PENNSYLVANIA
AMERICAN WATER

Brian Ardire
Director, Corporate Counsel
Pennsylvania-American Water Company
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October 3, 2018

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility
Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17105-3265

In Re: Application of Pennsylvania-American Water Company for approval (1) the transfer, by sale, of substantially all of the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company, and (2) the right of Pennsylvania-American Water Company to begin to offer or furnish wastewater service to the public in the Borough of Turbotville, Northumberland County, Pennsylvania. A-2018-3004189.

Dear Secretary Chiavetta:

In response to your letter dated September 19, 2018, attached for filing are Pennsylvania-American Water Company's answers to the Data Requests Set 1 regarding the above referenced docket number.

Sincerely,

Brian Ardire

blg
Enclosure
cc: C. McKinley
Tanya McCloskey/Christine Hoover, Office of Consumer Advocate
John Evans, Office of Small Business Advocate
Richard Kanaskie, PUC Bureau of Investigation and Enforcement

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-1. Please identify the Pennsylvania Department of Environmental Protection (DEP) permitted treatment capacity limits, including hydraulic and organic loading, for the Turbotville Borough wastewater treatment plant (Turbotville WWTP).

Response: The treatment plant permitted hydraulic capacity is 0.136 MGD. The permitted organic capacity is 226.8 pounds per day of BOD5.

Responsible Witness: Michael J. Guntrum PE, PMP

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-2. Please provide a copy of the Turbotville WWTP's DEP National Pollutant Discharge Elimination Sytem (NPDES) and Water Quality Permits referenced in Schedule 4.1(q) of the Application's APA.

Response: See Attachment A-2.

Responsible Witness: Michael J. Guntrum PE, PMP

Attachment A-2

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR PUBLICLY OWNED TREATMENT WORKS (POTWs)

NPDES PERMIT NO: PA0028100

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

Turbotville Borough
2 Adam Street PO Box 264
Turbotville, PA 17772-9069

is authorized to discharge from a facility known as **Turbotville Borough Wastewater Treatment Plant**, located in **Turbotville Borough, Northumberland County**, to **Unnamed Tributary to Warrior Run** in Watershed(s) **10-D** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON SEPTEMBER 1, 2015

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON AUGUST 31, 2020

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))

3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (40 CFR 122.41(b), 122.21(d))

   In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (25 Pa. Code §§ 92a.7(b), (c))

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED AUGUST 17, 2015 **ISSUED BY**

Thomas M. Randis
Clean Water Program Manager
Northcentral Regional Office

Permit No. PA0028100

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 41° 6' 23.10" , **Longitude** 76° 46' 21.30" , **River Mile Index** 1.33 , **Stream Code** 19158

Receiving Waters: Unnamed Tributary to Warrior Run

Type of Effluent: Sewage

1. The permittee is authorized to discharge during the period from Permit Effective Date through May 31, 2018.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.45	XXX	1.48	1/day	Grab
CBOD5	13	20	XXX	12	18	24	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	34	34	XXX	30	30	30	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab

Outfall 001, Continued (from Permit Effective Date through May 31, 2018)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Ammonia-Nitrogen May 1 - Oct 31	7.0	10	XXX	6.0	9.0	12	1/week	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	20	31	XXX	18	27	36	1/week	8-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
Total Copper	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/month	8-Hr Composite
Total Lead	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/month	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001 , **Latitude** 41° 6' 23.10" , **Longitude** 76° 46' 21.30" , **River Mile Index** 1.33 , **Stream Code** 19158

Receiving Waters: Unnamed Tributary to Warrior Run

Type of Effluent: Sewage

1. The permittee is authorized to discharge during the period from June 1, 2018 through Permit Expiration Date.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.45	XXX	1.48	1/day	Grab
CBOD5	13	20	XXX	12	18	24	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	34	34	XXX	30	30	30	1/week	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab

Outfall 001, Continued (from June 1, 2018 through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Ammonia-Nitrogen May 1 - Oct 31	4.0	5.5	XXX	3.5	5.0	7.0	1/week	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	11.5	17	XXX	10.5	15	21	1/week	8-Hr Composite
Total Phosphorus	2.96	2.96	XXX	2.60	2.60	2.60	1/week	8-Hr Composite
Total Copper (µg/L)	0.04	0.08 Daily Max	XXX	36.31	72.62 Daily Max	90.77	1/month	8-Hr Composite
Total Lead	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/month	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

3800-FM-BPNPSM0436 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT – INFLUENT & PROCESS CONTROL

Facility Name: Turbotville Borough Wastewater Treatment Plant
Municipality: Turbotville Borough County: Northumberland
Watershed: 10-D

Month: _____ Year: _____
NPDES Permit No.: PA0028100
Renewal application due **180 days** prior to expiration

Day	Influent					Process Control				
	Flow (MGD)	BOD5 (mg/l)	BOD5 (lbs)	TSS (mg/l)	TSS (lbs)	Aeration MLSS (mg/l)	Aeration DO (mg/l)	Sludge Wasted (gallons)		
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
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22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Avg										
Max										

This permit will expire on

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

3800-FM-BPNPSM0440 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). **Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.** If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: Turbotville Borough Wastewater Treatment Plant Month: _____ Year: _____

Municipality: Turbotville Borough County: Northumberland Permit No.: PA0028100

☐ **Violations of Permit Effluent Limitations***

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken

☐ **Sanitary Sewer Overflows and Other Unauthorized Discharges***

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified

☐ **Other Permit Violations***

- ☐ Sample collection less frequent than required — Explain _____
- ☐ Sample type not in compliance with permit — Explain _____
- ☐ Violation of permit schedule — Explain _____
- ☐ Other — Explain _____
- ☐ Other — Explain _____

*** If the space provided is not sufficient to record all information, please attach additional sheets.**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

3800-FM-BPNPSM0435 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: Turbotville Borough Wastewater Treatment Plant
Municipality: Turbotville Borough County: Northumberland
Watershed: 10-D
Laboratories: _____

Month: _____ Year: _____
NPDES Permit No.: PA0028100 Outfall No.: 001
Renewal application due **180 days** prior to expiration
This permit will expire on _____

Day	Effluent Parameters																	
	Total Copper		Total Lead															
	Q	µg/L	Q	µg/L	Q		Q		Q		Q		Q		Q		Q	
1																		
2																		
3																		
4																		
5																		
6																		
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I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

3800-PM-BPNPSM0435 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: Turbotville Borough Wastewater Treatment Plant
Municipality: Turbotville Borough County: Northumberland
Watershed: 10-D
Laboratories: _____

Month: _____ Year: _____
NPDES Permit No.: PA0028100 Outfall No.: 001
Renewal application due **180 days** prior to expiration
This permit will expire on _____

Day	Effluent Parameters																	
	Flow		pH		DO		TRC		CBOD5		TSS		Fecal Coliform		Ammonia		Total Phosphorus	
	Q	MGD	Q	S.U.	Q	mg/L	Q	mg/L	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	mg/L	Q	mg/L
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30																		
31																		
Avg																		

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____
Title: _____ Date: _____

3900-FM-BPNPSM0189 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL LABORATORY ACCREDITATION FORM[1]

Permittee Name: Turbotville Borough

Address: 2 Adam Street
Turbotville, PA 17772-9069

PERMIT NUMBER	MONITORING PERIOD Year/Month/Day						
PA0028100				TO			

PARAMETER	ANALYSIS METHOD	LAB NAME	LAB ID NUMBER[2]

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

Name/Title Principal Executive Officer

Phone: _____

Signature of Principal Executive Officer or Authorized Agent

_____

Date: _____

[1] Submit this form with the first Discharge Monitoring Report (DMR) or Annual Report, where sample results are submitted to the Department for compliance purposes. You do not need to send this form to the Department again UNLESS there has been a change to the lab(s), parameter(s) or method(s) of analysis.

[2] For parameter(s) covered under accreditation-by-rule, submit the lab's registration number in lieu of an accreditation number.

3800-FM-BPNPSM0462 3/2012

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

INTERIM

PERMITTEE NAME/ADDRESS

NAME Turbotville Borough
ADDRESS 2 Adam Street
Turbotville, PA 17772-9069
FACILITY Turbotville Borough WWTP
LOCATION Turbotville Borough
Northumberland County
WATERSHED 10-D

PA0028100	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: Permit Effective Date
DMR Effective To: May 31, 2018
Permit Expires:
Permit Application Due:

___ Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow	SAMPLE MEASUREMENT			MGD	*****	*****	*****	*****		Continuous	Metered
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	*****	*****				
pH	SAMPLE MEASUREMENT	*****	*****	*****		*****		S.U.		1/day	Grab
	PERMIT REQUIREMENT	*****	*****		6.0 Min	*****	9.0 Max				
Dissolved Oxygen	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****	mg/L		1/day	Grab
	PERMIT REQUIREMENT	*****	*****		Report Min	*****	*****				
Total Residual Chlorine	SAMPLE MEASUREMENT	*****	*****	*****	*****			mg/L		1/day	Grab
	PERMIT REQUIREMENT	*****	*****		*****	0.45 Avg Mo	1.48 IMAX				
CBOD5	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	13 Avg Mo	20 Wkly Avg		*****	12 Avg Mo	18 Wkly Avg				
BOD5 Raw Sewage Influent	SAMPLE MEASUREMENT			lbs/day	*****		*****	mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	*****				
Total Suspended Solids	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	34 Avg Mo	34 Wkly Avg		*****	30 Avg Mo	30 Wkly Avg				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

TYPED OR PRINTED

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS

NAME: Turbotville Borough
ADDRESS: 2 Adam Street
Turbotville, PA 17772-9069
FACILITY: Turbotville Borough WWTP
LOCATION: Turbotville Borough
Northumberland County
WATERSHED: 10-D

PA0028100	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

INTERIM

Reporting Frequency: Monthly
DMR Effective From: Permit Effective Date
DMR Effective To: May 31, 2018
Permit Expires:
Permit Application Due:

___ Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Suspended Solids Raw Sewage Influent	SAMPLE MEASUREMENT			lbs/day	*****		*****	mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	*****				
Fecal Coliform May 1 - Sep 30	SAMPLE MEASUREMENT	*****	*****	*****	*****			CFU/ 100 ml		1/week	Grab
	PERMIT REQUIREMENT	*****	*****		*****	200 Geo Mean	1,000 IMAX				
Fecal Coliform Oct 1 - Apr 30	SAMPLE MEASUREMENT	*****	*****	*****	*****			CFU/ 100 ml		1/week	Grab
	PERMIT REQUIREMENT	*****	*****		*****	2,000 Geo Mean	10,000 IMAX				
Ammonia-Nitrogen May 1 - Oct 31	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	7.0 Avg Mo	10 Wkly Avg		*****	6.0 Avg Mo	9.0 Wkly Avg				
Ammonia-Nitrogen Nov 1 - Apr 30	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	20 Avg Mo	31 Wkly Avg		*****	18 Avg Mo	27 Wkly Avg				
Total Phosphorus	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Wkly Avg		*****	Report Avg Mo	Report Wkly Avg				
Total Copper	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/month	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	Report Daily Max				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).						
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

FINAL

PERMITTEE NAME/ADDRESS

NAME: Turbotville Borough
ADDRESS: 2 Adam Street
Turbotville, PA 17772-9069
FACILITY: Turbotville Borough WWTP
LOCATION: Turbotville Borough
Northumberland County
WATERSHED: 10-D

PA0028100	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: June 1, 2018
DMR Effective To: Permit Expiration Date
Permit Expires:
Permit Application Due:
___ Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Suspended Solids	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	34 Avg Mo	34 Wkly Avg		*****	30 Avg Mo	30 Wkly Avg				
Fecal Coliform May 1 - Sep 30	SAMPLE MEASUREMENT	*****	*****	*****	*****			CFU/ 100 ml		1/week	Grab
	PERMIT REQUIREMENT	*****	*****		*****	200 Geo Mean	1,000 IMAX				
Fecal Coliform Oct 1 - Apr 30	SAMPLE MEASUREMENT	*****	*****	*****	*****			CFU/ 100 ml		1/week	Grab
	PERMIT REQUIREMENT	*****	*****		*****	2,000 Geo Mean	10,000 IMAX				
Ammonia-Nitrogen May 1 - Oct 31	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	4.0 Avg Mo	5.5 Wkly Avg		*****	3.5 Avg Mo	5.0 Wkly Avg				
Ammonia-Nitrogen Nov 1 - Apr 30	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	11.5 Avg Mo	17 Wkly Avg		*****	10.5 Avg Mo	15 Wkly Avg				
Total Phosphorus	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	2.96 Avg Mo	2.96 Wkly Avg		*****	2.60 Avg Mo	2.60 Wkly Avg				
Total Copper	SAMPLE MEASUREMENT			lbs/day	*****			µg/L		1/month	8-Hr Composite
	PERMIT REQUIREMENT	0.04 Avg Mo	0.08 Daily Max		*****	36.31 Avg Mo	72.62 Daily Max				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
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FINAL

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Turbotville, PA 17772-9069
FACILITY: Turbotville Borough WWTP
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Northumberland County
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PA0028100	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
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Permit Expires:
Permit Application Due:

___ Check Here if No Discharge

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PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Lead	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/month	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	Report Daily Max				
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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	PERMIT REQUIREMENT										

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TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
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PERMITTEE NAME/ADDRESS

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ADDRESS: 2 Adam Street
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PA0028100	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: June 1, 2018
DMR Effective To: Permit Expiration Date
Permit Expires:
Permit Application Due:
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PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow	SAMPLE MEASUREMENT			MGD	*****	*****	*****	*****		Continuous	Metered
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	*****	*****				
pH	SAMPLE MEASUREMENT	*****	*****	*****		*****		S.U.		1/day	Grab
	PERMIT REQUIREMENT	*****	*****		6.0 Min	*****	9.0 Max				
Dissolved Oxygen	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****	mg/L		1/day	Grab
	PERMIT REQUIREMENT	*****	*****		Report Min	*****	*****				
Total Residual Chlorine	SAMPLE MEASUREMENT	*****	*****	*****	*****			mg/L		1/day	Grab
	PERMIT REQUIREMENT	*****	*****		*****	0.45 Avg Mo	1.48 IMAX				
CBOD5	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	13 Avg Mo	20 Wkly Avg		*****	12 Avg Mo	18 Wkly Avg				
BOD5 Raw Sewage Influent	SAMPLE MEASUREMENT			lbs/day	*****		*****	mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	*****				
Total Suspended Solids Raw Sewage Influent	SAMPLE MEASUREMENT			lbs/day	*****		*****	mg/L		1/week	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	*****				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
		AREA CODE	NUMBER	YEAR	MO	DAY
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT					

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COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-PM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS

NAME Turbotville Borough
ADDRESS 2 Adam Street
Turbotville, PA 17772-9069
FACILITY Turbotville Borough WWTP
LOCATION Turbotville Borough
Northumberland County
WATERSHED 10-D

PA0028100	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY		YEAR	MO	DAY
			TO			

INTERIM

Reporting Frequency: Monthly
DMR Effective From: Permit Effective Date
DMR Effective To: May 31, 2018
Permit Expires:
Permit Application Due:

___ Check Here if No Discharge
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Lead	SAMPLE MEASUREMENT			lbs/day	*****			mg/L		1/month	8-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max		*****	Report Avg Mo	Report Daily Max				
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
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NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

Supplemental Form Inventory

The following supplemental forms (indicated in the check box column) are attached to this permit and must be completed and submitted to DEP in accordance with the permit and the supplemental form instructions. If the eDMR system is used to submit DMR reports, the spreadsheet versions of these supplemental forms, where applicable, should be used and attached to the eDMR submissions. A link to DEP's supplemental form website is available when logging into the eDMR system.

Check Box	Supplemental Form Name and No.
☒	Daily Effluent Monitoring (3800-FM-BPNPSM0435)
☒	Influent & Process Control (3800-FM-BPNPSM0436)
☐	Hauled in Municipal Wastes (3800-FM-BPNPSM0437)
☐	Sewage Sludge/Biosolids Production and Disposal (3800-FM-BPNPSM0438)
☐	Chemical Additives Usage (3800-FM-BPNPSM0439)
☒	Non-Compliance Reporting Form (3800-FM-BPNPSM0440)
☐	CSO Monthly Summary Report (3800-FM-BPNPSM0441)
☐	CSO Detailed Report (3800-FM-BPNPSM0442)
☐	Groundwater Monitoring Data Report (3800-FM-BPNPSM0443)
☐	Nutrient Monitoring (3800-FM-BPNPSM0444)
☐	Nitrogen Budget (3800-FM-BPNPSM0445)
☐	Phosphorus Budget (3800-FM-BPNPSM0446)
☐	Annual Nutrient Summary (3800-FM-BPNPSM0447)
☐	TMDL Annual Load Summary (3800-FM-BPNPSM0448)
☐	Land Application Systems (3800-FM-BPNPSM0449)
☐	Hauled in Residual Wastes (3800-FM-BPNPSM0450)
☐	Surface Water Monitoring Data Report (3800-FM-BPNPSM0461)
☒	Lab Accreditation Form (3800-FM-BPNPSM0189)
☐	Whole Effluent Toxicity Test Summary Report (3800-FM-BPNPSM0485)
☐	Storm Water Annual Inspection Form (3800-PM-WSFR0083v)
☐	Storm Water Additional Information (3800-PM-WSFR0083t)
☐	Other:

File Copy Permit File

Pennsylvania Department of Environmental Protection

208 West Third Street, Suite 101
Williamsport, PA 17701-6448

April 17, 2000

Northcentral Regional Office

Fax 570-327-3565

CERTIFIED MAIL NO. Z 530 201 331

Borough of Turbotville
P.O. Box 264
Turbotville, PA 17772-0264

Re: Sewerage - WQM No. 4999406
Borough of Turbotville
Turbotville Borough, Northumberland County

Gentlemen:

Enclosed is a corrected Water Quality Management (WQM) Permit No. 4999406 for the re-rating of your sewage treatment plant.

Please cancel and destroy Permit No. 1799402. The permit number for this permit has been corrected to 4999406. Also, the rerated flows for the plant have been more clearly defined. No other changes have been made to this permit. NPDES Permit No. PA0028100 that you also received with our letter of March 29, 2000, is not effected by these discharges.

We are sorry these changes had to be made to your permit. Should you have any questions, please feel free to contact Brant Keller at 570-327-3679.

Sincerely,

L. Richard Adams, P.E.
Chief, Permits Section
Water Management

Enclosure: WQM Permit

cc: Uni-Tec Consulting Engineers, Inc.
Brant Keller
Central Office
Regional Office
File

LRA/BK/sr

SPECIAL CONDITIONS

Water Quality Management Permit No. 4999406
Borough of Turbotville
Turbotville Borough, Northumberland County

This permit is issued subject to all rules and regulations now in force and the following special conditions:

A. The standard and special conditions specified for previously issued Water Quality Management permits shall continue to apply to those permits unless superseded by the terms and conditions of this permit.

B. Consistent with DEP Policy (362-2000-007), the Department did not conduct a detailed technical review of the application for this permit. The Department considers John P. Mazich, registration #043786-E, the registered engineer whose seal is affixed to the design documents, to be fully responsible for the adequacy of all aspects of the facility design.

3600-FM-WQ0015 Rev. 8/94

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MANAGEMENT PROGRAM

PERMIT NO. 4999406

AMENDMENT NO. _____

WATER QUALITY MANAGEMENT PERMIT

A. PERMITTEE (Name & Address): Borough of Turbotville
PO Box 264
Turbotville, PA 17772-0264

B. PROJECT (Name, County, Municipality): Sewage Treatment Plant Rerating
Turbotville Borough, Northumberland County

C. THIS: X **Permit** _____ **Permit Amendment**

APPROVES:

X	**The operation of:**	_____	**Modification(s) to the construction/operation of:**
X	Sewage Treatment Facilities	_____	Industrial Waste Treatment Facilities
_____	Land Application Facilities	_____	Other: _____

Average Design Flow of _____ MGD consisting of: Rerating the existing sewage treatment plant for a design flow of 0.136 MGD and a maximum monthly average flow of 0.16 MGD. The plant's influent organic load is rerated at 227 lbs/day of BOD_5.

_____	Sewers and Appurtenances	_____	Pump Station(s)
_____	Impoundment(s)	_____	Injection Well(s)
_____	Soil Erosion & Sedimentation Control Plan		
_____	Stream Crossing(s)	_____	Outfall & Headwall(s)

D. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. a. All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit/Permit Amendment Application dated 10/27/99, its supporting documentation, and addendums dated None. Such application, its supporting documentation and addendums are hereby made a part of this permit.
   b. Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are (except for any modifications to the original permit herein permitted) also made a part of this permit amendment.
2. Conditions numbered _____ of the _____ standard conditions dated _____ and conditions numbered _____ of the Erosion Control standard conditions dated _____ are attached and made part of this permit.
3. Special conditions numbered A and B are attached and made part of this permit.

E. THIS AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the standard or special conditions, the standard or special conditions shall apply.
2. Failure to comply with the rules and regulations of the Department or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of the permit.
3. This permit is issued pursuant to the Clean Stream law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 et seq., and/or the Dam Safety and Encroachments Act of November 26, 1978, P.L. 1375, as amended, 32 P.S. §693.1 et seq. Issuance of this permit shall not relieve the permittee of any responsibility under any other law.
4. Industrial Facilities - If the herein permitted facilities or modifications are not completed with two (2) years of the issue date below, this permit will become null and void and reapplication shall be required.

PERMIT ISSUED:
DATE 3/24/2000

AMENDMENT ISSUED:
DATE _____

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BY: Daniel L. Altare
TITLE: Environmental Program Manager

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Water Quality Management
200 Pine Street
Williamsport, Pennsylvania 17701-6510
717-327-3666

July 5, 1988

CERTIFIED MAIL NO. P 799 322 822

Sewerage
Water Quality Management Permit 4988404
Turbotville Borough
Turbotville Borough, Northumberland County

Turbotville Borough
P. O. Box 264
Turbotville, PA 17772

Gentlemen:

The above referenced permit is enclosed. Please study the permit carefully and direct any questions to the Facilities Section of this office.

This action of the Department may be appealable to the Environmental Hearing Board, 101 South Second Street, Suites Three - Five, Harrisburg, PA 17101, (717-787-3483) by any aggrieved person pursuant to Section 1921-A of the Administrative Code of 1929, as amended, 71 P.S. Section 510-21; and the Administrative Agency Law, 2 Pa. C.S.A. §§501-508 and 701-704. Appeals must be filed with the Environmental Hearing Board within thirty (30) days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the regulations governing practice and procedure before the Board may be obtained from the Board. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

Very truly yours,

William P. Parsons
Regional Water Quality Manager

WPP:LK:rjh

Enclosures: Permit
Standard Conditions Relating to Sewerage
Standard Conditions Relating to Erosion Control

cc: Uni-Tec, Inc.
Central Office
Regional Office

CONFIDENTIAL

REGIONAL ENGINEER'S REVIEW

3. The aerobic treatment tanks will have a capacity of 50,000 gallons each. Each will provide its detention time of 24 hours based on average design flow. To eliminate short-circuiting of raw sewage particles, the aeration chamber's air diffusers were designed and placed longitudally along one side of the aeration chamber to enhance spiral rotation. Each diffuser assembly is equipped with an air shut-off valve. A minimum of 2,000 cubic feet of air/pound of BOD applied in the aeration cell is provided. Two blower motor units, each having a capacity of 500 CFM at 5 psi are being provided. The blowers will be controlled by a 24-hour 7-day timer clock. Blowers will be set to provide peak plant performance. Froth control system is included in the aeration chamber. Froth control pump is rated at 50 GPM and will pump effluent from the clarifier to self-cleaning spray nozzles within the aeration chamber.

4. Two settling tanks will be provided. Each settling tank has a total capacity of 8,333 gallons and will provide 4 hours of detention at average design daily flow rate. The surface settling rate in each tank is 250 gpd/sq. ft. and the overflow weir rate is 5,000 gpd/ft. of weir. The inlet to the settling tank is baffled to prevent short-circuiting. Twelve foot side water depth has been provided and this was redesigned after NSF approvals for the treatment plant could not be obtained. An airlift sludge return is provided within each hopper bottom.

5. A 4,500 gallon capacity chlorine contact tank is provided. Gas chlorination will be used to provide disinfection. The minimum detention within the chlorine contact chamber will be 60 minutes at the average design flow rate.

6. An ultrasonic-type flow meter with a parshall flume will follow the chlorination tank to measure the total flow rate that leaves the sewage treatment plant. A 24-hour day 7-day chart recorder will be provided to measure total plant flow.

7. An aerated sludge holding tank with a capacity of 30,000 will be provided to stabilize waste sludge. Diffused air will be supplied by the blowers that provide air for other portions of the plant. The treatment plant is estimated to produce approximately 1,200 gpd of waste sludge with a solid content of 1.5 percent. The sludge will be stored for an average of 25 days. Supernatant will be pumped back to the aeration tank. Ultimate disposal will be by approved DER hauler to a nearby sewage treatment plant that accepts waste sludge. Ultimately, consideration will be given to utilization of sludge drying beds but in the interim the sludge will be disposed of under contract.

There are no chemicals added during the treatment process other than the chlorine for disinfection purposes. An alarm device will be located at the pump station prior to the treatment plant. There are no overflows or bypasses proposed as part of this application. Since this is a small facility and power is very dependable, no provisions for permanent standby power are provided; however, provisions for connection of a portable standby generator to the pump station in cases of power failure are being provided. The proposed treatment facility is at a higher elevation then the existing treatment facility which has never been flooded. The perimeter of the proposed treatment facility will be entirely secured with a chain-link fence.

The borough is getting funding from Farmers Home.

The Act 14 requirements have been met. The application was published in the Pennsylvania Bulletin. There was no inter-bureau coordination involved in the case. The design of this treatment plant meets the requirements of the Sewerage Manual. It is recommended that this permit be issued.

DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

WATER QUALITY MANAGEMENT PERMIT NO. 4988404

A. PERMITTEE: (Name and Address)
Turbotville Borough
P.O. Box 264
Turbotville, PA 17772

B. PROJECT LOCATION
Municipality: Turbotville Borough
County: Northumberland

C. TYPE OF FACILITY (For industrial wastes: type of establishment
0.10 MGD extended aeration STP

D. NAME OF PLANT, AREA SERVED, OUTFALL NO., ETC.
Turbotville expansion and upgrade

E. THIS PERMIT APPROVES:

1. Plans For Construction Of: a. [X] Pump Stations: Sewers and Appurtenances b. [X] Sewage Treatment Facilities c. [ ] Industrial Wastes Treatment Facilities d. [ ] Injection Well e. [X] Outfall & Headwall f. [ ] Stream Crossing g. [ ] Impoundment
2. The Discharge Of: a. [ ] Treated b. [ ] Untreated c. [ ] Sewage d. [ ] Industrial Wastes
3. Discharge To: a. [ ] Surface Water b. [ ] Ground Water
   Name of Stream to which discharged or drainage area in which groundwater discharge takes place or impoundment is located.
4. Preparedness, Prevention, Contingency (PPC) Plan [ ]
5. An Erosion and Sedimentation Control Plan [X]
   Project Area is <1 Acres

F. THIS APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. ALL CONSTRUCTION, OPERATIONS, PROCEDURES AND DISCHARGE SHALL BE IN ACCORDANCE WITH APPLICATION NO. 4988404 DATED 3/7/88 ITS SUPPORTING DOCUMENTATION, AND AMENDMENTS DATED None. SUCH APPLICATION, ITS SUPPORTING DOCUMENTATION AND AMENDMENTS ARE HEREBY MADE A PART OF THIS PERMIT.
2. CONDITIONS NUMBERED 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,19,20,21,22 OF THE Sewerage STANDARD CONDITIONS DATED September 2, 1983 AND CONDITIONS NUMBERED All OF THE EROSION CONTROL STANDARD CONDITIONS DATED 1985 WHICH CONDITIONS ARE ATTACHED AND MADE PART OF THIS PERMIT.
3. SPECIAL CONDITIONS DESIGNATED 1 WHICH ARE ATTACHED AND ARE MADE A PART OF THIS PERMIT.

G. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. IF THERE IS A CONFLICT BETWEEN THE APPLICATION ON ITS SUPPORTING DOCUMENTS AND AMENDMENTS AND THE STANDARD OR SPECIAL CONDITIONS, THE STANDARD OR SPECIAL CONDITIONS SHALL APPLY.
2. FAILURE TO COMPLY WITH THE RULES AND REGULATIONS OF THE DEPARTMENT OR WITH THE TERMS OR CONDITIONS OF THIS PERMIT SHALL VOID THE AUTHORITY GIVEN TO THE PERMITTEE BY THE ISSUANCE OF THE PERMIT.
3. THIS PERMIT IS ISSUED PURSUANT TO THE CLEAN STREAMS LAW, ACT OF JUNE 22, 1937, P.L. 1987 AS AMENDED 35 P.S. §691.1 ET SEQ. AND/OR THE DAM SAFETY AND ENCROACHMENTS ACT OF NOVEMBER 26, 1978, P.L. 1375, AS AMENDED, 32 P.S. §693.1 ET SEQ. ISSUANCE OF THIS PERMIT SHALL NOT RELIEVE THE PERMITTEE OF ANY RESPONSIBILITY UNDER ANY OTHER LAW.

PERMIT ISSUED

DEPARTMENT OF ENVIRONMENTAL RESOURCES

DATE July 5, 1988

BY [signature]

TITLE REGIONAL WATER QUALITY MANAGER

ER-BWQ-43 Rev.: 6/76

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

CONFIDENTIAL
For Department Use Only

INTERNAL REVIEW AND RECOMMENDATIONS

NAME OF APPLICANT: Turbotville Borough | PROJECT LOCATION: Turbotville Borough, Northumberland County | APPLICATION NUMBER: 4988404

BRIEF DESCRIPTION OF PROJECT AND DISCUSSION (Use Additional Sheets if Necessary)

The applicant requests issuance of a Water Quality Management permit for the construction of a 100,000 gpd extended aeration sewage treatment plant. The project narrative in the design engineer's report states that the discharge quality will be considered equivalent to secondary treatment and an NPDES permit at the above flow rate for secondary treatment in terms of C-BOD_5 and suspended solids has been issued previously. No industrial waste will be treated at the proposed facility. An allowance has been made for infiltration up to 10,000 gpd and an infiltration/ inflow removal project is part of their plan.

For the purposes of Chapter 94 the influent loading is 210 mg/l and 175 pounds/ day BOD_5 and for total suspended solids 210 mg/l and 175 pounds/day influent. The peak hourly flow rate was not to exceed 250 percent of the design flow.

The following is a summary of the major components of the proposed treatment facility:

1. A comminutor with an emergency by-pass bar screen.

2. Pump station with two submersible pumps each rated at 175 GPM. This flow rate is 2½ times the average daily flow rate of 70 GPM. The wet well will have an 8 ft. diameter with a capacity of 375 gallons/ft. The detention time at design flow will be approximately 8 minutes. A 4-inch force main will carry the influent to a splitter box which will divide the flow evenly between the two aerobic treatment units.

CURRENT ESTIMATE OF COMPLETION DATE OF PROJECT (Industrial Wastes Only)

RECOMMENDATION AND ACTION

Approve -- Issue By Region	Approve -- Issue By Central Office	Refuse	Signature	Date
☒	☐	☐	REVIEWING ENGINEER Lynn Kyle	7/1/88
☑	☐	☐	REGIONAL FACILITIES SECTION CHIEF	7/5/88
☒	☐	☐	REGIONAL ENGINEER/WATER QUALITY MANAGER	7/5/88
	☐	☐	DIVISION FACILITIES ENGINEER	
	☐	☐	DIVISION CHIEF	

PERMIT CONDITIONS:

1. STANDARD --

2. SPECIAL (Use Additional Sheets If Necessary) --

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-3. Please identify the current average daily wastewater flow generated by the customers within the requested territory and provide evidence that the Turbotville Borough wastewater system can provide adequate collection, conveyance and treatment capacity to meet present and future customer demands.

Response: The Turbotville 2017 Chapter 94 report identifies the current average daily wastewater flow as 0.056 MGD for 2017. Based on our review of the treatment plan and collection system and projections of hydraulic and organic loading the Turbotville Borough wastewater system can provide adequate collection, conveyance and treatment capacity to meet present and future customer demands.

Responsible Witness: Michael J. Guntrum PE, PMP

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-4. Please provide a copy of Turbotville Borough's most recent Chapter 94 Municipal Wasteload Management Report submitted to the DEP.

Response: See Attachment A-4.

Responsible Witness: Michael J. Guntrum PE, PMP

Attachment A-4

Sanitary Sewage System

Annual
Wasteload Management Report
For The 2017 Operating Year

Prepared for:

The Borough of Turbotville
PO Box 264
Turbotville, PA 17772

March 5, 2018

Prepared by:

Bruce Foreman

Bruce Foreman

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Hydraulic and Organic Loading Data Spreadsheet and Graphs

Borough Official Acknowledgement and Approval

Meter Calibration Certification

Exhibits

Introduction

This Municipal Wasteload Management Report gives an analysis of the organic and hydraulic loading of the Turbotville Wastewater Treatment System during the past five years and provides a projection for the coming five years. The provisions of the Municipal Wasteload Management Report are to manage discharges into a municipal sewage facility, such that the Borough is able to (1) effectively manage extensions and connections to the sewer system and (2) prevent the occurrence of an overloaded sewage facility. The report has been prepared to meet the requirements of Chapter 94, paragraph 25, of the regulations of the Pennsylvania Department of Environmental Protection.

The information presented herein has been developed from data furnished by the borough, its employees, and from on-site inspections.

For reference, the following should be noted:

Owner:	The Borough of Turbotville
Address:	P.O. Box 264 Turbotville, PA 17772
Operator:	Bruce W. Foreman Cert. #S7422
Telephone:	(570)649-5476
NPDES Permit #:	PA 00281000
Receiving Stream:	Unnamed Tributary to Warrior Run

WASTEWATER TREATMENT FACILITIES

The Borough of Turbotville is a small rural community surrounded by Lewis Township, located at the northern tip of Northumberland County. The Borough owns and operates a wastewater treatment plant located in the northwest quadrant of Turbotville (Latitude 41° 06'08", Longitude 76° 46'32"). The description of the existing Turbotville Wastewater Treatment Plant is as follows:

1. Treatment Summary

The treatment plant employs a biological treatment process to attain treatment goals. The plant is designed for an average hydraulic capacity of 0.136 MGD and an organic capacity of BOD5 loading of 226.8 pounds per day. The raw sewage is comminuted, then pumped to the activated sludge process, settled, disinfected, and discharged into an unnamed tributary of Warrior Run (a tributary of the west branch of the Susquehanna River).The sludge from the secondary settling basin is pumped to an aerobic digester for stabilization. Final deposition of sludge is accomplished utilizing dewatering (via drying beds) and land filling.

2. Treatment Requirements

The Borough of Turbotville Wastewater Treatment Plant operates under the regulation and approval of the Pennsylvania Department of Environmental Protection (Pa DEP) and the United States Environmental Protection Agency (USEPA). USEPA regulatory requirements are presented through the National Pollutant Discharge Elimination System (NPDES) Permit No. PA0028100.

* Flow	0.136MGD
* C-BOD5	20.0 lb/day
* TSS	34.0 lb/day
* PH	6.0 - 9.0 S.U.
* Fecal Coliform	
- (5/1 - 9/30)	200 MPN/100ml
- (10/1 - 4/30)	2,000 MPN/100ml
* Ammonia (N)	
- (6/1 - 10/31)	5.5 lb/day
- (11/1 - 5/31)	17.0 lb/day
* Chlorine	.45 Avg. and 1.48 Max
* Lead	Reporting
* Copper	Reporting
* Total Phosphorus	Reporting
* Raw Influent	Report Avg. lbs BOD and TSS

3. Flow Pattern

The following paragraphs provide a brief description of the major process units employed at the plant.

The plant receives sewage from the Turbotville Borough and includes all residential, commercial, and industrial sewage generated within Borough limits. All wastewater generated in the Borough flows to a 0.250 MGD mazoration chamber where it passes through a 0-300 gpm mazorator.
The mazoration chamber is equipped with a 45o, two-inch clearance manual by-pass bar screen. The wastewater then flows by gravity to an on-site 0.250 MGD two-way adjustable flow splitter box. The splitter box is capable of delivering 0 to 100% flow to either secondary treatment unit trains or a combination thereof.

The preliminary effluent proceeds into two 50,000-gallon aeration tanks where biological treatment occurs. Sludge recirculated from the secondary settling basins is mixed with preliminary effluent and air is introduced via non-clogging coarse air diffusers to provide treatment. The biologically-activated effluent from the aeration tanks flow by gravity into two 16,700-gallon secondary settling basins where the biomass generated in the aeration tanks is settled out. The settled sludge is either returned back to the head of the aeration tanks or wasted from the process. The secondary settling basin effluent flows by gravity into two 2,100-gallon chlorine contact tanks and is disinfected. The chlorine contact effluent flows through the 980-gallon final effluent flow metering chamber and is discharged to an unnamed tributary of Warrior Run (a tributary of the west branch of the Susquehanna River).

4. Solids Handling

The sludge wasted from the activated sludge process is pumped via two 3" 0-105 gpm air lift pumps located in the secondary settling basin to a 29,700 gallon aerobic digestion tank. Stabilization and thickening occurs in the aerobic digestion tank. The thickened stabilized sludge is pumped to the sludge drying beds where it is dewatered, removed and hauled to an approved landfill. During the winter months the drying beds are not used, because of the freezing temperatures. We utilize contract haulers to haul liquid sludge to other wastewater treatment plants for further treatment and disposal.

INFILTRATION / INFLOW REMEDIATION

As a routine maintenance practice the Borough has continued to identify and eliminate I/I to the sewer system through regular inspection, smoke testing, video inspection, and repair to the system. The following is a list of what was done in the year 2017:

1. We capped off a six inch line no longer used.
2. We capped off a four inch lateral no longer in use.
3. We fixed two laterals that were leaking.
4. Chip Adams camera 2192 feet of sewer line in the boro.

ANTICIPATED I/I MAINTENANCE, REPAIR, RELOCATION/MODIFICATIONS

During 2018, the Borough plans to continue working on inflow/infiltration problem within the collection system, by performing investigations to locate problems and making appropriate corrective actions. The following will serve as the Borough's schedule of anticipated O&M, major repairs and upgrades listed below:

1. Structural remediation activities to be done in 2018:

a. The Turbotville Borough is in the beginning stages of upgrading the wastewater treatment plant.

2. Collection and conveyance system

    a. Will continue televising the main lines for I/I problem areas. As problems are found, they will be addressed accordingly.

3. Institutional remediation activities to be done in 2018:

    a. Continue to review sewer use ordinances and amend as needed.

    b. Continue to work with the residents to repair sanitary service laterals found to be defective through the following procedure:

        The Borough will send a certified letter to the resident describing the problem, defining the amount of time to correct the problem (i.e., 60 days from receipt of certified letter) and enforcement actions to be taken if compliance is not achieved.

INDUSTRIAL WASTE REPORT

The Borough of Turbotville has sewer use ordinances in place to regulate the discharge of sanitary and industrial wastewater into its sewer system. In 1994, the Borough developed Water and Wastewater Design Standards. The ordinances and design standards were reviewed in 1995 and were promulgated in 1996. There are no "Major Contributing Industries" as defined by the National Pollutant Discharge Elimination System (NPDES). The Borough Authority has not entered into any formal agreements with or issued permits to any industrial discharges

SEWER USE ORDINANCE

Providing for the creation and operation of a municipal sewer system for the Borough of Turbotville, Northumberland County, prescribing the regulations for connections thereto and the use thereof; prohibiting surface drains and drainage of sewage and waste waters; prohibiting erection and construction and maintenance of cesspools, privies, septic tanks and similar facilities for disposal of waste and sewage and requiring abandonment and discontinuance of such facilities now in use; prescribing penalties for violation

SEWER EXTENSIONS

Turbotville Borough had no new connections in 2017. Two accounts were deleted but could be reconnected in the future.

MAJOR EQUIPMENT

Turbotville Borough owns two trucks and a skid steer. All other needed maintenance equipment can be rented or contracted as the need arises

MONITORING

Routine monitoring of operation is in compliance with requirements of the NPDES Permit. Flow is continuously recorded. BOD5, C-BOD5, Total suspended solids, Fecal coliform, Ammonia, Total Phosphorus, Total Lead and Total Copper are analyzed weekly by collecting an 8 hr. grab composite. Seewald Testing does the testing for us. Total chlorine and pH are measured daily by the operators.

ROUTINE MAINTENANCE

The operator performs routine maintenance of the wastewater treatment facilities on a regular scheduled basis. Major repairs are performed only as needed. Such work is done on a contract basis with local contractors or by the Borough's personnel.

Maintenance done in 2017:

1. LTS Plumbing brought jet truck and unclogged return line in tank#1 and replaced the cap.
2. We cleaned out the chlorine tank when needed.
3. We cleaned and replaced air diffusers on the aeration tank.
4. Joe's welding replaced one air valve in each aeration tank and also fixed air leaks.
5. Dan Byler Construction put a new roof over the drying beds.
6. Shively's Electric did yearly maintenance inspection on the electrical boxes.
7. Shively's Electric came and fixed electrical problems in July.
8. Routine maintenance was done to the blowers.

COMBINED SEWER REGULATORS AND OVERFLOWS

The sewer system does not contain any combined sewers or overflows.

CONDITION OF THE SYSTEM

The system is in fair condition. We are currently in the process of selling the sewer plant to American Water. So the upgrade planned is on hold until decisions are made.

HYDRAULIC LOADING PROJECTIONS

The 5-year average flows is followed by the following information:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spread
Sewage Treatment Pl

Reporting Year: 2017

Facility Name: Turbotville Wastewater Plant

Permit No.: PA0028100

Persons/EDU: 3.5

Existing Hydraulic Design Capacity:	0.136	MGD			
Upgrade Planned in Next 5 Years?	YES		Year:	2018	
Future Hydraulic Design Capacity:	0.137	MGD			
Existing Organic Design Capacity:	227	lbs BOD5/day			
Upgrade Planned in Next 5 Years?	YES		Year:	2018	
Future Organic Design Capacity:	228	lbs BOD5/day			

Monthly Average Flows for Past Five Years (MGD)

Month	2013	2014	2015	2016	2017
January	0.055	0.043	0.033	0.055	0.103
February	0.047	0.035	0.03	0.081	0.048
March	0.045	0.055	0.064	0.041	0.09
April	0.052	0.067	0.079	0.033	0.067
May	0.039	0.056	0.031	0.033	0.07
June	0.03	0.029	0.053	0.029	0.03
July	0.036	0.032	0.08	0.0298	0.048
August	0.025	0.04	0.042	0.036	0.059
September	0.025	0.026	0.039	0.031	0.036
October	0.028	0.032	0.047	0.036	0.046
November	0.033	0.027	0.043	0.034	0.034
December	0.061	0.059	0.077	0.045	0.037
Annual Avg	0.04	0.042	0.052	0.0403	0.056
Max 3-Mo Avg	0.049	0.059	0.058	0.071	0.08
Max : Avg Ratio	1.23	1.40	1.12	1.76	1.43
Existing EDUs	365.0	365.0	365.0	365.0	363.0
Flow/EDU (GPD)	109.6	115.1	142.5	110.4	154.3
Flow/Capita (GPD)	31.3	32.9	40.7	31.5	44.1
Exist. Overload?	NO	NO	NO	NO	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2013	2014	2015	2016	2017
January	47	65	39	96	77
February	57	48	47	238	81
March	62	80	80	95	64
April	46	56	78	62	87
May	37	99	56	75	73
June	37	38	67	79	72
July	35	69	57	72	86
August	48	64	53	77	118
September	67	48	76	72	69
October	36	54	85	48	76
November	35	41	110	59	73
December	39	70	116	69	98
Annual Avg	46	61	72	87	81
Max Mo Avg	67	99	116	238	118
Max : Avg Ratio	1.47	1.62	1.61	2.74	1.45
Existing EDUs	365	365	365	365	363
Load/EDU	0.125	0.167	0.197	0.238	0.224
Load/Capita	0.036	0.048	0.056	0.068	0.064
Exist. Overload?	NO	NO	NO	YES	NO

Projected Flows for Next Five Years (MGD)

	2018	2019	2020	2021	2022
New EDUs	6.0	2.0	2.0	2.0	2.0
New EDU Flow	0.0008	0.0003	0.0003	0.0003	0.0003
Proj. Annual Avg	0.0469	0.0472	0.0475	0.0478	0.0481
Proj. Max 3-Mo Avg	0.0651	0.0655	0.0659	0.0663	0.0667
Proj. Overload?	NO	NO	NO	NO	NO

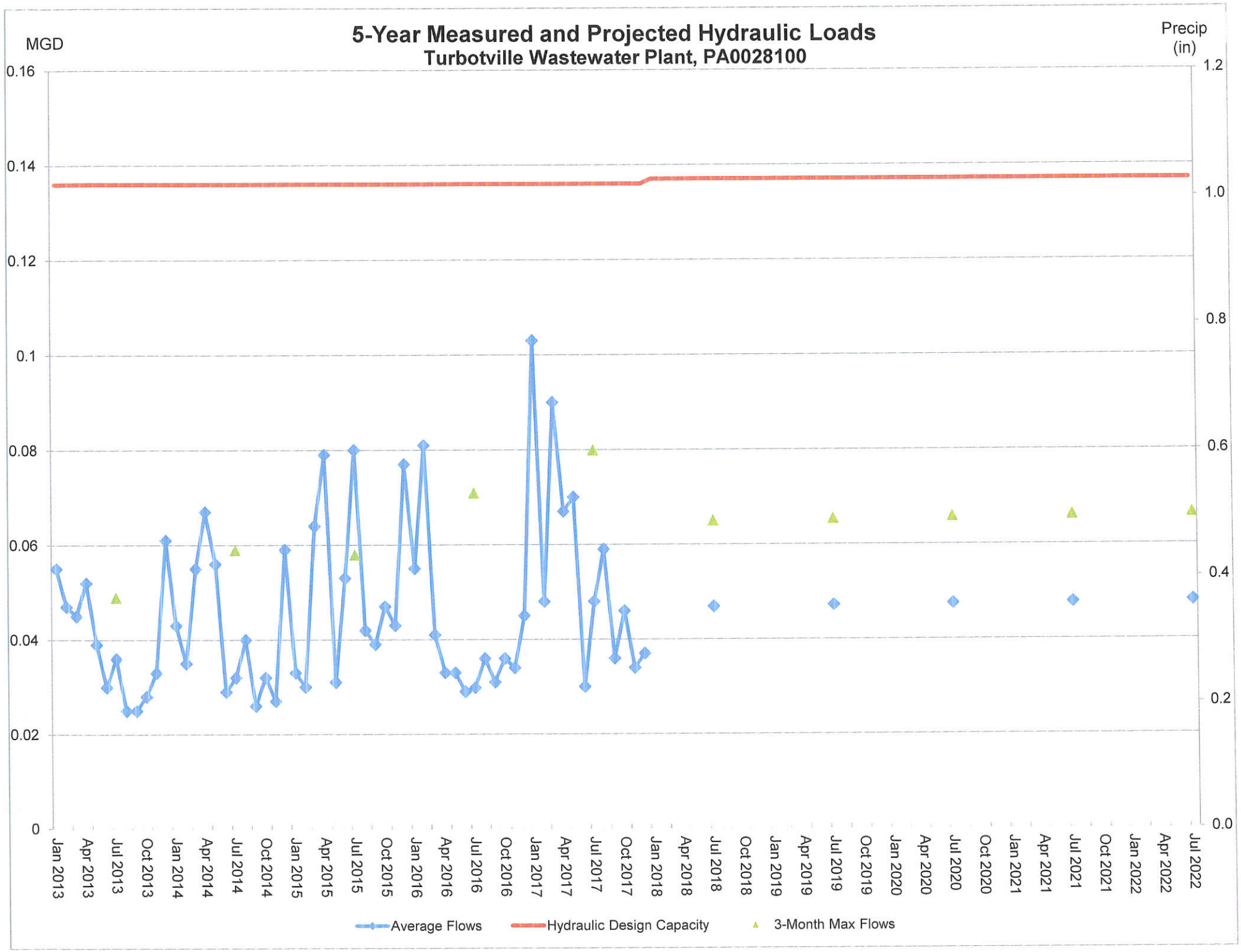
Projected BOD5 Loads for Next Five Years (lbs/day)

	2018	2019	2020	2021	2022
New EDUs	6	2	2	2	2
New EDU Load	1.141	0.380	0.380	0.380	0.380
Proj. Annual Avg	70	71	71	72	72
Proj. Max Avg	125	126	127	127	128
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2013	2014	2015	2016	2017
January	1.4	1.9	0.4	6.4	6.4
February	1.2	1.3	0.5	7.6	6.9
March	1.5	2.8	1.6	1.7	6.8
April	3.8	4.7	4.1	3.3	4.8
May	3.7	4.6	1.8	2.1	6.4
June	4.1	3.5	8.4	3.1	1.8
July	6.7	5.3	6.6	3.3	10.7
August	2.4	5.3	3.7	3.5	5.4
September	1.7	1.7	4.2	3.3	2.0
October	3.4	3.9	4.0	2.4	5.6
November	3.7	2.2	2.8	2.3	2.1
December	2.1	4.4	4.9	1.5	4.7


5-Year Measured and Projected Hydraulic Loads
Turbotville Wastewater Plant, PA0028100
MGD
Precip (in)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan 2013
Apr 2013
Jul 2013
Oct 2013
Jan 2014
Apr 2014
Jul 2014
Oct 2014
Jan 2015
Apr 2015
Jul 2015
Oct 2015
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
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Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Average Flows
Hydraulic Design Capacity
3-Month Max Flows

There is a subdivision which has one connection so far. The aforementioned subdivisions will add 12 new EDUs to the Turbotville Sanitary Sewer System. No additional housing units were built in 2017. Six EDU's are planned for the first year in the projection year for new homes being built. There was two accounts deleted in 2017.

The five year projections are based on two connections per year for the next five years and Active EDU's 362.5

2010 Census Population	705
2010 Census Households	306
Population per EDU	2.48
Gallons per Capita	68
Gallons per EDU	143
Connections 2017	0
2018-2022	2

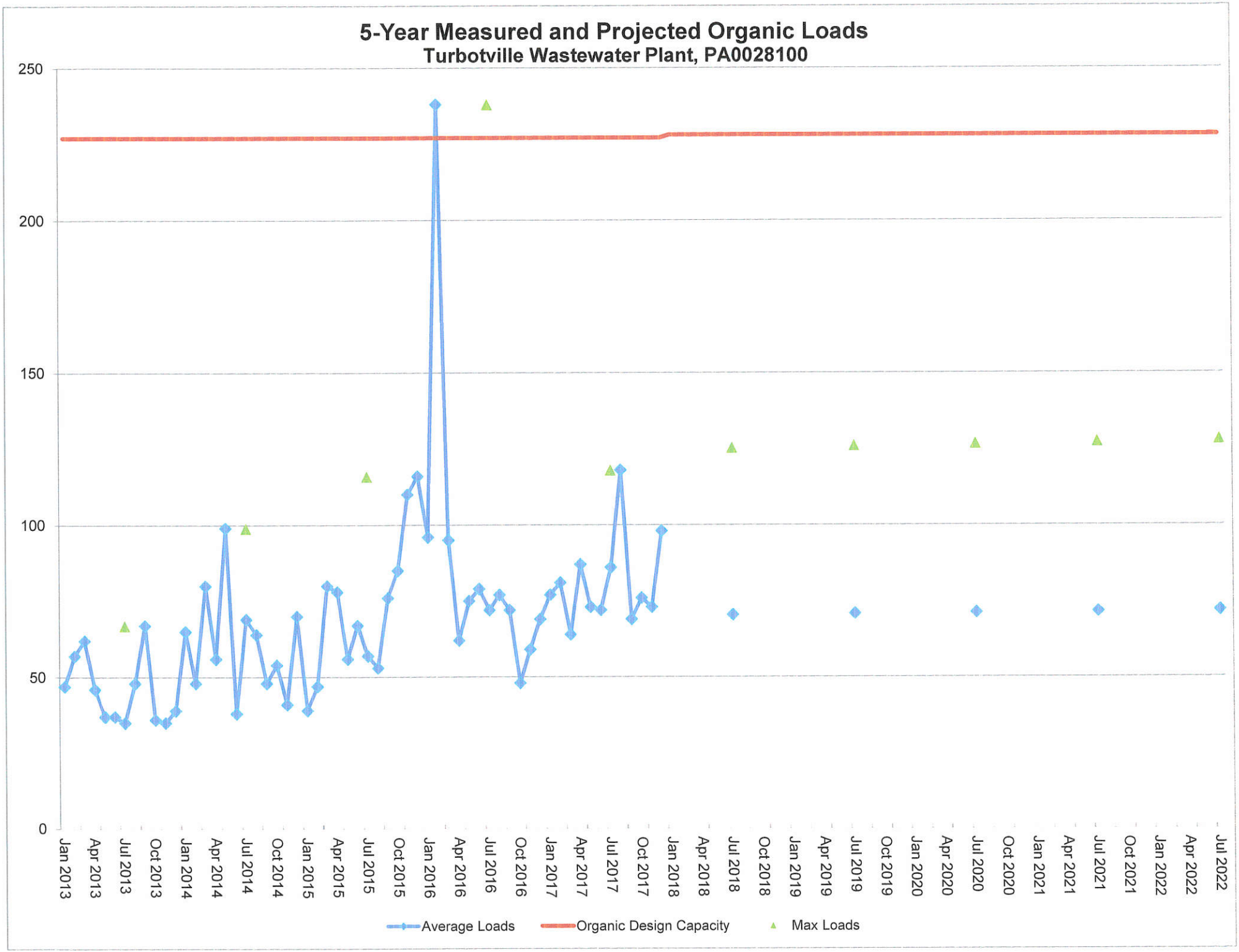
ORGANIC LOADING PROJECTIONS

Projections are based on 6 connections the first year and two connections the next four years. The projected organic loadings were based on the 5-year average BOD loadings and by the following information:

2010 Estimated Population	705
2010 Households	306
EDU's	365.5
LB/DAY BOD's per EDU	0.2
Connections 2018-2022	2

Hydraulic and organic loading for the past 5 years and projection loadings are shown on the spreadsheet on the following page with graphs.

BOROUGH OFFICIALS ACKNOWLEDGEMENT


5-Year Measured and Projected Organic Loads
Turbotville Wastewater Plant, PA0028100
250
200
150
100
50
0
Jan 2013
Apr 2013
Jul 2013
Oct 2013
Jan 2014
Apr 2014
Jul 2014
Oct 2014
Jan 2015
Apr 2015
Jul 2015
Oct 2015
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
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Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Average Loads
Organic Design Capacity
Max Loads

AND APPROVAL

The Borough of Turbotville is committed to provide adequate sewage treatment services to the community. The objectives of this report are to manage, identify, and address system needs now and in the future. This report has been reviewed and is hereby approved for submission to the Pennsylvania Department of Environmental Protection by

Francis (Pat) Betz

Borough Council President

Nathan Yoder

Borough Council Vice President

Bruce W. Foreman, L.O.
Certified Operator

:

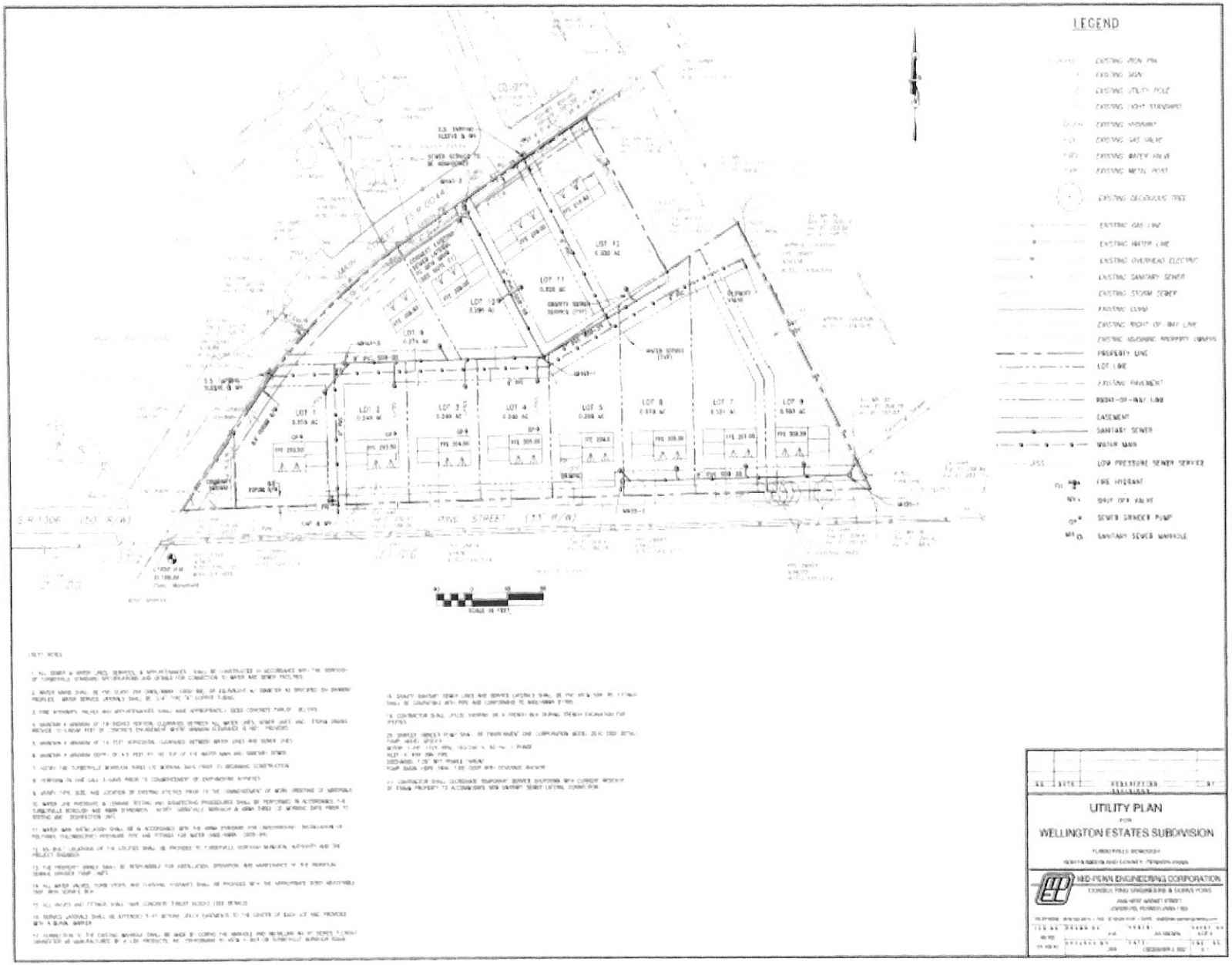
EXHIBITS

1. Copy of manhole inventory/inspection list (attached)
2. Copy of Wellington Estates Lot Plan
3. Copy of the flow meter calibration

Manhole No.	Location	Pre-cast or Brick	Comments

Manhole No.	Location	Pre-cast or Brick	Comments
1	At plant by comminutor	Pre-Cast	4' 6"deep
2	Lot by Lola Pursel	Pre-Cast	5' 6" deep
3	Behind Sewer operations bldg.	Pre-Cast	4' 10" deep
4	Behind Lola Pursel's	Brick	4' 5" deep (sealed w/mL72 and flex-seal 2003)
5	Coopers lot below Carl Heiss	Brick	119" deep
6	On lot of 78 King St.	Brick	141"deep
7	Second St.	Pre-Cast	146" deep
8	Second St. by Reedy's	Pre-Cast	92" deep
9	King St.	Pre-Cast	10' 6" deep
10	King St.	Brick	11' 2" deep
11	King St. @Paradise	Brick	10' deep
12	King St.	Brick	9' 8" deep
13	King St.	Brick	9' 2" deep
14	King St.	Brick	8' 6" deep
15	Wash. St. +Locast Alley	Pre-Cast	10' 6" deep 8" inlet
16	Behind Atttel	Pre-Cast	7' 11" deep
17	Jim Chamberlin	Pre-Cast	51" deep
18	Behind Zenith Rovenolts	Pre-Cast	7' 6" deep
19	Locust Alley by Terry's Garage	Pre-Cast	7' 3" deep
20	Main St. + Washington St.	Pre-Cast	13' 5" deep
21	Washington St. + Virgin	Pre-Cast	7' 5" deep Elevated bypass to #110
22	Virgin Alley Behind Dale Mastelers	Pre-Cast	5' 7" deep installed 2000
23	Behind Roy Russel	Pre-Cast	111.5" deep installed 2000
24	Paradise St.	Pre-Cast	9' deep installed 2001
25	Paradise St.	Pre-Cast	9' deep
26	Behind Cooper's Hardware	Pre-Cast	4' deep installed 2000
27	Sheer Image	Pre-Cast	3' deep
28	Broadway + Washington St.	Pre-Cast	6' 8" deep
29	Broadway	Pre-Cast	7' 3" deep installed 1998
30	Broadway	Pre-Cast	6' 7.5" deep installed 1998
31	Broadway	Pre-Cast	8' 9.5" deep installed 1998
32	Broadway	Pre-Cast	8' 5" deep installed 1998
33	Park by Fountain	Pre-Cast	21' 6" deep Brick chimney
34	Ballfield	Pre-Cast	17' 3" Brick riser
35	Cornor of Tennis Court	Pre-Cast	9' deep
35-1	Wellington Estates	Pre-Cast	10' Deep
35-2	Wellington Estates	Pre-Cast	6' Deep
36	Pine St. by Tennis Court	Pre-Cast	6' 11" deep
37	Pine + Church St.	Pre-Cast	5' 7" deep Sealed 2002
38	Pine St. by Applemans	Pre-Cast	5' deep brick chimney
39	Stamms lot by Shell's	Brick	11 ft. deep Wet
40	Virgin Alley by Shell's	Pre-Cast	5' Deep installed 2000
41	Virgin Alley by Mensch	Pre-Cast	5' 8" deep installed 2000
42	Virgin Alley by Hotel	Pre-Cast	5' 4" Deep
43	Stamms lot by Shell's	Pre-Cast	7' 6" deep Wet
43-1	Wellington Estates	Pre-Cast	5' Deep
43-2	Wellington Estates	Pre-Cast	6' Deep
44	Stamm's lot by Shell's	Pre-Cast	11 ft. deep 2002

Manhole No.	Location	Pre-cast or Brick	Comments
45	Route 44 by Shell's	Brick	4' deep (sealed w/mL72 2002)
46	Locust Alley by Shellenberger	Pre-Cast	3' deep installed 2000
47	Locust Alley by Starr	Pre-Cast	5' deep installed 2000
48	Locust Alley by Church Lot	Pre-Cast	4' 10" deep
49	Alley Behind Allison	Pre-Cast	12' 4"deep Drop inlet from #50 installed 2000
50	Paradise St.at Zion Church	Brick	5' 6" deep (sealed w/ mL72 and flex-seal 2003)
51	Paradise St. @ Bower Apts.	Pre-Cast	5' 8" deep
52	Alley behind Allison's	Pre-Cast	10' deep installed 2000
53	Alley behind Cinthia Shaffer	Pre-Cast	11' 6" deep Elevated inlet from #55
54	Behind Denny Engle	Pre-Cast	2' deep
55	Paradise St.	Brick	7 1/2 ft deep (sealed w/ mL72 2002)
56	Pine St. & Paradise St.	Pre-Cast	3' deep
57	Pine St. by Kline's	Pre-Cast	6' 6" deep
58	Pine St. by Appleman's	Pre-Cast	4' 10" Deep brick riser
59	Washington St by Bill Brooks	Pre-Cast	6' 8" deep
60	Washington St. & Colonial Lane	Pre-Cast	5' 9" deep
61	Colonial Lane & Wash. Place	Pre-Cast	13' 2" deep
62	West Wash. Place	Pre-Cast	11' 6" deep
63	West Wash. Place	Pre-Cast	11' 11" deep
64	East Wash. Place	Pre-Cast	11' 8" deep
65	East Wash. Place	Pre-Cast	4' 8" deep
101	First Street	Pre-Cast	6 ft. deep 2001
102	First Street and Locust Alley	Brick	4 feet feep (sealed w/mL72 and flex-seal 2003)
10	Locust Alley behind Gary Enterline	Pre-Cast	5' 2" deep installed 2000
104	Locust Alley by Bob Crawford	Pre-Cast	7' 2" deep installed 2000
105	Washington St. & Locust Alley	Pre-Cast	7' 10" deep
106	First St. by Donna Keefer	Pre-Cast	47" deep
107	By Grooms in Virgin Alley	Brick	5' 6" deep
108	Virgin Alley behind Bob Aderhold	Brick	6' 5" deep
109	Virgin Alley behind Clyde Williams	Brick	9' 2" deep
110	Virgin Alley behind Marve Smith	Brick	8' 6" deep
201	Our property by stone pile	Pre-Cast	58" deep
202	Clark's lot	Pre-Cast	4 ft. deep (WET)
203	Clark's lot by Railroad	Pre-Cast	6 1/2 ft. deep
204	See notes on attached map	Pre-Cast	6' 10" deep
205	Rte. 44 by Clarks	Pre-Cast	81 1\2" deep
206	Rte. 44 by V.F.W.	Pre-Cast	5' 4" deep
207	At intersection of Rts. 54 & 44	Pre-Cast	5' 6" deep
208	Front of Bank	Brick	4' deep (sealed w/mL72 and flex-seal 2003)
209	FoodRite	Pre-Cast	5' deep


LEGEND
EXISTING IRON PIN
EXISTING SIGN
EXISTING UTILITY POLE
EXISTING LIGHT STANDARD
EXISTING HYDRANT
EXISTING GAS VALVE
EXISTING WATER VALVE
EXISTING METAL POST
EXISTING DECIDUOUS TREE
EXISTING GAS LINE
EXISTING WATER LINE
EXISTING OVERHEAD ELECTRIC
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING CURB
EXISTING RIGHT-OF-WAY LINE
EXISTING ADJOINING PROPERTY LINE(S)
PROPERTY LINE
LOT LINE
EXISTING PAVEMENT
RIGHT-OF-WAY LINE
EASEMENT
SANITARY SEWER
WATER MAIN
LOW PRESSURE SEWER SERVICE
FIRE HYDRANT
GATE VALVE
SEWER GRINDER PUMP
SANITARY SEWER MANHOLE
LOT 1 0.356 AC
LOT 2 0.349 AC
LOT 3 0.340 AC
LOT 4 0.340 AC
LOT 5 0.338 AC
LOT 6 0.379 AC
LOT 7 0.531 AC
LOT 8 0.565 AC
LOT 9 0.574 AC
LOT 10 0.799 AC
LOT 11 0.828 AC
LOT 12 0.830 AC
GRAVITY SEWER
WATER STUB
SR 1006 (50' R/W)
PINE STREET (33' R/W)
SCALE IN FEET
UTILITY PLAN
FOR
WELLINGTON ESTATES SUBDIVISION
MID-PENN ENGINEERING CORPORATION

LRM, Inc

Instrumentation & Disinfection Systems

Calibration Date
1/18/2017

User
Turbotville WWTP
P.O. Box 264
Turbotville PA 17772

Job Site
Turbotville WWTP
2 Adam Street
Turbotville PA 17772

Attn

Instrument Model No.
Endress & Hauser FMU90

Instrument S/N
EA0097150E6

Instrument Loop
Plant Effluent

Input Type
Ultrasonic

Primary Signal Producer
45 deg Triangular Weir

Calibrated Range
0-800 GPM

Instrument Settings

Found

Zero	Span
3.64 ft	2.40

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0.00 GPM	4.000 mADC	0.00%
50 %	400.00 GPM	12.000 mADC	0.00%
100 %	800.00 GPM	20.000 mADC	0.00%

Equipment Used: Isco Standards Book, Stick Rule

Adjustments / Actions Taken : New Flow Curve

Comments :

Service Representative

Date 1/25/2017

Michael Sollazzo
215 N. Main Street - Souderton,Pa 18964 - 215-721-4840 - Fax 215-721-4923

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-5. Please provide a detailed breakdown, by major plant category, of the Turbotville Borough wastewater system assets being acquired by PAWC-WD, including size, material type and quantity.

Response: PAWC will acquire the assets listed below. Assets to be acquired by NARUC account will be determined as part of the Depreciated Original Cost Study.

Wastewater Treatment Plant Assets:

- Wastewater Treatment Plant existing of:
- Comminutor Chamber (0.25 MGD) with a bypass bar screen.
- Flow splitter box
- Two aeration tanks (50,000 gallons each)
- Two secondary settling basins (16,700 gallons each)
- Two chlorine contact tanks (2,100 gallons each)
- Final effluent flow metering chamber (980 gallons)
- Two 3-inch air lift pumps
- Aerobic digestion tank (29,700 gallons)
- Sludge drying beds
- Land and easements
- Other miscellaneous Equipment

Collection System Assets:

- 3.5 miles of 6 and 8-inch mains
- Pumping station
- Manholes, laterals, etc.
- Land and easements

Responsible Witness: Scott D. Fogelsanger

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-6. Please identify the certificated water operator(s) who will run the Turbotville Borough wastewater system for PAWC-WD and provide a copy of the individual's DEP operator license.

Response: A certified contract operator will operate the Turbotville wastewater treatment plant and be managed by PAWC.

Responsible Witness: Joseph F. Woodward

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-7. Please clarify if PAWC-WD intends to physically interconnect the Turbotville Borough wastewater system with PAWC-WD's existing system or operate it as a standalone.

Response: The Turbotville Borough wastewater system will be operated by PAWC as a stand-alone system and will be maintained through PAWC's Milton Division.

Responsible Witness: Joseph F. Woodward

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-8. Please quantify the distance in miles the PAWC-WD's Milton Division is from Turbotville Borough wastewater system.

Response: PAWC's Milton Division is approximately 3.5 miles from the Turbotville Borough wastewater system.

Responsible Witness: Joseph F. Woodward

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-9. Section 6.1(f) of the Asset Purchase Agreement (APA), provided as the Application's Exhibit B, states PAWC-WD shall be responsible for the preparation, cost and submission of any necessary revisions to Turbotville Borough's Official Sewage Facilities Plan (Act 537 Plan). Please quantify the estimated costs PAWC-WD will incur to revise Turbotville Borough's Act 537 Plan.

Response: The preparation of the minor update to the Act 537 Plan to reflect the change in ownership is being performed by PAWC personnel.

Responsible Witness: Michael J. Guntrum PE, PMP

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-10. Schedule 4.1(q) of the Application's APA identified a capital plan proposed by Turbotville Borough in its recent submission of an Act 537 Plan to PA DEP. Please provide the following:

a. A copy of Turbotville Borough's recently submitted Act 537 Plan, including any planning modules and special studies; and
b. PAWC-WD's anticipated capital plan for the Turbotville Borough wastewater system, including the estimated timeframe and costs.

Response:

a. A copy of the recently submitted and subsequently withdrawn Turbotville Act 537 Plan update is attached. See Attachment A-10.

b. B: PAWC's anticipated 5 year total capital plan consists of SCADA, security, safety, process improvements, and collection system improvements. The total estimated cost of the 5 year capital plan is approximately $2,500,000.

Responsible Witness: Michael J. Guntrum PE, PMP

Attachment A-10

Act 537 Special Study

Wastewater Treatment Plant

Borough of Turbotville

Northumberland County, Pennsylvania

April 2017

Prepared for:

Borough of Turbotville
P.O. Box 264
Turbotville, PA 17772

Prepared by:

Uni-Tec Consulting Engineers, Inc.
2007 Cato Avenue
State College, PA 16801

File No. 0047-043-001

UNI-TEC
Consulting Engineers Inc.

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Plan Summary

Summary of Act 537 Special Study
Borough of Turbotville, Northumberland County

A. Service Area and Major Problems

The planning area is the existing wastewater treatment plant (0.87 acre). Effectively, the planning area is restricted to the area involved with the wastewater treatment facilities as no activities are proposed within or beyond the current wastewater service area of Turbotville Borough.

The area served by the Turbotville Borough-owned sewer system is shown on the map provided in **Appendix E**. The sewer service area is located entirely within the Borough of Turbotville and only includes areas currently served by the Borough sewer system.

The existing wastewater treatment plant has neared the end of its useful life, and at times, has struggled to meet its permitted effluent limits. Since 2009, the Borough has been exploring options to rehabilitate or replace the Plant. Additionally, with the issuance of the renewed NPDES Permit in 2015, the Borough will be subject to more stringent effluent limitations (see **Table 2**) that the existing Plant is not capable of achieving for Ammonia, Total Phosphorus, and Total Copper.

B. Selected Alternative

To allow the Borough to meet its current and future NPDES permit limits, this Study has recommended Alternative B: Upgrade of the Existing WWTP.

No additional institutional arrangements will be needed to implement this Alternative as the WWTP is currently owned, operated, and maintained by the Borough.

C. Cost Estimate

The estimated Construction Cost of Alternative B: WWTP Upgrade is $3,033,826.
The estimated Project Cost of Alternative B: WWTP Upgrade is $3,943,974.

To finance the proposed project, the Borough will apply for a funding package from PENNVEST. Additionally, the Borough will seek sources of grant funds to help reduce any future loan principal amount.

D. Municipal Commitments

No municipal commitments are needed to implement the recommendations of this Study beyond adoption of this Special Study by the Borough of Turbotville. The Borough will take normal Council actions as it moves forward with the design, permitting, funding, and construction activities.

E. Implementation Schedule

To implement the recommendations of this Study, the following schedule is proposed:

Submit WQM Part II Permit Application	May 5, 2017 (estimate)
Apply for PENNVEST funding	August 2017 (TBD)
Advertise for Bids	December 2017
Open Bids/Award Contract	February 2018
Begin Construction	March 2018
Complete Construction	Winter 2018/2019

Plan Content

I. PREVIOUS WASTEWATER PLANNING

A. Past Wastewater Planning Impact on Current Planning Effort

1. Previous Act 537 Planning

   Turbotville Borough

   The most recent Act 537 Plan for the Borough of Turbotville was prepared in December 1984, by Buchart-Horn, Inc. Since then, Wellington Estates has been the only approved subdivision (2007). Having 12 lots, Wellington Estates is served by the existing wastewater treatment plant (WWTP). The WWTP was upgraded in 1989, expanding its capacity from 0.048 MGD to 0.100 MGD. The WWTP was again upgraded between 1990 and 2013, increasing its capacity from 0.100 MGD to 0.136 MGD.

   Lewis Township

   Lewis Township shares common borders with Turbotville Borough. In 2001 Lewis Township began the process of evaluating its Township wastewater needs. The Lewis Township wastewater planning activity was conducted in accordance with the Official Sewage Facilities Planning process commonly known as Act 537 planning.

   The Lewis Township Act 537 plan was completed and approved in mid-2007. The plan included sending 15,000 gpd (0.015 mgd) of flow to the Turbotville wastewater treatment plant. The Lewis Township plan concluded that the Township would construct small diameter force main and individual grinder units along SR 0054 known in the plan as Area B. Lewis Township would also construct small diameter force main and individual grinder units along T660 Schell Road known in the plan as Area C. Areas B and C would be conveyed through the existing Turbotville collection system to the Turbotville wastewater treatment plant.

   Lewis Township and Turbotville Borough entered into an Intermunicipal Agreement dated January 31, 2011 governing the details of the wastewater service to be provided by Turbotville Borough to Lewis Township. The agreement maintained the initially contemplated reserve hydraulic capacity of 15,000 gpd. In addition, the agreement established organic reserve capacities of 25.01 pounds per day of BOD_5 as well as 29.27 pounds per day of total suspended solids. These three loading limitations were agreed to be measured on a 24-hour basis and averaged over a calendar month.

   As of the writing of this Turbotville Borough Act 537 Special Study, Lewis Township has not constructed the aforementioned sewer systems. Turbotville Borough will conduct its study analysis by continuing to honor its capacity obligations as required by its Intermunicipal Agreement with Lewis Township.

2. Unaddressed Planning in Approved Plan Implementation Schedule

   There is no unaddressed planning at this time.

3. Anticipated or Proposed Planning by Sewer Authority or Approved Under Chapter 94 Corrective Action Plan
   There is not any anticipated sewage planning by the Borough through an approved Chapter 94 Corrective Action Plan.

4. Planning Modules for New Land Development, Planning "Exceptions", and Addenda
   Sewage Planning Exemption was received September 6, 2007 for Wellington Estates Subdivision, containing 12 lots to be serviced by the public sewer system in the Borough of Turbotville.

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Planning Area and Wastewater Service Area

The planning area (**Appendix D**) is the existing wastewater treatment plant (0.87 acre). Effectively, the planning area is restricted to the area involved with the wastewater treatment facilities as no activities are proposed within or beyond the current wastewater service area of Turbotville Borough. In other words, this *Special Study* does not address any proposed modifications or extensions to the existing wastewater collection or conveyance systems. Nonetheless, factors from outside the planning area are addressed in regard to their related impact on the current treatment facility and proposed technical alternative.

The area served by the Turbotville Borough-owned sewer system is shown on the map provided in **Appendix E**. The sewer service area is located entirely within the Borough of Turbotville. In addition to the sewer service area, the existing public water service area, served by the Turbotville Municipal Authority is also depicted on this map. The Authority's public water system serves two areas in Lewis Township: Schell Road and the Warrior Run school complex.

B. Physical Characteristics

The planning area is located at the northwest corner of Turbotville Borough and is bordered by an Unnamed Tributary to Warrior Run to the west, RJ Corman Railroad (Norfolk Southern) to the north, and Adam Street to the south. Warrior Run has a Chapter 93 stream classification of Warm Water Fishery, Migratory Fish (WWF, MF) and drains to the West Branch Susquehanna River in Northumberland County. The existing plant's effluent flows into the unnamed tributary directly downstream of the plant. The surrounding area is mostly residential within the Borough and primarily farmlands and pastures outside of the Borough. Between the existing treatment plant fence and the railroad to the north is a small drainage ditch that flows into the unnamed tributary to Warrior Run.

C. Soils

The soils located within the planning area are soil types WbA (Watson Silt Loam) and WeC (Weikert Channery Silt Loam). The Watson Silt Loam covers 95 percent of the planning area according to the soil survey **(Appendix F)**. WbA is considered a Prime

Agricultural Soil while WeC is not. Though Watson silt loam is considered a prime farmland soil, the planning area is not currently used for agricultural purposes. Neither soil type identified within the planning area is considered hydric. Although the soil survey lists these two soils within the planning area, it is possible that there are other soil classifications present. The existing site has previously been disturbed multiple times during the wastewater treatment plant's initial construction and subsequent renovations. It is assumed that fill and structural fill was brought in from outside of the area.

D. Geologic Features

Three major geologic formations exist within the planning area:

- Silurian era, Will Creek Formation – variegated gray, interbedded calcareous shale, siltstone, sandstone, and limestone and dolomite
- Devonian and Silurian era, Keyser and Tonoloway formations (undivided) – medium-gray fossillferous limestone and medium-gray mud-cracked limestone containing some shale and sandstone interbeds
- Devonian era, Onondaga and Old Port formations (divided) – medium-gray calcareous shale, marine fossils, very course grained sandstone, siltstones, chert, shale and limestone.

In 1998, the DEP performed a study to find where the Nitrogen-Nitrate concentrations were in excess of 5.0 mg/l in the Lewis Township and Turbotville Borough area. Although some residences were found to exceed 5.0 mg/l, none were located in the current planning area or within Turbotville Borough.

E. Topography

The topography of the planning area is depicted on the map of the Planning Area **(Appendix D).** To the west, the Unnamed Tributary to Warrior Run Creek bounds the planning area. On the north side of the planning area a drainage ditch separates the fence and the railroad. The maximum relief across the planning area is approximately 8 feet, from elevation 536 at the southern boundary to 528 at the north-western boundary. The planning area is occupied by the existing wastewater treatment plant.

The planning area and Turbotville service area is served completely by a public sewer system. The planning area, as an existing wastewater treatment plant, was not evaluated for suitability for onlot sewage disposal systems.

F. Potable Water Supplies

The Turbotville Municipal Authority – Public Water System provides the planning area and the Borough of Turbotville with potable water. The water system is served by a spring source which is treated at the existing Water Treatment Plant. In addition to the Borough water service area identified in **Appendix E**, the water system serves a small area along Schell Road and the Warrior Run School complex. There are no wells located within the planning area, and the public water system is fully capable of providing

adequate water service to all customers throughout the planning area, as well as the sewer service area.

G. Wetlands

According to the U.S. Fish and Wildlife Service National Wetlands Inventory **(Appendix G)**, there are no wetlands present in the planning area. Of the two non-hydric soils, WbA and WeC, located in the planning area **(Appendix F,** Soil Map mentioned above**)**, each soil has a hydric component of 5% and 1%, respectively. No wetlands will be impacted within the Planning Area.

III. EXISTING SEWAGE FACILITIES AND NEEDS IN THE PLANNING AREA

A. Existing Community Sewerage Systems

Within the Planning Area, the only sewage system is the existing public wastewater collection and treatment system owned and operated by the Borough of Turbotville. The maps provided in **Appendices D and E** show the location of these facilities.

1. Description of Existing Sewage Facilities
   The Borough of Turbotville's Wastewater Collection System consists of approximately 3.5 miles of 6- and 8-inch diameter sewer mains. In the 1990's two-thirds of the collection system was rehabilitated through slip-lining. The Borough also operates a grinder pump located on Washington Street that serves two connections.

   All sewage flows by gravity to the existing wastewater treatment plant located in the Planning Area, at the northwest corner of the Borough. **Appendix H** depicts the existing Wastewater Treatment Plant. The wastewater treatment plant (NPDES Permit No. PA0028100) is permitted for a design flow rate of 0.136 MGD, and the design influent mass organic loading rate of 227 lbs/day BOD5. Treated effluent is discharged to Unnamed Tributary to Warrior Run, within the West Branch Susquehanna River drainage basin. The plant's current and projected effluent discharge requirements are shown in **Tables 1** and **2**. The most recent NPDES permit issued for the plant provide two separate Effluent Limitations: Permit issuance through May 31, 2018 (Table 1) and June 1, 2018 through August 31, 2020 (Table 2). The highlighted values will become more stringent after June 1, 2018.

Table 1: NPDES Effluent Limitations
September 1, 2015 through May 31, 2018

Parameter	Average Monthly (lbs/day)	Weekly Average (lbs/day)	Average Monthly (mg/L)	Weekly Average (mg/L)	Instant. Maximum (mg/L)
pH	--	--	--	--	6.0 min/9.0 max
Total Residual Chlorine	--	--	0.45	--	1.48
$CBOD_5$	13	20	12	18	24
Total Suspended Solids	34	34	30	30	30
Fecal Coliform (CFU/100 mL) May 1 – Sep 30	--	--	200 Geo Mean	--	1,000
Fecal Coliform (CFU/100 mL) Oct 1 – Apr 30	--	--	2,000 Geo Mean	--	10,000
Ammonia-Nitrogen May 1 – Oct 31	7.0	10	6.0	9.0	12
Ammonia-Nitrogen Nov 1 – Apr 30	20	31	18	27	36
Total Phosphorus	Report	Report	Report	Report	--
Total Copper	Report	Report	Report	Report	--
Total Lead	Report	Report	Report	Report	--

Table 2: NPDES Effluent Limitations
June 1, 2018 through August 31, 2020

Parameter	Average Monthly (lbs/day)	Weekly Average (lbs/day)	Average Monthly (mg/L)	Weekly Average (mg/L)	Instant. Maximum (mg/L)
pH	--	--	--	--	6.0 min/9.0 max
Total Residual Chlorine	--	--	0.45	--	1.48
$CBOD_5$	13	20	12	18	24
Total Suspended Solids	34	34	30	30	30
Fecal Coliform (CFU/100 mL) May 1 – Sep 30	--	--	200 Geo Mean	--	1,000
Fecal Coliform (CFU/100 mL) Oct 1 – Apr 30	--	--	2,000 Geo Mean	--	10,000
Ammonia-Nitrogen May 1 – Oct 31	4.0	5.5	3.5	5.0	7.0
Ammonia-Nitrogen Nov 1 – Apr 30	11.5	17	10.5	15	21
Total Phosphorus	2.96	2.96	2.60	2.60	2.60
Total Copper (µg/L)	0.04	0.08 Daily Max	36.31	72.62 Daily Max	90.77
Total Lead	Report	Report	Report	Report	--

2. Wastewater Treatment Process

The wastewater treatment plant is permitted for a discharge of 0.136 MGD under NPDES Permit PA0028100. **Appendix I** provides a schematic of the existing wastewater treatment process. All wastewater flows via a gravity collection system to a 0.250 MGD maceration chamber where it passes through a 0-300 gpm macerator. The chamber is also equipped with a manual by-pass bar screen. The wastewater then flows by gravity to a 0.250 MGD pumping station where it is pumped to two 50,000-gallon extended aeration tanks where biological treatment occurs. Sludge recirculated from the secondary settling basins is mixed with preliminary effluent and air is introduced via non-clogging coarse air diffusers to provide treatment. The biologically-activated effluent from the aeration tanks flows by gravity to two clarifiers. Secondary effluent from the clarifiers flows by gravity to two 2,100-gallon chlorine contact tanks for disinfection with chlorine tablets and is finally discharged to an unnamed tributary of Warrior Run (a tributary of the West Branch of the Susquehanna River). The Borough does not utilize any other disposal areas for effluent.

The sludge wasted from the activated sludge process is pumped via two 3" 0-105 gpm air lift pumps located in the secondary settling basin to a 29,700 gallon aerobic digestion tank. Stabilization and thickening occurs in the aerobic digestion tank. The thickened stabilized sludge is pumped to the sludge drying beds where it is dewatered, removed and hauled to an approved landfill at a rate of 16 dry tons per year at the Lycoming County landfill.

3. Existing Sewage Facilities Needs

The Borough of Turbotville is not currently in violation of its NPDES permit, Clean Streams Law permit, nor is there an existing or projected hydraulic or organic overload under 25 Pa. Code Chapter 94. The existing wastewater treatment plant, however, has neared the end of its useful life, and at times, has struggled to meet its permitted effluent limits. Since 2009, the Borough has been exploring options to rehabilitate or replace the Plant. Additionally, with the issuance of the renewed NPDES Permit in 2015, the Borough will be subject to more stringent effluent limitations (see **Table 2**) that the existing Plant is not capable of achieving for Ammonia, Total Phosphorus, and Total Copper. The Borough must take some form of action to meet its upcoming NPDES Permit effluent limitations.

The Plant, while not hydraulically overloaded, has received significant amounts of inflow and infiltration from the collection system. For the past 3 years, the Borough has worked to identify and eliminate sources of inflow and infiltration. Additionally, flows received at the plant have been monitored to determine average flow rates as well as peak wet weather flow rates. Though I&I are always a concern, the 2015 Chapter 94 Report for the Borough showed that the Plant received an annual average flow of 0.052 MGD and maximum 3-month average of 0.058 MGD during

2015 with a five-year average flow of 0.051 MGD, all significantly below the plant's capacity of 0.136 MGD.

4. Scheduled WWTP Upgrades
   As of this Special Study, there are no scheduled or in-progress upgrades or expansions of the wastewater treatment facilities. Though as mentioned above, the Borough has been exploring options to upgrade or replace the existing wastewater treatment plant since 2009.

5. Operation and Maintenance
   The Borough provides operation and maintenance of the sewage collection and treatment system. Two Borough employees are responsible for the day to day activities of the sewage collection system and treatment plant. The Borough has contracted with a part-time licensed operator to ensure the Treatment Plant is operated according its permit requirements. All operational decisions are made by the licensed operator.

IV. FUTURE GROWTH AND LAND DEVELOPMENT

A. Municipal and County Planning Documents

Zoning and Comprehensive Plan

In June of 2005, the Borough of Turbotville adopted the County of Northumberland's Comprehensive Plan. The County reviews all land development and subdivision plans submitted to the borough.

The Borough has adopted the Zoning Ordinance of 2014. The zoning map for Turbotville Borough is attached as **Appendix J**.

The Planning Area is located within the Residential Town (RT) zone. The Borough also includes Residential Urban (RU), Downtown Commercial (CD), Commercial Manufacturing (CM), and Highway Commercial (HC) zones. The Zoning Ordinance does not restrict minimum lot size based upon the presence of public sanitary sewer or water service within the RT zone. The existing land use of the Planning Area is a wastewater treatment facility, which is included in the Zoning Ordinance's definition of "Essential Service" and is an appropriate use within this zone. Proposed land use for this Planning Area will remain a wastewater treatment plant.

Floodplain, Stormwater Management, and Special Protection Areas

Floodplains

In reviewing flood mapping provided by the Federal Emergency Management Authority (FEMA) for the Borough of Turbotville, there is no defined 100-year floodplain identified within the Planning Area. A copy of the Flood Insurance Rate Map (FIRM) for this area is included in **Appendix K**.

In the absence of a defined floodway for a waterway, Federal and State regulations require a 50-foot wide area beyond the stream bank to be considered the floodway. This 50-foot wide floodway boundary for UNT to Warrior Run is shown on the maps

included in **Appendix D**. The treatment alternative selected for implementation in this Study will be constructed outside of the current 50-wide floodway in the Planning Area.

Stormwater Management (Watershed-specific) Areas
The jurisdiction of Northumberland County's Stormwater Management Plan covers the Borough of Turbotville as does the county's Land Development Regulations. The Stormwater Management Plan is a component of the land development regulations and will be required for any proposed upgrades.

Chapter 93 Special Protection Areas
The only waterway within the Planning Area is the Unnamed Tributary to Warrior Run. The stream has a Chapter 93 designated and existing use classification of Warm Water Fishery, Migratory Fish (WWF, MF) and drains to the West Branch Susquehanna River in Northumberland County. This area is not identified as a special protection area.

B. Projected Growth for Current Service Area

Existing Developments/Subdivisions
Wellington Estates Subdivision was submitted to the Turbotville Borough in 2007. It proposed a 12-lot, single family, residential subdivision with each lot being served by public sewer and water. In September 2007, the PA DEP granted the Borough a planning exemption for Wellington Estates. To date, one (1) lot has been developed. The Borough does not anticipate any additional subdivisions at this time.

Land Use Designations
The Planning Area is located within the Borough's Residential Town (RT) zone. The existing land use of the Planning Area is a wastewater treatment facility, which is included in the Zoning Ordinance's definition of "Essential Service" and is an appropriate use within this zone. Proposed land use for this Planning Area will remain a wastewater treatment plant. The wastewater treatment plant upgrade will comply with the requirements of the land development regulations that set by the Borough of Turbotville and Northumberland County, as this special study will describe.

Future Growth Areas and Population Projection
Between 2000 and 2010, the population of the Borough of Turbotville increased by 2.0%, from 691 to 705 people, according to the 2000 and 2010 United States Census (0.2% per year). The current number of Equivalent Dwelling Units for the Borough's sewer service area is 365.5 EDUs. Assuming a continued 2.0% growth rate since 2010 and over the next 20 years, the Borough's population is projected to be 744 people by 2037. A similar increase in the number of EDUs projects the sewer system will serve 382 EDUs by 2037. Additionally, future growth should account for the 15,000 GPD from Lewis Township, as previously discussed. As the existing wastewater treatment plant is currently at only 38% capacity, this projected growth will not overload the treatment plant. Assuming the current flow rate per EDU of 52,000 GPD/365.5 EDUs, or 142 GPD/EDU, the projected 2037 flow rate to the treatment plant is 54,350 GPD, plus 15,000 GPD from Lewis Township, for a total flow of 69,350 GPD, or 51% of the existing plant's 136,000 GPD capacity.

Zoning, Subdivision Regulations, Comprehensive Plans, or Other Plans Related to Use and Protection of Land and Water Resources

All applicable zoning, subdivision regulations, comprehensive plans, or other plans related to use and protection of land and water resources have heretofore been addressed in this study report. It is believed that the proposed activity will be fully compliant will all rules and regulations to which it is subject.

Sewage Planning Necessary to Provide Adequate Wastewater Treatment for Five and Ten Year Planning Horizons

In evaluating the proposed alternatives for upgrading the Turbotville wastewater treatment facility, the proposed planning period will be 20 years. This planning activity will take into account all factors (e.g., residential growth rate, commercial and industrial development potential, and future treatment requirements).

V. IDENTIFY ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

For the purposes of this Special Study, three alternatives have been evaluated to address the sewage facilities needs of the Planning Area and Turbotville Borough sewer service area:

1. Connection to Milton Regional Sewer Authority (Alternative A)
2. Replacement and Upgrade of the Existing Turbotville WWTP (Alternative B)
3. No Action

These three alternatives will be further explored throughout this Study.

A. Conventional Treatment and Discharge Alternatives

1. Regional Treatment

   The Special Study has evaluated the alternative of regionalizing treatment with a nearby community. The closest community with sufficient wastewater treatment capabilities is the Milton Regional Sewer Authority, approximately 8.5 miles away from the Borough. This alternative would include the following components:

   - The Borough would continue to collect raw sewage through the existing collection system.
   - Sewage would flow by gravity to the site of the current Turbotville wastewater treatment plant.
   - A new Raw Sewage Pump Station would be constructed at the site of the existing Turbotville wastewater treatment plant.
   - Raw sewage would be pumped to the Milton Regional Sewer Authority facilities through 8.7 miles of force main. All force main would follow State or Local roads.
   - All sewage collected from Turbotville Borough would be treated at the MRSA WWTP.
   - The existing Turbotville WWTP would be decommissioned and demolished.

This proposed Alternative A is graphically depicted on the map in **Appendix L**. As will be demonstrated further in the Study, though technically feasible, conveying sewage to the MRSA is not the most cost-effective alternative.

2. Service Area Expansion
   As discussed in Section I.A.1 of this Study, the Borough of Turbotville and Lewis Township have entered into an Intermunicipal Agreement dated January 31, 2011 to send 15,000 gallons per day of sewage from Lewis Township to the Turbotville WWTP. In addition, the agreement established organic reserve capacities of 25.01 pounds per day of BOD_5 as well as 29.27 pounds per day of total suspended solids. The Borough continues to honor this commitment to Lewis Township despite no construction of sewage facilities by the Township.

   The remaining population outside the Borough's current service area is rural and scattered; the cost per EDU to expand the service area to these possible customers would be very high and there is not any political or regulatory desire to accomplish this expansion. Consequently, unless there is significant justification in the years ahead, the Turbotville service area will remain as currently defined.

3. Continued Use of Existing Facilities
   The current wastewater treatment plant has exceeded its useful life in regard to both physical condition and treatment capabilities. One of the alternatives investigated in this study is a renovation of the existing WWTP involving facility replacements and additions. The status of the current treatment plant has been thoroughly investigated and was previously discussed in Sections III.A.1 and 3 of this Special Study. To provide long-term reliable treatment of the Borough's sewage and to meet the upcoming effluent limitations as defined in the current NPDES permit, the Borough has explored the alternative of upgrading the existing wastewater treatment plant (Alternative B). As the Borough is projected to meet its five-year projections for hydraulic and organic capacities per Chapter 94, this alternative does not propose an increase or reduction of the hydraulic or organic loading capacity.

   In exploring treatment processes, the Borough is evaluating a Sequencing Batch Reactor (SBR) sized to remove organic matter, ammonia (via nitrification process), total nitrogen (via denitrification process), and total phosphorus (via chemical process). For this Study, the SBR has been designed around the Aqua-Aerobic Systems, Inc. system though the treatment process is available from several different manufacturers to allow for competitive pricing. **Appendix M** provides a summary of the SBR Phases of Operation.

   Two SBR tanks would be constructed and all biological treatment necessary to meet current and upcoming effluent limits would be accomplished in these tanks. In addition, the project will include an influent grinding system, triplex raw sewage pumps, chemical feed systems, post-equalization, ultraviolet disinfection, aerobic sludge digesters, and an emergency generator. The proposed WWTP upgrade will also include an alternate for sludge dewatering and disposal facilities. **Appendix N** provides a Site Plan of the proposed WWTP upgrade.

The SBR process was selected over other treatment processes, such as separate aeration basins and settling tanks, due to space restrictions at the existing WWTP site. An advantage of SBR technology is its smaller footprint requirement. The dual SBR units can be constructed on available land at the site while the existing treatment facilities remain in service, a critical necessity. To construct a separate WWTP using separate aeration basins and clarifiers would require the purchase of adjacent land and expansion of the Borough's existing property. The Borough desires to keep all wastewater treatment confined to the existing fenced-in area on property currently owned by the Borough.

Key components of the **WWTP Upgrade Alternative** are identified as follows:

Influent Pump Station

The existing raw sewage pump station would be replaced with a new triplex pump station capable of handling design flows with one pump out of service. The usage of a triplex station provides the Borough with the flexibility of handling a wide range of dry and wet weather flows. The raw sewage wet well would include a sewage grinder or comminuter to protect the pumps and downstream equipment.

Sequencing Batch Reactor (SBR) Basins: The SBR treatment system will be provided as the treatment component for removal of organic (carbonaceous) matter, ammonia (via nitrification process), and total nitrogen (via denitrification process). This system represents a fill-and-draw, non-steady state, activated sludge (suspended growth) process in which a reactor basin is filled with wastewater during a discrete time period, and then operated in a batch mode. The SBR will accomplish influent and effluent flow equalization, mixing, aeration, and clarification in a timed sequence in a single reactor basin. By varying the operating strategy, alternating aerobic and anoxic conditions will be achieved to encourage the growth of desirable micro-organisms (**Appendix M**). The process is ideally suited when nitrification, denitrification, and biological or chemical phosphorous removal are required to achieve regulatory discharge requirements. Two SBR basins (0.147 MG each) would be constructed and all biological and chemical treatment necessary to meet current and anticipated standards would be accomplished in these tanks. Retrievable fine bubble diffusers and a floating mechanical mixer will be utilized in each basin to maintain desired dissolved oxygen levels and mixing. Automated controls will be utilized to regulate all operational parameters, including treatment cycle phases, aeration and mixing coordination, chemical feed rates for phosphorus removal and pH adjustment, and discharge flow rates from the associated post-equalization tank.

Aerobic Digesters

Waste activated sludge from the SBR process would be pumped to the adjacent parallel aerobic digesters. Digested sludge will be pumped to the existing Sludge Drying Beds, to remain in service, or to a future sludge dewatering process, such as a belt filter press prior to disposal off site.

Ultraviolet Disinfection System: In consideration of the emphasis on safety issues, anti-degradation regulations to protect water resources, and the growing potential

that chlorination facilities will be phased out by regulatory action, an alternate means of disinfection is being proposed as a component of the upgrade project. Accordingly, a UV system consisting of three parallel enclosed UV reactors, each with a treatment capacity of 0.136 MGD, will be installed in a dedicated building between the SBR tanks and the existing outfall. Three identical units would provide redundancy for the average monthly flow while also providing up to 0.408 MGD of capacity for peak flow events. Effluent from the SBR post-equalization tank would be directed, at a regulated flow rate, to the UV system for disinfection and then to the existing outfall to the Unnamed Tributary to Warrior Run. System controls will automatically regulate the number of UV reactors engaged and the UV intensity level of each unit in operation, based upon the monitored discharge rate from the SBR post-equalization tank and the respective performance status of the UV reactors.

4. Collection System Repair or Replacement

   The Borough of Turbotville has continually addressed the inflow and infiltration within its collection and conveyance system. While I&I is recognized by the Borough as a problem requiring ongoing maintenance, the endeavors to date have been very effective and I&I is not considered a major issue. Nonetheless, the influence of the more persistent I&I must be taken into account in designing hydraulic components at the treatment plant.

   For the past 3 years, the Borough has worked to identify and eliminate sources of inflow and infiltration. Additionally, flows received at the plant have been monitored to determine average flow rates as well as peak wet weather flow rates. The following work has been completed to date:

   - September 2014 – Smoke testing of the Broadway Street drainage area to identify potential sources of I&I.
   - 2015 and 2016 – Manhole rehabilitation – Identified manholes within the system as sources of inflow and infiltration. Borough began sealing the manhole connections.
   - 2013 – 2016 – Monitoring of WWTP flows to determine peak flows (wet weather influenced) received at the WWTP
   - 2016 – Flow monitoring of system flows utilizing temporary flow loggers. These devices are placed in the flow channel of a manhole to log the flow rates over time. The Borough can relocate the loggers as needed to isolate sections of sewer with higher wet weather influenced flows. These loggers have also provided data used to determine the peak flow rates that any WWTP upgrade will need to handle. Based on the metered flows, any WWTP project will need to handle flows that range from 30,000 to 300,000 gallons per day (GPD).
   - Future – Virgin Alley Sewer Replacement – The last section terra-cotta sewer in the Borough will be replaced with PVC and various manholes will be sealed to prevent infiltration around liner installations.

5. New Community Sewage Systems

   The Planning Area and the Borough's sewer service area are presently served by a public wastewater treatment collection and treatment system. There is not a need for a new or additional sewage system and/or treatment facility.

6. Innovative/Alternative Methods
   The Planning Area and the Borough's sewer service area are presently served by a public wastewater treatment collection and treatment system. There are no areas requiring sewage service that would require innovative or alternative methods of collection and conveyance of sewage.

B. No-Action Alternative

The short-term and long-term impacts of no action or doing nothing to address the Planning Area's existing sewage needs are as follows:

1. Water Quality/Public Health
   The anticipated short term impacts of a no-action alternative are as follows:
   - NPDES Permit violations for effluent quality. Without an upgrade of the existing WWTP, the Borough would most likely not be able to meet upcoming effluent limitations for Ammonia Nitrogen and Total Phosphorus.
   - Water quality in receiving stream (UNT to Warrior Run) would begin to deteriorate as treatment process failures become more prevalent due to equipment breakdowns. Because of the age and condition of the existing plant, problems could be abrupt and of a severity that permitted effluent limitations would be exceeded; the water quality of the receiving stream could thus be degraded and beneficial uses impacted.
   - Public health concerns would be heightened as deteriorating water quality would increase the probability of waterborne diseases and discourage usage of receiving stream for water supply, agricultural, and recreational purposes.

   In the long term, the noted short-term impacts would become more severe. Potential water quality degradation could reach a level where difficulty and longevity of stream recovery would be increased. Greater degradation would be coupled with a greater public health risk.

2. Growth Potential
   While the existing WWTP is currently at 38% of its hydraulic capacity and 32% of its organic capacity, providing plenty of room for growth, the Borough may have to restrict growth and connections if it is in repeated violation of its NPDES permitted effluent limits. This potential connection prohibition would restrict growth of residential population as well as commercial interest in the Borough in both the short term and long term.

3. Community Economic Conditions
   Similar to the restriction on residential growth potential described above, if the WWTP cannot meet its permitted effluent limits, a forthcoming connection prohibition would limit new businesses from coming to the service area and would limit existing businesses from expanding operations. Restrictions on both new and existing businesses would have a negative long-term impact on job creation in the Borough.

4. Recreational Opportunities
   The WWTP's receiving stream, UNT to Warrior Run, and Warrior Run are both classified as a Warm Water Fishes (WWF) streams. Neither stream is stocked with trout or considered a Class A Wild Trout Stream. Beyond local fishing for warm water fish species, there is low recreational use of these streams before the confluence with the West Branch Susquehanna River. The West Branch Susquehanna River (approximately 6 miles downstream) provides many recreational opportunities for fishing and boating. The short and long-term impact of no action would be potential water quality degradation that could reach a level where fish species would be affected, thus reducing the recreational opportunities of the streams.

5. Drinking Water Sources
   Any decrease in the water quality of UNT to Warrior Run and Warrior Run would have an obvious negative impact on the downstream use of this stream as a drinking water supply by current and future users. This influence would apply to both Warrior Run and the West Branch Susquehanna River. According to the Pennsylvania Department of Environmental Protection's eMapPa website, there are no permitted surface water withdrawals for drinking water on Warrior Run.

6. Other Environmental Concerns
   The water quality of Warrior Run is important to the many agricultural operations along its banks. Farmers use water from this stream for irrigation, watering of livestock, and other agricultural applications. Dwindling water quality would result in these uses being encumbered by greater restrictions or excluded.

VI. EVALUATION OF ALTERNATIVES

Wastewater management alternatives developed as part of the Act 537 planning process must be evaluated in respect to the goals and objectives of the various planning, environmental, and natural resource laws and policies of the Commonwealth of Pennsylvania. Chapter 71.21(a)(5) of DEP's regulations requires that the Act 537 Plan address the consistency of each wastewater management alternative with eleven of the Commonwealth's goals and policies. If a recommended alternative is determined to conflict with or is inconsistent with one of the goals and objectives, the conflict and inconsistencies must be resolved before DEP will approve the alternative.

The following sections discuss the eleven categories under the consistency analysis. Consistency analyses were performed for only those components related to this Special Study. Based on the following, it appears that the selected approach (Alternative B: Upgrade of the Existing Turbotville WWTP) is consistent with the criteria. Three alternatives were identified in Section V of this Special Study:

1. Connection to Milton Regional Sewer Authority (Alternative A)
2. Replacement and Upgrade of the Existing Turbotville WWTP (Alternative B)
3. No Action

A. Consistency Evaluation

Alternatives A and B, identified above and in Section V of this Study, were evaluated for consistency with various environmental regulations and cost effectiveness. The scope of this *Act 537 Special Study* is confined to wastewater treatment alternatives to meet the Borough's current and future NPDES Permit effluent limitations. The required sewage treatment capacity of the service area will remain as currently regulated under existing NPDES and WQM permits.

1. Clean Streams Law

   Sections 4 and 5 of the Clean Streams Law require that consideration be given to water quality management and pollution control in a watershed as a whole. Whereas, Section 208 of the Clean Water Act calls for the development of wastewater plans that identify the facilities necessary to meet anticipated wastewater treatment needs for the future. This *Special Study* is consistent with the Clean Streams Law since it addresses the ability of the Borough of Turbotville to reliably meet future effluent limitations. Alternative A (Connection to MRSA) would be consistent with the Clean Streams Law in that the existing Turbotville WWTP effluent outfall would be eliminated. Alternative B (Turbotville WWTP Upgrade) is consistent with the Clean Streams Law in that current and future NPDES permitted effluent limits would be met.

2. Municipal Wasteload Management Annual Reports (Chapter 94)

   Projected hydraulic and organic capacity requirements presented in the Borough's most recent Chapter 94 report are consistent with the projections and basic design criteria presented in this Study. The Borough does not require revised hydraulic or organic capacity.

   Alternative A: The Milton Regional Sewer Authority is currently operating at 33% of its 4.25 million gallons per day capacity (MGD) and can handle the both the Borough's 5-year hydraulic projection of 53,200 GPD and 20-year projection of 54,350 GPD.

   Alternative B: The proposed WWTP Upgrade would not alter the plant's current hydraulic capacity of 0.136 MGD, which is sufficient for both the 5-year and 20-year flow projections.

   Both Alternative A and B can adequately treat the Borough's projected hydraulic and organic loadings. Furthermore, the Borough is not under any DEP imposed Corrective Action Plan.

3. Title II of the Clean Water Act

   Title II of the Clean Water Act requires the development and implementation of wastewater treatment management plans and practices which provide the application of the best practical waste treatment technology before discharging into

receiving waters. Both alternatives presented in this Study are consistent with this requirement as practical waste treatment technologies. Alternative B has been selected for implementation and the proposed discharge will be as currently permitted regarding location and quantity (i.e., the treatment capacity will remain as permitted).

4. Comprehensive Planning

   Both treatment alternatives are consistent with the Northumberland County's Comprehensive Plan which was adopted by the Borough of Turbotville in June 2005.

5. Antidegradation Requirements

   Chapters 93 and 95 under Pennsylvania's Clean Stream Law classifies all surface waters according to uses to be protected and establishes water quality criteria which need to be maintained in the surface waters. The selected approach (Alternative B) in this study is consistent with these requirements as surface water discharges will remain as currently permitted.

   Chapter 102 requires a Soil Erosion and Sediment Pollution Control Plan to be prepared and followed for any construction activity impacting greater than 5,000 square feet. An NPDES Permit for Stormwater Discharges Associated with Construction Activities is required for any disturbance greater than one (1) acre. Both Alternatives A and B will require a Chapter 102 Soil Erosion and Sediment Pollution Control Plan to be developed. Alternative A (Connection to MRSA) has a projected earth disturbance of 5.5 acres and will require an NPDES Permit for Construction. Alternative B will not require an NPDES permit as the entire existing WWTP site is 0.87 acre and no earth disturbance is proposed outside of this site. Before construction begins for the selected alternative (Alternative B), an erosion and sedimentation control plan will be prepared and approved by the appropriate agency.

   Chapter 105 requires a permit for any crossing of waters of the Commonwealth. The proposed alignment of Alternative A (Connection to MRSA) will cross at least five streams and one wetland (**Appendix G**), requiring a Chapter 105 Water Obstruction and Encroachment Permit. Alternative B (WWTP Upgrade) does not propose any stream or wetland crossings.

   Alternative A (Connection to MRSA) will require significantly more Federal and State permits than the selected Alternative B (WWTP Upgrade).

6. State Water Plans

   The Pennsylvania Water Resources Planning Act (Act 220 of 2002) requires water plans to be prepared for all major watersheds within Pennsylvania. The Turbotville wastewater system is located within the West Branch Susquehanna River Watershed Region. No new surface water discharges are proposed under this

Special Study; therefore, the selected approach (Alternative B) is consistent with the state water plan.

7. Pennsylvania Prime Agricultural Land Policy

   The Prime Agricultural Land Policy was established to protect prime agricultural land from irreversible conversions to uses that result in the loss of the land as an environmental or essential food source resource. The selected wastewater treatment alternative will be located upon the current treatment plant site.

   The majority of the construction included in Alternative A (Connection to MRSA) will take place along local and State Roads, through previously disturbed soils. As such, Alternative A will not impact or result in the loss of Prime Agricultural Land.

   The soils located within the defined planning area are soil types WbA (Watson Silt Loam) and WeC (Weikert Channery Silt Loam). The Watson Silt Loam covers 95 percent of the planning area according to the soil survey **(Appendix F)**. Watson Silt Loam is considered a prime farmland soil while the Weikert Channery Silt Loam is not. Though Watson silt loam is considered a prime farmland soil, the planning area is not currently used for agricultural purposes. Although the soil survey lists these two soils within the planning area, it is possible that there are other soil classifications present. The existing site, and location for Alternative B, has previously been disturbed multiple times during the wastewater treatment plant's initial construction and subsequent renovations. It is assumed that fill and structural fill was brought in from outside of the area. Alternative B is consistent with the PA Prime Agricultural Land Policy.

8. County Stormwater Management Plan

   The Northumberland County Subdivision and Land Development Ordinance covers the Borough of Turbotville and addresses stormwater management for new development. Stormwater Management will be a component of the selected treatment alternative (Alternative B). The County does not have an approved Act 167 Stormwater Management Plan for the Warrior Run watershed, therefore no conflict exists for either Alternative A or B.

9. Wetland Protection

   Alternative A (Connection to MRSA) would require construction of 8.7 miles of force main installation, including five stream crossings and one wetland crossing as shown in the U.S. Fish and Wildlife Service National Wetlands Inventory mapping provided in **Appendix G**. This wetland is identified as PFO1A, a Freshwater Forested/Shrub Wetland.

   According to mapping provided **(Appendix G)**, there are no wetlands present in the Study's defined planning area. Therefore, the selected alternative (Alternative B) is consistent with the regulatory requirement to avoid or mitigate loss of wetlands.

10. Protection of Rare, Endangered or Threatened Plant and Animal Species

    A search of the Pennsylvania Natural Diversity Inventory (PNDI) electronic database was done for selected wastewater treatment alternative (Alternate B – WWTP Upgrade). The PNDI Project Environmental Review Receipt (**Appendix O**) indicates that there are no known impacts to threatened and endangered species and/or special concern species and resources in the area designated for implementing the selected wastewater treatment alternative.

11. Historical and Archaeological Resource Protection

    A Cultural Resource Notice was submitted to the Pennsylvania Historical and Museum Commission, Bureau of Historic Preservation for the Planning Area and the selected treatment alternative (Alternate B – WWTP Upgrade). A January 24, 2017 review letter was issued by PHMC indicating that the project will have no effect on historic properties. A copy of the completed Cultural Resource Notice and response letter are included as **Appendix P**. The selected alternative is consistent with the protection of historical and archaeological resources.

B. Resolution of Inconsistencies

Based on the above analyses, it does not appear that there are any inconsistencies, during the planning phase, between the selected wastewater treatment alternative (Alternative B) and the policies of the Commonwealth of Pennsylvania.

C. Applicable Water Quality Standards Evaluation

The selected wastewater treatment alternative (Alternative B) does not appear to be in conflict with any applicable water quality standards, effluent limitations, or any other technical, legislative, or legal requirements set forth by local, county, state, or federal agencies.

Based on the analysis in Section VI.A above, it appears that Alternate A will require additional permitting for stream and wetland crossings that Alternate B will not require. Alternate A will also require an NPDES Permit for Stormwater Discharges Associated with Construction Activities and will require a Highway Occupancy Permit issued by the Pennsylvania Department of Transportation for construction of the 8.7 miles of force main along and across several State roads (SR 44, 1007, I-180, 405, and I-80). While the HOP does not address water quality standards, it could have an impact on drainage.

D. Estimated Costs, Present Worth Analysis, and Other Factors

1. Construction and Project Costs

   The various components of Alternatives A and B, along with their associated preliminary probable costs are presented respectively in **Tables 3 and 4**.

Table 3

Preliminary Opinion of Probable Construction and Project Costs

Alternative A - Connection to Milton Regional Sewer Authority

Item No.	Description	Quantity	Units	Unit Price	Extended Total
1	General Requirements	1	LS	$ 226,596.00	$ 226,596.00
2	Demolition of WWTP	1	LS	$ 100,000.00	$ 100,000.00
3	Erosion & Sediment Control	1	LS	$ 20,000.00	$ 20,000.00
4	Triplex Influent Pump Station	1	LS	$ 994,400.00	$ 994,400.00
5	Electrical inc. Emergency Generator	1	LS	$ 119,000.00	$ 119,000.00
6	8-inch DIP Force Main	46,000	LF	$ 125.00	$ 5,750,000.00
7	Highway Boring	450	LF	$ 290.00	$ 130,500.00
8	Stream Crossing	5	EA	$ 3,180.00	$ 15,900.00
9	State Road Restoration	16,700	SY	$ 200.00	$ 3,340,000.00
10	State Shoulder Restoration	17,200	SY	$ 50.00	$ 860,000.00
				CONSTRUCTION SUBTOTAL =	$ 11,556,396.00
				10% CONSTRUCTION CONTINGENCY =	$ 1,155,639.60
				TOTAL CONSTRUCTION COST =	**$ 12,712,035.60**
				NON-CONSTRUCTION PROJECT COSTS (30%) =	$ 3,813,610.68
				TOTAL PROJECT COST =	**$ 16,525,646.28**

Table 4

Preliminary Opinion of Probable Construction and Project Costs

Alternative B - Wastewater Treatment Plant Upgrade

Item No.	Description	Quantity	Units	Unit Price	Extended Total
1	General Requirements	1	LS	$ 117,262.93	$ 117,262.93
2	Demolition	1	LS	$ 68,308.50	$ 68,308.50
3	Erosion & Sediment Control	1	LS	$ 10,000.00	$ 10,000.00
4	Triplex Influent Pump Station	1	LS	$ 199,000.00	$ 199,000.00
5	SBR System, inc. Tank and Blowers	1	LS	$ 1,574,000.00	$ 1,574,000.00
6	SBR Control System	1	LS	$ 45,000.00	$ 45,000.00
7	Mechanical Building	1	LS	$ 124,500.00	$ 124,500.00
8	Ultraviolet Disinfection Building	1	LS	$ 64,500.00	$ 64,500.00
9	UV Units (3 total)	1	LS	$ 117,000.00	$ 117,000.00
10	Sludge Drying Bed Renovations	1	LS	$ 35,000.00	$ 35,000.00
11	Site and Yard Piping	1	LS	$ 107,950.00	$ 107,950.00
12	Electrical inc. Emergency Generator	1	LS	$ 295,502.57	$ 295,502.57
				CONSTRUCTION SUBTOTAL =	$ 2,758,024.00
				10% CONSTRUCTION CONTINGENCY =	$ 275,802.40
				TOTAL CONSTRUCTION COST =	**$ 3,033,826.40**
				NON-CONSTRUCTION PROJECT COSTS (30%) =	$ 910,147.92
				TOTAL PROJECT COST =	**$ 3,943,974.31**

Total estimated construction costs are as follows: Alternative A (Connection to MRSA) =$12,712,036 and Alternative B (WWTP Upgrade) = $3,033,826. Projected costs are based upon current values and do not include price escalation factors; sources for these costs included: (1) estimates provided by respective equipment manufacturer's representatives, (2) actual values from recent projects for implementing similar construction features, and (3) cost estimating procedures. Also, in the same tables are the preliminary probable project costs for these alternatives: Alternative A = $16,525,646 and Alternative B = $3,943,974.

2. Operation and Maintenance Costs

   Preliminary projections of the operation and maintenance (O & M) costs for alternatives are presented in **Table 5**. Total annual O & M costs for Alternatives A and B are $70,000 and $126,300, respectively. These values include all expenditures needed to operate and maintain the wastewater treatment facility or pump station, but do not include the costs of financing capital improvements.

3. Present Worth Analysis

   A present worth analysis was employed to assess the economic impact of the projected capital and O & M costs for each of the alternatives. The basic concept of this analysis is that all cash flows are converted to a common point in time, the present. As such, time value of money is considered and all future cash flows are discounted back to the present. Comparison of the equivalent worth of competing alternatives allows for prioritization of alternatives based upon economics. The basic methodology used in this study is presented in **Table 6**. When applied to Alternatives A and B, respective present worth values were projected to be $17,579,208 and $5,844,900 (**Table 7**). Even though Alternative B has a higher annual O & M cost, the 20-year present worth of this Alternative is significantly less than abandoning the WWTP and connecting to the Milton Regional Sewer Authority. Based upon this economic evaluation, Alternative B (WWTP Upgrade) is favored over Alternative A (Connection to MRSA).

E. Analysis of Funding Methods

Preliminary user fee projections were performed for Alternate B (WWTP Upgrade) under six different funding scenarios (**Table 8**). In five of the scenarios, PENNVEST was used as the model source of project capital, based upon the anticipated availability of a suitable funding package and a favorable assessment for PENNVEST funding by DEP. Additionally, Scenario F projects the user fee using a private bank loan to finance the capital portion of the project. The only variable in each scenario was the breakdown of funding between grant and loan amounts and loan terms. Only one scenario, Scenario E, provided a grant for the project. As evaluated, the user rate ranges from $64.45/month ($1M grant) to $103.93/month (non-PENNVEST loan). Because projected user fees are speculative, every effort will be made to solicit grant moneys from any available source so that long-term debt and associated user rates can be minimized and project implementation facilitated. For example, the Commonwealth Financing Authority (CFA) is an agency for potential grant funds through various programs that are periodically open for applications. Other sources of financing that could be evaluated

Table 5

Current and Projected Operation and Maintenance Costs

Item	Description	2016 Budget	Alternative A Connection to MRSA	Alternative B WWTP Upgrade
1	Administrative Costs	$ 21,150.00	$ 21,150.00	$ 21,150.00
2	Regular Maintenance Salary	$ 23,000.00	$ 15,000.00	$ 15,000.00
3	Operator Salary	$ 6,200.00	$ -	$ 8,000.00
4	Licensed Operator Salary	$ 6,000.00	$ 3,000.00	$ 6,000.00
5	NPDES Permit Fee	$ 600.00	$ -	$ 500.00
6	Materials	$ 2,000.00	$ 1,000.00	$ 2,000.00
7	Chlorine & Chemicals	$ 2,000.00	$ -	$ 5,000.00
8	Sludge Analysis/NPDES	$ 8,000.00	$ -	$ 8,000.00
9	Utilities	$ 14,000.00	$ 8,000.00	$ 15,000.00
10	Sewer Line Maint/Repair	$ 2,600.00	$ 2,600.00	$ 2,600.00
11	Manhole Repair/Replace	$ 4,500.00	$ 4,500.00	$ 4,500.00
12	Sewer Plant Repairs	$ 1,500.00	$ -	$ 1,500.00
13	Equipment Rental	$ 200.00	$ 200.00	$ 200.00
14	Building Maintenance & Repairs	$ 200.00	$ 100.00	$ 200.00
15	Dues	$ 250.00	$ 250.00	$ 250.00
16	Vehicles	$ 1,600.00	$ 1,600.00	$ 1,600.00
17	Equipment Fund Transfers	$ 3,600.00	$ 3,600.00	$ 3,600.00
18	Equipment Transfer	$ 3,000.00	$ 3,000.00	$ 3,000.00
19	Insurance Premium	$ 11,000.00	$ 6,000.00	$ 20,000.00
20	Sludge Disposal	$ 8,200.00	$ -	$ 8,200.00
	Total Annual O&M Costs =	**$ 119,600.00**	**$ 70,000.00**	**$ 126,300.00**

Table 6
Methodology Summary[1]
Economic Evaluation of Alternatives
(Using Present-Worth Determinations)

Present Worth Cost Factors (w/ General Definitions)

- ***Capital Costs*** - Includes costs of construction; land, relocation, and right-of-way and easement acquisition; design, field exploration, and construction engineering; administrative and legal services; operator training and other start up services; interest during construction; and other related activities.

- ***Annual Costs*** - Includes annual costs of operation, maintenance, and replacement procedures that are needed to ensure effective and reliable performance of facilities during their useful life.

- ***Salvage Value*** - Includes values of structures, equipment, and land at the end of the useful life of the facilities. Structures and equipment are depreciated on a straight-line basis, assuming a specific market or reuse value exists, and land is considered to have a post-project useful life value at least equal to its current market value.

- ***Discount Rate*** - The rate established by the Water Resource Council for evaluation of water resource projects; FY2017 rate is 2.875 percent.

Present Worth Calculations

Present worth calculations were performed in accordance with the following equation:

$$P = C + \left[A\left(PWF_u\right)\right] - S$$

where
P is present worth
C is capital cost
A is annual cost
PWF_u is uniform series present worth factor[2] $= \left[\left(1 + \mathrm{d}\right)^{\mathrm{n}} - 1\right] \Big/ \left[\mathrm{d}\left(1 + \mathrm{d}\right)^{\mathrm{n}}\right]$
d is discount rate[3]
n is useful life in years[4]
S is salvage value[5]

[1]Presentation adapted from information provided by Pennsylvania Department of Environmental Protection.

[2]Uniform series present worth factor is 15.05 for all alternatives.

[3]FY2017 discount rate is 2.875 percent.

[4]Useful life of 20 years assumed for all facilities in this particular evaluation.

[5]Salvage value is assumed to be 0 for all alternatives.

Table 7

Present Worth of Proposed Alternatives

	Alternative	
	A **Connection to MRSA**	**B** **WWTP Upgrade**
Capital Cost	$ 16,525,646.28	$ 3,943,974.31
Annual O&M Cost	$ 70,000.00	$ 126,300.00
Present Worth Factor [1]	15.05	15.05
Annual O&M Present Worth	$ 1,053,561.44	$ 1,900,925.85
Total Present Worth	**$ 17,579,207.72**	**$ 5,844,900.16**

[1] Present Worth Factor = $[(1 + d)^n - 1] / [d(1 + d)^n]$

Discount Rate, d = 0.02875

n (years) = 20

FY2017 discount rate by Water Resource Council: 2.875%

Salvage Value for both alternatives is assumed to be zero.

Table 8

Projected User Rates for Alternate B: WWTP Upgrade

	Current User Rate	Scenario A PENNVEST[1] 1.557%, 20 yrs	Scenario B PENNVEST 1.557%, 30 yrs	Scenario C PENNVEST 1.00%, 20 yrs	Scenario D PENNVEST 1.00%, 30 yrs	Scenario E PENNVEST 1.00%, 30 yrs	Scenario F Private Bank 4.00%, 20 yrs
Project Cost		$ 3,943,974.31	$ 3,943,974.31	$ 3,943,974.31	$ 3,943,974.31	$ 3,943,974.31	$ 3,943,974.31
Grants		$ -	$ -	$ -	$ -	$ 1,000,000.00	$ -
Loan Amount		$ 3,943,974.31	$ 3,943,974.31	$ 3,943,974.31	$ 3,943,974.31	$ 2,943,974.31	$ 3,943,974.31
Annual Debt Service (New)		$229,625.85	$164,640.74	$217,657.36	$152,224.56	$113,627.82	$286,796.50
Annual Debt Service (Existing)	$ 42,751.00	$ 42,751.00	$ 42,751.00	$ 42,751.00	$ 42,751.00	$ 42,751.00	$ 42,751.00
Annual O&M Costs	$ 119,600.00	$ 126,300.00	$ 126,300.00	$ 126,300.00	$ 126,300.00	$ 126,300.00	$ 126,300.00
Total Annual Expenses	$ 162,351.00	$ 398,676.85	$ 333,691.74	$ 386,708.36	$ 321,275.56	$ 282,678.82	$ 455,847.50
Annual User Rate[2]	$ 480.00	$ 1,090.77	$ 912.97	$ 1,058.03	$ 879.00	$ 773.40	$ 1,247.19
Monthly User Rate	**$ 40.00**	**$ 90.90**	**$ 76.08**	**$ 88.17**	**$ 73.25**	**$ 64.45**	**$ 103.93**

[1] PENNVEST interest rate for Northumberland County: Years 1 - 5 = 1.000%, Years 6 - 30 = 1.743%, Blended Rate = 1.557%

[2] User Rate based on 365.5 EDUs

include a low interest loan or bond from Pennsylvania Rural Water Association (PRWA) financial services.

F. Immediate and Phased Implementation Analysis

The selected alternative involves the construction of new treatment facilities. The majority of the new tanks and buildings can be constructed while the existing treatment plant remains in service. The only phasing will be the decommissioning and demolition of the existing plant after the new plant is operational. As the new effluent limitations must be met by mid-2018, implementation of the selected alternative will be immediate.

G. Administrative Organization Evaluation

The Borough of Turbotville has the existing administrative organizations and legal authority in place to implement the recommendations of this Special Study.

VII. INSTITUTIONAL EVALUATION

A. Existing Wastewater Treatment Authority Evaluation

The Borough of Turbotville is and will continue to be the owner and operator of the existing wastewater system, including collection, conveyance, and treatment facilities. Furthermore, Turbotville is the institution through which wastewater projects will be designed, financed, constructed, owned and operated. Turbotville has the resources, including staff, certified personnel, facilities ownership, and other essentials to remain as the legal entity to provide comprehensive wastewater services for its service area. The renovated facilities of the selected alternative will be constructed on property currently owned or acquired by Turbotville. In addition, Turbotville has the ability to incur debt for construction of facilities, as the purveyor of capital projects, and the authority to set user fees and negotiate suitable agreements with other parties. The status of the Borough's current debt has been included in the analysis of the projected user fees.

B. Institutional Alternatives Needed to Implement Recommended Technical Alternative

The Borough of Turbotville has in place the administrative, financial, and operational infrastructure to proceed with the implementation of the proposed technical alternative with a high degree of confidence in the desired outcome. The Borough has been operating a wastewater treatment facility for decades and there is no need to create a new municipal authority to handle the operations of the sewer system. The Borough's structure allows it to react to future sewage facility needs.

C. Administrative and Legal Activities for Implementation of Recommended Alternative

The Borough of Turbotville will implement the recommended technical alternative through normal Borough Council procedures. All matters of a legal nature will be

addressed by the Borough solicitor. There are not any anticipated activities that are outside of the legal authority and administrative capabilities of the Borough.

The recommended technical alternative will not require the creation of an authority. The alternative will not require the development of new ordinances, regulations, or intermunicipal agreements. The recommended technical alternative will not require the acquisition of land, rights-of-way, or easements.

The recommended technical alternative (Alternative B) will not require the adoption of other municipal sewage facilities plans other than the Borough's own Special Study.

D. Institutional Alternative to Implement Recommended Technical Alternative

The Borough of Turbotville will implement the recommended technical alternative as it has the administrative and legal authority to so effectively.

VIII. IMPLEMENTATION SCHEDULE AND JUSTIFICATION FOR SELECTED TECHNICAL AND INSTITUTIONAL ALTERNATIVES

A. Technical Alternative Justification

The technical alternative selected by the Borough of Turbotville is Alternative B: WWTP Upgrade. The upgrade will be designed around the Sequencing Batch Reactor (SBR) treatment technology. The rationale for this decision is set forth in the topical presentations below.

1. Existing Wastewater Disposal Needs
   Replacement/Upgrade of the existing wastewater treatment plant with SBR technology will allow the Borough to meet its current and upcoming NPDES permit effluent limitations without the need to acquire additional land. Other treatment technologies available (ie. separate aeration basins and clarifiers) require a much larger footprint that the Borough does not have available on its current property.

2. Future Wastewater Disposal Needs
   Replacement/Upgrade of the existing wastewater treatment plant with SBR technology will allow the Borough to meet its upcoming (mid-2018) NPDES permit effluent limitations without the need to acquire additional land. Other treatment technologies available (ie. separate aeration basins and clarifiers) require a much larger footprint that the Borough does not have available on its current property. The WWTP Upgrade will allow for future growth within the Borough and surrounding Township if needed.

3. Operation and Maintenance Considerations
   Operational aspects of the SBR treatment technology have been proven highly reliable in hundreds of facilities in the Pennsylvania area. Biological and chemical treatment needed for both organic and nutrient (nitrogen and phosphorus) removal are consolidated in a single treatment process that has been capable of achieving the effluents limitations anticipated for the Turbotville treatment facility.

Furthermore, the overall performance capability of the SBR alternative is enhanced by automated control features that are dependable and operator friendly. In regard to maintenance, the SBR alternative will reduce the number and complexity of mechanical components, which will optimize maintenance requirements.

4. Cost-Effectiveness
   The WWTP Upgrade alternative (Alternative B) is the most cost-effective of the two alternatives evaluated. **Tables 7** and **8** show the present worth analysis and impact to user fees.

5. Available Management and Administrative Systems
   The Borough of Turbotville has in place the management and administrative systems necessary for successful implementation and operation of a wastewater treatment plant.

6. Available Funding Methods
   PENNVEST has been chosen as the preferred agency for the acquisition of primary funding for the implementation of the WWTP Upgrade alternative. Additional funding sources will be investigated for supplemental funding.

7. Environmental Soundness and Compliance
   The WWTP Upgrade alternative, along with the other alternative considered, will be in compliance with all local, county, state, and federal requirements pertinent to this type of project. Many of these compliances have been addressed within the body of this report. Though all environmental concerns would be addressed during the design and construction of either alternative, Alternative B (WWTP Upgrade) has significantly less potential for environmental impacts due to Alternative A's increased earth disturbance and stream crossings.

B. Financing Plan

The financing plan favored by the Borough for implementation of the WWTP Upgrade alternative consists of interim financing through Turbotville National Bank and primary capital financing through PENNVEST. Back-up financing could be provided by a loan through Turbotville National Bank or Pennsylvania Rural Water Association (PRWA) financial services. The entity with the most favorable loan terms at the time of application would be utilized.

C. Implementation Schedule

The proposed schedule for implementation of the WWTP Upgrade alternative is presented in **Table 9**. Please note that proposed dates are contingent upon receiving the necessary permits and approvals as anticipated; therefore, the Borough may revise the schedule if there are any associated delays in permit acquisition.

Table 9
Proposed Implementation Schedule
Alternative B: WWTP Upgrade

Milestone	Date
Receive Act 537 Study approval from the DEP	May 1, 2017 (estimate)
Submit WQM Part II Permit Application	May 5, 2017 (estimate)
Obtain WQM Part II Permit	August 2017 (estimate)
Apply for PENNVEST funding	August 2017 (TBD)
Anticipated PENNVEST offer	October 2017 (TBD)
Advertise for Bids	December 2017
Open Bids/Award Contract	February 2018
Begin Construction	March 2018
New NPDES Effluent Limits	June 1, 2018
Complete Construction	Winter 2018/2019

IX. ENVIRONMENTAL REPORT GENERATED FROM THE UER PROCESS

A. Uniform Environmental Review Report is presented as **Appendix A**, but as an accompanying, stand-alone document

Appendix A

Environmental Report
(Included as a separate document)

Appendix B
Plan of Study

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

January 6, 2017

Turbotville Borough Council
Attn: Brentha Snyder, Secretary
1st Street, P.O. Box 264
Turbotville, PA 17772

Received JAN 12 2017

Re: Approval Letter - Plan of Study and Task/Activity Report
Act 537 Planning
Borough of Turbotville, Northumberland County

Dear Supervisors:

The Department of Environmental Protection (DEP) has received a Plan of Study and Task/Activity Report for preparation of an Act 537 Special Study submitted by Uni-Tec Consulting Engineers, Inc., under a cover letter dated December 21, 2016.

The special study intends to look at upgrading or replacing the existing, aging, wastewater treatment plant in order to continue to meet its permitted effluent limits. The planning area for the study will be wholly within the fenced-in confines of the existing treatment plant.

We have approved your Plan of Study for an estimated total cost of $14,750.00. The resulting Act 537 Update Revision must be consistent with Act 537, Chapter 71, Sections 71.21 and 71.31, of DEP's regulations, and with information contained in A Guide for Preparing Act 537 Update Revisions (January 2003). In accordance with your approved Task/Activity Report, your completed planning package will be submitted to DEP for review in April 2017.

In addition to the checked items, your completed planning package must include the following:

- Part 2 – Administrative Completeness Checklist
- Part 3, subsection IV - Future Growth and Land Development - B. 5.
- Part 3, subsection VI. - Evaluation of Alternatives - E. and G.

If you have any questions or concerns, please call Amy Gresh at 570.327.3668 or email amgresh@pa.gov.

Sincerely,

Amy Gresh
Sewage Planning Specialist
Clean Water Program

cc: Northumberland County Planning Commission
Michele Aukerman
Dennis Swartzlander
Amy Gresh
File

UNI-TEC
Consulting Engineers Inc.

December 21, 2016
File No. 0047-043-000

Mr. Dennis Swartzlander
Pennsylvania Department of Environmental Protection
208 West Third Street, Suite 101
Williamsport, PA 17701-6448

RE: Act 537 Special Study – Task/Activity Report
Turbotville Borough Wastewater Treatment Plant
Turbotville Borough, Northumberland County

Dear Mr. Swartzlander:

On behalf of the Borough of Turbotville, please find enclosed the proposed Task/Activity Report (TAR) for the Borough's proposed Act 537 Special Study for the Wastewater Treatment Plant. For the TAR, the following items are enclosed:

- TAR Narrative of study area and the proposed sewage planning project
- Maps of the Planning Area
- Completed Task/Activity Report form
- Part 3 (General Plan Content Checklist) of the Act 537 Plan Content and Environmental Assessment Checklist identifying the major planning elements to be included in the Special Study.

Please review the enclosed information and let us and the Borough know if this approach will satisfy the Department's requirements for an Act 537 Special Study for a potential upgrade/replacement of the Borough's wastewater treatment plant.

Should you have any questions or need additional information, please do not hesitate to contact me at (814) 238-8223, ext. 360 or by email: maa@uni-tec.com.

Sincerely,
UNI-TEC CONSULTING ENGINEERS, INC.

Michele A. Aukerman

Michele A. Aukerman, P.E.
Project Engineer

cc: Borough of Turbotville (w/encl)

2007 Cato Avenue • State College, PA 16801 • p 814.238.8223 • f 814.238.7808 • www.uni-tec.com

Borough of Turbotville
Wastewater Treatment Plant Upgrade
Act 537 Special Study
Task/Activity Report

Background

The Borough of Turbotville (Northumberland County) owns and operates a 0.136 million gallon per day (MGD) wastewater treatment plant that serves the residential and commercial customers of the Borough. The existing WWTP, constructed in 1988, is an activated sludge plant with coarse bubble air and dual settling basins. The WWTP has neared the end of its useful life, and at times, has struggled to meet its permitted effluent limits. Since 2009, the Borough has been exploring options to rehabilitate or replace the WWTP. Additionally, with the issuance of the renewed NPDES Permit in 2015, the Borough will be subject to more stringent effluent limitations that the existing WWTP is not capable of achieving for Ammonia, Total Phosphorus, and Total Copper. The Borough is ready to undertake a plant upgrade/replacement project with an Act 537 Special Study as the first step.

Planning Area

The planning area for the Act 537 Special Study will be the existing wastewater treatment plant site. Any proposed upgrade or replacement project will remain within the existing fenced-in confines of the treatment plant. All items included in Part 3, II of the Act 537 Plan Content and Environmental Assessment Checklist will be identified for the Planning Area. The attached map depicts the proposed Planning Area as well as the municipal boundary for the Borough of Turbotville, for reference.

Act 537 Plan Content and Checklist

In addition to identifying the Planning Area and analyzing the area's physical characteristics and environmental features, the Special Study will compare two WWTP upgrade/replacement alternatives along with a "no-action" alternative. This evaluation of the alternatives will include a determination of the most cost-effective alternative to provide long-term sewage treatment for the Borough of Turbotville.

The attached Act 537 Plan Content and Checklist and Task/Activity Report identifies the major planning elements to be included in the Borough's Act 537 Study.

TURBOTVILLE BOROUGH, NORTHUMBERLAND COUNTY
ACT 537 SPECIAL STUDY - PLANNING AREA
DECEMBER 2016

ACT 537 SPECIAL STUDY
PLANNING AREA
(EXISTING WASTEWATER
TREATMENT PLANT)
Queen St
© 2016 Google
Google Earth
Earth Point
Google Earth
feet
meters
200
600

3850-FM-BCW0005 3/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

TASK/ACTIVITY REPORT

Turbotville Borough — Municipality

Northumberland — County

Wastewater Treatment Plant — Proposed Planning Area (Attach Map)

December 15, 2016 — Date of Report

Date completed plan will be submitted to DEP April 7, 2017

Estimated Cost of Plan $14,750.00

Column Headings May Be Changed To Suit the Needs of the Planning Effort Use Additional Sheets if Necessary

Sheet 1 of 2

TASK ACTIVITY NUMBER FROM APPENDIX I	PRINCIPAL $135/HR		PROJECT ENG. $125/HR		SR. ENG. N/A		ENGINEER $80/HR		SR. CADD TECH $90/HR		DRAFTSMAN $80/HR		CLERICAL N/A		LEGAL N/A		SUB TOTAL
	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	
I A	3	$405.00	8	$1,000.00													$1,405.00
II A - G			2	$250.00			10	$800.00	12	$1,080.00							$2,130.00
III A			4	$500.00			10	$800.00			8	$640.00					$1,940.00
IV A - B			2	$250.00			10	$800.00	10	$900.00							$1,950.00
V A	2	$270.00															$270.00
V H			2	$250.00													$250.00
VI A - D	3	$405.00	32	$4,000.00			5	$400.00									$4805.00
VII A - D			4	$500.00													$500.00

Michele A. Aukerman, P.E.
Name of Person Completing Report

Michele A. Aukerman
Signature

Project Engineer
Title

Diane K. Miller
Municipal Secretary Signature

3850-FM-BCW0005 3/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

TASK/ACTIVITY REPORT

Turbotville Borough (Municipality) | Northumberland (County) | Wastewater Treatment Plant (Proposed Planning Area (Attach Map)) | December 15, 2016 (Date of Report)

Date completed plan will be submitted to DEP April 7, 2017 | Estimated Cost of Plan $14,750.00

Column Headings May Be Changed To Suit the Needs of the Planning Effort | Use Additional Sheets if Necessary | Sheet 2 of 2

TASK ACTIVITY NUMBER FROM APPENDIX I	PRINCIPAL $135/HR		PROJECT ENG. $125/HR		SR. ENG. N/A		ENGINEER $80/HR		SR. CADD TECH $90/HR		DRAFTSMAN $80/HR		CLERICAL N/A		LEGAL N/A		SUB TOTAL
	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	
VIII A - C			4	$500.00													$500.00
IX			8	$1,000.00													$1,000.00

Michele A. Aukerman, P.E. (Name of Person Completing Report) | Michele A. Aukerman (Signature) | Project Engineer (Title) | Deanne K. Miller (Municipal Secretary Signature)

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan		Item Required
_____	X	**I.**	**Previous Wastewater Planning**
			A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	X		1. Previously undertaken under the Pennsylvania Sewage Facilities Act (Act). (Reference - Act 537, 35 P.S. §750.5(d)(1)).
_____	X		2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A-D)). Section V.F of the Planning Guide.
_____	X		3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A&B)). Section V.D. of the Planning Guide.
_____	X		4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A)).
_____	X	**II.**	**Physical and Demographic Analysis utilizing written description and mapping** (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	X		A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference – 25 *Pa. Code* §71.21(a)(1)(i)).
_____	X		B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference - 25 *Pa. Code* §71.21(a)(1)(ii)).
_____	X		C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems (IRSIS), and areas unsuitable for soil dependent systems. (Reference - 25 *Pa. Code* §71.21(a)(1)(iii)). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference - 25 *Pa. Code* §71.21(a)(1)(iii)).
_____	X		D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference - 25 *Pa. Code* §71.21(a)(1)(iii)).
_____	X		E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference - 25 *Pa. Code* §71.21(a)(1)(ii)).
_____	X		F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference - 25 *Pa. Code* §71.21(a)(1)(vi)). Section V.C. of the Planning Guide.
_____	X		G. Wetlands-Identify wetlands as defined in 25 *Pa. Code* Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference - 25 *Pa. Code* §71.21(a)(1)(v)). Appendix B, Section II.I of the Planning Guide.

_____	X	**III.**	**Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs**
		A.	Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:
_____	X	1.	Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(A)).
_____	X	2.	A narrative and schematic diagram of the facility's basic treatment processes including the facility's National Pollutant Discharge Elimination System (NPDES) permitted capacity, and the Clean Streams Law permit number. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(A)).
_____	X	3.	A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under 25 *Pa. Code* Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(B)).
_____	X	4.	Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(i & ii)).
_____	X	5.	A detailed description of the municipality's operation and maintenance (O & M) requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs (SMPs). (Reference – 25 *Pa. Code* §71.21(a)(2)(i)(C)).
_____	X	6.	Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference - 25 *Pa. Code* §71.21(a)(4)(i & ii)).
_____	_____	B.	Using DEP's publication titled *Act 537 Sewage Disposal Needs Identification* (3800-BK-DEP1949), identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:
_____	_____	1.	The types of onlot systems in use. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(A)).
_____	_____	2.	A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Act, the Clean Stream Law or regulations promulgated thereunder. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(B)).
_____	_____	3.	A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and 25 *Pa. Code* Chapter 73 (relating to standards for sewage disposal facilities). (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
_____	_____	4.	An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Act 537 Sewage Disposal Needs Identification* publication. (Reference – 25 *Pa. Code* §71.21(a)(2)(ii)(B)).

5. Detailed description of O & M requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to SMPs. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(C)).

C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:

1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference – 25 *Pa. Code* §71.71).

2. Quantities of the types of sludges or septage generated. (Reference - 25 *Pa. Code* §71.71).

3. Present disposal methods, locations, capacities and transportation methods. (Reference - 25 *Pa. Code* §71.71).

X **IV. Future Growth and Land Development**

A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:

X 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)).

X 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – 25 *Pa. Code* §71.21(a)(3)(iv)).

X 3. All limitations and plans related to floodplain and stormwater management and special protection (25 *Pa. Code* Chapter 93) areas. (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)) Appendix B, Section II.F of the Planning Guide.

X B. Delineate and describe the following through map, text and analysis.

X 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of equivalent dwelling units (EDUs) in development, total number of EDUs currently developed and total number of EDUs remaining to be developed (include time schedule for EDUs remaining to be developed). (Reference - 25 *Pa. Code* §71.21(a)(3)(i)).

X 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference - 25 *Pa. Code* §71.21(a)(3)(ii)). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)).

X 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference - 25 *Pa. Code* §71.21(a)(1)(iv) and (a)(3)(iii)).

X 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)).

--public ground/surface water supplies
--recreational water use areas
--groundwater recharge areas
--industrial water use
--wetlands

5. Sewage planning necessary to provide adequate wastewater treatment for 5 and 10-year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(3)(v)).

X **V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities**

A. Conventional collection, conveyance, treatment and discharge alternatives including:

X 1. The potential for regional wastewater treatment. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(i)).

X 3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)).

X a. Repair. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(A)).

X b. Upgrading. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(B)).

X c. Reduction of hydraulic or organic loading to existing facilities. (Reference - 25 *Pa. Code* §71.71).

X d. Improved O & M. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(C)).

X e. Other applicable actions that will resolve or abate the identified problems. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(D)).

X 4. Repair or replacement of existing collection and conveyance system components. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(A)).

X 5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(iii)).

X 6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(B)).

B. The use of individual sewage disposal systems including IRSIS systems based on:

1. Soil and slope suitability. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).

2. Preliminary hydrogeologic evaluation. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).

3. The establishment of a SMP. (Reference - 25 *Pa. Code* §71.21(a)(4)(iv)). See also Part "F" below.

4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference - 25 *Pa. Code* §71.21(a)(4)).

a. Existing technology and sizing requirements of 25 *Pa. Code* Chapter 73. (Reference - 25 *Pa. Code* §73.31-§73.72).

b. Use of expanded absorption areas or alternating absorption areas. (Reference - 25 *Pa. Code* §73.16).

c. Use of water conservation devices. (Reference - 25 *Pa. Code* §71.73(b)(2)(iii)).

C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference - 25 *Pa. Code* §71.64(d)).

1. Treatment and discharge requirements. (Reference - 25 *Pa. Code* §71.64(d)).
2. Soil suitability. (Reference - 25 *Pa. Code* §71.64(c)(1)).
3. Preliminary hydrogeologic evaluation. (Reference - 25 *Pa. Code* §71.64(c)(2)).
4. Municipal, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 *Pa. Code* §71.64(d)). See Part "F" below.

D. The use of community land disposal alternatives including:

1. Soil and site suitability. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
2. Preliminary hydrogeologic evaluation. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
3. Municipality, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)). See Part "F" below.
4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.

E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference - 25 *Pa. Code* §71.21(a)(4)).

1. Commercial, residential and industrial use. (Reference - 25 *Pa. Code* §71.63(e)).
2 Designated conveyance facilities (pumper trucks). (Reference - 25 *Pa. Code* §71.63(b)(2)).
3. Designated treatment facilities or disposal site. (Reference - 25 *Pa. Code* §71.63(b)(2)).
4. Implementation of a retaining tank ordinance by the municipality. (Reference - 25 *Pa. Code* §71.63(c)(3)). See Part "F" below.
5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference - 25 *Pa. Code* §71.63(c)(2)).

F. SMPs to assure the future O & M of existing and proposed sewage facilities through:

1. Municipal ownership or control over the O & M of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(iv)).
2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference - 25 *Pa. Code* §71.73(b)(1)).
3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference - 25 *Pa. Code* §71.73(b)(2)).
4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference - 25 *Pa. Code* §71.21(a)(4)(iv) and §71.73(b)(5)) through:
   a. Aggressive pro-active enforcement of ordinances that require O & M and prohibit malfunctioning systems. (Reference - 25 *Pa. Code* §71.73(b)(5)).
   b. Public education programs to encourage proper O & M and repair of sewage disposal systems.
5. Establishment of joint municipal SMPs. (Reference - 25 *Pa. Code*

§71.73(b)(8)).

6. Requirements for bonding, escrow accounts, management agencies or associations to assure O & M for non-municipal facilities. (Reference - 25 *Pa. Code* §71.71).

G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference - 25 *Pa. Code* §71.21(a)(4)).

1. Modification of existing comprehensive plans involving:

a. Land use designations. (Reference - 25 *Pa. Code* §71.21(a)(4)).

b. Densities. (Reference - 25 *Pa. Code* §71.21(a)(4)).

c. Municipal ordinances and regulations. (Reference - 25 *Pa. Code* §71.21(a)(4)).

d. Improved enforcement. (Reference - 25 *Pa. Code* §71.21(a)(4)).

e. Protection of drinking water sources. (Reference - 25 *Pa. Code* §71.21(a)(4)).

2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference - 25 *Pa. Code* §71.21(a)(4)).

3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference - 25 *Pa. Code* §71.21(a)(4)).

4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 1. Water quality/public health. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 2. Growth potential (residential, commercial, industrial). (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 3. Community economic conditions. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 4. Recreational opportunities. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 5. Drinking water sources. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X 6. Other environmental concerns. (Reference - 25 *Pa. Code* §71.21(a)(4)).

X **VI. Evaluation of Alternatives**

A. Technically feasible alternatives identified in Section V of this checklist must be evaluated for consistency with respect to the following: (Reference - 25 *Pa. Code* §71.21(a)(5)(i)).

X 1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A)). Appendix B, Section II.A of the Planning Guide.

X 2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under 25 *Pa. Code* Chapter 94. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(B)). The municipality's recent Wasteload Management (25 *Pa. Code* Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.

X 3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A.

1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A 1251-1376). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(C)). Appendix B, Section II.E of the Planning Guide.

_____ X 4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(D)). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.

_____ X 5. **Antidegradation requirements** as contained in 25 *Pa. Code* Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(E). Appendix B, Section II.F of the Planning Guide.

_____ X 6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(F)). Appendix B, Section II.C of the Planning Guide.

_____ X 7. **Pennsylvania Prime Agricultural Land Policy** contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(G)). Appendix B, Section II.G of the Planning Guide.

_____ X 8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(H)). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.

_____ X 9. **Wetland Protection.** Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(I)) Appendix B, Section II.I of the Planning Guide.

_____ X 10. **Protection of rare, endangered or threatened plant and animal species** as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(J)). Provide DEP with a copy of the completed *PNDI Manual Project Submission Form*. Also provide a copy of the response letters from the 4 jurisdictional agencies regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.

_____ X 11. **Historical and archaeological resource protection** under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission (PHMC). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(K)). Provide DEP with a completed copy of a *Cultural Resource Notice* and a return receipt for its submission to PHMC. Provide a copy of the response letter or review stamp from the Bureau of Historic Preservation (BHP) indicating the project will have no effect on, or that there may be potential impacts on, known archaeological and historical sites and any avoidance and mitigation measures required. Appendix B, Section II.K of the Planning Guide.

_____	X	B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference - 25 *Pa. Code* §71.21(a)(5)(ii)). Appendix B of the Planning Guide.
_____	X	C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference - 25 *Pa. Code* §71.21(a)(5)(iii)).
_____	X	D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, O & M and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference - 25 *Pa. Code* §71.21(a)(5)(iv)).
_____	_____	E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of the plan submission. (Reference - 25 *Pa. Code* §71.21(a)(5)(v)).
_____	_____	F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)).
_____	_____	1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of SMPs. (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)(A)).
_____	_____	2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a SMP justifying time schedules for each phase. (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)(B)).
_____	_____	G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)(D)).
_____	X	**VII. Institutional Evaluation**
		A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
_____	X	1. Financial and debt status. (Reference - 25 *Pa. Code* §71.61(d)(2)).
_____	X	2. Available staff and administrative resources. (Reference - 25 *Pa. Code* §71.61(d)(2))
_____	X	3. Existing legal authority to:
_____	X	a. Implement wastewater planning recommendations. (Reference - 25 *Pa. Code* §71.61(d)(2)).
_____	X	b. Implement system-wide O & M activities. (Reference - 25 *Pa. Code* §71.61(d)(2)).
_____	X	c. Set user fees and take purchasing actions. (Reference - 25 *Pa. Code* §71.61(d)(2)).
_____	X	d. Take enforcement actions against ordinance violators. (Reference - 25 *Pa. Code* §71.61(d)(2)).
_____	X	e. Negotiate agreements with other parties. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X f. Raise capital for construction and O & M of facilities. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:

_____ X 1. Need for new municipal departments or municipal authorities. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:

_____ X 1. Incorporation of authorities or agencies. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 4. Adoption of other municipal sewage facilities plans. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 5. Any other legal documents. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.

_____ X D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ X **VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives**

A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:

_____ X 1. Existing wastewater disposal needs. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ X 2. Future wastewater disposal needs. (5 and 10 year growth areas). (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ X 3. O & M considerations. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ X 4. Cost-effectiveness. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ X 5. Available management and administrative systems. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ X 6. Available financing methods. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ X 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____	X	B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference - 25 *Pa. Code* §71.21(a)(6))
_____	X	C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a SMP. (Reference – 25 *Pa. Code* §71.31(d))
_____	X	**IX. Environmental Report (ER) generated from the UER Process**
_____	X	A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance (381-5511-111). Include this document as "Appendix A" to the Act 537 Plan Update Revision. ***Note: An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.***

Appendix C
Act 537 Plan Content and Environmental Assessment Checklist

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Act 537 Special Study - Turbotville Wastewater Treatment Plant Alternatives

2. Brief Project Description The Special Study provides the most cost-effective solution to meet upcoming NPDES Permit Effluent Limitations that have minimal environmental and economic impact for the defined Planning Area, the existing Borough WWTP.

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Turbotville	Northumberland	☐	☒	☐

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Betz	F. Patrick			Council President

Additional Individual Last Name	First Name	MI	Suffix	Title
Miller	Diane			Secretary

Municipality Mailing Address Line 1	Mailing Address Line 2
P.O. Box 264	

Address Last Line -- City	State	ZIP+4
Turbotville	PA	17772

Phone + Ext.	FAX (optional)	Email (optional)
570-649-5476		turbotville5476@windstream.net

C. Site Information

Site (or Project) Name	
Turbotville Wastewater Treatment Plant	(Municipal Name) Act 537 Plan

Site Location Line 1	Site Location Line 2
2 Adam Street	

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Aukerman	Michele	A	

Title	Consulting Firm Name
Project Engineer	Uni-Tec Consulting Engineers, Inc.

Mailing Address Line 1	Mailing Address Line 2
2007 Cato Avenue	

Address Last Line – City	State	ZIP+4	Country
State College	PA	16801	Centre

Email	Phone + Ext.	FAX
maa@uni-tec.com	814-238-8223, ext 360	814-238-7808

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by DEP. Incomplete plans may be ***denied*** unless the municipality is clearly requesting an advisory review.
_____	i	1. **Table of Contents**
		2. **Plan Summary**
_____	2	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - 25 *Pa. Code* §71.21(a)(7)(i)).
_____	2	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference - 25 *Pa. Code* §71.21(a)(7)(ii)).
_____	2	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference - 25 *Pa. Code* §71.21(a)(7)(ii)).
_____	2	D. Identify the municipal commitments necessary to implement the Plan. (Reference - 25 *Pa. Code* §71.21(a)(7)(iii)).
_____	3	E. Provide a schedule of implementation for the project that identifies the ***major*** milestones with dates necessary to accomplish the project to the point of operational status. (Reference - 25 *Pa. Code* §71.21(a)(7)(iv)).
_____	_____	3. **Municipal Adoption:** ***Original***, signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference - 25 *Pa. Code* §71.31(f)) Section V.F. of the Planning Guide.
_____	_____	4. **Planning Commission / County Health Department Comments**: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference - 25 *Pa. Code* §71.31(b)) Section V.E.1 of the Planning Guide.
_____	_____	5. **Publication:** Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30-day comment period. (Reference - 25 *Pa. Code* §71.31(c)) Section V.E.2 of the Planning Guide.
_____	_____	6. **Comments and Responses:** Copies of ***all*** written comments received and municipal response to ***each*** comment in relation to the proposed plan. (Reference - 25 *Pa. Code* §71.31(c)) Section V.E.2 of the Planning Guide.
_____	32	7. **Implementation Schedule:** A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference - 25 *Pa. Code* §71.31(d)) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference - 25 *Pa. Code* §71.21(c)).
_____	_____	8. **Consistency Documentation:** Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 25 *Pa. Code §*71.21.(a)(5)(i-iii). (Reference - 25 *Pa. Code* §71.31(e)). Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan		Item Required
_____	5	**I.**	**Previous Wastewater Planning**
		A.	Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	5	1.	Previously undertaken under the Pennsylvania Sewage Facilities Act (Act). (Reference - Act 537, 35 P.S. §750.5(d)(1)).
_____	6	2.	Has not been carried out according to an approved implementation schedule contained in the plans. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A-D)). Section V.F of the Planning Guide.
_____	6	3.	Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A&B)). Section V.D. of the Planning Guide.
_____	6	4.	Through planning modules for new land development, planning "exemptions" and addenda. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A)).
_____	6	**II.**	**Physical and Demographic Analysis utilizing written description and mapping** (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	6	A.	Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference – 25 *Pa. Code* §71.21(a)(1)(i)).
_____	6	B.	Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference - 25 *Pa. Code* §71.21(a)(1)(ii)).
_____	6	C.	Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems (IRSIS), and areas unsuitable for soil dependent systems. (Reference - 25 *Pa. Code* §71.21(a)(1)(iii)). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference - 25 *Pa. Code* §71.21(a)(1)(iii)).
_____	7	D.	Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference - 25 *Pa. Code* §71.21(a)(1)(iii)).
_____	7	E.	Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference - 25 *Pa. Code* §71.21(a)(1)(ii)).
_____	7	F.	Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference - 25 *Pa. Code* §71.21(a)(1)(vi)). Section V.C. of the Planning Guide.
_____	8	G.	Wetlands-Identify wetlands as defined in 25 *Pa. Code* Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference - 25 *Pa. Code* §71.21(a)(1)(v)). Appendix B, Section II.I of the Planning Guide.

_____	8	**III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs**
		A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:
_____	8	1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(A)).
_____	10	2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's National Pollutant Discharge Elimination System (NPDES) permitted capacity, and the Clean Streams Law permit number. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(A)).
_____	10	3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under 25 *Pa. Code* Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(B)).
_____	11	4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(i & ii)).
_____	11	5. A detailed description of the municipality's operation and maintenance (O & M) requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs (SMPs). (Reference – 25 *Pa. Code* §71.21(a)(2)(i)(C)).
_____	10	6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference - 25 *Pa. Code* §71.21(a)(4)(i & ii)).
_____	N/A	B. Using DEP's publication titled *Act 537 Sewage Disposal Needs Identification* (3800-BK-DEP1949), identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:
_____	_____	1. The types of onlot systems in use. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(A)).
_____	_____	2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Act, the Clean Stream Law or regulations promulgated thereunder. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(B)).
_____	_____	3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and 25 *Pa. Code* Chapter 73 (relating to standards for sewage disposal facilities). (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
_____	_____	4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Act 537 Sewage Disposal Needs Identification* publication. (Reference – 25 *Pa. Code* §71.21(a)(2)(ii)(B)).

5. Detailed description of O & M requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to SMPs. (Reference - 25 *Pa. Code* §71.21(a)(2)(i)(C)).

N/A C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:

1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference – 25 *Pa. Code* §71.71).

2. Quantities of the types of sludges or septage generated. (Reference - 25 *Pa. Code* §71.71).

3. Present disposal methods, locations, capacities and transportation methods. (Reference - 25 *Pa. Code* §71.71).

11 **IV. Future Growth and Land Development**

A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:

11 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)).

11 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – 25 *Pa. Code* §71.21(a)(3)(iv)).

11 3. All limitations and plans related to floodplain and stormwater management and special protection (25 *Pa. Code* Chapter 93) areas. (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)) Appendix B, Section II.F of the Planning Guide.

12 B. Delineate and describe the following through map, text and analysis.

12 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of equivalent dwelling units (EDUs) in development, total number of EDUs currently developed and total number of EDUs remaining to be developed (include time schedule for EDUs remaining to be developed). (Reference - 25 *Pa. Code* §71.21(a)(3)(i)).

12 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference - 25 *Pa. Code* §71.21(a)(3)(ii)). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)).

12 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference - 25 *Pa. Code* §71.21(a)(1)(iv) and (a)(3)(iii)).

13 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference - 25 *Pa. Code* §71.21(a)(3)(iv)).

--public ground/surface water supplies
--recreational water use areas
--groundwater recharge areas
--industrial water use
--wetlands

_____	13		5. Sewage planning necessary to provide adequate wastewater treatment for 5 and 10-year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(3)(v)).
_____	13	**V.**	**Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities**
			A. Conventional collection, conveyance, treatment and discharge alternatives including:
_____	13		1. The potential for regional wastewater treatment. (Reference - 25 *Pa. Code* §71.21(a)(4)).
_____	14		2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(i)).
_____	14		3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)).
_____	14		a. Repair. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(A)).
_____	14		b. Upgrading. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(B)).
_____	14		c. Reduction of hydraulic or organic loading to existing facilities. (Reference - 25 *Pa. Code* §71.71).
_____	14		d. Improved O & M. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(C)).
_____	14		e. Other applicable actions that will resolve or abate the identified problems. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(D)).
_____	16		4. Repair or replacement of existing collection and conveyance system components. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(A)).
_____	16		5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(iii)).
_____	17		6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(ii)(B)).
_____	N/A		B. The use of individual sewage disposal systems including IRSIS systems based on:
_____	_____		1. Soil and slope suitability. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
_____	_____		2. Preliminary hydrogeologic evaluation. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
_____	_____		3. The establishment of a SMP. (Reference - 25 *Pa. Code* §71.21(a)(4)(iv)). See also Part "F" below.
_____	_____		4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference - 25 *Pa. Code* §71.21(a)(4)).
_____	_____		a. Existing technology and sizing requirements of 25 *Pa. Code* Chapter 73. (Reference - 25 *Pa. Code* §73.31-§73.72).
_____	_____		b. Use of expanded absorption areas or alternating absorption areas. (Reference - 25 *Pa. Code* §73.16).
_____	_____		c. Use of water conservation devices. (Reference - 25 *Pa. Code* §71.73(b)(2)(iii)).

N/A C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference - 25 *Pa. Code* §71.64(d)).

1. Treatment and discharge requirements. (Reference - 25 *Pa. Code* §71.64(d)).
2. Soil suitability. (Reference - 25 *Pa. Code* §71.64(c)(1)).
3. Preliminary hydrogeologic evaluation. (Reference - 25 *Pa. Code* §71.64(c)(2)).
4. Municipal, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 *Pa. Code* §71.64(d)). See Part "F" below.

N/A D. The use of community land disposal alternatives including:

1. Soil and site suitability. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
2. Preliminary hydrogeologic evaluation. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)).
3. Municipality, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 *Pa. Code* §71.21(a)(2)(ii)(C)). See Part "F" below.
4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.

N/A E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference - 25 *Pa. Code* §71.21(a)(4)).

1. Commercial, residential and industrial use. (Reference - 25 *Pa. Code* §71.63(e)).
2. Designated conveyance facilities (pumper trucks). (Reference - 25 *Pa. Code* §71.63(b)(2)).
3. Designated treatment facilities or disposal site. (Reference - 25 *Pa. Code* §71.63(b)(2)).
4. Implementation of a retaining tank ordinance by the municipality. (Reference - 25 *Pa. Code* §71.63(c)(3)). See Part "F" below.
5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference - 25 *Pa. Code* §71.63(c)(2)).

N/A F. SMPs to assure the future O & M of existing and proposed sewage facilities through:

1. Municipal ownership or control over the O & M of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference - 25 *Pa. Code* §71.21(a)(4)(iv)).
2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference - 25 *Pa. Code* §71.73(b)(1)).
3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference - 25 *Pa. Code* §71.73(b)(2)).
4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference - 25 *Pa. Code* §71.21(a)(4)(iv) and §71.73(b)(5)) through:
   a. Aggressive pro-active enforcement of ordinances that require O & M and prohibit malfunctioning systems. (Reference - 25 *Pa. Code* §71.73(b)(5)).
   b. Public education programs to encourage proper O & M and repair of sewage disposal systems.
5. Establishment of joint municipal SMPs. (Reference - 25 *Pa. Code*

§71.73(b)(8)).

6. Requirements for bonding, escrow accounts, management agencies or associations to assure O & M for non-municipal facilities. (Reference - 25 *Pa. Code* §71.71).

N/A G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference - 25 *Pa. Code* §71.21(a)(4)).

1. Modification of existing comprehensive plans involving:

a. Land use designations. (Reference - 25 *Pa. Code* §71.21(a)(4)).

b. Densities. (Reference - 25 *Pa. Code* §71.21(a)(4)).

c. Municipal ordinances and regulations. (Reference - 25 *Pa. Code* §71.21(a)(4)).

d. Improved enforcement. (Reference - 25 *Pa. Code* §71.21(a)(4)).

e. Protection of drinking water sources. (Reference - 25 *Pa. Code* §71.21(a)(4)).

2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference - 25 *Pa. Code* §71.21(a)(4)).

3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference - 25 *Pa. Code* §71.21(a)(4)).

4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference - 25 *Pa. Code* §71.21(a)(4)).

17 H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference - 25 *Pa. Code* §71.21(a)(4)).

17 1. Water quality/public health. (Reference - 25 *Pa. Code* §71.21(a)(4)).

17 2. Growth potential (residential, commercial, industrial). (Reference - 25 *Pa. Code* §71.21(a)(4)).

17 3. Community economic conditions. (Reference - 25 *Pa. Code* §71.21(a)(4)).

18 4. Recreational opportunities. (Reference - 25 *Pa. Code* §71.21(a)(4)).

18 5. Drinking water sources. (Reference - 25 *Pa. Code* §71.21(a)(4)).

18 6. Other environmental concerns. (Reference - 25 *Pa. Code* §71.21(a)(4)).

18 **VI. Evaluation of Alternatives**

A. Technically feasible alternatives identified in Section V of this checklist must be evaluated for consistency with respect to the following: (Reference - 25 *Pa. Code* §71.21(a)(5)(i)).

19 1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(A)). Appendix B, Section II.A of the Planning Guide.

19 2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under 25 *Pa. Code* Chapter 94. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(B)). The municipality's recent Wasteload Management (25 *Pa. Code* Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.

19 3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A.

1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A 1251-1376). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(C)). Appendix B, Section II.E of the Planning Guide.

_____ 20 4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(D)). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.

_____ 20 5. **Antidegradation requirements** as contained in 25 *Pa. Code* Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(E). Appendix B, Section II.F of the Planning Guide.

_____ 20 6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(F)). Appendix B, Section II.C of the Planning Guide.

_____ 21 7. **Pennsylvania Prime Agricultural Land Policy** contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(G)). Appendix B, Section II.G of the Planning Guide.

_____ 21 8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(H)). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.

_____ 21 9. **Wetland Protection.** Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(I)) Appendix B, Section II.I of the Planning Guide.

_____ 22 10. **Protection of rare, endangered or threatened plant and animal species** as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(J)). Provide DEP with a copy of the completed *PNDI Manual Project Submission Form*. Also provide a copy of the response letters from the 4 jurisdictional agencies regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.

_____ 22 11. **Historical and archaeological resource protection** under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission (PHMC). (Reference - 25 *Pa. Code* §71.21(a)(5)(i)(K)). Provide DEP with a completed copy of a *Cultural Resource Notice* and a return receipt for its submission to PHMC. Provide a copy of the response letter or review stamp from the Bureau of Historic Preservation (BHP) indicating the project will have no effect on, or that there may be potential impacts on, known archaeological and historical sites and any avoidance and mitigation measures required. Appendix B, Section II.K of the Planning Guide.

22 B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference - 25 *Pa. Code* §71.21(a)(5)(ii)). Appendix B of the Planning Guide.

22 C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference - 25 *Pa. Code* §71.21(a)(5)(iii)).

22-25 D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, O & M and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference - 25 *Pa. Code* §71.21(a)(5)(iv)).

25-29 E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of the plan submission. (Reference - 25 *Pa. Code* §71.21(a)(5)(v)).

30 F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)).

30 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of SMPs. (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)(A)).

30 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a SMP justifying time schedules for each phase. (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)(B)).

30 G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - 25 *Pa. Code* §71.21(a)(5)(vi)(D)).

30 **VII. Institutional Evaluation**

A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:

30 1. Financial and debt status. (Reference - 25 *Pa. Code* §71.61(d)(2)).

30 2. Available staff and administrative resources. (Reference - 25 *Pa. Code* §71.61(d)(2))

30 3. Existing legal authority to:

30 a. Implement wastewater planning recommendations. (Reference - 25 *Pa. Code* §71.61(d)(2)).

30 b. Implement system-wide O & M activities. (Reference - 25 *Pa. Code* §71.61(d)(2)).

30 c. Set user fees and take purchasing actions. (Reference - 25 *Pa. Code* §71.61(d)(2)).

30 d. Take enforcement actions against ordinance violators. (Reference - 25 *Pa. Code* §71.61(d)(2)).

30 e. Negotiate agreements with other parties. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 30 f. Raise capital for construction and O & M of facilities. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 30 B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:

_____ 30 1. Need for new municipal departments or municipal authorities. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 30 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 30 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 30 C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:

_____ 31 1. Incorporation of authorities or agencies. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 31 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 31 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 31 4. Adoption of other municipal sewage facilities plans. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 31 5. Any other legal documents. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ N/A 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.

_____ 31 D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference - 25 *Pa. Code* §71.61(d)(2)).

_____ 31 **VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives**

A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:

_____ 31 1. Existing wastewater disposal needs. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 31 2. Future wastewater disposal needs. (5 and 10 year growth areas). (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 31 3. O & M considerations. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 32 4. Cost-effectiveness. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 32 5. Available management and administrative systems. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 32 6. Available financing methods. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 32 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference - 25 *Pa. Code* §71.21(a)(6)).

_____ 32 B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference - 25 *Pa. Code* §71.21(a)(6))

_____ 32 C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a SMP. (Reference – 25 *Pa. Code* §71.31(d))

_____ 33 **IX. Environmental Report (ER) generated from the UER Process**

_____ 34 A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance (381-5511-111). Include this document as "Appendix A" to the Act 537 Plan Update Revision. ***Note: An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.***

PENNVEST I.D. No. _____

ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

Municipalities that propose to implement their official sewage facilities plan updates with PENNVEST funds must meet 6 additional requirements to be eligible for such funds. See *A Guide for Preparing Act 537 Update Revisions* (362-0300-003), Appendix N for greater detail or contact the DEP regional office serving your county listed in Appendix J of the same publication.

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	34 - separate document	1. Environmental Impact Assessment. (Planning Phase) The UER replaces the Environmental Impact Assessment that was a previous requirement for PENNVEST projects.
_____	22-29	2. Cost Effectiveness (Planning Phase) The cost-effectiveness analysis should be a present-worth (or equivalent uniform annual) cost evaluation of the principle alternatives using the interest rate that is published annually by the Water Resources Council. Normally, for PENNVEST projects the applicant should select the most cost-effective alternative based upon the above analysis. Once the alternative has been selected the user fee estimates should be developed based upon interest rates and loan terms of the selected funding method.
_____		3. Second Opinion Project Review. (Design Phase)
_____		4. Minority Business Enterprise/Women's Business Enterprise (Construction Phase)
_____		5. Civil Rights. (Construction Phase)
_____		6. Initiation of Operation/Performance Certification. (Post-construction Phase)

I/A TECHNOLOGIES

PARTIAL LISTING OF INNOVATIVE AND ALTERNATIVE TECHNOLOGIES

TREATMENT TECHNOLOGIES
Aquaculture
Aquifer Recharge
Biological Aerated Filters
Constructed Wetlands
Direct Reuse (NON-POTABLE)
Horticulture
Overland Flow
Rapid Infiltration
Silviculture
Microscreens
Controlled Release Lagoons
Swirl Concentrator

ENERGY RECOVERY TECHNOLOGIES
Anaerobic Digestion with more than 90 percent Methane Recovery
Cogeneration of Electricity
Self-Sustaining Incineration

SLUDGE TREATMENT TECHNOLOGIES

Aerated Static Pile Composting
Enclosed Mechanical Composting (In vessel)
Revegetation of Disturbed Land
Aerated Windrow Composting

INDIVIDUAL & SYSTEM-WIDE COLLECTION TECHNOLOGIES
Cluster Systems
Septage Treatment
Small Diameter Gravity Sewers
Step Pressure Sewers
Vacuum Sewers
Variable Grade Sewers
Septic Tank Effluent Pump with Pressure Sewers

ACT 537 SPECIAL STUDY PLANNING AREA

EXISTING 60-FOOT RJ CORMAN RAILROAD RIGHT-OF-WAY

EXISTING INFLUENT SEWER

UNNAMED TRIBUTARY TO WARRIOR RUN

50' FLOODWAY

EXISTING OUTFALL STRUCTURE

EXISTING ACCESS ROAD

ADAM STREET

QUEEN STREET

WbA

Hv

WeC

EvB

LEGEND

- SOIL BOUNDARY
- HaB — SOIL TYPES
- EDGE OF STREAM
- EXISTING FENCE
- EXISTING CONTOURS
- EXISTING STORM LINE
- EXISTING SANITARY SEWER LINE
- EDGE OF FLOODWAY
- PROPERTY LINES
- PLANNING AREA

APPENDIX D

VERIFY SCALES
BAR IS ONE HALF INCH ON ORIGINAL DRAWING. 0 1/2
IF NOT ONE HALF INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

DESIGNED BY: XXX | CHECKED BY: XXX | DRAWN BY: JDE | DATE: 02-20-17

REV. DESCRIPTION

UNI-TEC Consulting Engineers Inc.
2007 Cato Avenue
State College, PA 16801
(814) 238-8223 www.uni-tec.com

ENGINEERS SEAL

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY
PENNSYLVANIA

WASTEWATER TREATMENT PLANT
ACT 537 SPECIAL STUDY PLANNING AREA

SCALE 1"=50'

PROJECT NO. 0047043101

SHEET NO. 1

I:\0047043000\CAD\PD\ACT 537\WD\PER\EXISTING SITE PLANNING AREA

I:\0047043000\CAD\PD\ACT 537\WD\PER\BOROUGH MAP

VERIFY SCALES
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DRAWN BY: JDE			
02–20–17			

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ENGINEERS SEAL

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY
PENNSYLVANIA

WASTEWATER TREATMENT PLANT
SEWER AND WATER SERVICE AREA

SCALE
1"=600'

PROJECT NO.
0047043101

SHEET NO.
1

Appendix F
Soil Survey

Map Scale: 1:2,010 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Northumberland County, Pennsylvania
Survey Area Data: Version 9, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 14, 2011—Sep 18, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Northumberland County, Pennsylvania (PA097)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
ArA	Alvira silt loam, 0 to 3 percent slopes	0.2	1.4%
BkB	Berks channery silt loam, 3 to 8 percent slopes	1.9	11.8%
EvB	Evendale cherty silt loam, 3 to 8 percent slopes	1.7	10.2%
Hv	Holly silt loam	2.2	13.6%
WbA	Watson silt loam, 0 to 3 percent slopes	7.6	45.8%
WeC	Weikert channery silt loam, 8 to 15 percent slopes	2.9	17.4%
Totals for Area of Interest		**16.5**	**100.0%**

Appendix G
Wetlands Mapping

U.S. Fish and Wildlife Service
National Wetlands Inventory

PLANNING AREA WETLAND MAPPING

January 11, 2017

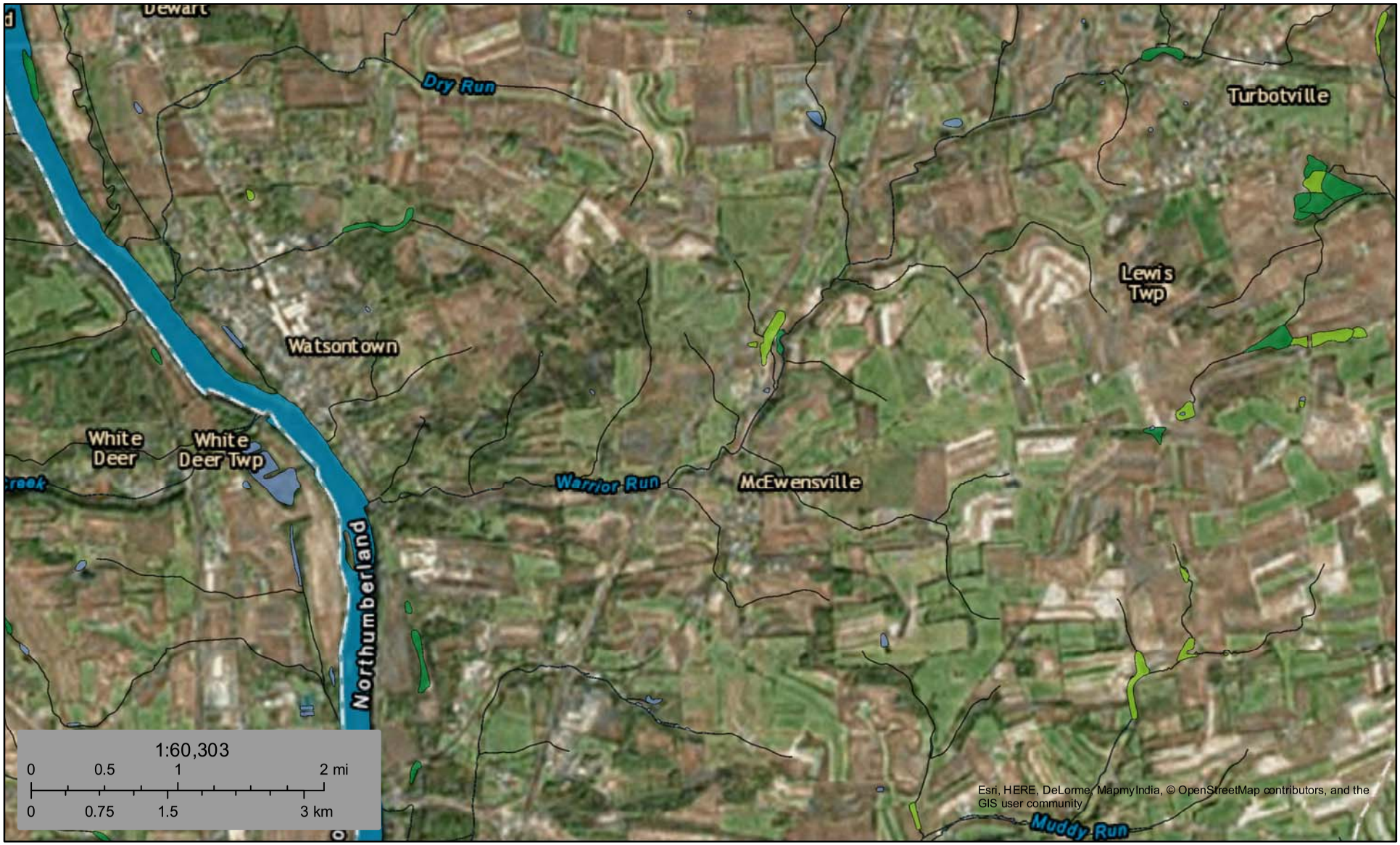
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Alternate A - Connection to MRSA



February 22, 2017

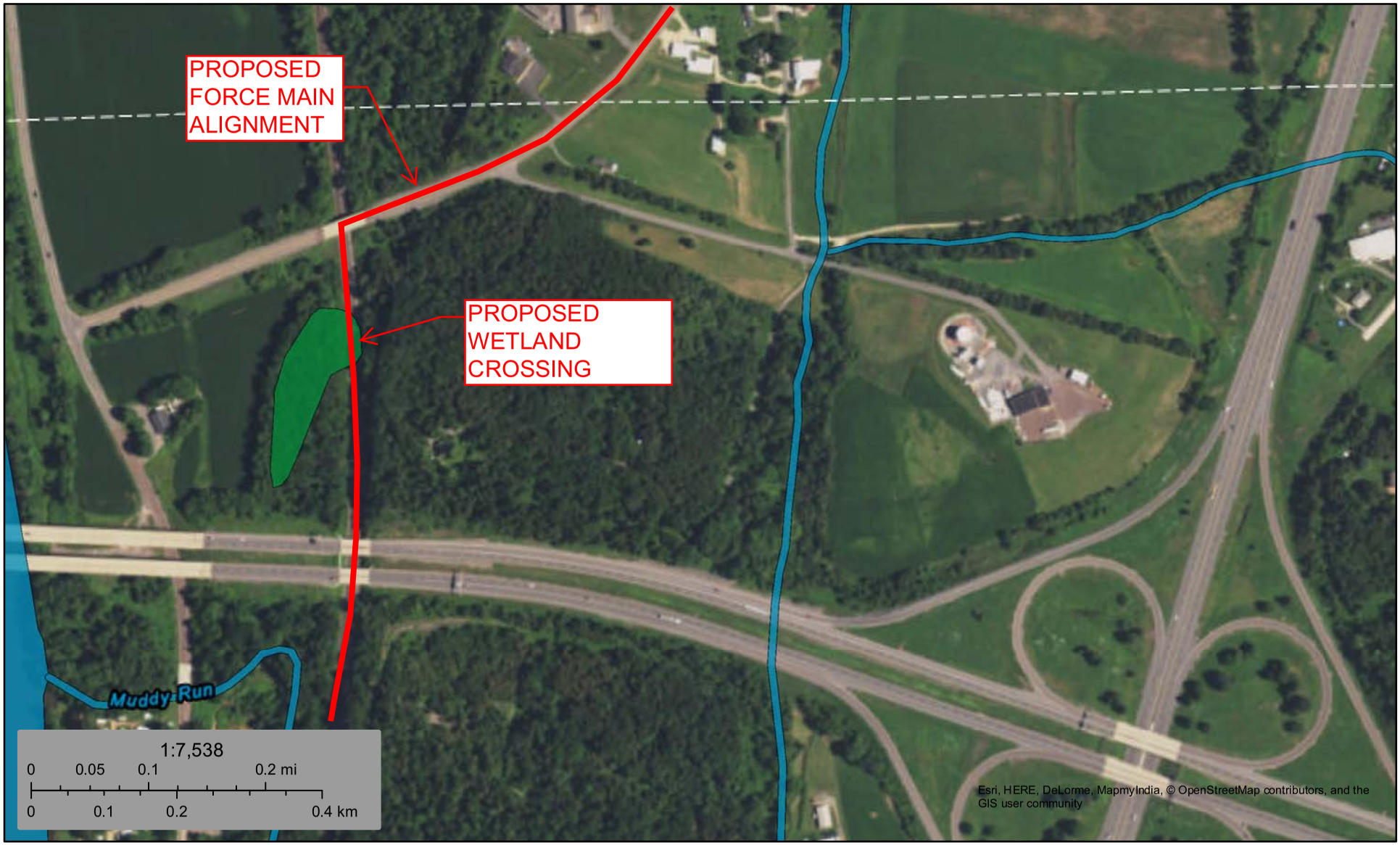
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Alternate A - Wetland Crossing



February 22, 2017

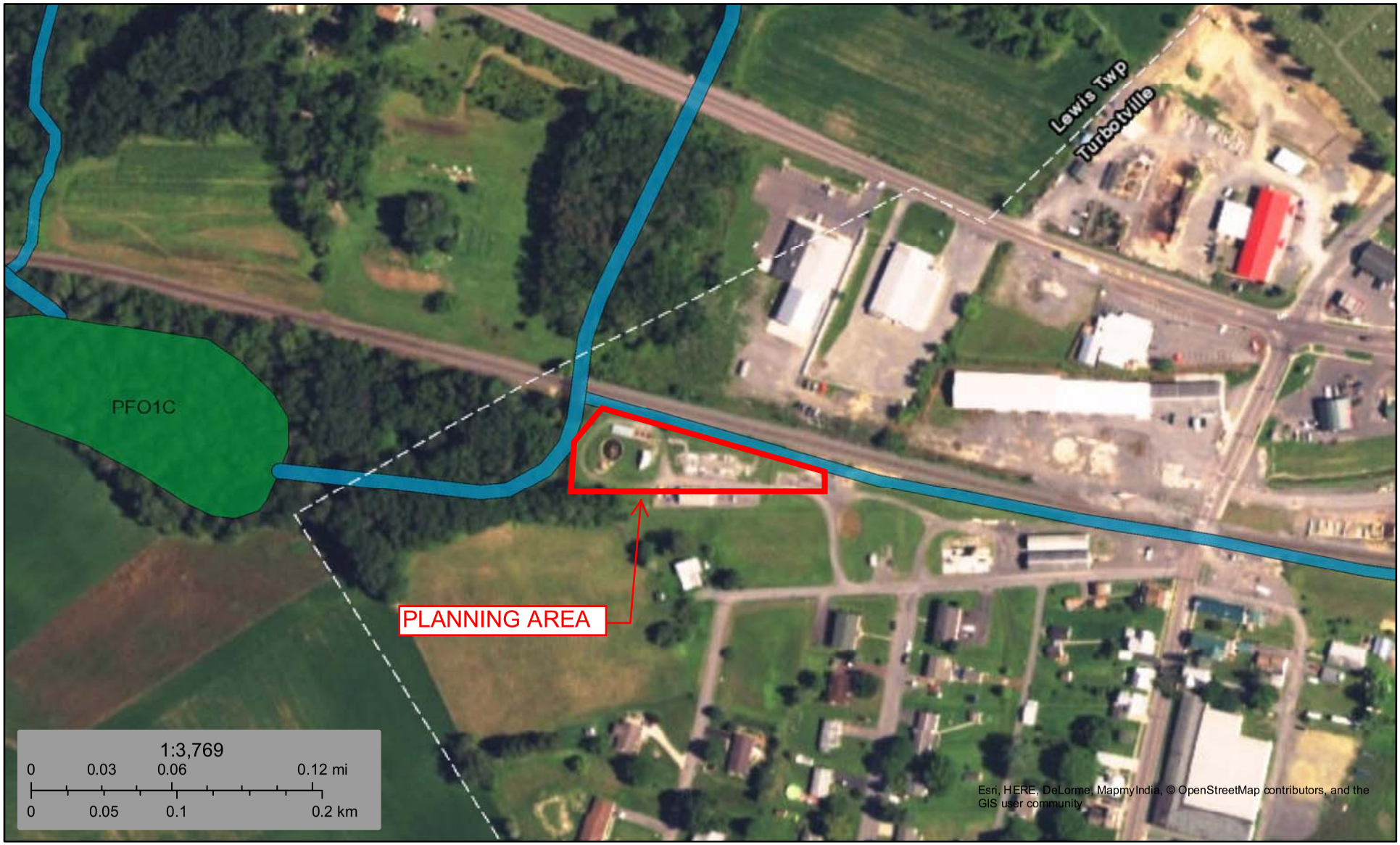
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Alternate B - WWTP Upgrade

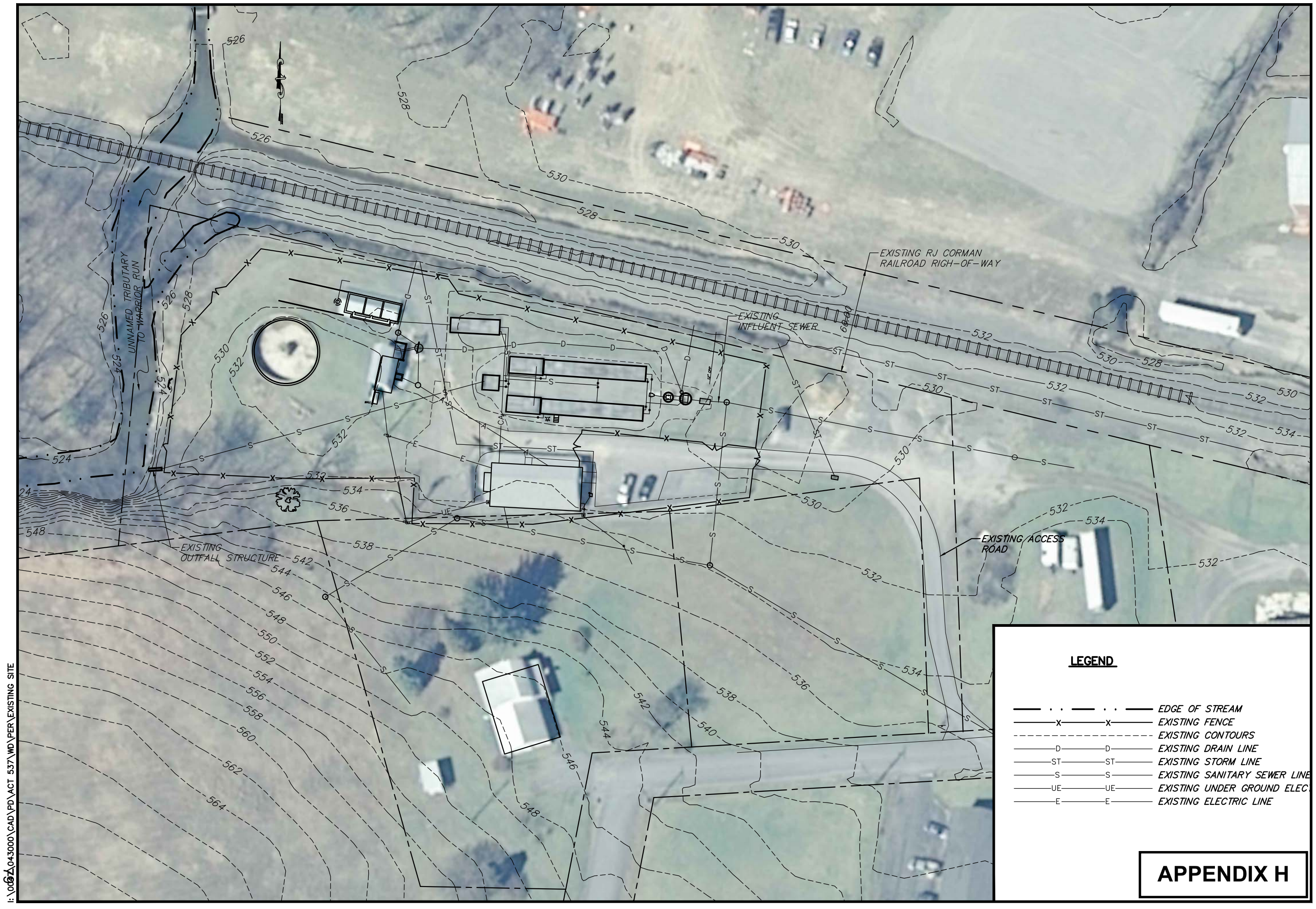


February 22, 2017

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper



I:\0047\043000\CAD\PD\ACT 537\WD\PER\EXISTING SITE

VERIFY SCALES
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XXX			
CHECKED BY:			
XXX			
DRAWN BY:			
JDE			
01-23-17			

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ENGINEERS SEAL

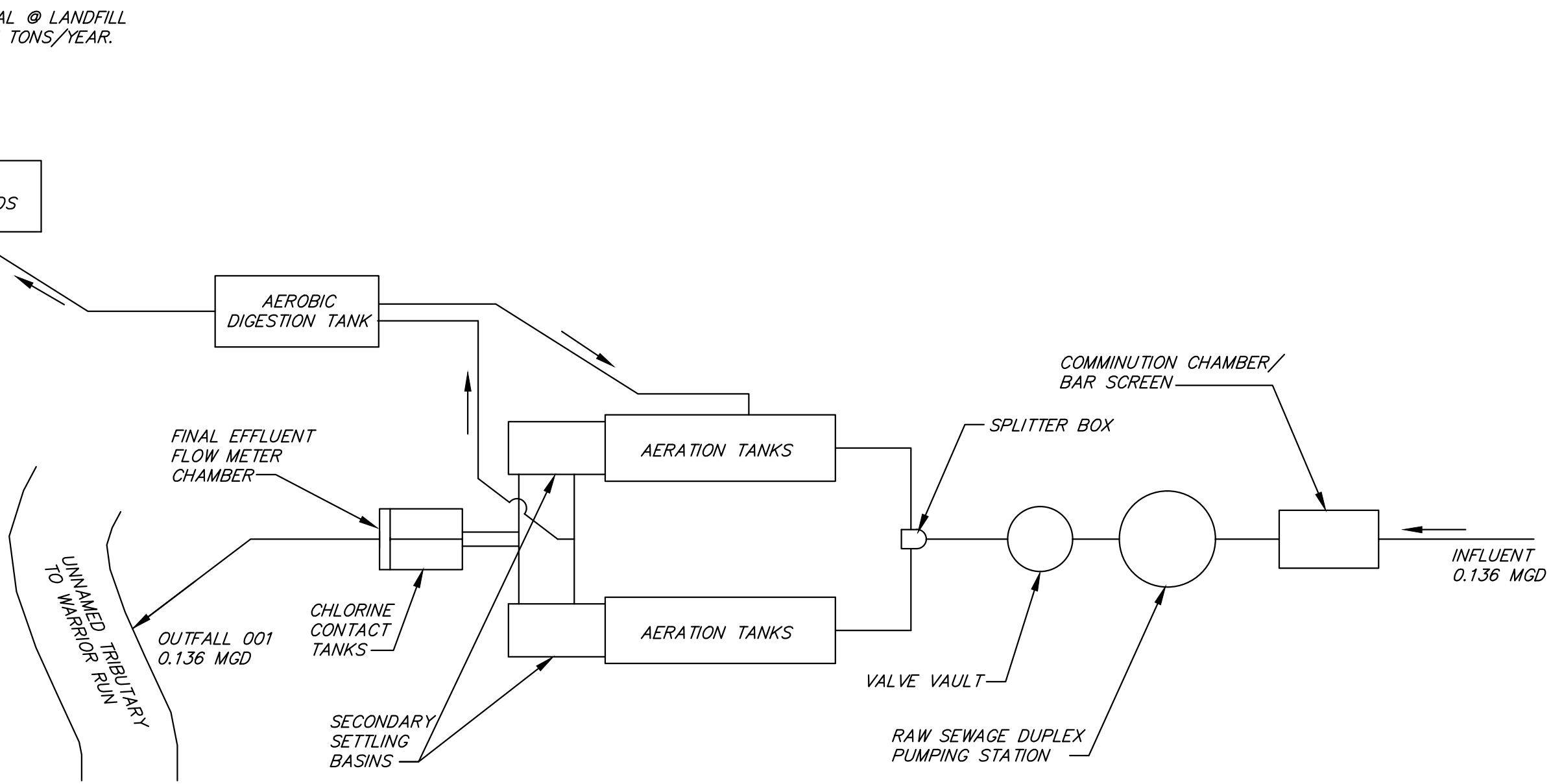
BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY
PENNSYLVANIA

EXISTING WASTEWATER TREATMENT PLANT
EXISTING SITE PLAN

SCALE
1"=50'

PROJECT NO.
0047043101

SHEET NO.
1



APPENDIX I

I:\0047043000\CAD\PD\ACT 537\WD\PER\DIAGRAM.DWG

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XXX			
DRAWN BY:			
JDE			
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NORTHUMBERLAND COUNTY
PENNSYLVANIA

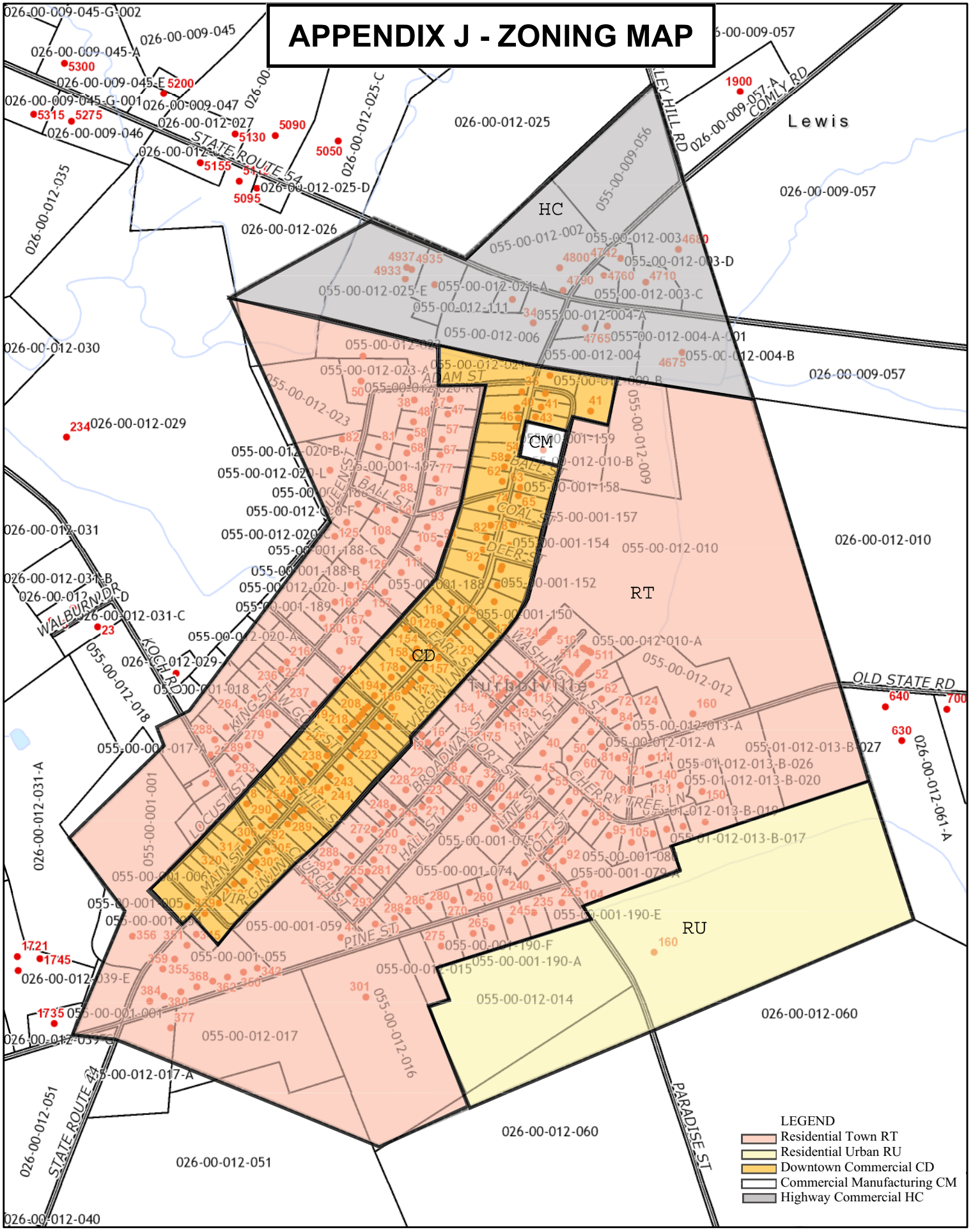
EXISTING WASTEWATER TREATMENT PLANT
SCHEMATIC DIAGRAM

SCALE
NONE

PROJECT NO.
0047043101

SHEET NO.
1

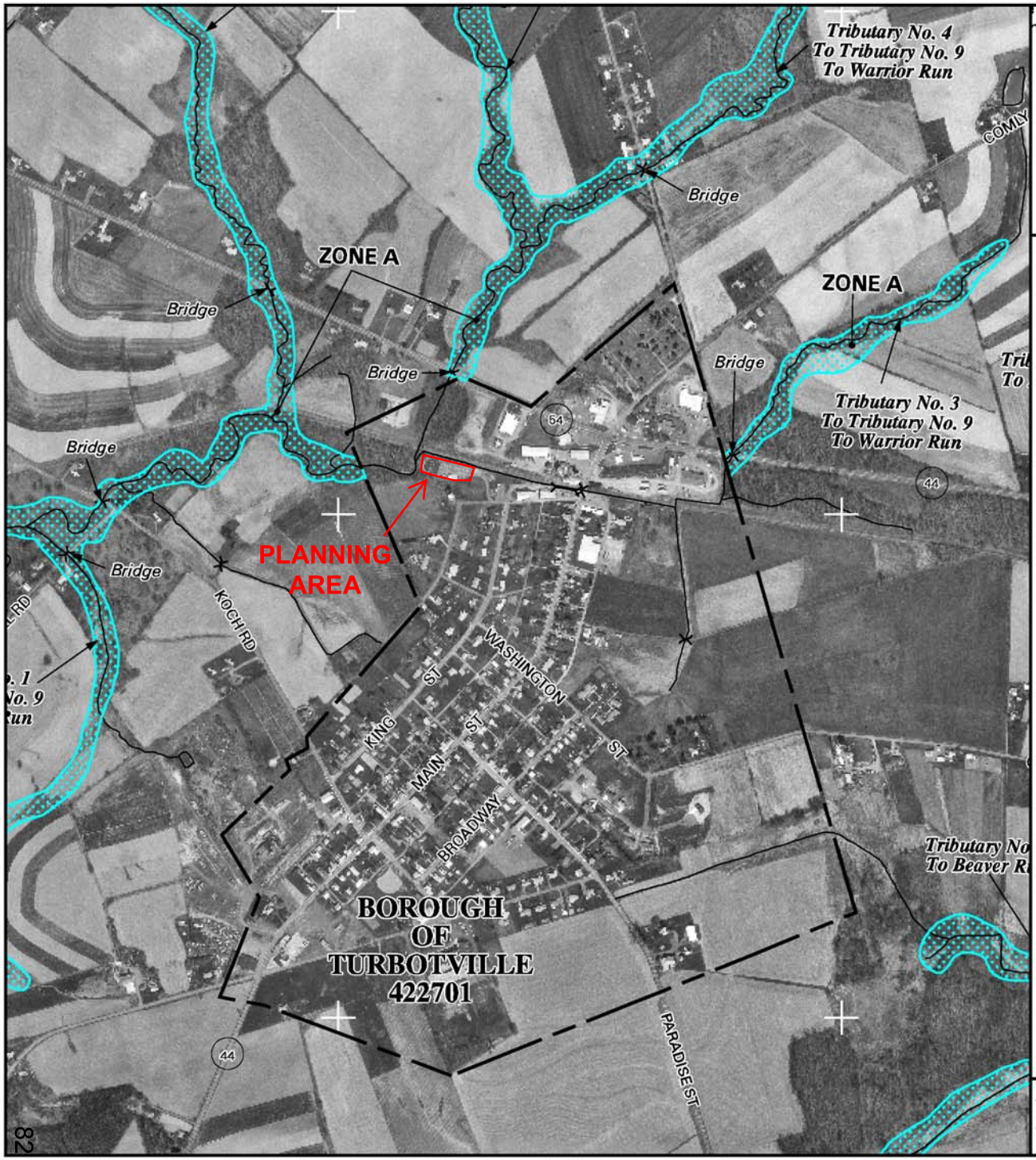
APPENDIX J - ZONING MAP



BOROUGH OF TURBOTVILLE
ZONING MAP

1 inch = 800 feet

COUNTY OF NORTHUMBERLAND
ASSESSMENT BUREAU & GEOGRAPHIC INFORMATION SYSTEMS



82

...if flood insurance is available in this community, cont...
...he National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEE

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110D

FIRM

FLOOD INSURANCE RATE MAP

NORTHUMBERLAND COUNTY, PENNSYLVANIA
(ALL JURISDICTIONS)

PANEL 110 OF 525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEWIS, TOWNSHIP OF	421840	0110	D
DELAWARE, TOWNSHIP OF	421010	0110	D
TURBOTVILLE, BOROUGH OF	422701	0110	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
42097C0110D

EFFECTIVE DATE:
JULY 16, 2008

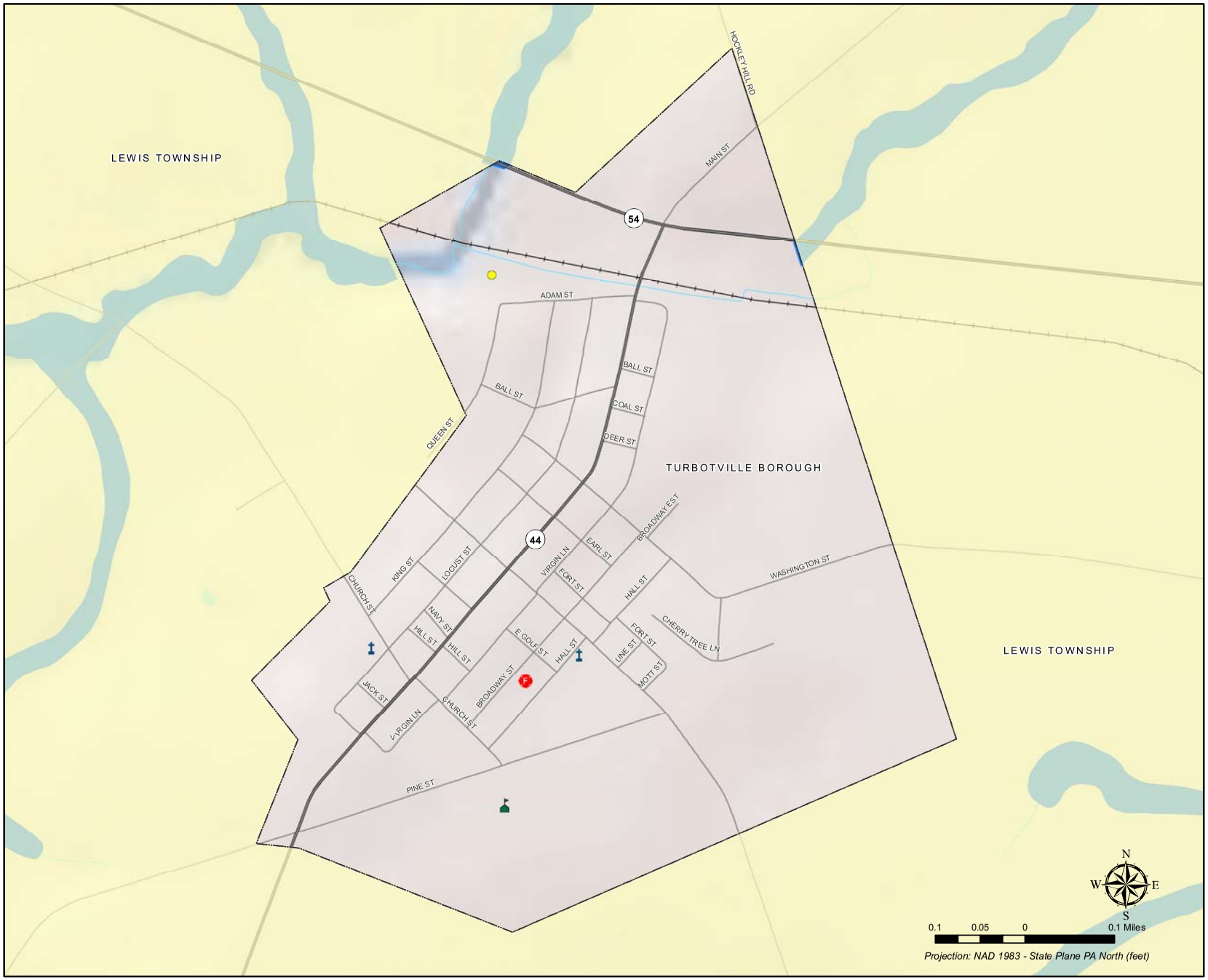
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX K

Northumberland County Hazard Mitigation Plan

Turbotville Borough Flood Vulnerability



LEGEND

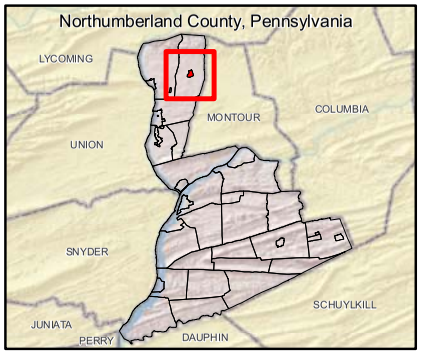
- Addressable Structure in SFHA
- Church
- Fire Department
- Municipal Building
- School
- Interstate
- US Highway
- State Highway
- Local Road
- Railroad
- Stream / River
- Municipality
- County

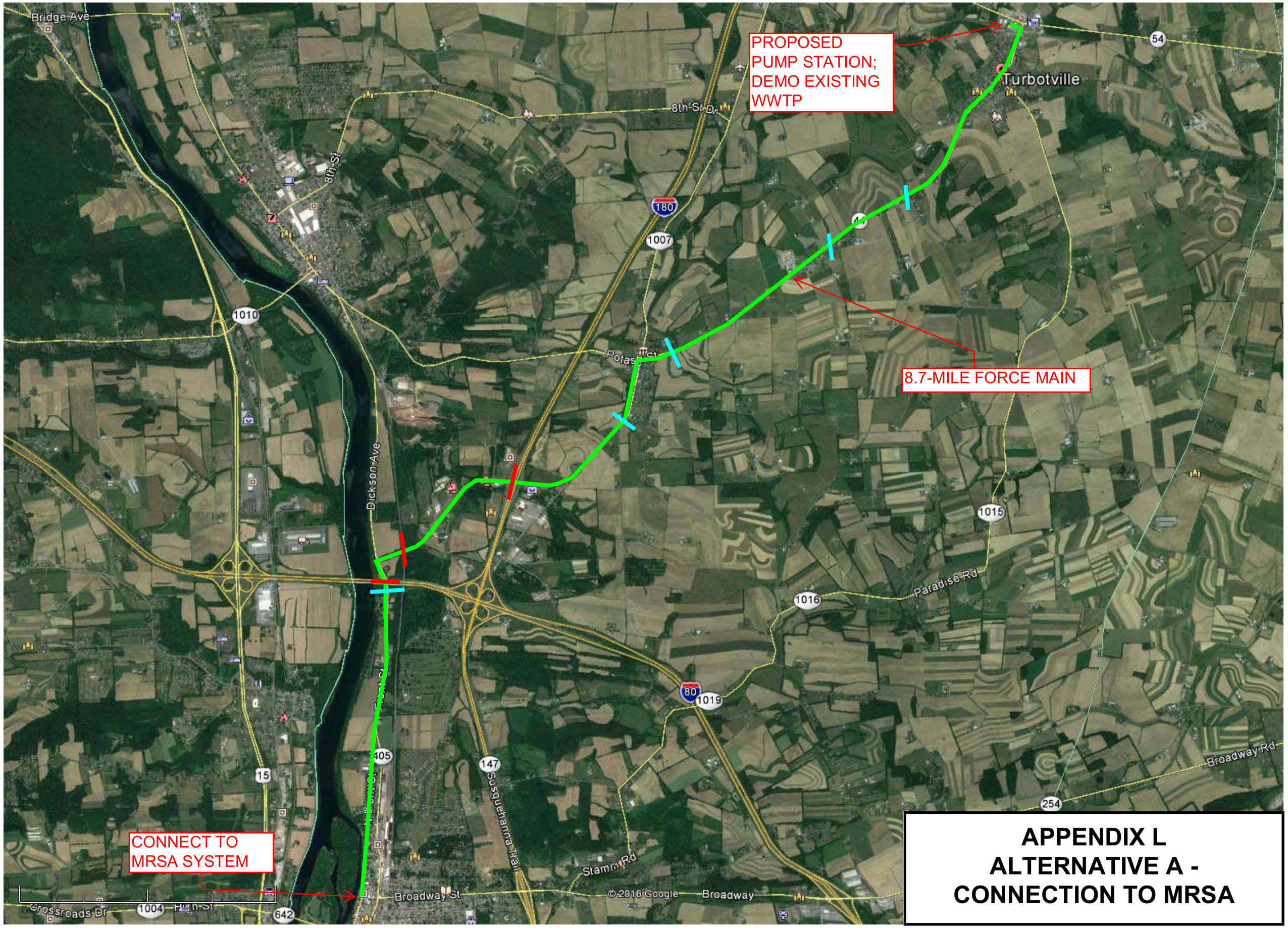
Special Flood Hazard Area (SFHA)

- Approximate 1% Annual-Chance-Flood
- Detailed 1% Annual-Chance-Flood

Source: ESRI; Northumberland County GIS Dept., 2011.

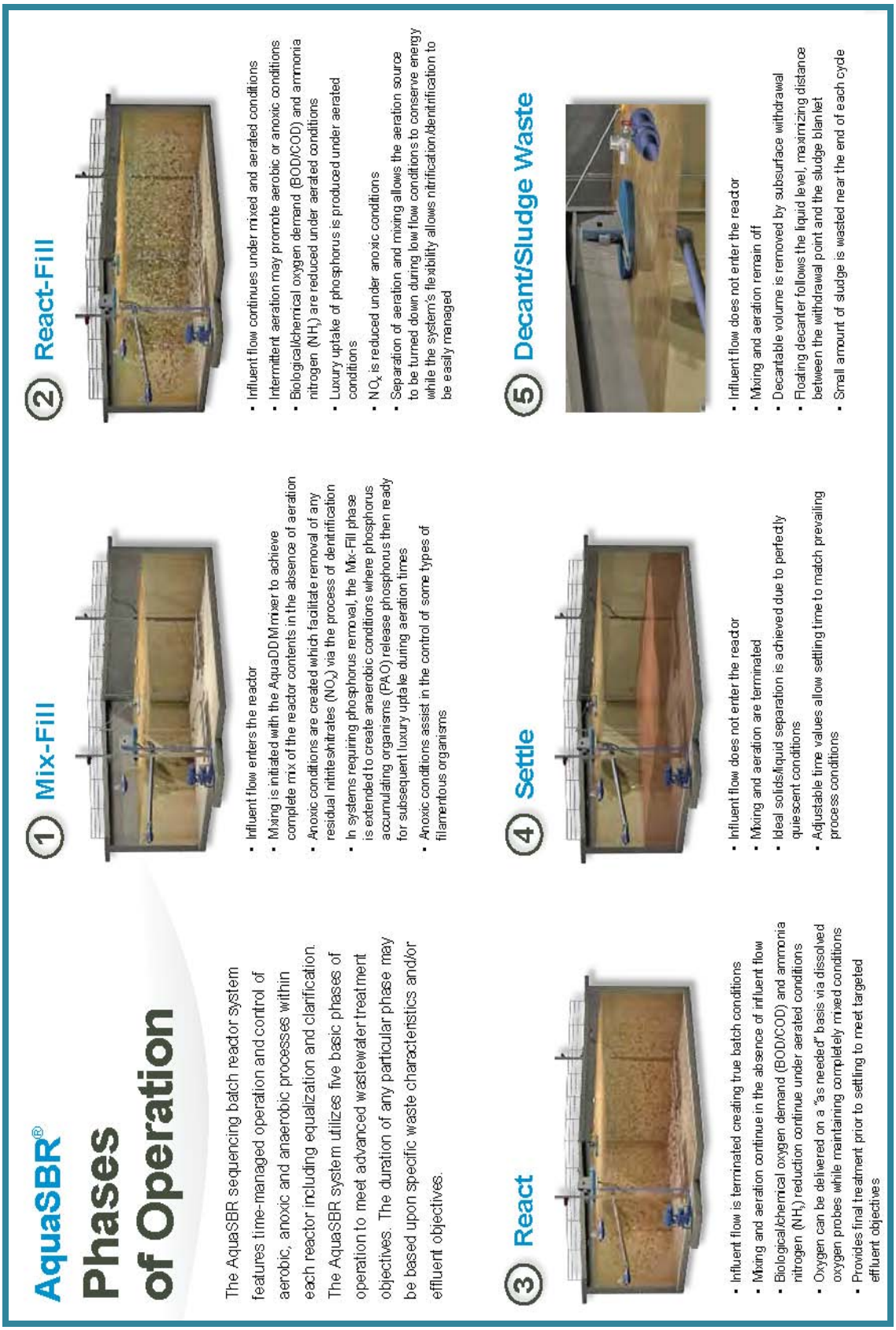
Flood data obtained from FEMA's DFIRM database.
Effective DFIRM Date: 7/16/2008




PROPOSED
PUMP STATION;
DEMO EXISTING
WWTP
8.7-MILE FORCE MAIN
CONNECT TO
MRSA SYSTEM
Bridge Ave
8th St
8th St Dr
Turbotville
54
180
1007
1010
Dickson Ave
1015
Paradise Rd
1016
80
1019
405
147
Susquehanna Trail
Broadway Rd
254
15
Stamm Rd
Broadway St
Broadway
Crossroads Dr
1004
Main St
642
© 2016 Google
Highway or
RR Crossing
Stream
Crossing
APPENDIX L
ALTERNATIVE A -
CONNECTION TO MRSA
Google Earth
miles
km
8
10

APPENDIX M
ALTERNATIVE B - SBR Phases of Operation

Figure 2
Phases of Operation for SBR w/ BNR Capability
Process Technology by Aqua-Aerobic Systems, Inc.



© 2010 Aqua-Aerobic Systems, Inc.

TAX PARCEL
026-00-012-026

UNNAMED TRIBUTARY TO WARRIOR RUN

EXISTING SLUDGE DRYING BEDS TO REMAIN

EXISTING FENCE TO REMAIN

INFLUENT VALVE VAULT

INFLUENT TRIPLEX PUMP STATION AND GRINDER

NORFOLK SOUTHERN RAILROAD

SBR UNIT NO. 2

AEROBIC DIGESTER NO. 2

POST EQUALIZATION BASIN

AEROBIC DIGESTER NO. 1

MECHANICAL BUILDING

SLUDGE DEWATERING BUILDING (ALTERNATE)

50' FLOODWAY

SBR UNIT NO. 1

UV BUILDING

EXISTING OUTFALL TO REMAIN

BACK-UP GENERATOR

EXISTING CONTROL BUILDING TO REMAIN

TAX PARCEL
055-00-012-022

TAX PARCEL
055-00-012-021

EXISTING SEWER TO REMAIN (TYP.)

TAX PARCEL
055-00-012-023

TAX PARCEL
055-00-012-023-A

ADAM STREET

QUEEN STREET

KING STREET

APPENDIX N

I:\0047\043000\CAD\PD\ACT 537\WD\PER\PROPOSED SITE

28

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DATE

REV. DESCRIPTION

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DRAWN BY: JDE
02-20-17

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State College, PA 16801
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ENGINEERS SEAL

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY
PENNSYLVANIA

WASTEWATER TREATMENT PLANT
PROPOSED SITE PLAN

SCALE
1"=50'

PROJECT NO.
0047043101

SHEET NO.
1

Appendix O

Pennsylvania Natural Diversity Inventory (PNDI) Receipt

1. PROJECT INFORMATION

Project Name: **Act 537 Special Study Wastewater Treatment Plant Upgrade**
Date of Review: **1/11/2017 10:46:58 AM**
Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**
Project Area: **0.90 acres**
County(s): **Northumberland**
Township/Municipality(s): **TURBOTVILLE**
ZIP Code: **17772**
Quadrangle Name(s): **MILTON**
Watersheds HUC 8: **Lower West Branch Susquehanna**
Watersheds HUC 12: **Warrior Run**
Decimal Degrees: **41.106490, -76.771729**
Degrees Minutes Seconds: **41° 6' 23.3626" N, 76° 46' 18.2242" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

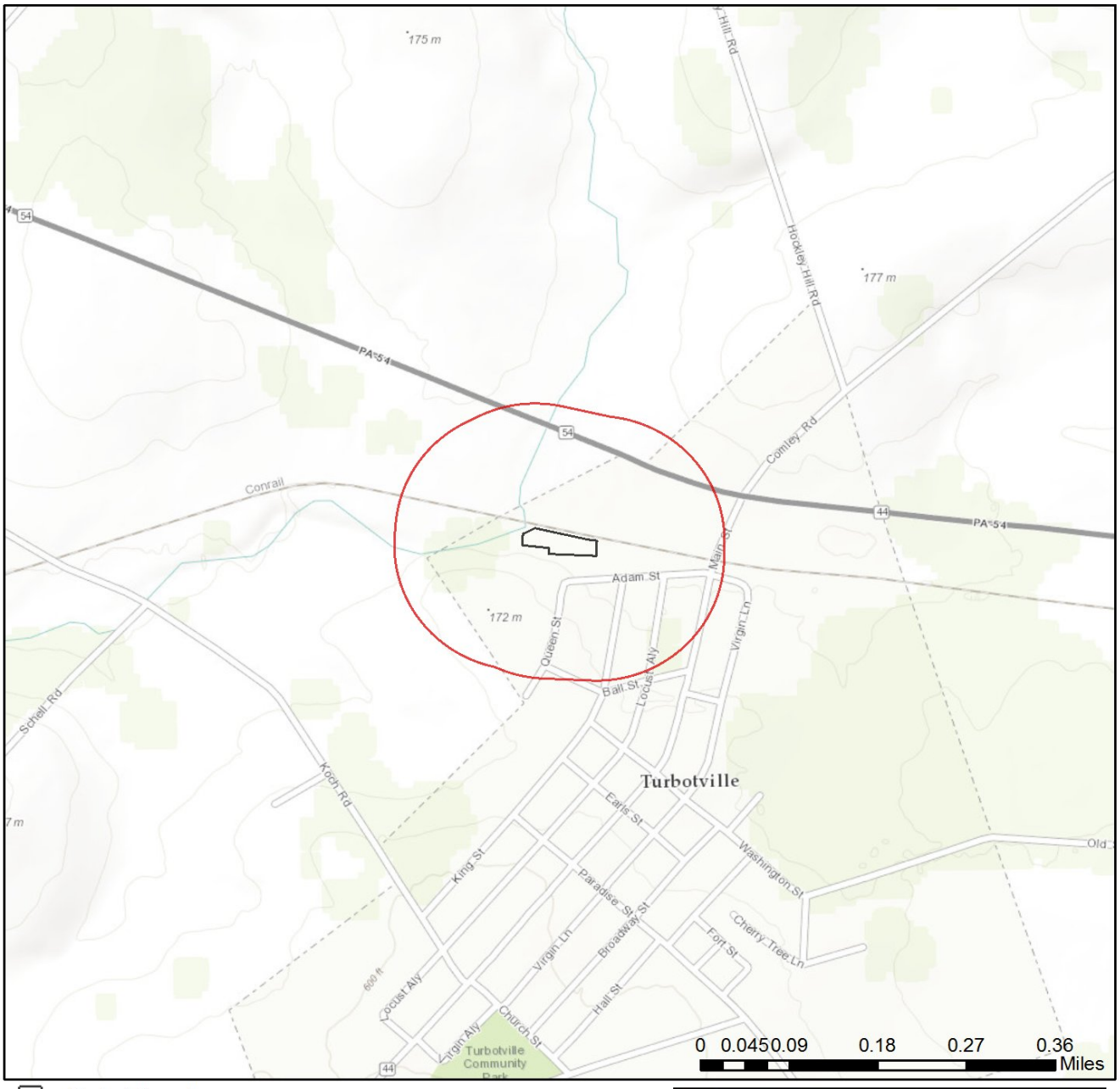
Act 537 Special Study Wastewater Treatment Plant Upgrade

Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user

Act 537 Special Study Wastewater Treatment Plant Upgrade



Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:
No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

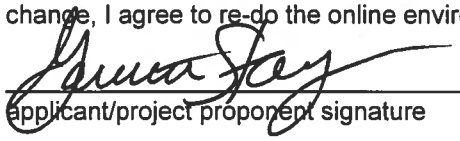
PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Garrett A. Stoy
Company/Business Name: Uni-Tec Consulting Engineers, Inc.
Address: 2007 Cato Avenue
City, State, Zip: State College, PA, 16801
Phone:(814)238-8223 ext. 341 Fax:(814) 838-7808
Email: gas@uni-tec.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.



applicant/project proponent signature

01/11/2017
date

Appendix P
Cultural Resource Notice and PHMC Review

UNI-TEC
Consulting Engineers Inc.

RECEIVED
JAN 17 '17
Pennsylvania Historic Preservation Office

January 11, 2017
File No. 0047-043-000
Certified Mail No. 7015 1660 0000 9116 5187

Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
400 North Street, Second Floor
Harrisburg, PA 17120-0093

RE: Cultural Resource Notice
Act 537 Special Study
The Borough of Turbotville PA

Dear Pennsylvania Historical and Museum Commission:

The Borough of Turbotville is conducting an Act 537 Special Study. The study is to supplement the existing Act 537 in order to construct a new wastewater treatment plant, so that it will meet new effluent standards. The existing plant can be identified on the site plan attached to the file. On the site plan, the boundary of the project is outlined in red which encloses an area of 0.892 acres that will be utilized during the proposed project. The outline represents an existing fence that encloses the existing treatment plant. The proposed wastewater treatment plant will be constructed inside the red boundary on previously disturbed land. The confines of the fence limit the size and location of the project to within the outlined area.

The existing wastewater treatment plant consists of buildings located in the project area that were constructed in 1988. All of the buildings except for the Control Building will be demolished in order to make room for the new water treatment plant.

The remaining items have been attached per request of Section H. of the Cultural Resource Notice:

1. Cultural Resource Notice
2. 7.5' U.S.G.S. map indicating the defined boundary of the proposed activity
3. Return Receipt
4. Demolition Site Plan
5. Proposed Site Plan

ER No. 2017-0589-097-A
The project will have
NO EFFECT
on historic properties
Date 1/24/17 Reviewer

2007 Cato Avenue • State College, PA 16801 • p 814.238.8223 • f 814.238.7808 • www.uni-tec.com

Should you have any questions or require additional information, please do not hesitate to contact me via email: gas@uni-tec.com or phone: (814) 238-8223 ext. 341

Sincerely,
UNI-TEC CONSULTING ENGINEERS, INC.

Garrett A. Stoy
Project Engineer

GAS/gas

Email cc: Michele A. Aukerman, P.E. Uni-Tec Consulting Engineers, Inc.

0120-PM-PY0003 Rev. 5/2006
NOTICE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

DEP USE ONLY
Date Received

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name: The Borough of Turbotville

Street Address: 2 Adam Street

City: Turbotville State: Pennsylvania Zip: 17772

Telephone Number: (570) 649-5476

Project Title: Act 537 Special Study - Wastewater Treatment Plant Upgrade

SECTION B. LOCATION OF PROJECT

Municipality: The Borough of Turbotville County Name: Northumberland DEP County Code: 49

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: **Water Quality Management Part II Anticipated

Anticipated federal permits:

- ☐ Surface Mining
- ☐ Army Corps of Engineers
- ☐ 401 Water Quality Certification
- ☐ 404 Water Quality Permit
- ☐ Federal Energy Regulatory Commission
- ☐ Other: _____

SECTION D. GOVERNMENT FUNDING SOURCES N/A

- ☐ State: (Name) _____
- ☐ Federal: (Name) _____
- ☐ Local: (Name) _____
- ☐ Other: (Name) _____

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application

- ☐ Central Office (Harrisburg)
- ☐ Southeast Regional Office (Norristown)
- ☐ Northeast Regional Office (Wilkes-Barre)
- ☐ Southcentral Regional Office (Harrisburg)
- ☒ Northcentral Regional Office (Williamsport)
- ☐ Southwest Regional Office (Pittsburgh)
- ☐ Northwest Regional Office (Meadville)
- ☐ District Mining Office: _____
- ☐ Oil & Gas Office: _____

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District: Northumberland County Conservation District

Telephone Number, if known: (570) 495-4665

SECTION G. CONSULTANT

Consultant, if applicable: Garrett A. Stoy

Street Address: 2007 Cato Avenue

City: State College State: Pennsylvania Zip: 16801

Telephone Number: (814) 238-8223 ext. 341

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION

REQUIRED

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity. -Acreage stated in Cover Letter

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity. -Attached

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area. -Not Applicable

Attach a narrative description of the proposed activity. -Stated in Cover Letter

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission. -Return Receipt Attached

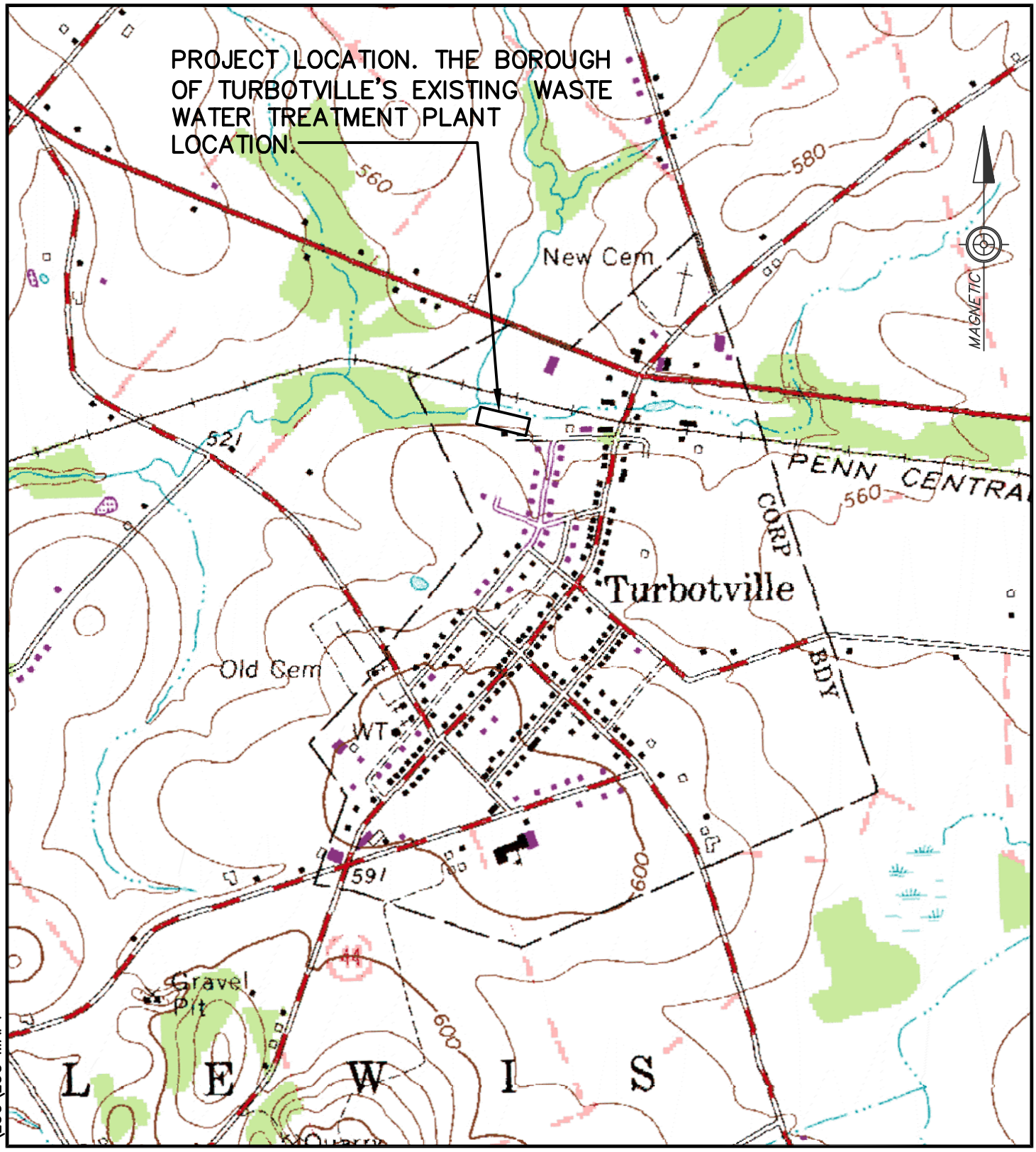
REQUESTED

Attach photographs of any building over 40 years old. - Not Applicable

Attach site map, if available. -Site Map Attached

SECTION I. SIGNATURE BLOCK

Applicant's Signature	Date of Submission of Notice to PHMC
	01/11/2017



I:\0047\043000\CAD\SUP\LOC\LOC MAP1

UNI-TEC
Consulting Engineers Inc.
2007 Cato Avenue
State College, PA 16801
(814) 238-8223 www.uni-tec.com

WASTEWATER TREATMENT PLANT

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY
PENNSYLVANIA

LOCATION MAP

JANUARY 2017

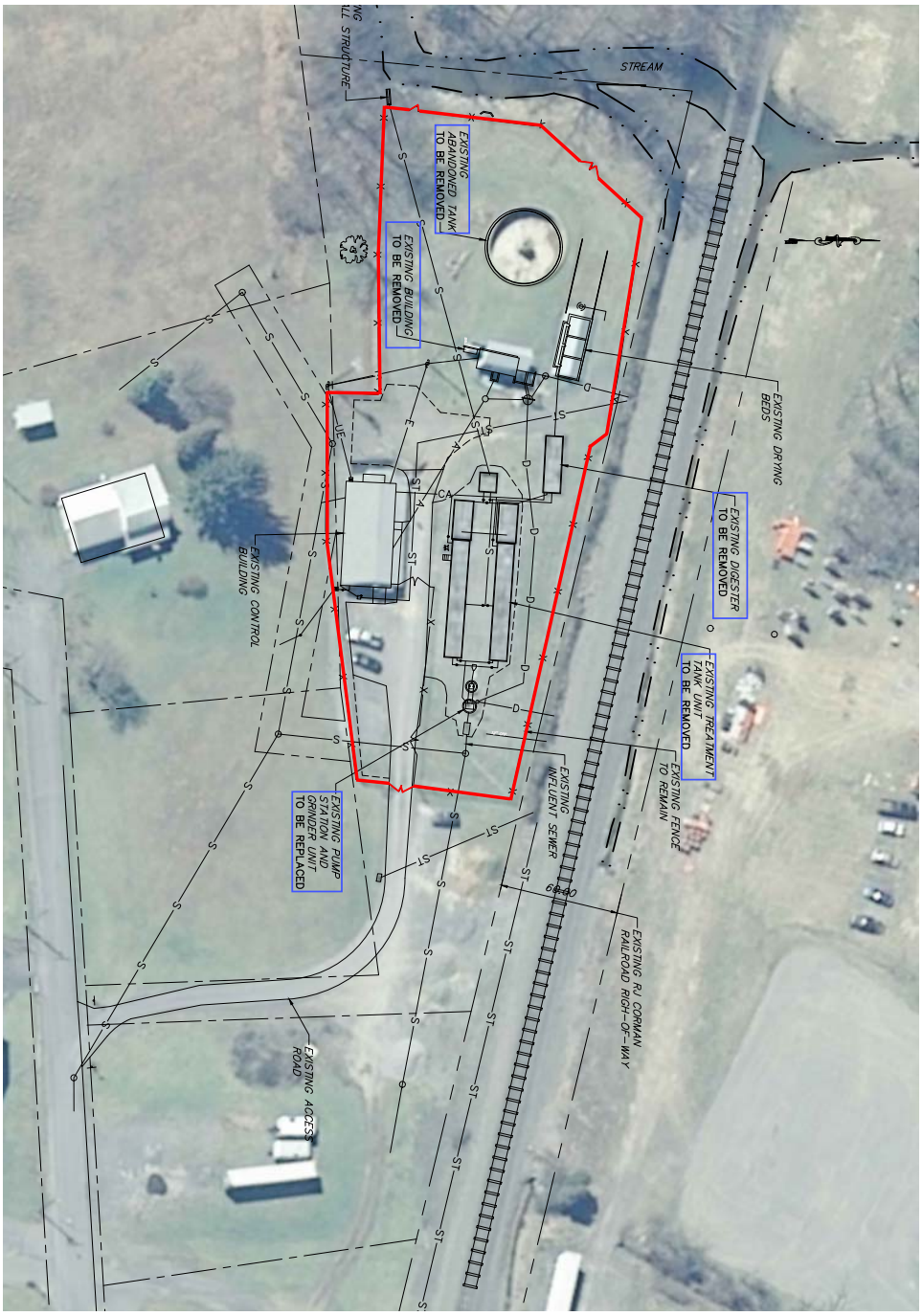
MILTON QUAD

SCALE
1"=1000'

PROJECT NO.
0047043101

SHEET NO.
1

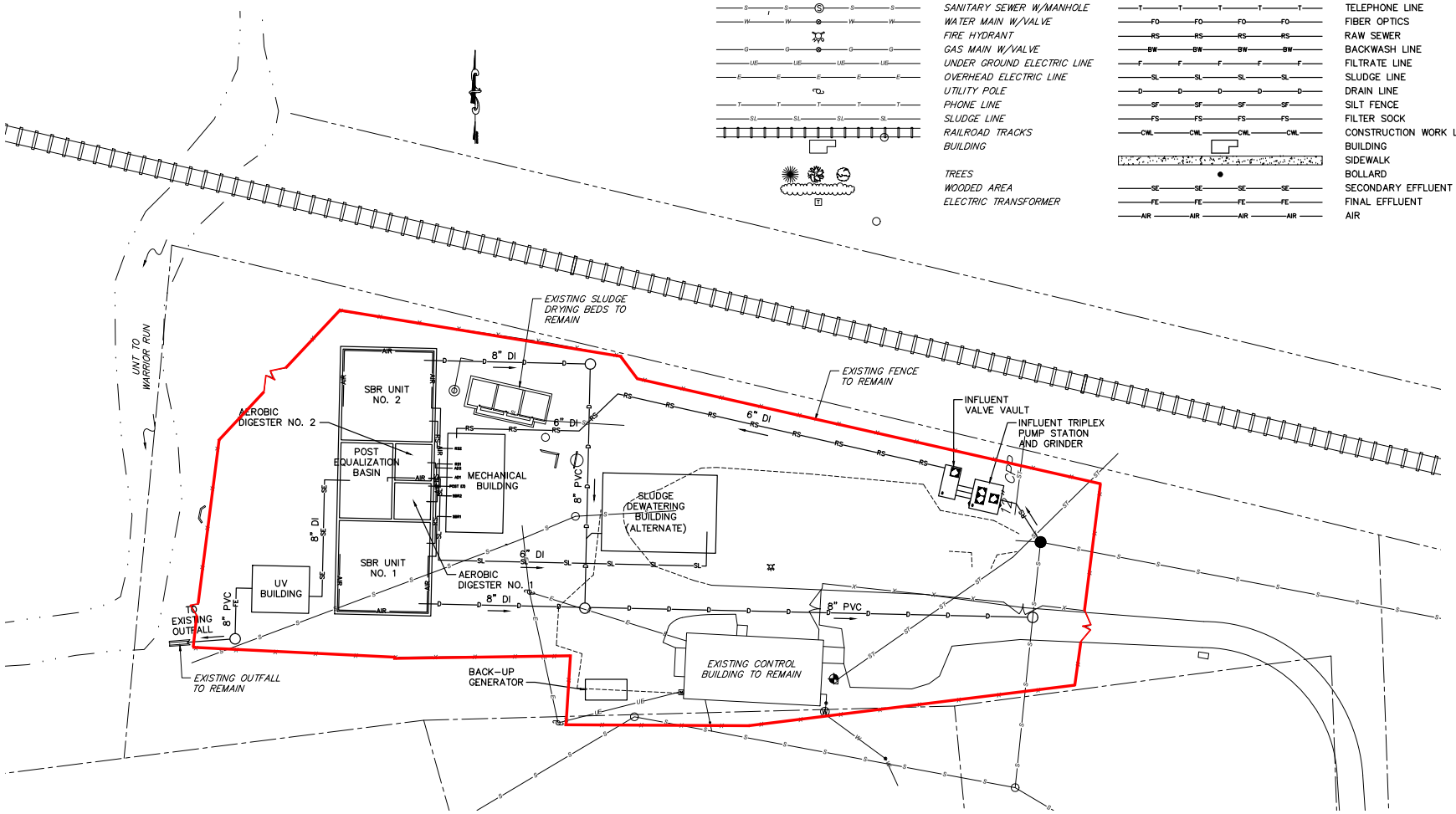
I:\0047\043000\CADD\PD\16-01\WD\C\D1.DWG



DEMOLITION SITE PLAN
SCALE: 1"=30'

SCALE: AS NOTED	BOROUGH OF TURBOTVILLE NORTHUMBERLAND COUNTY – PENNSYLVANIA WASTEWATER TREATMENT PLANT UPGRADE PROJECT DEMOLITION SITE PLAN	ENGINEERS SEAL	UNI-TEC Consulting Engineers Inc. 2007 Cato Avenue State College, PA 16801 (814) 238-8223 www.uni-tec.com	DESIGNED BY: MAA CHECKED BY: MAA DRAWN BY: JLH 10-03-16	REV. DESCRIPTION / DATE	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

PROJECT NO. 0047043000
SHEET NO. D1



VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY.
0 1"

DATE
REV. DESCRIPTION

DESIGNED BY: MAA
CHECKED BY: MAA
DRAWN BY: JLH
10-13-16

UNI-TEC Consulting Engineers Inc.
2007 Cato Avenue
State College, PA 16801
(814) 238-8223 www.uni-tec.com

ENGINEERS SEAL

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY – PENNSYLVANIA
WASTEWATER TREATMENT PLANT
UPGRADE PROJECT

Proposed Site Plan

SCALE
1"=20'
PROJECT NO.
0047043000
SHEET NO.
C6

I:\0047\043000\CADD\PD\16-01WD\C\C6.DWG

Appendix Q

Public Notice of Study Review and Comment Opportunity and Proof of Publication

LEGAL NOTICE

PUBLIC NOTICE is hereby given that the Borough of Turbotville has conducted an *Act 537 Special Study* in accordance with the applicable provisions of the Pennsylvania Sewage Facilities Act of 1966, P.L. 1535, No. 537, as amended and supplemented, generally referred to as "Act 537", and codified in Chapter 71 (Administration of Sewage Facilities Planning Program) of Title 25 (Environmental Protection) adopted August 2, 1971, Sections 71.21 and 71.31, as amended. Pennsylvania municipalities are required to adopt an Official Sewage Facilities Plan (Act 537 Plan) that provides for sewage disposal services adequate to prevent contamination of waters and/or environmental health hazards and to revise said plan whenever it is necessary to meet the sewage disposal needs of the respective municipality.

The purpose of this *Special Study* is to supplement the existing Act 537 Plan of the Borough in order to identify the most cost-effective method to satisfy the upcoming treatment requirements of the Borough's existing sewage service area for the next 20-year planning period. In general, two treatment alternatives were selected for evaluation: (1) abandonment of the Borough's existing wastewater treatment plant and proposed conveyance of sewage to Milton Regional Sewer Authority for treatment, and (2) replacement of the Borough's existing plant with a new plant utilizing a sequencing batch reactor (SBR) system. As no wastewater activities are proposed within or beyond the current wastewater service area of Turbotville Borough, the scope for this *Special Study* was selected based upon the premise that the planning area is the existing wastewater treatment plant. Factors from outside the study area are addressed in regard to their related impact on the current treatment facility and proposed alternative.

Upon review of all factors, the Borough selected the alternative to replace its wastewater treatment plant with SBR technology. The preliminary opinion of potential user rates indicates that monthly rates for this alternative could range, based upon the amount of grant money in the funding received and terms of any loan, between $64.45 and $90.90 for each equivalent dwelling unit (EDU). Key implementation activities and associated schedule are included in the *Act 537 Special Study*. The Study determined that no discharge is proposed to a body of water designated as high quality or exceptional value.

Upon publication of this notice, a ***30-day review and comment period*** is in effect. Copies of the *Act 537 Special Study* are available for review at the office of the Borough of Turbotville, 267 Broadway Street, Turbotville, PA 17772, during normal hours. Interested parties can review the document and direct written comments to the Borough Secretary at Turbotville Borough, P.O. Box 264, Turbotville, PA 17772 within the ***30-day review and comment period***.

Borough of Turbotville

Advertising Receipt

Standard Journal
21 N. Arch Street
Milton, PA 17847

Phone: 570-742-9671
Fax: 570-742-9876

Turbotville Borough
Diane Miller
P.O. Box 264
2 Adam Street
TURBOTVILLE , PA 17772

Acct #: 01100108
Ad #: 00030896
Phone: (570)649-5476
Date: 03/02/2017
Ad taker: jd **Salesperson:**

Sort Line: Act 537 Special Study **Classification:** 001

Description	Start	Stop	Ins.	Cost/Day	Total
01 Standard Journal	03/03/2017	03/03/2017	1	96.20	96.20
inte Internet charge					2.00
NOTE Notary Charge					5.00

Ad Text:
LEGAL NOTICE

PUBLIC NOTICE is hereby given that the Borough of Turbotville has conducted an Act 537 Special Study in accordance with the applicable provisions of the Pennsylvania Sewage Facilities Act of 1966, P.L. 1535, No. 537, as amended and supplemented, generally referred to as "Act 537",
and codified in Chapter 71 (Administration of Sewage Facilities Planning Program) of Title 25 (Environmental Protection) adopted August 2, 1971, Sections 71.21 and 71.31, as amended. Pennsylvania municipalities are required to adopt an Official Sewage Facilities Plan (Act 537 Plan) that provides for sewage disposal services adequate to prevent contamination of waters and/or environmental health hazards and to revise said plan

Payment Reference:

Total:	103.20
Tax:	0.00
Net:	103.20
Prepaid:	0.00
Total Due	103.20

STANDARD JOURNAL

21 ARCH STREET
MILTON, PA 17847

Proof of Publication

Commonwealth of Pennsylvania §
County of Northumberland

Personally appeared before me, the undersigned as Notary Public in and for said County and State.

Joanne Delmonico

who being duly sworn according to the law, doth depose and say that she is the

Classified Advertising Representative

for the Standard Journal, a newspaper of general circulation published at Milton, County of Northumberland, Commonwealth of Pennsylvania, which was established January 23, 1890, and that a notice, copy of which is hereto attached, was published in said Standard Journal on

.....3/3/17.....

that affiant is not interested in the subject matter of the attached notice of advertising, and avers that all of the allegations of the statement as to the time, place, and character of the publication are true.

Joanne Delmonico

Sworn and subscribed before me this
..28th.....day of ..March, 2017...

Karen J. Hendricks
Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Karen J. Hendricks, Notary Public
Milton Boro, Northumberland County
My Commission Expires Jan. 17, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

STANDARD JOURNAL CLASSIFIEDS

LEGAL NOTICE

Sealed proposals will be received by the Township of Delaware, Northumberland County, 1960 Eighth Street Drive, PO Box 203 Watsontown, PA 17777 until 2:00 P.M. prevailing time on April 4, 2017 for the following:

1.	5,000 tons	2RC	Aggregate delivered
2.	500 tons	1B	Aggregate delivered
3.	500 tons	1B washed	Aggregate delivered
4.	2,500	2B	Aggregate delivered
5.	10,000 tons	2A	Aggregate delivered
6.	1,000 tons	2	Aggregate delivered
7.	1,000 tons	AS4	Aggregate delivered
8.	500 tons	Gabion	Aggregate delivered
9.	500 tons	Rip Rap	Aggregate delivered
10.	250 tons	3	Aggregate delivered
11.	250 tons	4	Aggregate delivered
12.	150 tons	Cracker Dust	Delivered
13.	250 tons	AS4 Sandstone	Delivered
14.	250 tons	2 Sandstone	Delivered
15.	250 tons	2B Sandstone	Delivered
16.	250 tons	7 Sandstone	Delivered
17.	10,000 gallons	LS Diesel Fuel	Delivered
18.	10,000 gallons	Heating Oil; 1/2 heating, Off road diesel	1/2 kerosene

All work and material must meet PA Department of Transporation specifications Form 408 dated 1983 and its supplements. Proposals must be upon the forms furnished by the Municipality. The bid must be accompanied by a certified check or bid bond in the amount of 10% of the bid, made payable to the Municipality. The Municipality reserves the right to reject any or all proposals.

2016 AUDITOR'S REPORT
LEWIS TWP. - UNION COUNTY

General Fund

Revenues		
Township Account Balance as of Jan 1, 2016	$630,531	
Taxes	$174,471	
Fines and Forfeits	$1,654	
Interest Earnings	$1,515	
Intergovernmental Revenues	$60,641	
Public Safety	$9,516	
Refunds	$2,214	
Total Revenues & Balance	**$880,542**	**$880,542**
Expenditures		
General Government	$29,438	
Fire	$24,966	
Ambulance	$3,000	
Planning & Zoning	$4,652	
Trash disposal	$7,058	
Highways and Streets	$100,882	
Insurance Premiums	$10,884	
Employer Paid Benefits	$13,322	
Unclassified Operating expenses	$180	
Total Expenditures	**$194,382**	**$194,382**
General Fund Balance 12/31/2016		**$6,86,160**

State Fund Account

Revenues		
State Fund Account Balance as of Jan 1, 2016	$4,753	
Motor Vehicle Fuel Tax	$65,905	
Interest Earnings	$81	
Total Revenues & Balance	**$70,739**	**$70,739**
Expenditures		
Road and Bridge Maintenance	$64,801	
Total Expenditures	**$64,801**	$64,801
State Fund Balance		$5,938

Township Auditors: Joanne Boyer, Richard Troutman, Karen Troutman

Legal Notices

ESTATE NOTICE

Notice is hereby given that Letters of Testamentary on the Estate of JOHN M. VOUGHT, JR, a/k/a JOHN MARX VOUGHT, JR., late of 305 Tressler Blvd, Lewisburg, Union County, East Buffalo Township, Pennsylvania 17837, deceased, have been granted to the undersigned. All persons indebted to said estate are requested to make payment and those having claims against the same to present them for settlement to:

Joseph M. Vought
20953 Cherokee Terrace
Sterling, VA 20165

PETER L. MATSON, J.D.
Peter L. Matson, P.C.
222 Market Street
Lewisburg, PA 17837
(570) 523-3285

NOTICE

Notice is hereby given that Lewisburg Area School District is requesting proposals for Contracted School Bus Transportation. Proposals are due Friday March 31, 2017 at 3:00pm. Please visit www.lasd.us for RFP information.

LEGAL NOTICE

PUBLIC NOTICE is hereby given that the Borough of Turbotville has conducted an Act 537 Special Study in accordance with the applicable provisions of the Pennsylvania Sewage Facilities Act of 1966, P.L. 1535, No. 537, as amended and supplemented, generally referred to as "Act 537", and codified in Chapter 71 (Administration of Sewage Facilities Planning Program) of Title 25 (Environmental Protection) adopted August 2, 1971, Sections 71.21 and 71.31, as amended. Pennsylvania municipalities are required to adopt an Official Sewage Facilities Plan (Act 537 Plan) that provides for sewage disposal services adequate to prevent contamination of waters and/or environmental health hazards and to revise said plan whenever it is necessary to meet the sewage disposal needs of the respective municipality.

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Upon review of all factors, the Borough selected the alternative to replace its wastewater treatment plant with SBR technology. The preliminary opinion of potential user rates indicates that monthly rates for this alternative could range, based upon the amount of grant money in the funding received and terms of any loan, between $64.45 and $90.90 for each equivalent dwelling unit (EDU). Key implementation activities and associated schedule are included in the Act 537 Special Study. The Study determined that no discharge is proposed to a body of water designated as high quality or exceptional value.

Upon publication of this notice, a **30-day review and comment period** is in effect. Copies of the Act 537 Special Study are available for review at the office of the Borough of Turbotville, 267 Broadway Street, Turbotville, PA 17772, during normal hours. Interested parties can review the document and direct written comments to the Borough Secretary at Turbotville Borough, P.O. Box 264, Turbotville, PA 17772 within the **30-day review and comment period.**

Borough of Turbotville

TRUCK DRIVER

Must have CDL Class A with Hazmat
3 Years Clean Driving Record
and 2 Years Experience

Hauling Liquid Asphalt
Seasonal (Construction Work)

Apply at H.L. Klose & Sons
265 Mulberry St., Mifflinburg, PA 17844
No Phone Calls Please

Lost and Found

FOUND DOG

This little dog was found on 2/24 in a rural area of Montandon. Owner should call Haven to Home at 570-884-5067 and be able to provide identifying information.

Adoption

Adopt:

A loving married couple long to adopt infant. Will provide a loving home, sensitivity and endless love. Expenses paid. Please call Diane & George 888-250-3557

Help Wanted

CAREGIVERS

Keystone Care First Home Health Care Agency is looking for caregivers in the Sunbury/Norry area, 2nd & 3rd shifts area, Mifflinburg area 3rd shift. SIGN ON BONUS call 570-784-2005.

Caretaker's Position available at Union County facility

Experience with general repairs, plumbing, small engine, equipment operation and repairs. Also, required are computer and good people skills. Qualified persons send resume to: Caretakers Position, P. O. Box 131, Williamsport, PA 17703, by March 10, 2017.

Driver wanted for small Turbotville business. Livestock, 4 nights a week & general hauling. CDL Class A. Must be 23 and have 2 years current exp. 570-850-7247

Appendix R

Review Request Letters to Planning Agencies and Proofs of Receipt

UNI-TEC
Consulting Engineers Inc.

March 1, 2017
File No. 0047-043-001
Certified Mail 7016 3010 0001 1696 9169

Turbotville Borough Planning Commission
P.O. Box 264
Turbotville, PA 17772

RE: Act 537 Special Study
Borough of Turbotville

Dear Planning Commission Members:

On behalf of the Borough of Turbotville, please find enclose one (1) copy of the Draft Act 537 Special Study for Turbotville Borough to address future sewage facilities needs at the existing Wastewater Treatment Plant and determine the most cost-effective alternative that is consistent with Local, State, and Federal regulations.

In the Special Study, the Borough has selected the alternative to upgrade its existing Wastewater Treatment Plant.

The Special Study will be publically advertised and available for review and comment during a 30-day public comment period. The Borough welcomes any comments you may have on the Study's proposed impact on zoning, land use, or other concerns. We respectfully request any written comments on the Study be forwarded to the Borough at P.O. Box 264, Turbotville, PA 17772 by **Friday, March 31st**. If you have no comments on the Study, we would appreciate a simple letter stating that fact also be sent to the Borough by this date. Any comments received will be included in the final version of the Special Study prior to submission to the PA Department of Environmental Protection.

Should you have any questions or need additional information, please do not hesitate to contact me at (814) 238-8223, ext. 360 or by email: maa@uni-tec.com.

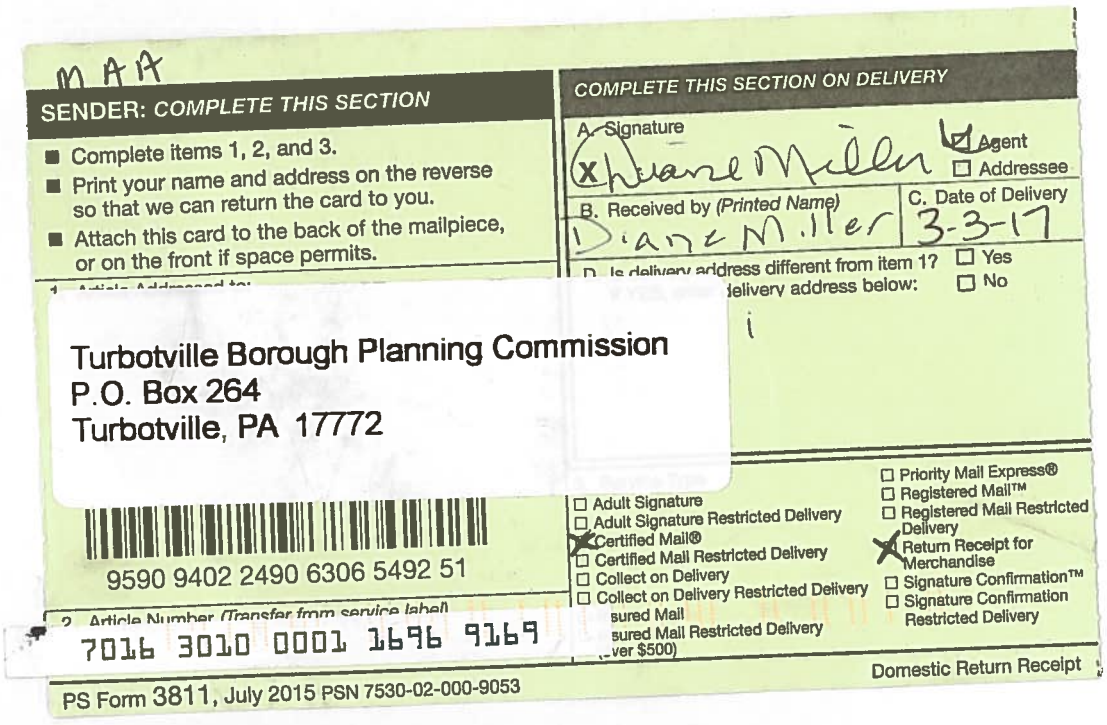
Sincerely,
UNI-TEC CONSULTING ENGINEERS, INC.

Michele A. Aukerman

Michele A. Aukerman, P.E.
Project Engineer

Enclosure

2007 Cato Avenue • State College, PA 16801 • p 814.238.8223 • f 814.238.7808 • www.uni-tec.com



MAA

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Diane Miller ☑ Agent ☐ Addressee

B. Received by (Printed Name) Diane Miller
C. Date of Delivery 3-3-17

D. Is delivery address different from item 1? ☐ Yes ☐ No
If YES, enter delivery address below:

Turbotville Borough Planning Commission
P.O. Box 264
Turbotville, PA 17772

9590 9402 2490 6306 5492 51

2. Article Number (Transfer from service label)
7016 3010 0001 1696 9169

☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
sured Mail
sured Mail Restricted Delivery
ver $500)

☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☒ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

UNI-TEC
Consulting Engineers Inc.

March 1, 2017
File No. 0047-043-001
Certified Mail 7016 3010 0001 1696 9152

Northumberland County Planning Commission
339 Stadium Drive
Sunbury, PA 17801

RE: Act 537 Special Study
Borough of Turbotville

Dear Planning Commission Members:

On behalf of the Borough of Turbotville, please find enclose one (1) copy of the Draft Act 537 Special Study for Turbotville Borough to address future sewage facilities needs at the existing Wastewater Treatment Plant and determine the most cost-effective alternative that is consistent with Local, State, and Federal regulations.

In the Special Study, the Borough has selected the alternative to upgrade its existing Wastewater Treatment Plant.

The Special Study will be publically advertised and available for review and comment during a 30-day public comment period. The Borough welcomes any comments you may have on the Study's proposed impact on zoning, land use, or other concerns. We respectfully request any written comments on the Study be forwarded to the Borough at P.O. Box 264, Turbotville, PA 17772 by **Friday, March 31st**. If you have no comments on the Study, we would appreciate a simple letter stating that fact also be sent to the Borough by this date. Any comments received will be included in the final version of the Special Study prior to submission to the PA Department of Environmental Protection.

Should you have any questions or need additional information, please do not hesitate to contact me at (814) 238-8223, ext. 360 or by email: maa@uni-tec.com.

Sincerely,
UNI-TEC CONSULTING ENGINEERS, INC.

Michele A. Aukerman

Michele A. Aukerman, P.E.
Project Engineer

Enclosure

2007 Cato Avenue • State College, PA 16801 • p 814.238.8223 • f 814.238.7808 • www.uni-tec.com

MAA

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Northumberland County Planning Commission
339 Stadium Dr.
Sunbury, PA 17801

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7016 3010 0001 1696 9152

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

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PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

UNI-TEC
Consulting Engineers Inc.

March 1, 2017
File No. 0047-043-001
Certified Mail 7016 3010 0001 1696 9145

Northumberland County Agricultural Land Preservation Board
c/o Northumberland County Conservation District
441 Plum Creek Road
Sunbury, PA 17801

RE: Act 537 Special Study
Borough of Turbotville

Dear Board Members:

On behalf of the Borough of Turbotville, please find enclose one (1) copy of the Draft Act 537 Special Study for Turbotville Borough to address future sewage facilities needs at the existing Wastewater Treatment Plant and determine the most cost-effective alternative that is consistent with Local, State, and Federal regulations.

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Should you have any questions or need additional information, please do not hesitate to contact me at (814) 238-8223, ext. 360 or by email: maa@uni-tec.com.

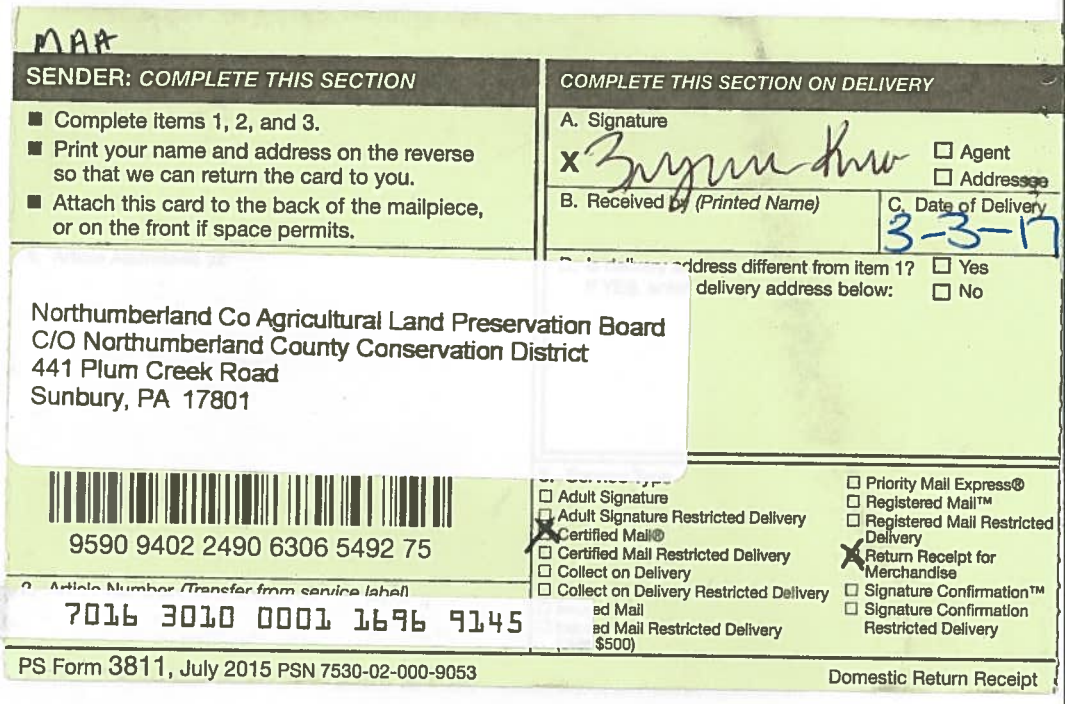
Sincerely,
UNI-TEC CONSULTING ENGINEERS, INC.

Michele A. Aukerman

Michele A. Aukerman, P.E.
Project Engineer

Enclosure

2007 Cato Avenue • State College, PA 16801 • p 814.238.8223 • f 814.238.7808 • www.uni-tec.com



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COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery 3-3-17

☐ Yes

delivery address below: ☐ No

Northumberland Co Agricultural Land Preservation Board
C/O Northumberland County Conservation District
441 Plum Creek Road
Sunbury, PA 17801

9590 9402 2490 6306 5492 75

7016 3010 0001 1696 9145

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PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

Appendix S

Comments Received on Special Study and Borough Responses

Turbotville Borough

267 Broadway Street, PO Box 264 Turbotville, PA 17772
Ph. 570-649-5476 Fax 570-649-6620
turbotville5476@windstream.net

April 3, 2017

To Whom it May Concern:

On behalf of the Borough of Turbotville, I certify that no comments were received from the public following the public notice of the Act 537 Special Study that was advertised on March 3, 2017 in the Standard Journal, a newspaper of general circulation.

Sincerely,

Diane Miller

Diane Miller
Turbotville Borough

Turbotville Borough Planning Commission
PO Box 264
Turbotville, PA 17772

March 27, 2017

Turbotville Borough
P.O. Box 264
Turbotville, PA 17772

Re : Act 537 Special Study

Dear Borough Council:

The Turbotville Borough Planning Commission received a draft copy of the Borough's Act 537 Special Study on March 3, 2017.

The Planning Commission has no comments on the Special Study and the Study's recommendation, Upgrade of the Existing Wastewater Treatment Plant, is consistent with the Municipal Zoning Ordinance of 2014 for the Borough of Turbotville.

If you have any additional questions, please do not hesitate to contact us.

Sincerely,

Lawrence Bieber

Lawrence Bieber
Planning Commission
Chairperson

PLANNING DEPARTMENT

COMMISSIONERS
Richard J. Shoch, Chairman
Samuel J. Schiccatano
Kymberley L. Best

Donald E. Alexander
Director of Planning and Economic Development
Voice: 570-988-4220
Fax: 570-988-4436
EMAIL: don.alexander@norrycopa.net

MAILING ADDRESS
Administration Center
399 Stadium Drive, Suite 207
Sunbury, PA 17801

COUNTY LAND USE LETTER

Received APR 0 3 2017

DATE: March 28, 2017
TO: Michele A. Aukerman, UNI-TEC
FROM: Northumberland County Planning Agency
SUBJECT: Borough of Turbotville, Act 537 Special Study

The County of Northumberland states that it:

_X_ has adopted a county or multi-county comprehensive plan. If yes, please provide date of adoption: April 2005

___ has not adopted a county or multi-county comprehensive plan.

The above referenced project:

_X_ is consistent with the adopted county or multi-county comprehensive plan.

___ is not consistent with the adopted county or multi-county comprehensive plan.

Additional comments (attach additional sheets if necessary):

Submitted by:

Name: Donald E. Alexander
Title: Director of Planning and Economic Development
Address: 399 Stadium Drive
Sunbury, PA 17801
(570)988-4343

Signature:
Date: 03-29-2017

AGRICULTURAL LAND PRESERVATION BOARD

COMMISSIONERS
Richard J. Shoch, Chairman
Samuel J. Schiccatano
Kymberley L. Best

NORTHUMBERLAND COUNTY PENNSYLVANIA

William Geise, Chairperson
Rich Daniels, Vice-Chairperson
Judy Becker, Administrator

Northumberland County Conservation District
441 Plum Creek Road
Sunbury, PA 17801
Phone: 570-495-4665 ext. 305

In Cooperation With

Natural Resources Conservation Service
441 Plum Creek Road
Sunbury, PA 17801
Phone: 570-286-7114 ext. 3

March 31, 2017

Turbotville Borough
PO Box 264
Turbotville, PA 17772

RE: Act 537 Special Study
Borough of Turbotville

Dear Turbotville Borough Council:

Please be advised that the Northumberland County Agricultural Land Preservation Board has reviewed your municipal wastewater project as requested.

We understand that your project will not adversely affect existing agricultural land uses within the project service area. Therefore, I see no conflicts between the Turbotville Borough Act 537 Special Study and the Agricultural Land Preservation Program in relation with the Farmland Protection Policy Act of 1981.

If you have any further questions regarding this project and the Agricultural Land Preservation Program, please feel free to contact me at (570) 495-4665 extension 305. Thank you for taking the time to inform me of this matter.

Sincerely,

Judy Becker

Judy Becker
Administrator
Northumberland County
Agricultural Land Preservation Program

Appendix T

Turbotville Borough Resolution to Adopt Special Study

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY, PENNSYLVANIA

RESOLUTION NO. 4-17

RESOLUTION OF THE TURBOTVILLE BOROUGH COUNCIL,
NORTHUMBERLAND COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, TURBOTVILLE BOROUGH has prepared an *Act 537 Special Study* which serves as a supplement to the Official Sewage Facilities Plan and provides for sewage facilities in a portion of Turbotville Borough, and

The alternative of choice to be implemented is a wastewater treatment plant upgrade incorporating a sequencing batch reactor system and associated process components. The key implementation schedule calls for project permitting and funding applications to be completed by August 2017 and for project construction completion by winter 2018/2019. The detailed schedule of key implementation activities is included in the *Act 537 Special Study*.

WHEREAS, Turbotville Borough finds that the *Act 537 Special Study* described above, conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Council of the Borough of Turbotville hereby adopt and submit to the Pennsylvania Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced *Act 537 Special Study*. The municipality hereby assures the Department that said plan will be implemented as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

Duly adopted April 3, 2017

Attest:

Deanne K. Miller
Secretary

Francis B. Bt
Council President

Mayor

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-11. Please describe PAWC-WD's other planned physical, operational and managerial changes for the Turbotville Borough wastewater system. Also, identify the time frame and costs associated with these changes.

Response: PAWC's anticipated 5 year total capital plan consists of SCADA, security, safety, process improvements, and collection system improvements. The total estimated cost of the 5 year capital plan is approximately $2,500,000. The current PAWC staff present in central Pennsylvania will manage the Turbotville wastewater system, which will be operated by a certified contract operator.

Responsible Witnesses: Michael J. Guntrum PE, PMP / Joseph F. Woodward

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-12. Section 8.1(p) of the Application's APA requires the termination of Turbotville Borough's "Lewis Township Agreement." Please provide a copy of this agreement and explain why it being terminated.

Response: See Attachment A-12.

The Lewis Township Agreement ("Agreement") is dated January 31, 2011, between The Borough of Turbotville ("Borough") and Township of Lewis ("Township"). This Agreement includes as Exhibit A, a Memorandum of Understanding dated December 30, 2009, also between the Borough and Township. Because the parties to this Agreement have yet to act or perform any of their respective obligations under the Agreement, Pennsylvania-American Water Company has chosen not to assume the Agreement at Closing and instead prefers to enter into a new agreement with the Township.

Please also see the Memorandum of Understanding between the Township and Borough, dated April 19, 2018 (see response to A-13), as the Township "determined that it would be in the best interest of Lewis Township if the Schell and Koch area is serviced by Lewis Township's own wastewater treatment plant." These are two reasons for the need to negotiate a new agreement with the Township.

As noted in PAWC's Asset Purchase Agreement ("APA"), all "agreements and extensions must comply with PAWC's current Tariff." (see § 8.1(h) of APA) With this in mind, PAWC will negotiate an agreement with the "Township regarding the provision of wastewater service to the SR54 Corridor in a form that is acceptable to PAWC." (see § 8.1(q) of APA) Lastly, when an agreement is finalized and executed by PAWC and the Township, PAWC will file this new agreement with the PUC (see § 8.1(q) of APA) and seek PUC approval pursuant to § 507 of the Public Utility Code.

Responsible Witness: Keith E. Gabage

Attachment A-12

Inter-Municipal Wastewater Agreement

Between

Borough of Turbotville, Northumberland County, Pennsylvania

and

Township of Lewis, Northumberland County, Pennsylvania

January 2011

Prepared By:
Uni-Tec Consulting Engineers, Inc.
2007 Cato Avenue
State College, PA 16801
File No. 0047-046-000

UNI-TEC
Consulting Engineers Inc.

50 Celebrating 50 Years of Service

WASTEWATER AGREEMENT

THIS WASTEWATER AGREEMENT dated the 31st day of January, 2011, by and between The Borough of Turbotville (hereinafter designated as the "BOROUGH"), Northumberland County, Pennsylvania, on the one hand, and the Township of Lewis (hereinafter designated as the "TOWNSHIP"), Northumberland County, Pennsylvania, on the other hand.

WITNESS TO:

WHEREAS, The TOWNSHIP plans to construct, own, operate, and maintain the TOWNSHIP's Municipal Sewerage System, for rendering sewer service in and for certain areas within the Township; and

WHEREAS, The TOWNSHIP has entered into an "Memorandum of Understanding", herein attached as Exhibit A, with the BOROUGH to purchase a defined amount of Reserved Capacity in the BOROUGH's Treatment Plant following completion of the TOWNSHIP's Municipal Sewerage System Improvement Project, for its present and future use; and

WHEREAS, the TOWNSHIP desires to purchase reserved capacity and share in operating expenses, under the terms hereof, for Wastewater treatment and disposal services through the BOROUGH's Wastewater Treatment Plant; and

WHEREAS, the BOROUGH pursuant to the request of the TOWNSHIP, agrees under the terms hereof to sell reserve capacity to the TOWNSHIP, and to bill the TOWNSHIP, for shared Wastewater treatment and disposal operating expenses, as a single bulk user customer under the terms and conditions set forth herein.

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Article 1 Definitions

Section 1.01 Defined Terms.

The terms defined in this Section 1.01, whenever used or referenced to in this Wastewater Agreement, shall have the respective meanings indicated unless a different meaning clearly appears from the context.

1.01.01 "Available Adjusted Capacity" expressed in gallons per day shall mean the BOROUGH's treatment facility design capacity of 136,000 gallons per day minus the TOWNSHIP's reserved capacity of 15,000 gallons per day equals the BOROUGH's Available Adjusted Capacity of 121,000 gallons per day.

1.01.02 "Average Annual Flow (AAF)" expressed in gallons per day shall mean the total measured flow at the BOROUGH or TOWNSHIP's flow meter(s) during any year divided by the number of days during that calendar year period;

1.01.03 "Average Daily Flow (ADF)" expressed in gallons per hour, shall mean the total measured flow at the BOROUGH or TOWNSHIP's flow meter(s) during any one calendar day divided by twenty-four hours in that period.

1.01.04 "Average Monthly Flow (AMF)" expressed in gallons per day shall mean the total measured flow at the BOROUGH or TOWNSHIP's flow meter(s) during any month divided by the number of days during that calendar month period;

1.01.05 "Billing Period Flow (BPF)" expressed in gallons shall mean the total measured flow during a billing period. For billing purposes, the BOROUGH's BPF is the difference of flow measured at the BOROUGH's flow meter subtracted by combined flow measured at the TOWNSHIP's two (2) flow meters during the billing period, The TOWNSHIP's BPF is based on the sum of flow measured at their combined flow meters during the billing period.

1.01.06 "BOD_5" shall mean biochemical oxygen demand or the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at twenty degrees (20^{o}) Centigrade expressed in milligrams per liter (mg/L), which standard laboratory procedure shall be as set forth in the latest edition of "Standard Methods";

1.01.07 "BOROUGH" shall mean the Borough of Turbotville, Northumberland County, Pennsylvania, a municipal corporation of the Commonwealth, acting by and through its Council Members, including any Person(s) acting in behalf of such Borough;

1.01.08 "BOROUGH's Collector Sewer" shall mean the BOROUGH's sewer that collects Wastewater from lateral or cross-over sewers and connects to trunk sewer, including all ancillary equipment and appurtenances used to intercept Wastewater. The lateral sewer connects Wastewater from facilities users, via wye connections into cross-over (e.g., a connector of two parallel sewer laterals) or collector sewers. Collector sewers flow into trunk sewers.

1.01.09 "BOROUGH's Interceptor Sewer" shall mean the BOROUGH's final sewer main along with all ancillary equipment and appurtenances used to intercept Wastewater from trunk sewers. The interceptor begins at the point where there are no additional connections to the interceptor sewer. The interceptor transports Wastewater directly to the BOROUGH 's Wastewater treatment facilities;

1.01.10 "BOROUGH's Municipal Sewerage System" shall mean the BOROUGH's system of pipes, tanks, conduits, structures or other devices for the collection, transportation, storage, treatment, and disposal of sewage, including the **3,523** feet of cross-over, collector, trunk and interceptor between the TOWNSHIP's point of connection to the BOROUGH's treatment and disposal facilities, as shown on Exhibit B, attached hereto;

1.01.11 "BOROUGH's Trunk Sewer" shall mean the BOROUGH's sewer along with all ancillary equipment and appurtenances used to accept Wastewater from collector sewers. The trunk sewer begins at the point where there are no lateral or cross-over connections to the sewer. The trunk sewer transports Wastewater to the interceptor sewer. Trunk sewer usually does not service individual properties; but receives tributary branches from larger service territory;

1.01.12 "BOROUGH's Treatment Plant" shall mean the existing Wastewater treatment and disposal facilities operated by BOROUGH as of the date of this Wastewater Agreement;

1.01.13 "Capital Recovery Determination Fees" shall mean fees paid by the TOWNSHIP or property owner who desires to, or is required to connect to the BOROUGH's municipal sewage system, as prescribed in General Local Government Code (53 PA. C.S.) - Powers and Duties of Authorities, Act of December. 30th 2003, No. 57. Said fees are enumerated in "Summary of Fees Calculated for Act 57 Capital Recovery Determination, dated August 26th, 2004, as amended, and are herein attached as Exhibit C. Fees shall be based upon the duly adopted fee schedule by the BOROUGH, which is in effect at the time of payment and shall be payable as set forth in this Agreement..

1.01.14 "Categorical Industrial User" shall mean an industrial user that is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subchapter N. If an Industrial User qualifies as a CIU, it is then, under the General Pretreatment Regulations, a Significant Industrial User (SIU).

1.01.15 "Commonwealth" shall mean the Commonwealth of Pennsylvania;

1.01.16 "Day" shall mean the 24-hour period beginning at 12:01 a.m.;

1.01.17 "DEP" shall mean the Department of Environmental Protection of the Commonwealth;

1.01.18 "Fiscal Year" shall mean a twelve (12) month accounting period of the Municipalities as provided by laws of the Commonwealth which, for purposes of this Wastewater Agreement and unless otherwise provided, shall commence on January 1st of each year and end on December 31st of that same year;

1.01.19 "Flow" shall mean the volume of liquid measured at the BOROUGH's flow meter or the TOWNSHIP's flow meters expressed in gallons during a specific period of time;

1.01.20 "GPD" shall mean gallons of flow per day;

1.01.21 "Groundwater" shall mean a supply of freshwater under the earth's surface that forms a natural reservoir;

1.01.22 "Independent" shall mean, with respect to the Certified Public Accountant and Consulting Engineers, a Person who is not a member of the governing body, officer, or employee of TOWNSHIP or BOROUGH or any elected or appointed official or employee of TOWNSHIP or BOROUGH, or which is not a partnership, corporation, or association having a partner, director, officer, member, or substantial stockholder who is a member of the governing body, officer, elected or appointed official, or employee of TOWNSHIP or BOROUGH; provided, however, that the fact that such Person is retained regularly by TOWNSHIP or BOROUGH shall not make such Person an employee within the meaning of this definition;

1.01.23 "Industrial User (Class III)" shall mean any nonresidential user identified in Division A, B, C, E or I of the Standard Industrial Classification Manual. Class III also shall include any user that discharges Wastewater containing toxic or poisonous substances as defined in Section 307 and Section 502 of the Clean Water Act, or any substance(s) causing interference in a Wastewater facility. Class III shall include any nonresidential user who: 1) is subject to national categorical pretreatment standards, 2) has a non-domestic flow of 25,000 gallons or more per average work day, 3) contributes more than 5% of the average dry weather capacity of a Wastewater facility or, 4) is determined by the state regulatory agency or the BOROUGH to have the potential to adversely affect the Wastewater facility;

1.01.24 "Industrial Wastewater" shall mean process water contaminated to such an extent that it cannot be reused and must be decontaminated for reuse, or discharge to a sewer system.

1.01.25 "Infiltration" shall mean water other than Wastewater that enters a sewer system from the ground through such means as defective pipes, pipe joints, connections or manholes. Infiltration does not include, and is distinguished from inflow;

1.01.26 "Inflow" shall mean water other than Wastewater that enters the sewer system from surface through direct connections, such as roof leaders, cellar drains, yard drains, area drains, foundation drains, manhole covers and cross connections between storm sewers and sanitary sewers. Inflow does not include, and is distinguished from, infiltration;

1.01.27 "Interference" shall mean inhibition or disruption of any sewer system, Wastewater treatment process, sludge disposal system, or their operation, which substantially contributes to a violation of applicable discharge permits;

1.01.28 "May" is permissible, "shall" is mandatory;

1.01.29 "Municipalities" shall mean Borough of Turbotville, and Township of Lewis, and their respective municipal authorities, who deliver Wastewater to the BOROUGH's Treatment Plant pursuant to this Wastewater Agreement;

1.01.30 "NPDES" shall mean National Pollutant Discharge Elimination System permit program, whether administered by the EPA or by the Commonwealth of Pennsylvania DEP;

1.01.31 "O & M Charge" shall mean expense charges payable by the TOWNSHIP, each billing period, to the BOROUGH hereunder calculated pursuant to Article 5 hereof;

1.01.32 "On-Lot Sewage Disposal System" shall mean individual sewage systems, community sewage systems and holding tanks as defined in Chapter 73, Standards for Sewage Disposal Facilities, of Title 25, Rules and Regulations, Department of Environmental Protection;

1.01.33 "Peak Hourly Flow" shall mean the maximum flow rate measured at the BOROUGH's flow meter or the TOWNSHIP's flow meters averaged over a period of one hour;

1.01.34 "Peak Instantaneous Flow" shall mean the maximum instantaneous flow rate measured at the BOROUGH's flow meter or the TOWNSHIP's flow meters at any given time;

1.01.35 "Person" or "Persons" shall mean an individual, a partnership, an association, a corporation, a joint stock company, a trust, an unincorporated association, a governmental body, a political subdivision, a municipal corporation, a municipality, a municipality authority, or any other group or legal entity;

1.01.36 "pH" shall mean the logarithm of the reciprocal of the hydrogen ion concentration expressed in grams per liter of solution, as determined by "Standard Methods";

1.01.37 "Pretreatment" shall mean the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in Wastewater before introducing such pollutants into the BOROUGH's Wastewater facility located within the corporate boundaries of Turbotville Borough;

1.01.38 "Project" shall mean the planning, designing, financing, acquisition, and construction of alterations, additions, and improvements to both Municipal Sewerage Systems by the TOWNSHIP, as identified in this Agreement;

1.01.39 "Reserved Capacity" shall mean the hydraulic and organic capacity allocated to the TOWNSHIP. Reserved capacity shall be solely dedicated for the TOWNSHIP's use; and shall not be used by any additional need for capacity by the BOROUGH due to growth within the BOROUGH's sewage service area;

1.01.40 "Reserved Capacity Contribution" shall mean an expenditure, as described in "Capital Recovery Determination Fees" above, which results in the acquisition of actual physical hydraulic and organic capacity available at the BOROUGH's Wastewater Treatment Plant;

1.01.41 "Residential Use (Class I)" shall mean all premises used only for human residency and that are connected to a Wastewater facility;

1.01.42 "Sanitary Wastewater" shall mean Wastewater discharged from the sanitary conveniences (i.e., toilets, urinals, showers, wash sinks, etc.) of dwellings, office buildings, industrial plants, or institutions;

1.01.43 Significant Industrial User" shall mean: a. an industrial user subject to Categorical Pretreatment Standards under 40CFR (Code of Federal Regulations), 403.6 and 40 CFR, Chapter I, subchapter N. Any industry that falls under these categories is considered a SIU whether it has process discharge to the sewer or not. These industries are Categorical Industrial Users (CIUs); b. any industry which discharges an average of 25,000 gallons per day or more of process Wastewater to the sewer system (excluding sanitary wastewater); c. any Industry which is designated as such by the BOROUGH on the basis that the industrial user has a reasonable potential for adversely affecting the operation of the BOROUGH's Municipal Sewerage System, or violating any pretreatment requirement.

1.01.44 "Standard Methods" shall mean the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, Water Environment Federation, and American Water Works Association;

1.01.45 "State" shall mean the Commonwealth of Pennsylvania.

1.01.46 "Surface Water" shall mean water that occurs when the rate of precipitation exceeds the rate at which water may percolate into the soil;

1.01.47 "TSS" shall mean total suspended solids, determined by the latest edition of "Standard Methods";

1.01.48 "TOWNSHIP" shall mean the Township of Lewis, Northumberland County, Pennsylvania, a municipal corporation of the Commonwealth, acting by and through its Board of Supervisors, including any Person(s) acting in behalf of such Township, as appropriate;

1.01.49 "TOWNSHIPS's Municipal Sewerage System" shall mean the TOWNSHIPS's system of pipes, tanks, conduits, structures or other devices for the collection, transportation, storage, and disposal of sewage, including TOWNSHIP's point of connection to the BOROUGH's Municipal Sewerage System, as shown on Exhibit E attached hereto;

1.01.50 "TOWNSHIP's Sewage Service Area" shall mean the service area identified in the TOWSHIP's Act 537 Sewage Facilities Planning, as approved by DEP on October 18th 2010 and shown in Exhibit E.;

1.01.51 "Toxic Pollutant" shall mean any of the pollutants listed as toxic under Section 307(a)(1) of the Clean Water Act;

1.01.52 "Wastewater Agreement" shall mean this document and all modifications, alterations, amendments, and supplements hereto made and delivered in accordance with provisions hereof and at such time constituting part hereof, which term sometimes is referred to in this document by use of such words as "hereto," "hereby," "herein," "hereof," "hereunder," or other descriptive words or phrases having similar import;

1.01.53 "USEPA" shall mean the United States Environmental Protection Agency;

1.01.54 "Wastewater" shall mean domestic sanitary sewage or industrial wastes, as such phrases usually and customarily are used by sanitary engineers and DEP, and as defined in the Wastewater treatment standards promulgated pursuant to Article 7 hereof.

Article 2 Construction and Operation of the TOWNSHIP's Municipal Sewerage System

Section 2.01 Construction and Operation of Municipal Sewerage System.

2.01.01 The TOWNSHIP shall pay all costs and expenses related to the acquisition, construction, operation, and maintenance of the TOWNSHIP Municipal Sewerage System. The TOWNSHIP Municipal Sewerage System shall be designed and constructed in a manner which will not cause the TOWNSHIP to be in violation of this Wastewater Agreement; and which will not cause the BOROUGH to be in violation of any Federal, State or local law or regulation of any governmental authority having jurisdiction over the Treatment Plant.

2.01.02 The TOWNSHIP and the BOROUGH shall each operate and maintain its respective municipal sewage systems in a good and sound operating condition, free of unlawful or unreasonable infiltration or inflow from ground or surface water.

Section 2.02 Connection to the TOWNSHIP Municipal Sewerage System.

2.02.01 TOWNSHIP shall manage and approve connections to its Municipal Sewerage System within the confines of its purchased reserved capacity. Connection to the TOWNSHIP's Municipal Sewerage System shall conform to the requirements of the building and plumbing code or other applicable requirements of the TOWNSHIP or to the procedures set forth in appropriate specifications.

Section 2.03 Connection to the BOROUGH's Municipal Sewerage System.

2.03.01 The TOWNSHIP shall connect to the BOROUGH's sewer as described in Exhibit B attached hereto. Said connection shall conform to the BOROUGH's standard specifications and details. Connection to the BOROUGH's sewer system shall require at least ten (10) days advanced certified written notice. The BOROUGH reserves the right to inspect the connection into their sewer; and to decline connection if said connection fails to comply with the BOROUGH's standard specifications and details, as amended, attached as Exhibit D, and provisions of this Agreement. The BOROUGH's sewer connection inspection costs shall be borne by the TOWNSHIP as incidental cost of their Project described in Section 2.01 of this Agreement.

2.03.02 TOWNSHIP shall deliver to the point of connection all Wastewater originating within the TOWNSHIP's Sewage Service Area as shown on Exhibit E attached hereto, and described in its approved Act 537 Plan.

2.03.03 TOWNSHIP shall not deliver to the point of connection any new Wastewater originating outside of the TOWNSHIP's Sewage Service Area. If contiguous properties outside of TOWNSHIP's Sewage Service Area would require sewer service, said property owner will have to negotiate terms with both BOROUGH and the TOWNSHIP for the use of the TOWNSHIP's Municipal Sewerage System to collect and convey sewage to the BOROUGH's Municipal Sewerage System.

2.03.04 The TOWNSHIP shall provide to the BOROUGH and at the TOWNSHIP's expense, in a form consistent with good engineering practices, a complete set of record construction drawings of the TOWNSHIP's Municipal Sewerage System, in paper and electronic form.

Section 2.04 Cooperation; Sharing of Information.

2.04.01 The TOWNSHIP and the BOROUGH each agree to the extent possible and economically practicable, to cooperate and share pertinent information with the other in facilitating the construction, maintenance or operation of its respective Municipal Sewerage System, and the BOROUGH will provide the TOWNSHIP with any pertinent information regarding cost, quantities of discharge, capacity or other matters relating to the Treatment Plant reasonably deemed necessary by the TOWNSHIP; provided, however, if (a) the Borough proposes a project for its sewer system that would require a substantial capital expenditure, which shall mean an expenditure involving more than $50,000.00, and (b) the proposed capital expenditure is not required to be made by any regulatory authority or by operational necessity, then (1) the Borough shall notify the Township of the proposed project and the plans for the project prior to any work being performed or funding obligations are incurred, and (2) the Township shall have a maximum of thirty (30) days from the receipt of the information from the Borough to evaluate the proposed project and make comments thereon. The Borough shall review the comments, but may proceed with the project at its sole discretion.

2.04.02 At least forty (40) calendar days prior to the date the BOROUGH's Annual Wasteload Management Report (Chapter 94 Report) is due for submittal to DEP, the TOWNSHIP shall submit to the BOROUGH a report detailing information as required in Title 25, Part 1, Subpart C, Article II, Chapter 94, General Requirements 94.11, 94.12.

Article 3 TOWNSHIP to Constitute Bulk Service Customer of BOROUGH; Terms of Agreement

Section 3.01 TOWNSHIP to Constitute Bulk Service Customer of BOROUGH.

3.01.01 The BOROUGH agrees to operate and maintain continuously during the term hereof the Treatment Plant, and any enlargements, additions, improvements and modifications thereto, and to provide TOWNSHIP, as a single, bulk service customer, the following:

a. Wastewater treatment and disposal services in the BOROUGH's Treatment Plant; and,
b. Wastewater transmission services through relevant portions of the BOROUGH's Municipal Sewerage System, throughout the term hereof, as provided for herein.
c. BOROUGH's obligation hereunder shall be deemed to sell the TOWNSHIP dedicated organic and hydraulic capacity in the BOROUGH's Municipal Sewerage System. The aforementioned Reserved Capacity in 1.01.39 shall be for the sole use of the TOWNSHIP.
d. The legal ownership or title of the BOROUGH's Municipal Sewerage System shall remain exclusively in the BOROUGH throughout the term hereof and thereafter. The BOROUGH shall maintain such facilities in good repair and order and in efficient operating condition necessary to meet all laws, regulations and standards prescribed by DEP and any other governmental authority having jurisdiction thereof for purposes of this Wastewater Agreement. The BOROUGH shall ensure that no act or omission of the BOROUGH causes the TOWNSHIP to be in violation of any federal, state or local law, rule, regulation, ordinance or directive.

Section 3.02 Terms of Agreemer

3.02.01 Subject to the covenants and conditions set forth herein, the term of this Wastewater Agreement shall be for a period equal to the economic useful life of the BOROUGH's Treatment Plant, as applicable and appropriate, as determined by the BOROUGH's consulting engineers and the certified public accountants (taking into consideration applicable depreciation, technical obsolescence, requirements of applicable laws and regulations, and the requirements of applicable discharge and operating permits), including any enlargements, additions, improvements, and modifications to any such facilities. Notwithstanding the foregoing, this Agreement shall not terminate before the TOWNSHIP makes the final payment on the financial instrument used to finance construction of the TOWNSHIP's Municipal Sewerage System.

3.02.02 It is understood and agreed by all parties hereto that since the TOWNSHIP has made a Reserved Capacity Contribution, as defined in Section 1.01, Subsection 1.01.40, for use of the BOROUGH's Municipal Sewerage System, including treatment plant capacity, the rates charged to the TOWNSHIP shall include the proportional cost of amortizing any debt incurred by the BOROUGH in the construction repairs and upgrades of it Municipal Sewerage System as described in Section 5.01. The TOWNSHIP's proportional share shall be calculated as described in Section 3.02.04

3.02.03 It is understood and agreed by all parties that, should additional capital expansion to the BOROUGH's Wastewater Treatment Plant be required for the purpose of increasing capacity due to additional growth in Turbotville Borough and not a result of Wastewater delivered from the TOWNSHIP, in excess of its Reserved Capacity, the BOROUGH shall bear all cost associated with said addition or modification.

3.02.04 It is understood and agreed by all parties that, should additional capital additions, improvements, modifications or repairs to the BOROUGH's Wastewater Treatment Plant be required due to stricter effluent mandates or proper operation of treatment plant at its existing capacity, then all cost associated with said additions, improvements, modifications, or repairs shall be borne proportionately by the BOROUGH and the TOWNSHIP. The proportional share shall mean allocated capacity – BOROUGH's allocated capacity as a percentage is ((121,000 gallons ÷ 136,000 gallons) X 100) = 88.97 %; TOWNSHIP's allocated capacity as a percentage is ((15,000 gallons ÷ 136,000 gallons) X 100) = 11.03 %;

Article 4 TOWNSHIP's Reserved Capacity; Measurement of Flow; Debt Service Charge; and Capital Additions and Improvements

Section 4.01 TOWNSHIP's Reserved Capacity in the Treatment Plant.

4.01.01 The TOWNSHIP hereafter, during the term hereof, shall have the contractual right to discharge Wastewater to the extent provided herein into the BOROUGH's Sanitary Sewer and Treatment Plant, in consideration of the payment of the Capital Recovery Determination Fee contribution due hereunder to BOROUGH, as hereinafter provided.

Section 4.02 TOWNSHIP's Reserved Hydraulic and Organic Capacity in the Treatment Plant

4.02.01 The BOROUGH shall receive and treat the TOWNSHIP's Wastewater not to exceed the following maximum flow and mass loading, as measured on a twenty-four hour basis and averaged over a calendar month, at the BOROUGH's treatment plant:

(i) Flow – 15,000 Gallons Per Day;

(ii) BOD_5 – 25.01 Pounds Per Day;

(iii) TSS – 29.27 Pounds Per Day;

or the share of the actual capacity of the BOROUGH's Treatment Facilities attributable to TOWNSHIP's requirements, however, the TOWNSHIP may exceed the above limitations on Flow, BOD_5 and TSS as follows:

(a) The limitations on average monthly flow (AMF) may be exceeded by no more than one hundred seventy five percent (175%) on any two days included in any period of seven consecutive days, provided the TOWNSHIP's average monthly flow is no more than seventy percent (70%) of the TOWNSHIP's actual reserved hydraulic capacity for the remaining five calendar days within the aforementioned seven consecutive day period. Notwithstanding the limitations on flow or the allowable excess therefore stated above, the rate of flow, expressed as the peak hourly flow for any period of three consecutive hours in any twenty-four hour period, shall not exceed 1,641 gallons per hour, based on a 16 hour run-off period and the allowable 175% exceedance of AMF.

(b) The limitations on daily BOD_5 and daily TSS may be exceeded by no more than one hundred thirty five percent (135%) on any two days included in any period of seven consecutive days, provided the TOWNSHIP's daily average BOD_5/TSS is no more than eighty six percent (86%) of the TOWNSHIP's actual reserved organic capacity for the remaining five calendar days within the aforementioned seven consecutive day period.

4.02.02 The TOWNSHIP shall pay its proportionate share of operating expenses of the BOROUGH's Treatment Facilities and of all other facilities used to receive and provide treatment of TOWNSHIP's Wastewater, such share to be calculated as follows:

$Boro_{,Q} = Q_{,gpb} - (Twp_{,Q1} + Twp_{,Q2})$
$Twp_{,Q} = Twp_{,Q1} + Twp_{,Q2}$
$TPC_{,Q} = (Boro_{,Q} \div Q_{gpb}) \times 100$
$BPC_{,Q} = (Twp_{,Q} \div Q_{gpb}) \times 100$

WHERE:
Twp = TOWNSHIP
Boro = BOROUGH
TPC = TOWNSHIP Percent Capacity
BPC = BOROUGH Percent Capacity
$Twp_{,Q}$ *= Township Flow from their multiple Q-meters*
$Boro_{,Q}$ *= Borough Flow*
Q_{gpb} *= Flow, Gallons per Billing Period from WWTP Q-meter*

4.02.03 The result of this calculation shall be the net TOWNSHIP share of operating expenses for each billing period, as set forth in Exhibit F.

4.02.04 For the purpose of trending the TOWNSHIP's organic load contribution to the BOROUGH's treatment facility, the TOWNSHIP, Wastewater shall be sampled alternately from TOWNSHIP's Wastewater sampling devices or sampling procedures, and shall be picked up by an independent certified testing laboratory, acceptable to all parties, for testing of influent BOD_5 and TSS. Such samples shall be taken and tested twice (2) per month for the first six (6) months of the Agreement, then once (1) per month for the next six (6) months, then quarterly for the following year, then bi-annually thereafter on a randomized schedule. This schedule shall be prepared in advance by the independent testing organization, but shall not be disclosed in advance to any of the parties in this Agreement. The TOWNSHIP and the BOROUGH will supply to the testing organization a list of holidays and other non-working days of the year upon which samples will not be taken.

4.02.05 The total cost of tests as identified in Subsection 4.02.04 hereof shall be part of the TOWNSHIP's operating expenses.

4.02.06 Values for BOD_5 and TSS will be used to monitor the TOWNSHIP's organic load contribution. Should the TOWNSHIP exceed its allocated capacity as defined in Subsection 4.02.01, (ii) and (iii), the TOWNSHIP shall take action as prescribed in Section 4.06, Subsection 4.06.02 to remediate said capacity exceedance. However, the results of any tests deemed to be inaccurate may be excluded from use for the purposes of the calculation of the Agreement by mutual Agreement of the parties in writing.

4.02.07 All tests for the determination of BOD_5 and TSS shall be performed on twenty-four hour flow proportional composite samples. If required, samples for the determination of fats, oils, and greases shall be grab samples. The average of the results of separate tests on four grab samples taken approximately six hours apart shall be considered the average concentration of fats, oils and greases for that twenty-four hour period.

4.02.08 If the maximum peak flow at any time exceeds the limits set forth in Subsection 4.02.01 of this Section 4.02, the TOWNSHIP shall submit a plan acceptable to the BOROUGH to reduce maximum flow to be within said limits, which plan shall include definite dates and milestones for achieving the reduction.

4.02.09 Flow through BOROUGH Lines.

(i) TOWNSHIP shall have the right to discharge Wastewater into a connection point of the BOROUGH's Municipal Sewerage System at the agreed hydraulic and organic reserved capacity loading as specified herein. The TOWNSHIP shall at no time discharge Wastewater into any BOROUGH's Municipal Sewerage System not identified within this Agreement.

4.02.10 The TOWNSHIP covenants and agrees that it will not discharge Wastewater into the BOROUGH's Treatment Plant in excess of its Reserved Capacity in the applicable facility, as set forth above, except as may be permitted by BOROUGH hereunder, in writing. The BOROUGH covenants and agrees that it shall not accept any additional flow or connections which would cause the BOROUGH's available adjusted treatment plant capacity to be exceeded, whereas Available Adjusted Capacity is defined in Subsection 1.01.01 of this Agreement, and described herein. The BOROUGH's Treatment Facility Design Capacity minus the TOWNSHIP's Reserved Capacity equals the BOROUGH's Available Adjusted Capacity.

4.02.11 The TOWNSHIP's reserved capacity shall be used solely for the TOWNSHIP's sewage treatment needs and shall not be utilized by any sewage requirements outside of its sewage service area, except as may be permitted by the BOROUGH.

4.02.12 If the TOWNSHIP discharges Wastewater into the Treatment Plant in quantity or content that exceeds its Reserved Capacity as set forth in this Agreement or otherwise violates the provisions of this Agreement, and the TOWNSHIP does not take immediate steps to correct such violation, the BOROUGH may take whatever action is necessary to resolve impact upon the Treatment Plant, including filing suit at law or in equity in the Court of Common Pleas of Northumberland County, Pennsylvania, or other court of competent jurisdiction, to compel appropriate corrective action by the TOWNSHIP. In such event, the TOWNSHIP agrees to pay the costs and expenses, including legal fees, of the BOROUGH in connection with any such legal action.

4.02.13 Nothing in this Section or elsewhere in this Agreement shall be interpreted to prevent TOWNSHIP from utilizing any portion of its Reserved Capacity to serve any Person located within the TOWNSHIP's Sewage Service Area, as such shall be determined by the TOWNSHIP, so long as the terms hereof are not violated by such service.

Section 4.03 Measurement of Flow

4.03.01 The quantity of Wastewater discharged by the TOWNSHIP shall be determined by inspection, initially on the Connection Date and at least monthly thereafter, of certain Wastewater flow meters or Wastewater flow measuring devices.

4.03.02 TOWNSHIP raw sewage monitoring stations as shown on Exhibit E shall be equipped with flow measuring devices and associated appurtenances.

(i) The flow measuring device shall be manufactured by an ISO 9001 certified manufacturer, and designed and installed in accordance with plans and specifications prepared by the TOWNSHIP's engineer.

(ii) The meter shall be hydraulically calibrated in a facility traceable to the National Institute of Standards and Technology.

(iii) The flow meter/transmitter system shall be intrinsically safe.

(iv) The flowmweter may be electrode electromagnetic type (ISO 10474.3.1B) for measuring a full conduit, with a standard accuracy up to 0.15% of volumetric rate accuracy over 13:1 turndown, 0.25% over 40:1 turndown;

(v) In the alternative, a doppler-radar sensor type (FCC Rules Part 15, Subpart C; Industry Canada RS-S210) for measuring an open channel, with a velocity measument accuracy of ±0.5%, depth measurement accuracy of ±1.0%, and an overall accuracy of ±5% of reading typical where flow is in a channel with uniform flow conditions and is not surcharged, ±1% full scale max.

(vi) The flow transmitter will be capable of delivering pulse, digital or analog signals to an automated flow proportional sampler furnished and used by the TOWNSHIP to measure organic load delivered to the BOROUGH's sewer system and treatment plant.

(vii) The flow measuring device and associated appurtenances shall be reviewed and approved by the BOROUGH. All costs associated with the BOROUGH's review of said device shall be borne by the TOWNSHIP.

4.03.03 Flow metering devices and associated appurtenances shall be calibrated no less frequently than semiannually by an independent certified process instrumentation organization, acceptable to all parties. The costs of such calibration for the metering device and associated appurtenances described in Subsection 4.03.02 above shall be borne by TOWNSHIP. The Person conducting the calibrations shall report the results of such inspecting and testing to BOROUGH and the TOWNSHIP. If the report indicates that the metering device and/or associated appurtenances do not record accurately and cannot be corrected in the field and such defects are not promptly cured by the TOWNSHIP, the BOROUGH, following written notice to TOWNSHIP, may, but shall not be required to, repair or replace the same. The costs of repairing or replacing the device described in Subsection 4.03.02 above shall be paid by the TOWNSHIP. In the event that the BOROUGH pays for such costs, the TOWNSHIP shall reimburse the BOROUGH for all such costs within thirty (30) days of receipt of a bill. Records from such flow metering devices and associated appurtenances, and access to the installation and operation thereof shall be available to BOROUGH and TOWNSHIP at all reasonable times.

4.03.04 The records of flows through TOWNSHIP and BOROUGH meters will be exchanged between the TOWNSHIP and the BOROUGH on or before the fifth (5th) day following the end of each billing period showing the TOWNSHIP's actual flow and BOROUGH's derived flow of Wastewater delivered to the BOROUGH' treatment plant during the previous billing period. The BOROUGH's derived flow is the difference of BOROUGH's treatment plant flow minus TOWNSHIP's flow.

4.03.05 The quantity and/or quality of Wastewater discharged by the TOWNSHIP into the BOROUGH's Municipal Sewerage System shall be the derived according to the equation specified in Subsection 4.02, by the measured flow from the device described in Subsection 4.03.02 above.

4.03.06 In the event of missing or erroneous flow records due to a defect in the metering device and/or associated appurtenances, an estimate of flow shall be made by the BOROUGH for purposes of determining the TOWNSHIP's volume of Wastewater discharged. This estimate shall be based on an evaluation by the BOROUGH's engineer of past TOWNSHIP flow records during the two (2) billing periods preceding the fault in the metering device, and the calculation shall bind the parties hereto.

Section 4.04 Allocation of Additional Reserved Capacity

4.04.01 The BOROUGH, in its sole discretion, at any time may sell additional Reserved Capacity to TOWNSHIP on such terms and conditions as shall be agreed upon by both the BOROUGH and the TOWNSHIP. At such time as Wastewater discharged from the TOWNSHIP Municipal Sewerage System to the BOROUGH's sewer system and treatment plant equals or exceeds 95% of the TOWNSHIP's Reserved Capacity, or is expected to equal or exceed 95% of its Reserved Capacity upon completion of an extension or addition to the TOWNSHIP's Municipal Sewerage System, as determined by the TOWNSHIP's engineer, the TOWNSHIP shall request, in writing, a Request to Purchase Additional Reserved Capacity from the BOROUGH sufficient to treat any projected increased discharge. If the BOROUGH declines to sell additional existing capacity of the Treatment Plant, the TOWNSHIP shall immediately cease connecting any additional customers to the TOWNSHIP's Municipal Sewerage System and may request the construction of additional Reserved Capacity pursuant to Section 4.07.01

Section 4.05 Specifications for Metering Device and Associated Appurtenances.

4.05.01 The flow measuring device and associated appurtenances shall be designed and installed in accordance with generally accepted engineering and construction practices, subject to review and approval of the BOROUGH. The TOWNSHIP plans and specifications, for their Lewis Township Wastewater Project, affiliated with this Section shall be incorporated into this Agreement by reference, as defined as:

(i) Project Manual Contract No(s).: 09-005.01

(ii) Construction Drawings Contract No(s).: 09-005.01

Section 4.06 Reserve Capacity Contribution (Tapping Fee)

4.06.01 TOWNSHIP shall pay a Tapping Fee of $187,266 for purchase of 15,000 gallons per day of capacity in the BOROUGH's sewer system and treatment plant. Pursuant to Exhibit F – Tapping Fee, Billing and Surcharge Example Process & Calculations.

4.06.02 In the event TOWNSHIP exceeds its hydraulic and/or organic Reserved Capacity for three successive months, it must acquire additional Reserved Capacity at the prevailing Reserve Capacity Contribution charge and in accordance with Act 57, as amended. Should the TOWNSHIP overload condition result in any expense to the BOROUGH, including any fines or penalties assessed by regualtory agencies, the

TOWNSHIP shall reimburse the BOROUGH for any such costs, fines and expenses, and also any legal fees incurred by the BOROUGH in defense therof.

Section 4.07 Further Upgrading of Treatment Plant

4.07.01 If BOROUGH undertakes to upgrade or modify the Treatment Plant, which undertaking results in Costs of acquisition or construction to be incurred by BOROUGH, for any of the following reasons: due to more stringent effluent discharge or sludge disposal requirements, pursuant to any case law, statutes, regulations, rules, guidelines, permits, approvals or other standard or requirement of DEP or any other State or Federal agencies who have a right to regulate the transmission, treatment or disposal of Wastewater or in the best professional judgement of the BOROUGH's engineer improvements, upgrade or modifications are needed (i.e. energy efficiency improvements) then, in that event the TOWNSHIP shall pay a pro rata share of such Costs in the same proportion as TOWNSHIP's Reserved Capacity as described in Section 3.02.04.
The TOWNSHIP and the BOROUGH agree to share information in acccordance with Section 2.04.01.
Any increase in the rated capacity of the BOROUGH's treatment plant arising from such upgrading or improvements shall be negotiated between the BOROUGH and the TOWNSHIP. Methods of payment (i.e., sewer use rates, capital contribution, etc.) for improvements shall be determined by the BOROUGH.

Section 4.08 Additions to BOROUGH's Treatment Plant Requested by TOWNSHIP

4.08.01 If TOWNSHIP discharges or desires to discharge Wastewater into the BOROUGH's Treatment Plant in excess of the Reserved Capacity available to it hereunder, including any additional Reserved Capacity purchased by TOWNSHIP pursuant to Section 4.04.01, TOWNSHIP shall notify BOROUGH in writing that it requests construction of additional Reserved Capacity in the BOROUGH's Treatment Plant. Within ninety (90) days of receipt of such notification, BOROUGH shall respond, stating the terms, costs and schedule of construction of such additional Reserved Capacity, or may simply deny the request in writing.

4.08.02 BOROUGH shall use its best efforts to obtain reasonable financing, if necessary, and to construct any approved enlargements, additions, improvements or modifications to the BOROUGH's Treatment Plant necessary to provide the additional Reserved Capacity requested by TOWNSHIP, in an expeditious and cost effective manner. Any such enlargement of the BOROUGH's Treatment Plant shall be satisfactory to the BOROUGH's engineer as being appropriate for and consistent with the Wastewater transmission or treatment configurations then existing and any technical limitations, and shall be approved by BOROUGH Council. TOWNSHIP will pay all costs and expenses associated with acquiring or constructing additional Reserved Capacity to be received by it, in an amount and under terms acceptable to BOROUGH. Any other Person, including the BOROUGH, participating in such expansion shall share on a pro rata basis in the Costs thereof with TOWNSHIP based on the amount of additional capacity reserved to each Person from the expansion.

Section 4.09 Additions and Upgrading

4.9.01 If a project is required to be undertaken pursuant to both Section 4.07 and Section 4.08 and it becomes impossible to directly relate the costs to either the upgrading or to expansion, such costs shall be reserved or equitably apportioned on the basis of sound and acceptable engineering and accounting principles.

Article 5 O& M Charge: Operating and Maintenance Expenses.

Section 5.01 Operating and Maintenance Expenses.

5.01.01 Inasmuch as the BOROUGH Treatment Plant will provide adequate service to the TOWNSHIP for present users and additional future users within the TOWNSHIP Sewage Service Area and, therefore, benefits the TOWNSHIP's sewage treatment users, both present and future, it is agreed by the BOROUGH and the TOWNSHIP that the Operation, Maintenance and Administration cost to be charged to the TOWNSHIP for the entire term of this Agreement shall, except as otherwise herein provided, be apportioned as defined in Section 4.02, Subsection 4.02.03. The BOROUGH hereby agrees that the cost factors upon which the BOROUGH shall structure its sewage service rates shall be as set forth in Paragraph 5.01.02 as follows:

5.01.02 Payment of the reasonable, proper and necessary cost of operation, maintenance and administration of the BOROUGH's Municipal Sewerage System that are mutually used by both the BOROUGH and the TOWNSHIP, including but without limiting the generality of the foregoing, the following items:

(i) Fixed Costs – Shall be billed according to apprortioned capacity as defined in Exhibit F:

(a) Debt Service – 1988 Sewer Project refinanceed under 2004 Note.

(ii) Variable Costs Shall be billed according to apprortioned capacity as defined in Section 4.02:

(a) Secretary Salary
(b) Operation & Maintenance Salaries
(c) Administrative Materials & Supplies
(d) Uniform Rental
(e) Miscellaneous & Insurance Costs
(f) Other Employee Benefits
(g) Capital Reserve Account
(h) Testing Services
(i) Building Maintenance & Repair
(j) Professional Services (Legal, Accounting, Engineering)
(k) Vehicle Operating Cost
(l) Operating Materials & Supplies
(m) Utilities
(n) Chemicals
(o) Sewer Line Maintenance

1) The BOROUGH variable cost 5.01.01(ii)(o) Sewer Line Maintenance of the BOROUGH's collection/conveyance facilities shall be included as a pro-rated payment of services rendered by the BOROUGH.

- Pro rated expense will be based amount of sewer used by the TOWNSHIP and the BOROUGH's total sewer system.

$SLM_{boro} = BOROUGH's\ Annual\ Sewer\ Line\ Maintenance\ Cost$
$SLM_{twp} = TOWNSHIP's\ Annual\ Sewer\ Line\ Maintenance\ Cost$
$SEW_{boro} = BOROUGH's\ Total\ Sewer\ Line$
$SEW_{twp} = TOWNSHIP's\ Portion\ of\ BOROUGH\ Sewer\ Line$
$CAP_{twp} = TOWNSHIP's\ Calculated\ Percent\ of\ Reserve\ Capacity$

$$SLM_{twp} = SLM_{boro} \times \left(\frac{SEW_{twp}}{SEW_{boro}}\right) \times CAP_{twp}$$

Example

$SLM_{boro} = \$12{,}000.00$
$SLM_{twp} = \$280.14$
$SEW_{boro} = 18{,}109\ feet$
$SEW_{twp} = 3{,}523\ feet$
$CAP_{twp} = 12\%$

$$SLM_{twp} = 12000 \times \left(\frac{3523}{18109}\right) \times 0.12 = 280.14$$

(p) Equipment Rental/Repair
(q) Biosolids Disposal

Section 5.02 Sewer Fund

5.02.01 The BOROUGH, so long as it operates its Municipal Sewerage System, shall install and maintain accounting records of its Sewer Fund and related accounts and accomplish audits of said records which will, as nearly as may be possible, allocate the expenditures incurred solely in the operation, maintenance and administration of the Municipal Sewerage System. The BOROUGH, as the case may be, shall furnish copies of said audit to the TOWNSHIP, and thereof shall be available for inspection by the TOWNSHIP's accountant and/or engineer.

5.02.02 TOWNSHIP shall make payments for operation, maintenance and administation costs, in accordance with the BOROUGH's billing protocol, as prescribed in Exhibit F of this Agreement. Said costs shall be based on the BOROUGH's actual bills accrued during the aforementioned billing period for the BOROUGH'treatment plant and sewer system

Article 6 Estimates and Payment of Charges

Section 6.01 Interest on Late Payments

6.01.01 If TOWNSHIP does not make full payment of the O & M Sewer Use Charge, payment for any other charge or payment due under this Agreement, on or before the specified payment date, as described herein, there shall be added to the amount thereof interest at the rate of 12% APR.

Article 7 Wastewater Quality Restrictions

Section 7.01 Uniform Standards

7.01.01 The BOROUGH had adopted or will adopt uniform Wastewater quality standards, from time to time, applicable to the BOROUGH's Municipal Sewerage Sysytem, which will comply with the requirements of DEP and all other regulatory agencies. The TOWNSHIP will not discharge or permit the discharge of Wastewater from customers of the TOWNSHIP into the TOWNSHIP's Municipal Sewerage System that would violate any of such standards. The BOROUGH will make no changes in said standards except upon reasonable prior written notice to the TOWNSHIP and all such standards will apply equally to customers of the BOROUGH and customers of the TOWNSHIP. In the event the TOWNSHIP violates the provisions of this paragraph, the TOWNSHIP shall be responsible for any and all costs incurred by the BOROUGH as the result of such violation and also any fines and penalties inposed by the rgulatory agencies, as well as legal fees incurred by the BOROUGH in defnse thereof.

Section 7.02 Compelling Compliance with Standards.

7.02.01 TOWNSHIP shall enact an ordinance, and the TOWNSHIP will keep such ordinance in full force and effect at all times, prohibiting and providing adequate penalties for the discharge into the TOWNSHIP Municipal Sewerage System of anything violating the above-mentioned Wastewater quality standards of the BOROUGH, and shall enforce the provisions thereof. Such ordinance shall also prohibit and regulate said discharge, as applicable. The TOWNSHIP shall not connect any Categorical or Significant Industrial User to its sewer system. Should the TOWNSHIP desire to connect an Industrial User to its Municipal Sewerage System The TOWNSHIP shall make a certified written notification to the BOROUGH at least one hundred eighty (180) day prior to requested connection. The TOWNSHIP shall bear all costs (i.e., Legal, engineering, administrative, permitting, capacity upgrade, inspection, etc.) associated to connection of the Industrial User. The TOWNSHIP shall not permit any discharge into the TOWNSHIP Municipal Sewerage System except in the manner and in accordance with the provisions of said ordinance. The TOWNSHIP shall provide a certified copy of the ordinance to the BOROUGH.

Section 7.03 Sampling of Wastewater

7.03.01 In accordance with Section 4, Subsection 4.02.04, the TOWNSHIP shall install equipment to facilitate sampling at or near the points where the TOWNSHIP Municipal Sewerage System discharges into the BOROUGH Municipal Sewerage System or other locations satisfactory to both parties. Sampling shall be preformed, by a PA State Board certified operator, with an automatic sampling device or manually collected, in accordance with 40 CFR Parts 136 and 503. The TOWNSHIP shall own and pay all Capital and O&M Costs associated with such facilities.

Section 7.04 Reports and Samples

7.04.01 In the event that any report obtained by BOROUGH analyzing any Wastewater sample shall state, in substance, that Wastewater discharged from the TOWNSHIP's Municipal Sewerage System, or from a particular user thereof, violates the quality standards and restrictions as established by the BOROUGH, giving rise to a violation of this Agreement, the TOWNSHIP, at its own cost, shall have the right to request verification of same by future sampling. Such future samples, as herein referred to,

shall be conducted by the independent certified testing lab appointed in Section 4.02, Subsection 4.02.04 and a second independent certified testing lab acceptable to both parties. If the results of analyzing the split sample or samples of the two laboratories are consistent with normal tolerance of testing procedures, then these results shall be considered final.

Section 7.05 Treatment of Unusual Wastes

7.05.01 If any Wastewater discharged by the TOWNSHIP is in violation of the BOROUGH's standards as determined by this Article and requires special treatment or would be harmful to the Treatment Plant, then the TOWNSHIP will pay or cause to be paid the entire Costs of providing any special treatment as a separate charge as provided in Section 7.06.01, and TOWNSHIP, upon written notice of a violation from BOROUGH, shall immediately act to enforce the Wastewater quality standards ordinances by providing or requiring pretreatment of such waste in such manner as is provided by said ordinances or compel disconnection from the TOWNSHIP's Municipal Sewerage System of the property from which such harmful waste is being discharged. In the event the BOROUGH is assessed any fines and/or penalties by regulatoriy agencies for violations of this paragraph, the TOWNSHIP shall reimburse the BOROUGH for any such expenses incurred, including any legal fees incurred by the BOROUGH in defense thereof.

7.05.02 In the event Wastewater is discharged by a customer of the TOWNSHIP into the TOWNSHIP's Municipal Sewerage System which is capable of being treated by the Treatment Plant, but such discharge contains a disproportionate concentration of BOD_5 and/or TSS in excess of that agreed to in Section 4 of this Agreement, the BOROUGH may agree in writing to allow the discharge and the TOWNSHIP agrees to pay a surcharge to the BOROUGH in accordance with a surcharge schedule as set forth in Exhibit F of this Agreement.

Section 7.06 Reimbursement for Damages from Improper Discharge

7.06.01 TOWNSHIP shall pay the costs of any damages to the BOROUGH's Treatment Plant resulting from discharge of improper Wastewater from the TOWNSHIP Municipal Sewerage System in violation of the above-mentioned quality standards and restrictions, and shall indemnify and hold harmless the BOROUGH with respect thereto, including any fines and/or penalties by regulatory agencies for violations of this paragraph, the TOWNSHIP shall reimburse the BOROUGH for any such expenses incurred, including any legal fees incurred by the BOROUGH in defense thereof.

~~any legal fees.~~ JJM TPB DKM

Should the BOROUGH determine that any such discharge has occurred from the TOWNSHIP, the BOROUGH shall promptly notify the TOWNSHIP of the discharge and shall turn over to the TOWNSHIP copies of all documentation concerning the discharge and take reasonable steps to assist the TOWNSHIP in investigating the matter. The Borough investigation ~~should~~ not extend beyond the TOWNSHIP's point of connection into the BOROUGH's Municipal Sewerage System. The BOROUGH shall pay the costs of any damage to the Treatment Plant resulting from discharge of improper Wastewater from the BOROUGH Municipal Sewerage System or from any customer (including other bulk users) of the BOROUGH in violation of the above-mentioned quality standards and restrictions, and shall indemnify and hold harmless TOWNSHIP with respect thereto. Any dispute as to the identity of the Person responsible for such damage, shall be resolved in the manner set forth in Section 7.04.01 of this Agreement.

JJM TPB DKM

Section 7.07 Sampling Manholes

7.07.01 Upon the request of the BOROUGH, the TOWNSHIP shall install a manhole at the point of discharge from the property of any user who has the potential to discharge into the TOWNSHIP Municipal Sewerage System any wastes other than domestic wastes. The TOWNSHIP shall require any Catagorical or Significant Industrial User as defined in the TOWNSHIP Sewer Use Ordinance to install a monitoring manhole. Said manhole shall meet the BOROUGH's requirements with respect to type, size, location and construction, so that sampling and/or metering will be facilitated.

Section 7.08 Disconnection of Property

7.08.01 The TOWNSHIP shall prohibit and prevent any Person from discharging Wastewater whose quantity or quality may have a deleterious effect on the BOROUGH's Treatment Plant and/or receiving stream.

Section 7.09 Pipe Connection Required

7.09.01 The TOWNSHIP shall prohibit and prevent by ordinance the discharge of any substance into its Municipal Sewerage System, other than by and through a permanent service lateral connection. The TOWNSHIP ordinance shall provide for fines in the maximum amount permitted by law. Accordingly, discharges from tank trucks or similar sources shall be prohibited.

Section 7.10 Collection of Waste Samples

7.10.01 The BOROUGH shall have the right to collect waste samples from any point in the TOWNSHIP Municipal Sewerage System. BOROUGH shall provide 24 hour verbal notice during regular business hours to the TOWNSHIP of its intent to collect a sample unless there is an emergency. Failure or inability to provide notice in emergency situations shall not prohibit collection of the sample.

Section 7.11 Prohibition of Septage Discharge

7.11.01 The TOWNSHIP shall prohibit and prevent by ordinance the discharge of septic tank wastes or dumping station wastes into the TOWNSHIP Municipal Sewerage System including the contents of septic tanks of existing establishments when they first connect to the TOWNSHIP Municipal Sewerage System.

Section 7.12 Implementation of Industrial Pretreatment Program

7.12.01 If the BOROUGH and its Municipal Sewerage System is required by DEP or the United States Environmental Protection Agency (USEPA) to implement a Municipal Industrial Pretreatment Program (MIPP), the BOROUGH shall accept primary responsibility to implement, administer and enforce the MIPP, including (but not limited to) conducting and updating industrial customer surveys, and performing inspections and sampling. TOWNSHIP and its Municipal Sewerage System agrees to employ the BOROUGH to act as their agent with respect to the MIPP. The TOWNSHIP acknowledges and agrees that the BOROUGH shall have and may exercise all authority and powers granted to BOROUGH under Act 9 of 1992 of the Commonwealth (35 P.S. 742.1, et seq.), within TOWNSHIP and applicable to its residents. The TOWNSHIP shall fully cooperate with any enforcement action taken by the BOROUGH against the TOWNSHIP's industrial users, and shall take such

action in the exercise of its own rights and police powers as may be reasonably requested by the BOROUGH to ensure compliance with BOROUGH's MIPP.

Article 8 Governmental Grants and Subsidies; Permits

Section 8.01 Applications

8.01.01 BOROUGH may, in its discretion, make applications to the Commonwealth and to the United States, and their appropriate agencies, for any available grants, subsidies or other payments, and for all permits and approvals in respect of the construction, operation or maintenance of the Treatment Plant, which amounts shall be applied in accordance with the terms and conditions of such grants. TOWNSHIP may also exercise the same prerogative.

Section 8.02 Compliance with Law and Conditions for Grants

8.02.01 Each party hereto will take all such action, within its legal powers, as may be required to comply with all applicable laws, regulations and permits applicable to their respective Municipal Sewerage Systems and with Agreements relating to applicable Federal and State grants and subsidies.

Article 9 Miscellaneous

Section 9.01 Insurance; Repairs and Reconstruction

9.01.01 BOROUGH will insure, or cause to be insured, its Municipal Sewerage System with a responsible company or companies authorized and qualified to do business under laws of the Commonwealth, against loss or damage by fire and such other risks (including public liability) and casualties and in such amounts as are usually carried on like properties in the Commonwealth and as shall be reviewed and approved, at least annually. Such insurance policies shall be non-assessable. Immediately upon the occurrence of any loss or damage to any part of said Wastewater facilities which is covered by insurance, BOROUGH will commence and promptly complete, or cause to be so commenced and promptly completed, the repairing, replacement or reconstruction of the damaged or destroyed property according to plans and specification prepared by the BOROUGH's engineers and shall collect and apply, or cause to be applied, the proceeds of such insurance to the cost of such repair, replacement or reconstruction. TOWNSHIP shall be responsible for maintaining adequate insurance (i.e., asset valuation according to GASB Statement 34) on the TOWNSHIP's Municipal Sewerage System. Each party shall provide the other with a Certificate of Insurance on the execution date of this Agreement; then, annually thereafter. In lieu of "Certificate of Insurance", at execution of this Agreement, the TOWNSHIP may provide a Local Government Unit Debt Act (LGUDA) "Debt Statement and Borrowing Base Certificate"; then the TOWNSHIP shall provide a Certificate of Insurance annually thereafter, as prescribed above.

Section 9.02 Inspection

9.02.01 Prior to execution of this Agreement, the BOROUGH and the TOWNSHIP, at its own expense, shall conduct a thorough inspection of each others sewerage facilities. Upon completion of the aforementioned inspection, each party will submit in writing the findings of its inspection including any exceptions taken regarding the condition of said facilities. If exceptions are noted by either party, the other shall indicate in writing the steps that will be taken to remedy such exceptions. Once the inspection reports have been addressed to the satisfaction of each party, they shall be included as an attachment (Exhibit H – Inspection Reports) to this Agreement and such counterpart thereby constitute but one and the same instrument.

9.01.02 Each party shall provide the other, from time to time, all information relevant to the proper administration of their responsibilities under this Agreement, or in respect to the interpretation hereof, as, and in such form and detail as, may be reasonably requested and each shall, at all reasonable times and from time to time, permit their representatives to examine and inspect their respective records and physical facilities relevant to the subject matter of this Wastewater Agreement.

Section 9.03 Force Majeure

9.03.01 Notwithstanding any other provision of this Wastewater Agreement, no party hereto shall be responsible in damages to the other for any failure to comply with this Wastewater Agreement resulting from an act of God or riot, sabotage, public calamity, flood, strike, unforeseen breakdown of the Treatment Plant, or other event beyond its reasonable control. The party having the responsibility for the facilities so affected, however, shall proceed promptly to remedy the consequences of such event, the costs to be shared, if applicable, to the extent provided elsewhere herein.

Section 9.04 Indemnity

9.04.01 Each party hereto agrees to save harmless the other party against all costs, losses or damages, including payment of reasonable attorneys fees, on account of any injury to persons or property occurring in the performance of this Agreement due to the negligence of such party or its agents, or employees; provided, however, that neither party hereto waives any rights or immunities arising out of any applicable governmental immunity laws and statutes. For purposes of this paragraph, employees operating the Treatment Plant shall be deemed to be employees solely of BOROUGH. Each party further agrees to indemnify and hold harmless from any fines, penalties and assessments levied by any regulatory agencies arising arising out of the other's party violationg provisions of this Agreement and rule and regualtions the the regulating authority.

Section 9.05 Severability

9.05.01 Should any provision hereof for any reason be held illegal or invalid, no other provision of this Agreement shall be affected, and this Agreement shall then be construed and enforced as if such illegal or invalid provision had not been contained herein.

Section 9.06 Headings

9.06.01 The headings of this Wastewater Agreement are solely for convenience and shall have no effect in the legal interpretation of any provision hereof.

Section 9.07 Effective Date

9.07.01 This Agreement shall become effective as of the date thereof.

Section 9.08 Waiver

9.08.01 The failure of a party hereto to insist upon strict performance of this Wastewater Agreement or of any of the terms or conditions hereof shall not be construed as a waiver of any of its rights hereunder.

Section 9.09 Counterparts

9.09.01 This Agreement may be executed in any number of counterparts, each of which shall be regarded for all purposes as an original, but such counterparts shall together constitute but one and the same instrument.

Section 9.10 Successors and Assigns

9.10.01 Neither the BOROUGH nor the TOWNSHIP shall voluntarily assign this Agreement without the consent of the other party, except that either party may assign its rights hereunder to a municipality authority duly created by it under the Municipality Authorities Act of 1945, as amended, and empowered to undertake and assume the rights and duties hereunder. Subject to the foregoing, this Agreement shall bind and inure to the benefit of the parties hereto and their respective successors and assigns notwithstanding any such assignment.

Section 9.11 Supersedes Prior Agreements

9.11.01 This Agreement supersedes and repeals any any prior Agreement, or contract, or understanding, written or oral, by or among the parties hereto with respect to the subject matter contained herein. This Agreement contains the entire Agreement among the parties hereto, and no oral statements or representations or prior written matter not contained in this statement shall have any force and effect.

Section 9.12 Modification

9.12.01 This Agreement may not be modified or amended except in a writing signed by the parties hereto.

Section 9.13 Pennsylvania Law Modifications

9.13.01 This Agreement may be construed according to, subject to and governed by the laws of the Commonwealth.

Section 9.14 Recording

9.14.01 This Agreement may be recorded by any party hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to executed by their respective duly authorized officers and their respective seals to be hereunto affixed.

ATTEST:

Diane K. Miller
Secretary

Borough of Turbotville
Northumberland County, Pennsylvania

By: Francis P. Bit
President

By: Justin L. Miller
Mayor

(SEAL)

ATTEST:

Secretary

Township of Lewis
Nrothumberland County, Pennsylvania

By: Ronald Knapp
Chairman

(SEAL)

Exhibits

Exhibit A
Memorandum of Understanding

The Borough of Turbotville

2 Adams Street
P.O. Box 264
Turbotville, PA 17772

Phone: (570) 649-5476
Fax: (570) 649-6620
turbotville5476@windstream.net

Send to:	From:
Uni-Tec	Diane Miller Secretary/Treasurer Turbotville Borough
Attention: **John Bender**	Date: 07/14/10
Fax Number: 814-238-7808	Fax number: (570) 649-6620

4 pages including fax cover

☐ Urgent ☐ Reply ASAP ☐ Please comment ☐ Please review ☐ For your information

John
Memorandum of Understanding

Thank You
Diane Miller
Turbotville Borough
Secretary

ORIGINAL

MEMORANDUM OF UNDERSTANDING

The parties to this Memorandum of Understanding have executed the same on this 30 day of December, 2009 between the **Township of Lewis**, Northumberland County, Pennsylvania, having a current address of 1498 Rovendale Drive, ~~Turbotville~~ Watsontown, Pennsylvania (hereinafter "**Lewis Township**")

AND

The **Borough of Turbotville**, Northumberland County, Pennsylvania, having a current address of P. O. Box 246, Turbotville, Pennsylvania (hereinafter "**Turbotville**").

WITNESSETH:

WHEREAS, the parties to this Memorandum of Understanding are contiguously located municipalities; and

WHEREAS, Turbotville is serviced by its own wastewater treatment plant; and

WHEREAS, Lewis Township has no wastewater treatment plant as necessary to provide service to areas of the Township known as the SR 54 Corridor (Area B) and the Koch Road/Schell Road Area (Area C); and

WHEREAS, it is the intent of the parties for Lewis Township to convey its wastewater from the two (2) aforementioned areas to Turbotville's wastewater treatment plant.

NOW, THEREFORE, in consideration of the covenants contained herein and intending to be legally bound, the parties hereto agree as follows:

1. It is agreed by the parties that Lewis Township will be a "bulk customer" of Turbotville and will purchase capacity at a rate to be determined by Turbotville Borough pursuant to Act 537-2003, as amended.

2. It is agreed by the parties that the flows to Turbotville from Lewis Township must have hydraulic flow (quality) metering facilities placed at all points of connection thereto.

3. It is agreed by the parties that the flows to Turbotville from Lewis Township will allocate space/manholes for future monitoring of concentrations to Turbotville.

4. It is agreed by the parties that the total flows to Turbotville from Area B and Area C in Lewis Township shall be 15,000 gallons per day and that flow shall be received from approximately 50 connections, approximately 18 from Area B and approximately 32 from Area C.

5. The parties agree that they will undertake negotiations to attempt to reach an acceptable Inter-Municipal Agreement between Lewis Township and/or its designated municipal authority as one party and the Borough of Turbotville as the other party, containing financial maintenance, installation requirements, and other necessary conditions and requirements that are agreed to by the parties said joint Inter-Municipal Agreement to be finalized and entered into by the parties prior to the award of any construction contract and/or the start of any construction of implementing the aforesaid sewer project in accordance with the Township's Act 537-2003 plan as approved by the Pennsylvania Department of Environmental Protection.

6. The Supervisors of Lewis Township agree to reimburse Turbotville within forty-five (45) calendar days of receipt of invoices submitted by Turbotville for all costs, including administrative fees, engineering fees and legal fees incurred by Turbotville during the negotiation and execution of the Resolution, Memorandum of Understanding and Inter-Municipal Agreement and for review of Construction Drawings and Project Manual, and observation of Sewer Inter-Connections, as to conformance with approved Turbotville Standards and Specifications. Such costs shall not exceed two (2%) percent of the total Contract cost of the Lewis Township Sewer Improvement Project as will be described herein.

7. If Turbotville and Lewis Township and/or its designated municipal authority cannot finalize and enter into an acceptable joint Inter-Municipal Agreement acceptable to both parties by December 31, 2010, this grant of understanding shall become null and void, excepting for the provisions requiring Township to reimburse Turbotville for its expenses incurred hereunder as set forth above, and Turbotville shall be relieved of any responsibility requirements of reserving capacity at the Turbotville Wastewater Treatment Facility for the benefit of the Township and/or municipal authority and shall be relieved of any obligation to accept any sewage wastewater from the Township for conveyance or treatment by Turbotville.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals on this 30 day of December, 2009.

ATTEST: M L Otterbein

Lewis Township
Northumberland County, Pennsylvania

Ronald Hoffa

ATTEST:

Turbotville Borough
Northumberland County, Pennsylvania

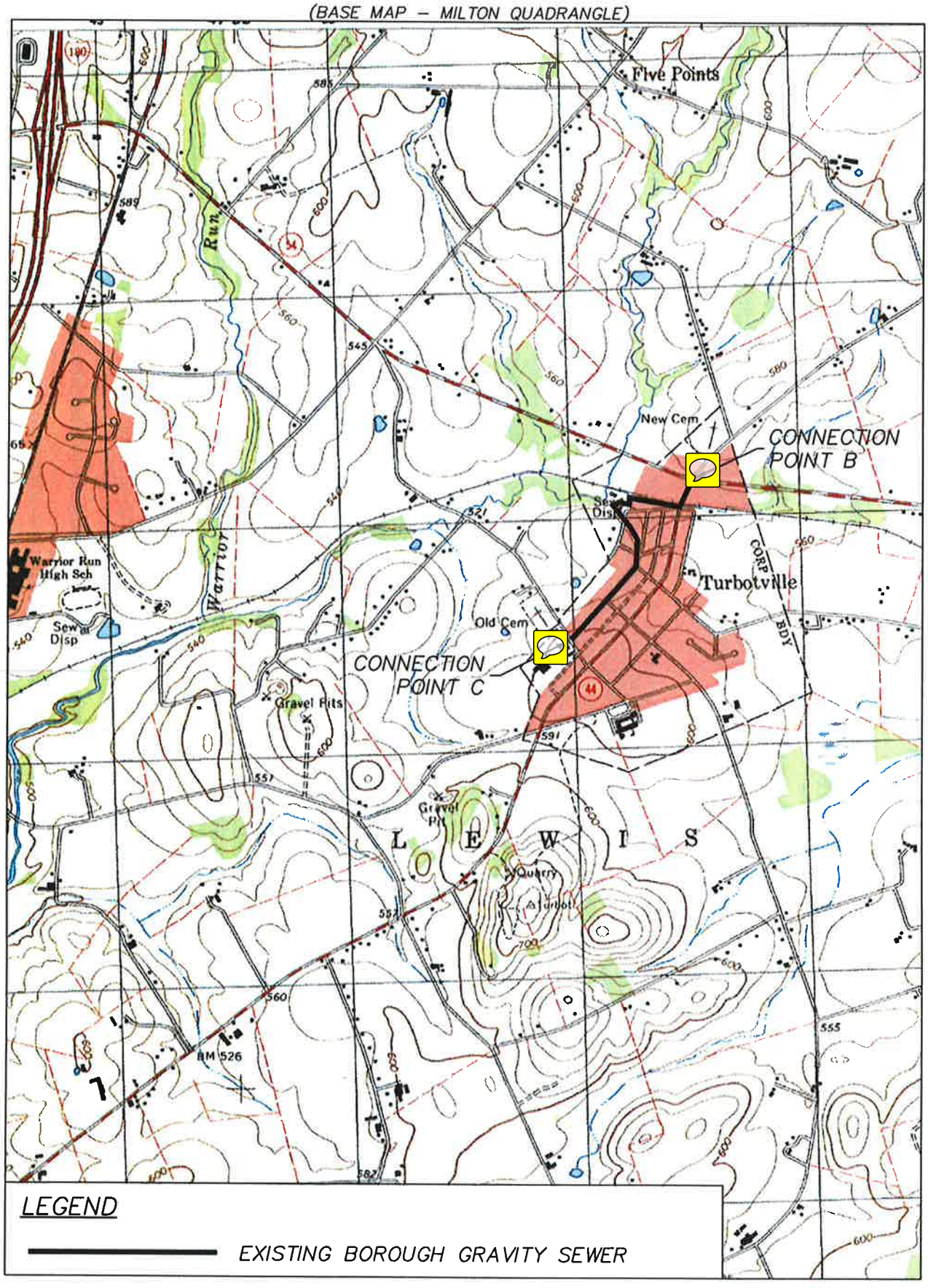
Francis B. Bet

Exhibit B
Lewis Township Sewer Connection Points to Turbotville Sewer

EXHIBIT B

TOWNSHIP'S POINTS OF CONNECTION TO BOROUGH'S MUNICIPAL SEWERAGE SYSTEM

(BASE MAP – MILTON QUADRANGLE)



2000 0 2000 4000 6000

GRAPHIC SCALE

Insert map here

Exhibit C
Reserved for Future Use

Exhibit D
Turbotville's Standard Specifications and Details

047-000-1-012

SUMMARY OF TECHNICAL SPECIFICATIONS

FOR
WATER AND SEWER CONSTRUCTION
AND CONNECTION TO
WATER AND SEWER FACILITIES
OWNED AND MAINTAINED BY THE
BOROUGH OF TURBOTVILLE
EFFECTIVE _____

1. SERVICE CONNECTION AND LINES

The Borough or its duly authorized representatives shall provide maintenance of all service laterals from the sewer and water main to the curb line (Curb line shall mean either the road side of an established curb, or the equivalent there of). All service laterals from the curb line to the structure to be served shall be installed and maintained by the owner at his or her expense, as approved by the Borough. The Borough shall not be responsible for the maintenance of the service line or any other line, pipe or fixture from the curb line to the structure to be served. No service connection facility between the curb line and the structure to be served shall be covered up in the process of installation until inspected and approved by the Borough or its duly authorized representatives.

The construction costs of connecting a water or sewer service lateral from the structure to a water or sewer main shall be at the owners expense unless the Borough constructs a water or sewer main past existing improved property in which case only the lateral component from the structure to the curb line will be at the owner's expense.

No sewer service lateral shall be laid in the same trench with gas lines, water lines, or any other facilities of a public service company.

The sewer service lateral from the curb line to the sewer main shall have a minimum inside diameter of four (4") inches. Gravity sewer service laterals from the curb line to the structure to be served shall have a minimum inside diameter of four (4") inches; while pressure sewer laterals from curb line to the structure to be served shall have a minimum inside diameter of one and one-half (1-1/2") inches.

The water service lateral from the curb line to the water main shall have a minimum inside diameter of three quarter (3/4") inches. The service laterals from the curb line to the structure to be served shall have a minimum inside diameter of three quarter (3/4") inches.

Only persons properly authorized by the Borough shall be permitted to make service lateral connection installations.

The Borough shall not be responsible forthe maintenance olf any service line, or any other line, pipe or fixture from the curb line to the structure to be served; nor shall the Borough be responsible for any damages resulting from the escape of water or seweage from any service connection from the curb line to the structure being served. The owner and any other person being served, at all times shall comply with all Federal, State, and municipal regulations, and shall make any and all changes to their service connection between the curb line and the structure to be served which shall be required or shall be made necessary as a result of any change of grade of the main line, or otherwise.

2. PIPE MATERIALS

Unless a special waiver is granted by the Borough prior to construction, pipe materials for gravity sewer service laterals shall be SDR 35 PVC Sewer Pipe with Flexible Elastomeric Seals, and pipe materials for pressure sewer laterals shall be SDR 21 PVC sewer pipe with Flexible Elastomeric Seals;

Unless a special waiver is granted by the Borough prior to construction, pipe materials for water service laterals shall be ASTM B88, Type K copper water tubing with matching fittings of flared or compression type.

3. LAYING PIPE IN TRENCHES

All sewer service laterals shall be installed with a minimum slope of 1/4" per foot for 4" diameter sections and 1/8" per foot for 6" diameter sections and a minimum cover of three and one-half (3-1/2') feet unless otherwise approved.

Pipe shall be laid with an even grade and straight alignment to the sewer main line.

Pipe slopes between 1/8" and 1/4" per foot for four inch sections will be permitted only under those circumstances where tightness of grade will not allow the structure to be connected using 1/4" per foot. These circumstances require approval of the Borough prior to construction.

All cuts into the Turbotville Borough sewer main will be performed by the Borough or an approved Contractor.

4. BEDDING REQUIREMENTS

All pipes shall be bedded beneath with six (6) inches of PennDOT 2A aggregate material, and backfilled with PennDOT 2A aggregate material that is thoroughly compacted to a depth of at least 12" above the top of the pipe.

5. BACKFILLING TRENCHES

No service connection between the curb line and structure to be served shall be covered up until inspected and approved by the Borough of its duly authorized representatives. Also, no service connection between the curb line and the sewer main line shall be covered up until inspected and approved.

Backfill material can be the material removed from the trench provided, from top of pipe bedding material to 24" over top of pipe: Material excavated from the trench is free of stones larger than 2" in size and free of wet, frozen, or organic materials; and from 24" above pipe to subgrade elevation: Material excavated from the trench if free of stones larger than 8" in size and free of wet, frozen or organic materials may be included with the backfill or replaced in the trench.

6. SERVICE LINE TESTING

The Borough requires air testing for gravity service lines. An Borough's inspector shall be given a minimum of 48 hour notice. The procedure for low-pressure air testing is as follows:

The Contractor shall test each service lateral using low pressure air. The backfilled lateral pipe shall be considered acceptable if the time for the air pressure to decrease 1.0 psig. from 3.5 to 2.5 psi exceeds the time indicated in the following list. If the rates of leakage are exceeded, the owner/contractor shall at their expense determine the source of leakage and make all necessary corrections, and retest.

4 inch pipe dia. - 2 min., 00 sec.
6 inch pipe dia. - 2 min., 55 sec.

A minimum period of 2 minutes shall be provided to allow equilibrium of the air temperature with pipe wall before test readings shall commence.

This sequence shall be repeated as often as necessary until the lateral tests acceptably.

7. UNAUTHORIZED CONNECTIONS

NO RAIN SPOUTS, CELLAR DRAINS, FOUNDATION DRAINS, OR SUMP PUMPS ARE TO BE CONNECTED TO THE SEWER SERVICE LATERAL OR THE MAIN SEWER. ANY OF THESE ALREADY CONNECTED TO THE STRUCTURE'S INTERIOR OR EXTERIOR PLUMBING SYSTEMS SHALL BE DISCONNECTED AT NO COST TO THE BOROUGH..

8. ADDITIONAL SPECIFICATIONS

For more information, details and specifications for **WATER AND SEWER CONSTRUCTION AND CONNECTION TO WATER AND SEWER FACILITIES OWNED BY THE BOROUGH OF TURBOTVILLE**, please refer to the Borough's Standard Specifications for the Construction and Acceptance of Water and Sewer

Facilities for Connection to the Existing Water and/or Sewer System or for Extension of the Water and/or Sewer System.

Standard Specifications

**FOR THE CONSTRUCTION AND ACCEPTANCE OF
WATER AND/OR SEWER FACILITIES
FOR CONNECTION TO THE
EXISTING WATER AND/OR SEWER SYSTEM
OR FOR EXTENSION OF THE WATER AND/OR SEWER SYSTEM
OF THE BOROUGH OF TURBOTVILLE**

ADOPTED

_____

SECTION 1 GENERAL PROVISIONS

1-1 Statement Of Intent

The Turbotville Borough of Northumberland County, Pennsylvania, owning, operating, administering, and maintaining a water and sewer system for treatment and distribution of potable water and; the conveyance and treatment of wastewater by the Borough, will accept any proposed connection to its existing water and sewer system when the standards and requirements of these specifications are met in their entirety, so long as capacity exists in water supply system and/or the sewer collection/treatment system; and all other regulations of Borough are adhered to. If the subject water and sewer facilities are accepted by the Borough, the responsibility of maintenance of such facilities will be assumed by the Borough unless special conditions must be met.

1-2 DER Sewerage Requirements and Regulations Incorporated by Reference

All Pennsylvania Department of Environmental Resources (DER) rules, regulations and requirements are to be considered incorporated into these specifications as if fully written herein.

Any regulations which are more stringent shall have precedence over the applicable section herein.

1-3 Ownership and Easements

The Borough will operate and maintain the water and sewer facilities under these conditions of ownership:

A. The Owner of the water and/or sewer facilities dedicates the completed water and/or sewer facilities at no cost to the Borough.

B. The Owner provides the Borough with permanent easements as may be required to maintain the water and sewer facilities.

1-4 Definition of Terms

The following terms whenever used or referred to in these Specifications shall have the following meanings, except in those instances where the context clearly indicated otherwise:

A. "Borough" - Turbotville Borough

B. "Consultant" - The individual firm or corporation presently employed as Consulting Engineer by the Borough and responsible for the review and advisement to the Borough as to the satisfaction of water and sewerage system design as presented to the Owner.

C. "Contractor" - The individual, firm, partnership, co-partnership or corporation designed by the Owner for the construction of sanitary sewers.

D. "Engineer" - The individual, firm, or corporation designated by

the owner as responsible for the preparation of drawings or plans necessary for construction of sanitary sewers and appurtenances and the Record Drawings; Owners' Engineer.

E. "House Connection and Sevice Lateral Connections" - The connection which connects the house water and/or sewer plumbing to the service lateral, terminating at the curb line. A lateral connection normally begins at the curb or property line and connects to the street main. The house connections and service lateral being within private property, is not part of the system dedicated to the Borough. The size and material of the house connection are subject to the plumbing ordinance of the Borough; however, the house connections and construction of same are subject to inspections and testing by the Borough.

F. "Owner" - The party or parties seeking approval for construction of water and/or sewer facilities and bearing the financial burden of construction; Developer.

G. "Planning Commission" - The local governing body responsible for the coordinated review of comprehensive planning.

H. "Work" - The installation of the water and/or sewer lines and appurtenances performed by the Contractor or Owner; Project.

1-5 Abbreviations

DER - Pennsylvania Department of Environmental Resources
PennDOT - Pennsylvania Department of Transportation
OSHA - Occupational Safety and Health Administration

1-6 Procedures for Obtaining Approval for Proposed Sewers

1-6-a General Sequence of Municipal Approval

The approval of a proposed sanitary sewer by the Borough is only one of a group of approvals or concurrences which must be obtained from the municipal governing bodies. To assist in the understanding of how the approval of the proposed sanitary sewer fits into the municipal approval procedure for real estate development, a general sequence is presented as follows:

A. Owner applies to County Planning Commission indicating the intended land use.

B. County Planning Commission will indicate to the Owner the requirements for an application for subdivision or building permit.

C. The County Planning Commission must be informed as to the method of sewage disposal. If on-site sewage disposal is impractical, the submission will be referred to the Borough to determine the feasibility of connecting to the sewer system.

D. If required by the Owner, the Borough and Consultant will review the proposed subdivision plans and will advise the Owner on how to provide sewer service to the development prior to the County Planning Commission.

Based on the content of the submission and the results of their review, the Borough will either approve the submission or make recommendations which will indicate what action must be taken prior to permitting the developer to connect to the existing sewer system.

If additional information is required from the Owner, he will be so notified. A record of such notification also will be forwarded to the County Planning Commission by the Borough. Should additional action or a new course of action be required, a recommendation will be submitted to the County Planning Commission and Township or Borough for their consideration and action. A good example of an additional or new course of action by the Owner may exist where the simple rerouting of a sewer would prove more convenient in light of future plans of the Borough.

E. A permit for building construction will not be issued until, among other consideration, the method of sewage disposal is resolved to the satisfaction of the governing municipal agencies.

NOTE: This is presented as a guide so that the Owner will conserve sewage disposal at an appropriate time in the planning stages. The Owner is specifically advised to contact the Township or Borough officials for specific details.

Further, an approval for occupancy will be issued only when the installed sewers of means of sewage disposal have been tested, inspected, approved and accepted by the municipal agency having jurisdiction.

1-6-b Approval of Proposed Sewers by the Borough

Approval of the proposed sewers will be issued by the Borough when the conditions of the General Provisions have been satisfactorily met.

1-6-c Permits and Fees

The Owner shall pay all fees, premiums, royalties, etc. necessary for the construction as well as costs incurred by the Borough for the processing of applications for the proposed project. The Owner shall have his Engineer prepare the appropriate PADER applications in the name of the Borough, together with all required modules. These shall be delivered to the Borough in duplicate for review by the Borough and the Consultant. The Consultant, after review and approval of the permit application, modules and other documents, shall countersign the permit

application, modules, and plans. The Borough shall submit all documentation to DER.

All premiums for bonds (bid, payment, performance, blasting, etc.) shall be paid for by the Owner, even if the Borough must obtain a bond.

The Owner or Contractor is also responsible for the following and any associated fees:

1. State highway occupancy permits
2. Township/Borough road or street occupancy permits
3. Stream encroachment permits
4. Soil erosion and sedimentation control
5. Borough Sewer Service Permit
6. Any other permits by any agency

Only where necessary, these should be obtained in the name of the Borough. In this case, the Borough and its Consultant will review, and may request changes, prior to submission.

The Owner shall pay for the costs of administration, review, and inspection by the Borough.

1-7 Bond and Maintenance

The Owner shall post a bond in accordance with the requirements of the Borough and other governing bodies which bond shall cover the cost of construction of the water and sewer facilities shown on the Plans as approved by the Borough and maintenance of the water and sewer facilities for a period of one year. The bond shall be posted concurrently with the bonds for other public improvements related to the project, and shall be in an amount approved by the Borough.

If blasting is to be performed, a blasting bond, in accordance with PennDOT requirements, is to be posted by the Borough, but the cost of which shall be borne by the Owner or his Contractor.

The Owner shall maintain all existing water and sewer facilities, and related paving items of the project, and shall correct all defects in workmanship and materials, including settlement of backfill, for a period of one (1) year from the date of acceptance (Deed of Dedication) of the proposed water and sewer facilities by the Borough.

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

1-8 Reference To Standards

Whenever reference to specifications or to standards is made relative to

furnishing of materials or testing thereof to conform to the standards of any technical society, organizations, or body, it shall be construed to mean the latest standards, code, specifications, or tentative specification adopted and published at the date of application even though references has been made to an earlier standard.

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

ACI	for American Concrete Institute
AGA	for American Gas Association
AIEE	for American Institute of Electrical Engineers
AISC	for American Institute of Steel Construction
ASA	for American Standards Association
ASCE	for American Society of Civil Engineers
ASME	for American Society of Mechanical Engineers
ASTM	for American Society of Testing and Materials
AWSC	for American Welding Society Code
AWWA	for American Water Works Association
CIPRA	for Cast Iron Pipe Research Association
Fed.Spec.	for Federal Specification
AASHTO	for American Association of State Highway and Transportation Officials
NEMA	for National Electrical Manufacturers Association
AWPA	for American Wood Preservers Association
OSHA	for Occupational Safety and Health Administration
SCS	for Soil Conservation Service
DER	for the Department of Environmental Resources
EPA	for the Environmental Protection Agency
PADOT 408	Pennsylvania Department of Transportation Specifications

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

1-9 Indemnification and Insurance

The Owner and/or Contractor shall indemnify the Borough against all third party liability.

The Owner shall instruct the Contractor to carry the following types of insurance plus whatever special types of insurance are required:

A. Workmen's Compensation
B. Contractor's Public Liability and Property Damage
C. Vehicle Liability
D. Scope of Insurance and Special Hazards
E. Builder's Risk Insurance
F. Blasting Insurance (when needed)

All subcontractors shall carry all required insurances.

1-10 Workmanship and Materials

These requirements shall apply to all water and sewer facilities construction under the auspices of a developer, as defined herein, in the area served by the Turbotville Borough. The intent of the Specifications is to define the quality and character of the workmanship and materials necessary to meet quality and character of the workmanship and materials necessary to meet the requirements of the Authorities and PennDOT for sewer construction in the curb and paved areas of the State Highway Routes, and to meet the requirement of Northumberland County and the Townships or municipality have jurisdiction over the other streets included in the project area.

1-11 Act 38

The Contractor is advised that existing utility locations are taken from the best available information. The Contractor is hereby advised of his obligation under Act 38 to contact the utility companies in the field. The Borough and Consultant will not assume any responsibility for the failure of the Contractor to fulfill his obligations under Act 38.

SECTION 2 CONTRACT PLANS AND SPECIFICATIONS

2-1 Submission to Borough and Approval

The Owner or the Engineer, shall submit three (3) complete sets of Plans of the proposed water and/or sewer facility construction for review by the Borough and Consultant. One (1) marked or approved set will be returned to the Owner after review by the Borough. Plans shall be prepared by a Professional Engineer, registered in the Commonwealth of Pennsylvania, and shall bear the original impression seal of the Engineer who prepared the Plans.

After the design drawing have been approved, the Borough shall be provided with three (3) sets of Plans for their own use, at the start of construction.

In addition to the Plans and Specifications called for herein, the Owner shall make available three (3) sets of any other specifications, as might be furnished for his project, by the manufacturer, whether it be a material, installation or maintenance specification.

2-2 Minimum Standards for Construction Drawings

The Plans for construction shall include the following:

A. An overall general or location plan to clearly indicate the point or points of connection to the existing or future water and/or sewer system(s). At the points of connection, the DER permit number and the permittee of the existing water and sewer facilitiess shall be indicated. The permit data will be supplied by the Borough upon request.

B. A list of plans shall be incorporated within the folio of plans of the proposed sewer project, and shall clearly indicate the sheet or plan number with a concise description of the sope or location of the water and/or sewer construction shown on a particular sheet or plan.

C. The plan view plans shall be at a scale no greater than 1 inch = 50 feet. The profile plans shall be at a scale of 1 inch = 50 feet, horizontal and; 1 inch = 5 feet, vertical. The plans shall be shown with pipe sizes and grades between manholes and valves clearly shown. Uniform sheet size shall be 24" x 36".

D. Inverts of sewers at manholes and manhole lid elevations shall be shown. The datum shall be that of the Borough's system. Benchmark elevations will be supplied by the Borough or Consultant. A minimum of one (1) benchmark shall be shown on each sheet of the construction plans.

E. Structures to be served shall be located in plan and profile with the basement elevations clearly indicated. It is the intent of the Borough to maintain its policy on serving the basements of all Structures within its service area unless basement service is unfeasible. The Borough shall be the sole judge as to whether basement service may be eliminated.

F. Street drainage or other utilities, crossing, paralleling or otherwise causing potential interference with the proposed construction shall be clearly shown in both the plan and profile.

G. Proposed service lateral connections shall be shown. Minimum size of service laterals shall be of a minimum dismeter size as specified in the "Summary of Technical Specifications". Sewer service lateral ends shall be stationed along the center line of the sewer between manholes with a length distance either left or right of the center line of the sewer main. Service laterals shall be constructed to each lot within the subdivision.

2-3 Minimum Standards for Record Drawings

The Owner shall furnish to the Borough a set of reproducible mylar Record Drawings and for (4) Record Drawing prints of all facilities for which Borough acceptance is being requested. The Record Drawings are to show the system as installed with all revisions.

The Record Drawings shall contain thereon the same information required for the design drawing corrected to Record Drawing conditions and shall include the locations of all streets and utilities (both main lines and laterals) that parallel or cross the installed sanitary sewers. The location of the lateral end, shown in the plan view, shall be graphically correct with respect to property corners, manholes, power poles, etc.

The Owner and Engineer are advised that since the Record Drawings become the property of the Borough and an official part of their public records, the Borough expects nothing less than the most professional engineering and drafting work. The Borough prides itself in having clear and neat records available to the public for future reference.

All Record Drawings are expected to be completed utilizing straight edges and standard drawing templates for letters, numbers and symbols. The Owner of Engineer is advised to examine existing Record Drawings, which are available at the Borough's Offices, so that he may clearly understand what standards the Record Drawings must meet.

The reproducible mylar of the Record Drawing is to be an impression seal of a Registered Professional Engineer (Pennsylvania) and certify that the Record Drawing information is true and correct. It shall be signed and dated by the Registered Professional Engineer.

The Owner may request permission for the Borough to accept portions of permitted water and/or sewer facilities that are installed on a piecemeal basis. The Borough will consider this only if Record Drawings are completed in accordance with the above-noted standards. If this method is used, a general plan of all water and sewe facilities that are permitted within the developers project area shall be included and that portion for which Borough acceptance is being requested shall be clearly indicated.

Following completion of the construction of all water and/or sewer facilities covered under the permit issued by the Department of Environmental Resources, the Owner shall be required to submit to the Borough Record Drawings in four (4) copies, together with one reproducible mylar in a proper folio. Two (2) copies of the folio submitted by the Owner shall be transmitted to the Department of Environmental Resources by the Borough as Record Drawings to replace the design drawings previously forwarded to the Department for permit purposes. In the event more than one Engineer is retained by the Owner over a period of years to produce Record Drawings on a piecemeal basis, it will be the responsibility of the Owner to retain one Engineer to produce the folio of Record Drawings showing in-place water and/or sewerfacilities.

SECTION 3 MATERIALS, EQUIPMENT, AND SUBMITTALS

3-1 General

Before placing orders, the Contractor and/or Owner shall submit to the Borough for approval detailed lists and descriptions of the various materials, fixtures, fittings, and supplies which he proposes to use in the work, together with the name of the individual or company who will furnish or manufacture the same. No manufacture will be approved for any of the materials to be furnished under a project unless he shall be of good reputation, shall have a plant of ample capacity, and shall have been engaged upon and successfully done similar work for at least five (5) years.

All materials, fixtures, fittings, and supplies furnished under a project shall be new and of standard first grade quality and of the best workmanship and design. No used inferior or low grade articles will be either approved or accepted, and all work of assembly and construction must be done in neat, first-class and workmanlike manner. In asking for prices on materials intended for delivery to the Owner under any item of a construction project, the Contractor shall provide the manufacturer or dealer with such complete information from these Specifications as may in any case be necessary, and in every case, he shall quote this section in full to each dealer or manufacturer.

3-2 Borough Sole Judge of Quality and Suitability

All materials becoming a part of the permanent construction, as called for on the Plans and in these Specifications, shall be first-class in every respect and subject to the approval of the Borough, who shall be the sole judge of their quality and their suitability for the purposes for which they are to be used. The Owner or Contractor shall be notified whenever the preparation or manufacture of any materials for the work is commenced. No material shall be shipped to the work before it has been authorized by the Borough to be inspected at the site or inspection has been waived. If any material brought on the ground for use in the work is condemned by the Borough after arrival at the site as unsuitable or not in conformity with the Specifications, the Owner or Contractor shall immediately remove and replace such material, even though it may have been passed previously by an inspector as satisfactory.

3-3 Approval of Shop Drawings

The approval of shop drawings submitted by the Contractor or Owner shall not constitute a waiver of any of the requirements of these Specifications, nor shall the Borough accept any structure, equipment, or apparatus unless it passes all the tests and requirements of these specifications. The approval of drawings shall be general, and shall not relieve the Contractor or Owner of responsibility for the accuracy of such drawings, not for the proper fitting and construction of the work.

Checking of shop drawings is only for conformance with the design

concept of the project and compliance with the information given in these Specifications. The Contractor and/or Owner are responsible for dimensions to be confirmed and correlated on the job site, for information that pertains solely to the fabrication process or to techniques of construction, and for the coordination_of the work of all trades.

The procedure in seeking approval of drawings being submitted by the Contractor and/or Owner shall be as follows:

A. The Contractor and/or Owner shall submit three (3) prints of the Drawings to the Borough for approval. The drawings shall be accompanied by a letter of transmittal, in triplicate, containing the name of the project, the name of the Contractor, the number of drawings, titles, and other requirements. Unless otherwise specified, such drawings shall be submitted at least fourteen (14) calendar days before they are required for fabrication of the materials by the supplier. This time requirement may be reduced only by the writtten authorization of the Borough.

B. When a drawing is satisfactory to the Borough, it will be stamped "No Exception Taken", be dated, and two (2) copies thereof will be returned to the Contractor and/or Owner by letter. The Contractor and/or Owner shall then insert the date of approval on the tracing and promplty furnish the Borough with four (4) additional prints of the approved drawing.

C. When a drawing is generally satisfactory to the Borough, but requires correction of minor detail, the Borough; will note thereon the corrections required, stamp the drawing "Approved as Corrected" and return a sufficient number of copies to the Owner. The Owner shall thereupon make the corrections indicated and promptly furnish the Borough with four (4) additional prints of the approved drawings for distribution.

D. Should a drawing be unsatisfactory to the Borough, they will stamp theron "Revise and Resubmit" and will return two (2) copies thereof to the Owner, with the portions to be revised indicated. The Owner shall make the necessary revisions and again submit prints of the corrected drawings, in quadruplicate, for approval.

E. Should a drawing be submitted including materials or equipment which are unsatisfactory to the Borough, or which do not conform to the Plans and Specifications, the Borough will note thereon the unsatifactory portions, stamp the drawing "Not Approved", and return two (2) copies to the Owner. The Owner shall make such revisions as are required, and again submit four (4) prints of the corrected drawing for approval.

The Contractor and/or Owner shall revise and resubmit the drawings as required by the Borough, until approval thereof is obtained.

Shop drawings shall not be submitted to the Borough piecemeal; each submisssion of shop drawings shall be sufficiently complete to permit

adequate checking. In general, all drawings relating to a specific piece of equipment, or to a specific phase of builidng construction, shall be incorporated into one shop drawing submission. Shop drawing submittals which do not conform to the above requirements will be rejected.

3-4 Samples

The Contractor and/or Owner shall, when required, submit to the Borough for approval typical samples of materials and appliances. The samples shall be properly identified by tags and shall be submitted sufficiently in advance of the time when they are to be incorporated into the work so that rejections thereof will not cause delay. A letter of transmittal, in duplicate, from the Contractor and/or Owner requesting approval must accompany all such samples.

3-5 Material Testing and Inspection

When required, the Owner/Contractor shall retain an Borough approved testing laboratory, who shall make tests of the materials used in concrete, proportioning of concrete mixes and tests on concrete and other items within the scope of the work, as the work processes. Four (4) copies of all tests shall be supplied from the testing laboratory to the Borough.

All expenses caused by the inspection of any material or equipment by the Borough shall be borne by the Owner.

Satisfactory documentary evidence that material has passed the required inspection and testing must be furnished to the Borough prior to its incorporation in the work, and rejected materials must be promptly removed form the premises.

3-6 Care and Protection

The Contractor and/or Owner shall be solely responsible for properly storing and protecting all materials, equipment and work furnished under any water/sewer construction project from the time such materials and equipment are deliverd at the site of the work until final acceptance thereof. He shall, at all times, take necessary precautions to prevent injury or damage by water, freezing, or inclemencies of the weather to such materials, equipment and work. All injury or damage to materials, equipment or work resulting from any cause whatsoever shall be made good by the Contractor.

SECTION 4 GENERAL CONSTRUCTION CONDITIONS

4-1 Notification for Commencement and Sequence

The Contractor and/or Owner shall notify the Borough of the date work is to commence. The Contractor shall commence work on the date ordered by the Owner and approved by the Borough, but in no case may the Owner or Contractor start the work before receiving, in writing, permission from the Borough to do so.

The Contractor shall submit his proposed Construction Schedule to the Borough for approval within one week of the Contractor's receipt of the Owner's order to commence work. In the event the proposed Construction Schedule conflicts with other work by or for the Borough, the Contractor shall revise the Construction Schedule as necessary to secure approval, and resubmit the revised Schedule to the Borough.

4-2 Cleanup

During construction of the Work, the Contractor shall, at all times, keep the site of the Work and adjacent premises as free from materials, debris, and rubbish as is practicable and shall remove the aforementioned from any portion of the site, if, in the opinion of the Borough, such material, debris, or rubbish constitutes a nuisance or is objectionable.

The Contractor shall remove from the site all of his surplus materials and temporary stuctures as soon as practicable.

At the conclusion of the Work, all erection plant, tools, temporary structures, and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish, or any other foreign substances. He shall sweep paved streets of accumulated dust and debris caused by his operations.

4-3 Final Inspection

A date for final inspection of the Work by the Borough shall be set by the Contractor and/or Owner in a written request which inspection date shall be not less than ten (10) days after the date of such request. The work will be deemed complete as of the date so set by the Contractor, if upon such inspection, the Borough determines that no further work remains to be done at the site.

However, if such inspection, in the opinion of the Borough, reveals items of work still to be performed, the Contractor shall promptly perform them and then request a reinspection. If, under any reinspection, the Borough determines that the Work is complete, the date of completion shall be deemed to be the actual date of such reinspection, which shall be made not less than one (1) nor more than ten (10) days after the date of the request therefor.

In the event that certain portions of the Work are required to be placed in use before completion of all the Work included under the project, the Contractor shall request an inspection of such portions of the Work so required in the same manner as specified above for final inspection. In addition, Record Drawings must be done in accordance with Section 2-3 of these Specifications.

During inspections, the Work shall be clean and free from materials which would interfere with the inspection.

The Contractor and/or Owner shall provide reasonable assistance to the

Borough's inspector when testing is being peformed.

SECTION 5 STANDARD DESIGN SPECIFICATIONS

SECTION 02100

CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Clearing
2. Grubbing
3. Stripping and stockpiling topsoil
4. Debris disposal

B. Related Sections:
1. Section 02200 - Earthwork
2. Section 02221 - Trenching, Backfilling and Compacting
3. Section 02485 - Finish Grading, Seeding and Sodding
4. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 DEFINITIONS

A. Clearing is defined as the removal of trees, brush, down timber, rotten wood, rubbish, any other vegetation and objectionable material at or above original ground elevation not designated to be saved. Clearing also includes removal of fences, walls, guide posts, guide rail, signs, and other obstructions interfering with the proposed work.

B. Grubbing is defined as the removal from below the surface of the natural ground of stumps, roots and stubs, brush, organic materials and debris.

1.03 JOB CONDITIONS

A. The CONTRACTOR may clear all obstructions within the permanent and construction rights-of-way and easements except those specifically designated to be saved or restored on the Contract Drawings or Specifications. Right-of-way and easement limits, and obstructions specifically designated to be saved or restored will be marked by the ENGINEER.

1.04 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Burning Permits:
1. Submit copies of each onsite burning permit if such permits are required by local jurisdictional authorities.

C. Permits for Disposal of Debris:
1. Arrange for disposal of debris resulting from clearing and grubbing to locations outside the OWNER's rights-of-way and easements, and obtain written agreements with the owners of the property where the debris will be deposited.
2. Submit copies of the agreement with each property owner releasing the

OWNER from responsibility in connection with the disposal of the debris.

PART 2 PRODUCTS

2.01 MATERIALS

A. Temporary Fencing:
1. Undamaged picket snow fence, 4' high, formed of wooden slats, tightly woven with wire cable.,
2. Soil set fence posts, studded "T" type, 6' high.

B. Tree Wound Dressing:
1. Antiseptic and waterproof, asphalt base.

PART 3 EXECUTION

3.01 PREPARATION

A. Notify the ENGINEER at least 48 hours prior to beginning any clearing work.

B. Protect benchmarks, utilities, existing trees, shrubs and other landscape features designated for preservation with temporary fencing or barricades satisfactory to the ENGINEER. Store no material and perform no construction operation within 4 feet of any tree to be saved or within the tree protection fence.

C. When a private enclosure fence encroaches on the work area, notify the property owner at least 5 days in advance of the clearing/grubbing operations to permit the owner to remove it, construct a supplemental fence, or make such other arrangements as may be necessary for security purposes. Upon failure of the property owner to reasonably proceed with the work required to secure his property, carefully remove the fence, in whole or in part, and neatly pile the materials onto the owner's property.

3.02 UTILITY RELOCATIONS

A. Inform all companies, individuals and others owning or controlling facilities or structures within the limits of the work which have to be relocated, adjusted or reconstructed in sufficient time for the utility to organize and perform such work in conjunction with or in advance of the CONTRACTOR's operations.

B. Comply with the provisions of PA Legislature Act 38, signed, as amended.

3.03 CLEARING

A. Confine clearing to within the limits of the right-of-way or easement.

B. Fell trees in a manner that will avoid damage to trees, shrubs, and other installations which are to be retained.

C. Where stumps are not required to be grubbed, cut flush with ground elevation.

3.04 GRUBBING

A. Grub areas within the construction limits to remove roots and other objectionable material to a minimum depth of 8".

B. Remove all stumps within the cleared areas unless otherwise authorized by the ENGINEER.

3.05 STRIPPING AND STOCKPILING TOPSOIL

A. Strip topsoil to whatever depth it may occur from areas to be excavated, filled or graded. Stockpile topsoil at a location approved by the ENGINEER for use in finish grading.

B. The topsoil is the property of the OWNER. Do not use it as backfill or remove it from the site.

3.06 DEBRIS DISPOSAL

A. Legally dispose of all trees, logs, branches, brush, stumps and other debris resulting from clearing and grubbing operations.

B. Do not deposit or bury on the site debris resulting from the clearing and grubbing work.

C. Debris may be burned on-site if local ordinances allow open-air burning, if required permits are obtained, and if burning operations are conducted in compliance with local ordinances and regulations.

3.07 RESTORATION

A. Repair all injuries to bark, trunk, limbs and roots of remaining plants by properly dressing, cutting, tracing and painting using approved arboricultural practices and materials.

B. Replace, with like species acceptable to the OWNER, all trees, shrubs and plants designated to be saved which are permanently injured or die during the life of the Contract as a result of construction operations.

C. Remove protective fences, enclosures and guards upon the completion of the project.

D. Restore guide posts, guide rail, signs and other interferences to a condition equal to that existing before construction operations.

END OF SECTION

SECTION 02150
BORING, JACKING, TUNNELING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Approach trench excavation
2. Installation of casing pipe or liner
3. Installation of carrier pipe

B. Related Sections:
1. Section 02221 - Trenching, Backfilling and Compacting
2. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.
Other sections

1.02 REFERENCES

A. Comply with applicable federal, state and local ordinances, codes, statutes, rules and regulations; and with the regulations or requirements of all other affected jurisdictional bodies.

B. Pennsylvania Department of Transportation Specifications, Publication 408.

C. If the pipeline crosses under a State highway, refer to the PennDOT Design Manual, Part 5, Utility Relocation, Section 11:02, "Application for and Issuance of Highway Occupancy Permits on Existing Highways" and Section 12:30, "Crossing Installation" and the provisions of Title 67, Chapter 459, pertaining to the Occupancy of Highways by Utilities.

D. Conform to the latest edition of the "Specifications for Pipeline Occupancy of Consolidated Rail Corporation Property" for construction of water and sewer pipelines in Conrail right-of-way.

1.03 QUALITY ASSURANCE

A. CONTRACTOR Qualifications:
1. Construction operations shall be undertaken only by a CONTRACTOR well experienced in operations of similar magnitude and condition under transportation arteries and surface areas which cannot be disturbed.

B. Design Criteria:
1. Pipe and joints of leakproof construction, designed for the earth and/or other pressures present, plus highway H20 loading or railway E80 loading with the associated recommended impact loading.
2. Design bracing and backstops, and use jacks of sufficient rating so that the jacking can proceed without stoppage except for adding pipe sections and, as conditions permit, to minimize the tendency of the ground material to "freeze" around the casing pipe.

C. Allowable Tolerances:
1. Do not overcut excavation by more than 1" greater than the outside diameter of the casing pipe.
2. Install casing pipe with the determined vertical and horizontal alignment prior to installation of the carrier pipe.

1.04 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Submit history of previous work completed of equivalent nature and scope. Include qualifications and experience of key personnel.

C. Submit description of proposed construction methods, including methods of establishing and maintaining vertical and horizontal alignment.

D. Submit tunnel liner design calculations and manufacturer's data on tunnel liner plate showing sizes, shapes, methods of attachment, connection details, and details of grout holes.
1. Highway Crossings: Design tunnel for earth and/or other pressure loads present, plus AASHTO H20 live loading.
2. Railroad Crossings: Design tunnel for earth and/or other pressure loads present, plus Cooper's Railroad E80 live loading with 50 percent added for impact.

1.05 JOB CONDITIONS

A. Conduct operations so as not to interfere with, interrupt, damage, destroy, or endanger the integrity of surface or subsurface structures, utilities, or landscape in the immediate or adjacent areas.

B. When boring, jacking or tunneling under state highways and railroads, comply with applicable right-of-way occupancy permits.

C. If boring is obstructed, relocate or jack or tunnel crossing as approved by the ENGINEER.

PART 2 PRODUCTS

2.01 STEEL CASING PIPE

A. ASTM A53 - Grade B; 35,000 psi minimum yield strength.

B. Full circumference welded joints.

C. Diameter and wall thickness as shown on the drawings.

2.02 REINFORCED CONCRETE CASING PIPE

A. ASTM C76

B. Determine pipe class from "Concrete Pipe Design Manual" prepared by the American Concrete Pipe Association.

C. Tongue and groove joints. To avoid concentrated loads at the joints insert strips of plywood, asphalt roofing paper or similar resilient materials around the circumference in the joints.

2.03 TUNNEL LINER PLATE

A. Steel: ASTM A569, Minimum Yield Strength 28,000 psi. Galvanized.

B. Bolts and Nuts: ASTM A307, galvanized

2.04 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.
1. Provided with notches to accommodate fastening. Treat notches at time of pipe installation.

B. Creosoting: AASHTO M133.

2.05 STEEL STRAPPING

A. ASTM A36

2.06 SAND (Fine aggregate)

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

2.07 GROUT

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

PART 3 EXECUTION

3.01 APPROACH TRENCH

A. Excavate approach trench using methods as site conditions require.

B. Ensure pipe entrance face as near perpendicular to alignment as conditions permit.

C. Establish a vertical entrance face at least 1 foot above top of casing or tunnel lining.

D. Install adequate excavation supports as specified in Section 02221 - Trenching, Backfilling and Compacting.

3.02 CASING PIPE INSTALLATION METHODS

A. Boring:
1. 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. Make sure the machine bore and cutting head arrangement is removable from within the pipe. Arrange the face of the cutting head to provide a barrier to the free flow of soft material.
2. 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.
3. 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.

B. Jacking:
1. Construct adequate thrust wall normal to the proposed line of the thrust.
2. Impart thrust load to the pipe through a suitable thrust ring that is sufficiently rigid to ensure distribution of the thrust load on the pipe.
3. Comply with PennDOT Specifications, Publication 408, Section 601.3(g) - Pipe Culverts, Jacked Pipe.

C. Drilling and Jacking:
1. Use an oil field type rock roller bit or plate bit made up of individual roller cutter units solidly welded to the pipe which is turned and pushed for its entire length by the drilling machine to give the bit the necessary cutting action.
2. Inject a high density slurry (oil field drilling mud) to the head as a cutter lubricant. Inject slurry at the rear of the cutter units to prevent jetting action ahead of the pipe.

D. Mining and Jacking
1. Utilize manual hand-mining excavation from within the casing pipe as it is advanced with jacks, allowing minimum ground standup time ahead of the casing pipe.

3.03 TUNNELING

A. Advance excavation for the tunnel liner in increments sufficient for the erection of one ring of liners and install liner plates immediately after each increment of excavation. Carry on excavation in such a manner that voids behind the liner plates are held to a minimum. Completely fill such voids with grout followed immediately by grout placed under pressure.

B. Excavate to the lines, grades, dimensions and tolerances as specified and shown, to accommodate the initial support and permanent lining.

C. Installation of Tunnel Linings:
1. Install the tunnel lining in a manner that will not damage the lining or coating.
2. Ensure that the edges are clean and free from material that could interfere with proper bearing.
3. Install bolts for liner plates in accordance with liner plate manufacturer's recommendations and retension or replace if necessary any bolt which does not meet the requirements.

D. Place concrete invert as shown on the Detail Drawing.

3.04 DEWATERING

A. Intercept and divert rainfall surface runoff and groundwater away from excavation through the use of dikes, curb walls, ditches, pipes, sumps or other means.

B. Develop a substantially dry subgrade for the prosecution of subsequent operations.

C. Comply with Federal and State requirements for dewatering to any water course, prevention of stream degradation, and erosion and sediment control.

3.05 PRESSURE GROUTING

A. Pressure grout the annular space between casing pipe and surrounding earth.

3.06 CARRIER PIPE INSTALLATION

A. All provisions regarding cleaning, inspection and handling specified under pipe material sections apply to this work.

B. Place the carrier as shown on the Detail Drawings. Exercise care to prevent damage to pipe joints when carrier pipe is placed in casing.

C. Support pipeline within casing so that no external loads are transmitted to carrier pipe. Attach wooden skids to barrel of carrier pipe; do not rest carrier pipe on bells.

D. Close ends of casing as detailed on Drawings.

END OF SECTION

SECTION 02200
EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Includes all Earthwork, as set forth on the Drawings and in accordance with this section of the Specifications.
1. All Work performed and materials furnished shall conform to the lines, grades, cross-sections, dimensions, details, gradations, and physical requirements established by the Drawings and Specifications.
2. All Earthwork performed, including the materials furnished, shall be subject to the testing and inspection requirements set forth herein.

B. Related Sections
1. Section 02100 - Clearing and Grubbing
2. Section 02221 - Trenching, Backfilling, and Compacting
3. Sectior 02485 - Finish Grading, Seeding, and Sodding
4. Section 03300 - Cast-in-place Concrete
5. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 REFERENCES

A. Pennsylvania Department of Transportation Specifications, Publication 408.

1.03 SUBMITTALS

A. Submit under the provisions of Section 01300.
1. Submit to the ENGINEER, at least 28 days prior to any earthwork, the following information:
a. Source(s) for all types of backfill and embankment materials.
b. Numbers and types of excavating and compacting equipment to be used.
c. Schedule for performance of earthwork operations.
2. Deliver to a soils engineering and testing laboratory, as selected by the ENGINEER, a bagged, one-hundred pound, representative sample of each kind of backfill and embankment material to be used in the Project. Submit samples to the laboratory at least 21 days prior to backfill and embankment operations. Results of laboratory analyses must be delivered to the ENGINEER at least 7 days prior to these operations. The ENGINEER reserves the right to determine where any and all material samples are taken and to select said samples. In case any sample fails any of the tests, the ENGINEER may require the CONTRACTOR to have additional samples taken and tested to prove the reliability of the source or the ENGINEER may reject the source. Gumbo soil, red dog, or any such elongated particle material; boulders; muck; or decayed vegetation in any form is not acceptable material. By submitting samples of materials, the CONTRACTOR agrees and guarantees that the materials actually used in the Project will conform with the characteristics required by the Specifications and demonstrated by the results of laboratory analyses performed upon representative samples.

1.04 QUALITY ASSURANCE

A. Source of Supply Approval

1. All aggregates furnished for the Project to be used as backfill or embankment material must be acquired from a supplier approved by the Commonwealth of Pennsylvania, Department of Transportation (PennDOT) and listed in PennDOT Publication No. 34, "Aggregate Producers."

B. Reference Specifications

1. Unless specifically noted otherwise in the Specifications or on the Drawings, all earthwork shall comply with applicable specifications set forth in the latest edition of Publication 408, "Specifications," of the Commonwealth of Pennsylvania, Department of Transportation.

1.05 SAFETY AND HEALTH CONSIDERATIONS

A. Provide adequate and suitable means of support to prevent failure of any excavation wall and to protect personnel working in and adjacent to the excavation.

B. All open excavation and other construction which presents a hazard to personnel or equipment on the Project area shall be adequately barricaded and posted with appropriate warning lights, barricades, or signs as required by local, State, or Federal regulations, or by the ENGINEER.

C. Excavations near existing structures will not be allowed closer to the structure than the depth of the excavation below the bottom of the foundation, without adequately shoring the excavation.

D. There may be existing water and sewer pipes, storm sewers, and other utilities within the Project area. An attempt has been made to indicate the location of these utilities on the Drawings, but the completeness or accuracy of the information provided is not guaranteed. Verification of utilities and their locations is the sole responsibility of the CONTRACTOR.

E. During the progress of the Work, minimize the creation and dispersion of dust. If calcium chloride or other materials are required for more effective dust control; furnish, load, deliver, and spread the material, as authorized by the ENGINEER.

F. Maintain existing access roads and all other facilities free of mud, dirt, and debris.

1.06 PROTECTION AND RESTORATION OF FACILITIES

A. Operate excavation machinery, cranes, and other equipment with care to prevent damage to structures, piping, wiring, and other facilities.

B. On paved surfaces, do not operate tractors, bulldozers, or any other power operated equipment having tracks or wheels which are so constructed that they will cut or otherwise damage such surfaces.

C. Restore property or facilities damaged by the CONTRACTOR's operations to conditions at least equal to those existing immediately prior to the beginning

of construction activities. Use suitable materials and methods to perform the restoration as promptly as practicable. The scheduling of restoration work shall be approved by the ENGINEER.

PART 2 PRODUCTS

2.01 MATERIALS

A. Suitable material for backfill and embankment may not be available on the Project site. In general, materials used for backfill and embankment shall be foreign materials brought to the site from sources approved by the ENGINEER.

B. On-site materials may be suitable for grading, if so approved by the ENGINEER.

C. On-site materials excavated in the course of construction which are deemed unsuitable by the ENGINEER for backfill and embankment shall be removed from the site by the CONTRACTOR at his expense and properly disposed of, as required.

D. All backfill and embankment material, whether from the excavations or from borrow areas, shall be of such a nature that it will make a dense, stable fill after it has been placed and properly compacted.

2.02 BACKFILL AND EMBANKMENT MATERIALS

A. Unless indicated otherwise on the Drawings or in these Specifications, suitable backfill and embankment material includes all earth materials having a maximum size that can be readily placed and compacted in loose 8-inch layers, except as herein specified, and classified as follows:

1. More than 35 percent passing the No. 200 sieve,
2. Not more than 20 percent of the material larger than two inches,
3. Minimum dry weight density of 95 pounds per cubic foot, as determined in accordance with PennDOT PTM No. 106, Method B,
4. Maximum liquid limit of 65, as determined in accordance with AASHTO-T89,
5. Plasticity index, as determined by AASHTO-T90 for soils having liquid limits of 41 to 65 inclusive, not less than Liquid Limit minus 30.

B. The CONTRACTOR must have the approval of the ENGINEER for the backfill and embankment material prior to transporting the material to the site.

C. Backfill for all pipelines under stabilized surfaces (concrete, bituminous, and crushed stone pavements, and roadway shoulders) shall be PennDOT No. 2RC crushed aggregate.

2.03 MATERIAL FOR OVEREXCAVATION

A. Material used to bring overexcavations for pipelines to the proper elevations shall be the bedding material specified for respective installation. Material used to bring overexcavations for structures to the proper elevations shall be controlled fill of PennDOT No. 2RC crushed aggregate, properly compacted.

2.04 STONE RIPRAP

A. Riprap Materials: Provide in accordance with PennDOT Specifications, Publication 408, Section 850.2A.

PART 3 EXECUTION

3.01 GENERAL

A. Make an examination of the Project site(s) that will receive the improvements and determine the extent and character of the Work to be performed.

B. Perform all excavation to the lines, grades, and elevations indicated on the Drawings, regardless of the type and character of the materials encountered. Perform all excavation on an unclassified basis; no extra will be allowed for rock excavation, quicksand excavation, muck excavation, or for any other type of excavation encountered. Rock excavation is the removal and disposal of materials which requires drilling and blasting, wedging, sledging, barring, or breaking up with power operated equipment for removal, including ledgerock, concrete or masonry structures, boulders, and other materials of related character.

C. Use no frozen or excessively wet material for backfill or embankment. Keep suitable or selected backfill or embankment material separated from the unsuitable types. If suitable backfill or embankment material becomes frozen, excessively wet, or mixed with unsuitable material, do not use it as backfill or embankment material. Provide supplemental approved material at no additional cost to the OWNER.

D. Haul all excavation materials not used in backfill or final grading operations from the site and dispose of properly. Do not dispose of such material on the work-site without the permission of the ENGINEER.

3.02 STRIPPING OF TOPSOIL

A. Before beginning excavation or filling work, strip the topsoil from all areas to be affected to a depth as required and either:
1. Spread on areas already graded and prepared for topsoil in accordance with the requirements in Section 02485, or
2. Store at a location designated on the Drawings or by the ENGINEER.

3.03 STRIPPING OF UNSUITABLE MATERIAL

A. There may be areas at the Project site where there is unsuitable material (decayed vegetation, leaves, trash, debris, brush, ashes, or cinders) at or near the surface of existing ground. Remove all of this unsuitable material and properly dispose of it off site.

3.04 SHEATHING AND SHORING

A. Where necessary for safety or to prevent disturbance, damage, or

settlement of adjacent structures, pipelines, utilities, or paving, sheath and shore all excavations. Any damage to new or existing structures occurring through settlement, water or earth pressure, or other causes due to inadequate bracing shall be repaired by the CONTRACTOR at his own expense.

B. Where trenches or excavations exceed five feet in depth, submit pipe installation and excavation procedures to the ENGINEER for review in advance of the start of the Work. Include complete details and descriptive data for materials and installation procedures proposed for use on the Project.

C. All sheathing and shoring, trench boxes, and other forms of excavation protection must be designed by a Professional Engineer licensed to practice in the State of Pennsylvania. This Engineer shall provide the CONTRACTOR with a certification signed and sealed by him stating that the designs of such facilities conform to the requirements of all applicable laws, codes, and regulations. Copies of this certification shall be submitted to the ENGINEER.

D. The CONTRACTOR must follow the proposed sheathing plans submitted. No deviations may be made from the filed procedures without first submitting a revised sheathing and shoring plan, signed and certified as required for the original submission, by the same licensed Professional Engineer who prepared the original submission.

E. All sheathing and shoring not to be left in place shall be carefully removed in such a manner as not to endanger the construction or other structures. All voids left or caused by withdrawal of sheathing shall be immediately backfilled with well-compacted material.

F. The costs for all excavation protection methods shall be included in the bid price for the Contract.

G. The CONTRACTOR is solely responsible and liable for any damage, bodily injuries, or deaths that result from the failure to provide adequate sheathing and shoring or other means of excavation protection.

H. The CONTRACTOR is solely responsible and liable for any and all damages to persons or property resulting from any improper or premature removal of excavation protection facilities.

3.05 SHEATHING AND SHORING LEFT IN PLACE

A. In order to protect adjacent property or structures, the ENGINEER may require that sheathing and shoring, or other excavation protection facilities, be left in place to be embedded in backfill or concrete. No additional payments will be made to the CONTRACTOR for excavation protection left in place. All other excavation protection facilities may be salvaged when the removal of same will not present a hazard to either the adjacent property and structures or the safety of persons at the Project site.

B. Materials used for excavation protection may have to be cut off at specific elevations or otherwise modified to accommodate job conditions.

3.06 EXCAVATION FOR STRUCTURES

A. Perform excavation at places indicated on the Drawings to the lines, grades, and elevations shown or as required to properly construct the structures. No allowance will be made for materials excavated beyond or below such lines or grades unless ordered by the ENGINEER. All soft and unstable material and other portions of the subgrade that will not compact readily or serve the intended purpose shall be removed as directed and specified herein. Perform excavation in such a manner that the requirements for backfill, embankment, and controlled fill can be followed.

B. If the CONTRACTOR permits natural foundations to become wet and soft from rain or other precipitation, such soft materials shall be removed by the CONTRACTOR and replaced with controlled fill materials specified above under MATERIALS FOR OVEREXCAVATION; controlled fill shall be placed in accordance with the requirements hereafter presented under BACKFILL FOR STRUCTURES or as directed by the ENGINEER.

C. In the case of concrete structures, make excavations far enough from the final lines of the structures to afford ample room for setting and removing forms, performing dewatering operations, and satisfying other construction needs.

D. Except where otherwise indicated on the Drawings or specified for a particular structure, or where ordered by the ENGINEER, carry excavations to the grade of the bottom of the footing or slab or, in the case of structures to be constructed upon controlled fill, to the grade required to properly accommodate specified fill materials. The prepared surface for structural foundations shall be level, properly compacted, and free from any protruding rock or boulders. Any foundation areas which are overcut or disturbed by the CONTRACTOR's operations shall be cleaned and backfilled to the foundation grade with controlled fill materials specified above under MATERIALS FOR OVEREXCAVATION; controlled fill shall be placed in accordance with the requirements hereafter presented under BACKFILL FOR STRUCTURES or as directed by the ENGINEER. Protect excavation bottoms against freezing.

E. Should operations impair foundations for new or existing structures, provide concrete underpinning piers or supports for such structures, as directed by the ENGINEER and at no additional cost to the OWNER.

F. Excavation for manholes or similar structures may be performed with nonvertical banks except where such excavation will undermine adjacent facilities or structures, or where such excavation will violate private property outside the property lines established for this Work. All inlet and discharge piping within the area of the excavation shall be installed in concrete cradle and the cradle shall extend into the pipe trench to where standard trench conditions are reached; minimum cradle extension shall be three feet.

G. During the process of excavation, maintain the grade in such condition that it will be well drained at all times. When directed by the ENGINEER, install temporary drains and drainage ditches to intercept or divert surface water which may affect the safety or condition of the Work.

H. The ENGINEER shall have complete control over the excavation, moving, placing, and disposition of all material. He shall determine the suitability

of material to be used as backfill and placed in embankments. Dispose of all material not considered suitable.

I. The CONTRACTOR shall be responsible for and shall take all necessary precautions to protect and preserve or to provide necessary temporary services for existing drainage, conduits, utilities, or similar underground structures or parts thereof.

J. Unless otherwise restricted by requirements set forth on the Drawings or in these specifications, suitable material removed from the excavation shall be used, insofar as practicable, for embankments, backfill, and other purposes as may be approved by the ENGINEER.

K. Construct ditches in conformity with the lines and grades indicated on the Drawings or as required. The slopes and bottoms of all drainage ditches shall be left in a neat and trim condition. Maintain all excavated ditches and gutters free from detrimental quantities of leaves, sticks, and other debris until final acceptance of the Work.

3.07 BACKFILL FOR STRUCTURES

A. Do not backfill around structures until approval is received from the ENGINEER at the site. All Structures designed to contain water shall be tested for watertightness, as required under Cast-In-Place Concrete: Section 03300, before any backfill is placed above the respective footings. Place no backfill against newly poured concrete walls until the concrete has attained the specified 28-day strength. Place backfill around tanks and structures uniformly in successive layers around the entire structure to preclude the possibility of non-uniform loading of the exterior wall. In this regard, the maximum permissible differential elevation of backfill at any one time is four feet.

B. Compact backfill around structures using adequately weighted rollers or heavy (10-ton minimum weight) bulldozers. Within three feet of any building wall, use only approved mechanical tampers. Spread and compact backfill material to be rolled in layers not to exceed six inches (compacted thickness). Rollers shall be of a design approved by the ENGINEER. The thickness of backfill material which is spread by bulldozer and compacted by the bulldozer tracks, or which is to be tamped in place, shall not exceed four inches. No stones larger in any dimension than the thickness of the compacted layers specified will be permitted in the backfill material.

C. To attain optimum compaction characteristics, moisten backfill according to ASTM D1557. Bring to a suitable elevation above grade to provide for anticipated settlement and shrinkage.

3.08 EMBANKMENT

A. Employ suitable compaction equipment for the type of embankment material being placed.

B. Form embankments of satisfactory materials placed in successive horizontal layers of not more than eight inches in loose depth for the full width of the site cross-section to the lines, grades, and elevations shown. A

minimum of six passes with the compaction equipment is required on each lift or layer before the next lift is placed. Suspend earthwork operations at any time when satisfactory results cannot be obtained on account of rain, freezing weather, or other unsatisfactory field condition. After heavy rains, drag, blade, or slope the fill to properly drain the material.

C. Should the material be too wet to permit proper compaction or rolling, delay all work on all portions of the embankment affected until the material has dried to the required moisture content. If the material is not moist enough for optimum results when placed, wet it before rolling. Harrowing or mixing the spread material may be required whenever considered necessary to secure a uniform moisture content.

1. Perform sprinkling with sprinkling wagons, pressure distributors, or other approved equipment that will sufficiently distribute the water.

D. Construct embankments approximately six to eight inches higher than required for the structures to be constructed thereon. Then, carefully excavate, grade, prepare, and compact the surface of the embankment to receive the structure. Overfill, and then remove the excess material to solid embankment material when constructing structures that are to be placed upon embankment.

E. Replace any embankment portion which, in the opinion of the ENGINEER, has become displaced due to carelessness or negligence.

3.09 EARTHWORK FOR ROADWAYS

A. Furnish all plant, labor, and materials to perform all excavating and grading for the construction of road subgrades, including all ditches, gutters, and shoulders; disposing of all acceptable excavated materials in embankments and backfills; and dressing, shaping, wetting, and compacting to the full width of the pavement areas, including shoulders. Perform all work in conformity with lines, grades, cross-sections, and dimensions shown on the Drawings, as staked, or as directed by the ENGINEER.

B. Carry the rough excavation to such depth that sufficient material will be left above the designated grade to allow for compaction. Likewise, on embankments, place sufficient material above the designated grade to allow for compaction and settlement.

C. The ENGINEER shall have complete control over the excavation, moving, placing and disposition of all material. He shall determine the suitability of the material to be placed in embankments. All material not considered suitable shall be disposed of as directed.

D. Make all necessary precautions to protect and preserve or provide necessary temporary services for existing drainage, conduits, utilities, or similar underground structures or parts thereof.

3.10 COMPACTION

A. Material compaction shall be closely controlled during construction to provide minimum densities required for specific use classifications.

B. Compaction shall not be less than the following percentages of maximum dry density for soils which exhibit a well-defined moisture-density relationship, as determined in accord with ASTM D1557, and not less than the following percentages of relative density for soils which will not exhibit a well-defined moisture-density relationship, as determined in accordance with ASTM D2049.

1. Backfilling of Structures - Compact top 12 inches of subgrade and each layer of backfill or embankment material to 95 percent maximum dry density or 90 percent relative dry density.
2. Building Slabs and Other Subgrade - Compact top 12 inches of subgrade and each layer of backfill or embankment material to 95 percent maximum dry density or 90 percent relative dry density.
3. Roadways, Pavements and Embankments - Compact top 12 inches of subgrade and each layer of backfill or embankment material to 95 percent maximum dry density or 90 percent relative dry density.
4. Walkways - Compact top six inches of subgrade and each layer of backfill or embankment material to 90 percent maximum dry density.
5. Trenches - See Section 02221.

C. Any areas inaccessible to a roller shall be consolidated and compacted by mechanical tampers.

3.11 FINAL SUBGRADE INSPECTION

A. ENGINEER will inspect the subgrade immediately before the CONTRACTOR places foundations, floor slabs, or pavements on rock, compacted embankments, or virgin soil. Remove unsatisfactory material and replace with properly compacted material. Commence placing of foundations, floor slabs, and pavements within 24 hours of final approval. Rain, frost, and other factors (which in the opinion of the ENGINEER are potentially damaging to the subgrade) occurring after the final approval, but before or during said placement, shall require an additional inspection of the subgrade for acceptance by the ENGINEER. The CONTRACTOR shall correct any deficiencies found at this time at his own expense.

3.12 GRADING

A. Bring all disturbed areas, including those areas used for storage of excavated material and equipment, up to within six inches of the final grade indicated on the drawings by the methods herein specified. In general, slope the grade away from the installed or existing structures to drainage ditches or culverts. Those areas which are not occupied by structures or pavement shall be thoroughly loosened by harrowing or dicing and then raked by hand, Remove all stones over one inch in size, all rubbish, and all debris. Space topsoil piles uniformly and distribute by an approved method.

B. Protect all newly graded work from the action of the elements and from settlement or washing that may occur. Repair damaged areas prior to the acceptance of the work and re-establish grades to the required elevations and slopes. Dispose of all surplus or undesirable excavated material as specified herein. Grading, backfilling, and compacting of embankment construction is not permitted: during freezing weather, when freezing weather is anticipated during the working day, when the area to be backfilled is frozen, when the backfill material is frozen, while rain is falling, while the ground is wet

from precipitation, or when in the opinion of the ENGINEER conditions are unfavorable. All level areas and sloped areas must be graded to neat, trim, pleasing lines, as directed by the ENGINEER.

3.13 DISPOSAL OF UNSUITABLE OR EXCESS MATERIAL

A. All materials from excavations not suitable or needed for embankment or backfill shall become the property of the CONTRACTOR and shall be removed from the Project site. If the CONTRACTOR fails to promptly remove this surplus or unsuitable material, the OWNER may have the material removed and charge the cost thereof as money paid to the CONTRACTOR.

3.14 DEWATERING

A. Provide and maintain in operation suitable and adequate pumping equipment or well points to dewater excavations.

B. The various tanks and basins, or the basements of buildings before completion of the superstructure and backfill, may be subject to floating during periods of high water unless they are filled with water. Make adequate provision for such filling and subsequent dewatering.

C. Control the grading in the vicinity of structures so that the ground surface is properly ditched to prevent water running into excavated areas.

D. Provide sufficient dewatering plant or equipment ready for immediate use.

3.15 EQUIPMENT

A. The CONTRACTOR may use any type of earth-moving equipment he may desire or has at his disposal, provided the equipment conforms with the requirements set forth in Section 108.05 of PennDOT Publication 408 and meets the qualifications necessary for the proper execution of the Work.

B. Furnish, operate, and maintain such equipment as is necessary to control uniform layers, section, and smoothness of grade for compaction and drainage.

3.16 GABIONS

A. Install in accordance with Section 626, "Gabions," of PennDOT Publication 408.

3.17 RIPRAP

A. Install in accordance with Section 850, "Rock Lining," of PennDOT Publication 408.

3.18 FIELD QUALITY CONTROL - TESTING PROGRAM

A. Use "Tests for Moisture-Density Relations of Soils, Using 10 Pound Rammer and 18 Inch Drop" (ASTM D1557 or AASHTO-T180) to determine the optimum moisture content and the maximum density of each type of material used for trench backfill.

B. Use either "Laboratory Determination of Moisture Content of Soil" (ASTM D2216) or "Moisture Content of Soil and Soil-Aggregates in Place by Nuclear Methods (Shallow Depth)" (ASTM D3017) to determine the field moisture content of materials being compacted.

C. Use "Density of Soil and Soil-Aggregates in Place by Nuclear Methods (Shallow Depth)" ASTM D2922) to determine the field density of compacted material.

D. A soils engineering and testing laboratory shall perform sufficient tests and inspection procedures, both in the laboratory and field, to insure that the provisions of this Specification are met. The ENGINEER shall determine the minimum number, locations, and times of testing and inspection procedures performed and shall select the engineering and testing laboratory to be used by the CONTRACTOR. Reports of all testing and inspection shall be immediately typed and delivered to the CONTRACTOR and ENGINEER. All costs associated with the required testing and inspection, including the cost of the engineering and testing laboratory, shall be paid by the CONTRACTOR as part of the bid price for the Contract.

E. After testing and inspection are completed for a particular subgrade and the respective laboratory reports are reviewed and approved by the ENGINEER, the subgrade shall be examined in the field by the ENGINEER prior to authorization of subsequent construction.

F. In the event that any in-place density test fails (i.e., does not indicate compaction meeting minimum density requirement), the ENGINEER shall require additional testing and inspections by the soil engineering and testing laboratory to substantiate conditions. If the additional testing and inspections indicate unsatisfactory conditions, the CONTRACTOR shall make all corrections and modifications to the methods, materials, moisture content, etc., used in placing and compacting the backfill or embankment. Responsibilities for costs concerning engineering and testing laboratory services are set forth elsewhere in Subsection 4.1 and in Paragraph 21 of the Instructions to Bidders.

G. The soils engineering and testing laboratory shall be directly responsible to the ENGINEER, to whom the laboratory must promptly, faithfully, and accurately report the results of its tests and inspections. The laboratory must also work in coordination with the CONTRACTOR, making all tests and inspections required by the Specifications. Reports must clearly state whether or not the tests and inspections indicate conditions that are in compliance with the Specifications.

END OF SECTION

SECTION 02207
AGGREGATE MATERIALS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
1. Fine and Coarse Aggregate materials.

B. Related Sections
1. Section 02221 - Trenching, Backfilling, and Compacting
2. Section 03300 - Cast-In-Place Concrete

1.02 REFERENCES

A. AASHTO - M147 - Materials for Aggregate and Soil-Aggregate.

B. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.

C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

E. PennDOT Specifications, Publication 408/90, Section 703 - AGGREGATES

PART 2 PRODUCTS

2.01 AGGREGATE MATERIALS

A. AASHTO No.3 - PennDOT Manual 408, Section 703.2 - COARSE AGGREGATE.

B. AASHTO No.8 - PennDOT Manual 408, Section 703.2 - COARSE AGGREGATE.

C. AASHTO No. 57 - PennDOT Manual 408, Section 703.2 - COARSE AGGREGATE.

D. PennDOT No. 2A - Crushed natural stone; free of shale, clay, friable material, sand, debris; graded in accordance with the PennDOT Manual 408, Section 703.2 - COARSE AGGREGATE.

E. PennDOT No. 2RC - Crushed stone or gravel aggregate conforming to Select Granular Material (2RC), Section 703.3, Publication 408 Specifications.

PART 3 EXECUTION

3.01 STOCKPILING

A. Stockpile materials on site at locations indicated designated by OWNER.

B. Stockpile in sufficient quantities to meet project schedule and requirements.

C. Separate differing materials with dividers or stockpile apart to prevent mixing.

D. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

3.02 STOCKPILE CLEANUP

A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free standing surface water.

3.03 COMPACTION

A. Place coarse aggregate in continuous layers not exceeding 4 inches and compact to 90% of the maximum dry density in accordance with ASTM D698.

END OF SECTION

SECTION 02221
TRENCHING, BACKFILLING AND COMPACTING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Cutting paved surfaces
2. Blasting
3. Trench excavation
4. Support of excavation
5. Pipe bedding and backfill requirements
6. Control of excavated material
7. Rough grading
8. Restoration of unpaved surfaces

B. Related Sections:
1. Section 02100 - Clearing and Grubbing
2. Section 02150 - Boring, Jacking, and Tunneling
3. Section 02200 - Earthwork
4. Section 02485 - Finish Grading, Seeding and Sodding
5. Section 02575 - Paving Restoration and Resurfacing
6. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 REFERENCES:

A. Pennsylvania Department of Transportation:
Regulations Governing Occupancy of Highways by Utilities (67 PA Code, Chapter 459)
Specifications, Publication 408
Pennsylvania Test Method, PTM 106
Pennsylvania Test Method, PTM 402
Work Zone Traffic Control, Publication 203

B. American Society for Testing and Materials (ASTM):
ASTM C33, Specifications for Concrete Aggregates
ASTM D698, Tests for Moisture-Density Relations of Soils
ASTM D2922, Test for Density of Soil and Soil Aggregate in Place by Nuclear Methods

1.03 QUALITY ASSURANCE

A. Testing Agency:
1. Arrange for and pay for compaction testing to be performed by a Soils Testing Laboratory and approved by the ENGINEER.

B. Compaction testing
1. At the discretion of the ENGINEER, compaction testing may be required. Required compaction testing will be conducted at the expense of the CONTRACTOR. Conduct compaction tests at locations as directed by the ENGINEER during backfilling operations.

2. Determine compaction in state highways and shoulders by the testing procedure contained in Pennsylvania Test Method, PTM 106, Method B or PTM 402.
3. Determine compaction in areas other than state highways and shoulders by the testing procedure contained in ASTM D698.
4. Compaction shall not be less than the following percentages of maximum dry density for soils which exhibit a well-defined moisture-density relationship, as determined in accord with ASTM D1557, and not less than the following percentages of relative density for soils which will not exhibit a well-defined moisture-density relationship, as determined in accordance with ASTM D2049.
a. Pipe Trenches - Compact top 12 inches of subgrade and each layer of backfill or embankment material to 95 percent maximum dry density or 90 percent relative dry density.

1.04 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates
1. Submit certification attesting that the composition analysis of pipe bedding and select material stone backfill materials meet specification requirements.
2. Submit certified compaction testing results from the soils testing laboratory.

C. Compaction Equipment List
1. Submit a list of all equipment to be utilized for compacting, including manufacturers' lift thickness limitations.

1.05 JOB CONDITIONS

A. Classification of Excavation
1. All excavation work performed under this contract is unclassified, and includes excavation and removal of all soil, shale, rock, boulders, fill and all other materials encountered of whatever nature.

B. Control of Traffic
1. Employ traffic control measures in accordance with PennDOT Publication 203.

C. Protection of Existing Utilities and Structures:
1. Take all precautions and utilize all facilities required to protect existing utilities and structures. In compliance with Act 38 of the General Assembly of Pennsylvania, advise each Utility at least 3 working days in advance of intent to excavate, do demolition work or use explosives and give the location of the job site. Request cooperative steps of the Utility and suggestions for procedures to avoid damage to its lines.
2. Advise each person in physical control of powered equipment or explosives used in excavation or demolition work of the type and location of utility lines at the job site, the Utility assistance to expect, and procedures to follow to prevent damage.
3. Immediately report to the Utility and the ENGINEER any break, leak or other damage to the lines or protective coatings made or discovered during the work and immediately alert the occupants of premises of any emergency created

or discovered.
4. Allow free access to Utility personnel at all times for purposes of maintenance, repair and inspection.

PART 2 PRODUCTS

2.01 PIPE BEDDING MATERIAL

A. Type A and Type B Bedding Material: PennDOT No. 2A graded in accordance with the PennDOT Specifications, Section 703.2 - COARSE AGGREGATE.

2.02 BACKFILL MATERIAL

A. Select Material Backfill:
1. Type A and Type B Backfill Material: PennDOT No. 2RC graded in accordance with the PennDOT Specifications, Section 703.3 - SELECT GRANULAR MATERIAL (2RC).

B. Suitable Backfill Material (State highways, shoulders, and paved or unpaved vehicle or walkway surfaces):
1. From top of pipe bedding material to subgrade elevation: Same as pipe bedding material specified above.

C. Suitable Backfill Material (Other than state highways and shoulders):
1. From top of pipe bedding material to 24" over top of pipe:
a. Material excavated from the trench if free of stones larger than 2" in size and free of wet, frozen, or organic materials.
2. From 24" above pipe to subgrade elevation:
a. Material excavated from the trench if free of stones larger than 8" in size and free of wet, frozen or organic materials.

D. Suitable Foreign Backfill Material:
1. Material meeting the requirements of paragraph C above which has to be rehandled or hauled further to the point of use than it would be to haul it to the dump site.

PART 3 EXECUTION

3.01 MAINTENANCE AND PROTECTION OF TRAFFIC

A. Coordinate the work to insure the least inconvenience to traffic and maintain traffic in one or more unobstructed lanes unless closing the roadway is authorized.

B. Maintain access to all streets and private drives.

C. Provide and maintain signs, flashing warning lights, barricades, markers, and other protective devices as required to conform with construction operations and to keep traffic flowing with minimum restrictions.

D. Comply with state and local codes, permits and regulations.

3.02 CUTTING PAVED SURFACES

A. Where installation of pipelines, miscellaneous structures, and appurtenances necessitate breaking a paved surface, make cuts in a neat uniform fashion forming straight lines parallel with the centerline of the trench. Cut offsets at right angles to the centerline of the trench.

B. Protect edges of cut pavement during excavation to prevent raveling or breaking; square edges prior to pavement replacement.

C. The requirement for neat line cuts, in other than state highways, may be waived if the final paving restoration indicates overlay beyond the trench width.

3.03 BLASTING

A. Blasting will be permitted except in areas where the proximity of structures, underground facilities, or public safety preclude the use of explosives. Nothing in this Section relieves the CONTRACTOR of his responsibilities for damages, nor shall it result in any responsibility to the OWNER or the ENGINEER.

3.04 TRENCH EXCAVATION

A. Depth of Excavation:
1. Gravity Pipelines:
a. Excavate trenches to the depth and grade shown on the profile drawings for the invert of the pipe plus that excavation necessary for placement of pipe bedding material.
b. Excavation for laterals shall provide a straight uniform grade from the main pipeline or riser stack to the elevation at the right-of-way line, plus that excavation necessary for placement of pipe bedding material.
2. Pressure Pipelines:
a. Excavate trenches to the minimum depth necessary to place required pipe bedding material and to provide 4' from the top of the pipe to the finished ground elevation, except where specific depths are otherwise shown on the drawings.
3. Where unsuitable bearing material is encountered in the trench bottom, continue excavation until the unsuitable material is removed, solid bearing is obtained or can be established or concrete cradle can be placed. If no concrete cradle is to be installed, refill the trench to the required pipeline grade with Type A pipe bedding material.
4. Where the CONTRACTOR, by error or intent, excavates beyond the minimum required depth, backfill the trench to the required pipeline grade with compacted Type A pipe bedding material.

B. Width of Excavation:
1. Excavate trenches, including laterals, to a width necessary for placement and jointing of the pipe and for placing and compacting pipe bedding and trench backfill around the pipe, but not less than 16" plus the pipe outside diameter.
2. Shape trench walls completely vertical from trench bottom to at least 2' above the top of the pipe.
3. For pressure pipeline fittings, excavate trenches to a width that will

permit placement of concrete thrust blocks. Provide earth surfaces for thrust that are perpendicular to the direction of thrust and are free of loose or soft material.

C. Length of Open Trench:
1. Do not advance trenching operations more than the length of pipe placement and backfilling that can be completed the same day, except as specified in the State Highway Occupancy Permit.

3.05 SUPPORT OF EXCAVATION

A. Support excavations with sheathing, shoring and bracing or a "trench box" as required to comply with Federal and State laws and codes.

B. Install adequate excavation supports to prevent ground movement or settlement to adjacent structures, pipelines or utilities. Repair damage due to settlement because of failure to provide support or through negligence or fault of the CONTRACTOR in any other manner, shall be repaired at the CONTRACTOR's expense.

C. Withdraw shoring, bracing and sheathing as backfilling proceeds unless otherwise directed by the ENGINEER.

3.06 CONTROL OF EXCAVATED MATERIAL

A. Keep the ground surface, within a minimum of 2' of both sides of the excavation free of excavated material.

B. Provide temporary barricades to prevent excavated material from encroaching on private property, walks, gutters and storm drains.

C. Maintain accessibility to all fire hydrants, valve pit covers, valve boxes, curb boxes, fire and police call boxes and other utility controls at all times. Keep gutters clear or provide other satisfactory facilities for street drainage. Do not obstruct natural water courses. Where necessary, provide temporary channels to allow the flow of water either along or across the site of the work.

D. In areas where pipelines parallel or cross streams, ensure that no material slides, is washed, or dumped into the stream course. Remove cofferdams immediately upon completion of pipeline construction.

3.07 DEWATERING

A. Keep excavations dry and free of water. Dispose of precipitation and subsurface water clear of the work.

B. Maintain pipe trenches dry until pipe has been jointed, inspected and backfilled, and concrete work has been completed. Prevent trench water from entering pipelines under construction.

C. Intercept and divert surface drainage away from excavations. Design surface drainage systems so that they do not cause erosion on or off the site, or cause unwanted flow of water.

D. Comply with Federal and State requirements for dewatering to any watercourse, prevention of stream degradation and erosion and sediment control.

3.08 PIPE BEDDING REQUIREMENTS

A. Type A bedding
1. Depth of pipe bedding aggregate is shown on the Detail Drawings.
2. Provide Type A bedding when using ABS, PE, and PVC pipe.

B. Type B bedding
1. Depth of bedding aggregate is shown on the Detail Drawings.
2. Provide Type B bedding as minimum for all pipe materials except ABS, PE, and PVC pipe, unless otherwise authorized by the ENGINEER.

C. Shape recesses for the joints or bell of the pipe by hand. Assure that the pipe is supported on the lower quadrant for the entire length of the barrel.

3.09 PIPE LAYING

A. Provide required pipe bedding placed in accordance with the Detail Drawings.

B. Lay pipe as specified in the appropriate Section of these Specifications for pipeline construction.

3.10 THRUST RESTRAINT

A. Provide pressure pipe with concrete thrust blocking or use restrained joint fittings at all bends, tees, valves, and changes in direction in accordance with the contract drawings.

3.11 BACKFILLING TRENCHES

A. After pipe installation and inspection, place pipe bedding from trench bottom to 12" above the crown of the pipe with specified bedding material hand placed and carefully compacted with hand-operated mechanical tampers in layers of suitable thickness to provide specified compaction around and under the haunches of the pipe. Backfill and compact the remainder of the trench with specified native or select backfill material.

B. Lift Thickness Limitations:
1. Submit a list of the compaction equipment to be utilized on the project, the recommendations of the equipment manufacturer as to the maximum lift thickness which can be placed, and the method of compaction to be used with this equipment to achieve the required compaction. In no case shall maximum lift thickness placed exceed the maximum limits specified by the manufacturer's recommendations. However, if the equipment manufacturer lift thickness recommendation is followed and the specified compaction is not obtained, remove, replace and retest as many times as is required to obtain the specified compaction at your own expense.
2. Lift thickness limitations specified for state highways, shoulders or

embankments govern over the compaction equipment manufacturer's recommendations.

C. Uncompacted Backfill:
1. Where uncompacted backfill is indicated on the contract drawings, backfill the trench from one foot above the pipe to the top of the trench with material excavated from the trench, crowned over the trench to a sufficient height to allow for settlement to grade after consolidation.

D. Unsuitable Backfill Material:
1. Where the ENGINEER deems backfill material to be unsuitable and rejects all or part thereof due to conditions prevailing at the time of construction, remove the unsuitable material and replace with select material stone backfill or suitable foreign backfill material.

3.12 DISPOSAL OF EXCAVATED MATERIAL

A. Remove from the construction area, and legally dispose of excavated material remaining after completion of backfilling.

3.13 ROUGH GRADING

A. Rough grade areas disturbed by construction to a uniform finish. Form the bases for terraces, banks, lawns and paved areas.

B. Grade areas to be paved to depths required for placing subbase and paving materials.

C. Grade areas to be topsoiled and seeded to 6" below indicated finish contours.

3.14 RESTORATION OF UNPAVED SURFACES

A. Restore unpaved surfaces disturbed by construction to equal the surface condition prior to construction.

B. Restore grassed areas in accordance with Section 02485, Finish Grading, Seeding and Sodding.

END OF SECTION

SECTION 02228
ROCK EXCAVATION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Excavation of rock
2. Blasting

B. Related Work Specified Elsewhere
1. Section 02200 - Earthwork
2. Section 02221 - Trenching, Backfilling, and Compacting.
3. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 DEFINITION

A. The word "rock", wherever used as the name of an excavated material or material to be excavated, means boulders and pieces of concrete or masonry exceeding 1/3 cubic yards in volume; or solid ledge rock which requires for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with power-operated tools.

1.03 REQUIREMENTS OF REGULATORY AGENCIES

A. Observe all municipal ordinances and State and Federal laws relating to the transportation, storage, handling and use of explosives.

B. The licensed blaster(s) shall at all times, have his license on the work site and shall permit examination thereof by official having jurisdiction.

PART 2 PRODUCTS

2.01 EXPLOSIVES

A. Where blasting is permitted, keep explosives on the site only in such quantity as may be needed for the work under way and only during such time as they are being used.

B. Store explosives in a secure manner, separate from all tools and flammable substances.

C. Safely store all caps or detonators at least 100 feet distant from the explosives.

D. When the need for explosives has ended, promptly remove all such materials from the premises.

PART 3 EXECUTION

3.01 GENERAL

A. Excavate rock (as defined above), if encountered, and dispose of the excavated material.

B. Excavate rock in pipe trenches so as to be not less than four (4) inches below the invert of the pipe, or as shown on the Detail Drawings.

3.02 BLASTING

A. Notify the OWNER and ENGINEER at least 48 hours in advance of any proposed blasting.

B. Conduct all operations involving explosives with experienced personnel only, with all possible care to avoid injury to persons and damage to property.

C. Perform all blasting only with such quantities and strengths of explosives and in such manner as will break the rock approximately to the intended lines and grades and yet will leave the rock not to be excavated in an unshattered condition.

D. Avoid excessive cracking of the rock upon or against which any structure will be built. Prevent damage to existing pipes or other structures and property above or below ground.

E. Cover rock with logs, blasting mats, or both, where required.

F. Give sufficient warning to all persons in the vicinity of the work before a charge is exploded. Employ flagmen to stop or direct traffic as required.

G. Before any blasting is carried out, submit to the Municipality a report prepared by the professional engineer licensed to practice in the State of Pennsylvania or Geologist containing specific recommendations for blasting. Should the report indicate potential damage to existing facilities, the Municipality will not allow blasting.

H. Pre-cut paving before blasting to prevent paving from heaving beyond normal trench width.

I. At the end of each Work day remove all wires from blast holes and pick up and dispose of all blasting wires that are laying around the Work area.

3.03 EXCESS ROCK EXCAVATION

A. If rock is excavated beyond the limits indicated on the Drawings, backfill the excess excavation, whether resulting from overbreakage or other causes, as specified below:

1. Pipe Trenches

a. In pipe trenches, use crushed stone to refill to the proper grade. Refilling with unsuitable material will not be permitted.

b. Fill excess excavation above the specified pipe encasement with the

specified backfill that is applicable for that section of the project.
c. Refer to specification Section 02221, Trenching, Backfilling, and Compacting for definition of crushed stone and backfill material.
2. Structures
a. In excavations for structures, fill excess excavation in the rock beneath foundations with Class B concrete.

3.04 SHATTERED ROCK

A. If rock below normal depth is shattered due to drilling or blasting operations and such shattered rock is unfit for foundations, and/or pipe bedding, remove the shattered rock and backfill the excavation as described above in "EXCESS ROCK EXCAVATION".

3.05 BLASTING RECORDS

A. Field monitor all blasting using seismographic type equipment.

B. Keep and submit to the Municipality an accurate record of each blast. Show the general location of the blast, the depth and number of drill holes, the kind and quantity of explosive used, ground velocity and displacements, and other data required for a complete record.

END OF SECTION

SECTION 02485
FINISH GRADING, SEEDING AND SODDING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Placing topsoil
2. Soil conditioning
3. Finish grading
4. Seeding
5. Sodding
6. Maintenance
7. Geotextile Filter Fabric

B. Restore unpaved surfaces to a condition similar to that prior to excavation as specified and indicated on the Drawings.

C. The "Seeding Restoration Tables" at the end of this section list specific seeding restoration requirements.

D. Related Sections:
1. Section 02100 - Clearing and Grubbing
2. Section 02200 - Earthwork
3. Section 02221 - Trenching, Backfilling and Compacting
4. Section 02275 - Soil Erosion and Sedimentation Control Plan
5. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 QUALITY ASSURANCE

A. Testing Agency:
1. The CONTRACTOR has the option to use soil testing to justify decreasing lime and fertilizer rates. When soil testing is selected, perform the soil and soil supplement testing by a Soils Testing Laboratory engaged and paid for by the CONTRACTOR and approved by the ENGINEER.
a. Collect soil samples under the direction of the ENGINEER.

B. Reference Standards:
1. Pennsylvania Department of Transportation Specifications, Publication 408.
2. Pennsylvania Seed Act of 1965, Act 187, as amended.
3. Agricultural Liming Materials Act of 1978, P.L.15, No. 9 (3P.S.132-1), as amended.
4. Pennsylvania Soil Conditioner and Plant Growth Substance Law, Act of December 1, 1977, P.L. 258, No. 86 (3P.S.68.2), as amended.
5. Rules for Testing Seeds of the Association of Official Seed Analysts.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Samples:
1. When directed, furnish three strips of sod, 4-1/2 feet long by 12" wide, laid on 3" of topsoil and tamped in place.
2. Advise the ENGINEER of the location of the field, and area within the field, from which the sod is to be taken for approval.

C. Certificates:
1. Prior to use or placement of material, submit certifications of material composition of the following for approval:
a. Topsoil analysis
b. Fertilizer
c. Lime
d. Seed mixture(s)
2. If soil tests are performed to justify decreased liming and fertilizer rates, submit certified soil sample analyses, including laboratory's recommended soil supplement formulation.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

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

B. Sod
1. Mow sod in the field to a height of not more than 2-1/2" within 5 days prior to lifting.
2. Cut sod to a depth equal to the growth of the fibrous roots, but in no case less than 1 1/2", exclusive of grass and thatch. Do not cut sod when the ground temperature is below 32 degrees F.
3. Deliver sod to the project site within 24 hours after being cut and place sod within 36 hours after being cut. Do not deliver small, irregular, or broken pieces of sod.
4. During wet weather, allow sod to dry sufficiently to prevent tearing during handling and placing. During dry weather, moisten sod to ensure its vitality and to prevent dropping of the soil during handling. Sod which dries out will be rejected.

PART 2 PRODUCTS

2.01 TOPSOIL

A. Has 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. Is free of clods, grass, roots, or other debris harmful to plant growth.

D. Is free of pests, pest larvae, and matter toxic to plants.

2.02 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 and as defined by the Pennsylvania Soil Conditioner and Plant Growth Substance Law.

2.03 LIME

A. Raw ground limestone conforming to PennDOT Specifications, Section 804.2(a).

2.04 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.

B. Minimum guaranteed purity, minimum guaranteed germination, and maximum weed seed percentages shall conform to PennDOT Specifications, Section 804.2(b).

2.05 SEED MIXTURES

A. See Exhibit A, "Seeding Restoration Table" at the end of this Section.

2.06 INOCULANT

A. Before seeding, inoculate leguminous seed with a 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.

2.07 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. Containing 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. Containing 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% ± 3%
Organic Matter: 98.6% ± 0.2% on the oven dry basis
Ash Content: 1.4% ± 0.2%
Minimum Water-Holding Capacity: 120% minimum
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

2.08 SOD

A. At least three year old, well-rooted Kentucky bluegrass (Poa pratensis) sod containing a growth of not more than 10% of other grasses and clovers.

B. Free from noxious weeds such as Bermuda grass, wild mustard, crab grass, and kindred grasses.

2.09 GEOTEXTILE FABRIC

A. Class 3, Type A or B, conforming to PennDOT Specifications, Publication 408.

PART 3 EXECUTION

3.01 TIME OF OPERATIONS

A. Spring Seeding:
1. Preliminary operations for seed bed preparation may commence as soon after February 15 as ground conditions permit.

B. Fall Seeding:
1. Preliminary operations for seed bed preparation may commence after July 15.

3.02 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. Hand rake 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. Hand rake subgrade. Remove rocks over 2" in diameter and other debris.

3.03 PLACING TOPSOIL

A. Replace topsoil as the upper layer of backfill and spread over the prepared subgrade to obtain the required depth and grade elevation as required by the Drawings. Final compacted thickness of topsoil shall not be less than 6". If additional topsoil over and above that salvaged from the site is required in order to maintain the required depth, furnish and install same at no additional cost to the OWNER.

B. Compact topsoil by one pass of a flat roller weighing not more than 75 pounds per lineal foot of roller.

C. Hand rake topsoil and remove all materials unsuitable or harmful to plant growth.

D. Do not place topsoil when the subgrade is frozen, excessively wet or extremely dry.

E. Do not handle topsoil when frozen or muddy.

3.04 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 the rate specified in "Exhibit A - Seeding Restoration Table" for the appropriate landcover restoration.
2. Thoroughly incorporate into the topsoil a minimum depth of 4".
3. Incorporate as a part of tillage operation.

D. Liming and Fertilizer rates may be decreased if lesser rates are indicated by soil tests provided by the CONTRACTOR.

3.05 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 rate(s) specified in "Exhibit A - Seeding Restoration table" for the appropriate landcover restoration.

E. Incorporate starter fertilizer into the upper 1" of soil.

3.06 GEOTEXTILES

A. Place geotextile fabric over substrate, lapping edges and ends in accordance with the manufacturer's instructions.

3.07 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 reraking or approved mechanical methods.

3.08 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 method, 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.

3.09 SODDING

A. Prior to sod placement, complete soil preparation or topsoiling.

B. Apply lime and fertilizer as specified. Work into the soil a minimum of 2".

C. Do not place sod when the temperature is lower than 32° F.

D. Place sod by hand with tight joints and no overlap. Transverse joints shall be broken or staggered.

E. Place sod so that the top of the sod is flush with the surrounding grade.

F. Use of tools which damage the sod or dumping of sod from vehicles will not be permitted.

G. Water sod to the saturation point immediately after placement.

H. After watering, tamp with an approved tamper to close all joints and insure close contact between sod and sod bed. After tamping, the sod shall present a smooth, even surface free from bumps and depressions. If so directed, us a light roller, weighing not more than 65 pounds per foot of roller width to complete firming and smoothing the sod.

I. When placing sod in ditches, place the strip with the long dimension at right angles to the flow of water. At any point where water will start flowing over a sodded area, the upper edge of the sod strips shall be turned into the soil below the adjacent area and a layer of compacted earth placed over this juncture to conduct the water over the edge of the sod.

J. In ditches and on slope areas, stake each strip of sod securely with at least 1 wood stake for each 2 square feet of sod. Stakes shall be 1/2" by 1" with a length of 8" to 12". Drive stakes flush with the top of the sod, with the long face apparelled to the slope contour.

3.10 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 or sodding shall be reseeded or resodded until complete grass catch occurs.

SEE SEEDING RESTORATION TABLE

SECTION 02506
CRUSHED STONE PAVING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
1. Preparation of sub-grade.
2. Furnishing, placing, spreading, and compacting crushed stone paving course.

B. Related Section
1. Section 01050 - Field Engineering
2. Section 01300 - Submittals
3. Section 01400 - Quality Control
4. Section 02221 - Trenching, Backfilling, and Compacting
5. Section 02207 - Aggregate Materials
6. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 References

A. Pennsylvania Department of Transportation Specifications, Publication 408, Section 703.3

B. ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.

1.03 Submittals

A. Submit manufacturer's certification that the crushed stone furnished conforms to PennDOT Specifications for stone type as shown on the drawings.

PART 2 PRODUCTS

2.01 Stone

A. Crushed stone to be supplied only from PennDOT approved sources producing stone types as shown on the drawings. Approved sources are listed in PennDOT Bulletin No. 13.

B. Provide crushed stone as indicated on the Drawings.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that compacted subgrade is dry and ready to receive work of this Section.

B. Verify that gradients and elevations of subgrade are correct.

C. Beginning of installation means acceptance of existing conditions.

3.02 PLACING STONE PAVING

A. Grade subgrade to specified elevations and compaction.

B. Uniformly spread the crushed stone, without segregation of coarse and fine materials, in loose layers not exceeding 6 inches in depth.

C. Compact each layer by rolling. Satisfactory compaction will be determined by the stability of the material under the compaction equipment. If the material used does not contain sufficient fines to properly lock under the roller, add additional fines of the same material or limestone fines to secure the desired compaction and stability.

D. Add water to assist compaction. With an excess water condition, rework topping and aerate to reduce moisture content.

E. Perform hand tamping in areas inaccessible to compaction equipment.

F. Provide crowned or sloped surface as indicated on the Drawings.

G. Maintain crushed stone paving until final acceptance.

END OF SECTION

SECTION 02510
BITUMINOUS CONCRETE PAVING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
1. Bituminous concrete paving; wearing, base, binder, scratch and level courses.
2. Aggregate base course.
3. Milling of bituminous pavement surface.
4. Grade adjustment of existing miscellaneous structures.

B. Related Sections
1. Section 02575 - Paving Restoration and Resurfacing.
2. Section 02607 - Manholes.
3. Section 02853 - Parking Bumpers.
4. Section 03300 - Cast-in-place Concrete.
5. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 REFERENCES

A. Pennsylvania Department of Transportation Specifications, Publication 408:
1. Section 305, Bituminous Concrete Base Course
2. Section 420, Bituminous Wearing Course ID-2
3. Section 421, Bituminous Binder Course ID-2
4. Section 460, Bituminous Tack Coat
5. Section 491, Milling of Bituminous Pavement Surface
6. Section 606, Grade Adjustment of Existing Miscellaneous Structures

1.03 QUALITY ASSURANCE

A. Perform Work in accordance with PennDOT Specifications.

B. Mixing Plant: Conform to PennDOT Specifications.

C. Obtain materials from same source throughout.

D. Maintain one copy of PennDOT Specifications on site.

1.04 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates
1. Submit certification from bituminous and aggregate suppliers attesting that materials conform to PennDOT Specifications.

1.05 REGULATORY REQUIREMENTS

A. Conform to applicable local and state requirements for paving work on public property.

PART 2 PRODUCTS

2.01 MATERIALS

A. Bituminous Cement: In accordance with PennDOT Specifications, Section 702 - Bituminous Material.

B. Aggregate for Binder and Wearing Course Mix: In accordance with PennDOT Specifications, Section 703 - Aggregates.

2.02 SOURCE QUALITY CONTROL

A. Provide mix design for asphalt under provisions of Section 01400.

B. Submit proposed mix design of each class of mix to ENGINEER for review prior to commencement of work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify subgrade conditions under provisions of Section 01039.

B. Verify that compacted subgrade and granular base is dry and ready to support paving and imposed loads.

C. Verify gradients and elevations of base are correct.

3.02 PLACING ASPHALT PAVEMENT

A. Place bituminous concrete base course to compacted thicknesses shown on the Drawings.

B. Place wearing course to 1.5 inch compacted thicknesses shown on the Drawings.

C. Install and adjust utility structures in correct position and elevation in conformance with PennDOT Specifications, Section 606.

D. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.

F. Develop rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.03 TOLERANCES

A. Follow PennDOT Specifications tolerances for flatness, compacted thickness, and variation from True Elevation.

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01400.

3.05 PROTECTION

A. Protect pavement from mechanical injury.

END OF SECTION

SECTION 02575
PAVING RESTORATION AND RESURFACING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Temporary Paving
2. Permanent Paving
3. Shoulder Restoration
4. Curb and Sidewalk Restoration

B. Related Sections:
1. Section 02221 - Trench Backfilling
2. Section 03300 - Cast In Place Concrete
3. Section 02510 - Bituminous Concrete Paving
4. Other sections of the specifications, not referenced above, shall also apply to the extent required for proper performance of this Work.

1.02 QUALITY ASSURANCE

A. Referenced Standards:
1. Pennsylvania Department of Transportation:
a. Specifications, Publication 408.
b. Specification for Bituminous Mixtures (Bulletin 27) - Publication 27.
c. Specification for Bituminous Materials (Bulletin 25) - Publication 27
d. Work Zone Traffic Control - Publication 203

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates
1. Submit certification from bituminous and aggregate suppliers attesting that materials conform to PennDOT Specifications.

1.04 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 Publication 203.

B. Existing paving outside the limits of the work that is damaged by the CONTRACTOR's operations shall be restored to its original condition at the expense of the CONTRACTOR.

PART 2 PRODUCTS

2.01 BITUMINOUS PAVING MATERIALS AND AGGREGATES

A. Conform to the PennDOT Specifications for all bituminous materials and aggregates used in paving and resurfacing.

2.02 CONCRETE

A. See Section 03300 - Cast-in-Place Concrete

PART 3 EXECUTION

3.01 TEMPORARY PAVING

A. Place temporary paving immediately upon completion of trench backfilling. Do not leave trenches unpaved longer than ten working days after backfilling.

B. Shape and compact subgrade material, then place and compact crushed stone base course to the required thickness.

C. Place temporary paving material. Compact to required minimum thickness with trench roller having minimum 300 pounds per inch-width of compaction roll.

D. Continuously maintain temporary paving to the satisfaction of the ENGINEER and the State and local road departments. Temporary paving on state roads must remain in place for a minimum of 90 days.

3.02 PERMANENT PAVING

A. Trim existing paving to remove damaged areas. Cut straight joint lines and right angle offsets.

B. Remove temporary paving material. Construct permanent base and surface courses to the required compacted thicknesses in accordance with PennDOT Specifications.

C. Maintain permanent paving to the satisfaction of the ENGINEER and the local and State road departments throughout the contract maintenance period.

3.03 BITUMINOUS OVERLAY

A. Place a bituminous overlay where indicated on the Drawings, Details, Surface Restoration Tables, or were directed by the ENGINEER.

B. Construct in accordance with PennDOT Specifications, Section 401.3.

3.04 SHOULDER RESTORATION

A. Restore shoulders in accordance with the Drawings.

3.05 DRIVEWAY RESTORATION

A. Trim concrete and bituminous driveway surfaces to remove damaged areas. Saw cut straight joint lines parallel to the centerline of the trench. Cut

offsets at right angles to the trench centerline.

B. Restore existing concrete driveways in accordance with the Drawings.

C. Restore existing bituminous surface driveways in accordance with the Drawings.

D. Restore earth driveways in kind.

E. Restore stone or gravel driveways in accordance with the Drawings.

F. Restore brick driveways with like bricks placed on a 4" thick wet sand bed. Place bricks in like pattern and spacing.

3.06 CONCRETE CURB AND SIDEWALK REPAIRS

A. Replace curbs and sidewalks damaged by construction to match existing.

B. Reconstruct curbs and sidewalks to the first expansion joint on either side of the damaged portion. Install expansion joint material.

C. Reconstruct sidewalks as shown on the Drawings.

END OF SECTION

SECTION 02601
MANHOLES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Precast Concrete Manholes
2. Concrete Manhole Bases
3. Manhole Steps
4. Manhole Covers and Frames

B. Related Sections:
1. Section 02221 - Trenching, Backfilling, and Compacting
2. Section 02610 - Sanitary Sewer Pipe
3. Section 03300 - Cast in Place Concrete
4. Section 09900 - Painting: Manhole Coatings

1.02 REFERENCES

A. Pennsylvania Department of Transportation Specifications Publication 408.

B. American Society for Testing and Materials (ASTM):
A48 Specification for Gray Iron Castings
C32 Specification for Sewer and Manhole Brick
C139 Specifications for Concrete Masonry Units for Construction of Catch Basins and Manholes
C270 Specifications for Mortar for Unit Masonry
C443 Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
C478 Specifications for Precast Reinforced Concrete Manhole Sections
C923 Specification for Resilient Connections Between Reinforced Concrete Manhole Structures and Pipes

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates:
1. Submit certification from material suppliers attesting that materials meet or exceed specification requirements.

C. Shop Drawings:
1. Submit detail shop drawings of manhole sections, and precast bases if used.
2. Submit detail shop drawings of manhole frames and covers, including rubbings of inscription.
3. Submit detail shop drawings of manhole steps.
4. Submit manufacturers' descriptive literature for the pipe to manhole flexible connections.

PART 2 PRODUCTS

2.01 BASIC MATERIALS

A. Crushed Stone Subbase:
1. PennDOT No. 2A, PennDOT Specifications, Section 703.2.

B. Manhole Brick: ASTM C32, grade MS, solid

C. Water Proofed Mortar: ASTM C270, Type M

D. Cement Concrete: Section 03300 - Cast-in-place Concrete

E. Joint Sealant Compound: FS SS-S-00210, preformed, flexible, self-adhering, cold-applied.

F. Rubber Gaskets: ASTM C443

G. Resilient Pipe-to-Manhole Connection: ASTM C923

H. Bitumastic Coating: SSPC - Paint 16

I. Waterstop: Fenco Concrete Manhole Adapter

2.02 FABRICATED PRODUCTS

A. Precast Concrete Manhole Sections: ASTM C478
1. 5.5% + 1% air entrained cement concrete.
2. Eccentric cone or flat slab top sections; minimum 24" access opening unless otherwise indicated.
3. Precast riser sections of length to suit.
4. Precast bases of a design compatible with the precast riser sections.

B. Manhole Steps:
1. Minimum 16" Wide, alluminum: Alloy 6061-T6

C. Manhole Frames and Covers:
1. Domestic cast iron castings: ASTM A48, Class 30 or better; free of bubbles, sand, air holes, and other imperfections.
2. Contact surfaces machined and matched.
3. Cast cover inscription with pipeline service and OWNER's name at the direction of the ENGINEER. Covers with vent holes are unacceptable.
4. For water valves or meters located within manholes, use watertight ventilating frame and lid (Neenah R-1917) with round neoprene gasket.
5. Frame to include 4 holes for anchoring frame to manhole core as indicated on the Drawings.
6. Cover shall contain 2 non-penetrating pick holes.

PART 3 EXECUTION

3.01 EXCAVATION

A. Perform excavation to the line and grade shown on the Contract Drawings

and as specified in Section 02221.

B. Location and depth of manholes as shown on the drawings.

3.02 CONSTRUCTION

A. Construct watertight manholes of precast concrete sections of the type shown on the Drawings.

B. Construct drop connections of the required type as shown on the Drawings. Encase drop connection in concrete.

C. Provide cast-in-place concrete or precast concrete bases.
1. Construct cast-in-place bases as shown on the Drawings.
a. Cast-in-place bases may be constructed with a special form for a joint to match the manhole cylinder sections.
2. Install precast bases as shown on the Drawings.
a. Set the precast base on a crushed stone subbase.
b. Provide a sealed, flexible resilient connection between pipe and precast base section.

D. Form flow channels in manhole bases as shown on the Drawings. Slope channels uniformly from influent invert to effluent invert. Construct bends of the largest possible radius. Form channel sides and invert smoothly and uniformly; free of cracks, holes or protrusions.

E. Seal joints between precast concrete manhole sections with preformed joint sealant compound and rubber gaskets.
1. Place joint sealant compound on lower section to be squeezed by the weight of the upper section.
2. Place rubber gasket in groove formed in spigot end. Equalize gasket tension.

F. Install manhole sections with steps in proper vertical alignment.

G. Use precast manhole rings to achieve elevation shown for frame and cover. Do not adjust elevation more than 1 ft. with precast rings. Seal joints between rings and adjacent components with joint sealant compund.

H. Install manhole frames and covers.
1. Set top of frames at finished grade elevation or other elevation, shown on the Drawings.
2. Seal joint between manhole frame and manhole with joint sealant compound.
3. Anchor manhole covers as shown on the Drawings.

I. Where new manholes are to be constructed on existing pipelines, carefully excavate around existing pipeline for placement of the new manhole base. Take all measures necessary to control flow through the existing pipeline and to prevent leakage into the new base. After completion of the manhole, carefully remove the top portion of the existing pipeline.

J. Connection To Existing Manholes
1. Make connections to existing manholes conforming to the details shown on

the Contract Drawings. Make provisions to handle existing sanitary flows for the duration of the proposed connection work. Perform the work in an expeditious manner and keep downtime to an absolute minimum. Make the proposed connections in a neat and workmanlike manner. Fill the annular space with a suitable non-shrink grout material. Include the cost of all work involved with connections to existing manholes in the cost of the applicable payment items to be installed. No separate payment shall be made for this work.

3.03 STUBS

A. Where stubs are shown on the Drawings, install a 24 inch long section of pipe with a watertight plug either furnished or approved by the pipe manufacturer.

3.04 GRADE

A. Install at the locations and elevations shown on the Drawings. Where manhole cover elevations are not specifically shown on the Drawings, set covers at final ground elevation. Invert elevations that differ more than 1/4 inch from the elevations shown on the Drawings shall be grounds for rejection.

3.05 BACKFILLING

A. Backfill only after examination of the manhole by the ENGINEER.

B. Perform backfilling as specified in Section 02221.

END OF SECTION

SECTION 02603
UNDERGROUND VALVE VAULTS AND METER BOXES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Valve Vaults
2. Valve Boxes
3. Meter Boxes

B. Related Sections:
1. Section 02221 - Trenching, Backfilling & Compacting
2. Section 02615 - Water Pipe
3. Section 02640 - Valves and Fire Hydrants
4. Section 02642 - Water Service Connections
5. Section 03300 - Cast in Place Concrete

1.02 REFERENCES

A. Pennsylvania Department of Transportation Specifications, Publication 408.

B. American Society for Testing and Materials (ASTM):
A48 Specification for Gray Iron Castings
C32 Specification for Sewer and Manhole Brick
C139 Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
C270 Specification for Mortar for Unit Masonry
C478 Specification for Precast Reinforced Concrete Manhole Sections

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Manufacturer's Literature
1. Submit manufacturer's latest published literature for valve vaults, meter boxes and frames and covers.

C. Shop Drawings:
1. Submit detailed shop drawings for each product specified herein for prior approval of the ENGINEER.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Exercise care in handling to avoid chipping, cracking and breakage.

B. Remove defective products from the site immediately.

PART 2 PRODUCTS

2.01 BASIC MATERIALS

A. Crushed Stone Subbase: PennDOT No. 2A, PennDOT Specifications, Section 703.2.

B. Masonry Mortar: ASTM C270, Type S

C. Concrete Block: ASTM C139

D. Brick: ASTM C32, Grade MM

E. Preformed Plastic Joint Sealant Compound: Self-adhering, cold applied sealant conforming to Federal Specification SS-S-00210.

F. Cast Iron: ASTM A48, Class 30 or better. Free of bubbles, sand and air holes and other imperfections.

2.02 MANUFACTURED PRODUCTS

A. Precast Reinforced Concrete Vaults:
1. Section 713.2(e), Publication 408 Specifications, complete with approved manhole steps and inlet and outlet pipe openings as indicated on the Detail Drawings.
2. Design vaults to meet the loading conditions of AASHTO HS-20.1

B. Precast Concrete Manholes:
1. ASTM C478 complete with approved manhole steps

C. Precast Concrete Water Meter Boxes:
1. Minimum 4000 psi concrete.
2. Minimum 2" wall thickness.
3. Reinforcement: 6 x 6 10/10 wire mesh
4. Suitable for use in sidewalks, lawns, or other areas not subject to vehicular traffic.

D. Cast Iron Meter Boxes:
1. Three piece comprising a base, an upper body and a separate lid; or two-piece comprising an integral body casting and a separate lid. Domestic cast iron.
2. Integrally cast anchor lugs and inlet and outlet connections.
3. Include all hardware.
4. Meter Box Covers:
a. Single or double lid
b. Minimum 11" dia. lid opening
c. Words "Water Meter" cast into the lid
d. Bronze worm lock with standard waterworks pentagon bolt head
e. Lid with a recess to engage a lug on the key permitting the key to become a handle for lifting the lid.

E. Cast Iron Manhole and Vault Frames and Covers:
1. Contact surfaces machined and matched. Domestic cast iron.
2. Cast cover inscription with pipeline service and OWNER's name at the direction of the ENGINEER.

F. Fabricated Aluminum Hatch or Vault Cover:
1. Commercially manufactured to withstand a minimum live load of 300 pounds per square feet, or as otherwise specified on the Drawings.
2. Frame: 1/4 inch extruded aluminum channel frame with anchor flange and drainage coupling of sizes and designated.
3. Door: Diamond pattern plate; frame reinforced to meet the loading requirements specified on the Drawings.
4. Hinges: Forged brass hinges with stainless steel pins.
5. Lifting Mechanisms: Stainless steel, compression spring type balancing door leaf through entire arc and acting as a check in retarding downward movement.
6. Hold-Open Device: Automatic, 90-degree, heavy steel hold-open arm with vinyl covered release handle. Arm shall be zinc plated and chromate sealed.
7. Locking Device: Stainless steel snap lock with handle on the underside and removable key handle on the top side. Include removable plug for concealing key hole.
8. Cadmium plate or galvanize all hardware.
9. Finish: Mill-finish with bituminous coating applied to exterior of the frame.

G. Manhole Steps:
1. Aluminum: Alloy 6061-T6

H. Keys and Wrenches:
1. Supply keys and wrenches of the type and number specified.

PART 3 EXECUTION

3.01 GENERAL

A. Refer to contract drawings for location, grade, and depth of vaults and boxes.

3.02 EXCAVATION

A. Excavate to the line and grade shown on the contract drawings and as specified in Section 02221.

B. Location and depth of structures are as shown on the drawings.

3.03 FOUNDATION

A. Provide 6" compacted crushed stone subbase foundation for precast structures and all meter boxes.

B. Place cast-in-place concrete foundation on undisturbed earth.

3.04 CONSTRUCTION

A. Vaults:
1. Construct valve vaults of precast sections, masonry, and cast-in-place concrete as shown on the contract drawings.
2. Seal vault joints watertight with preformed plastic joint sealant

compound.

3. Seal annular space between pipe and vault with mechanical seal consisting of interlocking synthetic rubber links shaped to fill the space and assembled with bolts and a pressure plat under each bolt head and nut.

4. Do not erect masonry when ambient temperature is below 45° F., unless it is rising and at no time when the temperature is below 40° F., except by written permission of the ENGINEER.

5. Install vault frames and covers. Adjust to finished grade elevation.

B. Meter Boxes:

1. Install meter boxes as shown on the contract drawings.

2. Adjust meter box covers to finished grade elevation.

3.05 BACKFILLING

A. Backfill only after inspection of the vault or meter box.

B. Backfill as specified in Section 02221.

END OF SECTION

SECTION 02610
SANITARY SEWER PIPE

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Sanitary sewer gravity pipelines
2. Laterals/service connections

B. Related Sections:
1. Section 02150 - Boring, Jacking, Tunneling
2. Section 02221 - Trenching, Backfilling and Compaction
3. Section 02601 - Manholes
4. Section 02651 - Sewer Pipeline Testing

1.02 REFERENCES

A. 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.

B. American Society for Testing and Materials (ASTM):
A53, Specification for Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
C14, Specification for Concrete Sewer, Storm Drain and Culvert Pipe.
C76, Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
C443, Specification for Joints for Circular Concrete Sewer and Culvert Pipe Using Rubber Gaskets.
D1785, Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
D2241, Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR).
D2680, Specification for Acrylonitrile-Butadiene-Styrene (ABS) Composite Sewer Piping.
D2751, Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
D3034, Specification for Type PMS Poly(Vinyl 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 Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.

ASTM F789-85, Specifications for Type PS46 Poly (Vinyl Chloride) (PVC Plastic Gravity Sewer Pipe and Fittings.

F 794-86, Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Ribbed Gravity Sewer Pipe and Fittings Based on Controlled inside Diameter.

F 949-86a, Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with A Smooth Interior and Fittings.

C. Federal Specifications (FS):
HH-P-117, Packing, Jute, Twisted.
QQ-C-40(2), Caulking, Lead Wool and Lead Pig.

D. American Water Works Association (AWWA):
C301, Prestressed Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids.

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

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates:
1. Submit copies of each manufacturer's certification attesting that the pipe, pipe fittings, joints, joint gaskets and lubricants meet or exceed specification requirements.

1.04 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

2.01 DUCTILE IRON SEWER PIPE

A. Pipe:
1. ANSI A21.51, thickness class as shown on the Drawings.
2. Standard cement-mortar lining, ANSI A21.4

B. Fittings:
1. Ductile 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 joint.

D. Rubber gaskets, Lubricants, Glands, Bolts and nuts: ANSI A21.11

E. Polyethylene encasement shall be provided for all DI pipe, fittings, and appurtenances. Polyethylene encasement shall conform to AWWA C105.

2.02 POLYVINYLCHLORIDE (PVC) SEWER PIPE

A. Gravity Sewer Pipe and Fittings:
1. Pipe 15" diameter and smaller: ASTM D3034, SDR-35
2. Pipe 18" to 27" diameter: ASTM F679
3. Flexible Elastomeric Seals: ASTM D3212
a. Seal Material: ASTM F477

2.03 STEEL CASING PIPE

A. Pipe ASTM A53 - Grade B; 35,000 psi minimum yield strength, asphalt coated.
1. Wall thickness as indicated on the drawings.

B. Joints: Electric resistance welded.

PART 3 EXECUTION

3.01 PREPARATION

A. Perform trench excavation to the line and grade indicated on the Contract Drawings and as specified in Section 02221.

B. Unless otherwise indicated on the drawings, provide for a minimum cover of 4-feet above the top of piping laid in trenches.

C. Provide pipe bedding as specified in Section 02221 for each type of pipe used. Provide Type A bedding for all PVC and ABS pipe. Place aggregate in a manner to avoid segregation, and compact to the maximum practical density so that the pipe can be laid to the required tolerances.

3.02 LAYING PIPE IN TRENCHES

A. Give ample notice to the ENGINEER in advance of pipe laying operations.

B. Maintain no less than three batter boards or their equivalent between adjoining manholes during pipe laying operations, or use laser alignment instruments.

C. 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.

D. Lay pipe proceeding up-grade with the bell or groove pointing upstream.

E. 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.

F. 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.

G. 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 can not be fully inserted into the bell, disassemble joint, inspect for damage, reclean joint components, and reassemble joint.

H. Assemble joints in accordance with recommendations 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.
3. Reinforced Concrete Joints:
a. Wipe clean end of the pipe and inside of rubber gasket. Equalize gasket circumferential tension.
b. Apply joint lubricant.
c. Align pipe with previously laid sections. Insert pipe into coupling, bell or groove and force into place to the bottom of the socket.
d. After joint assembly, check rubber ring location with a suitable gage.
4. Solvent Cemented Joints:
a. Chamfer and deburr pipe. Clean socket and plain end. Measure and mark the socket depth on the outside of the pipe.
b. Apply primer to inside socket surface using a scrubbing motion to ensure penetration. Repeated applications may be necessary. Soften surface of male end of pipe to depth of fitting socket by applying a liberal brush coat of primer. Do not pour primer on. Assure entire surface is well softened.
c. Repeat application of primer to inside socket surface, then apply cement

to pipe while surfaces are still wet with primer. Apply cement uniformly taking care to keep excess cement out of socket.

d. With truss pipe, seal truss section to avoid false air leaks. Seal ends of pipe in manholes.

e. Immediately after applying the last coat of cement to the pipe, and while both the inside socket surface and outside pipe surface are soft and wet, forcefully seat the pipe into the socket. Turn the pipe 1/4-turn during assembly to distribute cement evenly. Assembly should be completed within 20-seconds after the last application of cement. Insert pipe with a steady, even motion. Do not use hammer blows.

f. Hold joint in place until cement has set. Wipe excess cement from the pipe.

5. Coupled Joints:

a. Assemble in accordance with the manufacturer's recommendations.

I. Disassemble and remake improperly assembled joints using a new gasket.

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 Drawings, or deflection of pipe joints, will 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.

O. 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. PVC and Ductile Iron Pipe: Per manufacturer's recommendations.

b. Reinforced Concrete Pipe: 1-degree maximum deflection in joints. Use pipe with beveled end where necessary.

3.03 WYE BRANCHES AND TEES

A. Install wye branches or pipe tees at locations designated by the ENGINEER 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.

3.04 LATERALS

A. Where the depth of the main pipeline warrants, construct riser type laterals from the wye branch in accordance with the Detail Drawings. The determination as to the type of riser, slope, and depth of lateral pipe at the termination point will be made by the ENGINEER in the field.

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.

3.05 CAST-IN-PLACE CONCRETE CONSTRUCTION

A. Conform to the applicable requirements of DIVISION 3 - CONCRETE.

3.06 CRADLES AND ENCASEMENT

A. Provide concrete cradles and encasement for pipeline where indicated on the Contract Drawings or as directed by the ENGINEER.

3.07 THRUST RESTRAINT

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

3.08 CARRIER PIPE IN CASINGS

A. Applicable to casing pipe installed in open cut trenches. For installation by boring, jacking, or tunneling - see Section 02150.

B. Provisions regarding pipe laying specified above also apply to carrier pipe installed in casings.

C. Excavate trench to the additional depth and width necessary to accommodate the casing pipe and to maintain the line and grade of the carrier as indicated on the Contract Drawings.

D. The minimum inside diameter of the casing pipe is 4" greater than the largest outside diameter of the carrier pipe joints.

E. Support pipeline within casing so that no external loads are transmitted to the carrier pipe. Attach wooden skids to barrel of carrier pipe; do not rest carrier pipe on pipe joint bells.

F. Close ends of casing.

3.09 STREAM CROSSINGS

A. Construct sanitary sewer pipeline stream crossings in accordance with the Detail Drawings.

B. Provide concrete encased mechanical-joint ductile iron pipe backfilled with minimum 3" size stone to the level of the stream bed, between the limits

of the stream crossing.

3.10 BACKFILLING TRENCHES

A. Backfill pipeline trenches only after examination of pipe laying by the ENGINEER.

B. Backfill trenches as specified in Section 02221.

END OF SECTION

SECTION 02615
WATER PIPE

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Water Transmission lines and fittings
2. Water Distribution lines
3. Water Service lines
4. Detectable Underground Marking Tape

B. Related Sections:
1. Section 02150 - Boring, Jacking, Tunneling
2. Section 02221 - Trenching, Backfilling and Compacting
3. Section 02603 - Underground Valve Vaults and Meter Boxes
4. Section 02640 - Valves and Fire Hydrants
5. Section 02642 - Water Pipe Accessories
6. Section 02653 - Testing & Disinfecting Water Mains
7. Section 03300 - Cast-in-Place Concrete

1.02 REFERENCES

A. American Water Works Association (AWWA):

C104/A21.4, American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water

C105/A21.5, American National Standard for Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids

C110/A21.10, American National Standard for Ductile Iron and Gray Iron Fittings 3 inch through 48 inch, for Water and Other Liquids

C111/A21.11, American National Standard for Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings

C150/A21.50, American National Standard for Thickness Design of Ductile Iron Pipe

C151/A21.51, American National Standard for Ductile Iron pipe, Centrifugally cast in metal molds or sand-lined molds, for Water or other Liquids

C200, AWWA Standard for Steel Water Pipe 6 inch and Larger

C203, AWWA Standard for Coal Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot Applied

C205, AWWA Standard for Cement Mortar Protective Lining and Coating for Steel Water Pipe - 4 inch and Larger - Shop Applied

C206, AWWA Standard for Field Welding of Steel Water Pipe

C600, AWWA Standard for Installation of Ductile Iron Water Mains and their Appurtenances

C606, AWWA Standard for Grooved and Shouldered Joints

C651, AWWA Standard for Disinfecting Water Mains

C606, AWWA Standard for Grooved and Shouldered Joints

C900, AWWA Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4 inch through 12 inch, for Water

C901, AWWA Standard for Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. through 3 In. for Water Service

B. American Society for Testing and Materials (ASTM):

A47, Specification for Ferritic Malleable Iron Castings
A120, Specification for Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless, for Ordinary Uses
A536, Specification for Ductile Iron Castings
B43, Specification for Seamless Red Brass Pipe, Standard Sizes
B62, Specification for Composition Bronze or Ounce Metal Castings
B88, Specification for Seamless Copper Water tube
D698, Standard Test Methods of Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 5.5-lb (2.49-kg) Rammer and 12-in. (305-mm) Drop.
D1598, Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
D1599, Standard Test Method for Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings
D2239, Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter.
D2241, Specification for Polyvinyl Chloride (PVC) Pressure Rate Pipe (SDR-Series)
D2657, Standard Practice for Heat-Joining Polyolefin Pipe and Fittings.
D2737, Standard Specification for Polyethylene (PE) Plastic Tubing
D2740, Specification for Poly (Vinyl Chloride (PVC) Plastic Tubing
D2774, Standard Recommended Practice for Underground Installation of Thermoplastic Pressure Piping.
D2837, Standard Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
D3035, Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter.
D3139, Specification for Joints for Plastic Pressure Pipes using Flexible Elastomeric Seals
D3140, Standard Practice for Flaring Polyolefin Pipe and Tubing.
D3350, Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.

C. National Sanitation Foundation (NSF) No. 14 Plastic Piping Components and Related Materials.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Manufacturers' Literature:
1. Submit manufacturers' catalog information for each type of pipe, fittings, couplings, adapters, gaskets and assembly of joints for approval of the ENGINEER. Include manufacturers' recommendations for deflections in pipe joints.

C. Certificates:
1. Submit certifications for each type of pipe, fittings, gaskets, lubricants or other joint materials from the manufacturers attesting that each of these meets or exceeds specifications requirements.

D. Samples or Shop Drawings:
1. Submit shop drawings for joint assemblies and one sample of each type of jointing materials.

1.04 DELIVERY, STORAGE AND HANDLING

A. Delivery and Handling:
1. Do not place materials on private property without written permission from 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. Use padded slings, hooks and tongs 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 higher than maximum stacking heights shown in AWWA C600 or as recommended by the pipe manufacturer.
3. Keep interior of pipe and fittings free from dirt or other foreign matter.
4. Store gaskets for mechanical and push on joints in cool location out of direct sunlight and not in contact with petroleum products.

PART 2 PRODUCTS

2.01 PIPE, FITTINGS AND JOINTS

A. Ductile Iron (DI):
1. Ductile Iron Pipe: AWWA C150 and C151.
a. Cement Mortar Lined in accordance with AWWA C104.
b. Class 50 below ground and where noted on the Drawings.
c. Pipe Joints:
(1) Push-On - AWWA C111
B. Ductile Iron Fittings: AWWA C153 Compact Fittings
1. Cement Mortar Lined in accordance with AWWA C104.
2. Pressure Rating:
350 psi
3. Mechanical Joints
4. Polyethylene encasement shall be provided for all DI pipe, fittings, and appurtenances. Polyethylene encasement shall conform to AWWA C105.

C. Polyvinyl Chloride (PVC) Plastic Pipe:
1. Pipe:
a. AWWA C900 DR18.
2. National Sanitation Foundation Seal of Approval for use with potable water required.
3. Fittings:

See 2.01.B above
4. Pipe Joints:
a. Push-on: ASTM D3139
5. Couplings:
a. Mechanically coupled: Dresser style 38, Rockwell 411, or equal.

2.02 SERVICE CONNECTION PIPE OR TUBING AND FITTINGS

A. Copper Water Tubing:
1. ASTM B88, Type K
2. Matching Fittings of Flared or Compression Type

PART 3 EXECUTION

3.01 EXCAVATION

A. Excavate trenches as specified in Section 02221. Provide at least 4 feet of cover from the top of the pipe to the finished grade elevation.

3.02 PIPE BEDDING

A. Provide bedding as shown on the Detail Drawings.

B. Shape recesses for the joints or bell of the pipe by hand. Assure that the pipe is supported on the lower quadrant for the entire length of the barrel.

3.03 PIPE LAYING

A. Clean and inspect each length of pipe or fitting before lowering into the trench. Do not lower pipe into the trench except that which is to be immediately installed.

B. Lay pipe to a 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.

C. Lay each section of pipe in such a manner as to form a close concentric joint with adjoining section and to avoid offsets.

D. Lubricate pipe and gaskets as recommended by the manufacturer. Assemble to provide tight, flexible joints that permit movement caused by expansion, contraction and ground movement.

E. Check each pipe installed as to line and grade in place. Correct deviations immediately. Deflection of pipe joints in excess of maximum recommended by manufacturer will be cause for rejection.

F. Install fittings and valves as pipe laying progresses. Do not support weight of fittings and valves from pipe.

G. When the work is not in progress, and at the end of each work day,

securely plug the ends of pipe and fittings to prevent trench water, earth or other substances from entering the pipes or fittings.

H. Backfill concurrently with pipelaying to hold installed pipe in place. When pipe laying is terminated for any reason, provide at least 2 feet of backfill over all pipe except the last piece laid.

I. Joint Assembly:
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 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 lubricant. Slip the gland and gasket over the plain end of the pipe. Apply lubricant to gasket.
b. Insert the plain end of the pipe into the socket and seat the gasket evenly in 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.
e. Coat all bolts and nuts with bitumastic paint after installation.
3. Coupled Joints: In accordance with manufacturer's recommendations.

J. Detectable Underground Marking Tape
1. Use mylar encased aluminum foil marking tape, APWA color code conformance, 2" wide. Imprint with "CAUTION - BURIED WATER LINE BELOW". Printing under mylar - reverse print. Bury 1'-0" above all water lines without tearing, stretching, or breaking.

K. Install service connections as specified in Section 02642.

3.04 CUTTING

A. Cut pipe without damaging pipe or lining.

B. Grind cut ends and rough edges smooth. Bevel end for push-on joints.

3.05 DEFLECTION

A. When it is necessary to deflect water Distribution Pipe from a straight alignment horizontally or vertically, deflect at the joint only and do not exceed limits as follows:
1. PVC and Ductile Iron pipe: Per manufacturers' recommendations.

3.06 THRUST RESTRAINT

A. Provide all valves, tees, bends, caps, and plugs with concrete thrust blocks as indicated on the Drawings. Pour concrete thrust blocks against

undisturbed earth. Locate thrust blocks to contain the resultant force and so pipe and fitting joints will be accessible for repair.

B. Furnish and install tie rods, clamps, set screw retainer glands, or restrained joints as indicated on the Drawings. Protect metal restrained joint components against corrosion by applying a bituminous coating, encasing the entire assembly with an 8-mil thick polyethylene wrap in accordance with AWWA C105, or by concrete mortar encasement of metal area.

3.07 SPECIAL CONDITIONS

A. Connections
1. Wherever an existing water main is to be cut and closed, or extended or connected to the proposed new lines, construct connections as shown on the Drawings.
2. For connecting pipe of different materials, use transition fittings as recommended by the manufacturer and approved by the ENGINEER.

B. Stream Crossing:
1. Install water Distribution Pipe crossing streams as shown on the Detail Drawings.
2. Provide valves, valve vaults, and sampling tap on each side of the stream as shown on the drawings.

C. Highway and Railroad Crossings:
1. Install water Distribution Pipe crossing highways and railroads as shown on Contract Drawings. Comply with Railroad Company, Pennsylvania Department of Transportation, and municipal permits included in the Contract Specifications.

D. Bridge or Aerial Crossings:
1. For above the groundwater mains attached to a bridge or other structural supports, furnish and install all supports, hangers and fastenings as shown on the drawings.
2. Provide insulation and jacket as shown on the Drawings.

E. Wall Sleeves:
1. Provide pipes passing through concrete or masonry construction with sleeve or wall pipe fittings of size indicated.
2. Acceptable Product and Manufacturer:
a. Century-Line wall sleeves from Thunderline Corp.

3.10 COMPLETION

A. Test and disinfect water Distribution Pipe as specified in Section 02653.

END OF SECTION

SECTION 02640
VALVES AND FIRE HYDRANTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Water valves
2. Tapping Valves
3. Fire hydrants
4. Blowoffs

B. Related Sections:
1. Section 02221 - Trenching, Backfilling and Compacting
2. Section 02603 - Underground Valve Vaults and Meter Boxes
3. Section 02615 - Water Pipe
4. Section 02642 - Water Pipe Accessories
5. Section 03300 - Cast-in-Place Concrete

1.02 REFERENCES

A. American Water Works Association (AWWA):
C502-85 - AWWA Standard for Dry-Barrel Fire Hydrants
C504-87 - AWWA Standard for Rubber Seated Butterfly Valves
C509-87 - AWWA Standard for Resilient-Seated Gate valves, for Water and Sewerage Systems

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates:
1. Submit manufacturer's certification attesting that valves, hydrants, and accessories meet or exceed AWWA Standards and specification requirements.

C. Product Data:
1. Submit manufacturer's latest published literature including illustrations, installation instructions, maintenance instructions and parts lists.

1.04 DELIVERY, STORAGE AND HANDLING

A. Prepare valves, hydrants and accessories for shipment according to AWWA Standards and:
1. Seal valve, hydrant and meter ends to prevent entry of foreign matter into product body.
2. Box, crate, completely enclose, and protect products from accumulations of foreign matter.

B. Unloading:
1. Unload all valves carefully. Carefully lower the valve from the truck to the ground. In the case of larger valves, use forklifts or slings around

the body of the valve or under the skids for unloading. Use only hoists and slings with adequate load capacity to handle the weight of the valve. Hoists should not be hooked into or chains fastened around yokes, gearing, motors, cylinders, or handwheels.

C. Inspection:
1. Inspect valves at the time of receipt for damage in shipment. Verify compliance with specifications, direction of opening, size and shape of operating nut, number of turns to open or close, and type of end connections. Perform a visual inspection of the seating surfaces to detect any damage in shipment or scoring of the seating surfaces. Look for bent stems, broken handwheels, cracked parts, missing parts and accessories, and any other evidence of mishandling during shipment. Operate each valve through one complete opening-and-closing cycle.

D. Storage:
1. Store valves in the fully closed position to prevent entry of foreign material that could cause damage to the seating surfaces. Whenever practical, store valves indoors. If outside storage is required, protect the operating mechanism, such as gears, motor actuators, and cylinders, from weather elements. In outside storage, protect ports from the weather and foreign materials. In colder climates where valves may be subject to freezing temperatures, it is absolutely essential to remove water from the valve interior and close the valve before storage. Failure to do so may result in a cracked valve casting.

E. Handle products to prevent damage to interior or exterior surfaces.

PART 2 PRODUCTS

2.01 RESILIENT SEATED GATE VALVES

A. Iron body, bronze trim conforming to AWWA C509
1. Size: As indicated on the Drawings.
2. Valve Pressure Rating: 200 psig. (per AWWA C509)
3. Non-rising stem: O-ring stem seals.
4. 2" square operation nut; open counterclockwise unless otherwise indicated.
5. Mechanical joint end connections.
6. Provide valves 16" and larger with bypass valves and gear operators.

2.02 VALVE BOXES

A. Domestic cast iron, screw type, round base, as shown on the Drawings.

B. Cast iron lid.

2.03 TAPPING VALVES

A. Tapping Valves:
1. AWWA C500
2. Inlet Flange, Class 125

2.04 FIRE HYDRANTS

A. Kennedy Guardian dry barrel break-away type conforming to AWWA C502.
1. Inlet Connection: 6"
2. Valve Opening: 5-1/4"
3. Mechanical Joint or Ball End.
4. Corrosion resistant bolts and nuts.
5. One pumper, two hose nozzles.
a. Attach nozzle caps by separate chains.

2.05 BLOWOFFS

A. Furnish Aquarius One-O-One 2" flushing post hydrant pre-fabricated blowoffs manufactured by GIL Industries, Inc. or approved equal.

PART 3 EXECUTION

3.01 EXAMINATION

A. Determine the exact location and size of valves and hydrants from the Drawings. Obtain all necessary clarification and directions from the OWNER or ENGINEER prior to the execution of work.

3.02 PREPARATION

A. Perform trench excavation, backfilling and compaction in accordance with Section 02221.

B. Install pipe and tubing in accordance with Sections 02615 and 02642 and the applicable Detail Drawings.

3.03 INSTALLATION

A. Review instruction manuals supplied by manufacturers in detail before valves are installed. At the job site prior to installation, visually inspect each valve and remove any foreign material in the interior portion of the valve. Perform a detailed inspection of the valve prior to installation.

B. Bolts:
1. Protect all bolts, either with a suitable paint or by polyethylene wrapping, to prevent corrosion.

C. Underground Construction:
1. Locate valves in water-distribution lines, where practical, in easily accessible areas.
2. During installation, there is the possibility of foreign materials inadvertently entering the valve. Foreign material can damage internal working parts during operation of the valve. For this reason, install valves in the closed position. Place each valve on firm footing in the trench to prevent settling and excessive strain on the connection to the pipe. Support and align piping systems in such a way as to minimize bending of the valve connection.
3. Provide a valve box or vault for each valve used in a buried-service

application. Install the valve box so as not to transmit shock loads or stress to the valve. Center the valve box over the operating nut of the valve with the box cover flush with the surface of the finished area or such other level as directed by the ENGINEER. Valve boxes should be of such a design that a traffic load on the top of the box is not transmitted to the valve.

4. Provide valves buried in unusually deep trenches with special provisions for operating the valve -- either a riser on the stem to permit a normal key to be used or a notation on valve records that a long key will be required.

5. When valves with exposed gearing or operating mechanisms are installed below ground, provide a vault designed to allow pipe clearance and prevent settling on the pipe. Provide an operating nut accessible from the top opening of the vault with a valve key. The size of the vault should provide for easy removal of the valve bonnet and internal parts of the valve for purposes of repair. Consideration should be given to the possible entry of groundwater and/or surface water and to the need to provide for the disposal thereof.

3.04 GATE VALVES

A. Install valves in conjunction with pipe laying. Set valves plumb.

B. Provide buried valves with valve boxes installed flush with finished grade.

C. Furnish one tee wrench to the OWNER.

3.05 FIRE HYDRANTS

A. Install fire hydrants as shown on the Detail Drawings. Provide support blocking and drainage gravel as shown.

1. Set hydrants plumb with pumper nozzle facing the street.

2. Set hydrants with nozzles at least 12 inches above the ground and the safety flange not more than 6 inches nor less than 2 inches above grade.

3. Do not block drain hole.

4. Paint hydrants in accordance with local color scheme.

B. After hydrostatic testing, flush hydrants and check for proper drainage.

3.06 BLOWOFFS

A. Install a blowoff where shown on the Drawings.

B. Construct blowoffs as shown on the Drawings.

3.07 FIELD QUALITY CONTROL

A. Tests:

1. Do not backfill valve excavations until after pressure tests have been made. If resilient-seated gate valves are used to isolate test sections, the test pressure should not exceed the rated working pressure of the valve. After the test, relieve any trapped air pressure in the body of the valve. Do not operate resilient-seated gate valves in either the opening or closing direction at differential pressures above the rated working pressure.

B. Inspection:

1. After installation and before pressurization of the valve, inspect all pressure-containing bolting (bonnet, seal plate, packing gland, and end connections) for adequate tightness to prevent leakage. Inspect for adequate tightness of all tapped and plugged openings to the valve interior.

C. Records:

1. On completion of the installation, permanently record gate valve location, size, make, type, date of installation, number of turns to open, direction of opening, and other information deemed pertinent.

END OF SECTION

SECTION 02642
WATER PIPE ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Tapping water mains by installation of corporation stops or other suitable fittings or couplings.
2. Connection to service pipe and fittings up to curb stops and meter boxes.
3. Installation of meter setting equipment.

B. Related Sections:
1. Section 02221 - Trenching, Backfilling and Compacting
2. Section 02575 - Paving Restoration and Resurfacing
3. Section 02603 - Underground Valve Vaults and Meter Boxes
4. Section 02615 - Water Pipe
5. Section 02640 - Valves and Fire Hydrants

1.02 REFERENCES

A. American National Standards Institute (ANSI):
B16.3, Malleable Iron Screwed Fittings, 150 and 300 lb.

B. American Society for Testing and Materials (ASTM):
D2855, Standard Practice for Making Solvent Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings
D3139, Specifications for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
D3350, Specification for Polyethylene Plastic Pipe and Fittings Material

C. American Water Works Association (AWWA):
C104/A21.4-90, American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
C110/A21.10-87, American National Standard for Ductile Iron and Gray Iron Fittings 3 inch through 48 inch, for Water and Other Liquids
C111/A21.11-85, American National Standard for Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings
C700-90, AWWA Standard for Cold Water Meters - Displacement Type, Bronze Main Case
C701-88, AWWA Standard for Cold Water Meters - Turbine Type For Customer Service
C702-86, AWWA Standard for Cold Water Meters - Compound Type
C703-86, AWWA Standard for Cold Water Meters - Fire Service Type

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Manufacturer's Literature:
1. Submit copies of pages of manufacturer's catalog for each size and type of corporation stop, curb stop, curb box, meter setting and pipe fitting or coupling.

C. Shop Drawings or Samples:
1. Submit copies of shop drawings, or samples if so directed, of all products to be assembled by the CONTRACTOR at site for prior approval of the ENGINEER.

D. Certificates:
1. Submit copies of certificates for pipe, pipe fittings, joints, joint gaskets and lubricants, and base materials from each manufacturer attesting that each of these meets or exceeds specification requirements.

E. Job Mockup:
1. Prepare one sample complete service connection of each type at a location designated by the ENGINEER.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Product Delivery:
1. During loading, transporting and unloading of all materials and products, exercise care to prevent any damage.

B. Storage:
1. Store all products and materials off the ground and under protective coverings and custody, and in a manner to keep products clean and in good condition until used.

PART 2 PRODUCTS

2.01 CONNECTIONS

A. General:
1. Provide pipe joints and coupling materials suitable in size, design and material of pipe and service fittings with which it is used.

B. Screwed Joints:
1. Use sharp cut threads of standard gauge and length. After threading, ream all pipe ends to the size of bore and clean out all chips. Use sufficient quantity of select pipe dope of graphite and oil for lubrication of assembly.

2.02 TAPPING ACCESSORIES

A. Tapping Sleeves:
1. Mechanical Joint, or as indicated on the drawings
2. 200 psi working pressure
3. Outlet Flange: ANSI B16.1, Class 125

2.03 CORPORATION STOP ASSEMBLY

A. Corporation Stops:
1. Brass or Red Brass alloy body conforming to ASTM B62.
2. Inlet end threaded for tapping according to AWWA C800.
3. Outlet end suitable for service pipe specified.

B. Saddles:
1. In accordance with AWWA C800.
2. Galvanized iron, bronze or brass alloy body.
3. Neoprene, O-ring gasket
4. Single or Double Straps with matching hardware.

2.04 CURB STOP ASSEMBLY

A. Curb Stops:
1. Brass or Red Brass alloy body conforming to ASTM B62.
2. Ball Type Valve.
3. Positive Pressure Sealing

B. Curb Boxes and Covers:
1. Cast Iron Body or Buffalo Type
2. Minneapolis or Arch Pattern Base
3. Lid with inscription "Water", with Pentagon Plug.

2.05 METER SETTING EQUIPMENT

A. Outside Meter Setting:
1. Meter Yokes, Copper or Iron
2. Inlet and Outlet Horizontal/Vertical setting with matching couplings, fittings and stops

B. Inside Meter Setting
1. Meter Yokes, Copper or Iron
2. Inlet and Outlet Horizontal/Vertical Setting with matching couplings, fittings and stops.

2.06 METERS

A. Acceptable Manufacturers:
1. Sensus Technologies, Inc.
P. O. Box 487
Uniontown PA 15401
Phone: 412-439-7700
2. Neptune
Highway 229 South
Tallahassee AL 36078
Phone: 205-283-6555
3. Badger Meter Inc., Utility Division
4545 West Brown Deer Road
P. O. Box 23099
Milwaukee WI 53223-0099
Phone: 414-355-0400

B. Displacement Type: AWWA C700

C. Turbine Type: AWWA C701

D. Compound Type: AWWA C702

E. Fire Service Type: AWWA C703

PART 3 EXECUTION

3.01 PREPARATION

A. Establish location of curb stops and meter boxes for each service connection.

B. Excavate trench to the line and grade shown on the Contract Drawings and as specified. Jack or bore service lines underneath paved highways where approved by the ENGINEER.

C. Prepare sample service mock-up for the inspection and approval of the ENGINEER.

3.02 TAPPING WATER DISTRIBUTION PIPE

A. Tap each connection for different kinds of water mains using suitable materials, equipment and methods approved by the ENGINEER.

B. Provide saddles for PVC water mains.

C. Screw corporation stops directly into a tapped and threaded iron main at 10 and 2 o'clock positions on the main's circumference. Locate corporation stops at least 12" apart longitudinally and staggered.

D. In case of plastic pipe water mains, provide full support for the saddle all around the circumference of the pipe, with minimum 2" width of bearing area. Exercise care against crushing or any other damage to the water mains at the time of tapping or installing the saddle or corporation stop.

E. Use proper seals or other devices to ensure that no leaks are left in the water mains at the points of tapping. Do not backfill and cover the service connection until approved by the ENGINEER.

3.03 SERVICE LINE AND FITTINGS

A. Use bends to connect the service pipe or tubing to the tapping fitting or corporation stops to provide flexibility to counteract the effects of settlement or expansion/contraction in the line.

B. Lay each section of the service line in a manner to form a tight joint with the adjoining section. Avoid offsets, kinks or awkward bends to ensure a smooth flow line.

C. Clean and inspect each pipe and part of the fitting before installing and assemble to provide a flexible joint. Use joints or lubricants recommended by the manufacturers and as specified by the ENGINEER.

D. Install service fittings and appurtenances on suitable brick or concrete supports as shown on the Drawings. Do not use earth, rocks, wood or other organic materials as supports.

E. Prevent displacement of pipes and fittings at the time of placing concrete for thrust blocks or for any structures and until initial setting of concrete is assured.

F. Operate each corporation and curb stop before and after installation.

G. When the work is not in progress and at the end of each work day, securely plug the ends of pipe and fittings to prevent any dirt or foreign substances from entering the lines.

H. Provide concrete thrust blocking or restrained joints at all bends, tees and changes in direction.

I. Provide all pipes passing through concrete or masonry construction with wall sleeves of the type and size indicated.

J. Test and disinfect mains and service lines as specified in Section 02653.

END OF SECTION

SECTION 02651
SEWER PIPELINE TESTING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Testing Gravity Sewer Pipelines:
a. Low-pressure air test
b. Infiltration test
2. Deflection Testing of Plastic Pipe

B. Related Sections:
1. Section 02601 - Manholes
2. Section 02610 - Sanitary Sewer Pipe

1.02 QUALITY ASSURANCE

A. Test Acceptance:
1. No test will be accepted until the results are below the specified maximum limits.
2. Determine and correct, at your own expense, the causes of test failure and retest until successful test results are achieved.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.
1. Testing procedures
2. List of test equipment
3. Testing sequence schedule
4. Provisions for disposal of flushing and test water
5. Certificate of test gauge calibration
6. Deflection mandrel drawings and calculations

1.04 JOB CONDITIONS

A. Do not allow personnel in manholes during pressure testing.

B. Provide relief valves set at 10 psig to avoid accidentally overpressurizing gravity sewer line during low pressure air testing.

PART 2 PRODUCTS

2.01 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. Pressure gauge, calibrated to 0.1 lbs/sq.in.

2.02 INFILTRATION TEST EQUIPMENT

A. Weirs

2.03 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 02221.

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.

3.02 TESTING GRAVITY SEWER PIPELINES

A. Low Pressure Air Test:
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 minutes. Adjust pressure to 3.5 psig or to 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
4	0.3
6	0.7
8	1.2
10	1.5
12	1.8
15	2.1
18	2.4
21	3.0
24	3.6
27	4.2
30	4.8
33	5.4
36	6.0

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, discontinue the test 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. Visually inspect the interior of pipe over 36" in diameter.

C. Infiltration Test:

1. Use only when gravity pipeline is submerged in ground water. Obtain prior approval of the ENGINEER.

2. Maximum Allowable Infiltration: 200-gallons per inch of pipe diameter per mile per day for any one section under test, including the allowances for leakage from manholes.

3.03 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.
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:

$$L = [ND (P^{1/2})] / 7,400$$

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

a. If the line under test contains sections of various diameters, sum the computed leakage for each size to determine the allowable leakage.
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.

3.04 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. Limit the maximum allowable deflection for installed plastic sewer pipe 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. Construct the mandrel(s) at your expense and get the approval of the ENGINEER.

D. Locate, excavate, replace, and retest pipe exceeding the maximum allowable deflection at your expense.

3.05 TESTING MANHOLES

A. Perform a visual inspection for leaks in manholes at least 30 days after backfilling.

B. Perform manhole testing and include testing in the price bid for each manhole.

C. Vacuum Testing Equipment

1. Vacuum pump
2. Vacuum line
3. Vacuum tester base with compression band seal and outlet port
4. Shut-off valve
5. Stop watch
6. Plugs
7. Vacuum gauge, calibrated to 0.1"Hg and certified

D. Vacuum Test

1. General:

a. Use either air or water for testing whenever possible prior to backfilling to assist in locating leaks. Joint repairs by parging are to be done on both outside and inside of the joint to ensure a permanent seal.

2. Vacuum Test:

a. Plug all pipe openings. Take care to securely brace the plugs and pipe.

b. Do not permit personnel in manhole during air test.

c. Inflate the compression band to effect a seal between the vacuum base and the structure. Connect the vacuum pump to the outlet port with the valve open. Draw a vacuum to 10" of Hg. Close the valve. Start the test.

d. Determine the test duration for the manhole from the following table:

VACUUM TEST TABLE

Manhole Diameter	Test Period
48"	60 sec.
60"	75 sec.
72"	90 sec.

e. Record the vacuum drop during the test period. If the vacuum drop is greater than 1.0" of Hg during the test period, repair and retest the manhole. If a vacuum drop of 1" of Hg does not occur during the test period, discontinue the test, the manhole will be accepted.

f. If a unit fails to meet a 1" Hg drop in the specified time after repair, perform the water exfiltration test and repair as necessary.

E. Water Testing of Manholes - Exfiltration Test

1. Plug all pipes in the manhole. Remove any water that has accumulated in the manhole. Observe plugs over a period of not less than 2 hours to ensure that there is no leakage into the manhole.

2. Determine ground water level outside the manhole.

3. Fill the manhole with water to within 4" of the top of the cover frame. Prior to test allow the manhole to soak from a minimum of 4 hours to a maximum of 72 hours. After the soak period, adjust the water level inside the manhole to within 4" of the top of the cover frame.

4. Measure the water level from the top of the manhole frame. At the end of the 4-hour test period, again measure the water level from the top of the manhole frame. Compute the drop in the water level during the test period.

5. The exfiltration test of a manhole is satisfactory if the drop in water level is less than the values listed in the table below:

Manhole Depth (feet)	Allowable Drop in Water Level (feet) in 24" Diameter Section

	4' Diameter MH	5' Diameter MH
4	0.11	0.14
6	0.17	0.21
8	0.23	0.28
10	0.28	0.35
12	0.34	0.43
14	0.40	0.50
16	0.45	0.57
18	0.51	0.64
20	0.57	0.71
22	0.62	0.78
24	0.68	0.85
26	0.74	0.92
28	0.79	0.99
30	0.85	1.06

6. The table is based on an allowable exfiltration of 4 gallons per day per foot of depth of a 4-foot diameter manhole with a conical top and a 24" diameter opening. For purposes of the tests, measure the manhole depth from the invert to the bottom of the cover frame, or from the ground water surface to the bottom of the cover frame, whichever is less.

7. In case of unsatisfactory test results, repair the manhole and retest as often as necessary until satisfactory results are achieved. Repair visible leaks regardless of the amount of leakage.

END OF SECTION

SECTION 02653
TESTING & DISINFECTING WATER MAINS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Testing Water Main Pipeline:
a. Hydrostatic pressure testing
b. Leakage testing
2. Disinfecting:
a. Bacteriological testing

B. Related Sections:
1. Section 02615 - Water Pipe
2. Section 02640 - Valves and Fire Hydrants
3. Section 02642 - Water Pipe Accessories

1.02 REFERENCES

A. American Water Works Association (AWWA):
C600, AWWA Standard for Installation of Ductile Iron Water Mains and their Appurtenances - Section 4.1, Pressure and Leakage Test
C651, AWWA Standard for Disinfecting Water Mains

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Test Procedures:
1. Submit a testing sequence schedule including a list of testing equipment to be used.

C. Certificates:
1. Submit, prior to starting testing, certification attesting that the pressure gauges to be used have been calibrated and are accurate.
2. Submit certification attesting that the chlorine form composition is as specified.

D. Test Reports:
1. Submit copies of laboratory test reports of each bacteriological test.

1.04 QUALITY ASSURANCE

A. Testing Agency:
1. Pay for and engage an ENGINEER approved testing laboratory to perform bacteriological testing.

B. Test Acceptance:
1. No test will be accepted until the results are below the specified maximum limits.
2. Determine and correct the sources of leakage and retest until successful

test results are achieved.

PART 2 PRODUCTS

2.01 HYDROSTATIC TEST EQUIPMENT

A. Equipment includes:
1. Hydro pump
2. Pressure hose
3. Test connections
4. Water meter
5. Pressure gauge, calibrated to 0.1 lbs./sq.in.
6. Pressure relief valve

2.02 DISINFECTING CHEMICALS

A. Liquid chlorine, calcium hypochlorite or sodium hypochlorite conforming to AWWA Standards B300 and B301.

2.03 WATER FOR TESTING

A. Water used for pressure and leakage testing must be provided from an approved public water supply system.

PART 3 EXECUTION

3.01 PREPARATION

A. Backfill trenches in accordance with Section 02221

B. Provide the water line under test with reaction thrust blocking. Do not begin hydrostatic testing until the concrete thrust blocking has set. Allow 2,000 psi 28 day strength concrete to set (cure) for a minimum of 7 days prior to testing. If (H.E.S.) 3,000 psi 3-day strength concrete is used, hydrostatic testing may not begin until the concrete has set a minimum of 2 days.

C. Provide pumps, piping, tanks, connections, polyurethane plugs and appurtenances at no additional expense to the OWNER. The OWNER will provide the necessary water.

3.02 TESTING WATER LINES

A. Hydrostatic Testing:
1. Test each newly installed section of water line by hydrostatic test procedure in accordance with the recommended practice established by AWWA Standard C600, Section 4: Hydrostatic Testing
2. Conduct pressure tests for a period of not less than 2 hours at a pressure of not less than 1.5 times the working pressure based upon the elevation of the lowest point in line under test corrected to the elevation of the test gauge. Obtain test pressure from the ENGINEER.
3. 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.
4. Observe joints, fittings and valves under test. Remove and renew cracked pipe, joints, fittings and valves showing visible leakage. Retest.

B. Leakage tests:
1. After completion of successful pressure testing, conduct the leakage test for a 2-hour period at the test pressure as indicated as indicated by the Engineer or Owner.
2. Expel air from the line under test, close the air vents and/or corporation stops and raise pressure to the specified test pressure. The leakage in the section under test is defined as the quantity of water supplied to maintain pressure within 5 psig of the specified test pressure during the entire testing period. Water pipe installation is deemed to have failed the leakage test if the leakage obtained is greater than that determined by the formula:

$$L = (S\ D\ P^{1/2}) / 133{,}200$$

Where:
L = allowable leakage in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during leakage test, in psig

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

3. If test results indicate that the pipe laid has leakage greater than specified, locate and repair the defective joints, fittings, pipe or valves and retest until leakage is within allowable limits. Repair visible leaks regardless of the amount of leakage.

3.03 DISINFECTION

A. General
1. After completion of satisfactory pressure and leakage testing, disinfect the water pipelines in accordance with the recommended practice established in AWWA Standard C651. Conduct water line disinfection in the following steps:
a. Preliminary flushing
b. Chlorine application
c. Final flushing
d. Bacteriologic tests

B. During construction, place calcium hypochlorite granules at the upstream end of the first section of pipe, at the upstream end of each branch main, and at 500 feet intervals. Refer to AWWA C651 for quantity of granule to be used.

WARNING: This procedure must not be used on solvent welded plastic pipe or in screwed joint steel pipe because of the danger of fire or explosion from the reaction of the joint compounds with the calcium hypochlorite.

C. Preliminary Flushing:
1. Prior to disinfection, except when the tablet method is used, fill the

line to eliminate air pockets and flush the line at a rate of flow of 2.5 feet per second to remove particulates. Refer to AWWA C651 for rate of flow to produce 2.5 fps in pipe of various sizes.
2. Dispose of flushing water.

D. Chlorine Form:
1. Use chlorine gas solution, calcium hypochlorite or sodium hypochlorite as the chlorine form to be applied to the system. The ENGINEER's written approval of the chlorine form to be used is required.

E. Chlorine Application:
1. Continuous Feed Method:
a. The continuous feed method consists of placing calcium hypochlorite granules in the main during construction, completely filling the main to remove air pockets, flushing to remove particulates and filling the main with potable water chlorinated so that after a 24 hour holding period in the main there will be a free chlorine residual of not less than 10 mg/L.
b. Feed water and chlorine to the line at a constant rate such that the water will have not less than 25 mg/L free chlorine. Do not stop chlorine application until the entire line is filled with heavily chlorinated water.
c. During chlorine application, take precautionary measures to prevent the concentrated treatment solution from flowing back into the existing distribution system and/or supply source.
2. Tablet Method:
a. The tablet method consists of placing calcium hypochlorite granules and tablets in the water main as it is being installed and then filling the main with potable water when installation is completed.

NOTE: Since the preliminary flushing step must be eliminated, this method may be used only when scrupulous cleanliness has been exercised and only with approval of the ENGINEER. Do not use this method if trench water or foreign material has entered the main, or if the water temperature is below 41° F.

b. During construction, place sufficient number of 5 g calcium hypochlorite tablets in each section of pipe, in hydrants, hydrant branches, and other appurtenances to obtain a minimum of 25 mg/L available chlorine. Attach tablets to the crown of pipe sections with adhesive. Apply adhesive only to the broad side of the tablet next to the pipe surface. Refer to AWWA C651 for the proper number of 5g calcium hypochlorite tablets required.
c. When pipeline installation is completed, fill the main with water at a maximum velocity of one foot per second. Keep this water in the pipe for at least 24 hours. Manipulate valves so that the chlorine solution does not flow back into the line supplying the water.
3. During the 24 hour treatment, operate all valves, curb stops, and hydrants in the section treated.
4. At the completion of the 24 hour treatment, the treated water in all portions of the main shall have a residual of not less than 10 mg/L free chlorine.
5. Repeat the disinfection process until the minimum available chlorine is present at the end of the treatment sequence. The tablet method cannot be used in these subsequent disinfections. No additional compensation will be provided the CONTRACTOR for repeat treatment or testing.

F. Final Flushing:

1. Flush the heavily chlorinated water from the system under treatment until the chlorine concentration in the water leaving the system is no higher than that generally prevailing in the system or is acceptable for domestic use.
2. Comply with Federal, State and local laws when discharging the flushed chlorine solution.

G. Bacteriological Testing:
1. After final flushing is completed and before the water main is placed in service, test the line for bacteriologic quality. Perform two tests 24 hours apart.
2. Collect a minimum of one sample at the end of each line for each test, and one sample of the incoming water from the existing water system for comparison.
3. Collect samples in sterile bottles treated with sodium thiosulphate.
4. Provide a sampling tap consisting of a corporation stop installed in the main with copper tube gooseneck assembly. Do not use a hose or fire hydrant to collect samples.
5. Provide bacteriological test reports to the OWNER and the ENGINEER. If State health standard requirements are not met, rechlorinate and retest the system, at no additional cost to the OWNER.

END OF SECTION

SECTION 03305
CONCRETE FOR UTILITY CONSTRUCTION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
1. Cast-in-place cement concrete construction for Utilities
2. Reaction and support blocking
3. Cradles and encasement

B. Related Sections:
1. Section 02221 - Trenching, Backfilling & Compaction
2. Section 02575 - Paving and Resurfacing
3. Section 02601 - Manholes
4. Section 02603 - Underground Valve Vaults and Meter Boxes

1.02 REFERENCES

A. Pennsylvania Department of Transportation: Publication 408 Specifications

B. American Society for Testing and Materials (ASTM):
C31, Making and Curing Concrete Test Specimens in the Field
C39, Test for Compressive Strength of Cylindrical Concrete Specimens
C42, Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C172, Sampling Fresh Concrete

1.03 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certificates:
1. Submit certification from the concrete producer attesting that the cement concrete conforms to Section 704, Publication 408 Specifications for the class of concrete being used.
2. Submit certified results of compressive strength tests performed by an independent testing laboratory.

C. Shop Drawings
1. Submit detailed shop drawings of reinforcing steel

PART 2 PRODUCTS

2.01 CEMENT CONCRETE

A. Ready-mixed, conforming to Section 704, Publication 408 Specifications.
1. Requirements for State approved batch plants, design computations and plant inspection do not apply. The acceptability of concrete will be based on conformance with the Cement Concrete Criteria specified below and the results of the specified tests.

B. Cement Concrete Criteria:
1. PennDOT Class AA:
a. 28-day compressive strength: 3750 psi
b. Slump: 1 to 3 inches
2. PennDOT Class A
a. 28-day compressive strength: 3300 psi
b. Slump: 1 to 3 inches
3. PennDOT Class C
a. 28-day compressive strength: 2000 psi
b. Slump: 2 to 6 inches
4. High Early Strength
a. 3-day compressive strength: 3000 psi
b. Slump: 1 to 3 inches
5. Cement Factor and Maximum Water-Cement Ratio conforming to Table A, Section 704.1(b), PennDOT Specifications, Publication 408.

2.02 REINFORCEMENT STEEL

A. Reinforcement Bars:
1. New billet-steel conforming to Section 709.1, Publication 408 Specifications.
2. Deformed, Grade 40

B. Steel Wire Fabric
1. Conforming to Section 709.3, Publication 408 Specifications

PART 3 EXECUTION

3.01 CONSTRUCTION

A. Comply with Section 1001, Publication 408 Specifications for construction requirements including formwork, curing, protection, and finishing of cement concrete.

B. Excavate and shape trench bottoms and sides to accommodate thrust block forms, encasement, manhole bases, inlets and vaults.

C. Support pipe, valves and fittings at the required elevation with brick or concrete block. Do not use earth, rock, wood, or organic material as supports.

D. Construct manhole bases, reaction and support blocking, cradles, encasements and miscellaneous mass concrete of Class C concrete.

E. Construct cast-in-place vaults, inlets, endwalls, curbs, sidewalks and miscellaneous reinforced structures of Class A concrete.

F. Construct reinforced and plain cement concrete pavements and base courses of High Early Strength concrete as specified in Section 02575, Paving and Resurfacing.

G. Provide spacers, chairs, bolsters, ties and other devices for properly

placing, spacing, supporting and fastening reinforcement in place.

H. Place concrete utilizing all possible care to prevent displacement of pipe or fittings. Return displaced pipe or fittings to line and grade immediately.

I. Insure tie rods, nuts, bolts and flanges are free and clear of concrete.

J. Do not backfill structures until concrete has achieved its initial set, forms are removed and concrete work is inspected by the ENGINEER.

K. Perform backfilling and compaction as specified in Section 02221.

3.02 FIELD TESTS OF CONCRETE DURING CONSTRUCTION

A. Test each 50 cubic yards or fraction thereof of each class of concrete for compressive strength. Retain an independent testing laboratory to test cylinders.

1. Sample concrete in accordance with ASTM C172.
2. Prepare and cure two test cylinders in accordance with ASTM C31.
3. Test cylinders in accordance with ASTM C39

B. If test cylinders fail to meet strength requirements, the ENGINEER may require additional core tests in accordance with ASTM C42 at the expense of the CONTRACTOR.

END OF SECTION

6-20 Borough of Turbotville, Installation of Pipe through Steel Casing

SECTION 6 SCHEDULE OF STANDARD DETAILS

6-1 Borough of Turbotville, Water Service Lateral
6-2 Borough of Turbotville, Pre-Assembled Blow Off
6-3 Borough of Turbotville, Two Piece Valve Box
6-4 Borough of Turbotville, Three Piece Valve Box
6-5 Borough of Turbotville, Fire Hydrant
6-6 Borough of Turbotville, Sewer Service Lateral Stub
6-7 Borough of Turbotville, Sewer Service Lateral Connection
6-8 Borough of Turbotville, Manhole - Precast, 48" Diameter
6-9 Borough of Turbotville, Manhole Frame and Cover, Standard Opening
6-10 Borough of Turbotville, Typical Outside Drop Manhole Connection
6-11 Borough of Turbotville, Terminal Cleanout
6-12 Borough of Turbotville, Blocking for Plugs
6-13 Borough of Turbotville, Pipe Bedding - Type A
6-14 Borough of Turbotville, Pipe Bedding - Type B
6-15 Borough of Turbotville, Concrete Anchor Detail
6-16 Borough of Turbotville, Concrete Cradle, Concrete Encasement
6-17 Borough of Turbotville, Meter Box Cover Detail
6-18 Borough of Turbotville, Automatic Air Release Valve Detail
6-19 Borough of Turbotville, Typical Sanitary Sewer Service Lateral
6-21 Borough of Turbotville, Horizontal Bearing Thrust Blocks
6-22 Borough of Turbotville, Vertical Bearing Thrust Blocks; Vertical Thrust Upward, Vertical Thrust Downward
6-23 Borough of Turbotville, "Reserved"

EXHIBIT A

SEEDING RESTORATION TABLE[1]

EXISTING LANDCOVER	TOPSOIL	LIME	BASIC STARTER FERTILIZER[2]	STARTER FERTILIZER[2]	SEED MIX (% BY WEIGHT) & SOWING RATE
Temporary Cover[3]	No	No	No	No	**PennDOT Formula E:** 100% Annual Ryegrass Sow 10# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15
Road Right-of-Way: Unmowed	Yes	100# per 1000 SF	No	10-5-5 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF	**PennDOT Formula D:** 70% Kentucky 31 Tall Fescue 30% Creeping Red Fescue **OR** Chewings Fescue Sow 21# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15
Road Right-of-Way: Mowed	Yes	100# per 1000 SF	No	10-5-5 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF	**PennDOT Formula B:** 50% Kentucky Bluegrass Mix 30% Creeping Red Fescue **OR** Chewings Fescue 20% Perennial Ryegrass Mix Sow 21# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15

Embankment Areas (slopes steeper than 20%) (4)	Yes	100# per 1000 SF	No	10-5-5 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF	**PennDOT Formula C:** 45% Crownvetch 55% Annual Ryegrass Sow 9# per 1000 SY Ryegrass: March 1 thru October 15 Crownvetch: Anytime except September or October

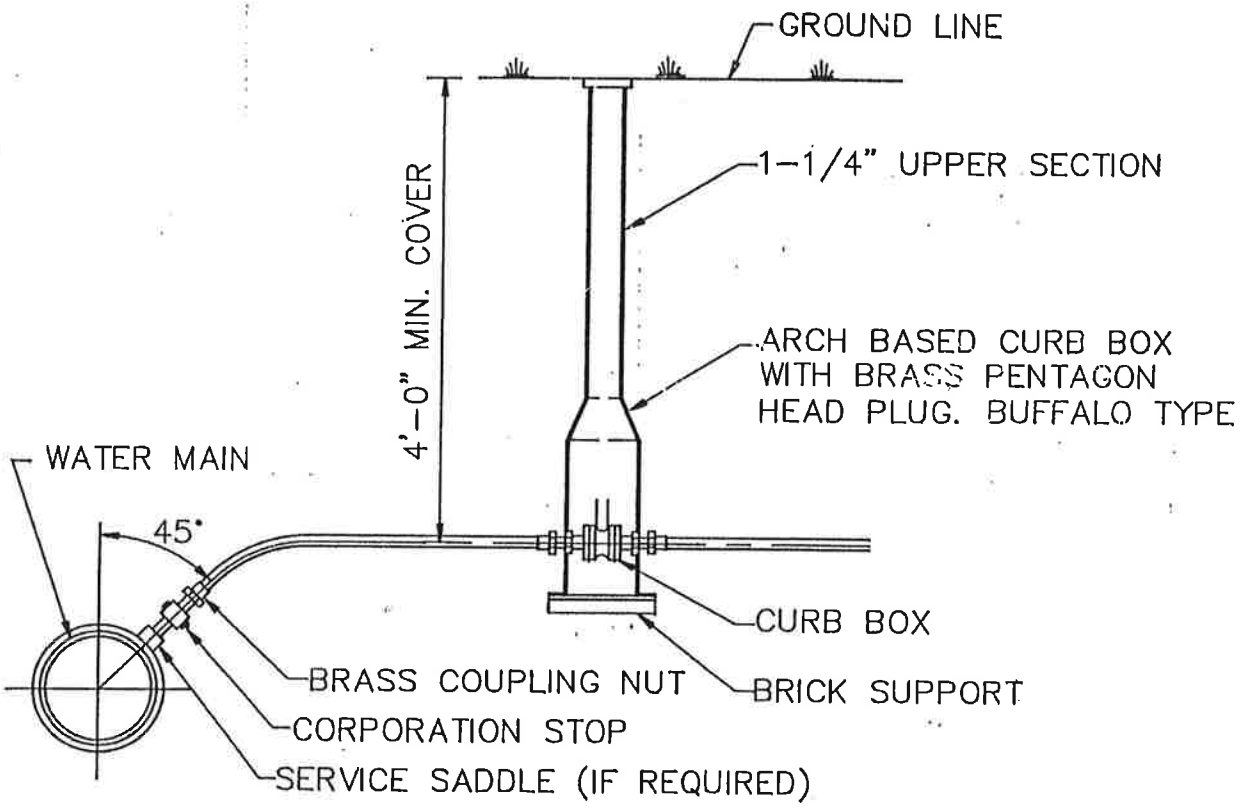
SEEDING RESTORATION TABLE[1]
(CONT.)

EXISTING LANDCOVER	TOPSOIL	LIME	BASIC STARTER FERTILIZER[2]	SEED MIX (% BY WEIGHT) FERTILIZER[2] & SOWING RATE
Lawn	Yes	100# per 1000 SF	0-20-20 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF	10-5-5 @ 50# per 1000 SF **PennDOT Formula B:** 50% Kentucky Bluegrass Mix 30% Creeping Red Fescue **OR** Chewings Fescue 20% Perennial Ryegrass Mix Sow 21# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15
Open Fields: Uncultivated	No	No	No	10-5-5 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF 100% Timothy Sow 9# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15
Open Fields: Cultivated	No	No	No	10-5-5 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF **PennDOT Formula E:** 100% Annual Ryegrass Sow 10# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15
Woods: Sparse Groundcover	No	No	No	10-5-5 @ 50# per 1000 SF **OR** 12-6-6 @ 33# per 1000 SF 100% Creeping Red Fescue **OR** Chewings Fescue Sow 36# per 1000 SY March 15 thru May 30 **OR** August 1 thru October 15

NOTES:

(1) Refer to Drawings and Special Conditions for seeding restoration requirements at each specific location of Work.
(2) Unless otherwise indicated by soil test results.
(3) Unless otherwise specified by the Erosion and Sedimentation Control Plan.
(4) Unless otherwise specified within Section 02485 - Finish Grading, Seeding and Sodding

Rev. 03/09/94



SERVICE LATERAL

NOT TO SCALE

SEE SPECIFICATIONS TO DETERMINE IF SERVICE SADDLE IS REQUIRED.

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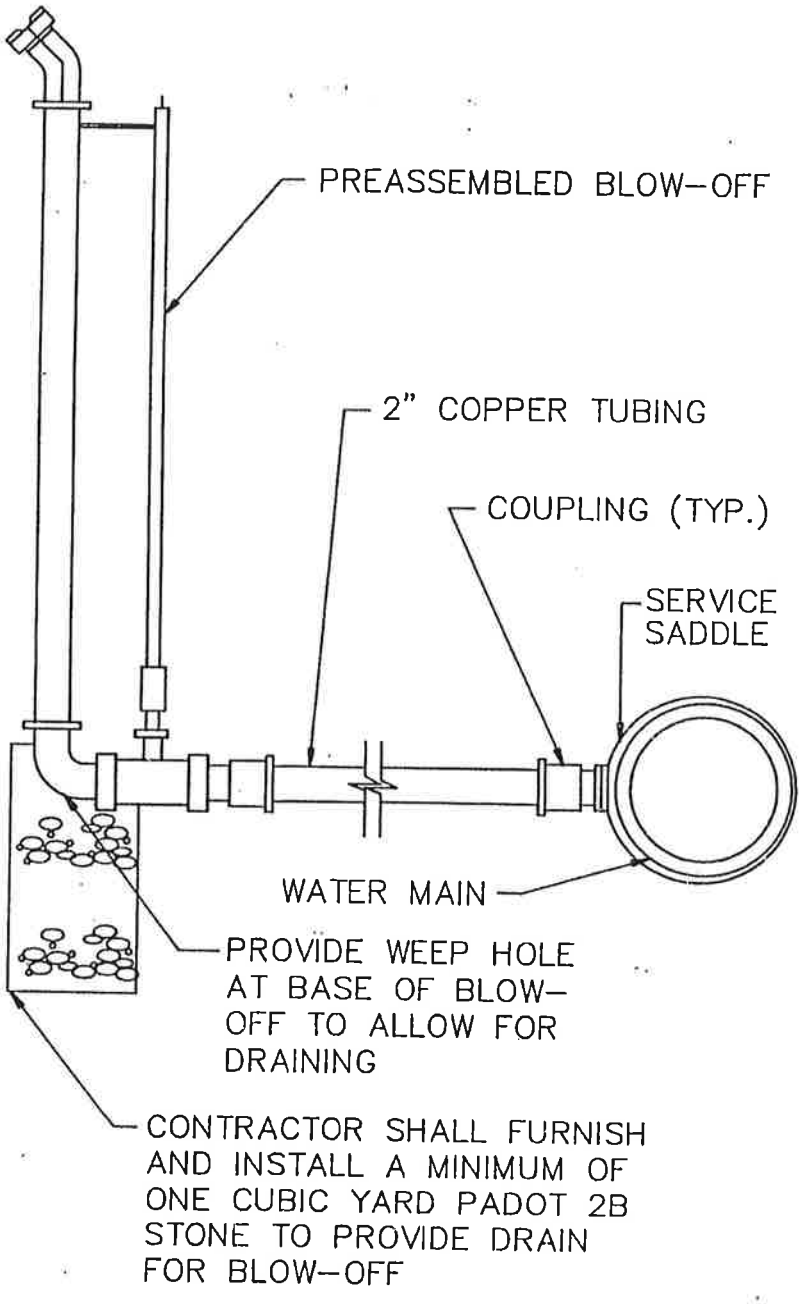
BOROUGH OF TURBOTVILLE

WATER SERVICE LATERAL

SCALE
NONE

DRAWING NO.
0470053007

SHEET NO.
6-1



PRE-ASSEMBLED BLOW OFF

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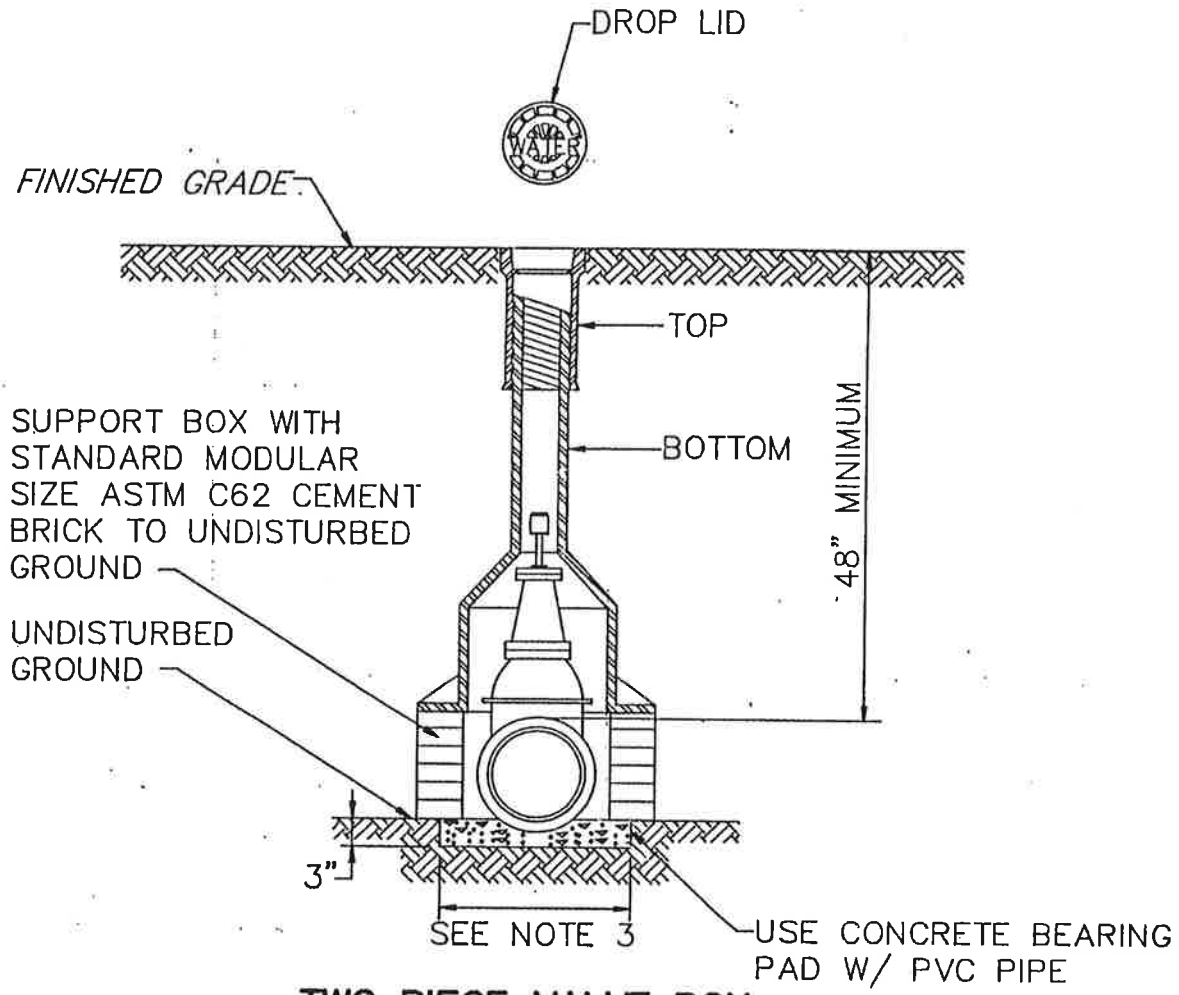
BOROUGH OF TURBOTVILLE

PRE-ASSEMBLED BLOW OFF

SCALE: NONE
DRAWING NO. 0470053007
SHEET NO. 6-2



TWO PIECE VALVE BOX

NOT TO SCALE

FOR MAIN LESS THAN 4" DIAMETER

NOTES:

1. VALVE BOX SHALL BE INSTALLED SO THAT TRAFFIC LOADS CANNOT BE TRANSMITTED TO THE VALVE.

2. BOX BOTTOM WILL BE SIZED SO THAT IT WILL NOT COME IN CONTACT WITH THE VALVE.

3. BEARING PAD SHALL EXTEND BEYOND WIDEST DIMENSION OF VALVE.

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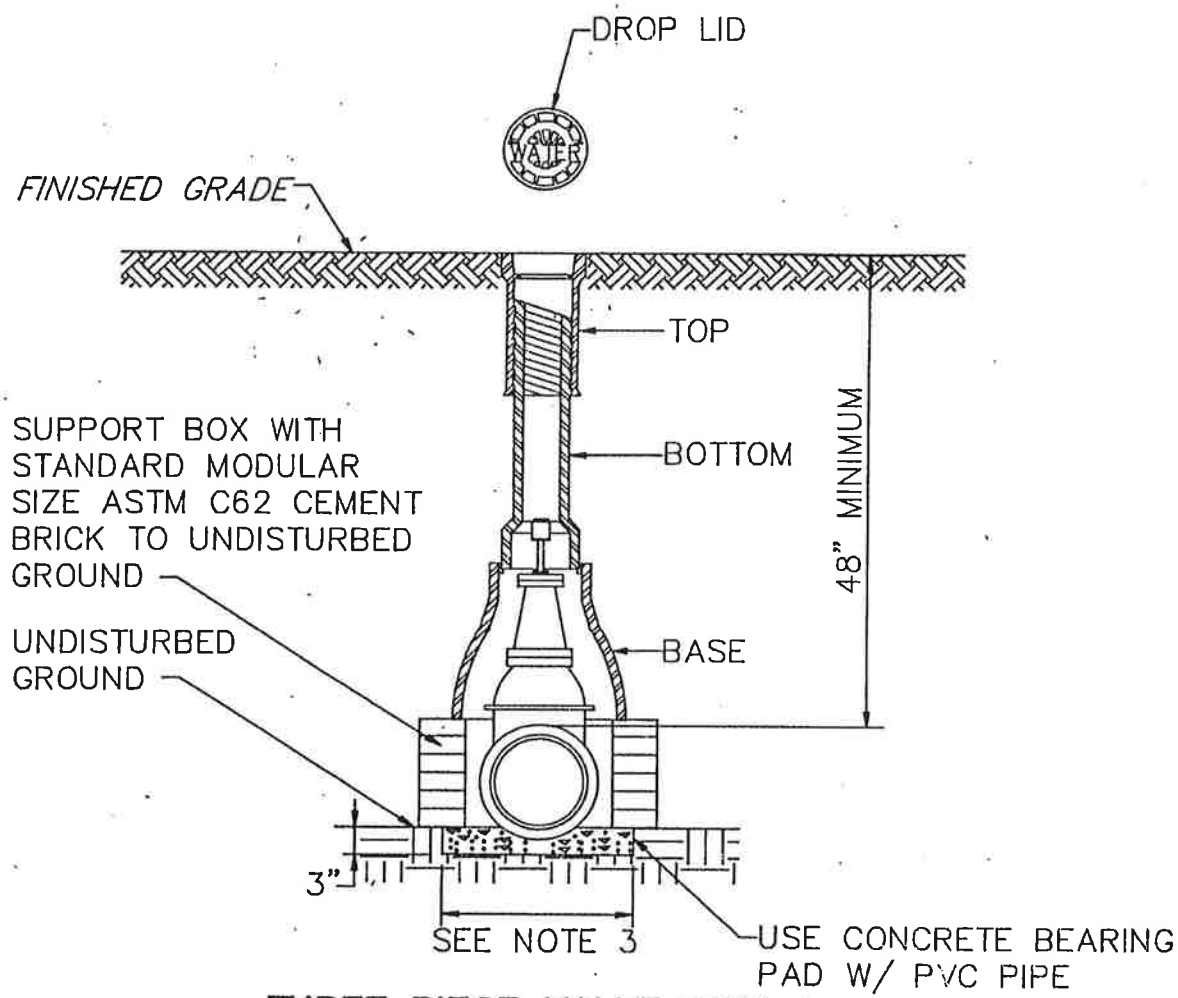
BOROUGH OF TURBOTVILLE
TWO PIECE VALVE BOX

SCALE	NONE
DRAWING	0470053007
SHEET NO.	6-3



THREE PIECE VALVE BOX

NOT TO SCALE

FOR 4" TO 12" DIAMETER MAIN.

NOTES:

1. VALVE BOX SHALL BE INSTALLED SO THAT TRAFFIC LOADS CANNOT BE TRANSMITTED TO THE VALVE.
2. BOX BASE WILL BE SIZED SO THAT IT WILL NOT COME IN CONTACT WITH THE VALVE.
3. BEARING PAD SHALL EXTEND BEYOND WIDEST DIMENSION OF VALVE.

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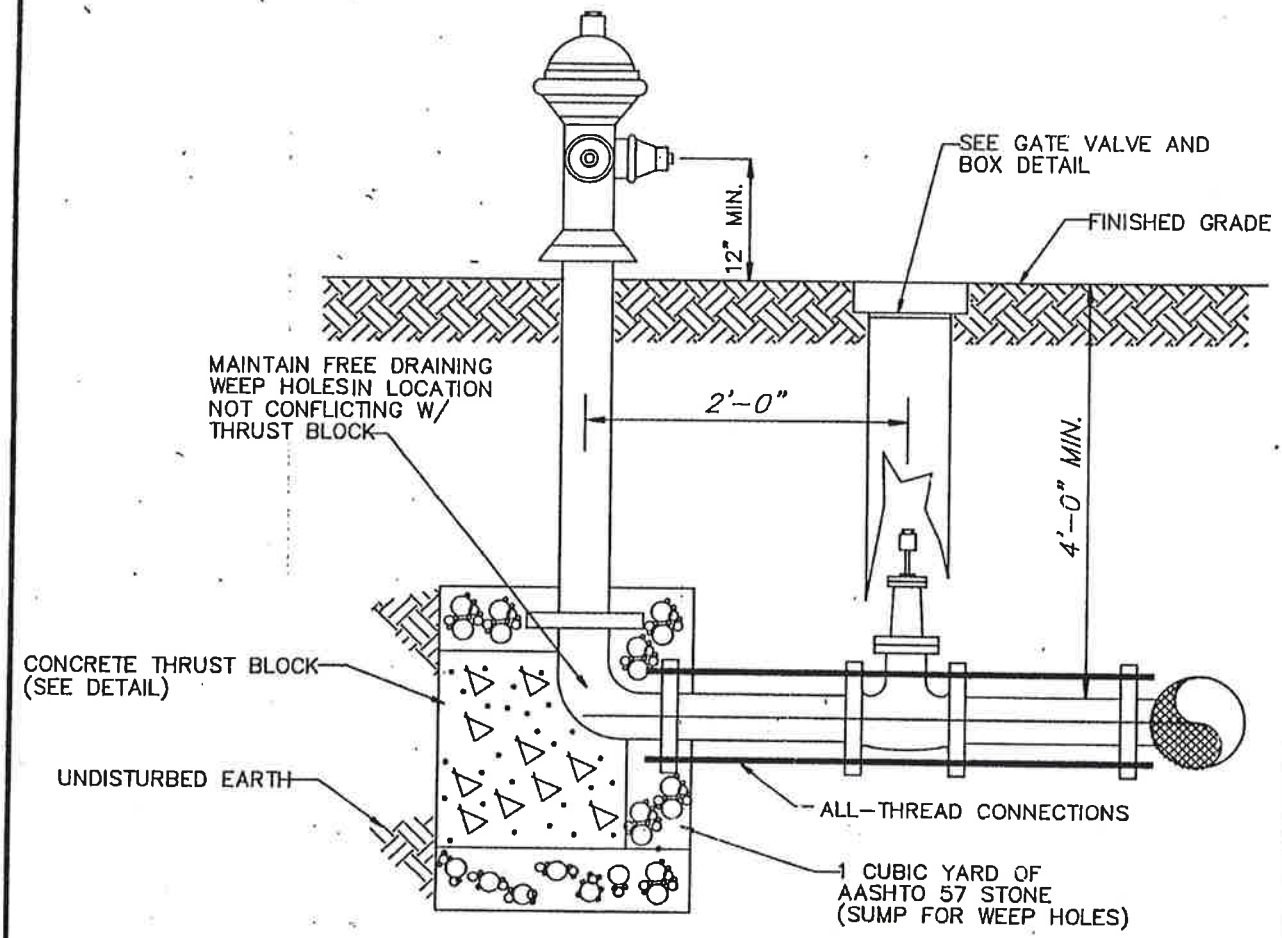
BOROUGH OF TURBOTVILLE
THREE PIECE VALVE BOX

SCALE NONE
DRAWING 0470053007
SHEET NO. 6-4



FIRE HYDRANT

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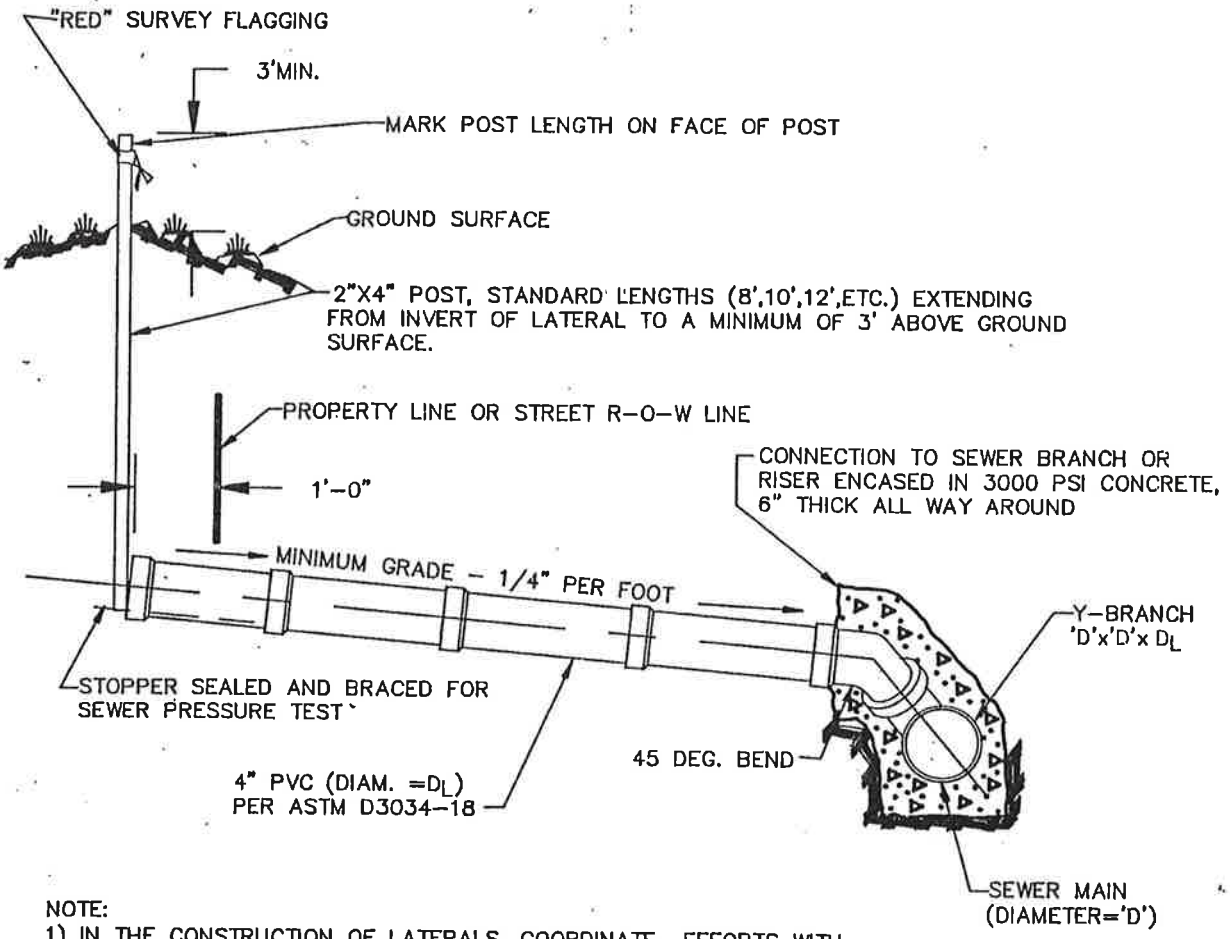
BOROUGH OF TURBOTVILLE
FIRE HYDRANT

SCALE	NONE
DRAWING	0470053007
SHEET NO.	6-5



NOTE:
1) IN THE CONSTRUCTION OF LATERALS, COORDINATE EFFORTS WITH THE AUTHORITY TO PROVIDE PROPER SERVICE TO THE PROPERTY OWNERS.

SEWER SERVICE LATERAL STUB

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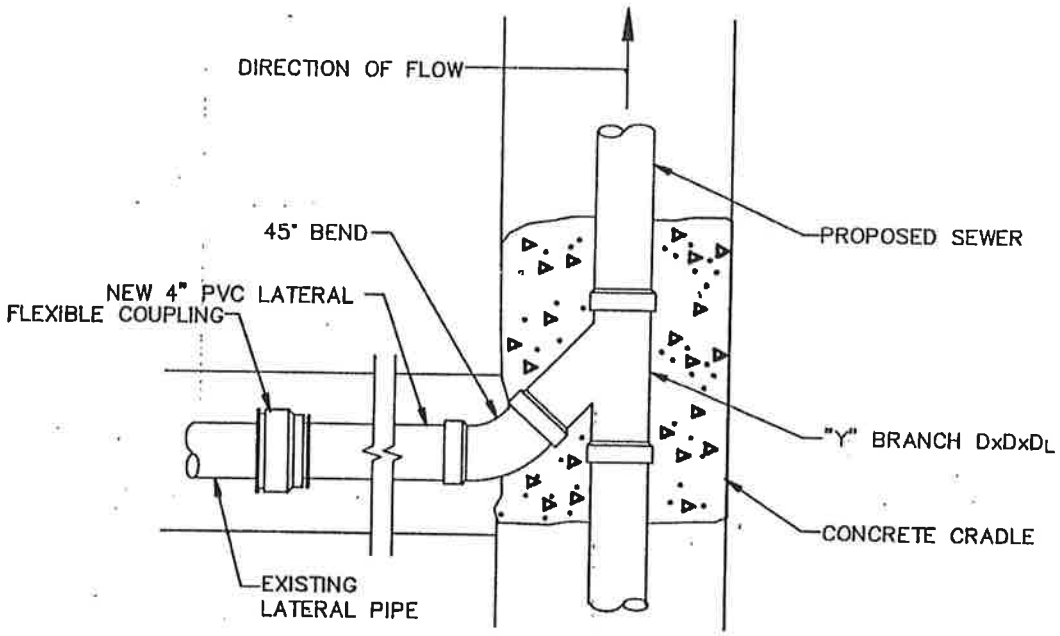
BOROUGH OF TURBOTVILLE

SEWER SERVICE LATERAL STUB

SCALE	NONE
DRAWING NO.	0470053007
SHEET NO.	6-6



SEWER SERVICE LATERAL CONNECTION

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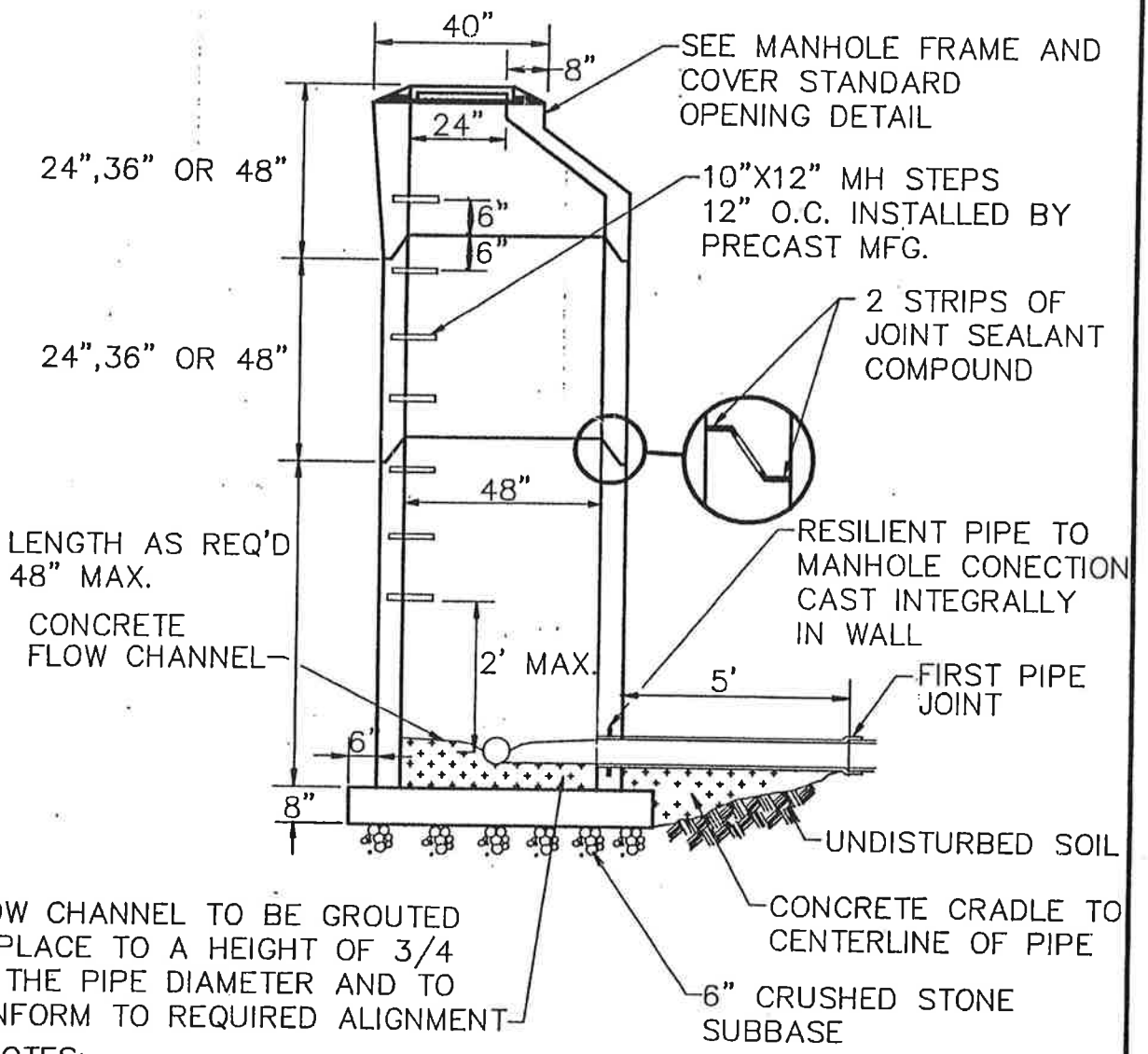
BOROUGH OF TURBOTVILLE

SEWER SERVICE LATERAL CONNECTION

SCALE	NONE
DRAWING NO.	0470053007
SHEET NO.	6-7



NOTES:

1. PROVIDE PRECAST MANHOLE SECTIONS CONFORMING TO ASTM C-478 LATEST EDITION.
2. COAT ENTIRE INSIDE AND OUTSIDE SURFACES OF MANHOLE; AND OUTSIDE SURFACE OF CRADLES WITH TWO COATS OF BITUMASTIC.
3. MAXIMUM PIPE DIAMETER IS 24"

MANHOLE – PRECAST
48" DIAMETER

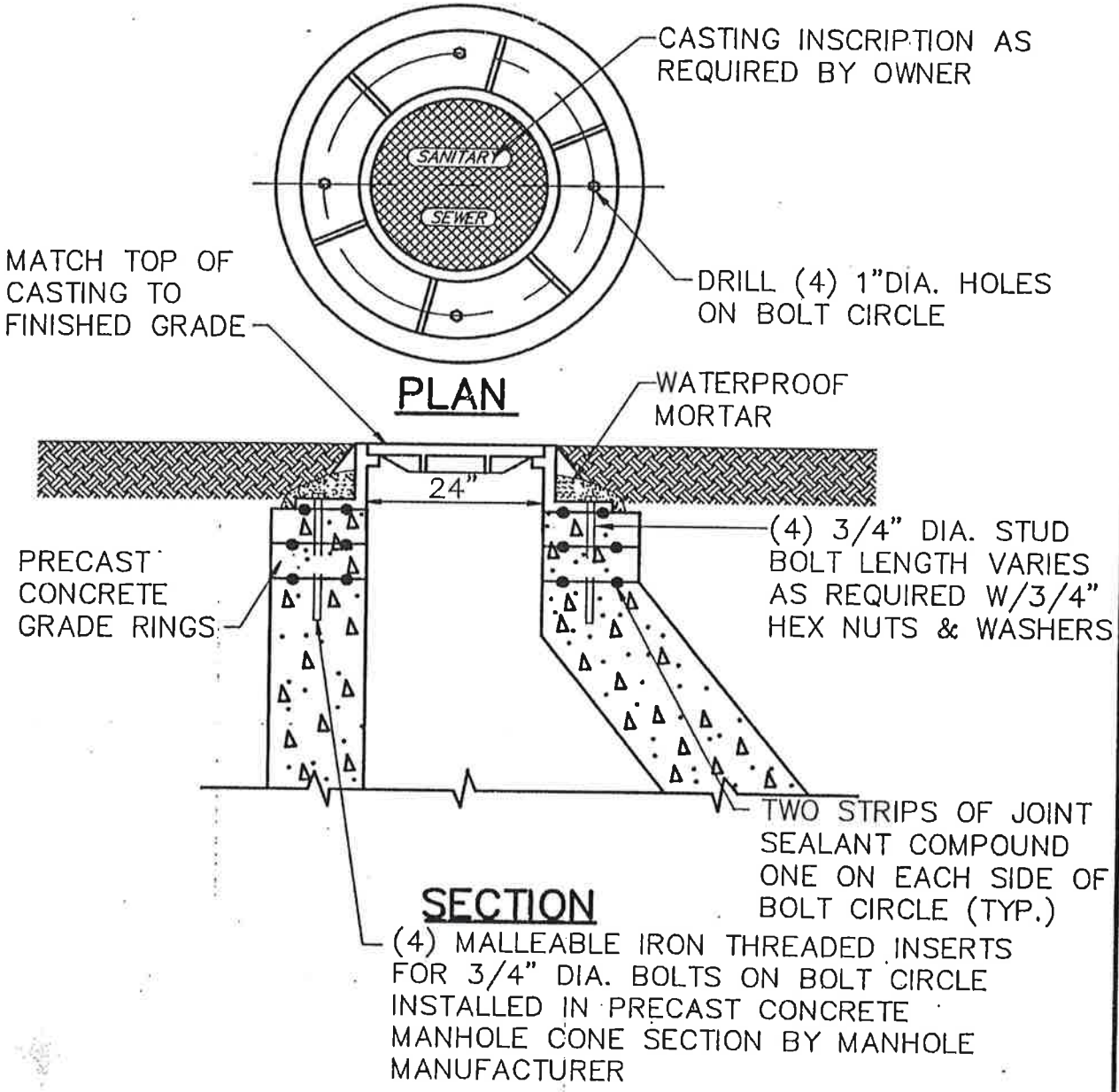
UNI-TEC CONSULTING ENGINEERS, INC.
2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-238-8228

BOROUGH OF TURBOTVILLE
MANHOLE PRECAST
48" DIAMETER

SCALE	NONE
DRAWING	0470053007
SHEET NO.	6-8

NOTE:

1. PRECAST CONCRETE GRADE RINGS ARE REQUIRED ONLY WHERE MANHOLE FRAME & COVER MUST CONFORM TO GRADE OF STREET. MAXIMUM ADJUSTMENT HEIGHT 12"



MANHOLE FRAME AND COVER STANDARD OPENING

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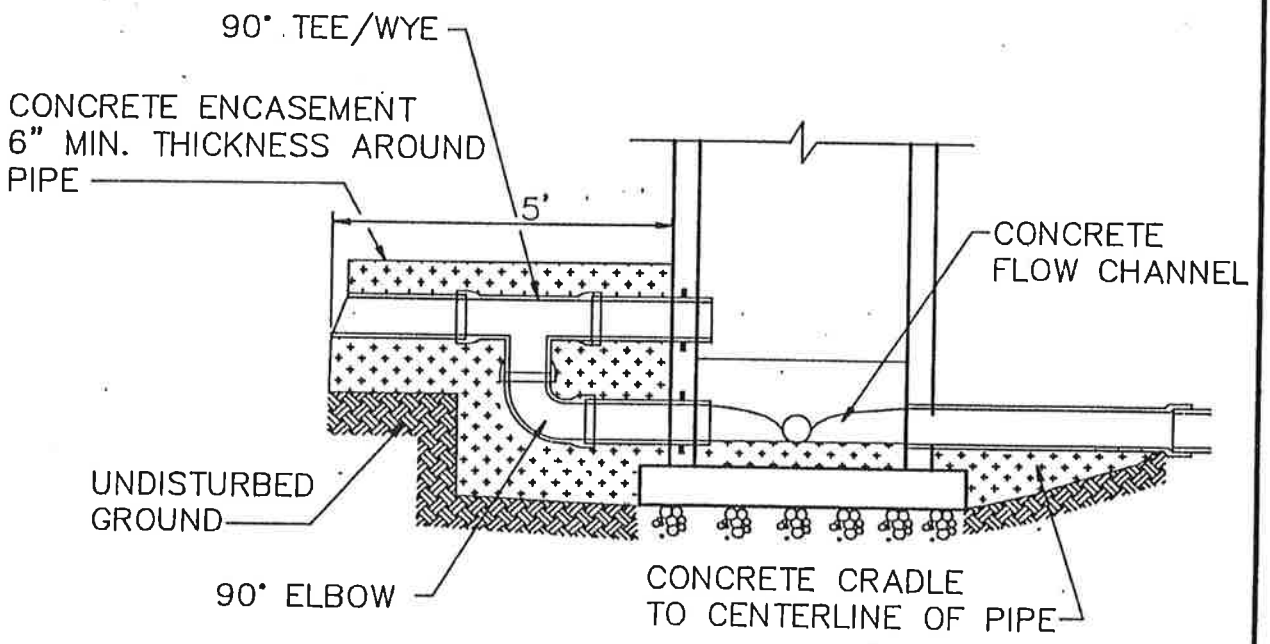
BOROUGH OF TURBOTVILLE
MANHOLE FRAME AND COVER
STANDARD OPENING

SCALE	NONE
DRAWING	0470053007
SHEET NO.	6-9

NOTE:

1. A DROP CONNECTION SHALL BE INSTALLED WHEN THE PIPE INVERTS INTO THE MANHOLE ARE 2.0 FEET OR ABOVE THE INVERT OUT OF THE MANHOLE. THE ENTIRE OUTER SURFACE AND CONCRETE ENCASEMENT AROUND MANHOLE AND CONNECTIONS SHALL BE COATED WITH TWO COATS BITUMASTIC.
2. REFER TO MANHOLE PRECAST 48" DIAMETER DETAIL FOR MANHOLE CONSTRUCTION.



TYPICAL OUTSIDE DROP MANHOLE CONNECTION

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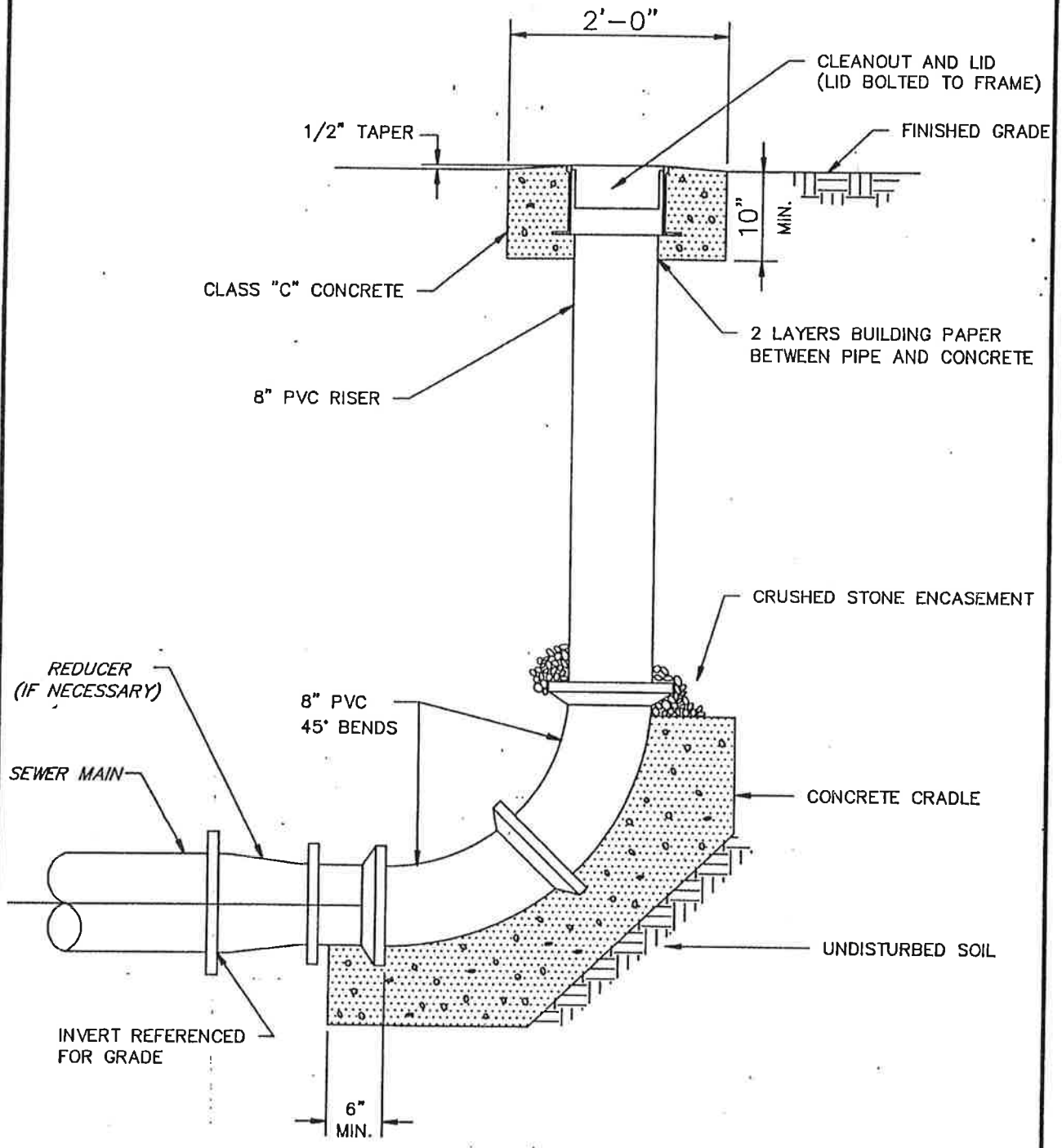
BOROUGH OF TURBOTVILLE
TYPICAL OUTSIDE DROP MANHOLE CONNECTION

SCALE	NONE
DRAWING	0470053007
SHEET NO.	6-10



TERMINAL CLEANOUT

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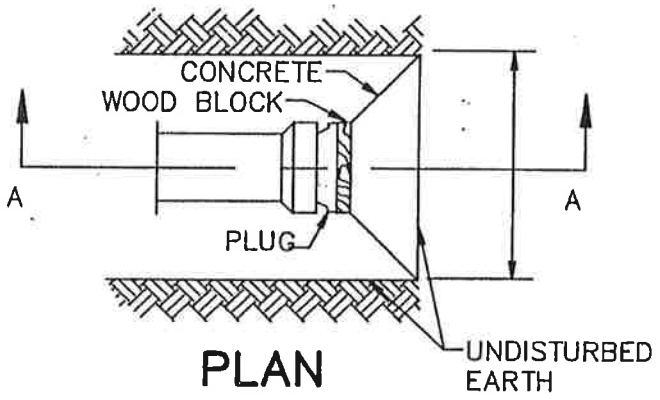
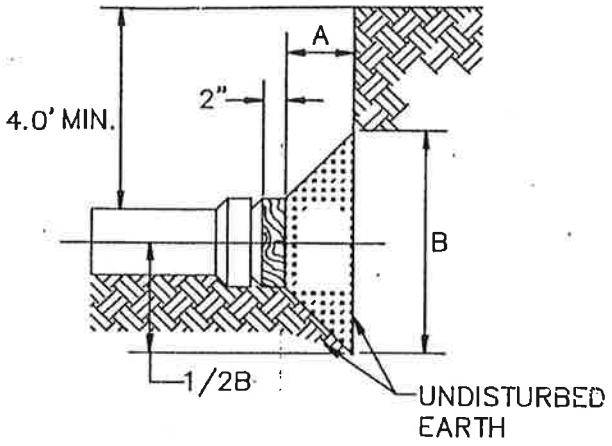
BOROUGH OF TURBOTVILLE
TERMINAL CLEANOUT

SCALE	NONE
DRAWING	0470053007
SHEET NO.	6-11



PLAN



SECTION A–A

BLOCKING FOR PLUGS

BLOCKING FOR PLUGS				
DIM.	DIAMETER			
	3",4",5"	8"	10"	12"
A	6"	8"	8"	10"
B	1'–2"	1'–6"	2'–0"	2'–4"
C	1'–6"	2'–3"	2'–6"	3'–3"

NOTE: CONCRETE TO BE MINIMUM 3000 PSI @ 28 DAYS.

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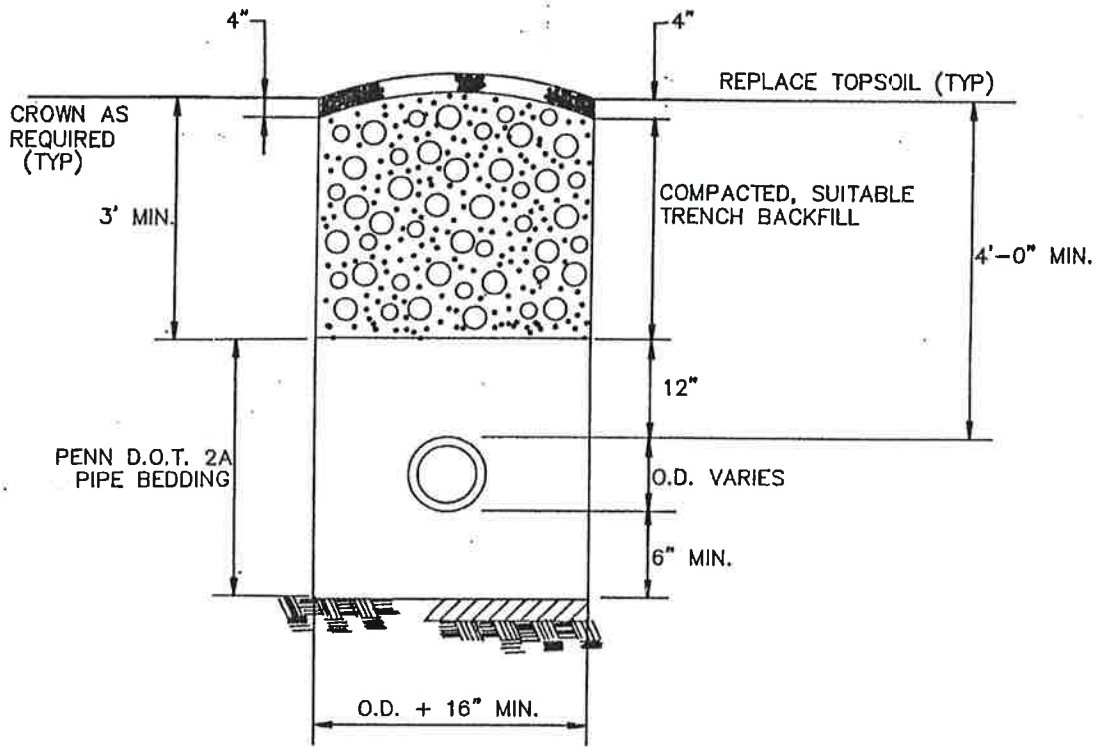
BOROUGH OF TURBOTVILLE
BLOCKING FOR PLUGS

SCALE
NONE
DRAWING
0470053007
SHEET NO.
6-12



PIPE BEDDING – TYPE A

NOTES

1. PLACE BEDDING AND BACKFILL IN CONTINUOUS LAYERS NOT EXCEEDING 8 INCHES AND COMPACT TO 90% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 COMPACT TO BOTTOM ELEVATION OF EXISTING PAVEMENT.
2. PROVIDE PIPE BEDDING OF PENNDOT 2A STONE, UNLESS DIRECTED OTHERWISE BY ENGINEER.
3. EXCAVATED NATIVE MATERIAL MAY BE USED FOR BACKFILL WHEN APPROVED BY ENGINEER, OTHERWISE BACKFILL WITH PENN DOT 2RC STONE.
4. WHERE RESTORED BITUMINOUS PAVEMENT MEETS EXISTING PAVEMENT, APPLY JOINT SEALER MATERIAL IN ACCORDANCE WITH PENN DOT PUB. 408, SECTION 705.4 (a), (b), AND (c).
5. USE CONCRETE CRADLE OR CONCRETE ENCASEMENT WHERE SHOWN ON THE DRAWINGS OR WHERE REQUIRED BY ENGINEER. PROVIDE CLASS C CONCRETE.
6. PROVIDE STEEL CASING FOR PIPE UNDER PENN DOT ROADWAYS AND WHEN REQUIRED BY ENGINEER. SEE STEEL CASING INSTALLATION DETAIL.
7. USE TYPE B BEDDING AND BACKFILL WHERE APPROVED BY ENGINEER.

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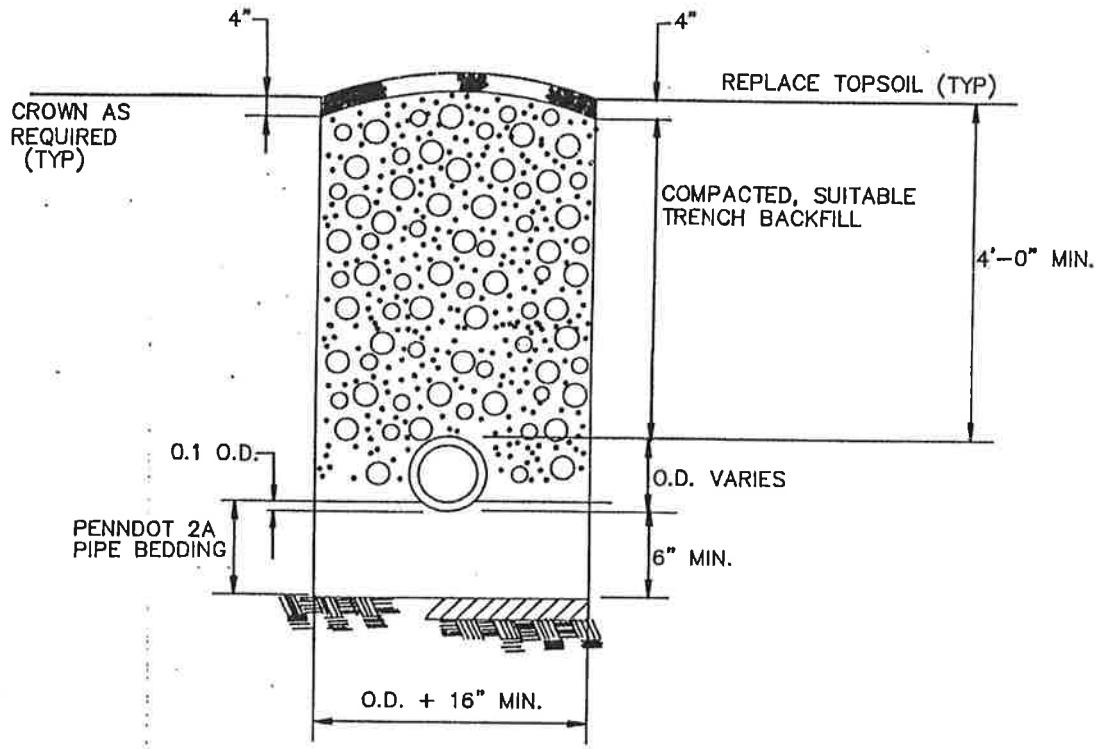
BOROUGH OF TURBOTVILLE
PIPE BEDDING – TYPE A

SCALE NONE
DRAWING 0470053007
SHEET NO. 6-13



PIPE BEDDING – TYPE B

NOTES

1. PLACE BEDDING AND BACKFILL IN CONTINUOUS LAYERS NOT EXCEEDING 8 INCHES AND COMPACT TO 90% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 COMPACT TO BOTTOM ELEVATION OF EXISTING PAVEMENT.
2. PROVIDE PIPE BEDDING OF PENNDOT 2A STONE, UNLESS DIRECTED OTHERWISE BY ENGINEER.
3. EXCAVATED NATIVE MATERIAL MAY BE USED FOR BACKFILL WHEN APPROVED BY ENGINEER, OTHERWISE BACKFILL WITH PENN DOT 2RC STONE.
4. WHERE RESTORED BITUMINOUS PAVEMENT MEETS EXISTING PAVEMENT, APPLY JOINT SEALER MATERIAL IN ACCORDANCE WITH PENN DOT PUB. 408, SECTION 705.4 (a), (b), AND (c).
5. USE CONCRETE CRADLE OR CONCRETE ENCASEMENT WHERE SHOWN ON THE DRAWINGS OR WHERE REQUIRED BY ENGINEER. PROVIDE CLASS C CONCRETE.
6. PROVIDE STEEL CASING FOR PIPE UNDER PENN DOT ROADWAYS AND WHEN REQUIRED BY ENGINEER. SEE STEEL CASING INSTALLATION DETAIL.
7. USE TYPE B BEDDING AND BACKFILL WHERE APPROVED BY THE BOROUGH'S ENGINEER.

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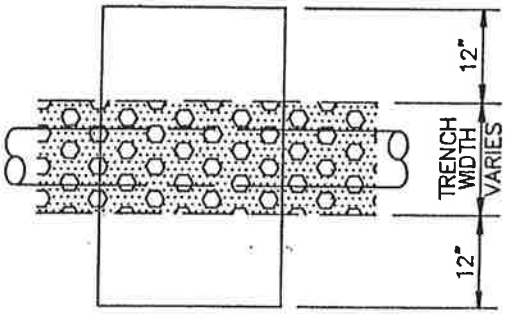
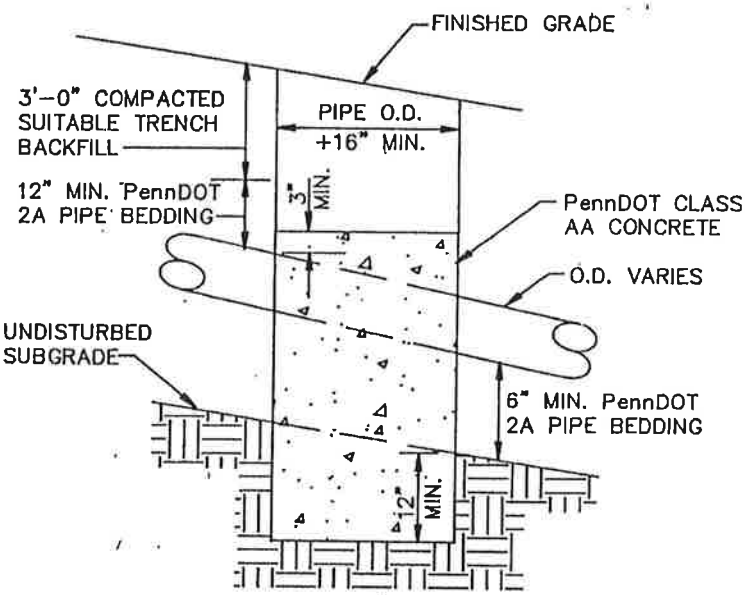
2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-235-8223

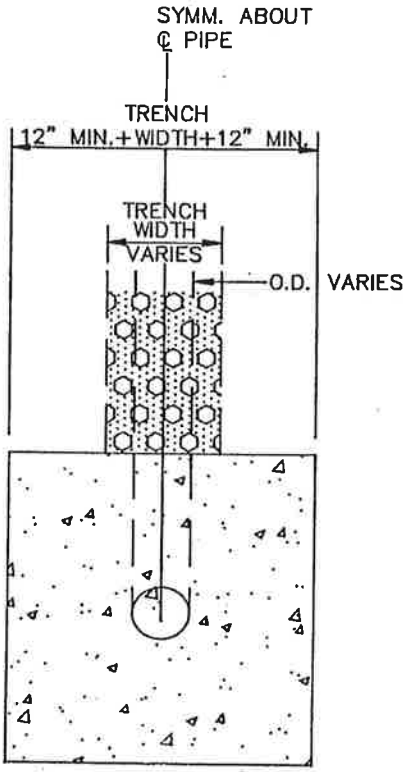
BOROUGH OF TURBOTVILLE
PIPE BEDDING – TYPE B

SCALE: NONE
DRAWING: 0470053007
SHEET NO.: 6-14



PLAN VIEW





SIDE VIEW

SECTION

CONCRETE ANCHOR DETAIL

NOT TO SCALE

NOTES:

WATER OR SEWER LINES LAID ON A 20% SLOPE OR GREATER SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS, OR EQUALLY SPACED AS FOLLOWS:

1. NOT OVER 30 FEET CENTER TO CENTER OF ANCHORS ON GRADES BETWEEN 20% AND 30%.
2. NOT OVER 20 FEET CENTER TO CENTER OF ANCHORS ON GRADES BETWEEN 35% AND 50%.
3. NOT OVER 15 FEET CENTER TO CENTER OF ANCHORS ON GRADES 50% AND OVER.

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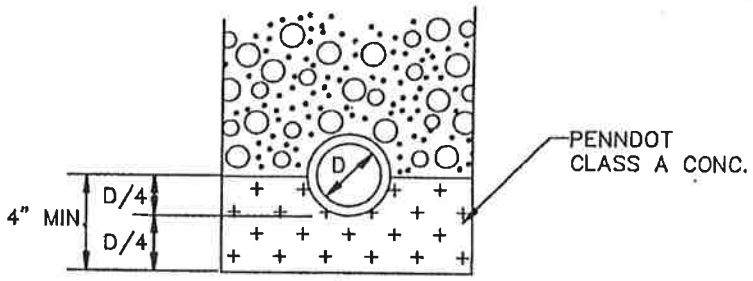
BOROUGH OF TURBOTVILLE

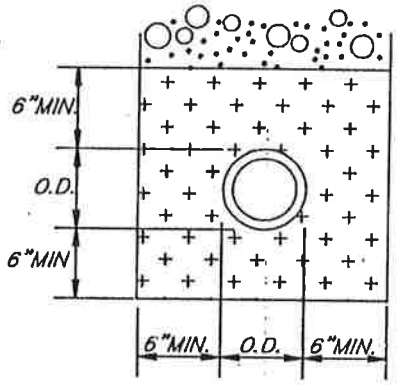
CONCRETE ANCHOR DETAIL

SCALE: NONE
DRAWING NO.: 0470053007
SHEET NO.: 6-15

NOTE:
MINIMUM WIDTH OF CRADLE D+8

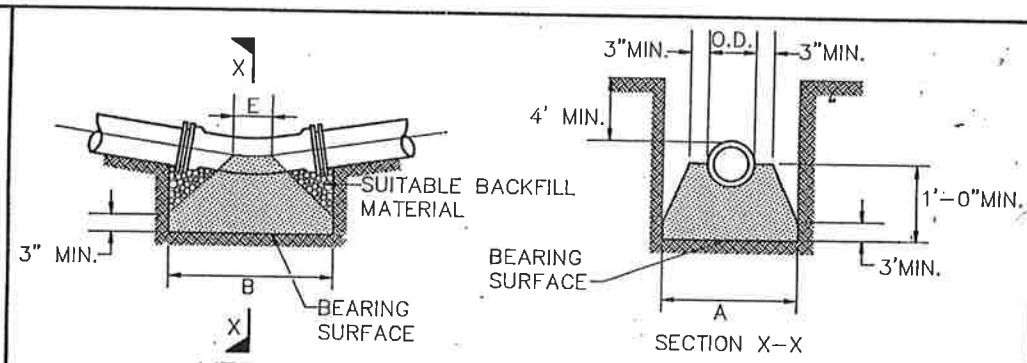


CONCRETE CRADLE



CONCRETE ENCASEMENT

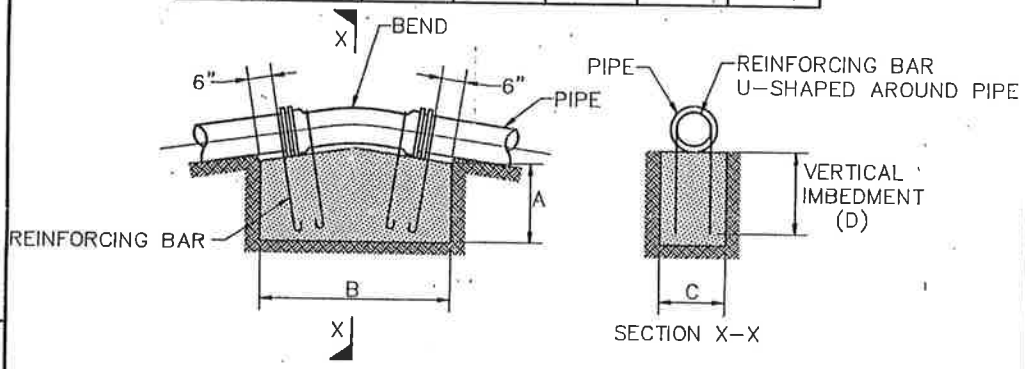
UNI–TEC CONSULTING ENGINEERS, INC. 2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-238-8223	BOROUGH OF TURBOTVILLE CONCRETE CRADLE CONCRETE ENCASEMENT	SCALE: NONE DRAWING: 0470053007 SHEET NO.: 6-16



VERTICAL BEARING THRUST BLOCKS

VERTICAL THRUST DOWNWARD

PIPE SIZE	45° BEND		22 1/2° BENDS		11 1/4° BENDS	
	A	B	A	B	A	B
4"	0'-11"	1'-8"	0'-8"	1'-3"	0'-8"	1'-3"
6"	1'-4"	2'-6"	1'-0"	1'-9"	1'-0"	1'-9"
8"	1'-10"	3'-4"	1'-4"	2'-5"	1'-4"	2'-5"
10"	2'-3"	4'-2"	1'-8"	2'-11"	1'-8"	2'-11"
12"	2'-8"	5'-0"	2'-0"	3'-4"	2'-0"	3'-4"
16"	4'-0"	7'-4"	3'-0"	5'-0"	3'-0"	5'-0"



VERTICAL BEARING THRUST BLOCKS

VERTICAL THRUST UPWARD

PIPE SIZE	45° BEND					22 1/2° BEND					11 1/4° BEND				
	A	B	C	D	BAR NO.	A	B	C	D	BAR NO.	A	B	C	D	BAR NO.
4"	4'-0"	6'-0"	3'-0"	1'-3"	5	3'-0"	4'-0"	3'-0"	1'-3"	4	2'-0"	3'-0"	3'-0"	1'-3"	3
6"	4'-0"	6'-0"	3'-0"	1'-3"	5	3'-0"	4'-0"	3'-0"	1'-3"	4	2'-0"	3'-0"	3'-0"	1'-3"	3
8"	4'-0"	6'-0"	3'-0"	1'-3"	5	3'-0"	4'-0"	3'-0"	1'-3"	4	2'-0"	3'-0"	3'-0"	1'-3"	3
10"	5'-0"	8'-0"	4'-0"	1'-7"	5	4'-6"	6'-0"	3'-0"	1'-3"	4	3'-0"	4'-6"	3'-0"	1'-3"	3
12"	5'-0"	8'-0"	4'-0"	1'-7"	5	4'-6"	6'-0"	3'-0"	1'-3"	4	3'-0"	4'-6"	3'-0"	1'-3"	3

NOTES:

1. DATA ON THIS TABLE ASSUMES SOIL BEARING CAPACITY OF 2,000 LBS/SQ.FT. (SAND & GRAVEL WITH CLAY). IF FIELD CONDITIONS OTHER THAN ASSUMED ARE ENCOUNTERED, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
2. BEARING SURFACE SHALL BE PLACED AGAINST UNDISTURBED SOIL. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
3. DIMENSION "E" SHALL BE AS LARGE AS POSSIBLE WITHOUT LIMITING JOINT FLEXIBILITY OR REMOVAL OF FITTING.
4. USE CONCRETE AS SPECIFIED IN TURBOTVILLE'S DESIGN STANDARDS.
5. PIPE DIAMETERS LESS THAN 4" SHALL USE THE DIMENSIONS SHOWN FOR 4" PIPE DIAMETERS.
6. ALL VALUES IN TABLE BASED ON 150 PSIG MAXIMUM WORKING PRESSURE.
7. FOR 6" PIPES AND SMALLER, USE REINFORCING BARS OVER FITTING ONLY.
8. PAINT ALL EXPOSED REINFORCING BARS WITH TWO COATS OF ASPHALT PAINT AS SPECIFIED IN TURBOTVILLE'S DESIGN STANDARDS.

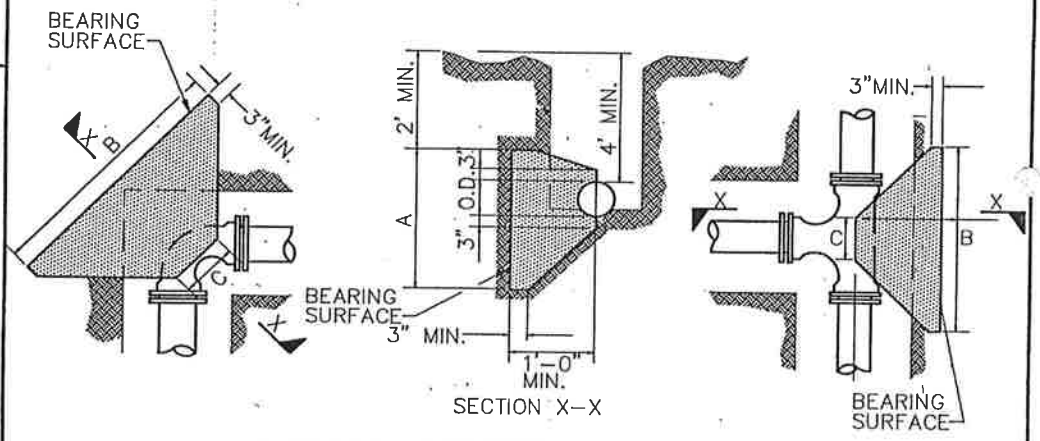
CHECKED BY / DATE

APPROVED BY / DATE

UNI-TEC CONSULTING ENGINEERS, INC.
2007 CATO AVENUE STATE COLLEGE, PA. 16801 (814) 238-8223

BOROUGH OF TURBOTVILLE
VERTICAL BEARING THRUST BLOCKS
VERTICAL THRUST UPWARD
VERTICAL THRUST DOWNWARD

SCALE: NONE
DRAWING NO.: 047005300?
SHEET NO.: 6-22



HORIZONTAL BEARING THRUST BLOCKS

PIPE SIZE	TEE OR DEAD END		90° BEND		45° BEND	
	A	B	A	B	A	B
4"	1'-0"	1'-11"	1'-3"	2'-3"	0'-11"	1'-8"
6"	1'-6"	2'-10"	1'-10"	3'-4"	1'-4"	2'-6"
8"	2'-0"	3'-10"	2'-6"	4'-4"	1'-10"	3'-4"
10"	2'-6"	4'-9"	3'-0"	5'-8"	2'-3"	4'-2"
12"	3'-0"	5'-9"	3'-6"	6'-11"	2'-8"	5'-0"

PIPE SIZE	22 1/2° BENDS		11 1/4° BENDS	
	A	B	A	B
4"	0'-8"	1'-3"	0'-8"	1'-3"
6"	1'-0"	1'-9"	1'-0"	1'-9"
8"	1'-4"	2'-5"	1'-4"	2'-5"
10"	1'-8"	2'-11"	1'-8"	2'-11"
12"	2'-0"	3'-4"	2'-0"	3'-4"

NOTES:

1. DATA ON THIS TABLE ASSUMES SOIL BEARING CAPACITY OF 2,000 LBS/SQ.FT. (SAND & GRAVEL WITH CLAY). IF FIELD CONDITIONS OTHER THAN ASSUMED ARE ENCOUNTERED, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
2. BEARING SURFACE SHALL BE PLACED AGAINST UNDISTURBED SOIL. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
3. DIMENSION "C" SHALL BE AS LARGE AS POSSIBLE WITHOUT LIMITING JOINT FLEXIBILITY OR REMOVAL OF FITTING.
4. USE CONCRETE AS SPECIFIED IN TURBOTVILLE'S DESIGN STANDARDS.
5. PIPE DIAMETERS LESS THAN 4" SHALL USE THE DIMENSIONS SHOWN FOR 4" PIPE DIAMETERS.
6. ALL VALUES IN TABLE BASED ON 150 PSIG MAXIMUM WORKING PRESSURE.

CHECKED BY _____ DATE _____

APPROVED BY _____ DATE _____

UNI-TEC CONSULTING ENGINEERS, INC.
2007 CATO AVENUE STATE COLLEGE, PA. 16801 (814) 238-8223

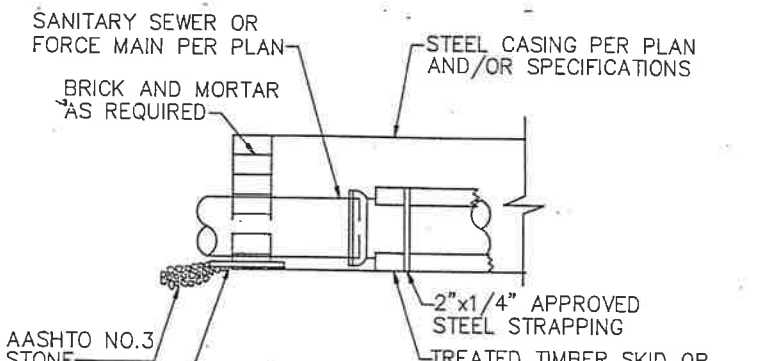
BOROUGH OF TURBOTVILLE

HORIZONTAL BEARING THRUST BLOCKS

SCALE NONE

DRAWING NO. 0470053007

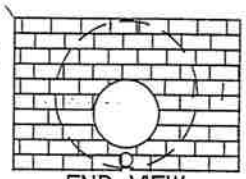
SHEET NO. 6-21



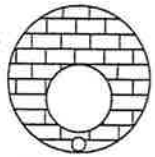
NOTE

PAD SANITARY SEWER PIPE AT BULKHEAD WITH TWO LAYERS OF 15 LB. BUILDING FELT.

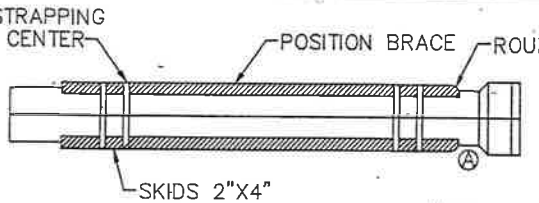
TYPICAL CASING INSTALLATION

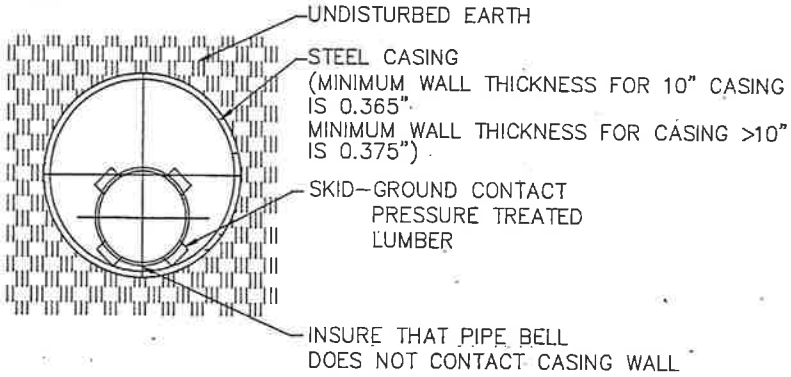


END VIEW
OPTION NO.1



END VIEW
OPTION NO.2





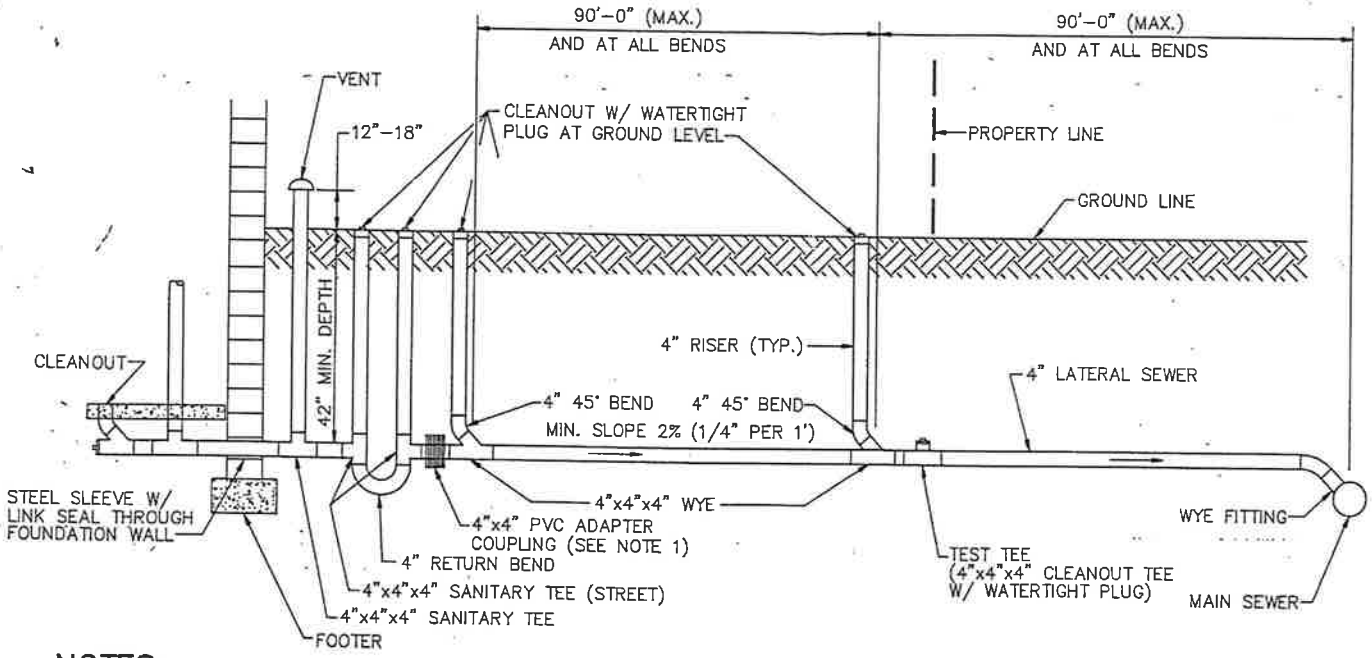
INSTALLATION OF PIPE THROUGH STEEL CASING

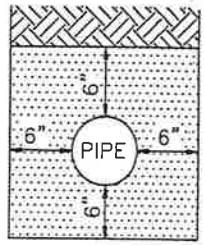
1. THE LEADING OR FORWARD ENDS OF THE SKIDS SHOULD BE ROUNDED AS SHOWN IN Ⓐ ABOVE.
2. SKID ATTACHMENTS MUST BE SECURE TO PREVENT MOVEMENT OF THE SKIDS DURING PUSHING OR PULLING OPERATIONS.
3. 2"x4" SKIDS WILL BE SECURED TO PIPE USING STEEL STRAPPING.
4. SKIDS SHOULD EXTEND FOR THE FULL LENGTH OF THE PIPE WITH THE EXCEPTION OF THE BELL AND SPIGOT AREA NECESSARY FOR ASSEMBLY.

INSTALLATION OF PIPE THROUGH STEEL CASING

NOT TO SCALE

DWN. BY ____ DATE ____ CHK'D. BY ____ DATE ____ SURVEY'D BY ____ DATE ____ BOOK NO. ____ DATE ____	UNI-TEC CONSULTING ENGINEERS, INC. 2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-238-8223	INSTALLATION OF PIPE THROUGH STEEL CASING BOROUGH OF TURBOTVILLE	SCALE: NONE DRAWING NO.: 0470053007 SHEET NO.: 6-20



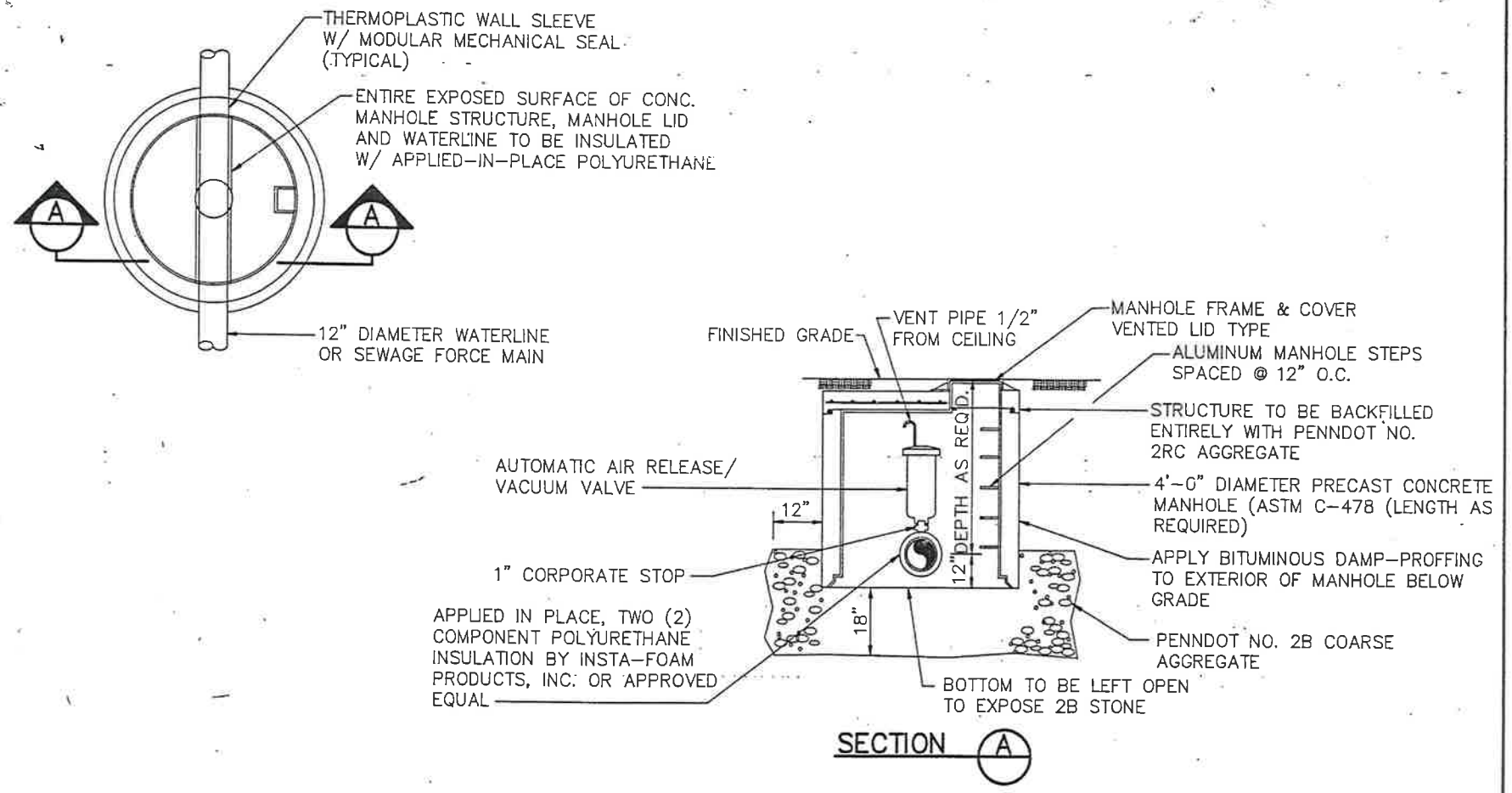


LATERAL BEDDING
(2A AGGREGATE)

NOTES:

1. LATERAL PIPE AND FITTINGS FROM DWELLING TO 4"x4" ADAPTER COUPLING IS TO BE ASTM D1785 (SCHEDULE 40) PVC WITH SOLVENT WELDED JOINTS. THE REMAINDER OF THE LATERAL IS TO BE CONSTRUCTED OF ASTM D3034 (SDR 35) OR ASTM D2241 (SDR26) PIPE AND FITTINGS WITH COMPRESSION JOINTS HAVING ELASTOMERIC SEALS. ALTERNATIVELY, THE ENTIRE SERVICE LATERAL CAN BE CONSTRUCTED OF ASTM D1785 (SCHEDULE 40) PVC PIPE AND FITTINGS WITH SOLVENT WELDED JOINTS.
2. WHERE SERVICE LATERALS GREATER THAN 4" DIAMETER ARE REQUIRED, ALL PIPE AND FITTINGS ARE TO BE CONSISTENT WITH THE SIZE DESIGNATIONS.
3. REFER TO ASSOCIATED SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SEWER LATERAL INSTALLATION AND TESTING. NO CONSTRUCTION CAN BEGIN PRIOR TO ISSUANCE OF SEWER CONNECTION PERMIT.
4. DEVIATIONS FROM THE REQUIREMENTS SET FORTH ON THIS DRAWING AND IN THE ASSOCIATED SPECIFICATIONS WILL BE CONSIDERED BY THE AUTHORITY UPON WRITTEN APPLICATION BY THE CONNECTION PERMIT HOLDER.

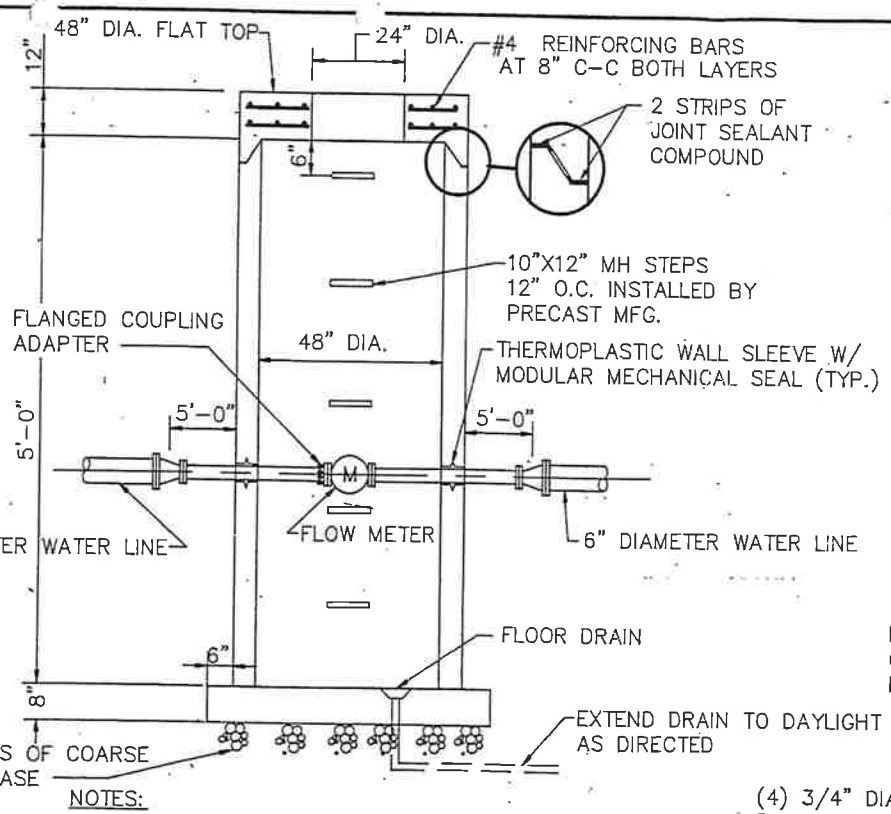
DWN. BY HEB DATE 10-94 (8:50A) CHK'D. BY _____ DATE _____ SURVEY'D BY _____ DATE _____ FILE NAME: D:\DWGS\SEWER-CN	UNI-TEC CONSULTING ENGINEERS, INC. 2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-238-8223	STANDARD DETAIL TYPICAL SANITARY SEWER SERVICE LATERAL BOROUGH OF TURBOTVILLE	SCALE NOT TO SCALE DRAWING NO. 0470053007 SHEET NO. 6-19



AUTOMATIC AIR RELEASE VALVE DETAIL

NOT TO SCALE

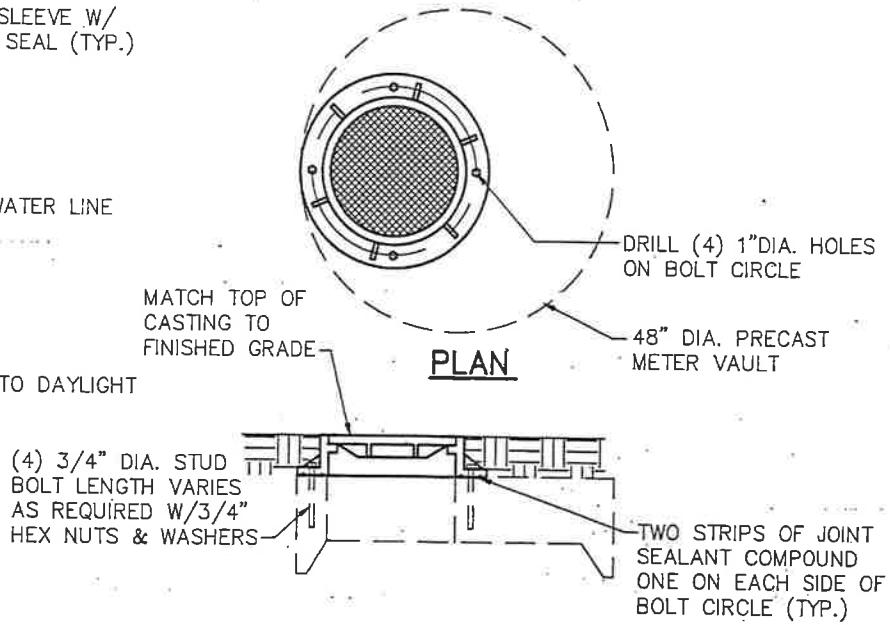
DWN. BY _____ DATE _____ CHK'D. BY _____ DATE _____ SURVEY'D BY _____ DATE _____ BOOK NO. _____ DATE _____	UNI-TEC CONSULTING ENGINEERS, INC. 2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-238-8223	AUTOMATIC AIR RELEASE VALVE DETAIL BOROUGH OF TURBOTVILLE	SCALE: NONE DRAWING NO.: 0470053007 SHEET NO.: 6-18



NOTES:

1. PROVIDE PRECAST VAULT SECTIONS CONFORMING TO ASTM C-478 LATEST EDITION.
2. COAT ENTIRE OUTSIDE SURFACES OF VAULT, AND OUTSIDE SURFACE OF CRADLES WITH TWO COATS OF BITUMASTIC.

METER VAULT – PRECAST
48" DIAMETER
NOT TO SCALE



METER BOX COVER DETAIL
NOT TO SCALE

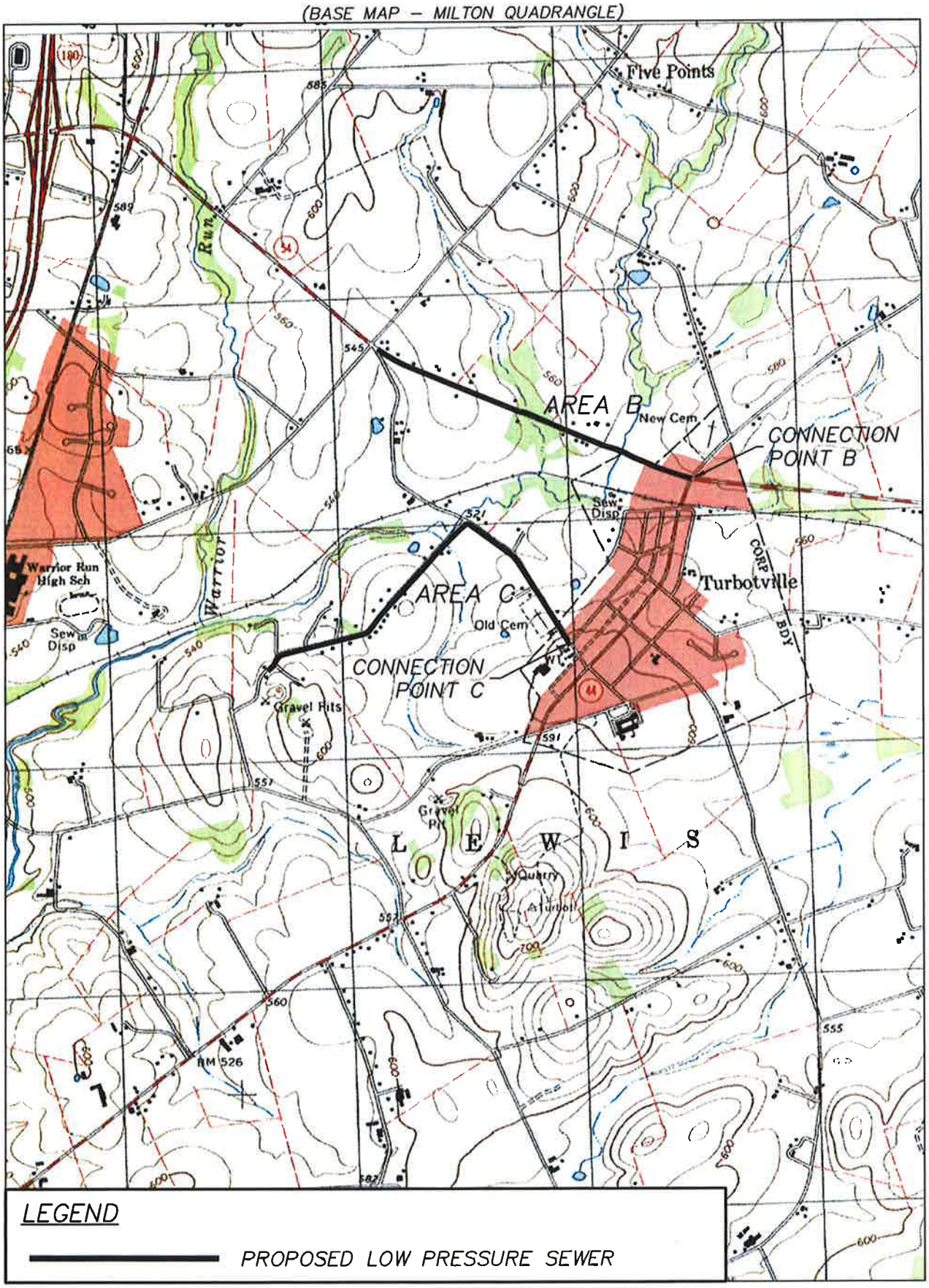
DWN. BY ____ DATE ____ CHK'D. BY ____ DATE ____ SURVEY'D BY ____ DATE ____ BOOK NO. ____ DATE ____	UNI-TEC CONSULTING ENGINEERS, INC. 2007 CATO AVENUE STATE COLLEGE, PA. 16801 814-238-8223	BOROUGHT OF TURBOTVILLE METER BOX COVER DETAIL	SCALE: NONE DRAWING NO.: 0470053007 SHEET NO.: 6-17

Exhibit E
Lewis Township's Act 537
Approved Service Area
Served by Turbotville

EXHIBIT E

TOWNSHIP'S MUNICIPAL SEWERAGE SYSTEM

(BASE MAP – MILTON QUADRANGLE)



2000 0 2000 4000 6000

GRAPHIC SCALE

Insert map here

Exhibit F
Tapping Fee, Billing and Surcharge Process and Calculation

This Exhibit F sets forth the details of tapping fee calculation & payment time-table, sewer billing and surcharge process & procedures. The intent is to prevent future problems of misunderstanding. The goal is to maintain a healthy working relationship between the BOROUGH and the TOWNSHIP.

PAYMENT OF TAPPING FEE

The TOWNSHIP's tapping fee shall be calculated as follows:

Township's allocated sewage capacity, GPD:		15,000
Gallons/EDU/day as defined in Turbotville's Act 57 study:		240.3
Unit Capacity Cost/EDU as defined in Turbotville's Act 57 study:	$	3,000
Township's EDUs = Township's capacity in GPD ÷ Unit Capacity in GPD/EDU:		62
Township's Tapping Fee = Township's EDUs X Unit Capacity Cost/EDU:	$	187,266

The TOWNSHIP shall pay the BOROUGH the entire tapping fee at an amount of $187,266.00 within ninety (90) days after submission of Lewis Township's first Request for Disbursement of PennVest Funds application.

BILLING PROCESS

The TOWNSHIP's billing shall be on a calendar month basis. The monthly billing period shall begin the first calendar day of the month, and end the last calendar day of the month. The respective flow meters will be read on the last calendar day of the month. The bill shall be sent to the TOWNSHIP within ten (10) days of the first calendar day of the subsequent month. TOWNSHIP payment shall occur within forty-five (45) days of the first calendar day of the subsequent month. The TOWNSHIP shall pay penalty for late payments as prescribed in Article 6, Section 6.01, Subsection 6.01.01 of this Agreement. TOWNSHIP penalty for late payments shall not be considered a sewer use charge; and it will not be subject to the TOWNSHIP sewer billing reconciliation audit.

Fixed and variable costs are described in Section 5.01, subsection 5.01.02, (i) a, (ii) a through q, and in the BOROUGH's Annual Budget. An example is provided below:

Example "Mock" Budget - Not for Billing	
Fixed Costs	
Debt Service - Interest	$ 44,000
Total Fixed Cost	**$ 44,000**
Variable Costs	
Secretary Salary	$ 6,900
Operation & Maintenance Salaries	$ 26,450
Administrative Materials & Supplies	$ 3,450
Uniform Rental	$ 805
Miscellaneous & Insurance Costs	$ 6,900
Other Employee Benefits	$ 3,450
Capital Reserve Account	$ 11,500
Testing Services	$ 9,200
Vehicle Operating Cost	$ 1,150
Professional Services (Legal, Accounting, Engineering)	$ 13,800
Operating Materials & Supplies	$ 2,300
Utilities	$ 19,550
Chemicals	$ 1,150
Sewer Line Maintenance	$ 13,800
Building Maintenance & Repair	$ 6,095
Equipment Rental/Repair	$ 8,050
Biosolids Disposal	$ 3,450
Total Variable Cost	**$ 138,000**

Fixed Costs Billing

Fixed costs billing shall be fixed costs defined in the BOROUGH's Annual Budget, apportioned in accordance with Section 3.02, Subsection 3.02.04, divided by billing periods in a calendar year, and billed to TOWNSHIP at each billing period. An example is provided below:

The percent share of Fixed Costs will be based on the allocated capacity percentage, as presented here	Expressed in GPD	Percent Capacity Calculation	Expressed in %
BOROUGH Allocated Hydraulic Capacity	121,000	= (121,000 ÷ 136,000) X 100 =	88.97%
TOWNSHIP Allocated Hydraulic Capacity	15,000	= (15,000 ÷ 136,000) X 100 =	11.03%
Total Allocated Hydraulic Capacity	136,000	= (136,000 ÷ 136,000) X 100 =	100.00%

	Fixed Costs	BORO % Capacity	BORO Fixed Cost	TWP % Capacity	TWP Fixed Cost
Annual Fixed Cost from Mock Budget above	$ 44,000	88.97%	$ 39,147	11.03%	$ 4,853
Monthly Billing of Fixed Cost	$ 3,667	88.97%	$ 3,262	11.03%	$ 404
In the above example, the TOWNSHIP's fixed cost per monthly billing cycle would be $404.00.					

Fixed cost billing shall be reconciled each year by the BOROUGH's certified public accountant. The fee for reconciliation of Fixed Cost shall be charged separately by the BOROUGH's CPA; and shall be paid by the TOWNSHIP.

Variable Costs Billing

Variable costs billing shall be cash basis, as opposed to accrued basis. The TOWNSHIP's variable costs billing shall be computed by totaling the actual paid variable costs accumulated from the beginning of the first day of each month to midnight of the last day of each month. The TOWNSHIP's billing shall be proportional to actual real-time sewage flow discharged into the BOROUGH's Municipal Sewerage System. The TOWNSHIP shall record totalized flow from their sewage flow meters on the first day of operation of its Municipal Sewerage System, then on the last day of that month, then on the last day of each month thereafter. The TOWNSHIP's percentage of variable costs is calculated by dividing the TOWNSHIP's measured combined sewage flow by the BOROUGH's measured sewage treatment plant flow occurring during the same monthly billing period.

This shall be the monthly amount of the TOWNSHIP's share of the variable billing costs, and shall be paid pursuant to the provisions of this Exhibit, subject to reconciliation on a yearly basis as hereinafter provided.

An example of variable cost billing is presented below:

Flow Proportional Usage Example based on								Turbotville 2008 Chapter 94 Hydraulic Loading		
Year 1, mo.	Master Totalizer, Gallons	Master Totalizer Difference, gal/mo	Township Combined Totalizer, Gallons	Township Totalizer Difference, gal/mo	Borough Flow (Master minus Township), gal/mo	Borough %	Township %	Assumed Monthly Variable Expenses	Borough Monthly Cost	Township Monthly Cost
0	0		0							
1	1,779,375	1,779,375	106,458	106,458	1,672,917	94.02%	5.98%	$ 11,500	$ 10,812	$ 688
2	5,344,208	3,564,833	234,208	127,750	3,437,083	96.42%	3.58%	$ 11,500	$ 11,088	$ 412
3	9,009,417	3,665,208	401,500	167,292	3,497,917	95.44%	4.56%	$ 11,500	$ 10,975	$ 525
4	10,676,250	1,666,833	638,750	237,250	1,429,583	85.77%	14.23%	$ 11,500	$ 9,863	$ 1,637
5	12,781,083	2,104,833	888,167	249,417	1,855,417	88.15%	11.85%	$ 11,500	$ 10,137	$ 1,363
6	14,560,458	1,779,375	1,146,708	258,542	1,520,833	85.47%	14.53%	$ 11,500	$ 9,829	$ 1,671
7	15,786,250	1,225,792	1,429,583	282,875	942,917	76.92%	23.08%	$ 11,500	$ 8,846	$ 2,654
8	16,957,292	1,171,042	1,718,542	288,958	882,083	75.32%	24.68%	$ 11,500	$ 8,662	$ 2,838
9	18,545,042	1,587,750	2,028,792	310,250	1,277,500	80.46%	19.54%	$ 11,500	$ 9,253	$ 2,247
10	20,062,833	1,517,792	2,360,333	331,542	1,186,250	78.16%	21.84%	$ 11,500	$ 8,988	$ 2,512
11	21,525,875	1,463,042	2,697,958	337,625	1,125,417	76.92%	23.08%	$ 11,500	$ 8,846	$ 2,654
12	24,658,792	3,132,917	3,062,958	365,000	2,767,917	88.35%	11.65%	$ 11,500	$ 10,160	$ 1,340
								$ 138,000	$ 117,460	$ 20,540

The Borough reserves the right to modify its billing procedures (i.e., billing based on annual sewer budget rather than actual sewer expenses; contract out sewer billing; etc.) to reduce and/or optimize administrative costs.

Variable cost billing shall be reconciled each year by the BOROUGH's certified public accountant. The fee for reconciliation of Variable Cost shall be charged separately by the BOROUGH's CPA; and shall be paid by the TOWNSHIP. The BOROUGH and TOWNSHIP agree to pay the reconciled variable costs amount to the appropriate party showing a deficit payment. Each BOROUGH and TOWNSHIP agrees to pay their deficit payment within 45 calendars days of completion of the reconciliation audit.

SURCHARGE PROCESS

The billing surcharge shall be based on the TOWNSHIP's allocated Reserved Capacity, prescribed in Article 4, Section 4.02, Subsection 4.02.01, i through iii. The surcharge factor shall not be less than one (1.000). The surcharge shall be assessed for the billing period the exceedance occurred, as adjustment of the monthly bill by multiplying that bill by the surcharge factor. An example of a surcharge is provided below:

$AML_{bod} = Average\ Monthly\ BOD_5\ expressed\ in\ lb/day$

$AML_{tss} = Average\ Monthly\ TSS\ expressed\ in\ lb/day$

$AML_q = Average\ Monthly\ Flow\ expressed\ in\ gal/day$

$ARC_{bod} = Allocated\ Reserved\ Capacity\ expressed\ in\ lb/day$

$ARC_{tss} = Allocated\ Reserved\ Capacity\ expressed\ in\ lb/day$

$ARC_q = Allocated\ Reserved\ Capacity\ expressed\ in\ gal/day$

$$Surcharge\ factor = \frac{\left(\frac{AML_{bod}}{ARC_{bod}}\right) + \left(\frac{AML_{tss}}{ARC_{tss}}\right) + \left(\frac{AML_q}{ARC_q}\right)}{3} =\geq 1$$

Whereas,
The monthly sewer bill multiplicand is multiplied by the surcharge multiplier factor. The surcharge product is subtracted by the monthly sewer bill yielding the monthly surcharge.

$AML_{bod} = 27.65\ lb/day$

$AML_{tss} = 28.36\ lb/day$

$AML_q = 17{,}000\ gal/day$

$ARC_{bod} = 25.01\ lb/day$

$ARC_{tss} = 29.27\ lb/day$

$ARC_q = 15{,}000\ gal/day$

$$Surcharge\ factor = \frac{(1.11) + (0.97 < 1.00\ therefore = 1.00) + (1.13)}{3} = 1.08$$

Whereas,
A monthly sewer bill of $1,667 times 1.08 equals $1,800. Then subtract $1,667 from $1,800 yielding a $133 monthly surcharge.

$AML_{bod} = 24.65\ lb/day$

$AML_{tss} = 28.36\ lb/day$

$AML_q = 14{,}500\ gal/day$

$ARC_{bod} = 25.01\ lb/day$

$ARC_{tss} = 29.27\ lb/day$

$ARC_q = 15{,}000\ gal/day$

$$Surcharge\ factor = \frac{(0.99 < 1.00\ therefore = 1.00) + (0.97 < 1.00\ therefore = 1.00) + (0.97 < 1.00\ therefore = 1.00)}{3} = 1$$

Whereas,
A monthly sewer bill of $1,667 times 1.00 equals $1,667 Then subtract $1,667 from $1667 yielding a $0.00 monthly surcharge.

If it is necessary to assess a surcharge fee due to a TOWNSHIP allocated capacity exceedance, the fee shall be calculated over a full calendar month period ending the last day of the month. The surcharge fee shall be sent to the TOWNSHIP within ten (10) days of the first day of the subsequent month. TOWNSHIP payment shall occur within forty-five (45) days of the first day of the subsequent month. Surcharge fees shall not be considered a sewer use charge; and it will not be subject to the TOWNSHIP sewer billing reconciliation audit.

Exhibit G
Turbotville Borough Sewer
Budget Charge of Accounts

The Borough of Turbotville

2 Adams Street
P.O. Box 264
Turbotville, PA 17772-0264

Phone: (570) 649-5476
Fax: (570) 649-6620
turbotville5476@windstream.net

TURBOTVILLE BOROUGH OFFICE RECORDS
ACCOUNTS & BALANCES

End of Year Balances

	Amount	Rate	Term	Maturity
GENERAL:				
Checking	$ 34,514.57			
Savings	49,438.98	1%		
Certificate of Deposit	15,113.02	4.35%	5yrs	10/20/13
Certificate of Deposit	30,940.87	3.10%	5yrs	09/03/14
EQUIPMENT FUND:				
Savings	$1.00	1%		
Certificate of Deposit	33,835.90	2.10%	24 months	10/02/11
SPECIAL HIGHWAY FUND:				
Savings	967.90	1%		
WATER:				
Checking	37.69			
SEWER:				
Checking	7,715.82			
Saving	5,478.90	1%		
Certificate of Deposit	15,536.88	4.35%	5 years	08/19/13
Certificate of Deposit	26,231.72	4.35%	5 years	09/08/13
Certificate of Deposit	13,293.36	3%	5 years	11/03/14
Loan	603,814.30	3.7%	19 years	12/15/23
		Pmt. $14,680.76		
HOLDING TANK:				
Savings	1,263.65	1%		

Turbotville General Fund
Profit & Loss Budget vs. Actual
January through December 2010

	Jan - Dec 10	Budget	$ Over Bu...	% of Budget
Income				
301.10 · .real estate-current	28,770.05	30,000.00	-1,229.95	95.9%
301.20 · .real estate-prior	3,462.83	1,000.00	2,462.83	346.3%
304.10 · .Fire Tax	19,500.32	19,500.00	0.32	100.0%
305.10 · .occupation-current	704.34	500.00	204.34	140.9%
305.20 · .Occupational-deliquent	46.76			
310.01 · .Per capita-current	1,103.40	1,700.00	-596.60	64.9%
310.10 · .Real Estate Transfer Tax	4,473.70	5,000.00	-526.30	89.5%
310.21 · .earned income tax-current	72,435.13	55,000.00	17,435.13	131.7%
310.50 · .Occupation privledge tax	1,215.60	2,100.00	-884.40	57.9%
321.32 · .Licenses & permits, office	50.00	100.00	-50.00	50.0%
321.90 · refunds	187.24			
331.11 · .vehicle, fines, violations etc	1,293.70	1,200.00	93.70	107.8%
341 · .....Interest Income	2,232.99	1,000.00	1,232.99	223.3%
341.01 · .Equipment Fund Interest	55.90	1,200.00	-1,144.10	4.7%
355.01 · .Purta	158.08	130.00	28.08	121.6%
355.02 · .Liquid Fuels Gas Tax	0.00	300.00	-300.00	0.0%
355.04 · .state alcohol license refunds	300.00	300.00	0.00	100.0%
355.08 · .Vol Fire Relief	3,995.30	4,000.00	-4.70	99.9%
357.02 · .Crossing Guard	0.00	1,600.00	-1,600.00	0.0%
357.03 · Liquid Fuels Transfer	16,051.94			
357.375 · Turb. Comm. Corp. Reimburs	4,538.92	5,000.00	-461.08	90.8%
362.14 · .Borough Fines (Code Enforcer)	30.00	500.00	-470.00	6.0%
362.40 · .Code Inspection UCC Fees	263.00			
362.41 · .ZONING FEES	334.88	500.00	-165.12	67.0%
365.35 · Insurance Refund	3,084.05			
365.09 · .Insurance Pool/Refunds	231.84	200.00	31.84	115.9%
380 · .....Misc	12.02			
392 · .....Equipment G/W/S Deposits	10,000.00			
395 · .....REFUNDS OF PY EXPENSES	1.00			
Total Income	175,332.99	130,830.00	44,502.99	134.0%
Expense				
400.11 · .mayor salary	0.00	100.00	-100.00	0.0%
400.42 · ..Dues	379.72	600.00	-220.28	63.3%
401.42 · ..Mayor Addl Exp	100.00	80.00	20.00	125.0%
402.31 · ..cert public accl	1,000.00	1,500.00	-500.00	66.7%
403.01 · tax collector commission-county	638.30	150.00	488.30	425.5%
403.11 · tax collector commission-local	2,833.50	4,500.00	-1,666.50	63.0%
403.20 · tax collection supp	350.37	300.00	50.37	116.8%
403.35 · tax collector ins	28.00			
404.31 · legal services	1,890.57	3,000.00	-1,109.43	63.0%
405.10 · sec salary	4,745.40	4,500.00	245.40	105.5%
405.20 · secretary supplies	1,300.28	2,000.00	-699.72	65.0%
405.23 · .Postage-1	370.25	600.00	-229.75	61.7%
405.24 · advertising	545.26	1,000.00	-454.74	54.5%
405.35 · sec/council/ins/bonding	250.00	500.00	-250.00	50.0%
405.46 · Continuing Education	239.04	300.00	-60.96	79.7%
406 · Other Administrative	1,916.35			
408.31 · engineer	125.00	500.00	-375.00	25.0%
408.321 · Office Phone(Fax, Inter., LDis)	504.62	700.00	-195.38	72.1%
408.36 · Utilities	7,612.14	12,900.00	-5,287.86	59.0%
408.367 · Utilities for 3 Bldgs.	179.55	200.00	-20.45	89.8%
408.37 · Hall Maint(Ins.pay De.09)	4,458.50			
408.374 · building maintenance sewer/oil	28.69			
409.46 · Services Contracted	273.32	800.00	-526.68	34.2%
411.373 · Fire Hall Repairs & Exp.	1,096.70	2,000.00	-3.30	99.8%
411.43 · Fire Tax Dist.	-837.41			
411.45 · Fire Service WRAFD	14,625.00	19,500.00	-4,875.00	75.0%
411.559 · Vol. Fire Relief	3,995.30			
413 · Code Enforcement	70.00			
414.12 · Zoning officer	212.32	600.00	-387.68	35.4%
419 · crossing guard-1	2,000.00	2,000.00	0.00	100.0%
428 · Weed Control	391.20			
430.00 · streets	1,759.09	2,000.00	-240.91	88.0%
430.23 · vehicle operating	1,563.81	1,000.00	563.81	156.4%

Turbotville General Fund
Profit & Loss Budget vs. Actual
January through December 2010

	Jan - Dec 10	Budget	$ Over Bu...	% of Budget
432 · snow & ice removal	258.12	2,000.00	-1,741.88	12.9%
433 · street signs	397.20	400.00	-2.80	99.3%
434 · street lighting	15,172.16	14,000.00	1,172.16	108.4%
435 · sidewalks & crosswalks	488.74	800.00	-311.26	61.1%
437 · Equipment Fund Transfers	3,600.00	3,600.00	0.00	100.0%
437.37 · Equipment Purchase & Repair	18,400.07	8,000.00	10,400.07	230.0%
437.38 · New Equipment	22,476.65			
438 · alleys	0.00	2,000.00	-2,000.00	0.0%
439 · Highway Construction & Rebuild	50,452.84			
448.10 · maint salary	14,987.63	19,000.00	-4,012.37	78.9%
448.15 · Sewer License	0.00			
448.25 · materials and supplies	1,294.40	1,000.00	294.40	129.4%
452 · playground program	1,998.62	2,000.00	-1.38	99.9%
452.36 · playground utilities	40.03	800.00	-759.97	5.0%
452.371 · Commty Ground/Playground Repair	3,280.60	2,000.00	1,280.60	164.0%
456 · .....library contribution	1,200.00	1,200.00	0.00	100.0%
481.00 · West Branch COG				
481.360 · COG Insurance	0.00	125.00	-125.00	0.0%
481.420 · COG Membership & Dues	37.66	75.00	-37.34	50.2%
Total 481.00 · West Branch COG	37.66	200.00	-162.34	18.8%
481.36 · unemployment compensation	7,951.37			
486 · Insurance premimums	5,720.66	9,000.00	-3,279.34	63.6%
487.15 · Holiday and Vacation	1,100.00			
487.151 · Sick Pay	1,049.00			
487.156 · med/life ins	0.00	2,000.00	-2,000.00	0.0%
487.161 · FICA -	666.65	1,000.00	-333.35	66.7%
487.162 · Co Unemployment Ins	0.00			
487.163 · Medicare	1,427.72			
487.44 · uniforms	474.20	500.00	-25.80	94.8%
492.02 · TRANSFERS TO WATER	0.00			
492.03 · SEWER TRANSFERS	0.00			
493.160 · Pension Payment	60.00			
6560 · Payroll Expenses	1,461.52			
88900 · Reconciliation Discrepancies	-0.80			
Total Expense	189,557.91	130,830.00	58,727.91	144.9%
Net Income	-14,224.92	0.00	-14,224.92	100.0%

Turbotville General Fund
Balance Sheet
As of December 31, 2010

	Dec 31, 10
ASSETS	
Current Assets	
Checking/Savings	
100 · .....checking	35,742.17
106 · .....savings acct	49,438.98
109 · .....certificate of dep	46,053.89
110-1 · ...EQUIPMENT FUND TURB BO...	33,835.90
110 · .....Equipment Fund	1.00
114 · .....FIRE TAX	837.73
Total Checking/Savings	165,909.67
Total Current Assets	165,909.67
TOTAL ASSETS	165,909.67
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Other Current Liabilities	
210 · .....Payroll-FWH	646.52
2100 · ....Payroll Liabilities	120.80
211 · .....Payroll-FICA	1,139.28
211.1 · ...Payroll-MCARE	266.82
212 · Payroll-LWH03	1,037.84
217 · .....Payroll-SWHPA	160.86
219 · .....occupation priv	-58.80
220 · .....Payroll-SUI	47.51
Total Other Current Liabilities	3,360.83
Total Current Liabilities	3,360.83
Total Liabilities	3,360.83
Equity	
279 · .....Fund Balance	148,247.80
289 · .....Retained Earnings	28,525.96
Net Income	-14,224.92
Total Equity	162,548.84
TOTAL LIABILITIES & EQUITY	165,909.67

Turbotville Borough Water Account
Profit & Loss Budget vs. Actual
January through December 2010

	Jan - Dec 10	Budget	$ Over Budget	% of Budget
Income				
359.05 · -Water Auth. Payment for Exp	121,296.12	128,300.00	-7,003.88	94.5%
364.750 · CAPITAL RESERVE-Adam St Project	0.00	15,000.00	-15,000.00	0.0%
381 · ----water conservation prog	1,333.00			
Total Income	122,629.12	143,300.00	-20,670.88	85.6%
Expense				
400.42 · DI/ES	564.74			
402.31 · -cert public acct	1,000.00	1,500.00	-500.00	66.7%
404.31 · -legal services	860.89	1,000.00	-139.11	86.1%
405.10 · -sec salary	6,039.47	4,500.00	1,539.47	134.2%
405.20 · -Sec Supplies	768.35	1,000.00	-231.65	76.8%
405.23 · -postage -t	760.95	1,500.00	-739.05	50.7%
405.34 · -Adv Printing	359.63	800.00	-440.37	45.0%
405.35 · -Bonding	0.00	300.00	-300.00	0.0%
406.174 · Continuing education	475.52	1,000.00	-524.48	47.6%
407.46 · --Data Processing	563.50			
408.31 · --engineer	0.00	1,000.00	-1,000.00	0.0%
409.45 · --contractors/hired maintance	490.82	1,000.00	-509.18	49.1%
411.353 · Fire Hydrant Service	1,515.00	8,000.00	-6,485.00	18.9%
430.23 · -vehicle operating	1,563.90	1,800.00	-236.10	86.9%
432 · ----Snow Removal	89.69	200.00	-110.31	44.8%
437 · ----Equipment Funds Transfers	3,600.00	3,600.00	0.00	100.0%
437.37 · -Eqip Purch Repair	9,723.83	15,000.00	-5,276.17	64.8%
448.10 · -maint salary	24,326.52	20,000.00	4,326.52	121.6%
448.20 · -materials & supp	1,239.37	1,500.00	-260.63	82.6%
448.31 · -analysis	1,574.06	2,500.00	-925.94	63.0%
448.38 · --utilities	18,875.93	25,000.00	-6,124.07	75.5%
448.42 · -Dues, memberships	92.01	800.00	-707.99	11.5%
448.74 · -meters	2,262.40	3,000.00	-737.60	75.4%
449.20 · -chlorine, chemicals	2,835.70	3,500.00	-664.30	81.0%
449.37 · -bldg main & repair	142.24	1,500.00	-1,357.76	9.5%
486 · ----Insurance premiums	5,720.67	8,000.00	-2,279.33	71.5%
487 · ---water line main	9,667.54	15,000.00	-5,332.46	64.5%
487.155 · med/life ins	0.00	2,000.00	-2,000.00	0.0%
487.181 · fica	2,323.00	2,500.00	-177.00	92.9%
487.44 · --uniforms	474.25	600.00	-125.75	79.0%
490.01 · sludge removal	175.00	200.00	-25.00	87.5%
492.92 · ----CAPITAL PURCHASE -Adam St	10,251.57	15,000.00	-4,748.43	68.3%
Total Expense	108,336.55	143,300.00	-34,963.45	75.6%
Net Income	14,292.57	0.00	14,292.57	100.0%

Turbotville Borough Water Account
Balance Sheet
As of December 31, 2010

	Dec 31, 10
ASSETS	
Current Assets	
Checking/Savings	
100 · ----Checking Acct	37.69
135 · ----Due from Authority	-121.54
Total Checking/Savings	-83.85
Total Current Assets	-83.85
TOTAL ASSETS	-83.85
LIABILITIES & EQUITY	
Equity	
289 · ----Retained Earnings	-14,376.42
Net Income	14,292.57
Total Equity	-83.85
TOTAL LIABILITIES & EQUITY	-83.85

sewer
Profit & Loss Budget vs. Actual
January through December 2010

	Jan - Dec 10	Budget	$ Over Budget	% of Budget
Income				
341 · interest income	2,185.18	2,000.00	185.18	109.3%
354.05 · services legal fees paid	581.30			
361.74 · POSTAGE REFUNDED	25.17			
364.10 · sewer rentals	179,452.16	182,000.00	-2,547.84	98.6%
364.11 · inspection fees	0.00	1,400.00	-1,400.00	0.0%
364.12 · tap on fee	0.00	6,000.00	-6,000.00	0.0%
364.30 · Lewis Township reimbursement				
364.31 · Legal fees reimbursement	4,500.30			
364.32 · Engineer reimbursement	20,362.50			
Total 364.30 · Lewis Township reimbursement	24,862.80			
Total Income	207,106.61	191,400.00	15,706.61	108.2%
Expense				
402.31 · cert public acct	1,000.00	1,500.00	-500.00	66.7%
404.31 · legal services	1,946.91	1,000.00	946.91	194.7%
405.10 · sec salary	6,151.04	4,000.00	2,151.04	153.8%
405.20 · Sec Supplies	811.89	1,000.00	-188.11	81.2%
405.23 · Postage Sewer	901.51	600.00	301.51	150.3%
405.325 · Postage	2.61			
405.34 · Advertising	206.36	500.00	-293.64	41.3%
406 · Arthur education training	305.82	200.00	105.82	152.9%
407.45 · Data Processing	573.90	200.00	373.90	287.0%
408.31 · engineer	888.10	2,000.00	-1,111.90	44.4%
409.374 · Building maintenance & repair	0.00	500.00	-500.00	0.0%
409.45 · Contractors/Hired Maintenance	265.82	500.00	-234.18	53.2%
429.10 · Maintaince Salary	30,085.33	23,500.00	6,585.33	127.9%
429.15 · Sewer License	4,500.00			
429.20 · Materials	2,744.46	1,000.00	1,744.46	274.4%
429.22 · Chlorine & Chemicals	4,489.52	1,000.00	3,489.52	449.0%
429.31 · Sludge Analysis/NPDES	6,345.43	6,000.00	345.43	105.8%
429.36 · Utilities	18,944.33	16,500.00	2,444.33	114.8%
429.37 · Sewer Line Main. & Repair Lat.	421.61	11,000.00	-10,578.39	3.8%
429.372 · Manholes Repair/Replacement	820.00	12,000.00	-11,180.00	6.8%
429.374 · Sewer Plant Repairs	6,952.56	10,000.00	-3,047.44	69.5%
429.375 · Televise Laterals	0.00	3,000.00	-3,000.00	0.0%
429.38 · Equipment Rental	0.00	200.00	-200.00	0.0%
429.39 · Building Maintenance and Repair	176.05	5,700.00	-5,523.95	3.1%
429.42 · Dues	218.72	200.00	18.72	109.4%
430.23 · vehicle operating	1,585.11	700.00	885.11	226.4%
432 · snow removal	89.69	200.00	-110.31	44.8%
437 · Equipment Fund Transfers	3,600.00	3,600.00	0.00	100.0%
437.37 · Equipment Purch & Repair	20,940.01	5,000.00	15,940.01	418.8%
471.30 · TNB Loan Payment	58,723.04	60,800.00	-2,076.96	96.6%
486 · Insurance premimums	5,720.67	7,000.00	-1,279.33	81.7%
487.166 · med/life ins	0.00	1,000.00	-1,000.00	0.0%
487.161 · fica	3,115.05	2,500.00	615.05	124.6%
487.44 · uniforms	474.21	500.00	-25.79	94.8%
490.01 · sludge disposal	5,730.61	8,000.00	-2,269.39	71.6%
494.90 · Lewis Twp Project				
494.91 · Legal fees	5,420.70			
494.92 · Engineer expense	23,758.25			
Total 494.90 · Lewis Twp Project	29,178.95			
Total Expense	217,789.31	191,400.00	26,389.31	113.8%
Net Income	-10,682.70	0.00	-10,682.70	100.0%

sewer
Balance Sheet
As of December 31, 2010

	Dec 31, 10
ASSETS	
Current Assets	
Checking/Savings	
100 · Checking Account	7,715.62
106 · Savings Account	5,478.90
107 · ....TERRY'S HOLDING TANK CASH	1,263.65
109 · CD's	55,061.96
262 · Terry's Autobody Holding Tank	-1,200.00
Total Checking/Savings	68,320.33
Total Current Assets	68,320.33
Other Assets	
100.03 · Sewer Plant	996,741.51
100.05 · Equipment	51,124.68
162.50 · Accumulated Depr	-545,094.75
Total Other Assets	502,771.44
TOTAL ASSETS	571,091.77
LIABILITIES & EQUITY	
Liabilities	
Long Term Liabilities	
261 · Long Term Debt	639,372.39
Total Long Term Liabilities	639,372.39
Total Liabilities	639,372.39
Equity	
289 · Retained Earnings	-57,597.92
Net Income	-10,682.70
Total Equity	-68,280.62
TOTAL LIABILITIES & EQUITY	571,091.77

State Fund
Profit & Loss Budget vs. Actual
January through December 2010

	Jan - Dec...	Budget	$ Over B...	% of Bud...
Income				
341 · ---Interest Income	51.71	14,132.98	-14,081.27	0.4%
355.02 · Liquid Fuels	15,453.33			
Total Income	15,505.04	14,132.98	1,372.06	109.7%
Expense	0.00			
Net Income	15,505.04	14,132.98	1,372.06	109.7%

State Fund
Balance Sheet
As of December 31, 2010

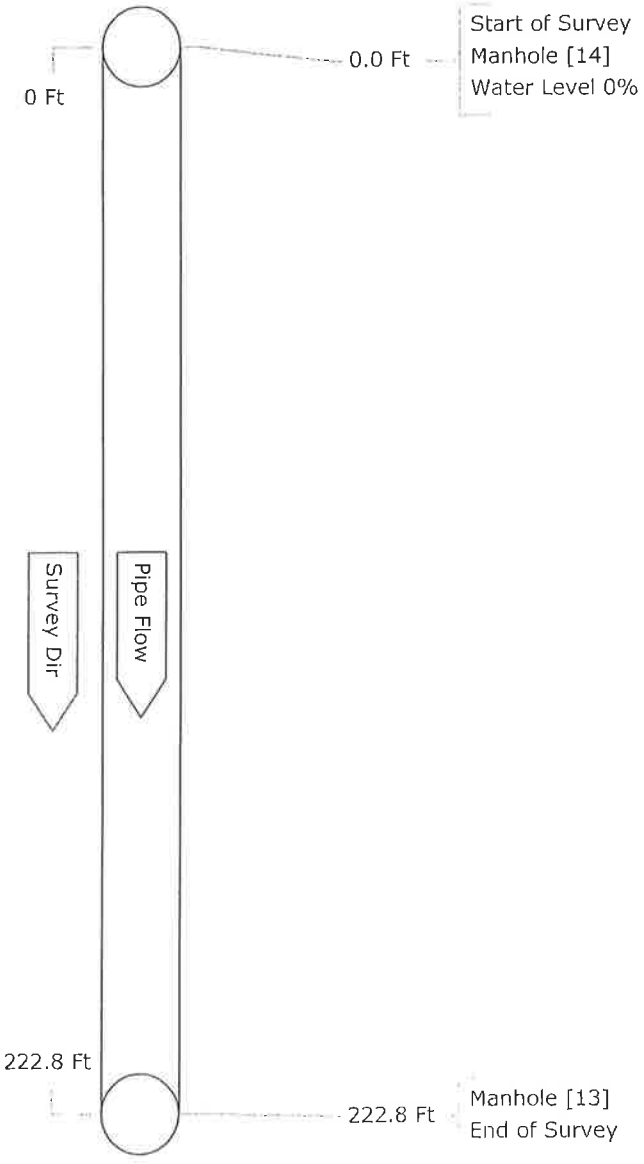
	Dec 31, 10
ASSETS	
Current Assets	
Checking/Savings	
106 · ---savings acct	967.90
Total Checking/Savings	967.90
Total Current Assets	967.90
TOTAL ASSETS	967.90
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Other Current Liabilities	
230.01 · Due to General Fund	-17,019.84
Total Other Current Liabilities	-17,019.84
Total Current Liabilities	-17,019.84
Total Liabilities	-17,019.84
Equity	
3900 · --Retained Earnings	2,482.70
Net Income	15,505.04
Total Equity	17,987.74
TOTAL LIABILITIES & EQUITY	967.90

Exhibits H
Inspection Reports

Insert report here

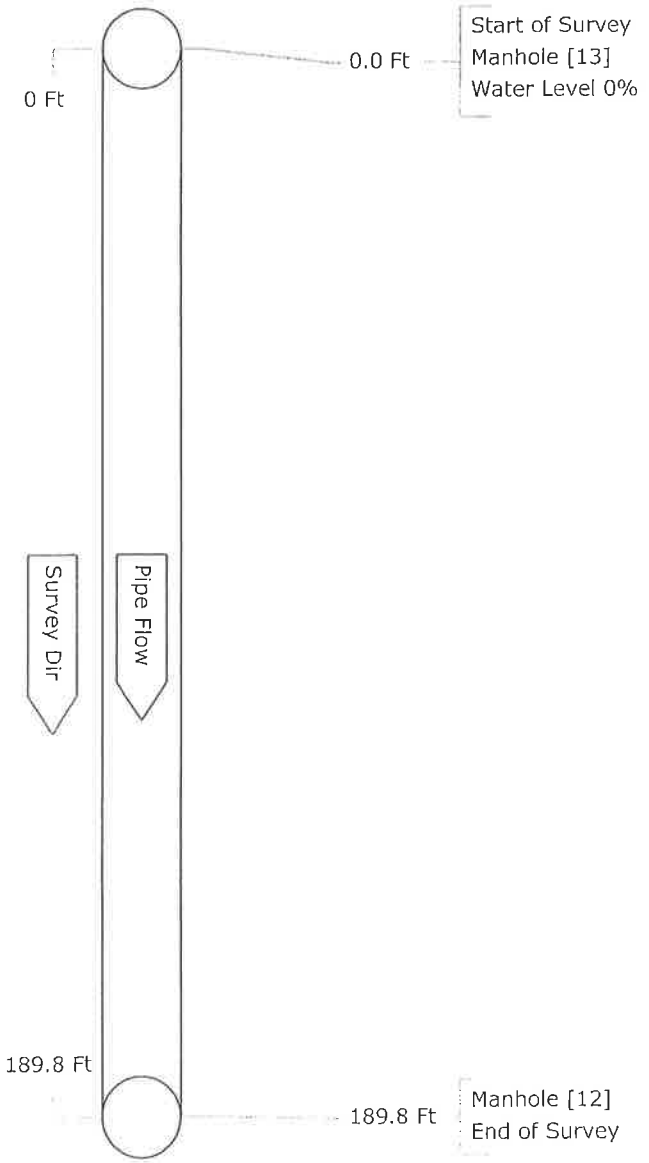
Pipe Graphic Report of PLR 14 X **for** Lewis Township

Setup 1	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 8:29	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 14	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 13	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-01		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 222.8 **Ft**	**Length Surveyed** 222.80		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose		**Cat**			
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



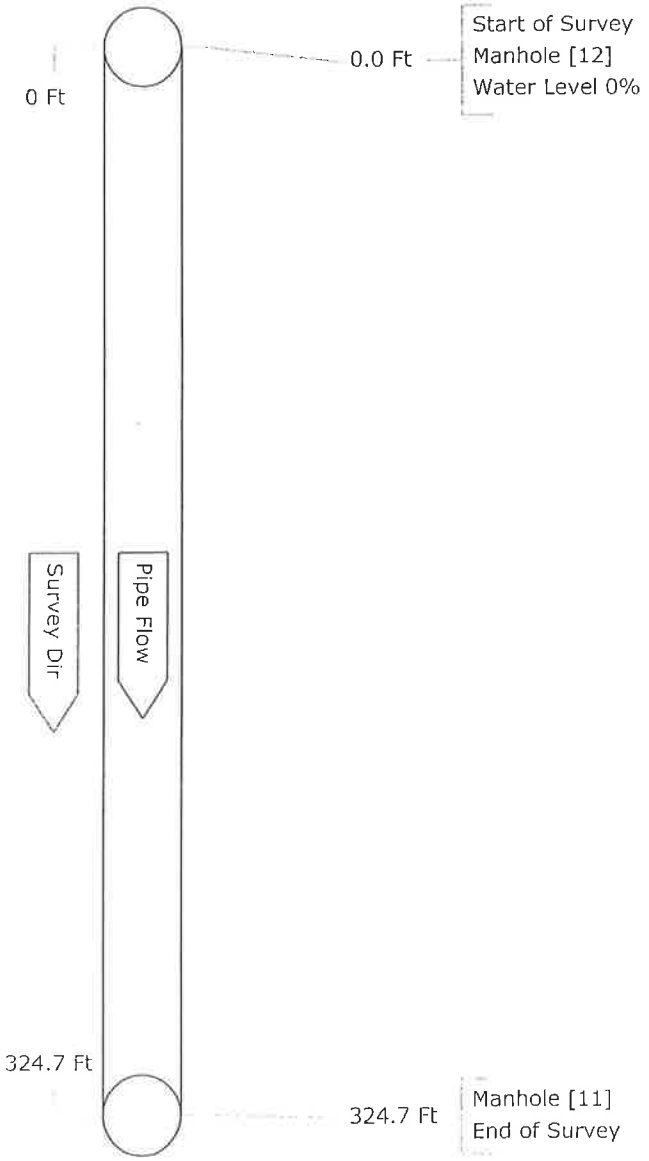
Pipe Graphic Report of PLR 13 X **for** Lewis Township

Setup 2	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 9:54	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 13	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 12	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-02		
Shape Circular	**Height** 6 **Width**	**ins** **Preclean** N	**Year Cleaned**		
Material Polyethylene	**Joint length** **Ft**	**Total length** 189.8 **Ft**	**Length Surveyed** 189.80		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose		**Cat**			
Additional info			Structural	O&M	Constructional
Location			Miscellaneous	Hydraulic	



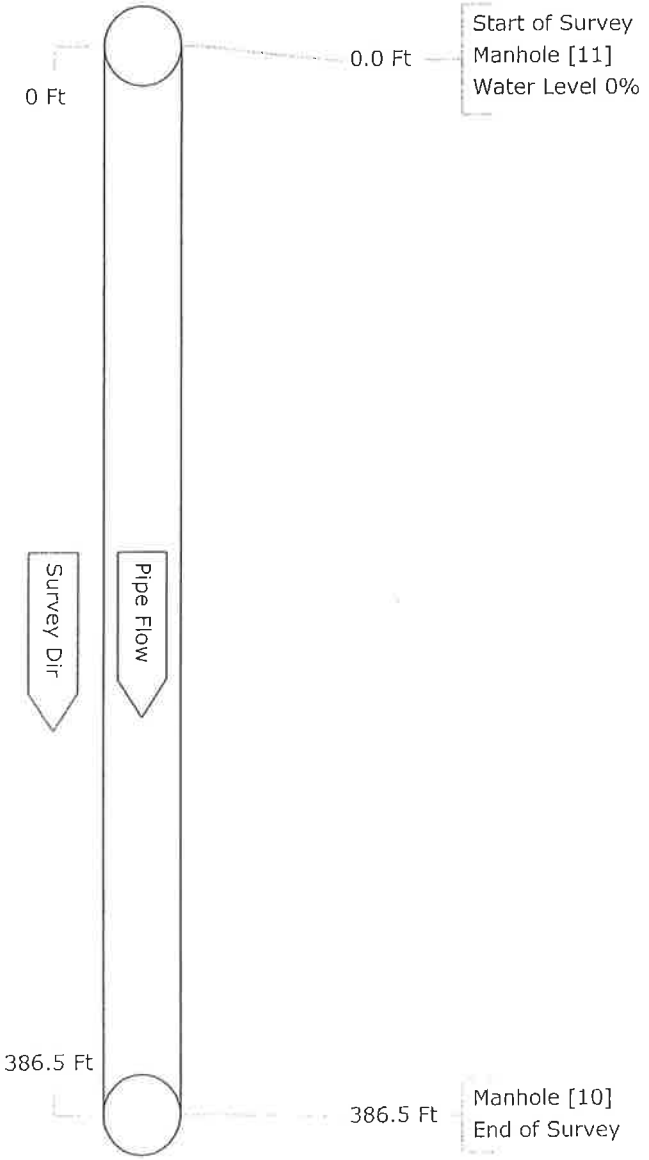
Pipe Graphic Report of PLR 12 X **for** Lewis Township

Setup 3	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 10:35	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 12	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 11	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-03		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 324.7 **Ft**	**Length Surveyed** 324.70		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



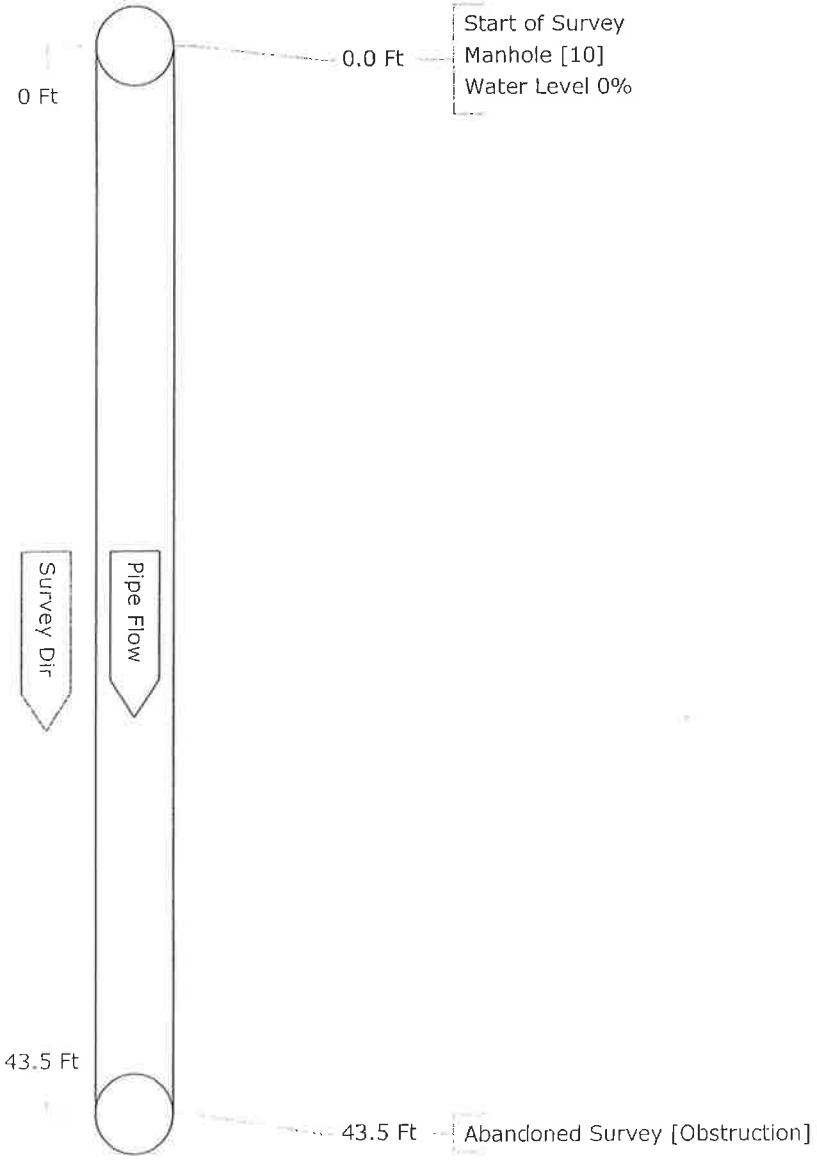
Pipe Graphic Report of PLR 11 X **for** Lewis Township

Setup 4	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 11:35	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 11	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 10	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-04		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 386.5 **Ft**	**Length Surveyed** 386.50		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



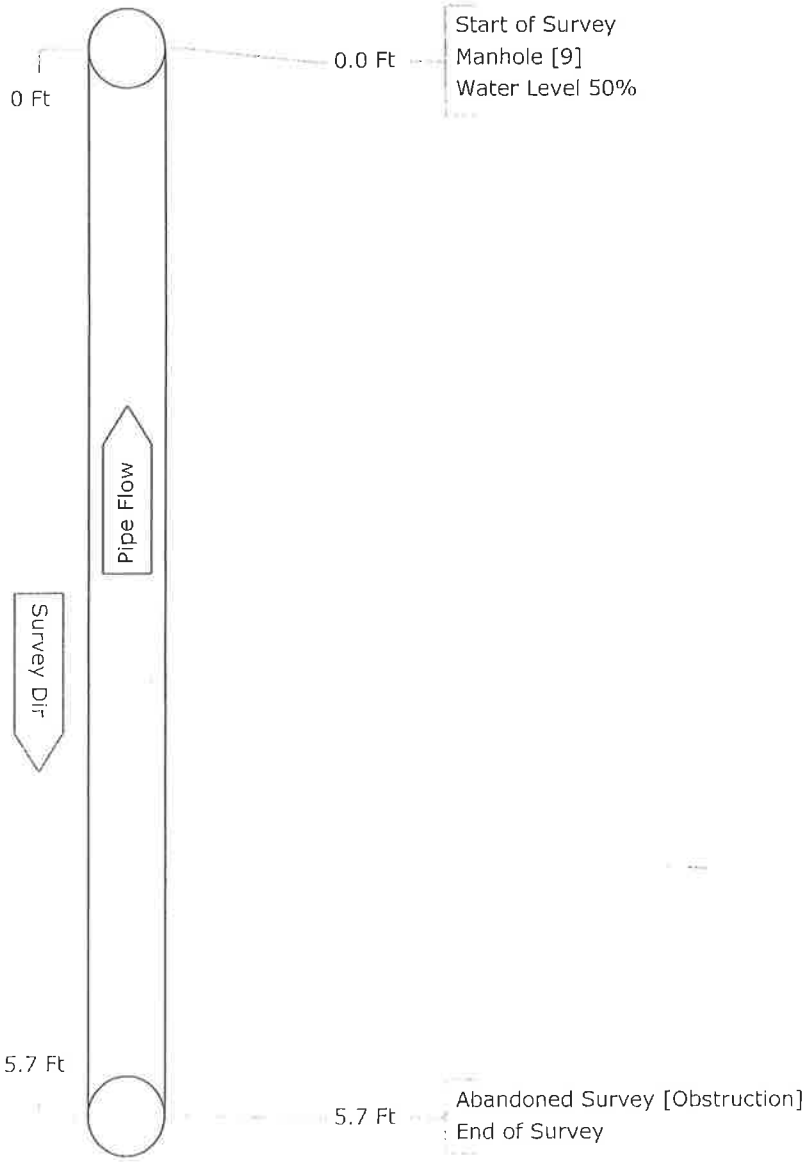
Pipe Graphic Report of PLR 10 X **for** Lewis Township

Setup 5/6	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 12:46	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 10	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 9	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-05		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 5.7 **Ft**	**Length Surveyed** 43.50		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



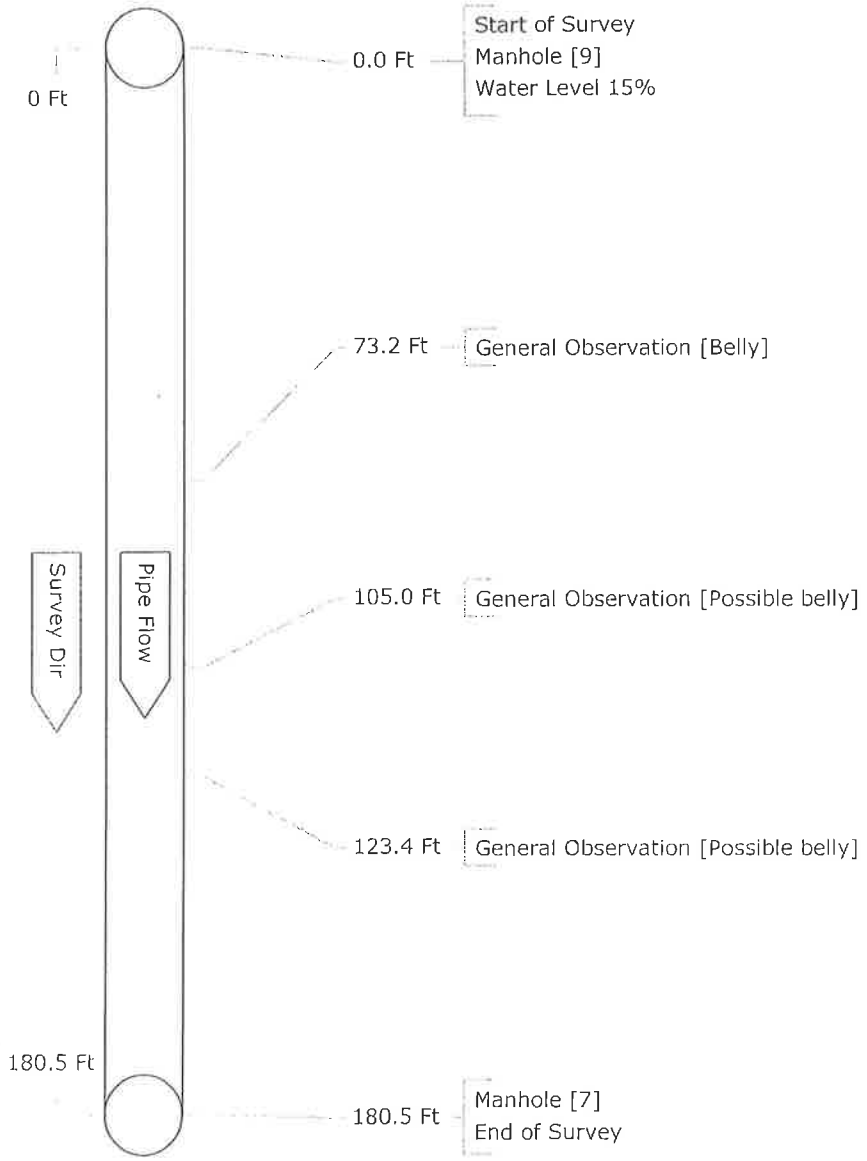
Pipe Graphic Report of PLR 10 X **for** Lewis Township

Setup 6/5	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 13:13	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 9	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 10	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Upstream	**Flow control**	**Media No** 2009-05		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 5.7 **Ft**	**Length Surveyed** 05.70		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info Reverse set up on sheet:5		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



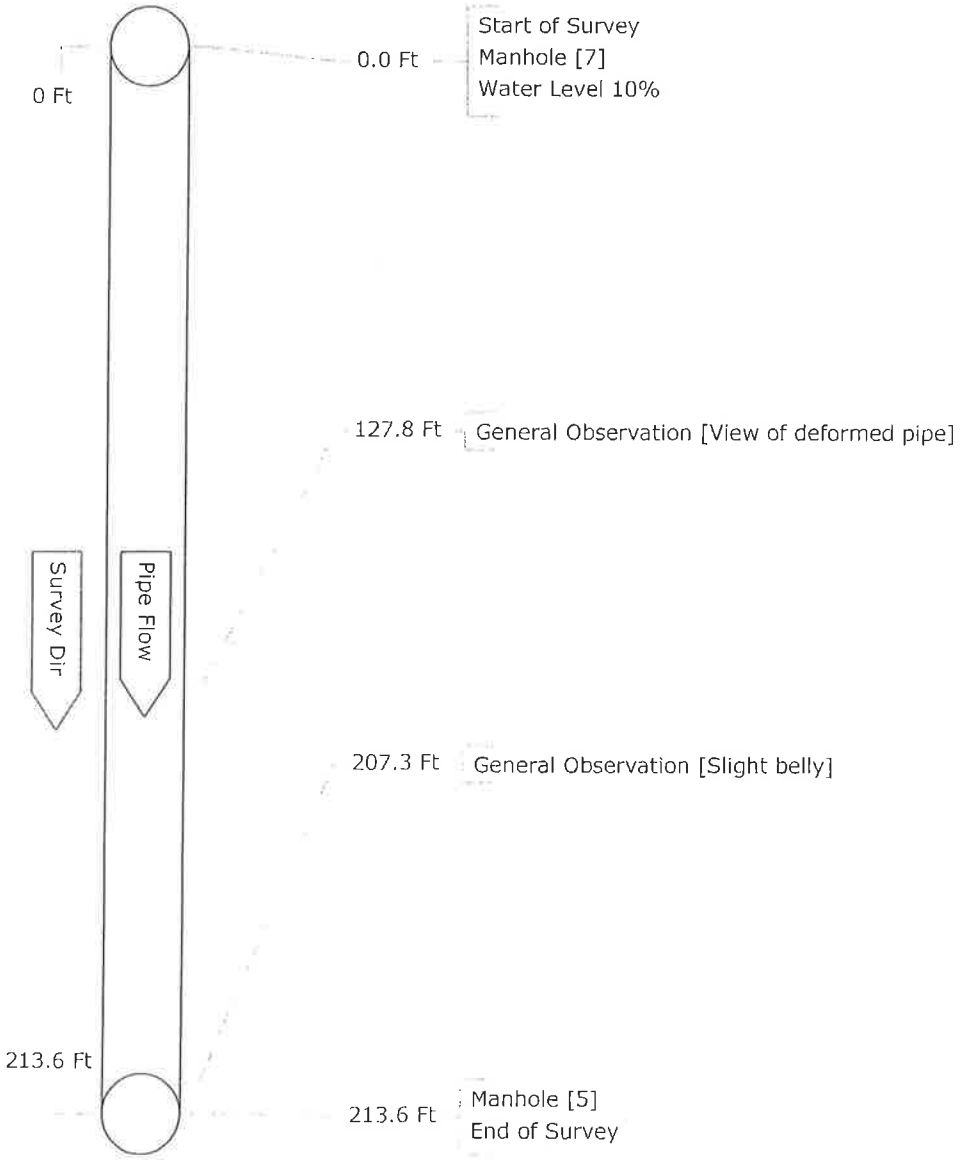
Pipe Graphic Report of PLR 9 X **for** Lewis Township

Setup 7	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 13:53	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 9	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 7	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-06		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 180.5 **Ft**	**Length Surveyed** 180.50		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



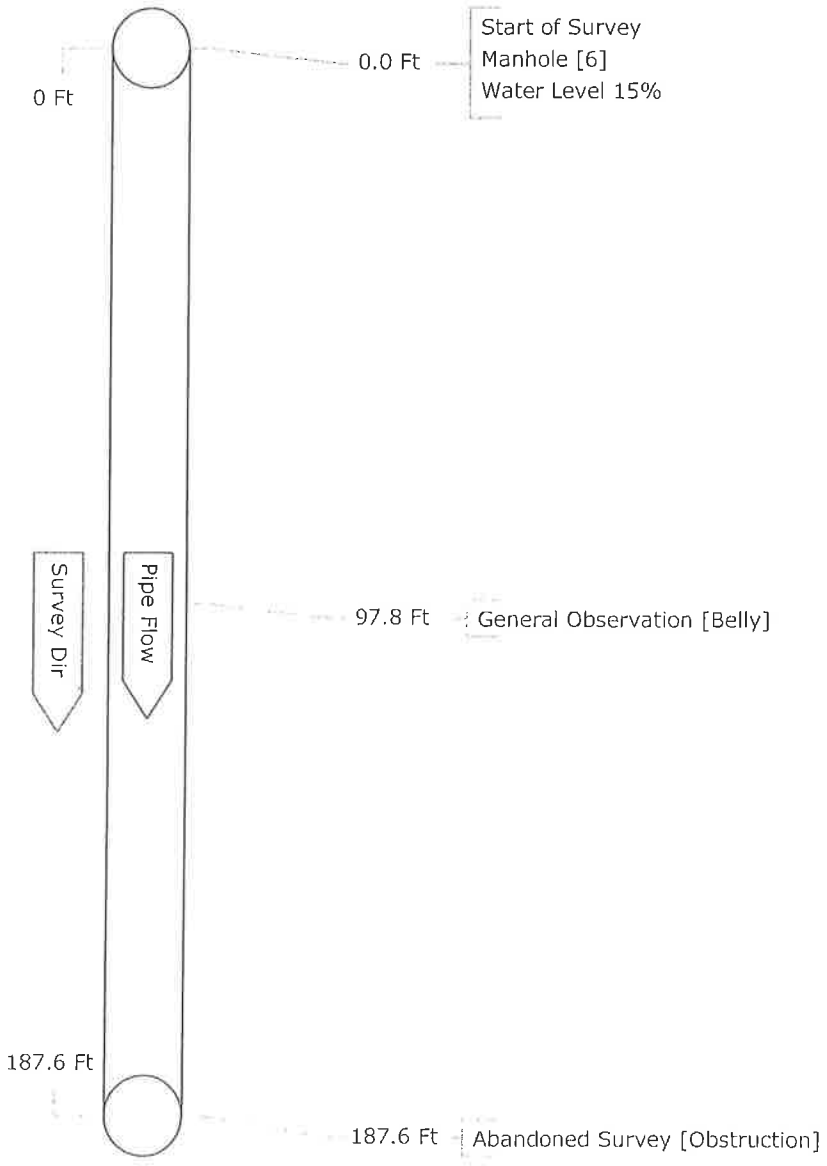
Pipe Graphic Report of PLR 7 W **for** Lewis Township

Setup 8	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/12	**Time** 14:55	**Street** King Street		
City Turbotville Borough	**Further location details**				
Start 7	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 5	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-07		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 213.6 **Ft**	**Length Surveyed** 213.60		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose		**Cat**			
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



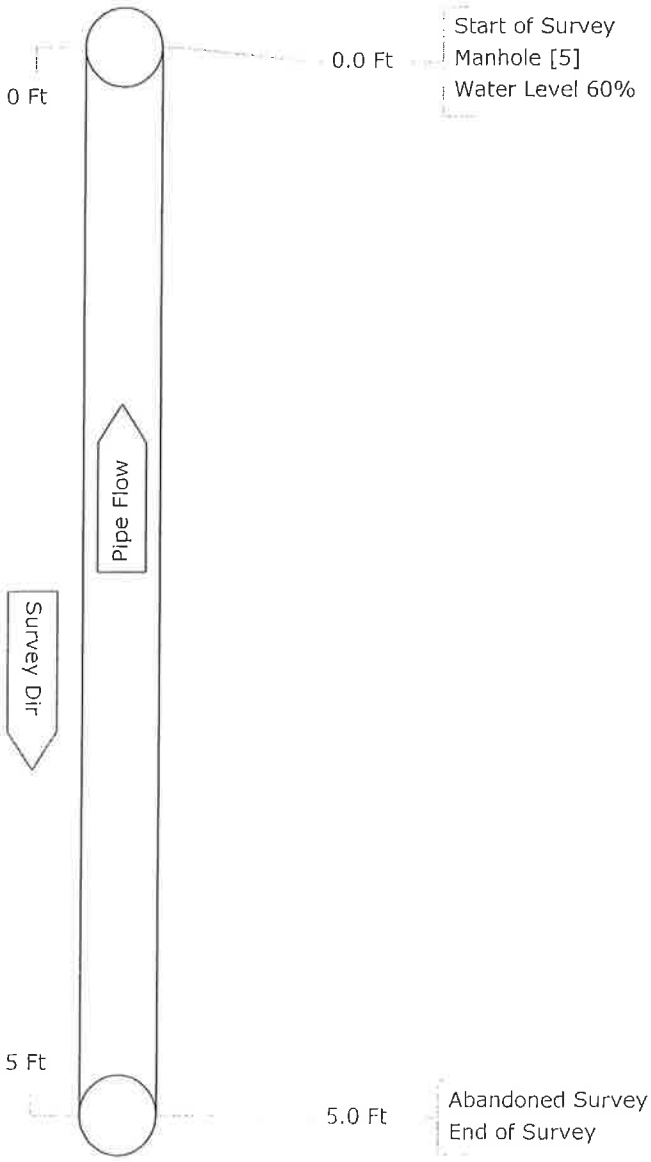
Pipe Graphic Report of PLR 6 X **for** Lewis Township

Setup 9/10	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 8:17	**Street** King Street		
City Turbotville	**Further location details**				
Start 6	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 5	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-08		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 5.0 **Ft**	**Length Surveyed** 187.60		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



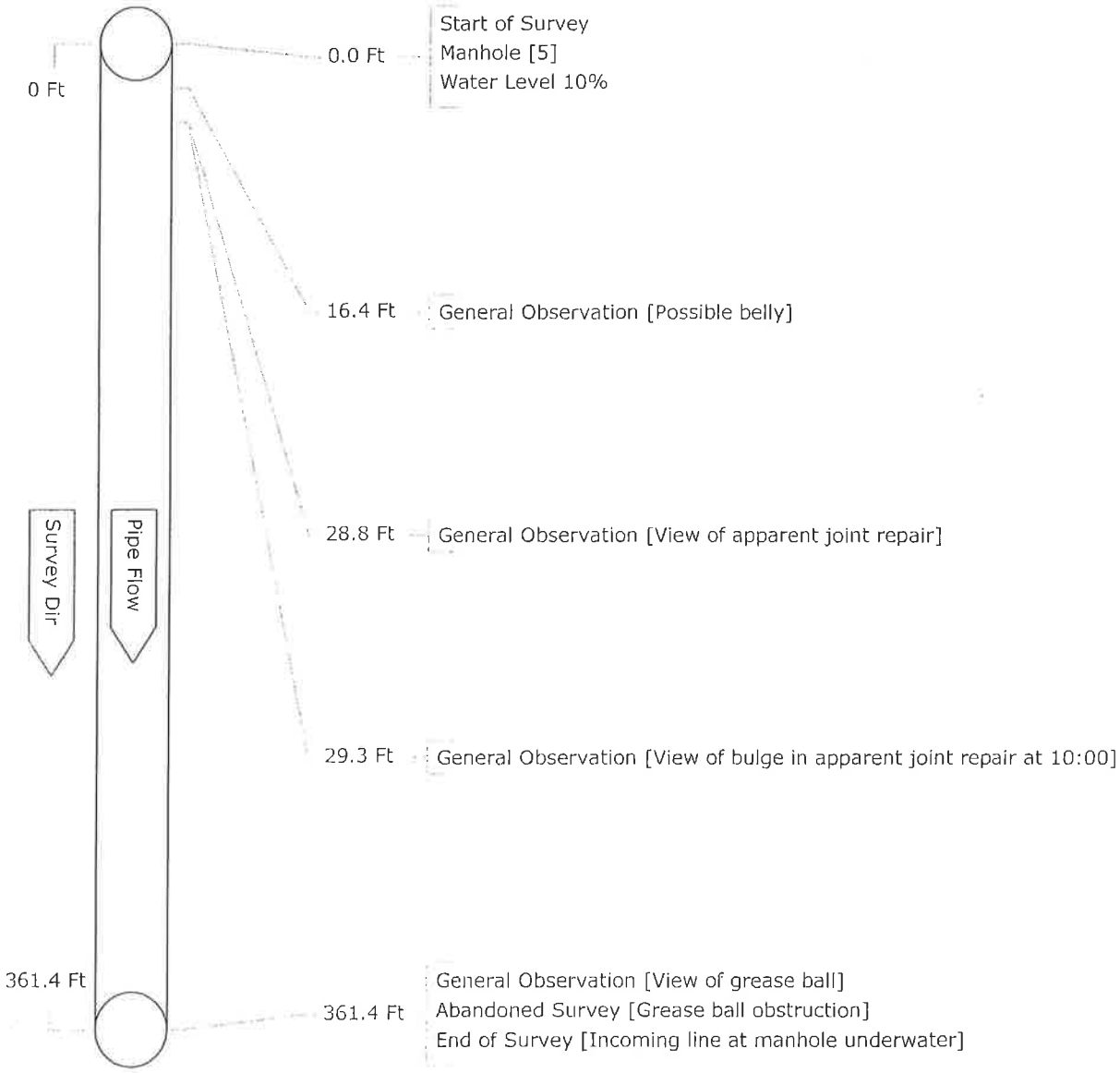
Pipe Graphic Report of PLR 6 X **for** Lewis Township

Setup 10/9	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 8:58	**Street** King Street		
City Turbotville	**Further location details**				
Start 5	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 6	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Upstream	**Flow control**	**Media No** 2009-08		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 5.0 **Ft**	**Length Surveyed** 05.00		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info Reverse set up on sheet:9			Structural	O&M	Constructional
Location			Miscellaneous	Hydraulic	



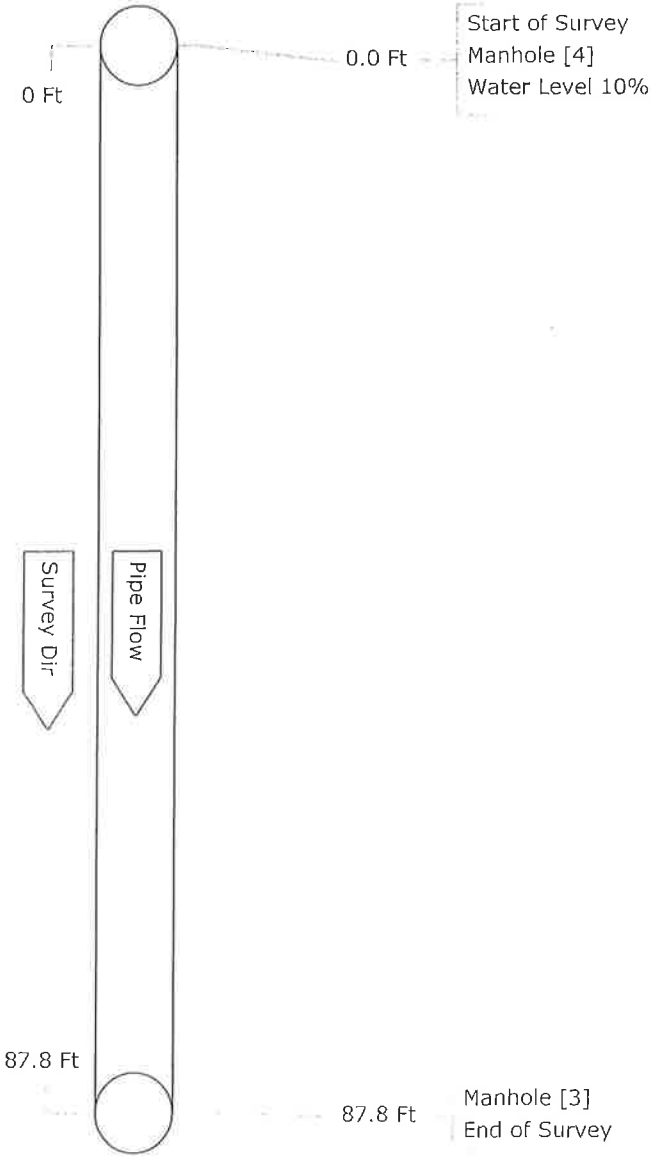
Pipe Graphic Report of PLR 5 X **for** Lewis Township

Setup 11	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 9:29	**Street** King Street		
City Turbotville	**Further location details**				
Start 5	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 4	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-09		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 361.4 **Ft**	**Length Surveyed** 361.40		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose		**Cat**			
Additional info			Structural	O&M	Constructional
Location			Miscellaneous	Hydraulic	



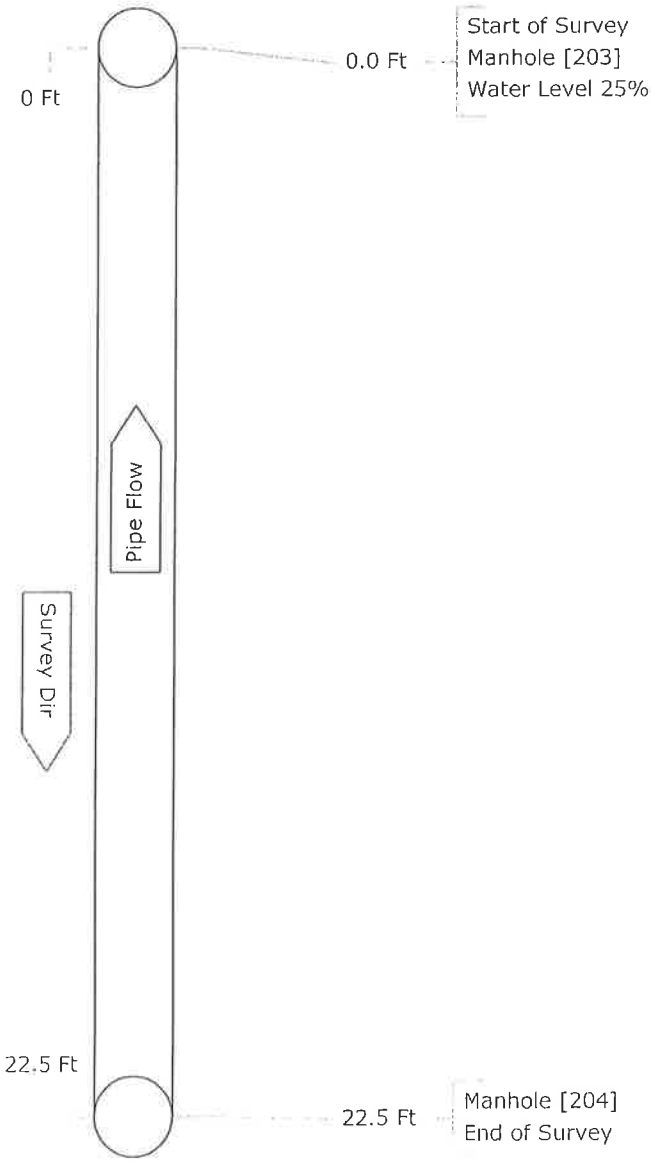
Pipe Graphic Report of PLR 4 X **for** Lewis Township

Setup 13	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 10:36	**Street** King Street		
City Turbotville	**Further location details**				
Start 4	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 3	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-10		
Shape Circular	**Height** 8	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyvinyl Chloride	**Joint length** **Ft**	**Total length** 87.8 **Ft**	**Length Surveyed** 87.80		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



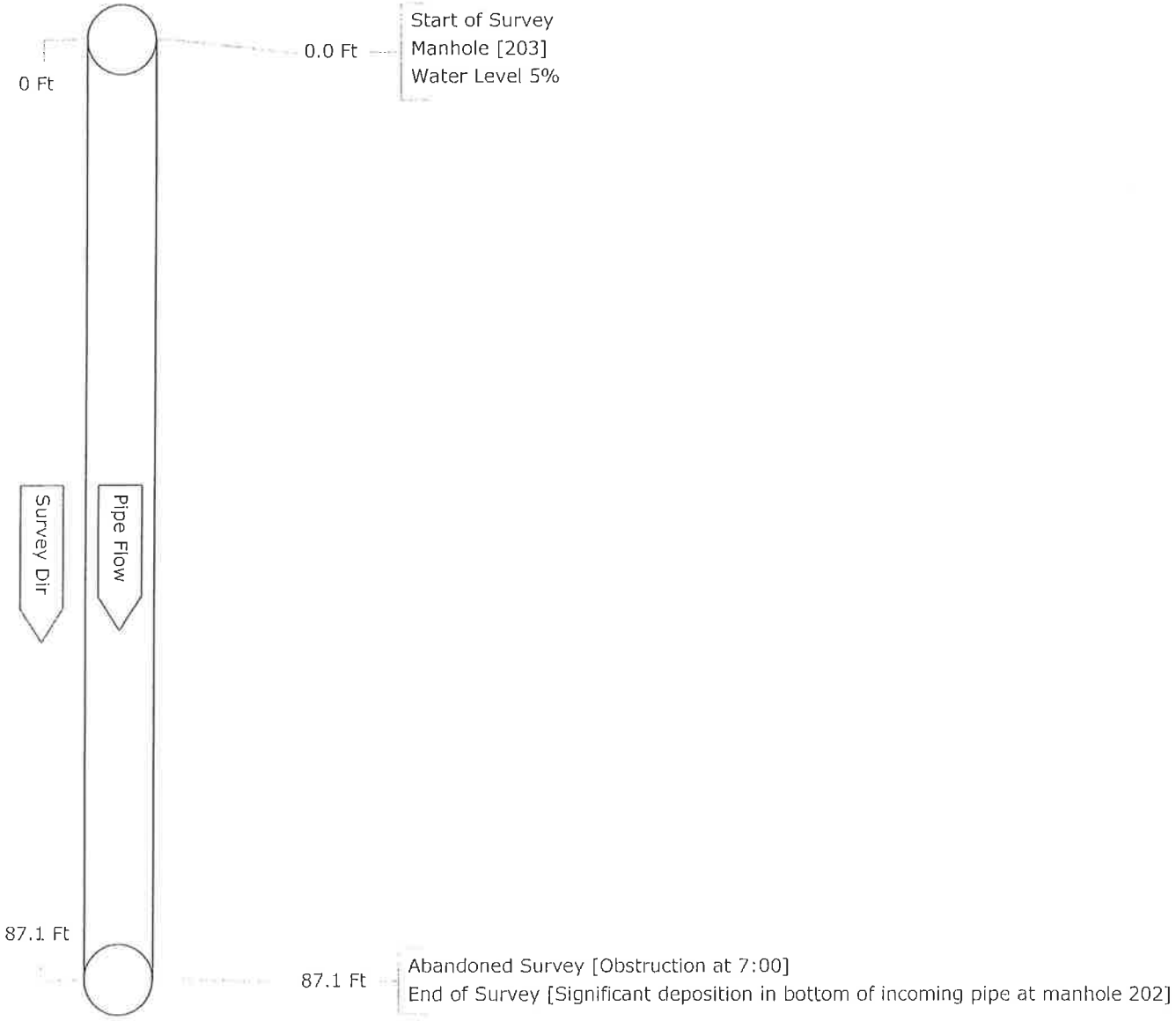
Pipe Graphic Report of PLR 204 U **for** Lewis Township

Setup 14	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 11:49	**Street** Main Street		
City Turbotville Borough	**Further location details**				
Start 203	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 204	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Upstream	**Flow control**	**Media No** 2009-11		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 22.5 **Ft**	**Length Surveyed** 22.50		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



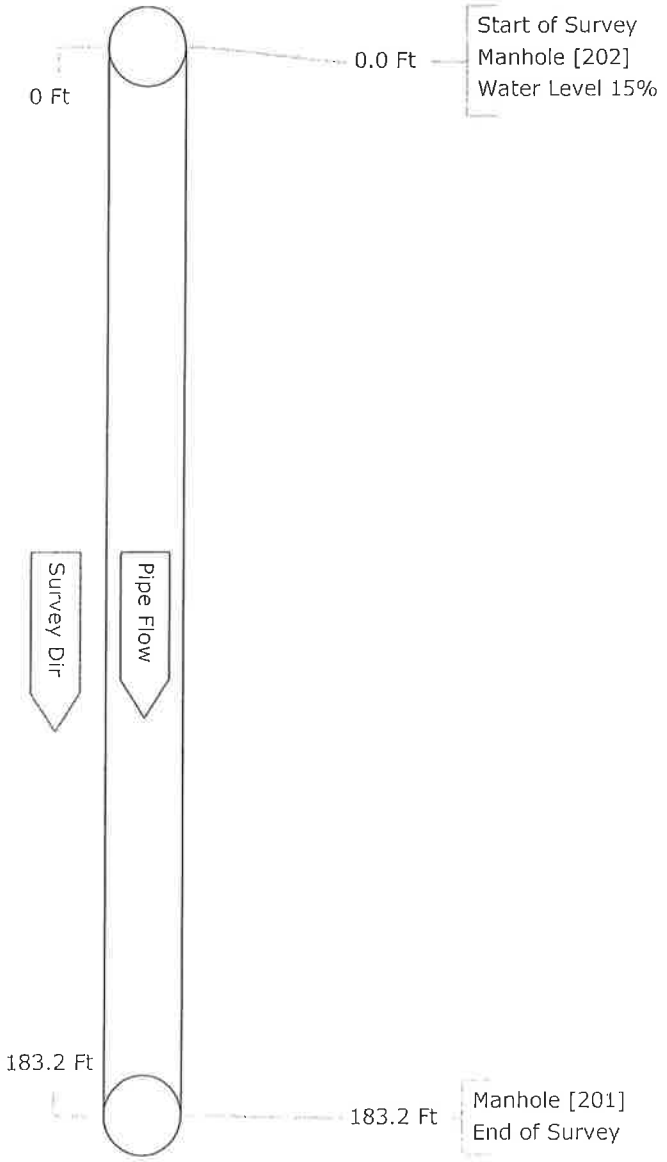
Pipe Graphic Report of PLR 203 X **for** Lewis Township

Setup 15	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 12:24	**Street** Main Street		
City Turbotville Borough	**Further location details**				
Start 203	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 202	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-12		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 87.1 **Ft**	**Length Surveyed** 87.10		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose		**Cat**			
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



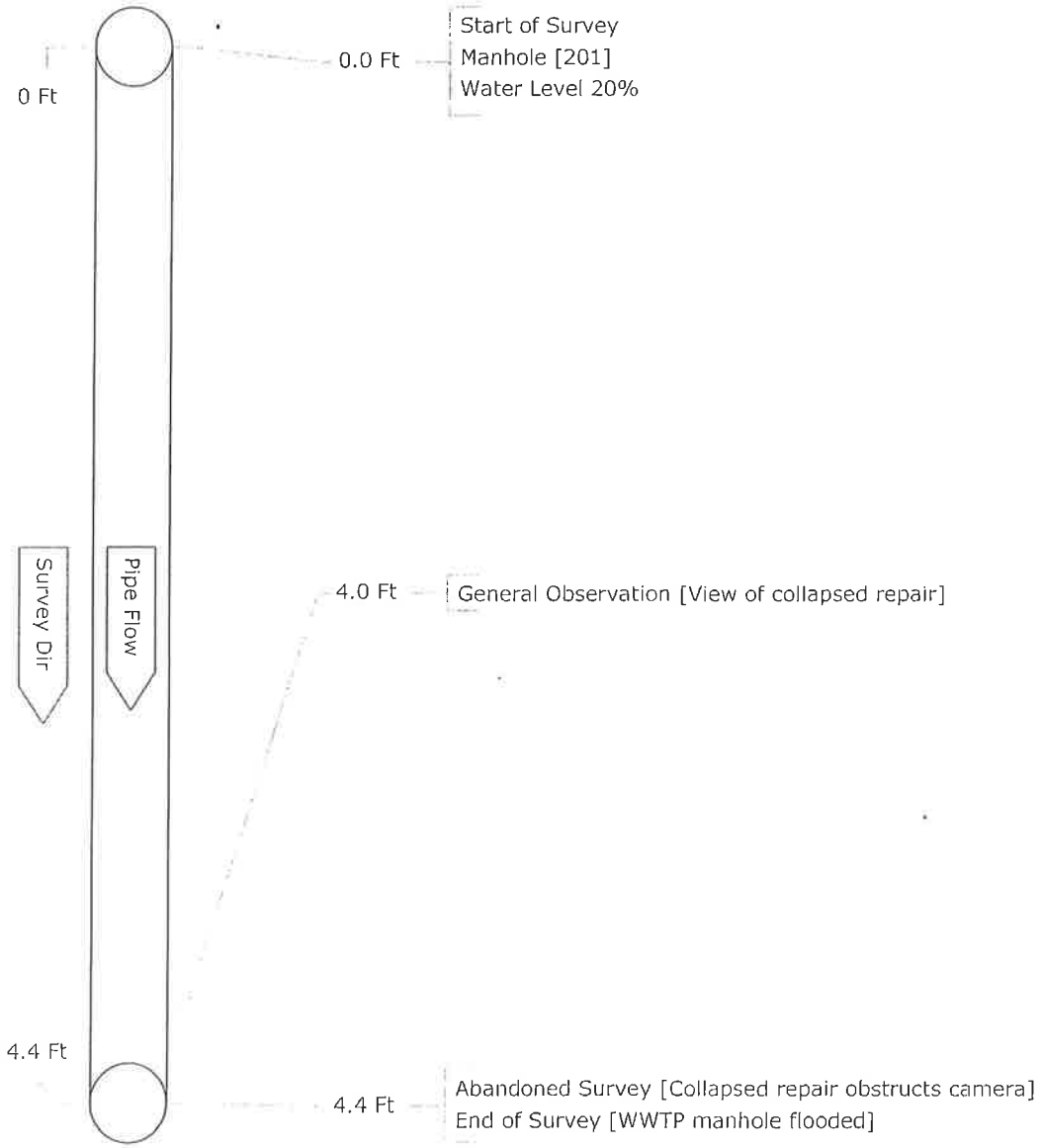
Pipe Graphic Report of PLR 202 X **for** Lewis Township

Setup 17	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 13:11	**Street** Main Street		
City Turbotville Borough	**Further location details**				
Start 202	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 201	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-13		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 183.2 **Ft**	**Length Surveyed** 183.20		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose	**Cat**				
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



Pipe Graphic Report of PLR 201 X **for** Lewis Township

Setup 18	**Surveyor** TRP	**Certificate #** U1103969	**System Owner**		
Drainage	**Survey Customer**				
P/O #	**Date** 2009/11/13	**Time** 13:24	**Street** Main Street		
City Turbotville Borough	**Further location details**				
Start 201	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish WWTP	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use	**Direction** Downstream	**Flow control**	**Media No** 2009-14		
Shape Circular	**Height** 6	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Polyethylene	**Joint length** **Ft**	**Total length** 4.4 **Ft**	**Length Surveyed** 04.40		
Lining	**Year laid**	**Year rehabilitated**	**Weather**		
Purpose		**Cat**			
Additional info		Structural	O&M	Constructional	
Location		Miscellaneous	Hydraulic		



Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-13. Please provide a copy Memorandum of Understanding between Turbotville Borough and Lewis Township dated April 9, 2018, also referenced is Section 8.1(p) of the Application's APA.

Response: See Attachment A-13.

Responsible Witness: Keith E. Gabage

Attachment A-13

665389

MEMORANDUM OF UNDERSTANDING

The parties to this Memorandum of Understanding ("**MOU**") have executed this MOU on this 19 day of April, 2018, by and between the Township of Lewis, Northumberland County, Pennsylvania, having a current address of P.O. Box 143, Watsontown, Pennsylvania (hereinafter "**Lewis Township**") and The Borough of Turbotville, Northumberland County, Pennsylvania, having a current address of P.O. Box 246, Turbotville, Pennsylvania (hereinafter "**Turbotville**").

WITNESSETH:

WHEREAS, the parties to this MOU are contiguously located municipalities; and

WHEREAS, Turbotville is currently serviced by its own wastewater treatment plant (the "**Turbotville Plant**"); and

WHEREAS, Lewis Township previously determined that sanitary sewer service to areas of the Township known as the SR 54 Corridor and the Schell & Koch Road area would be provided by Turbotville as the result of an alternatives analysis performed during Act 537 Planning in 2010; and

WHEREAS, the parties entered into an Inter-Municipal Wastewater Agreement dated, January 31, 2011 whereby Lewis Township agreed to purchase reserved capacity for the SR 54 Corridor and Schell & Koch Road area (the "**Wastewater Agreement**"); and

WHEREAS, Turbotville is now in negotiations with Pennsylvania American Water Company ("**PAWC**") for the sale and purchase of the Turbotville Plant; and

WHEREAS, PAWC have advised Turbotville that they will not purchase the Turbotville Plant unless the Wastewater Agreement is terminated; and

WHEREAS, both Turbotville and Lewis Township submitted 537 plans, in accordance with the Pennsylvania Sewage Facilities Act, to the Pennsylvania Department of Environmental Protection that have incorporated the rights and obligations under the Wastewater Agreement; and

WHEREAS, Lewis Township has now determined that it would be in the best interest of Lewis Township if the Schell & Koch Road area is serviced by Lewis Township's own wastewater treatment plant; and

WHEREAS, it is the intent of the parties that: (i) Lewis Township shall amend its 537 plan so that the Schell & Koch Road area will not be serviced by the Turbotville Plant but will instead be serviced by the Lewis Township plant ("**537 Plan Amendment**"), and (ii) Turbotville shall adopt the 537 Plan Amendment and (iii) upon the acceptance and approval by the DEP of the amended 537 plans regarding the Schell & Koch Road area, the parties shall terminate the Wastewater Agreement.

NOW, THEREFORE, in consideration of the covenants contained herein and intending to be legally bound, the parties hereto agree as follows:

1. It is agreed by the parties that Lewis Township will prepare the 537 Plan Amendment to revise Lewis Township's 537 Plan so that the Schell & Koch Road area will be serviced

by Lewis Township and that Turbotville shall adopt the 537 Plan Amendment, thereby modifying Turbotville's 537 Plan.

2. It is agreed that Turbotville will work diligently with Lewis Township and PAWC to obtain a commitment by PAWC to provide bulk treatment service the SR 54 Corridor in the future in accordance with current 537 planning and PAWC's wastewater tariff.

3. It is understood by Lewis Township and Turbotville Borough that future service to the SR54 Corridor shall be negotiated between Lewis Township and PAWC based upon the published Tariff(s) in effect at the time of negotiation and acceptance of financial feasibility by Lewis Township and PAWC.

4. It is agreed that the parties will terminate the Wastewater Agreement upon the complete and full satisfaction of the following:

   (a) Section 1 above; and

   (b) Turbotville and PAWC provide Lewis Township with the anticipated contracted "closing date" as set forth in the agreement between Turbotville and PAWC for the purchase of the Turbotville Plant; and

   (c) The acceptance and final approval by the DEP, of the amended 537 plans as drafted.

5. It is further agreed that if Turbotville does not sell the Turbotville Plant as set forth above, Lewis Township and Turbotville shall immediately, but no later than ten (10) days after the Closing Date, enter into a new wastewater agreement with terms and conditions to be negotiated at that time.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals on this 19 day of April, 2018.

ATTEST:

LEWIS TOWNSHIP
Northumberland County, Pennsylvania

By: _____ By: _____

ATTEST:

TURBOTVILLE BOROUGH
Northumberland County, Pennsylvania

By: _____ By: _____

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-14. Section 8.1(q) of the Application's APA provides that PAWC-WD must negotiate a bulk service agreement with Lewis Township. Please identify the status of the negotiation of a bulk wastewater service agreement with Lewis Township and provide the estimated date PAWC-WD intends to file the agreement with the Commission.

Response: While negotiating the terms of the Asset Purchase Agreement ("APA") with the Borough of Turbotville ("Borough"), PAWC also had informal discussions with the Township of Lewis ("Township"). During these discussions, PAWC provided the Township with the bulk customer rates pursuant to its Tariff which will be applicable when a new agreement is entered into as referenced in the response to A-12 above. This is also memorialized in the Memorandum of Understanding between the Borough and Township. (see A-13 above)

PAWC anticipates initiating formal discussions with the Township in October 2018.

Should an agreement be reached with the Township, PAWC will file such agreement with the PUC to seek approval for the agreement pursuant to Section 507 of the Public Utility Code.

Responsible Witness: Keith E. Gabage

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-15. Please confirm if the Application's Exhibit P includes the estimated revenues and expenses from the Lewis Township bulk service agreement. If not, please provide an estimate of applicable revenues and expenses and specify the applicable rate schedule this agreement would use.

Response: Exhibit P does not include any revenues or expenses associated with a bulk service arrangement with the Township of Lewis ("Township").

Once an agreement is reached with the Township and PUC approval is granted, PAWC will: 1) file an amended Tariff which will include a Bulk Metered Rate for the Township, it is anticipated that the rate will be identical to that outlined in "E. Special Rate Charges, Bulk Metered Usage" in Rate Zone 1 of PAWC's current Tariff and 2) provide an estimate of applicable revenues and expenses associated with this bulk customer.

Responsible Witness: John R. Cox

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-16. The journal entries provided in the Application's Section 17 do not include NARUC account numbers. Please quantify PAWC-WD's planned journal entries by major NARUC plant account. If PAWC-WD does not intend to utilize Account Number 104 – Utility Plant Purchased or Sold to book the purchase price, please provide an explanation as to why.

Response: Please see below for an example of the journal entry:

At Closing:		
Account 104- Utility Plant Purchased or Sold	$365,000	
Account 232 – Short-Term Debt		$365,000
Record DOC Study:		
Account 101- Utility Plant in Service	$x,xxx,xxx	
Account 108 – Accumulated Depreciation	(xxx,xxx)	
Utility Plant Acquisition Adjustment	xxx,xxx	
Account 104- Utility Plant Purchased or Sold		$365,000

The actual journal entry will depend on the results of the Depreciated Original Cost Study. The Utility Plant Acquisition adjustment, if any, will be recorded in Account 123 - Goodwill, 186.3 - Regulatory Assets or 253.1 - Regulatory Liabilities depending on if the acquisition adjustment is claimed in a future rate case.

Responsible Witness: John R. Cox

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-17. Please provide an estimate of the Turbotville Borough wastewater system's depreciated original cost.

Response: PAWC will conduct a Depreciated Original Cost Study to determine the value of Turbotville Borough's wastewater assets including any contributed property, if any.

Responsible Witness: Scott D. Fogelsanger

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-18. Please explain how the purchase price of $365,000 was determined if PAWC-WD did not rely on the depreciated original cost of the system to establish the purchase price.

Response: The purchase price of the Turbotville's wastewater system was based on arm-length negotiations.

Responsible Witness: Scott D. Fogelsanger

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-19. Please state whether any of Turbotville Borough's wastewater system is contributed property. If so, please identify the contributed property and its estimated original cost.

Response: It is unknown at this time if Turbotville Borough's wastewater system has contributed property. Refer to the response to A-17.

Responsible Witness: Scott D. Fogelsanger

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-20. Please clarify whether PAWC-WD intends to claim an acquisition adjustment pursuant to 66 Pa. C.S. § 1327 for this transaction in a future rate case.

Response: PAWC will determine if an acquisition adjustment pursuant to 66 Pa. C.S. § 1327 will be claimed in a future rate case based on the results of the Depreciated Original Cost Study and the Public Utility Commission will be notified at that time.

Responsible Witness: John R. Cox

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-21. Please explain why PAWC-WD's pro forma balance sheet of as of December 31, 2017, provided as the Application's Exhibit G, records Turbotville Borough's cash on hand and long-term debt, as these items are excluded from the transaction by the APA.

Response: See Attachment A-21, revised Application Exhibit G, that restates the PAWC pro forma balance sheet based on the tentative journal entry to record the transfer of the assets as contained in the Application in paragraph 17. Also, refer to the response to A-16 that details the example of the journal entry that would impact PAWC's balance sheet based on the results of the Depreciated Original Cost Study when completed.

Responsible Witness: Martin Randazzo

Attachment A-21

PA American Water & Turbotville WW **Appendix G**
Pro-Forma Balance Sheet
December 31, 2017
(Dollars in thousands)

	PA American Water December 31, 2017 (Audited)	Turbotville WW December 31, 2017 Proforma	Pro-forma December 31, 2017
Assets			
Cash and cash equivalents	$ 3,583	$ -	$ 3,583
Other current assets	$ 103,700	$ -	$ 103,700
Total property plant and equipment	$ 4,322,012	$ 365	$ 4,322,377
Regulatory assets & other L/T Assets	$ 188,472	$ -	$ 188,472
Total Assets	$ 4,617,767	$ 365	$ 4,618,132
Capitalization and liabilites			
Short Term Debt	$ 321,689	$ -	$ 321,689
Current Portion of Long-term Debt	$ 117,443	$ -	$ 117,443
Other current liabilities	$ 152,835	$ -	$ 152,835
Total Long-term Debt	$ 1,256,993	$ -	$ 1,256,993
Regulatory & other Long Term Liabilities	$ 970,813	$ -	$ 970,813
Stockholder's equity	$ 1,604,607	$ 365	$ 1,604,972
Contributions in aid of construction	$ 193,387	$ -	$ 193,387
Total Capitalization and liabilites	$ 4,617,767	$ 365	$ 4,618,132

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-22. Please provide a complete copy of Turbotville Borough's wastewater rules and regulations and specifically identify any applicable tapping or reserved capacity fees.

Response: See Attachment A-22 for the ordinances that contain the original rules and regulations and the subsequent ordinances that Turbotville Borough adopted that contained revisions to the rules and regulations. Turbotville Borough's rules and regulations do not contain a reserved capacity fee. The history of the adopted tapping fees are contained in the following ordinances:

- Ordinance 88-6 (dated 12-8-88): Established the fee at $1,375 per EDU
- Ordinance 02-01 (dated 9-6-01): Increased the fee to $3,000 per EDU

Responsible Witness: Scott D. Fogelsanger

Attachment A-22

BOROUGH OF TURBOTVILLE,

Northumberland County, Pennsylvania

ORDINANCE NO. 77-5

AN ORDINANCE

OF THE COUNCIL OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA, REQUIRING ALL OWNERS OF IMPROVED PROPERTY LOCATED WITHIN THIS BOROUGH AND BENEFITED, IMPROVED OR ACCOMMODATED BY ANY SANITARY SEWER CONSTITUTING PART OF THE SEWER SYSTEM CONSTRUCTED OR ACQUIRED AND OWNED AND OPERATED BY THIS BOROUGH TO CONNECT SUCH IMPROVED PROPERTY WITH SUCH SANITARY SEWER; REGULATING THE MANNER OF MAKING SUCH CONNECTIONS; AUTHORIZING THIS BOROUGH TO MAKE CONNECTIONS AT THE COST AND EXPENSE OF ANY OWNER OF IMPROVED PROPERTY FAILING TO MAKE SUCH CONNECTION; ADOPTING CERTAIN RULES AND REGULATIONS AND PROVIDING FOR ADOPTION OF ADDITIONAL RULES AND REGULATIONS; PROHIBITING THE CONNECTION OF PRIVY VAULTS, CESSPOOLS, SINKHOLES, SEPTIC TANKS AND SIMILAR RECEPTACLES TO ANY SEWER; PROHIBITING THE MAINTENANCE OF CERTAIN RECEPTACLES AND REQUIRING ABANDONMENT THEREOF WHERE A SEWER IS AVAILABLE; SETTING FORTH RELATED MATTERS; AND PRESCRIBING PENALTIES FOR VIOLATION.

The Council of the Borough of Turbotville, Northumberland County, Pennsylvania, enacts and ordains as follows:

ARTICLE I

DEFINITIONS

SECTION 1.01. Unless the context specifically and clearly indicates otherwise, the meaning of terms and phrases used in this Ordinance shall be as follows:

A. "Building Sewer" shall mean the extension from the sewage drainage system of any structure to the Lateral of a Sewer;

B. "Borough" shall mean the Borough of Turbotville, Northumberland County, Pennsylvania, a municipal corporation of the Commonwealth, acting by and through its Council, or, in appropriate cases, acting by and through its authorized representatives;

C. "Commonwealth" shall mean the Commonwealth of Pennsylvania;

D. "Improved Property" shall mean any property within this Borough upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure Sanitary Sewage and/or Industrial Wastes shall be or may be discharged;

E. "Industrial Establishment" shall mean any Improved Property located in this Borough used or intended for use, wholly or in part, for the manufacturing, processing, cleaning, laundering or assembling of any product, commodity or article, or any other Improved Property located in this Borough from which wastes, in addition to or other than Sanitary Sewage, shall be discharged;

F. "Industrial Wastes" shall mean any and all wastes discharged from an Industrial Establishment, other than Sanitary Sewage;

G. "Lateral" shall mean that part of the Sewer System extending from a Sewer to the curb line or, if there shall be no curb line, to the property line or, if no such Lateral shall be provided, then "Lateral" shall mean that portion of, or place in, a Sewer that is provided for connection of any Building Sewer;

H. "Owner" shall mean any Person vested with ownership, legal or equitable, sole or partial, of any Improved Property;

I. "Person" shall mean any individual, partnership, company, association, society, trust, corporation, municipality, municipality authority or other group or entity;

J. "Sanitary Sewage" shall mean normal water-carried household and toilet wastes from any Improved Property;

K. "Sewer" shall mean any pipe or conduit constituting a part of the Sewer System used or usable for sewage collection purposes;

L. "Sewer System" shall mean all facilities, as of any particular time, for collecting, transmitting, treating and disposing of Sanitary Sewage and/or Industrial Wastes, situate in or adjacent to this Borough and owned by the Borough; and

M. "Street" shall mean and shall include any street, road, lane, court, cul-de-sac, alley, public way or public square.

ARTICLE II

USE OF PUBLIC SEWERS REQUIRED

SECTION 2.01. The Owner of any Improved Property benefited, improved or accommodated by a Sewer shall connect such Improved Property with such Sewer, in such manner as this Borough may require, within 60 days after notice to such Owner from this Borough to make such connection, for the purpose of discharge of all Sanitary Sewage and Industrial Wastes from such Improved Property; Subject, however, to such limitations and restrictions as shall be established herein or otherwise shall be established by this Borough, from time to time.

SECTION 2.02. All Sanitary Sewage and Industrial Wastes from any Improved Property, after connection of such Improved Property with a Sewer shall be required under Section 2.01, shall be conducted into a Sewer; Subject, however, to such limitations and restrictions as shall be established herein or otherwise shall be established by this Borough, from time to time.

SECTION 2.03. No Person shall place, shall deposit or shall permit to be placed or to be deposited upon public or private property within this Borough any Sanitary Sewage or Industrial Wastes in violation of Section 2.01.

No Person shall discharge or shall permit to be discharged to any natural outlet within this Borough any Sanitary Sewage or Industrial

Wastes in violation of Section 2.01, except where suitable treatment has been provided that is satisfactory to this Borough.

SECTION 2.04. No privy vault, cesspool, sinkhole, septic tank or similar receptacle shall be used or shall be maintained at any time upon any Improved Property that has been connected to a Sewer or that shall be required under Section 2.01 to be connected to a Sewer.

Every such privy vault, cesspool, sinkhole, septic tank or similar receptacle in existence shall be abandoned and, at the discretion of this Borough, shall be cleansed and shall be filled, at the expense of the Owner of such Improved Property, under the direction and supervision of this Borough; and any such privy vault, cesspool, sinkhole, septic tank or similar receptacle not so abandoned and, if required by this Borough, not cleansed and filled, shall constitute a nuisance, and such nuisance may be abated, as provided by law, at the expense of the Owner of such Improved Property.

SECTION 2.05. No privy vault, cesspool, sinkhole, septic tank or similar receptacle at any time shall be connected with a Sewer.

SECTION 2.06. The notice by this Borough to make a connection to a Sewer, referred to in Section 2.01, shall consist of a copy of this Ordinance, including any amendments and/or supplements at the time in effect, or a summary of each Section thereof, and a written or printed document requiring the connection in accordance with the provisions of this Ordinance and specifying that such connection shall be made within 60 days from the date such notice is given. Such notice may be given at any time after a Sewer is in place that can receive and can convey Sanitary

Sewage and Industrial Wastes for treatment and disposal from the particular Improved Property. Such notice shall be served upon the Owner either by personal service or by registered mail, or by such other method as at the time may be provided by law.

ARTICLE III

BUILDING SEWERS AND CONNECTIONS

SECTION 3.01. No Person shall uncover, shall connect with, shall make any opening into or shall use, shall alter or shall disturb, in any manner, any Sewer or any part of the Sewer System without first obtaining a permit, in writing, from this Borough.

SECTION 3.02. Application for a permit required under Section 3.01 shall be made by the Owner of the Improved Property served or to be served or by the duly authorized agent of such Owner.

SECTION 3.03. No Person shall make or shall cause to be made a connection of any Improved Property with a Sewer until such Person shall have fulfilled each of the following conditions:

A. Such Person shall have notified the Secretary of this Borough of the desire and intention to connect such Improved Property to a Sewer;

B. Such Person shall have applied for and shall have obtained a permit as required by Section 3.01;

C. Such Person shall have given the Secretary of this Borough at least 24 hours' notice of the time when such

connection will be made so that this Borough may supervise and inspect or may cause to be supervised and inspected the work of connection and necessary testing; and

D. If applicable, such Person shall have furnished satisfactory evidence to the Secretary of this Borough that any tapping (or connection) fee that may be charged and imposed by the Borough against the Owner of each Improved Property who connects such Improved Property to a Sewer has been paid.

SECTION 3.04. Except as otherwise provided in this Section 3.04, each Improved Property shall be connected separately and independently with a Sewer through a Building Sewer. Grouping of more than one Improved Property on one Building Sewer shall not be permitted, except under special circumstances and for good sanitary reasons or other good cause shown, but then only after special permission of this Borough, in writing, shall have been secured and only subject to such rules, regulations and conditions as may be prescribed by this Borough.

SECTION 3.05. All costs and expenses of construction of a Building Sewer and all costs and expenses of connection of a Building Sewer to a Sewer shall be borne by the Owner of the Improved Property to be connected; and such Owner shall indemnify and shall save harmless this Borough from all loss or damage that may be occasioned, directly or indirectly, as a result of construction of a Building Sewer or of connection of a Building Sewer to a Sewer.

SECTION 3.06. A Building Sewer shall be connected to a Sewer at

the place designated by this Borough and where, if applicable, the Lateral is provided.

The invert of a Building Sewer at the point of connection shall be at the same or a higher elevation than the invert of the Sewer. A smooth, neat joint shall be made and the connection of a Building Sewer to the Lateral shall be made secure and watertight.

SECTION 3.07. If the Owner of any Improved Property benefited, improved or accommodated by a Sewer, after 60 days' notice from this Borough, in accordance with Section 2.01, shall fail to connect such Improved Property, as required, this Borough may make such connection and may collect from such Owner the costs and expenses thereof by a municipal claim, an action in assumpsit or such other legal proceeding as may be permitted by law.

ARTICLE IV

RULES AND REGULATIONS GOVERNING BUILDING SEWERS AND CONNECTIONS TO SEWERS

SECTION 4.01. Where an Improved Property, at the time connection to a Sewer is required, shall be served by its own sewage disposal system or sewage disposal device, the existing house sewer line shall be broken on the structure side of such sewage disposal system or sewage disposal device and attachment shall be made, with proper fittings, to continue such house sewer line as a Building Sewer.

SECTION 4.02. No Building Sewer shall be covered until it has been inspected and approved by this Borough. If any part of a Building

Sewer is covered before so being inspected and approved, it shall be uncovered for inspection at the cost and expense of the Owner of the Improved Property to be connected to a Sewer.

SECTION 4.03. Every Building Sewer of any Improved Property shall be maintained in a sanitary and safe operating condition by the Owner of such Improved Property.

SECTION 4.04. Every excavation for a Building Sewer shall be guarded adequately with barricades and lights to protect all Persons from damage and injury. Any Street, sidewalk and other property disturbed in the course of installation of a Building Sewer shall be restored, at the cost and expense of the Owner of the Improved Property being connected, in a manner satisfactory to this Borough.

SECTION 4.05. This Borough shall have the right to gain access to and upon the Improved Property, at all reasonable times, after connection of the Building Sewer to the Sewer for the purposes of inspection, observation, measurement, sampling and testing, and the performance of all other functions relating to sewer service rendered by this Borough. If at any time said Building Sewer and the waste being discharged therein from the Improved Property does not comply with the rules and regulations set forth herein or hereinafter adopted, notice of same, in writing, shall be given to the Owner of the Improved Property to make the necessary change or repairs within sixty (60) days of receipt of such notice. If the Owner shall fail or shall refuse to make said necessary change or repairs within said time period, the Borough may refuse to permit such Person to discharge Sanitary Sewage and Industrial

Wastes into the Sewer System until such change or repairs shall have been remedied to the satisfaction of this Borough.

SECTION 4.06. This Borough reserves the right to adopt, from time to time, additional rules and regulations as it shall deem necessary and proper relating to connections with a Sewer and with the Sewer System, which additional rules and regulations, to the extent appropriate, shall be and shall be construed as part of this Ordinance.

ARTICLE V

ENFORCEMENT

SECTION 5.01. Any Person who shall violate this Ordinance shall be subject, upon summary conviction for a first offense and upon summary conviction for each subsequent offense, to a fine of not less than Twenty-Five Dollars nor more than One Thousand Dollars, together with costs of prosecution in each case. Each day that a violation shall continue shall be deemed and shall be taken to be a separate offense and shall be punishable as such.

SECTION 5.02. Fines and costs imposed under provisions of this Ordinance shall be enforceable and recoverable in the manner at the time provided by applicable law.

ARTICLE VI

EFFECTIVE DATE

SECTION 6.01. This Ordinance shall become effective in accordance with law.

ARTICLE VII

SEVERABILITY

SECTION 7.01. In the event any provision, section, sentence, clause or part of this Ordinance shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this Ordinance, it being the intent of this Borough that such remainder shall be and shall remain in full force and effect.

ARTICLE VIII

DECLARATION OF PURPOSE

SECTION 8.01. It is declared that enactment of this Ordinance is necessary for the protection, benefit and preservation of the health, safety and welfare of inhabitants of this Borough.

DULY ENACTED AND ORDAINED, this day of , 1988, by the Council of the Borough of Turbotville, Northumberland County, Pennsylvania, in lawful session duly assembled.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By:_____
President of Council

ATTEST:

_____
Secretary

(SEAL)

EXAMINED AND APPROVED, this day of , 1988.

_____
Mayor of the Borough of Turbotville,
Northumberland County, Pennsylvania

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BOROUGH OF TURBOTVILLE,

Northumberland County, Pennsylvania

ORDINANCE NO. 88-6

AN ORDINANCE

OF THE COUNCIL OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA ADOPTING RULES AND REGULATIONS GOVERNING USE OF THE SEWER SYSTEM; IMPOSING USER CHARGES AND TAPPING FEES TO BE COLLECTED FROM THE OWNER OF EACH IMPROVED PROPERTY TO BE SERVED BY THE SEWER SYSTEM; AND PROVIDING FOR PAYMENT AND COLLECTION OF SUCH USER CHARGES AND TAPPING FEES.

The Council of the Borough of Turbotville, Northumberland County, hereby enacts and ordains as follows:

ARTICLE I

DEFINITIONS

Section 1.01. Unless the context specifically and clearly indicates otherwise, the meaning of terms and phrases used in this Ordinance shall be as follows:

A. "Ammonia Nitrogen as N" shall mean ammonia nitrogen as determined pursuant to the procedure set forth in the lastest edition of "Standard Methods for the Examination of Water and Wastewater", published by American Publis Health Association, Inc.

B. "B.O.D." (Biochemical Oxygen Demand) shall mean the quantity of oxygen, expressed in ppm by weight, utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five (5) days at twenty degrees (20) Centigrade. The standard laboratory procedure shall be that

found in the lastest edition of "Standard Methods for the Examination of Water and Wastewater" published by the Anerican Public Health Association.

C. "Borough" shall mean the Borough of Turbotville, Northumberland County, Pennsylvania, a municipal corporation of the Commonwealth, acting by and through its Council or, in appropriate cases, acting by and through its authorized representatives.

D. "Building Sewer" shall mean the sewer extension from the sewage drainage system of any Improved Property to the Lateral serving such Improved Property.

E. "Commercial Establishment" shall mean any room, group of rooms, building or enclosure connected, directly or indirectly, to the Sewer System and used or intended for use in the operation of a business enterprise for the sale and distribution of any product, commodity, article or service.

F. "Commonwealth" shall mean the Commonwealth of Pennsylvania,

G. "Connection Ordinance" shall mean the ordinance enacted by this Borough, inter alia, requiring all Owners of Improved Property benefitted, improved or accommodated by a Sewer, to connect to such Sewer and use the same in such manner as this Borough may ordain.

H. "Council" shall mean the group of elected officials acting as the governing body of the Borough.

I. "Domestic Sanitary Sewage" shall mean normal water-carried household and toilet wastes discharged from any Improved Property.

J. "Dwelling Unit" shall mean any room, group of rooms, house trailer, apartment, condominium, cooperative or other enclosure connected, directly or indirectly, to the Sewer System and occupied or intended for occupancy as living quarters by an individual, a single family or other discrete group persons, excluding institutional dormitories.

K. "Educational Establishment" shall mean any room, group of rooms, building or other enclosure connected, directly or indirectly, to the Sewer System and used or intended for use, in whole or in part, for educational purposes, including both public and private schools.

L. "Equivalent Dwelling Unit" shall mean the unit of measure by which a User Charge shall be imposed upon each Improved Property, as determined in this Ordinance or in any subsequent ordinance of the Borough, which shall be deemed to constitute

the estimated, equivalent amount of Domestic Sanitary Sewage discharged by a single-family Dwelling Unit.

M. "Improved Property" shall mean any property upon which there is erected a structure intended for continious or periodic habitation, occupancy or use by human beings or animals and from which structure Domestic Sanitary Sewage and/or Industrial Wastes shall be or may be discharged, which is located within the Sewered Area and subject to the Connection Ordinance.

N. "Industrial Establishment" shall mean any Improved Property used or intended for use, wholly or in part, for the manufacturing, processing, cleaning, laudering or assembling of any product, commodity or article, or any other Improved Property from which wastes, in addition to or other than Domestic Sanitary Sewage, shall or may be discharged.

O. "Industrial Wastes" shall mean any and all wastes discharged from an Industrial Establishment other than Domestic Sanitary Sewage.

P. "Institutional Establishment" shall mean any room, group of rooms, building or other enclosure connected, directly or indirectly, to the Sewer System, including institutional dormitories and Educational Establishments, which do not constitute a Commercial Establishment, a Dwelling Unit, or an Industrial Establishment.

Q. "Large Consumer" shall mean any Commercial Establishment, Educational Establishment, Industrial Establishment, or Institutional Establishment, regardless of water consumption or volume of Domestic Sanitary Sewage or Industrial Wastes discharged.

R. "Lateral" shall mean that part of the Sewer System extending from a Sewer to the curbline, or if there is no curbline, to the property line, or if no such extension is provided, then "Lateral" shall mean that portion of, or place in, a Sewer that is provided for connection of any Building Sewer.

S. "Multiple Use Improved Property" shall mean any Improved Property upon which there shall exist any combination of a Dwelling Unit, Commercial Establishemnt, Industrial Establishment, Educational Establishment or Institutional Establishment.

T. "Owner" shall mean any Person vested with title, legal or equitable, sole or partial, of any Improved Property.

U. "Person" shall mean any individual, partnership, company, association, society, trust, corporation or other group or entity, including municipalities, municipal authorities, school districts and other units of government.

V. "ph" shall mean the logarithm of the reciprocal of the concentration of hydrogen ions, expressed in grams per liter of solution, indicating the degree of acidity or alkalinity of a substance.

W. "ppm" shall mean parts per million parts water, by weight.

X. "Sewer" shall mean any pipe or conduit constituting a part of the Sewer System used or usable for sewage collection purposes.

Y. "Sewered Area" shall mean that area of the Borough served by the Sewer System as determined and designated, from time to time, by the Borough.

Z. "Sewer System" shall mean all facilities, at any particular time, acquired, constructed, operated, and/or owned by the Borough for collecting, pumping, transporting, treating and disposing of Domestic Sanitary Sewage and/or Industrial Wastes.

AA. "Street" shall mean and shall include any street, road, lane, court, cul-de-sac, alley, public way or public square, including such streets as are indicated to public use, and such streets as are owned by private Persons.

BB. "Tapping Fee" shall mean the Tapping Fee imposed by the Borough under Article III hereof against the Owner of any Improved Property that is connected to the Sewer System.

CC. "Total Phosphorus as P" shall mean total phosphorus as determined pursuant to the procedure set forth in the lastest edition of "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health Association, Inc.

DD. "Total Solids" shall mean solids determined by evaporating at 100 degrees C a mixed sample of wastewater as determined pursuant to the procedure set forth in the lastest edition of "Standard Methods for the Examination of Water and Wastewater", published by the Anerican Public Health Association. Total solids inlcude floating solids, Suspended Solids, Setteable Solids and Dissolved Solids, as defined below:

(a). "Suspended Solids" shall mean solids determined by standard laboratory procedure in

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in the waste.

(b). "Setteable Solids" shall mean solids that settle in an imhoff cone from a standard sample of waste.

(c). "Dissolved Solids" shall mean solids that are dissolved in the waste and cannot be settled, but can be determined by evaporation.

EE. "User Charge" shall mean the annual rental or charge imposed by the Borough hereunder, as amended from time to time, against the Owner of each Improved Property, for the use of the Sewer System.

ARTICLE II

USER CHARGE

Section 2.01. A User Charge is hereby imposed upon the Owner of each Improved Property which shall be connected to the Sewer System, for use of the Sewer System, whether such use is direct or indirect, and for services rendered by the Borough in connection therewith, and shall be payable as provided herein.

Section 2.02. The User Charge shall be payable by the Owner of each Improved Property commencing the earlier of: (1) the date of actual, physical connection of an Improved Property to the Sewer System, or (2) sixty (60) days from the date indicated on the notice to connect described in the Connection Ordinance.

Section 2.03. The User Charge applicable to any Improved Property constituting a Dwelling Unit or Large Consumer shall be calculated, imposed and collected on the basis of the method provided in this Section 2.03.

Each Improved Property shall be charged a User Charge as a specific amount per Equivalent Dwelling Unit applicable to such Improved Property, as determined by the Borough, from time to time. The number of Equivalent Dwelling Units applicable to each Improved Property shall be determined as follows:

Description of Improved Property	Unit of Measurement	Number of EDUs Per Unit of Measurement
Residential Dwelling Unit (year-round or seasonal)	Each Dwelling Unit	1
Retail store, professional offices or other commercial enterprise	1 to 10 employees Each additional 10 employees or fraction thereof	1 1
Hotel, motel or boarding house (not including restaurant facilities)	1 to 4 rental rooms Each additional 4 rooms or fraction thereof	1 1
Restaurant, club, tavern or other retail food or drink establishment	1 to 10 customer seats Each additional 10 seats or fraction thereof	1 1 1/2
Automobile service station or commercial vehicle repair shop	1 or 2 bays Each additional 2 bays or fraction thereof	2 1
Beauty parlor or barber shop (attached to or part of a Dwelling Unit)	First chair Each additional chair	1 1
Beauty parlor or barber shop (not attached to or part of a Dwelling Unit)	First chair Each additional chair	1 1/2 1
School	Per each 30 pupils, faculty, administrators and staff	1
Church	Each	1 1/2
Fire Company	Each	1 1/2
Community Hall	Each	1 1/2
Funeral Home	Each	2
Industrial/Manufacturing establishment	1 to 10 employees Each additional 10 employees or fraction thereof	1 1

The number of Equilavent Dwelling Units applicable to retail stores, professional offices, industrial/manufacturing establishments and commercial enterprises shall be computed on the basis of the average daily number of full- and part-time employees (including the owner(s) or employer(s)) for the two months preceding the date of the bi-monthly billing. The Owners of such facilities shall be responsible for advising the Borough in writing of the number of employees upon request of the Borough. The number of Equilvalent Dwelling Units applicable to school facilities shall be computed on the highest monthly average daily attendance of pupils (plus faculty, administrators, and staff) for the twelve months preceding the date of the bi-monthly billing. The Owners of such facilities shall be responsible for advising the Borough in writing of the number of pupils, faculty, administrators and staff in attendance as as average daily figure upon request of the Borough.

If the use or classification of any Improved Property changes within a billing period, the User Charge shall be prorated by the Borough. The Owner of the Improved Property shall be responsible for advising the Borough in writing of any such affecting the User Charge payable hereunder. The appropriate credit or additional charge shall appear on the statement for the next succeeding billing period.

The annual flat rate User Charge payable per Equilvalent Dwelling Unit shall be $240.00

Section 2.04. In the case of a Multiple Use Improved Property sharing a common connection to the Sewer System or a common structure, each such classification of Improved Property shall pay a separate User Charge, as though it was housed in a separate structure and had a direct and separate

connection to the Sewer System, computed in accordance with Section 2.03 of this Ordinance.

Section 2.05. The Owner of any Improved Property which shall discharge Domestic Sanitary Sewage and/or Industrial Wastes into the Sewer System in excess of a total flow of 350 gallons per day per Equilvalent Dwelling Unit with a peak flow rate in excess of 700 gallons per day for any 10-minute period, per Equilvalent Dwelling Unit, as determined or reasonably estimated by the Borough, shall pay a volume surcharge. The Owner of any Improved Property which shall discharge Domestic Sanitary Sewage and/or Industrial Wastes to the Sewer System having a B.O.D. greater than 200 ppm, or a Suspended Solids content greater than 300 ppm, or a Dissolved Solids content greater than 500 ppm, or a Total Solids content greater than 800 ppm, or a Total Phosphorus as P content greater than 10 ppm or an Ammonia Nitrogen as N content greater than 20 ppm, shall pay a strength of waste surcharge, in addition to applicable volume charges. Surcharges shall be paid in addition to all User Charges computed in accordance with provosions of this Article II and shall be computed on such basis as this Borough may from time to time adopt. The strength of Domestic Sanitary Sewage and/or Industrial Wastes to be used for establishing the amount of surcharge shall be determined periodically at the discretion of the Borough either: (1) by suitable sampling and analysis of such wastes for a consecutive three-day period during a time of normal plant

operation; or (2) from estimates made by the Borough; or (3) from known relationships of products produced to strengths of such wastes for those industries where such factors have been established. In establishing such waste strengths for surcharge purposes by analysis, analyses shall be made in accordance with procedures outlined in the lastest edition of "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, Inc.

Section 2.06. The Owner of any Improved Property discharging Domestic Sanitary Sewage and/or Industrial Wastes into the Sewer System shall furnish to the Borough, including by way of the application for permit described in the Connection Ordinance, all information deemed essential or appropriate by the Borough for the determination of all applicable User Charges and surcharges. The costs of obtaining such information shall be borne by such Owner of the Improved Property.

In the event of the failure of the Owner to provide adequate information, the Borough shall estimate the applicable User Charge and surcharges based upon available information, until such time as adequate information is received. There shall be no rebate of past payments if the Owner's refusal to provide such information results in overpayment.

Section 2.07. Nothing herein contained shall be deemed to prohibit this Borough from entering

into separate or special agreements with Owners of Improved Property with respect to the User Charge to be imposed in those cases where, due to special or unusual circumstances, the User Charge set forth herein shall be deemed by this Borough, in its sole discretion, to be inequitable, or where it is in the best interests of this Borough to do so.

Section 2.08. User Charges and surcharges, as applicable, shall be payable on a bi-monthly basis, and shall cover a billing period consisting of the immediately preceding two months. Owners of Improved Property that shall be first connected to the Sewer System during any bi-monthly period shall pay a pro-rata User Charge for service for the balance of the bi-monthly period, plus any applicable surcharges.

Section 2.09. Payments of User Charges and any applicable surcharges shall be due and payable upon the applicable billing date, at the office of the Secretary of the Borough, in the appropriate amount, computed in accordance with this Ordinance, which shall constitute the net bill. If any User Charge or any applicable surcharge is not paid within twenty-one (21) calender days after the applicable billing date, an additional sum of ten-percent (10%) shall be added to such net bill, which net bill, plus such additional sum, shall constitute the gross bill. Payment made or mailed and postmarked on or before tha last day of such twenty-one (21) calender day period shall constitute payment within such period.

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If the end of such twenty-one (21) calender day period shall fall on a legal holiday or on a Sunday, then payment made on or mailed and postmarked on the next succeeding business day which is not a legal holiday shall constitute payment within such period. Any and all payments received on account of deliquent accounts shall be applied first to the oldest outstanding gross bill, including any accumulated late fee.

Section 2.10. It shall be the responsibility of each Owner of an Improved Property to provide the Borough with, and thereafter keep the Borough continiously advised of, the correct mailing address of such Owner. Failure of any Owner to receive a bill for charges due and payable shall not be considered an excuse for nonpayment, nor shall failure result in an extension of the period of time during which the net bill shall be payable.

Section 2.11. No officer or employee of the Borough is authorized to reduce, vary or exempt charges imposed herein or other provisions of this Ordinance without official action by the Council of this Borough.

Every Owner of Improved Property shall remain liable for the payment of User Charges and surcharges until the later of: (1) the receipt by the Borough of written notice by such Owner that the property has been sold, containing the correct name and mailing address of the new Owner, or (2) the date on which title to the Improved Property

is transferred to a new Owner. Failure to provide notice renders an Owner continuoulsy liable for any charges that may accrue until such time as the Borough has been properly notified of any change in ownership as described above.

ARTICLE III

TAPPING FEES

Section 3.01. No Person shall connect any Improved Property with any part of the Sewer System without first making application for and securing a permit, in writing, from the Borough. Such application shall be made on a form to be provided by the Borough.

Section 3.02. A Tapping Fee is hereby imposed and shall be charged against the Owner of any Improved Property whenever such Owner hereafter shall connect such Improved Property with the Sewer System. The Tapping Fee hereby imposed shall be the sum of: (a) $150.00 for each physical connection of a Building Sewer with the Sewer System and (b) the product of $1,250.00 multiplied by the number of Equivalent Dwelling Units applicable to the Improved Property, as determined in accordance with Section 2.03 and Section 2.04 of this Ordinance.

Section 3.03. If any Owner of Improved Property heretofore connected to the Sewer System, or of any Improved Property hereafter connected to the Sewer System, shall alter or expand the use of

the Improved Property such that a larger number of Equivalent Dwelling Units shall be applicable to such Improved Property, as determined in accordance with section 2.04 of this Ordinance, such Owner must apply for a permit in accordance with the provisions of Section 3.01 of this Ordinance, and an additional Tapping Fee in the amount of $1,250.00 multiplied by the difference between the number of Equivalent Dwelling Units applicable to such Improved Property prior to such alteration or expansion and the number of Equivalent Dwelling Units to be applicable thereto immediately thereafter. Such additional Tapping Fee shall be due and payable at the time application is made for such permit.

Section 3.04. All Tapping Fees shall be payable to the Treasurer of this Borough or to such other officer or agent of this Borough as shall be authorized from time to time by Resolution of the Council of this Borough to accept payment thereof.

Section 3.05. Payment of Tapping Fees imposed under this Ordinance shall be enforced by this Borough in any manner appropriate under laws in the time in effect.

Section 3.06. Nothing herein contained shall be deemed to prohibit this Borough from entering into separate or special agreements with the Owner of any property with respect to the Tapping Fees to be imposed in those cases where such Owner

shall agree to make a capital contribution toward the cost of constructing or improving the Sewer System, or shall agree to construct any facilities, at such Owner's cost and expense, thereafter to become part of the Sewer System owned and operated by this Borough, where, due to special or unusual circumstances, the Tapping Fee set forth herein shall be deemed by this Borough, in its sole discretion, to be inequitable, or where it is in the best interests of this Borough to do so.

ARTICLE IV

PROHIBITED WASTES

Section 4.01. No Person shall discharge or shall cause to be discharged into the Sewer System any storm water, surface water, spring water, ground water, roof runoff, subsurface drainage, building foundation drainage, cellar drainage, or drainage from roof leader connections.

Section 4.02. Except as otherwise provided, no Person shall discharge or cause to be discharged into the Sewer System any matter or substance:

A. Having a temperature higher than 104 degrees F. (40 degrees C.) or less than 32 degrees F.;

B. Containing more than 100 mg/l of fat, oil or grease;

C. Containing any gasoline, benzene, naphtha, fuel, oil, paint products, acid or other flammable or explosive liquids, solids or gases;

D. Containing any solid wastes resulting from preparation, cooking and dispensing of food and from handling, storage and sale of produce, which wastes commonly are known as garbage, which have not been ground by household type garbage disposal units or other suitable garbage grinders;

E. Containing any ashes, cinders, sand, mud, straw, string, shavings, metal, glass, rags, feathers, tar, cotton, dental floss, wool or other fibers, plastics, wood, paunch manure or any other solid or viscous substances capable of causing obstructions or other interferences with proper operation of the Sewer System;

F. Having a ph lower than 6.0 or higher than 9.0, or having any other corresive property capable of causing damage or hazards to structures or equipment of the Sewer System or any Sewer or to any Person engaged in operation and maintenance of the Sewer System;

G. Containing toxic or poisonous substances in sufficient quantity to injure or to interfere with any sewage treatment process, to constitute hazards to humans or animals or to create any hazards in waters which shall receive treated effluent from the Sewer System;

H. Containing dye from any source that will result in a treatment plant effluent exceeding limits

on compliance with applicable State or Federal regulations;

I. Containing radio-active substances and/or isotopes of such half-life or concentration that will result in a treatment plant effluent exceeding limits in compliance with applicable State or Federal regulations;

J. Having a chlorine demand in excess of 12 mg/l at a detention time of 20 minutes;

K. Prohibited by any permit issued by the Commonwealth of Pennsylvania or the U.S. Environmental Protection Agency;

L. Containing wastes which are not amenable to biological treatment or reduction in existing treatment facilities, specifically non-biodegradable complex carbon compounds;

M. Having a B.O.D. content greater than two hundred (200) ppm;

N. Having a Suspended Solids content greater than three hundred (300) ppm;

O. Having a Total Phosphorus as P content greater than 10 ppm;

P. Having an Ammonia Nitrogen as N content greater than 20 ppm;

Q. Having an instantaneous slug flow greater than five percent (5%) of the average daily Sewage System treatment plant;

R. Having any waste containing toxic or poisonous substances in excess of the following limits, measured at the point of discharge to the Sewer System:

Substance	Maximum Concentration ppm
Arsenic	0.05
Cadmium (as Cd)	0.01
Chromium (trivalent)	1.0
Chromium (hexavalent)	0.05
Copper (as Cu)	0.2
Cyanides	0.2
Lead	0.01
Mercury	0.1
Nickel (Ni)	0.5
Phenol	0.009
Silver	0.05
Zinc (Zn)	2.5;

S. Containing any substance not mentioned in the foregoing list that will pass through the treatment plant of the Sewer System and exceed the maximum permitted levels for such substance under the requirements of the Commonwealth or other governmental agencies having jurisdiction; or

T. Any other substance prohibited by ordinance, resolution, rule or regulation of the Borough hereafter enacted or adopted from time to time.

Section 4.03. Under no circumstances shall any Person discharge or cause to be discharged into the Sewer System any of the substances listed in Section 4.02 above, without first securing written permission to do so from the Borough.

Section 4.04. Whenever a Person is authorized by the Borough and appropriate governmental agencies to discharge any polluted water, Domestic Sanitary Sewage or Industrial Waste containing any of the substances or possessing any of the characteristics referred to in Section 4.02, such discharge shall be subject to the continuing approval, inspection and review of the Borough. If, in the opinion of the Borough, such discharges are causing or will cause damage to the Sewer System, the Borough shall order the Person causing discharge to cease doing so forthwith, or to take other appropriate action, including exercising the remedies provided in the Connection Ordinance, to eliminate the harmful discharge.

Section 4.05. Nothing contained herein shall be construed as prohibiting any special arrangement between the Borough and the Owner of an Improved Property allowing Industrial Wastes of unusual strength or character to be admitted into the Sewer System.

Section 4.06. Where necessary or appropriate, in the opinion of the Borough, the Owner of an Improved Property shall provide, at the sole expense of the Owner, suitable pretreatment

facilities acceptable to the Borough.

Plans, specifications and any other pertinent information relating to proposed facilities for preliminary treatment and handling of Industrial Wastes shall be submitted for approval of the borough. No construction of any such facility shall commence until approval has been obtained, inwriting, from the Borough, and until approval has been obtained from any and all regultory bodies having jurisdiction.

Such facilities for preliminary treatment and handling of Industrial Wastes shall be continuously maintained, at the sole expense of the Owner, in good operating condition satisfactory to the Borough. The Borough shall have access to such facilities at reasonable times for purposes of inspection and sampling.

ARTICLE V

ADMISSION OF INDUSTRIAL WASTES INTO THE SEWER SYSTEM

Section 5.01. No person shall discharge or cause to be discharged into the Sewer System any Industrial Wastes without prior application for and receipt of a written permit from the Borough.

Section 5.02. Any Person desiring to make or use a connection through which Industrial Wastes shall be discharged into the Sewer System shall file with the Borough a completed "Industrial

Wastes Questionaire", furnished by the Borough, which shall supply pertinent data, including estimated quantity of flow, characteristics and constituents of the proposed discharge. The cost of obtaining all such data shall be borne by the Person desiring to make or use the connection to the Sewer System.

Section 5.03. A. Ten (10) days prior to the first day of March, June, September, and December of each year, each major contributor of Industrial Wastes shall file with the Borough a report on the quality and quantity of their discharge. The report forms shall be supplied by the Borough and shall be similar to EPA 7550-22, page IV-1.

B. Major contributirs shall consist of those whose total discharge exceeds 20,000 gallons per day, have in their waste a toxic pollutant or, in the judgement of the Borough, would have a significant impact on the Sewer System or the quality of its effluent.

Section 5.04. A. When required by the Borough, the Owner of any Improved Property serviced by a Building Sewer carrying Industrial Wastes shall install, at his expense, a suitable control manhole, together with such necessary meters and other appurtenances in the Building Sewer, to facilitate observation, sampling and measurement of the waste flow.

B. All measurements, tests, and analysis of the characteristics of waters and wastes to which reference is made herein shall be determined in

accordance with the lastest edition of "Standard Methods for Examination of Water and Wastewater", published by the American Public Health Association, Inc. and shall be determined by or under the direct supervision of a "qualified analyst" at the control manhole provided, or upon suitable samples taken at such control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the Building Sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the Sewer System and to determine the existence of hazards to life, limb, and property. (The particular analyses involved will determine whether a twenty-four (24) hour composite of all outfalls of a premises is appropriate or whether a grab sample or samples must be taken.)

Section 5.05. Any Industrial Establishment discharging Domestic Sanitary Sewage and/or Industrial Wastes into the Sewer System and comtemplating a change in the method of operation which will alter the characteristics and/or volume of such wastes being discharged shall notify the Borough, in writing, at least (10) days prior to institution of such change.

Section 5.06. Grease, oil and sand interceptors shall be provided by the Owner of any Industrial, Commercial or Institutional Establishment,

at his or its sole cost, when required by the Borough, for the proper handling of liquid wastes containing excessive grease, inflammable wastes, sand, or other harmful substances. All interceptors shall be of a type and capacity approved by the Borough and constructed or installed at a satisfactory location in accordance with plans approved by the Borough prior to installation or commencement of construction.

Section 5.07. The use of mechanical garbage grinders in an Industrial Establishment or a Commercial Establishment shall not be permitted without prior approval from the Borough.

Section 5.08. The Borough may require Industrial Establishments having large variations in rates of waste discharge to install suitable regulating devices for equalizing waste flows to the Sewer System.

ARTICLE VI

MISCELLANEOUS

Section 6.01. The Borough shall have the right of access, at all reasonable times, to any part of any Improved Property as necessary for purposes of inspection, observation, measurement, sampling and testing and for performance of other functions relating to service rendered by the Borough.

Section 6.02. The Owner of any Improved Property shall be held liable for all acts of tenants

or other occupants of such Improved Property, as may be permitted by law, insofar as such acts shall be governed by the provisions of this Ordinance.

Section 6.03. The Borough shall adopt, from time to time, such additional rules and regulations as it shall deem necessary and proper in connection with the use and operation of the Sewer System, which rules and regulations shall be, shall become and shall be construed as part of this Ordinance.

Section 6.04. In the event any provision, section, sentence, clause or part of this Ordinance shall be held by any Court or Administrative tribunal of competent jurisdiction to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this Ordinance, it being the intent of the Borough that such remainder shall be and shall remain in full force and effect.

Section 6.05. All ordinances or parts of ordinances of this Borough which are inconsistent herewith expressly shall be and are repealed.

Section 6.06. This Ordinance shall become effective in accordance with law.

Section 6.07. It is declared that enactment of this Ordinance is necessary for the protection, benefit and preservation of health, safety and welafare of the inhabitants of this Borough.

DULY ENACTED AND ORDAINED, this 8th day of December, 1988, by the Council of the Borough of Turbotville, Northumberland County, Pennsylvania, in lawful session duly assembled.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: Jeanne D. Oberly
President of Council

ATTEST:

Paul E. Rauch
Secretary

(SEAL)

EXAMINED AND APPROVED this 8th day of December, 1988.

Lester M. Swoope
Mayor of the Borough of Turbotville,
Northumberland County, Pennsylvania

TURBOTVILLE BOROUGH COUNCIL
NORTHUMBERLAND COUNTY, PENNSYLVANIA

ORDINANCE - 97- 5

The Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, hereby gives notice of its intention to adopt an Ordinance amending the Sewer Use Ordinance Numbers 88-5 and 88-6, adopted December 8, 1988 and standard specifications for the construction and acceptance of water and/or sewer facilities for connection to the Existing Water and/or Sewer or for Extension of the Water and/or Sewer System adopted May 6, 1996.

WHEREAS, the Turbotville Borough sewer system is experiencing ground water inflow/infiltration through house connections, lateral connections and laterals; and

WHEREAS, the ground water inflow/infiltration jeopardizes the Borough's sewer system and wastewater treatment facility and, therefore, the public health, safety and welfare; and

WHEREAS, it is necessary for the Borough to require owners of property served by the Turbotville Borough sewer system to repair, modify, or reconstruct the house connection, lateral connection, or laterals so that they are in conformance with the Standard Specifications for the Construction and Acceptance of Water and/or Sewer Facilities for Connection to the Existing Water and/or Sewer System or for Extension of the Water and/or Sewer System adopted by the Borough on May 6, 1996, as amended to eliminate ground water inflow/infiltration; and

WHEREAS, the Turbotville Borough Council of Northumberland County, Pennsylvania, adopted Sewer Use Ordinance Numbers 88-5 and 88-6, on December 8, 1988; and adopted Standard Specifications for the Construction and Acceptance of Water and/or Sewer Facilities for Connection to the Existing Water and/or Sewer System or for Extension of the Water and/or Sewer System on May 6, 1996; and

WHEREAS, the Borough is desirous of amending Ordinance No. 88-5, Article IV Rules and Regulations Governing Building Sewers and Connections to Sewers, Section 4.05, and Ordinance No. 88-6, Article IV - Prohibiting Waste, Section 4.01.

NOW, THEREFORE, be it ordained that Section 4.05 of the Turbotville Borough Sewer Use Ordinance No. 88-5, is herein amended to read as follows:

Section 4.05. This Borough shall have the right to gain access to and upon the Improved Property, at all reasonable times, after connection of the Building Sewer to the Sewer for the purpose of inspection observation, measurement, sampling, and testing, and the performance of all other functions relating to sewer service rendered by this Borough. If at any time said Building Sewer and the waste being discharged therein from the Improved Property does not comply with the rules and regulations set forth herein or hereinafter adopted, notice of same in writing, shall be given to the Owner of the Improved Property to make the necessary change or repairs within sixty (60) days from the date of receipt of said written notice. If the Owner shall fail or shall refuse to make said necessary change or repairs within said time period, the Borough may, in addition to any other remedies they may have, refuse to permit any Person or Owner to discharge Sanitary Sewage and Industrial Wastes into the Sewer System until such change or repairs shall have been remedied in accordance with the Borough's Standard Specifications for the Construction and Acceptance of Water and/or Sewer Facilities for Connection to the Existing Water and/or Sewer System or for Extension of the Water and/or Sewer System. Before any action is taken to disconnect and/or refuse to permit any Person or Owner to discharge Sanitary Sewage and Industrial Waste into the Sewer System, notice of same in writing, shall be given to the Owner of the Improved Property at least ten (10) days prior to any action taken by the Borough.

AND FURTHER NOW, be it ordained that Section 4.01 of the Turbotville Borough Sewer Use Ordinance No. 88-6, is hereby amended to read as follows:

Section 4.01. No Person or Owner shall discharge or shall cause to be discharged into the Sewer System any storm water, surface water, spring water, ground water, roof runoff, subsurface drainage, building foundation drainage, cellar drainage, or drainage from roof leader connection. Any Owner whose house connection, lateral connection, or lateral is not in compliance with Section 4.01 shall be served with a written notice stating that said house connection, lateral connection, or lateral is in violation and each Owner shall be given sixty (60)

3-.

days for compliance from the date of the receipt of said written Notice. If the Owner shall fail or shall refuse to make said necessary change or repairs within said time period, the Borough may, in addition to any other remedies they may have, refuse to permit any Person or Owner to discharge Sanitary Sewage and Industrial Wastes into the Sewer System until such change or repairs shall have been remedied in accordance with the Borough's Standard Specifications for the Construction and Acceptance of Water and/or Sewer Facilities for Connection to the Existing Water and/or Sewer System or for Extension of the Water and/or Sewer System. Before any action is taken to disconnect and/or refuse to permit any Person or Owner to discharge Sanitary Sewage and Industrial Waste into the Sewer System, notice of same in writing, shall be given to the Owner of the Improved Property at least ten (10) days prior to any action taken by the Borough.

ENACTED AND RESOLVED into an ordinance this 5th day of MAY, 1997.

BOROUGH OF TURBOTVILLE

Attest:

By: _____
President

Christina A. Mensch
Secretary

Approved the 5th day of MAY, 1997.

_____
Mayor

ORDINANCE NO. 9904

AN ORDINANCE OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA, AMENDING ORDINANCE 88-6 AND SETTING NEW USER CHARGES TO BE COLLECTED FROM THE OWNER OF EACH IMPROVED PROPERTY SERVED BY THE SEWER SYSTEM

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, and it is hereby enacted and ordained by Authority of the same as follows:

SECTION ONE: Section 2.03 of Ordinance 88-6 and Section 1 of Ordinance 90-5, as amended, which sets forth the annual flat rate user charge payable for equivalent dwelling unit shall be amended as follows: The annual flat rate user charge payable per equivalent dwelling unit shall be $456.00.

SECTION TWO: All other provisions set forth in Ordinance 88-6, as amended, shall be and shall remain in full force and effect.

SECTION THREE: The rates, hereinabove set forth, shall become effective July 1, 1999.

SECTION FOUR: All ordinances or parts thereof inconsistent herewith are hereby repealed.

ENACTED AND ORDAINED into an Ordinance this 28th day of June, 1999.

ATTEST: BOROUGH OF TURBOTVILLE

Christina G. Mauser
Borough Secretary

By: _____
President of Borough Council

APPROVED the 28th day of June, 1999.

_____
Mayor

TURBOTVILLE BOROUGH COUNCIL
NORTHUMBERLAND COUNTY, PENNSYLVANIA

ORDINANCE NO. 01-01

The Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, hereby gives notice of its intention to adopt an Ordinance amending Ordinance 88-6 adopting Rules and Regulations Governing Use of the Sewer System to add a new Section 6.08 under Article VI - Miscellaneous.

NOW, THEREFORE, be it enacted and ordained that a new Section 6.08 under Article VI - Miscellaneous shall be added to Ordinance No. 88-6, which said new section shall read as follows:

> SECTION 6.08 Any person who shall violate or fail to conform to any of the provisions of this Ordinance shall, in addition to any other remedy that may be exercised by the Borough, upon conviction thereof, be sentenced to pay a fine of not more than One Thousand ($1,000.00) Dollars (as provided by 53 P.S. § 48308 as amended) and costs of prosecution, and in default of payment of such fine and costs, to imprisonment for not more than thirty (30) days. Provided: each day's continuance of a violation shall constitute a separate offense.

All other provisions set forth in Ordinance 88-6, as amended, shall be and shall remain in full force and effect.

All ordinances or parts thereof inconsistent herewith are hereby repealed.

ENACTED AND ORDAINED into an Ordinance this 2nd day of January, 2001.

ATTEST: Christina A. Measel
Borough Secretary

BOROUGH OF TURBOTVILLE
By: Carl Weiss
President of Borough Council

APPROVED the 2nd day of January, 2001.

Mark Reasner
Mayor

TURBOTVILLE BOROUGH COUNCIL
NORTHUMBERLAND COUNTY, PENNSYLVANIA

ORDINANCE NO. 02-01

The Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, hereby gives notice of its intention to adopt an Ordinance amending Ordinance 88-6 Imposing User Charges and Tapping Fees to be Collected from the Owner of Each Improved Property to be Served by the Sewer System to amend Sections 3.02 and 3.03 under Article III - Tapping Fees.

NOW, THEREFORE, be it enacted and ordained that Ordinance No. 88-6, Sections 3.02 and 3.03 under Article III - Tapping Fees shall be amended, which said sections shall read as follows:

SECTION 3.02 A Tapping Fee is hereby imposed and shall be charged against the Owner of any Improved Property whenever such Owner hereafter shall connect such Improved Property with the Sewer System. The Tapping Fee hereby imposed shall be the sum of: (a) $150.00 for each physical connection of a Building Sewer with the Sewer System and (b) the product of $3,000.00 multiplied by the number of Equivalent Dwelling Units applicable to the Improved Property, as determined in accordance with Section 2.03 and 2.04 of this Ordinance.

SECTION 3.03 If any Owner of Improved Property heretofore connected to the Sewer System, or of any Improved Property hereafter connected to the Sewer System, shall alter or expand the use of the Improved Property such that a larger number of Equivalent Dwelling Units shall be applicable to such Improved Property, as determined in accordance with Section 2.04 of this Ordinance, such Owner must apply for a permit in accordance with the provisions of Section 3.01 of this Ordinance, and an additional Tapping Fee in the amount of $3,000.00 multiplied by the difference between the number of Equivalent Dwelling Units applicable to such Improved Property prior to such alteration or expansion and the number of Equivalent Dwelling Units to be applicable thereto immediately thereafter. Such additional Tapping Fee shall be due and payable at the time application is made for such permit.

All other provisions set forth in Ordinance 88-6, as amended, shall be and shall remain in full force and effect.

All ordinances or parts thereof inconsistent herewith are hereby repealed.

ENACTED AND ORDAINED into an Ordinance this 6th day of August, 2001.

ATTEST: BOROUGH OF TURBOTVILLE

_____ By:_____
Borough Secretary President of Borough Council

APPROVED the 6th day of August, 2001.

_____
Mayor

Copy

TURBOTVILLE BOROUGH COUNCIL
NORTHUMBERLAND COUNTY, PENNSYLVANIA

ORDINANCE NO. 01-03

The Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, hereby gives notice of its intention to adopt an Ordinance amending Ordinance 88-6 Imposing User Charges and Tapping Fees to be Collected from the Owner of Each Improved Property to be Served by the Sewer System to amend Section 2.03 under Article II - User Charge.

NOW, THEREFORE, be it enacted and ordained that Ordinance No. 88-6, Section 2.03 under Article II - User Charge shall be amended, which said section shall read as follows:

SECTION 2.03 The User Charge applicable to any Improved Property constituting a Dwelling Unit or Large Consumer shall be calculated, imposed and collected on the basis of the method provided in this Section 2.03.

Each Improved Property shall be charged a User Charge as a specific amount per Equivalent Dwelling Unit applicable to such Improved Property, as determined by the Borough, from time to time. The number of Equivalent Dwelling Units applicable to each Improved Property shall be determined as follows:

Description of Improved Property	Unit of Measurement	Number of EDUs Per Unit of Measurement
Residential Dwelling Unit (year-round or seasonal)	Each Dwelling Unit	1
Retail store, professional offices or other commercial enterprise	1 to 10 employees each additional 10 employees or fraction thereof	1 1
Hotel, motel or boarding house (not including restaurant facilities)	1 to 4 rental rooms each additional 4 rooms or fraction thereof	1 1

Restaurant, club, tavern or other retail food or drink establishment	1 to 25 customer seats each additional 25 seats or fraction thereof	1 1½
Automobile service station or commercial vehicle repair shop	1 or 2 bays with up to 3 empl. 3 or more bays will be ½ per employee over 3 empl.	2 ½
Laundromat	Per washing machine	¼
Car Wash	per bay	1
Beauty parlor or barber shop (attached to or part of a Dwelling Unit)	First chair each additional chair	1 1
Beauty parlor or barber shop (not attached to or part of a Dwelling Unit)	First chair each additional chair	1½ 1
School	Per each 30 pupils, faculty, Administrators and staff	1
Church	each	1½
Fire Company	each	1½
Community Hall	each	1½
Funeral Home	each	2
Industrial/Manufacturing Establishment	1 to 10 employees Each additional 10 Employees or fraction thereof	1 1

All other provisions set forth in Ordinance 88-6, as amended, shall be and shall remain in full force and effect.

All ordinances or parts thereof inconsistent herewith are hereby repealed.

ENACTED AND ORDAINED into an Ordinance this 4th day of August, 2003.

ATTEST:

Christina A. Mensch
Borough Secretary

BOROUGH OF TURBOTVILLE

By: Robert L. Crawford
President of Borough Council

APPROVED the 4th day of August, 2003.

Mark Reaser
Mayor

ORDINANCE NO. 2-09

AN ORDINACE OF THE BOROUGH OF TURBOTVILLE,
NOTHUMBERLAND COUNTY, PENNSYLVANIA,
AMENDING ORDINANCE 99-04 AND SETTING NEW USER
CHARGES TO BE COLLECTED FROM THE OWNER OF
EACH IMPROVED PROPERTY SERVED BY THE SEWER SYSTEM

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, and it is hereby enacted and ordained by Authority of the same as follows:

SECTION I: Ordinance 99-04 and Ordinance 90-5, as amended, which sets forth the annual flat rate user charge payable for equivalent dwelling unit shall be amended as follows: The annual flat rate user charge payable per equivalent dwelling unit shall be $468.00.

SECTION II: All other provisions set forth in Ordinance 99-04, as amended, shall be and shall remain in full force and effect.

SECTION III: The rates, hereinabove set forth, shall become effective February 2, 2009.

SECTION IV: All ordinances or parts there of inconsistent herewith are hereby repealed.

ENACTED AND ORDAINED into an Ordinance this 2nd day of February, 2009.

ATTEST:

Brenda J. Snyder
Borough Secretary

Diana O. Bell
President of Borough Council

APPROVED the 2 day of February, 2009

Scott T. Miller
Mayor

ORDINANCE NO. 2-09

AN ORDINACE OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA, AMENDING ORDINANCE 99-04 AND SETTING NEW USER CHARGES TO BE COLLECTED FROM THE OWNER OF EACH IMPROVED PROPERTY SERVED BY THE SEWER SYSTEM

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Borough Council of the Borough of Turbotville, Northumberland County, Pennsylvania, and it is hereby enacted and ordained by Authority of the same as follows:

SECTION 1: Ordinance 2-09, Ordinance 99-04 and Ordinance 90-5, as amended, which sets forth the annual flat rate user charge payable for equivalent dwelling unit shall be amended as follows:

A. The annual flat rate user charge payable per equivalent dwelling unit shall be $480.00, effective December 1, 2012.

B. The annual flat rate user charge payable per equivalent dwelling unit shall be $492.00, effective December 1, 2013.

C. The annual flat rate user charge payable per equivalent dwelling unit shall be $504.00, effective December 1, 2014 and thereafter.

SECTION II: All other provisions set forth in Ordinance 99-04, as amended, shall be and shall remain in full force and effect.

SECTION III: All ordinances or parts there of inconsistent herewith are hereby repealed.

ENACTED AND ORDAINED into an Ordinance this 5th day of November, 2012.

ATTEST:

BOROUGH OF TURBOTVILLE

Duaine K. Miller
Borough Secretary

By: Francis P. Bat
President of Borough Council

APPROVED the 5 day of November, 2012.

Justin K. Miller
Mayor

ORDINANCE NO. 1-18

AN ORDINANCE OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA AMENDING ORDINANCE NO. 99-04 AND SETTING NEW USER CHARGES TO BE COLLECTED FROM THE OWNER OF EACH IMPROVED PROPERTY SERVED BY THE SEWER SYSTEM

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Borough Council of the Borough of Turbotville, and it is hereby enacted and ordained by the authority of the same as follows:

SECTION 1. Ordinance 11-12, Ordinance 2-09, Ordinance 99-04, and Ordinance 90-5 as amended, which sets forth the annual flat rate user charge payable for equivalent dwelling unit shall be amended as follows:

A. The annual flat rate user charge payable per equivalent dwelling unit shall be $522.00, effective with April 2018 billing and thereafter.

SECTION II. All other provisions set forth in Ordinance No. 99-04, as amended, shall be and shall remain in full force and effect.

SECTION III: All ordinances or parts there of inconsistent herewith are hereby repealed.

ENACTED AND ORDINANCED into an Ordinance this 5 day of February, 2018.

ATTEST:

Diane K. Miller
Borough Secretary

Francis O Bell
President of Council

APPROVED the 5th day of February, 2018.

Mayor

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-23. Please provide a rate comparison calculation for an average residential wastewater customer applying Turbotville Borough's existing rates and then PAWC-WD's proposed tariff rate.

Response: Please see below for the rate comparison calculation for an average residential wastewater customer applying Turbotville Borough's existing rates and then PAWC-WD's proposed tariff rate. Turbotville Borough will adopt PAWC's proposed tariff rates prior to closing of the acquisition.

Average Residential Customer based on 3,900 gallons per month

Turbotville Current Existing Wastewater Rates

	Annual	Bi-Monthly	Monthly
Flat Rate	$ 522.00	$ 87.00	$ 43.50

Note: The Borough of Turbotville will adopt the rates below prior to closing

Under PAWC Proposed Rates based on 3,900 gallons per month

	Unit (Gallons)	Price per 100 Gallons	Monthly
Service Charge			$7.50
Usage Charge per 100 gallons	3,900	$1.2880	$50.23
Total			$57.73

Responsible Witness: John R. Cox

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-24. Please cite Turbotville Borough's definition and measure of an Equivalent Dwelling Unit (EDU) as it applies to wastewater service and state if PAWC-WD will assume this definition and measure at closing. If not, please explain any immediate impact PAWC-WD's different definition and measurement of EDU's would have at closing (i.e., an immediate change in rates due to a change in how an EDU is calculated).

Response: Pursuant to Section 7.1 of the Asset Purchase Agreement, Turbotville Borough will apply PAWC's Tariff at Closing. However, please see below for Turbotville Borough's definition of an Equivalent Dwelling Unit (EDU) which is materially similar to PAWC's current definition. PAWC will continue to bill the customers at the same number of EDUs as established under Turbotville Borough.

Turbotville Borough's definition of an EDU:

"Equivalent Dwelling Unit" shall mean the unit of measure by which a User Charge shall be imposed upon each Improved Property, as determined in this Ordinance or in any subsequent ordinance of the Borough, which shall be deemed to constitute the estimated, equivalent amount of Domestic Sanitary Sewage discharged by a single-family Dwelling Unit.

PAWC's definition of an EDU from the PAWC wastewater tariff:

11. **Dwelling Unit:** A structure or dwelling intended to be occupied as a whole by one family.

12. **Equivalent Dwelling Units (EDU)**: The EDU is a measure based upon the estimated average daily wastewater flow for the type of business, as calculated by the PaDEP Regulation at 25 Pa Code: 73.17 divided by the typical estimated average daily wastewater flow from a current single-family unit.

Responsible Witness: John R. Cox

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-25. The proposed tariff supplement, provided as the Application's Exhibit L, identified metered rates and an unmetered rate. Please separately quantify the number of customers within the requested territory, by customer class, that will be subject to the metered rate schedule and the unmetered rate.

Response: All customers acquired through the acquisition will be billed based on metered rates.

Responsible Witness: John R. Cox

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-26. Please quantify the number of existing customers within the requested territory that PAWC-WD anticipates will be required to install/administer pretreatment as required by the proposed tariff supplement in the Application's Exhibit L.

Response: PAWC anticipates no existing customers within the requested territory will be required to install/administer pretreatment as required by the proposed tariff supplement in the Application's Exhibit L.

Responsible Witness: Michael J. Guntrum PE, PMP

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-27. Please provide an estimate of the future number of connections to Turbotville Borough's wastewater system anticipated for the next 10 years.

Response: The only known development that has the potential to add additional connections to the wastewater system is that of the Yoder Development Group, Inc.'s project referenced in the document in response to A-29 below. This development has twelve lots, but only two are connected to the system.

Responsible Witness: Keith E. Gabage

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-28. Provide calculations supporting PAWC-WD's estimated revenues and expenses identified in the Application's Exhibit P.

Response: See Attachment A-28.

Responsible Witness: Martin Randazzo

Attachment A-28

Turbotville WW

Exhibit P Support

Operating Revenues:

	No. of Customers	Monthly Bill		
Residential	243	$59.18		$ 172,560
Com, Ind & Mun.	26	$229.65		71,650
Total Operating Revenues				$244,210

Operating Expenses:

Purchased Water	$ 500	
Fuel & Power	15,716	
Chemicals	1,780	
Waste Disposal	8,380	
Labor	18,500	
Pensions	0	
Group Insurance	4,905	
Other Benefits	1,544	
Shared Governance and Service Fees	0	
Shared Business Services	4,027	
Contracted Services	24,747	
Regulatory Expenses	0	
Insurance Other Than Group	4,215	
Customer Accounting	2,442	
Rents	0	
General Office Expense	1,557	
Miscellaneous	1,226	
Maintenance	7,665	
Operating Expenses less D & A		$ 97,205
General Taxes		$ 3,370
EBITDA		$ 143,635
Depreciation & Amortization		$ 41,104
EBIT		$ 102,531
Interest Expense		$ 13,757
Income Taxes		36,835
Net Income		$ 51,939

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-29. Please provide a copy of the wastewater system's Deed of Right of Way and Dedication between Yoder Development Group, Inc. and The Borough of Turbotville dated September 4, 2008, referenced in Schedule 4.1(l)(ii) of the Application's APA.

Response: See Attachment A-29.

Responsible Witness: Scott D. Fogelsanger

Attachment A-29

ORIGINAL

DEED OF RIGHT OF WAY AND DEDICATION

THIS DEED OF RIGHT OF WAY AND DEDICATION ("Deed"), made this 4th day of September, 2008, between YODER DEVELOPMENT GROUP, INC. ("Grantor") and THE BOROUGH OF TURBOTVILLE ("Grantee").

WITNESSETH:

That in consideration of One Dollar ($1.00), the receipt whereof is hereby acknowledged, the said Grantor does hereby grant and convey to the said Grantee, its successors and assigns, a perpetual right of way and easement over, under, along and through the lands of the Grantor situated in the Borough of Turbotville, Northumberland County, Pennsylvania, said easement and right of way to be twenty (20) feet in width (ten (10) feet on either side of the sewer line herein conveyed to the Grantee) and located as shown on the survey attached hereto as Exhibit "A" (the "Easement Area") for the purposes hereinafter set forth and, further, does hereby grant, bargain, sell, release and confirm unto the said Grantee the sewer line installed in said Easement Area, subject to the following.

1. The right of way granted herein is for the free ingress, egress and regress to and for said Grantee, its successors and assigns, for the purpose of operating, inspecting, repairing, maintaining and removing the sewer line herein conveyed to Grantee.

2. In the event Grantee is required to disturb the surface of the land within the Easement Area, it will restore such service to a like or better condition than existed prior to such disturbance.

3. No excavation, change of grade nor water impoundment will be made and no structures or dwellings will be placed upon or erected on the Easement Area without the prior written consent of Grantee.

4. This deed shall be binding upon and inure to the benefit of the Grantor and Grantee and to their respective successors and assigns.

IN WITNESS WHEREOF, Yoder Development Group, Inc. has caused this Deed of Right of Way and Dedication to be executed on its behalf by the undersigned duly authorized officer and its corporate seal to be affixed hereto the day and year first above written.

ATTEST:

YODER DEVELOPMENT GROUP, INC.

By: _____
President

COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF Northumberland :

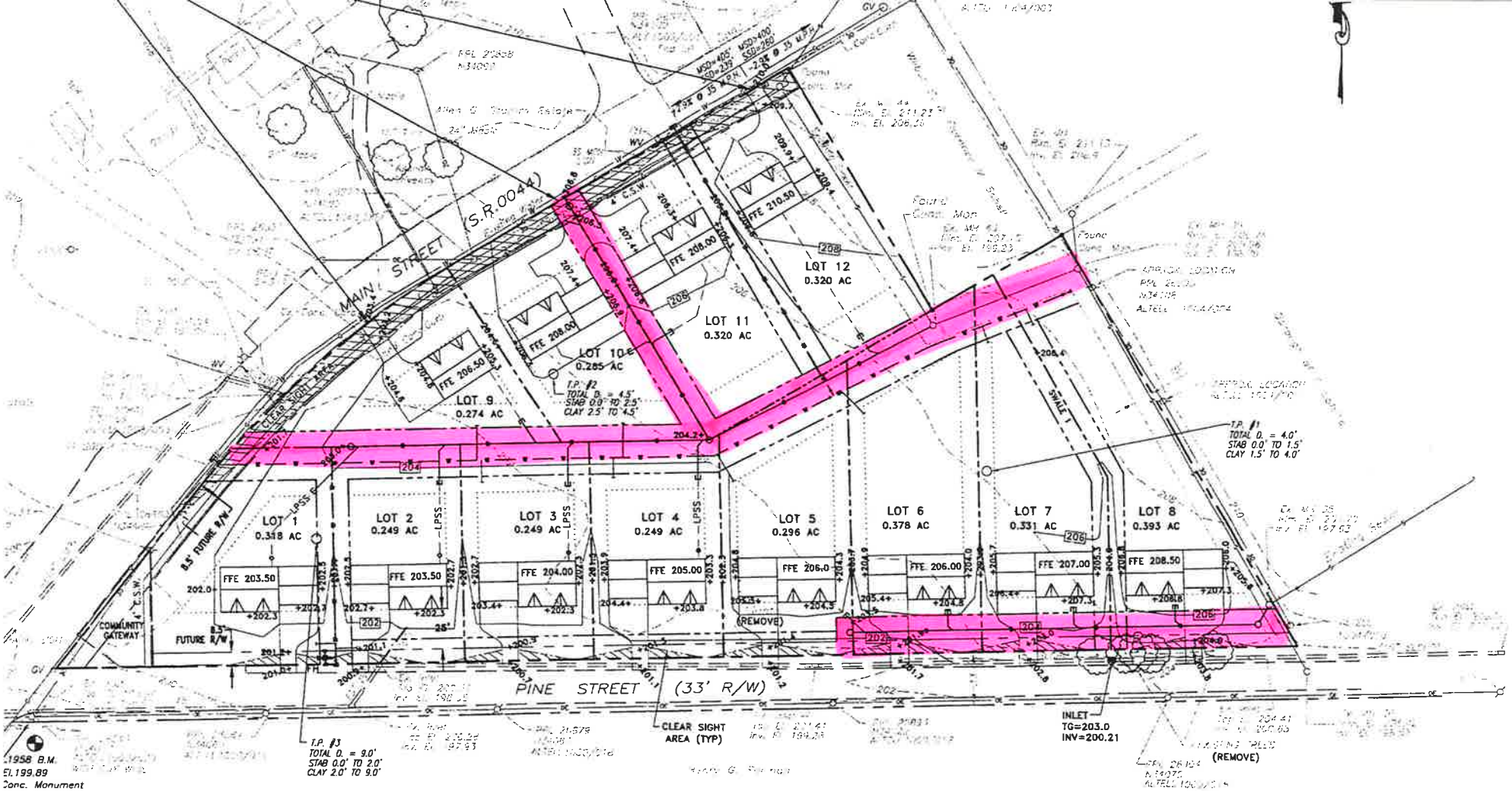
On this, the 4th day of September, 2008, before me, the undersigned officer, personally appeared Robert P. Yoder, Sr., who acknowledged himself to be the President of Yoder Development Group, Inc., the foregoing corporation, and that as such, he, being authorized by such corporation to do so, executed the foregoing Deed of Right of Way and Dedication for the purpose therein contained by signing his name thereon as such.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

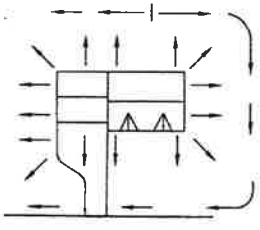
Cathy S. Mensch

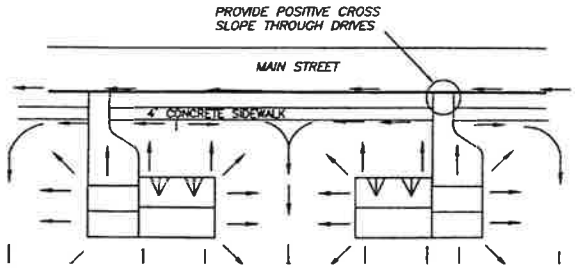
My Commission Expires:

NOTARIAL SEAL
CATHY S. MENSCH, NOTARY PUBLIC
LEWIS TWP., NORTHUMBERLAND COUNTY
MY COMMISSION EXPIRES FEB. 11, 2010



SEWER EXHIBIT "A"





CROSS

General Stormwater Notes

1. The general site grading has been designed in a manor to emulate the characteristics of a "Non-Structural Best Management Practice Design" as described in the PA DEP Best Management Practice Manual. The non-invasive grading techniques, promotes a sheet and shallow flow condition that increases groundwater infiltration and pollution removal.

2. It shall be the site contractor's responsibility to ensure that stormwater runoff is directed away from the proposed house location. It is also the responsibility of the site contractor to ensure that all adjoining property owners are not adversely affected by stormwater runoff as a direct result of their site grading activities.

3. If there is any questions concerning lot grading, the design engineer (Mid-Penn Engineering Corporation) shall be immediately contacted for advise on corrective actions.

4. This property was formerly a heavy manufacturing facility and therefore the current cover condition is primarily compacted gravel. The pre-development runoff characteristic is similar to an impervious condition.

Stormwater management requirements have been achieved through the implementation of amended soils (Topsoil and Seeding). The proposed type of construction (non-invasive grading) is a preferred "Best Management Practice" listed within the PA DEP BMP Manual. Peak rate and volume increases will be mitigated or offset with the construction of large lawn areas. These lawn areas will reduce peak flows. Additionally, subsurface storage will be provided within the voids of the new topsoil cover. Many chemicals and pollutants will be removed by the overland flow of

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

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A-30. Please state whether Turbotville Borough's wastewater system has any outstanding loans (i.e., PENNVEST, etc.). If so, identify the loan amount, lender, and purpose and provide the loan's payment history.

Response: See Attachment A-30. Turbotville Borough has two outstanding general obligation notes. The details associated with these notes are contained in a schedule on page 15 of the 2017 Municipal Annual Audit and Financial Report Municipal Authorities. This schedule shows the issue date, original amount issued, outstanding balance at 1-1-17, principal paid during 2017 and the outstanding balance at 12-31-17. Additional information provided on the notes as follows:

- General Obligation Note, Series of 2004 information:
  - Note documents (DCED Approval, Ordinance, etc.)
  - Amortization schedule based on actual borrowing of $826,850.68

- General Obligation Note, Series of 2016 information:
  - Note Documents (DCED Approval, Ordinance, etc.)
  - Turbotville Borough draws down funds on an "as needed basis"
  - Turbotville Borough makes monthly interest only payments.

Responsible Witness: Scott D. Fogelsanger

Attachment A-30

DCED-CLGS-30 (09/2017)

2017 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
ph: 888-223-6837 | fax: 717-783-1402

City of: _____ County: _____

Borough of: TURBOTVILLE County: NORTHUMBERLAND

Township of: _____ County: _____

Municipality of: _____ County: _____

BALANCE SHEET
December 31, 2017

		GOVERNMENTAL FUNDS			
ASSETS AND OTHER DEBITS		**General Fund**	**Special Revenue *(Including State Liquid Fuels)***	**Capital Projects**	**Debt Service**
100-120	Cash and Investments	206,740	72,061	-	-
140-144	Tax Receivable	-	-	-	-
121-129 145-149	Accounts Receivable (excluding taxes)	-	-	-	-
130	Due From Other Funds	-	-	-	-
131-139 150-159	Other Current Assets	-	-	-	-
160-169	Fixed Assets	-	-	-	-
180-189	Other Debits	-	-	-	-
TOTAL ASSETS AND OTHER DEBITS		$ 206,740	$ 72,061	$ -	$ -
LIABILITIES AND OTHER CREDITS					
210-229	Payroll Taxes & Other Payroll Withholdings	-	-	-	-
200-209 213-239	All Other Current Liabilities	-	-	-	-
230	Due To Other Funds	-	-	-	-
260-269	Long-Term-Liabilities	-	-	-	-
240-259	Current Portion of Long-Term Debt & Other Credits	-	-	-	-
TOTAL LIABILITIES AND OTHER CREDITS		$ -	$ -	$ -	$ -
FUND AND ACCOUNT GROUP EQUITY					
281-284	Contributed Capital	-	-	-	-
290	Investment in General Fixed Assets	-	-	-	-
271-289	Fund Balance/Retained Earnings 12/31	206,740	72,061	-	-
291-299	Other Equity	-	-	-	-
TOTAL FUND AND ACCOUNT GROUP EQUITY		$ 206,740	$ 72,061	$ -	$ -

Total Assets and other Debits minus Total Liabilities and Other Credits must equal the Total Fund and Account Group Equity.

		PROPRIETARY FUNDS		FIDUCIARY FUND	ACCOUNT GROUPS		TOTAL
ASSETS AND OTHER DEBITS		**Enterprise**	**Internal Service**	**Trust & Agency**	**General Fixed Assets**	**General Long Term Debt**	**Memorandum Only**
100-120	Cash and Investments	51,080	-	-	-	-	329,881
140-144	Tax Receivable	-	-	-	-	-	-
121-129							
145-149	Accounts Receivable (excluding taxes)	-	-	-	-	-	-
130	Due From Other Funds	-	-	-	-	-	-
131-139							
150-159	Other Current Assets	-	-	-	-	-	-
160-169	Fixed Assets	435,570	-	-	-	-	435,570
180-189	Other Debits	-	-	-	-	-	-
TOTAL ASSETS AND OTHER DEBITS		$ 486,650	$ -	$ -	$ -	$ -	$ 765,451
LIABILITIES AND OTHER CREDITS							
210-229	Payroll Taxes & Other Payroll Withholdings	-	-	-	-	-	-
200-209							
213-239	All Other Current Liabilities	-	-	-	-	-	-
230	Due To Other Funds	-	-	-	-	-	-
260-269	Long-Term-Liabilities	399,109	-	-	-	-	399,109
240-259	Current Portion of Long-Term Debt & Other Credits	47,740	-	-	-	-	47,740
TOTAL LIABILITIES AND OTHER CREDITS		$ 446,849	$ -	$ -	$ -	$ -	$ 446,849
FUND AND ACCOUNT GROUP EQUITY							
281-284	Contributed Capital	-	-	-	-	-	-
290	Investment in General Fixed Assets	-	-	-	-	-	-
271-289	Fund Balance/Retained Earnings 12/31	39,801	-	-	-	-	318,602
291-299	Other Equity	-	-	-	-	-	-
TOTAL FUND AND ACCOUNT GROUP EQUITY		$ 39,801	$ -	$ -	$ -	$ -	$ 318,602

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	$ 765,451

Total Assets and other Debits minus Total Liabilities and Other Credits must equal the Total Fund and Account Group Equity.

STATEMENT OF REVENUES AND EXPENDITURES
December 31, 2017

REVENUES		GOVERNMENTAL FUNDS			
TAXES		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
301.00	Real Estate Taxes	39,819	20,191	-	-
305.00	Occupation Taxes (levied under municipal code)	354	-	-	-
308.00	Residence Taxes (levied by cities of the 3rd Class)	-	-	-	-
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)	-	-	-	-
310.00	Per Capita Taxes	1,578	-	-	-
310.10	Real Estate Transfer Taxes	9,225	-	-	-
310.20	Earned Income Taxes/Wage Taxes	74,640	-	-	-
310.30	Business Gross Receipts Taxes	-	-	-	-
310.40	Occupation Taxes (levied under Act 511)	-	-	-	-
310.50	Local Services Tax**	1,905	-	-	-
310.60	Amusement/Admission Taxes	-	-	-	-
310.70	Mechanical Device Taxes	-	-	-	-
310.90	Other Local Tax Enabling Act/Act 511/Taxes	-	-	-	-
	_____	-	-	-	-
	_____	-	-	-	-
	_____	-	-	-	-
TOTAL TAXES		$ 127,521	$ 20,191	$ -	$ -
LICENSES & PERMITS					
320-322	All Other Licenses and Permits	125	-	-	-
321.80	Cable Television Franchise Fees	-	-	-	-
TOTAL LICENSES & PERMITS		$ 125	$ -	$ -	$ -
FINES & FORFEITS					
330-332	Fines and Forfeits	1,041	-	-	-
TOTAL FINES & FORFEITS		$ 1,041	$ -	$ -	$ -
INTEREST, RENTS & ROYALTIES					
341.00	Interest Earnings	1,140	209	-	-
342.00	Rents and Royalties	-	-	-	-
TOTAL INTEREST, RENTS & ROYALTIES		$ 1,140	$ 209	$ -	$ -

*** This tax was know as Occupational Privilege Tax (OPT) prior to 2005 and the Emergency and Municipal Services Tax prior to 2008.*

REVENUES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
TAXES		Enterprise	Internal Service	Trust and Agency	Memorandum Only
301.00	Real Estate Taxes	-	-	-	60,010
305.00	Occupation Taxes (levied under municipal code)	-	-	-	354
308.00	Residence Taxes (levied by cities of the 3rd Class)	-	-	-	-
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)	-	-	-	-
310.00	Per Capita Taxes	-	-	-	1,578
310.10	Real Estate Transfer Taxes	-	-	-	9,225
310.20	Earned Income Taxes/Wage Taxes	-	-	-	74,640
310.30	Business Gross Receipts Taxes	-	-	-	-
310.40	Occupation Taxes (levied under Act 511)	-	-	-	-
310.50	Local Services Tax**	-	-	-	1,905
310.60	Amusement/Admission Taxes	-	-	-	-
310.70	Mechanical Device Taxes	-	-	-	-
310.90	Other Local Tax Enabling Act/Act 511/Taxes	-	-	-	-
	_____	-	-	-	-
	_____	-	-	-	-
	_____	-	-	-	-
TOTAL TAXES		$ -	$ -	$ -	$ 147,712
LICENSES & PERMITS					
320-322	All Other Licenses and Permits	-	-	-	125
321.80	Cable Television Franchise Fees	-	-	-	-
TOTAL LICENSES & PERMITS		$ -	$ -	$ -	$ 125
FINES & FORFEITS					
330-332	Fines and Forfeits	-	-	-	1,041
TOTAL FINES & FORFEITS		$ -	$ -	$ -	$ 1,041
INTEREST, RENTS & ROYALTIES					
341.00	Interest Earnings	96	-	-	1,445
342.00	Rents and Royalties	-	-	-	-
TOTAL INTEREST, RENTS & ROYALTIES		$ 96	$ -	$ -	$ 1,445

*** This tax was know as Occupational Privilege Tax (OPT) prior to 2005 and the Emergency and Municipal Services Tax prior to 2008.*

INTERGOVERNMENTAL REVENUES		GOVERNMENTAL FUNDS			
FEDERAL		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
351.03	Highways and Streets	-	-	-	-
351.09	Community Development	-	-	-	-
351.00	All Other Federal Capital and Operating Grants	-	-	-	-
352.01	National Forest	-	-	-	-
352.00	All Other Federal Shared Revenue & Entitlements	-	-	-	-
353.00	Federal Payments in Lieu of Taxes	-	-	-	-
TOTAL FEDERAL		$ -	$ -	$ -	$ -
STATE					
354.03	Highways and Streets	-	-	-	-
354.09	Community Development	-	-	-	-
354.15	Recycling/Act 101	-	-	-	-
354.00	All Other State Capital and Operating Grants	-	-	-	-
355.01	Public Utility Realty Tax (PURTA)	144	-	-	-
355.02 -	355.03 Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback	738	21,832	-	-
355-04	Alcoholic Beverage Licenses	300	-	-	-
355.05	General Municipal Pension System State Aid	-	-	-	-
355.07	Foreign Fire Insurance Tax Distribution	3,314	-	-	-
355.08	Local Share Assessment/Gaming Proceeds	-	-	-	-
355.09	Marcellus Shale Impact Fee Distribution	-	-	-	-
355.00	All Other State Shared Revenues & Entitlements	-	-	-	-
356.00	State Payments in Lieu of Taxes	-	-	-	-
TOTAL STATE		$ 4,496	$ 21,832	$ -	$ -
LOCAL GOVERNMENT UNITS					
357.03	Highways and Streets	-	-	-	-
357.00	All Other Local Government Units Capital and Operating Grants	-	-	-	-
358.00	Local Governmental Unit Shared Payments for Contracted Intergovernmental Services	-	-	-	-
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes		-	-	-
TOTAL LOCAL GOVERNMENT UNITS		$ -	$ -	$ -	$ -

INTERGOVERNMENTAL REVENUES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
FEDERAL		**Enterprise**	**Internal Service**	**Trust and Agency**	**Memorandum Only**
351.03	Highways and Streets	-	-	-	-
351.09	Community Development	-	-	-	-
351.00	All Other Federal Capital and Operating Grants	-	-	-	-
352.01	National Forest	-	-	-	-
352.00	All Other Federal Shared Revenue & Entitlements	-	-	-	-
353.00	Federal Payments in Lieu of Taxes	-	-	-	-
TOTAL FEDERAL		$ -	$ -	$ -	$ -
STATE					
354.03	Highways and Streets	-	-	-	-
354.09	Community Development	-	-	-	-
354.15	Recycling/Act 101	-	-	-	-
354.00	All Other State Capital and Operating Grants	-	-	-	-
355.01	Public Utility Realty Tax (PURTA)	-	-	-	144
355.02 -	355.03 Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback	-	-	-	22,570
355-04	Alcoholic Beverage Licenses	-	-	-	300
355.05	General Municipal Pension System State Aid	-	-	-	-
355.07	Foreign Fire Insurance Tax Distribution	-	-	-	3,314
355.08	Local Share Assessment/Gaming Proceeds	-	-	-	-
355.09	Marcellus Shale Impact Fee Distribution	-	-	-	-
355.00	All Other State Shared Revenues & Entitlements	-	-	-	-
356.00	State Payments in Lieu of Taxes	-	-	-	-
TOTAL STATE		$ -	$ -	$ -	$ 26,328
LOCAL GOVERNMENT UNITS					
357.03	Highways and Streets	-	-	-	-
357.00	All Other Local Government Units Capital and Operating Grants	-	-	-	-
358.00	Local Governmental Unit Shared Payments for Contracted Intergovernmental Services	-	134,045	-	134,045
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes	-	-	-	-
TOTAL LOCAL GOVERNMENT UNITS		$ -	$ 134,045	$ -	$ 134,045

TOTAL INTERGOVERNMENTAL REVENUES	$ 160,373

REVENUES		GOVERNMENTAL FUNDS			
		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
CHARGES FOR SERVICES					
361.00	General Government	430	-	-	-
362.00	Public Safety	662	-	-	-
363.20	Parking	-	-	-	-
363.00	All Other Charges for Highway & Streets Services	-	-	-	-
364.10	Wastewater/Sewage Charges	-	-	-	-
364.30	Solid Water Collection & Disposal Charge (trash)	-	-	-	-
364.60	Host Municipality Fee for Solid Waste Facility	-	-	-	-
364.00	Other Charges for Sanitation Services	-	-	-	-
365.00	Health	-	-	-	-
366.00	Human Services	-	-	-	-
367.00	Culture and Recreation	-	-	-	-
368.00	Airports	-	-	-	-
369.00	Bars	-	-	-	-
370.00	Cemeteries	-	-	-	-
372.00	Electric System				
373.00	Gas System	-	-	-	-
374.00	Housing System	-	-	-	-
375.00	Markets	-	-	-	-
377.00	Transit Systems	-	-	-	-
378.00	Water System	-	-	-	-
379.00	Other Charges for Service	-	-	-	-
TOTAL CHARGES FOR SERVICE		$ 1,092	$ -	$ -	$ -
UNCLASSIFIED OPERATING REVENUES					
383.00	Assessments	-	-	-	-
386.00	Escheats (sale of personal property)	-	-	-	-
387.00	Contributions and Donations from Private Sectors	3,025	-	-	-
388.00	Fiduciary Fund Pension Contributions				
389.00	All Other Unclassified Operating Revenues***	-	-	-	-
TOTAL UNCLASSIFIED OPERATING REVENUES		$ 3,025	$ -	$ -	$ -
OTHER FINANCING SOURCES					
391.00	Proceeds of General Fixed Asset Disposition	656	-	-	-
392.00	Interfund Operating Transfers**	7,200	-	-	-
393.00	Proceeds of General Long Term Debt	-	-	-	-
394.00	Proceeds of Short Term-Debt	-	-	-	-
395.00	Refunds of Prior Year Expenditures	883	-	-	-
TOTAL OTHER FINANCING SOURCES		$ 8,739	$ -	$ -	$ -
TOTAL REVENUES		$ 147,179	$ 42,232	$ -	$ -

*** The total of line 392.00 must match the total of line 492.00*

**** This amount cannot be greater than 1% of "TOTAL REVENUES" in each of the funds.*

REVENUES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
CHARGES FOR SERVICES		**Enterprise**	**Internal Service**	**Trust and Agency**	**Memorandum Only**
361.00	General Government	-	-	-	430
362.00	Public Safety	-	-	-	662
363.20	Parking	-	-	-	-
363.00	All Other Charges for Highway & Streets Services	-	-	-	-
364.10	Wastewater/Sewage Charges	186,447	-	-	186,447
364.30	Solid Water Collection & Disposal Charge (trash)	-	-	-	-
364.60	Host Municipality Fee for Solid Waste Facility	-	-	-	-
364.00	Other Charges for Sanitation Services	-	-	-	-
365.00	Health	-	-	-	-
366.00	Human Services	-	-	-	-
367.00	Culture and Recreation	-	-	-	-
368.00	Airports	-	-	-	-
369.00	Bars	-	-	-	-
370.00	Cemeteries	-	-	-	-
372.00	Electric System	-	-	-	-
373.00	Gas System	-	-	-	-
374.00	Housing System	-	-	-	-
375.00	Markets	-	-	-	-
377.00	Transit Systems	-	-	-	-
378.00	Water System	-	-	-	-
379.00	Other Charges for Service	-	-	-	-
TOTAL CHARGES FOR SERVICE		$ 186,447	$ -	$ -	$ 187,539

UNCLASSIFIED OPERATING REVENUES					
383.00	Assessments	-	-	-	-
386.00	Escheats (sale of personal property)	-	-	-	-
387.00	Contributions and Donations from Private Sectors	-	-	-	3,025
388.00	Fiduciary Fund Pension Contributions			-	-
389.00	All Other Unclassified Operating Revenues***	-	-	-	-
TOTAL UNCLASSIFIED OPERATING REVENUES		$ -	$ -	$ -	$ 3,025

OTHER FINANCING SOURCES					
391.00	Proceeds of General Fixed Asset Disposition	-	-	-	656
392.00	Interfund Operating Transfers	-	-	-	7,200
393.00	Proceeds of General Long Term Debt	-	-	-	-
394.00	Proceeds of Short Term-Debt	-	-	-	-
395.00	Refunds of Prior Year Expenditures	-	-	-	883
TOTAL OTHER FINANCING SOURCES		$ -	$ -	$ -	$ 8,739

TOTAL REVENUES	$ 186,543	$ 134,045	$ -	$ 509,999

*** The total of line 392.00 must match the total of line 492.00*

**** This amount cannot be greater than 1% of "TOTAL REVENUES" in each of the funds.*

EXPENDITURES		GOVERNMENTAL FUNDS			
GENERAL GOVERNMENT		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
400.00	Legislative(Governing) Body	-	-	-	-
401.00	Executive (Manager or Mayor)	502	-	-	-
402.00	Auditing Services/Financial Administration	1,500	-	-	-
403.00	Tax Collection	306	-	-	-
404.00	Solicitor/Legal Services	1,901	-	-	-
405.00	Secretary/Clerk	9,616	-	-	-
406.00	Other General Government Administration	2,973	-	-	-
407.00	IT-Networking Services-Data Processing	-	-	-	-
408.00	Engineering Services	-	-	-	-
409.00	General Government Buildings and Plant	31,712	-	-	-
TOTAL GENERAL GOVERNMENT		$ 48,510	$ -	$ -	$ -
PUBLIC SAFETY					
410.00	Police	-	-	-	-
411.00	Fire	3,314	14,277	-	-
412.00	Ambulance/Rescue	-	-	-	-
413.00	UCC and Code Enforcement	75	-	-	-
414.00	Planning and Zoning	25	-	-	-
415.00	Emergency Management & Communications	-	-	-	-
416.00	Militia and Armories	-	-	-	-
417.00	Examination of Licensed Occupations	-	-	-	-
418.00	Public Scales (weights and measures)	-	-	-	-
419.00	Other Public Safety	1,366	-	-	-
TOTAL PUBLIC SAFETY		$ 4,780	$ 14,277	$ -	$ -
HEALTH AND HUMAN SERVICES					
420.00-425.00	Health and Human Services	-	-	-	-
PUBLIC WORKS - SANITATION					
426.00	Recycling Collection and Disposal	-	-	-	-
427.00	Solid Waste Collection and Disposal (trash)	498	-	-	-
428.00	Weed Control	91	-	-	-
429.00	Wastewater/Sewage Collection & Treatment	-	-	-	-
TOTAL PUBLIC WORKS - SANITATION		$ 589	$ -	$ -	$ -

EXPENDITURES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
GENERAL GOVERNMENT		**Enterprise**	**Internal Service**	**Trust and Agency**	**Memorandum Only**
400.00	Legislative(Governing) Body	-	-	-	-
401.00	Executive (Manager or Mayor)	-	-	-	502
402.00	Auditing Services/Financial Administration	-	-	-	1,500
403.00	Tax Collection	-	-	-	306
404.00	Solicitor/Legal Services	-	-	-	1,901
405.00	Secretary/Clerk	-	-	-	9,616
406.00	Other General Government Administration	-	-	-	2,973
407.00	IT-Networking Services-Data Processing	-	-	-	-
408.00	Engineering Services	-	-	-	-
409.00	General Government Buildings and Plant	-	-	-	31,712
TOTAL GENERAL GOVERNMENT		$ -	$ -	$ -	$ 48,510
PUBLIC SAFETY					
410.00	Police	-	-	-	-
411.00	Fire	-	-	-	17,591
412.00	Ambulance/Rescue	-	-	-	-
413.00	UCC and Code Enforcement	-	-	-	75
414.00	Planning and Zoning	-	-	-	25
415.00	Emergency Management & Communications	-	-	-	-
416.00	Militia and Armories	-	-	-	-
417.00	Examination of Licensed Occupations	-	-	-	-
418.00	Public Scales (weights and measures)	-	-	-	-
419.00	Other Public Safety	-	-	-	1,366
TOTAL PUBLIC SAFETY		$ -	$ -	$ -	$ 19,057
HEALTH AND HUMAN SERVICES					
420.00-425.00	Health and Human Services	-	-	-	-
PUBLIC WORKS - SANITATION					
426.00	Recycling Collection and Disposal	-	-	-	-
427.00	Solid Waste Collection and Disposal (garbage)	-	-	-	498
428.00	Weed Control	-	-	-	91
429.00	Wastewater/Sewage Collection & Treatment	174,528	-	-	174,528
TOTAL PUBLIC WORKS - SANITATION		$ 174,528	$ -	$ -	$ 175,117

EXPENDITURES		GOVERNMENTAL FUNDS			
PUBLIC WORKS - HIGHWAYS & STREETS		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
430.00	General Services - Administration	8,603	-	-	-
431.00	Cleaning of Streets and Gutters	-	-	-	-
432.00	Winter Maintenance - Snow Removal	1,305	-	-	-
433.00	Traffic Control Devices	889	-	-	-
434.00	Street Lighting	10,788	-	-	-
435.00	Sidewalks and Crosswalks	2,369	-	-	-
436.00	Storm Sewers and Drains	-	-	-	-
437.00	Repairs of Tools and Machinery	27,616	-	-	-
438.00	Maintenance & Repairs of Roads & Bridges	-	50,511	-	-
439.00	Highway Construction and Rebuilding Projects	6,444	-	-	-
TOTAL PUBLIC WORKS - HIGHWAY & STREETS		$ 58,014	$ 50,511	$ -	$ -
PUBLIC WORKS - OTHER SERVICES					
440.00	Airports	-	-	-	-
441.00	Cemeteries	-	-	-	-
442.00	Electric System	-	-	-	-
443.00	Gas System	-	-	-	-
444.00	Markets	-	-	-	-
445.00	Parking	-	-	-	-
446.00	Storm Water and Flood Control	-	-	-	-
447.00	Transit System	-	-	-	-
448.00	Water System	21,370	-	-	-
449.00	Water Transport and Terminals	-	-	-	-
TOTAL PUBLIC WORKS - OTHER SERVICES		$ 21,370	$ -	$ -	$ -
CULTURE AND RECREATION					
451.00	Culture - Recreation Administration	-	-	-	-
452.00	Participant Recreation	1,462	-	-	-
453.00	Spectator Recreation	-	-	-	-
454.00	Parks	-	-	-	-
455.00	Shade Trees	-	-	-	-
456.00	Libraries	1,900	-	-	-
457.00	Civil and Military Celebrations	50	-	-	-
458.00	Seniors' Citizen Centers	-	-	-	-
459.00	Other Culture and Recreation	-	-	-	-
TOTAL CULTURE AND RECREATION		$ 3,412	$ -	$ -	$ -
COMMUNITY DEVELOPMENT					
461.00	Conservation of Natural Resources	-	-	-	-
462.00	Community Development and Housing	-	-	-	-
463.00	Economic Development	-	-	-	-
464.00	Economic Opportunity	-	-	-	-
465.00 - 469.00	All Other Community Development	100	-	-	-
TOTAL COMMUNITY DEVELOPMENT		$ 100	$ -	$ -	$ -

EXPENDITURES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
PUBLIC WORKS - HIGHWAYS & STREETS		Enterprise	Internal Service	Trust and Agency	Memorandum Only
430.00	General Services - Administration	-	-	-	8,603
431.00	Cleaning of Streets and Gutters	-	-	-	-
432.00	Winter Maintenance - Snow Removal	-	-	-	1,305
433.00	Traffic Control Devices	-	-	-	889
434.00	Street Lighting	-	-	-	10,788
435.00	Sidewalks and Crosswalks	-	-	-	2,369
436.00	Storm Sewers and Drains	-	-	-	-
437.00	Repairs of Tools and Machinery	-	-	-	27,616
438.00	Maintenance & Repairs of Roads & Bridges	-	-	-	50,511
439.00	Highway Construction and Rebuilding Projects	-	-	-	6,444
TOTAL PUBLIC WORKS - HIGHWAY & STREETS		$ -	$ -	$ -	$ 108,525
PUBLIC WORKS - OTHER SERVICES					
440.00	Airports	-	-	-	-
441.00	Cemeteries	-	-	-	-
442.00	Electric System	-	-	-	-
443.00	Gas System	-	-	-	-
444.00	Markets	-	-	-	-
445.00	Parking	-	-	-	-
446.00	Storm Water and Flood Control	-	-	-	-
447.00	Transit System	-	-	-	-
448.00	Water System	-	130,445	-	151,815
449.00	Water Transport and Terminals	-	-	-	-
TOTAL PUBLIC WORKS - OTHER SERVICES		$ -	$ 130,445	$ -	$ 151,815
CULTURE AND RECREATION					
451.00	Culture - Recreation Administration	-	-	-	-
452.00	Participant Recreation	-	-	-	1,462
453.00	Spectator Recreation	-	-	-	-
454.00	Parks	-	-	-	-
455.00	Shade Trees	-	-	-	-
456.00	Libraries	-	-	-	1,900
457.00	Civil and Military Celebrations	-	-	-	50
458.00	Seniors' Citizen Centers	-	-	-	-
459.00	Other Culture and Recreation	-	-	-	-
TOTAL CULTURE AND RECREATION		$ -	$ -	$ -	$ 3,412
COMMUNITY DEVELOPMENT					
461.00	Conservation of Natural Resources	-	-	-	-
462.00	Community Development and Housing	-	-	-	-
463.00	Economic Development	-	-	-	-
464.00	Economic Opportunity	-	-	-	-
465.00 - 469.00	All Other Community Development	-	-	-	100
TOTAL COMMUNITY DEVELOPMENT		$ -	$ -	$ -	$ 100

EXPENDITURES		GOVERNMENTAL FUNDS			
DEBT SERVICE		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
471.00	Debt Principal (short-term and long-term)	-	-	-	-
472.00	Debt Interest (short-term and long-term)	-	-	-	-
475.00	Fiscal Agent Fees	-	-	-	-
TOTAL DEBT SERVICE		$ -	$ -	$ -	$ -
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS					
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	2,815	-	-	-
482.00	Judgments and Losses	-	-	-	-
483.00	Pension/Retirement Fund Contributions	-	-	-	-
484.00	Workers Compensation Insurance	1,547	-	-	-
487.00	Other Group Insurance Benefits	8,925	-	-	-
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS		$ 13,287	$ -	$ -	$ -
INSURANCE					
486.00	Insurance, Casualty, and Surety	7,408	-	-	-
UNCLASSIFIED OPERATING EXPENDITURES					
488.00	Fiduciary Fund Benefits and Refunds Paid				
489.00	All Other Unclassified Expenditures***	-	-	-	-
TOTAL UNCLASSIFIED OPERATING EXPENDITURES		$ -	$ -	$ -	$ -
OTHER FINANCING USES					
491.00	Refund of Prior Year Revenues	-	-	-	-
492.00	Interfund Operating Transfers**	-	-	-	-
493.00	Other Financing Uses	-	-	-	-
TOTAL OTHER FINANCING USES		$ -	$ -	$ -	$ -
TOTAL EXPENDITURES		$ 157,470	$ 64,788	$ -	$ -
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		$ (10,291)	$ (22,556)	$ -	$ -

** *The total of line 492.00 must match the total of line 392.00*

*** *This amount cannot be greater than 1% of "TOTAL EXPENDITURES" in each of the funds.*

EXPENDITURES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
DEBT SERVICE		**Enterprise**	**Internal Service**	**Trust and Agency**	**Memorandum Only**
471.00	Debt Principal (short-term and long-term)	-	-	-	-
472.00	Debt Interest (short-term and long-term)	-	-	-	-
475.00	Fiscal Agent Fees	-	-	-	-
TOTAL DEBT SERVICE		$ -	$ -	$ -	$ -
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS					
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	-	-	-	2,815
482.00	Judgments and Losses	-	-	-	-
483.00	Pension/Retirement Fund Contributions	-	-	-	-
484.00	Workers Compensation Insurance	-	-	-	1,547
487.00	Other Group Insurance Benefits	-	-	-	8,925
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS		$ -	$ -	$ -	$ 13,287
INSURANCE					
486.00	Insurance, Casualty, and Surety	-	-	-	7,408
UNCLASSIFIED OPERATING EXPENDITURES					
488.00	Fiduciary Fund Benefits and Refunds Paid			-	-
489.00	All Other Unclassified Expenditures***	-	-	-	-
TOTAL UNCLASSIFIED OPERATING EXPENDITURES		$ -	$ -	$ -	$ -
OTHER FINANCING USES					
491.00	Refund of Prior Year Revenues	-	-	-	-
492.00	Interfund Operating Transfers**	3,600	3,600	-	7,200
493.00	Other Financing Uses	-	-	-	-
TOTAL OTHER FINANCING USES		$ 3,600	$ 3,600	$ -	$ 7,200
TOTAL EXPENDITURES		$ 178,128	$ 134,045	$ -	$ 534,431
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		$ 8,415	$ -	$ -	$ (24,432)

*** The total of line 492.00 must match the total of line 392.00*

**** This amount cannot be greater than 1% of "TOTAL EXPENDITURES" in each of the funds.*

DEBT STATEMENT

Purpose	Bond (B) Note (N)	Issue Date (year)	Maturity Date(year)	Original Amount of Issue	Outstanding Beginning of Year	Principal Incurred This Year(Additions)	Principal Paid This Year	Current Year Accretion of Compound Interest Bonds	Outstanding Year End	Plus (less) Unamortized Premium (Discount)	Total Balance
GENERAL OBLIGATION BONDS AND NOTES											
General Obligation Bond	B	2004	2023	$ 826,851	$ 360,620	$ -	$ 46,018	$ -	$ 314,602	$ -	$ 314,602
General Obligation Bond	B	2016	2018	$ 500,000	$ 95,203	$ 37,044	$ -	$ -	$ 132,247	$ -	$ 132,247
											$ -
											$ -
											$ -
											$ -
											$ -
											$ -
											$ -
REVENUE BONDS AND NOTES											
											$ -
											$ -
											$ -
											$ -
											$ -
LEASE RENTAL DEBT											
											$ -
											$ -
											$ -
											$ -
OTHER											
											$ -
											$ -
											$ -
											$ -

Total bonds and notes outstanding	$ 446,849
Capitalized lease obligations	-
Other debt	-
TOTAL OUTSTANDING DEBT	$ 446,849

STATEMENT OF CAPITAL EXPENDITURES

CATEGORY:	Capital Purchases	Capital Construction	Total
Electric	$ -	$ -	$ -
Fire	-	-	-
Gas System	-	-	-
General Government	-	-	-
Health	-	-	-
Housing	-	-	-
Libraries	-	-	-
Mass Transit	-	-	-
Parks	-	-	-
Police	-	-	-
Recreation	-	-	-
Sewer	-	-	-
Solid Waste	-	-	-
Streets/Highways	23,394	-	23,394
Water	-	-	-
Other (Please specify)	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-
_____	-	-	-

TOTAL CAPITAL EXPENDITURES* ..... $ 23,394

**Capital expenditures are generally considered to be those which result in additions to the value of fixed assets (land, buildings, and other structures, machinery and equipment).*

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year
*(including all employees and elected officials)*** ..... $ 121,345

***Use income from Box 16 of theW-3 Statement*

Richard C. Lowe, PC

CERTIFIED PUBLIC ACCOUNTANT

5 SOUTH MAIN STREET

MUNCY, PA 17756

PHONE: (570) 935-0172 FAX: (570) 935-0174

INDEPENDENT AUDITOR'S REPORT

To the Borough Council
Turbotville Borough
Turbotville, Pennsylvania

We have audited the accompanying statutory DCED-CLGS-30 2017 Municipal Annual Audit and Financial Report of Turbotville Borough (Borough), which comprises the statutory balance sheet for each fund type and account groups as of December 31, 2017, and the statement of revenues and expenditures for each fund type for the year then ended.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the financial reporting provisions prescribed or permitted by the Department of Community and Economic Development of the Commonwealth of Pennsylvania (DCED). Management is also responsible for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the annual audit and financial report Form DCED-CLGS-30 referred to in the first paragraph present fairly, in all material respects, the balance sheet of each of the fund type and account groups of the Borough as of December 31, 2017, and the related statement of revenues and expenditures for each fund type for the year then ended, in accordance with the financial reporting provisions prescribed or permitted by the Department of Community and Economic Development of the Commonwealth of Pennsylvania (DCED).

Basis of Accounting

The financial statements are prepared on the basis of the financial reporting provisions prescribed or permitted by the DCED, which is a basis of accounting other than accounting principles generally accepted in the United States of America, to comply with the requirements of DCED. As permitted by the DCED, the Borough prepares its annual audit and financial report on the modified cash basis of accounting; and did not include the required note disclosures and supplementary information, which is permitted by DCED, which practices differ from accounting principles generally accepted in the United States of America. The effects on the financial statements of the significant differences between the modified cash basis of accounting and accounting principles generally accepted in the United States of America are that revenues are recorded when received rather than earned and expenditures are recognized when paid rather when incurred except for proprietary funds. Only related Borough's receivables/payables are recognized as assets while no fixed assets or infrastructure assets are capitalized and depreciated except for enterprise funds; and, non-capital related loans payable to third parties are recognized as liabilities while other long-term obligations, such as capital related bonds payable except for enterprise funds and compensated absences, are not recognized. Our opinion is not modified with respect to that matter.

Restriction on Use

This report is intended solely for the information and use of the governing body and the management of the Borough, for filing with the Department of Community and Economic Development and the County Clerk of Courts and is not intended to be and should not be used by anyone other than those specified parties.

Reil C Lowe, P. C.

Muncy, Pennsylvania
February 27, 2018

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

CERTIFICATE OF APPROVAL
LOCAL GOVERNMENT UNIT DEBT ACT

DATE: May 24, 2004

APPROVAL NO.: GON-11582

AMOUNT: $850,000.00

APPROVAL NO.: E-3536

AMOUNT: $850,000.00

For Secretary of Community and Economic Development

BOROUGH OF TURBOTVILLE,
NORTHUMBERLAND COUNTY, PENNSYLVANIA
$850,000 GENERAL OBLIGATION NOTE, SERIES OF 2004

APPLICATION FOR APPROVAL TO DELIVER NOTE
UNDER THE LOCAL GOVERNMENT UNIT DEBT ACT
AND
APPLICATION FOR APPROVAL TO EXCLUDE SELF-LIQUIDATING
DEBT UNDER SUCH ACT

TO: THE DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT OF THE COMMONWEALTH OF PENNSYLVANIA

Application is made by the BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania (the "Local Government Unit"), to the Department of Community and Economic Development (the "Department") of the Commonwealth of Pennsylvania (the "Commonwealth"), pursuant to the Local Government Unit Debt Act (the "Act") of the

Commonwealth, for approval to deliver note of the Local Government Unit, and for approval to exclude self-liquidating debt to determine net nonelectoral debt. The Local Government Unit, acting through its proper officers, sets forth and certifies as follows:

1. The debt proposed to be issued will be evidenced by a general obligation note, will constitute nonelectoral debt, will be in the maximum principal amount of $850,000, and will be issued in connection with a refunding project of the Local Government Unit (the "Project").

2. Attached hereto and made part hereof is a complete and accurate transcript of the proceedings relating to the proposed note, which transcript of proceedings consists of the following:

a. A certified copy of the ordinance, *inter alia*, prescribing the manner of sale of the note, authorizing the note and awarding the note, together with appropriate proofs of proper publication;

b. A certified copy of the accepted bid or proposal for purchase of the note; and

c. A Debt Statement prepared pursuant to the Act, to which is appended an appropriate Borrowing Base Certificate as required by the Act.

3. The debt proposed to be issued will be issued in connection with the refinancing of certain costs of the sanitary sewage facilities serving properties located within the Local Government Unit and with respect to which the Local Government Unit levies rates and charges. A report to the Local Government Unit from Uni-Tec Consulting Engineers Inc., an

engineer qualified by appropriate experience with respect to the financing of water and sewer systems, in compliance with 53 Pa.C.S. §8026, is attached and made part hereof.

4. The filing of this Application has been authorized by appropriate action of the governing body of the Local Government Unit (See the ordinance referred to in Paragraph 2.a.).

IN WITNESS WHEREOF, the Local Government Unit causes this Application to be executed in its name and in its behalf by the President or Vice President of the Council and its official seal to be affixed hereto and attested by the Secretary of the Local Government Unit, all as of the 26th day of April, 2004.

BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania

By: Patrick Betz
~~(Vice)~~ President of Council

ATTEST:

Christine A. Mensch
Secretary

(SEAL)

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

ORDINANCE NO. 002-04

AN ORDINANCE

OF THE COUNCIL OF THIS BOROUGH INCURRING NONELECTORAL DEBT TO BE EVIDENCED BY A GENERAL OBLIGATION NOTE TO BE DESIGNATED AS THIS BOROUGH'S GENERAL OBLIGATION NOTE, SERIES OF 2004, IN THE MAXIMUM PRINCIPAL AMOUNT OF EIGHT HUNDRED FIFTY THOUSAND DOLLARS ($850,000), TO PROVIDE FUNDS FOR AND TOWARD (1) REFUNDING THE OUTSTANDING PRINCIPAL BALANCE OF THE GENERAL OBLIGATION NOTE, SERIES OF 1988, OF THIS BOROUGH, (2) REFUNDING THE OUTSTANDING PRINCIPAL BALANCE OF THE GENERAL OBLIGATION NOTE, SERIES OF 1990, OF THIS BOROUGH, AND (3) PAYING THE COSTS, FEES AND EXPENSES RELATED TO SUCH REFUNDING; SETTING FORTH THE FINDING THAT IT IS IN THE BEST FINANCIAL INTERESTS OF THIS BOROUGH TO SELL THE NOTE AT PRIVATE SALE UPON INVITED BIDDING; ACCEPTING A CERTAIN PROPOSAL FOR PURCHASE OF SUCH GENERAL OBLIGATION NOTE AT PRIVATE SALE UPON INVITED BIDDING; SETTING FORTH THE TERMS AND SUBSTANTIAL FORM OF SUCH GENERAL OBLIGATION NOTE AND AUTHORIZING EXECUTION AND AUTHENTICATION THEREOF; PLEDGING THE FULL FAITH, CREDIT AND TAXING POWER OF THIS BOROUGH IN SUPPORT OF SUCH GENERAL OBLIGATION NOTE; APPOINTING A PAYING AGENT AND A SINKING FUND DEPOSITARY; SETTING FORTH CERTAIN COVENANTS AND REPRESENTATIONS RELATING TO THE FEDERAL INCOME TAX STATUS OF THE INTEREST TO BE PAID ON SAID GENERAL OBLIGATION NOTE; AUTHORIZING APPROPRIATE OFFICERS OF THIS BOROUGH TO TAKE CERTAIN ACTIONS AND TO EXECUTE CERTAIN DOCUMENTS IN CONNECTION WITH ISSUANCE OF SAID GENERAL OBLIGATION NOTE; AND REPEALING ALL ORDINANCES OR PARTS OF ORDINANCES INSOFAR AS THE SAME SHALL BE INCONSISTENT HEREWITH.

WHEREAS, The Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), is a municipal corporation (a borough) of the Commonwealth of Pennsylvania (the "Commonwealth") and is governed by its Council; and

WHEREAS, the Borough heretofore incurred indebtedness for the purpose of acquiring and/or constructing alterations, additions, renovations, replacements and improvements to the sanitary sewage collection, transportation, treatment and disposal system serving the Borough (the "Sewer System"), such indebtedness being evidenced by a General Obligation Note, Series of 1988, dated December 15, 1988, in the original stated maximum principal amount of $650,000 (the "1988 Note") issued to the United States of America, acting by and through the Farmers Home Administration, United States Department of Agriculture, now the Rural Utility Service of the United States Department of Agriculture ("RUS"); and

WHEREAS, The Department of Community Affairs, now the Department of Community and Economic Development (the "Department"), of the Commonwealth, approved the proceedings of this Borough related to the increase of its indebtedness by issuance of the 1988 Note, which approval of the Department was evidenced by Certificate of Approval No. GON-7728, dated December 7, 1988; and

WHEREAS, the Borough heretofore incurred additional indebtedness for the purpose of completing the aforementioned alterations, additions, renovations, replacements and improvements to the Sewer System, such indebtedness being evidenced by a General Obligation

Note, Series of 1990, dated April 15, 1990, in the original stated principal amount of $280,000, issued to the RUS (the "1990 Note"); and

WHEREAS, The Department approved the proceedings of this Borough related to the increase of its indebtedness by issuance of the 1990 Note, which approval of the Department was evidenced by Certificate of Approval No. GON-8046, dated April 11, 1990; and

WHEREAS, The 1988 Note and the 1990 Note, collectively, are referred to herein from time to time as the "Prior Notes"; and

WHEREAS, The Council of the Borough, in contemplation of sale and of issuance of a general obligation note in the maximum principal amount of $850,000 to provide funds for and toward the Project (hereinafter defined), has determined that such general obligation note: (a) should be offered for sale at private sale upon invited bidding; and (b) should be offered for sale at a price of not less than 100% of principal amount thereof; and

WHEREAS, A Request for Loan Proposals dated February 17, 2004 (the "Request for Loan Proposals"), was prepared and circulated on behalf of the Borough to various banks, soliciting proposals to purchase such general obligation note; and

WHEREAS, Competitive bids or proposals for purchase of such general obligation note were received and reviewed by Council at a special meeting held on March 29, 2004; and

WHEREAS, A proper written and sealed bid or proposal for purchase of such general obligation note was received from The Turbotville National Bank (the "Bank"), of Turbotville, Pennsylvania, was determined by Council to be the highest and best bid or proposal for

purchase of such general obligation note, and was accepted by resolution duly adopted by Council; and

WHEREAS, The Council of the Borough desires to ratify and confirm acceptance of such bid or proposal of the Bank, to award the Note (hereinafter defined) to the Bank, at private sale upon invited bidding, and to incur nonelectoral debt in connection with the Project (hereinafter defined), pursuant to provisions of the Act.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED, by the Council of the Borough, as follows:

Section 1. The Council of the Borough does authorize and direct the issuance of a general obligation note of the Borough, pursuant to this Ordinance, in the maximum principal amount of $850,000, to be designated generally as the "General Obligation Note, Series of 2004" (the "Note"), in accordance with the Act, to provide funds for and toward (1) refunding the Prior Notes and (2) paying the costs, fees and expenses related to such refunding, including costs, fees and expenses of financing (the "Project").

Section 2. The Council of the Borough expresses its finding that it is in the best financial interests of the Borough to sell the Note at private sale upon invited bidding and determines that the debt to be incurred pursuant to this Ordinance and to be evidenced by the Note shall be nonelectoral debt of the Borough.

Section 3. A brief description of the Project is set forth in Section 1. The refunding of the Prior Notes is authorized and permitted under and pursuant to 53 Pa.C.S.

§8241(b)(1) (reducing total debt service over the life of the series). The estimated remaining useful life of the Sewer System financed by the Prior Notes is at least twenty-six (26) years.

Section 4. The Council of the Borough shall and does hereby accept the bid or proposal of the Bank for purchase of the Note submitted to Council on March 29, 2004, under the terms and conditions thereof and of the Request for Loan Proposals; and the Note shall be and is awarded to the Bank in accordance with the terms and conditions of the Request for Loan Proposals and such bid or proposal, the original of which is on file with the Secretary of the Borough, at private sale, at a dollar price of $850,000 (100% of principal amount), the Bank having submitted such bid or proposal in accordance with provisions of the Act. The Council of the Borough does hereby authorize, approve, ratify and confirm the acceptance of such bid or proposal and the execution of an acceptance thereof on behalf of this Borough by the President or Vice President of the Council.

Section 5. The Note, when issued, will be a general obligation note of the Borough.

Section 6. The Note shall be registered in form, shall be numbered 1, shall be in the denomination of $850,000 (or any lesser principal amount as shall be drawn and borrowed against the Note), shall be dated as of the date of delivery thereof to the Bank, and shall bear interest at the rate per annum and shall be payable as to principal and interest as set forth in Section 7. The Bank shall make an advance of the proceeds of the Note to the Borough at the time of delivery of the Note to the Bank, in such amount as shall be specified in a written request of the

Borough signed by at least two (2) authorized officers of the Borough as the amount required to fund the Project, the amount of such advance not to exceed $850,000.

The Borough covenants that the proceeds of the Note advanced to the Borough by the Bank shall be applied solely to payment or reimbursement of costs, as "costs" is defined in the Act, of the Project, as that term is defined in this Ordinance.

Section 7. The Note shall bear interest at the rate or rates per annum and the principal of the Note shall be payable in 79 equal installments of principal and interest due and payable quarterly on March 15, June 15, September 15 and December 15 of each year, with the first such installment being due and payable on June 15, 2004.

Notwithstanding any other provision of this Ordinance, the entire principal balance of the Note and all accrued and unpaid interest thereon shall be due and payable on December 15, 2023.

Section 8. The Borough hereby appoints the Bank as the paying agent and sinking fund depositary for the Note and directs that the principal of, redemption premium, if any, and interest on the Note shall be payable at the principal office of the Bank in Turbotville, Pennsylvania, in lawful money of the United States of America.

Section 9. The Borough hereby appoints the Bank to act as registrar with respect to the Note. The Bank, by acceptance of the Note, agrees to establish and maintain on behalf of the Borough a book or other record into which it shall enter the name and address of the registered owner, from time to time, of the Note and shall register any transfer of ownership of the Note. Such

book or other record shall be open to inspection by the Borough or its duly authorized agents during normal banking business hours of the Bank.

The Borough and the Bank, acting as registrar and paying agent for the Note, may deem and treat the person in whose name the Note shall be registered as the absolute owner thereof for all purposes, and payment of the principal of, premium, if any, and interest on the Note shall be made only to or upon the order of the registered owner or the legal representative of such registered owner, but registration of a transfer of ownership may be made as herein provided. All payments made to or upon the order of the registered owner of the Note shall be valid and effectual to satisfy and discharge liability upon the Note, to the extent of the sum or sums so paid, and neither the Borough nor the Bank, as paying agent, shall be affected by any notice to the contrary.

Registration of the transfer of ownership of the Note shall be made only upon surrender of the Note to the Bank, acting as note registrar, at its principal office in Turbotville, Pennsylvania, accompanied by a written assignment and instructions in form satisfactory to the Bank, as note registrar, duly executed by the registered owner of the Note or the attorney-in-fact or legal representative of such registered owner. The Bank, as note registrar, shall record the transfer of ownership of the Note upon the registration book or record maintained by the Bank on behalf of the Borough for such purpose, shall enter the name of the transferee as registered owner of the Note upon the Note in the space provided for such purpose, and shall deliver the Note to the transferee.

Section 10. The Note shall be subject to redemption prior to maturity, at the option of the Borough, as a whole or in part, on any date, upon payment of the principal amount to be

redeemed, together with accrued interest thereon to the date fixed for redemption, without premium or penalty.

In the case of any partial redemption of the Note, the Borough shall have the privilege to designate the principal installment(s) of the Note against which the redeemed principal amount shall be applied, but if the Borough shall not make such designation, the redeemed principal amount shall be applied against the installment(s) of principal last (by date) due and payable on the Note and such partial redemption shall not postpone or interrupt payments of future installments of principal due on the Note, which shall continue to be due and payable until payment of the outstanding principal balance of the Note in full.

Payment of the redemption price of the Note, or of any portion thereof called for redemption, shall be made only upon presentation of the Note at the principal office of the Bank, acting as paying agent. With respect to partial redemption of the Note, the Bank, as paying agent, shall make notation of the amount of principal redeemed on the Note at the place provided on the Note for such purpose and, if the Borough has designated the principal installment(s) to which such partial redemption is to be applied, shall also make appropriate notation thereof upon the Note at the place provided for such notation.

Any redemption, as hereinbefore authorized, shall be upon written notice deposited, postage prepaid, in the United States mail not less than five (5) days prior to the date selected for redemption and addressed to the person in whose name the Note is registered on the business day next preceding the date of mailing of the notice on the registration book of the Borough kept by the

Bank, acting as note registrar on behalf of the Borough, at the address of such owner as shown on such registration book; Provided, however, that if the registered owner of the Note is the Bank or the registered owner of the Note shall have filed written waiver of notice with the Borough, the Note may be redeemed on the redemption date without necessity of such notice by mail. On the date designated for redemption, money for payment of the principal, premium, if any, and accrued interest due on the Note or the portion thereof so called for redemption, as applicable, being held by the Bank, acting as paying agent, and notice of redemption having been given or waived as aforesaid, interest on the Note or the portion thereof so called for redemption, as applicable, shall cease to accrue and, if the Note shall have been called for redemption in full, it shall cease to be entitled to any benefit or security under this Ordinance, and the registered owner thereof shall have no further rights with respect to the Note, except to receive payment of the principal of and accrued interest on the Note to the redemption date, together with any applicable redemption premium.

Section 11. The form of the Note, including the form of Redemption Record, the form of Registration Record, the form of Delivery Endorsement and the form of Assignment of ownership, shall be substantially as set forth in Exhibit A, which is attached hereto and made part hereof.

Section 12. The Note shall be executed in the name of and on behalf of the Borough by the manual signature of the President or Vice President of the Council and the official seal of the Borough shall be affixed thereto and the manual signature of the Secretary or Assistant

Secretary of the Borough shall be affixed thereto in attestation thereof; and said officers are authorized to execute and to attest, as applicable, the Note, as aforesaid.

Section 13. The Borough covenants to and with the registered owner, from time to time, of the Note that the Borough: (i) shall include the amount of the debt service on the Note, for each fiscal year of the Borough in which such sums are payable, in its budget for that year, (ii) shall appropriate such amounts from its general revenues for the payment of such debt service, and (iii) shall duly and punctually pay or cause to be paid from the Sinking Fund (hereinafter defined) or any other of its revenues or funds the principal of and the interest on the Note at the dates and place and in the manner stated therein, according to the true intent and meaning thereof; and, for such budgeting, appropriation and payment, the Borough shall and does pledge, irrevocably, its full faith, credit and taxing power. As provided in the Act, the foregoing covenant of the Borough shall be enforceable specifically.

Section 14. There is created, pursuant to the Act, a sinking fund for the Note, to be known as "Sinking Fund - General Obligation Note, Series of 2004" (the "Sinking Fund"), which sinking fund shall be administered in accordance with applicable provisions of the Act.

Section 15. The Borough appoints the Bank to act as the sinking fund depositary with respect to the Sinking Fund.

Section 16. The Borough covenants to make payments out of the Sinking Fund or out of any other of its revenues or funds, at such times and in such annual amounts, as shall be sufficient for prompt and full payment of all obligations of the Note when due.

Section 17. The President or Vice President of the Council and the Secretary or Assistant Secretary, respectively, of the Borough, which shall include their duly qualified successors in office, if applicable, are authorized and directed: (a) to prepare, to certify and to file the debt statement required by the Act; (b) to prepare and to file the application with the Department, together with a complete and accurate transcript of the proceedings relating to the incurring of the debt to be evidenced by the Note upon issuance thereof, as required by the Act; (c) to prepare and to file, if applicable, any statements required by the Act that are necessary to qualify all or any portion of nonelectoral and/or lease rental debt of the Borough that is subject to exclusion as self-liquidating or subsidized debt for exclusion from the appropriate debt limit as self-liquidating or subsidized debt; (d) to pay or to cause to be paid to the Department all proper filing fees required by the Act in connection with the foregoing; and (e) to take other required, necessary and/or appropriate action.

The Council of the Borough authorizes and directs that an appropriate borrowing base certificate for the Borough be prepared for filing with the Department as required by the Act. The President or Vice President and Secretary or Assistant Secretary of the Council of the Borough are authorized to prepare and to execute, or to authorize the auditors of the Borough to prepare and to execute, such borrowing base certificate.

Section 18. The Note has been sold, as set forth in this Ordinance, at private sale upon invited bidding, as permitted by the Act.

Section 19. The President or Vice President of Council and the Secretary, respectively, of the Borough are authorized and directed to contract with the Bank for its services as sinking fund depositary in connection with the Sinking Fund and as paying agent and registrar in connection with the Note.

Section 20. It is declared that the debt to be incurred hereby, together with any other indebtedness of the Borough, is not in excess of any applicable limitation imposed by the Act upon the incurring of debt by the Borough.

Section 21. The Secretary or Assistant Secretary of the Borough is authorized and directed to deliver the Note, after execution and attestation thereof as provided for herein, to the Bank, as provided in the accepted proposal(s) for purchase of the Note, but only after the Department has certified its approval pursuant to the Act or such approval shall be presumed to have been given, as provided in the Act. The Secretary or Assistant Secretary of the Borough is further authorized and directed to certify the date of initial delivery of the Note to the Bank by completion of the Delivery Endorsement appearing upon the Note.

Section 22. The appropriate officers of this Borough are hereby authorized and directed to take such action and to execute such documents as shall be necessary to effect the redemption of the Prior Notes out of the proceeds of the Note at the time of issuance and delivery of the Note to the Bank, such that the Prior Notes shall no longer be "outstanding" in accordance with 53 Pa.C.S. §8250 upon issuance of the Note.

The Secretary of the Borough is hereby authorized and directed to notify the RUS of the Borough's determination to prepay and retire the Prior Notes.

Section 23. The Borough covenants to and with the Bank and subsequent owners of the Note that it shall file with the Bank or any such subsequent owner of the Note, within 120 days after the end of each fiscal year of the Borough during which the Note is outstanding, if the Bank or such subsequent owner of the Note shall so request, a copy of the audited financial statement of the Borough for such fiscal year.

Section 24. The Borough covenants to and with the Bank and subsequent owners of the Note that it will make no use of the proceeds of the Note, or of any other obligations deemed to be part of the same issue as the Note under applicable federal tax regulations, that will cause the Note to be or become an "arbitrage bond" (or note) within the meaning of Section 103(b)(2) and Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), and the regulations implementing said Sections that duly have been published in the Federal Register or with any other regulations implementing said Sections, and the Borough further covenants to comply with all other requirements of the Code if and to the extent applicable to maintain continuously the Federal income tax exemption of interest on the Note and to take no action which would adversely affect the tax-exempt status of the interest paid or payable on the Note.

The Borough further covenants that it will neither make nor permit use of the proceeds of the Note, or of the proceeds of any other obligations deemed to be part of the same "issue" under the Code, or revenues held for payment of debt service on the Note or on any such

other obligations, and that the Borough will not use or permit use of the facilities or property financed with the proceeds of the Note or proceeds of any obligations refunded by the Note, or facilities or property held as security for such payment, if such use would cause the Note to be or be deemed to be a "private activity bond," as that phrase is defined in Section 141 of the Code and regulations implementing said Section.

The Borough determines that it has not issued, and does not reasonably expect to issue, tax-exempt obligations that, together with all tax-exempt obligations issued and reasonably expected to be issued by all entities which issue obligations on behalf of the Borough and all "subordinate entities" (within the meaning of Section 265(b)(3)(E) of the Code), of the Borough, in the aggregate, exceed or will exceed Ten Million Dollars ($10,000,000) during the 2004 calendar year and, accordingly, the Borough hereby designates the Note as a "qualified tax-exempt obligation", as defined in Section 265(b)(3)(B) of the Code, for the purposes and effect contemplated by Section 265 of the Code.

Section 25. Any reference in this Ordinance to an officer or member of Council of the Borough shall be deemed to refer to his or her duly qualified successor in office, if applicable.

Section 26. In the event any provision, section, sentence, clause or part of this Ordinance shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this Ordinance, it being the intent of the Borough that such remainder shall be and shall remain in full force and effect.

Section 27. All ordinances or parts of ordinances, insofar as the same shall be inconsistent herewith, shall be and the same expressly are repealed.

Section 28. This Ordinance shall be effective in accordance with the Act.

DULY ENACTED AND ORDAINED, by the Council of the Borough of Turbotville, Northumberland County, Pennsylvania, in lawful session duly assembled, this 26th day of April, 2004.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: Patrick Bet
~~(Vice)~~ President of the Council

ATTEST:

Kristina A. Mensch
Secretary of the Borough

(SEAL)

EXAMINED AND APPROVED this 26th day of April, 2004.

Mark Reese
Mayor of the Borough

EXHIBIT A

(FORM OF NOTE)

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania
GENERAL OBLIGATION NOTE, SERIES OF 2004

NO. 1 **$850,000.00**

Date: _____, 2004

The BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania (the "Borough"), a municipal corporation (a borough) of the Commonwealth of Pennsylvania (the "Commonwealth"), promises to pay to the order of THE TURBOTVILLE NATIONAL BANK (the "Bank"), or registered assigns, the principal sum of _____ DOLLARS ($_____), together with interest on the unpaid balance of such principal sum at the rate of Three and Seventy-hundredths per centum (3.70%) per annum, said principal sum and interest to be payable in installments as hereinafter set forth,.

Interest on the outstanding principal balance of this General Obligation Note, Series of 2004 (the "Note"), shall be calculated from the date of initial delivery of this Note to the Bank, which date of initial delivery shall be endorsed hereon by the Secretary or Assistant Secretary of the Borough by completion of the Delivery Endorsement appearing hereon. Principal and interest on this Note shall be payable in 79 equal installments of principal and interest, each in the amount of $_____, due and payable quarterly on March 15, June 15, September 15 and December 15 of each year, with the first such installment being due and payable on June 15, 2004. Notwithstanding

any other provision hereof, however, the entire principal balance of this Note and all accrued and unpaid interest shall be due and payable on December 15, 2023.

The principal, redemption premium, if any, and interest with respect to this Note shall be payable, when due, at the principal office of the Bank in Turbotville, Pennsylvania, in lawful money of the United States of America.

This Note is subject to redemption prior to maturity, at the option of the Borough, as a whole or in part, on any date, upon payment of the principal amount to be redeemed, together with accrued interest thereon to the date fixed for redemption, without premium or penalty.

In the case of any partial redemption of this Note, the Borough shall have the privilege to designate the principal installment(s) of this Note against which the redeemed principal amount shall be applied, but if the Borough shall not make such designation, the redeemed principal amount shall be applied against the installment(s) of principal last (by date) due and payable on this Note and such partial redemption shall not postpone or interrupt payments of future installments of principal due on this Note, which shall continue to be due and payable until payment of the outstanding principal balance of this Note in full.

Payment of the redemption price of this Note shall be made to the person in whose name ownership of this Note is registered, but only upon presentation of this Note at the principal office of the Bank, acting as paying agent, for notation hereon of the amount of principal redeemed at the place provided on this Note for such purpose and, if the Borough has designated the principal

installment(s) to which such partial redemption is to be applied, for notation hereon of the principal installment(s) redeemed.

Any redemption, as hereinbefore authorized, shall be upon written notice deposited, postage prepaid, in the United States mail not less than five (5) days prior to the date selected for redemption and addressed to the person in whose name ownership of this Note is registered on the business day next preceding the date of mailing of the notice on the registration book of the Borough kept by the Bank, acting as note registrar on behalf of the Borough, at the address of such owner as shown on such registration book; Provided, however, that if the registered owner of this Note is the Bank or the registered owner of this Note shall file written waiver of notice with the Borough, this Note may be redeemed on the redemption date without necessity of such notice by mail. On the date designated for redemption, money for payment of the principal, premium, if any, and accrued interest due on this Note or the portion hereof so called for redemption, as applicable, being held by the Bank, acting as paying agent, and notice of redemption having been given or waived as aforesaid, interest on this Note or the portion hereof so called for redemption, as applicable, shall cease to accrue and, if this Note shall have been called for redemption in full, it shall cease to be entitled to any benefit or security under the Ordinance (hereinafter defined), and the registered owner or any other holder hereof shall have no further rights with respect to this Note, except to receive payment of the principal of and accrued interest hereon to the redemption date, together with any applicable redemption premium.

This Note is issued in accordance with provisions of the Pennsylvania Local Government Unit Debt Act, 53 Pa.C.S. Chs. 80-82 (the "Act"), and by virtue of a duly enacted Ordinance (the "Ordinance") of the Council of the Borough and is the general obligation note authorized by the Ordinance to be issued in the maximum principal amount of $850,000. The Act, as such shall have been in effect when this Note was authorized, and the Ordinance shall constitute a contract between the Borough and the Registered Owner, from time to time, of this Note.

It hereby is certified that: (i) all acts, conditions and things required to be done, to happen or to be performed as conditions precedent to and in issuance of this Note or in creation of the debt of which this Note are evidence have been done, have happened or have been performed in due and regular form and manner, as required by law; and (ii) the debt represented by this Note, together with any other indebtedness of the Borough, is not in excess of any applicable limitation imposed by the Act upon the incurring of the debt of the Borough which is evidenced by this Note.

The Borough has covenanted, in the Ordinance, to and with registered owners, from time to time, of this Note that the Borough: (i) shall include the amount of the debt service for this Note, for each fiscal year of the Borough in which such sums are payable, in its budget for that year, (ii) shall appropriate such amounts from its general revenues for the payment of such debt service, and (iii) shall duly and punctually pay or cause to be paid from the sinking fund established under the Ordinance or any other of its revenues or funds the principal of and interest on this Note at the dates and place and in the manner stated herein, according to the true intent and meaning hereof; and, for such budgeting, appropriation and payment, the Borough has pledged and does pledge,

irrevocably, its full faith, credit and taxing power. The Act provides that the foregoing covenant of the Borough shall be enforceable specifically.

The Borough, in the Ordinance, has established a sinking fund with the Bank, as the sinking fund depositary, into which funds for the payment of the principal of and the interest on this Note shall be deposited not later than the date fixed for the disbursement thereof. The Borough has covenanted, in the Ordinance, to make payments out of such sinking fund or out of any other of its revenues or funds, at such times in such annual amounts, as shall be sufficient for prompt and full payment of all obligations of this Note.

This Note has been designated by the Borough as a "qualified tax-exempt obligation", as defined in Section 265(b)(3)(B) of the Internal Revenue Code of 1986, as amended (the "Code"), for purposes and effect contemplated by Section *265 of the Code (relating to expenses and interest relating to tax-exempt income of certain financial institutions).*

Ownership of this Note is transferable by the Bank, or by any subsequent registered owner in person or by his attorney duly authorized, in writing, at the principal office of the Bank, but only upon notation of such transfer of ownership hereon and on the records of the Borough to be kept for that purpose at the principal office of the Bank by a duly authorized representative of the Bank acting as registrar for this Note on behalf of the Borough. The Borough and the Bank may deem and treat the person, from time to time, in whose name ownership of this Note shall be registered as the absolute owner hereof for the purpose of receiving payment hereof and of interest due hereon, for the purpose of redemption hereof prior to maturity and for all other purposes.

IN WITNESS WHEREOF, the BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania, as provided by the Act and in the Ordinance, has caused this Note to be executed in its name and in its behalf by the manual signature of the President or the Vice President of its Council and the official seal of the Borough to be affixed hereto and the manual signature of the Secretary or Assistant Secretary of the Borough to be affixed hereto in attestation thereof, this ____ day of ____, 2004.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By:_____
(Vice) President of the Council

ATTEST:

_____
(Assistant) Secretary of the Borough

(SEAL)

DELIVERY ENDORSEMENT

I, the undersigned, certify that this Note was initially delivered to The Turbotville National Bank, this____ day of _____, 2004.

_____

(Assistant) Secretary of the Borough of Turbotville, Northumberland County, Pennsylvania

REDEMPTION RECORD
(PRINCIPAL PAID IN ADVANCE OF DUE DATE)

Date	Principal Amount Paid	Remaining Principal Balance	Due Date(s) of Installment(s) to which Payment Applied	Signature of Authorized Official Acknowledging Payment

REGISTRATION RECORD

NOTHING TO BE WRITTEN HERE EXCEPT BY A DULY AUTHORIZED REPRESENTATIVE OF THE TURBOTVILLE NATIONAL BANK, THE PAYING AGENT, OR OF ANY SUCCESSOR PAYING AGENT, ACTING AS REGISTRAR, ON BEHALF OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA

Date of Registry	Name of Registered Owner	Registrar (Authorized Representati

CERTIFICATE

I, the undersigned, Secretary of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), certify that: the foregoing is a true and correct copy of an Ordinance that duly was enacted by affirmative vote of a majority of all members of the Council of the Borough, in accordance with law, at a meeting duly held on 4/26, 2004, at which meeting a quorum was present; said Ordinance was examined and approved by the Mayor of the Borough on April 26, 2004; said Ordinance has been certified and recorded by me, as (Assistant) Secretary of the Borough, in the book provided for the purpose of such recording; said Ordinance, upon enactment, as aforesaid, was assigned Ordinance No. 002-04; the total number of members of the Council of the Borough is seven (7); the vote of the members of the Council of the Borough, upon enactment of said Ordinance, the yeas and nays having been called, duly was recorded by me, as Secretary, as follows:

Pat Betz	- yes
Carl Heiss	- yes
John Hetzendorf	- yes
Robert Crawford	- yes
Melvin Clark	- yes
William Wagner	- absent
Terry Bixler	- yes

Said Ordinance has been advertised, as required by law, in a newspaper of general circulation in the Borough and a copy thereof was made available for public inspection as required by the Pennsylvania Local Government Unit Debt Act; and said Ordinance has not been amended, altered or repealed, as of the date of this Certificate.

I further certify that the Council of the Borough met the requirements of the Sunshine Act, 65 Pa.C.S. Chapter 7, as amended, by advertising the time and place of said meeting, by posting prominently a notice of said meeting at the principal office of the Borough or at the public building in which said meeting was held, and by providing a reasonable opportunity for public comment at such meeting prior to enactment of said Ordinance, all in accordance with such Act.

IN WITNESS WHEREOF, I set my hand and affix the official seal of the Borough, this 26th day of April, 2004.

Christina A. Mensch

~~(Assistant)~~ Borough Secretary

(SEAL)

STANDARD JOURNAL

21 ARCH STREET
MILTON, PA 17847

Proof of Publication

Commonwealth of Pennsylvania
County of Northumberland

Personally appeared before me, the undersigned as Notary Public in and for said County and State.

Amy Moyer

who being duly sworn according to the law, doth depose and say that she is the

General Manager

for the Standard Journal, a newspaper of general circulation published at Milton, County of Northumberland, Commonwealth of Pennsylvania, which was established January 23, 1890, and that a notice, copy of which is hereto attached, was published in said Standard Journal on

April 22, 2004

that affiant is not interested in the subject matter of the attached notice of advertising, and avers that all of the allegations of the statement as to the time, place, and character of the publication are true.

Amy Moyer

Sworn and subscribed before me this

26th day of April, 2004

Karen J. Hendricks
Notary Public

Notarial Seal
Karen J. Hendricks, Notary Public
Milton Boro, Northumberland County
My Commission Expires Jan. 17, 2005
Member, Pennsylvania Association of Notaries

NOTICE

NOTICE IS GIVEN that the Council of the Borough of Turbotville, Northumberland County, Pennsylvania proposes to enact, at a public meeting to be held not less than three (3) days nor more than thirty (30) days following the date of publication of this notice, an ordinance (the "Ordinance"), the caption and summary of the proposed Ordinance being as follows:

"AN ORDINANCE OF THE COUNCIL OF THIS BOROUGH INCURRING NON ELECTORAL DEBT TO BE EVIDENCED BY A GENERAL OBLIGATION NOTE TO BE DESIGNATED AS THIS BOROUGH'S GENERAL OBLIGATION NOTE, SERIES OF 2004, IN THE MAXIMUM PRINCIPAL AMOUNT OF $ 100,000; PROVIDING FOR SALE UPON INVITED BIDDING; ACCEPTING A CERTAIN PROPOSAL FOR PURCHASE OF SUCH GENERAL OBLIGATION NOTE AT PRIVATE SALE UPON INVITED BIDDING; SETTING FORTH THE TERMS AND SUBSTANTIAL FORM OF SUCH GENERAL OBLIGATION NOTE AND AUTHORIZING EXECUTION AND AUTHENTICATION THEREOF; PLEDGING THE FULL FAITH, CREDIT AND TAXING POWER OF THIS BOROUGH IN SUPPORT OF SUCH GENERAL OBLIGATION NOTE; APPOINTING A PAYING AGENT AND A SINKING FUND DEPOSITARY; SETTING FORTH CERTAIN COVENANTS AND REPRESENTATIONS RELATING TO THE FEDERAL INCOME TAX STATUS OF THE INTEREST TO BE PAID ON SAID GENERAL OBLIGATION NOTE; AUTHORIZING APPROPRIATE OFFICERS OF THIS BOROUGH TO TAKE CERTAIN ACTIONS AND TO EXECUTE CERTAIN DOCUMENTS IN CONNECTION WITH ISSUANCE OF SAID GENERAL OBLIGATION NOTE; AND REPEALING ALL ORDINANCES OR PARTS OF ORDINANCES INSOFAR AS THE SAME SHALL BE INCONSISTENT HEREWITH."

The Notice is given in accordance with requirements of and in compliance with the Act.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania
By: Christina A. Mensch, Borough Secretary

STANDARD JOURNAL

21 ARCH STREET
MILTON, PA 17847

Proof of Publication

Commonwealth of Pennsylvania
County of Northumberland

Personally appeared before me, the undersigned as Notary Public in and for said County and State.

Amy Moyer

who being duly sworn according to the law, doth depose and say that she is the

General Manager

for the Standard Journal, a newspaper of general circulation published at Milton, County of Northumberland, Commonwealth of Pennsylvania, which was established January 23, 1890, and that a notice, copy of which is hereto attached, was published in said Standard Journal on

April 29, 2004

that affiant is not interested in the subject matter of the attached notice of advertising, and avers that all of the allegations of the statement as to the time, place, and character of the publication are true.

Amy Moyer

Sworn and subscribed before me this

30th day of April, 2004

Kara

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NOTICE IS GIVEN that the Council of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), at a meeting duly called and held on April 26, 2004, enacted an Ordinance (the "Ordinance"), the caption and summary of which is as follows:

"AN ORDINANCE

OF THE COUNCIL OF THIS BOROUGH INCURRING NONELECTORAL DEBT TO BE EVIDENCED BY A GENERAL OBLIGATION NOTE TO BE DESIGNATED AS THIS BOROUGH'S GENERAL OBLIGATION NOTE, SERIES OF 2004, IN THE MAXIMUM PRINCIPAL AMOUNT OF EIGHT HUNDRED FIFTY THOUSAND DOLLARS ($850,000), TO PROVIDE FUNDS FOR AND TOWARD (1) REFUNDING THE OUTSTANDING PRINCIPAL BALANCE OF THE GENERAL OBLIGATION NOTE, SERIES OF 1988, OF THIS BOROUGH, (2) REFUNDING THE OUTSTANDING PRINCIPAL BALANCE OF THE GENERAL OBLIGATION NOTE, SERIES OF 1990, OF THIS BOROUGH, AND (3) PAYING THE COSTS, FEES AND EXPENSES RELATED TO SUCH REFUNDING; SETTING FORTH THE FINDING THAT IT IS IN THE BEST FINANCIAL INTERESTS OF THIS BOROUGH TO SELL THE NOTE AT PRIVATE SALE UPON INVITED BIDDING; ACCEPTING A CERTAIN PROPOSAL FOR PURCHASE OF SUCH GENERAL OBLIGATION NOTE AT PRIVATE SALE UPON INVITED BIDDING; SETTING FORTH THE TERMS AND SUBSTANTIAL FORM OF SUCH GENERAL OBLIGATION NOTE AND AUTHORIZING EXECUTION AND AUTHENTICATION THEREOF; PLEDGING POINTING A PAYING AGENT AND A SINKING FUND DEPOSITARY; SETTING FORTH CERTAIN COVENANTS AND REPRESENTATIONS RELATING TO THE FEDERAL INCOME TAX STATUS OF THE INTEREST TO BE PAID ON SAID GENERAL OBLIGATION NOTE; AUTHORIZING APPROPRIATE OFFICERS OF THIS BOROUGH TO TAKE CERTAIN ACTIONS AND TO EXECUTE CERTAIN DOCUMENTS IN CONNECTION WITH ISSUANCE OF SAID GENERAL OBLIGATION NOTE; AND REPEALING ALL ORDINANCES OR PARTS OF ORDINANCES INSOFAR AS THE SAME SHALL BE INCONSISTENT HEREWITH."

Notice is further given that: (1) the proposal of Turbotville National Bank for purchase of the General Obligation Note, Series of 2004 (the "Note"), that was received and accepted provided for a purchase price of $850,000 (100% of principal amount); and (2) the interest rate specified in said proposal was a single fixed interest rate of 3.70% for the term of the Note.

The final form of the Ordinance, as enacted, may be inspected by any citizen, in the office of the Secretary of the Borough, at the Borough Municipal Building, 2 Adam Street, Turbotville, Pennsylvania, on any regular business day, Monday through Friday, between the hours of 8:00 a.m. and 3:00 p.m., prevailing time.

This Notice is given in accordance with requirements of and in compliance with the Local Government Unit Debt Act.

BOROUGH OF

CERTIFICATE

I, the undersigned, Secretary of the BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania (the "Borough"), certify that attached hereto and made part hereof is a true and correct copy of the bid or proposal which was submitted to the Council of the Borough and accepted by said Council at a meeting duly called and held on March 29, 2004, with respect to the sale of a proposed general obligation note of the Borough, designated as the "General Obligation Note, Series of 2004", in the maximum principal amount of $850,000, at private sale upon invited bidding.

IN WITNESS WHEREOF, I set my hand and affix the official seal of the Borough, as the Secretary of the Borough, this 26th day of April, 2004.

Christina A. Mensch

Secretary

(SEAL)

Turbotville National Bank

P.O. Box 37 • Turbotville, PA 17772 • 570/649-5118 • FAX: 570/649-5788

LOAN PROPOSAL

To: Borough of Turbotville
c/o Paul A. Lundeen, Esquire
Rhoads & Sinon L.L.P.
One South Market Square, P.O. Box 1146
Harrisburg, PA 17108-1146

Dear Members of Council:

The undersigned financial institution (the "Bank") hereby proposes to lend an amount not exceeding **Eight Hundred Fifty Thousand Dollars ($850,000)** (the "Maximum Loan Amount") to the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), for the purposes and upon the terms and conditions set forth in the Request for Loan Proposal dated February 17, 2004, issued by or on behalf of the Borough (the "Request"), at a fixed interest rate for the full term of the loan of 3.70% per annum.

The Borough may prepay the outstanding principal amount of the Note (as defined in the Request) as a whole, or from time to time in part, on any date, without premium or penalty. Partial prepayments may be applied to the last installment(s) of principal due on such Note.

The Bank and its legal counsel shall charge no points, fees or other costs to the Borough in connection with this loan.

An amortization schedule using the quoted interest rate and the payment dates specified in the Request is attached to and made part of this Proposal.

If the terms and conditions of this loan commitment letter are acceptable to you, please evidence your approval by countersigning and returning to the Bank a copy of this Loan Proposal. If a countersigned coy of this loan Proposal is not received by the Bank within 30 calendar days following the date fixed in the Request as the final date for submission of bids or proposals then this Loan Proposal shall, at the option of the Bank and upon your receipt of written notice to that effect, be of no further force or effect.

Sincerely,

The Turbotville National Bank

By: _____
P. Thomas Yoder, Jr., President

Attachment (Amortization Schedule)

ACCEPTED by due and proper action of the Council of the Borough taken on March 29, 2004

BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania

By: _____
(Vice) President of Council

BOROUGH OF TURBOTVILLE

REQUEST FOR LOAN PROPOSAL

February 17, 2004

I. BACKGROUND INFORMATION

The Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), is requesting a proposal for a general obligation loan in the maximum principal amount set forth below to refund its outstanding General Obligation Note, Series of 1988, and General Obligation Note, Series of 1990 (together, the "Outstanding Notes"), which were issued for the purpose of funding certain improvements to the sanitary sewerage system facilities serving the Borough. Such refunding is hereinafter referred to as the "Refunding Project."

Please submit your proposal (and an amortization schedule based on your quoted rate and quarterly payments on the dates hereinafter mentioned) to the following address for receipt **at or before Noon, Friday, March 12, 2004**:

BOROUGH OF TURBOTVILLE
c/o Paul A. Lundeen
Rhoads & Sinon LLP
One South Market Square, 12th Floor
Harrisburg, PA 17101

If by United States Mail:
P.O. Box 1146
Harrisburg, PA 17108-1146

(Telephone: 717-233-5731; Fax: 717-231 6610)

The Borough reserves the right to reject any or all bids or proposals received and to accept such bid or proposal as it shall deem to be in its best interest.

II. LOAN TERMS

The Borough hereby requests your proposal to make a general obligation loan (the "Loan") to the Borough in connection with the Refunding Project in a principal sum not to exceed

EIGHT HUNDRED FIFTY THOUSAND DOLLARS ($850,000.00),

for the aforesaid purposes, upon the following terms and conditions:

A. Loan Term and Amortization.

The term of the Loan shall be approximately 19 3/4 years, with the final payment due at maturity on December 15, 2023. Interest and principal shall be payable in quarterly installments due on March 15, June 15, September 15 and December 15 of each year, with the first payment of principal and interest due June 15, 2004. Debt service during the amortization period shall be level annual.

(An amortization schedule using these payment dates and your proposed interest rate must be submitted as part of your proposal).

B. Interest Rate and Calculation

The interest rate to be applicable to the outstanding principal balance of the Loan shall be the rate per annum set forth in the bid or proposal accepted by the Borough. Interest shall accrue on the amount advanced by the Lender to the Borough against the Loan from the date of such advance. Interest shall be calculated and paid only on the principal balance of the Loan outstanding and unpaid from time to time. Interest shall be calculated on the basis of the actual number of days in a year of 365 or 366 days, as appropriate to the year for which the calculation is made.

C. Advances

There shall be only one draw on the Loan: Loan proceeds in an amount sufficient to prepay the Outstanding Notes and to pay costs of financing shall be advanced by the Lender at the time of execution and delivery to the Lender of the Note and the other closing documents specified below.

D. The Note

The Borough's obligation to repay the principal amount of the Loan, together with interest thereon at the applicable rate or rates, shall be evidenced by a fully registered note (the "Note") duly issued by the Borough in accordance with the Local Government Unit Debt Act and a debt-authorizing ordinance (the "Ordinance") to be duly enacted by the Council of the Borough.

E. Optional Prepayment

Except as may otherwise be stated in the accepted proposal for the Loan, the outstanding principal balance of the Note shall be subject to prepayment prior to maturity, at

the option of the Borough, as a whole or, from time to time, in part, on any date, or after the date specified by the Lender in the accepted bid or proposal, upon payment of the principal amount to be prepaid together with accrued interest thereon to the date fixed for prepayment and without any premium or penalty.

F. Security

The Note shall be a general obligation of the Borough and the Borough shall pledge its full faith, credit and taxing power for payment of principal of and interest on the Note. The Ordinance shall contain the covenant required by 53 Pa.C.S. §8104, as applicable to general obligation bonds or notes.

G. Interest to be Tax-Exempt

The Borough will enter into such covenants as shall be necessary, in the opinion of Rhoads & Sinon LLP, Harrisburg, Pennsylvania, bond counsel, to assure compliance with the Internal Revenue Code of 1986 and to qualify interest on the Note for exclusion from gross income for federal income tax purposes as set forth in the opinion of bond counsel hereinafter mentioned.

H. Obligation to be "Bank-qualified"

The Borough will designate the Note as a "qualified tax-exempt obligation" under Section 265(b)(3) of the Internal Revenue Code of 1986, as amended (relating to expenses and interest relating to tax-exempt income of certain financial institutions).

I. Loan Documents

A debt incurring Ordinance and the text of the Note embodying the terms hereof and of the accepted proposal shall be prepared by Rhoads & Sinon LLP, Harrisburg, Pennsylvania, as bond counsel to the Borough.

J. Closing Documents

As a condition of closing the Borough shall deliver to the Lender, in addition to the executed Note, a copy of the approved Local Government Unit Debt Act proceedings related to the Note and the following:

1. An Opinion of Rhoads & Sinon LLP, Harrisburg, Pennsylvania, Bond Counsel, to the effect that: (1) the Note is a valid and

enforceable instrument of the Borough; (2) the Note is not presently an "arbitrage bond" as described in Section 103(b)(2) of the Internal Revenue Code of 1986, as amended (the "Code"); (3) the Note has been designated as a "qualified tax-exempt obligation" for purposes and effect contemplated by Section 265 of the Code (relating to expenses and interest relating to tax-exempt income of certain financial institutions); (4) interest on the Note is excludible from gross income for Federal income tax purposes under existing statutes, regulations and judicial decisions and interest payable on the Note is not a preference item for Federal alternative minimum taxation (subject, however, to the qualification that interest on the Note may be includible in "adjusted current earnings" for purposes of the Federal alternative minimum tax imposed on certain corporations); and (5) the Note is exempt from personal property taxes within the Commonwealth of Pennsylvania and interest on the Note is exempt from the Commonwealth's Personal Income Tax and the Commonwealth's Corporate Net Income Tax;

2. An affidavit or certificate of appropriate officers of the Borough and its Solicitor to the effect that no litigation of any nature is pending or threatened: (a) seeking to restrain or enjoin or restraining or enjoining execution and delivery of the Note by the Borough; or (b) in any manner affecting or questioning proceedings of the Borough for the execution or delivery of, or the performance of its obligations under, the Note; or (c) affecting, directly or indirectly, or questioning (i) validity of the Note; or (ii) title of present officers and members of the Council of the Borough to their respective offices or memberships; or (iii) creation, organization or existence of the Borough;

3. An opinion of the Solicitor of the Borough as to the valid organization and existence of the Borough under Pennsylvania law; the lawful enactment and effectiveness of the Ordinance; the authority of the person(s) executing the Note on behalf of the Borough to execute and deliver the Note and the other loan closing documents; the Borough's compliance with the Sunshine Act in connection with enactment of the Ordinance; and such other matters as may be reasonably requested by Bond Counsel;

4. Such other documents, certificates and instruments as shall be required by Rhoads & Sinon LLP to evidence compliance with, or to comply with, the provisions of the Internal Revenue Code of 1986, as

amended, and applicable regulations thereunder, with respect to the exclusion of interest payable on the Note from gross income for federal income tax purposes.

Drafts of closing documents and opinions shall be provided to the Lender and its designated counsel at least one week prior to the scheduled loan closing.

K. Loan Closing

It is anticipated that Loan closing will be not later than May 28, 2004. Closing shall take place at a time and place mutually agreed upon by the Borough and the Lender, or if no such time and place shall be agreed upon, then at the offices of the Borough Solicitor, Koch, Foust & Martin, Attorneys at Law, 131 Broadway Street, Milton, Pennsylvania, beginning at 10:00 a.m. on Friday, May 28, 2004.

L. Fees and Expenses

The Borough shall pay all fees and expenses of its Solicitor and Bond Counsel and shall pay for the preparation and printing of the loan documents.

Unless otherwise specified in the Lender's proposal, Lender shall pay the fees and expenses of its own counsel and of any other persons it shall retain in connection with the Loan; if the Lender will require the Borough to pay any placement fee, loan origination fee, loan discount or other charge (including any fees or expenses of counsel to the Lender), the amount thereof, stated as a dollar figure or a percentage of the loan amount, or the maximum amount thereof, shall be set forth in the Proposal (and, if need be, the amount of the Loan which the Lender proposes to make shall be deemed increased by such amount as shall be needed to pay such fee or fees, discount and other charges out of the Loan proceeds).

M. Miscellaneous

The Borough shall provide the Lender with a copy of its audited financial statements annually, and such other information as the Lender may reasonably request. Audited financial statements and other information concerning the Borough and its financial affairs may be obtained by any prospective lender from the following:

Christina A. Mensch, Secretary
Borough of Turbotville
First Street
Turbotville, PA 17777
(Telephone: (570) 649-5476)
(Office Hours: 7:00 a.m to 3:30 p.m, Monday to Friday, excepting holidays)

The Borough intends to qualify the Note as a self-liquidating debt for purposes of the Local Government Unit Debt Act, on the basis of the sewer revenues, rates and charges to be collected by the Borough from owners of properties connected to, or to be connected to, the public sanitary sewerage facilities of the Borough, but no specific pledge of sewer revenues will be made.

III. ADDITIONAL OR ALTERNATIVE TERMS

A. Special Conditions or Additional Terms.

Unless otherwise stated specifically in the Lender's Proposal, it shall be understood that the Lender will make the Loan upon all of the terms and conditions set forth in Part II of this Request for Loan Proposals, without additions or variations. If Lender desires to impose any additional terms or conditions, or any terms or conditions at variance with those set forth in Part II, the same shall be set forth with particularity in the proposal.

B. Alternative Proposals or Counterproposals.

The Borough desires to receive proposals for the Loan upon the terms and conditions set forth in Part II above at a single, fixed rate of interest for the full term of the Loan. PROPOSALS FOR A VARIABLE OR CONTINGENT RATE OR A RATE SUBJECT TO ADJUSTMENT WILL BE CONSIDERED NON-RESPONSIVE AND WILL NOT BE CONSIDERED.

IV. FORM AND CONTENT OF PROPOSALS

Each bid or proposal shall be in writing, shall be on the letterhead of the lending institution submitting the bid or proposal, ***shall state that it is made in response to this Request for Loan Proposal*** and shall be signed by an officer duly authorized to make such proposal on behalf of the lending institution, and ***shall be accompanied by a quarterly amortization schedule using upon the interest rate quoted in the proposal and the quarterly payment dates and final maturity date set forth in Part II above***. The suggested form of a responsive bid or proposal is attached.

It is the Borough's desire to obtain firm proposals to make the Loan. If any proposal shall be subject to the further approval of the financial institution or of any officer, board or committee thereof, it shall be so stated in the proposal.

Each bid or proposal must state the interest rate to be applicable to the Note.

If any loan discount, origination fee, placement fee or other charge or any fees or expenses of the Lender or Lender's counsel is to be paid or reimbursed by the Borough, the amount thereof shall be specified (as a dollar amount, a maximum dollar amount or a percentage of the loan amount).

All bids or proposals shall remain open for acceptance for a period of not less than thirty (30) days from the date set forth above as the date when bids or proposals are to be submitted.

V. SELECTION OF SUCCESSFUL LENDER

The Borough reserves the right to accept any proposal deemed to be in its best interest and to reject any or all proposals. The Borough also reserves the right to negotiate with the selected Lender for any variance in the terms and conditions of the Loan deemed to be in the best interest of the Borough.

(SUGGESTED FORM OF PROPOSAL)

LOAN PROPOSAL

To: Borough of Turbotville
c/o Paul A. Lundeen, Esquire
Rhoads & Sinon LLP
One South Market Square, P.O. Box 1146
Harrisburg, PA 17108-1146

Dear Members of Council:

The undersigned financial institution (the "Bank") hereby proposes to lend an amount not exceeding **Eight Hundred Fifty Thousand Dollars ($850,000)** (the "Maximum Loan Amount") to the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), for the purposes and upon the terms and conditions set forth in the Request for Loan Proposal dated February 17, 2004, issued by or on behalf of the Borough (the "Request"), at a fixed interest rate for the full term of the loan of _____% per annum.

The Borough may prepay the outstanding principal amount of the Note (as defined in the Request) as a whole, or from time to time, in part, on any date, without premium or penalty. Partial prepayments may be applied to the last installment(s) of principal due on such Note.

The Bank and its legal counsel shall charge no points, fees or other costs to the Borough in connection with this loan.

An amortization schedule using the quoted interest rate and the payment dates specified in the Request is attached to and made part of this Proposal.

If the terms and conditions of this loan commitment letter are acceptable to you, please evidence your approval by countersigning and returning to the Bank a copy of this Loan Proposal. If a countersigned copy of this Loan Proposal is not received by the Bank within 30 calendar days following the date fixed in the Request as the final date for submission of bids or proposals, then this Loan Proposal shall, at the option of the Bank and upon your receipt of written notice to that effect, be of no further force or effect.

Sincerely,

_____
(Name of Lending Institution)

By: _____
Name:
Title:

Attachment (Amortization Schedule)

Date: _____

ACCEPTED by due and proper action of the Council of the Borough taken on _____, 2004.

BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania

By: _____
(Vice) President of Council

BOROUGH OF TURBOTVILLE,

Northumberland County, Pennsylvania

DEBT STATEMENT

TO: THE DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT OF THE COMMONWEALTH OF PENNSYLVANIA

We, the undersigned, (Vice) President of the Council and Secretary, respectively, of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Local Government Unit"), being duly authorized to prepare and to verify, under oath or affirmation, this Debt Statement of the Local Government Unit, pursuant to and in accordance with Section 8110 of the Local Government Unit Debt Act (the "Act") of the Commonwealth of Pennsylvania, do set forth and certify as follows:

1. This Debt Statement is made as of April 26, 2004, such date being less than 60 days before the filing hereof;

2. The gross indebtedness of the Local Government Unit is as follows:

a.	Electoral debt		$ 0.00
b.	Nonelectoral debt:		
	(1) Proposed General Obligation Note, Series of 2004	$850,000.00[1]	
	(2) General Obligation Note, Series of 2001	$ 7,927.00[2]	

[1] Debt authorized by ordinance enacted April 26, 2004, in connection with a refunding of the General Obligation Notes, Series of 1988 and 1990, which are outstanding in the principal amounts of $552,054 and $241,610, respectively, and will cease to be outstanding upon issuance of the proposed note.

Total Nonelectoral Debt ..... $ 857,927.00

c. Lease rental debt:

Lease rental debt evidenced by an agreement evidencing the acquisition of a capital asset (water system facilities) with The Municipal Authority of the Borough of Turbotville	$1,095,126.25

Total Lease Rental Debt $1,095,126.25

Total gross indebtedness $1,953,053.25

3. The Local Government Unit claims, in this Debt Statement, exclusions from or against the total gross indebtedness, as such is set forth in Paragraph 2, in determining the net debt of the Local Government Unit:

a. Electoral debt ..... $ 0.00

b. Nonelectoral debt ..... $ 850,000.00[3]

c. Lease rental debt ..... $1,095,126.25[4]

Total exclusions claimed $1,095,126.25

4. The remaining debt of the Local Government Unit is as follows:

a. Electoral debt ..... $ 0.00

---

[2] Debt incurred as a "small borrowing" under the Act.

[3] Includes nonelectoral debt in the amount of $850,000 excluded pursuant to proceedings filed concurrently with this Debt Statement. See the attached report to the Borough from Uni-Tec Engineers, Inc. pursuant to Section 8026 of the Act.

[4] This amount includes lease rental debt in the outstanding amount of $1,095,126.25 previously excluded pursuant to proceedings filed with respect to the indebtedness described in paragraph 2.c above (Approval E-2811, dated October 3, 2000, as to which there has been no decrease in the amount to be excluded (100%), other than decreases resulting from repayment of principal.

b. Net nonelectoral debt ..... $ 7,927.00

c. Net lease rental debt ..... $ 0.00

Total remaining debt ..... $ 7,927.00

5. The maximum principal amount of gross nonelectoral debt to be evidenced by a note to be issued by the Borough is $850,000.

6. The aggregate net nonelectoral debt of the Local Government Unit to be outstanding, after settlement for the issue in the amount set forth in Paragraph 5, will be $7,927.00.

7. The aggregate net lease rental debt of the Local Government Unit to be outstanding, after settlement for the issue in the amount set forth in Paragraph 5, will be $ - 0 - .

8. The aggregate net nonelectoral debt and net lease rental debt, combined, of the Local Government Unit to be outstanding, after settlement for the issue in the amount set forth in Paragraph 5, will be $7,927.00.

9. The borrowing base of the Local Government Unit, as evidenced by a Borrowing Base Certificate which is attached hereto and made part hereof, is $219,534.

10. The nonelectoral debt limit of the Local Government Unit, i.e. 250% of the borrowing base, computed as provided in the Act, is $548,835.

11. The nonelectoral debt plus lease rental debt limit of the Local Government Unit, i.e. 350% of the borrowing base, computed as provided in the Act, is $768,369.

IN WITNESS WHEREOF, we, the undersigned, ~~(Vice)~~ President of the Council and Secretary, respectively, of the Local Government Unit, affix our signatures to this Debt Statement of the Local Government Unit, this 26th day of April, 2004.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: Patricia Betz
~~(Vice)~~ President of Council

By: Christina A. Mensch
Secretary

(SEAL)

ACKNOWLEDGMENT

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF NORTHUMBERLAND)

We, the undersigned, first being duly sworn individually according to law, verify and depose and say that: we are ~~(Vice)~~ President of the Council and Secretary, respectively, of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Local Government Unit"); we prepared and executed the foregoing Debt Statement of the Local Government Unit; and the facts contained in the foregoing Debt Statement of the Local Government Unit are true and correct.

Patricia Betz
~~(Vice)~~ President of Council

Christina A. Mensch
Secretary

SWORN TO AND SUBSCRIBED
before me, a Notary Public,
this ____ day of _____, 2004.

WITNESS:

Paul A. Lundeen

Notary Public

My Commission Expires:

(SEAL)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF DAUPHIN)

On this, the 4th day of May, 2004, before me Shelley A. Derfler, the undersigned officer, personally appeared Paul A. Lundeen, known to me (or satisfactorily proven) to be a member of the bar of the highest court of the Commonwealth of Pennsylvania, (Supreme Court ID Number 25945) and a subscribing witness to the within instrument, and certified that he was personally present when Patrick Betz and Christina A. Mensch, whose names are subscribed to the within instrument, executed the same, and that said persons acknowledge that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Shelley A. Derfler
Notary Public

My Commission Expires:

(SEAL)

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Shelley A. Derfler, Notary Public
City Of Harrisburg, Dauphin County
My Commission Expires Oct. 18, 2007
Member, Pennsylvania Association Of Notaries

Calculation Summary Report

Loan Information

Printed on 02-27-2004 at 9:05 AM

Borrower name **Phone**

Address **SSN**

PA **DOB**

Loan number

Payment Information

Repayment method	Installment	Accrual method	Periodic
Amount requested	$850,000.00	First period accrual method	Actual/365
Number of amortized payments	79	Funding date	05-28-2004
		First payment date	06-15-2004
		Multiple advance	No

Interest Rate Definition

Fixed interest rate 3.700%

Payment Schedule

79 quarterly payments of 15,100.95 beginning 06-15-2004

Calculation Results

Loan amount	$850,000.00
Proceeds	$850,000.00
Amount financed	$850,000.00
Total of payments	$1,192,975.05
APR	3.700%
Maturity date	12-15-2023
Charges not affecting the APR	
Credit insurance premiums	$0.00
Total miscellaneous fees	$0.00

Charges affecting the APR	
Prepaid fees	$0.00
Prepaid odd days interest	$0.00
Number of odd days	
Pro rata charge	$0.00
PMI	
Prepaid PMI	$0.00
PMI escrow	$0.00
PMI renewals	$0.00
Single premium PMI	$0.00
Total charges affecting the APR	$0.00
Interest	$342,975.05

Amortization

Borrower name
Address

PA

Loan number

Date		Amount	Payment	Principal	Interest	Remaining Balance
05-28-2004	Fixed Rate	3.700				
05-28-2004	Funding	850,000.00				850,000.00
06-15-2004	Regular Pmt		15,100.95	13,549.99	1,550.96	836,450.01
09-15-2004	Regular Pmt		15,100.95	7,363.79	7,737.16	829,086.22
12-15-2004	Regular Pmt		15,100.95	7,431.90	7,669.05	821,654.32
2004 Totals:			45,302.85	28,345.68	16,957.17	
03-15-2005	Regular Pmt		15,100.95	7,500.65	7,600.30	814,153.67
06-15-2005	Regular Pmt		15,100.95	7,570.03	7,530.92	806,583.64
09-15-2005	Regular Pmt		15,100.95	7,640.05	7,460.90	798,943.59
12-15-2005	Regular Pmt		15,100.95	7,710.72	7,390.23	791,232.87
2005 Totals:			60,403.80	30,421.45	29,982.35	
03-15-2006	Regular Pmt		15,100.95	7,782.05	7,318.90	783,450.82
06-15-2006	Regular Pmt		15,100.95	7,854.03	7,246.92	775,596.79
09-15-2006	Regular Pmt		15,100.95	7,926.68	7,174.27	767,670.11
12-15-2006	Regular Pmt		15,100.95	8,000.00	7,100.95	759,670.11
2006 Totals:			60,403.80	31,562.76	28,841.04	
03-15-2007	Regular Pmt		15,100.95	8,074.00	7,026.95	751,596.11
06-15-2007	Regular Pmt		15,100.95	8,148.69	6,952.26	743,447.42
09-15-2007	Regular Pmt		15,100.95	8,224.06	6,876.89	735,223.36
12-15-2007	Regular Pmt		15,100.95	8,300.13	6,800.82	726,923.23
2007 Totals:			60,403.80	32,746.88	27,656.92	
03-15-2008	Regular Pmt		15,100.95	8,376.91	6,724.04	718,546.32

06-15-2008	Regular Pmt	15,100.95	8,454.40	6,646.55	710,091.92
09-15-2008	Regular Pmt	15,100.95	8,532.60	6,568.35	701,559.32
12-15-2008	Regular Pmt	15,100.95	8,611.53	6,489.42	692,947.79
2008 Totals:		60,403.80	33,975.44	26,428.36	
03-15-2009	Regular Pmt	15,100.95	8,691.18	6,409.77	684,256.61
06-15-2009	Regular Pmt	15,100.95	8,771.58	6,329.37	675,485.03
09-15-2009	Regular Pmt	15,100.95	8,852.71	6,248.24	666,632.32
12-15-2009	Regular Pmt	15,100.95	8,934.60	6,166.35	657,697.72
2009 Totals:		60,403.80	35,250.07	25,153.73	
03-15-2010	Regular Pmt	15,100.95	9,017.25	6,083.70	648,680.47
06-15-2010	Regular Pmt	15,100.95	9,100.66	6,000.29	639,579.81
09-15-2010	Regular Pmt	15,100.95	9,184.84	5,916.11	630,394.97
12-15-2010	Regular Pmt	15,100.95	9,269.80	5,831.15	621,125.17
2010 Totals:		60,403.80	36,572.55	23,831.25	
03-15-2011	Regular Pmt	15,100.95	9,355.54	5,745.41	611,769.63
06-15-2011	Regular Pmt	15,100.95	9,442.08	5,658.87	602,327.55
09-15-2011	Regular Pmt	15,100.95	9,529.42	5,571.53	592,798.13
12-15-2011	Regular Pmt	15,100.95	9,617.57	5,483.38	583,180.56
2011 Totals:		60,403.80	37,944.61	22,459.19	
03-15-2012	Regular Pmt	15,100.95	9,706.53	5,394.42	573,474.03
06-15-2012	Regular Pmt	15,100.95	9,796.32	5,304.63	563,677.71
09-15-2012	Regular Pmt	15,100.95	9,886.93	5,214.02	553,790.78
12-15-2012	Regular Pmt	15,100.95	9,978.39	5,122.56	543,812.39
2012 Totals:		60,403.80	39,368.17	21,035.63	
03-15-2013	Regular Pmt	15,100.95	10,070.69	5,030.26	533,741.70
06-15-2013	Regular Pmt	15,100.95	10,163.84	4,937.11	523,577.86
09-15-2013	Regular Pmt	15,100.95	10,257.85	4,843.10	513,320.01
12-15-2013	Regular Pmt	15,100.95	10,352.74	4,748.21	502,967.27
2013 Totals:		60,403.80	40,845.12	19,558.68	
03-15-2014	Regular Pmt	15,100.95	10,448.50	4,652.45	492,518.77

06-15-2014	Regular Pmt	15,100.95	10,545.15	4,555.80	481,973.62
09-15-2014	Regular Pmt	15,100.95	10,642.69	4,458.26	471,330.93
12-15-2014	Regular Pmt	15,100.95	10,741.14	4,359.81	460,589.79
2014 Totals:		60,403.80	42,377.48	18,026.32	
03-15-2015	Regular Pmt	15,100.95	10,840.49	4,260.46	449,749.30
06-15-2015	Regular Pmt	15,100.95	10,940.77	4,160.18	438,808.53
09-15-2015	Regular Pmt	15,100.95	11,041.97	4,058.98	427,766.56
12-15-2015	Regular Pmt	15,100.95	11,144.11	3,956.84	416,622.45
2015 Totals:		60,403.80	43,967.34	16,436.46	
03-15-2016	Regular Pmt	15,100.95	11,247.19	3,853.76	405,375.26
06-15-2016	Regular Pmt	15,100.95	11,351.23	3,749.72	394,024.03
09-15-2016	Regular Pmt	15,100.95	11,456.23	3,644.72	382,567.80
12-15-2016	Regular Pmt	15,100.95	11,562.20	3,538.75	371,005.60
2016 Totals:		60,403.80	45,616.85	14,786.95	
03-15-2017	Regular Pmt	15,100.95	11,669.15	3,431.80	359,336.45
06-15-2017	Regular Pmt	15,100.95	11,777.09	3,323.86	347,559.36
09-15-2017	Regular Pmt	15,100.95	11,886.03	3,214.92	335,673.33
12-15-2017	Regular Pmt	15,100.95	11,995.97	3,104.98	323,677.36
2017 Totals:		60,403.80	47,328.24	13,075.56	
03-15-2018	Regular Pmt	15,100.95	12,106.93	2,994.02	311,570.43
06-15-2018	Regular Pmt	15,100.95	12,218.92	2,882.03	299,351.51
09-15-2018	Regular Pmt	15,100.95	12,331.95	2,769.00	287,019.56
12-15-2018	Regular Pmt	15,100.95	12,446.02	2,654.93	274,573.54
2018 Totals:		60,403.80	49,103.82	11,299.98	
03-15-2019	Regular Pmt	15,100.95	12,561.14	2,539.81	262,012.40
06-15-2019	Regular Pmt	15,100.95	12,677.34	2,423.61	249,335.06
09-15-2019	Regular Pmt	15,100.95	12,794.60	2,306.35	236,540.46
12-15-2019	Regular Pmt	15,100.95	12,912.95	2,188.00	223,627.51
2019 Totals:		60,403.80	50,946.03	9,457.77	
03-15-2020	Regular Pmt	15,100.95	13,032.40	2,068.55	210,595.11

06-15-2020	Regular Pmt	15,100.95	13,152.95	1,948.00	197,442.16
09-15-2020	Regular Pmt	15,100.95	13,274.61	1,826.34	184,167.55
12-15-2020	Regular Pmt	15,100.95	13,397.40	1,703.55	170,770.15
2020 Totals:		60,403.80	52,857.36	7,546.44	
03-15-2021	Regular Pmt	15,100.95	13,521.33	1,579.62	157,248.82
06-15-2021	Regular Pmt	15,100.95	13,646.40	1,454.55	143,602.42
09-15-2021	Regular Pmt	15,100.95	13,772.63	1,328.32	129,829.79
12-15-2021	Regular Pmt	15,100.95	13,900.02	1,200.93	115,929.77
2021 Totals:		60,403.80	54,840.38	5,563.42	
03-15-2022	Regular Pmt	15,100.95	14,028.60	1,072.35	101,901.17
06-15-2022	Regular Pmt	15,100.95	14,158.36	942.59	87,742.81
09-15-2022	Regular Pmt	15,100.95	14,289.33	811.62	73,453.48
12-15-2022	Regular Pmt	15,100.95	14,421.51	679.44	59,031.97
2022 Totals:		60,403.80	56,897.80	3,506.00	
03-15-2023	Regular Pmt	15,100.95	14,554.90	546.05	44,477.07
06-15-2023	Regular Pmt	15,100.95	14,689.54	411.41	29,787.53
09-15-2023	Regular Pmt	15,100.95	14,825.42	275.53	14,962.11
12-15-2023	Regular Pmt	15,100.95	14,962.55	138.40	-0.44
2023 Totals:		60,403.80	59,032.41	1,371.39	
Loan Totals:		1,192,975.05	850,000.44	342,974.61	

Printed on: 02-27-2004

BORROWING BASE CERTIFICATE

OF THE

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

1. This Borrowing Base Certificate of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Local Government Unit"), has been prepared in accordance with the Local Government Unit Debt Act, 53 Pa. C.S. Chs. 80-82, of the Commonwealth of Pennsylvania (the "Act").

2. "Total Revenues", as such phrase is defined in the Act, of the Local Government Unit for the three (3) full fiscal years ended next preceding the date hereof, computed according to the definition of "Total Revenues" set forth in 53 PA C.S. §8002, are as follows:

a. All money received by the Local Government Unit, from whatever source derived, for each of the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate, were as follows:

Fiscal Year Ended 12/31/2001	**Fiscal Year Ended 12/31/2002**	**Fiscal Year Ended 12/31/2003[1]**
$371,823	$405,869	$425,533

b. The deductions or exceptions of the Local Government Unit from the amounts set forth in Paragraph 2.a., for each of the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate, were as follows:

Deduction or Exception	**Fiscal Year Ended 12/31/2001**	**Fiscal Year Ended 12/31/2002**	**Fiscal Year Ended 12/31/2003**
Federal or state subsidies for a particular project financed by debt	$ - 0 -	$ - 0 -	$ - 0 -

[1] All fiscal year ended December 31, 2003, figures are unaudited estimates.

Project revenues, user charges or other receipts which are or will be pledged or budgeted for specific self-liquidating debt, etc.	$181,524	$189,318	$173,780
Interest on money in sinking funds or other funds pledged or budgeted for payment or security of outstanding debt, etc.	$ - 0 -	$ - 0 -	$ - 0 -
Grants and gifts in aid of or measured by construction or acquisition of specified projects	$ - 0 -	$ - 0 -	$ - 0 -
Proceeds of the sale of capital assets and other nonrecurring items, including bond or note proceeds not considered income	$ - 0 -	$ - 0 -	$ - 0 -
Total	$181,524	$189,318	$173,780

c. The "Total Revenues" of the Local Government Unit, for each of the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate (being, for each such fiscal year, the total amount set forth in Paragraph 2.b., deducted from the amount set forth in Paragraph 2.a.), were as follows:

Fiscal Year Ended 12/31/2001	**Fiscal Year Ended 12/31/2002**	**Fiscal Year Ended 12/31/2003**
$190,299	$216,551	$251,753

the total of which is $658,603; and

d. The annual arithmetic average of such Total Revenues for the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate, as such Total Revenues are set forth in Paragraph 2.c., is $219,534.

3. We, the undersigned, further certify that we have made due and proper investigation of and with respect to matters and things involved in this Borrowing Base Certificate.

IN WITNESS WHEREOF, we set our hands to this Borrowing Base Certificate, this 7th day of April, 2004.

BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania

By: Patrick Betz
~~(Vice)~~ President of Borough Council

ATTEST:

Christina A. Mensch
Secretary of the Borough

(SEAL)

Borough of Turbotville
Northumberland County, Pennsylvania

April 2004

REPORT

ON

SELF-LIQUIDATING DEBT

OF

BOROUGH OF TURBOTVILLE

$850,000 Maximum Principal Amount
General Obligation Note, Series of 2004

Uni-Tec Consulting Engineers
INCORPORATED

Prepared By:

Uni-Tec Consulting Engineers, Inc.
2007 Cato Avenue
State College, Pennsylvania 16801

File No. 0047-036-000

REPORT OF ENGINEER

In accordance with the requirements of Section 8026(a) of the Local Government Unit Debt Act, 53 Pa.C.S. Chs. 80-82 (the "Act"), the following report is submitted to the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), with respect to the Project (hereinafter defined) being undertaken by the Borough, for which the Borough proposes to issue a General Obligation Note in the maximum principal amount of $850,000 (the "2004 Note"), to the Turbotville National Bank ("the Bank") (see the Letter of Commitment from the Bank to the Borough which is attached hereto as **Exhibit "A"**). The proceeds of the 2004 Note will be issued in connection with the following: (1) payoff of a 1988 FmHA loan used for improvements to the sanitary sewer system in and about the Borough, (2) payoff of a 1990 FmHA loan used for similar improvements purposes, and (3) paying costs, fees and expenses with respect to the foregoing purposes and to the financing (collectively, the "Project").

(i) The estimated costs of the Project financed through issuance of the 2004 Note are set forth in **Exhibit "B"** attached hereto and made a part hereof.

(ii) The maximum principal amount of the 2004 Note being issued by the Borough is $850,000. The projected payment dates, interest rates and annual debt service payments for the 2004 Note are set forth in **Exhibit "C"** attached hereto and made a part hereof.

(iii) The estimated date of completion and final closeout of the Project is May 28, 2004.

(iv) The estimated net revenues from operation of the Sewer System for each year of the life of the 2004 Note, and computations showing, in reasonable detail, that such net revenues, together with other available funds to be received in respect to the Sewer System, will be sufficient in each such year to pay the annual debt service, other than capitalized debt service, on the 2004 Note are set forth in **Exhibit "D"** which is attached hereto and made a part hereof.

IN WITNESS WHEREOF, I hereunto set my hand and affix my Registered Professional Engineer Seal, this 27 day of April, 2004.

UNI-TEC CONSULTING ENGINEERS, INC.

By: Paul M. Meister
Paul M. Meister, P.E.

(REGISTERED PROFESSIONAL ENGINEER'S SEAL)

CERTIFICATE OF CONSULTING ENGINEERS

I, the undersigned, a duly authorized representative of Uni-Tec Consulting Engineers, Inc., hereby certify that the estimates of net revenues to be obtained from the operation of the sanitary sewer system facilities (the "Sewer System") owned and operated by The Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), for which a General Obligation Note, Series 2004, in the amount of $850,000 is being issued by the Borough to Turbotville National Bank, evidencing nonelectoral debt of the Borough, have been computed from my best estimate of the gross revenues to be obtained from rentals, rates and charges, interest to be received on reserve accounts established or to be established by resolution of the Borough, or from possible payments under bulk service or other contracts with other local government units or authorities for use of the Sewer System, by deducting from such gross revenues, in each year, the total estimated costs of operation and maintenance of the Sewer System chargeable against such revenues, all based on assumptions deemed reasonable by me for the purposes. I further certify:

(i) Uni-Tec Consulting Engineers, Inc., is the consulting engineer to the Borough and is qualified to act with regard to the type of project being financed by the Borough.

(ii) I am a registered professional engineer, duly qualified and licensed under the laws of the Commonwealth of Pennsylvania, authorized by Uni-Tec Consulting Engineers, Inc., State College, Pennsylvania, to make these certifications on behalf of such corporation.

(iii) I am familiar with Section 8026 (a) of the Local Government Unit Debt Act, 53 Pa.C.S. Chs. 80-82, pertaining to self-liquidating debt.

(iv) I am familiar with the operation and maintenance costs of sewer systems similar to the Borough's sewer system.

(v) My professional experience covers a period of 15 years as an engineer and covers a wide range of projects for both public agencies and investor owned companies. As a consulting engineer, my professional opinions have been accepted without exception by government agencies, financial advisors, bond lawyers and trustee banks. This includes projections of revenues and expenses of sewer systems owned by municipality authorities and municipalities for use in the marketing of municipal bonds and other obligations.

(vi) I further certify that I have been requested by the Borough to prepare and deliver this Certificate in accordance with the Local Government Unit Debt Act.

Paul M. Meister, P.E.

Date: 4/27, 2004

(REGISTERED PROFESSIONAL ENGINEER'S SEAL)

EXHIBIT "A"

COMMITMENT LETTER

(See Attached. Two pages.)

Turbotville National Bank

P.O. Box 37 • Turbotville, PA 17772 • 570/649-5118 • FAX: 570/649-5788

LOAN PROPOSAL

To: Borough of Turbotville
c/o Paul A. Lundeen, Esquire
Rhoads & Sinon L.L.P.
One South Market Square, P.O. Box 1146
Harrisburg, PA 17108-1146

Dear Members of Council:

The undersigned financial institution (the "Bank") hereby proposes to lend an amount not exceeding **Eight Hundred Fifty Thousand Dollars ($850,000)** (the "Maximum Loan Amount") to the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), for the purposes and upon the terms and conditions set forth in the Request for Loan Proposal dated February 17, 2004, issued by or on behalf of the Borough (the "Request"), at a fixed interest rate for the full term of the loan of 3.70% per annum.

The Borough may prepay the outstanding principal amount of the Note (as defined in the Request) as a whole, or from time to time in part, on any date, without premium or penalty. Partial prepayments may be applied to the last installment(s) of principal due on such Note.

The Bank and its legal counsel shall charge no points, fees or other costs to the Borough in connection with this loan.

An amortization schedule using the quoted interest rate and the payment dates specified in the Request is attached to and made part of this Proposal.

If the terms and conditions of this loan commitment letter are acceptable to you, please evidence your approval by countersigning and returning to the Bank a copy of this Loan Proposal. If a countersigned coy of this loan Proposal is not received by the Bank within 30 calendar days following the date fixed in the Request as the final date for submission of bids or proposals then this Loan Proposal shall, at the option of the Bank and upon your receipt of written notice to that effect, be of no further force or effect.

Sincerely,

The Turbotville National Bank

By: _____
P. Thomas Yoder, Jr., President

Attachment (Amortization Schedule)

ACCEPTED by due and proper action of the Council of the Borough taken on _____, 2004

BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania

By: _____
(Vice) President of Council

Calculation Summary Report

Loan Information Printed on 02-27-2004 at 9:05 AM

Borrower name **Phone**

Address **SSN**

PA **DOB**

Loan number

Payment Information

Repayment method	Installment	Accrual method	Periodic
Amount requested	$850,000.00	First period accrual method	Actual/365
Number of amortized payments	79	Funding date	05-28-2004
		First payment date	06-15-2004
		Multiple advance	No

Interest Rate Definition

Fixed interest rate 3.700%

Payment Schedule

79 quarterly payments of 15,100.95 beginning 06-15-2004

Calculation Results

Loan amount	$850,000.00
Proceeds	$850,000.00
Amount financed	$850,000.00
Total of payments	$1,192,975.05
APR	3.700%
Maturity date	12-15-2023
Charges not affecting the APR	
Credit insurance premiums	$0.00
Total miscellaneous fees	$0.00

Charges affecting the APR	
Prepaid fees	$0.00
Prepaid odd days interest	$0.00
Number of odd days	
Pro rata charge	$0.00
PMI	
Prepaid PMI	$0.00
PMI escrow	$0.00
PMI renewals	$0.00
Single premium PMI	$0.00
Total charges affecting the APR	$0.00
Interest	$342,975.05

EXHIBIT "B"

PROJECT COSTS

BOROUGH OF TURBOTVILLE
ESTIMATED SEWER REFINANCING LOAN

Payoff 1988 FmHA Sewer Loan	
Principal	$ 552,054.48
Interest	$ 13,219.06
Total P+I	**$ 565,273.54**

Payoff 1990 FmHA Sewer Loan	
Principal	$ 241,610.24
Interest	$ 8,549.68
Total P+I	**$ 250,159.92**

Totals	
Total P+I, both loans	$ 815,433.46
Legal Fees	$ 18,000.00
Other Fees (engineer's debt report, DCED filing fees, advertising expense, closing costs, and misc.	$ 4,500.00
Contingency	$ 12,066.54
Total Estimated Loan	**$ 850,000.00**

EXHIBIT "C"

The maximum debt service requirements on the General Obligation Note, Series of 2004, in the maximum principal amount of $850,000 being issued by The Borough of Turbotville is as follows:

(See attached schedule.[1] Three pages.)

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[1] Assumes the Note is issued on May 28, 2004 with 79 quarterly payments beginning on June 15, 2004 through and including December 15, 2023, at a fixed interest rate of 3.700% per annum, calculated using a 365-day year, with a full maturity date of December 15, 2023.

EXHIBIT C

The Borough of Turbotville

Compound Period: **Monthly**

Annual Nominal Interest Rate: **3.70%**

Effective Quarterly Interest Rate: **0.92500%**

CASH FLOW DATA

Event	Date	Amount	Number	Period	End Date
Loan	5/28/2004	$850,000.00	1		
Payment	6/15/2004	$15,100.95	79	Quarterly	12/15/2023

Amortization Schedule - Normal Amortization, 365 Day Year

Payment No.	Date	Payment	Interest	Principal	Balance
	5/28/2004				$ 850,000.00
1	6/15/2004	$ 15,100.95	$ 1,550.96	$ 13,549.99	$ 836,450.01
2	9/15/2004	$ 15,100.95	$ 7,737.16	$ 7,363.79	$ 829,086.22
3	12/15/2004	$ 15,100.95	$ 7,669.05	$ 7,431.90	$ 821,654.32
4	3/15/2005	$ 15,100.95	$ 7,600.30	$ 7,500.65	$ 814,153.67
5	6/15/2005	$ 15,100.95	$ 7,530.92	$ 7,570.03	$ 806,583.64
6	9/15/2005	$ 15,100.95	$ 7,460.90	$ 7,640.05	$ 798,943.59
7	12/15/2005	$ 15,100.95	$ 7,390.23	$ 7,710.72	$ 791,232.87
8	3/15/2006	$ 15,100.95	$ 7,318.90	$ 7,782.05	$ 783,450.82
9	6/15/2006	$ 15,100.95	$ 7,246.92	$ 7,854.03	$ 775,596.79
10	9/15/2006	$ 15,100.95	$ 7,174.27	$ 7,926.68	$ 767,670.11
11	12/15/2006	$ 15,100.95	$ 7,100.95	$ 8,000.00	$ 759,670.11
12	3/15/2007	$ 15,100.95	$ 7,026.95	$ 8,074.00	$ 751,596.11
13	6/15/2007	$ 15,100.95	$ 6,952.26	$ 8,148.69	$ 743,447.43
14	9/15/2007	$ 15,100.95	$ 6,876.89	$ 8,224.06	$ 735,223.36
15	12/15/2007	$ 15,100.95	$ 6,800.82	$ 8,300.13	$ 726,923.23
16	3/15/2008	$ 15,100.95	$ 6,724.04	$ 8,376.91	$ 718,546.32
17	6/15/2008	$ 15,100.95	$ 6,646.55	$ 8,454.40	$ 710,091.92
18	9/15/2008	$ 15,100.95	$ 6,568.35	$ 8,532.60	$ 701,559.32
19	12/15/2008	$ 15,100.95	$ 6,489.42	$ 8,611.53	$ 692,947.80
20	3/15/2009	$ 15,100.95	$ 6,409.77	$ 8,691.18	$ 684,256.61
21	6/15/2009	$ 15,100.95	$ 6,329.37	$ 8,771.58	$ 675,485.04
22	9/15/2009	$ 15,100.95	$ 6,248.24	$ 8,852.71	$ 666,632.33
23	12/15/2009	$ 15,100.95	$ 6,166.35	$ 8,934.60	$ 657,697.72
24	3/15/2010	$ 15,100.95	$ 6,083.70	$ 9,017.25	$ 648,680.48
25	6/15/2010	$ 15,100.95	$ 6,000.29	$ 9,100.66	$ 639,579.82
26	9/15/2010	$ 15,100.95	$ 5,916.11	$ 9,184.84	$ 630,394.99
27	12/15/2010	$ 15,100.95	$ 5,831.15	$ 9,269.80	$ 621,125.19

EXHIBIT C

28	3/15/2011	$	15,100.95	$	5,745.41	$	9,355.54	$	611,769.65
29	6/15/2011	$	15,100.95	$	5,658.87	$	9,442.08	$	602,327.57
30	9/15/2011	$	15,100.95	$	5,571.53	$	9,529.42	$	592,798.15
31	12/15/2011	$	15,100.95	$	5,483.38	$	9,617.57	$	583,180.58
32	3/15/2012	$	15,100.95	$	5,394.42	$	9,706.53	$	573,474.05
33	6/15/2012	$	15,100.95	$	5,304.63	$	9,796.32	$	563,677.73
34	9/15/2012	$	15,100.95	$	5,214.02	$	9,886.93	$	553,790.80
35	12/15/2012	$	15,100.95	$	5,122.56	$	9,978.39	$	543,812.42
36	3/15/2013	$	15,100.95	$	5,030.26	$	10,070.69	$	533,741.73
37	6/15/2013	$	15,100.95	$	4,937.11	$	10,163.84	$	523,577.89
38	9/15/2013	$	15,100.95	$	4,843.10	$	10,257.85	$	513,320.04
39	12/15/2013	$	15,100.95	$	4,748.21	$	10,352.74	$	502,967.30
40	3/15/2014	$	15,100.95	$	4,652.45	$	10,448.50	$	492,518.80
41	6/15/2014	$	15,100.95	$	4,555.80	$	10,545.15	$	481,973.65
42	9/15/2014	$	15,100.95	$	4,458.26	$	10,642.69	$	471,330.95
43	12/15/2014	$	15,100.95	$	4,359.81	$	10,741.14	$	460,589.81
44	3/15/2015	$	15,100.95	$	4,260.46	$	10,840.49	$	449,749.32
45	6/15/2015	$	15,100.95	$	4,160.18	$	10,940.77	$	438,808.55
46	9/15/2015	$	15,100.95	$	4,058.98	$	11,041.97	$	427,766.58
47	12/15/2015	$	15,100.95	$	3,956.84	$	11,144.11	$	416,622.47
48	3/15/2016	$	15,100.95	$	3,853.76	$	11,247.19	$	405,375.28
49	6/15/2016	$	15,100.95	$	3,749.72	$	11,351.23	$	394,024.05
50	9/15/2016	$	15,100.95	$	3,644.72	$	11,456.23	$	382,567.82
51	12/15/2016	$	15,100.95	$	3,538.75	$	11,562.20	$	371,005.63
52	3/15/2017	$	15,100.95	$	3,431.80	$	11,669.15	$	359,336.48
53	6/15/2017	$	15,100.95	$	3,323.86	$	11,777.09	$	347,559.39
54	9/15/2017	$	15,100.95	$	3,214.92	$	11,886.03	$	335,673.36
55	12/15/2017	$	15,100.95	$	3,104.98	$	11,995.97	$	323,677.39
56	3/15/2018	$	15,100.95	$	2,994.02	$	12,106.93	$	311,570.46
57	6/15/2018	$	15,100.95	$	2,882.03	$	12,218.92	$	299,351.54
58	9/15/2018	$	15,100.95	$	2,769.00	$	12,331.95	$	287,019.59
59	12/15/2018	$	15,100.95	$	2,654.93	$	12,446.02	$	274,573.57
60	3/15/2019	$	15,100.95	$	2,539.81	$	12,561.14	$	262,012.42
61	6/15/2019	$	15,100.95	$	2,423.61	$	12,677.34	$	249,335.09
62	9/15/2019	$	15,100.95	$	2,306.35	$	12,794.60	$	236,540.49
63	12/15/2019	$	15,100.95	$	2,188.00	$	12,912.95	$	223,627.54
64	3/15/2020	$	15,100.95	$	2,068.55	$	13,032.40	$	210,595.14
65	6/15/2020	$	15,100.95	$	1,948.01	$	13,152.94	$	197,442.20
66	9/15/2020	$	15,100.95	$	1,826.34	$	13,274.61	$	184,167.59
67	12/15/2020	$	15,100.95	$	1,703.55	$	13,397.40	$	170,770.19

EXHIBIT C

68	3/15/2021	$	15,100.95	$	1,579.62	$	13,521.33	$	157,248.86
69	6/15/2021	$	15,100.95	$	1,454.55	$	13,646.40	$	143,602.46
70	9/15/2021	$	15,100.95	$	1,328.32	$	13,772.63	$	129,829.84
71	12/15/2021	$	15,100.95	$	1,200.93	$	13,900.02	$	115,929.81
72	3/15/2022	$	15,100.95	$	1,072.35	$	14,028.60	$	101,901.21
73	6/15/2022	$	15,100.95	$	942.59	$	14,158.36	$	87,742.85
74	9/15/2022	$	15,100.95	$	811.62	$	14,289.33	$	73,453.52
75	12/15/2022	$	15,100.95	$	679.45	$	14,421.50	$	59,032.02
76	3/15/2023	$	15,100.95	$	546.05	$	14,554.90	$	44,477.11
77	6/15/2023	$	15,100.95	$	411.41	$	14,689.54	$	29,787.58
78	9/15/2023	$	15,100.95	$	275.54	$	14,825.41	$	14,962.16
79	12/15/2023	$	15,100.95	$	138.40	$	14,962.55	$	(0.39)
Grand Totals		**$**	**1,192,975.05**	**$**	**342,974.66**	**$**	**850,000.39**		
		Total Payment		**Total Interest**		**Total Principal**			

EXHIBIT "D"

COMPUTATION SHOWING SUFFICIENCY
OF
NET REVENUES TO PAY DEBT SERVICE

(See attached schedule. Two pages.)

Exhibit D

PROJECTED CASH FLOW SUMMARY - SANITARY SEWER SYSTEM

Borough of Turbotville

Year	1 Number of Sewer EDU's	2 Average Annual EDU Charges	3 Annual Sewer Revenue	4 Tapping Fee	5 Tapping Fee Revenue	6 Other Sewer Revenues	7 GROSS REVENUES	8 Sewer Annual O&M Costs	9 Annual Debt Service	10 TOTAL EXPENSES	11 ANNUAL SURPLUS
2004	368	$ 460	$ 169,280	$ 3,000	$ 9,000	$ 2,500	$ 180,780	$ 120,000	$ 60,404	$ 180,404	$ 376
2005	372	$ 460	$ 170,973	$ 3,030	$ 11,150	$ 2,525	$ 184,648	$ 123,300	$ 60,404	$ 183,704	$ 944
2006	375	$ 462	$ 173,433	$ 3,060	$ 11,375	$ 2,550	$ 187,358	$ 126,691	$ 60,404	$ 187,095	$ 264
2007	379	$ 466	$ 176,684	$ 3,091	$ 11,603	$ 2,576	$ 190,863	$ 130,175	$ 60,404	$ 190,579	$ 285
2008	383	$ 470	$ 179,983	$ 3,122	$ 11,836	$ 2,602	$ 194,421	$ 133,755	$ 60,404	$ 194,158	$ 262
2009	387	$ 474	$ 183,330	$ 3,153	$ 12,074	$ 2,628	$ 198,032	$ 137,433	$ 60,404	$ 197,837	$ 195
2010	391	$ 478	$ 186,726	$ 3,185	$ 12,317	$ 2,654	$ 201,696	$ 141,212	$ 60,404	$ 201,616	$ 80
2011	395	$ 483	$ 190,566	$ 3,216	$ 12,565	$ 2,680	$ 205,811	$ 145,096	$ 60,404	$ 205,499	$ 311
2012	398	$ 487	$ 194,065	$ 3,249	$ 12,817	$ 2,707	$ 209,589	$ 149,086	$ 60,404	$ 209,489	$ 100
2013	402	$ 492	$ 198,018	$ 3,281	$ 13,075	$ 2,734	$ 213,827	$ 153,186	$ 60,404	$ 213,589	$ 238
2014	407	$ 497	$ 202,031	$ 3,314	$ 13,338	$ 2,762	$ 218,130	$ 157,398	$ 60,404	$ 217,802	$ 328
2015	411	$ 502	$ 206,104	$ 3,347	$ 13,606	$ 2,789	$ 222,499	$ 161,727	$ 60,404	$ 222,130	$ 369
2016	415	$ 507	$ 210,239	$ 3,380	$ 13,879	$ 2,817	$ 226,935	$ 166,174	$ 60,404	$ 226,578	$ 357
2017	419	$ 512	$ 214,435	$ 3,414	$ 14,158	$ 2,845	$ 231,438	$ 170,744	$ 60,404	$ 231,148	$ 291
2018	423	$ 517	$ 218,694	$ 3,448	$ 14,443	$ 2,874	$ 236,011	$ 175,439	$ 60,404	$ 235,843	$ 168
2019	427	$ 523	$ 223,445	$ 3,483	$ 14,733	$ 2,902	$ 241,080	$ 180,264	$ 60,404	$ 240,668	$ 412
2020	432	$ 528	$ 227,837	$ 3,518	$ 15,029	$ 2,931	$ 245,797	$ 185,221	$ 60,404	$ 245,625	$ 172
2021	436	$ 534	$ 232,730	$ 3,553	$ 15,331	$ 2,961	$ 251,022	$ 190,315	$ 60,404	$ 250,719	$ 303
2022	440	$ 540	$ 237,698	$ 3,588	$ 15,639	$ 2,990	$ 256,328	$ 195,548	$ 60,404	$ 255,952	$ 376
2023	445	$ 546	$ 242,743	$ 3,624	$ 15,954	$ 3,020	$ 261,717	$ 200,926	$ 60,404	$ 261,330	$ 387

See calculations and assumed growth rates on following page.

4/27/04

UTCE File No. 0047-036-000

Attachment to Exhibit D - Projected Cash Flow Summary

Column	Explanation
1	**NUMBER OF SEWER EDUs** Current number of Equivalent Dwelling Units (EDUs) is 368. Projected growth rate is 1.0% annually. Total number of new EDUs in the 20-year period is thus conservatively estimated at 77. See explanation for Column 5 for further info.
2	**AVERAGE ANNUAL EDU CHARGES** Current annual user rate is $456 annually. Act 339 money is no longer available. Act 339 grants contributed $10,883 of annual revenue, which must be replaced. A revised initial annual user rate of $460 may balance the budget approximately. Growth rate of annual user rate is estimated to be approximately 0.935% annually for 20 years to meet rising expenses.
3	**ANNUAL SEWER REVENUE** Column 1 multiplied by Column 2.
4	**TAPPING FEE** Current tap fee is $3,000 and increases 1% annually to meet rising expenses.
5	**TAPPING FEE REVENUE** Calculated by multiplying the number of new taps derived from Column 1 by the tapping fee in column 4. Three new taps were assumed in 2004. There are approximately 80 developable acres in the Borough. Assuming ¼ acre lots and 60% of the developable acreage is allocated for utilities, green space, and undeveloped properties, there are approximately 128 potential EDUs in the Borough. Lewis Township is requesting 50 EDUs. A total of 178 EDUs is possible. Less than ½ of this total was used as a conservative estimate, or 77 EDUs (see Column 1 explanation). An increased number of new taps over this conservative estimate should result in a net revenue increase.
6	**OTHER SEWER REVENUE** From interest income and inspections with a growth rate of 1% per year. Information derived from annual budgets.
7	**GROSS REVENUES** The sum of Columns 3, 5, and 6.
8	**SEWER ANNUAL O&M COSTS** Derived from the last several year's budgets, minus debt service. A growth rate of 2.75% per year was applied, which was also derived from budget trends over the last several years.
9	**ANNUAL DEBT SERVICE** Calculated in the new loan amortization.
10	**TOTAL EXPENSES** The sum of Columns 8 and 9.
11	**ANNUAL SURPLUS** Column 10 subtracted from Column 7.

Amortization

Borrower name TURBOTVILLE BOROUGH
Address

PA

Loan number

Date		Amount	Payment	Principal	Interest	Remaining Balance
06-03-2004	Fixed Rate	3.700				
06-03-2004	Funding	826,850.68				826,850.68
06-15-2004	Regular Pmt		14,680.76	13,674.95	1,005.81	813,175.73
09-15-2004	Regular Pmt		14,680.76	7,158.88	7,521.88	806,016.85
12-15-2004	Regular Pmt		14,680.76	7,225.10	7,455.66	798,791.75
2004 Totals:			44,042.28	28,058.93	15,983.35	
03-15-2005	Regular Pmt		14,680.76	7,291.94	7,388.82	791,499.81
06-15-2005	Regular Pmt		14,680.76	7,359.39	7,321.37	784,140.42
09-15-2005	Regular Pmt		14,680.76	7,427.46	7,253.30	776,712.96
12-15-2005	Regular Pmt		14,680.76	7,496.17	7,184.59	769,216.79
2005 Totals:			58,723.04	29,574.96	29,148.08	
03-15-2006	Regular Pmt		14,680.76	7,565.50	7,115.26	761,651.29
06-15-2006	Regular Pmt		14,680.76	7,635.49	7,045.27	754,015.80
09-15-2006	Regular Pmt		14,680.76	7,706.11	6,974.65	746,309.69
12-15-2006	Regular Pmt		14,680.76	7,777.40	6,903.36	738,532.29
2006 Totals:			58,723.04	30,684.50	28,038.54	
03-15-2007	Regular Pmt		14,680.76	7,849.34	6,831.42	730,682.95
06-15-2007	Regular Pmt		14,680.76	7,921.94	6,758.82	722,761.01
09-15-2007	Regular Pmt		14,680.76	7,995.22	6,685.54	714,765.79
12-15-2007	Regular Pmt		14,680.76	8,069.18	6,611.58	706,696.61
2007 Totals:			58,723.04	31,835.68	26,887.36	
03-15-2008	Regular Pmt		14,680.76	8,143.82	6,536.94	698,552.79

06-15-2008	Regular Pmt	14,680.76	8,219.15	6,461.61	690,333.64
09-15-2008	Regular Pmt	14,680.76	8,295.17	6,385.59	682,038.47
12-15-2008	Regular Pmt	14,680.76	8,371.90	6,308.86	673,666.57
2008 Totals:		58,723.04	33,030.04	25,693.00	
03-15-2009	Regular Pmt	14,680.76	8,449.34	6,231.42	665,217.23
06-15-2009	Regular Pmt	14,680.76	8,527.50	6,153.26	656,689.73
09-15-2009	Regular Pmt	14,680.76	8,606.38	6,074.38	648,083.35
12-15-2009	Regular Pmt	14,680.76	8,685.99	5,994.77	639,397.36
2009 Totals:		58,723.04	34,269.21	24,453.83	
03-15-2010	Regular Pmt	14,680.76	8,766.33	5,914.43	630,631.03
06-15-2010	Regular Pmt	14,680.76	8,847.42	5,833.34	621,783.61
09-15-2010	Regular Pmt	14,680.76	8,929.26	5,751.50	612,854.35
12-15-2010	Regular Pmt	14,680.76	9,011.86	5,668.90	603,842.49
2010 Totals:		58,723.04	35,554.87	23,168.17	
03-15-2011	Regular Pmt	14,680.76	9,095.22	5,585.54	594,747.27
06-15-2011	Regular Pmt	14,680.76	9,179.35	5,501.41	585,567.92
09-15-2011	Regular Pmt	14,680.76	9,264.26	5,416.50	576,303.66
12-15-2011	Regular Pmt	14,680.76	9,349.95	5,330.81	566,953.71
2011 Totals:		58,723.04	36,888.78	21,834.26	
03-15-2012	Regular Pmt	14,680.76	9,436.44	5,244.32	557,517.27
06-15-2012	Regular Pmt	14,680.76	9,523.73	5,157.03	547,993.54
09-15-2012	Regular Pmt	14,680.76	9,611.82	5,068.94	538,381.72
12-15-2012	Regular Pmt	14,680.76	9,700.73	4,980.03	528,680.99
2012 Totals:		58,723.04	38,272.72	20,450.32	
03-15-2013	Regular Pmt	14,680.76	9,790.46	4,890.30	518,890.53
06-15-2013	Regular Pmt	14,680.76	9,881.02	4,799.74	509,009.51
09-15-2013	Regular Pmt	14,680.76	9,972.42	4,708.34	499,037.09
12-15-2013	Regular Pmt	14,680.76	10,064.67	4,616.09	488,972.42
2013 Totals:		58,723.04	39,708.57	19,014.47	
03-15-2014	Regular Pmt	14,680.76	10,157.77	4,522.99	478,814.65

06-15-2014	Regular Pmt	14,680.76	10,251.72	4,429.04	468,562.93
09-15-2014	Regular Pmt	14,680.76	10,346.55	4,334.21	458,216.38
12-15-2014	Regular Pmt	14,680.76	10,442.26	4,238.50	447,774.12
2014 Totals:		58,723.04	41,198.30	17,524.74	
03-15-2015	Regular Pmt	14,680.76	10,538.85	4,141.91	437,235.27
06-15-2015	Regular Pmt	14,680.76	10,636.33	4,044.43	426,598.94
09-15-2015	Regular Pmt	14,680.76	10,734.72	3,946.04	415,864.22
12-15-2015	Regular Pmt	14,680.76	10,834.02	3,846.74	405,030.20
2015 Totals:		58,723.04	42,743.92	15,979.12	
03-15-2016	Regular Pmt	14,680.76	10,934.23	3,746.53	394,095.97
06-15-2016	Regular Pmt	14,680.76	11,035.37	3,645.39	383,060.60
09-15-2016	Regular Pmt	14,680.76	11,137.45	3,543.31	371,923.15
12-15-2016	Regular Pmt	14,680.76	11,240.47	3,440.29	360,682.68
2016 Totals:		58,723.04	44,347.52	14,375.52	
03-15-2017	Regular Pmt	14,680.76	11,344.45	3,336.31	349,338.23
06-15-2017	Regular Pmt	14,680.76	11,449.38	3,231.38	337,888.85
09-15-2017	Regular Pmt	14,680.76	11,555.29	3,125.47	326,333.56
12-15-2017	Regular Pmt	14,680.76	11,662.17	3,018.59	314,671.39
2017 Totals:		58,723.04	46,011.29	12,711.75	
03-15-2018	Regular Pmt	14,680.76	11,770.05	2,910.71	302,901.34
06-15-2018	Regular Pmt	14,680.76	11,878.92	2,801.84	291,022.42
09-15-2018	Regular Pmt	14,680.76	11,988.80	2,691.96	279,033.62
12-15-2018	Regular Pmt	14,680.76	12,099.70	2,581.06	266,933.92
2018 Totals:		58,723.04	47,737.47	10,985.57	
03-15-2019	Regular Pmt	14,680.76	12,211.62	2,469.14	254,722.30
06-15-2019	Regular Pmt	14,680.76	12,324.58	2,356.18	242,397.72
09-15-2019	Regular Pmt	14,680.76	12,438.58	2,242.18	229,959.14
12-15-2019	Regular Pmt	14,680.76	12,553.64	2,127.12	217,405.50
2019 Totals:		58,723.04	49,528.42	9,194.62	
03-15-2020	Regular Pmt	14,680.76	12,669.76	2,011.00	204,735.74

06-15-2020	Regular Pmt	14,680.76	12,786.95	1,893.81	191,948.79
09-15-2020	Regular Pmt	14,680.76	12,905.23	1,775.53	179,043.56
12-15-2020	Regular Pmt	14,680.76	13,024.61	1,656.15	166,018.95
2020 Totals:		58,723.04	51,386.55	7,336.49	
03-15-2021	Regular Pmt	14,680.76	13,145.08	1,535.68	152,873.87
06-15-2021	Regular Pmt	14,680.76	13,266.68	1,414.08	139,607.19
09-15-2021	Regular Pmt	14,680.76	13,389.39	1,291.37	126,217.80
12-15-2021	Regular Pmt	14,680.76	13,513.25	1,167.51	112,704.55
2021 Totals:		58,723.04	53,314.40	5,408.64	
03-15-2022	Regular Pmt	14,680.76	13,638.24	1,042.52	99,066.31
06-15-2022	Regular Pmt	14,680.76	13,764.40	916.36	85,301.91
09-15-2022	Regular Pmt	14,680.76	13,891.72	789.04	71,410.19
12-15-2022	Regular Pmt	14,680.76	14,020.22	660.54	57,389.97
2022 Totals:		58,723.04	55,314.58	3,408.46	
03-15-2023	Regular Pmt	14,680.76	14,149.90	530.86	43,240.07
06-15-2023	Regular Pmt	14,680.76	14,280.79	399.97	28,959.28
09-15-2023	Regular Pmt	14,680.76	14,412.89	267.87	14,546.39
12-15-2023	Regular Pmt	14,680.76	14,546.21	134.55	0.18
2023 Totals:		58,723.04	57,389.79	1,333.25	
Loan Totals:		1,159,780.04	826,850.50	332,929.54	

Printed on: 06-03-2004

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

CERTIFICATE OF APPROVAL
LOCAL GOVERNMENT UNIT DEBT ACT

DATE: October 11, 2016

APPROVAL NO: GON-161011-03

AMOUNT: $500,000.00

For Secretary of Community and Economic Development

Borough of Turbotville
Northumberland County, Pennsylvania
$500,000 Maximum Principal Amount
General Obligation Note, Series of 2016

APPLICATION FOR APPROVAL TO DELIVER A GENERAL OBLIGATION NOTE UNDER PROVISIONS OF THE LOCAL GOVERNMENT UNIT DEBT

TO: THE DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT OF THE COMMONWEALTH OF PENNSYLVANIA

Application is made by the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), to the Department of Community and Economic Development (the "Department") of the Commonwealth of Pennsylvania (the "Commonwealth"), pursuant to the Local Government Unit Debt Act (the "Act") of the Commonwealth, for approval to deliver a general obligation note of the Borough. In accordance with applicable provisions of the Act, the Borough, acting through its proper officers, sets forth and certifies as follows:

1. The debt proposed to be issued will be evidenced by the Borough's General Obligation Note, Series of 2016 (the "Note"), will constitute nonelectoral debt and will be in the maximum principal amount of $500,000, and is being incurred in connection with refunding an outstanding obligation, funding costs of a capital project which consists of constructing improvements to the wastewater treatment plant owned and operated by the Borough and paying related costs, fees and expenses.

2. Attached hereto and made part hereof is a complete and accurate transcript of the proceedings relating to the issuance of the proposed Note, which transcript of proceedings consists of the following:

a. A certified copy of the ordinance of the Borough authorizing the manner of sale of the Note, authorizing the Note and awarding the Note, together with appropriate proofs of proper publication;

b. A certified copy of the accepted bid or proposal for purchase of the Note; and

c. A Debt Statement prepared pursuant to the Act, to which is appended an appropriate Borrowing Base Certificate as required by the Act.

3. The filing of this Application has been authorized by appropriate action of the Council of the Borough (See the ordinance referred to in paragraph 2.a.).

IN WITNESS WHEREOF, the Borough causes this Application to be executed in its name and in its behalf by the President or Vice President of the Council and its official seal to be affixed hereto and attested by the Secretary of the Borough, all as of the 12th day of September, 2016.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: Francis B. Best
(Vice) President of Council

ATTEST:

Diane K. Miller
Secretary

(SEAL)

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

ORDINANCE NO. 9-16

AN ORDINANCE

OF THE BOROUGH AUTHORIZING AND DIRECTING ISSUANCE OF A GENERAL OBLIGATION NOTE OF THE BOROUGH IN THE MAXIMUM PRINCIPAL AMOUNT OF $500,000, PURSUANT TO THE PENNSYLVANIA LOCAL GOVERNMENT UNIT DEBT ACT, TO REFUND AND RETIRE THE OUTSTANDING GENERAL OBLIGATION NOTE, SERIES OF 2013, OF THE BOROUGH AND TO PROVIDE FUNDS FOR AND TOWARD PAYMENT OF COSTS OF A CAPITAL PROJECT WHICH CONSISTS OF THE ACQUISITION AND CONSTRUCTION OF RENOVATIONS, ALTERATIONS, ADDITIONS AND/OR IMPROVEMENTS TO THE WASTEWATER TREATMENT PLANT OF THE BOROUGH AND PAYMENT OF RELATED COSTS, FEES AND EXPENSES; ACCEPTING A CERTAIN BID OR PROPOSAL FOR PURCHASE OF SUCH NOTE; SETTING FORTH THE TERMS OF SUCH NOTE; CREATING A SINKING FUND AND APPOINTING A SINKING FUND DEPOSITORY FOR SUCH NOTE; AND PLEDGING THE FULL FAITH, CREDIT AND TAXING POWER OF THE BOROUGH IN SUPPORT OF SUCH NOTE.

WHEREAS, The Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), is a municipal corporation (a borough) of the Commonwealth of Pennsylvania (the "Commonwealth") and a "local government unit" within the meaning of the Local Government Unit Debt Act, 53 Pa.C.S. Chs. 80-82 (the "Act"), and is governed by its elected Council; and

WHEREAS, The Council of the Borough heretofore determined to undertake the Capital Project, as that phrase is defined in Section 1 of this Ordinance; and

WHEREAS, The Council of the Borough, by ordinance duly enacted, in accordance with law, on November 4, 2013 (the "Series of 2013 Note Enabling Ordinance"), authorized and directed issuance of a general obligation note designated as the Borough's "General Obligation Note, Series of 2013", in the stated maximum principal amount of $500,000 (the "Series of 2013

Note"), to provide funds for and toward such Capital Project and in anticipation of later, permanent financing; and

WHEREAS, The Department of Community and Economic Development of the Commonwealth (the "Department") approved the proceedings of the Borough related to the increase of indebtedness by issuance of the Series of 2013 Note, which approval was evidenced by Certificate of Approval No. GON-131203-05, dated December 3, 2013; and

WHEREAS, At the time of authorization, issuance and delivery of the Series of 2013 Note, the Council of the Borough anticipated that plans and specifications for such Capital Project, construction bids for such Capital Project, and permanent financing for such Capital Project would be in place no later than December 31, 2013, and the Series of 2013 Note was therefore stated to mature on December 31, 2016, by which time the Borough expected permanent financing to be in place; and

WHEREAS, Implementation of such Capital Project has been delayed, and no commitment for permanent financing of the costs of such Capital Project is in hand or is expected to be in hand before the Series of 2013 Note matures; and

WHEREAS, The Council of the Borough expects that the final engineering design of such Capital Project will be completed and submitted to the Pennsylvania Department of Environmental Protection ("DEP") in October 2016; that a DEP permit for construction of such Capital Project will be issued in a timely manner; and that plans and specifications for such Capital Project will be completed and construction bids received by the Spring of 2017, with construction then to commence and to be completed within another 15 months; and

WHEREAS, The Council of the Borough therefore has determined that it is necessary to refund the outstanding principal balance of the Series of 2013 Note and to provide for the funding of additional costs of such Capital Project on a temporary basis, until such time as permanent financing for such Capital Project can be secured; and

WHEREAS, The Council of the Borough, in contemplation of the sale and issuance of a general obligation note in the maximum principal amount of Five Hundred Thousand Dollars ($500,000), to refund and retire the Series of 2013 Note and to provide funds for and toward the Capital Project (hereinafter defined), heretofore determined that such general obligation note: (a) should be offered for sale at private sale by negotiation; and (b) should be offered for sale at a price of not less than 100% of principal amount thereof; and

WHEREAS, A proper written and sealed private bid or proposal for purchase of such general obligation note has been requested from and has been received from The Turbotville National Bank (the "Bank"), which has an office in Turbotville, Pennsylvania; and

WHEREAS, The Council of the Borough duly has opened, read and considered such bid or proposal; and

WHEREAS, The Council of the Borough desires to accept such bid or proposal of the Bank, to award the Note (hereinafter defined) to the Bank, at private sale by negotiation, and to incur nonelectoral debt in the amount of $500,000 in connection with the Project (hereinafter defined) pursuant to provisions of the Act.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED, by the Council of the Borough, as follows:

Section 1. The Council of the Borough does authorize and direct the issuance of a general obligation note of the Borough, pursuant to this Ordinance, in the maximum principal amount of $500,000, to be designated generally as its "General Obligation Note, Series of 2016" (the "Note"), in accordance with the Act, to provide funds for and toward a refunding project that consists of the redemption and retirement of the Series of 2013 Note (the "Refunding Project"), for and toward payment of costs of a capital project which consists of the acquisition and construction of renovations, alterations, additions and/or improvements to the wastewater treatment plant of the Borough (the "Capital Project"), and for and toward the payment of related costs, fees and expenses, including the costs and expenses of issuance of the Note (all of the foregoing, collectively, the "Project").

Section 2. The Council of the Borough expresses its finding that it is in the best financial interests of the Borough to sell the Note at private sale by negotiation and determines that the debt, of which the Note shall be evidence, to be incurred pursuant to this Ordinance shall be nonelectoral debt of the Borough.

Section 3. A brief description of the Project for which debt, of which the Note shall be evidence, is to be incurred is set forth in Section 1.

The Refunding Project is authorized by Section 8241(b)(2) of the Act. The Council of the Borough hereby determines that the covenant to pay the Series of 2013 Note in full by December 31, 2016, is unduly burdensome to the Borough under the existing facts and circumstances related to the Capital Project.

The estimated useful life of the Capital Project is at least thirty (30) years, and the estimated date of completion of construction related to the Capital Project is now July 31, 2018.

Section 4. The Council of the Borough shall and does accept the bid or proposal of the Bank for purchase of the Note, dated August 9, 2016 (the "Proposal"); and the Note shall be and is awarded to the Bank, in accordance with the terms and conditions of the Proposal, the original of which is on file with the Secretary of the Borough, at private sale by negotiation, at a dollar price of $500,000 (100% of principal amount), such price to be paid to the Township in multiple advances on a revolving line of credit basis, as hereinafter provided, the Bank having submitted such bid or proposal in accordance with provisions of the Act.

The Bank shall make advances of the proceeds of the Note to the Borough, from time to time, on a revolving line of credit basis, on any date or dates through and including the day preceding the stated date of maturity of the Note, upon written requests of the Borough signed by at least two (2) authorized officers of the Borough, provided that the outstanding principal balance of the Note shall not exceed, at any time, the sum of $500,000 and the Bank may require, as a condition to any advance, that the request for such advance be supported by a certificate of the Borough's consulting engineers for the Capital Project or an opinion of the Borough Solicitor to the effect that the costs to be paid or reimbursed by the Borough from the requested advance represent costs properly incurred by the Borough in connection with the Project.

The Council of the Borough does hereby determine and direct that the Series of 2013 Note be paid in full on the date of issuance and delivery of the Note to the Bank (the "Loan Closing Date") and does hereby authorize and direct its officers to request and obtain from the Bank on the Loan Closing Date an initial advance of proceeds sufficient to redeem and pay the outstanding principal of the Series of 2013 Note, together with any unpaid, accrued interest thereon, and to pay related costs and expenses, including costs of issuance of the Note. Upon such redemption of the Series of 2013 Note, the Borough shall request that the Bank cancel the Series of 2013 Note.

The Borough shall repay the amounts borrowed from the Bank from time to time against the stated principal amount of the Note from the proceeds of permanent or construction financing for the Capital Project, including, as applicable, bonds or notes issued by the Borough and loans and grants made by the Pennsylvania Infrastructure Investment Authority, the Commonwealth Financing Authority, and/or the Rural Utilities Service, USDA, in connection with the Capital Project, as and when such proceeds are received or, if and as necessary, from any other revenues or funds of the Borough, including its tax or other general revenues, in accordance with the covenant set forth in Section 11 of this Ordinance.

Section 5. The Note, when issued, will be a general obligation note of the Borough.

Section 6. The Note shall be in registered form and shall bear interest on the principal balance thereof outstanding at the rate, shall be of the denomination, shall mature and shall be payable as to interest on the dates as set forth in the following schedule:

Interest Rate	Denomination	Maturity Date	Interest Payment Dates
2.15% per annum, fixed	$500,000	December 31, 2018	Quarterly on March 1, June 1, September 1 and December 1 of each year, with the first payment on December 1, 2016

If the date fixed for any payment of principal or interest on the Note, whether an Interest Payment Date, the Maturity Date or any date fixed for redemption of the Note in whole or in part, is not a Business Day, as hereinafter defined, such payment shall be due and payable on the next following Business Day, and such extension of time shall in each case be included in any computation of payments of interest, but shall be excluded in the computation of interest for any next succeeding interest period. For the purposes of this Ordinance and the Note, the phrase "Business Day" shall mean any day other than a Saturday, a Sunday or a legal holiday in the Commonwealth of Pennsylvania.

Each amount advanced by the Bank against the stated principal amount of the Note shall bear interest from the date of such advance.

Section 7. The Note shall be subject to redemption prior to maturity, at the option of the Borough, as a whole, on any date, upon payment of the outstanding principal amount thereof, together with accrued interest to the date fixed for redemption.

The Borough, at its option, from time to time, on any date, may redeem any part of the principal of the Note, by payment of the principal amount selected for such redemption, together with accrued interest to the date fixed for redemption.

Any redemption, as hereinbefore authorized, shall be upon written notice deposited, postage prepaid, in the United States mail not less than five (5) days prior to the date selected for redemption and addressed to the person in whose name ownership of the Note is registered on the Business Day next preceding the date of mailing of the notice on the registration book of the Borough kept by the Bank, acting as registrar for the Note on behalf of the Borough, at the address of such owner as shown on such registration book; provided, however, that if the registered owner of the Note is the Bank or the registered owner of the Note shall have filed written waiver of notice with the Borough, the Note may be redeemed on the redemption date without necessity of such notice by mail. On the date designated for redemption, money for payment of the principal, premium, if any, and accrued interest due on the Note or the portion thereof so called for redemption, as applicable, being held by the Bank, acting as paying agent, and notice of redemption having been given or waived as aforesaid, interest on the Note or the portion thereof so called for redemption, as applicable, shall cease to accrue and, if the Note shall have been called for redemption in full, it shall cease to be entitled to any benefit or security under this Ordinance, and the registered owner thereof shall have no further rights with respect to the Note, except to receive payment of the principal of and accrued interest on the Note to the redemption date, together with any applicable redemption premium

The foregoing provisions of this Section are, however, subject to the condition that so long as the line of credit with the Bank to which this Note relates is open, this Note shall not be cancelled, nor shall such line of credit be terminated, until such line of credit may no longer be drawn upon by the Borough or the Borough shall declare, in writing delivered to the Bank, that no further draws shall be made by the Borough against such line of credit.

Section 8. The principal of and interest on the Note shall be payable at the Turbotville, Pennsylvania, office of the Bank or at any other office of the Bank, as shall be specified in the Note, in lawful money of the United States of America.

Section 9. The form of the Note and the form of Registration Record shall be substantially as set forth in **Exhibit A** attached hereto and made part hereof, with appropriate insertions and variation.

Section 10. The Note shall be executed in the name of and on behalf of the Borough by the manual signature of the President or Vice President of the Council of the Borough and the official seal of the Borough shall be affixed thereto, and the manual signature of the Secretary or any Assistant Secretary of the Borough shall be affixed thereto in attestation thereof; and said officers are authorized to execute and to attest, as applicable, the Note, as aforesaid.

Section 11. The Borough covenants to and with the Bank and any subsequent registered owner, from time to time, of the Note that the Borough: (i) shall include the amount of the debt service for the Note, for each fiscal year of the Borough in which such sums are payable, in its budget for that year, (ii) shall appropriate such amounts from its general revenues for the payment of such debt service, and (iii) shall duly and punctually pay or cause to be paid from the sinking fund created pursuant to Section 12 hereof or any other of its revenues or funds the principal of and the interest on the Note at the dates and place and in the manner stated in the Note, according to the true intent and meaning thereof; and, for such budgeting, appropriation and payment, the Borough shall and does pledge, irrevocably, its full faith, credit and taxing power. As provided in the Act, the foregoing covenant of the Borough shall be enforceable specifically.

Section 12. There is created, pursuant to Section 8221 of the Act, a sinking fund for the Note, to be known as "Sinking Fund - General Obligation Note, Series of 2016", which sinking fund shall be administered in accordance with applicable provisions of the Act.

Section 13. The Borough appoints the Bank as the sinking fund depository with respect to the sinking fund created pursuant to Section 12.

Section 14. The Borough covenants to make payments out of the sinking fund created pursuant to Section 12 or out of any other of its revenues or funds, at such times and in such annual amounts, as shall be sufficient for prompt and full payment of all obligations of the Note when due.

Section 15. The President or Vice President of the Council and the Secretary or any Assistant Secretary, respectively, of the Borough, which shall include their duly qualified successors in office, if applicable, are authorized and directed: (a) to prepare, to certify and to file with the Department of Community and Economic Development (the "Department") of the Commonwealth the debt statement required by the Act; (b) to prepare and to file the application with the Department, together with a complete and accurate transcript of the proceedings relating to the incurring of debt, of which debt the Note, upon issue, will be evidence, as required by the Act; (c) to prepare and to file, if applicable, any statements required by the Act that are necessary

to qualify all or any portion of nonelectoral and/or lease rental debt of the Borough that is subject to exclusion as self-liquidating or subsidized debt for exclusion from the appropriate debt limit as self-liquidating or subsidized debt; (e) to make an initial draw request with respect to the Note in the amount necessary to refund and retire the Series of 2013 Note and to pay related costs, fees and expenses of financing; and (e) to take other required, necessary and/or appropriate action.

The Council of the Borough authorizes and directs that an appropriate borrowing base certificate for the Borough be prepared for filing with the Department as required by the Act. The President or Vice President of Council and the Secretary or any Assistant Secretary of the Borough are authorized to prepare and to execute, or to authorize the auditors of the Borough to prepare and to execute, such borrowing base certificate.

Section 16. The Note has been sold, as set forth in this Ordinance, at private sale by negotiation, as permitted by the Act.

Section 17. The President or Vice President of the Council and the Secretary or any Assistant Secretary, respectively, of the Borough are authorized and directed to contract with the Bank for its services as sinking fund depository in connection with the sinking fund created pursuant to Section 12 and as paying agent in connection with the Note.

Section 18. It is declared that the debt to be incurred hereby, together with any other indebtedness of the Borough, is not in excess of any applicable limitation imposed by the Act upon the incurring of debt by the Borough which is evidenced by the Note.

Section 19. The Secretary of the Borough is authorized and directed to deliver the Note, after execution and attestation thereof as provided for herein, to the Bank, as provided in the proposal for purchase of the Note, but only after the Department has certified its approval pursuant to Section 8204 of the Act or the filing made with the Department in accordance with Section 15 of this Ordinance is deemed to have been approved, as provided in Section 8206 of the Act.

Section 20. The President or Vice President of the Council and the Secretary or any Assistant Secretary, respectively, of the Borough are authorized and directed to provide for the redemption and retirement of the Series of 2013 Note and the payment of all related costs, fees and expenses, including legal fees and other costs of issuing the Note from the proceeds of the Note on the Loan Closing Date, and for such purpose to submit an initial draw request to the Bank. Such initial draw request may also include any additional amount needed to pay or reimburse any Capital Project cost which may have been approved by Council prior to the Loan Closing Date but not paid or reimbursed previously from proceeds of the Series of 2013 Note. Such officers of the Borough are hereby further authorized to declare, in writing and on behalf of the Borough, that no further draws shall be made by the Borough against the refunded Series of 2013 Note and to request that the Bank provide for cancellation and destruction of the Series of 2013 Note.

Section 21. The Borough covenants to and with the Bank and any subsequent owners of the Note that it will make no use of the proceeds of the Note, or of any other obligations deemed to

be part of the same issue as the Note under applicable federal tax regulations, that will cause the Note to be or become an "arbitrage bond" (or note) within the meaning of Section 103(b)(2) and Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), and the regulations implementing said Sections that duly have been published in the Federal Register or with any other regulations implementing said Sections. The Borough further covenants to and with the Bank and any subsequent owners of the Note that it will make no use of the proceeds of the Note, of the proceeds of any other obligations deemed to be part of the same "issue" as the Note under applicable Federal tax regulations, or of any property or facilities financed with the proceeds of the Note or of any such other obligations deemed to be part of the same "issue" as the Note, that will cause the Note to be or become a "private activity bond" within the meaning of Section 141 of the Code and the Treasury Regulations implementing said Section of the Code. The Borough shall comply with all other requirements of the Code, if and to the extent applicable, to maintain continuously the Federal income tax exemption of interest on the Note, and shall take no action which would adversely affect the tax-exempt status of the interest paid or payable on the Note.

Each of the officers of the Borough is authorized to execute and deliver on behalf of the Borough upon issuance and delivery of the Note a tax compliance certificate or agreement which, among other things, confirms that the Borough reasonably expects (1) to allocate at least 85% of the amounts actually drawn and borrowed against the Note to expenditures for the Project by the end of the 3-year period following issuance of the Note, (2) to incur within 6 months following the issuance of the Note a binding obligation to a third party to expend at least 5% of the face amount of the Note on the Capital Project (or, if applicable, the Borough has already incurred such an obligation); (3) to expend all amounts actually drawn and borrowed against the Note to pay costs of the Project, and (4) to complete the Project with due diligence.

The Borough determines that it has not issued, and does not reasonably expect to issue, tax-exempt obligations that, together with all tax-exempt obligations issued and reasonably expected to be issued by all entities which issue obligations on behalf of the Borough and all "subordinate entities" (within the meaning of Section 265(b)(3)(E) of the Code), of the Borough, in the aggregate, exceed or will exceed Ten Million Dollars ($10,000,000) during the 2016 calendar year and, accordingly, the Borough hereby designates the Note as a "qualified tax-exempt obligation", as defined in Section 265(b)(3)(B) of the Code, for the purposes and effect contemplated by Section 265 of the Code.

Section 22. The Borough covenants with the Bank and any subsequent owners of the Note that so long as the Note remains outstanding and unpaid or the revolving line of credit to which the Note relates remains open,

(a) the Borough shall submit to the Bank annually, within 120 days following the end of each fiscal year of the Borough, a copy of the Borough's current annual budget and annual financial report in a form acceptable to the Bank; and

(b) the Borough shall establish and maintain a construction fund for the Capital Project at the Bank, into which advances of the proceeds of the Note shall be deposited and from which money may be withdrawn or disbursed from time to time for payment of costs, as such term is defined in the Act, of the Capital Project, upon written authorization of the Council of the Borough, and for this purpose the Borough hereby designates the Bank as an authorized depository for money of the Borough and authorizes and directs that the Treasurer and other proper officers of the Borough open an account with the Bank in the name of the Borough to serve as such construction fund.

Section 23. Any reference in this Ordinance to an officer or member of the Council or other officer of the Borough shall be deemed to refer also to his or her duly qualified successor in office, as applicable.

Section 24. In the event any provision, section, sentence, clause or part of this Ordinance shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this Ordinance, it being the intent of the Borough that such remainder shall be and shall remain in full force and effect.

Section 25. All ordinances or parts of ordinances, insofar as the same shall be inconsistent herewith, shall be and the same expressly are repealed.

Section 26. This Ordinance shall be effective in accordance with Section 8003 of the Act.

DULY ENACTED AND ORDAINED, by the Council of the Borough of Turbotville, Northumberland County, Pennsylvania, in lawful session duly assembled, this 12th day of September, 2016.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: _____
(Vice) President of Borough Council

ATTEST:

_____
Borough Secretary

(SEAL)

DULY EXAMINED AND APPROVED this 12 day of September, 2016.

_____
Mayor of the Borough of Turbotville

EXHIBIT A

(FORM OF NOTE)

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania,
GENERAL OBLIGATION NOTE, SERIES OF 2016

_____, 2016

The **BOROUGH OF TURBOTVILLE**, Northumberland County, Pennsylvania (the "Borough"), a municipal corporation (a borough) of the Commonwealth of Pennsylvania (the "Commonwealth"), promises to pay to the order of The Turbotville National Bank (the "Bank"), or registered assigns, on December 31, 2018 (the "Maturity Date"), unless this General Obligation Note, Series of 2016 (the "Note"), duly shall have been called for previous redemption in full and payment of the redemption price shall have been made or provided for, the principal sum of Five Hundred Thousand Dollars ($500,000), or such lesser particular sum as shall represent the unpaid balance of all amounts drawn and borrowed by the Borough from the Bank against this Note from time to time, on a revolving line of credit basis, and to pay to the Bank, or registered assigns, interest on the principal balance of this Note which, from time to time, shall be outstanding and shall remain unpaid, at the fixed rate of 2.15% per annum, payable quarterly, on March 1, June 1, September 1 and December 1 of each year, beginning on December 1, 2016, and on the Maturity Date (each an "Interest Payment Date"). If any Interest Payment Date, the Maturity Date or any other date fixed for any payment of principal or interest on this Note, including any redemption date, is not a Business Day, as herein defined, such payment shall be due and payable on the next following Business Day, and such extension of time shall in each case be included in any computation of payments of interest, but shall be excluded in the computation of interest for any next succeeding interest period. As used in this Note, the phrase "Business Day" shall mean any day other than a Saturday, a Sunday or a legal holiday in the Commonwealth of Pennsylvania.

The principal of and interest on this Note shall be payable at the Turbotville, Pennsylvania, office of the Bank, in lawful money of the United States of America.

This Note is subject to redemption prior to maturity, at the option of the Borough, as a whole, on any date, upon payment of the outstanding principal amount hereof, together with accrued interest to the date fixed for redemption. The Borough, at its option, from time to time, on any date, may redeem any part of the outstanding principal balance of this Note, by payment of the amount selected for such redemption, together with accrued interest to the redemption date.

Any redemption, as hereinbefore authorized, shall be upon written notice deposited, postage prepaid, in the United States mail not less than five (5) days prior to the date selected for redemption and addressed to the person in whose name ownership of this Note is registered on the business day next preceding the date of mailing of the notice on the registration book of the Borough kept by the Bank, acting as note registrar on behalf of the Borough, at the address of such

owner as shown on such registration book; provided, however, that if the registered owner of this Note is the Bank or such registered owner shall file written waiver of notice with the Borough, this Note may be redeemed on the redemption date without necessity of such notice by mail. On the date designated for redemption, money for payment of the principal, premium, if any, and accrued interest due on this Note or the portion hereof so called for redemption, as applicable, being held by the Bank, acting as paying agent, and notice of redemption having been given or waived as aforesaid, interest on this Note or the portion hereof so called for redemption, as applicable, shall cease to accrue and, if this Note shall have been called for redemption in full, it shall cease to be entitled to any benefit or security under the Ordinance (hereinafter defined), and the registered owner or any other holder hereof shall have no further rights with respect to this Note, except to receive payment of the principal of and accrued interest hereon to the redemption date, together with any applicable redemption premium, if any.

The foregoing provisions of this Note are, however, subject to the condition that so long as the line of credit with the Bank to which this Note relates is open, this Note shall not be cancelled, nor shall such line of credit be terminated, until such line of credit may no longer be drawn upon by the Borough or the Borough shall declare, in writing delivered to the Bank, that no further draws shall be made by the Borough against such line of credit.

This Note is issued in accordance with provisions of the Act of the General Assembly of the Commonwealth known as the Local Government Unit Debt Act (the "Act"), and by virtue of a duly enacted Ordinance (the "Ordinance") of the Council of the Borough. The Act, as such shall have been in effect when this Note was authorized, and the Ordinance shall constitute a contract between the Borough and the registered owner or registered owners, from time to time, of this Note.

It hereby is certified that: (i) all acts, conditions and things required to be done, to happen or to be performed as conditions precedent to and in issuance of this Note or in creation of the debt of which this Note is evidence have been done, have happened or have been performed in due and regular form and manner, as required by law; and (ii) the debt represented by this Note, together with any other indebtedness of the Borough, is not in excess of any applicable limitation imposed by the Act upon the incurring of the debt of the Borough which is evidenced by this Note.

The Borough has covenanted, in the Ordinance, to and with registered owners, from time to time, of this Note, outstanding, from time to time, pursuant to the Ordinance, that the Borough: (i) shall include the amount of the debt service for this Note, for each fiscal year of the Borough in which such sums are payable, in its budget for that year, (ii) shall appropriate such amounts from its general revenues for the payment of such debt service, and (iii) shall duly and punctually pay or cause to be paid from the sinking fund established under the Ordinance or any other of its revenues or funds the principal of and the interest on this Note at the dates and place and in the manner stated herein, according to the true intent and meaning hereof; and, for such budgeting, appropriation and payment, the Borough has pledged and does pledge, irrevocably, its full faith, credit and taxing power. The Act provides that the foregoing covenant of the Borough shall be enforceable specifically.

The Borough, in the Ordinance, has established a sinking fund with the Bank, as the sinking fund depository, into which funds for the payment of the principal of and the interest on this Note shall be deposited not later than the date fixed for the disbursement thereof. The Borough has covenanted, in the Ordinance, to make payments out of such sinking fund or out of any other of its revenues or funds, at such times in such annual amounts, as shall be sufficient for prompt and full payment of all obligations of this Note.

This Note has been designated by the Borough as a "qualified tax-exempt obligation", as defined in Section 265(b)(3)(B) of the Internal Revenue Code of 1986, as amended (the "Code"), for purposes and effect contemplated *by Section 265 of the Code (relating to expenses and interest relating to tax-exempt income of certain financial institutions).*

This Note is transferable by the Bank, or by any subsequent registered owner in person or by his attorney duly authorized, in writing, at the principal office or at any branch office of the Bank, but only upon notation of such registration hereon and on the records of the Borough to be kept for that purpose at the principal office or at any branch office of the Bank by a duly authorized representative of the Bank acting on behalf of the Borough. The Borough and the Bank may deem and treat the person, from time to time, in whose name this Note shall be registered as the absolute owner hereof for the purpose of receiving payment hereof and of interest due hereon, for the purpose of redemption hereof prior to maturity and for all other purposes.

IN WITNESS WHEREOF, the BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania, as provided by the Act and in the Ordinance, has caused this Note to be executed in its name and on its behalf by the manual signature of the President or the Vice President of the Council of the Borough and the official seal of the Borough to be affixed hereto and the manual signature of the Secretary of the Borough to be affixed hereto in attestation thereof, all as of the date set forth above.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: _____
(Vice) President of Borough Council

ATTEST:

_____
Borough Secretary

(SEAL)

REGISTRATION RECORD

NOTHING TO BE WRITTEN HERE EXCEPT BY A DULY AUTHORIZED REPRESENTATIVE OF THE TURBOTVILLE NATIONAL BANK, TURBOTVILLE, PENNSYLVANIA, THE PAYING AGENT, OR OF ANY SUCCESSOR PAYING AGENT, ACTING AS REGISTRAR, ON BEHALF OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA

Date of Registry	Name of Registered Owner	Registrar (Authorized Representative)
_____, 2016	The Turbotville National Bank	The Turbotville National Bank

CERTIFICATE

I, the undersigned, Secretary of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), certify that: the foregoing is a true and correct copy of an Ordinance which duly was enacted by affirmative vote of a majority of all members of the Council of the Borough, in accordance with law, at a meeting duly held on Septemnber 12, 2016, at which meeting a quorum was present; said Ordinance duly was examined and approved by the Mayor of the Borough on September 12, 2016; said Ordinance has been certified and recorded by me, as Secretary of the Borough, in the book provided for the purpose of such recording; said Ordinance, upon enactment, as aforesaid, was assigned Ordinance No. 9-16; the total number of members of the Council of the Borough is seven (7); the vote of the members of the Council of the Borough, upon enactment of said Ordinance, the yeas and nays having been called, duly was recorded by me, as Secretary, as follows:

Francis Betz	- Yes
Nathan Yoder	- Absent
Harold Bender	- Yes
Robert Lynn	- Absent
Betty Figels	- Yes
Christina Mensch	- Yes
Michael Harrison	- Yes ;

said Ordinance has been advertised, as required by law, in a newspaper of general circulation in the Borough; and said Ordinance has not been amended, altered or repealed as of the date of this Certificate.

I further certify that the Council of the Borough met the advance notice and public comment requirements of the Sunshine Act, 65 Pa.C.S. Ch. 7, by advertising said meeting, by posting prominently a notice of said meeting at the principal office of the Borough or at the public building in which said meeting was held, and by providing a reasonable opportunity for public comment at said meeting, all in accordance with such Act.

IN WITNESS WHEREOF, I set my hand and affix the official seal of the Borough, this 12 day of September, 2016.

Diane K. Miller
Borough Secretary

(SEAL)

Legal Notices

CSIU BOARD COMMITTEE MEETINGS NOTICE

The Finance Committee of the Central Susquehanna Intermediate Unit (CSIU) will meet at 5:30 p.m. prior to every regularly scheduled board meeting during 2016-17 at the CSIU central office, 90 Lawton Lane, Milton.

EXECUTOR'S NOTICE

LETTERS TESTAMENTARY in the Estate of **Joseph W. Smith, Jr. a/k/a Joseph William Smith, Jr., Deceased**, late of Milton Borough, Northumberland County, Commonwealth of Pennsylvania, having been granted to the undersigned, all persons indebted are requested to make immediate payment and those having claims will present them for settlement without delay to:

James E. Smith
2878 Pleasant View Road
New Columbia, PA 17856

Or to his attorney:

Graham C. Showalter, Esquire
36 S. Third Street
PO Box 563
Lewisburg, PA 17837-0563
570-523-3237 Lewisburg

To get results, place a classified ad.

Legal Notices

EXECUTRIX'S NOTICE

IN RE: ESTATE OF Violet D. Dietrich

NOTICE IS HEREBY GIVEN that Letters Testamentary have been granted in the ESTATE OF VIOLET D. DIETRICH, late of East Buffalo Township, Union County, Pennsylvania. All persons indebted to said estate are requested to make immediate payment, and those having claims or demands against the estate of the decedent shall present them without delay to the undersigned executrix:

Kathryn D. Morris
135 Spruce Street
Lewisburg, PA 17837

or to her attorney

Lonnie C. Hill, Esquire
47 North Third Street
Lewisburg, PA 17837

NOTICE

NOTICE IS GIVEN that the Council of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), will hold a public meeting on Monday, September 12, 2016, beginning at 7:00 p.m., prevailing time, in the Community Hall of the Turbotville Borough Office, 2 Adam Street, PO Box 264, Turbotville, Pennsylvania, and at such meeting, or at another public meeting to be held not less than three (3) days nor more than thirty (30) days following the date of the advertisement of this Notice, proposes to enact an ordinance, the caption and summary of such proposed ordinance (the "Ordinance") being as follows:

"AN ORDINANCE

OF THE BOROUGH AUTHORIZING AND DIRECTING ISSUANCE OF A GENERAL OBLIGATION NOTE OF THE BOROUGH IN THE MAXIMUM PRINCIPAL AMOUNT OF $500,000, PURSUANT TO THE PENNSYLVANIA LOCAL GOVERNMENT UNIT DEBT ACT, TO REFUND AND RETIRE THE OUTSTANDING GENERAL OBLIGATION NOTE, SERIES OF 2013, OF THE BOROUGH AND TO PROVIDE FUNDS FOR AND TOWARD PAYMENT OF COSTS OF A CAPITAL PROJECT WHICH CONSISTS OF THE ACQUISITION AND CONSTRUCTION OF RENOVATIONS, ALTERATIONS, ADDITIONS AND/OR IMPROVEMENTS TO THE WASTEWATER TREATMENT PLANT OF THE BOROUGH AND PAYMENT OF RELATED COSTS, FEES AND EXPENSES; ACCEPTING A CERTAIN BID OR PROPOSAL FOR PURCHASE OF SUCH NOTE; SETTING FORTH THE TERMS OF SUCH NOTE; CREATING A SINKING FUND AND APPOINTING A SINKING FUND DEPOSITORY FOR SUCH NOTE; AND PLEDGING THE FULL FAITH, CREDIT AND TAXING POWER OF THE BOROUGH IN SUPPORT OF SUCH NOTE.

The full text of such proposed Ordinance may be examined or inspected by any citizen, at the Turbotville Borough Office, located at 2 Adam Street, Turbotville, Northumberland County, Pennsylvania, on any regular business day between the hours of 8:00 a.m. and 3:00 p.m., prevailing time. Amendments may be made with respect to the Ordinance prior to or during its final passage. Advertisement related to the final passage of the Ordinance, in final form, including amendments, as aforesaid, will be made in accordance with requirements of the Local Government Unit Debt Act (the "Act").

This Notice is given in accordance with requirements of and in compliance with the Act.

To get results, place a classified ad. Call 570-742-9077

Legal Notices

BY ORDER OF THE COUNCIL OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA
570-649-5476, Turbotville

NOTICE OF MEETING

NOTICE IS HEREBY GIVEN that the Annual Meeting of the Union County Higher Educational Financing Authority will be held on Monday, October 17, 2016, at 8:30 A.M., in Room 241B of the Langone Center on the campus of Bucknell University, Lewisburg, Pennsylvania.

John W. Arbogast, Jr., Secretary

Terry W. Light, J.D., Solicitor
112 Market Street
Lewisburg, Pennsylvania 17837
(570) 523-3241

NOTICE OF PUBLIC HEARING

Notice is hereby given that the Lewis Township Zoning Hearing Board, of Lewis Township, Northumberland County, will hold a public hearing commencing at 7:00 p.m. on Thursday, September 15, 2016, at the Lewis Township Building, located at 1428 Rovendale Drive, Watsontown, PA 17777.

Legal Notices

The purpose of the hearing is to consider an application for Variance to Section: 302:E , Commercial, of the Lewis Township Zoning Ordinance, requesting a variance to the minimum lot area requirements for subdivision, by Levi Detweiler located at 1034 Beaver Run Road, Turbotville, PA 17772.

All interested parties are invited to attend. People with a disability who wish to attend the hearing, but require an auxiliary aid, service, or other accommodations to participate in the proceedings, please call the Lewis Township Office at 570-649-5371 to discuss how such requirements may be met.
570-649-5371,
Watsontown

Articles For Sale

Electric Guitar

FOR SALE: New Black Epiphone Les-Paul Electric Guitar, with extras. Mint cond. $99. Call 717-379-8010.

FOR SALE: Antique maple kitchen table with 6 chairs, also a buffet. Both made by the Ebert Furniture Co. in Red Lion, Pa. $300 or best offer. Call 570-742-7454. Milton

Articles For Sale

Wooden table 32 x 54 1/2 inches with 4 wooden chairs. Chairs are in excellent condition. Table-top needs refinishing. $75. Must be picked up. Sunbury area. Call 570-286-0971. Leave a message.

Solid wood dining room table and 4 chairs, 2 captain. Table is 48 inches round, extends to 67 1/2 inches. Good condition. $250. Must be picked up. Sunbury area. Call 570-286-0971. Leave a message

Solid wood TV cabinet with 2 bifold doors. Good condition. Free. Must be picked up. Sunbury area. Call 570-286-0971. Leave a message.

Help Wanted

Electric Lineman

The Borough of Watsontown will accept applications until 1:00 P.M. on Friday, September 9, 2016 for an Electric Lineman in the department of Public Works. Successful candidate must have a valid PA Commercial Driver's License (Class B) or be willing to obtain one within six months of employment. Preference will be given to candidates with electrical and construction experience, and experience with construction equipment. This position is in the Public Works department and successful applicants will be required to assist with all aspects of municipal operations in addition to working with the electric crew. Compensation to be determined by qualifications and experience. Training opportunities are available. Applications may be obtained at the Borough Office, 318 Main Street, Watsontown PA 17777 during normal business hours. The Borough is an equal opportunity employer.
570-538-1000,
Watsontown

Line cook & wait staff needed. Willing to train. Elizabeth's Lewisburg. 570-523-8088. Ask for Melissa.
Lewisburg

To get results, place a classified ad. Call 570-742-9077

ESTATE SALE - LOG HOMES
PAY THE BALANCE OWED ONLY!!!
AMERICAN LOG HOMES IS ASSISTING FINAL RELEASE OF ESTATE & ACCOUNT SETTLEMENT ON HOUSES.
3 Log Home Kits sealed for BALANCE OWED, FREE DELIVERY
1) Model # 1901 Cambria Sq. Ft. ... BALANCE OWED $17,000
2) Model # 2310 Little Rock $19,525 ... BALANCE OWED $15,000
3) Model # 1903 Augusta SQ. FT. ... BALANCE OWED $16,500
BEFORE CALLING: VIEW at www.loghomesteam.com Click on House Plans
NEW - HOMES NEVER BUILT BEFORE MANUFACTURED
• Make any plan design changes you desire!
• Comes with Complete Building Blueprints & Construction Manual
• Windows, Doors, and Roofing not included
• NO TIME LIMIT FOR DELIVERY!
BBB A+ Rating
SERIOUS ONLY REPLY. Call (704) 602-3035 ask for Accounting Dept.

DOING WHAT WE SAY SINCE 1935.
SEE FOR YOURSELF.
GREAT RATES IN PENNSYLVANIA!
UP TO $.50 PER MILE IN BEDFORD (DEDICATED)
UP TO $.515 PER MILE IN CORAOPOLIS (TANKER)
VAN TRUCKLOAD
Sign-on bonuses of up to $7,500
Team and Solo | Regional and OTR | 25 positions available
INTERMODAL – IN CHAMBERSBURG
Sign-on bonuses of up to $5,000
Regional | Home 3 consecutive nights
SCHNEIDER
schneiderjobs.com
schneiderownemployeestores.com
800-44-PRIDE | 800-25-LEASE

Real Estate Review

Homes For Rent

For Rent: 1/2 Double 3 bedrooms. Center St. Milton. Stove-Refrig. Dishwasher, laundry hookup, gas heat. Rent $850/mth. Sewer incl. 1 yr. lease requ. Call for details 570-742-7440 or 570-713-4615.

To place your ad in the Real Estate Review call 570-742-9077.

BEST DEAL EVER!
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GENERAC
$995 FREE!
ULTIMATE 10-YEAR WARRANTY
FREE ESTIMATES
(814) 404-3946
CHARTTECHSOLUTIONS.com

STANDARD JOURNAL

21 ARCH STREET
MILTON, PA 17847

Proof of Publication

Commonwealth of Pennsylvania §
County of Northumberland

Personally appeared before me, the undersigned as Notary Public in and for said County and State.

Amy Moyer

who being duly sworn according to the law, doth depose and say that she is the

General Manager

for the Standard Journal, a newspaper of general circulation published at Milton, County of Northumberland, Commonwealth of Pennsylvania, which was established January 23, 1890, and that a notice, copy of which is hereto attached, was published in said Standard Journal on

.....9-6-16.....

that affiant is not interested in the subject matter of the attached notice of advertising, and avers that all of the allegations of the statement as to the time, place, and character of the publication are true.

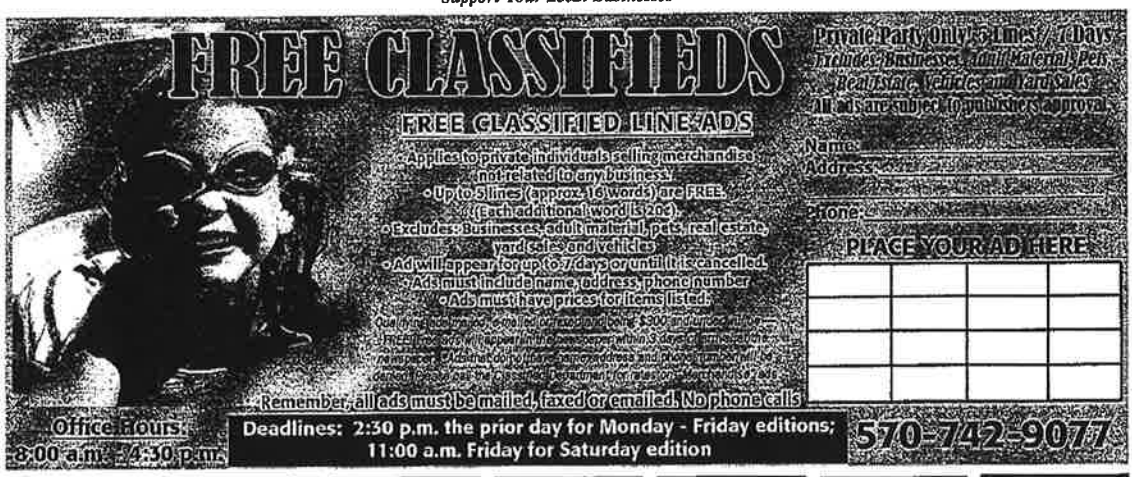
Moyer

Sworn and subscribed before me this

.....6th.....day of .....September, 2016

Karen J. Hendricks
Notary Public

COMMONWEALTH OF PENNSYLVA
Notarial Seal
Karen J. Hendricks, Notary Public
Milton Boro, Northumberland County
My Commission Expires Jan. 17, 20
MEMBER, PENNSYLVANIA ASSOCIATION OF N



Legal Notices

ADVERTISEMENT OF GRANT OF LETTERS TESTAMENTARY

ESTATE OF DALE LEHMAN BEAVER DECEASED

Letters testamentary on the above estate having been granted to the undersigned by the Register of Wills of Northumberland County, Pennsylvania, all persons indebted to the estate are requested to make payment, and those having claims to present the same without delay to:

Janice W. Beaver
Executrix

Address:
15265 St. Rt. 405
Watsontown, PA 17777

Or her attorney:

Michael D. Suders
Attorney at Law
3 West First Street
Watsontown, PA 17777
(570) 538-3360

To place your ad in the Real Estate Review call 570-742-9077.

Legal Notices

CO-EXECUTORS' NOTICE

RE: ESTATE OF JANE C. FOUST, late of the Township of Delaware, Northumberland County, Pennsylvania.

Letters Testamentary on the above estate having been granted to the undersigned, all persons indebted to said estate are request to make payment, and those having claims to present same without delay to:

Christopher J. Foust and
Donna D. Yoder
Co-Executors
c/o Christopher J. Foust,
1900 Vincent Avenue
Watsontown, PA 17777

NOTICE

NOTICE IS GIVEN that the Council of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), at a meeting duly called and held on September 12, 2016, finally enacted an Ordinance, the caption and a summary of such Ordinance (the "Ordinance") being as follows:

"AN ORDINANCE OF THE BOROUGH AUTHORIZING AND DIRECTING ISSUANCE OF A GENERAL OBLIGATION NOTE OF THE BOROUGH IN THE MAXIMUM PRINCIPAL AMOUNT OF $500,000, PURSUANT TO THE PENNSYLVANIA LOCAL GOVERNMENT UNIT DEBT ACT, TO REFUND AND RETIRE THE OUTSTANDING GENERAL OBLIGATION NOTE, SERIES OF 2013, OF THE BOROUGH AND TO PROVIDE FUNDS FOR AND TOWARD PAYMENT OF COSTS OF A CAPITAL PROJECT WHICH CONSISTS OF THE ACQUISITION AND CONSTRUCTION OF RENOVATIONS, ALTERATIONS, ADDITIONS AND/OR IMPROVEMENTS TO THE WASTEWATER TREATMENT PLANT OF THE BOROUGH AND PAYMENT OF RELATED COSTS, FEES AND EXPENSES; ACCEPTING A CERTAIN BID OR PROPOSAL FOR PURCHASE OF SUCH NOTE; SETTING FORTH THE TERMS OF SUCH NOTE; CREATING A SINKING FUND AND APPOINTING A SINKING FUND DEPOSITORY FOR SUCH NOTE; AND PLEDGING THE FULL FAITH, CREDIT AND TAXING POWER OF THE BOROUGH IN SUPPORT OF SUCH NOTE."

Notice is further given that: (1) the accepted proposal of The Turbotville National Bank, for the purchase of the General Obligation Note, Series of 2016, to be issued by the Borough (the "Note") provides for a purchase price of $500,000 (100% of principal amount), to be advanced on a revolving line of credit basis; and (2) the interest rate specified in said proposal that was accepted by the Borough is a fixed rate of 2.15% for the full term of the Note.

The final form of the Ordinance, no amendments having been made upon final passage, may be examined by any citizen, at the Turbotville Borough Office, located at 2 Adam Street, Turbotville, Northumberland County, Pennsylvania, on any regular business day between the hours of 8:00 a.m. and 3:00 p.m., prevailing time.

This Notice is given in accordance with requirements of and in compliance with the Pennsylvania Local Government Unit Debt Act.

BY ORDER OF THE COUNCIL OF THE BOROUGH OF TURBOTVILLE, NORTHUMBERLAND COUNTY, PENNSYLVANIA
570-649-5476,
Turbotville

Want to clear away some clutter and make some money?
Come to Standard Journal, place an ad,
pick up a kit* and have a yard sale!
Standard Journal
21 N. Arch Street Milton 570-742-9077 www.standard-journal.com
*Must run ad for 3 days to get a yard sale kit.

Lost and Found

FOUND: set of keys on Old Route 15, North of New Columbia. Call 570-568-0015 to identify after 5pm.

Articles For Sale

FOR SALE: Cherry, Walnut and Oak lumber $1 a board foot. Call 570-412-7226.

Stihl Backpack Leaf Blower

FOR SALE: Stihl Backpack Leaf Blower, BR350, Like New, $225. Call 570-768-7035.

To get results, place a classified ad. Call 570-742-9077

Help Wanted

Experienced Caregivers Wanted
Work on the types of cases you enjoy!
At Griswold Home Care You choose your cases, hours, and job location. Experience freedom of choice!
Call 570-752-5552

Join our Team of Direct Care Workers!!

CSG is looking for flexible, creative & committed people to help create extraordinary experiences for adults with Intellectual Disabilities (ID). Help w/ daily living activities while building relationships & encouraging community inclusion so they may experience life to its fullest.

FT, PT, PRN - 2nd & 3rd Shifts.
Paid Training, Great Benefits!

Join our Team & Love your Job as a Direct Support Professional in Columbia, Montour, Snyder, Union & Northumberland Counties.

Apply at www.csg.jobs today!
570-323-6944 ext 20047
EOE

Join our Team of Supervisors!!

CSG is looking for exp'd leaders to guide & support our direct care staff while managing the daily operation of a group home for adults w/ Intellectual Disabilities (ID) or Autism (ASD). The ability to create extraordinary experiences while building relationships between those we serve & the staff while providing leadership & direct care is req'd!

HS Dipl & 1 yr exp in ID/MH req'd.
Great Benefits!

Join our Team & Love your Job as a Residential Supervisor in Watsontown or Bloomsburg (1 yr ASD exp req'd).

Apply at www.csg.jobs today!
570-323-6944 ext 20047
EOE
Williamsport

Help Wanted

Line cook & wait staff needed. Willing to train. Elizabeth's Lewisburg. 570-523-6088. Ask for Melissa.
Lewisburg

Personal Trainer

THE MILTON YMCA IS LOOKING FOR A PERSONAL TRAINER. HOURS VARY DEPENDING ON WHEN THEIR SERVICES ARE REQUESTED. REQUIREMENTS INCLUDE: GOOD COMMUNICATION SKILLS, FIRST AID/CPR, CRIMINAL BACKGROUND CLEARANCES AND CURRENT PERSONAL TRAINING CERTIFICATION FROM NCAA ACCREDITED ORGANIZATION. PLEASE CONTACT ROB MOYER AT 742-7321 WITH QUESTIONS.

Production Associate- IMMEDIATE

Pardoe's Perky Peanuts is actively seeking talented and reliable employees for 1st shift. Temporary to hire, full time opportunities are available in Montandon, PA. Employee will be required to perform moderately physical and repetitive work with attention to quality and detail and could include machine operation or work as part of a production team. Pardoe's is looking for candidates that we can develop, retain and ultimately hire for permanent positions.

Candidates must have: ability to lift up to 50 lbs., reliable transportation to work, ability to perform labor for up to 10 hours, ability to work independently or as part of a team.

Applications will be accepted in person from 9am to 11am or 2:30pm to 4:30pm, on Wed. 9/14, Thurs. 9/15, Mon. 9/19 & Tues 9/20.
570-524-9595,
Montandon

For Home Delivery Call *570-742-9671*

Help Wanted

Special Education Teacher:

Full-time in Sunbury, Grade 3-6 Multiple Disabilities Support. Refer to www.csiu.org/jobs for details. Apply by 9/26/16. EOE.
570-523-1155,Milton

The Mifflinburg Area School District will accept applications for the following positions:

Food Service Employees

Interested candidates may obtain applications in the front lobby of the Mifflinburg Area School District Administrative Office, 178 Maple Street, Mifflinburg, PA 17844 or online at www.mifflinburg.org.
570-966-8200,Mifflinburg

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Standard Journal
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www.newspaperlinks.com
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STANDARD JOURNAL

21 ARCH STREET
MILTON, PA 17847

Proof of Publication

Commonwealth of Pennsylvania §
County of Northumberland

Personally appeared before me, the undersigned as Notary Public in and for said County and State.

Amy Moyer

who being duly sworn according to the law, doth depose and say that she is the

General Manager

for the Standard Journal, a newspaper of general circulation published at Milton, County of Northumberland, Commonwealth of Pennsylvania, which was established January 23, 1890, and that a notice, copy of which is hereto attached, was published in said Standard Journal on

.....9/14/16.....

that affiant is not interested in the subject matter of the attached notice of advertising, and avers that all of the allegations of the statement as to the time, place, and character of the publication are true.

Moyer

Sworn and subscribed before me this
.....20th day of September, 2016

Karen J. Hendricks
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Karen J. Hendricks, Notary Public
Milton Boro, Northumberland County
My Commission Expires Jan. 17, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

CERTIFICATE

I, the undersigned, Secretary of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"), certify that attached hereto and made a part hereof is a true and correct copy of the successful bid or proposal that was submitted to and accepted by the Council of the Borough, at private sale by negotiation, at a meeting duly called and held on September 12, 2016, with respect to the sale by the Borough of a general obligation note of the Borough in the maximum principal amount of Five Hundred Thousand Dollars ($500,000).

IN WITNESS WHEREOF, I set my hand and affix the official seal of the Borough, as the Secretary of the Borough, this 12th day of September, 2016.

Diane K. Miller
Secretary

(SEAL)

Turbotville National Bank

P.O. Box 37 • Turbotville, PA 17772 • 570/649-5118 • FAX: 570/649-5788

August 9, 2016

To: Borough Council
Borough of Turbotville
c/o Rhoads & Sinon LLP
One South Market Square, P.O. Box 1146
Harrisburg, P A 17108-1146

Dear Members of Borough Council:

The Turbotville National Bank (the "Bank") hereby confirms that upon your written acceptance of this commitment letter and satisfaction of the following terms and conditions it will lend an amount not to exceed **Five Hundred Thousand Dollars ($500,000)** (the "Maximum Loan Amount") to the Borough of Turbotville, Northumberland County, Pennsylvania (the "Borrower"), on a revolving line of credit basis, to provide funds for and toward the redemption and retirement of the Borrower's existing General Obligation Note, Series of 2013, in the stated maximum principal amount of $500,000 (the "Outstanding Note"), which is presently held by the Bank, and for and toward the payment of costs of acquisition and construction of renovations, alterations, additions, and/or improvements to the wastewater treatment plant that is part of the sanitary sewage system owned and operated by the Borrower and related costs and expenses, including costs and expenses of issuance of the Note (hereinafter defined) and interest on such Note (the "Project").

1. The obligation of the Borrower to repay the amounts drawn and borrowed against this loan commitment, with interest thereon as hereinafter provided, shall be evidenced by a general obligation note to be issued by the Borrower and to be designated as the Borrower's "General Obligation Note, Series of 2016" (the "Note"). The Note shall be registered as to principal and interest in the name of the Bank, shall be in a stated maximum principal amount equal to the Maximum Loan Amount, shall be dated as of the Loan Closing Date (defined below), and shall provide for payment of interest and principal in accordance with the further terms of this commitment letter. The Note shall provide that it is payable at the principal office of the Bank in lawful money of the United States of America.

2. On the date of execution and delivery of such Note to the Bank (the "Loan Closing Date"), and from time to time thereafter on any date or dates through and including December 31, 2018, and on a revolving line of credit basis, the Borrower may draw funds against this commitment by written order to the Bank signed by an authorized officer of the Borrower; provided, however, that the total amount that may be drawn and borrowed against the Note and outstanding at any time shall not exceed the Maximum Loan Amount, and the amount drawn and borrowed shall be used solely for payment of costs and expenses of the Project, as herein defined.

The foregoing paragraph notwithstanding, upon delivery to the Bank of the executed Note and such opinions, approvals and other documents as shall be required by this letter as a

condition of closing on the Note, the Borrower shall request, and the Bank shall make, a first advance of funds to the Borrower against the Note in such amount as is required to redeem and retire the Outstanding Note at par (100 of the then outstanding principal balance thereof), plus accrued interest to the redemption date, to pay related costs and expenses, including the costs, fees and expenses of issuance of the Note, and to pay any additional costs of the Project which have been incurred by the Borrower, but in no event less than $50,001 (in order that the Note will be deemed for federal tax purposes to have been "issued" on the Loan Closing Date). If the amount of such first advance exceeds the amount necessary to redeem the Outstanding Note and to pay issuance costs and other Project costs then due and payable, any such excess shall be deposited by the Borrower in a construction fund and shall be held therein until disbursed in payment of costs of the Project.

3. Principal and interest on the Note shall be payable as follows:

(a) Interest shall be payable on the Note quarterly on March 1, June 1, September 1, and December 1 of each year, and at maturity or upon any earlier prepayment, with the first payment of interest being due December 1, 2016. Only interest shall be payable with respect to the Note prior to the stated maturity of the Note. The outstanding principal balance of the Note, together with all accrued, unpaid interest, shall be payable at maturity of the Note, if not sooner paid.

(b) Interest shall be calculated and payable on the outstanding principal balance of the Note at a fixed rate of interest of 2.15 per annum.

(e) Interest shall be calculated on the basis of the actual number of days in a year of365 or 366 days, as appropriate.

4. The Borrower may prepay the outstanding principal amount of the Note as a whole, or from time to time, in part, on any date, without premium or penalty.

5. The Note shall be a general obligation of the Borrower for the payment of which the Borrower shall pledge its full faith, credit and taxing power in accordance with the Pennsylvania Local Government Unit Debt Act (the "Debt Act").

6. The Note shall be issued by the Borrower pursuant to an Ordinance (the "Ordinance"), duly enacted by the Borrower in accordance with the Debt Act, which Ordinance shall be in form and substance satisfying the requirements of the Debt Act.

7. The Borrower shall covenant in the Ordinance to comply with the requirements of the Internal Revenue Code of 1986, as amended (the "Code"), throughout the term of the Note so interest on the Note shall remain excludable from gross income of the holder for federal income tax purposes. The Borrower shall also designate the Note as a "Qualified Tax-Exempt Obligation" of the Borrower under Section 265(b)(3)(B) of the Code.

8. The Borrower shall deliver to the Bank: the following on or prior to the Loan Closing Date:

a. The executed Note, in form and substance satisfactory to the Bank: and Bond Counsel;

b. A copy of the Ordinance, together with a copy of the proceedings for the incurring of the debt evidenced by the Note as filed with the Department of Community and Economic Development of the Commonwealth of Pennsylvania, together with the approval of such proceedings by said Department;

c. A certificate dated as of the Loan Closing Date of appropriate officers of the Borrower and its Solicitor to the effect that no litigation of any nature is pending or threatened: (1) seeking to restrain or enjoin or restraining or enjoining execution, issuance, delivery or sale of the Note; or (2) in any manner affecting or questioning proceedings and authority of the Borrower for execution, issuance, delivery or sale of the Note; or (3) questioning or contesting the official existence or official boundaries of the Borrower; or (4) affecting, directly or indirectly, or questioning title of present officers and members of the governing body of the Borrower to their respective offices and memberships; and that no authority or proceedings for authorization, execution, issuance, sale and delivery of the Note has been revoked, repealed, amended or rescinded.

d. An Opinion of Rhoads & Sinon LLP, Harrisburg, Pennsylvania, Bond Counsel, dated as of the Loan Closing Date, to the effect that: (1) the Note is a valid and binding obligation of the Borrower and is enforceable in accordance with terms thereof and of the Ordinance, subject, however, to bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights theretofore or thereafter enacted and the exercise of judicial discretion in appropriate cases; (2) under the laws of the Commonwealth of Pennsylvania as enacted and construed, the Note is exempt from personal property taxes in the Commonwealth of Pennsylvania and interest on the Note is exempt from the Pennsylvania Personal Income Tax and the Pennsylvania Corporate Net Income Tax; (3) under present statutes, regulations and judicial decisions, interest on the Note is excluded from gross income for- purposes of federal income taxation and is not an item of tax preference for purposes of the federal alternative minimum tax imposed on individuals and corporations (with the exception that in the case of corporations (as defined for federal income tax purposes) such interest may be taken into account in determining adjusted current earnings for purposes of such alternative minimum tax); and (4) the Note is a "qualified tax-exempt obligation" for purposes and effect contemplated by Section 265 of the Internal Revenue Code of 1986, as amended (relating to expenses and interest relating to tax-exempt income of certain financial institutions). Such opinion may state that the expressions of opinion regarding federal income taxation of interest on the Note are given in reliance upon certifications of fact made by officers of the Borrower and

subject to the Borrower's compliance with all requirements of the Internal Revenue Code of 1986, as amended, and applicable federal tax regulations that must be satisfied subsequent to the issuance of the Note in order that the interest thereon be, or continue to be, excluded from gross income for federal income tax purposes; and

e. Such additional certifications of the officers of the Borrower as may be determined necessary or appropriate by Bond Counsel, including an appropriate certification of the Borrower's expectations regarding the amount and use of the gross proceeds of the Note for purposes of determining compliance with the federal tax regulations relating to "arbitrage bonds".

In addition, the Borrower shall make arrangements satisfactory to Bond Counsel for the preparation and timely filing of an Information Return for Tax-Exempt Government Obligations (Treasury Form 8038-G) relating to the Note with the Internal Revenue Service after loan closing.

9. This commitment is conditioned upon the preparation, execution and delivery of all legal documents in form and substance satisfactory to the Bank and its legal counsel, which documents shall incorporate substantially the terms and conditions set forth above. All legal documents shall be prepared by Bond Counsel and drafts of all closing documents and opinions shall be provided to the Bank not less than one (1) week prior to the Loan Closing Date.

10. The Borrower shall pay all the legal fees of its Solicitor and Bond Counsel and all filing and advertising costs and expenses associated with the authorization and approval of the Note under the Debt Act. The Bank and its legal counsel shall charge no points, fees or other costs in connection with the loan or issuance of the Note.

11. The Loan Closing Date shall be a regular business day of the Bank selected by the Borrower and, unless the date for loan closing shall be extended by the Bank, not later than November 15,2016. Loan closing shall take place at the principal office of the Bank or at such other place as shall be mutually acceptable to the Bank and the Borrower.

12. It is a condition of this loan commitment that the Borrower shall annually submit to the Bank a copy of its current annual budget and a copy of its annual financial report within 120 days following the close of each fiscal year. The obligation of the Borrower under this paragraph shall survive loan closing.

13. If the terms and conditions of this loan commitment letter are acceptable to you, please evidence your approval by signing and returning to the Bank the enclosed copy on or before October 1, 2016. If such executed copy is not received by the Bank by such date, then this commitment shall, at the option of the Bank and upon your receipt of written notice to that effect, be of no further force or effect.

Sincerely,
THE TURBOTVILLE NATIONAL BANK

By: _____
Title: Pres/CEO

ACCEPTED by a motion duly approved by the governing body of the Borrower this 29th day of August ,2016.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: _____
(Vice) President of the Borough Council

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

DEBT STATEMENT

TO: THE DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT OF THE COMMONWEALTH OF PENNSYLVANIA

We, the undersigned, (Vice) President of the Council and Secretary, respectively, of the BOROUGH OF TURBOTVILLE, Northumberland County, Pennsylvania (the "Local Government Unit"), being duly authorized to prepare and to verify, under oath or affirmation, this Debt Statement of the Local Government Unit, pursuant to and in accordance with Section 8110 of the Local Government Unit Debt Act (the "Act") of the Commonwealth of Pennsylvania, do set forth and certify, as follows:

1. This Debt Statement is made as of September 12, 2016, such date being less than 60 days before the filing hereof.

2. The gross indebtedness of the Local Government Unit is as follows:

a.	Electoral debt	$	0.00
b.	Nonelectoral debt		
	(1) Proposed General Obligation Note, Series of 2016	$	500,000.00[1]
	(2) General Obligation Note, Series of 2004 (GON-11582)	$	299,635.38
	Total nonelectoral debt	$	799,635.38
c.	Lease rental debt		

[1] Includes the debt evidenced by the proposed General Obligation Note, Series of 2016, of the Local Government Unit authorized by ordinance enacted September 12, 2016, for the delivery of which the approval of the Department is being requested by proceedings being filed concurrently with the proceedings for approval of the proposed bond described in 2.b.(1) above. Such Note will be issued to refund an outstanding obligation (the General Obligation Note, Series of 2013, Approval No. GON-131203-05, in the stated maximum principal amount of $500,000, which will cease to be outstanding upon issuance of the proposed note) and to finance a capital project of the Borough.

(1) Lease rental debt evidenced by a Guaranty Agreement securing a note of The Municipal Authority of the Borough of Turbotville (PennVest) (LRA-3467)	$	604,927.36
Total lease rental debt	$	604,927.36
Total gross indebtedness	$	1,404,562.74

3. The Local Government Unit claims, in this Debt Statement, the following exclusions from or against the total gross indebtedness, as such is set forth in paragraph 2, in determining the net debt of the Local Government Unit:

a.	Electoral Debt	$	0.00
b.	Nonelectoral debt	$	299,635.38[2]
c.	Lease rental debt	$	604,927.36[2]
	Total exclusions claimed	$	904,562.74[2]

4. The remaining debt of the Local Government Unit is as follows:

a.	Electoral debt	$	0.00
b.	Net nonelectoral debt	$	500,000.00
c.	Net lease rental debt	$	0.00
	Total remaining debt	$	500,000.00

5. The maximum principal amount of nonelectoral debt to be issued by the Local Government Unit, for which approval under the Act is sought by the Application to which this Debt Statement is attached, is $500,000.00.

6. The aggregate net nonelectoral debt of the Local Government Unit to be outstanding after settlement for the issue in the amount set forth in paragraph 5 will be $500,000.00.

---

[2] Includes (a) $299,635.38, referred to in 2.b.(2), heretofore excluded as self-liquidating debt pursuant to proceedings heretofore approved by the Department, bearing Approval No. E-3536, dated May 24, 2004; (b) $604,927.36, referred to in 2.c.(1), heretofore excluded as self-liquidating debt pursuant to proceedings heretofore approved by the Department, bearing Approval No. E-2811, dated October 3, 2000, as to all of which it is certified that there has been no change in the amount to be excluded (100%), other than decreases resulting from payment of debt service.

8. The aggregate net lease rental debt of the Local Government Unit to be outstanding after settlement for the issue in the amount set forth in paragraph 5 will be $0.00.

9. The aggregate net nonelectoral debt and net lease rental debt, combined, of the Local Government Unit to be outstanding after settlement for the issue in the amount set forth in paragraph 5 will be $500,000.00.

10. The borrowing base of the Local Government Unit, as evidenced by a Borrowing Base Certificate attached hereto and made part hereof, is $234,730.

11. The nonelectoral debt limit of the Local Government Unit, computed as provided in the Act, *i.e.*, 250% of the Borrowing Base of the Local Government Unit as set forth in paragraph 10, is $566,825.

12. The nonelectoral debt plus lease rental debt limit of the Local Government Unit, computed as provided in the Act, *i.e.*, 350% of the borrowing base of the Local Government Unit as set forth in paragraph 10, is $821,555.

IN WITNESS WHEREOF, we, the undersigned, (Vice) President of the Council and Secretary, respectively, of the Local Government Unit, affix our signatures to this Debt Statement of the Local Government Unit, this 12th day of September, 2016.

BOROUGH OF TURBOTVILLE,
Northumberland County, Pennsylvania

By: _____
(Vice) President of Council

ATTEST:

_____
Secretary

(SEAL)

ACKNOWLEDGMENT

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF NORTHUMBERLAND)

We, the undersigned, first being duly sworn individually according to law, verify and depose and say that: we are (Vice) President of the Council and Secretary, respectively, of Borough of Turbotville, Northumberland County, Pennsylvania (the "Borough"); we prepared and executed the foregoing Debt Statement of the Borough; and the facts contained in the foregoing Debt Statement of the Borough are true and correct.

(Vice) President of Council

Secretary

SWORN TO AND SUBSCRIBED
before me, a Notary Public, this
12th day of September, 2016.

Notary Public

My Commission Expires:

(SEAL)

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Mary E. Slonaker, Notary Public
Lewis Twp., Northumberland County
My Commission Expires March 14, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

BORROWING BASE CERTIFICATE

OF THE

BOROUGH OF TURBOTVILLE
NORTHUMBERLAND COUNTY, PENNSYLVANIA

1. This Borrowing Base Certificate of the Borough of Turbotville, Northumberland County, Pennsylvania (the "Local Government Unit"), has been prepared in accordance with the Local Government Unit Debt Act, 53 Pa. C.S. Chs. 80-82, of the Commonwealth of Pennsylvania (the "Act").

2. "Total Revenues", as such phrase is defined in the Act, of the Local Government Unit for the three (3) full fiscal years ended next preceding the date hereof, computed according to the definition of "Total Revenues" set forth in 53 PA C.S. §8002, are as follows:

a. All money received by the Local Government Unit, from whatever source derived, for each of the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate, were as follows:

Fiscal Year Ended 2013	**Fiscal Year Ended 2014**	**Fiscal Year Ended 2015**
$535,884	$684,912	$615,337

b. The deductions or exceptions of the Local Government Unit from the amounts set forth in Paragraph 2.a., for each of the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate, were as follows:

Deduction or Exception	**Fiscal Year Ended 2013**	**Fiscal Year Ended 2014**	**Fiscal Year Ended 2015**
Federal or state subsidies for a particular project financed by debt	$ -0-	$ -0-	$ -0-
Project revenues, user charges or other receipts which are or will be pledged or budgeted for specific self-liquidating debt, etc.	$ 369,861	$ 317,420	$ 444,473

Interest on money in sinking funds or other funds pledged or budgeted for payment or security of outstanding debt, etc.	$ -0-	$ -0-	$ -0-
Grants and gifts in aid of or measured by construction or acquisition of specified projects	$ -0-	$ -0-	$ -0-
Proceeds of the sale of capital assets and other nonrecurring items, including bond or note proceeds not considered income	$ -0-	$ -0-	$ 187
Total	$ 369,861	$ 317,420	$ 444,660

c. The "Total Revenues" of the Local Government Unit, for each of the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate (being, for each such fiscal year, the total amount set forth in Paragraph 2.b., deducted from the amount set forth in Paragraph 2.a.), were as follows:

Fiscal Year Ended 2013	**Fiscal Year Ended 2014**	**Fiscal Year Ended 2015**
$166,023	$367,492	$170,677

the total of which is $704,192; and

d. The annual arithmetic average of such Total Revenues for the three (3) full fiscal years ended next preceding the date of this Borrowing Base Certificate, as such Total Revenues are set forth in Paragraph 2.c., is $234,730.

3. We, the undersigned, further certify that we have made due and proper investigation of and with respect to matters and things involved in this Borrowing Base Certificate.

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-31. The map provided in the Application's Exhibit M does not depict the location or route of the wastewater treatment or collection system assets. Please provide a map depicting these assets.

Response: See Attachment A-31.

Responsible Witness: Scott D. Fogelsanger

Attachment A-31

Date: 8/13/2018

- Wastewater Treatment Plant
- Manhole
- Fitting
- Gravity Main
- Lateral Line
- Approximate Service Area
- Municipality

TO BE USED FOR REFERENCE ONLY
Although every effort has been made to ensure the accuracy of the information, errors and conditions originating from physical sources to develop the information may be reflected in the data supplied.

N
W E
S

1 inch = 250 feet

0 125 250 500 750 1,000 Feet

PENNSYLVANIA AMERICAN WATER

Pennsylvania-American Water Company
Milton Operating Area
Proposed Service Territory - Turbotsville Wastewater System
Approximately 166 Acres
Lewis Township, Northumberland County

Document Path: \\amwater.net\gis\gisuser\data\Pennsylvania\Acquisitions\Northumberland County\Turbotville\a_Turbotville_ww_Landscape_36x48.mxd

Bureau of Technical Utility Services
Water/Wastewater Division
Data Request Set 1

Application of Pennsylvania-American Water Company–Wastewater Division for approval of the transfer, by sale, of substantially all the Borough of Turbotville's assets, properties and rights related to its wastewater collection and treatment system to Pennsylvania-American Water Company at Docket No. A-2018-3004189

A-32. Please provide a copy of any response that PAWC-WD received to the land use compliance request letter sent to the Northumberland County Planning Commission as provided in the Application's Exhibit O.

Response: See Attachment A-32.

Responsible Witness: Scott D. Fogelsanger

Attachment A-32

PENNSYLVANIA
AMERICAN WATER

800 West Hersheypark Drive
Hershey, PA 17033
P 717-531-5000
F 717-531-3399

August 8, 2018

Via Certified Mail

Northumberland County
Planning Commission
399 Stadium Drive
Sunbury, PA 17801

Re: Pennsylvania -American Water Company application to acquire the Borough of Turbotville's wastewater system, Northumberland County, Pennsylvania.

Pennsylvania American Water Company (Pennsylvania American Water) is submitting an application under Section 1102(a) and 507 of the Pennsylvania Public Utility Commission (PUC) Code, 66 Pa. C. S. §§1102 (a), 507 for the acquisition of the Borough of Turbotville's wastewater system and its related assets.

As part of the application process, the PUC requested Pennsylvania American Water seek the County's input for the purpose of determining if Pennsylvania American Water's application complies with the County's land use planning.

Specifically, the PUC requests that the County review the following questions:

1. Are there adopted municipal comprehensive plans for the townships/boroughs involved? _____
2. Is there an adopted county comprehensive plan? yes
3. Is there an adopted multi-municipal or multi-county comprehensive plan? ____
4. Is there an adopted county or municipal zoning ordinance or joint municipal zoning ordinance? ____
5. Is the proposed project consistent with these comprehensive plans and/or zoning ordinances? yes
6. If the answer is "yes" to any of the above questions, please sign below, or submit a letter, indicating that the application is consistent with the applicable comprehensive plans and zoning ordinances. If the application is not consistent with the applicable comprehensive plans and zoning ordinances, please provide an explanation.

If you have any questions, please call me at 717-790-3044 or e-mail scott.fogelsanger@amwater.com.

Sincerely,

S. Fogelsanger/bg
Scott Fogelsanger
Sr. Manager, Business Development

Pennsylvania American Water's application is consistent with the applicable comprehensive plans and zoning ordinances.

Northumberland County Signature _____

Printed Name/Title Donald E. Alexander, Director Date 08.17.2018

Please send/e-mail this form to: Bobbi Gautsch at roberta.gautsch@amwater.com.