G-000-105.2

1115

STORM SEWER FEED MATERIALS PRODUCTION CENTER FERNALD, OHIO
VOLUME 1 NARRATIVE, SUMMARY & RECOMMENDATIONS

04/01/86

WYNN ASSOCIATES, INC/LOCKWOOD GREENE ENG
150
REPORT

[redacted]

1115

STORM SEWER

FEED MATERIAL PRODUCTION CENTER
FERNALD, OHIO

Prepared For:
LOCKWOOD GREENE ENGINEERS, INC.
OAK RIDGE, TENNESSEE

Volume 1
Narrative, Summary & Recommendations

April 1986

WYNNE ASSOCIATES, INC.
MURFREESBORO, TENNESSEE
Subsidiary of RJN Environmental Associates, Inc.

R.W. KNEIP

1

INFILTRATION/INFLOW EVALUATION

FINAL REPORT

FOR

FEED MATERIAL PRODUCTION CENTER

FERNALD, OHIO

VOLUME 1

NARRATIVE, SUMMARY, & RECOMMENDATIONS

PREPARED BY

WYNNE ASSOCIATES, INC.

MURFREESBORO, TENNESSEE

MARCH 1986

TABLE OF CONTENTS

	Page No.
SECTION I - BACKGROUND:	
A. Background	1
B. Technical Aspects of Study	2
C. Implementation of Study	3
SECTION II - SURVEY METHODS:	
A. Introduction	1
B. Physical Survey	1
C. Rainfall Simulation	4
D. Line Cleaning & TV Inspection	5
E. Final Report	5
SECTION III - FIELD DATA ANALYSIS:	
A. Introduction	1
B. Tabulation Of Leak Data	2
C. Cost-Effectiveness Analysis	4
D. Summary	8
SECTION IV - SURVEY FINDINGS:	
A. Introduction	1
B. General Findings	1
SECTION V - REPORT+SUMMARY:	
A. Introduction	1
B. Analysis of Extraneous Flows	1
C. Rehabilitation	2
D. Summary	3
E. Recommendations	3

APPENDIX

PART 1: Flow Monitoring Data

PART 2: Rehabilitation Tables - Methods & Costs

PART 3: I/I Leak Analysis

A. INTRODUCTION:

The storm sewer system of the Department of Energy Feed Material Production Center (hereafter referred to as "FMPC") at Fernald, Ohio, experiences extraneous flow during periods of wet weather. This extraneous flow, which enters the system as infiltration from groundwater sources and inflow through structural deficiencies, causes possible contamination of the storm system with uranium contaminated groundwater. As a result, flow from the storm sewer system poses a possible contamination threat to the receiving streams.

In order to solve this problem, Lockwood Greene Engineers, Inc., as consulting engineers to FMPC, has implemented a two-phase program. The first phase consisted of enlarging the existing stormwater retention basin to six million gallon capacity and the second phase consists of an I/I abatement program which will attempt to eliminate extraneous contaminated infiltration/inflow from entering the stormwater system. As a part of the second phase, it was considered necessary to conduct an infiltration/inflow study to evaluate the storm sewer system.

On 31 December, 1985, Lockwood Greene Engineers, Inc., acting under its Contract No. DE-AC05-81OR20676 with the Department of Energy, entered into a subcontract agreement with Wynne Associates, Inc., of Murfreesboro, Tennessee, to conduct an Infiltration/Inflow evaluation survey in the FMPC storm sewer system. The ultimate goal of the study was to identify those areas that are contributing the majority of the infiltration entering the storm sewer system and locate the actual sewer defects in those areas which permit entry of extraneous water

into the system.

B. TECHNICAL ASPECTS OF STUDY:

The technical proposal submittted by Wynne Associates, Inc., outlined a plan of study designed to locate and identify sources of Infiltration and Inflow (I/I), recommend methods and costs of rehabilitation, and provide a cost analysis for peforming the recommended rehabilitation. The proposed plan of study - designed around methodology currently utilized in U.S. Environmental Protection Agency funded municipal Sewer System Evaluation Surveys (SSES) - consisted of the following steps:

1. Review of Existing Data - including review of existing maps, drawings, etc.; interviews with staff; and inventory of existing system to be made from existing information.

2. Aboveground Physical Survey to determine location of lines and manholes, length and depth of line segments, and note possible inflow sources.

3. Continuous Flow Monitoring - consisting of dividing the system into major subdrainage areas (Minisystems) so that flows can be isolated and measured within each area, installation of groundwater and rainfall measuring devices, and installation of flow monitoring equipment capable of continually monitoring flow during periods of dry weather, rainfall, and high groundwater.

4. Infiltration Investigation (Flow Isolation and Belowground Inspection).

5. Inflow Investigation - Smoke and Dyed Water Testing.
6. Line Cleaning.
7. Television Inspection.
8. Field Data Storage in computerized data processing system.
9. Cost Analysis based on leak by leak comparison of rehabilitation costs versus costs to transport and treat.
10. Recommended Rehabilitation Program.
11. Final Report.

C. IMPLEMENTATION OF STUDY:

Wynne Associates commenced work on the I/I evaluation study of the FMPC storm sewer system in January, 1986, and completed the last phases of Continuous Flow Monitoring and TV inspection in March, 1986. Data gathered in the study is tabulated and presented in this report.

A. INTRODUCTION:

The I/I evaluation survey at FMPC utilized Sewer System Evaluation Survey (SSES) methodology currently employed in EPA funded municipal I/I studies. Stated simply, the purpose of the Sewer System Evaluation Survey (SSES) is to locate extraneous water entering ("leaking") into the sewer system and determine how much can be economically removed through rehabilitation methods. Survey steps consist of determining the following:

1. HOW MUCH EXTRANEOUS WATER IS PRESENT.
2. WHERE IT IS LOCATED.
3. WHAT PORTION CAN BE ECONOMICALLY ELIMINATED.

To accomplish this, survey tasks are normally conducted in the following sequence:

Phase I	Physical Survey (includes Continuous Flow Monitoring).
Phase II	Rainfall Simulation.
Phase III	Preparatory Line Cleaning.
Phase IV	Television Inspection.
Phase V	Final Report.

B. PHASE I: PHYSICAL SURVEY:

The first step prior to commencing Physical Survey is to divide the sanitary sewer system into study areas, or "mini-systems", of convenient working size. For the purposes of the FMPC study, the storm sewer system was divded into five minisystems consisting of the following:

Mini-system No.	Line Length	Inch-Miles
1	6,550 lf	20.536
2	17,170 lf	44.839
3	8,690 lf	19.530
4	6,810 lf	12.807
5	6,990 lf	15.216
TOTALS	46,210	112.928

1. CONTINUOUS FLOW MONITORING The early 1986 flow monitoring program was conducted for the purpose of measuring infiltration and inflow in each FMPC minisystem. During flow monitoring, rainfall and groundwater levels were also monitored. Continuous Flow Monitoring tasks consisted of installing flow recorders in key manholes where total flows for each minisystem could be measured and recording flows over a span of time sufficient to include the physical conditions of rainfall and groundwater normally present under the following conditions:

   (a) Dry Weather Days - days of minimal ground water
   (b) High Ground Water Days - groundwater above pipe invert.
   (c) Rainfall Days - with sufficient rainfall to produce measureable inflow.

[redacted] of the FMPC Continuous Flow Monitoring Pro[redacted]ted on separate Flow Monitoring Summamries and hydrographs, by minisystem, and presented in Part 1 of the Appendix to this report volume. This data is also summarized in Tables 2-1 and 2-2 at the end of this report section. Note that stormwater flows are referred to as "Inflow" in

these tables.

2. ABOVEGROUND PHYSICAL SURVEY was conducted in all five (5) minisystems to confirm line locations, line sizes, manhole locations, and assign leak rates to all located I/I sources.

3. FLOW ISOLATION was conducted in all minisystems. These minisystems were subdivided into "micro-systems" (2,000 to 3,000 lf) and micro-system weir readings were taken on high groundwater days - a period when normal discharge is at a minimum and it is assumed that most measured flow is infiltration. Where micro-system readings indicated excessive rates of infiltration, instantaneous weir readings were also taken under similar conditions for each line segment within the micro-system.

   Through subsequent TV inspection, attempt was made to identify those infiltration sources isolated to individual line segments but not identified as individual point sources during other survey steps.

4. BELOWGROUND PHYSICAL SURVEY was conducted in all minisystems. Purpose of the Belowground Physical Survey was to confirm line sizes, pipe materials, locate manhole and line defects, and assign leak rates to all located I/I sources.

Results of Physical Survey are contained in the field note volumes and all I/I leak data obtained during performance of these tasks was

incorporated into the final computer analysis presented in the Appendix to this report volume.

C. PHASE II - RAINFALL SIMULATION:

Rainfall Simulation tasks, used primarily to locate inflow in the FMPC storm sewer system, consisted of the following:

1. SMOKE TESTING was conducted in all mini-systems. During performance of this task, smoke was introduced into line segments (through use of mechanical blower and chemical smoke) and trained crewmen took note of those points above or adjacent to the sewer lines (including service laterals) where the smoke escaped - the assumption being that water can enter through any opening which permits smoke to escape. Observed leaks were recorded with color photographs, quantified using a system based on intensity of escaping smoke, and diagrams prepared locating each smoke leak by referencing it to at least two (2) permanent markers. These diagrams and photographs are included in the bound field notebooks submitted as a part of this report.

2. DYE TESTING was performed by introducing dye into such locations as ponding areas or storm drains and visually monitoring the flows from adjacent sanitary sewer lines for telltale signs of dyed water and, thus, the indication of inflow. Leaks were traced, located, quantified, and recorded in the bound field books.

Totals of infiltration and inflow located by Flow Isolation, Below-

ground Physical Survey, Smoke Testing, and Dye Testing were cross-checked against total I/I quantities computed from results of the Continuous Flow Monitoring program to check for reasonableness and an indication of whether most leak sources had actually been located.

A discussion of findings and a brief narrative of findings from performance of Physical Survey and Rainfall Simulation tasks, are presented in Part 4 of this volume.

D. PHASES III & IV - LINE CLEANING AND TV INSPECTION:

Line Cleaning and TV Inspection tasks were originally scheduled for 16,000 LF of the storm sewer system. Due to time constraints, however, this task was limited to approximately 13,250 Lf of line. Individual point sources permitting extraneous water to enter the TV'd lines were located, described, quantified, and logged in both written logs and on video tape. The written logs of this TV inspection are indexed and presented with the other field inspection reports.

E. PHASE V - FINAL REPORT:

This Final I/I Evaluation Report is prepared for the purposes of presenting a tabulation of all located infiltration/inflow sources observed and recorded during the course of the FMPC study and to determine, through cost analysis, those which are cost-effective to rehabilitate. It is anticipated that this data will serve as the basis for designing a comprehensive rehabilitation program to be undertaken in the FMPC storm sewer system.

TABLE 2-1

FLOW SUMMARY
(Average Daily I/I Flows)

Mini-system	Theor. Flow (MGD)	Avg. Dry Weather Flow (MGD)	Dry Weather Inifl. (MGD)	Computed Avg. High Grndwtr. Infil. (MGD)	Annual Infil. Days	Computed Average Inflow (MGD)	Annual Inflow Days
1	.002	.028	.026	.078	119	.896	51
2	.003	.114	.111	.122	119	.437	51
3	.002	.019	.017	.074	85	.220	51
4	.020	.069	.049	.017	119	.227	51
5	.000	.006	.006	.009	119	.066	51
Totals	.027	.236	.209	.300		1.846	

TABLE 2-2

ANNUAL EXTRANEOUS FLOW RATES

MINI-SYSTEM	1 DRY WEATHER INFILTRATION (MGY)	2 HIGH GROUNDWATER INFILTRATION (MGY)	3 TOTAL INFIL. (MGY)	4 TOTAL INFLOW (MGY)	5 TOTAL I/I (MGY) — 3+4
1	9.662	9.300	18.962	45.688	64.650
2	40.515	14.520	55.035	22.287	77.322
3	6.211	6.302	12.513	11.227	23.740
4	17.793	1.964	19.757	11.601	31.358
5	2.029	1.074	3.103	3.383	6.486
Totals	76.210	33.160	109.370	94.186	203.556

NOTE: The term "Inflow" in these tables refers to stormwater flow.

A. INTRODUCTION:

Copies of Field Survey forms used to tabulate field data gathered in Phases I and II are compiled, bound, and presented with this Final Survey Report.

Format of the field notes was designed to aid both the engineers designing a rehabilitation program and those actually undertaking future rehabilitation of the I/I sources listed. Field Survey Forms in each volume contain sketches which pinpoint each leak located by Smoke Testing. This sketch provides references to at least two (2) permanent reference points - along with one set of color photographs to further aid in identifying leak locations in the field.

Infiltration leaks in manholes are indicted on the manhole sketch at the top of the survey form. Visually observed infiltration leaks are noted by written description giving size, distance from an identified manhole, and position on the circumference of the pipe using "clock" terminology with 12:00 o'clock as the top (crown) of the pipe.

As a guide in assigning each leak an appropriate rehabiliation method, a "Rehabilitation Method Summary" was developed. This listing of rehabilitaion methods selected for use in the FMPC storm sewer system is presented in Part 2 of the Appendix to this report volume. Cost figures applicable to each rehabilitation method are listed in Tables A, B, C, D, and E of this Appendix section and presented along with the Rehabiliation Method Summary. Over and above the estimated direct cost assigned to each rehabilitation method, an allowance of approximately 30% has been added to cover engineering, supervision, contin-

gencies, fiscal, legal, and administrative costs.

B. TABULATION OF LEAK DATA:

In order to perform in-depth analysis, a computer program was used to tabulate and process the field data gathered during the FMPC study. From field inspection reports, the following data was entered and/or computed for each I/I source:

1. PRIORITY NUMBER: Transportation and Treatment (T&T) Costs divided by Rehabilitation Costs.

2. TRANSPORTATION & TREATMENT COSTS: Twenty (20) year present worth cost of transporting and treating the quantity of extraneous water entering sewer system through the leak. In other words, the cost of allowing the leak to remain.

3. MINI SYSTEM ID: Alpha and/or numerical Id assigned the mini-system - or study area.

4. UPSTREAM MANHOLE NUMBER: Number assigned to the manhole located at upper end of the line segment.

5. DOWNSTREAM MANHOLE NUMBER: Number assigned to the manhole located at lower end of the line segment.

6. LEAK NUMBER: Leaks are numbered consecutively within a segment with multiple leaks.

7. BOOK ID: ID assigned to the book of field notes where leak data is recorded.

8. PAGE NO.: Page number in the book of field notes where leat

data is recorded.

9. CLASS: Indicates significance of leak source.

10. SMOKE INTENSITY: A number used in the Smoke Testing quantification system to indicate significance of the problem where smoke testing was used to locate the leak.

11. LEAK ENTRY: Type of entry, ie: entry through Municipal Main Line, Manhole, Municpal Service, or Private Service.

12. LEAK TYPE: Provides information regarding actual problem. In case of a Main Line leak, it is the method used to determine flow rate.

13. LEAK ENTRY COVER: Type of surface covering the leak area.

14. LEAK RATE: The estimated annual extraneous flow attributable to the leak.

15. PROBABLE CAUSE OF HOLE OR CRACK: Describes probable cause of the noted leak.

16. SERVICE ADDRESS: Address of the residence where service line leak is located.

17. PIPE LENGTH: Length of line segment between upstream and down stream manholes.

18. PIPE DIAMETER: Diameter, in inches, of the sewer line in which leak is located.

19. PIPE DEPTH: Average depth,in feet, of cover over sewer line in which leak is located.

20. PIPE MATERIAL: Material from which pipe is manufactured - clay, concrete, etc.

21. DISTANCE FROM UPSTREAM MANHOLE: Distance from upstream manhole to location of leak. If preceded by a minus (-) sign, distance is measured from downstream manhole.

22. LENGTH REPLACED: Estimated length of line to be replaced during rehabiliation.

23. REHABILITATION COST: Cost of repairing I/I source.

24. PERCENT I/I REMOVED: Estimated percent of I/I to be removed by recommended method of rehabilitation.

25. REHABILITATION METHOD: Recommended method to repair the I/I source.

C. COST-EFFECTIVENESS ANALYSIS:

During computer processing of leak data, a "Priority Number" is generated for each located leak. The priority number of a given leak source is calculated by the following equation:

$$\frac{\text{Present Worth Transportation and Treatment Cost}}{\text{Rehabilitation Cost}} = \text{Priority Number}$$

A priority number greater than 1.00 results when the costs of transporting and treating extraneous water attributable to a particular leak exceeds the cost to rehabilitate or repair it. It is, therefore,

cost effective to repair the leak if the priority number is equal to or greater than 1.00. In other words, it is less expensive to fix it than to bear the expense of living with it. Conversely, priority numbers less than 1.00 identify leaks not cost-effective to repair.

The cost analysis for each identified leak involves a determination of annual flow attributable to the leak, selection of a rehabilitation method - along with estimated costs and percentage of leak reduction attainable by the selected method, determination of Transportation & Treatment Costs for the quantity of extraneous flow attributable to the leak, and a comparison of rehabilitation costs to T & T Costs.

(1) DETERMINATION OF ANNUAL LEAK RATE:

Quantification of leaks is based on training, experience, and sound judgement.

Reduced to the simplest situation, the source of an observed leak can easily be classified as either infiltration or inflow and a reasonable flow rate estimate made in gallons per minute (gpm). This rate can then be converted to and gallons per day (gpd) rate. From the Continuous Flow Monitoring Program data, the number of infiltration and inflow days projected to occur in an average year is available for each mini-system (See Appendix, Part 1 for more detailed explanation of calculations associated with processing Continuous Flow Monitoring data). By multiplying the daily flow rate attributable to the leak by the number of days it is expected to occur in an average year, an estimated annual flow rate can then be calculated. As an example, let us

use a hypothetical infiltration leak occuring at FMPC mini-system 001 at an estimated rate of one (1) gallon per minute. On a daily basis, this amounts to 1,440 gallons. From Continuous Flow Monitoring results, it was projected that mini-system 001 would experience 119 days of high groundwater infiltration during an average year. The annual flow then calculates to be 171,360 gallons - or 171.36 thousands of gallons per year. Had the leak been attributable to a constant source of infiltration, it would have been assumed to occur on 365 days per year and resulted in a higher annual flow volume.

In this manner, almost any observed leak may be projected to an annual flow rate, including smoke detected leaks which are quantified using a system based on smoke intensity.

(2) REHABILITATION METHODS:

Various methods have been developed for repairing sewer system defects which permit entry of extraneous flows. Among some of the most common rehabilitation methods are:

(a) Air Test and Chemical Grout - a method used to test for leaking pipe joints and sealing those which fail.

(b) Sewer Line Point Repairs - a method whereby defective pipe joints are removed and replaced with new pipe joints.

(c) Slip Lining - a repair method in which a polyethylene liner is installed for the entire length of a sewer segment. Since there are no joints in the liner, infiltration is virtually eliminated.

(c) Plastering Manhole Walls - a method used to waterproof leaking manhole walls and prevent infiltration.

These and many other methods selected for possible use in a sewer system rehabilitation program at FMPC are listed in Part 2 of the Appendix to this volume. Along with each method is also listed the estimated cost of performing the particular type of rehabilitation and a conservative estimate of the I/I percentage to be removed through use of the method.

(3) TRANSPORTATION & TREATMENT COSTS:

Annualized costs to Transport and Treat the extraneous flows estimated to be removed from the FMPC storm sewer system through rehabilitation were calculated and provided by the consulting engineers, Lockwood Greene Engineers, Inc. These costs are $2.00 per thousand gallons per year for both infiltration and inflow in all FMPC minisystems.

(4) COMPARISON OF T & T COSTS TO COSTS OF REHABILITATION:

In computing the "Priority Number" for each located leak in the FMPC storm sewer system, the following type calculation was performed:

Minisystem 1 (Hypothetical) - From MH 1 to MH 2

Length 148 lf - Diameter 18"

Infiltration Rate:	1,440 gallons per day
Percent Removal:	95%
Infiltration Removed:	1,368 gallons per day

Annual Number Of Infiltration Days:	119 per year
Annual Infil. Removed:	162,792 thousand gallons
Rehab. Method:	Test and Seal
Rehab Cost:	148' x $26.00 = $3,848
Interest Rate:	8.000 %
Present Worth Factor:	9.8181
T & T Cost:	$2.00 per 1,000 gallons per year

Costs To Transport & Treat:

2.00 x 9.8181x 162.792 (000's) = $3,196

Priority Number:	3,196 / 3,848 = 0.831

Since the cost to repair the leak is more than the costs associated with transporting and treating that portion eliminated by rehabilitation (priority number less than 1.00), rehabilitation is not cost-effective.

D. SUMMARY:

Detailed tabulations of all infiltration and inflow sources located during the FMPC storm sewer system I/I study, along with summaries of total rehabilitation and cost-effective rehabilitation, tables listing rehabilitation methods, I/I removal rates, and costs are presented in Section V and the Appendix of this volume.

A. INTRODUCTION:

Data gathering tasks at FMPC were undertaken during January, February, and March of 1986 and sufficient groundwater was present to assure accurate readings in connection with the infiltration problem. Smoke test results are gnerally considered good, but undoubtedly there would have been more small inflow sources located if this task had been performed during a dryer period.

B. GENERAL FINDINGS:

Summaries of findings by rehabilitation method, number of occurrences, and costs are tabulated for each study area in tables 4-1 through 4-8 at the end of this section. A complete detailed listing of all noted defects located during the study is presented in Part 3 of the Appendix to this report volume.

It is anticipated that recommended rehabilitation will eliminate a vast majority of the infiltration/inflow problems, however, additional flow monitoring after completion of rehabilitation will be required to determine the actual level of I/I abatement attained.

As summarized in the following tables, a total of 235 rehab occurrences were tabulated - 94 of which were cost-effective using the $2.00 per 1,000 gallons per year transportation and treatment costs for both infiltration and inflow. Total cost to rehabilitate all occurrences is estimated at $721,934.00 - of which an estimated $248,056.00 is cost-effective.

C. SPECIAL CONSIDERATIONS:

The "Rehabilitation Method Summary" listed in Appendix Section 2

contains two (2) rehabilitation descriptions which are virtually identical. These are "Air Test and Chemically Grout Main Line" and "Clean, TV, Air Test, and Grout Line Segment". These categories were used in order to separate line segments which had been TV'd from those which had not. The first category applies to lines which were cleaned and TV inspected during the study. The second category applies to those line segments which were evalated based on infiltration weir readings but which were not previously cleaned and TV inspected. As shown in Table 4-3, there were one hundred eighteen (118) occurrences of the latter category - sixty (60) of which were cost-effective for rehabilitation. In twenty six (26) of these cost-effective occurrences and thirty three (33) of the non-cost-effective occurrences, however, access to the lines is restricted at one end of the line segment, thus making it impossible to set up equipment required to undertake the indicated rehabilitation. The storm sewer system would require upgrading through installation of cleanouts or manholes at the tees where these lines connect to the next line segment or at the upstream end of laterals originating at buildings and other locations where no line access is presently available. The cost of this upgrade is estimated at $2,000.00 per location; thus adding $52,000.00 in preparatory upgrade costs to enable the cost-effective occurrences of this rehabilitation method to be undertaken and an additional $66,000.00 if the non-cost-effective occurrences are to be undertaken. The line segments involved are listed in Table 4-9.

In addition to the access problems discussed above, there are several locations where bends in the line segments will pose difficulty to operation of TV/Grout equipment. This problem will exist for certain

TABLE 4-1

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

TOTAL REHABILITATION COST TOTALS BY MINI-SYSTEM

MINI SYSTEM	TOTAL REHABILITATION COST ($)	TOTAL MANHOLE AND MAINLINE REHABILITATION COST ($)	TOTAL MUNICIPAL SERVICE LINE REHABILITATION COST ($)	TOTAL PRIVATE SERVICE LINE REHABILITATION COST ($)
1	99583	99583	0	0
2	241145	241145	0	0
3	146444	146444	0	0
4	136196	134196	0	2000
5	98566	98566	0	0
TOTALS	721934	719934	0	2000

TABLE 4-2

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

COST EFFECTIVE REHABILITATION COST TOTALS BY MINI-SYSTEM

MINI SYSTEM	TOTAL COST EFFECTIVE REHABILITATION COST ($)	TOTAL COST EFFECTIVE MANHOLE AND MAINLINE REHABILITATION COST ($)	TOTAL COST EFFECTIVE MUNICIPAL SERVICE LINE REHABILITATION COST ($)	TOTAL COST EFFECTIVE PRIVATE SERVICE LINE REHABILITATION COST ($)
1	51513	51513	0	0
2	130257	130257	0	0
3	32615	32615	0	0
4	33671	33671	0	0
5	0	0	0	0
TOTALS	248056	248056	0	0

TABLE 4-3

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
REHABILITATION METHOD OCCURRENCE SUMMARY

PAGE 1

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
REPLACE SECTION OR ENTIRE MAIN LINE	5	3
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	41	6
AIR TEST AND CHEMICALLY GROUT MAIN LINE	53	16
EXCAVATE AND REPAIR POINT SOURCE OF SERVICE LINE IN YARD		
MUNICIPAL	0	0
PRIVATE	1	0
EXCAVATE AND REPAIR FAULTY MAIN LINE TAP UNDER EASEMENT	1	0
REALIGN AND GROUT CASTING, MANHOLE IN EASEMENT	1	0
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	6	4
CLEAN MH WALLS,PLUG LARGE CRACKS, WATERPROOF WALLS	3	3
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	6	2
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	118	60
TOTALS	235	94

TABLE 4-4

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
REHABILITATION METHOD OCCURRENCE SUMMARY IN MINI-SYSTEM 1 PAGE 1

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	4	0
AIR TEST AND CHEMICALLY GROUT MAIN LINE	7	2
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	17	12
TOTALS	28	14

TABLE 4-5

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

REHABILITATION METHOD OCCURRENCE SUMMARY IN MINI-SYSTEM 2 PAGE 1

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
REPLACE SECTION OR ENTIRE MAIN LINE	1	1
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT).	17	4
AIR TEST AND CHEMICALLY GROUT MAIN LINE	14	8
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	4	3
CLEAN MH WALLS,PLUG LARGE CRACKS, WATERPROOF WALLS	3	3
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	40	31
TOTALS	79	50

TABLE 4-6

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

REHABILITATION METHOD OCCURRENCE SUMMARY IN MINI-SYSTEM 7 PAGE 1

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
REPLACE SECTION OR ENTIRE MAIN LINE	2	2
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	5	1
AIR TEST AND CHEMICALLY GROUT MAIN LINE	13	0
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	1	1
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	2	1
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	26	10
TOTALS	49	15

TABLE 4-7

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

REHABILITATION METHOD OCCURRENCE SUMMARY IN MINI-SYSTEM 4 PAGE 1

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
REPLACE SECTION OR ENTIRE MAIN LINE	2	0
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	9	1
AIR TEST AND CHEMICALLY GROUT MAIN LINE	9	6
EXCAVATE AND REPAIR POINT SOURCE OF SERVICE LINE IN YARD		
MUNICIPAL	0	0
PRIVATE	1	0
EXCAVATE AND REPAIR FAULTY MAIN LINE TAP UNDER EASEMENT	1	0
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	2	1
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	28	7
TOTALS	52	15

TABLE 4-8

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

REHABILITATION METHOD OCCURRENCE SUMMARY IN MINI-SYSTEM 5 PAGE 1

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	6	0
AIR TEST AND CHEMICALLY GROUT MAIN LINE	10	0
REALIGN AND GROUT CASTING, MANHOLE IN EASEMENT	1	0
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	1	0
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	2	0
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	7	0
TOTALS	27	0

TABLE 4-9

LINE SEGMENTS WITH ACCESS AT ONE END ONLY
UPGRADE REQUIRED TO PERMIT REHABILITATION EQUIPMENT SETUP

Mini	UpMH	DnMH	
1	CB46	Tee	
1	CB44	Tee	
1	CB45	Tee	
1	CB39A	Tee	
1	CB51A	Tee	
1	CB53	Tee	(*)
1	CB84	Tee	(*)
2	CB35	Tee	
2	MH29	Tee	
2	NLAT	MH64	
2	CB40	Tee	
2	WLAT	JBOX	
2	CB24	Tee	
2	NLAT	Tee	
2	CB16	Tee	
2	CB18	Tee	
2	MH32	Tee	(*)
2	ELAT	CB28	(*)
2	ELAT	MH22	(*)
2	WLAT	MH29	(*)
3	NLAT	MH47	
3	MH48A	Tee	
3	NLAT	CB68	
3	CB18A	Tee	
3	CB66	Tee	
3	CB18	Tee	
3	NLAT	CB22	
3	WLAT	MH48	(*)
3	WLAT	CB69	(*)
3	CB23	Tee	(*)
3	NLAT	CB23	(*)
3	CB60	Tee	(*)
3	NLAT	MH42	(*)
3	NLAT	CB66	(*)
3	NLAT	CB67	(*)
3	CB56	Tee	(*)
4	WLAT	MH57	
4	ELAT	CB76	
4	WLAT	MH56	
4	NLAT	MH55	
4	WLAT	CB74	
4	CB77	Tee	(*)
4	ELAT	CB78	(*)
4	ELAT	MH60	(*)
4	CB69	Tee	(*)
4	NLAT	MH54	(*)
4	ELAT	CB75	(*)
4	NLAT	CB80	(*)
4	ELAT	CB87	(*)
4	CB80	Tee	(*)
4	CB81	Tee	(*)
4	WLAT	MH58	(*)
4	NLAT	CB71	(*)
4	SLAT	CB79	(*)
4	NLAT	MH51	(*)
5	CB03	Tee	(*)
5	CB05	Tee	(*)
5	CB11	Tee	(*)
5	MH03	Tee	(*)

(*) Indicates Non-Cost-Effective Segment

A. INTRODUCTION:

From the tabulated listings of all infiltration and/or inflow sources located and identified during the FMPC Storm Sewer System I/I Evaluation Study (see tabulation in Appendix Section 3), data is available from which to summarize estimated quantities of infiltration and inflow (I/I) cost-effective to remove through rehabilitation and to estimate the costs attendant to undertaking that work. The purpose of this report section is to tabulate that data in summary form, present conclusions based on a review of the data, and make recommendations concerning rehabilitation in the FMPC strom sewer system.

B. ANALYSIS OF EXTRANEOUS FLOWS AND REHABILITATION:

For the purposes of this report, extraneous flows (infiltration and inflow) are categorized as follows:

(1) **PROJECTED ANNUAL I/I RATES:**

These are the estimated total annual I/I volumes, as computed from Continuous Flow Monitoring Program data, which will reach the holding basin and/or treatment facility.

(2) **I/I COST-EFFECTIVE TO REMOVE:**

Total I/I removable from cost-effective sources using the recommended rehabilitation methods.

(3) **RESIDUAL I/I:**

Estimated portion of I/I remaining in system after rehabilitation of cost-effective I/I sources.

An analysis of extraneous flows in the FMPC storm sewer system is

tabulated in Table 5-1 at the end of this report section. The following additional tables, which are sources for portions of the data included in this table, are presented immediately following Table 5-1.

5-2	Located I/I Totals - By Minisystem
5-3	Located I/I Totals - By Rehabilitation Method
5-4	T&T Costs For Total I/I Removable From Cost-Effective Sources
5-5	Residual Flows (After Rehab) By Minisystem
5-6	Residual Inflow Summary
5-7	Residual Infiltration Summary
5-8	Leak Occurance By Rehab. Method

C. REHABILITATION:

Section 3 of the Appendix to this volume contains the detailed listings of each I/I source located during the study. These listings, by minisystem, contain description, location, annual I/I flow rate, recommended rehabilitation method, cost of rehabilitation, and estimated percent of I/I removable by the recommended rehabilitation method. Leaks are listed in descending order of "Priority Numbers" which are calculated by dividing the twenty (20) year present worth cost to transport and treat the quantity of I/I removable through rehabilitation by the cost of that rehabilitation and all leaks with a priority number of 1.00 and above are cost-effective for rehabilitation.

A brief summary of data summarized in Section IV and in the tables accompanying this section is presented below:

	No.	Cost
1. Total Individual Leaks Recommended For Rehab.	235 ea	$ 721,934
2. Total Leaks Cost-Effective For Repair	94 ea	$ 248,056
3. Total I/I Quantified	109.837	MGY
4. I/I Removable Through Cost-Effective Rehab.	38.154	MGY

Note that the above costs do not include system upgrade costs necessary to provide access for rehabilitation recommended in this report. As stated in Section IV, these costs are estimated at $52,000 to provide access to those line segments which are cost-effective for "Clean, TV, Air Test, and Grout Line Segment" - plus an additional $66,000.00 if all occurrences of this rehabilitation method are to be undertaken.

D. SUMMARY:

Review of data gathered in this study indicates that the most serious problem existing in the FMPC storm sewer system is ground water infiltrating through pipe joints and line defects. Approximately seventy percent (70%) of the annual infiltration has its origin in constant sources occurring 365 days per year - the balance being associated with high groundwater conditions which occur on the average of 119 days per year. Inflow accounts for less than one percent (1%) of the total I/I and a similar percentage of total estimated rehabilitation costs.

Inflow + Infiltration (stormwater)

3

E. RECOMMENDATIONS:

Based on data tabulated in this report, it is recommended that a program of storm sewer rehabilitation be undertaken at FMPC, said program consisting, at a minimum, of performing the rehabilitation cost-justified in this report. Estimated cost of such a program is $248,056.00 to eliminate 38,154,077 gallons of infiltration and inflow per year. Estimated costs to correct all located defects is $721,934.00 to remove 46,030,528 gallons of infiltration and inflow per year. Note that system upgrade costs listed in "C." above and in Section IV are over and above these rehabilitation costs.

The alternative to rehabilitation consists of providing a holding facility with capacity to handle all present flows.

TABLE 5-1

SUMMARY OF EXTRANEOUS FLOWS

AND ESTIMATED REMOVAL THROUGH REHABILITATION

FMPC - Fernald, Ohio

	(Gallons Per Year)		
	Infil.	Inflow	Total
1. Projected Annual I/I	109,376,016	461,268	109,837,284
2. I/I Cost-Effective To Remove	38,048,237	105,840	38,154,077
3. Residual I/I			
(a) Cost-Effective Sources	53,059,447	158,760	53,218,207
(b) Non-Cost-Effective Sources	18,268,332	196,668	18,465,000
Total Residual	71,327,779	355,428	71,683,207
4. Percent Of Cost-Effective Removal	35 %	23 %	35 %

TABLE 5-2

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
INFILTRATION/INFLOW TOTALS BY MINI-SYSTEM

MINI SYSTEM	TOTAL I/I (GPY)	TOTAL INFLOW (GPY)	INFLOW RESIDUAL (GPY)	TOTAL INFILTRATION (GPY)	INFILTRATION RESIDUAL (GPY)
1	18933831	32421	32421	18901410	11901038
2	55091417	28541	28541	55062876	34279740
3	12578677	32421	32421	12546256	8373100
4	20034742	270508	164668	19764234	13672662
5	3198617	97377	97377	3101240	3101240
TOTALS	109837284	461268	355428	109376016	71327779

TABLE 5-3

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

INFILTRATION/INFLOW TOTALS BY REHABILITATION METHOD PAGE 1

REHABILITATION METHOD	TOTAL I/I (GPY)	TOTAL I/I RESIDUAL (GPY)
REPLACE SECTION OR ENTIRE MAIN LINE	4181060	1812328
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	7774341	5735181
AIR TEST AND CHEMICALLY GROUT MAIN LINE	35053116	24002597
EXCAVATE AND REPAIR POINT SOURCE OF SERVICE LINE IN YARD		
MUNICIPAL	0	0
PRIVATE	5908	5908
EXCAVATE AND REPAIR FAULTY MAIN LINE TAP UNDER EASEMENT	110160	110160
REALIGN AND GROUT CASTING, MANHOLE IN EASEMENT	5908	5908
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	465216	187747
CLEAN MH WALLS,PLUG LARGE CRACKS, WATERPROOF WALLS	438948	131684
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	619107	252409
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	61183520	39439284
TOTALS	109837284	71683207

TABLE 5-4

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

COST EFFECTIVE TRANSPORTATION AND TREATMENT COST
TOTALS BY MINI-SYSTEM

MINI SYSTEM	TOTAL COST EFFECTIVE TRANSPORTATION AND TREATMENT COST ($)	TOTAL COST EFFECTIVE MANHOLE AND MAINLINE TRANSPORTATION AND TREATMENT COST ($)	TOTAL COST EFFECTIVE MUNICIPAL SERVICE LINE TRANSPORTATION AND TREATMENT COST ($)	TOTAL COST EFFECTIVE PRIVATE SERVICE LINE TRANSPORTATION AND TREATMENT COST ($)
1	137461	137461	0	0
2	408102	408102	0	0
3	81945	81945	0	0
4	121694	121694	0	0
5	0	0	0	0
TOTALS	749201	749201	0	0

TABLE 5-5

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
COMPUTATION OF RESIDUAL FLOWS BY MINI-SYSTEM

MINI SYSTEM	NON-COST EFFECTIVE INFLOW	+	COST EFF. RESIDUAL INFLOW	=	TOTAL RESIDUAL INFLOW	NON-COST EFFECTIVE INFIL	+	COST EFF. RESIDUAL INFIL	=	TOTAL RESIDUAL INFIL
1	32421		0		32421	1400478		10500560		11901038
2	28541		0		28541	5043808		29235932		34279740
3	32421		0		32421	3895656		4477444		8373100
4	5908		158760		164668	4827150		8845512		13672662
5	97377		0		97377	3101240		0		3101240
TOTALS	196668		158760		355428	18268332		53059447		71327779

TABLE 5-6

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
REMOVABLE/RESIDUAL INFLO TOTALS BY MINI-SYSTEM

MINI	TOTAL INFLO	COST EFFECTIVE RESIDUAL INFLO	NON COST EFFECTIVE REMOVABLE INFLO
1	32421	0	16211
2	28541	0	11416
3	32421	0	12968
4	270508	158760	4136
5	97377	0	51640
TOTAL	461268	158760	96371

TABLE 5-7

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
REMOVABLE/RESIDUAL INFIL TOTALS BY MINI-SYSTEM

MINI	TOTAL INFIL	COST EFFECTIVE RESIDUAL INFIL	NON COST EFFECTIVE REMOVABLE INFIL
1	18901410	10500560	591064
2	55062876	29235932	2181034
3	12546256	4477444	1617936
4	19764234	8845512	2095457
5	3101240	0	1295176
TOTAL	109376016	53059447	7780668

TABLE 5-8

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
REHABILITATION METHOD OCCURRENCE SUMMARY

REHABILITATION METHOD	TOTAL OCCURRENCES	COST EFFECTIVE OCCURRENCES
REPLACE SECTION OR ENTIRE MAIN LINE	5	3
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	41	6
AIR TEST AND CHEMICALLY GROUT MAIN LINE	53	16
EXCAVATE AND REPAIR POINT SOURCE OF SERVICE LINE IN YARD		
MUNICIPAL	0	0
PRIVATE	1	0
EXCAVATE AND REPAIR FAULTY MAIN LINE TAP UNDER EASEMENT	1	0
REALIGN AND GROUT CASTING, MANHOLE IN EASEMENT	1	0
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	6	4
CLEAN MH WALLS,PLUG LARGE CRACKS, WATERPROOF WALLS	3	3
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	6	2
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	118	60
TOTALS	235	94

APPENDIX

TABLE OF CONTENTS

PART 1: F.M.P.C. Continuous Flow Monitoring

PART 2: Rehabilitation Tables - Methods & Costs

PART 3: I/I Leak Analysis and Recommended Rehabilitaion

A. BACKGROUND:

Continuous Flow Monitoring was conducted at FMPC during January, February, and March of 1986. The purpose of the program was to measure infiltration and inflow in each of the study areas (minisystems copmprising the FMPC storm sewer system. Rainfall and groundwater levels were monitored concurrently with flow monitoring.

Continuous Flow Monitoring consisted of installing electronic flow monitoring devices, measuring both depth and flow rate, in key manholes where total flows for each minisystem could be measured. Flows were recorded over a span of time sufficient to include the physical conditions of rainfall and groundwater normally associated with the following conditions:

(a) Dry Weather Days - days of minimal ground water
(b) High Ground Water Days - groundwater above pipe invert.
(c) Rainfall ("Wet") Days - days with sufficient rainfall to produce measureable inflow.

Detailed results of the FMPC Continuous Flow Monitoring Program are tabulated in Tables FMP-2 and FMP-2 and on the separate Flow Monitoring Summamries and hydrographs for each mini-system which are included in this section of the Appendix.

B. METHODOLOGY:

From data recorded during the flow monitoring program (FMP), the average flow was calculated for Dry Days, Wet Days, and High Groundwater Days. Theoretical Flows for each minisystem were calculated by

comparing late night flows on dry days with average dry day flow rates. These calculated theoretical flow rates were then compared to domestic, commercial, and industrial water consumption rates and found to vary less than two percent.

(1) Dry Weather Infiltration:

The difference in the Average Dry Day Flows and Theoretical Flows. This type of infiltration is normally assumed to be from a constant source and to occur 365 days per year.

(2) Wet Day Flows:

Wet days are those with sufficient rainfall to cause measurable inflow - normally a minimum of 0.25". The difference between Average High Groundwater Day Flow and Average Wet Day Flow is "Inflow".

(3) High Groundwater Days:

These are days when groundwater is elevated sufficiently to permit extraneous flow to infiltrate the sewer lines through such defects as cracks or open joints. The difference between Average Dry Day Flow and Average High Groundwater Days is "Infiltration".

Flows measured during the FMP are unique to that period of time and the physical conditions of rainfall and groundwater present. Since I/I studies are part of a long-range planning process, these measured flows must be projected to reflect the flow rates which can be reasonably expected under the average conditions of a longer period of time. Since inflow and infiltration are both directly related to rainfall,

rainfall averages are used as a common denominator in flow projections. From a comparison of inflow producing rainfalls during the FMP and those over a number of "average" years, multipliers can be developed and applied to the FMP data to project it up - or down - to the long-term average conditions. For example, if average inflow-producing rainfall during the FMP at Fernald was 0.50" but analysis of rainfall records indicated a long-term average of such rainfalls to be 0.75", the I/I multiplier - or "proportioning factor" - would be 1.50 and this factor applied to the average flow rates computed from current FMP data.

For use in cost-analysis computations, the average daily I/I flow rates must be projected to total annual flow rates rates. The average annual number of inflow days can be calculated by taking the average of days on which inflow-producing rainfalls occur during some period of "average years". At FMPC this figure was fifty one (51) days per year. For each inflow day, groundwater levels are normally raised sufficiently to cause infiltraion for some corresponding number of days. If one (1) Wet Day results in two (2) High Groundwater Days and there are an average of 64 Wet Days per year, it is reasonable to assume there will be 128 High Ground Water Days per year. This type calculation was performed by analyzing hydrographs for each FMPC minisystem and computing the average annnual number of of High Groundwater Infiltration Days. This data is summarized in Tables FMP-1, FMP-2, and the individual Flow Monitoring Summaries for each minisystem, as presented at the end of this Appendix section. Note that the term "Inflow" in various flow monitoring tables refers to stormwater flow through the system - flow directly attributable to rainfall.

TABLE FMP-1

FLOW SUMMARY
(Average Daily I/I Flows)

Mini-system	Theor. Flow (MGD)	Avg. Dry Weather Flow (MGD)	Dry Weather Inifl. (MGD)	Computed Avg. High Grndwtr. Infil. (MGD)	Annual Infil. Days	Computed Average Inflow (MGD)	Annual Inflow Days
1	.002	.028	.026	.078	119	.896	51
2	.003	.114	.111	.122	119	.437	51
3	.002	.019	.017	.074	85	.220	51
4	.020	.069	.049	.017	119	.227	51
5	.000	.006	.006	.009	119	.066	51
Totals	.027	.236	.209	.300		1.846	

TABLE FMP-2

ANNUAL EXTRANEOUS FLOW RATES

MINI-SYSTEM	DRY WEATHER INFILTRATION (MGY)	HIGH GROUNDWATER INFILTRATION (MGY)	TOTAL INFIL. (MGY)	TOTAL INFLOW (MGY)	TOTAL I/I (MGY)
1	9.662	9.300	18.962	45.688	64.650
2	40.515	14.520	55.035	22.287	77.322
3	6.211	6.302	12.513	11.227	23.740
4	17.793	1.964	19.757	11.601	31.358
5	2.029	1.074	3.103	3.383	6.486
Totals	76.210	33.160	109.370	94.186	203.556

NOTE: The term "Inflow" in these tables refers to stormwater flow.

FMPC FERNALD, OHIO FLOW ANALYSIS

60" LINE (STORM SEWER) MP.1

1.	LENGTH OF SEWER LINES	6550 LF
2.	INCH-MILES OF PIPE	20.536 IN-MI
3.	THEORETICAL BASE FLOW	0.002 MGD
4.	AVERAGE DRY DAY FLOW	0.028 MGD
5.	MEASURED DAILY EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	0.026 MGD
	(B) HIGH GROUNDWATER INFILTRATION	0.119 MGD
	(C) INFLOW	1.360 MGD
6.	I/I MULTIPLIER	0.659
7.	COMPUTED AVERAGE DAILY EXTRANEOUS FLOWS	
	(A) HIGH GROUNDWATER INFILTRATION	0.078 MGD
	(B) INFLOW	0.896 MGD
8.	INFILTRATION RATE	5094 GPD/IN-MI
9.	AVERAGE ANNUAL NUMBER OF HIGH GROUNDWATER DAYS	119
10.	AVERAGE ANNUAL NUMBER OF INFLOW DAYS	51
11.	COMPUTED AVERAGE ANNUAL EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	9.662 MGY
	(B) HIGH GROUNDWATER INFILTRATION	9.300 MGY
	SUB-TOTAL (INFILTRATION)	18.962 MGY
	(C) INFLOW	45.688 MGY
	TOTAL ANNUAL I/I	64.650 MGY
12.	PEAK INFLOW MULTIPLIER	2.326
13.	PEAK INFLOW RATE	3.162 MGD

FMPC FERNALD, OHIO FLOW ANALYSIS

60" LINE (STORM SEWER) MP.2

1.	LENGTH OF SEWER LINES	17170 LF
2.	INCH-MILES OF PIPE	44.839 IN-MI
3.	THEORETICAL BASE FLOW	0.003 MGD
4.	AVERAGE DRY DAY FLOW	0.114 MGD
5.	MEASURED DAILY EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	0.111 MGD
	(B) HIGH GROUNDWATER INFILTRATION	0.185 MGD
	(C) INFLOW	0.663 MGD
6.	I/I MULTIPLIER	0.659
7.	COMPUTED AVERAGE DAILY EXTRANEOUS FLOWS	
	(A) HIGH GROUNDWATER INFILTRATION	0.122 MGD
	(B) INFLOW	0.437 MGD
8.	INFILTRATION RATE	5196 GPD/IN-MI
9.	AVERAGE ANNUAL NUMBER OF HIGH GROUNDWATER DAYS	119
10.	AVERAGE ANNUAL NUMBER OF INFLOW DAYS	51
11.	COMPUTED AVERAGE ANNUAL EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	40.515 MGY
	(B) HIGH GROUNDWATER INFILTRATION	14.520 MGY
	SUB-TOTAL (INFILTRATION)	55.035 MGY
	(C) INFLOW	22.287 MGY
	TOTAL ANNUAL I/I	77.322 MGY
12.	PEAK INFLOW MULTIPLIER	2.326
13.	PEAK INFLOW RATE	1.542 MGD

FMPC FERNALD, OHIO FLOW ANALYSIS

36" LINE (STORM SEWER) MP.3

1.	LENGTH OF SEWER LINES	8690 LF
2.	INCH-MILES OF PIPE	19.530 IN-MI
3.	THEORETICAL BASE FLOW	0.002 MGD
4.	AVERAGE DRY DAY FLOW	0.019 MGD
5.	MEASURED DAILY EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	0.017 MGD
	(B) HIGH GROUNDWATER INFILTRATION	0.113 MGD
	(C) INFLOW	0.334 MGD
6.	I/I MULTIPLIER	0.659
7.	COMPUTED AVERAGE DAILY EXTRANEOUS FLOWS	
	(A) HIGH GROUNDWATER INFILTRATION	0.074 MGD
	(B) INFLOW	0.220 MGD
8.	INFILTRATION RATE	4667 GPD/IN-MI
9.	AVERAGE ANNUAL NUMBER OF HIGH GROUNDWATER DAYS	85
10.	AVERAGE ANNUAL NUMBER OF INFLOW DAYS	51
11.	COMPUTED AVERAGE ANNUAL EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	6.211 MGY
	(B) HIGH GROUNDWATER INFILTRATION	6.302 MGY
	SUB-TOTAL (INFILTRATION)	12.513 MGY
	(C) INFLOW	11.227 MGY
	TOTAL ANNUAL I/I	23.741 MGY
12.	PEAK INFLOW MULTIPLIER	2.326
13.	PEAK INFLOW RATE	0.777 MGD

FMPC FERNALD, OHIO FLOW ANALYSIS

36" LINE (STORM SEWER) MP.4

1.	LENGTH OF SEWER LINES	6810 LF
2.	INCH-MILES OF PIPE	12.807 IN-MI
3.	THEORETICAL BASE FLOW	0.020 MGD
4.	AVERAGE DRY DAY FLOW	0.069 MGD
5.	MEASURED DAILY EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	0.049 MGD
	(B) HIGH GROUNDWATER INFILTRATION	0.025 MGD
	(C) INFLOW	0.345 MGD
6.	I/I MULTIPLIER	0.659
7.	COMPUTED AVERAGE DAILY EXTRANEOUS FLOWS	
	(A) HIGH GROUNDWATER INFILTRATION	0.017 MGD
	(B) INFLOW	0.227 MGD
8.	INFILTRATION RATE	5095 GPD/IN-MI
9.	AVERAGE ANNUAL NUMBER OF HIGH GROUNDWATER DAYS	119
10.	AVERAGE ANNUAL NUMBER OF INFLOW DAYS	51
11.	COMPUTED AVERAGE ANNUAL EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	17.793 MGY
	(B) HIGH GROUNDWATER INFILTRATION	1.964 MGY
	SUB-TOTAL (INFILTRATION)	19.757 MGY
	(C) INFLOW	11.601 MGY
	TOTAL ANNUAL I/I	31.358 MGY
12.	PEAK INFLOW MULTIPLIER	2.326
13.	PEAK INFLOW RATE	0.803 MGD

FMPC FERNALD, OHIO FLOW ANALYSIS

30" LINE (STORM SEWER) MP.5

1.	LENGTH OF SEWER LINES	6990 LF
2.	INCH-MILES OF PIPE	15.216 IN-MI
3.	THEORETICAL BASE FLOW	0.000 MGD
4.	AVERAGE DRY DAY FLOW	0.006 MGD
5.	MEASURED DAILY EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	0.006 MGD
	(B) HIGH GROUNDWATER INFILTRATION	0.014 MGD
	(C) INFLOW	0.101 MGD
6.	I/I MULTIPLIER	0.659
7.	COMPUTED AVERAGE DAILY EXTRANEOUS FLOWS	
	(A) HIGH GROUNDWATER INFILTRATION	0.009 MGD
	(B) INFLOW	0.066 MGD
8.	INFILTRATION RATE	958 GPD/IN-MI
9.	AVERAGE ANNUAL NUMBER OF HIGH GROUNDWATER DAYS	119
10.	AVERAGE ANNUAL NUMBER OF INFLOW DAYS	51
11.	COMPUTED AVERAGE ANNUAL EXTRANEOUS FLOWS	
	(A) DRY WEATHER INFILTRATION	2.029 MGY
	(B) HIGH GROUNDWATER INFILTRATION	1.074 MGY
	SUB-TOTAL (INFILTRATION)	3.103 MGY
	(C) INFLOW	3.383 MGY
	TOTAL ANNUAL I/I	6.486 MGY
12.	PEAK INFLOW MULTIPLIER	2.326
13.	PEAK INFLOW RATE	0.234 MGD

EXPLANATION FOR LINE ITEMS IN THE FLOW MONITORING SUMMARIES

1. LENGTH OF SEWER LINES: Total length in linear feet of gravity line located within the monitored area. Service laterals and force mains are not included in this measurement.

2. INCH-MILES OF PIPE: For purposes of equating the lengths of gravity lines among monitored areas, and for comparison of infiltration rates, it is convenient to determine the quantity of sewer line in an area in similar units, such as the inch-diameter-mile. This is determined by (1) multiplying the length in linear feet of each size of pipe by its diameter in inches, (2) dividing the results by 5,280 feet/mile, (3) repeating these two steps for each diameter of pipe in this area, (4) and summing all of the results.

3. BASE WASTEWATER FLOW: The sum of the residential, commercial, and industrial flow rates.

4. AVERAGE DRY DAY FLOW: The average daily wastewater flow rate measured during dry weather. Dry weather is defined as those days when flow produced by rainfall or high groundwater infiltration is not present.

5. MEASURED DAILY EXTRANEOUS FLOWS:

   (A) DRY WEATHER INFILTRATION: This is the long term infiltration, defined as the difference between the average dry day (Item 4) and the calculated base flow (Item 3).

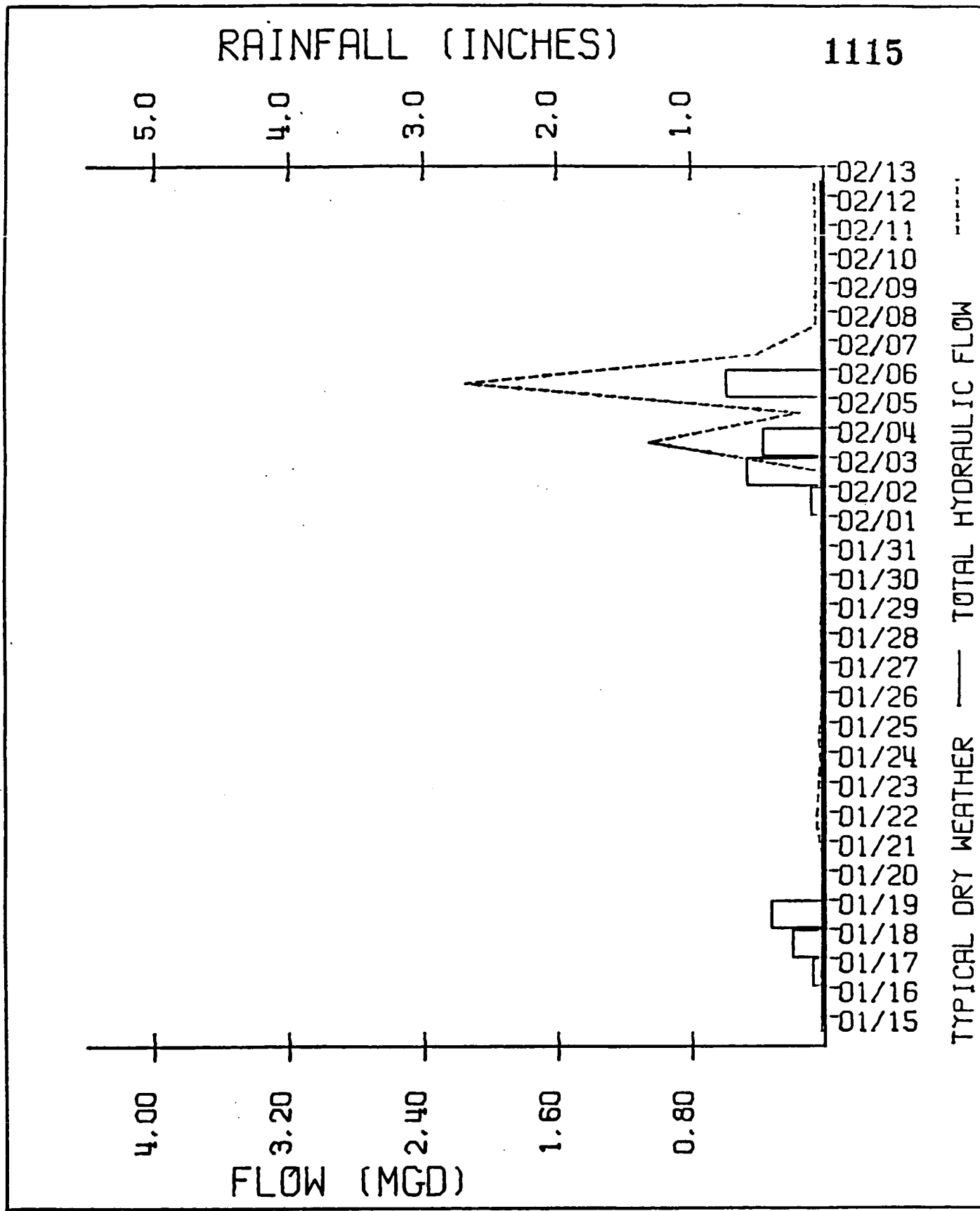
   (B) HIGH GROUNDWATER INFILTRATION: This is the short term infiltration created by perched or elevated groundwater following a significant storm event.

(B) HIGH GROUNDWATER INFILTRATION: Computed by multiplying Item 7A by Item 9.

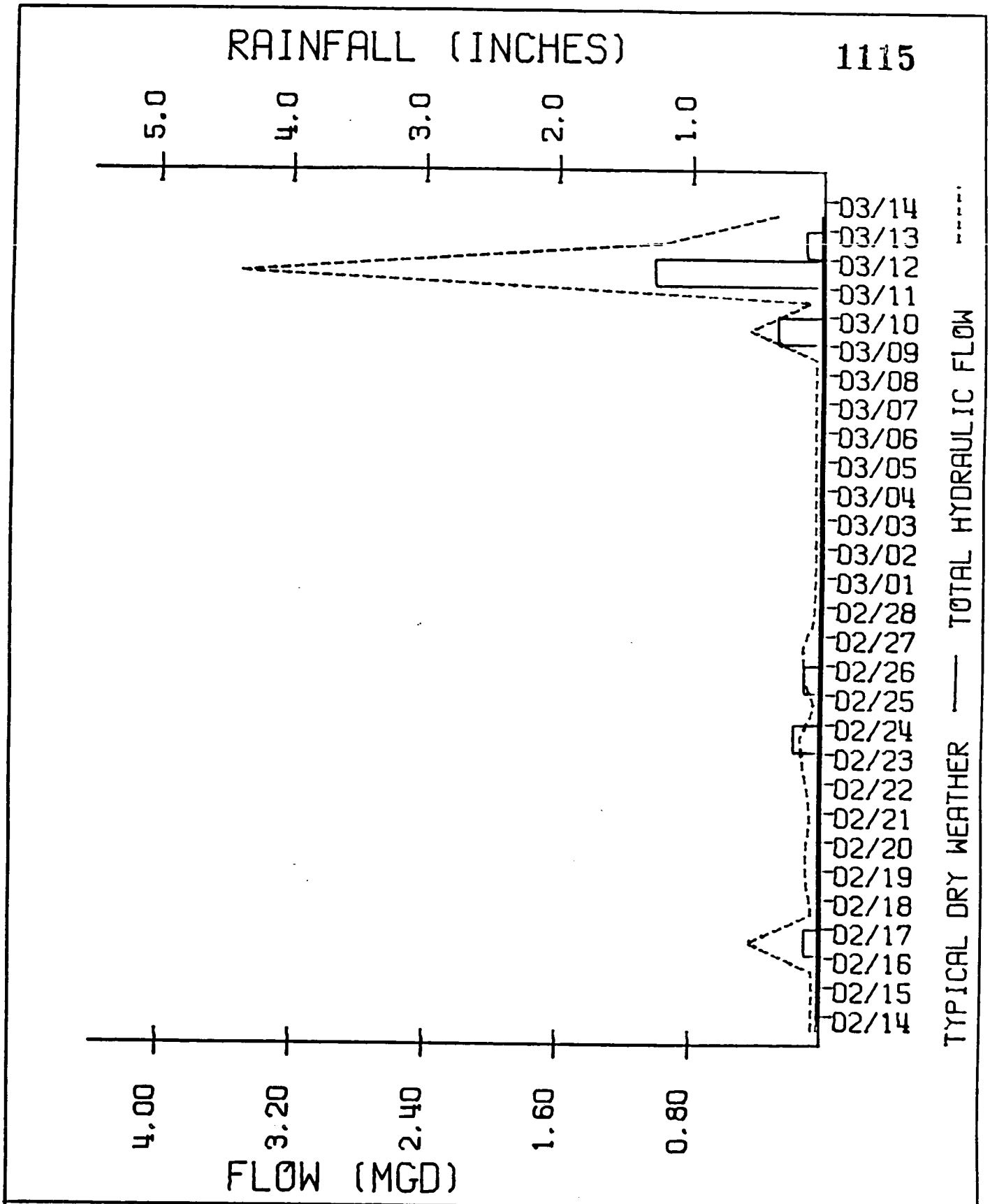
(C) INFLOW: Computed by multiplying Item 7B by Item 10.

12. PEAK INFLOW MULTIPLIER: A mathematical expression of the relationship of the design rainfall to that of the average inflow producing rain event during flow monitoring. The design rainfall is defined as the 24-hour rain event which occurs at 2-year intervals, which is considered a practical time period allowing design of plant hydraulics for a larger than annual rainfall.

13. PEAK INFLOW RATE: This represents the peak daily inflow projected to occur during a design rainfall event. It is calculated by multiplying Items 5C and 12.

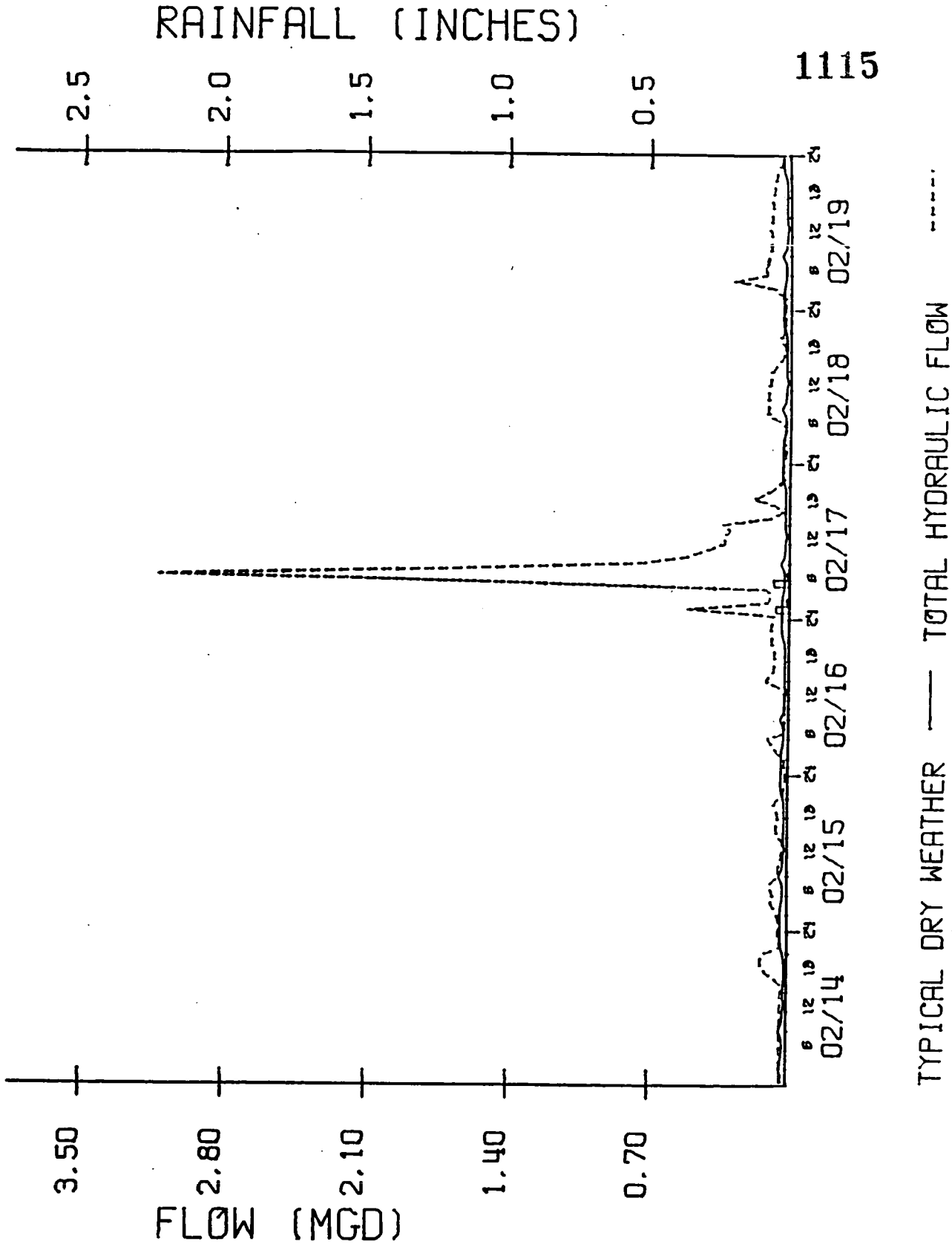


WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.1 60" LINE (STORM SEWER)



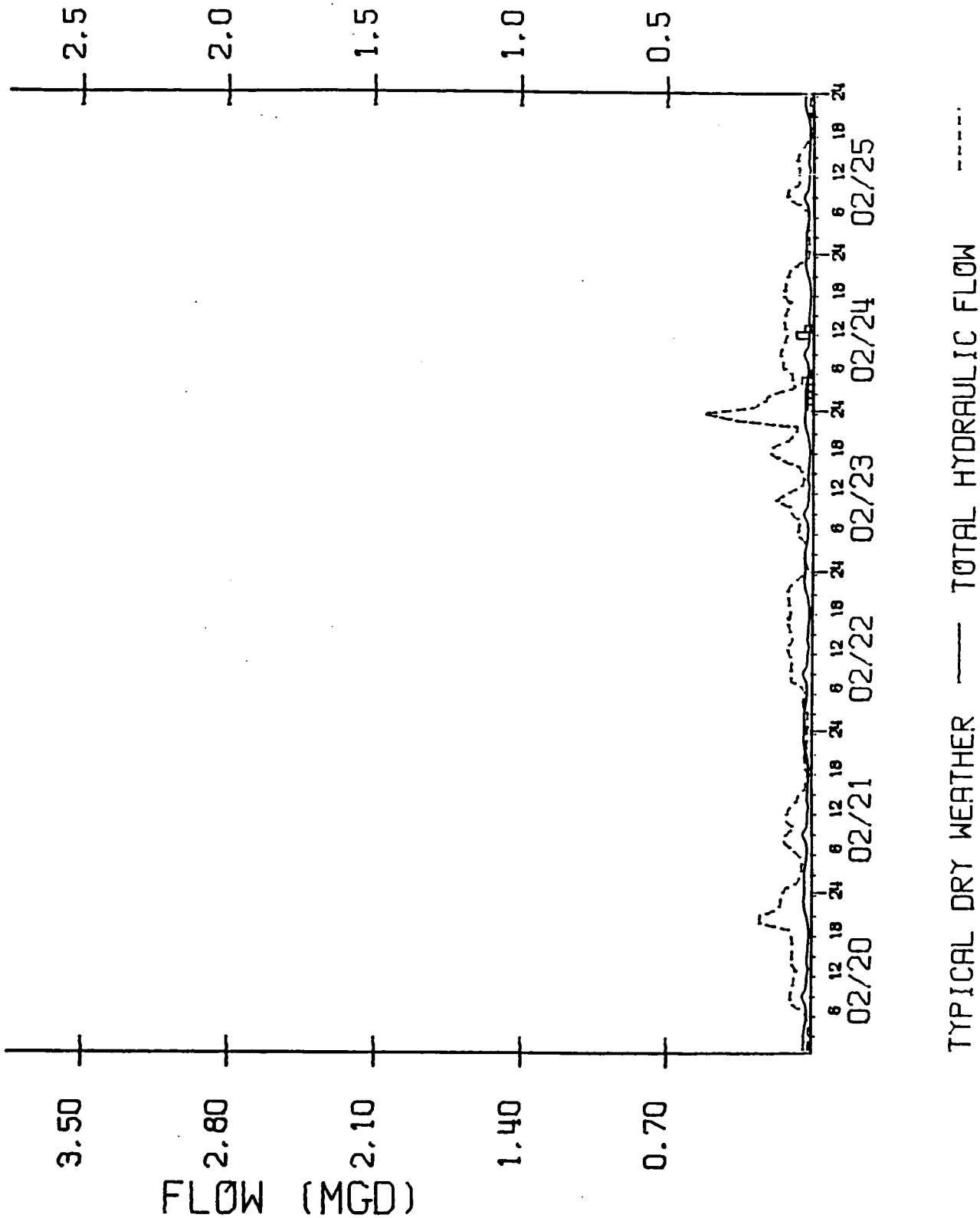
WYNNE ASSOCIATES INC.

FMPC FERNALD, OHIO FLOW ANALYSIS
MP.1
60" LINE (STORM SEWER)



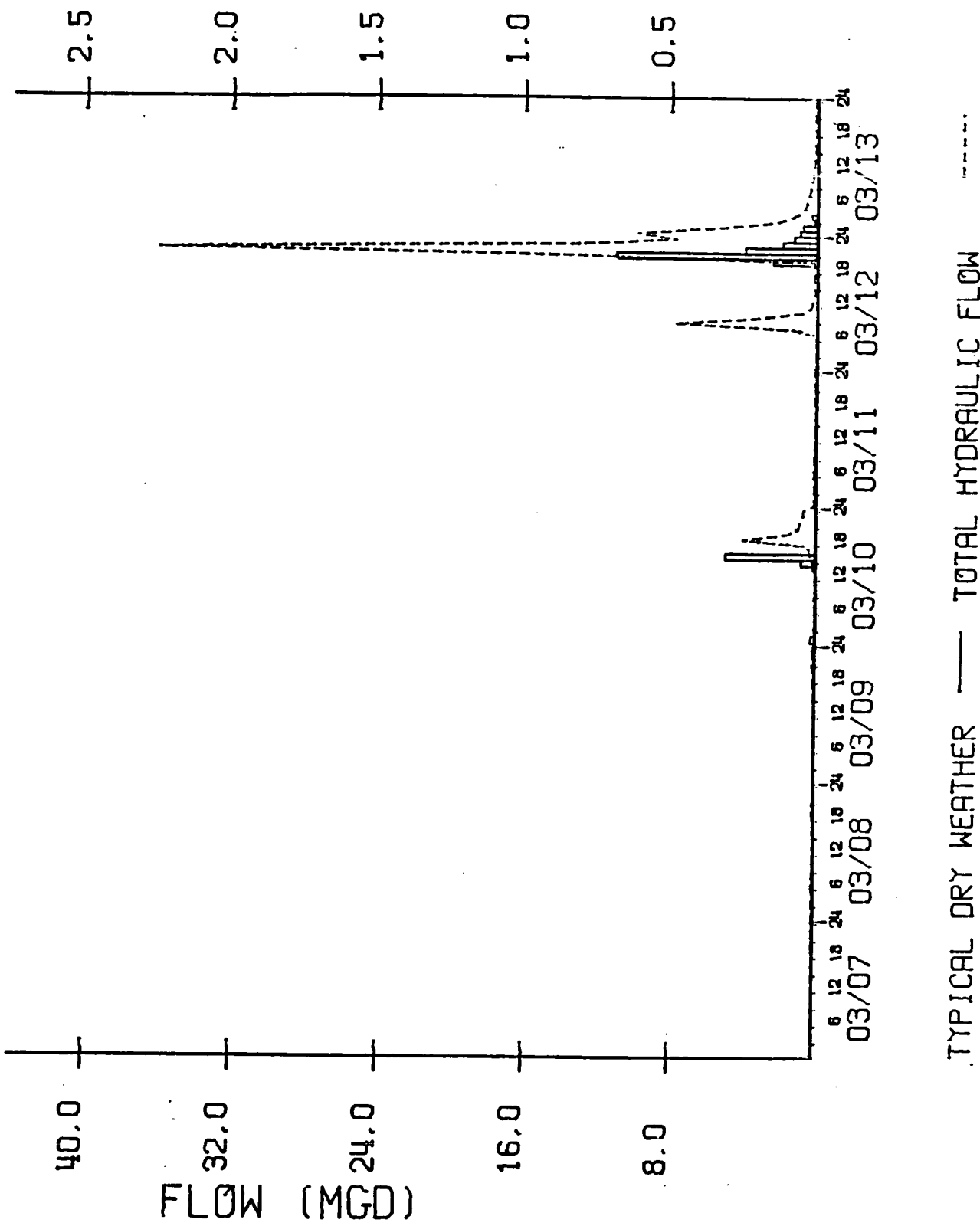
WYNNE ASSOCIATES INC.

FMPC FERNALD, OHIO FLOW ANALYSIS
MP.1
60" LINE (STORM SEWER)

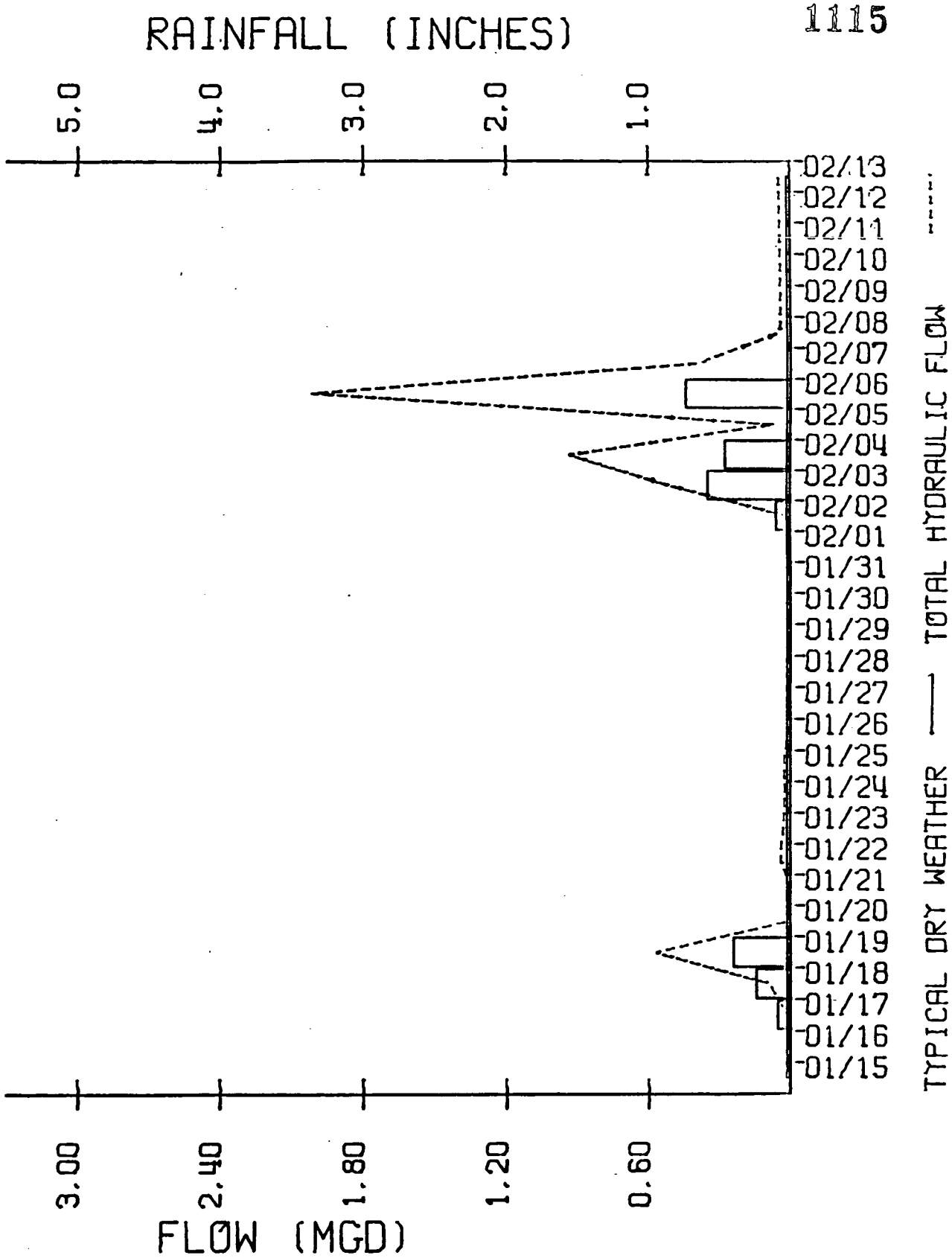


WYNNE ASSOCIATES INC.

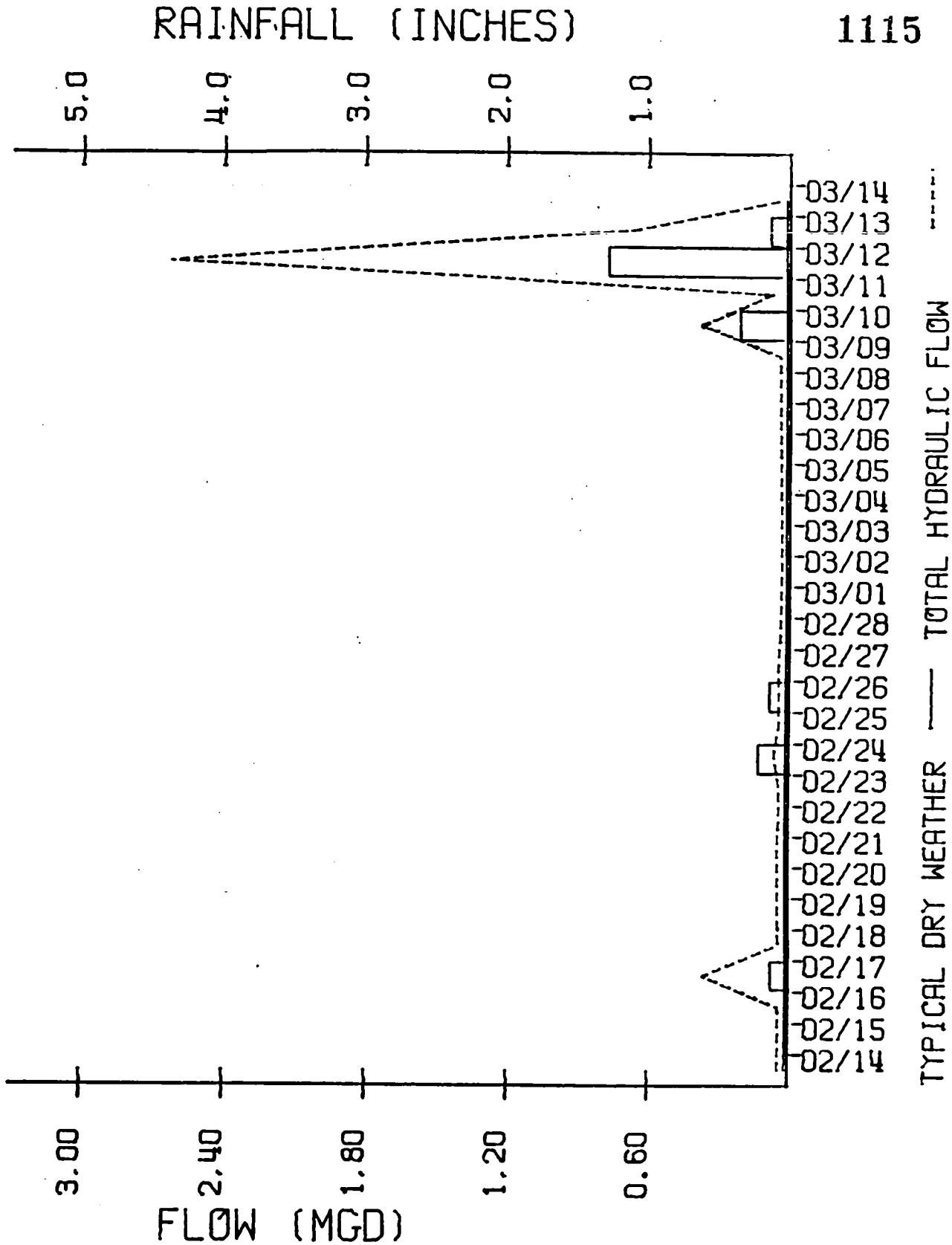
FMPC FERNALD, OHIO FLOW ANALYSIS
MP.1
60" LINE (STORM SEWER)



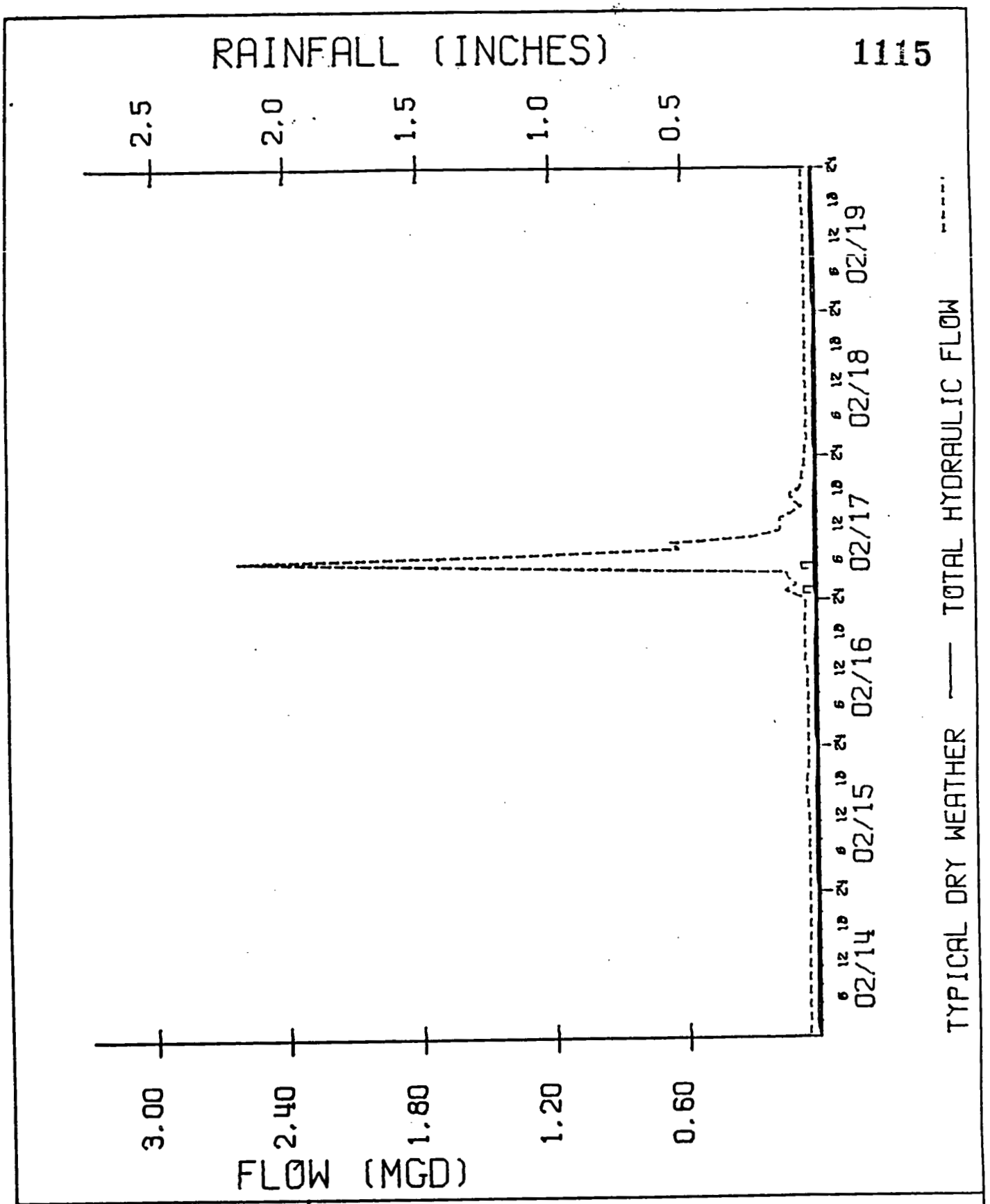
WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.1 60" LINE (STORM SEWER)



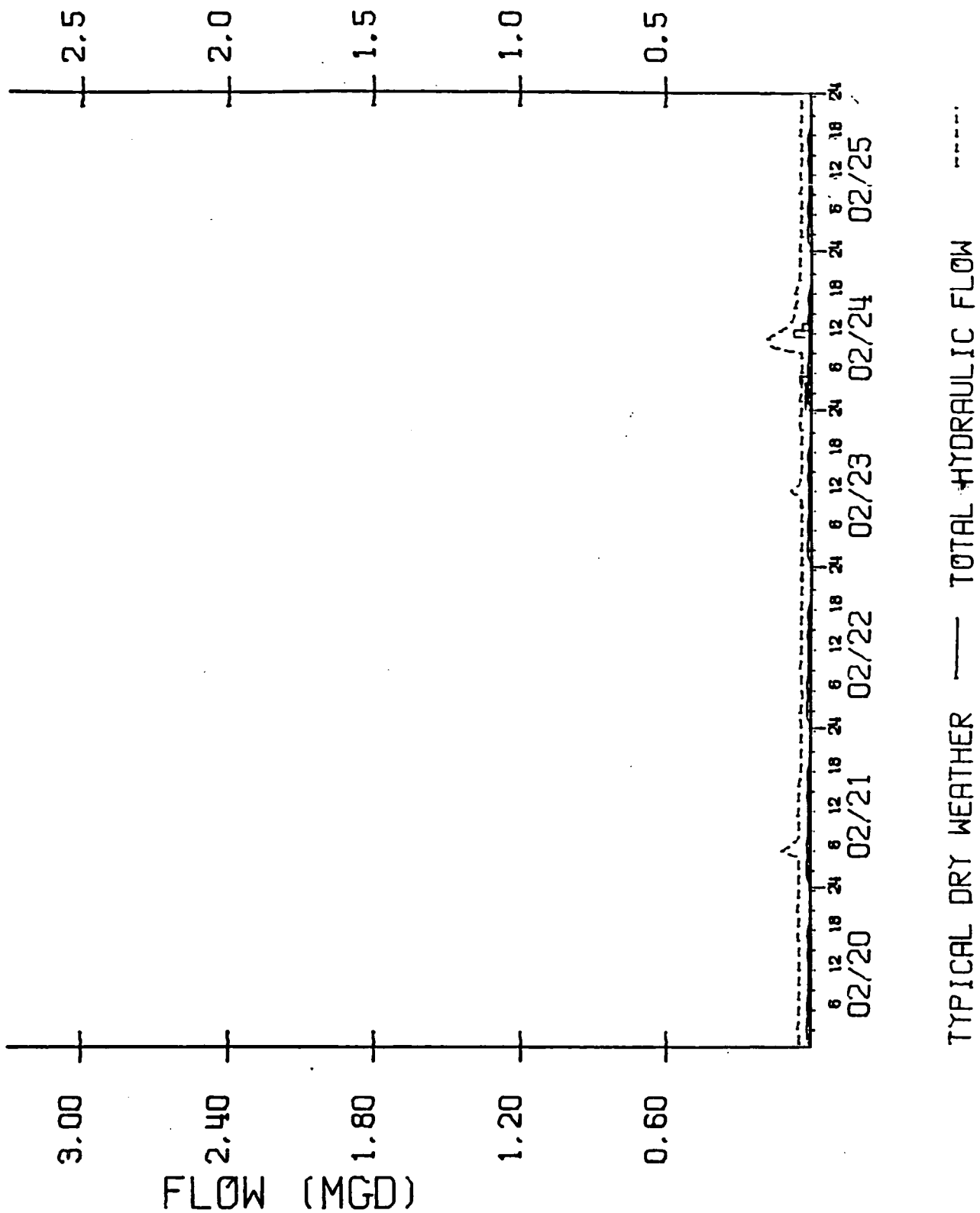
WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.2 60" LINE (STORM SEWER)



WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.2 60" LINE (STORM SEWER)

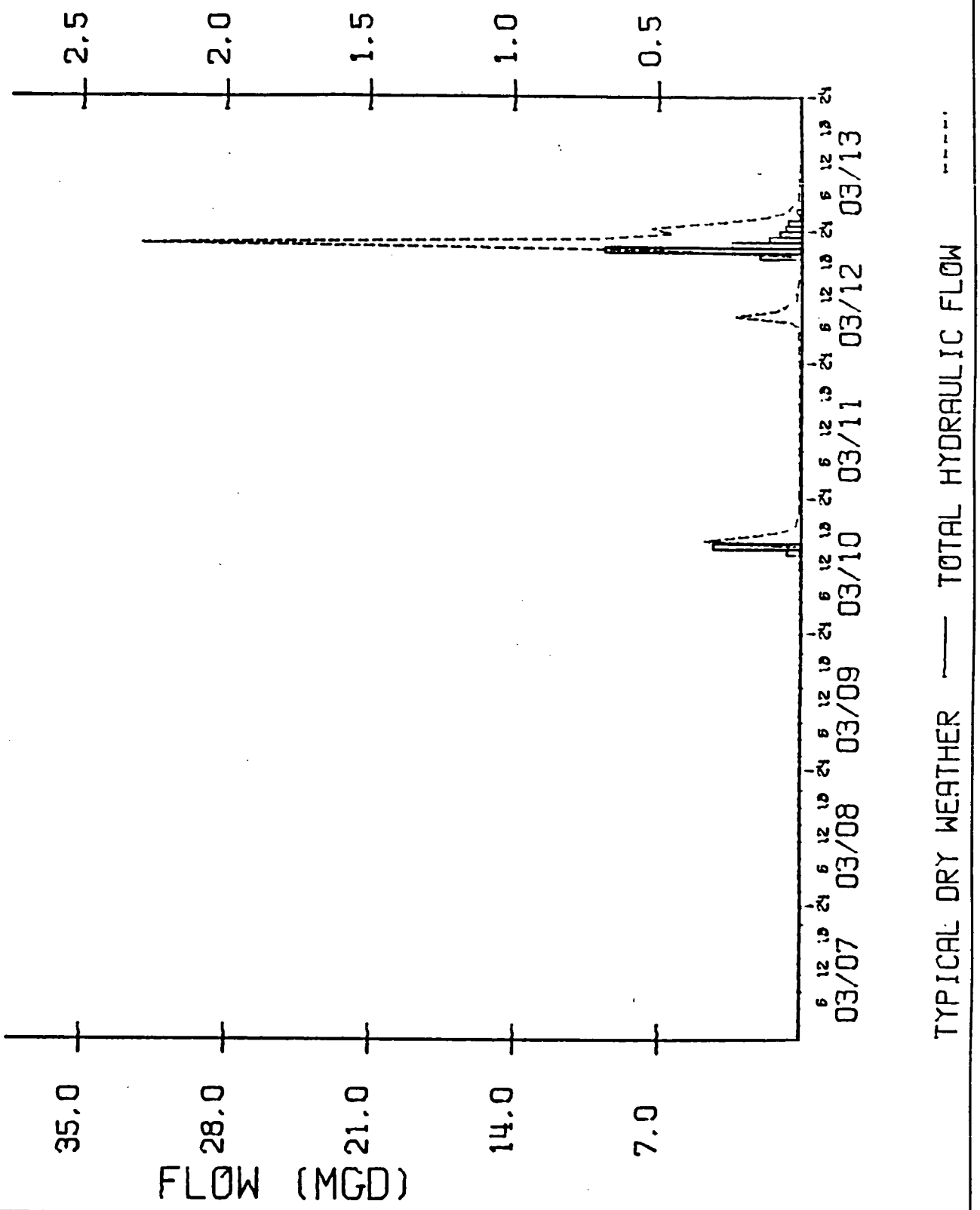


WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.2 60" LINE (STORM SEWER)

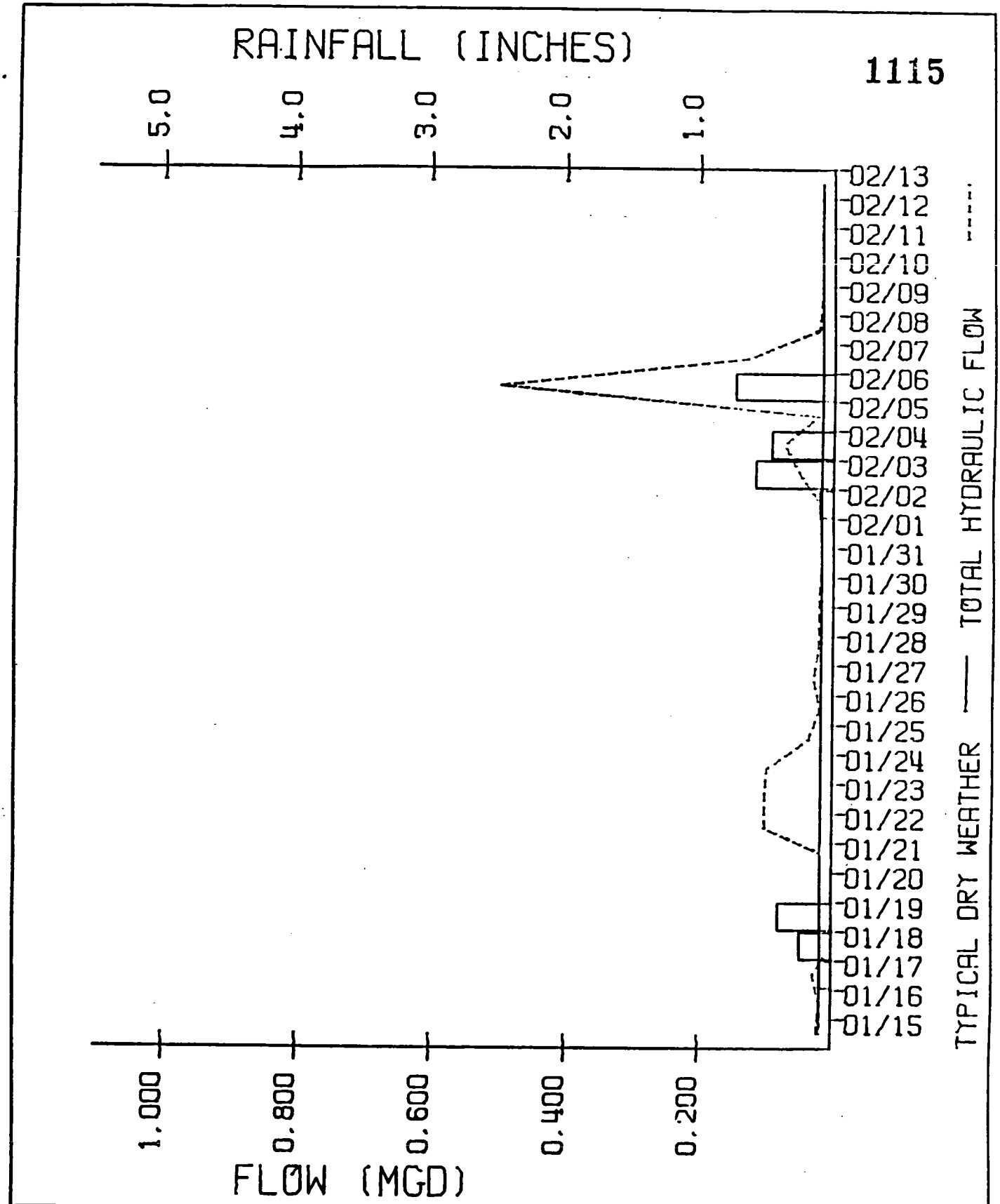


WYNNE ASSOCIATES INC.

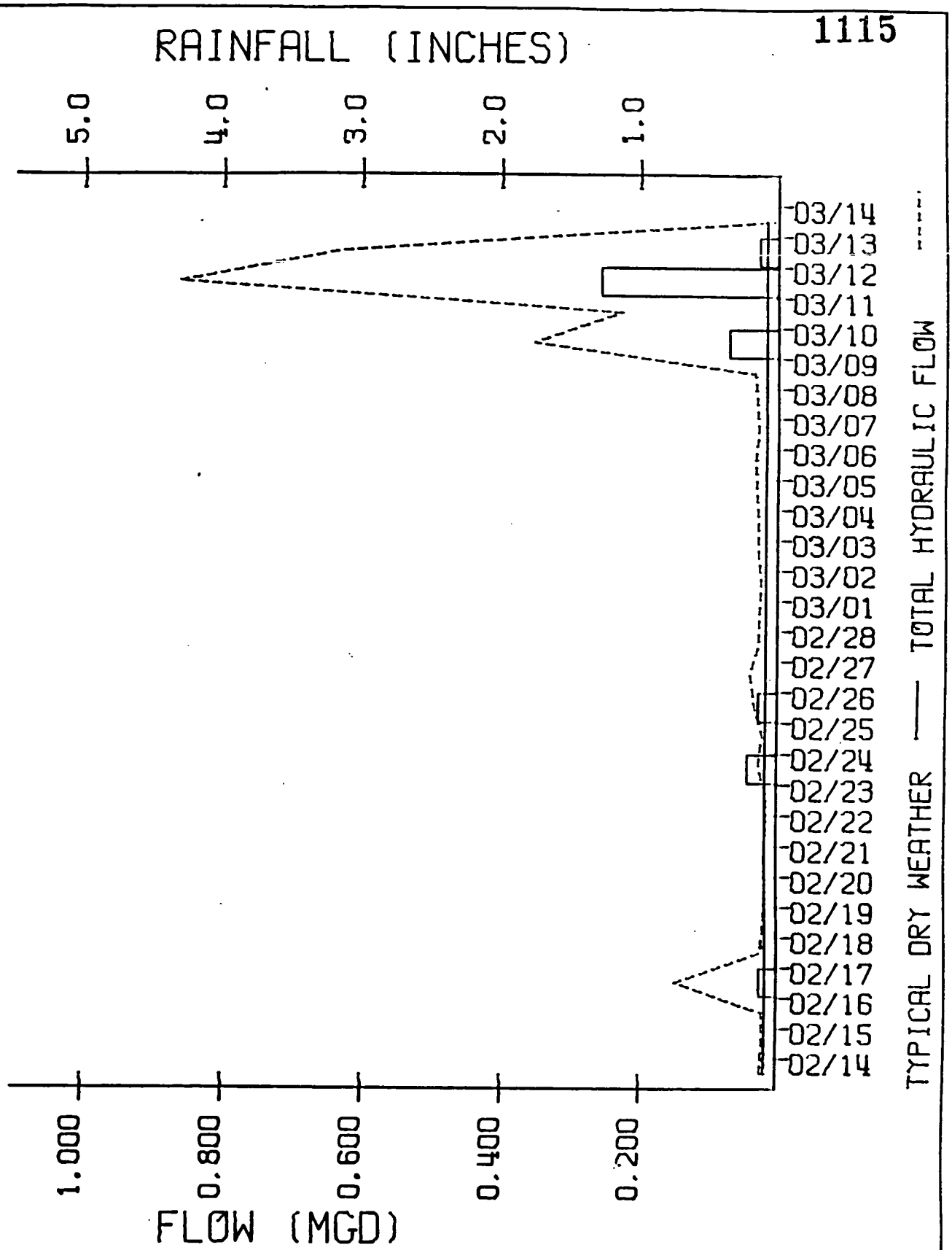
FMPC FERNALD, OHIO FLOW ANALYSIS
MP.2
60" LINE (STORM SEWER)



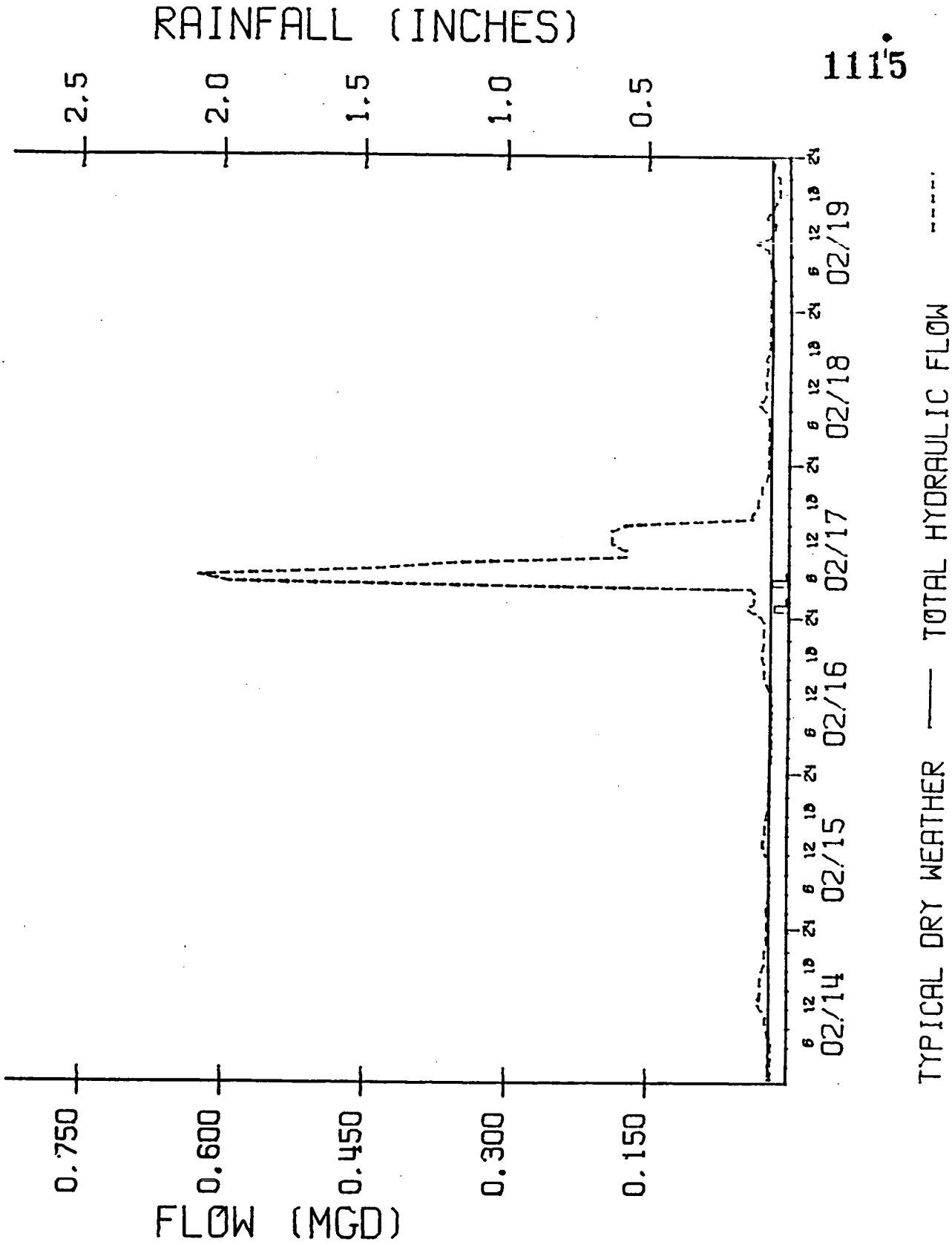
WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.2 60" LINE (STORM SEWER)



WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.3 36" LINE (STORM SEWER)

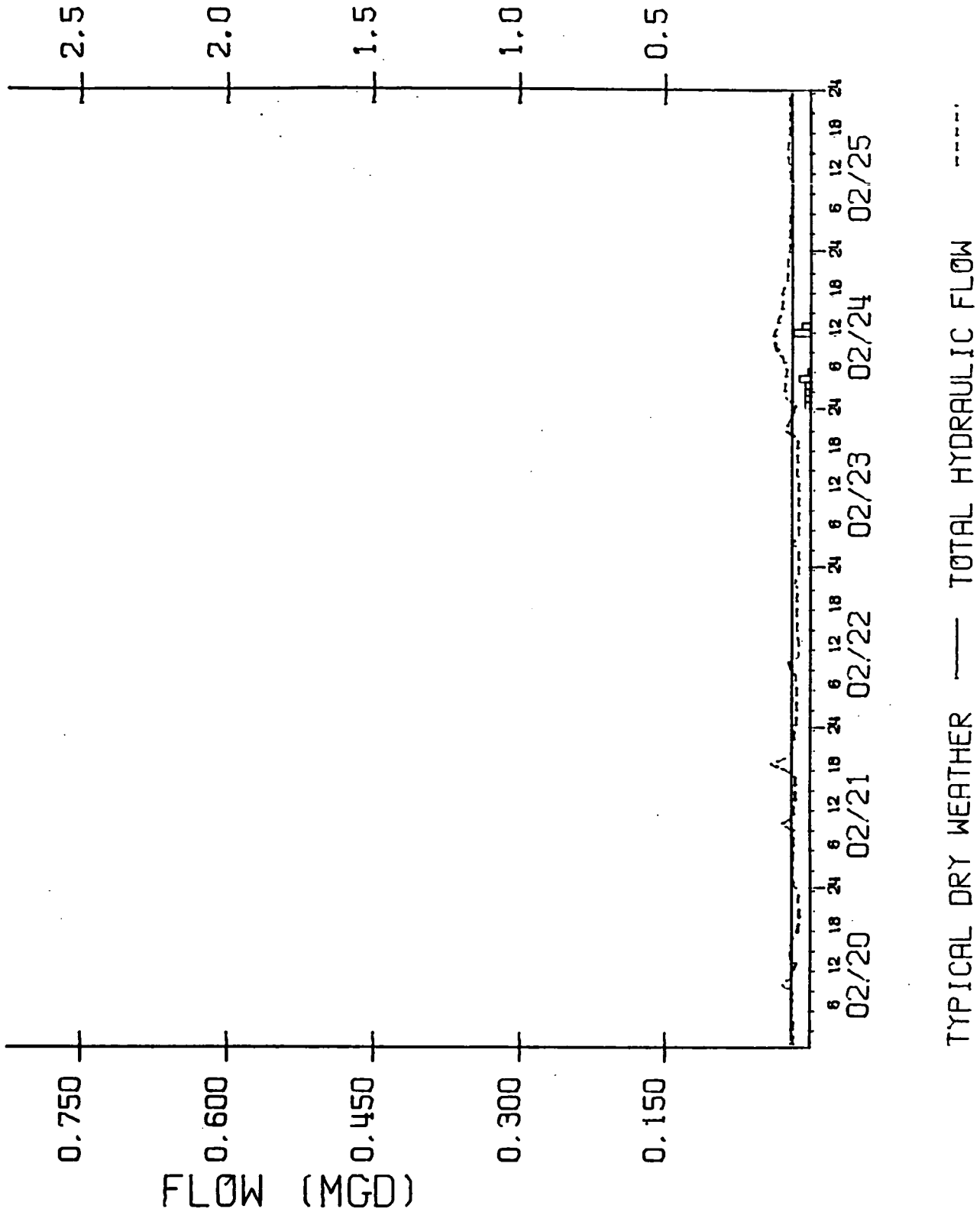


WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.3 36" LINE (STORM SEWER)



WYNNE ASSOCIATES INC.

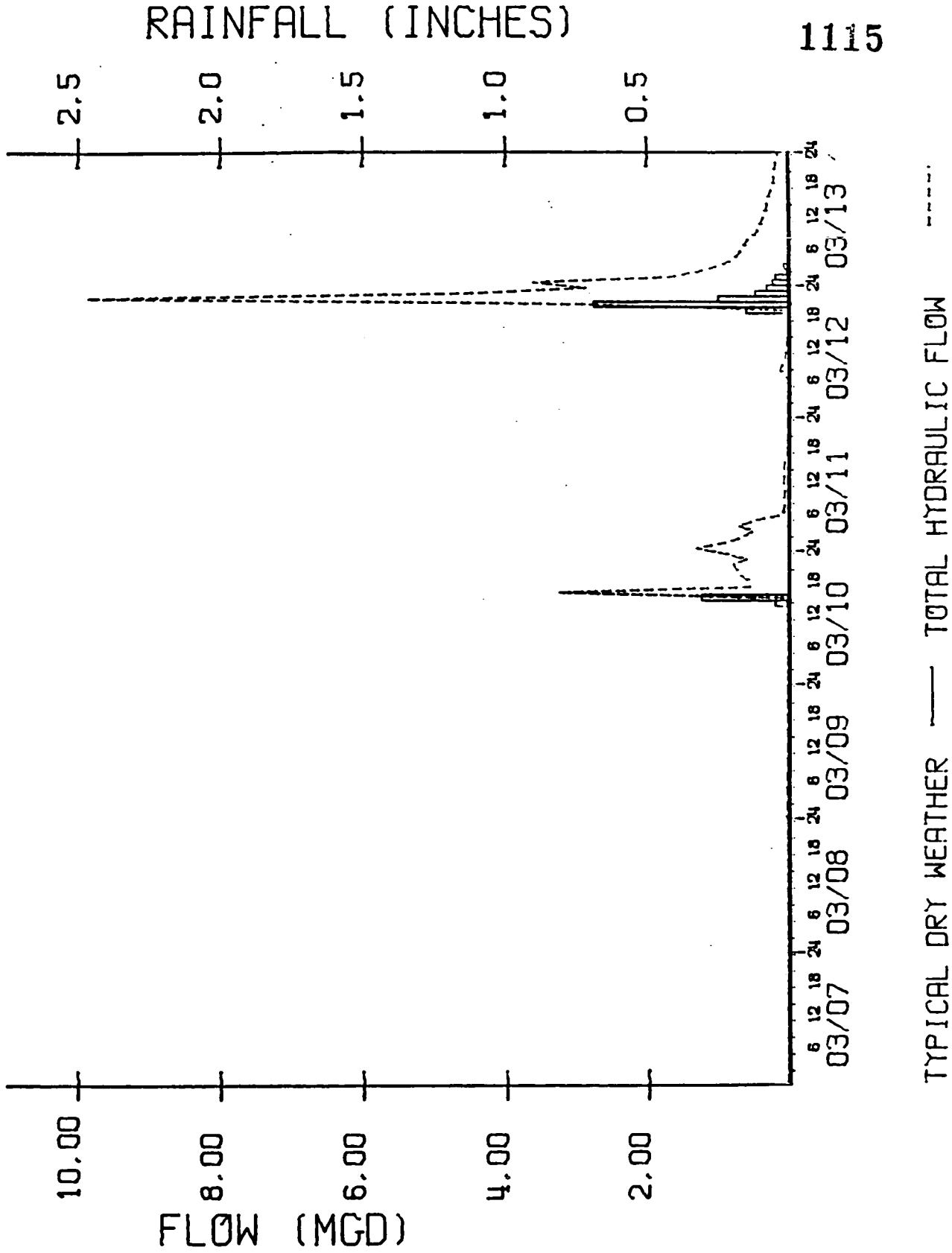
FMPC FERNALD, OHIO FLOW ANALYSIS
MP.3
36" LINE (STORM SEWER)



1115

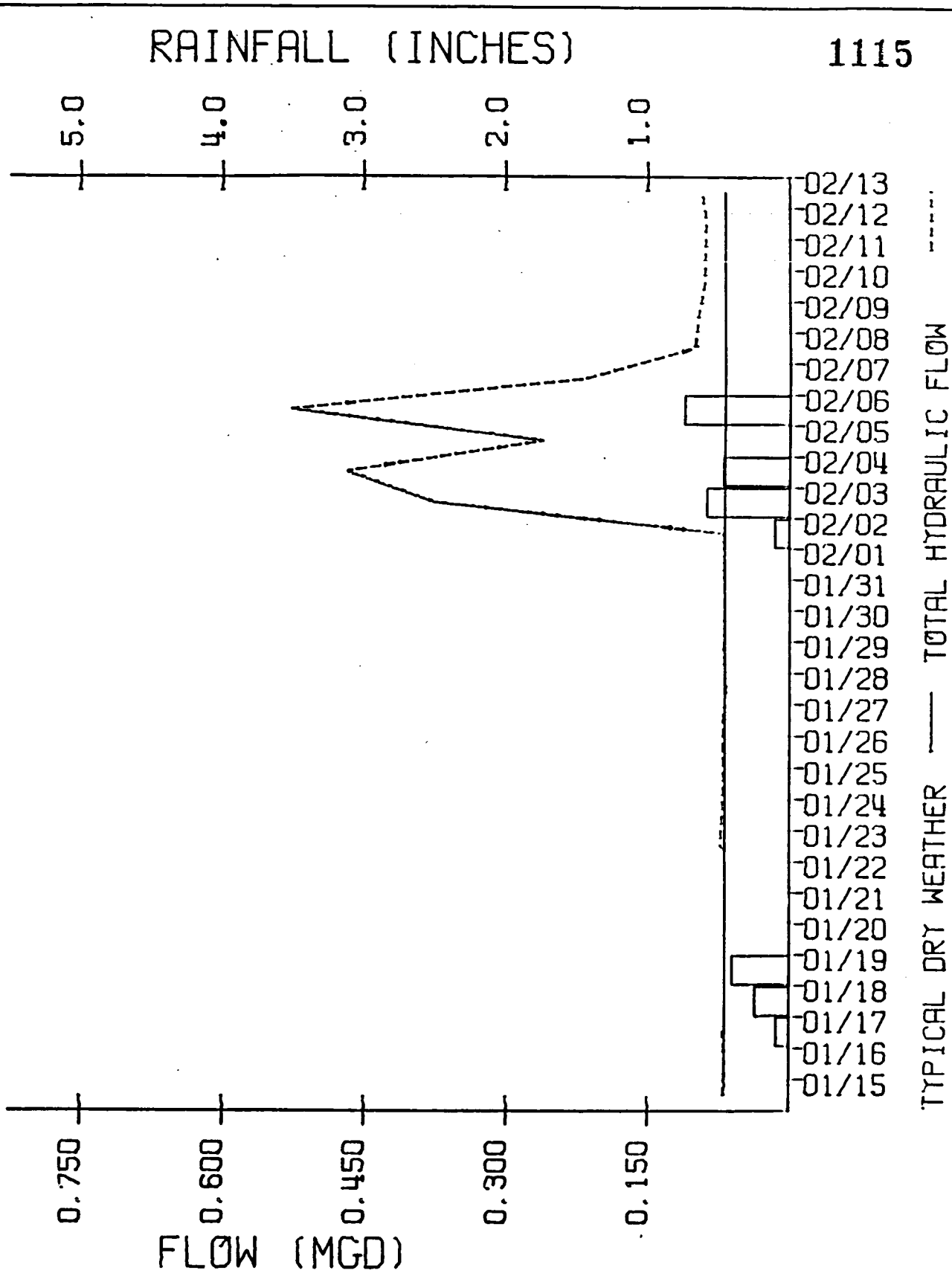
WYNNE ASSOCIATES INC.

FMPC FERNALD, OHIO FLOW ANALYSIS
MP.3
36" LINE (STORM SEWER)

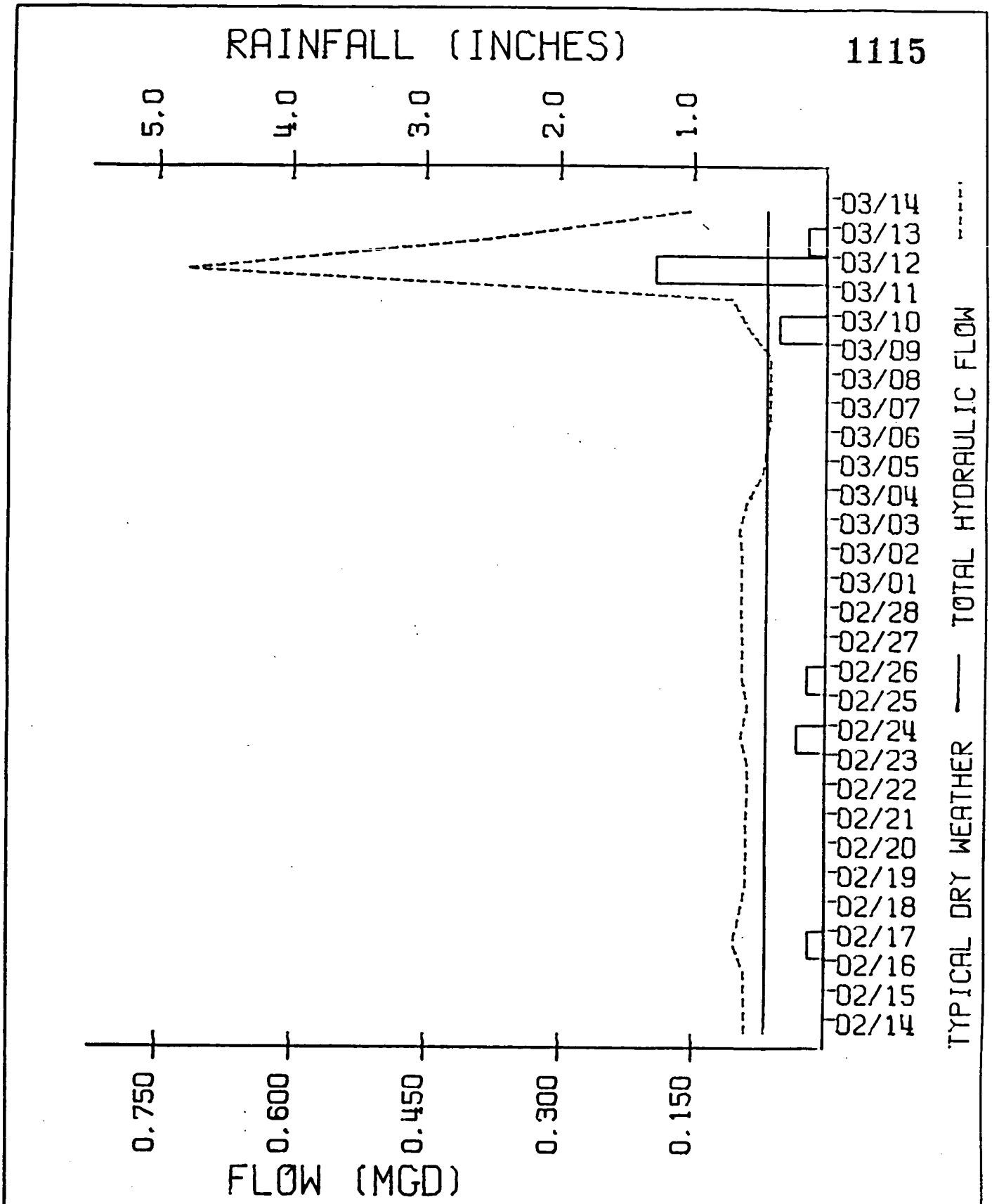


WYNNE ASSOCIATES INC.

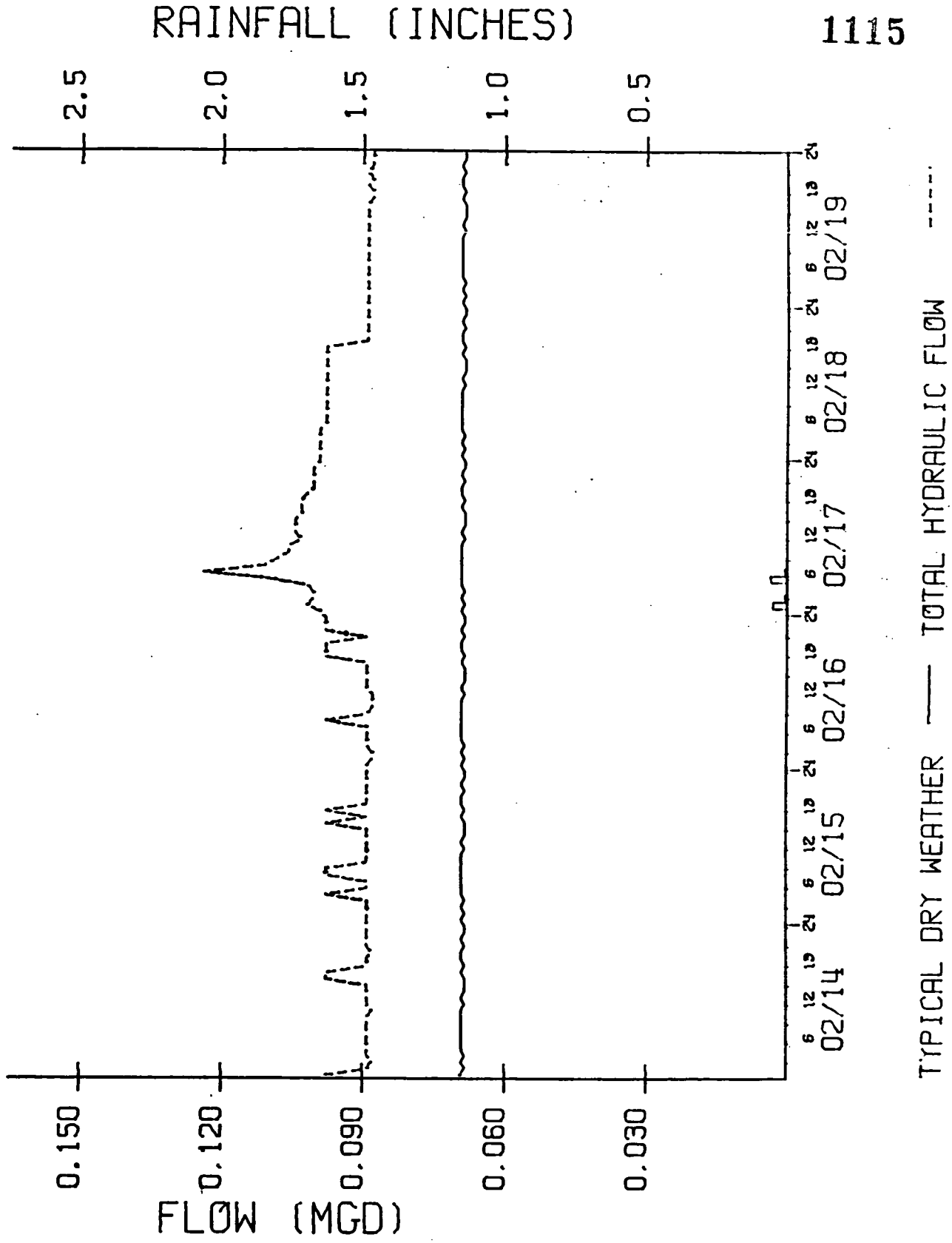
FMPC FERNALD, OHIO FLOW ANALYSIS
MP.3
36" LINE (STORM SEWER)



WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.4 36" LINE (STORM SEWER)

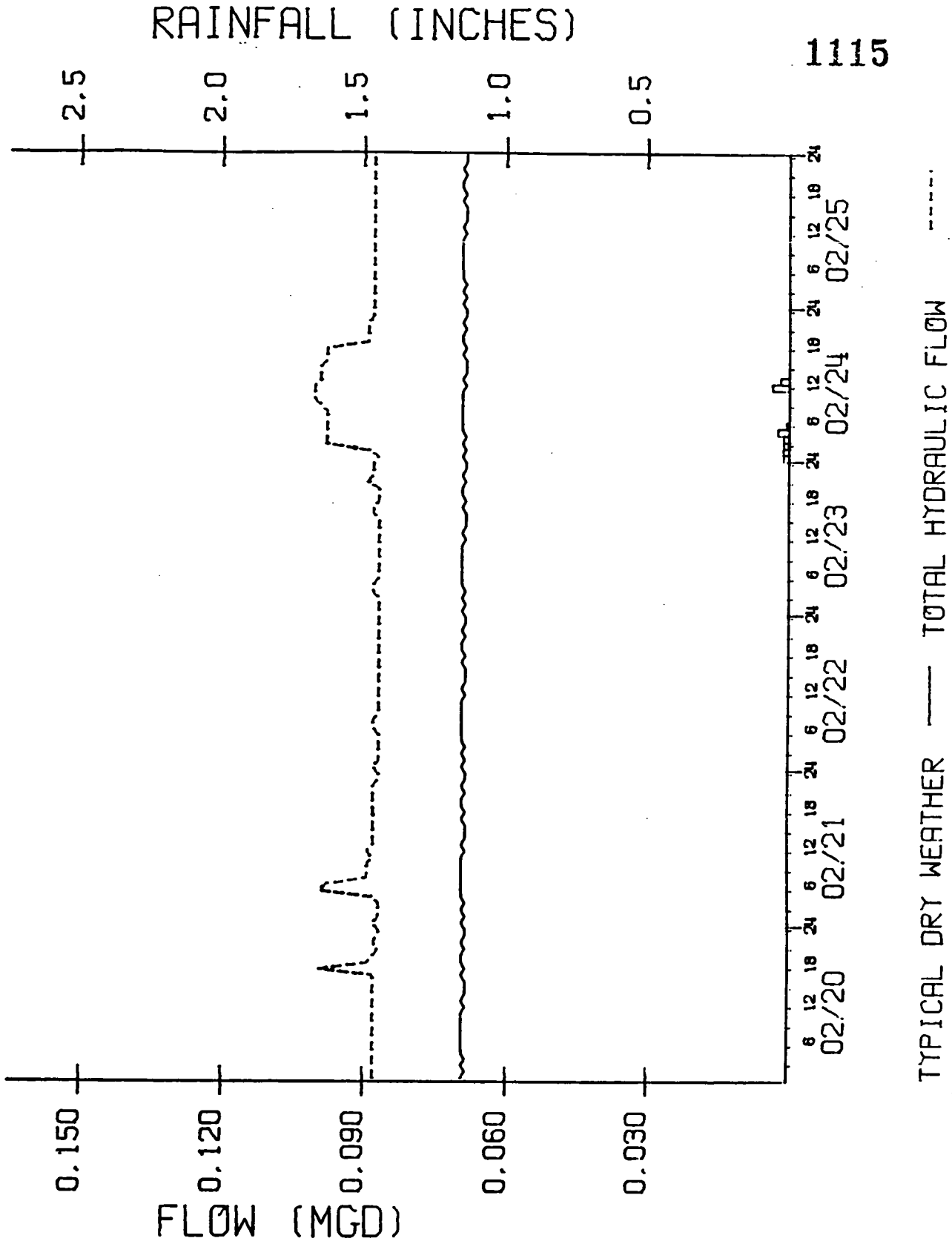


WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.4 36" LINE (STORM SEWER)



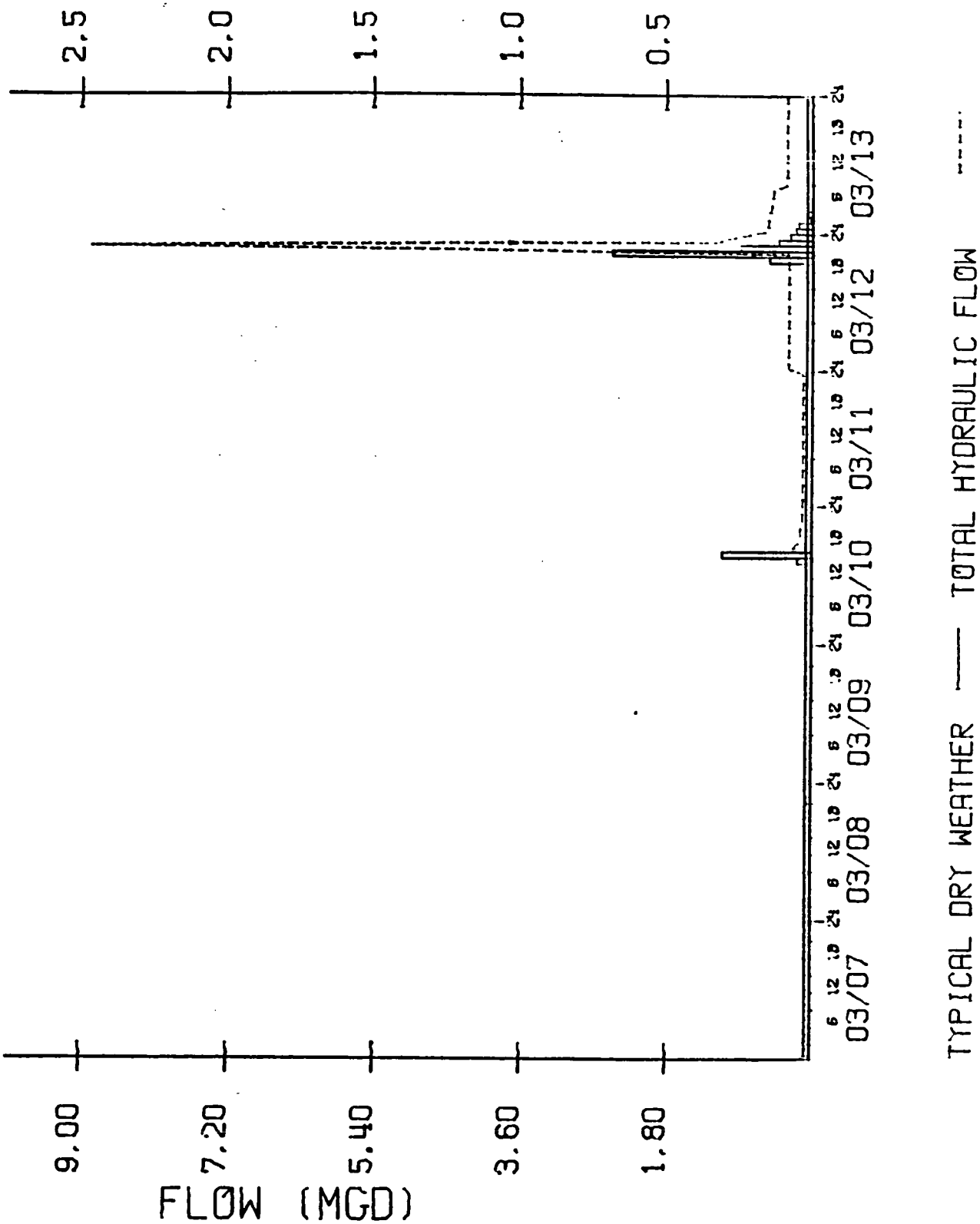
WYNNE ASSOCIATES INC.

FMPC FERNALD, OHIO FLOW ANALYSIS
MP.4
36" LINE (STORM SEWER)

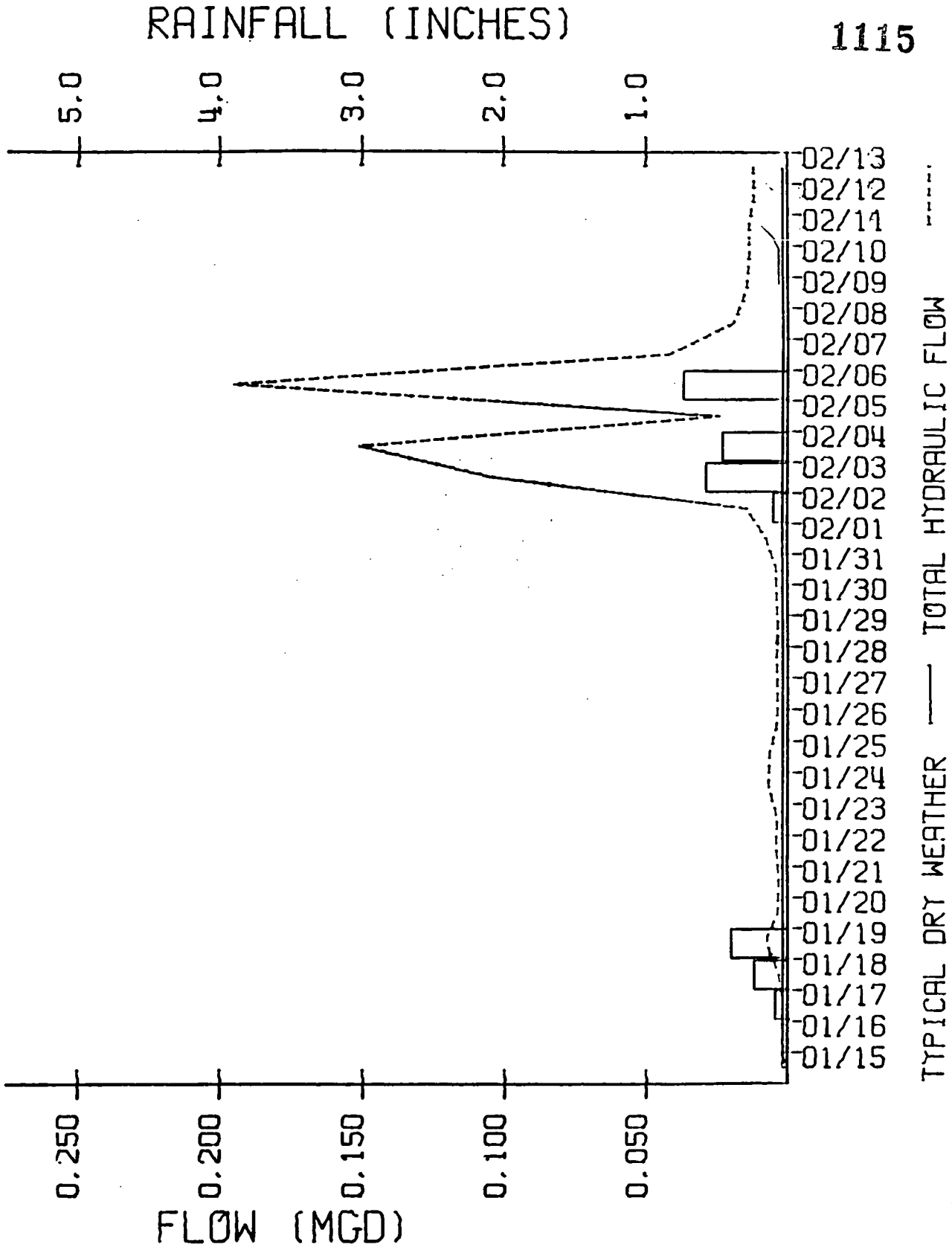


1115

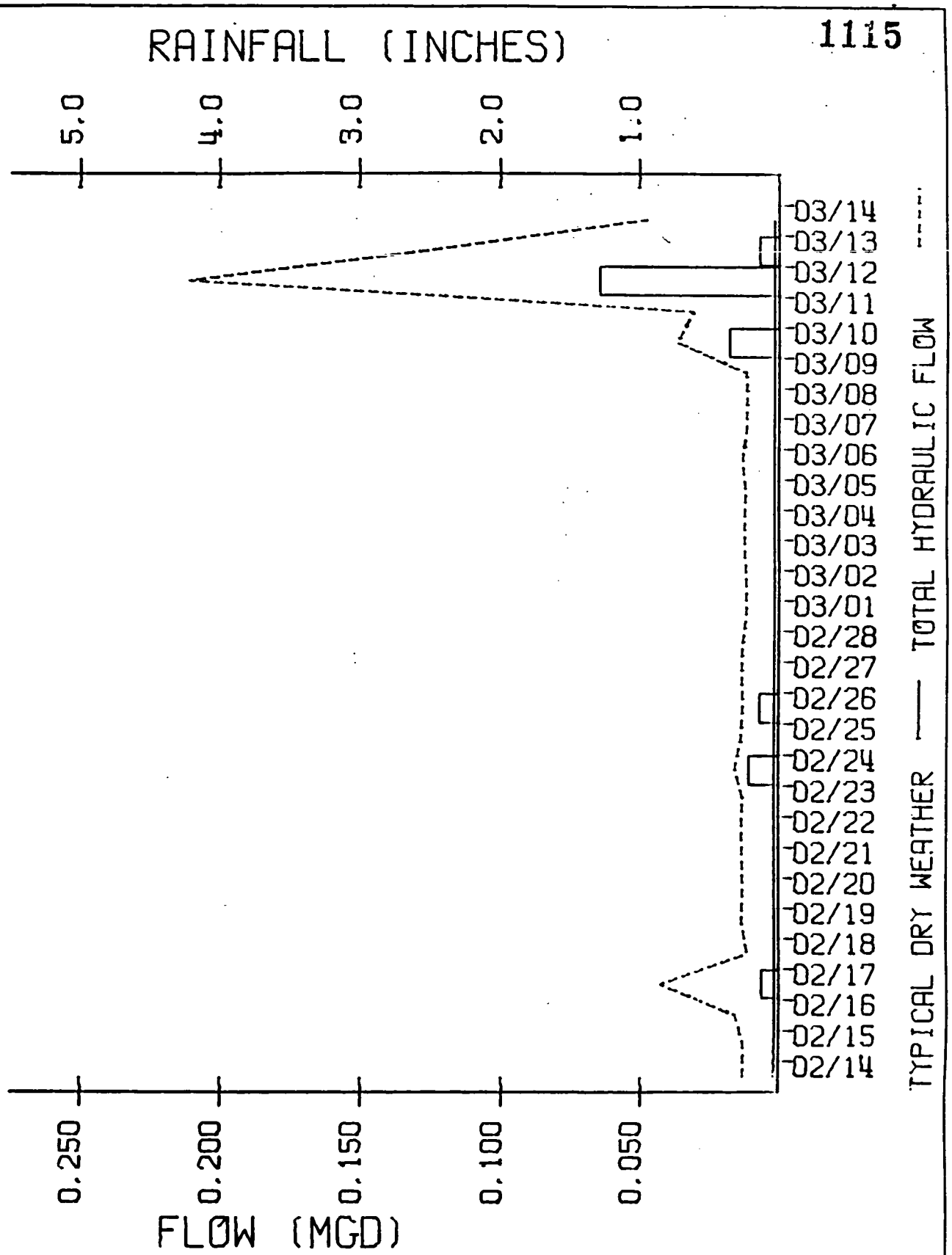
WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.4 36" LINE (STORM SEWER)



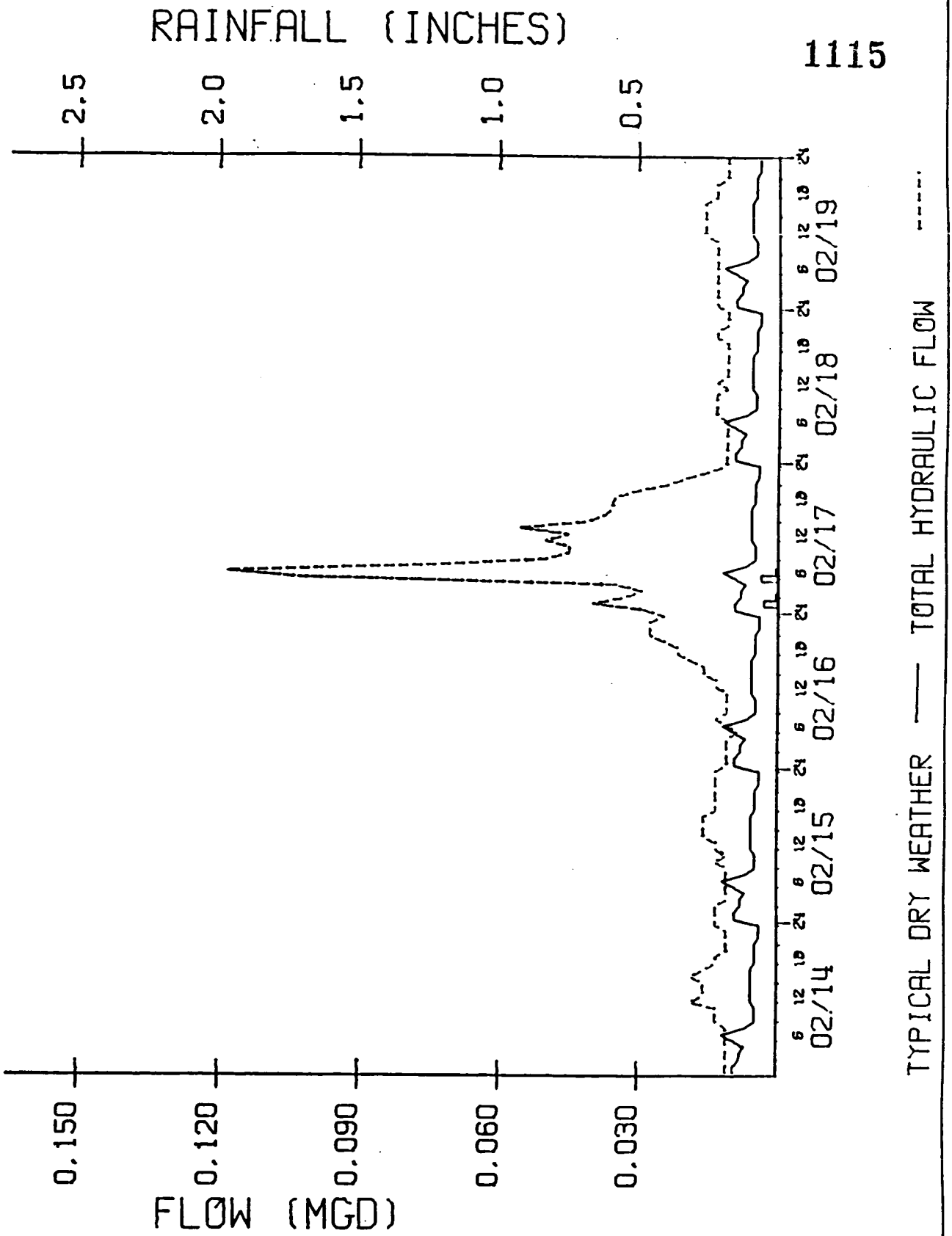
WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.4 36" LINE (STORM SEWER)



WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.5 30" LINE (STORM SEWER)

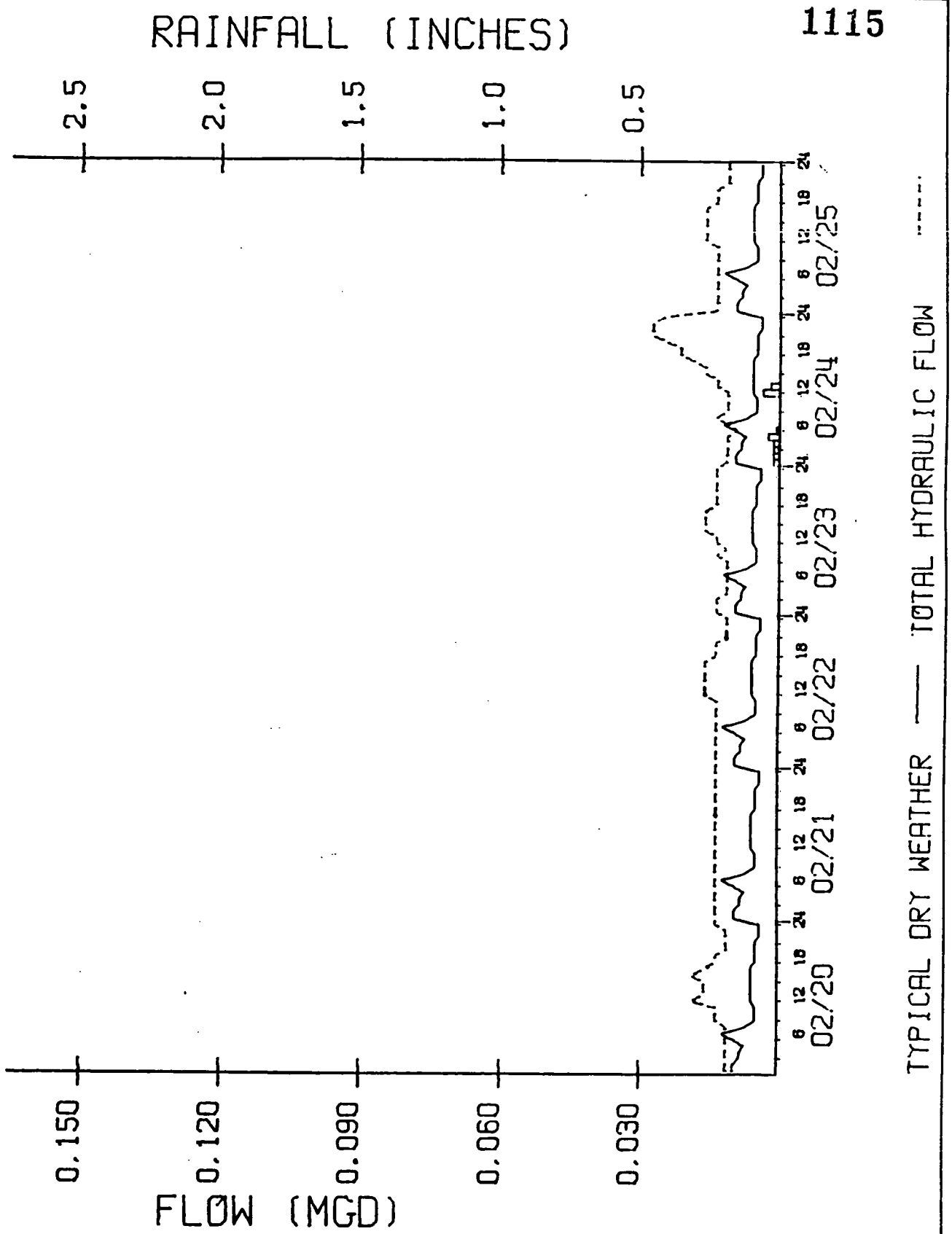


WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.5 30" LINE (STORM SEWER)

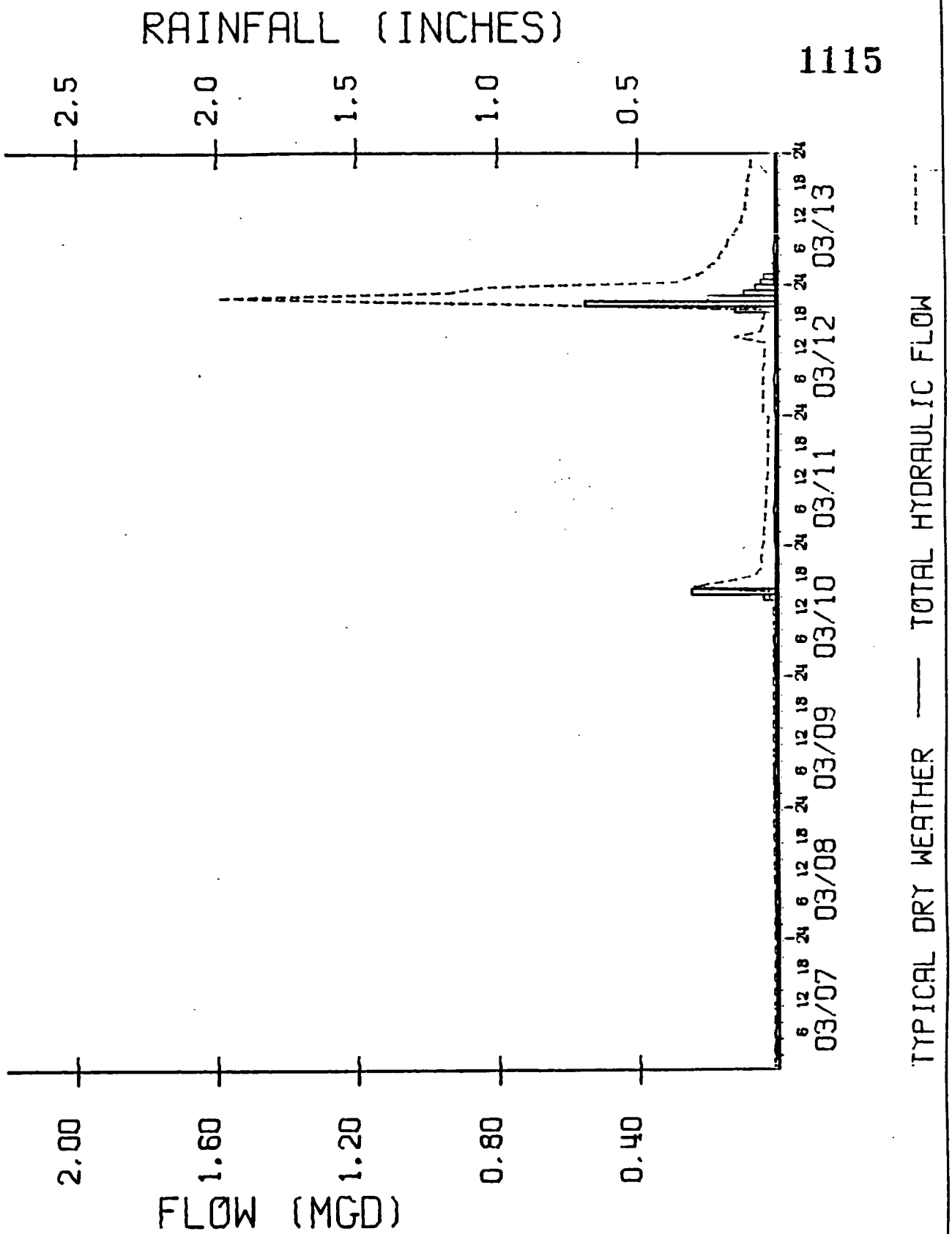


WYNNE ASSOCIATES INC.

FMPC FERNALD, OHIO FLOW ANALYSIS
MP.5
30" LINE (STORM SEWER)



WYNNE ASSOCIATES INC.	FMPC FERNALD, OHIO FLOW ANALYSIS MP.5 30" LINE (STORM SEWER)



1115

WYNNE ASSOCIATES INC.

FMPC FERNALD, OHIO FLOW ANALYSIS
MP.5
30" LINE (STORM SEWER)

JOB NAME :FMPC FERNALD, OHIO FLOW ANALYSIS

AVERAGE DAILY CUMULATIVE FLOW RATES IN MGD

DAY	DATE	RAIN	MP.1	MP.2	BYPASS NO.1	MP.3	MP.4	MP.5
WED	15-JAN-86	0.00	0.017	0.002	0.194	0.021	0.069	0.001
THR	16-JAN-86	0.00	0.018	0.008	0.188	0.017	0.068	0.002
FRI	17-JAN-86	0.09	0.020	0.013	0.205	0.028	0.070	0.002
SAT	18-JAN-86	0.24	0.000	0.091	0.000	0.000	0.000	0.003
SUN	19-JAN-86	0.40	0.000	0.571	0.000	0.000	0.000	0.002
MON	20-JAN-86	0.00	0.000	0.003	0.000	0.000	0.000	0.003
TUE	21-JAN-86	0.00	0.017	0.004	0.000	0.000	0.000	0.003
WED	22-JAN-86	0.00	0.049	0.042	0.000	0.101	0.036	0.004
THR	23-JAN-86	0.00	0.037	0.027	0.284	0.100	0.072	0.004
FRI	24-JAN-86	0.00	0.026	0.022	0.279	0.097	0.070	0.007
SAT	25-JAN-86	0.00	0.035	0.027	0.213	0.035	0.069	0.006
SUN	26-JAN-86	0.00	0.015	0.010	0.196	0.019	0.070	0.003
MON	27-JAN-86	0.00	0.020	0.011	0.203	0.028	0.069	0.003
TUE	28-JAN-86	0.00	0.022	0.012	0.188	0.021	0.065	0.004
WED	29-JAN-86	0.00	0.019	0.009	0.196	0.021	0.069	0.003
THR	30-JAN-86	0.00	0.016	0.009	0.193	0.020	0.068	0.004
FRI	31-JAN-86	0.00	0.019	0.008	0.189	0.016	0.068	0.004
SAT	1-FEB-86	0.00	0.020	0.009	0.197	0.018	0.068	0.002
SUN	2-FEB-86	0.10	0.000	0.009	0.206	0.019	0.069	0.015
MON	3-FEB-86	0.58	0.000	0.518	0.529	0.050	0.375	0.104
TUE	4-FEB-86	0.46	1.050	0.934	0.691	0.073	0.467	0.151
WED	5-FEB-86	0.00	0.148	0.067	0.405	0.023	0.259	0.023
THR	6-FEB-86	0.74	2.143	2.016	1.217	0.497	0.525	0.195
FRI	7-FEB-86	0.00	0.400	0.384	0.384	0.125	0.217	0.042
SAT	8-FEB-86	0.00	0.051	0.042	0.239	0.021	0.099	0.019
SUN	9-FEB-86	0.00	0.050	0.040	0.225	0.019	0.096	0.014
MON	10-FEB-86	0.00	0.049	0.043	0.209	0.017	0.089	0.013
TUE	11-FEB-86	0.00	0.052	0.044	0.212	0.020	0.089	0.014
WED	12-FEB-86	0.00	0.054	0.046	0.205	0.017	0.088	0.012
THR	13-FEB-86	0.00	0.058	0.048	0.214	0.016	0.093	0.012
FRI	14-FEB-86	0.00	0.052	0.045	0.216	0.023	0.090	0.013
SAT	15-FEB-86	0.00	0.049	0.043	0.215	0.020	0.091	0.013
SUN	16-FEB-86	0.00	0.056	0.047	0.220	0.021	0.091	0.016
MON	17-FEB-86	0.13	0.450	0.367	0.399	0.148	0.104	0.043
TUE	18-FEB-86	0.00	0.056	0.045	0.204	0.023	0.096	0.012
WED	19-FEB-86	0.00	0.092	0.046	0.210	0.019	0.089	0.014
THR	20-FEB-86	0.00	0.092	0.047	0.205	0.016	0.088	0.013
FRI	21-FEB-86	0.00	0.064	0.047	0.208	0.018	0.089	0.013
SAT	22-FEB-86	0.00	0.081	0.038	0.202	0.014	0.087	0.014
SUN	23-FEB-86	0.00	0.115	0.041	0.201	0.014	0.087	0.013
MON	24-FEB-86	0.22 snow	0.134	0.064	0.233	0.027	0.095	0.016
TUE	25-FEB-86	0.00	0.043	0.041	0.211	0.021	0.088	0.014
WED	26-FEB-86	0.14 Snow	0.110	0.043	0.236	0.034	0.094	0.013
THR	27-FEB-86	0.00	0.119	0.044	0.241	0.040	0.093	0.014
FRI	28-FEB-86	0.00	0.043	0.036	0.231	0.027	0.096	0.013
SAT	1-MAR-86	0.00	0.041	0.034	0.228	0.026	0.095	0.012
SUN	2-MAR-86	0.00	0.038	0.032	0.226	0.024	0.095	0.012
MON	3-MAR-86	0.00	0.042	0.033	0.237	0.028	0.098	0.013

JOB NAME :FMPC FERNALD, OHIO FLOW ANALYSIS

AVERAGE DAILY CUMULATIVE FLOW RATES IN MGD

DAY	DATE	RAIN	MP.1	MP.2	BYPASS NO.1	MP.3	MP.4	MP.5
TUE	4-MAR-86	0.00	0.041	0.033	0.218	0.028	0.089	0.012
WED	5-MAR-86	0.00	0.044	0.036	0.185	0.031	0.071	0.012
THR	6-MAR-86	0.00	0.050	0.039	0.179	0.033	0.067	0.013
FRI	7-MAR-86	0.00	0.049	0.040	0.167	0.028	0.063	0.012
SAT	8-MAR-86	0.00	0.051	0.042	0.169	0.031	0.063	0.011
SUN	9-MAR-86	0.00	0.049	0.041	0.174	0.035	0.063	0.012
MON	10-MAR-86	0.36	0.453	0.373	0.569	0.354	0.089	0.037
TUE	11-MAR-86	0.00	0.081	0.073	0.473	0.228	0.107	0.031
WED	12-MAR-86	1.29	3.524	2.630	1.794	0.864	0.718	0.211
THR	13-MAR-86	0.14	0.982	0.673	1.224	0.630	0.383	0.125
FRI	14-MAR-86	0.00	0.288	0.032	0.000	0.006	0.153	0.047

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
REHABILITATION METHOD SUMMARY

REHABILITATION METHOD	I/I CODE	% REM.	COST (1)
REPLACE SECTION OR ENTIRE MAIN LINE	I/I	60.	TABLE A
POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)	I/I	50.	TABLE B
AIR TEST AND CHEMICALLY GROUT MAIN LINE	I/I	40.	TABLE D
EXCAVATE AND REPAIR POINT SOURCE OF SERVICE LINE IN YARD	INFLO	70.	400.
EXCAVATE AND REPAIR FAULTY MAIN LINE TAP UNDER EASEMENT	E L M	60.	2000.
REALIGN AND GROUT CASTING, MANHOLE IN EASEMENT	INFLO	70.	188.
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	INFIL	70.	TABLE E
CLEAN MH WALLS,PLUG LARGE CRACKS, WATERPROOF WALLS	INFIL	70.	TABLE E
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	INFIL	70.	TABLE E
CLEAN,TV,AIR TEST & GROUT LINE SEGMENT	I/I	40.	TABLE D

LOCKWOOD GREENE ENGINEERS INC.
OAK RIDGE, TN.

WYNNE ASSOCIATES INC.
PRS511 MURFREESBORO, TN.

FMPC FERNALD, OHIO
JOB NUMBER WYN756
TABLE A
LINE SEGMENT REPLACEMENT COSTS
(COST PER L.F. - MINIMUM OF 25 L.F.)

PAVED AREAS

PIPE DIAMETER (INCHES)	PIPE DEPTH (FEET) 0-6	6-8	8-10	10-12	12-14	14-16	16-20
6	60	75	90	105	105	105	105
8	90	105	120	135	150	150	150
10	105	120	135	150	165	165	165
12	120	135	150	165	180	180	180
15	135	150	165	180	195	195	195
18	150	165	180	195	210	210	210
21	165	180	195	210	225	225	225
24	180	195	210	225	240	240	240
27	234	252	270	288	354	354	354
30	234	270	288	327	384	384	384
33	270	288	327	360	420	420	420
36	309	327	363	393	450	450	450
42	384	402	429	495	507	507	507
48	453	495	552	579	627	627	627

UNPAVED AREAS

PIPE DIAMETER (INCHES)	PIPE DEPTH (FEET) 0-6	6-8	8-10	10-12	12-14	14-16	16-20
6	30	45	60	75	75	75	75
8	57	66	78	93	132	132	132
10	75	84	99	114	141	141	141
12	90	99	114	132	150	150	150
15	105	120	135	159	165	165	165
18	120	135	150	165	180	180	180
21	135	150	165	180	195	195	195
24	150	165	180	195	210	210	210
27	189	207	225	223	309	309	309
30	207	225	243	282	339	339	339
33	225	243	282	315	375	375	375
36	264	282	318	348	408	408	408
42	339	357	414	450	507	507	507
48	408	450	507	534	582	582	582

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

TABLE B
PARTIAL LINE SEGMENT REPLACEMENT COSTS
(LUMP SUM COST FOR UP TO 15 L.F.)

PIPE DIAMETER (INCHES)	PIPE DEPTH - PAVED AREAS (FEET)				PIPE DEPTH - UNPAVED AREAS (FEET)			
	0-6	6-10	10-14	14-20	0-6	6-10	10-14	14-20
6	2025	3000	4500	6000	1350	2100	3600	4500
8	2250	3150	4650	6150	1500	2250	3750	4650
10	2400	3300	4800	6300	1650	2400	3900	4800
12	2550	3450	4950	6450	1800	2550	4050	4950
15	2700	3600	5100	6600	1950	2700	4200	5100
18	2850	3750	5250	6900	2100	2850	4500	5400
21	3000	3900	5400	7200	2250	3000	4800	5700
24	3300	4200	5700	7500	2550	3300	5100	6000
27	3600	4500	6000	7800	3000	3600	5400	6300
30	3900	4800	6300	8100	3300	3900	5700	6600
33	4200	5100	6600	8400	3600	4200	6000	6900
36	4500	5400	6900	8700	3900	4500	6300	7200

TABLE C
SLIP LINING COST

PIPE SIZE (INCHES)	COST ($/FOOT)
6	25.60
8	26.30
10	28.80
12	31.30
15	36.90
18	43.10
21	50.00
24	57.50
27	68.80
30	73.80
33	82.50
36	87.50

TABLE D
CLEAN, AIR TEST AND GROUT COST

PIPE SIZE (INCHES)	COST ($/FOOT)
6 - 12	15.00
15 - 18	26.00
21 & OVER	32.00

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756

TABLE E
MANHOLE WATERPROOFING

	COST ($/VERTICAL FOOT)
CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS	90.00
CLEAN MH WALLS,PLUG LARGE CRACKS, WATERPROOF WALLS	110.00
CLEAN MH WALLS,PLUG LARGE CRACKS, PLASTER+WATERPROOF	160.00

EXAMPLE CALCULATIONS

ASSUME 1000,000 GPY INFLOW
50,000 GPY INFILTRATION

$$\text{INFLOW} = 100{,}000 \ \frac{\text{GAL}}{\text{YR}} \times \frac{\$\ 2.00}{1000\ \text{GAL}} \times 9.8181\ \text{PWF} = \$\ 1964.$$

$$\text{INFILTRATION} = 50{,}000 \ \frac{\text{GAL}}{\text{YR}} \times \frac{\$\ 2.00}{1000\ \text{GAL}} \times 9.8181\ \text{PWF} = \$\ 982.$$

ALL COST FIGURES PRESENTED HEREIN ARE ROUNDED TO
THE NEAREST DOLLAR.
ALL I/I RATES PRESENTED HEREIN ARE ROUNDED TO
THE NEAREST GALLON.

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 1

PRIORITY NUMBER: 14.68 TRANSPORTATION AND TREATMENT COST: $ 10134
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB46 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 23
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1290270 GALLONS OF INFIL YEARLY
PIPE LENGTH: 46 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 690 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 3.58 TRANSPORTATION AND TREATMENT COST: $ 20491
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 40 DOWNSTREAM MANHOLE: 41
LEAK NUMBER: 1 BOOK: 1 PAGE: 12
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2608830 GALLONS OF INFIL YEARLY
PIPE LENGTH: 220 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 5720 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 3.06 TRANSPORTATION AND TREATMENT COST: $ 41233
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 75 DOWNSTREAM MANHOLE: MP1
LEAK NUMBER: 1 BOOK: 1 PAGE: 7
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 5249640 GALLONS OF INFIL YEARLY
PIPE LENGTH: 420 FEET PIPE DIAMETER: 60 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 13440 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 2.81 TRANSPORTATION AND TREATMENT COST: $ 21206
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 39 DOWNSTREAM MANHOLE: 41
LEAK NUMBER: 1 BOOK: 1 PAGE: 20
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2699850 GALLONS OF INFIL YEARLY
PIPE LENGTH: 290 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 7540 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 2

PRIORITY NUMBER: 2.70 TRANSPORTATION AND TREATMENT COST: $ 1824
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB44 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 26
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 232224 GALLONS OF INFIL YEARLY
PIPE LENGTH: 45 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 675 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 2.70 TRANSPORTATION AND TREATMENT COST: $ 2514
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB45A DOWNSTREAM MANHOLE: CB45
LEAK NUMBER: 1 BOOK: 1 PAGE: 25
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 320046 GALLONS OF INFIL YEARLY
PIPE LENGTH: 62 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 2 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 930 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 2.70 TRANSPORTATION AND TREATMENT COST: $ 6483
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB45 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 24
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 825330 GALLONS OF INFIL YEARLY
PIPE LENGTH: 160 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2400 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 2.70 TRANSPORTATION AND TREATMENT COST: $ 2027
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB39A DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 22
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 258054 GALLONS OF INFIL YEARLY
PIPE LENGTH: 50 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 3

PRIORITY NUMBER: 2.70 TRANSPORTATION AND TREATMENT COST: $ 6483
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB47 DOWNSTREAM MANHOLE: 39
LEAK NUMBER: 1 BOOK: 1 PAGE: 21
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: PAVEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 825330 GALLONS OF INFIL YEARLY
PIPE LENGTH: 160 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 2400 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.93 TRANSPORTATION AND TREATMENT COST: $ 3092
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 35 DOWNSTREAM MANHOLE: 75
LEAK NUMBER: 1 BOOK: 1 PAGE: 8
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 393600 GALLONS OF INFIL YEARLY
PIPE LENGTH: 50 FEET PIPE DIAMETER: 60 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 1600 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.55 TRANSPORTATION AND TREATMENT COST: $ 13013
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 37 DOWNSTREAM MANHOLE: 39
LEAK NUMBER: 1 BOOK: 1 PAGE: 27
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1656810 GALLONS OF INFIL YEARLY
PIPE LENGTH: 321 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 8346 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 1.44 TRANSPORTATION AND TREATMENT COST: $ 5893
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB3 DOWNSTREAM MANHOLE: CB4
LEAK NUMBER: 1 BOOK: 1 PAGE: 3
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 750300 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DEFECTIVE JOINT(S)
PIPE LENGTH: 157 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4082 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 4

PRIORITY NUMBER: 1.04 TRANSPORTATION AND TREATMENT COST: $ 785
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB51A DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 14
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 99630 GALLONS OF INFIL YEARLY
PIPE LENGTH: 50 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.04 TRANSPORTATION AND TREATMENT COST: $ 2286
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB51 DOWNSTREAM MANHOLE: 40
LEAK NUMBER: 1 BOOK: 1 PAGE: 13
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 291018 GALLONS OF INFIL YEARLY
PIPE LENGTH: 146 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2190 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.75 TRANSPORTATION AND TREATMENT COST: $ 1474
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 36 DOWNSTREAM MANHOLE: CB41
LEAK NUMBER: 1 BOOK: 1 PAGE: 31
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 187698 GALLONS OF INFIL YEARLY
PIPE LENGTH: 130 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1950 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.75 TRANSPORTATION AND TREATMENT COST: $ 1702
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB41 DOWNSTREAM MANHOLE: CB42
LEAK NUMBER: 1 BOOK: 1 PAGE: 30
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 216726 GALLONS OF INFIL YEARLY
PIPE LENGTH: 150 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2250 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 5

PRIORITY NUMBER: 0.75 TRANSPORTATION AND TREATMENT COST: $ 556
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB42 DOWNSTREAM MANHOLE: 37
LEAK NUMBER: 1 BOOK: 1 PAGE: 29
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 70848 GALLONS OF INFIL YEARLY
PIPE LENGTH: 49 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 735 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.35 TRANSPORTATION AND TREATMENT COST: $ 1266
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 38 DOWNSTREAM MANHOLE: 40
LEAK NUMBER: 2 BOOK: 1 PAGE: 15
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 161130 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 238 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3570 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.34 TRANSPORTATION AND TREATMENT COST: $ 616
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 38 DOWNSTREAM MANHOLE: 40
LEAK NUMBER: 3 BOOK: 1 PAGE: 15
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 62730 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 238 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.30 TRANSPORTATION AND TREATMENT COST: $ 1208
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 41 DOWNSTREAM MANHOLE: 35
LEAK NUMBER: 3 BOOK: 1 PAGE: 11
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 123000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 290 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3900 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 4

PRIORITY NUMBER: 0.30 TRANSPORTATION AND TREATMENT COST: $ 1208
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 41 DOWNSTREAM MANHOLE: 35
LEAK NUMBER: 2 BOOK: 1 PAGE: 11
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 123000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 290 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3900 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)

PRIORITY NUMBER: 0.23 TRANSPORTATION AND TREATMENT COST: $ 2174
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 41 DOWNSTREAM MANHOLE: 35
LEAK NUMBER: 1 BOOK: 1 PAGE: 11
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 276750 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 290 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 9280 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.17 TRANSPORTATION AND TREATMENT COST: $ 318
MINI-SYSTEM: 1 UPSTREAM MANHOLE: 38 DOWNSTREAM MANHOLE: 40
LEAK NUMBER: 1 BOOK: 1 PAGE: 15 SMOKE CLASS: 1 SMOKE INTENSITY: H
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: .32421 GALLONS OF INFLO YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 238 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFLO REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)

PRIORITY NUMBER: 0.11 TRANSPORTATION AND TREATMENT COST: $ 483
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB53 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 10
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 61500 GALLONS OF INFIL YEARLY
PIPE LENGTH: 275 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4125 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 1 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 0.08 TRANSPORTATION AND TREATMENT COST: $ 197
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB1 DOWNSTREAM MANHOLE: CB2
LEAK NUMBER: 1 BOOK: 1 PAGE: 6
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: PAVEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 25092 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DEFECTIVE JOINT(S)
PIPE LENGTH: 156 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2340 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.06 TRANSPORTATION AND TREATMENT COST: $ 149
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB50 DOWNSTREAM MANHOLE: 38
LEAK NUMBER: 1 BOOK: 1 PAGE: 17
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 18942 GALLONS OF INFIL YEARLY
PIPE LENGTH: 143 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2145 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.06 TRANSPORTATION AND TREATMENT COST: $ 46
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB84 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 16
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 5904 GALLONS OF INFIL YEARLY
PIPE LENGTH: 45 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 675 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.05 TRANSPORTATION AND TREATMENT COST: $ 527
MINI-SYSTEM: 1 UPSTREAM MANHOLE: CB54 DOWNSTREAM MANHOLE: 35
LEAK NUMBER: 1 BOOK: 1 PAGE: 9
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 67158 GALLONS OF INFIL YEARLY
PIPE LENGTH: 300 FEET PIPE DIAMETER: 60 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 9600 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 1

PRIORITY NUMBER: 19.78 TRANSPORTATION AND TREATMENT COST: $ 7717
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 24 DOWNSTREAM MANHOLE: 25
LEAK NUMBER: 1 BOOK: 1 PAGE: 123
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 982560 GALLONS OF INFIL YEARLY
PIPE LENGTH: 26 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 390 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 9.16 TRANSPORTATION AND TREATMENT COST: $ 8389
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 66 DOWNSTREAM MANHOLE: 22
LEAK NUMBER: 1 BOOK: 1 PAGE: 74
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1068000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 61 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 915 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 6.90 TRANSPORTATION AND TREATMENT COST: $ 13469
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB86 DOWNSTREAM MANHOLE: 21
LEAK NUMBER: 1 BOOK: 1 PAGE: 92
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1714852 GALLONS OF INFIL YEARLY
PIPE LENGTH: 61 FEET PIPE DIAMETER: 36 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 1952 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 6.89 TRANSPORTATION AND TREATMENT COST: $ 37533
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 83 DOWNSTREAM MANHOLE: CB86
LEAK NUMBER: 1 BOOK: 1 PAGE: 93
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 4778588 GALLONS OF INFIL YEARLY
PIPE LENGTH: 170 FEET PIPE DIAMETER: 36 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5440 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 1

PRIORITY NUMBER: 19.78 TRANSPORTATION AND TREATMENT COST: $ 7717
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 24 DOWNSTREAM MANHOLE: 25
LEAK NUMBER: 1 BOOK: 1 PAGE: 123
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 982560 GALLONS OF INFIL YEARLY
PIPE LENGTH: 26 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 390 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 9.16 TRANSPORTATION AND TREATMENT COST: $ 8389
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 66 DOWNSTREAM MANHOLE: 22
LEAK NUMBER: 1 BOOK: 1 PAGE: 74
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1068000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 61 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 915 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 6.90 TRANSPORTATION AND TREATMENT COST: $ 13469
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB86 DOWNSTREAM MANHOLE: 21
LEAK NUMBER: 1 BOOK: 1 PAGE: 92
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1714852 GALLONS OF INFIL YEARLY
PIPE LENGTH: 61 FEET PIPE DIAMETER: 36 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 1952 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 6.89 TRANSPORTATION AND TREATMENT COST: $ 37533
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 83 DOWNSTREAM MANHOLE: CB86
LEAK NUMBER: 1 BOOK: 1 PAGE: 93
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 4778588 GALLONS OF INFIL YEARLY
PIPE LENGTH: 170 FEET PIPE DIAMETER: 36 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5440 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRSF11 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WY4756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 2

PRIORITY NUMBER: 5.63 TRANSPORTATION AND TREATMENT COST: $ 3635
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB17 DOWNSTREAM MANHOLE: 16
LEAK NUMBER: 2 BOOK: 1 PAGE: 41
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 462800 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 3565
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB32 DOWNSTREAM MANHOLE: 27
LEAK NUMBER: 1 BOOK: 1 PAGE: 117
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 453900 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 14093
MINI-SYSTEM: 2 UPSTREAM MANHOLE: SLAT DOWNSTREAM MANHOLE: 27
LEAK NUMBER: 1 BOOK: 1 PAGE: 116
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1794240 GALLONS OF INFIL YEARLY
PIPE LENGTH: 170 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2550 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 24042
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 28 DOWNSTREAM MANHOLE: 29
LEAK NUMBER: 1 BOOK: 1 PAGE: 111
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 3060888 GALLONS OF INFIL YEARLY
PIPE LENGTH: 290 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4350 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. JYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 3565
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB34 DOWNSTREAM MANHOLE: 29
LEAK NUMBER: 1 BOOK: 1 PAGE: 109
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 453900 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 3565
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB35 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 106
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 453900 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.34 TRANSPORTATION AND TREATMENT COST: $ 7292
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB92 DOWNSTREAM MANHOLE: 65
LEAK NUMBER: 1 BOOK: 1 PAGE: 58
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 928448 GALLONS OF INFIL YEARLY
PIPE LENGTH: 91 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1365 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 4.82 TRANSPORTATION AND TREATMENT COST: $ 20230
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 21 DOWNSTREAM MANHOLE: CB85
LEAK NUMBER: 1 BOOK: 1 PAGE: 89
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2575660 GALLONS OF INFIL YEARLY
PIPE LENGTH: 131 FEET PIPE DIAMETER: 54 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4192 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. LYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WY8756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 3565
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB34 DOWNSTREAM MANHOLE: 29
LEAK NUMBER: 1 BOOK: 1 PAGE: 109
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 453900 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.52 TRANSPORTATION AND TREATMENT COST: $ 3565
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB35 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 106
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 453900 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.34 TRANSPORTATION AND TREATMENT COST: $ 7292
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB92 DOWNSTREAM MANHOLE: 65
LEAK NUMBER: 1 BOOK: 1 PAGE: 58
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 928448 GALLONS OF INFIL YEARLY
PIPE LENGTH: 91 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1365 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 4.82 TRANSPORTATION AND TREATMENT COST: $ 20230
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 21 DOWNSTREAM MANHOLE: CB85
LEAK NUMBER: 1 BOOK: 1 PAGE: 89
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2575660 GALLONS OF INFIL YEARLY
PIPE LENGTH: 131 FEET PIPE DIAMETER: 54 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4192 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 4

PRIORITY NUMBER: 4.82 TRANSPORTATION AND TREATMENT COST: $ 23628
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 22 DOWNSTREAM MANHOLE: CB27
LEAK NUMBER: 1 BOOK: 1 PAGE: 72
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 3008200 GALLONS OF INFIL YEARLY
PIPE LENGTH: 153 FEET PIPE DIAMETER: 54 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4896 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 4.82 TRANSPORTATION AND TREATMENT COST: $ 37989
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 23 DOWNSTREAM MANHOLE: 34
LEAK NUMBER: 1 BOOK: 1 PAGE: 64
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 4836616 GALLONS OF INFIL YEARLY
PIPE LENGTH: 246 FEET PIPE DIAMETER: 54 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 7872 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 4.75 TRANSPORTATION AND TREATMENT COST: $ 25697
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB27 DOWNSTREAM MANHOLE: 23
LEAK NUMBER: 1 BOOK: 1 PAGE: 70
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 3271640 GALLONS OF INFIL YEARLY
PIPE LENGTH: 169 FEET PIPE DIAMETER: 54 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5408 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 4.65 TRANSPORTATION AND TREATMENT COST: $ 21587
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB85 DOWNSTREAM MANHOLE: 22
LEAK NUMBER: 1 BOOK: 1 PAGE: 87
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2748320 GALLONS OF INFIL YEARLY
PIPE LENGTH: 145 FEET PIPE DIAMETER: 54 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4640 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRSF11 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYM756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 5

PRIORITY NUMBER: 3.97 TRANSPORTATION AND TREATMENT COST: $ 11325
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 26 DOWNSTREAM MANHOLE: 27
LEAK NUMBER: 2 BOOK: 1 PAGE: 118
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 1153440 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 141 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2850 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 3.81 TRANSPORTATION AND TREATMENT COST: $ 13981
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 26 DOWNSTREAM MANHOLE: 27
LEAK NUMBER: 1 BOOK: 1 PAGE: 118
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1780000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 141 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3666 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 3.18 TRANSPORTATION AND TREATMENT COST: $ 22800
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 29 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 107
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2902824 GALLONS OF INFIL YEARLY
PIPE LENGTH: 275 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 7150 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 2.83 TRANSPORTATION AND TREATMENT COST: $ 9982
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 33 DOWNSTREAM MANHOLE: 34
LEAK NUMBER: 1 BOOK: 1 PAGE: 96
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1270920 GALLONS OF INFIL YEARLY
PIPE LENGTH: 110 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3520 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN.
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 6

PRIORITY NUMBER: 2.38 TRANSPORTATION AND TREATMENT COST: $ 7864
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 27 DOWNSTREAM MANHOLE: 30
LEAK NUMBER: 3 BOOK: 1 PAGE: 115
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 801000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 333 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3300 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 2.38 TRANSPORTATION AND TREATMENT COST: $ 7864
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 27 DOWNSTREAM MANHOLE: 30
LEAK NUMBER: 2 BOOK: 1 PAGE: 115
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 801000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 333 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3300 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 2.13 TRANSPORTATION AND TREATMENT COST: $ 2114
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB18 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 39
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: FAULTY MANHOLE RING OR COVER
LEAK RATE: 153792 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 990 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
WATERPROOF WALLS

PRIORITY NUMBER: 1.95 TRANSPORTATION AND TREATMENT COST: $ 1409
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB17 DOWNSTREAM MANHOLE: 16
LEAK NUMBER: 1 BOOK: 1 PAGE: 41
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 102528 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 720 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,FILL SMALL
CRACKS,WATERPROOF WALLS

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 1.94 TRANSPORTATION AND TREATMENT COST: $ 612
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB93 DOWNSTREAM MANHOLE: CB92
LEAK NUMBER: 1 BOOK: 1 PAGE: 59
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 77964 GALLONS OF INFIL YEARLY
PIPE LENGTH: 21 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 315 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.94 TRANSPORTATION AND TREATMENT COST: $ 2626
MINI-SYSTEM: 2 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: 64
LEAK NUMBER: 1 BOOK: 1 PAGE: 57
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 334284 GALLONS OF INFIL YEARLY
PIPE LENGTH: 90 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1350 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.94 TRANSPORTATION AND TREATMENT COST: $ 1809
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 64 DOWNSTREAM MANHOLE: 65
LEAK NUMBER: 1 BOOK: 1 PAGE: 56
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 230332 GALLONS OF INFIL YEARLY
PIPE LENGTH: 62 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 930 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.94 TRANSPORTATION AND TREATMENT COST: $ 5687
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 65 DOWNSTREAM MANHOLE: CB98A
LEAK NUMBER: 1 BOOK: 1 PAGE: 55
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 724104 GALLONS OF INFIL YEARLY
PIPE LENGTH: 195 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2925 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYM756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 8

PRIORITY NUMBER: 1.94 TRANSPORTATION AND TREATMENT COST: $ 730
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB98A DOWNSTREAM MANHOLE: CB98
LEAK NUMBER: 1 BOOK: 1 PAGE: 54
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 92916 GALLONS OF INFIL YEARLY
PIPE LENGTH: 25 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 375 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.89 TRANSPORTATION AND TREATMENT COST: $ 1222
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB37 DOWNSTREAM MANHOLE: 31
LEAK NUMBER: 1 BOOK: 1 PAGE: 102
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 155572 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.71 TRANSPORTATION AND TREATMENT COST: $ 1107
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB40 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 97
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 140976 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.71 TRANSPORTATION AND TREATMENT COST: $ 1054
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB36 DOWNSTREAM MANHOLE: CB30
LEAK NUMBER: 1 BOOK: 1 PAGE: 104
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 134212 GALLONS OF INFIL YEARLY
PIPE LENGTH: 41 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 615 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 9

PRIORITY NUMBER: 1.64 TRANSPORTATION AND TREATMENT COST: $ 1806
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 66 DOWNSTREAM MANHOLE: 22
LEAK NUMBER: 2 BOOK: 1 PAGE: 74
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 131364 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1100 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS.PLUG LARGE CRACKS,
WATERPROOF WALLS

PRIORITY NUMBER: 1.60 TRANSPORTATION AND TREATMENT COST: $ 2114
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB86 DOWNSTREAM MANHOLE: 21
LEAK NUMBER: 2 BOOK: 1 PAGE: 92
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 153792 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1320 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS.PLUG LARGE CRACKS,
WATERPROOF WALLS

PRIORITY NUMBER: 1.46 TRANSPORTATION AND TREATMENT COST: $ 2632
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 31 DOWNSTREAM MANHOLE: 32
LEAK NUMBER: 2 BOOK: 1 PAGE: 101
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 268068 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
PIPE LENGTH: 360 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 1.42 TRANSPORTATION AND TREATMENT COST: $ 1409
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB19 DOWNSTREAM MANHOLE: 17
LEAK NUMBER: 1 BOOK: 1 PAGE: 38
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 102528 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 990 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,FILL SMALL
CRACKS,WATERPROOF WALLS

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 10

PRIORITY NUMBER: 1.40 TRANSPORTATION AND TREATMENT COST: $ 15024
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 27 DOWNSTREAM MANHOLE: 30
LEAK NUMBER: 1 BOOK: 1 PAGE: 115
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1912788 GALLONS OF INFIL YEARLY
PIPE LENGTH: 333 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 10656 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 1.30 TRANSPORTATION AND TREATMENT COST: $ 1409
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB85 DOWNSTREAM MANHOLE: 22
LEAK NUMBER: 2 BOOK: 1 PAGE: 87
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 102528 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1080 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,FILL SMALL
CRACKS,WATERPROOF WALLS

PRIORITY NUMBER: 1.16 TRANSPORTATION AND TREATMENT COST: $ 2816
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 68 DOWNSTREAM MANHOLE: CB98
LEAK NUMBER: 1 BOOK: 1 PAGE: 60
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 358492 GALLONS OF INFIL YEARLY
PIPE LENGTH: 161 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2415 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 1.09 TRANSPORTATION AND TREATMENT COST: $ 2916
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 70 DOWNSTREAM MANHOLE: 69
LEAK NUMBER: 1 BOOK: 1 PAGE: 76
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 371308 GALLONS OF INFIL YEARLY
PIPE LENGTH: 178 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2670 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 11

PRIORITY NUMBER: 1.06 TRANSPORTATION AND TREATMENT COST: $ 14680
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 33 DOWNSTREAM MANHOLE: 34
LEAK NUMBER: 2 BOOK: 1 PAGE: 96
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 1246000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 110 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 13800 % INFIL REMOVED: 60
METHOD OF REHABILITATION: REPLACE SECTION OR ENTIRE MAIN LINE
** 69 FEET INDICATED FOR REPLACEMENT **

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 1602
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 12A DOWNSTREAM MANHOLE: CB12
LEAK NUMBER: 1 BOOK: 1 PAGE: 52
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 203988 GALLONS OF INFIL YEARLY
PIPE LENGTH: 103 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1545 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 467
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB55 DOWNSTREAM MANHOLE: JBOX
LEAK NUMBER: 1 BOOK: 1 PAGE: 48
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 59452 GALLONS OF INFIL YEARLY
PIPE LENGTH: 30 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 450 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 3263
MINI-SYSTEM: 2 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: JBOX
LEAK NUMBER: 1 BOOK: 1 PAGE: 47
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 415452 GALLONS OF INFIL YEARLY
PIPE LENGTH: 210 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3150 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 12

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 1088
MINI-SYSTEM: 2 UPSTREAM MANHOLE: JBOX DOWNSTREAM MANHOLE: CB24
LEAK NUMBER: 1 BOOK: 1 PAGE: 46
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 138484 GALLONS OF INFIL YEARLY
PIPE LENGTH: 70 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1050 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 1711
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB24 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 45
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 217872 GALLONS OF INFIL YEARLY
PIPE LENGTH: 110 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1650 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 4974
MINI-SYSTEM: 2 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 44
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 633324 GALLONS OF INFIL YEARLY
PIPE LENGTH: 320 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $ 668
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB16 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 42
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 85084 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES
OAKRIDGE, TN. PRS511 MURFREESBORO

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAG

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB18 DOWNSTREAM MANHOLE:
LEAK NUMBER: 2 BOOK: 1 PAGE: 39
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 85084 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.03 TRANSPORTATION AND TREATMENT COST: $
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB19 DOWNSTREAM MANHOLE:
LEAK NUMBER: 2 BOOK: 1 PAGE: 38
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 85084 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.98 TRANSPORTATION AND TREATMENT COST: $
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 32 DOWNSTREAM MANHOLE:
LEAK NUMBER: 1 BOOK: 1 PAGE: 99
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 818800 GALLONS OF INFIL YEARLY
PIPE LENGTH: 250 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 6500 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.78 TRANSPORTATION AND TREATMENT COST: $
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB98 DOWNSTREAM MANHOLE:
LEAK NUMBER: 1 BOOK: 1 PAGE: 53
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 195800 GALLONS OF INFIL YEARLY
PIPE LENGTH: 130 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1950 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LIN

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 14

PRIORITY NUMBER: 0.60 TRANSPORTATION AND TREATMENT COST: $ 705
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB27 DOWNSTREAM MANHOLE: 23
LEAK NUMBER: 2 BOOK: 1 PAGE: 70
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 51264 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1170 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,FILL SMALL CRACKS,WATERPROOF WALLS

PRIORITY NUMBER: 0.59 TRANSPORTATION AND TREATMENT COST: $ 2346
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB12 DOWNSTREAM MANHOLE: 14
LEAK NUMBER: 1 BOOK: 1 PAGE: 51
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 298684 GALLONS OF INFIL YEARLY
PIPE LENGTH: 151 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3926 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.59 TRANSPORTATION AND TREATMENT COST: $ 3808
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB13 DOWNSTREAM MANHOLE: 15
LEAK NUMBER: 1 BOOK: 1 PAGE: 49
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 484872 GALLONS OF INFIL YEARLY
PIPE LENGTH: 245 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 6370 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.52 TRANSPORTATION AND TREATMENT COST: $ 1748
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 30 DOWNSTREAM MANHOLE: 33
LEAK NUMBER: 4 BOOK: 1 PAGE: 103
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 178000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
PIPE LENGTH: 396 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3300 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 15

PRIORITY NUMBER: 0.52 TRANSPORTATION AND TREATMENT COST: $ 1748
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 30 DOWNSTREAM MANHOLE: 33
LEAK NUMBER: 3 BOOK: 1 PAGE: 103
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 178000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
PIPE LENGTH: 396 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3300 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.52 TRANSPORTATION AND TREATMENT COST: $ 1748
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 30 DOWNSTREAM MANHOLE: 33
LEAK NUMBER: 2 BOOK: 1 PAGE: 103
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 178000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
PIPE LENGTH: 396 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3300 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.51 TRANSPORTATION AND TREATMENT COST: $ 2796
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 31 DOWNSTREAM MANHOLE: 32
LEAK NUMBER: 1 BOOK: 1 PAGE: 101
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 356000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 360 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 5400 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.49 TRANSPORTATION AND TREATMENT COST: $ 821
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 69 DOWNSTREAM MANHOLE: 56
LEAK NUMBER: 2 BOOK: 1 PAGE: 75
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 83660 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 143 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1650 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 16

PRIORITY NUMBER: 0.49 TRANSPORTATION AND TREATMENT COST: $ 821
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 69 DOWNSTREAM MANHOLE: 66
LEAK NUMBER: 2 BOOK: 1 PAGE: 75
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 83660 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 143 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1650 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)

PRIORITY NUMBER: 0.47 TRANSPORTATION AND TREATMENT COST: $ 5992
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 30 DOWNSTREAM MANHOLE: 33
LEAK NUMBER: 1 BOOK: 1 PAGE: 103
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 762908 GALLONS OF INFIL YEARLY
PIPE LENGTH: 396 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 12672 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.44 TRANSPORTATION AND TREATMENT COST: $ 285
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB26 DOWNSTREAM MANHOLE: CB65
LEAK NUMBER: 1 BOOK: 1 PAGE: 88
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 36312 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN.TV.AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.35 TRANSPORTATION AND TREATMENT COST: $ 1398
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 14 DOWNSTREAM MANHOLE: CB13
LEAK NUMBER: 1 BOOK: 1 PAGE: 50
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 178000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 151 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3926 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 17

PRIORITY NUMBER: 0.35 TRANSPORTATION AND TREATMENT COST: $ 1398
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 17 DOWNSTREAM MANHOLE: 34
LEAK NUMBER: 1 BOOK: 1 PAGE: 37
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 178000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 124 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3968 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.27 TRANSPORTATION AND TREATMENT COST: $ 1311
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 16 DOWNSTREAM MANHOLE: 17
LEAK NUMBER: 3 BOOK: 1 PAGE: 40
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 133500 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 268 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4800 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.27 TRANSPORTATION AND TREATMENT COST: $ 1311
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 16 DOWNSTREAM MANHOLE: 17
LEAK NUMBER: 2 BOOK: 1 PAGE: 40
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 133500 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 268 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4800 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.27 TRANSPORTATION AND TREATMENT COST: $ 1311
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 16 DOWNSTREAM MANHOLE: 17
LEAK NUMBER: 1 BOOK: 1 PAGE: 40
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 133500 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 268 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4800 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 18

PRIORITY NUMBER: 0.26 TRANSPORTATION AND TREATMENT COST: $ 1274
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 16 DOWNSTREAM MANHOLE: 17
LEAK NUMBER: 4 BOOK: 1 PAGE: 40
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 129940 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 268 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4800 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.25 TRANSPORTATION AND TREATMENT COST: $ 699
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 14 DOWNSTREAM MANHOLE: CB13
LEAK NUMBER: 3 BOOK: 1 PAGE: 50
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 71200 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 151 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2700 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.23 TRANSPORTATION AND TREATMENT COST: $ 605
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB98 DOWNSTREAM MANHOLE: 14
LEAK NUMBER: 2 BOOK: 1 PAGE: 53
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 61588 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 130 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2550 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.21 TRANSPORTATION AND TREATMENT COST: $ 224
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB99 DOWNSTREAM MANHOLE: CB94
LEAK NUMBER: 1 BOOK: 1 PAGE: 81 SMOKE CLASS: 2 SMOKE INTENSITY: H
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 28541 GALLONS OF INFLO YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 70 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1050 % INFLO REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 19

PRIORITY NUMBER: 0.17 TRANSPORTATION AND TREATMENT COST: $ 486
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 14 DOWNSTREAM MANHOLE: CB13
LEAK NUMBER: 2 BOOK: 1 PAGE: 50
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 49484 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: DETERIORATED PIPE
PIPE LENGTH: 151 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2700 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.12 TRANSPORTATION AND TREATMENT COST: $ 661
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 17 DOWNSTREAM MANHOLE: 34
LEAK NUMBER: 2 BOOK: 1 PAGE: 37
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 67284 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
PIPE LENGTH: 124 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5100 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.11 TRANSPORTATION AND TREATMENT COST: $ 638
MINI-SYSTEM: 2 UPSTREAM MANHOLE: 34 DOWNSTREAM MANHOLE: CB54
LEAK NUMBER: 1 BOOK: 1 PAGE: 36
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 81168 GALLONS OF INFIL YEARLY
PIPE LENGTH: 178 FEET PIPE DIAMETER: 60 INCHES
PIPE DEPTH: 14 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5696 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.10 TRANSPORTATION AND TREATMENT COST: $ 285
MINI-SYSTEM: 2 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: CB28
LEAK NUMBER: 1 BOOK: 1 PAGE: 69
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 36312 GALLONS OF INFIL YEARLY
PIPE LENGTH: 190 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 2 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2850 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 2 SUMMARY BY PRIORITY PAGE 20

PRIORITY NUMBER: 0.08 TRANSPORTATION AND TREATMENT COST: $ 285
MINI-SYSTEM: 2 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: 22
LEAK NUMBER: 1 BOOK: 1 PAGE: 73
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 36312 GALLONS OF INFIL YEARLY
PIPE LENGTH: 230 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3450 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.07 TRANSPORTATION AND TREATMENT COST: $ 285
MINI-SYSTEM: 2 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: 29
LEAK NUMBER: 1 BOOK: 1 PAGE: 108
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 36312 GALLONS OF INFIL YEARLY
PIPE LENGTH: 250 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.04 TRANSPORTATION AND TREATMENT COST: $ 92
MINI-SYSTEM: 2 UPSTREAM MANHOLE: CB39 DOWNSTREAM MANHOLE: CB40
LEAK NUMBER: 1 BOOK: 1 PAGE: 98
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 11748 GALLONS OF INFIL YEARLY
PIPE LENGTH: 141 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2115 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 1

PRIORITY NUMBER: 6.81 TRANSPORTATION AND TREATMENT COST: $ 26155
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18 DOWNSTREAM MANHOLE: CB20
LEAK NUMBER: 1 BOOK: 1 PAGE: 136
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 2220000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DETERIORATED PIPE
PIPE LENGTH: 141 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3840 % INFIL REMOVED: 60
METHOD OF REHABILITATION: REPLACE SECTION OR ENTIRE MAIN LINE
** 32 FEET INDICATED FOR REPLACEMENT **

PRIORITY NUMBER: 4.30 TRANSPORTATION AND TREATMENT COST: $ 19285
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18A DOWNSTREAM MANHOLE: 18
LEAK NUMBER: 1 BOOK: 1 PAGE: 137
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 2455320 GALLONS OF INFIL YEARLY
PIPE LENGTH: 140 FEET PIPE DIAMETER: 24 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4480 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 3.66 TRANSPORTATION AND TREATMENT COST: $ 5850
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 20 DOWNSTREAM MANHOLE: 21
LEAK NUMBER: 2 BOOK: 1 PAGE: 90
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 426240 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1600 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
PLASTER+WATERPROOF

PRIORITY NUMBER: 1.69 TRANSPORTATION AND TREATMENT COST: $ 1221
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18 DOWNSTREAM MANHOLE: CB20
LEAK NUMBER: 2 BOOK: 1 PAGE: 136
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 88800 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 720 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,FILL SMALL
CRACKS,WATERPROOF WALLS

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 2

PRIORITY NUMBER: 1.64 TRANSPORTATION AND TREATMENT COST: $ 2964
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: 47
LEAK NUMBER: 1 BOOK: 1 PAGE: 176
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 377400 GALLONS OF INFIL YEARLY
PIPE LENGTH: 120 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.59 TRANSPORTATION AND TREATMENT COST: $ 2632
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 48A DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 174
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 335072 GALLONS OF INFIL YEARLY
PIPE LENGTH: 110 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1650 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.59 TRANSPORTATION AND TREATMENT COST: $ 1434
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB68
LEAK NUMBER: 1 BOOK: 1 PAGE: 173
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 182632 GALLONS OF INFIL YEARLY
PIPE LENGTH: 60 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 900 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.59 TRANSPORTATION AND TREATMENT COST: $ 4736
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB68 DOWNSTREAM MANHOLE: 48
LEAK NUMBER: 1 BOOK: 1 PAGE: 172
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 602952 GALLONS OF INFIL YEARLY
PIPE LENGTH: 198 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2970 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 3

PRIORITY NUMBER: 1.35 TRANSPORTATION AND TREATMENT COST: $ 5677
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB20 DOWNSTREAM MANHOLE: 19
LEAK NUMBER: 2 BOOK: 1 PAGE: 133
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 481888 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DETERIORATED PIPE
PIPE LENGTH: 281 FEET PIPE DIAMETER: 27 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4200 % INFIL REMOVED: 60
METHOD OF REHABILITATION: REPLACE SECTION OR ENTIRE MAIN LINE
** 28 FEET INDICATED FOR REPLACEMENT **

PRIORITY NUMBER: 1.32 TRANSPORTATION AND TREATMENT COST: $ 3183
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB18A DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 158
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 405224 GALLONS OF INFIL YEARLY
PIPE LENGTH: 75 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2400 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.13 TRANSPORTATION AND TREATMENT COST: $ 3487
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 47 DOWNSTREAM MANHOLE: CB68
LEAK NUMBER: 1 BOOK: 1 PAGE: 175
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 444000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 205 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3075 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.13 TRANSPORTATION AND TREATMENT COST: $ 681
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB66 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 134
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 86728 GALLONS OF INFIL YEARLY
PIPE LENGTH: 40 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 600 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 4

PRIORITY NUMBER: 1.08 TRANSPORTATION AND TREATMENT COST: $ 518
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB18 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 132
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 66008 GALLONS OF INFIL YEARLY
PIPE LENGTH: 15 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 480 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 1.07 TRANSPORTATION AND TREATMENT COST: $ 1770
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 47 DOWNSTREAM MANHOLE: CB68
LEAK NUMBER: 2 BOOK: 1 PAGE: 175
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 180264 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 205 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1650 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 1.04 TRANSPORTATION AND TREATMENT COST: $ 2341
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB22
LEAK NUMBER: 1 BOOK: 1 PAGE: 131
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 298072 GALLONS OF INFIL YEARLY
PIPE LENGTH: 150 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2250 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.80 TRANSPORTATION AND TREATMENT COST: $ 2906
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB20 DOWNSTREAM MANHOLE: 19
LEAK NUMBER: 3 BOOK: 1 PAGE: 133
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 296000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DROPPED OR SHEARED PIPE
PIPE LENGTH: 281 FEET PIPE DIAMETER: 27 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3600 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 5

PRIORITY NUMBER: 0.69 TRANSPORTATION AND TREATMENT COST: $ 523
MINI-SYSTEM: 3 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: 48
LEAK NUMBER: 1 BOOK: 1 PAGE: 171
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 66600 GALLONS OF INFIL YEARLY
PIPE LENGTH: 50 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 2 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.69 TRANSPORTATION AND TREATMENT COST: $ 2109
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 48 DOWNSTREAM MANHOLE: CB69
LEAK NUMBER: 1 BOOK: 1 PAGE: 170
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 268472 GALLONS OF INFIL YEARLY
PIPE LENGTH: 202 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 2 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3030 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.69 TRANSPORTATION AND TREATMENT COST: $ 523
MINI-SYSTEM: 3 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: CB69
LEAK NUMBER: 1 BOOK: 1 PAGE: 169
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 66600 GALLONS OF INFIL YEARLY
PIPE LENGTH: 50 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.64 TRANSPORTATION AND TREATMENT COST: $ 5812
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB20 DOWNSTREAM MANHOLE: 19
LEAK NUMBER: 1 BOOK: 1 PAGE: 133
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 740000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 281 FEET PIPE DIAMETER: 27 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 8992 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYM756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 6

PRIORITY NUMBER: 0.55 TRANSPORTATION AND TREATMENT COST: $ 1162
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB70 DOWNSTREAM MANHOLE: CB18A
LEAK NUMBER: 2 BOOK: 1 PAGE: 159
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 118400 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 155 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2100 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)

PRIORITY NUMBER: 0.46 TRANSPORTATION AND TREATMENT COST: $ 279
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB23 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 127
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 35520 GALLONS OF INFIL YEARLY
PIPE LENGTH: 40 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 600 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.40 TRANSPORTATION AND TREATMENT COST: $ 939
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB69 DOWNSTREAM MANHOLE: 49A
LEAK NUMBER: 1 BOOK: 1 PAGE: 168
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 119584 GALLONS OF INFIL YEARLY
PIPE LENGTH: 90 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2340 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.40 TRANSPORTATION AND TREATMENT COST: $ 1209
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18C DOWNSTREAM MANHOLE: 18B
LEAK NUMBER: 2 BOOK: 1 PAGE: 139
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 123136 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 201 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3000 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. HYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 0.38 TRANSPORTATION AND TREATMENT COST: $ 1558
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB70 DOWNSTREAM MANHOLE: CP18A
LEAK NUMBER: 1 BOOK: 1 PAGE: 159
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 198320 GALLONS OF INFIL YEARLY
PIPE LENGTH: 155 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4030 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.38 TRANSPORTATION AND TREATMENT COST: $ 1737
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB23
LEAK NUMBER: 1 BOOK: 1 PAGE: 128
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 221112 GALLONS OF INFIL YEARLY
PIPE LENGTH: 300 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4500 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.36 TRANSPORTATION AND TREATMENT COST: $ 237
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB64 DOWNSTREAM MANHOLE: 18A
LEAK NUMBER: 1 BOOK: 1 PAGE: 154
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 30192 GALLONS OF INFIL YEARLY
PIPE LENGTH: 43 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 645 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.36 TRANSPORTATION AND TREATMENT COST: $ 255
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB57 DOWNSTREAM MANHOLE: 44
LEAK NUMBER: 2 BOOK: 1 PAGE: 153 SMOKE CLASS: 1 SMOKE INTENSITY: H
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 32421 GALLONS OF INFLO YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
PIPE LENGTH: 47 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 705 % INFLO REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 8

PRIORITY NUMBER: 0.36 TRANSPORTATION AND TREATMENT COST: $ 818
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB60 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 140
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 104192 GALLONS OF INFIL YEARLY
PIPE LENGTH: 148 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2220 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.33 TRANSPORTATION AND TREATMENT COST: $ 237
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB57 DOWNSTREAM MANHOLE: 44
LEAK NUMBER: 1 BOOK: 1 PAGE: 153
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 30192 GALLONS OF INFIL YEARLY
PIPE LENGTH: 47 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 705 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.31 TRANSPORTATION AND TREATMENT COST: $ 1999
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 20 DOWNSTREAM MANHOLE: 21
LEAK NUMBER: 1 BOOK: 1 PAGE: 90
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 254560 GALLONS OF INFIL YEARLY
PIPE LENGTH: 199 FEET PIPE DIAMETER: 36 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6368 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.26 TRANSPORTATION AND TREATMENT COST: $ 386
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 49B DOWNSTREAM MANHOLE: 49A
LEAK NUMBER: 1 BOOK: 1 PAGE: 166
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 49136 GALLONS OF INFIL YEARLY
PIPE LENGTH: 96 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1440 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 2

PRIORITY NUMBER: 0.22 TRANSPORTATION AND TREATMENT COST: $ 412
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: 42
LEAK NUMBER: 1 BOOK: 1 PAGE: 152
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 52392 GALLONS OF INFIL YEARLY
PIPE LENGTH: 120 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN.TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.21 TRANSPORTATION AND TREATMENT COST: $ 1200
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 49 DOWNSTREAM MANHOLE: CB70
LEAK NUMBER: 1 BOOK: 1 PAGE: 162
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 152736 GALLONS OF INFIL YEARLY
PIPE LENGTH: 212 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5512 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.21 TRANSPORTATION AND TREATMENT COST: $ 2267
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 19 DOWNSTREAM MANHOLE: 20
LEAK NUMBER: 1 BOOK: 1 PAGE: 126
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 288600 GALLONS OF INFIL YEARLY
PIPE LENGTH: 326 FEET PIPE DIAMETER: 35 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 10432 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.18 TRANSPORTATION AND TREATMENT COST: $ 203
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 43 DOWNSTREAM MANHOLE: CB58
LEAK NUMBER: 2 BOOK: 1 PAGE: 145
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 14800 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1120 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
PLASTER+WATERPROOF

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 10

PRIORITY NUMBER: 0.18 TRANSPORTATION AND TREATMENT COST: $ 1162
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18C DOWNSTREAM MANHOLE: 18B
LEAK NUMBER: 1 BOOK: 1 PAGE: 139
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 148000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 201 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6432 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.17 TRANSPORTATION AND TREATMENT COST: $ 1107
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18D DOWNSTREAM MANHOLE: 18C
LEAK NUMBER: 1 BOOK: 1 PAGE: 141
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 140896 GALLONS OF INFIL YEARLY
PIPE LENGTH: 200 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 6400 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.16 TRANSPORTATION AND TREATMENT COST: $ 602
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB58 DOWNSTREAM MANHOLE: CB59
LEAK NUMBER: 1 BOOK: 1 PAGE: 143
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 76664 GALLONS OF INFIL YEARLY
PIPE LENGTH: 250 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.14 TRANSPORTATION AND TREATMENT COST: $ 916
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 18B DOWNSTREAM MANHOLE: 18A
LEAK NUMBER: 1 BOOK: 1 PAGE: 138
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 116624 GALLONS OF INFIL YEARLY
PIPE LENGTH: 200 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 6400 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 11

PRIORITY NUMBER: 0.09 TRANSPORTATION AND TREATMENT COST: $ 372
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB91 DOWNSTREAM MANHOLE: 18
LEAK NUMBER: 1 BOOK: 1 PAGE: 147
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 47360 GALLONS OF INFIL YEARLY
PIPE LENGTH: 152 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3952 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.08 TRANSPORTATION AND TREATMENT COST: $ 272
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 43 DOWNSTREAM MANHOLE: CB58
LEAK NUMBER: 1 BOOK: 1 PAGE: 145
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 34632 GALLONS OF INFIL YEARLY
PIPE LENGTH: 211 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3165 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.07 TRANSPORTATION AND TREATMENT COST: $ 237
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB66
LEAK NUMBER: 1 BOOK: 1 PAGE: 135
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 30192 GALLONS OF INFIL YEARLY
PIPE LENGTH: 220 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3300 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.06 TRANSPORTATION AND TREATMENT COST: $ 145
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 43 DOWNSTREAM MANHOLE: CB58
LEAK NUMBER: 3 BOOK: 1 PAGE: 145
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 14800 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 211 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2400 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 12

PRIORITY NUMBER: 0.03 TRANSPORTATION AND TREATMENT COST: $ 70
MINI-SYSTEM: 3 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB67
LEAK NUMBER: 1 BOOK: 1 PAGE: 178
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 8880 GALLONS OF INFIL YEARLY
PIPE LENGTH: 120 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.03 TRANSPORTATION AND TREATMENT COST: $ 70
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB67 DOWNSTREAM MANHOLE: 47
LEAK NUMBER: 1 BOOK: 1 PAGE: 177
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 8880 GALLONS OF INFIL YEARLY
PIPE LENGTH: 135 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2025 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.03 TRANSPORTATION AND TREATMENT COST: $ 191
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 42 DOWNSTREAM MANHOLE: 44
LEAK NUMBER: 1 BOOK: 1 PAGE: 151
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 24272 GALLONS OF INFIL YEARLY
PIPE LENGTH: 411 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 6165 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.03 TRANSPORTATION AND TREATMENT COST: $ 44
MINI-SYSTEM: 3 UPSTREAM MANHOLE: CB56 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 150
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 5624 GALLONS OF INFIL YEARLY
PIPE LENGTH: 95 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1425 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYU756
MINI-SYSTEM 3 SUMMARY BY PRIORITY PAGE 13

PRIORITY NUMBER: 0.03 TRANSPORTATION AND TREATMENT COST: $ 65
MINI-SYSTEM: 3 UPSTREAM MANHOLE: 44 DOWNSTREAM MANHOLE: CB91
LEAK NUMBER: 1 BOOK: 1 PAGE: 149
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 8288 GALLONS OF INFIL YEARLY
PIPE LENGTH: 76 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1976 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC.
OAKRIDGE, TN.

WYNNE ASSOCIATES INC
PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 1

PRIORITY NUMBER: 23.00 TRANSPORTATION AND TREATMENT COST: $ 24160
MINI-SYSTEM: 4 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: 57
LEAK NUMBER: 1 BOOK: 1 PAGE: 181
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 3075912 GALLONS OF INFIL YEARLY
PIPE LENGTH: 70 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1050 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 12.72 TRANSPORTATION AND TREATMENT COST: $ 3817
MINI-SYSTEM: 4 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: CB76
LEAK NUMBER: 1 BOOK: 1 PAGE: 184
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 485928 GALLONS OF INFIL YEARLY
PIPE LENGTH: 20 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 300 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 5.93 TRANSPORTATION AND TREATMENT COST: $ 24862
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 58 DOWNSTREAM MANHOLE: 83
LEAK NUMBER: 1 BOOK: 1 PAGE: 95
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 3165264 GALLONS OF INFIL YEARLY
PIPE LENGTH: 131 FEET PIPE DIAMETER: 36 INCHES
PIPE DEPTH: 15 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4192 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 5.26 TRANSPORTATION AND TREATMENT COST: $ 3319
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB75 DOWNSTREAM MANHOLE: CB74
LEAK NUMBER: 1 BOOK: 1 PAGE: 187
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 422586 GALLONS OF INFIL YEARLY
PIPE LENGTH: 42 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 630 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYM756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 2

PRIORITY NUMBER: 4.40 TRANSPORTATION AND TREATMENT COST: $ 5619
MINI-SYSTEM: 4 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: 56
LEAK NUMBER: 1 BOOK: 1 PAGE: 190
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 715428 GALLONS OF INFIL YEARLY
PIPE LENGTH: 85 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1275 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 4.34 TRANSPORTATION AND TREATMENT COST: $ 7821
MINI-SYSTEM: 4 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: 55
LEAK NUMBER: 1 BOOK: 1 PAGE: 192
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 995724 GALLONS OF INFIL YEARLY
PIPE LENGTH: 120 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 3.05 TRANSPORTATION AND TREATMENT COST: $ 1923
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB76 DOWNSTREAM MANHOLE: CB77
LEAK NUMBER: 1 BOOK: 1 PAGE: 183
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 244800 GALLONS OF INFIL YEARLY
PIPE LENGTH: 42 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 630 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 3.01 TRANSPORTATION AND TREATMENT COST: $ 8586
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 56 DOWNSTREAM MANHOLE: CB74
LEAK NUMBER: 2 BOOK: 1 PAGE: 189
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 874548 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 243 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2850 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 3

PRIORITY NUMBER: 2.53 TRANSPORTATION AND TREATMENT COST: $ 11274
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 62 DOWNSTREAM MANHOLE: 53
LEAK NUMBER: 1 BOOK: 1 PAGE: 197
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 1435392 GALLONS OF I/I YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DEFECTIVE JOINT(S)
PIPE LENGTH: 171 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 2 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4446 % I/I REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 2.41 TRANSPORTATION AND TREATMENT COST: $ 15281
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 56 DOWNSTREAM MANHOLE: CB74
LEAK NUMBER: 1 BOOK: 1 PAGE: 189
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 1945548 GALLONS OF INFIL YEARLY
PIPE LENGTH: 243 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 6318 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 2.09 TRANSPORTATION AND TREATMENT COST: $ 1342
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB73 DOWNSTREAM MANHOLE: 53
LEAK NUMBER: 2 BOOK: 1 PAGE: 194
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 97614 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 640 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
PLASTER+WATERPROOF

PRIORITY NUMBER: 1.88 TRANSPORTATION AND TREATMENT COST: $ 1836
MINI-SYSTEM: 4 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: CB74
LEAK NUMBER: 1 BOOK: 1 PAGE: 186
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 233784 GALLONS OF INFIL YEARLY
PIPE LENGTH: 65 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 975 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 4

PRIORITY NUMBER: 1.44 TRANSPORTATION AND TREATMENT COST: $ 4458
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB71 DOWNSTREAM MANHOLE: 62
LEAK NUMBER: 1 BOOK: 1 PAGE: 199
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 567630 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): DEFECTIVE JOINT(S)
PIPE LENGTH: 205 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3075 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 1.38 TRANSPORTATION AND TREATMENT COST: $ 5494
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 52 DOWNSTREAM MANHOLE: 62
LEAK NUMBER: 1 BOOK: 1 PAGE: 198
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 699516 GALLONS OF INFIL YEARLY
PIPE LENGTH: 264 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3960 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 1.24 TRANSPORTATION AND TREATMENT COST: $ 1901
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB73 DOWNSTREAM MANHOLE: 53
LEAK NUMBER: 1 BOOK: 1 PAGE: 194
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 242010 GALLONS OF I/I YEARLY
PIPE LENGTH: 102 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1530 % I/I REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.94 TRANSPORTATION AND TREATMENT COST: $ 2831
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 54 DOWNSTREAM MANHOLE: 53
LEAK NUMBER: 1 BOOK: 1 PAGE: 195
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 360468 GALLONS OF INFIL YEARLY
PIPE LENGTH: 200 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3000 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WY0756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 5

PRIORITY NUMBER: 0.85 TRANSPORTATION AND TREATMENT COST: $ 3605
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB74 DOWNSTREAM MANHOLE: 57
LEAK NUMBER: 1 BOOK: 1 PAGE: 185
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 459000 GALLONS OF INFIL YEARLY
PIPE LENGTH: 162 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4212 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.79 TRANSPORTATION AND TREATMENT COST: $ 2266
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB77 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 182
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 288558 GALLONS OF INFIL YEARLY
PIPE LENGTH: 110 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2860 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.72 TRANSPORTATION AND TREATMENT COST: $ 2567
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 57 DOWNSTREAM MANHOLE: 58
LEAK NUMBER: 4 BOOK: 1 PAGE: 179
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 217872 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 264 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3520 % INFIL REMOVED: 60
METHOD OF REHABILITATION: REPLACE SECTION OR ENTIRE MAIN LINE
** 32 FEET INDICATED FOR REPLACEMENT **

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 841
MINI-SYSTEM: 4 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: CB78
LEAK NUMBER: 1 BOOK: 1 PAGE: 217
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 107100 GALLONS OF INFIL YEARLY
PIPE LENGTH: 80 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1200 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 6

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 1106
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 59 DOWNSTREAM MANHOLE: CB78
LEAK NUMBER: 1 BOOK: 1 PAGE: 216
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 140760 GALLONS OF INFIL YEARLY
PIPE LENGTH: 105 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 6 FEET PIPE MATERIAL: CAST IRON
REHABILITATION COST: $ 1575 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 1663
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB78 DOWNSTREAM MANHOLE: CB87
LEAK NUMBER: 1 BOOK: 1 PAGE: 215
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 211752 GALLONS OF INFIL YEARLY
PIPE LENGTH: 158 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 2370 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 341
MINI-SYSTEM: 4 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: CB87
LEAK NUMBER: 1 BOOK: 1 PAGE: 214
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 107100 GALLONS OF INFIL YEARLY
PIPE LENGTH: 80 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1200 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 654
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB87 DOWNSTREAM MANHOLE: 60A
LEAK NUMBER: 1 BOOK: 1 PAGE: 213
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 83232 GALLONS OF INFIL YEARLY
PIPE LENGTH: 62 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 930 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WY:756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 1264
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 60A DOWNSTREAM MANHOLE: 60
LEAK NUMBER: 1 BOOK: 1 PAGE: 212
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 160956 GALLONS OF INFIL YEARLY
PIPE LENGTH: 120 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 1579
MINI-SYSTEM: 4 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: 60
LEAK NUMBER: 1 BOOK: 1 PAGE: 211
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 201042 GALLONS OF INFIL YEARLY
PIPE LENGTH: 150 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2250 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.70 TRANSPORTATION AND TREATMENT COST: $ 442
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB79 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 208
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 56304 GALLONS OF INFIL YEARLY
PIPE LENGTH: 42 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 630 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.64 TRANSPORTATION AND TREATMENT COST: $ 1298
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 62 DOWNSTREAM MANHOLE: 53
LEAK NUMBER: 2 BOOK: 1 PAGE: 197
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 110160 GALLONS OF INFIL YEARLY
PIPE LENGTH: 171 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 2 FEET PIPE MATERIAL: CLAY
DISTANCE FROM UPSTREAM MANHOLE: 0 FEET
REHABILITATION COST: $ 2000 % INFIL REMOVED: 60
METHOD OF REHABILITATION: EXCAVATE AND REPAIR FAULTY MAIN LINE TAP UNDER EASEMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 8

PRIORITY NUMBER: 0.63 TRANSPORTATION AND TREATMENT COST: $ 1797
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB74 DOWNSTREAM MANHOLE: 57
LEAK NUMBER: 2 BOOK: 1 PAGE: 185
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 182988 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): BROKEN OR SHATTERED PIPE
PIPE LENGTH: 162 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 2850 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.58 TRANSPORTATION AND TREATMENT COST: $ 1502
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB71 DOWNSTREAM MANHOLE: 62
LEAK NUMBER: 4 BOOK: 1 PAGE: 199
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 153000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 205 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2550 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.58 TRANSPORTATION AND TREATMENT COST: $ 1502
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB71 DOWNSTREAM MANHOLE: 62
LEAK NUMBER: 3 BOOK: 1 PAGE: 199
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 153000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 205 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2550 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.54 TRANSPORTATION AND TREATMENT COST: $ 606
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB71 DOWNSTREAM MANHOLE: 62
LEAK NUMBER: 2 BOOK: 1 PAGE: 199
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 44064 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 1120 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
PLASTER+WATERPROOF

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYM756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 9

PRIORITY NUMBER: 0.54 TRANSPORTATION AND TREATMENT COST: $ 985
MINI-SYSTEM: 4 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: 54
LEAK NUMBER: 1 BOOK: 1 PAGE: 196
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 125460 GALLONS OF INFIL YEARLY
PIPE LENGTH: 120 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1800 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.46 TRANSPORTATION AND TREATMENT COST: $ 2420
MINI-SYSTEM: 4 UPSTREAM MANHOLE: ELAT DOWNSTREAM MANHOLE: CB75
LEAK NUMBER: 1 BOOK: 1 PAGE: 188
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 308142 GALLONS OF INFIL YEARLY
PIPE LENGTH: 350 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 5250 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.40 TRANSPORTATION AND TREATMENT COST: $ 1916
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 60 DOWNSTREAM MANHOLE: 1
LEAK NUMBER: 1 BOOK: 1 PAGE: 210
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 243882 GALLONS OF INFIL YEARLY
PIPE LENGTH: 182 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4732 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.37 TRANSPORTATION AND TREATMENT COST: $ 1125
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 51 DOWNSTREAM MANHOLE: CB71
LEAK NUMBER: 1 BOOK: 1 PAGE: 201
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 143208 GALLONS OF INFIL YEARLY
PIPE LENGTH: 202 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3030 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 10

PRIORITY NUMBER: 0.34 TRANSPORTATION AND TREATMENT COST: $ 373
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB82 DOWNSTREAM MANHOLE: 58
LEAK NUMBER: 1 BOOK: 1 PAGE: 203
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 47430 GALLONS OF INFIL YEARLY
PIPE LENGTH: 42 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 12 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 1092 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.33 TRANSPORTATION AND TREATMENT COST: $ 1502
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 57 DOWNSTREAM MANHOLE: 58
LEAK NUMBER: 3 BOOK: 1 PAGE: 179
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 153000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 264 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4500 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.33 TRANSPORTATION AND TREATMENT COST: $ 1502
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 57 DOWNSTREAM MANHOLE: 58
LEAK NUMBER: 2 BOOK: 1 PAGE: 179
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 153000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 264 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4500 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.27 TRANSPORTATION AND TREATMENT COST: $ 747
MINI-SYSTEM: 4 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB80
LEAK NUMBER: 1 BOOK: 1 PAGE: 206
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 95166 GALLONS OF INFIL YEARLY
PIPE LENGTH: 180 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2700 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 11

PRIORITY NUMBER: 0.27 TRANSPORTATION AND TREATMENT COST: $ 769
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB80 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 205
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 97920 GALLONS OF INFIL YEARLY
PIPE LENGTH: 185 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 10 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2775 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.27 TRANSPORTATION AND TREATMENT COST: $ 375
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB81 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 204
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 47736 GALLONS OF INFIL YEARLY
PIPE LENGTH: 90 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1350 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.23 TRANSPORTATION AND TREATMENT COST: $ 245
MINI-SYSTEM: 4 UPSTREAM MANHOLE: WLAT DOWNSTREAM MANHOLE: 58
LEAK NUMBER: 1 BOOK: 1 PAGE: 180
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 31212 GALLONS OF INFIL YEARLY
PIPE LENGTH: 70 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 13 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1050 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.21 TRANSPORTATION AND TREATMENT COST: $ 425
MINI-SYSTEM: 4 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: CB71
LEAK NUMBER: 1 BOOK: 1 PAGE: 200
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 54162 GALLONS OF INFIL YEARLY
PIPE LENGTH: 130 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1950 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 12

PRIORITY NUMBER: 0.20 TRANSPORTATION AND TREATMENT COST: $ 673
MINI-SYSTEM: 4 UPSTREAM MANHOLE: SLAT DOWNSTREAM MANHOLE: CB79
LEAK NUMBER: 1 BOOK: 1 PAGE: 209
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 85680 GALLONS OF INFIL YEARLY
PIPE LENGTH: 220 FEET PIPE DIAMETER: 8 INCHES
PIPE DEPTH: 0 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 3300 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.13 TRANSPORTATION AND TREATMENT COST: $ 245
MINI-SYSTEM: 4 UPSTREAM MANHOLE: NLAT DOWNSTREAM MANHOLE: 51
LEAK NUMBER: 1 BOOK: 1 PAGE: 202
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 31212 GALLONS OF INFIL YEARLY
PIPE LENGTH: 125 FEET PIPE DIAMETER: 6 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1875 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.12 TRANSPORTATION AND TREATMENT COST: $ 963
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 61 DOWNSTREAM MANHOLE: CB82
LEAK NUMBER: 1 BOOK: 1 PAGE: 207
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 125154 GALLONS OF INFIL YEARLY
PIPE LENGTH: 294 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 7644 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.06 TRANSPORTATION AND TREATMENT COST: $ 180
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 61 DOWNSTREAM MANHOLE: CB82
LEAK NUMBER: 2 BOOK: 1 PAGE: 207
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 15300 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 294 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2860 % INFIL REMOVED: 60
METHOD OF REHABILITATION: REPLACE SECTION OR ENTIRE MAIN LINE
** 26 FEET INDICATED FOR REPLACEMENT **

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 4 SUMMARY BY PRIORITY PAGE 13

PRIORITY NUMBER: 0.04 TRANSPORTATION AND TREATMENT COST: $ 81
MINI-SYSTEM: 4 UPSTREAM MANHOLE: CB77 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 2 BOOK: 1 PAGE: 182 SMOKE CLASS: 5 SMOKE INTENSITY: M
LEAK ENTRY: PRIVATE SERVICE LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 5908 GALLONS OF INFLO YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: CRACKED PIPE
SERVICE ADDRESS:
REHABILITATION COST: $ 2000 % INFLO REMOVED: 70
METHOD OF REHABILITATION: EXCAVATE AND REPAIR POINT SOURCE OF SER-
VICE LINE IN YARD

PRIORITY NUMBER: 0.03 TRANSPORTATION AND TREATMENT COST: $ 165
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 57 DOWNSTREAM MANHOLE: 58
LEAK NUMBER: 1 BOOK: 1 PAGE: 179
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 16830 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 264 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4500 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.01 TRANSPORTATION AND TREATMENT COST: $ 75
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 61 DOWNSTREAM MANHOLE: CB82
LEAK NUMBER: 4 BOOK: 1 PAGE: 207
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 7650 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 294 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4500 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.01 TRANSPORTATION AND TREATMENT COST: $ 75
MINI-SYSTEM: 4 UPSTREAM MANHOLE: 61 DOWNSTREAM MANHOLE: CB82
LEAK NUMBER: 3 BOOK: 1 PAGE: 207
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 7650 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): OFFSET OR MISALIGNED JOINT(S)
PIPE LENGTH: 294 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 11 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4500 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYM756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 1

PRIORITY NUMBER: 0.84 TRANSPORTATION AND TREATMENT COST: $ 913
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB3 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 236
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT ,
LEAK RATE: 116266 GALLONS OF INFIL YEARLY
PIPE LENGTH: 72 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 1080 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.84 TRANSPORTATION AND TREATMENT COST: $ 2535
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 7 DOWNSTREAM MANHOLE: CB5
LEAK NUMBER: 1 BOOK: 1 PAGE: 234
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 322690 GALLONS OF INFIL YEARLY
PIPE LENGTH: 200 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3000 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.84 TRANSPORTATION AND TREATMENT COST: $ 1840
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB5 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 233
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 234240 GALLONS OF INFIL YEARLY
PIPE LENGTH: 145 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 2175 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.84 TRANSPORTATION AND TREATMENT COST: $ 633
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB11 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 219
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 80642 GALLONS OF INFIL YEARLY
PIPE LENGTH: 50 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 750 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 2

PRIORITY NUMBER: 0.64 TRANSPORTATION AND TREATMENT COST: $ 3351
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 5 DOWNSTREAM MANHOLE: CB4
LEAK NUMBER: 1 BOOK: 1 PAGE: 232
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 426634 GALLONS OF INFIL YEARLY
PIPE LENGTH: 201 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5226 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.64 TRANSPORTATION AND TREATMENT COST: $ 2918
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB4 DOWNSTREAM MANHOLE: 6
LEAK NUMBER: 1 BOOK: 1 PAGE: 231
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 371490 GALLONS OF INFIL YEARLY
PIPE LENGTH: 175 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4550 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.53 TRANSPORTATION AND TREATMENT COST: $ 241
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 2 DOWNSTREAM MANHOLE: CB2
LEAK NUMBER: 2 BOOK: 1 PAGE: 241
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 17568 GALLONS OF INFIL YEARLY
REHABILITATION COST: $ 450 % INFIL REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS.FILL SMALL
CRACKS,WATERPROOF WALLS

PRIORITY NUMBER: 0.47 TRANSPORTATION AND TREATMENT COST: $ 878
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB10 DOWNSTREAM MANHOLE: 11
LEAK NUMBER: 1 BOOK: 1 PAGE: 245
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 111752 GALLONS OF INFIL YEARLY
PIPE LENGTH: 124 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 1860 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 3

PRIORITY NUMBER: 0.34 TRANSPORTATION AND TREATMENT COST: $ 446
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB11 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 2 BOOK: 1 PAGE: 219 SMOKE CLASS: 1 SMOKE INTENSITY: H
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 32421 GALLONS OF INFLO YEARLY
REHABILITATION COST: $ 1280 % INFLO REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
PLASTER+WATERPROOF

PRIORITY NUMBER: 0.30 TRANSPORTATION AND TREATMENT COST: $ 2490
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 10 DOWNSTREAM MANHOLE: 11
LEAK NUMBER: 1 BOOK: 1 PAGE: 222
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 316956 GALLONS OF INFIL YEARLY
PIPE LENGTH: 254 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 16 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 8128 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.30 TRANSPORTATION AND TREATMENT COST: $ 1198
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 11 DOWNSTREAM MANHOLE: 12
LEAK NUMBER: 2 BOOK: 1 PAGE: 221
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 122000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 203 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3900 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.24 TRANSPORTATION AND TREATMENT COST: $ 1610
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 11 DOWNSTREAM MANHOLE: 12
LEAK NUMBER: 1 BOOK: 1 PAGE: 221
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 204960 GALLONS OF INFIL YEARLY
PIPE LENGTH: 203 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 9 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6496 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 4

PRIORITY NUMBER: 0.20 TRANSPORTATION AND TREATMENT COST: $ 1175
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 3 DOWNSTREAM MANHOLE: TEE
LEAK NUMBER: 1 BOOK: 1 PAGE: 239
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 149572 GALLONS OF INFIL YEARLY
PIPE LENGTH: 225 FEET PIPE DIAMETER: 18 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 5850 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.18 TRANSPORTATION AND TREATMENT COST: $ 1198
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 10 DOWNSTREAM MANHOLE: 11
LEAK NUMBER: 4 BOOK: 1 PAGE: 222
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 122000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 254 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 16 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6600 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.18 TRANSPORTATION AND TREATMENT COST: $ 1198
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 10 DOWNSTREAM MANHOLE: 11
LEAK NUMBER: 3 BOOK: 1 PAGE: 222
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 122000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 254 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 16 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6600 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.18 TRANSPORTATION AND TREATMENT COST: $ 1198
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 10 DOWNSTREAM MANHOLE: 11
LEAK NUMBER: 2 BOOK: 1 PAGE: 222
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 122000 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 254 FEET PIPE DIAMETER: 30 INCHES
PIPE DEPTH: 16 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6600 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 5

PRIORITY NUMBER: 0.16 TRANSPORTATION AND TREATMENT COST: $ 982
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 6 DOWNSTREAM MANHOLE: 10
LEAK NUMBER: 1 BOOK: 1 PAGE: 230
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 125050 GALLONS OF INFIL YEARLY
PIPE LENGTH: 188 FEET PIPE DIAMETER: 21 INCHES
PIPE DEPTH: 8 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 6016 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.13 TRANSPORTATION AND TREATMENT COST: $ 81
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB8 DOWNSTREAM MANHOLE: CB10
LEAK NUMBER: 1 BOOK: 1 PAGE: 250 SMOKE CLASS: 5 SMOKE INTENSITY: M
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: FAULTY MANHOLE RING OR COVER
LEAK RATE: 5908 GALLONS OF INFLO YEARLY
REHABILITATION COST: $ 600 % INFLO REMOVED: 70
METHOD OF REHABILITATION: REALIGN AND GROUT CASTING, MANHOLE IN EASEMENT

PRIORITY NUMBER: 0.09 TRANSPORTATION AND TREATMENT COST: $ 433
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB1 DOWNSTREAM MANHOLE: 2
LEAK NUMBER: 2 BOOK: 1 PAGE: 242 SMOKE CLASS: 4 SMOKE INTENSITY: M
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LEAK FROM HOLE OR CRACK TO LINE
LEAK RATE: 55080 GALLONS OF INFLO YEARLY
PROBABLE CAUSE OF HOLE OR CRACK: BROKEN OR SHATTERED PIPE
PIPE LENGTH: 295 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4425 % INFLO REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

PRIORITY NUMBER: 0.09 TRANSPORTATION AND TREATMENT COST: $ 436
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB1 DOWNSTREAM MANHOLE: 2
LEAK NUMBER: 1 BOOK: 1 PAGE: 242
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 55510 GALLONS OF INFIL YEARLY
PIPE LENGTH: 295 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 4425 % INFIL REMOVED: 40
METHOD OF REHABILITATION: CLEAN,TV,AIR TEST & GROUT LINE SEGMENT

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN
FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 6

PRIORITY NUMBER: 0.07 TRANSPORTATION AND TREATMENT COST: $ 227
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 2 DOWNSTREAM MANHOLE: CB2
LEAK NUMBER: 1 BOOK: 1 PAGE: 241
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 28914 GALLONS OF INFIL YEARLY
PIPE LENGTH: 201 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3015 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.07 TRANSPORTATION AND TREATMENT COST: $ 193
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB2 DOWNSTREAM MANHOLE: 3
LEAK NUMBER: 1 BOOK: 1 PAGE: 240
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 24522 GALLONS OF INFIL YEARLY
PIPE LENGTH: 170 FEET PIPE DIAMETER: 12 INCHES
PIPE DEPTH: 5 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 2550 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

PRIORITY NUMBER: 0.06 TRANSPORTATION AND TREATMENT COST: $ 55
MINI-SYSTEM: 5 UPSTREAM MANHOLE: CB2 DOWNSTREAM MANHOLE: 3
LEAK NUMBER: 2 BOOK: 1 PAGE: 240 SMOKE CLASS: 7 SMOKE INTENSITY: H
LEAK ENTRY: UPSTREAM MANHOLE LEAK ENTRY COVER: CURB OR SIDEWALK
LEAK TYPE: LEAKING MH WALL, BASE, OR CONE
LEAK RATE: 3968 GALLONS OF INFLO YEARLY
REHABILITATION COST: $ 800 % INFLO REMOVED: 70
METHOD OF REHABILITATION: CLEAN MH WALLS,PLUG LARGE CRACKS,
PLASTER+WATERPROOF

PRIORITY NUMBER: 0.02 TRANSPORTATION AND TREATMENT COST: $ 86
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 1 DOWNSTREAM MANHOLE: CB1
LEAK NUMBER: 1 BOOK: 1 PAGE: 243
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 10980 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 202 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 3030 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE

LOCKWOOD GREENE ENGINEERS INC. WYNNE ASSOCIATES INC
OAKRIDGE, TN. PRS511 MURFREESBORO, TN

FMPC FERNALD, OHIO
JOB NUMBER WYN756
MINI-SYSTEM 5 SUMMARY BY PRIORITY PAGE 7

PRIORITY NUMBER: 0.01 TRANSPORTATION AND TREATMENT COST: $ 30
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 1 DOWNSTREAM MANHOLE: CB1
LEAK NUMBER: 2 BOOK: 1 PAGE: 243
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 3050 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 202 FEET PIPE DIAMETER: 10 INCHES
PIPE DEPTH: 4 FEET PIPE MATERIAL: CONCRETE
REHABILITATION COST: $ 1650 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.01 TRANSPORTATION AND TREATMENT COST: $ 30
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 9 DOWNSTREAM MANHOLE: 10
LEAK NUMBER: 2 BOOK: 1 PAGE: 223
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: LINE LEAK(S)
LEAK RATE: 3050 GALLONS OF INFIL YEARLY
PROBABLE CAUSE OF LINE LEAK(S): CRACKED PIPE
PIPE LENGTH: 185 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 2700 % INFIL REMOVED: 50
METHOD OF REHABILITATION: POINT REPAIR OF MAIN LINE (UP TO 25 LF
REPLACEMENT)

PRIORITY NUMBER: 0.01 TRANSPORTATION AND TREATMENT COST: $ 74
MINI-SYSTEM: 5 UPSTREAM MANHOLE: 9 DOWNSTREAM MANHOLE: 10
LEAK NUMBER: 1 BOOK: 1 PAGE: 223
LEAK ENTRY: MUNICIPAL MAIN LINE LEAK ENTRY COVER: EASEMENT
LEAK TYPE: INFIL WEIR MEASUREMENT
LEAK RATE: 9394 GALLONS OF INFIL YEARLY
PIPE LENGTH: 185 FEET PIPE DIAMETER: 15 INCHES
PIPE DEPTH: 7 FEET PIPE MATERIAL: CLAY
REHABILITATION COST: $ 4810 % INFIL REMOVED: 40
METHOD OF REHABILITATION: AIR TEST AND CHEMICALLY GROUT MAIN LINE