

COPY

SEWER AND WATER SHARED SERVICES AGREEMENT

THIS AGREEMENT, made this 23rd day of October, 2018

BY AND BETWEEN

JACKSON TOWNSHIP MUNICIPAL UTILITIES AUTHORITY, a public body corporate organized and existing under the laws of the State of New Jersey, with offices at 135 Manhattan Street in the Township of Jackson, County of Ocean, and State of New Jersey 08527

(Hereinafter referred to as "Authority");

AND

MANCHESTER TOWNSHIP, a municipal corporation of the State of New Jersey, with offices located at 1 Colonial Drive in the Township of Manchester, County of Ocean, and State of New Jersey 08759

(Hereinafter referred to as "Manchester");

WITNESSETH:

WHEREAS, the Authority is a duly constituted corporate body politic created under the provisions of New Jersey Statute 40:14B et seq., and holds the exclusive right and franchise to provide Sewer and Water Service to the lands within its district; and

WHEREAS, Manchester is a municipal corporation and holds the exclusive right and franchise to provide Sewer and Water Service to the lands within its district; and

WHEREAS, the developer of the Miele Farms project located in Jackson Township (hereinafter referred to as "Developer") is proposing to construct an approximate 8,450 linear foot 12" gravity sewer main extension in Manchester from County Route 571 (near Brentwood Avenue) to County Route 547. Miele Farms, and the adjacent properties in Jackson Township, will then be served by an approximate 1,200 linear foot sewer force main which will discharge to a gravity manhole 1,140' from the County Route 547 and County Route 571 intersection in Manchester Township. The infrastructure improvements and the discharge manhole location are further illustrated in the Preliminary Engineer's Report for the Route 571 Sanitary Sewer Trunk System dated May 21, 2018 attached as Exhibit "A" and the Preliminary Plans – Sanitary Sewer System for Route 571/547 dated March 16, 2018 attached as Exhibit "B"; and

WHEREAS, the Developer is also proposing to extend 12" water mains from County Route 571 in Manchester and the intersection of Whitesville Road and County Route 547 in Jackson to the Jackson/Manchester border on Route 547 to provide the redundancy required by the Residential Site Improvement Standards at N.J.A.C. 5:21-5 et seq.. These water main extensions will include an interconnection chamber, located in Jackson Township, and a basic

hydraulic analysis of the Authority's and Manchester's water systems to determine if booster pumps are required for either system; and

WHEREAS, by effectuating these improvements, the Authority will be able to discharge up to 220,000 gallons per day (GPD) of sewage to Manchester in perpetuity, or until amended, and the Authority and Manchester will establish a water supply interconnection; and

WHEREAS, the Authority and Manchester would like to effectuate this work by the within Shared Services Agreement pursuant to N.J.S.A. 40A:65-1 et seq..

NOW, THEREFORE, in consideration of the sum of **ONE (\$1.00) DOLLAR** and other good and valuable consideration, receipt whereof is hereby acknowledged, and in further consideration of the mutual promises, agreements and covenants contained herein, the parties do mutually promise, covenant and agree as follows:

AS FOLLOWS:

1. The Developer will construct the above referenced sewer and water improvements to the standards of the Authority and/or Manchester depending upon the jurisdictional boundary and the Developer shall be required to go through the customary and typical approval process for the water and sewer improvements. The work shall comply with the appropriate Rules and Regulations of the Authority and/or Manchester including design standards, escrow, inspection, performance and maintenance bonding.
2. Typically, this jurisdictional boundary will be the Township border with the exception that the Authority will own the entire sewer force main in both Jackson and Manchester Townships.
3. Ownership of the 12" gravity sewer main extension, the water main extension, and water booster station, if necessary, located in Manchester shall pass to Manchester for operation, maintenance, repair and replacement upon acceptance by the Manchester Engineer and authorizing resolution by the Township Council. Ownership of the sewer force main, interconnection chamber, water main extension and water booster station, if necessary, located in Jackson shall pass to the Authority for operation, maintenance, repair and replacement (including the force main piping in the discharge manhole) upon acceptance by the Authority Engineer and authorizing resolution by the Board of Commissioners.
4. Manchester agrees to accept all of the metered wastewater flow delivered to it by the Authority but in no event shall Manchester be obligated to accept more than 220,000 GPD of actual wastewater flow on a peak monthly basis. If the metered flow exceeds 220,000 GPD, Manchester shall have the right to reassess the capacity in their sewer lines and such excess flow shall only be accepted by Manchester by way of a written amendment to this Agreement under such terms and conditions which are mutually agreed by Manchester and the Authority.
5. Issuance of Treatment Works Approval permits (hereinafter referred to as "TWAs") in Jackson Township will require the joint consent of the Authority and Manchester and Manchester shall have the right to not sign TWAs where the current plus projected flow will exceed 220,000 GPD on a peak monthly basis.

6. The billing meter for this discharge shall be located at the pump station in Jackson. In the event that the accuracy of the mag meter is outside of the 95%-105% range, it shall be calibrated, repaired or replaced at the Authority's sole cost and expense. Manchester, at its sole cost and expense, may have the meter inspected for proper calibration.

7. The potable water interconnection chamber shall be located in Jackson Township and the meter shall be owned and maintained by the Authority. In the event that the accuracy of the meter is outside of the 95%-105% range, it shall be calibrated, repaired or replaced at the Authority's sole cost and expense. Manchester, at its sole cost and expense, may have the meter inspected for proper calibration.

8. The Authority, in consideration of the obligations imposed in this Agreement, shall pay to Manchester, on a quarterly basis, an amount equal to the metered wastewater flow from Jackson Township by the then prevailing sewer disposal bulk rate imposed by the Ocean County Utilities Authority (hereinafter referred to as "OCUA"). The Authority shall also pay to Manchester, on a quarterly basis, an amount equal to the metered wastewater flow from Jackson by 60% of the difference in the then prevailing base sewer disposal rate for the Authority and the then prevailing sewer disposal bulk rate imposed OCUA. For illustration purposes, the Authority's base sewer disposal rate in 2018 is \$5.10 per thousand gallons and OCUA's bulk rate is \$3.96 per thousand gallons.

9. The Authority and Manchester shall pay the then prevailing rates for any emergency water purchased via the potable water interconnection. The Authority will, however, cap the rate for bulk water purchased to Manchester at the then current 2nd tier rate. In 2018, the Authority's second tier rate is \$3.35 per thousand gallons. There will be no minimum usage charge or meter charge.

10. The quantity of water available to the Authority or Manchester shall not be subject to any minimum or maximum limits and the quantity available will be determined by the supplying entity at the time of the emergency or bulk sale request and is subject to force majeure events. It remains the responsibility of the receiving entity to maintain adequate flow and pressure in their system and neither party is committing to a guaranteed supply.

11. The Authority and Manchester shall comply with all applicable laws and regulations regarding treatment and delivery of potable water established by the NJDEP, the USEPA and any successor government agencies or departments at the point of interconnection. The supplying entity shall not be responsible for non-compliance or water quality degradation beyond the point of interconnection. Both parties shall perform all required water quality tests and this testing shall be undertaken by a State of NJ certified laboratory.

12. The interconnection shall be jointly tested by the Authority and Manchester on an annual basis.

13. If a firm commitment on water supply is required, it shall be addressed via an amendment to this Agreement.

14. The Authority and Manchester will pay all invoices, which are not in dispute, within forty-five (45) days of presentation, or the statutory interest rate shall apply.

15. Manchester shall grant an easement, or similar device, to the Authority over the Township right-of-ways in which the sewer force main is located for the purpose of operating, maintaining, repairing and replacing this infrastructure.

16. This Agreement shall commence upon the formal acceptance of the infrastructure by both the Authority and Manchester. No sewer or water service has to be provided until the Authority and Manchester have accepted the respective infrastructure. The Agreement will continue in perpetuity or until amended.

17. Both municipal agencies agree to comply with all Federal, State and County requirements for potable water and sewage collection.

18. Both municipal agencies shall maintain adequate property damage and liability insurance to protect their respective interest and indemnify each other as to the actions of their respective employees and / or agents.

19. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, administrators, executors, successors and assigns.

20. This Agreement may be executed in any number of counterparts each of which shall be deemed an original, but all of which together shall be deemed to be one and the same instrument.

21. This Agreement may not be modified, amended or terminated except in writing and signed by each party hereto.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals on the date above first written.

WITNESS:

John Hultgren

JACKSON TOWNSHIP MUNICIPAL
UTILITIES AUTHORITY

David A. Harpell
David A. Harpell, Executive Director

WITNESS:

Sabrina J. Skelton

MANCHESTER TOWNSHIP

Kenneth T. Palmer
By: Mayor Kenneth T. Palmer

Preliminary Engineer's Report

for

**Route 571
Sanitary Sewer Trunk System
Jackson and Manchester Townships
Ocean County, New Jersey**

**Prepared by
Professional Design Services, L.L.C.
1245 Airport Road, Unit 1
Lakewood, New Jersey 08701
PDS Ref. No. 28008**

**William A. Stevens, P.E.
New Jersey License No. 39915**

**May 21, 2008
Revised May 18, 2009
Revised June 19, 2009
Revised March 19, 2018**

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- A Location Map
- B USGS Quadrangle Map

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- I Sewer Flow Study Readings
- II Sewer Flow Study Summary
- III Sewer System Flow Computation

1 INTRODUCTION

Jackson Township proposes to construct a sanitary sewer trunk system to serve the southwesterly section of Jackson Township, Ocean County, New Jersey. Exhibit "A" is a Location Map and Exhibit "B" is a USGS Quadrangle Map of the project location. The proposed trunk system will serve that portion of the central sewer service area located west of the Toms River within Jackson Township as well the area within Manchester Township along the Route 571 corridor.

The proposed trunk system will ultimately connect and discharge into the Manchester Township Department of Utilities Authority (MTDOU) system. There is an existing trunk sewer main located with Route 571 at the intersection of Brentwood Avenue which continues south along Route 571 between Richard Estates and Leisure Ridge to the existing OCUA Ridgeway Interceptor. The existing MTDOU system must be analyzed to verify that adequate capacity exists to accept the existing flows and all anticipated contributory flows from the contributory service area within Manchester Township and Jackson Township.

This report is intended to provide sufficient engineering details and analysis to allow for verification of existing system capacity and preparation of an inter-local agreement between the Jackson Township Municipal Utilities Authority (JTMUA) and MTDOU for construction and usage of the trunk sewer.

2 PROJECT DESCRIPTION

The Route 571/ 547 Trunk Sewer will provide service to various proposed development and existing projects within both Manchester and Jackson Townships that are located within the Central Sewer Service Area per the WQMP map adopted in 2013.

3 EXISTING SEWAGE FLOW

The existing trunk sewer extends along Route 571 to the intersection of Richard Drive and through Richard Estates to the OCUA's Ridgeway interceptor. The study area must encompass the entire contributory service area upstream of the connection to the OCUA interceptor. As a result, there are existing land uses connected along the existing trunk sewer which must be analyzed. The existing land uses are quite varied, including residential, office, retail and school, all of which may have different peak flow days and times. The influence from such varied land uses makes it difficult to predict or model flows using desk-top design theories and thus difficult to establish dry weather peak flow rates. The most accurate method to estimate existing sanitary flow is measurement by a wastewater flow meter.

3.1 Meter

An American Sigma Model 910 Area-Velocity Flow Meter was installed for temporary flow metering. These meters are designed to measure wastewater velocity and flow depth in sewer pipes that achieve design cleansing velocities.

This type of flow monitor senses velocity with a Doppler sensor that emits and receives 1 Megahertz frequency signals. The return frequency sensed from signals bouncing off various sewage particles, bubbles and discontinuities existing in the liquid are shifted from the emitted frequency. This shift is proportional to the liquid's velocity. The meter then determines average wastewater velocity by processing multiple frequency shifts from a representative cross-section of flow.

The flow meter was programmed to record wastewater levels and velocities at fifteen minute intervals and then calculate and record the flow rate by applying this data and the pipe diameter to the Manning equation. During installation and subsequent servicing, site conditions were carefully recorded and the actual flow depth was measured for meter calibration.

The meter was installed in the upstream pipe of an existing "straight-through" manhole located between Richard Estates and Leisure Village, West. The pipe was observed to be clean and the flow depth was physically measured when the flow meter was installed.

3.2 Meter Data Analysis

Metering occurred between Thursday, March 26, 2009 at 9:00 am until Monday,

April 20, 2009 at 8:30 am. The logged readings may be found in Appendix I and a Summary Chart in Appendix II. The metering period captures all uses in operation, notable in this case due to the presence of two (2) schools: an elementary and intermediate school. The metering period also occurred during a period of high seasonal groundwater levels and included rainfall events so as to allow the estimation of any infiltration into the sewer system.

An overall average daily flow rate of 0.197 million gallons per day (MGD) or 197,000 gallons per day (GPD) was monitored. An overall maximum flow rate of 0.413 MGD, or 413,000 GPD, was monitored.

In order to estimate the influence of rainfall events on the wastewater flow data, the daily rainfall data is listed in Appendix II as taken from the Lakehurst Naval Air Weather Station. Flow meter data from dry weather periods and wet weather periods are not substantially different infiltration is not present.

The Existing Peak Daily Flow as measured during the metering period is 0.413 MGD.

4 **PROPOSED SEWAGE FLOW ESTIMATE**

Table I, attached to this report estimates the average and peak daily flow from all existing and potential uses within the sewer contributory area:

<u>Township</u>	<u>ADF (MGP)</u>	<u>PDF(MGD)</u>
Jackson	0.23	0.46
Manchester	0.82	1.64
Total	1.05	2.10

5 **EXISTING GRAVITY SEWER MAIN CAPACITY**

The capacity of the existing 18" trunk sewer main located between Route 70 and the OCUA interceptor will be checked in accordance with the current Rules and Regulations of the New Jersey Department of Environmental Protection.

The existing trunk sewer was designed as an 18" pipe at a slope of 0.15%. As-Built information for the main is not fully available. The upstream-most portion near Route 70 has been As-Built surveyed by PDS and has a slope of 0.15%. The MTDOU has advised, however, that there is a pipe in the downstream portion near the flow metering point that has an As-Built slope of 0.13%. The pipe capacity will be determined at both pipe slopes.

The capacity of the existing trunk main is calculated as follows:

18" pipe

$$Q = \frac{1.486}{N} \times R^{2/3} \times S^{1/2} \times A$$

$$N = 0.01 \text{ PVC}$$

$$A = 1.76$$

$$R = .375$$

$$Q_{\text{Full}} = 4.39 \text{ CFS @ } 0.13\% \text{ Slope} = 2.83 \text{ MGD}$$

$$= 4.71 \text{ MGD @ } 0.15\% \text{ Slope} = 3.04 \text{ GPD}$$

Conveyance Capacity per NJAC 7:14A-1.2 is 80% of the depth of the pipe plus peak wet weather flow. Utilizing a "proportional velocity and discharge for circular sewers flow partially full chart" shows that at 80% depth the proportional pipe discharge is 100% of full capacity. The Manchester DOU requires an infiltration allowance of 500 gallons per day per inch per mile of upstream sewer of aged systems to determine wet weather flow.

The upstream sewer within Routes 571 and 547 will be 3.2 miles in length and 12" diameter.

500 Gallons

$$\text{Day} \times 12 \text{ inch} \times 3.2 \text{ mile} = 19,200 \text{ GPD or } 0.02 \text{ CFS}$$

The existing pipe capacity at the downstream portion of the existing MTDOU system is 3.06 MGD based upon a pipe slope of 0.15% and 2.85 MGD based on the 0.13% pipe slope.

PROPOSED GRAVITY SEWER MAIN CAPACITY

The gravity sanitary sewer main to be extended along Route 571 and 547 will be designed in accordance with the current Rules and Regulations of the New Jersey Department of Environmental Protection and all materials and methods of construction will be in accordance with the Rules and Regulations of the Manchester Township Department of Utilities.

The minimum pipe size and slope to be constructed within the project is calculated as follows:

Design Capacity = pipe flowing half full must exceed peak daily flow.

$$Q = \frac{1.486}{N} \times R^{2/3} \times S^{1/2} \times A$$

	PIPE	
	Route 571	Route 547
Pipe Size	12"	12"
Pipe Slope	0.20	0.20
Pipe Type	PVC	PVC
"N"	.010	.010
"A"	0.39	0.39
"R"	0.25	0.25
"Q" Capacity	0.65 MGD	0.65 MGD
Peak Daily Flow	0.42 MGD	0.19 MGD
Velocity		

7 SUMMARY

Existing Trunk Sewer

The Existing Trunk Sewer upstream of the connection to the OCUA Interceptor has an existing peak daily flow of 0.413 MGD

The Existing Trunk Sewer has a capacity of 2.85 MGD based on the worst-case pipe slope.

There is an available pipe capacity of 2.44 MGD

The estimated peak daily flow for future development of the contributory area is 2.10 MGD, including 0.23 MGD to service properties within Jackson Township.

The existing trunk sewer has adequate capacity to service upstream contributory service area, including the portion of the Central Sewer Service area located within Jackson Township.

Proposed Trunk Sewer

A 12" gravity trunk sewer is proposed to extend from the existing gravity system near Route 70 to the Route 547 intersection and then within Route 547 to Ridge Avenue. This trunk sewer will have adequate capacity for the estimated peak daily flows from the contributory sewer service area, including the contributory area in Jackson Township.

EXHIBITS

- A LOCATION MAP**
- B USGS QUADRANGLE MAP**
- C SEWER SERVICE AREA PLANS**

APPENDICES

- I FLOW STUDY READINGS**
- II FLOW STUDY SUMMARY**
- III SEWER SYSTEM FLOW COMPUTATION**

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
26/MAR/09	08:30	0.000	0.00	0.000
26/MAR/09	08:45	0.000	0.00	0.000
26/MAR/09	09:00	2.351	5.02	306.004
26/MAR/09	09:15	2.229	5.16	291.125
26/MAR/09	09:30	2.321	5.32	318.891
26/MAR/09	09:45	2.273	4.83	280.392
26/MAR/09	10:00	2.446	5.38	347.700
26/MAR/09	10:15	2.407	5.36	338.238
26/MAR/09	10:30	2.386	5.28	328.812
26/MAR/09	10:45	2.375	5.24	324.377
26/MAR/09	11:00	2.394	5.40	338.265
26/MAR/09	11:15	2.405	5.39	339.537
26/MAR/09	11:30	2.327	5.10	306.503
26/MAR/09	11:45	2.352	5.28	322.139
26/MAR/09	12:00	2.355	5.35	327.154
26/MAR/09	12:15	2.232	5.68	321.236
26/MAR/09	12:30	2.442	5.10	328.795
26/MAR/09	12:45	2.396	5.41	339.348
26/MAR/09	13:00	2.324	5.07	304.330
26/MAR/09	13:15	2.033	5.30	261.379
26/MAR/09	13:30	2.068	5.20	262.964
26/MAR/09	13:45	2.074	4.95	251.671
26/MAR/09	14:00	2.067	4.92	248.970
26/MAR/09	14:15	2.022	4.53	221.760
26/MAR/09	14:30	2.377	4.79	296.909
26/MAR/09	14:45	2.249	4.85	277.115
26/MAR/09	15:00	2.062	4.12	207.561
26/MAR/09	15:15	2.117	4.46	233.600
26/MAR/09	15:30	2.141	4.56	242.858
26/MAR/09	15:45	2.098	4.41	227.977
26/MAR/09	16:00	2.067	4.30	217.458
26/MAR/09	16:15	1.829	4.28	181.000
26/MAR/09	16:30	1.914	4.43	200.224
26/MAR/09	16:45	1.861	4.45	192.943
26/MAR/09	17:00	1.856	4.27	184.541
26/MAR/09	17:15	1.912	4.48	202.138
26/MAR/09	17:30	1.893	4.32	191.885
26/MAR/09	17:45	1.967	4.63	217.600
26/MAR/09	18:00	1.933	4.50	206.190
26/MAR/09	18:15	1.884	4.24	187.147
26/MAR/09	18:30	1.912	4.36	196.580
26/MAR/09	18:45	1.896	4.24	189.075
26/MAR/09	19:00	2.087	4.45	228.334
26/MAR/09	19:15	2.011	4.35	211.154
26/MAR/09	19:30	2.063	4.72	237.859
26/MAR/09	19:45	2.187	5.09	279.499
26/MAR/09	20:00	2.157	5.03	270.596
26/MAR/09	20:15	2.134	4.88	258.538
26/MAR/09	20:30	2.132	4.89	258.598
26/MAR/09	20:45	2.076	4.72	240.432
26/MAR/09	21:00	2.059	4.63	232.965
26/MAR/09	21:15	2.041	4.57	226.774
26/MAR/09	21:30	2.029	4.54	223.383

26/MAR/09	21:45	1.974	4.31	203.719
26/MAR/09	22:00	1.967	4.29	201.643
26/MAR/09	22:15	1.998	4.51	216.744
26/MAR/09	22:30	1.775	4.29	173.416
26/MAR/09	22:45	1.776	3.82	154.746
26/MAR/09	23:00	1.936	4.55	208.739
26/MAR/09	23:15	1.875	4.15	181.832
26/MAR/09	23:30	1.942	4.46	205.724
26/MAR/09	23:45	1.571	4.41	149.069
27/MAR/09	00:00	1.693	4.37	162.508

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Manchester Sewer Flow Study
Day Report - 26/MAR/09
Thursday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.000 08:30	0.00 08:30	0.000 08:30
Maximum:	2.446 10:00	5.68 12:15	347.700 10:00
Average:	2.027	4.59	239.503

Total Flow1: 226.330 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
27/MAR/09	00:15	1.754	4.38	174.020
27/MAR/09	00:30	1.676	3.90	144.870
27/MAR/09	00:45	1.617	3.43	121.012
27/MAR/09	01:00	1.603	3.15	109.513
27/MAR/09	01:15	1.633	3.36	120.269
27/MAR/09	01:30	1.343	3.04	81.526
27/MAR/09	01:45	1.498	3.13	98.643
27/MAR/09	02:00	1.088	2.39	46.969
27/MAR/09	02:15	1.512	3.04	96.910
27/MAR/09	02:30	1.206	1.68	38.537
27/MAR/09	02:45	1.103	1.50	30.080
27/MAR/09	03:00	1.210	2.24	51.474
27/MAR/09	03:15	0.921	1.35	20.754
27/MAR/09	03:30	0.809	1.03	13.053
27/MAR/09	03:45	0.944	2.45	38.968
27/MAR/09	04:00	0.811	1.38	17.564
27/MAR/09	04:15	0.783	1.06	12.788
27/MAR/09	04:30	1.220	2.08	48.420
27/MAR/09	04:45	1.173	2.17	47.578
27/MAR/09	05:00	0.686	1.24	12.295
27/MAR/09	05:15	0.633	0.94	8.253
27/MAR/09	05:30	0.000	0.67	0.000
27/MAR/09	05:45	1.281	2.13	53.194
27/MAR/09	06:00	1.130	1.48	30.756
27/MAR/09	06:15	0.784	1.70	20.490

27/MAR/09	06:30	0.780	1.02	12.204
27/MAR/09	06:45	1.508	2.60	82.581
27/MAR/09	07:00	1.008	1.68	29.477
27/MAR/09	07:15	0.903	1.14	16.990
27/MAR/09	07:30	1.489	2.87	89.650
27/MAR/09	07:45	1.548	2.89	95.649
27/MAR/09	08:00	1.584	2.88	98.567
27/MAR/09	08:15	1.587	2.87	98.621
27/MAR/09	08:30	1.871	4.50	196.801
27/MAR/09	08:45	2.161	4.55	245.221
27/MAR/09	09:00	2.318	5.18	309.584
27/MAR/09	09:15	2.359	5.32	326.330
27/MAR/09	09:30	2.352	5.14	313.623
27/MAR/09	09:45	2.441	5.46	351.976
27/MAR/09	10:00	2.204	5.30	294.606
27/MAR/09	10:15	2.436	5.71	366.611
27/MAR/09	10:30	2.411	5.48	346.556
27/MAR/09	10:45	2.270	5.09	294.808
27/MAR/09	11:00	2.325	5.39	323.500
27/MAR/09	11:15	2.317	5.22	311.613
27/MAR/09	11:30	2.364	5.34	328.350
27/MAR/09	11:45	2.148	5.30	283.677
27/MAR/09	12:00	2.203	5.30	294.018
27/MAR/09	12:15	2.336	5.48	330.946
27/MAR/09	12:30	2.268	5.21	301.355
27/MAR/09	12:45	2.318	5.31	317.545
27/MAR/09	13:00	2.245	5.10	290.843
27/MAR/09	13:15	1.878	5.10	223.918
27/MAR/09	13:30	2.426	4.75	303.178
27/MAR/09	13:45	2.050	4.55	227.493
27/MAR/09	14:00	2.066	4.78	241.330
27/MAR/09	14:15	2.064	4.81	242.780
27/MAR/09	14:30	2.075	4.76	241.780
27/MAR/09	14:45	2.022	4.35	213.043
27/MAR/09	15:00	1.992	4.20	201.014
27/MAR/09	15:15	2.035	4.39	217.160
27/MAR/09	15:30	2.244	4.39	250.533
27/MAR/09	15:45	1.794	4.39	180.342
27/MAR/09	16:00	1.809	4.32	179.865
27/MAR/09	16:15	1.804	4.04	167.294
27/MAR/09	16:30	1.777	3.99	161.657
27/MAR/09	16:45	1.750	4.03	159.744
27/MAR/09	17:00	1.791	4.22	173.016
27/MAR/09	17:15	2.117	4.61	241.414
27/MAR/09	17:30	2.026	4.43	217.636
27/MAR/09	17:45	1.960	4.07	190.401
27/MAR/09	18:00	1.996	4.57	219.512
27/MAR/09	18:15	1.966	4.35	204.414
27/MAR/09	18:30	1.927	4.10	186.851
27/MAR/09	18:45	1.925	4.19	190.729
27/MAR/09	19:00	1.949	4.39	203.858
27/MAR/09	19:15	1.953	4.48	208.397
27/MAR/09	19:30	2.267	4.80	277.567
27/MAR/09	19:45	2.165	4.42	238.994
27/MAR/09	20:00	2.061	4.22	212.344
27/MAR/09	20:15	2.130	4.61	243.251
27/MAR/09	20:30	2.067	4.23	213.691
27/MAR/09	20:45	2.098	4.51	233.191
27/MAR/09	21:00	2.068	4.44	224.470
27/MAR/09	21:15	2.060	4.39	220.774
27/MAR/09	21:30	2.089	4.46	228.861
27/MAR/09	21:45	1.867	4.48	195.266
27/MAR/09	22:00	1.905	4.53	203.401

27/MAR/09	22:15	1.878	4.44	195.293
27/MAR/09	22:30	1.904	4.38	196.316
27/MAR/09	22:45	1.841	4.10	174.973
27/MAR/09	23:00	1.906	4.34	194.807
27/MAR/09	23:15	1.855	4.16	179.450
27/MAR/09	23:30	1.745	3.37	133.002
27/MAR/09	23:45	1.742	3.32	130.424
28/MAR/09	00:00	1.728	3.20	124.325

Manchester Sewer Flow Study
Day Report - 27/MAR/09
Friday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.000 05:30	0.67 05:30	0.000 05:30
Maximum:	2.441 09:45	5.71 10:15	366.611 10:15
Average:	1.760	3.78	175.598

Total Flow1: 252.861 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
28/MAR/09	00:15	1.898	4.20	187.342
28/MAR/09	00:30	1.878	4.11	180.467
28/MAR/09	00:45	1.429	3.24	95.164
28/MAR/09	01:00	1.806	3.12	129.490
28/MAR/09	01:15	1.611	2.74	96.114
28/MAR/09	01:30	1.548	2.61	86.414
28/MAR/09	01:45	1.622	3.11	110.270
28/MAR/09	02:00	1.303	2.75	70.633
28/MAR/09	02:15	1.266	2.23	54.894
28/MAR/09	02:30	1.333	2.70	71.527
28/MAR/09	02:45	0.882	1.54	22.206
28/MAR/09	03:00	1.370	2.83	78.132
28/MAR/09	03:15	1.214	1.77	40.911
28/MAR/09	03:30	0.620	1.13	9.670
28/MAR/09	03:45	0.666	1.00	9.476
28/MAR/09	04:00	1.405	2.22	63.559
28/MAR/09	04:15	0.867	1.38	19.355
28/MAR/09	04:30	0.757	1.08	12.325
28/MAR/09	04:45	0.653	0.83	7.620
28/MAR/09	05:00	1.302	2.30	58.875
28/MAR/09	05:15	1.106	1.52	30.655
28/MAR/09	05:30	0.989	1.05	17.850
28/MAR/09	05:45	0.900	0.74	10.911
28/MAR/09	06:00	0.366	0.74	2.881
28/MAR/09	06:15	1.440	2.51	74.603
28/MAR/09	06:30	1.210	1.73	39.787
28/MAR/09	06:45	0.849	1.17	15.947

28/MAR/09	07:00	0.694	1.00	10.114
28/MAR/09	07:15	1.409	2.70	77.869
28/MAR/09	07:30	1.232	1.66	39.251
28/MAR/09	07:45	1.085	1.08	21.028
28/MAR/09	08:00	1.308	2.68	69.241
28/MAR/09	08:15	1.154	1.68	35.956
28/MAR/09	08:30	1.662	3.65	133.985
28/MAR/09	08:45	1.652	3.03	110.331
28/MAR/09	09:00	1.868	4.29	187.041
28/MAR/09	09:15	2.424	4.45	283.842
28/MAR/09	09:30	2.137	4.99	264.706
28/MAR/09	09:45	2.196	5.14	283.860
28/MAR/09	10:00	2.344	5.59	339.731
28/MAR/09	10:15	2.633	5.46	393.040
28/MAR/09	10:30	2.653	5.67	412.647
28/MAR/09	10:45	2.527	5.41	366.183
28/MAR/09	11:00	2.470	5.43	355.743
28/MAR/09	11:15	2.446	5.28	341.260
28/MAR/09	11:30	2.499	5.41	360.491
28/MAR/09	11:45	2.452	5.15	333.691
28/MAR/09	12:00	2.595	5.73	403.436
28/MAR/09	12:15	2.622	5.79	413.795
28/MAR/09	12:30	2.401	4.75	299.021
28/MAR/09	12:45	2.748	5.47	419.037
28/MAR/09	13:00	2.571	5.18	359.588
28/MAR/09	13:15	2.460	4.82	314.344
28/MAR/09	13:30	2.495	5.22	346.922
28/MAR/09	13:45	2.520	5.41	364.831
28/MAR/09	14:00	2.446	5.03	325.172
28/MAR/09	14:15	2.433	5.06	324.580
28/MAR/09	14:30	2.167	5.13	278.091
28/MAR/09	14:45	2.222	4.99	280.316
28/MAR/09	15:00	2.129	4.57	241.306
28/MAR/09	15:15	2.181	4.86	265.995
28/MAR/09	15:30	2.177	4.80	261.611
28/MAR/09	15:45	2.342	4.61	279.520
28/MAR/09	16:00	2.291	4.49	263.671
28/MAR/09	16:15	2.359	4.79	293.794
28/MAR/09	16:30	2.217	4.40	246.219
28/MAR/09	16:45	2.207	4.49	250.041
28/MAR/09	17:00	2.157	4.33	233.025
28/MAR/09	17:15	2.131	4.30	227.350
28/MAR/09	17:30	2.198	4.77	263.868
28/MAR/09	17:45	2.153	4.47	239.695
28/MAR/09	18:00	2.129	4.34	229.029
28/MAR/09	18:15	2.109	4.20	218.818
28/MAR/09	18:30	2.300	4.39	259.215
28/MAR/09	18:45	2.128	4.22	222.796
28/MAR/09	19:00	2.130	4.28	226.297
28/MAR/09	19:15	2.130	4.39	231.807
28/MAR/09	19:30	2.162	4.49	242.707
28/MAR/09	19:45	2.134	4.31	228.177
28/MAR/09	20:00	2.245	4.85	276.579
28/MAR/09	20:15	2.185	4.45	244.263
28/MAR/09	20:30	2.199	4.44	245.987
28/MAR/09	20:45	2.206	4.55	253.214
28/MAR/09	21:00	1.971	4.43	209.068
28/MAR/09	21:15	2.103	4.39	227.751
28/MAR/09	21:30	2.119	4.32	226.715
28/MAR/09	21:45	2.106	4.33	225.164
28/MAR/09	22:00	2.142	4.39	233.767
28/MAR/09	22:15	2.108	4.37	227.193
28/MAR/09	22:30	1.890	4.30	190.806

28/MAR/09	22:45	1.959	4.52	211.113
28/MAR/09	23:00	1.706	3.21	122.391
28/MAR/09	23:15	1.740	3.25	127.526
28/MAR/09	23:30	1.912	4.30	194.004
28/MAR/09	23:45	1.949	4.37	202.847
29/MAR/09	00:00	2.204	4.48	248.559

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Manchester Sewer Flow Study
Day Report - 28/MAR/09
Saturday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.366 06:00	0.74 05:45	2.881 06:00
Maximum:	2.748 12:45	5.79 12:15	419.037 12:45
Average:	1.868	3.76	195.189

Total Flow: 281.072 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
29/MAR/09	00:15	1.785	4.04	164.745
29/MAR/09	00:30	1.881	4.26	187.311
29/MAR/09	00:45	1.909	4.10	184.330
29/MAR/09	01:00	1.919	4.08	184.984
29/MAR/09	01:15	1.720	3.00	115.686
29/MAR/09	01:30	1.720	2.92	112.643
29/MAR/09	01:45	1.686	2.78	104.355
29/MAR/09	02:00	1.743	3.27	128.584
29/MAR/09	02:15	1.369	2.39	65.979
29/MAR/09	02:30	1.454	2.61	78.722
29/MAR/09	02:45	1.268	1.65	40.621
29/MAR/09	03:00	1.464	3.09	94.229
29/MAR/09	03:15	1.237	1.24	29.445
29/MAR/09	03:30	1.215	1.28	29.570
29/MAR/09	03:45	1.271	1.74	42.933
29/MAR/09	04:00	1.310	2.01	51.894
29/MAR/09	04:15	1.204	1.01	23.061
29/MAR/09	04:30	0.480	0.77	4.471
29/MAR/09	04:45	1.115	2.14	43.668
29/MAR/09	05:00	1.116	1.90	38.829
29/MAR/09	05:15	1.054	1.16	21.664
29/MAR/09	05:30	0.720	0.96	10.261
29/MAR/09	05:45	0.649	0.77	7.061
29/MAR/09	06:00	1.461	2.21	67.238
29/MAR/09	06:15	1.226	1.30	30.441
29/MAR/09	06:30	1.112	0.94	19.002
29/MAR/09	06:45	0.707	0.79	8.153
29/MAR/09	07:00	1.530	3.16	102.845
29/MAR/09	07:15	1.237	1.72	40.876

29/MAR/09	07:30	1.199	1.31	29.801
29/MAR/09	07:45	1.359	2.31	62.995
29/MAR/09	08:00	1.364	2.06	56.387
29/MAR/09	08:15	1.094	1.40	27.773
29/MAR/09	08:30	1.409	3.11	89.484
29/MAR/09	08:45	1.473	3.02	92.898
29/MAR/09	09:00	2.116	4.61	240.905
29/MAR/09	09:15	2.002	4.30	207.391
29/MAR/09	09:30	2.184	5.03	275.892
29/MAR/09	09:45	2.249	5.19	296.558
29/MAR/09	10:00	2.264	5.27	304.054
29/MAR/09	10:15	2.262	5.35	308.743
29/MAR/09	10:30	2.218	5.22	292.630
29/MAR/09	10:45	2.232	5.20	294.359
29/MAR/09	11:00	2.513	5.43	364.966
29/MAR/09	11:15	2.445	5.25	338.821
29/MAR/09	11:30	2.439	5.35	344.077
29/MAR/09	11:45	2.448	5.70	368.661
29/MAR/09	12:00	2.358	5.34	327.259
29/MAR/09	12:15	2.413	5.48	347.327
29/MAR/09	12:30	2.400	5.36	336.815
29/MAR/09	12:45	2.457	5.71	371.478
29/MAR/09	13:00	2.359	5.33	327.088
29/MAR/09	13:15	2.406	5.47	345.248
29/MAR/09	13:30	2.080	5.51	280.964
29/MAR/09	13:45	2.134	5.37	284.534
29/MAR/09	14:00	2.164	5.12	276.778
29/MAR/09	14:15	2.140	4.66	247.548
29/MAR/09	14:30	2.218	5.11	286.013
29/MAR/09	14:45	2.246	5.37	306.523
29/MAR/09	15:00	2.162	4.96	267.615
29/MAR/09	15:15	2.145	4.86	259.392
29/MAR/09	15:30	2.023	4.29	210.077
29/MAR/09	15:45	2.018	4.35	212.342
29/MAR/09	16:00	2.368	4.45	274.290
29/MAR/09	16:15	2.304	4.41	261.381
29/MAR/09	16:30	2.273	4.34	252.230
29/MAR/09	16:45	2.239	4.36	247.998
29/MAR/09	17:00	2.286	4.43	259.637
29/MAR/09	17:15	2.067	4.35	219.784
29/MAR/09	17:30	2.118	4.32	226.144
29/MAR/09	17:45	2.128	4.37	230.733
29/MAR/09	18:00	2.142	4.52	240.847
29/MAR/09	18:15	2.088	4.16	213.448
29/MAR/09	18:30	2.161	4.50	242.741
29/MAR/09	18:45	2.169	4.59	249.025
29/MAR/09	19:00	2.128	4.41	232.508
29/MAR/09	19:15	2.414	4.39	278.583
29/MAR/09	19:30	2.400	4.62	290.435
29/MAR/09	19:45	2.325	4.42	265.588
29/MAR/09	20:00	2.395	4.66	292.333
29/MAR/09	20:15	2.383	4.53	281.666
29/MAR/09	20:30	2.426	4.80	306.288
29/MAR/09	20:45	2.385	4.63	288.185
29/MAR/09	21:00	2.370	4.57	282.214
29/MAR/09	21:15	2.190	4.70	258.356
29/MAR/09	21:30	2.198	4.29	237.410
29/MAR/09	21:45	2.276	4.56	265.375
29/MAR/09	22:00	2.244	4.61	262.804
29/MAR/09	22:15	2.219	4.50	252.169
29/MAR/09	22:30	2.195	4.38	241.811
29/MAR/09	22:45	2.150	4.14	221.676
29/MAR/09	23:00	2.176	4.33	235.993

29/MAR/09	23:15	2.205	4.55	252.956
29/MAR/09	23:30	1.989	4.23	202.319
29/MAR/09	23:45	1.881	4.10	180.634
30/MAR/09	00:00	1.692	3.12	117.486

Manchester Sewer Flow Study
Day Report - 29/MAR/09
Sunday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.480 04:30	0.77 04:30	4.471 04:30
Maximum:	2.513 11:00	5.71 12:45	371.478 12:45
Average:	1.901	3.81	196.688

Total Flow1: 283.231 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
30/MAR/09	00:15	1.670	2.86	105.888
30/MAR/09	00:30	1.874	4.09	179.152
30/MAR/09	00:45	1.659	2.68	97.991
30/MAR/09	01:00	1.654	2.73	99.489
30/MAR/09	01:15	1.700	3.21	121.865
30/MAR/09	01:30	1.649	2.85	103.564
30/MAR/09	01:45	1.421	2.36	68.766
30/MAR/09	02:00	1.552	2.93	97.166
30/MAR/09	02:15	1.385	1.70	47.612
30/MAR/09	02:30	1.469	2.51	76.884
30/MAR/09	02:45	1.446	2.56	76.468
30/MAR/09	03:00	0.860	1.30	17.995
30/MAR/09	03:15	0.784	1.07	12.915
30/MAR/09	03:30	1.308	2.35	60.672
30/MAR/09	03:45	0.865	1.36	18.982
30/MAR/09	04:00	0.836	1.01	13.415
30/MAR/09	04:15	0.479	0.75	4.343
30/MAR/09	04:30	1.305	2.33	59.923
30/MAR/09	04:45	1.114	1.31	26.700
30/MAR/09	05:00	0.781	1.03	12.356
30/MAR/09	05:15	0.610	0.62	5.134
30/MAR/09	05:30	0.000	0.55	0.000
30/MAR/09	05:45	1.079	1.82	35.403
30/MAR/09	06:00	1.073	1.44	25.454
30/MAR/09	06:15	0.978	1.14	19.186
30/MAR/09	06:30	0.934	1.01	15.776
30/MAR/09	06:45	1.303	1.81	46.425
30/MAR/09	07:00	1.256	1.63	39.482
30/MAR/09	07:15	0.849	1.17	15.947
30/MAR/09	07:30	1.506	2.99	95.052
30/MAR/09	07:45	1.333	2.09	55.370

30/MAR/09	08:00	1.502	2.96	93.752
30/MAR/09	08:15	1.576	3.19	108.274
30/MAR/09	08:30	1.984	4.20	200.075
30/MAR/09	08:45	2.055	4.72	236.696
30/MAR/09	09:00	2.066	4.82	243.633
30/MAR/09	09:15	2.199	5.34	295.779
30/MAR/09	09:30	2.645	5.51	399.088
30/MAR/09	09:45	2.516	5.31	357.710
30/MAR/09	10:00	2.586	5.50	385.384
30/MAR/09	10:15	2.586	5.63	394.534
30/MAR/09	10:30	2.482	5.29	349.132
30/MAR/09	10:45	2.536	5.45	370.893
30/MAR/09	11:00	2.535	5.53	376.039
30/MAR/09	11:15	2.525	5.51	373.129
30/MAR/09	11:30	2.738	5.43	413.273
30/MAR/09	11:45	2.645	5.26	380.995
30/MAR/09	12:00	2.623	5.42	387.417
30/MAR/09	12:15	2.636	5.47	394.365
30/MAR/09	12:30	2.406	5.45	344.250
30/MAR/09	12:45	2.402	5.31	334.005
30/MAR/09	13:00	2.398	5.33	334.780
30/MAR/09	13:15	2.373	5.24	323.873
30/MAR/09	13:30	2.346	5.02	305.143
30/MAR/09	13:45	2.288	4.86	284.654
30/MAR/09	14:00	2.324	5.03	301.965
30/MAR/09	14:15	2.338	5.04	305.046
30/MAR/09	14:30	2.521	4.94	333.837
30/MAR/09	14:45	2.315	4.61	275.289
30/MAR/09	15:00	2.249	4.71	269.303
30/MAR/09	15:15	2.162	4.48	241.888
30/MAR/09	15:30	2.125	4.36	229.334
30/MAR/09	15:45	2.169	4.43	240.266
30/MAR/09	16:00	2.168	4.33	234.719
30/MAR/09	16:15	2.169	4.37	237.034
30/MAR/09	16:30	2.184	4.36	239.057
30/MAR/09	16:45	2.172	4.37	237.701
30/MAR/09	17:00	2.101	4.05	209.878
30/MAR/09	17:15	2.204	4.52	250.664
30/MAR/09	17:30	2.023	4.41	216.298
30/MAR/09	17:45	2.056	4.44	222.556
30/MAR/09	18:00	2.079	4.51	230.064
30/MAR/09	18:15	2.016	4.30	209.837
30/MAR/09	18:30	2.055	4.41	220.885
30/MAR/09	18:45	2.010	4.04	195.873
30/MAR/09	19:00	2.163	4.84	261.419
30/MAR/09	19:15	2.206	4.98	276.790
30/MAR/09	19:30	2.232	5.18	292.930
30/MAR/09	19:45	2.242	5.26	299.478
30/MAR/09	20:00	2.337	4.86	294.086
30/MAR/09	20:15	2.188	4.83	265.133
30/MAR/09	20:30	2.184	5.03	275.612
30/MAR/09	20:45	2.110	4.72	245.813
30/MAR/09	21:00	2.081	4.48	228.980
30/MAR/09	21:15	2.047	4.29	213.920
30/MAR/09	21:30	2.123	4.60	241.905
30/MAR/09	21:45	2.127	4.59	242.058
30/MAR/09	22:00	2.118	4.55	238.296
30/MAR/09	22:15	2.065	4.35	219.748
30/MAR/09	22:30	2.077	4.49	228.635
30/MAR/09	22:45	1.882	4.56	201.011
30/MAR/09	23:00	1.946	4.46	206.295
30/MAR/09	23:15	1.912	4.32	195.119
30/MAR/09	23:30	1.913	4.28	193.098

30/MAR/09	23:45	1.993	4.55	218.246
31/MAR/09	00:00	1.937	4.25	195.443

Manchester Sewer Flow Study
Day Report - 30/MAR/09
Monday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.000 05:30	0.55 05:30	0.000 05:30
Maximum:	2.738 11:30	5.63 10:15	413.273 11:30
Average:	1.882	3.84	200.810
Total Flow1:	289.166 (gal) x1000		

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
31/MAR/09	00:15	1.840	3.80	162.017
31/MAR/09	00:30	1.908	4.18	187.833
31/MAR/09	00:45	1.870	3.99	174.260
31/MAR/09	01:00	1.743	3.24	127.643
31/MAR/09	01:15	1.725	3.10	120.139
31/MAR/09	01:30	2.003	3.31	159.676
31/MAR/09	01:45	1.450	2.59	77.631
31/MAR/09	02:00	1.573	3.44	116.540
31/MAR/09	02:15	1.313	1.91	49.516
31/MAR/09	02:30	1.452	3.01	90.723
31/MAR/09	02:45	1.309	1.97	50.865
31/MAR/09	03:00	0.797	1.23	15.193
31/MAR/09	03:15	0.778	0.99	11.805
31/MAR/09	03:30	1.293	2.22	56.345
31/MAR/09	03:45	1.077	1.21	23.445
31/MAR/09	04:00	0.711	0.85	8.854
31/MAR/09	04:15	0.593	0.77	6.141
31/MAR/09	04:30	1.226	2.14	50.109
31/MAR/09	04:45	1.027	1.28	23.126
31/MAR/09	05:00	0.953	1.07	17.310
31/MAR/09	05:15	0.866	0.65	9.116
31/MAR/09	05:30	1.014	1.95	34.432
31/MAR/09	05:45	1.003	1.90	33.008
31/MAR/09	06:00	0.909	1.02	15.295
31/MAR/09	06:15	0.878	0.92	13.134
31/MAR/09	06:30	1.448	2.57	76.949
31/MAR/09	06:45	1.245	2.05	49.162
31/MAR/09	07:00	1.084	1.29	25.187
31/MAR/09	07:15	1.216	2.05	47.408
31/MAR/09	07:30	1.279	2.48	61.878
31/MAR/09	07:45	1.677	3.39	126.007
31/MAR/09	08:00	1.589	2.79	95.730
31/MAR/09	08:15	1.844	4.16	177.793

31/MAR/09	08:30	1.983	4.64	220.908
31/MAR/09	08:45	2.079	5.14	262.257
31/MAR/09	09:00	2.091	5.13	263.489
31/MAR/09	09:15	2.128	5.25	277.115
31/MAR/09	09:30	2.047	4.79	238.822
31/MAR/09	09:45	2.401	5.43	341.629
31/MAR/09	10:00	2.439	5.72	368.107
31/MAR/09	10:15	2.362	5.51	338.281
31/MAR/09	10:30	2.460	5.63	366.866
31/MAR/09	10:45	2.404	5.39	340.042
31/MAR/09	11:00	2.439	5.48	352.463
31/MAR/09	11:15	2.452	5.62	364.414
31/MAR/09	11:30	2.575	5.20	362.078
31/MAR/09	11:45	2.261	5.31	305.957
31/MAR/09	12:00	2.151	5.32	284.921
31/MAR/09	12:15	2.209	5.24	291.994
31/MAR/09	12:30	2.217	5.10	285.630
31/MAR/09	12:45	2.438	5.08	326.788
31/MAR/09	13:00	1.931	4.81	220.008
31/MAR/09	13:15	2.570	5.17	359.362
31/MAR/09	13:30	2.087	5.02	257.403
31/MAR/09	13:45	2.064	4.63	233.239
31/MAR/09	14:00	2.074	4.77	242.509
31/MAR/09	14:15	2.042	4.51	224.093
31/MAR/09	14:30	1.880	3.81	167.489
31/MAR/09	14:45	2.001	4.45	214.470
31/MAR/09	15:00	1.972	4.31	203.503
31/MAR/09	15:15	1.988	4.38	208.978
31/MAR/09	15:30	1.981	4.40	209.036
31/MAR/09	15:45	2.038	4.70	232.973
31/MAR/09	16:00	1.942	4.17	192.264
31/MAR/09	16:15	1.925	4.17	189.925
31/MAR/09	16:30	1.804	4.45	184.088
31/MAR/09	16:45	1.840	4.18	178.308
31/MAR/09	17:00	1.776	4.30	173.885
31/MAR/09	17:15	1.775	4.22	170.426
31/MAR/09	17:30	1.715	3.83	147.183
31/MAR/09	17:45	1.952	4.02	186.962
31/MAR/09	18:00	1.936	4.40	202.302
31/MAR/09	18:15	1.982	4.69	222.724
31/MAR/09	18:30	1.879	4.25	186.816
31/MAR/09	18:45	1.857	3.99	172.560
31/MAR/09	19:00	1.679	4.38	163.439
31/MAR/09	19:15	2.157	4.22	227.280
31/MAR/09	19:30	2.131	4.82	254.870
31/MAR/09	19:45	2.143	5.19	276.662
31/MAR/09	20:00	2.504	5.13	343.039
31/MAR/09	20:15	1.959	4.95	231.093
31/MAR/09	20:30	2.417	4.98	316.572
31/MAR/09	20:45	2.332	4.84	292.037
31/MAR/09	21:00	2.339	4.97	300.759
31/MAR/09	21:15	2.205	4.63	257.034
31/MAR/09	21:30	2.196	4.72	260.860
31/MAR/09	21:45	2.079	4.16	211.891
31/MAR/09	22:00	2.158	4.57	246.208
31/MAR/09	22:15	2.099	4.33	223.903
31/MAR/09	22:30	2.068	4.19	211.893
31/MAR/09	22:45	2.145	4.55	242.605
31/MAR/09	23:00	1.694	3.84	144.764
31/MAR/09	23:15	1.729	4.04	156.983
31/MAR/09	23:30	1.865	4.47	194.538
31/MAR/09	23:45	1.805	4.22	175.016
01/APR/09	00:00	1.877	4.59	201.626

Manchester Sewer Flow Study
Day Report - 31/MAR/09
Tuesday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.593 04:15	0.65 05:15	6.141 04:15
Maximum:	2.575 11:30	5.72 10:00	368.107 10:00
Average:	1.817	3.85	185.413

Total Flow1: 266.994 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
01/APR/09	00:15	1.894	4.58	203.607
01/APR/09	00:30	1.877	4.49	197.234
01/APR/09	00:45	1.842	4.24	180.876
01/APR/09	01:00	1.715	3.51	134.826
01/APR/09	01:15	1.889	4.55	201.471
01/APR/09	01:30	1.622	2.86	101.413
01/APR/09	01:45	1.580	2.68	91.228
01/APR/09	02:00	1.322	1.99	52.066
01/APR/09	02:15	1.453	2.82	85.006
01/APR/09	02:30	0.991	1.51	25.810
01/APR/09	02:45	1.080	1.55	30.229
01/APR/09	03:00	1.124	1.52	31.355
01/APR/09	03:15	1.009	1.06	18.651
01/APR/09	03:30	0.541	0.84	5.845
01/APR/09	03:45	1.264	2.45	60.070
01/APR/09	04:00	1.061	1.35	25.496
01/APR/09	04:15	0.652	0.82	7.526
01/APR/09	04:30	0.610	1.00	8.298
01/APR/09	04:45	1.157	2.02	43.474
01/APR/09	05:00	1.045	1.16	21.505
01/APR/09	05:15	0.976	1.12	18.746
01/APR/09	05:30	0.844	0.00	0.000
01/APR/09	05:45	0.572	0.46	3.437
01/APR/09	06:00	1.130	1.77	36.720
01/APR/09	06:15	1.025	1.26	22.708
01/APR/09	06:30	0.969	1.04	17.145
01/APR/09	06:45	1.135	2.20	46.010
01/APR/09	07:00	1.068	1.72	32.870
01/APR/09	07:15	1.034	1.46	26.612
01/APR/09	07:30	1.504	2.98	94.648
01/APR/09	07:45	1.468	2.50	76.521
01/APR/09	08:00	1.594	3.34	115.284
01/APR/09	08:15	1.770	4.26	171.614
01/APR/09	08:30	1.785	4.16	169.556
01/APR/09	08:45	1.968	4.99	234.655

01/APR/09	09:00	2.046	5.35	266.473
01/APR/09	09:15	2.353	5.21	318.482
01/APR/09	09:30	2.454	5.66	367.824
01/APR/09	09:45	2.360	5.58	342.608
01/APR/09	10:00	2.277	5.18	301.891
01/APR/09	10:15	2.350	5.45	332.578
01/APR/09	10:30	2.587	5.51	385.977
01/APR/09	10:45	2.488	5.44	360.616
01/APR/09	11:00	2.374	5.22	323.339
01/APR/09	11:15	2.510	5.60	375.867
01/APR/09	11:30	2.399	5.06	317.626
01/APR/09	11:45	2.439	5.31	341.524
01/APR/09	12:00	2.414	5.31	336.452
01/APR/09	12:15	2.185	5.47	300.070
01/APR/09	12:30	2.219	5.11	286.589
01/APR/09	12:45	2.291	5.27	309.825
01/APR/09	13:00	2.241	5.21	296.599
01/APR/09	13:15	2.237	5.30	300.922
01/APR/09	13:30	2.187	5.14	281.901
01/APR/09	13:45	2.141	5.05	268.709
01/APR/09	14:00	2.106	4.94	256.787
01/APR/09	14:15	1.964	4.97	232.993
01/APR/09	14:30	1.928	4.79	218.898
01/APR/09	14:45	1.909	4.51	202.692
01/APR/09	15:00	1.928	4.65	212.397
01/APR/09	15:15	1.643	4.49	161.920
01/APR/09	15:30	1.980	4.49	213.001
01/APR/09	15:45	1.946	4.45	206.144
01/APR/09	16:00	1.935	4.44	203.935
01/APR/09	16:15	1.936	4.40	202.153
01/APR/09	16:30	1.933	4.35	199.436
01/APR/09	16:45	1.965	4.55	213.591
01/APR/09	17:00	1.899	4.27	190.597
01/APR/09	17:15	1.882	4.30	189.622
01/APR/09	17:30	1.909	4.40	197.919
01/APR/09	17:45	1.907	4.43	199.042
01/APR/09	18:00	2.156	4.22	226.789
01/APR/09	18:15	2.100	4.52	233.854
01/APR/09	18:30	2.066	4.14	208.869
01/APR/09	18:45	2.147	4.90	261.907
01/APR/09	19:00	1.889	4.60	203.703
01/APR/09	19:15	1.975	4.46	210.758
01/APR/09	19:30	2.005	4.61	223.101
01/APR/09	19:45	2.082	5.00	255.364
01/APR/09	20:00	2.090	5.03	258.561
01/APR/09	20:15	2.047	4.87	242.771
01/APR/09	20:30	2.010	4.68	227.188
01/APR/09	20:45	1.911	4.19	188.831
01/APR/09	21:00	2.220	4.56	256.116
01/APR/09	21:15	2.076	4.40	223.628
01/APR/09	21:30	2.051	4.66	232.777
01/APR/09	21:45	2.006	4.47	216.349
01/APR/09	22:00	1.976	4.34	205.600
01/APR/09	22:15	1.971	4.43	209.068
01/APR/09	22:30	1.746	4.44	175.171
01/APR/09	22:45	1.747	4.14	163.445
01/APR/09	23:00	1.812	4.18	174.385
01/APR/09	23:15	1.648	3.29	119.296
01/APR/09	23:30	1.755	3.80	150.995
01/APR/09	23:45	1.852	4.36	187.485
02/APR/09	00:00	1.681	3.25	121.401

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Marchester Sewer Flow Study

Day Report - 01/APR/09
Wednesday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.541 03:30	0.00 05:30	0.000 05:30
Maximum:	2.587 10:30	5.66 09:30	385.977 10:30
Average:	1.780	3.84	182.155

Total Flow1: 262.304 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
02/APR/09	00:15	1.450	3.73	112.001
02/APR/09	00:30	1.664	4.15	152.449
02/APR/09	00:45	1.751	4.37	173.149
02/APR/09	01:00	1.502	2.77	87.594
02/APR/09	01:15	1.559	3.13	104.376
02/APR/09	01:30	1.576	3.16	107.181
02/APR/09	01:45	1.227	2.61	61.161
02/APR/09	02:00	1.376	2.87	79.748
02/APR/09	02:15	1.228	1.81	42.469
02/APR/09	02:30	1.259	2.05	50.048
02/APR/09	02:45	1.286	2.26	56.800
02/APR/09	03:00	0.863	1.34	18.612
02/APR/09	03:15	0.987	1.47	24.923
02/APR/09	03:30	1.037	1.78	32.477
02/APR/09	03:45	0.980	1.38	23.242
02/APR/09	04:00	0.728	1.07	11.547
02/APR/09	04:15	1.331	2.53	67.016
02/APR/09	04:30	1.070	1.45	27.760
02/APR/09	04:45	0.972	1.08	17.913
02/APR/09	05:00	0.972	1.45	24.137
02/APR/09	05:15	1.059	2.05	38.773
02/APR/09	05:30	0.959	1.25	20.432
02/APR/09	05:45	0.921	0.97	14.868
02/APR/09	06:00	1.368	2.82	77.584
02/APR/09	06:15	1.149	1.95	41.636
02/APR/09	06:30	1.066	1.50	28.668
02/APR/09	06:45	1.288	2.95	74.441
02/APR/09	07:00	1.217	2.25	52.289
02/APR/09	07:15	1.135	1.54	32.266
02/APR/09	07:30	1.319	2.87	74.787
02/APR/09	07:45	1.315	2.73	71.027
02/APR/09	08:00	1.336	2.85	75.993
02/APR/09	08:15	1.814	4.50	187.960
02/APR/09	08:30	1.922	4.76	216.533
02/APR/09	08:45	1.971	4.91	231.445
02/APR/09	09:00	1.997	5.13	246.536
02/APR/09	09:15	2.263	5.32	306.763

02/APR/09	09:30	2.163	5.24	283.266
02/APR/09	09:45	2.224	5.39	303.330
02/APR/09	10:00	2.243	5.42	308.463
02/APR/09	10:15	2.269	5.50	318.489
02/APR/09	10:30	2.277	5.51	320.789
02/APR/09	10:45	2.325	5.70	342.057
02/APR/09	11:00	2.254	5.31	304.568
02/APR/09	11:15	2.347	5.66	344.203
02/APR/09	11:30	2.328	5.58	335.612
02/APR/09	11:45	2.138	5.51	292.742
02/APR/09	12:00	2.186	5.48	300.469
02/APR/09	12:15	2.189	5.32	292.410
02/APR/09	12:30	2.189	5.49	301.968
02/APR/09	12:45	2.132	5.23	276.673
02/APR/09	13:00	2.103	5.18	268.594
02/APR/09	13:15	2.055	4.94	247.867
02/APR/09	13:30	2.097	5.20	268.583
02/APR/09	13:45	2.095	5.20	268.291
02/APR/09	14:00	2.042	4.97	246.988
02/APR/09	14:15	1.987	4.75	226.407
02/APR/09	14:30	2.019	4.95	241.803
02/APR/09	14:45	2.013	4.93	239.960
02/APR/09	15:00	1.967	4.67	219.441
02/APR/09	15:15	1.897	4.35	193.766
02/APR/09	15:30	1.721	4.30	166.300
02/APR/09	15:45	1.869	4.49	196.069
02/APR/09	16:00	1.842	4.14	176.974
02/APR/09	16:15	1.871	4.43	193.490
02/APR/09	16:30	1.806	4.21	174.742
02/APR/09	16:45	1.837	4.52	192.187
02/APR/09	17:00	1.790	4.24	173.784
02/APR/09	17:15	1.838	4.40	187.387
02/APR/09	17:30	1.816	4.35	181.848
02/APR/09	17:45	1.907	4.77	214.120
02/APR/09	18:00	1.871	4.58	200.072
02/APR/09	18:15	1.826	4.26	179.467
02/APR/09	18:30	1.900	4.61	205.820
02/APR/09	18:45	2.033	4.47	220.569
02/APR/09	19:00	1.872	4.36	190.637
02/APR/09	19:15	1.943	4.68	216.022
02/APR/09	19:30	1.973	4.87	230.093
02/APR/09	19:45	1.944	4.76	220.102
02/APR/09	20:00	1.913	4.63	208.811
02/APR/09	20:15	1.895	4.63	206.118
02/APR/09	20:30	1.923	4.73	215.340
02/APR/09	20:45	2.130	4.68	246.979
02/APR/09	21:00	2.040	4.51	223.530
02/APR/09	21:15	2.014	4.47	217.280
02/APR/09	21:30	1.994	4.34	208.075
02/APR/09	21:45	2.047	4.42	220.229
02/APR/09	22:00	2.040	4.36	216.124
02/APR/09	22:15	2.065	4.47	225.452
02/APR/09	22:30	1.817	4.22	176.480
02/APR/09	22:45	1.838	4.33	184.128
02/APR/09	23:00	1.821	4.03	169.260
02/APR/09	23:15	1.861	4.30	186.299
02/APR/09	23:30	1.868	4.25	185.106
02/APR/09	23:45	1.861	4.35	188.595
03/APR/09	00:00	1.768	3.85	154.753

 Manchester Sewer Flow Study
 Day Report - 02/APR/09
 Thursday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.728 04:00	0.97 05:45	11.547 04:00
Maximum:	2.347 11:15	5.70 10:45	344.203 11:15
Average:	1.740	3.93	174.642

Total Flow1: 251.484 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
03/APR/09	00:15	1.766	3.97	159.195
03/APR/09	00:30	1.806	3.13	129.661
03/APR/09	00:45	1.580	3.83	130.444
03/APR/09	01:00	1.678	4.22	157.328
03/APR/09	01:15	1.765	4.54	182.148
03/APR/09	01:30	1.500	2.65	83.552
03/APR/09	01:45	1.581	3.20	109.199
03/APR/09	02:00	1.117	1.64	33.462
03/APR/09	02:15	1.429	3.24	95.252
03/APR/09	02:30	1.221	1.92	44.726
03/APR/09	02:45	1.078	1.22	23.689
03/APR/09	03:00	1.182	2.33	51.800
03/APR/09	03:15	1.055	1.38	25.975
03/APR/09	03:30	0.611	1.02	8.467
03/APR/09	03:45	0.614	1.05	8.858
03/APR/09	04:00	1.101	2.03	40.534
03/APR/09	04:15	0.999	1.29	22.293
03/APR/09	04:30	0.663	0.96	9.002
03/APR/09	04:45	0.669	1.04	9.925
03/APR/09	05:00	1.247	1.81	43.433
03/APR/09	05:15	1.066	1.40	26.586
03/APR/09	05:30	0.949	1.02	16.383
03/APR/09	05:45	0.456	0.40	2.150
03/APR/09	06:00	0.450	0.74	3.905
03/APR/09	06:15	1.420	2.35	68.388
03/APR/09	06:30	0.981	1.39	23.402
03/APR/09	06:45	0.840	1.07	14.301
03/APR/09	07:00	1.091	2.71	53.512
03/APR/09	07:15	0.996	1.70	29.278
03/APR/09	07:30	1.464	2.69	82.085
03/APR/09	07:45	1.304	2.32	59.584
03/APR/09	08:00	1.404	2.93	84.004
03/APR/09	08:15	1.848	3.75	160.735
03/APR/09	08:30	1.667	4.61	169.980
03/APR/09	08:45	1.855	4.99	215.077
03/APR/09	09:00	1.891	5.16	228.727
03/APR/09	09:15	1.917	5.15	233.072
03/APR/09	09:30	1.865	4.93	214.193
03/APR/09	09:45	2.135	5.25	278.177

03/APR/09	10:00	2.175	5.55	302.287
03/APR/09	10:15	2.221	5.46	306.716
03/APR/09	10:30	2.285	5.67	331.733
03/APR/09	10:45	2.323	5.69	340.980
03/APR/09	11:00	2.255	5.45	312.773
03/APR/09	11:15	2.264	5.39	311.269
03/APR/09	11:30	2.521	5.46	368.860
03/APR/09	11:45	2.584	5.49	384.554
03/APR/09	12:00	2.573	5.53	384.633
03/APR/09	12:15	2.609	5.35	380.086
03/APR/09	12:30	2.346	5.69	345.809
03/APR/09	12:45	2.205	5.04	280.210
03/APR/09	13:00	2.302	5.49	324.797
03/APR/09	13:15	2.226	5.27	297.048
03/APR/09	13:30	2.208	5.17	287.706
03/APR/09	13:45	2.233	5.18	292.877
03/APR/09	14:00	2.188	4.88	268.270
03/APR/09	14:15	2.265	5.33	307.874
03/APR/09	14:30	2.035	5.04	249.041
03/APR/09	14:45	2.081	4.86	247.925
03/APR/09	15:00	2.109	5.03	261.963
03/APR/09	15:15	2.070	4.87	246.508
03/APR/09	15:30	2.020	4.58	223.710
03/APR/09	15:45	2.042	4.71	233.869
03/APR/09	16:00	2.212	4.52	252.406
03/APR/09	16:15	2.121	4.63	243.032
03/APR/09	16:30	2.060	4.41	222.035
03/APR/09	16:45	2.041	4.13	204.798
03/APR/09	17:00	2.072	4.44	225.156
03/APR/09	17:15	2.076	4.44	226.022
03/APR/09	17:30	2.030	4.28	210.585
03/APR/09	17:45	2.027	4.32	212.538
03/APR/09	18:00	2.049	4.38	218.624
03/APR/09	18:15	2.077	4.51	229.656
03/APR/09	18:30	2.073	4.51	229.020
03/APR/09	18:45	2.082	4.55	232.328
03/APR/09	19:00	2.094	4.66	240.068
03/APR/09	19:15	1.866	4.47	194.684
03/APR/09	19:30	2.034	5.04	248.693
03/APR/09	19:45	2.045	4.82	239.810
03/APR/09	20:00	2.126	5.07	266.942
03/APR/09	20:15	2.109	4.96	258.491
03/APR/09	20:30	2.150	5.18	277.682
03/APR/09	20:45	2.043	4.68	232.861
03/APR/09	21:00	2.000	4.44	213.768
03/APR/09	21:15	1.998	4.34	208.766
03/APR/09	21:30	2.052	4.58	228.847
03/APR/09	21:45	2.037	4.46	220.584
03/APR/09	22:00	2.059	4.54	228.384
03/APR/09	22:15	1.990	4.26	203.827
03/APR/09	22:30	1.981	4.17	198.070
03/APR/09	22:45	2.049	4.49	224.268
03/APR/09	23:00	2.035	4.36	215.160
03/APR/09	23:15	1.682	3.77	140.838
03/APR/09	23:30	1.802	3.97	164.264
03/APR/09	23:45	1.943	4.58	211.504
04/APR/09	00:00	1.858	4.05	175.380

 Manchester Sewer Flow Study
 Day Report - 03/APR/09
 Friday

Site Id: 00032009
 Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.450 06:00	0.40 05:45	2.150 05:45
Maximum:	2.609 12:15	5.69 10:45	384.633 12:00
Average:	1.784	3.91	186.699

Total Flow1: 268.846 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
04/APR/09	00:15	1.890	4.12	182.889
04/APR/09	00:30	1.945	4.40	203.365
04/APR/09	00:45	1.752	3.30	130.762
04/APR/09	01:00	1.561	3.36	112.504
04/APR/09	01:15	1.706	4.22	161.223
04/APR/09	01:30	1.542	2.99	98.194
04/APR/09	01:45	1.529	2.76	89.449
04/APR/09	02:00	1.529	2.67	86.811
04/APR/09	02:15	1.501	2.54	80.396
04/APR/09	02:30	1.012	1.72	30.269
04/APR/09	02:45	1.499	2.94	92.772
04/APR/09	03:00	1.289	1.67	42.202
04/APR/09	03:15	0.849	1.17	15.899
04/APR/09	03:30	1.474	2.77	85.101
04/APR/09	03:45	1.203	1.66	37.794
04/APR/09	04:00	1.071	1.14	21.891
04/APR/09	04:15	0.435	0.00	0.000
04/APR/09	04:30	1.287	2.17	54.710
04/APR/09	04:45	1.072	1.47	28.284
04/APR/09	05:00	0.960	1.16	18.942
04/APR/09	05:15	0.534	0.74	5.064
04/APR/09	05:30	0.407	0.00	0.000
04/APR/09	05:45	1.019	1.79	31.836
04/APR/09	06:00	0.933	1.17	18.250
04/APR/09	06:15	0.866	0.92	12.906
04/APR/09	06:30	0.800	0.72	8.980
04/APR/09	06:45	0.584	0.64	5.026
04/APR/09	07:00	1.320	2.45	64.136
04/APR/09	07:15	1.055	1.28	23.963
04/APR/09	07:30	0.977	1.13	18.899
04/APR/09	07:45	1.445	2.54	75.950
04/APR/09	08:00	1.345	2.19	58.867
04/APR/09	08:15	1.326	1.85	48.532
04/APR/09	08:30	1.555	3.32	110.617
04/APR/09	08:45	2.125	4.36	229.252
04/APR/09	09:00	2.031	4.15	204.701
04/APR/09	09:15	2.181	5.02	274.494
04/APR/09	09:30	2.301	5.42	320.555
04/APR/09	09:45	2.358	5.59	342.470
04/APR/09	10:00	2.907	5.43	450.422
04/APR/09	10:15	2.498	5.61	373.734

04/APR/09	10:30	2.552	5.60	385.215
04/APR/09	10:45	2.556	5.53	381.269
04/APR/09	11:00	2.575	5.64	392.981
04/APR/09	11:15	2.621	5.76	411.367
04/APR/09	11:30	2.581	5.60	391.524
04/APR/09	11:45	2.503	5.12	342.385
04/APR/09	12:00	2.301	5.49	324.586
04/APR/09	12:15	2.292	5.45	320.191
04/APR/09	12:30	2.399	5.59	351.019
04/APR/09	12:45	2.754	5.50	422.320
04/APR/09	13:00	2.213	5.08	283.720
04/APR/09	13:15	2.289	5.43	318.839
04/APR/09	13:30	2.280	5.22	304.779
04/APR/09	13:45	2.276	5.24	305.154
04/APR/09	14:00	2.271	5.09	295.200
04/APR/09	14:15	2.281	5.27	307.673
04/APR/09	14:30	2.266	5.22	301.770
04/APR/09	14:45	2.231	5.14	290.234
04/APR/09	15:00	2.185	4.85	265.908
04/APR/09	15:15	2.177	4.86	265.025
04/APR/09	15:30	2.138	4.74	251.991
04/APR/09	15:45	2.168	4.92	266.846
04/APR/09	16:00	2.220	5.09	285.861
04/APR/09	16:15	2.154	4.74	254.494
04/APR/09	16:30	2.116	4.56	238.412
04/APR/09	16:45	2.163	4.80	259.111
04/APR/09	17:00	2.119	4.59	240.411
04/APR/09	17:15	2.136	4.74	251.648
04/APR/09	17:30	2.055	4.40	220.508
04/APR/09	17:45	2.042	4.39	217.839
04/APR/09	18:00	1.786	4.04	165.004
04/APR/09	18:15	2.022	4.56	223.015
04/APR/09	18:30	2.052	4.57	228.471
04/APR/09	18:45	2.051	4.49	224.416
04/APR/09	19:00	1.999	4.35	209.348
04/APR/09	19:15	2.010	4.40	213.426
04/APR/09	19:30	2.024	4.46	218.818
04/APR/09	19:45	2.441	4.54	292.587
04/APR/09	20:00	2.049	4.55	226.924
04/APR/09	20:15	2.080	4.57	233.071
04/APR/09	20:30	2.034	4.47	220.729
04/APR/09	20:45	2.042	4.37	216.990
04/APR/09	21:00	2.073	4.38	222.583
04/APR/09	21:15	2.075	4.49	228.263
04/APR/09	21:30	2.021	4.18	204.598
04/APR/09	21:45	2.036	4.34	214.478
04/APR/09	22:00	2.074	4.44	225.673
04/APR/09	22:15	2.093	4.46	229.765
04/APR/09	22:30	2.317	4.48	267.307
04/APR/09	22:45	2.177	4.34	236.581
04/APR/09	23:00	2.141	4.54	241.434
04/APR/09	23:15	2.103	4.39	227.588
04/APR/09	23:30	2.136	4.54	240.646
04/APR/09	23:45	2.050	4.21	210.080
05/APR/09	00:00	2.044	4.31	214.535

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Manchester Sewer Flow Study
Day Report - 04/APR/09
Saturday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Level Vel. 1 Flow 1

	(in.)	(fps)	(gpm)
Minimum:	0.407	0.00	0.000
	05:30	04:15	04:15
Maximum:	2.907	5.76	450.422
	10:00	11:15	10:00
Average:	1.860	3.84	198.299

Total Flow1: 285.551 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
05/APR/09	00:15	2.022	4.29	210.138
05/APR/09	00:30	1.995	4.20	201.692
05/APR/09	00:45	1.805	4.15	171.840
05/APR/09	01:00	1.874	4.22	184.912
05/APR/09	01:15	1.797	3.89	160.241
05/APR/09	01:30	1.623	2.93	103.866
05/APR/09	01:45	1.638	3.06	109.828
05/APR/09	02:00	1.351	2.69	72.643
05/APR/09	02:15	1.403	2.86	81.885
05/APR/09	02:30	1.275	2.39	59.243
05/APR/09	02:45	1.120	1.38	28.310
05/APR/09	03:00	1.277	2.55	63.554
05/APR/09	03:15	0.866	1.37	19.253
05/APR/09	03:30	1.509	3.02	96.228
05/APR/09	03:45	1.316	2.18	56.789
05/APR/09	04:00	0.845	1.12	15.157
05/APR/09	04:15	0.863	1.33	18.578
05/APR/09	04:30	0.984	1.81	30.719
05/APR/09	04:45	0.914	1.27	19.323
05/APR/09	05:00	0.847	0.87	11.755
05/APR/09	05:15	0.485	0.84	4.955
05/APR/09	05:30	1.265	1.98	48.484
05/APR/09	05:45	1.052	1.24	23.164
05/APR/09	06:00	0.737	1.19	13.091
05/APR/09	06:15	0.644	0.70	6.351
05/APR/09	06:30	0.823	1.70	22.100
05/APR/09	06:45	0.926	1.97	30.530
05/APR/09	07:00	0.834	1.12	14.873
05/APR/09	07:15	0.830	1.05	13.807
05/APR/09	07:30	0.866	1.46	20.487
05/APR/09	07:45	1.285	2.16	54.192
05/APR/09	08:00	1.077	1.21	23.445
05/APR/09	08:15	1.687	3.45	129.629
05/APR/09	08:30	1.627	3.05	108.570
05/APR/09	08:45	1.869	4.30	187.395
05/APR/09	09:00	2.022	4.84	236.914
05/APR/09	09:15	2.341	4.88	296.047
05/APR/09	09:30	2.356	5.61	343.028
05/APR/09	09:45	2.351	5.63	343.115
05/APR/09	10:00	2.292	5.39	316.615
05/APR/09	10:15	2.374	5.71	353.449
05/APR/09	10:30	2.747	5.72	437.136
05/APR/09	10:45	2.314	5.55	330.730

05/APR/09	11:00	2.940	5.57	470.229
05/APR/09	11:15	2.924	5.38	450.205
05/APR/09	11:30	2.961	5.50	469.022
05/APR/09	11:45	2.532	5.51	374.525
05/APR/09	12:00	2.618	5.64	402.498
05/APR/09	12:15	2.659	5.41	394.886
05/APR/09	12:30	2.627	5.43	389.683
05/APR/09	12:45	2.585	5.24	367.209
05/APR/09	13:00	2.588	5.30	371.591
05/APR/09	13:15	2.124	5.19	273.219
05/APR/09	13:30	2.200	5.28	292.649
05/APR/09	13:45	2.131	5.05	267.018
05/APR/09	14:00	2.130	4.89	258.064
05/APR/09	14:15	2.130	4.95	261.546
05/APR/09	14:30	2.110	4.81	250.461
05/APR/09	14:45	2.153	4.95	265.616
05/APR/09	15:00	2.170	5.08	275.752
05/APR/09	15:15	2.156	4.99	268.217
05/APR/09	15:30	2.118	4.85	254.141
05/APR/09	15:45	2.141	4.97	264.459
05/APR/09	16:00	2.082	4.64	237.249
05/APR/09	16:15	1.816	4.80	200.479
05/APR/09	16:30	2.054	4.28	214.494
05/APR/09	16:45	2.000	4.44	213.846
05/APR/09	17:00	2.002	4.69	226.305
05/APR/09	17:15	1.995	4.63	222.247
05/APR/09	17:30	1.940	4.21	194.037
05/APR/09	17:45	1.972	4.49	211.833
05/APR/09	18:00	1.945	4.43	204.874
05/APR/09	18:15	1.922	4.25	193.075
05/APR/09	18:30	1.928	4.27	195.154
05/APR/09	18:45	1.922	4.31	195.773
05/APR/09	19:00	1.939	4.42	203.555
05/APR/09	19:15	1.792	4.95	203.065
05/APR/09	19:30	1.808	4.61	191.774
05/APR/09	19:45	1.780	4.42	179.561
05/APR/09	20:00	1.895	4.77	212.286
05/APR/09	20:15	1.904	4.67	209.318
05/APR/09	20:30	1.889	4.59	203.478
05/APR/09	20:45	1.926	4.78	218.028
05/APR/09	21:00	1.862	4.53	196.604
05/APR/09	21:15	1.901	4.65	208.072
05/APR/09	21:30	1.910	4.66	209.703
05/APR/09	21:45	1.969	4.89	230.200
05/APR/09	22:00	1.955	4.83	225.181
05/APR/09	22:15	1.843	4.23	180.538
05/APR/09	22:30	1.883	4.46	196.672
05/APR/09	22:45	1.852	4.31	185.306
05/APR/09	23:00	1.877	4.38	192.043
05/APR/09	23:15	1.865	4.33	188.266
05/APR/09	23:30	1.818	4.09	171.489
05/APR/09	23:45	1.911	4.61	207.787
06/APR/09	00:00	1.842	4.33	184.983

Manchester Sewer Flow Study
Day Report - 05/APR/09
Sunday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Level	Vel. 1	Flow 1
(in.)	(fps)	(gpm)

Minimum: 0.485 0.70 4.955
05:15 06:15 05:15

Maximum: 2.961 5.72 470.229
11:30 10:30 11:00

Average: 1.803 3.91 191.691

Total Flow: 276.035 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
06/APR/09	00:15	1.603	2.91	101.350
06/APR/09	00:30	1.592	4.22	145.345
06/APR/09	00:45	1.424	3.20	93.581
06/APR/09	01:00	1.390	3.10	87.480
06/APR/09	01:15	1.572	4.11	139.015
06/APR/09	01:30	1.485	3.45	107.464
06/APR/09	01:45	1.367	2.52	69.492
06/APR/09	02:00	1.437	2.96	87.804
06/APR/09	02:15	1.382	2.71	75.856
06/APR/09	02:30	1.098	1.44	28.754
06/APR/09	02:45	1.312	2.60	67.411
06/APR/09	03:00	1.142	1.30	27.438
06/APR/09	03:15	0.796	1.21	14.986
06/APR/09	03:30	1.354	2.71	73.586
06/APR/09	03:45	1.179	1.70	37.481
06/APR/09	04:00	0.794	1.19	14.619
06/APR/09	04:15	0.743	0.90	9.995
06/APR/09	04:30	1.202	1.92	43.770
06/APR/09	04:45	0.734	1.15	12.565
06/APR/09	05:00	0.655	0.85	7.883
06/APR/09	05:15	0.667	0.76	7.271
06/APR/09	05:30	0.770	1.54	18.127
06/APR/09	05:45	1.158	2.03	43.723
06/APR/09	06:00	0.961	1.16	19.017
06/APR/09	06:15	0.865	0.90	12.515
06/APR/09	06:30	1.074	2.28	43.810
06/APR/09	06:45	1.324	2.48	65.195
06/APR/09	07:00	0.828	1.57	20.532
06/APR/09	07:15	1.439	2.92	86.621
06/APR/09	07:30	1.213	1.75	40.488
06/APR/09	07:45	1.455	3.16	95.407
06/APR/09	08:00	1.397	2.72	77.195
06/APR/09	08:15	1.528	3.44	111.609
06/APR/09	08:30	1.724	4.47	173.368
06/APR/09	08:45	1.864	5.03	218.391
06/APR/09	09:00	1.841	4.88	208.354
06/APR/09	09:15	2.260	5.30	305.554
06/APR/09	09:30	2.322	5.46	326.892
06/APR/09	09:45	2.273	5.45	316.166
06/APR/09	10:00	2.288	5.43	318.424
06/APR/09	10:15	2.354	5.67	346.461
06/APR/09	10:30	2.735	5.66	430.294
06/APR/09	10:45	2.242	5.48	311.938
06/APR/09	11:00	2.255	5.66	324.836
06/APR/09	11:15	2.203	5.47	303.339

06/APR/09	11:30	2.306	5.93	351.975
06/APR/09	11:45	2.264	5.67	327.399
06/APR/09	12:00	2.273	5.65	328.256
06/APR/09	12:15	2.288	5.61	328.929
06/APR/09	12:30	2.247	5.34	305.000
06/APR/09	12:45	2.278	5.53	322.393
06/APR/09	13:00	2.296	5.59	329.472
06/APR/09	13:15	2.249	5.37	307.066
06/APR/09	13:30	2.204	5.18	287.369
06/APR/09	13:45	2.051	5.38	268.771
06/APR/09	14:00	2.097	5.07	261.607
06/APR/09	14:15	2.139	5.26	279.686
06/APR/09	14:30	2.176	5.31	289.223
06/APR/09	14:45	2.041	4.79	237.873
06/APR/09	15:00	2.046	4.82	239.894
06/APR/09	15:15	1.973	4.53	213.876
06/APR/09	15:30	2.001	4.74	228.484
06/APR/09	15:45	1.693	4.74	178.883
06/APR/09	16:00	1.767	4.83	194.026
06/APR/09	16:15	1.786	4.83	197.208
06/APR/09	16:30	2.046	4.24	210.989
06/APR/09	16:45	1.768	4.55	183.052
06/APR/09	17:00	1.789	4.37	178.764
06/APR/09	17:15	1.885	4.77	210.669
06/APR/09	17:30	1.847	4.67	200.301
06/APR/09	17:45	1.834	4.60	195.296
06/APR/09	18:00	1.909	5.02	225.770
06/APR/09	18:15	1.851	4.81	207.005
06/APR/09	18:30	1.823	4.65	195.632
06/APR/09	18:45	1.760	4.27	170.582
06/APR/09	19:00	1.866	4.89	212.705
06/APR/09	19:15	1.894	4.94	219.673
06/APR/09	19:30	2.152	5.06	271.292
06/APR/09	19:45	1.997	4.72	226.857
06/APR/09	20:00	1.945	4.69	217.042
06/APR/09	20:15	1.987	5.01	239.054
06/APR/09	20:30	2.037	5.26	260.427
06/APR/09	20:45	1.954	4.87	226.812
06/APR/09	21:00	1.929	4.76	217.547
06/APR/09	21:15	1.944	4.84	223.426
06/APR/09	21:30	1.992	5.07	242.915
06/APR/09	21:45	1.795	3.98	163.812
06/APR/09	22:00	1.902	4.57	204.738
06/APR/09	22:15	1.849	4.35	186.623
06/APR/09	22:30	1.854	4.34	187.237
06/APR/09	22:45	1.523	4.14	133.791
06/APR/09	23:00	1.580	4.46	151.918
06/APR/09	23:15	1.684	4.51	168.570
06/APR/09	23:30	1.723	4.39	170.043
06/APR/09	23:45	1.706	4.22	161.033
07/APR/09	00:00	1.731	4.26	165.903

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Manchester Sewer Flow Study
Day Report - 06/APR/09
Monday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.655	0.76	7.271
	05:00	05:15	05:15

Maximum: 2.735 5.93 430.294
10:30 11:30 10:30

Average: 1.719 4.00 178.940

Total Flow1: 257.674 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
07/APR/09	00:15	1.723	4.14	160.138
07/APR/09	00:30	1.785	4.53	184.795
07/APR/09	00:45	1.631	3.77	134.774
07/APR/09	01:00	1.788	4.56	186.418
07/APR/09	01:15	1.705	4.13	157.452
07/APR/09	01:30	1.231	3.04	71.739
07/APR/09	01:45	1.694	3.12	117.908
07/APR/09	02:00	1.247	2.75	66.170
07/APR/09	02:15	1.033	1.35	24.542
07/APR/09	02:30	1.296	3.10	78.976
07/APR/09	02:45	1.131	2.04	42.429
07/APR/09	03:00	1.171	2.34	51.131
07/APR/09	03:15	1.143	2.23	47.082
07/APR/09	03:30	1.056	1.51	28.354
07/APR/09	03:45	0.714	0.89	9.377
07/APR/09	04:00	1.003	2.39	41.616
07/APR/09	04:15	0.857	1.47	20.265
07/APR/09	04:30	0.784	0.88	10.648
07/APR/09	04:45	0.534	0.74	5.080
07/APR/09	05:00	1.153	1.99	42.619
07/APR/09	05:15	0.934	1.18	18.558
07/APR/09	05:30	0.834	0.99	13.173
07/APR/09	05:45	0.829	1.27	16.637
07/APR/09	06:00	0.950	2.09	33.498
07/APR/09	06:15	0.907	1.50	22.542
07/APR/09	06:30	0.867	1.29	18.145
07/APR/09	06:45	0.832	1.14	15.029
07/APR/09	07:00	1.331	2.54	67.160
07/APR/09	07:15	1.255	2.14	52.007
07/APR/09	07:30	1.279	2.57	64.002
07/APR/09	07:45	1.338	2.90	77.429
07/APR/09	08:00	1.319	2.70	70.560
07/APR/09	08:15	1.854	4.41	190.139
07/APR/09	08:30	1.879	4.83	212.368
07/APR/09	08:45	1.960	4.76	222.837
07/APR/09	09:00	1.978	4.97	235.527
07/APR/09	09:15	1.989	5.03	240.418
07/APR/09	09:30	2.117	5.63	294.594
07/APR/09	09:45	2.173	5.77	313.991
07/APR/09	10:00	2.120	5.53	289.984
07/APR/09	10:15	2.444	5.62	363.017
07/APR/09	10:30	2.366	5.53	340.452
07/APR/09	10:45	2.382	5.60	348.020
07/APR/09	11:00	2.385	5.67	353.123
07/APR/09	11:15	2.313	5.49	327.011
07/APR/09	11:30	2.191	5.07	278.892
07/APR/09	11:45	2.352	5.78	352.772

07/APR/09	12:00	2.284	5.47	320.129
07/APR/09	12:15	2.259	5.36	308.362
07/APR/09	12:30	2.226	5.26	296.114
07/APR/09	12:45	2.261	5.44	313.519
07/APR/09	13:00	2.216	5.28	295.376
07/APR/09	13:15	1.992	5.11	244.554
07/APR/09	13:30	1.974	4.88	230.504
07/APR/09	13:45	2.008	4.91	238.014
07/APR/09	14:00	1.950	4.90	227.652
07/APR/09	14:15	1.958	5.05	235.878
07/APR/09	14:30	1.687	4.72	177.034
07/APR/09	14:45	1.658	4.57	166.956
07/APR/09	15:00	2.042	4.80	238.377
07/APR/09	15:15	2.030	4.74	233.287
07/APR/09	15:30	1.868	4.08	177.872
07/APR/09	15:45	1.562	4.36	145.964
07/APR/09	16:00	2.125	4.36	229.416
07/APR/09	16:15	2.033	4.16	205.385
07/APR/09	16:30	1.960	4.17	195.105
07/APR/09	16:45	2.031	4.45	219.377
07/APR/09	17:00	1.945	4.17	192.918
07/APR/09	17:15	1.923	4.07	185.293
07/APR/09	17:30	1.996	4.48	215.383
07/APR/09	17:45	1.931	4.22	193.403
07/APR/09	18:00	1.743	4.12	162.036
07/APR/09	18:15	1.906	4.68	210.085
07/APR/09	18:30	1.761	3.90	155.786
07/APR/09	18:45	1.930	4.66	213.017
07/APR/09	19:00	1.981	4.89	232.045
07/APR/09	19:15	1.977	4.99	236.296
07/APR/09	19:30	2.036	5.20	257.000
07/APR/09	19:45	1.986	4.94	235.723
07/APR/09	20:00	2.053	5.21	260.775
07/APR/09	20:15	1.944	4.63	214.217
07/APR/09	20:30	1.996	4.85	233.211
07/APR/09	20:45	2.015	4.98	242.412
07/APR/09	21:00	1.903	4.41	197.552
07/APR/09	21:15	1.862	4.22	183.230
07/APR/09	21:30	1.934	4.56	209.101
07/APR/09	21:45	1.912	4.48	201.952
07/APR/09	22:00	1.982	4.86	231.304
07/APR/09	22:15	1.852	4.21	181.220
07/APR/09	22:30	1.905	4.52	202.894
07/APR/09	22:45	1.864	4.33	188.014
07/APR/09	23:00	1.878	4.49	197.370
07/APR/09	23:15	1.828	4.27	180.344
07/APR/09	23:30	1.816	4.28	178.836
07/APR/09	23:45	1.836	4.38	186.161
08/APR/09	00:00	1.825	4.28	180.159

 Manchester Sewer Flow Study
 Day Report - 07/APR/09
 Tuesday

Site Id: 00032009
 Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.534 04:45	0.74 04:45	5.080 04:45
Maximum:	2.444	5.78	363.017

10:15 11:45 10:15

Average: 1.724 3.96 176.770

Total Flow: 254.549 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
08/APR/09	00:15	1.560	4.04	134.944
08/APR/09	00:30	1.699	4.19	158.821
08/APR/09	00:45	1.754	4.38	174.154
08/APR/09	01:00	1.569	3.32	112.096
08/APR/09	01:15	1.731	4.18	162.906
08/APR/09	01:30	1.772	4.32	174.412
08/APR/09	01:45	1.600	3.25	112.799
08/APR/09	02:00	1.488	2.61	81.465
08/APR/09	02:15	1.387	2.95	83.122
08/APR/09	02:30	1.112	1.59	32.304
08/APR/09	02:45	1.317	2.99	17.870
08/APR/09	03:00	1.180	2.34	51.828
08/APR/09	03:15	0.809	1.36	17.160
08/APR/09	03:30	0.762	1.15	13.288
08/APR/09	03:45	1.403	2.20	63.013
08/APR/09	04:00	0.984	1.43	24.270
08/APR/09	04:15	0.608	0.97	8.043
08/APR/09	04:30	0.584	0.64	4.957
08/APR/09	04:45	1.167	1.58	34.441
08/APR/09	05:00	0.995	1.23	21.190
08/APR/09	05:15	0.935	1.08	16.878
08/APR/09	05:30	0.594	0.79	6.332
08/APR/09	05:45	1.344	2.63	70.702
08/APR/09	06:00	1.078	1.53	29.622
08/APR/09	06:15	0.950	1.04	16.654
08/APR/09	06:30	0.996	1.56	26.856
08/APR/09	06:45	1.429	2.42	71.134
08/APR/09	07:00	0.980	1.39	23.382
08/APR/09	07:15	1.343	3.22	86.445
08/APR/09	07:30	1.301	2.61	67.055
08/APR/09	07:45	1.431	3.07	90.317
08/APR/09	08:00	1.434	2.80	82.809
08/APR/09	08:15	1.962	4.39	205.564
08/APR/09	08:30	1.992	5.11	244.554
08/APR/09	08:45	2.071	5.30	268.654
08/APR/09	09:00	2.058	5.28	265.048
08/APR/09	09:15	2.014	5.16	251.017
08/APR/09	09:30	2.095	5.45	280.693
08/APR/09	09:45	2.414	5.49	348.210
08/APR/09	10:00	2.363	5.51	338.823
08/APR/09	10:15	2.326	5.60	336.420
08/APR/09	10:30	2.384	5.61	349.127
08/APR/09	10:45	2.379	5.43	337.187
08/APR/09	11:00	2.407	5.46	344.689
08/APR/09	11:15	2.349	5.23	318.653
08/APR/09	11:30	2.418	5.54	352.160
08/APR/09	11:45	2.202	5.30	293.626
08/APR/09	12:00	2.215	5.48	306.339
08/APR/09	12:15	2.045	4.91	244.040

08/APR/09	12:30	2.087	5.09	260.924
08/APR/09	12:45	2.352	4.94	301.387
08/APR/09	13:00	2.406	5.45	343.922
08/APR/09	13:15	2.303	5.15	305.040
08/APR/09	13:30	2.338	5.40	326.736
08/APR/09	13:45	2.575	5.20	361.965
08/APR/09	14:00	2.056	4.87	244.059
08/APR/09	14:15	2.194	5.13	282.623
08/APR/09	14:30	2.146	4.94	263.926
08/APR/09	14:45	2.139	5.00	265.795
08/APR/09	15:00	2.085	4.84	247.954
08/APR/09	15:15	1.992	4.30	205.892
08/APR/09	15:30	1.950	4.11	190.699
08/APR/09	15:45	1.989	4.42	211.520
08/APR/09	16:00	1.824	4.55	191.459
08/APR/09	16:15	1.881	4.10	180.426
08/APR/09	16:30	1.917	4.35	196.875
08/APR/09	16:45	1.926	4.49	204.789
08/APR/09	17:00	1.863	4.10	177.849
08/APR/09	17:15	1.955	4.55	211.866
08/APR/09	17:30	1.882	4.09	180.161
08/APR/09	17:45	1.995	4.63	222.327
08/APR/09	18:00	2.198	4.44	245.700
08/APR/09	18:15	2.109	4.11	214.110
08/APR/09	18:30	2.102	4.33	224.512
08/APR/09	18:45	2.018	4.16	203.156
08/APR/09	19:00	2.184	4.89	267.863
08/APR/09	19:15	1.813	4.78	199.513
08/APR/09	19:30	1.934	4.96	227.381
08/APR/09	19:45	1.961	4.95	231.917
08/APR/09	20:00	1.947	4.75	220.003
08/APR/09	20:15	2.288	4.90	287.255
08/APR/09	20:30	2.236	4.93	279.345
08/APR/09	20:45	2.098	4.51	233.025
08/APR/09	21:00	2.162	4.98	268.716
08/APR/09	21:15	2.110	4.80	250.003
08/APR/09	21:30	2.005	4.42	213.522
08/APR/09	21:45	1.969	4.34	204.394
08/APR/09	22:00	2.019	4.61	225.397
08/APR/09	22:15	1.965	4.26	200.027
08/APR/09	22:30	1.992	4.35	208.448
08/APR/09	22:45	1.965	4.23	198.638
08/APR/09	23:00	2.037	4.63	229.138
08/APR/09	23:15	1.836	4.32	183.499
08/APR/09	23:30	1.860	4.14	179.420
08/APR/09	23:45	1.885	4.28	189.018
09/APR/09	00:00	1.906	4.46	200.362

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Manchester Sewer Flow Study
Day Report - 08/APR/09
Wednesday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.584 04:30	0.64 04:30	4.957 04:30
Maximum:	2.575 13:45	5.61 10:30	361.965 13:45

Average: 1.807 3.98 289.357

Total Flow1: 272.673 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009

Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
09/APR/09	00:15	2.355	4.38	267.965
09/APR/09	00:30	1.884	4.57	201.831
09/APR/09	00:45	1.847	4.07	174.377
09/APR/09	01:00	1.842	4.35	185.741
09/APR/09	01:15	1.790	3.90	159.776
09/APR/09	01:30	1.714	3.62	139.141
09/APR/09	01:45	1.693	3.37	127.261
09/APR/09	02:00	1.601	2.81	97.757
09/APR/09	02:15	1.281	2.12	53.002
09/APR/09	02:30	1.414	2.74	79.264
09/APR/09	02:45	1.249	1.45	34.983
09/APR/09	03:00	1.384	2.83	79.240
09/APR/09	03:15	1.272	1.95	48.163
09/APR/09	03:30	0.957	1.12	18.103
09/APR/09	03:45	1.266	3.09	75.966
09/APR/09	04:00	1.134	1.81	37.807
09/APR/09	04:15	1.043	1.14	21.065
09/APR/09	04:30	0.820	0.80	10.358
09/APR/09	04:45	0.831	0.95	12.588
09/APR/09	05:00	1.001	1.97	34.203
09/APR/09	05:15	0.917	1.15	17.543
09/APR/09	05:30	0.878	0.82	11.683
09/APR/09	05:45	0.646	0.73	6.582
09/APR/09	06:00	1.230	2.17	51.025
09/APR/09	06:15	1.063	1.37	25.961
09/APR/09	06:30	0.965	1.22	20.058
09/APR/09	06:45	1.563	3.00	100.523
09/APR/09	07:00	1.344	2.42	64.946
09/APR/09	07:15	1.491	2.89	90.435
09/APR/09	07:30	1.428	2.41	70.711
09/APR/09	07:45	1.787	3.37	137.464
09/APR/09	08:00	1.751	3.13	124.208
09/APR/09	08:15	1.913	4.12	185.951
09/APR/09	08:30	2.017	4.61	224.671
09/APR/09	08:45	2.301	4.97	293.650
09/APR/09	09:00	2.323	5.33	319.617
09/APR/09	09:15	2.423	5.53	352.649
09/APR/09	09:30	2.442	5.49	353.913
09/APR/09	09:45	2.795	5.68	445.423
09/APR/09	10:00	2.847	5.41	435.648
09/APR/09	10:15	2.522	5.47	369.320
09/APR/09	10:30	2.413	5.61	355.596
09/APR/09	10:45	2.379	5.50	341.659
09/APR/09	11:00	2.426	5.67	361.925
09/APR/09	11:15	1.989	5.60	267.670
09/APR/09	11:30	2.438	5.60	360.177
09/APR/09	11:45	2.473	5.50	361.451
09/APR/09	12:00	2.415	5.32	337.847
09/APR/09	12:15	2.481	5.66	373.399
09/APR/09	12:30	2.417	5.25	333.477
09/APR/09	12:45	2.486	5.52	365.044

09/APR/09	13:00	2.442	5.22	336.393
09/APR/09	13:15	2.456	5.26	342.198
09/APR/09	13:30	2.139	5.26	279.875
09/APR/09	13:45	2.279	5.39	314.193
09/APR/09	14:00	2.295	5.20	306.527
09/APR/09	14:15	2.317	5.11	305.244
09/APR/09	14:30	2.277	5.06	294.785
09/APR/09	14:45	2.268	4.99	288.516
09/APR/09	15:00	2.260	5.00	287.969
09/APR/09	15:15	2.069	4.05	205.250
09/APR/09	15:30	2.179	4.60	251.167
09/APR/09	15:45	2.167	4.62	250.043
09/APR/09	16:00	2.133	4.48	236.981
09/APR/09	16:15	2.179	4.67	254.982
09/APR/09	16:30	2.087	4.22	216.110
09/APR/09	16:45	2.071	4.12	208.834
09/APR/09	17:00	2.163	4.64	250.613
09/APR/09	17:15	1.953	4.34	201.952
09/APR/09	17:30	2.107	4.56	237.026
09/APR/09	17:45	1.993	4.05	194.078
09/APR/09	18:00	2.045	4.23	210.602
09/APR/09	18:15	2.039	4.20	207.906
09/APR/09	18:30	2.409	4.37	276.024
09/APR/09	18:45	2.226	4.14	233.279
09/APR/09	19:00	2.416	4.88	309.879
09/APR/09	19:15	1.870	4.20	183.092
09/APR/09	19:30	1.917	4.30	194.624
09/APR/09	19:45	2.109	4.85	252.582
09/APR/09	20:00	2.027	4.72	232.048
09/APR/09	20:15	2.002	4.65	224.474
09/APR/09	20:30	2.243	4.68	266.464
09/APR/09	20:45	2.138	4.57	242.692
09/APR/09	21:00	2.158	4.33	233.358
09/APR/09	21:15	2.208	4.57	254.543
09/APR/09	21:30	2.164	4.20	227.372
09/APR/09	21:45	2.271	4.91	284.682
09/APR/09	22:00	2.293	5.08	298.797
09/APR/09	22:15	2.122	4.27	224.190
09/APR/09	22:30	2.155	4.49	241.131
09/APR/09	22:45	2.149	4.50	240.636
09/APR/09	23:00	2.107	4.35	225.969
09/APR/09	23:15	2.098	4.36	225.539
09/APR/09	23:30	2.099	4.39	226.774
09/APR/09	23:45	2.066	4.23	213.690
10/APR/09	00:00	2.060	4.21	211.648

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Manchester Sewer Flow Study
Day Report - 09/APR/09
Thursday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.646 05:45	0.73 05:45	6.582 05:45
Maximum:	2.847 10:00	5.68 09:45	445.423 09:45
Average:	1.939	4.02	210.662

Total Flow1: 303.353 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
10/APR/09	00:15	2.049	4.24	211.580
10/APR/09	00:30	2.070	4.43	224.473
10/APR/09	00:45	2.082	4.48	228.939
10/APR/09	01:00	2.064	4.38	221.221
10/APR/09	01:15	1.798	4.11	169.254
10/APR/09	01:30	1.880	4.25	187.240
10/APR/09	01:45	1.598	2.85	98.585
10/APR/09	02:00	1.695	3.59	135.637
10/APR/09	02:15	1.216	2.05	47.438
10/APR/09	02:30	1.055	1.28	24.093
10/APR/09	02:45	1.253	2.66	64.280
10/APR/09	03:00	1.051	1.39	25.936
10/APR/09	03:15	0.780	1.02	12.318
10/APR/09	03:30	1.363	2.78	76.148
10/APR/09	03:45	1.072	1.47	28.261
10/APR/09	04:00	0.963	0.96	15.688
10/APR/09	04:15	0.585	0.66	5.191
10/APR/09	04:30	1.162	2.53	54.860
10/APR/09	04:45	1.004	1.33	23.229
10/APR/09	05:00	0.929	1.01	15.641
10/APR/09	05:15	0.463	0.52	2.857
10/APR/09	05:30	0.380	0.54	2.194
10/APR/09	05:45	1.233	2.20	52.010
10/APR/09	06:00	0.992	1.20	20.635
10/APR/09	06:15	0.914	1.05	15.911
10/APR/09	06:30	0.530	0.68	4.563
10/APR/09	06:45	1.470	2.73	83.795
10/APR/09	07:00	0.965	1.81	29.748
10/APR/09	07:15	0.817	1.13	14.547
10/APR/09	07:30	1.571	2.65	89.614
10/APR/09	07:45	1.407	2.47	70.892
10/APR/09	08:00	1.545	3.00	99.028
10/APR/09	08:15	1.526	2.84	91.988
10/APR/09	08:30	2.060	4.31	216.852
10/APR/09	08:45	2.242	4.67	265.826
10/APR/09	09:00	2.334	5.38	324.945
10/APR/09	09:15	2.352	5.21	317.965
10/APR/09	09:30	2.382	5.45	338.917
10/APR/09	09:45	2.400	5.55	349.240
10/APR/09	10:00	2.624	5.42	388.012
10/APR/09	10:15	2.617	5.39	384.449
10/APR/09	10:30	2.627	5.60	401.538
10/APR/09	10:45	2.529	5.50	372.900
10/APR/09	11:00	2.557	5.72	394.229
10/APR/09	11:15	2.535	5.57	379.271
10/APR/09	11:30	2.540	5.66	386.080
10/APR/09	11:45	2.557	5.72	393.941
10/APR/09	12:00	2.195	5.52	304.579
10/APR/09	12:15	2.229	5.29	298.331
10/APR/09	12:30	2.373	5.56	343.727
10/APR/09	12:45	2.399	5.55	348.576
10/APR/09	13:00	2.074	5.48	278.398
10/APR/09	13:15	2.347	5.18	315.388

10/APR/09	13:30	2.285	5.02	294.053
10/APR/09	13:45	2.280	5.14	299.634
10/APR/09	14:00	2.218	5.11	286.013
10/APR/09	14:15	2.037	5.31	262.918
10/APR/09	14:30	2.112	5.14	267.870
10/APR/09	14:45	2.071	4.94	250.623
10/APR/09	15:00	2.042	4.80	238.293
10/APR/09	15:15	2.112	5.14	268.145
10/APR/09	15:30	1.755	4.77	189.908
10/APR/09	15:45	1.808	4.76	197.518
10/APR/09	16:00	1.859	4.63	200.529
10/APR/09	16:15	1.865	4.62	200.675
10/APR/09	16:30	2.299	4.68	276.280
10/APR/09	16:45	2.160	4.54	244.792
10/APR/09	17:00	2.126	4.26	224.671
10/APR/09	17:15	2.023	3.95	193.454
10/APR/09	17:30	2.063	4.20	211.975
10/APR/09	17:45	2.091	4.43	227.709
10/APR/09	18:00	2.158	4.82	259.180
10/APR/09	18:15	2.103	4.54	235.186
10/APR/09	18:30	2.125	4.65	245.000
10/APR/09	18:45	2.151	4.78	256.069
10/APR/09	19:00	1.786	4.35	177.535
10/APR/09	19:15	1.933	4.38	200.810
10/APR/09	19:30	2.006	4.62	223.341
10/APR/09	19:45	2.024	4.71	230.895
10/APR/09	20:00	2.074	4.96	251.933
10/APR/09	20:15	2.061	4.80	241.590
10/APR/09	20:30	2.214	5.42	302.927
10/APR/09	20:45	2.169	5.14	278.938
10/APR/09	21:00	2.219	5.34	299.538
10/APR/09	21:15	2.134	4.91	260.229
10/APR/09	21:30	2.305	4.41	261.562
10/APR/09	21:45	1.967	4.41	207.540
10/APR/09	22:00	2.027	4.73	232.213
10/APR/09	22:15	2.047	4.44	221.390
10/APR/09	22:30	2.062	4.47	225.133
10/APR/09	22:45	2.052	4.39	219.372
10/APR/09	23:00	2.054	4.28	214.494
10/APR/09	23:15	2.074	4.39	222.824
10/APR/09	23:30	2.030	4.15	204.322
10/APR/09	23:45	2.056	4.29	215.042
11/APR/09	00:00	1.889	4.30	190.591

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Manchester Sewer Flow Study
Day Report - 10/APR/09
Friday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.380	0.52	2.194
	05:30	05:15	05:30
Maximum:	2.627	5.72	401.538
	10:30	11:00	10:30
Average:	1.858	3.99	202.746

Total Flow1: 291.954 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
11/APR/09	00:15	1.725	4.17	161.682
11/APR/09	00:30	1.767	4.25	170.619
11/APR/09	00:45	1.818	4.14	173.542
11/APR/09	01:00	2.047	4.24	211.144
11/APR/09	01:15	1.931	4.07	185.982
11/APR/09	01:30	1.946	4.10	189.740
11/APR/09	01:45	1.719	2.91	112.382
11/APR/09	02:00	1.683	2.89	108.137
11/APR/09	02:15	1.280	2.11	52.714
11/APR/09	02:30	1.408	2.69	77.354
11/APR/09	02:45	1.365	2.36	64.784
11/APR/09	03:00	0.911	1.24	18.700
11/APR/09	03:15	1.128	2.01	41.649
11/APR/09	03:30	1.214	2.35	54.163
11/APR/09	03:45	1.077	1.36	26.359
11/APR/09	04:00	1.015	0.99	17.568
11/APR/09	04:15	0.700	0.70	7.115
11/APR/09	04:30	1.284	2.15	53.901
11/APR/09	04:45	1.090	1.36	26.757
11/APR/09	05:00	0.955	0.85	13.745
11/APR/09	05:15	0.845	0.31	4.159
11/APR/09	05:30	0.555	1.02	7.392
11/APR/09	05:45	1.480	2.81	86.930
11/APR/09	06:00	0.993	1.52	26.164
11/APR/09	06:15	0.870	1.09	15.294
11/APR/09	06:30	0.832	0.70	9.261
11/APR/09	06:45	0.771	0.71	8.347
11/APR/09	07:00	1.275	2.07	51.287
11/APR/09	07:15	1.096	1.42	28.239
11/APR/09	07:30	0.981	0.94	15.845
11/APR/09	07:45	0.927	0.91	14.071
11/APR/09	08:00	1.376	2.87	79.828
11/APR/09	08:15	1.173	1.91	42.013
11/APR/09	08:30	1.458	3.31	100.048
11/APR/09	08:45	1.686	4.27	160.029
11/APR/09	09:00	2.006	4.01	194.328
11/APR/09	09:15	2.099	5.08	262.598
11/APR/09	09:30	2.571	5.69	395.158
11/APR/09	09:45	2.388	5.50	343.186
11/APR/09	10:00	2.418	5.59	355.475
11/APR/09	10:15	2.453	5.60	363.435
11/APR/09	10:30	2.838	5.86	469.970
11/APR/09	10:45	3.149	5.75	535.549
11/APR/09	11:00	2.817	5.77	457.912
11/APR/09	11:15	2.447	5.88	380.266
11/APR/09	11:30	2.835	5.61	449.010
11/APR/09	11:45	2.999	5.95	516.810
11/APR/09	12:00	2.988	5.78	499.719
11/APR/09	12:15	2.914	5.58	464.953
11/APR/09	12:30	2.680	5.67	418.512
11/APR/09	12:45	2.590	5.26	369.621
11/APR/09	13:00	2.615	5.55	395.100
11/APR/09	13:15	2.703	5.65	421.985
11/APR/09	13:30	2.709	5.80	434.592
11/APR/09	13:45	2.660	5.50	401.248

11/APR/09	14:00	2.986	5.27	455.028
11/APR/09	14:15	2.484	5.30	350.239
11/APR/09	14:30	2.477	5.39	354.767
11/APR/09	14:45	2.537	5.45	371.586
11/APR/09	15:00	2.496	5.29	352.016
11/APR/09	15:15	2.483	5.34	353.140
11/APR/09	15:30	2.432	5.23	334.994
11/APR/09	15:45	2.523	5.55	375.129
11/APR/09	16:00	2.276	5.37	312.656
11/APR/09	16:15	2.200	5.02	278.232
11/APR/09	16:30	2.174	5.08	276.436
11/APR/09	16:45	2.198	5.01	277.294
11/APR/09	17:00	2.198	4.90	270.987
11/APR/09	17:15	2.176	4.86	264.887
11/APR/09	17:30	2.141	4.81	256.096
11/APR/09	17:45	2.171	4.88	265.121
11/APR/09	18:00	2.190	4.90	269.651
11/APR/09	18:15	2.175	4.91	267.446
11/APR/09	18:30	2.180	4.93	269.683
11/APR/09	18:45	2.211	5.15	287.034
11/APR/09	19:00	2.177	5.04	275.107
11/APR/09	19:15	2.147	4.95	264.440
11/APR/09	19:30	2.136	4.87	258.286
11/APR/09	19:45	2.220	5.28	296.447
11/APR/09	20:00	2.200	5.17	286.240
11/APR/09	20:15	2.360	4.98	305.185
11/APR/09	20:30	2.185	4.81	263.774
11/APR/09	20:45	2.113	4.59	239.720
11/APR/09	21:00	2.138	4.72	250.622
11/APR/09	21:15	2.163	4.90	264.652
11/APR/09	21:30	2.163	4.89	263.810
11/APR/09	21:45	2.142	4.78	254.230
11/APR/09	22:00	2.139	4.83	256.544
11/APR/09	22:15	2.109	4.59	239.159
11/APR/09	22:30	2.375	4.19	259.349
11/APR/09	22:45	2.053	4.27	213.712
11/APR/09	23:00	2.162	4.55	245.651
11/APR/09	23:15	2.127	4.66	245.773
11/APR/09	23:30	2.105	4.25	220.735
11/APR/09	23:45	2.116	4.43	231.687
12/APR/09	00:00	2.139	4.58	243.461

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Manchester Sewer Flow Study
Day Report - 11/APR/09
Saturday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.555	0.31	4.159
	05:30	05:15	05:15
Maximum:	3.149	5.95	535.549
	10:45	11:45	10:45
Average:	1.973	4.06	230.910

Total Flow1: 332.511 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
12/APR/09	00:15	2.087	4.24	217.559
12/APR/09	00:30	2.051	4.15	207.439
12/APR/09	00:45	2.113	4.53	236.724
12/APR/09	01:00	2.095	4.48	230.944
12/APR/09	01:15	2.056	4.35	218.238
12/APR/09	01:30	1.669	2.96	109.227
12/APR/09	01:45	1.934	4.39	201.331
12/APR/09	02:00	1.596	2.70	93.392
12/APR/09	02:15	1.664	3.12	114.675
12/APR/09	02:30	1.522	2.26	72.953
12/APR/09	02:45	1.648	3.07	111.176
12/APR/09	03:00	1.249	2.33	56.078
12/APR/09	03:15	1.056	1.29	24.332
12/APR/09	03:30	1.337	2.99	79.788
12/APR/09	03:45	1.195	1.85	41.789
12/APR/09	04:00	0.839	1.06	14.117
12/APR/09	04:15	1.234	1.68	39.790
12/APR/09	04:30	1.220	1.82	42.304
12/APR/09	04:45	1.085	1.08	21.028
12/APR/09	05:00	0.711	0.85	8.866
12/APR/09	05:15	0.643	0.69	6.211
12/APR/09	05:30	1.377	2.45	68.215
12/APR/09	05:45	1.116	1.34	27.265
12/APR/09	06:00	1.014	1.13	20.046
12/APR/09	06:15	0.548	0.00	0.000
12/APR/09	06:30	1.341	2.61	69.927
12/APR/09	06:45	1.119	1.37	28.000
12/APR/09	07:00	1.054	1.15	21.622
12/APR/09	07:15	0.985	0.94	15.882
12/APR/09	07:30	1.548	2.89	95.603
12/APR/09	07:45	1.085	2.37	46.447
12/APR/09	08:00	1.606	2.48	86.718
12/APR/09	08:15	1.709	3.04	116.326
12/APR/09	08:30	1.963	4.29	201.121
12/APR/09	08:45	2.139	5.07	269.437
12/APR/09	09:00	2.460	5.44	354.807
12/APR/09	09:15	2.574	5.70	396.611
12/APR/09	09:30	2.932	5.78	486.311
12/APR/09	09:45	2.501	5.63	375.480
12/APR/09	10:00	2.832	5.59	447.029
12/APR/09	10:15	2.251	5.51	315.742
12/APR/09	10:30	3.091	5.49	498.213
12/APR/09	10:45	2.803	5.71	450.044
12/APR/09	11:00	2.771	5.58	432.022
12/APR/09	11:15	2.778	5.60	435.636
12/APR/09	11:30	2.747	5.59	427.845
12/APR/09	11:45	2.697	5.45	405.539
12/APR/09	12:00	2.695	5.49	408.499
12/APR/09	12:15	2.666	5.47	400.273
12/APR/09	12:30	2.164	5.38	290.716
12/APR/09	12:45	2.152	5.57	298.870
12/APR/09	13:00	2.700	5.76	429.311
12/APR/09	13:15	2.508	5.41	362.462
12/APR/09	13:30	2.479	5.45	358.977
12/APR/09	13:45	2.530	5.63	382.114
12/APR/09	14:00	2.303	5.50	325.429
12/APR/09	14:15	2.317	5.17	308.976

12/APR/09	14:30	2.394	5.32	333.067
12/APR/09	14:45	2.290	5.05	296.209
12/APR/09	15:00	2.255	4.96	284.824
12/APR/09	15:15	2.221	4.94	277.614
12/APR/09	15:30	2.215	5.02	280.640
12/APR/09	15:45	1.942	4.86	224.491
12/APR/09	16:00	1.827	4.27	180.310
12/APR/09	16:15	1.969	4.81	226.627
12/APR/09	16:30	2.032	4.89	241.213
12/APR/09	16:45	1.935	4.48	205.789
12/APR/09	17:00	1.959	4.52	211.499
12/APR/09	17:15	2.179	4.35	237.423
12/APR/09	17:30	2.144	4.46	237.818
12/APR/09	17:45	2.111	4.68	243.804
12/APR/09	18:00	2.183	4.87	266.632
12/APR/09	18:15	2.216	5.15	288.401
12/APR/09	18:30	1.813	4.78	199.365
12/APR/09	18:45	1.913	4.72	213.019
12/APR/09	19:00	2.011	4.83	234.557
12/APR/09	19:15	2.011	4.93	239.278
12/APR/09	19:30	2.071	5.16	261.350
12/APR/09	19:45	2.144	5.37	286.557
12/APR/09	20:00	2.132	5.23	276.861
12/APR/09	20:15	2.449	5.14	332.623
12/APR/09	20:30	2.293	5.06	297.981
12/APR/09	20:45	2.177	4.72	257.521
12/APR/09	21:00	2.226	5.01	282.494
12/APR/09	21:15	2.282	5.20	303.734
12/APR/09	21:30	2.259	5.08	292.350
12/APR/09	21:45	2.339	5.44	329.643
12/APR/09	22:00	2.216	4.96	277.869
12/APR/09	22:15	2.068	4.93	249.317
12/APR/09	22:30	2.119	4.90	256.814
12/APR/09	22:45	2.219	5.37	301.131
12/APR/09	23:00	2.054	4.65	232.977
12/APR/09	23:15	2.008	4.40	213.135
12/APR/09	23:30	2.039	4.50	222.727
12/APR/09	23:45	2.049	4.51	224.901
13/APR/09	00:00	2.038	4.49	222.647

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Manchester Sewer Flow Study
Day Report - 12/APR/09
Sunday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.548	0.00	0.000
	06:15	06:15	06:15
Maximum:	3.091	5.78	498.213
	10:30	09:30	10:30
Average:	1.973	4.16	227.611

Total Flow1: 327.760 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
13/APR/09	00:15	2.037	4.53	224.089
13/APR/09	00:30	2.032	4.46	219.913
13/APR/09	00:45	1.743	3.79	149.271
13/APR/09	01:00	1.896	4.03	179.523
13/APR/09	01:15	1.654	2.85	103.888
13/APR/09	01:30	1.819	4.07	170.690
13/APR/09	01:45	1.332	2.54	67.413
13/APR/09	02:00	1.608	3.66	127.849
13/APR/09	02:15	1.334	1.93	51.152
13/APR/09	02:30	1.555	3.42	113.800
13/APR/09	02:45	1.366	1.98	54.435
13/APR/09	03:00	0.915	1.28	19.484
13/APR/09	03:15	1.153	2.23	47.798
13/APR/09	03:30	1.208	2.30	52.679
13/APR/09	03:45	1.119	1.67	34.134
13/APR/09	04:00	0.839	1.05	14.009
13/APR/09	04:15	0.839	1.05	14.009
13/APR/09	04:30	1.258	1.92	46.775
13/APR/09	04:45	1.081	1.26	24.446
13/APR/09	05:00	0.965	0.73	11.937
13/APR/09	05:15	0.591	0.75	5.916
13/APR/09	05:30	1.452	2.60	78.237
13/APR/09	05:45	1.206	1.69	38.703
13/APR/09	06:00	0.835	1.00	13.203
13/APR/09	06:15	0.780	1.01	12.107
13/APR/09	06:30	1.399	2.62	74.653
13/APR/09	06:45	1.313	2.16	56.022
13/APR/09	07:00	1.234	1.86	44.096
13/APR/09	07:15	1.454	3.31	99.802
13/APR/09	07:30	1.200	1.57	35.710
13/APR/09	07:45	1.333	2.62	69.498
13/APR/09	08:00	1.369	2.82	77.780
13/APR/09	08:15	1.885	4.28	189.018
13/APR/09	08:30	1.942	4.43	204.405
13/APR/09	08:45	2.025	4.90	240.599
13/APR/09	09:00	2.095	5.19	267.666
13/APR/09	09:15	2.202	5.60	310.502
13/APR/09	09:30	2.207	5.57	309.751
13/APR/09	09:45	2.621	5.41	386.346
13/APR/09	10:00	2.576	5.58	389.009
13/APR/09	10:15	2.599	5.72	404.127
13/APR/09	10:30	2.640	5.80	418.814
13/APR/09	10:45	2.621	5.66	404.092
13/APR/09	11:00	2.691	5.92	439.175
13/APR/09	11:15	2.656	5.88	427.880
13/APR/09	11:30	2.563	5.56	384.496
13/APR/09	11:45	2.609	5.77	409.618
13/APR/09	12:00	2.236	5.70	323.128
13/APR/09	12:15	2.309	5.77	343.022
13/APR/09	12:30	2.248	5.75	328.536
13/APR/09	12:45	2.333	5.87	354.261
13/APR/09	13:00	2.324	5.78	347.012
13/APR/09	13:15	2.167	5.13	277.903
13/APR/09	13:30	2.235	5.52	312.658
13/APR/09	13:45	2.198	5.38	297.351
13/APR/09	14:00	2.206	5.43	301.844
13/APR/09	14:15	2.224	5.47	307.520
13/APR/09	14:30	2.029	5.28	259.578
13/APR/09	14:45	2.002	4.88	235.252

13/APR/09	15:00	2.198	5.36	296.333
13/APR/09	15:15	2.192	5.25	289.152
13/APR/09	15:30	2.077	4.69	238.835
13/APR/09	15:45	2.105	4.88	253.127
13/APR/09	16:00	2.064	4.75	239.645
13/APR/09	16:15	2.169	5.21	282.524
13/APR/09	16:30	2.006	4.43	214.131
13/APR/09	16:45	1.978	4.34	205.644
13/APR/09	17:00	1.946	4.11	189.981
13/APR/09	17:15	1.999	4.34	209.151
13/APR/09	17:30	2.000	4.38	210.887
13/APR/09	17:45	1.893	4.90	217.609
13/APR/09	18:00	1.931	4.67	213.716
13/APR/09	18:15	1.918	4.46	202.012
13/APR/09	18:30	1.915	4.29	193.896
13/APR/09	18:45	2.010	4.75	230.491
13/APR/09	19:00	2.058	5.01	251.902
13/APR/09	19:15	2.082	5.03	257.106
13/APR/09	19:30	2.129	5.25	277.213
13/APR/09	19:45	2.014	4.65	226.470
13/APR/09	20:00	2.115	5.08	265.500
13/APR/09	20:15	2.143	5.22	278.481
13/APR/09	20:30	2.153	5.21	279.618
13/APR/09	20:45	2.379	5.33	330.758
13/APR/09	21:00	2.235	5.19	294.049
13/APR/09	21:15	2.105	4.74	246.103
13/APR/09	21:30	2.104	4.69	243.243
13/APR/09	21:45	2.165	4.96	268.180
13/APR/09	22:00	2.138	4.81	255.539
13/APR/09	22:15	2.007	4.15	201.076
13/APR/09	22:30	1.983	4.04	192.159
13/APR/09	22:45	2.040	4.41	218.581
13/APR/09	23:00	1.757	3.88	154.543
13/APR/09	23:15	1.988	4.38	208.978
13/APR/09	23:30	1.972	4.34	205.104
13/APR/09	23:45	1.989	4.38	209.285
14/APR/09	00:00	1.973	4.20	198.488

Manchester Sewer Flow Study

Day Report - 13/APR/09

Monday

Site Id: 00032009

Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.591	0.73	5.916
	05:15	05:00	05:15
Maximum:	2.691	5.92	439.175
	11:00	11:00	11:00
Average:	1.878	4.12	207.876

Total Flow1: 299.341 (gal) x1000

Manchester Sewer Flow Study

Logged Readings

Site Id: 00032009

Description: Richard Estates Trunk Sewer

Date	Time	Level	Vel. 1	Flow 1
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		(in.)	(fps)	(gpm)
14/APR/09	00:15	2.023	4.51	221.244
14/APR/09	00:30	1.960	4.21	196.741
14/APR/09	00:45	1.992	4.40	210.746
14/APR/09	01:00	1.765	3.06	122.573
14/APR/09	01:15	1.961	4.34	203.387
14/APR/09	01:30	1.745	3.09	122.023
14/APR/09	01:45	1.696	3.85	145.593
14/APR/09	02:00	1.334	2.10	55.739
14/APR/09	02:15	1.544	3.25	107.147
14/APR/09	02:30	1.439	2.71	80.500
14/APR/09	02:45	1.005	1.65	28.802
14/APR/09	03:00	0.946	0.98	15.629
14/APR/09	03:15	1.161	2.37	51.312
14/APR/09	03:30	1.105	1.80	36.224
14/APR/09	03:45	0.809	0.65	8.208
14/APR/09	04:00	0.700	0.69	7.048
14/APR/09	04:15	1.233	2.65	62.526
14/APR/09	04:30	1.035	1.37	25.035
14/APR/09	04:45	0.993	1.09	18.738
14/APR/09	05:00	0.886	0.52	7.513
14/APR/09	05:15	0.450	0.30	1.581
14/APR/09	05:30	1.392	2.57	72.728
14/APR/09	05:45	1.148	1.37	29.222
14/APR/09	06:00	0.798	1.24	15.356
14/APR/09	06:15	0.650	0.79	7.226
14/APR/09	06:30	1.375	2.43	67.552
14/APR/09	06:45	1.252	1.58	38.190
14/APR/09	07:00	1.151	1.41	30.089
14/APR/09	07:15	1.378	2.79	77.625
14/APR/09	07:30	1.314	2.31	60.038
14/APR/09	07:45	1.617	2.98	105.116
14/APR/09	08:00	1.943	4.29	198.162
14/APR/09	08:15	1.727	3.34	129.858
14/APR/09	08:30	1.940	4.34	200.120
14/APR/09	08:45	1.968	4.66	219.105
14/APR/09	09:00	1.973	4.64	219.378
14/APR/09	09:15	2.083	5.07	259.392
14/APR/09	09:30	2.159	5.45	293.678
14/APR/09	09:45	2.204	5.58	309.665
14/APR/09	10:00	2.514	5.43	365.422
14/APR/09	10:15	2.536	5.65	384.955
14/APR/09	10:30	2.452	5.66	367.020
14/APR/09	10:45	2.464	5.77	377.030
14/APR/09	11:00	2.396	5.56	348.489
14/APR/09	11:15	2.481	5.82	384.100
14/APR/09	11:30	2.171	5.41	293.646
14/APR/09	11:45	2.559	5.63	388.787
14/APR/09	12:00	2.500	5.62	375.014
14/APR/09	12:15	2.506	5.64	377.818
14/APR/09	12:30	2.454	5.60	363.777
14/APR/09	12:45	2.184	5.47	299.672
14/APR/09	13:00	2.263	5.45	314.366
14/APR/09	13:15	2.266	5.42	313.183
14/APR/09	13:30	2.288	5.49	322.218
14/APR/09	13:45	2.220	5.27	295.853
14/APR/09	14:00	2.175	5.08	276.623
14/APR/09	14:15	2.195	5.15	284.150
14/APR/09	14:30	2.145	4.96	264.620
14/APR/09	14:45	1.879	4.55	199.971
14/APR/09	15:00	1.862	4.15	179.971
14/APR/09	15:15	1.963	4.87	228.491

14/APR/09	15:30	1.976	4.82	228.233
14/APR/09	15:45	2.064	5.07	255.731
14/APR/09	16:00	2.018	4.96	241.989
14/APR/09	16:15	1.898	4.39	195.977
14/APR/09	16:30	1.913	4.46	201.373
14/APR/09	16:45	1.957	4.72	220.488
14/APR/09	17:00	1.911	4.55	204.927
14/APR/09	17:15	1.909	4.56	205.380
14/APR/09	17:30	1.813	4.06	169.320
14/APR/09	17:45	1.805	3.95	163.836
14/APR/09	18:00	1.935	4.61	211.450
14/APR/09	18:15	1.979	4.89	232.034
14/APR/09	18:30	1.959	4.81	224.668
14/APR/09	18:45	1.938	4.76	218.999
14/APR/09	19:00	1.956	4.79	223.374
14/APR/09	19:15	2.310	5.27	313.329
14/APR/09	19:30	2.253	5.40	309.663
14/APR/09	19:45	2.243	5.31	302.657
14/APR/09	20:00	2.169	5.07	275.192
14/APR/09	20:15	2.243	5.43	309.116
14/APR/09	20:30	2.153	5.02	269.241
14/APR/09	20:45	2.115	4.84	253.025
14/APR/09	21:00	2.098	4.87	251.603
14/APR/09	21:15	1.961	4.95	231.835
14/APR/09	21:30	1.932	4.81	220.406
14/APR/09	21:45	1.927	4.41	201.016
14/APR/09	22:00	1.921	4.32	196.378
14/APR/09	22:15	1.778	3.66	148.564
14/APR/09	22:30	1.868	4.24	184.746
14/APR/09	22:45	1.875	4.31	188.785
14/APR/09	23:00	1.880	4.37	192.121
14/APR/09	23:15	1.841	4.10	175.017
14/APR/09	23:30	1.893	4.41	196.295
14/APR/09	23:45	1.850	4.13	177.281
15/APR/09	00:00	1.886	4.28	189.467

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Manchester Sewer Flow Study
Day Report - 14/APR/09
Tuesday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.450	0.30	1.581
	05:15	05:15	05:15
Maximum:	2.559	5.82	388.787
	11:45	11:15	11:45
Average:	1.829	4.03	196.349

Total Flow1: 282.743 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
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15/APR/09	00:15	2.089	4.47	229.316
15/APR/09	00:30	2.018	4.39	214.183
15/APR/09	00:45	1.947	4.10	190.027
15/APR/09	01:00	1.906	3.93	176.308
15/APR/09	01:15	1.733	4.06	158.424
15/APR/09	01:30	1.797	3.94	162.330
15/APR/09	01:45	1.870	4.30	187.537
15/APR/09	02:00	1.601	2.77	96.231
15/APR/09	02:15	1.636	2.96	106.040
15/APR/09	02:30	1.551	2.57	85.038
15/APR/09	02:45	1.629	3.01	107.219
15/APR/09	03:00	1.480	2.02	62.480
15/APR/09	03:15	1.188	1.18	26.407
15/APR/09	03:30	1.505	3.18	100.903
15/APR/09	03:45	1.250	1.26	30.386
15/APR/09	04:00	1.243	1.63	39.115
15/APR/09	04:15	1.396	2.78	78.831
15/APR/09	04:30	1.313	2.16	55.922
15/APR/09	04:45	0.958	1.13	18.456
15/APR/09	05:00	1.805	2.71	112.318
15/APR/09	05:15	2.233	1.54	87.178
15/APR/09	05:30	1.580	1.16	39.494
15/APR/09	05:45	1.818	3.01	126.053
15/APR/09	06:00	1.574	1.52	51.536
15/APR/09	06:15	1.181	1.10	24.440
15/APR/09	06:30	1.441	2.94	87.382
15/APR/09	06:45	1.262	1.95	47.687
15/APR/09	07:00	0.860	1.31	18.127
15/APR/09	07:15	1.419	2.78	80.836
15/APR/09	07:30	0.945	2.14	34.026
15/APR/09	07:45	1.684	3.06	114.505
15/APR/09	08:00	1.500	2.54	80.063
15/APR/09	08:15	1.711	3.83	146.590
15/APR/09	08:30	1.850	4.47	192.028
15/APR/09	08:45	1.842	4.41	188.447
15/APR/09	09:00	1.920	4.94	224.067
15/APR/09	09:15	1.961	5.11	239.129
15/APR/09	09:30	2.312	5.28	314.353
15/APR/09	09:45	2.181	5.33	291.262
15/APR/09	10:00	2.251	5.76	329.926
15/APR/09	10:15	2.181	5.33	291.457
15/APR/09	10:30	2.574	5.70	396.490
15/APR/09	10:45	2.235	5.69	322.707
15/APR/09	11:00	2.186	5.35	293.605
15/APR/09	11:15	2.201	5.29	293.137
15/APR/09	11:30	2.269	5.41	313.412
15/APR/09	11:45	2.486	5.31	351.237
15/APR/09	12:00	2.489	5.82	385.382
15/APR/09	12:15	2.481	5.78	381.585
15/APR/09	12:30	2.447	5.64	364.500
15/APR/09	12:45	2.184	5.47	299.672
15/APR/09	13:00	2.427	5.03	321.339
15/APR/09	13:15	2.419	5.26	334.333
15/APR/09	13:30	2.366	5.36	329.714
15/APR/09	13:45	1.984	5.07	241.305
15/APR/09	14:00	2.037	4.92	243.341
15/APR/09	14:15	2.048	4.92	245.326
15/APR/09	14:30	2.099	5.01	259.052
15/APR/09	14:45	2.069	4.88	246.793
15/APR/09	15:00	2.158	5.22	280.985
15/APR/09	15:15	2.097	4.91	253.777
15/APR/09	15:30	1.977	4.40	208.263
15/APR/09	15:45	1.941	4.21	194.191

15/APR/09	16:00	2.047	4.77	237.777
15/APR/09	16:15	2.057	4.76	238.763
15/APR/09	16:30	1.968	4.23	199.100
15/APR/09	16:45	2.010	4.48	217.320
15/APR/09	17:00	1.897	4.64	206.724
15/APR/09	17:15	2.023	4.71	230.566
15/APR/09	17:30	1.976	4.26	201.916
15/APR/09	17:45	1.986	4.21	200.821
15/APR/09	18:00	2.228	4.30	242.808
15/APR/09	18:15	1.932	4.53	207.366
15/APR/09	18:30	1.964	4.09	192.064
15/APR/09	18:45	2.025	4.53	222.043
15/APR/09	19:00	1.943	4.29	197.941
15/APR/09	19:15	2.074	4.95	251.671
15/APR/09	19:30	2.085	4.92	251.758
15/APR/09	19:45	2.131	5.15	272.338
15/APR/09	20:00	2.128	5.08	268.037
15/APR/09	20:15	2.167	5.25	284.131
15/APR/09	20:30	2.461	5.19	338.423
15/APR/09	20:45	2.330	5.24	315.301
15/APR/09	21:00	2.183	4.85	265.557
15/APR/09	21:15	2.144	4.68	249.542
15/APR/09	21:30	2.124	4.59	241.590
15/APR/09	21:45	1.945	4.88	225.703
15/APR/09	22:00	1.882	3.95	173.987
15/APR/09	22:15	2.005	4.32	208.768
15/APR/09	22:30	2.102	4.61	238.818
15/APR/09	22:45	2.068	4.29	217.005
15/APR/09	23:00	2.067	4.30	217.269
15/APR/09	23:15	2.072	4.25	215.504
15/APR/09	23:30	2.001	3.94	190.143
15/APR/09	23:45	2.094	4.53	233.726
16/APR/09	00:00	2.055	4.32	216.415

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Manchester Sewer Flow Study
Day Report - 15/APR/09
Wednesday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.860	1.10	18.127
	07:00	06:15	07:00
Maximum:	2.574	5.82	396.490
	10:30	12:00	10:30
Average:	1.927	4.10	202.886

Total Flow1: 292.156 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
16/APR/09	00:15	1.752	3.84	152.444
16/APR/09	00:30	1.942	4.58	211.273

16/APR/09	00:45	1.860	4.04	174.876
16/APR/09	01:00	1.914	4.28	193.316
16/APR/09	01:15	1.947	4.37	202.411
16/APR/09	01:30	1.548	3.28	108.458
16/APR/09	01:45	1.855	4.42	190.569
16/APR/09	02:00	1.556	2.95	98.278
16/APR/09	02:15	0.957	1.73	28.052
16/APR/09	02:30	1.549	2.90	96.199
16/APR/09	02:45	1.345	1.94	52.279
16/APR/09	03:00	0.960	1.15	18.754
16/APR/09	03:15	1.126	1.73	35.748
16/APR/09	03:30	1.261	2.58	62.991
16/APR/09	03:45	1.088	1.34	26.230
16/APR/09	04:00	0.661	0.00	0.000
16/APR/09	04:15	0.699	0.68	6.880
16/APR/09	04:30	1.312	2.39	61.839
16/APR/09	04:45	1.095	1.41	27.936
16/APR/09	05:00	0.738	1.20	13.197
16/APR/09	05:15	0.640	0.65	5.775
16/APR/09	05:30	1.322	2.46	64.594
16/APR/09	05:45	1.073	1.47	28.353
16/APR/09	06:00	0.755	1.38	15.811
16/APR/09	06:15	0.708	0.81	8.420
16/APR/09	06:30	1.384	2.04	57.139
16/APR/09	06:45	1.300	1.78	45.618
16/APR/09	07:00	1.226	1.61	37.650
16/APR/09	07:15	1.472	3.15	96.731
16/APR/09	07:30	1.277	1.88	46.938
16/APR/09	07:45	1.878	3.23	141.981
16/APR/09	08:00	2.053	4.86	243.034
16/APR/09	08:15	2.000	4.49	216.513
16/APR/09	08:30	2.130	5.02	265.417
16/APR/09	08:45	2.471	5.24	343.311
16/APR/09	09:00	2.109	5.12	266.590
16/APR/09	09:15	2.184	5.34	292.725
16/APR/09	09:30	2.206	5.31	295.391
16/APR/09	09:45	2.225	5.14	289.575
16/APR/09	10:00	2.539	5.55	378.493
16/APR/09	10:15	2.487	5.56	368.187
16/APR/09	10:30	2.450	5.57	360.694
16/APR/09	10:45	2.527	5.68	384.573
16/APR/09	11:00	2.482	5.34	352.695
16/APR/09	11:15	2.460	5.32	346.343
16/APR/09	11:30	2.542	5.74	392.071
16/APR/09	11:45	2.465	5.43	355.276
16/APR/09	12:00	2.447	5.42	350.367
16/APR/09	12:15	2.316	5.56	331.692
16/APR/09	12:30	2.310	5.53	328.921
16/APR/09	12:45	2.339	5.49	332.334
16/APR/09	13:00	2.285	5.16	301.919
16/APR/09	13:15	2.310	5.22	310.650
16/APR/09	13:30	2.251	5.04	288.668
16/APR/09	13:45	2.249	4.98	284.942
16/APR/09	14:00	2.233	4.95	279.945
16/APR/09	14:15	2.242	5.02	285.555
16/APR/09	14:30	2.203	4.85	269.389
16/APR/09	14:45	2.001	4.59	221.262
16/APR/09	15:00	2.077	4.69	238.835
16/APR/09	15:15	2.144	4.93	262.842
16/APR/09	15:30	1.946	4.07	188.258
16/APR/09	15:45	1.962	4.27	200.045
16/APR/09	16:00	2.023	4.47	218.843
16/APR/09	16:15	1.672	4.04	149.523

16/APR/09	16:30	1.743	4.12	162.100
16/APR/09	16:45	1.686	3.68	138.044
16/APR/09	17:00	1.826	4.34	182.965
16/APR/09	17:15	1.578	2.95	100.285
16/APR/09	17:30	1.784	4.24	172.552
16/APR/09	17:45	2.029	4.14	203.943
16/APR/09	18:00	1.901	4.21	188.215
16/APR/09	18:15	1.917	4.25	192.167
16/APR/09	18:30	1.976	4.46	211.144
16/APR/09	18:45	1.981	4.66	221.422
16/APR/09	19:00	1.942	4.34	200.085
16/APR/09	19:15	2.016	4.59	223.389
16/APR/09	19:30	1.805	4.74	196.489
16/APR/09	19:45	2.053	4.28	214.102
16/APR/09	20:00	1.984	4.51	214.479
16/APR/09	20:15	2.054	4.77	238.884
16/APR/09	20:30	2.108	4.92	255.912
16/APR/09	20:45	2.086	4.91	251.372
16/APR/09	21:00	2.039	4.64	230.234
16/APR/09	21:15	1.949	4.14	192.142
16/APR/09	21:30	2.035	4.66	230.383
16/APR/09	21:45	2.008	4.46	215.944
16/APR/09	22:00	1.951	4.22	195.897
16/APR/09	22:15	1.952	4.20	194.999
16/APR/09	22:30	2.133	4.40	232.719
16/APR/09	22:45	1.967	4.11	193.154
16/APR/09	23:00	2.000	4.39	211.582
16/APR/09	23:15	1.989	4.38	209.515
16/APR/09	23:30	1.982	4.38	208.112
16/APR/09	23:45	2.002	4.50	217.063
17/APR/09	00:00	1.995	4.56	218.958

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Manchester Sewer Flow Study
Day Report - 16/APR/09
Thursday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.640	0.00	0.000
	05:15	04:00	04:00
Maximum:	2.542	5.74	392.071
	11:30	11:30	11:30
Average:	1.844	3.95	193.999

Total Flow1: 279.358 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
17/APR/09	00:15	1.992	4.47	214.051
17/APR/09	00:30	1.992	4.45	212.935
17/APR/09	00:45	1.907	3.99	179.241
17/APR/09	01:00	1.988	4.45	212.613

17/APR/09	01:15	1.787	3.29	134.157
17/APR/09	01:30	1.837	3.70	157.137
17/APR/09	01:45	1.463	2.68	81.671
17/APR/09	02:00	1.598	2.85	98.680
17/APR/09	02:15	1.381	1.65	46.159
17/APR/09	02:30	1.538	2.83	92.565
17/APR/09	02:45	1.425	1.57	45.937
17/APR/09	03:00	1.376	0.96	26.722
17/APR/09	03:15	1.476	2.14	66.012
17/APR/09	03:30	1.411	1.48	42.701
17/APR/09	03:45	0.903	1.14	17.007
17/APR/09	04:00	0.801	0.00	0.000
17/APR/09	04:15	1.056	1.96	36.873
17/APR/09	04:30	1.012	1.27	22.432
17/APR/09	04:45	0.729	1.08	11.700
17/APR/09	05:00	0.749	0.58	6.566
17/APR/09	05:15	1.324	2.01	52.687
17/APR/09	05:30	1.203	1.66	37.767
17/APR/09	05:45	0.838	1.04	13.826
17/APR/09	06:00	0.823	0.84	10.874
17/APR/09	06:15	0.782	1.04	12.509
17/APR/09	06:30	1.327	2.03	53.575
17/APR/09	06:45	0.914	1.27	19.341
17/APR/09	07:00	0.904	0.79	11.802
17/APR/09	07:15	1.545	2.87	94.782
17/APR/09	07:30	1.278	1.84	45.710
17/APR/09	07:45	1.413	2.59	74.919
17/APR/09	08:00	1.467	2.92	69.175
17/APR/09	08:15	1.735	4.32	168.820
17/APR/09	08:30	1.807	4.61	191.486
17/APR/09	08:45	1.944	5.22	240.971
17/APR/09	09:00	2.589	5.26	369.276
17/APR/09	09:15	2.540	5.30	361.501
17/APR/09	09:30	2.556	5.62	387.236
17/APR/09	09:45	2.476	5.45	358.665
17/APR/09	10:00	2.530	5.66	383.950
17/APR/09	10:15	2.467	5.30	346.945
17/APR/09	10:30	2.554	5.65	388.682
17/APR/09	10:45	2.494	5.38	357.487
17/APR/09	11:00	2.392	5.64	353.023
17/APR/09	11:15	2.519	5.58	376.595
17/APR/09	11:30	2.558	5.55	382.566
17/APR/09	11:45	2.571	5.63	390.938
17/APR/09	12:00	2.560	5.59	385.902
17/APR/09	12:15	2.552	5.56	382.295
17/APR/09	12:30	2.150	5.05	270.647
17/APR/09	12:45	2.240	5.08	288.716
17/APR/09	13:00	2.246	5.32	303.758
17/APR/09	13:15	2.239	5.20	295.616
17/APR/09	13:30	2.193	4.99	274.772
17/APR/09	13:45	2.175	4.99	271.620
17/APR/09	14:00	2.163	5.00	270.096
17/APR/09	14:15	2.058	4.53	227.413
17/APR/09	14:30	2.073	4.68	237.866
17/APR/09	14:45	2.092	4.74	243.753
17/APR/09	15:00	2.047	4.59	228.673
17/APR/09	15:15	2.022	4.42	216.287
17/APR/09	15:30	1.812	4.19	174.519
17/APR/09	15:45	2.286	4.32	252.787
17/APR/09	16:00	1.907	4.39	197.417
17/APR/09	16:15	1.917	4.30	194.770
17/APR/09	16:30	1.923	4.28	194.780
17/APR/09	16:45	1.943	4.36	201.385

17/APR/09	17:00	1.918	4.21	190.960
17/APR/09	17:15	1.973	4.45	210.143
17/APR/09	17:30	1.978	4.39	208.191
17/APR/09	17:45	1.966	4.45	209.122
17/APR/09	18:00	1.959	4.37	204.037
17/APR/09	18:15	1.866	4.77	207.524
17/APR/09	18:30	1.925	4.34	197.921
17/APR/09	18:45	1.993	4.55	218.089
17/APR/09	19:00	1.987	4.30	204.880
17/APR/09	19:15	2.137	4.99	264.615
17/APR/09	19:30	2.081	4.71	240.608
17/APR/09	19:45	2.058	4.60	230.846
17/APR/09	20:00	2.034	4.54	224.242
17/APR/09	20:15	2.117	4.89	255.797
17/APR/09	20:30	2.036	4.48	221.372
17/APR/09	20:45	1.991	4.20	201.016
17/APR/09	21:00	2.287	4.32	253.319
17/APR/09	21:15	2.235	4.19	237.583
17/APR/09	21:30	2.233	4.53	256.248
17/APR/09	21:45	1.831	4.29	181.761
17/APR/09	22:00	1.933	4.24	194.130
17/APR/09	22:15	1.882	4.05	178.705
17/APR/09	22:30	1.913	4.28	193.171
17/APR/09	22:45	1.938	4.38	201.593
17/APR/09	23:00	1.944	4.44	205.235
17/APR/09	23:15	1.944	4.42	204.497
17/APR/09	23:30	1.851	3.89	167.155
17/APR/09	23:45	1.907	4.19	188.336
18/APR/09	00:00	1.948	4.40	203.914

Manchester Sewer Flow Study
Day Report - 17/APR/09
Friday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.729 04:45	0.00 04:00	0.000 04:00
Maximum:	2.589 09:00	5.66 10:00	390.938 11:45
Average:	1.859	3.86	193.212

Total Flow1: 278.225 (gal) x1000

Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
18/APR/09	00:15	1.630	3.79	135.363
18/APR/09	00:30	1.817	4.22	176.548
18/APR/09	00:45	1.817	4.21	176.345
18/APR/09	01:00	1.784	3.95	161.104
18/APR/09	01:15	1.877	4.41	193.683
18/APR/09	01:30	1.605	2.83	98.822

18/APR/09	01:45	1.608	2.86	100.078
18/APR/09	02:00	1.635	3.11	111.429
18/APR/09	02:15	1.003	1.63	28.348
18/APR/09	02:30	1.624	3.03	107.576
18/APR/09	02:45	1.414	2.30	66.511
18/APR/09	03:00	0.965	1.21	19.925
18/APR/09	03:15	1.650	2.82	102.221
18/APR/09	03:30	1.144	1.90	40.315
18/APR/09	03:45	1.070	1.74	33.251
18/APR/09	04:00	0.899	0.85	12.592
18/APR/09	04:15	0.471	0.63	3.581
18/APR/09	04:30	1.383	2.03	56.791
18/APR/09	04:45	1.187	1.17	26.231
18/APR/09	05:00	0.830	0.93	12.217
18/APR/09	05:15	0.679	0.80	7.828
18/APR/09	05:30	0.719	0.70	7.471
18/APR/09	05:45	0.868	1.69	23.689
18/APR/09	06:00	0.828	1.05	13.776
18/APR/09	06:15	0.801	0.93	11.606
18/APR/09	06:30	0.528	0.64	4.314
18/APR/09	06:45	1.060	1.63	30.900
18/APR/09	07:00	1.121	1.96	40.162
18/APR/09	07:15	0.994	1.11	19.088
18/APR/09	07:30	0.929	0.75	11.691
18/APR/09	07:45	1.477	2.79	86.034
18/APR/09	08:00	1.206	1.39	31.816
18/APR/09	08:15	1.506	3.12	99.187
18/APR/09	08:30	1.800	4.50	185.612
18/APR/09	08:45	2.197	5.01	276.732
18/APR/09	09:00	2.231	5.17	292.098
18/APR/09	09:15	2.374	5.39	333.659
18/APR/09	09:30	2.345	5.43	330.232
18/APR/09	09:45	2.394	5.55	347.716
18/APR/09	10:00	2.639	5.49	396.056
18/APR/09	10:15	2.636	5.60	403.500
18/APR/09	10:30	2.999	5.59	485.252
18/APR/09	10:45	2.934	5.80	487.713
18/APR/09	11:00	2.440	5.35	344.624
18/APR/09	11:15	2.539	5.91	403.183
18/APR/09	11:30	2.520	5.71	385.489
18/APR/09	11:45	2.467	5.41	354.065
18/APR/09	12:00	2.437	5.34	343.202
18/APR/09	12:15	2.442	5.36	345.611
18/APR/09	12:30	2.392	5.13	320.924
18/APR/09	12:45	2.427	5.39	344.652
18/APR/09	13:00	2.236	5.19	294.342
18/APR/09	13:15	2.177	5.04	275.000
18/APR/09	13:30	2.245	5.15	293.635
18/APR/09	13:45	2.322	5.39	323.033
18/APR/09	14:00	2.209	5.01	279.088
18/APR/09	14:15	2.411	4.95	313.182
18/APR/09	14:30	1.997	5.13	246.363
18/APR/09	14:45	2.140	4.13	219.662
18/APR/09	15:00	2.275	4.55	264.829
18/APR/09	15:15	2.268	4.99	288.516
18/APR/09	15:30	2.227	4.81	271.159
18/APR/09	15:45	2.124	4.17	219.154
18/APR/09	16:00	2.437	4.52	290.531
18/APR/09	16:15	2.327	4.39	263.581
18/APR/09	16:30	2.463	4.65	303.915
18/APR/09	16:45	2.507	4.87	326.282
18/APR/09	17:00	2.841	4.57	366.727
18/APR/09	17:15	2.253	4.44	254.323

18/APR/09	17:30	2.410	4.53	286.333
18/APR/09	17:45	2.424	4.25	270.829
18/APR/09	18:00	2.465	4.37	285.370
18/APR/09	18:15	2.861	4.67	379.211
18/APR/09	18:30	2.409	4.37	276.119
18/APR/09	18:45	2.259	4.17	239.817
18/APR/09	19:00	2.247	4.10	234.379
18/APR/09	19:15	2.345	4.55	276.484
18/APR/09	19:30	2.081	4.42	225.730
18/APR/09	19:45	2.206	4.49	249.691
18/APR/09	20:00	2.225	4.39	246.960
18/APR/09	20:15	2.302	4.69	277.781
18/APR/09	20:30	2.243	4.39	249.832
18/APR/09	20:45	2.266	4.36	251.856
18/APR/09	21:00	2.035	4.48	221.287
18/APR/09	21:15	2.082	4.57	233.651
18/APR/09	21:30	2.450	4.58	296.925
18/APR/09	21:45	2.085	4.44	227.437
18/APR/09	22:00	2.048	4.25	211.764
18/APR/09	22:15	1.978	3.85	182.606
18/APR/09	22:30	2.056	4.29	215.278
18/APR/09	22:45	2.330	3.60	216.495
18/APR/09	23:00	2.250	3.96	226.389
18/APR/09	23:15	2.270	4.33	251.172
18/APR/09	23:30	2.248	4.18	239.001
18/APR/09	23:45	2.251	4.25	243.340
19/APR/09	00:00	2.072	4.37	221.781

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Manchester Sewer Flow Study
Day Report - 18/APR/09
Saturday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.471 04:15	0.63 04:15	3.581 04:15
Maximum:	2.999 10:30	5.91 11:15	487.713 10:45
Average:	1.945	3.84	211.059

Total Flow1: 303.925 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
19/APR/09	00:15	2.067	4.19	211.964
19/APR/09	00:30	2.169	4.39	238.391
19/APR/09	00:45	2.054	3.88	194.330
19/APR/09	01:00	2.217	4.78	267.447
19/APR/09	01:15	1.896	2.90	129.195
19/APR/09	01:30	1.948	3.32	153.655
19/APR/09	01:45	1.890	3.07	136.345
19/APR/09	02:00	1.920	3.21	145.675

19/APR/09	02:15	1.362	1.25	34.086
19/APR/09	02:30	1.703	2.99	113.864
19/APR/09	02:45	1.641	2.16	77.721
19/APR/09	03:00	1.486	1.22	37.935
19/APR/09	03:15	1.633	2.43	86.804
19/APR/09	03:30	1.509	1.42	45.111
19/APR/09	03:45	1.262	1.39	34.009
19/APR/09	04:00	0.893	1.02	14.945
19/APR/09	04:15	1.516	2.20	70.651
19/APR/09	04:30	1.413	1.18	34.227
19/APR/09	04:45	1.321	0.98	25.549
19/APR/09	05:00	0.983	0.71	12.065
19/APR/09	05:15	0.801	0.00	0.000
19/APR/09	05:30	1.355	1.76	47.913
19/APR/09	05:45	1.243	1.48	35.455
19/APR/09	06:00	0.714	0.89	9.377
19/APR/09	06:15	0.651	0.37	3.393
19/APR/09	06:30	0.650	1.03	9.405
19/APR/09	06:45	0.829	2.23	29.257
19/APR/09	07:00	0.777	1.50	17.912
19/APR/09	07:15	0.738	1.08	11.951
19/APR/09	07:30	0.743	0.96	10.700
19/APR/09	07:45	1.161	2.06	44.504
19/APR/09	08:00	1.065	1.39	26.452
19/APR/09	08:15	1.020	1.20	21.386
19/APR/09	08:30	1.348	3.35	90.413
19/APR/09	08:45	2.200	4.46	246.910
19/APR/09	09:00	2.109	3.95	205.844
19/APR/09	09:15	2.284	5.07	296.302
19/APR/09	09:30	2.327	5.22	313.967
19/APR/09	09:45	2.418	5.51	349.981
19/APR/09	10:00	2.407	5.37	339.308
19/APR/09	10:15	2.425	5.36	341.756
19/APR/09	10:30	2.427	5.32	340.130
19/APR/09	10:45	2.470	5.55	363.750
19/APR/09	11:00	2.672	5.39	395.785
19/APR/09	11:15	2.780	5.49	427.311
19/APR/09	11:30	2.727	5.63	426.201
19/APR/09	11:45	2.698	5.31	395.746
19/APR/09	12:00	2.735	5.47	415.548
19/APR/09	12:15	2.722	5.40	407.259
19/APR/09	12:30	2.774	5.59	433.310
19/APR/09	12:45	3.129	5.66	522.748
19/APR/09	13:00	2.650	5.54	402.258
19/APR/09	13:15	2.547	5.33	365.025
19/APR/09	13:30	2.479	4.92	324.212
19/APR/09	13:45	2.539	5.23	356.614
19/APR/09	14:00	2.534	5.27	358.338
19/APR/09	14:15	2.563	5.40	373.421
19/APR/09	14:30	2.522	5.10	344.340
19/APR/09	14:45	2.554	5.29	364.188
19/APR/09	15:00	2.459	4.82	313.529
19/APR/09	15:15	2.507	5.13	343.281
19/APR/09	15:30	2.763	5.02	387.110
19/APR/09	15:45	2.612	4.83	343.715
19/APR/09	16:00	2.497	4.44	295.829
19/APR/09	16:15	2.395	4.30	269.461
19/APR/09	16:30	2.389	4.32	269.845
19/APR/09	16:45	2.400	4.37	275.024
19/APR/09	17:00	2.147	4.47	238.914
19/APR/09	17:15	2.165	4.57	247.032
19/APR/09	17:30	2.244	4.49	256.184
19/APR/09	17:45	2.166	4.20	227.065

19/APR/09	18:00	2.234	4.40	249.137
19/APR/09	18:15	2.244	4.29	244.760
19/APR/09	18:30	2.240	4.20	238.718
19/APR/09	18:45	2.574	4.64	323.161
19/APR/09	19:00	2.435	4.36	280.065
19/APR/09	19:15	2.394	4.39	274.963
19/APR/09	19:30	2.388	4.41	274.990
19/APR/09	19:45	2.442	4.83	311.369
19/APR/09	20:00	2.435	4.75	304.786
19/APR/09	20:15	2.495	5.01	333.343
19/APR/09	20:30	2.346	4.33	263.466
19/APR/09	20:45	2.463	4.89	319.483
19/APR/09	21:00	2.611	4.83	343.276
19/APR/09	21:15	2.503	4.71	314.928
19/APR/09	21:30	2.474	4.70	309.076
19/APR/09	21:45	2.395	4.52	283.326
19/APR/09	22:00	2.327	4.30	258.187
19/APR/09	22:15	2.317	4.33	258.869
19/APR/09	22:30	2.323	4.42	265.142
19/APR/09	22:45	2.008	4.33	209.920
19/APR/09	23:00	2.080	4.27	217.617
19/APR/09	23:15	2.026	4.02	197.143
19/APR/09	23:30	1.990	3.76	179.558
19/APR/09	23:45	2.083	4.43	226.704
20/APR/09	00:00	1.790	2.74	112.308

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Manchester Sewer Flow Study
Day Report - 19/APR/09
Sunday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.650	0.00	0.000
	06:30	05:15	05:15
Maximum:	3.129	5.66	522.748
	12:45	12:45	12:45
Average:	2.042	3.80	224.934

Total Flow1: 323.904 (gal) x1000

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Manchester Sewer Flow Study
Logged Readings

Site Id: 00032009
Description: Richard Estates Trunk Sewer

Date	Time	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
20/APR/09	00:15	2.291	4.34	255.185
20/APR/09	00:30	1.671	2.97	109.885
20/APR/09	00:45	1.845	3.73	159.838
20/APR/09	01:00	2.908	4.62	384.120
20/APR/09	01:15	2.077	3.05	155.073
20/APR/09	01:30	2.326	4.07	244.532
20/APR/09	01:45	1.985	2.36	112.546
20/APR/09	02:00	2.090	3.23	166.023
20/APR/09	02:15	1.044	2.02	37.233
20/APR/09	02:30	1.304	2.96	75.948

20/APR/09	02:45	1.375	2.86	79.431
20/APR/09	03:00	1.713	1.39	53.503
20/APR/09	03:15	1.079	1.22	23.733
20/APR/09	03:30	1.165	2.10	45.603
20/APR/09	03:45	1.737	1.65	64.699
20/APR/09	04:00	1.188	1.19	26.558
20/APR/09	04:15	0.844	1.11	14.953
20/APR/09	04:30	0.661	0.00	0.000
20/APR/09	04:45	1.348	2.21	59.731
20/APR/09	05:00	0.867	1.38	19.373
20/APR/09	05:15	0.866	1.03	14.425
20/APR/09	05:30	0.754	0.00	0.000
20/APR/09	05:45	0.722	0.60	6.410
20/APR/09	06:00	1.143	1.90	40.075
20/APR/09	06:15	1.094	1.40	27.750
20/APR/09	06:30	1.033	1.13	20.495
20/APR/09	06:45	1.050	1.38	25.672
20/APR/09	07:00	1.425	2.39	69.945
20/APR/09	07:15	1.004	1.64	28.564
20/APR/09	07:30	1.649	3.20	116.342
20/APR/09	07:45	1.454	2.62	79.007
20/APR/09	08:00	1.716	3.86	148.389
20/APR/09	08:15	1.841	4.42	188.735
20/APR/09	08:30	1.896	4.52	201.251

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Manchester Sewer Flow Study
Day Report - 20/APR/09
Monday

Site Id: 00032009
Description: Richard Estates Trunk Sewer

	Level (in.)	Vel. 1 (fps)	Flow 1 (gpm)
Minimum:	0.661 04:30	0.00 04:30	0.000 04:30
Maximum:	2.908 01:00	4.62 01:00	384.120 01:00
Average:	1.446	2.31	89.854
Total Flow1:	45.825 (gal) x1000		

SEWER FLOW STUDY SUMMARY
FLOWS (gpm)

Day	Date	Average	Peak	Rainfall (Inches)	Comments
Thursday	March 26	--	348	0	
Friday	March 27	176	367	0	
Saturday	March 28	195	419	0.21	
Sunday	March 29	197	371	0.45	
Monday	March 30	201	413	0.20	
Tuesday	March 31	185	368	0	
Wednesday	April 1	182	386	0	
Thursday	April 2	175	344	0.50	
Friday	April 3	187	385	0.54	School Out
Saturday	April 4	198	450	0	
Sunday	April 5	192	470	0	
Monday	April 6	179	430	0.43	School Out
Tuesday	April 7	177	363	0	School Out
Wednesday	April 8	189	361	0	School Out
Thursday	April 9	210	445	0	School Out
Friday	April 10	203	401	0	School Out
Saturday	April 11	231	535	0.90	
Sunday	April 12	228	498	0	Easter
Monday	April 13	208	439	0	
Tuesday	April 14	196	388	0.50	
Wednesday	April 15	203	396	0.57	
Thursday	April 16	194	392	0	
Friday	April 17	193	391	0	
Saturday	April 18	211	487	0	
Sunday	April 19	225	522	0	
Monday	April 20	--	384	0	

TABLE 1
PROPOSED FLOW SUMMARY
ROUTE 571 CENTRAL SEWER SERVICE AREA

	Landuse Zone	Lot Size	Developable Area	Pinelands / CAFRA	Existing Number of Units or SF	Proposed Number of Units or SF	Total Number of Units or SF	Unit Flow	ADF
JTMUA Projected Service Area									
	Block 23001 Lots 22-29 Market					365	365	300	109,500
	Block 23001 Lots 22-29 Affordable						66	225	14,850
	Earle Industrial Park					6	6	4,000	240,000
	Ridgeway Industrial Park					2	2	4,000	8,000
	Clayton					450,000	450,000	0.10	45,000
	Luxury MHP				100		100	200	20,000
	Pine Barrens Golf Course				1		1		6,100
							Sub-Total		227,450
Manchester Township									
Route 571 Service Area									
Route 547, North of Route 571 Within Manchester Township									
	Existing Single Family Homes			Pinelands	68		68	230	15,640
	Future Single Family Homes			Pinelands		41	41	300	12,300
	Block 62, Lot 4			Pinelands		5	5	300	1,500
	Block 62, Lot 4			Pinelands	1		1	300	300
	Block 65, Lot 11	0.4	0.4	Pinelands		2,500	2,500	0.10	250
	Block 65, Lot 12	0.5	0.5	Pinelands		3,000	3,000	0.10	300
	Block 65, Lot 13	0.5	0.5	Pinelands		3,000	3,000	0.10	300
	Block 65, Lot 14 – Krupnick Site	19.4	19.4	Pinelands		125,000	125,000	0.10	12,500
	Block 66, Lots 2 and 4 – 23 Units per PDS	11.0	11.0	Pinelands		23	23	300	6,900
	Block 67.01, Lot 1.10 – Former Fox Chase Sub: Proposed Church			Pinelands					5,000
	Block 67.06, Lots 5 and 6	5.9	5.9	Pinelands		28,000	28,000		2,800
							Sub-Total		57,790
Area West of Route 547 South of Route 571 Within Manchester Township									
	Existing Single Family Home	PR – 15		Pinelands	7		7	230	1,610
	Future Single Family Home	PR – 15		Pinelands		29	29	300	8,700
	Block 69, Lot 2		1.0	Pinelands		4,000	4,000	0.10	400
	Block 69, Lot 3		1.0	Pinelands		4,000	4,000	0.10	400
	Block 69, Lots 4 and 8		6.0	Pinelands		19,200	19,200	0.10	1,920
	Block 69, Lot 5		3.0	Pinelands		12,000	12,000	0.10	1,200
	Block 69, Lot 7 – aka Bettio Site		5.6	Pinelands		19,200	19,000	0.10	1,920
							Sub-Total		16,150

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CAFRA Notes in the OP Zone – CAFRA Exempt Project – 49 Parking Spaces or 30% Lot Coverage, Whichever is Greater.
FS = Flow Study

	Landuse Zone	Lot Size	Developable Area	Pinelands / CAFRA	Existing Number of Units or SF	Proposed Number of Units or SF	Total Number of Units or SF	Unit Flow	ADF
Cedar Glen West and Ridgeway Mobile Home Park									
Cedar Glen West	PR - A			Pinelands	826		826	170	140,420
Cedar Glen West Clubhouse and Maintenance Building	PR - A			Pinelands	8,000		8,000	0.10	800
Ridgeway Mobile Home Park - 134 Units Total	PR - A			Pinelands	134		134	170	22,780
Block 62, Lots 9 and 10	R - 40			Pinelands	2		2	300	600
Block 62, Lot 11	R - 40			Pinelands	1		1	300	300
							Sub-Total		164,900
Area South of 571 Between Route 547 and Ridgeway Boulevard									
Block 71, Lot 1.01	POR - 4				101,059		101,059		10,106
Block 71, Lot 2	POR - 4				1		1	300	300
Block 71, Lot 6 - Golf Course	POR - 4				1		1	6,100	6,100
Block 72, Lots 1 and 3	POR - 4			2			2	300	300
Block 72, Lot 4 - Flumil, Inc.	POR - 4	113	100		787		787	300	23,400
Block 72, Lot 5	POR - 4	12.4		1			1	300	300
Block 72, Lot 5	POR - 4				6		6	300	1,800
							Sub-Total		42,306
Rinduin Ridge and Quarry Road									
Existing Single Family Homes				28			28	230	6,440
Future Single Family Homes					4		4	300	1,200
Rinduin Ridge PRC, aka MGD, Block 62, Lot 15							0		
2 Bedroom Units					255		255	225	57,375
3 Bedroom Units					45		45	170	54,060
							Sub-Total		119,075
Clearstream, Ridgeway Acres and Route 571 Corridor, West of Cabin Branch Stream									
Existing Single Family Homes				65			65	230	14,950
Future Single Family Homes				8,000	4		4	230	920
Clearstream Estates				15			15	230	3,450
Ridgeway Acres				14			14	230	3,220
Rolling Meadows Subdivision				25			25	230	5,750
							Sub-Total		28,290
Wilber Avenue Corridor and North Side Route 571, East of Route 70, West of Cabin Branch Stream									
Existing Single Family Homes				35			35	230	8,050
Future Single Family Homes					21		21	300	6,300
Block 16, 17, 20 Combined SF per BO	HD 3	13.0			28,699		28,699	0.10	2,870
Block 18, Lot 1873 - Rite Aid	HE 3			11,280			11,280		
Block 21, Lot 1 - Park Ridge Estates				1	8		8	300	2,400

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FS = Flow Study

	Landuse Zone	Lot Size	Developmentable Area	Pinelands / CAFRA	Existing Number of Units or SF	Proposed Number of Units or SF	Total Number of Units or SF	Unit Flow	ADF
Block 23, 24, 26, 27, 28 Combined						24	24	300	7,200
Block 21, Lot 620	HD 3 & R-40	5.0		1 Residential	X	5,100		0.10	810
Block 21, Lot 621	HD 3 & R-40	5.0		1 Residential	X	5,100		0.1	810
Block 21, Lot 622.01 – Anderson & Campbell Funeral Home (Actual SF of Building per Township Assessor)					5,220		5,220	0.1	522
Block 21, Lot 1747	HD 3	0.5				2,682	2,682	0.10	268
Block 52, Lot 2						9	9	300	2,700
Block 58, Lot 1.02							Sub-Total		31,930
Area South of Route 571, East of Cabin Branch Stream, East of Route 70									
Block 30, Lot 637 – PNC Bank (Actual SF of Building per Township Assessor)					2,544		2,544	0.10	254
Block 52, Lot 2	HD – 3	13.2	0.0 (1)						0
Block 52, Lot 4	HD – 3	2.1	0.0 (1)	CAFRA					0
Block 30, Lot 1.01	HD – 3	7.6	4.0 (2)	CAFRA		17,151	17,515	0.10	1,751
Block 30, Lot 1.02	HD – 3	0.7	0.5 (2)			3,093	3,093	0.1	309
Block 54, Lot 706					1		1	30	300
							Sub-Total		2,614
Renaissance Existing and Proposed Stavola / Clayton									
Renaissance PRC					65		65		FS
Clayton / Stavola PRC					8,000	4	4		8,000
2 Bedroom Units						510	510	170	86,700
3 Bedroom Units						90	90	170	15,300
							Sub-Total		110,000
Holly Oaks / Knoll Woods									
Holly Oaks / Knoll Woods Existing SF					488		488	230	112,240
Holly Oaks / Knoll Woods Proposed SF						6	6	300	1,800
Holly Oaks Park – Assume 10 GPD per Person – Say 75 Visitors					75		75	10	750
Block 15, Lot 6 – O.C.E.A.N., Inc. Head Start School – No. of Students					47		47		FS
Block 15, Lot 1.01 – Church – Redeemer Lutheran Nursery School – No. of Students					35		35		FS
Block 15, Lot 1.02							13,066	0.10	1,307
Block 60.10, Lot 1		3	3			5,227	5,227	0.10	523

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	Landuse Zone	Lot Size	Developable Area	Pinelands / CAFRA	Existing Number of Units or SF	Proposed Number of Units or SF	Total Number of Units or SF	Unit Flow	ADF
	Block 60.10, Lot 13	1.2	1.2			1,307	1,307	0.10	131
	Block 60.10, Lot 14	0.25	0.25			1,307	1,307	0.10	131
	Block 60.10, Lot 15	1.3	1.3			9,148	9,148	0.10	915
	Block 60.10, Lot 20	0.3	0.3			1,481	1,481	0.10	148
	Block 60.10, Lot 21	1.0	1.0			4,792	7,792	0.10	480
	Block 60.10, Lot 24 – Self Storage				1		1		
	Block 60.10, Lot 1 – Existing Real Estate Office					4,050	4,050	0.10	405
	Block 60.01, Lots 4 and 5				2		2	300	600
							Sub-Total		119,430
East side Route 571 south of Route 70									
	Ocean County Landfill					430,000	430,000	0.10	43,000
	OR-LI Zone, Within Landfill					267,720	267,720	0.10	26,772
	Existing R-10 Zone of Washington and Richmond Avenues				15		15	230	3,450
	Block 5, Lot 2106					2	2	300	600
	Block 2, Lot 2113					1	1	300	300
	Block 2, Lot 2115					1	1	300	300
	Block 4, Lot 2199					1	1	300	300
	Block 5, Lot 2059					10,019	10,019	0.10	1,000
	Existing Residential Along Richmond Avenue in O-P Zone				5		5	300	1,500
	Block 4, Lot 9				1		1	300	300
	Block 4, Lot 630					10,454	10,454	0.10	1,045
	Block 4, Lot 631					34,848	34,848	0.1	3,485
	Block 4, Lot 632				1		1	300.00	300
	Combined O-P SF of Remaining Block 4, Fronting Harriet Avenue (Paper Street)					18,731	18,731	0.10	1,873
	Block 3, Lot 2557 Fire House MT Parking Lot and MT WT Site (Occupancy of Fire House)				250		250	0.10	FS
	Block 3, Lot 635 thru 638					18,294	18,294	0.10	1,829
	Block 3.03, Lot 1					47,075	47,075	0.10	4,704
	Block 3.02, Lot 642					47,075	47,075	0.10	4,704
	Block 3.02, Lot 3					1,307	1,307	0.10	130
	Block 2, Lot 16				1		1		FS
	Block 38.102, Lot 1.01 – Crossroads Office Building and Sovereign Bank (SF per Assessor)				9,173		9,173		FS
							Sub-Total		95,592
West side Route 571 south of Route 70									
	R10A Zones of Patricia and Essex				30			300	9,000
	Block 2, Lot 17	OP	1.3	1.3	CAFRA		5,663	0.10	566

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FS = Flow Study

	Landuse Zone	Lot Size	Developable Area	Pinelands / CAFRA	Existing Number of Units or SF	Proposed Number of Units or SF	Total Number of Units or SF	Unit Flow	ADF
	Block 2, Lot 768	5.0	5.0	CAFRA		12,632	12,632	0.10	1,263
	Block 2, Lot 769	5.0	5.0	CAFRA		18,295	18,295	0.10	1,830
	Block 2, Lot 770	8.8	8.8	CAFRA		33,541	33,541	0.10	3,354
	Block 2, Lot 771	4.8	4.8	CAFRA		20,038	20,038	0.10	2,004
	Block 2, Lot 772	5.0	5.0	CAFRA		21,344	21,344	0.10	2,134
	Block 2, Lot 773	1.5	1.5	CAFRA		6,708	6,708	0.10	671
	Block 2, Lot 774 – Church Property – Seats in Church				150				FS
	Block 2, Lot 774 – Lot Portion – Single Family Homes Potential in R-10 Zone					15	15	300	4,500
	Block 2, Lot 775.01 – R-10 Zone					15	15	300	4,500
	Block 2, Lot 775.02 – R-10 Zone					2	2	300	600
	Richard Estates				61		61		FS
	Manchester Middle School				780		780		FS
	Ridgeway Elementary School				520		520		FS
							Sub-Total		30,422

Leisure Ridge, Colbe Commons, Hudson City Plaza

Block 6, Lot 1965 – Hudson City Plaza – Combined SF					37,325		37,325		FS
Block 6, Lot 1965 – Hudson City Plaza – Pizza Restaurant – Per Seat					24		24		FS
Block 38.102, Lot 638.02 – Funeral Home					6,316		6,316		FS
Block 38.102, Lot 638.02 – Funeral Home Domestic Demand					1		1		FS
Block 38.102, Lot 638.01 – Elder Law Office Building					14,215		14,215		FS
Block 38.102, Lot 19.01 – Colbe Commons – Combined SF					14,924		14,924		FS
Block 38.102, Lot 19.01 – Colbe Commons – Donovan's Restaurant – Bar Seating					30		30		FS
Block 38.102, Lot 19.01 – Colbe Commons – Donovan's Restaurant – General Seating					120		120		FS
Block 38.102, Lot 19.01 – Colbe Commons – Restaurant – Per Seat – Angelo's					24		24		FS
Leisure Ridge PRC					183		183		FS
Block 38.102, Lot 92 – Leisure Ridge Clubhouse (5)					110		110		FS

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CAFRA Notes in the OP Zone – CAFRA Exempt Project – 49 Parking Spaces or 30% Lot Coverage, Whichever is Greater.
FS = Flow Study

FIGURES

1 SANITARY SEWER PLAN

PRELIMINARY PLANS - SANITARY SEWER SYSTEM
FOR
ROUTE 571/547
TOWNSHIPS OF JACKSON AND MANCHESTER
OCEAN COUNTY NEW JERSEY

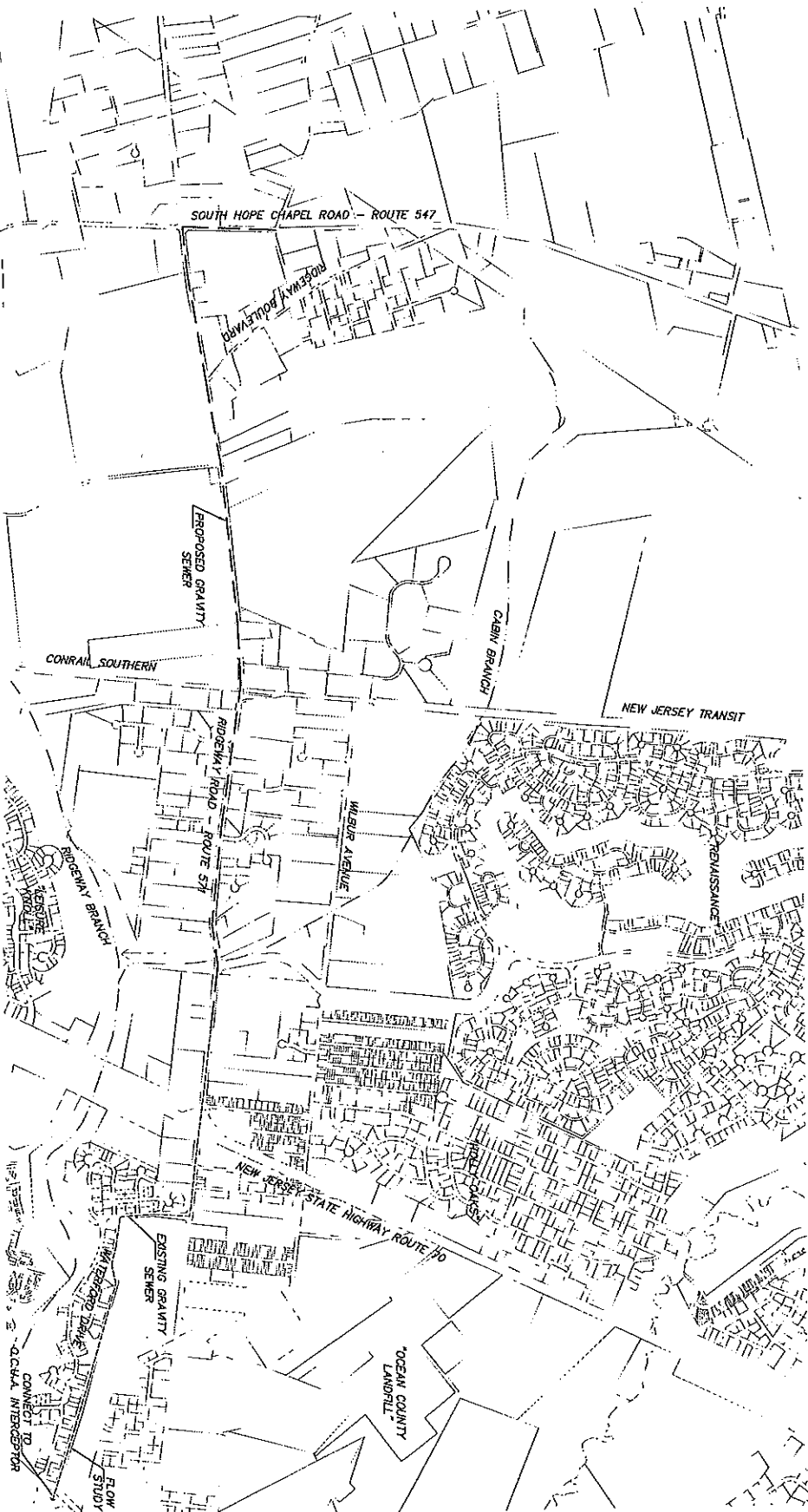


TABLE 7	CRACKING TIME
1	COVER SHEET
2	ROUTED 50% SIA, 142+0.0 TO SIA, 147+0.0
3	ROUTED 50% SIA, 147+0.0 TO SIA, 152+0.0
4	ROUTED 50% SIA, 152+0.0 TO SIA, 157+0.0
5	ROUTED 50% SIA, 157+0.0 TO SIA, 162+0.0
6	ROUTED 50% SIA, 162+0.0 TO SIA, 203+0.0
7	ROUTED 50% SIA, 203+0.0 TO SIA, 222+0.0
8	ROUTED 50% SIA, 222+0.0 TO SIA, 237+0.0
9	ROUTED 50% SIA, 237+0.0 TO SIA, 244+0.0
10	ROUTED 50% SIA, 244+0.0 TO SIA, 249+0.0
11	ROUTED 50% SIA, 249+0.0 TO SIA, 174+0.0
12	ROUTED 50% SIA, 174+0.0 TO SIA, 156+0.0
13	COVER SHEET

1. IT IS PROPOSED TO CONSTRUCT SEWER MAINS WITHIN ROUTES 571 AND 542 TO SERVICE FARMHUS OF MANCHESTER AND JACKSON TOWNSHIP THAT ARE LOCATED WITHIN THE CENTRAL SEWER SERVICE AREA.
2. THE EXISTING CONDITIONS OF ROUTE 571 ARE TAKEN FROM PLANS FOR THE RECONSTRUCTION OF ROUTE 571 PREPARED BY OSCA COUNTY, THE EXISTING SEWER MAIN LOCATED ON SHEET 2 IS SHOWN AS SURVEYED BY PROFESSIONAL DESIGN SURVEYOR, LEO AUST, 2001.
3. THESE PLANS ARE FOR PRELIMINARY DESIGN ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION.

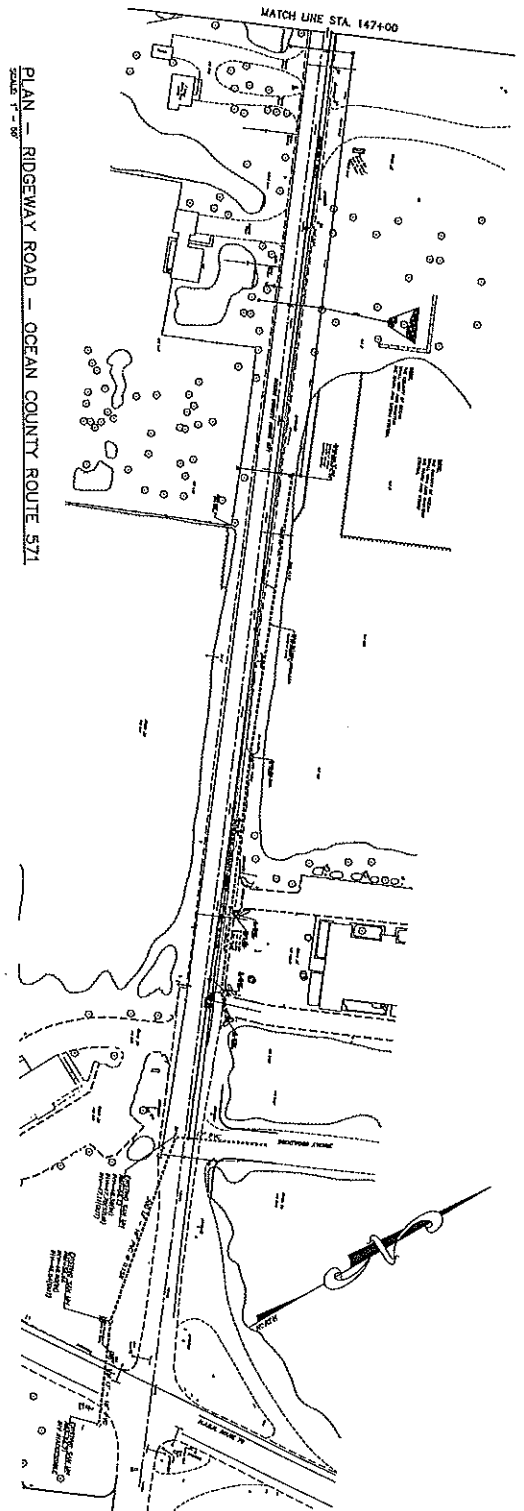
DISSEMINATION OF INFORMATION
The production and the sales and service incorporated herein as an instrument of employment, however, is the property of PROCTER AND GAMBLE COMPANY, L.L.C., and is not to be used in any way, without the prior written consent of the company.

(INCLUDING NATIONAL LABORATORY, STAYTON
 EMPLOYMENT, KENNETH BERNARD, STAYTON
 HE WROTE THAT HE HAD BEEN IN STAYTON FOR
 MORE THAN 10 YEARS.
 STAYTON, STAYTON, STAYTON
 AN ADULT IN STAYTON IS 10 YEARS
 CHAIRMAN OF STAYTON IS STAYTON
 WILLIAM A. STEVENS, P.E.

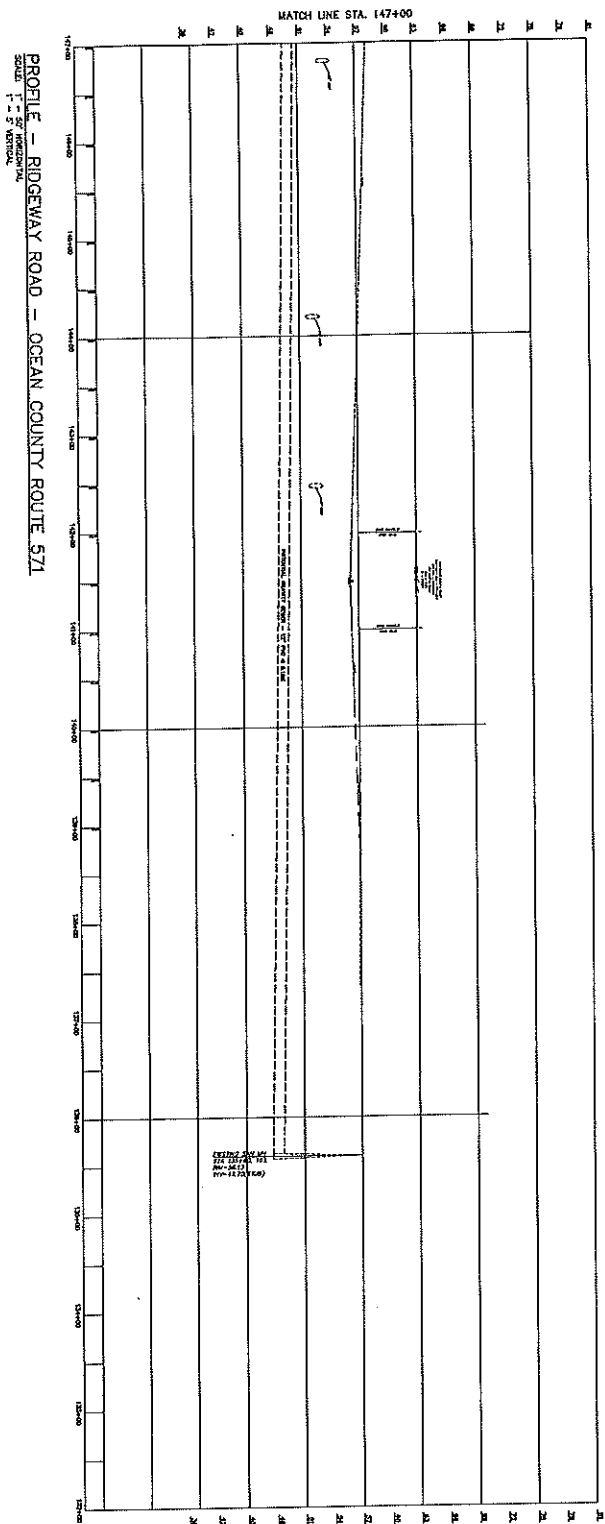
COVER SHEET

FOR
ROUTE 571/54

SHEET	DATE	BY	CHECKED BY	APP'D
	10/10/2018			



PLAN — RIDGEWAY ROAD — OCEAN COUNTY ROUTE 571
SCALE 1" = 60'



PROFILE — RIDGEWAY ROAD — OCEAN COUNTY ROUTE 571
SCALE 1" = 5' VERTICAL

RECORD OF CHANGES

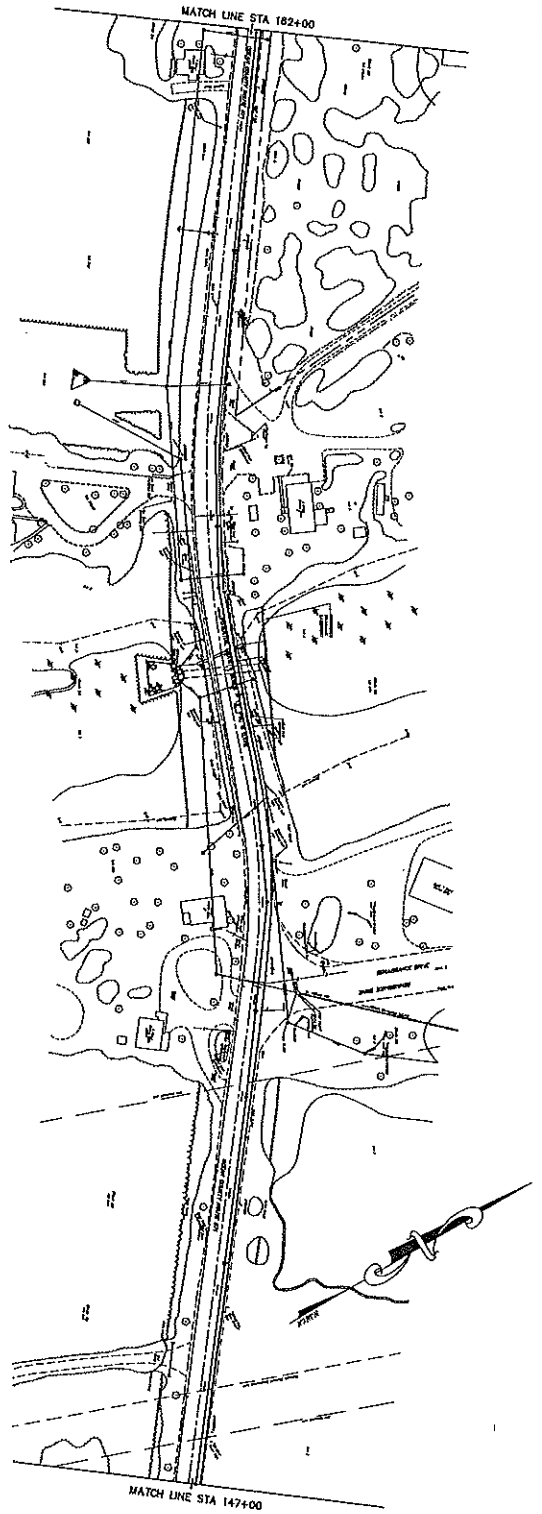
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2	10/1/00	REVISIONS TO PERMIT
3	10/1/00	REVISIONS TO PERMIT
4	10/1/00	REVISIONS TO PERMIT
5	10/1/00	REVISIONS TO PERMIT
6	10/1/00	REVISIONS TO PERMIT
7	10/1/00	REVISIONS TO PERMIT
8	10/1/00	REVISIONS TO PERMIT
9	10/1/00	REVISIONS TO PERMIT
10	10/1/00	REVISIONS TO PERMIT

PROFESSIONAL DESIGN SERVICES, LLC
 705
 1000 WEST 10TH AVENUE, SUITE 200
 DENVER, COLORADO 80202
 (303) 733-1111
 WILLIAM STUBBS, P.E., P.S.
 PROJECT ENGINEER

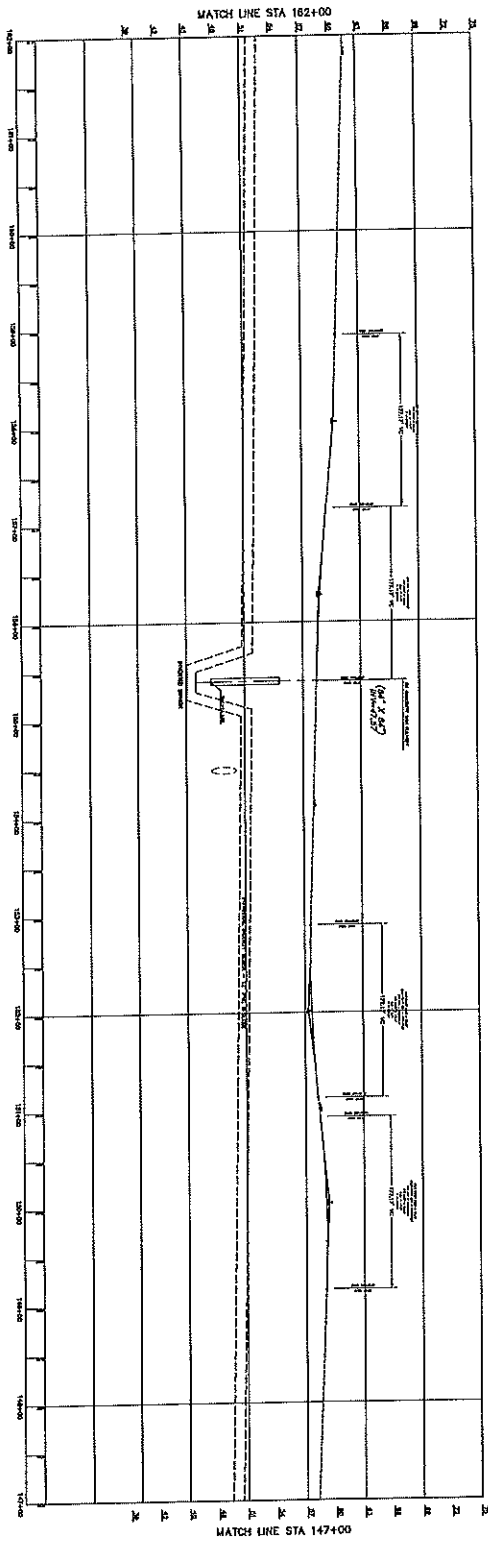
PREDIMINARY PLANS — SANITARY SEWER SYSTEM
 PLAN & PROFILE
 FOR
 ROUTE 571/547
 STATION 132+00 — 147+00
 TOWNSHIP OF JACKSON & MANHATTAN
 OCEAN COUNTY, NEW JERSEY

DATE	BY	CHECKED	APPROVED
10/1/00	W.S.	W.S.	W.S.

PLAN - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 50'



PROFILE - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 5' VERTICAL

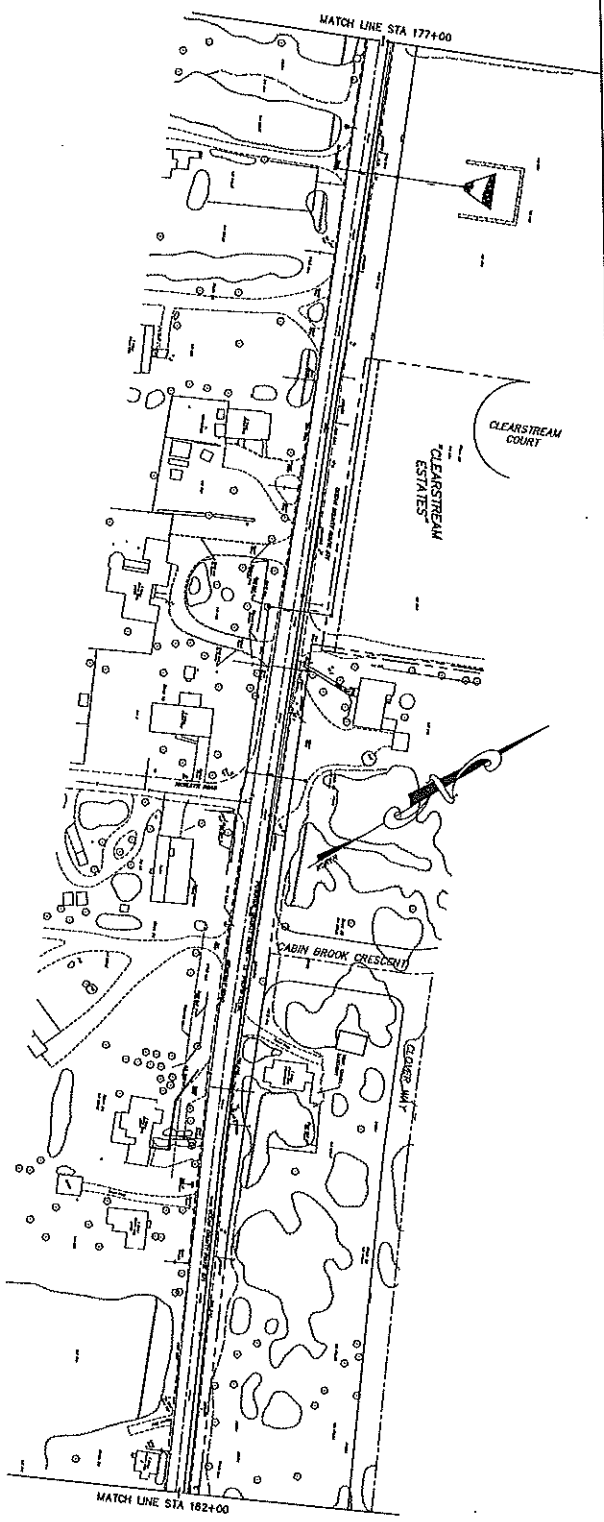


DESIGNED BY: J. L. STEVENS, P.E.
CHECKED BY: J. L. STEVENS, P.E.
DATE: 10/1/00

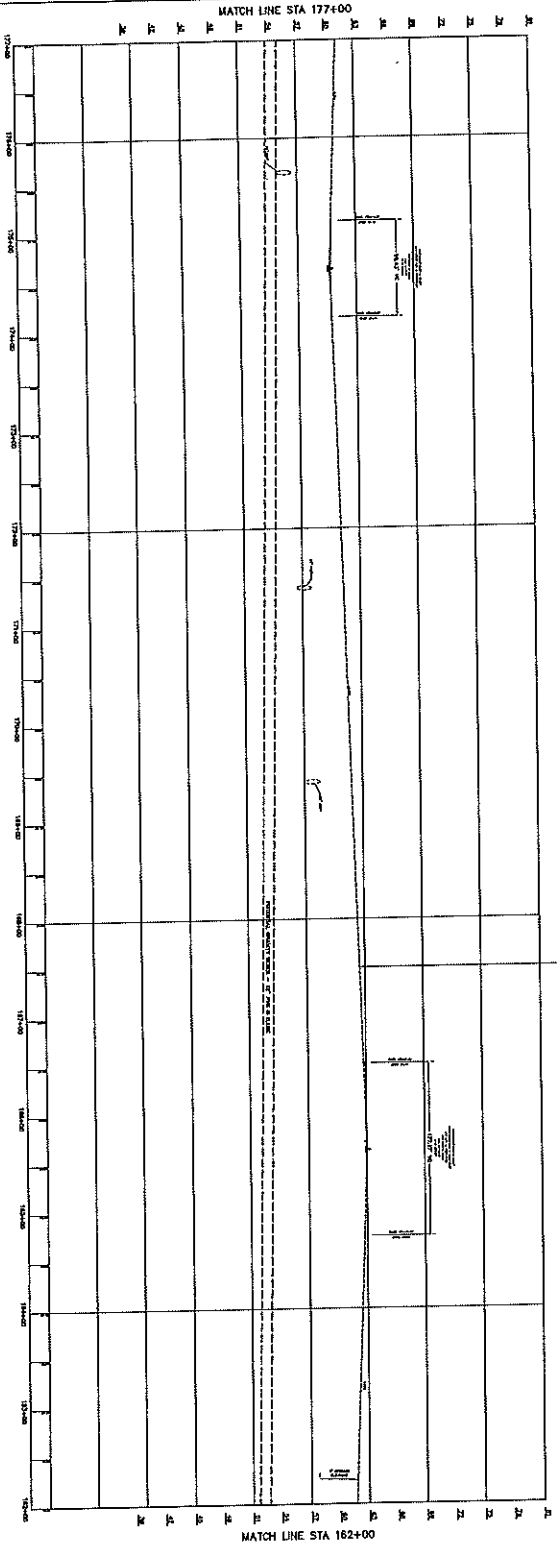
FOR: PRELIMINARY PLANS - SANITARY SEWER SYSTEM
PLAN & PROFILE
ROUTE 571/547
STATION 147+00 - 162+00
TOWNSHIP OF JACKSON & MANCHESTER
TOWNSHIP OF JACKSON & MANCHESTER
TOWNSHIP OF JACKSON & MANCHESTER

DESIGNED BY: J. L. STEVENS, P.E.
CHECKED BY: J. L. STEVENS, P.E.
DATE: 10/1/00

FOR: PRELIMINARY PLANS - SANITARY SEWER SYSTEM
PLAN & PROFILE
ROUTE 571/547
STATION 147+00 - 162+00
TOWNSHIP OF JACKSON & MANCHESTER
TOWNSHIP OF JACKSON & MANCHESTER
TOWNSHIP OF JACKSON & MANCHESTER



PLAN - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 50'



PROFILE - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 5' VERTICALLY

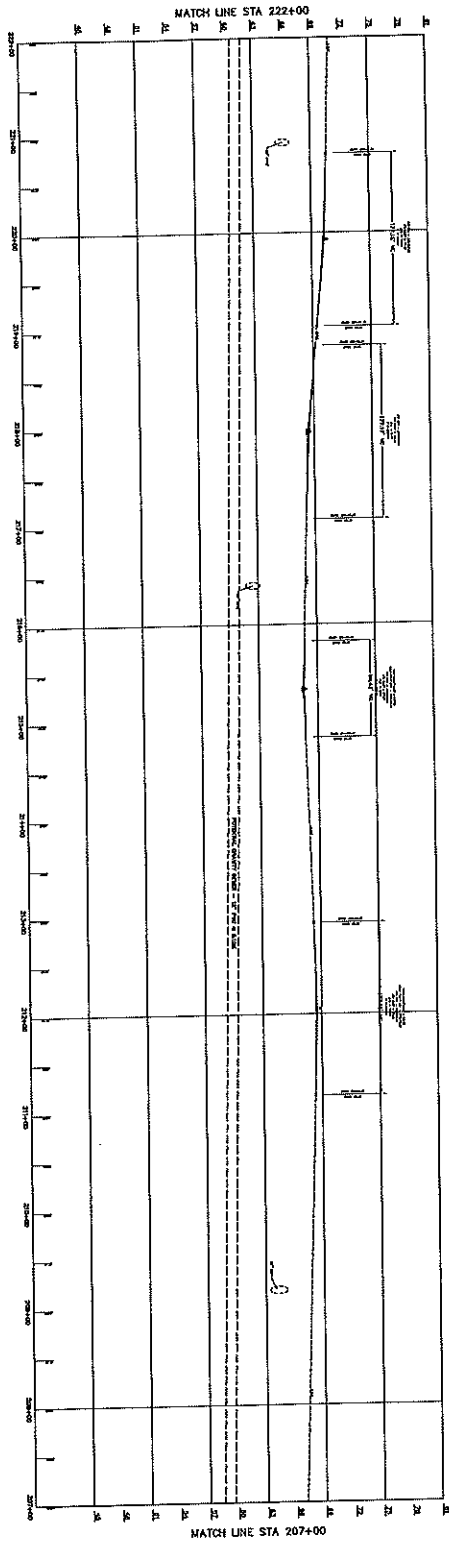
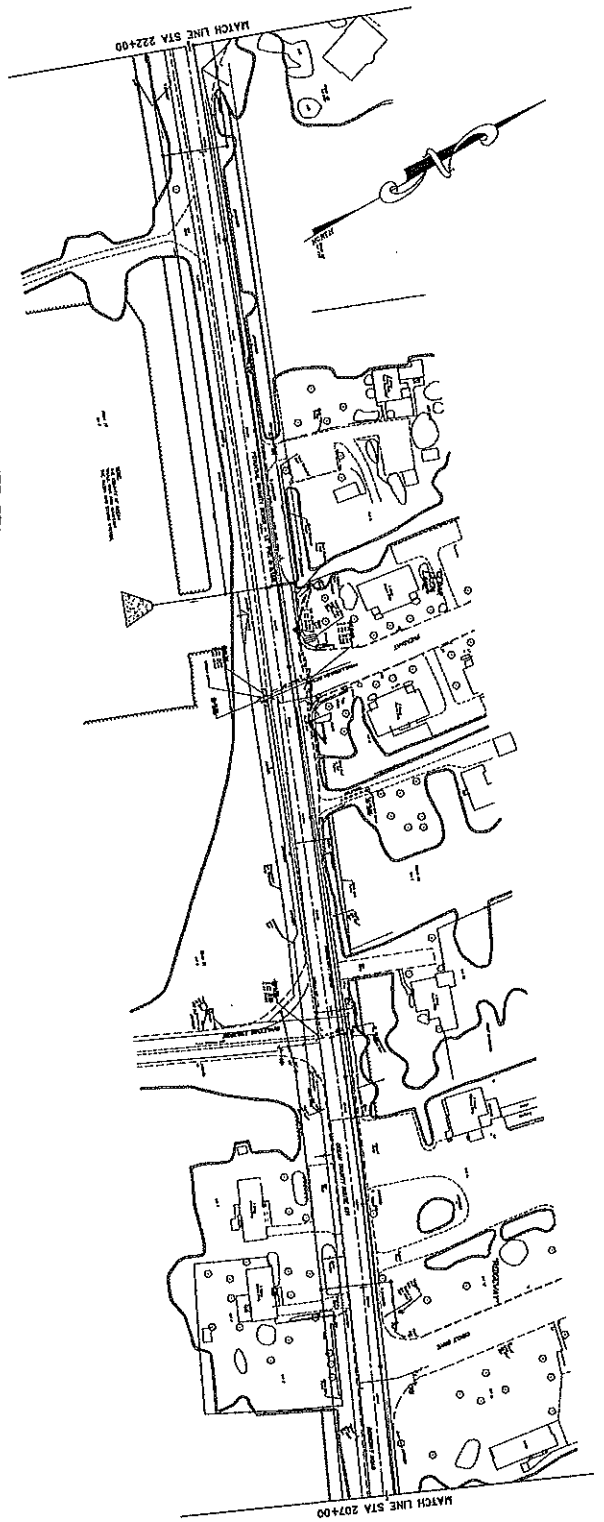
RECORD OF REVISIONS

NO.	DATE	DESCRIPTION
1	01/15/00	PRELIMINARY PLAN
2	01/15/00	PLAN & PROFILE
3	01/15/00	ROUTE 571/547
4	01/15/00	STATION 182+00 - 177+00
5	01/15/00	DESIGNED BY WILSON & MANFROTTO
6	01/15/00	NEW JERSEY

WILSON & MANFROTTO, P.C.
 PROFESSIONAL ENGINEERS
 1000 ROUTE 100
 SUITE 200
 NEW JERSEY 07033-1000
 TEL: 908-761-1000
 FAX: 908-761-1001
 E-MAIL: WILSON@WMANFROTTO.COM

PRELIMINARY PLAN - SANITARY SEWER SYSTEM
 PLAN & PROFILE
 ROUTE 571/547
 STATION 182+00 - 177+00
 DESIGNED BY WILSON & MANFROTTO
 NEW JERSEY

PLAN - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 20'



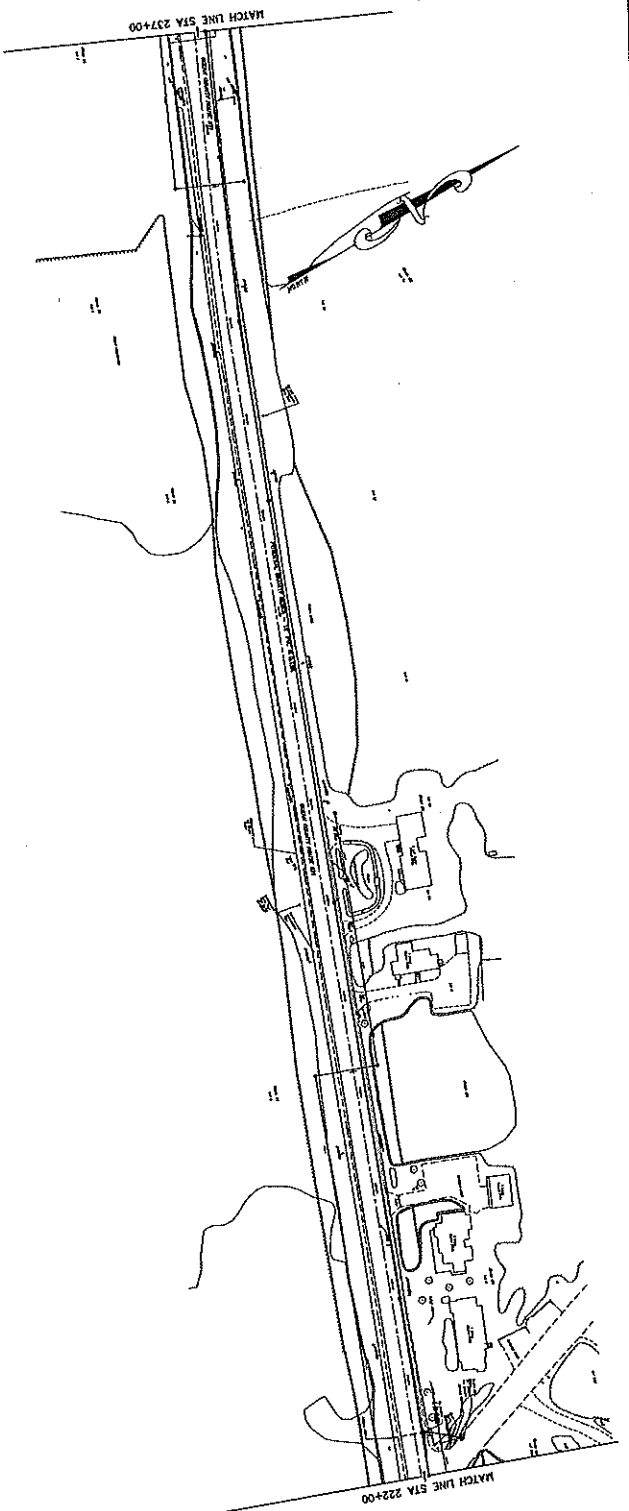
PROFILE - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 2' VERTICAL

NOTES:
1. THE PROFILE AND PLAN VIEWS ARE BASED ON THE DATA SUBMITTED BY THE CLIENT.
2. THE PROFILE VIEW IS A REPRESENTATION OF THE EXISTING GROUND SURFACE.
3. THE PLAN VIEW IS A REPRESENTATION OF THE EXISTING ROAD ALIGNMENT.
4. THE PROFILE VIEW IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
5. THE PLAN VIEW IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.

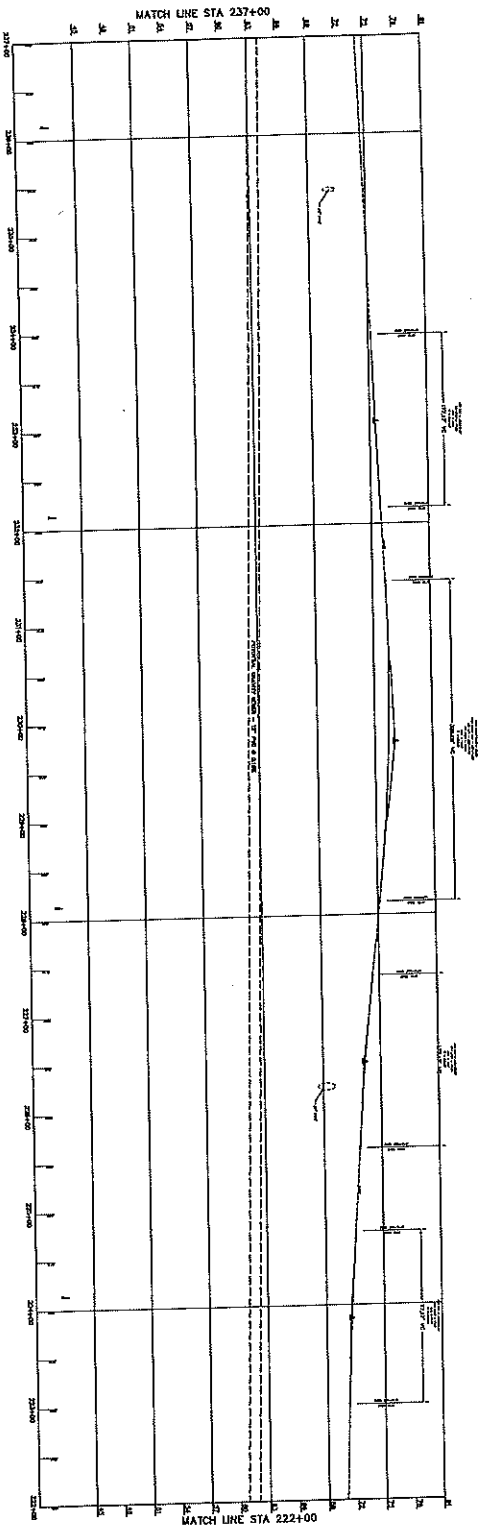
NO.	DESCRIPTION	DATE
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3	REVISION	
4	REVISION	
5	REVISION	
6	REVISION	
7	REVISION	
8	REVISION	
9	REVISION	
10	REVISION	

WILLIAM STEVENS, P.E.
Professional Engineer
No. 123456789
State of New Jersey
Ocean County
New Jersey

PRELIMINARY PLANS - SANITARY SEWER SYSTEM
PLAN & PROFILE
ROUTE 571/547
STATION 207+00 - 222+00
OCEAN COUNTY
NEW JERSEY

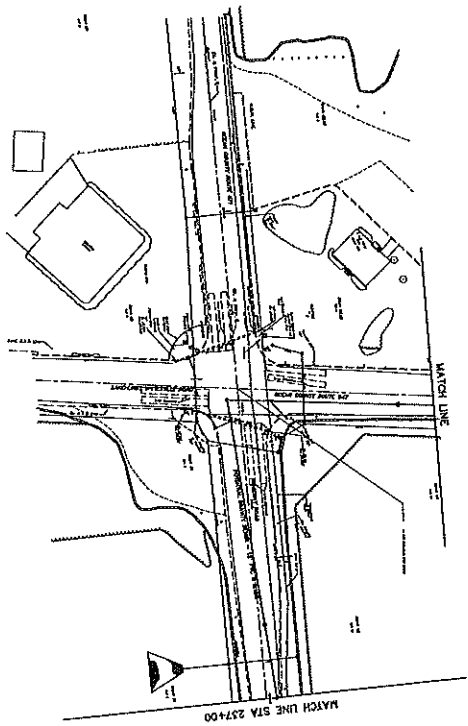


PLAN - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 50'

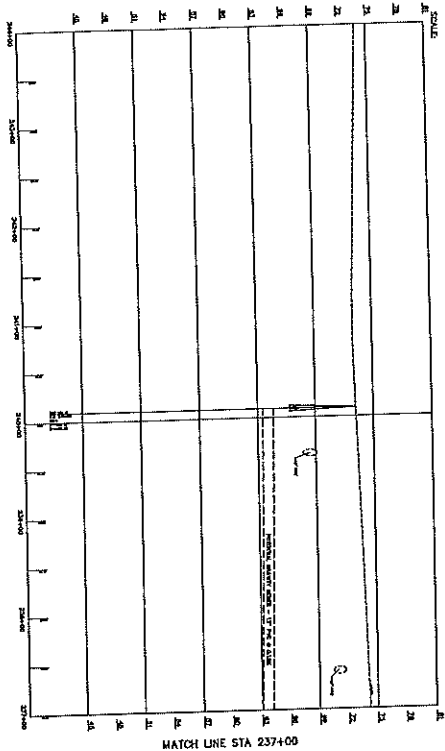


PROFILE - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571
SCALE 1" = 5' VERTICAL

DESIGNER OF RECORD PROFESSIONAL DESIGN SERVICES, LLC 1000 ROUTE 571, SUITE 200 ROSELAND, NJ 07068 TELEPHONE: (908) 361-1111 FAX: (908) 361-1112 WWW.PDS-LLC.COM		PROJECT: ROUTE 571/547 STATION: 222+00 - 237+00 OWNER: TOWNSHIP OF JACKSON & MONROE, NEW JERSEY	
DATE: 08/11/2011 BY: [Signature] CHECKED: [Signature] IN CHARGE: [Signature]		PROJECT NO. 11-001 DATE: 08/11/2011 BY: [Signature] CHECKED: [Signature] IN CHARGE: [Signature]	



PLAN - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571

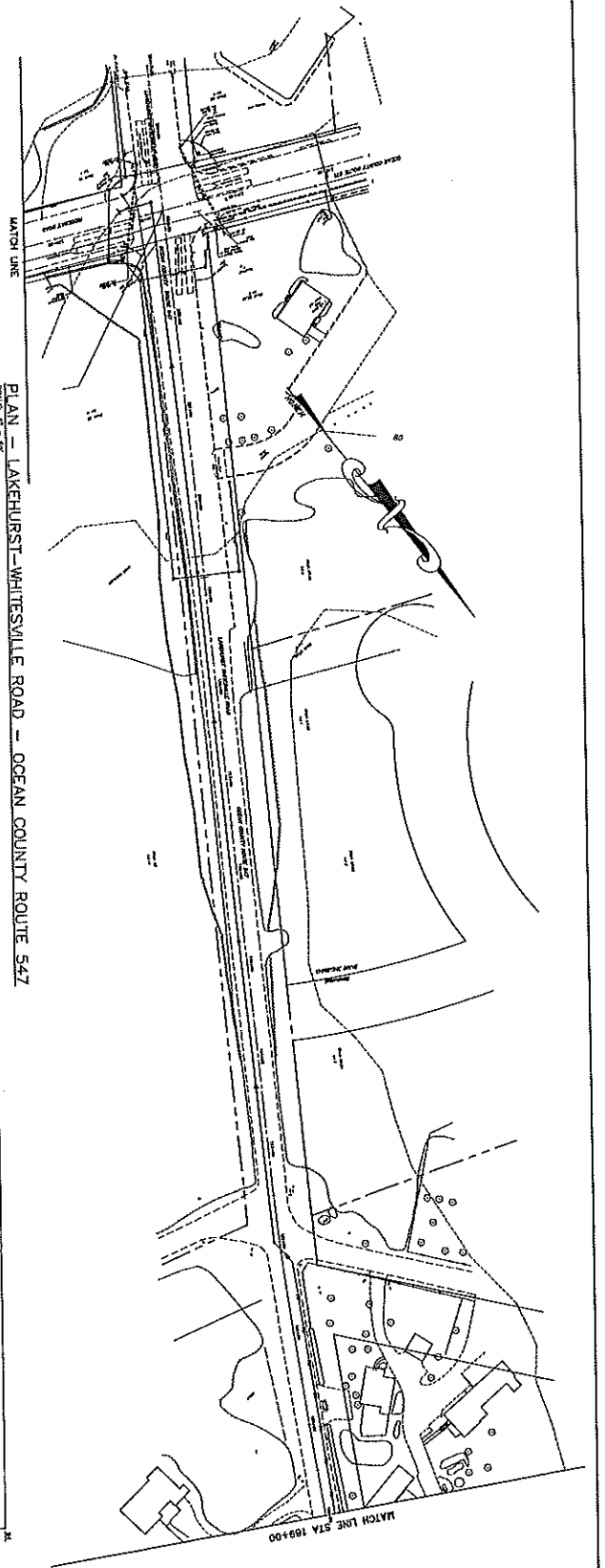


PROFILE - RIDGEWAY ROAD - OCEAN COUNTY ROUTE 571

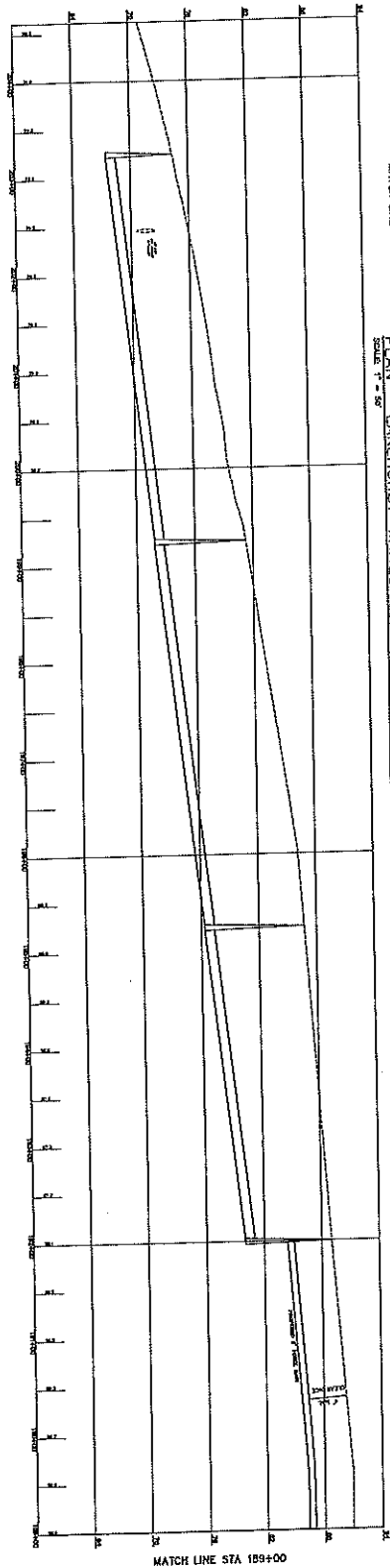
DESIGNED BY: J. J. STEVENS, P.E.
 CHECKED BY: J. J. STEVENS, P.E.
 DATE: 10/1/88

PROJECT: PRELIMINARY PLAN & PROFILE
 ROUTE 571/547
 STATION 2374+00 TO 2444+00
 OCEAN COUNTY, NEW JERSEY

WILLIAM L. STEVENS, P.E., P.P.
 1015 W. 10TH AVE., SUITE 200
 NEW JERSEY 07102

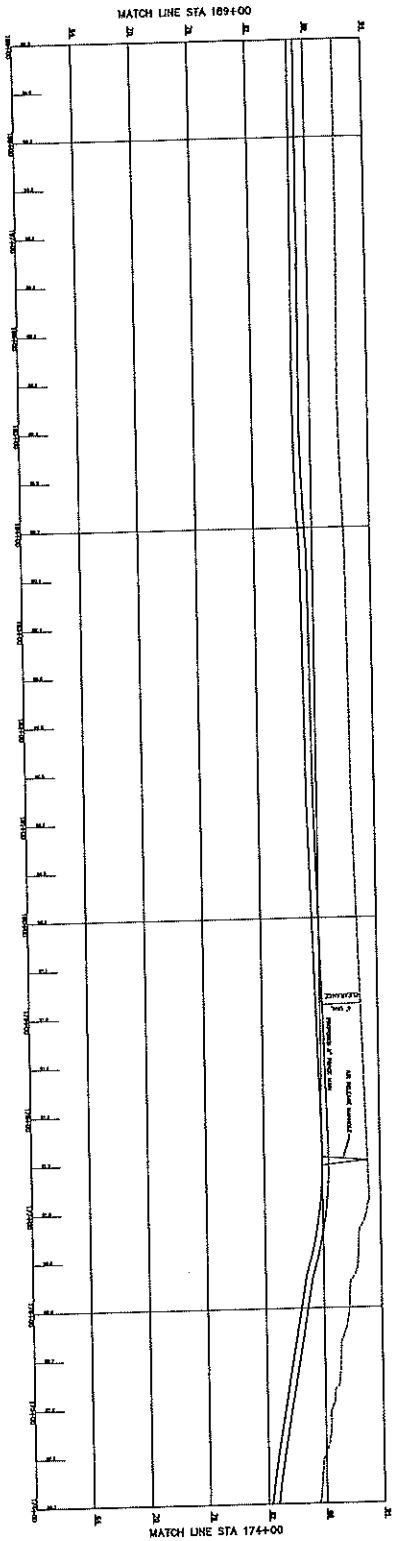
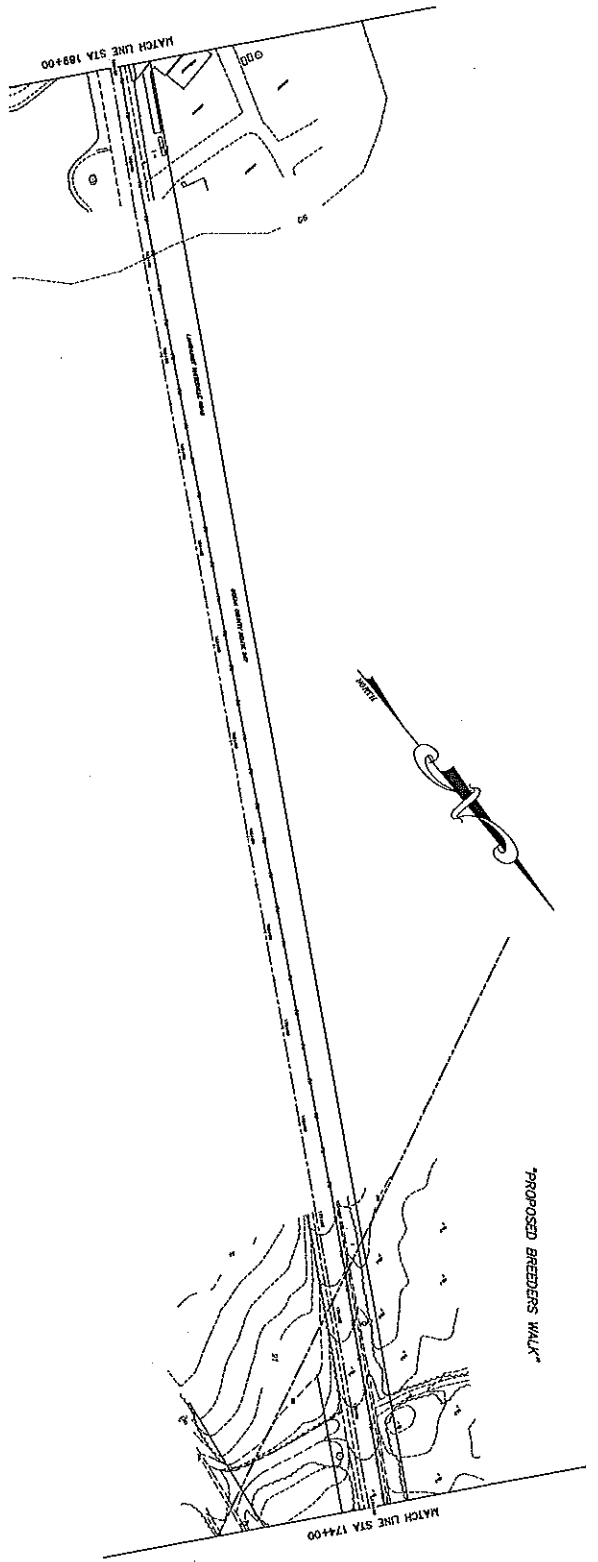


PLAN - LAKEHURST-WHITESVILLE ROAD - OCEAN COUNTY ROUTE 547
SCALE 1" = 50'



PROFILE - LAKEHURST-WHITESVILLE ROAD - OCEAN COUNTY ROUTE 547
SCALE 1" = 5' VERTICAL

PREPARED BY: J. J. JOHNSON CHECKED BY: J. J. JOHNSON DATE: 10/1/80	
PROJECT: LAKEHURST-WHITESVILLE ROAD - OCEAN COUNTY ROUTE 547 STATION: 204+50 - 189+00 COUNTY: OCEAN COUNTY TOWNSHIP: NEW JERSEY	
PREPARED BY: J. J. JOHNSON CHECKED BY: J. J. JOHNSON DATE: 10/1/80	
PROJECT: LAKEHURST-WHITESVILLE ROAD - OCEAN COUNTY ROUTE 547 STATION: 204+50 - 189+00 COUNTY: OCEAN COUNTY TOWNSHIP: NEW JERSEY	



PROFESSIONAL ENGINEER

WILLIAM L. STEVENS, P.E., P.P.

705

PROFESSIONAL DESIGN SERVICES, LLC

1000 ROUTE 174, SUITE 100
LAKEHURST, NJ 08038
TEL: 609-881-1111
FAX: 609-881-1112
WWW.WLSDESIGN.COM

PRELIMINARY PLANS - SANITARY SEWER SYSTEM

PLAN & PROFILE

FOR

ROUTE 547/547

STATION 189+00 - 174+00

TOWNSHIP OF JACKSON & MANASSETT

OCEAN COUNTY, NJ

DATE: 10/1/2011

BY: WLS

CHECKED BY: WLS

APPROVED BY: WLS

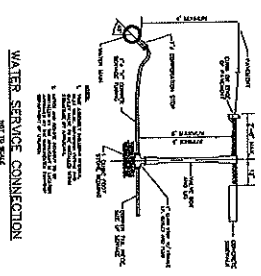
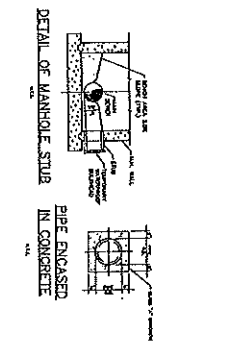
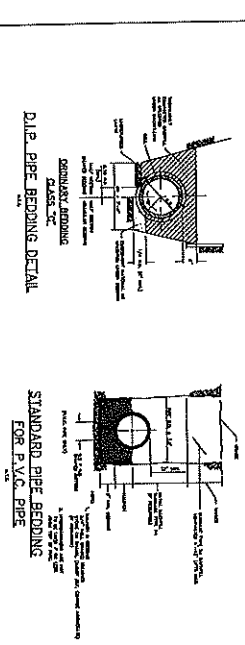
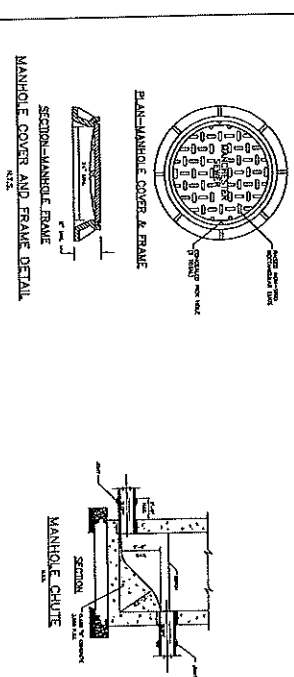
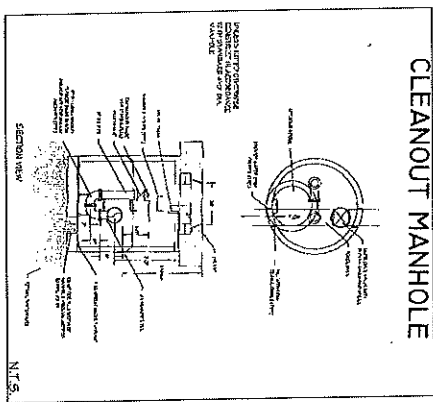
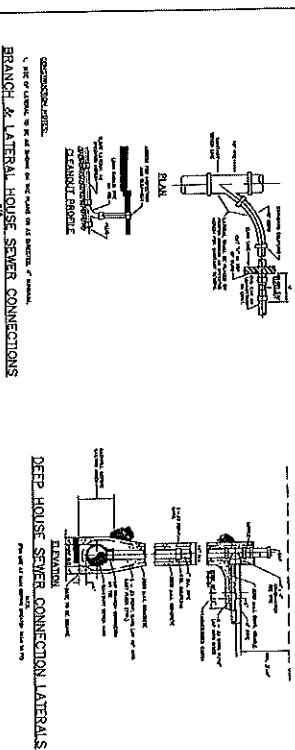
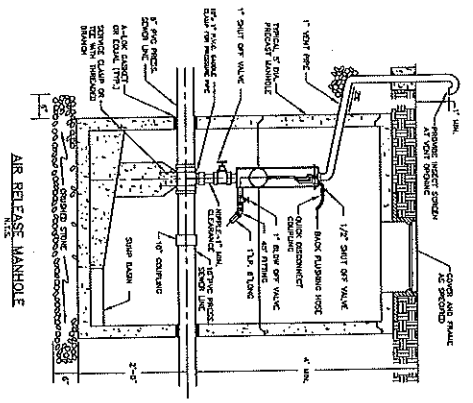
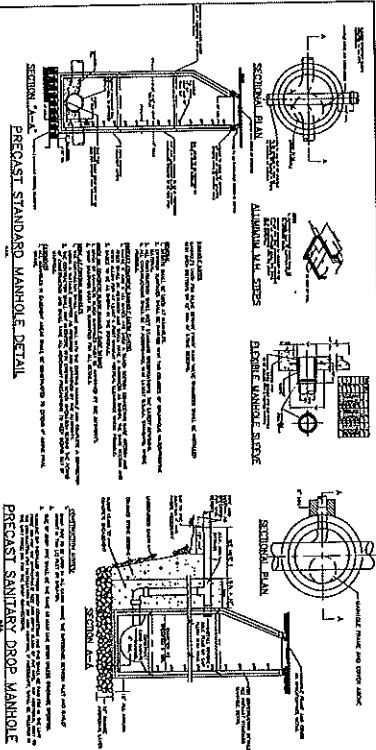
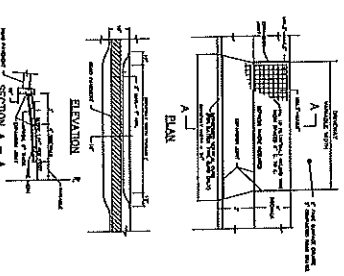
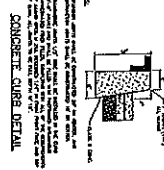
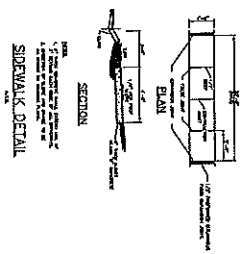


TABLE OF THURST BLOCKS

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MANHOLE & CLEANOUT

MANHOLE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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PROFESSIONAL DESIGN SERVICES, LLC
 1000 ROUTE 571, SUITE 200
 JERSEY CITY, NJ 07310
 TEL: 201.761.1111
 FAX: 201.761.1112
 WWW.PDS-LLC.COM

PRELIMINARY PLANS - SANITARY SEWER SYSTEM
 CONSTRUCTION DETAILS
 FOR
 ROUTE 571/547
 TOWNSHIP OF JACKSON & MANICENTERS
 OCEAN COUNTY
 NEW JERSEY