

**RESOLUTION APPROVING DESIGNATION OF QUASI-PUBLIC
FACILITY FOR WAYSIDE CHURCH OF DELIVERANCE**

Be it Resolved by the Mayor and Board of Aldermen of the City of Clinton, Mississippi that:

Upon the request of the Wayside Church of Deliverance, 1504 Clinton-Raymond Road, Clinton, Mississippi for a designation of the property described in Exhibit A attached as a public or quasi-public facility and the recommendation for approval of such designation by the Planning and Zoning Commission of the City of Clinton, said request is approved subject to the following conditions:

1. Ingress and egress to the property and proposed structure shall be located as shown in the proposed site plan on file in the Office of the City Engineer.
2. Off street parking shall be provided generally as shown on the site plan.
3. Approval of this request is granted subject to the property being used as a family life center and related facilities by Wayside Church of Deliverance or its successors and generally in compliance with the site plan.
4. The use of the property as proposed is generally compatible with adjacent properties.
5. Except as modified by these conditions, the property shall be subject to all applicable ordinances and regulations.

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The forgoing Resolution, having been reduced to writing, Alderman Ferrell moved that said Resolution be adopted. Alderman Todd seconded. The vote was as follows:

Alderman Brabham voted:	<u>Aye</u>
Alderman Ferrell voted	<u>Aye</u>
Alderman Depriest voted:	<u>Aye</u>
Alderman Todd voted:	<u>Aye</u>
Alderman Fisher voted:	<u>Aye</u>
Alderman Touchton voted:	<u>Aye</u>
Alderman Lott voted:	<u>Aye</u>

Approved on the 7th day of January, 1997.

CITY OF CLINTON, MISSISSIPPI

Rosemary J. Aultman
ROSEMARY AULTMAN, Mayor

ATTEST:

Nelson Byrd
NELSON BYRD, City Clerk

EXHIBIT A

1504 Clinton-Raymond Road- The Wayside Church of Deliverance Property includes five properties and includes approximately 1.4829 Acres described as follows:

Property One:

Being situated in the Southeast 1/4 of the Northeast 1/4 of Section 36, Township 6 North, Range 2 West, City of Clinton, Second Judicial District of Hinds County, Mississippi, and being more particularly described by metes and bounds, to wit:

Commence at the Northeast corner of the said Section 36 and run thence South 01 degrees 41'54" West for a distance of 1777.98 feet to the Northern line of the Clinton-Raymond Road; thence South 51 degrees 21'36" West for a distance of 40.55 feet along the said Northern line of the Clinton-Raymond Road; thence leave said Northern line and run North 35 degrees 06'36" West, for a distance of 174.08 feet along the Eastern line of Lot 1 of the Banks Estate as recorded in Deed Book 3438 at Page 344 of the Chancery Records of Hinds County at Raymond, Mississippi, to the Northeast corner of the said Lot 1 and the POINT OF BEGINNING for the parcel herein described; thence North 38 degrees 13' 27" West for a distance of 83.0 feet along the line dividing Lots 2 and 3 of the said Banks Estate; thence leave said line dividing Lots 2 and 3 and run South 76 degrees 01' 22" West for a distance of 54.07 feet; thence South 21 degrees 07'07" West for a distance of 60.45 feet; thence South 35 degrees 11'27" West for a distance of 68.75 feet to the Eastern line of Banks Road; thence South 20 degrees 11'27" East for a distance of 48.94 feet along the said Eastern line of Banks Road to the Northwest corner of the said Lot 1 of Banks Estate; thence leave said Eastern line and run North 54 degrees 21'26" East for a distance 182.53 feet along the line dividing Lots 1 and 2 to the POINT OF BEGINNING, Containing 0.3051 acres more or less.

Property Two:

A parcel of land lying in the Northeast Quarter (NE 1/4) of Section 36, Township 6 North, Range 2 West, in the Second Judicial District of Hinds County, Mississippi, described as follows:

Commencing at the most Southerly corner of said Lot 1 being the Southwest corner as conveyed by said Book and Page and run thence Northwesterly and along the Westerly line of said Lot for a distance of 182.53 feet to a point; run thence Southeasterly and parallel with the West line of said Lot 1 for a distance of 190 feet, more or less, to a point in the North line of Banks Road as shown on said plat; thence Southwesterly and along the North line of Banks Road for a distance of 30 feet, more or less, to the point of beginning.

Property Three:

being situated in the Northwest 1/4 of Sec 36, Township 6 North, Range 2 West, City of Clinton, Second Judicial District of Hinds County, Mississippi, and being more particularly described by metes and bounds as follows, to-wit:

Commence at the northeast corner of the said Section 36 and run thence South 01 degrees 41'54" West for a distance of 1777.98 feet to the Northern line of the Clinton-Raymond Road; thence South 51 degrees 21'36" West for a distance of 40.55 feet along the said Northern line of the Clinton-Raymond Road; thence leave said Northern line and run North 35 degrees 06'36" West for a distance of 174.08 feet along the Eastern line of Lot 1 of the Banks Estates as recorded in Deed Book 3438 at page 344 of the Chancery records of Hinds County, at Raymond, Mississippi, to the Northeast corner of the said Lot 1; thence North 38 degrees 13'27" West for a distance of 83.0 feet along the line dividing Lots 2 and 3 of the said Banks Estate; thence leave said line dividing Lots 2 and 3 and run South 76 degrees 01'22" West for a distance of 54.07 feet to the POINT OF BEGINNING for the parcel herein described; thence South 21 degrees 07'07" West for a distance of 60.45 feet; thence South 35 degrees 11'27" West for a distance of 68.75 feet to the Eastern line of Banks Road; thence North 20 degrees 11'27" West for a distance of 34.0 feet along the said Eastern line of Banks Road; thence leave said Eastern line of Banks Road and run 42 degrees 11'53" East for a distance of 108.88 feet to the POINT OF BEGINNING, containing 0.0493 acres more or less.

Property Four:

A lot or parcel of land comprising one acre, more or less, and described as beginning at a point 126.5 feet East of the Northwest corner of Section 31, Township 6 North, Range 1 West, and run thence South 1817 feet, more or less, to the right-of-way of the Raymond-Clinton Road, run thence East along the line of said road 20 feet to the POINT OF BEGINNING; thence run in a North-easterly direction 139.1 feet, more or less, to a stake, thence run Northward parallel with the Western line of said lot 313.2 feet to a point, run thence Westerly parallel with the said Raymond-Clinton Road 139.1 feet to a point, thence Southerly to the POINT OF BEGINNING.

Property Five:

A part or parcel of Lot 1 of Banks Estate, according to that certain plat prepared by Robert B. Barnes, Land Surveyor, dated September 2, 1987, attached to that certain deed from Joe D. Williams, et.al. to Margaret Banks Evans and Katherine Williams, dated December 3, 1987, recorded in Deed Book 355 at Page 141, reference to which is hereby made. Said plat and the particulars thereof being incorporated herein by reference:

A strip of land off the Northwesterly side of Lot 1 being 10 feet in width lying Southeast of and adjacent to said Northwesterly line of said Lot 1, said Northwesterly line being 182.53 feet in length and running North 54 degrees 21 minutes 26 seconds East.

FINAL ORDER OF THE MAYOR AND BOARD OF ALDERMEN
OF CLINTON, MISSISSIPPI, EXEMPTING CERTAIN
PROPERTIES OF GENERAL MOTORS CORPORATION,
DELPHI PACKARD ELECTRIC SYSTEMS, FROM AD VALOREM
TAXES AND COMPLETED DECEMBER 31, 1995

WHEREAS, applicant is now operating as an automobile component part manufacturing type of industry within the industrial park of the City of Clinton, Hinds County, Mississippi, which factory includes Plants 20, 22, 24, 25 and 27 containing bona fide expanded facilities of public utility within the meaning of Section 27-31-101, et seq. and related Sections of the Mississippi Code, as amended, and is eligible for the exemption granted by the above-mentioned section by specific enumeration, namely "manufacturing"; and the exemption prayed for in this Application is for additions or expansions of the above-mentioned plants and the replacement of equipment used in connection with or necessary to the operation of the said enterprise as provided in Section 27-31-105 of the Mississippi Code, as amended; and

WHEREAS, the additions or expansions and replacement of equipment were completed on December 31, 1995, and as of that date the true value of all property to be exempt was Twelve Million, Five Hundred Twenty Seven Thousand, Five Hundred Forty-Seven and 32/100 Dollars (\$12,527,547.32), as shown in an itemized list attached to the Application for Exemption as Exhibit "A"; and

WHEREAS, the Application of General Motors Corporation, Delphi Packard Electric Systems, was approved by this body

for submission to the Mississippi State Tax Commission which in turn certified that the properties described in the Application are eligible for exemption and the Board of Aldermen now finding that the provisions of Section 27-31-101, et seq. have been fully complied with for the exemption;

IT IS THEREFORE ORDERED by the Mayor and Board of Aldermen of Clinton, Mississippi, that the General Motors Corporation, Delphi Packard Electric Systems, Application herein is hereby approved and that the property described in Exhibit "A" to the application for Exemption with a value of \$12,527,547.32 is exempt from all ad valorem taxation, except State and School District taxation, for a ten (10) year period beginning on the 31st day of December, 1995, and ending on the 30th day of December, 2005.

SO ORDERED, this, the 7th day of January, 1996.


ROSEMARY G. AULTMAN, Mayor
City of Clinton, Mississippi

ATTEST:


NELSON BYRD, City Clerk
City of Clinton, Mississippi

(SEAL)

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WILLIFORD, GEARHART & KNIGHT, INC.
ENGINEERS & SURVEYORS

9.
PRINCIPALS
Charles H. Williford, P.E., P.L.S.
Gregory A. Gearhart, P.E.
Jeffery T. Knight, P.E.

ASSOCIATES
Bill Owen, P.E.

December 19, 1996

Richard Broome, P.E.
City of Clinton
P.O. Box 156
Clinton, MS 39060

RE: City of Clinton
Battery Drive Water Well
WGK# 96-330

Dear Richard:

The Water and Sewer Master Plan confirmed the need for a new 500 gpm water well to serve the Industrial Park water service area. After evaluating the logs of the existing water wells in the area, access to existing water mains and the availability of potential new well sites, we believe the best site to be located near the southeast corner of the Douglas Battery property. This site is located between the two elevated tanks, is adjacent to an 8" water main, and is essentially outside the zones of influence of the existing wells. In addition, easements for several utilities cross the site, severely limiting the area available for a building, and thus a water well would represent the best use for this portion of the property.

We have performed a preliminary design for the water well and anticipate a total depth of 1000 feet. Electrical logs and drillers logs indicate a probable thickness of sand sufficient for constructing a 500 gpm, and possibly larger, well. We would propose that the bid proposal form be structured to take base bids on a 500 gpm well. Add alternate bids for a test well and a larger well should also be taken, with award based on aquifer conditions encountered during drilling. We expect the base bid to be in the \$250,000 dollar range.

We propose to provide engineering services for the following lump sum amounts:

Design engineering, construction administration and Construction review:	\$ 28,450
Site topographic survey, boundary survey, plat and description:	\$ 1,500
Total engineering services:	\$ 29,950

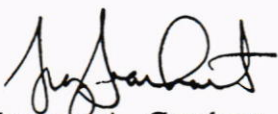
We are able to reduce the design fee by approximately 15% below "standard" rates due to data gathered and familiarity gained during our work on the Master Plan.

If acceptable, the work would be performed under our General Services Contract with the City.
I have included a copy of our standard hourly rates for 1997 for additional or hourly services.

Thank you again for this opportunity to be of assistance.

Sincerely,

WILLIFORD, GEARHART & KNIGHT, INC.

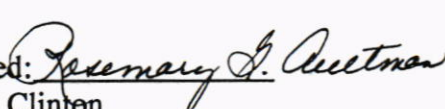


Gregory A. Gearhart, P.E.
Principal

GG/mcb

Enclosure

Proposed: 
Williford, Gearhart & Knight
Date: 12/19/96

Accepted: 
City of Clinton
Date: 1/8/97

interoffice

MEMORANDUM

to: Mayor & Board of Aldermen
cc: W. Harold Alderman, Public Works Director
from: Richard L. Broome, P.E., City Engineer *Richard*
re: Clinton Nature Center
date: January 24, 1996

Pursuant to the Clinton Nature Center's request, I have estimated the material cost of extending Brookwood Drive approximately 30 feet to the end of the existing platted right-of-way line. This estimate of \$2,500 includes a 36-inch corrugated metal pipe, two grate inlets, clay gravel and asphalt. It does not include concrete curb and gutter or any allowance for labor and equipment.

If you need any further information, please contact me.

from the desk of...

Richard L. Broome, P.E.
City Engineer
City of Clinton
P. O. Box 156
Clinton, MS 39060

601-924-5462
Fax: 601-925-4605

726
Nature
Center



EXECUTIVE SUMMARY
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI

SEWER SYSTEM FOCUS

NOVEMBER, 1996



WILLIFORD, GEARHART & KNIGHT, INC.
ENGINEERS & SURVEYORS
CLINTON, MISSISSIPPI
WGK NO. 95-199

**WASTEWATER MASTER PLAN
FOR
CITY OF CLINTON, MISSISSIPPI**

NOVEMBER, 1996

I. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

An evaluation of the immediate and long-term wastewater collection and treatment facilities needs for the City of Clinton, Mississippi has been completed. The evaluation process focused on the capabilities and performance of the existing treatment facilities; the ability of the collection system to provide service to current municipal residents; projected population growth rates and patterns; and facility improvements required to service the projected future needs. A separate field investigation is currently ongoing to identify and repair sources of excessive inflow and infiltration in the existing collection system.

The city is currently served by six wastewater treatment facilities (WWTFs), with a combined permitted capacity of 2.726 MGD. Average daily flows treated in 1995 averaged 2.2 MGD. The Office of Pollution Control (OPC) has ordered the City to upgrade or replace the Southeast and South Central facilities, as neither has disinfection capabilities and as the Southeast WWTF does not consistently meet its BOD, TSS and ammonia permit requirements. Flows to these two facilities are currently near or above the original design capacities. In addition, the OPC has ordered the elimination of existing sewage overflows in the Byrd Heights area.

While a planning area of approximately 51 square miles was utilized for long term planning, efforts were focused on the 23 square miles within the current city limits. Within this area, the population is projected to increase to approximately 36,000 in 2015 from the current 23,500, as depicted on Exhibit III-1. This population increase, along with accelerating commercial development, is projected to increase average daily wastewater flows from 2.2 MGD in 1995 to 4.15 MGD by the end of the twenty year planning period. It is also projected that much of

these new flows will be generated in new areas of development located "downstream" from the current treatment facilities.

To address these future wastewater collection and disposal needs and to provide protection for the water quality in area streams, a **long term** schematic plan was developed with the following goals:

1. Provide access throughout the planning area to gravity wastewater collection interceptors.
2. Reduce the number of wastewater treatment facilities to not more than two.

This plan is depicted graphically on Exhibits VI-S1 and VI-S2. It is to be used as a guide for all future wastewater improvements. Phased implementation of the plan, beginning with improvements in the South system, is depicted on Exhibit VI-S3 and discussed below.

Northern System

Phase 1 - It was determined that the existing three treatment plants serving the northern portion of the currently incorporated area contain adequate excess capacity for the next 15 to 20 years. Over this time frame flows will increase from 0.55 MGD to near the sum of the permitted flows of the three northern plants, 1.2 MGD. Additional pumping stations may have to be constructed to serve downstream areas or transfer flows between basins, but these systems should be able to accommodate approximately 1200 - 1500 additional customers. Stormwater inflow and infiltration in these systems is relatively minor due to the relatively young age of the piping systems.

Long Range - A long term plan for consolidating treatment at a single northern plant was also developed, and is depicted on Exhibit VI-S1. The gravity collection systems for the Lovett and Northeast WWTFs would be extended downstream to provide gravity collection service for an area extending 1.5 miles north of the current city limits. This plan could be followed if this expanded service area was created through annexation.

Southern/Western System

Phase 1 - The **combined** flows to the three treatment plants serving the southern portion of the currently incorporated area are approaching the combined design capacities of those plants.

Average daily wastewater flows are projected to increase from 1.5 MGD to 2.9 MGD during the planning period. Based on cost-effective analysis, the Phase 1 plan in this area includes the following components:

1. Construction of a new wastewater treatment facility near the southwest city limits.
2. Conversion of the Southeast and South Central lagoons to off-line stormwater equalization facilities, which would temporarily store peak inflow-induced flows, and reintroduce these flows to the collection system during low-flow periods. Discharges from these facilities would cease.
3. Construction of South Interceptor, Reach 1, to transport flows from the Southeast and South Central plants to the new facility, and to provide gravity interceptor access to approximately four square miles of currently unserved area.
4. Construction of selected laterals to allow existing pump stations to be decommissioned.
5. Decommissioning of the Southwest treatment facility. Discharges from this facility would cease.
6. Construction of a portion of the South Interceptor, Reach 2, to transport flows from the Southwest treatment facility to a new pump station on the east side of the Natchez Trace Parkway. A 12" gravity line would be extended to the west side of the Trace to serve as a collection point for new flows from that basin. This system would provide gravity interceptor access to approximately one square mile of currently unserved area.
7. Construction of a pump station, force main and gravity main to transport flows from Reach 2 to the South Interceptor, Reach 1.

This plan is depicted on Exhibit VI-S3, and represents the **recommended plan**.

Long Range - A long range plan was developed to provide gravity service to the Bakers Creek Basin (Reach 1), Lindsey Creek Basin (Reach 2), and the West Bakers Creek Basin (Reaches 3 and West). The network of gravity pipes and a pump station is depicted on Exhibit VI-S2. Actual implementation of the Reach 2 and Reach 3 gravity mains is dependent on development and annexation in these basins.

Collection System Overflows

Overflows from the gravity collection system have been reported in the Southwest and Southeast basins. These overflows are related to stormwater finding its way into the piping system, creating surcharges. This relationship is graphically depicted on Exhibit IV-S7. It is recommended that the City initiate a program of testing, flow measurement and repair/replacement of mains to eliminate overflows.

Projected Costs

The total probable project cost for implementation of Phase 1 of the selected plan (treatment, expanded collection system and existing system repairs) has been estimated to be \$12,268,763. Funding is available through the SRF loan program. Using either SRF funds or bond funds, the additional cost of sewer service per customer for the average residential user in Clinton will be from \$7.00 to \$8.50 per month, depending on amortization period and final construction costs.

EXHIBITS

TABLE OF EXHIBITS

<u>EXHIBIT NUMBER</u>	<u>DESCRIPTION</u>
III-1	Population Growth Curve 1960-2020
IV-S3	Collection System Average Flows and Loads For 1994 and 1995
IV-S6	Rainfall Impact on Average Monthly Discharge at the North Wastewater Treatment Facilities
IV-S7	Rainfall Impact on Average Monthly Discharge at the Southwest Biolac Wastewater Treatment Facility
IV-S8	Sewer Usage Summary
VI-S1	North System Long Range Plan
VI-S2	South System Long Range Plan
VI-S3	South Interceptor, Phase I
VI-S4	Design Data for North Interceptor - Reach #1
VI-S5	Design Data For North Interceptor - Reach #2
VI-S6	Design Data for South Interceptor - Reach #1
VI-S7	Design Data for South Interceptor - Reach #2
VI-S8	Design Data for South Interceptor - Reach #3
VI-S9	Design Date for West Interceptor
VI-S10	South Treatment Plant Sequencing Diagram
VII-S1	Opinion of Probable Construction Costs for North Interceptor-Reach #1
VII-S2	Opinion of Probable Construction Costs for South Interceptor-Reach #1

TABLE OF EXHIBITS

EXHIBIT NUMBER

DESCRIPTION

VII-S3	Opinion of Probable Construction Costs for Pump Station Alternate Option 2
VII-S4	Planning Level Cost Projection for South WWTF
VII-S5	Planning Level Cost Estimate for Selected Improvements
VII-S6	Yearly Operations and Maintenance Cost Projections for the 3.0 MGD South Wastewater Treatment Facility
VII-S7	Consolidation of Current and Proposed Operations and Maintenance Cost

EXHIBIT III-1. POPULATION GROWTH CURVE 1960-2020
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

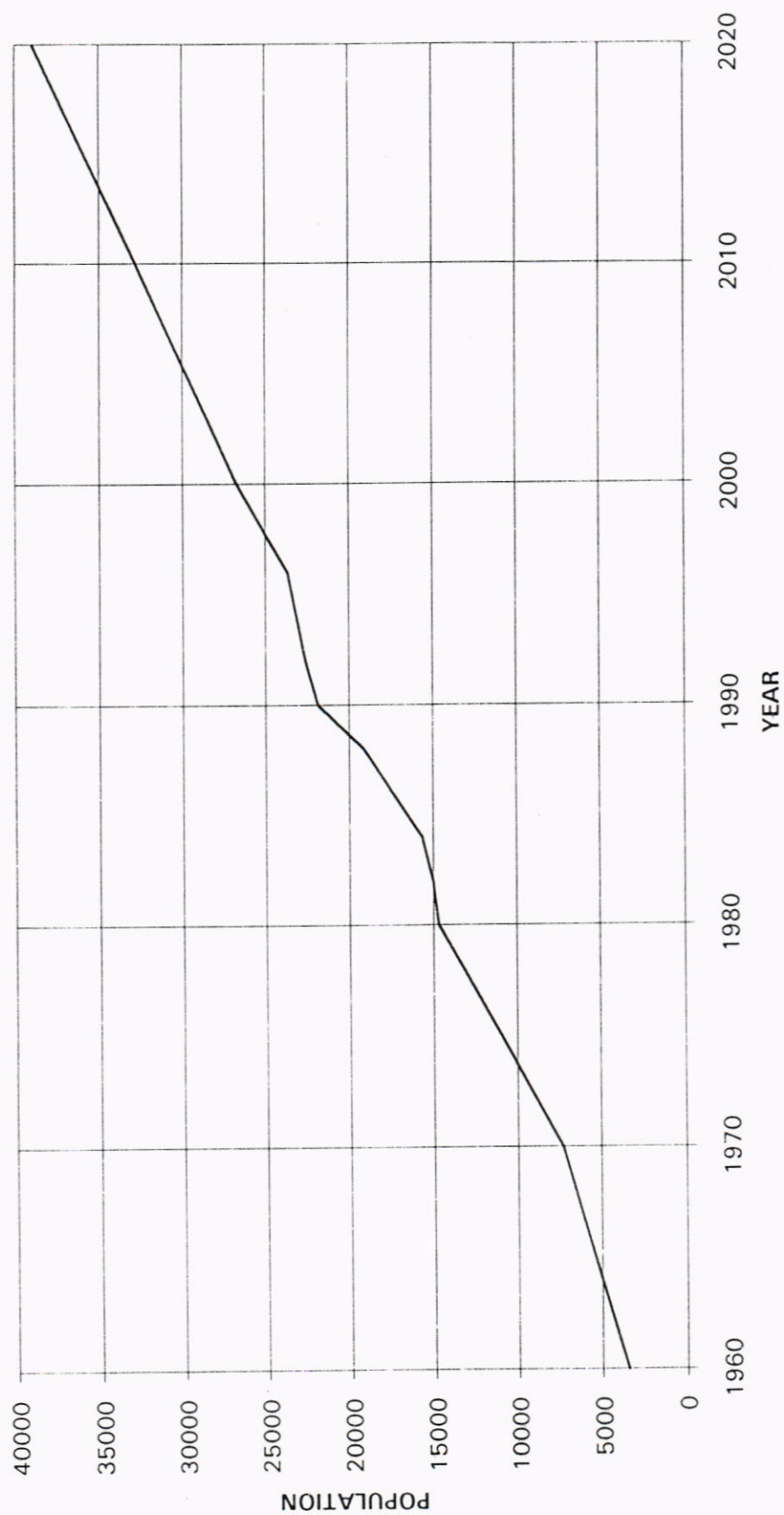


EXHIBIT IV-S3. COLLECTION SYSTEM AVERAGE FLOWS AND LOADS FOR 1994 AND 1995
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

EXISTING FACILITIES	BOD DESIGN CAPACITY (LB/DAY)	FLOW DESIGN CAPACITY (MGD)	BOD 1994 AVERAGE (LB/DAY)	FLOW 1994 AVERAGE (MGD)	BOD 1995 AVERAGE (LB/DAY)	FLOW 1995 AVERAGE (MGD)	BOD 2015 AVERAGE (LB/DAY)	FLOW 2015 AVERAGE (MGD)
SOUTH COLLECTION SYSTEM								
SOUTHWEST	1000.8	0.600	760.70	0.52	881.89	0.64	2025.44	1.21
SOUTHCENTRAL	867	0.520	858.25	0.53	854.28	0.43	1366.38	0.82
SOUTHEAST	667	0.400	718.16	0.50	976.37	0.44	1377.40	0.83
SUBTOTAL	2534.80	1.520	2337.11	1.55	2712.54	1.51	4769.23	2.86
NORTH COLLECTION SYSTEM								
LOVETT BIOLAC	460.368	0.276	235.93	0.11	248.61	0.16	514.23	0.31
NORTHEAST BIOLAC	867	0.300	319.91	0.23	317.27	0.20	616.55	0.37
BRIARS BIOLAC	667	0.630	0.00	0.00	315.67	0.19	591.37	0.35
SUBTOTAL	1994.37	1.206	555.84	0.34	881.54	0.55	1722.15	1.03
COMBINED SYSTEM TOTALS								
TOTAL	4529.17	2.726	2892.95	1.889	3594.09	2.062	6491.37	3.892

TESTSUM.WQ2

EXHIBIT IV-S6. RAINFALL IMPACT ON AVERAGE MONTHLY DISCHARGE AT THE
 NORTH WASTEWATER TREATMENT FACILITIES
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

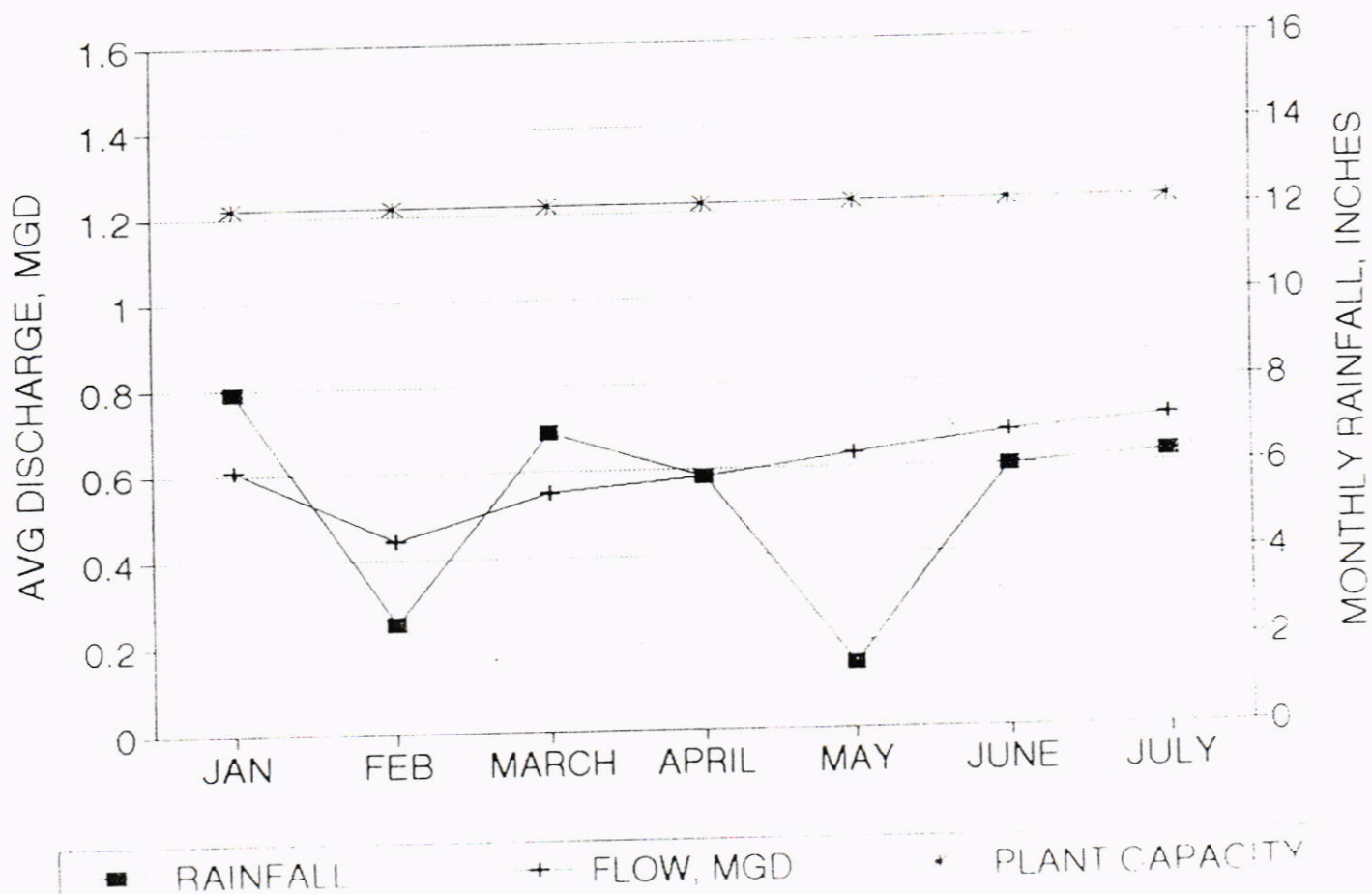


EXHIBIT IV-S7. RAINFALL IMPACT ON AVERAGE MONTHLY DISCHARGE AT THE
SOUTHWEST BIOLAC WASTEWATER TREATMENT FACILITY
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

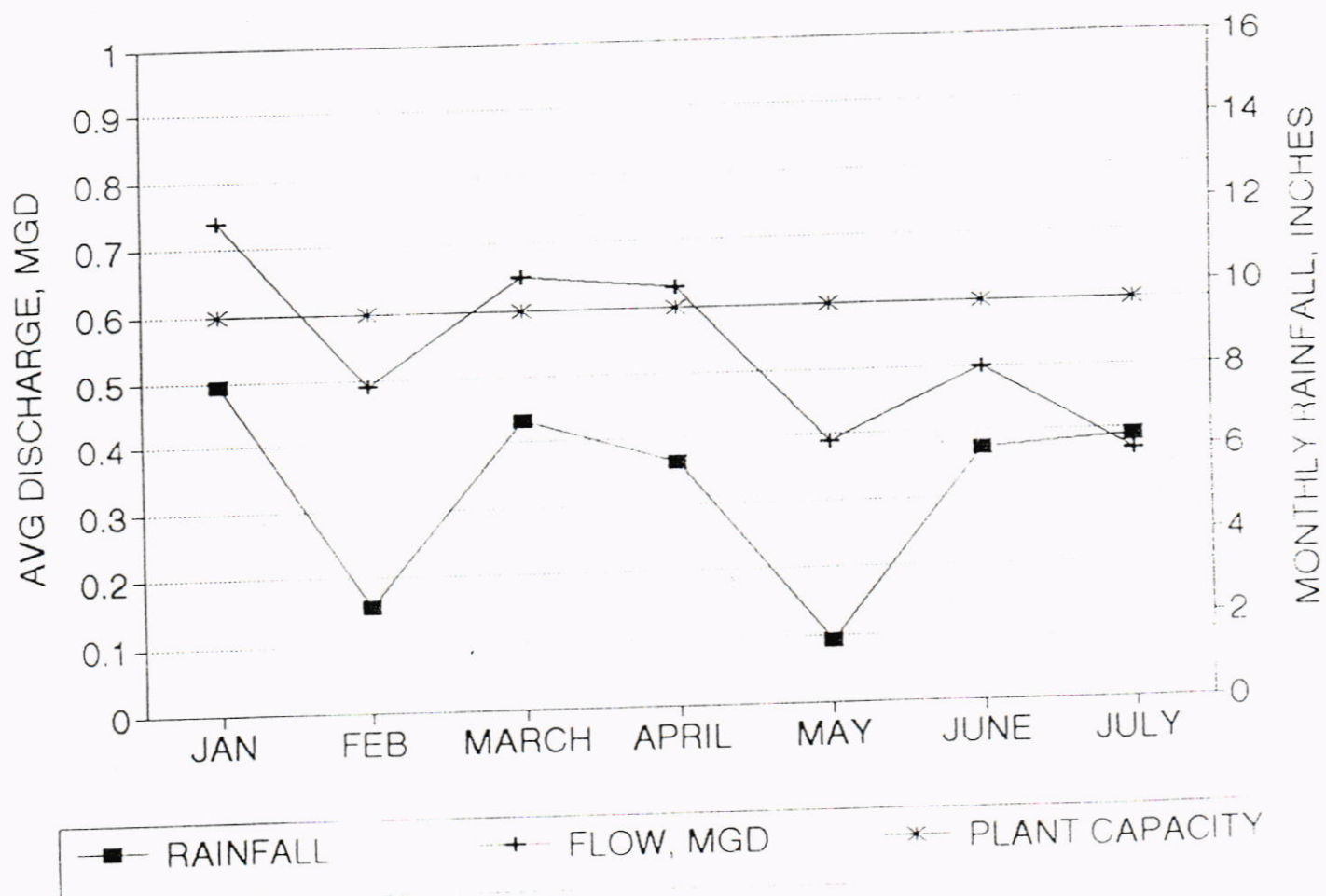
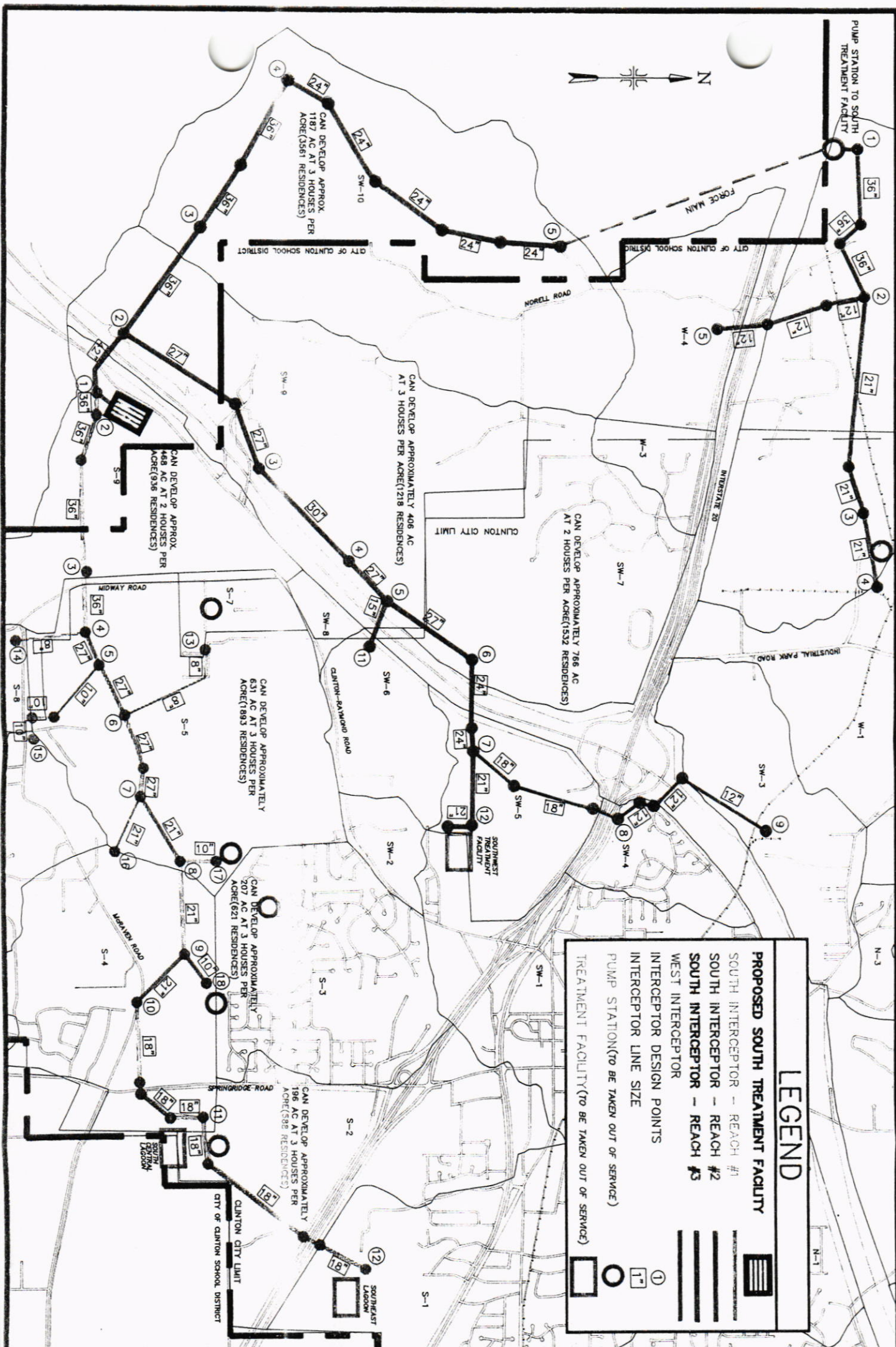


EXHIBIT IV-S8. SEWER USAGE SUMMARY
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

USAGE CATEGORY	AVERAGE ANNUAL USAGE (GALLONS)	AVERAGE MONTHLY USAGE (GALLONS)	AVERAGE DAILY USAGE (GALLONS)	NUMBER OF METERS	AVERAGE DAILY USAGE (GAL/METER)
ALL CLASSES	973,187,830	80,758,830	2,332,830	6,485	360
INDUSTRIAL	81,057,204	6,754,767	343,400	8	42,925
LARGE COMMERCIAL	10,831,825	902,657	30,093	5	6,019
INSTITUTIONAL	41,601,314	3,466,674	138,348	48	2,882
MULTI-FAMILY	73,133,321	6,094,453	203,152	40	5,079
RESIDENTIAL/SMALL COMMERCIAL	766,564,166	63,540,279	1,430,905	6,384	224



LEGEND

PROPOSED SOUTH TREATMENT FACILITY

SOUTH INTERCEPTOR - REACH #1

SOUTH INTERCEPTOR - REACH #2

SOUTH INTERCEPTOR - REACH #3

WEST INTERCEPTOR

INTERCEPTOR DESIGN POINTS

INTERCEPTOR LINE SIZE

PUMP STATION (TO BE TAKEN OUT OF SERVICE)

TREATMENT FACILITY (TO BE TAKEN OUT OF SERVICE)

INTERCEPTOR

INTERCEPTOR

DESIGN POINT

PUMP STATION

TREATMENT FACILITY



WILLIFORD, GEARHART & KNIGHT, INC.
ENGINEERS & SURVEYORS

DATE
8.15.96

DRAWN BY
JP

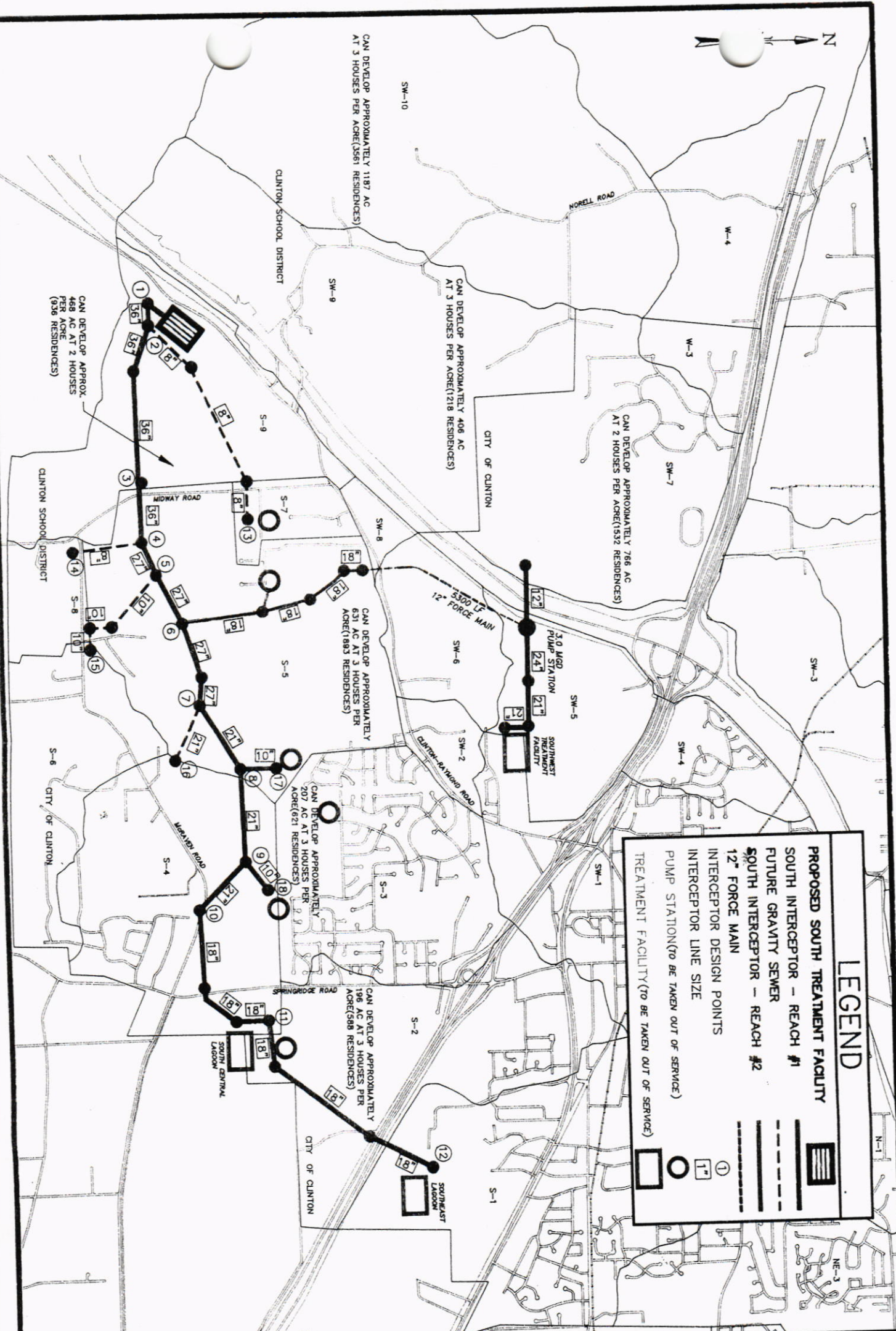
SCALE
1" = 2500'

**SOUTH AND WEST
SEWER INTERCEPTORS**

P\95-199\INTSTXT

EXHIBIT VI - S2

WGK# - 95-199



	DATE	8.15.96	SOUTH INTERCEPTOR - REACH #1 PHASE ONE	
	DRAWN BY	JP		
	SCALE	1" = 2500'	P/95-199/OP2ATXT WGK# - 95-199	EXHIBIT VI - S3

WILLIFORD, GEARHART & KNIGHT, INC.
 ENGINEERS & SURVEYORS

EXHIBIT VI-S4. DESIGN DATA FOR NORTH INTERCEPTOR - REACH #1
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

Design Points	Size (Inches)	Length (Feet)	Percent Slope Available	Design Slope	Ultimate Flow	Design Pipe Capacity
1-2	36	6300	0.280	0.200	11.780	19.32
2-3	36	2500	0.000	0.100	10.660	13.66
3-4	30	4000	0.300	0.210	9.034	12.17
4-5	24	4400	0.340	0.240	7.140	7.17
5-6	24	1000	0.500	0.350	6.554	8.66
6-7	24	3600	0.280	0.200	4.870	6.55
4-8	10	5500	0.720	0.510	0.480	1.01

EXHIBIT VI-S5. DESIGN DATA FOR NORTH INTERCEPTOR - REACH #2
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

Design Points	Size (Inches)	Length (Feet)	Percent Slope Available	Design Slope	Ultimate Flow	Design Pipe Capacity
1-9	18	5000	0.500	0.350	2.640	4.02
9-10	18	4000	0.120	0.100	1.530	2.15
1-11	24	600	0.340	0.230	5.460	7.02
11-12	18	500	0.000	0.100	1.709	2.15
11-13	27	3200	0.000	0.100	4.092	6.34
13-14	24	1700	0.000	0.100	3.100	4.63

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EXHIBIT VI-S6. DESIGN DATA FOR SOUTH INTERCEPTOR - REACH #1
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

Design Points	Size (Inches)	Length (Feet)	Percent Slope Available	Design Slope	Ultimate Flow	Design Pipe Capacity
1-2	36	500	0.000	0.100	9.620	13.66
2-3	36	3600	0.000	0.100	9.540	13.66
3-4	36	1200	0.170	0.110	9.212	14.33
4-5	27	1000	0.300	0.210	8.887	9.19
5-6	27	2000	0.250	0.176	8.064	8.41
6-7	27	2000	0.000	0.100	6.119	6.34
7-8	21	2000	0.600	0.420	5.500	6.64
8-9	21	2500	0.320	0.230	4.720	4.91
9-10	21	1700	0.000	0.150	3.900	3.97
10-11	18	4100	0.490	0.340	3.380	3.96
11-12	18	6100	0.160	0.160	2.690	2.72
2-13	8	5000	0.440	0.310	0.112	0.43
4-14	8	1200	0.670	0.470	0.433	0.53
5-15	10	2400	1.040	0.730	1.060	1.21
7-16	10	1600	0.620	0.440	0.777	0.94
8-17	10	1500	1.060	0.750	0.296	1.22
9-18	10	1000	0.800	0.570	0.296	1.07

EXHIBIT VI-S7. DESIGN DATA FOR SOUTH INTERCEPTOR - REACH #2
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

Design Points	Size (Inches)	Length (Feet)	Percent Slope Available	Design Slope	Ultimate Flow	Design Pipe Capacity
1-2	42	2000	0.000	0.100	19.950	20.62
2-3	27	7400	0.280	0.220	9.280	9.40
3-4	30	3500	0.120	0.110	8.694	8.81
4-5	27	1500	0.260	0.190	8.586	8.74
5-6	27	2500	0.240	0.170	8.246	8.26
6-7	24	2400	0.380	0.260	6.412	7.46
7-8	18	3900	0.340	0.230	2.240	3.26
8-9	12	5800	0.320	0.680	1.700	1.90
5-11	15	1300	0.000	0.110	1.430	1.38
7-12	21	1500	0.200	0.140	3.840	3.83

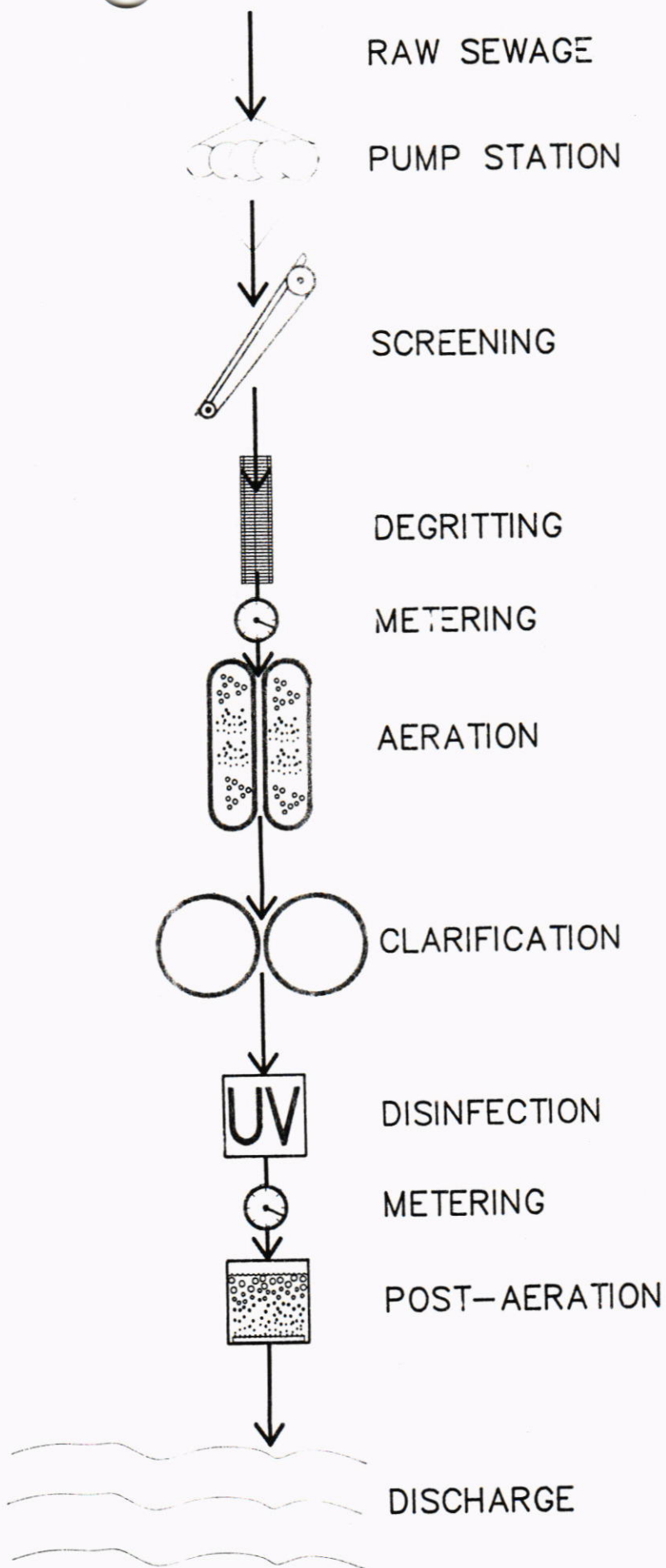
EXHIBIT VI-S8. DESIGN DATA FOR SOUTH INTERCEPTOR - REACH #3
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

Design Points	Size (Inches)	Length (Feet)	Percent Slope Available	Design Slope	Ultimate Flow	Design Pipe Capacity
1-2	36	3200	0.000	0.100	13.400	13.66
2-3	36	4300	0.000	0.100	11.580	13.66
3-4	24	8800	0.780	0.560	10.160	10.95

EXHIBIT VI-S9. DESIGN DATA FOR WEST INTERCEPTOR
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

Design Points	Size (Inches)	Length (Feet)	Percent Slope Available	Design Slope	Ultimate Flow	Design Pipe Capacity
1-2	36	4700	0.001	0.070	10.160	11.43
2-3	21	5100	0.294	0.210	3.630	4.70
3-4	14	2000	0.500	0.350	1.692	2.05
2-5	12	3700	0.660	0.480	0.465	1.59

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WILLIFORD, GEARHART & KNIGHT, INC.
ENGINEERS & SURVEYORS

DATE
8.20.96

DRAWN BY
JP/BG

SCALE
NONE

SOUTH TREATMENT PLANT SEQUENCING DIAGRAM

SWWTP.DWG

WGK# - 95-199

EXHIBIT VI-S10

EXHIBIT VII-S1. OPINION OF PROBABLE CONSTRUCTION COST FOR NORTH INTERCEPTOR - REACH #1
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST	CUMULATIVE COST
<u>NORTH INTERCEPTOR - REACH #1</u>						
1	CLEARING & GRUBBING	1	LS	194000	194,000	
2	10" SEWER PIPE	5500	LF	16	88,000	
3	24" SEWER PIPE	9000	LF	82	738,000	
4	30" SEWER PIPE	4000	LF	110	440,000	
5	36" SEWER PIPE	8800	LF	146	1,284,800	
6	48" MANHOLE	14	EA	1500	21,000	
7	60" MANHOLE	13	EA	2700	35,100	
8	72" MANHOLE	35	EA	3900	136,500	
9	20" BORED & JACKED	160	LF	160	25,600	
10	36" BORED & JACKED	200	LF	285	57,000	
11	48" BORED & JACKED	160	LF	575	92,000	
12	EROSION CONTROL	19	AC	700	13,300	
					<u>\$3,125,300</u>	
	CONTINGENCIES AND INDIRECT COSTS (35%)				\$1,093,855	
			SUB-TOTAL		<u>\$4,219,155</u>	
			TOTAL COST		<u>4,219,155</u>	\$17,760,590
<u>NORTH INTERCEPTOR - REACH #2</u>						
1	CLEARING & GRUBBING	1	LS	76000	76,000	
2	18" SEWER PIPE	9500	LF	46	437,000	
3	24" SEWER PIPE	2300	LF	82	188,600	
4	27" SEWER PIPE	3200	LF	90	288,000	
5	48" MANHOLE	24	EA	1500	36,000	
6	60" MANHOLE	14	EA	2700	37,800	
7	24" BORED & JACKED	160	LF	180	28,800	
8	EROSION CONTROL	11	AC	700	7,700	
					<u>\$1,099,900</u>	
	CONTINGENCIES AND INDIRECT COSTS (35%)				\$384,965	
			SUB-TOTAL		<u>\$1,484,865</u>	
			TOTAL COST		<u>\$1,484,865</u>	\$19,245,455

EXHIBIT VII-S2. OPINION OF PROBABLE CONSTRUCTION COSTS SOUTH INTERCEPTOR - REACH #1
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST	CUMULATIVE COST
<u>MAIN INTERCEPTOR</u>						
1	CLEARING & GRUBBING	1	LS	260000	260,000	
2	10" SEWER PIPE	2000	LF	20	40,000	
3	18" SEWER PIPE	10200	LF	46	469,200	
4	21" SEWER PIPE	6200	LF	60	372,000	
5	27" SEWER PIPE	2500	LF	65	162,500	
6	27" SEWER PIPE	2500	LF	70	175,000	
7	36" SEWER PIPE	3500	LF	95	332,500	
8	36" SEWER PIPE	1800	LF	125	225,000	
9	48" MANHOLE	31	EA	1500	46,500	
10	60" MANHOLE	28	EA	2700	75,600	
11	72" MANHOLE	17	EA	4000	68,000	
12	24" BORED & JACKED	700	LF	180	126,000	
13	48" BORED AND JACKED	60	LF	575	34,500	
14	EROSION CONTROL	24.5	AC	700	17,150	
					<u>\$2,403,950</u>	
	CONTINGENCIES AND INDIRECT COSTS (35%)				\$841,383	
	SUB-TOTAL				<u>3,245,333</u>	<u>\$3,245,333</u>
<u>LATERALS</u>						
1	EROSION CONTROL	1	LS	31000	31,000	
2	8" SEWER PIPE	5000	LF	27	135,000	
3	10" SEWER PIPE	2500	LF	16	40,000	
4	21" SEWER PIPE	1600	LF	71	113,600	
5	48" MANHOLE	22	EA	1500	33,000	
6	60" MANHOLE	4	EA	2700	10,800	
7	20" BORED AND JACKED	120	LF	160	19,200	
8	EROSION CONTROL	7	AC	700	4,900	
					<u>\$387,500</u>	
	CONTINGENCIES AND INDIRECT COSTS (35%)				\$135,625	
	SUB-TOTAL				<u>\$523,125</u>	<u>\$3,768,458</u>
<u>OFF-LINE EQUALIZATION OF INFLOW AND INFILTRATION</u>						
1	CONSTRUCTION(S. EAST)	1	LS	150000	\$150,000	
2	CONSTRUCTION(S. CENTRAL)	1	LS	100000	\$100,000	
	CONTINGENCIES AND INDIRECT COSTS (35%)				\$87,500	
	SUB-TOTAL				<u>\$337,500</u>	
	TOTAL COST				<u>\$4,105,958</u>	<u>\$4,105,958</u>

EXHIBIT VII-S3. OPINION OF PROBABLE CONSTRUCTION COSTS FOR PUMP STATION ALTERNATE OPTION 2
 WATER AND SEWER MASTER PLAN
 CITY OF CLINTON, MISSISSIPPI
 NOVEMBER 1996

NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
<u>ALTERNATE OPTION 2</u>					
1	CLEARING AND GRUBBING	1	LS	77000	77,000
2	ACCESS ROADS	2400	LF	20	48,000
3	3.0 MGD PUMP STATION	1	LS	125000	125,000
4	12" FORCE MAIN	5000	LF	13	65,000
5	20" BORE AND JACK	200	LF	85	17,000
5	18" BORE AND JACK	100	LF	75	7,500
6	AIR VACUUM RELEASE VALVE	2	EA	2000	4,000
7	12" SANITARY SEWER FROM WEST	1500	LF	28	42,000
8	21" SANITARY SEWER	2500	LF	44	110,000
9	24" SANITARY SEWER	1000	LF	50	50,000
10	36" BORE AND JACK	0	LF	300	0
11	18" SANITARY SEWER	4500	LF	40	180,000
12	48" MANHOLE	29	EA	1300	37,700
13	60" MANHOLE	2	EA	2700	5,400
14	EROSION CONTROL	7	AC	700	4,900
					\$773,500
CONTINGENCIES AND INDIRECT COSTS (35%)					\$270,725
TOTAL					\$1,044,225

EXHIBIT VII-S4. PLANNING LEVEL COST PROJECTION FOR SOUTH WWTF
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

FACILITY PROCESS	CONSTRUCTION COST
PUMP STATION	300,000
SCREENING AND DEGRITTING	450,000
METERING	20,000
OXIDATION DITCHES	2,734,000
CLARIFIERS	1,074,000
DISINFECTION	338,000
POST-AERATION	70,000
DISCHARGE	80,000
ELECTRICAL AND CONTROLS	150,000
SITE WORK	350,000
SLUDGE LAGOON	150,000
SUB-TOTAL	5,716,000
LAND	100,000
CONTINGENCIES AT 10%	571,600
INDIRECT COSTS AT 15.5%	885,980
TOTAL	\$7,273,580

EXHIBIT VII-S5. PLANNING LEVEL COST ESTIMATE FOR SELECTED IMPROVEMENTS
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

SELECTED IMPROVEMENT	CONSTRUCTION COST	INDIRECT COST	TOTAL COST
COLLECTION SYSTEM ADDITIONS/MODIFICATIONS:			
SOUTH INTERCEPTOR REACH #1 - MAIN INTERCEPTOR	2,403,950	841,383	3,245,333
OFF-LINE EQUALIZATION	337,500	118,125	455,625
SOUTH INTERCEPTOR REACH#2 - P.S. ALTERNATE	773,500	270,725	1,044,225
TREATMENT EXPANSION:			
SOUTH WWTF (3.0-3.5 MGD)	5,716,000	1,457,580	7,273,580
COLLECTION SYSTEM REPAIRS :			
SEWERLINE AND MANHOLE TESTING AND REPAIR (BY CITY OF CLINTON PUBLIC WORKS CREWS)	250,000	0	250,000
TOTAL PLANNING LEVEL COST	\$9,480,950	\$2,687,813	\$12,268,763

EXHIBIT VII-S6. YEARLY OPERATIONS AND MAINTENANCE COST PROJECTIONS FOR THE 3.0 MGD
SOUTH WASTEWATER TREATMENT FACILITY.
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

<u>ELECTRICAL EXPENSES*</u>	DAILY (KWH)	YEARLY (KWH)	DAILY COST**	YEARLY COST**
INFLUENT PUMPING	370	135050	\$29.60	\$10,804.00
SCREENING	14	5110	\$1.12	\$408.80
AERATION	1782	650430	\$142.56	\$52,034.40
CLARIFICATION/RAS	194	70810	\$15.52	\$5,664.80
DISINFECTION	175	63875	\$14.00	\$5,110.00
MISCELLANEOUS	100	36500	\$8.00	\$2,920.00
SUB-TOTAL	2635	961775	\$210.80	\$76,942.00
<u>OPERATIONAL EXPENSES*</u>				YEARLY COST**
SCREENINGS DISPOSAL				\$8,760.00
SLUDGE DISPOSAL @ \$0.05/GAL				\$50,000.00
SUB-TOTAL				\$58,760.00
<u>MAINTENANCE EXPENSES*</u>				YEARLY COST**
LAMP REPLACEMENT				\$2,600.00
MISCELLANEOUS				\$15,000.00
SUB-TOTAL				\$17,600.00
TOTAL***				\$153,302.00

* VALUES BASED UPON: INITIAL FLOW = 1.5 MGD

**VALUES BASED UPON: CURRENT AVERAGE COST PER KWH = \$0.08

*** LABOR INCLUDED IN CURRENT CONTRACT

EXHIBIT VII-S7. CONSOLIDATION OF CURRENT AND PROPOSED OPERATIONS AND MAINTENANCE COST
WATER AND SEWER MASTER PLAN
CITY OF CLINTON, MISSISSIPPI
NOVEMBER 1996

O&M INCREASE ITEMS	POWER	O&M	TOTAL
PROPOSED 3.0 MGD WWTF*	\$76,942	\$76,360	\$153,302
PROPOSED 3.0 MGD PUMP STATION*	\$7,253	\$1,200	\$8,453
TOTAL O&M INCREASE*	\$84,195	\$77,560	\$161,755
O&M REDUCTION ITEMS	POWER	O&M	TOTAL
<u>CURRENT WWTF**</u>			
SOUTHWEST	\$28,800	\$13,000	\$41,800
SOUTH CENTRAL	\$8,220	\$3,050	\$11,270
SOUTH EAST	\$17,160	\$4,050	\$21,210
<u>CURRENT PUMP STATION**</u>			
WILLOWBROOK	\$3,600	\$1,200	\$4,800
ROYAL OAK	\$1,800	\$1,200	\$3,000
SOUTHCENTRAL***	\$4,320	\$1,200	\$5,520
TOTAL O&M REDUCTION	\$63,900	\$23,700	\$87,600
NET O&M INCREASE(INCREASE-REDUCTION)	\$20,295	\$53,860	\$74,155

*LABOR INCLUDED IN CURRENT CONTRACT

**TO BE REMOVED FROM SERVICE

***ASSUMES 80% REDUCTION IN USE, 20% FOR INFLOW/INFILTRATION EQUALIZATION