LUCAS COUNTY, OHIO

SANITARY SEWER

MASTER PLAN

AUGUST 2002

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August 22, 2002

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Mr. James P. Shaw III, P.E.
Lucas County Sanitary Engineer
1111 South McCord Road
Holland, OH 43528

Re: Lucas County, Ohio
Sanitary Sewer Master Plan
LUC9900-002-R0

Dear Mr. Shaw:

Please find attached ten copies of the Sanitary Sewer Master Plan.

The plan evaluates the need for sanitary sewers in western Lucas County in light of the current residential and commercial growth. This trend will probably continue well into the future.

The plan generally, recommends the construction of trunk sanitary sewers in the major east/west crossroads that will drain to the existing McCord Road Interceptor. A phase-wise approach to construction the new sanitary sewers is recommended by starting at the McCord Road Interceptor and proceeding westward as needed to match land development.

We will be happy to meet with you and your staff to discuss the plan in detail and appreciate the opportunity to be of continued service to Lucas County.

If you have any questions, please feel free to contact our office.

Yours truly,

Albert T. Zamora, P.E.

ATZ/tac

Enclosure

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1.0. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

1.1. Purpose

The purpose of this study was to evaluate the sewerage needs of the western part of Lucas County and develop recommendations to meet those needs of the near future and at full development.

1.2. Summary

1.2.1. Population Distribution

Residential development throughout all of western Lucas County can be observed, but the fastest growing areas are within Monclova and Springfield Townships. Generally, residential growth is spreading westward from I-475 along the major east/west crossroads. The need for sewers will have to follow the extension of water mains.

1.2.2. Land Use

Future land use in western Lucas County will have residential development prevailing over new commercial and industrial development. It is anticipated that commercial/industrial land use will generally be limited to the Toledo Express Airport vicinity, the Airport Highway corridor, the interchanges of I-475 with Monclova Road and Maumee-Western Road, and in western Sylvania Township along Central Avenue.

1.2.3. Maumee River Wastewater Treatment Plant Flows

A review of the MRWWTP flows shows a doubling of flow over the twenty year period ending in 2000 with an annual average flow of 13.3 MGD. It is expected that at the current residential development rate, the current plant average capacity of 15 MGD will be exceeded within five years.

1.3. Recommendations

In order to effectively meet the needs of western Lucas County at full development, a sanitary sewer system will need to be constructed in the near future (3-5 years) which can be readily extended to the boundaries of the sewer district. The recommendation is for a phased

approach in which the faster developing crossroad service areas are given the higher priority for sewer construction.

2.0. CURRENT SITUATION

2.1. Service Area and System Description

2.1.1. Service Area

In this plan, the Lucas County Sewer District is defined as being all of Sylvania, Springfield, Monclova, and Waterville Townships and parts of Richfield, Spencer, Harding, and Swanton Townships. The Cities of Maumee and Sylvania as well as the Villages of Waterville and Whitehouse maintain their own wastewater collection systems which are tributary to the Maumee River Wastewater Treatment Plant (MRWWTP).

A Sanitary Sewer System Study completed for the Village of Berkey in 1995 recommended gravity collector sewers and pumping to the City of Sylvania collection system for final disposal at the Lucas County MRWWTP would be the most effective and economical way to handle the wastewater generated by the village.

The current sewer district service area is shown in Figure 1.

2.1.2. Collection and Treatment System

The MRWWTP and the main trunk sewer tributary to the plant came online in 1973. The MRWWTP is situated on the south-eastern edge of Monclova Township adjacent to the Maumee River on River Road.

The McCord Road Trunk Sewer starts at the MRWWTP and proceeds northerly parallel to Interstate 475 and terminates at the southern city limits of Sylvania.

During construction of the McCord Road Trunk Sewer, connection stubs were provided at manholes at the major crossroads for future subtrunk sanitary sewers.

It is the determination of the extent and capacity of the crossroad subtrunk sewers that is the primary objective of this master plan.

2.3. Current Commercial and Industrial Development

The existing commercial developments within the sewer district are generally located along the principle arterial roadways in the vicinity of their intersection with I-475. These roadways

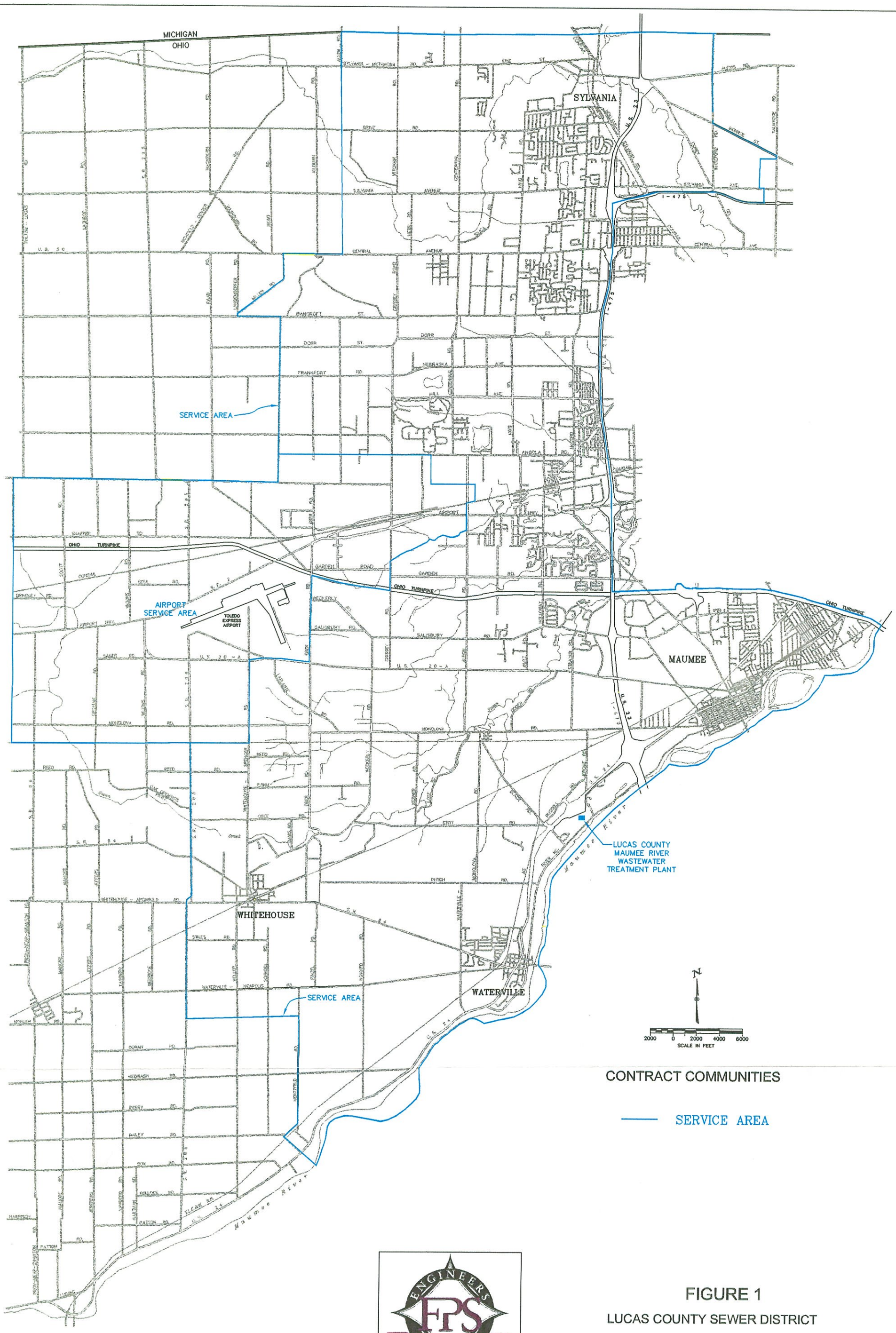


FIGURE 1

LUCAS COUNTY SEWER DISTRICT

SERVICE AREA

LUCAS COUNTY, OHIO

include: Monroe Street, Alexis Road, Sylvania Avenue, Central Avenue, Airport Highway, and Salisbury Road.

The existing industrial developments are located in the western end of Sylvania Township; along Airport Highway adjacent to Toledo Express Airport, and between US24, Black Road and River Road.

Figure 2 shows the boundaries of the existing commercial and industrial development that is served by the Lucas County Sanitary Sewer District. Boundary information was provided by Toledo-Lucas County Plan Commissions' most recent land use inventory maps.

2.4. Current Annual Wastewater Flow Trend

Flows to the Maumee River Wastewater Treatment Plant have steadily increased over the life of the plant due to increased population and expansion of the service area. Table 1 summarizes flow data for the years 1997 through 2001.

TABLE 1
DAILY FLOWS – 1997 THROUGH 2001 (MGD)

Year	Year Average	Minimum Month	Maximum Month	Maximum Day
1997	13.6	10.3	18.5 (MAR)	29.6
1998	13.5	10.0	18.6 (FEB)	38.0
1999	12.1	9.5	17.7 (APR)	28.2
2000	13.3	10.3	16.6 (JUNE)	27.7
2001	12.6	9.3	18.1 (FEB)	26.6
2002*	14.4	11.2	17.5 (APR)	23.0

*Through April, 2002

2.5. Current MRWWTP Planned Expansion

As residential development in western Lucas County continues at a pace seen in recent years, the sanitary wastewater flow generated in the County's service area will soon meet MRWWTP's capacity (15MGD).

In order to provide full treatment for the projected flow of 22.5 MGD for the year 2020, it was recommended that a separate parallel plant expansion be constructed with an initial capacity

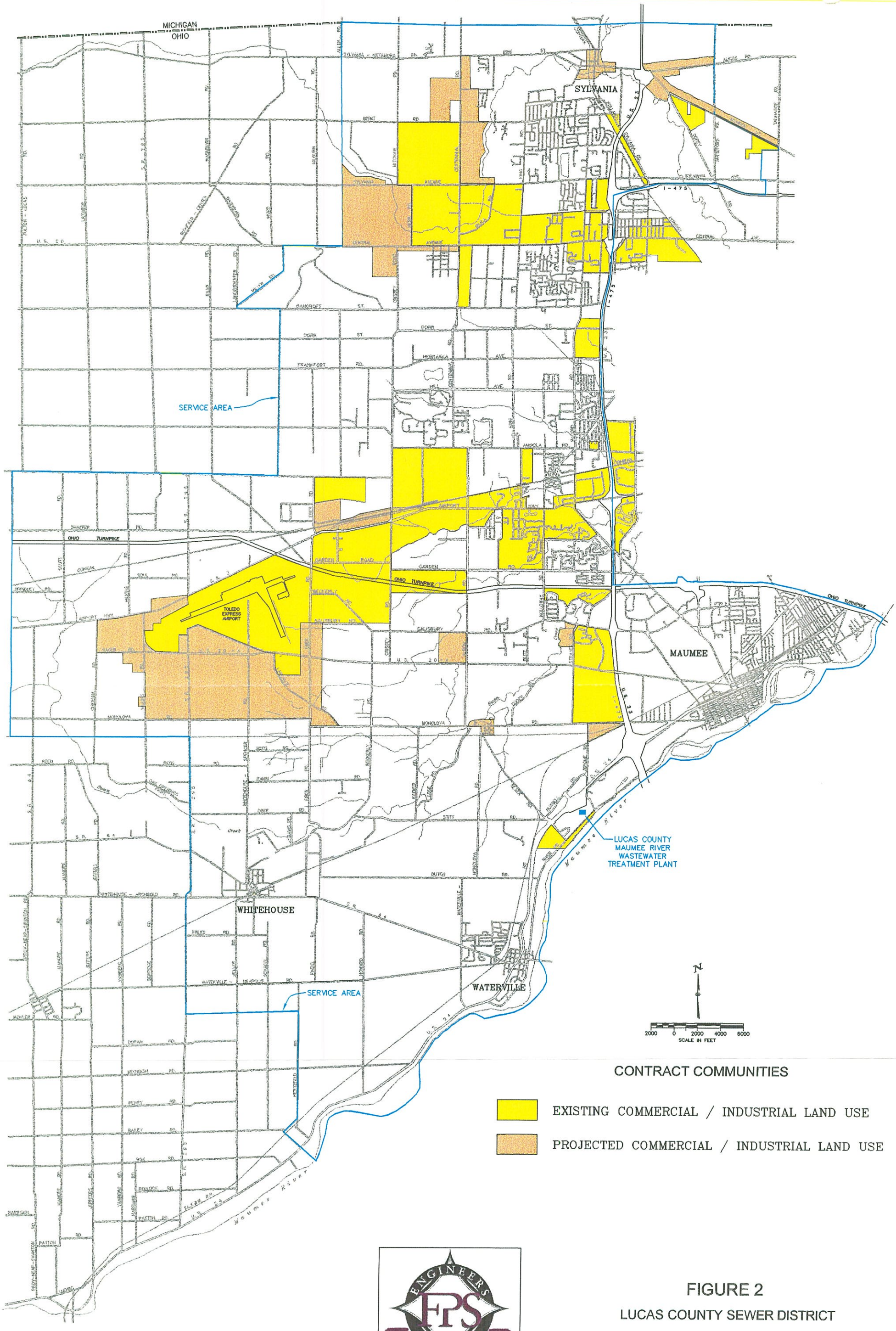


FIGURE 2

LUCAS COUNTY SEWER DISTRICT

LAND USE

LUCAS COUNTY, OHIO

of 7.5 MGD, ultimately expandable to 15 MGD. The expansion will be an independent Activated Sludge facility and will be adjacent and to the north of the existing plant.

This expansion will allow for uninterrupted service of the existing plant. Substantial improvements and modifications will also be completed on the existing facilities.

3.0. SANITARY SEWER SERVICE AREA PROJECTIONS

3.1. Population Projections

Estimates of the future population are the most significant criteria used to project future wastewater flow from sewer service areas. Projected populations and associated flows determine the needed wastewater treatment plant capacities.

The Toledo Area Council of Governments (TMACOG) provided population projections of the Lucas County Sanitary District service area. The TMACOG information includes past population survey data to 1990 and projections of population by city, village, and township that are part of the service area and tributary to MRWWTP. The past and projected populations are listed in Table 2.

TABLE 2
TMACOG POPULATION FORECASTS

Cities	1990	2000	2010	2020	2030
Maumee	15,561	15,445	15,308	15,268	15,130
Sylvania	17,301	17,400	17,448	17,426	17,426
Villages					
Berkey	267	250	238	231	255
Holland	1,210	1,245	1,277	1,289	1,315
Waterville	4,517	4,775	4,940	5,112	5,398
Whitehouse	2,528	2,827	3,077	3,310	3,557
Townships					
Harding	593	565	584	651	719
Monclova	4,547	5,607	6,728	8,043	8,723
Providence	3,016	3,151	3,220	3,275	3,324
Richfield	1,178	1,298	1,363	1,403	1,442
Spencer	1,665	1,662	1,732	1,792	1,845
Springfield	18,835	22,528	25,682	28,672	31,627
Swanton	3,329	3,428	3,501	3,559	3,598
Sylvania	22,682	27,540	29,869	31,089	31,456
Waterville	1,958	2,306	2,605	2,896	3,178
Total	66,325	77,182	84,816	91,322	96,437

Monclova, Springfield, and Sylvania Townships are expected to continue to be the areas of greatest population growth. Sanitary sewer service in these areas will have to be provided to meet the demand for additional housing and will have to closely follow the extension of water mains to the western edge of the county.

3.2. Commercial and Industrial Expansion Projection

Commercial and industrial land use projections as provided by the Toledo-Lucas County Plan Commissions were classified as commercial, light industrial/office, and heavy industrial. The development locations projected for the Lucas County Sanitary District service area are as follows:

Commercial

Sylvania Township:	-	along Central Avenue or both sides of I-475
	-	along Monroe Street on both sides of I-475 and along Alexis Road adjacent to I-475
Springfield Township:	-	in the vicinity of the intersection of Airport Highway and I-475
Monclova Township:	-	along Salisbury Road adjacent to I-475

Light Industrial/Office

Sylvania Township:	-	along Holland-Sylvania Road
	-	along Centennial Road from Brint Road to Erie Street
	-	Between Central Avenue and Sylvania Avenue on both sides of Centennial Road
Springfield Township:	-	along Airport Highway and McCord Road
Monclova Township:	-	west of I-475 between Salisbury Road and Monclova Road

Heavy Industrial

Sylvania Township:	-	along Centennial Road from Central Avenue to Erie Street
	-	along Central Avenue, west of Crissey Road and Herr Road
Springfield Township:	-	North and south of Airport Highway between Eber Road and Albon Road
Monclova Township:	-	between Monclova Road, Norfolk & Southern Railroad and Jerome Road

Figure 2 shows the boundaries of the projected commercial and industrial development.

3.3. Projected Wastewater Flows

Using existing plant flow records along with population projections and requests for additional flow contributions from the contract communities, projections of future flows were generated. Flow data from 1997-1999 was utilized to project the 2000 flow. The projected average daily flow to the MRWWTP for 2000 is 14.2 MGD. The projected wastewater flows for the Lucas County Sewer Service Area as well as the requested flow contributions from the Contract Communities are listed in Table 3. Projected wastewater flows for the Lucas County Sewer Service Area were based on this average flow of 110 gpcd.

TABLE 3
PROJECTED WASTEWATER FLOWS

Contract Communities	2000	2020
City of Maumee	3.6*	5.1**
City of Sylvania	4.4*	5.4**
Village of Waterville	0.7*	1.7**
Village of Whitehouse	0.6*	1.2**
Contract Total	**9.3**	**13.4**
Lucas County Service Area	**2000**	**2020**
Village of Berkey	-	0.025
Village of Holland	0.14	0.142
Harding Township	-	0.036
Monclova Township	0.5	0.885
Providence Township	-	0.180
Richfield Township	-	0.077
Spencer Township	-	0.197
Springfield Township	2.4	3.154
Swanton Township	-	0.391
Sylvania Township	2.9	3.420
Waterville Township	0.2	0.319
Wood County	0.035	0.035
Lucas County Total	**5.7**	**8.826**
MRWWTP Total	**15.0**	**22.23**

* Current contract amounts (MGD)
** Requested contract amounts (MGD)

4.0. SEWERAGE NEEDS TO MEET FULL DEVELOPMENT

4.1. Sewerage Needs Determination

The sewerage needs of the western part of the Lucas County Sanitary Sewer District at full development was determined by evaluating all of the parceled and developable acreage within the service area. At full development, all parcels (10 acres or less) are projected to contribute 243 gpd per unit, while the developable acres (parcels larger than 10 acres) are projected to contribute 286 gpd per acre.

The projected flows from tributary areas were multiplied by appropriate peaking factors to determine minimum sewer sizes. The proposed sewer sizes and layout were chosen to minimize pipe slope, thus enabling the pass-under of streams and ditches and also to eliminate existing pump stations where possible.

4.2. Crossroads Service Areas Proposed Sewers

4.2.1. Monclova/Salisbury Roads Service Area

By using a larger diameter subtrunk sanitary sewer, the Monclova and Salisbury Road service areas can be consolidated and served completely with gravity sewers.

A new main subtrunk sewer would be connected to the existing McCord Road Trunk sewer at McCord Road and Strayer Road, and proceed west in Monclova Road to Albon Road. The minimum slope required to produce the standard minimum wastewater velocity would allow for the elimination of Pump Station No. 43, Blystone Valley on Monclova Road and would allow the 30-inch diameter sewer to pass under Swan Creek.

At Monclova Road and Albon Road, one 24-inch diameter branch sewer would proceed north in Albon Road to the intersection with Salisbury Road.

At Albon Road and Salisbury Road, the North branch subtrunk would reduce to 21-inch diameter and proceed west in Salisbury Road to Lexington Boulevard. The branch subtrunk would reduce to 18-inch diameter and proceed to the intersection with Crissey Road. The subtrunk then would reduce to 15-inch diameter and proceed west to the intersection of Salisbury Road and Weckerly Road.

Tributary sanitary sewers to the North Branch subtrunk would be 12-inch diameter in order to minimize sewer slope.

The South Branch subtrunk would start at the intersection of Monclova Road and Albon Road as a 21-inch diameter sewer and proceed west to the intersection with Weckerly Road. The branch subtrunk would reduce to 18-inch diameter and proceed to the intersection with Eber Road.

At the intersection of Monclova Road and Eber Road the South Branch subtrunk would split into two 15-inch diameter tributary sewers, one proceeding north to the intersection of Eber Road and LaPlante Road and also west to the intersection of Monclova Road and Whitehouse-Spencer Road, while the other tributary sewer would proceed south to the intersection of Eber Road and Ramm Road.

Another tributary sewer in Weckerly Road would also be 15-inch diameter, whereas the remaining tributary sewers would be 12-inch diameter. The minimum slopes of the tributary sewers would allow for gravity flow throughout the service area. See Figure 3 in the Appendices for the sewer layout of the Monclova/Salisbury Roads Service Area. Appendix B provides a summary table of the design data of the proposed sewers.

4.2.2. Garden Road Service Area

A new 12-inch diameter subtrunk sewer in Garden Road would connect to the McCord Road Truck sewer at the intersection of Garden Road and Heatherglen and proceed west to approximately 600 feet beyond the intersection of Garden Road and Holloway Road. This subtrunk sewer would provide gravity service for residents east of Cairl Ditch and would allow for the elimination of Pump Station No. 14, Garden Creek Estate at Garden Creek Drive. Service to Holloway Road would be provided by 12-inch diameter tributary sewers, one starting south of the Cairl Ditch crossing and proceeding south to the subtrunk, the other starting north of the Turnpike and proceeding north to the subtrunk.

Areas west of Cairl Ditch would be served by a new pump station located off of Garden Road east of the Cairl Ditch crossing. A 12-inch diameter subtrunk sewer would start at the proposed pump station and proceed west to the intersection of Garden Road and Crissey Road.

Tributary sanitary sewers in Albon Road, Gunn Road, and Pilliod Road would be 12-inch diameter and would allow for the elimination of Pump Station No. 45, Apple Blossom on Pilliod Road. See Figure 4 in the Appendices for the sewer layout of the Garden Road Service Area.

4.2.3. Airport Highway Service Area

The area that remains to be sewered within the Airport Highway Service Area would be served by Pump Station No. 6, Wolf Creek Executive Park on Airport Highway. A new 12-inch diameter subtrunk sewer in Airport Highway would start at the pump station and proceed west to the intersection of Airport Highway and Albon Road.

A 12-inch diameter tributary sewer in Albon Road would start south of the Conrail Railroad and drain south to the subtrunk and another 12-inch diameter tributary would start north of Wolf Creek and drain north to the subtrunk. See Figure 5 in the Appendices for the sewer layout of the Airport Highway Service Area.

4.2.4. Angola Road Service Area

The installation of a new gravity subtrunk sewer in Angola Road, extending from its connection to the existing 18-inch diameter sanitary sewer to Crissey Road would allow for the elimination of Pump Station No. 40, Hidden Harbour at Angola Road and East Shoreline Drive, Pump Station No. 39, Stoneridge Farms at Angola Road and Pimlico Park, and Pump Station No. 20, Stone Oak at Angola Road and Broadmoor Boulevard.

The subtrunk sewer would start as an 18-inch diameter sewer and proceed to the intersection of Angola Road and Wentworth Avenue. The subtrunk would reduce to 15-inch diameter and proceed to the intersection of Angola Road and Kieswetter Road.

The subtrunk then would reduce to 12-inch diameter and end at the intersection of Angola Road and Crissey Road.

Tributary sewers in Albon Road, Raymil Road, King Road, and Wentworth Avenue draining to the subtrunk would be 12-inch diameter. See Figure 6 in the Appendices for the sewer layout of the Angola Road Service Area.

4.2.5. Hill Avenue Service Area

A new 15-inch diameter subtrunk sewer in Hill Avenue would start at its connection to the existing 18-inch diameter sanitary sewer at the intersection with Florentine Drive and proceed west to the intersection of Hill Avenue and Centennial Road. The subtrunk would reduce to 12-inch diameter and extend to the intersection of Hill Avenue and Crissey Road. This subtrunk would provide gravity service for the unsewered area within the service area and would allow for the elimination of Pump Station No. 2, Stone Oak at Hill Avenue and Centennial Road.

Tributary sewers draining to the subtrunk in King Road, Layer Road, Centennial Road, Orchard Lake Boulevard, and Crissey Road would be 10-inch diameter. See Figure 7 in the Appendices for the sewer layout of the Hill Avenue Service Area.

4.2.6. Nebraska Avenue Service Area

A new 12-inch diameter subtrunk sewer in Nebraska Avenue would start at its connection to the McCord Road Trunk sewer and proceed west to the Nebraska Avenue and Frankfort Road split and end at the intersection of Frankfort Road and Crissey Road. This subtrunk would provide gravity service for the unsewered area with the service area and would allow for the elimination of Pump Station No. 47, Pineridge Estates on Nebraska Avenue.

Tributary serwers draining to the subtrunk in King Road, Oak Park Road, Layer Road, Rall Road, Centennial Road, Glengary Road, and Crissey Road would be 10-inch diameter. See Figure 8 in the Appendices for the sewer layout of the Nebraska Avenue Service Area.

4.2.7. Dorr Street Service Area

A new 18-inch diameter subtrunk sewer in Dorr Street would start at its connection to the existing 18-inch diameter sanitary subtrunk sewer west of Carrington Drive and proceed west to the intersection of Dorr Street and Morack Road. The subtrunk would reduce to 12-inch diameter and proceed to the intersection of Dorr Street and Crissey Road. This subtrunk would provide gravity service for all the service area.

Tributary sewers draining to the subtrunk in Morack Drive, King Road, Orchard Park Road, Rall Road, Centennial Road, and Crissey Road would be 10-inch diameter. See Figure 9 in the Appendices for the sewer layout of the Dorr Street Service Area.

4.2.8. Bancroft Street Service Area

By extending a new 15-inch diameter subtrunk sewer in Bancroft Street from the McCord Road Trunk sewer out to Willow Pond Boulevard, two pump stations would be eliminated while providing gravity service to all of the service area. Pump Station No. 35, Deerpoint at Bancroft Street and Gradwohl Rad and Pump Station No. 37, Forest Lakes at Bancroft Street and Willow Pond Boulevard would be eliminated.

Tributary sewers draining to the subtrunk in King Road, Hesyler Road, Shetland Road, Gradwohl Road, Centennial Road, and Wright Drive would be 10-inch diameter. See Figure 10 in the Appendices for the sewer layout of the Bancroft Street Service Area.

4.2.9. Silica Road Pump Station Service Area

The western part of Central Avenue and the northeast corner of Sylvania Township are currently served by two pump stations, No. 38 (Sylvania Avenue) and No. 27 (Silica Road). Pump Station No. 38 which is the final receiving point of all the service area, pumps to the upper end of the McCord Road Trunk sewer.

The unsewered areas could be served by four subareas, which would drain to the existing pump stations and one new proposed pump station. The subareas would be:

Central Avenue and King Road Subarea:

Extension of tributary sewers in Central Avenue and King Road would connect to existing sanitary sewer S-727 for conveyance to the Silica Road Pump Station (No. 27).

New Central Avenue Pump Station Subarea:

A new pump station near the intersection of Central Avenue and Crissey Road would serve a low lying area with tributary sewers to the pump station in Central Avenue, Crissery Road, and Herr Road.

Pump Station No. 38 Subarea:

Tributary sewers in Herr Road and Sylvania Avenue would drain to Pump Station No. 28 directly, while other tributary sewers in West Sylvania Avenue, Holt Road, and Brint Road would drain to existing sanitary sewer S-763.

Sylvania-Metamora Road Subarea:

Tributary sewers would connect to existing sanitary sewers S-815 and S-811, which drain to Pump Station No. 38.

See Figure 11 in the Appendices for the sewer layout of the Silica Road Pump Station Service Area.

4.3. Recommendations and Probable Costs

4.3.1. Phased Approach

As residential development progresses westward from I-475 because of the extension of water mains, the need for adequate sewerage will similarly follow the progression.

A review of the population number within the Lucas County Sanitary Sewer District shows the significant growth during the past two census'. The exact population numbers in western Lucas County, especially in Monclova and Springfield Townships is difficult to determine as new housing construction is underway, even as this report is being written.

The recommended approach in meeting the sewerage needs of Lucas County is for a phased approach. This approach entails building subtrunk sanitary sewers draining to the McCord Road Truink sewer in the major east-west crossroads which are extended westward as demand warrants. The subtrunk sewers will be of sufficient size and depth and can be extended westward as residential growth progresses. The exclusive use of gravity sewers and elimination of existing pump stations where all possible will be the goal.

4.3.2. Recommendation for Monclova/Salisbury Roads Service Area

Phase 1 (3-5 years)

- Construct the 30-inch diameter main subtrunk in Monclova Road to Albon Road.
- Construct the north branch subtrunk in Albon Road and Salisbury Road to Crissey Road.
- Construct the south branch subtrunk in Monclova Road to Weckerly Road.
- Construct the tributary sewers in Albon Road, Maumee-Western Road, Waterville-Monclova Road, Lose Road, Weckerly Road and Crissey Road.
- Eliminate Pump Stations Nos. 43 and 46.

Phase 2 (6-10 years)

- Extend the subtrunk sewers in Salisbury Road to Eber Roads; in Maumee-Western Road to Eber Road; and in Monclova Road to Eber Road.
- Construct the tributary sewers in Ramm Road, LaPlante Road, and Eber Road.

Phase 3 (>10 years)

- Extend the subtrunk sewers to Whitehouse-Spencer Road.
- Construct the tributary sewers in Ramm Road and Whitehouse-Spencer Road.

4.3.3. Recommendation for Garden Road Service Area

Phase 1 (3-5 years)

- Extend the subtrunk in Garden Road to Gunn Road.
- Construct the new pump station.
- Construct the tributary sewer in Gunn Road to Pilliod Road.
- Eliminate Pump Station Nos. 14 and 45.

Phase 2 (6-10 years)

- Extend the subtrunk in Garden Road to Albon Road.

Phase 3 (> 10 years)

- Extend the subtrunk in Garden Road to Crissey.

4.3.4. Recommendation for Airport Highway Service Area

Phase 1 (3-5 years)

- Construct the subtrunk sewer in Airport Highway from Pump Station No. 6 to Albon Road.
- Construct the tributary sewers in Albon Road.

4.3.5. Recommendation for Angola Road Service Area

Phase 1 (3-5 years)

- Construct the subtrunk sewer in Angola Road to Albon Road
- Construct the tributary sewers in Wentworth Street, King Road, Raymil Road, and Albon Road.
- Eliminate Pump Station No. 40.

Phase 2 (6-10 years)

- Extend the subtrunk sewer in Angola Road to Kieswetter Road.
- Eliminate Pump Station Nos. 20 and 39.

Phase 3 (> 10 years)

- Extend the subtrunk sewer in Angola Road to Crissey Road.

4.3.6. Hill Avenue Service Area

Phase 1 (3-5 years)

- Construct the subtrunk sewer in Hill Avenue to Centennial Road.
- Construct the tributary sewers in King Road, Layer Road, and Centennial Road.
- Eliminate Pump Station No. 2.

Phase 2 (6-10 years)

- Extend the subtrunk sewer in Hill Avenue to Crissey Road.
- Construct the tributary sewers in Orchard Lake Boulevard and Crissey Road.

4.3.7. Recommendation for Nebraska Avenue Service Area

Phase 1 (3-5 years)

- Construct the subtrunk sewer in Nebraska Avenue to King Road.

- Construct the tributary sewers in King Road.
- Eliminate Pump Station No. 47.

Phase 2 (6-10 years)

- Extend the subtrunk sewer in Nebraska Avenue to Centennial Road.
- Construct the tributary sewers in Oak Park Road, Layer Road, Rall Road and Centennial Road.

Phase 3 (> 10 years)

- Extend the subtrunk sewer in Nebraska Avenue to Crissey Road.
- Construct the tributary sewers in Orchard Lake Boulevard, Glengary Road, and Crissey Road.

4.3.8. Recommendation for Dorr Street Service Area

Phase 1 (3-5 years)

- Construct the subtrunk sewer in Dorr Street to King Road.
- Construct the tributary sewers in Morack Road and King Road.

Phase 2 (6-10 years)

- Extend the subtrunk sewer in Dorr Street to Centennial Road.
- Construct the tributary sewers in Oak Park Road, Rall Road, and Centennial Road.

Phase 3 (> 10 years)

- Extend the subtrunk sewer in Dorr Street to Crissey Road.
- Construct the tributary sewers in Centennial Road.

4.3.9. Recommendation for Bancroft Street Service Area

Phase 1 (3-5 years)

- Construct the subtrunk sewer in Bancroft Street to King Road.
- Construct the tributary sewers in King Road.

Phase 2 (6-10 years)

- Extend the subtrunk sewer in Bancroft Street to Centennial Road.
- Construct the tributary sewers in Hesyler Road, Gradwohl Road, and Centennial Road.
- Eliminate Pump Station No. 36.

Phase 3 (> 10 years)

- Extend the subtrunk sewer in Bancroft Street to Crissey Road.
- Construct the tributary sewers in Wright Drive and Crissey Road.
- Eliminate Pump Station No. 37.

4.3.10. Recommendation for Silicia Road Pump Station Service Area

Phase 1 (3-5 years)

- Construct the Central Avenue and King Road Subarea sewers.

Phase 2 (6-10 years)

- Construct the new Central Avenue Pump Station and tributary sewers in Crissey Road, Central Avenue – east of the new pump station, and Herr Road.
- Construct the tributary sewers to Pump Station No. 38 in Herr Road and Sylvania Avenue.

Phase 3 (> 10 years)

- Construct the tributary sewers to existing sanitary sewer S-763 in West Sylvania Avenue, Holt Road, and Brint Road.
- Construct the tributary sewers to existing sanitary sewers S-815 and 5-811 in Sylvania-Metamora Road.

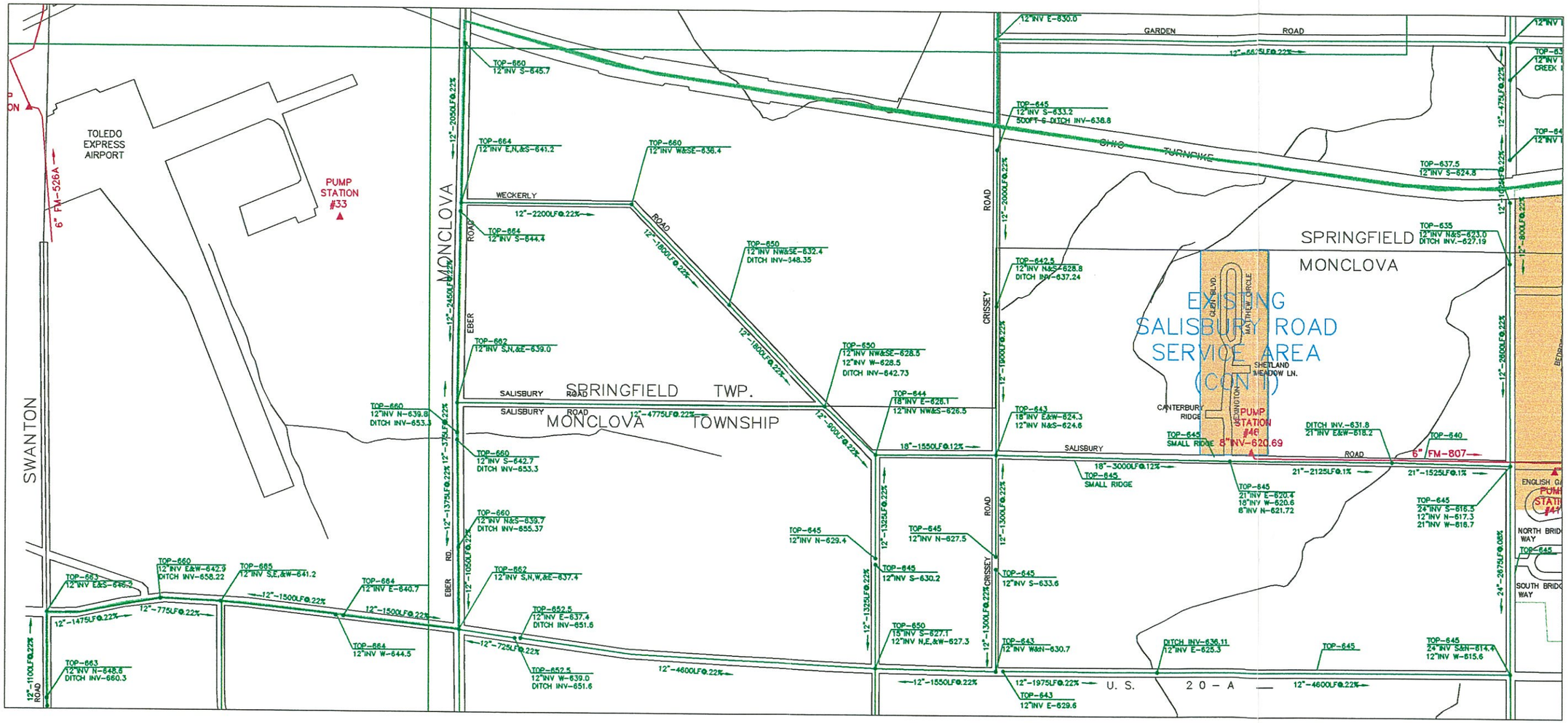
4.4. Probable Costs of Recommended Sewerage

Table 4 provides the summary of the total probable costs for the construction of all the sewers needed to meet full development of Lucas County. Detailed cost breakdown for each service area is provided in Appendix C.

TABLE 4 SUMMARY OF PROBABLE COST SANITARY SEWER SYSTEM MASTER PLAN LUCAS COUNTY, OHIO	
Monclova/Salisbury Road Service Area – Phase 1	$8,627,000.00
Monclova/Salisbury Road Service Area – Phase 2	$5,071,000.00
Monclova/Salisbury Road Service Area – Phase 3	$3,776,000.00
Garden Road Service Area – Phase 1	$1,350,000.00
Garden Road Service Area – Phase 2	$827,000.00
Garden Road Service Area – Phase 3	$697,000.00
Airport Highway Service Area – Phase 1	$430,000.00
Angola Road Service Area – Phase 1	$1,633,000.00
Angola Road Service Area – Phase 2	$406,000.00
Angola Road Service Area – Phase 3	$210,000.00
Hill Avenue Service Area – Phase 1	$1,399,000.00
Hill Avenue Service Area – Phase 2	$685,000.00
Nebraska Avenue Service Area – Phase 1	$799,000.00
Nebraska Avenue Service Area – Phase 2	$1,112,000.00
Nebraska Avenue Service Area – Phase 3	$1,212,000.00
Dorr Street Service Area – Phase 1	$752,000.00
Dorr Street Service Area – Phase 2	$804,000.00
Dorr Street Service Area – Phase 3	$664,000.00
Bancroft Street Service Area – Phase 1	$645,000.00
Bancroft Street Service Area – Phase 2	$1,925,000.00
Bancroft Street Service Area – Phase 3	$632,000.00
Silica Road Pumping Station Service Area – Phase 1	$412,000.00
Silica Road Pumping Station Service Area – Phase 2	$1,462,000.00
Silica Road Pumping Station Service Area – Phase 3	$2,087,000.00
TOTAL SANITARY SEWER SYSTEM MASTER PLAN	$37,617,000.00

APPENDIX A

PROPOSED SEWER LAYOUTS OF SERVICE AREAS



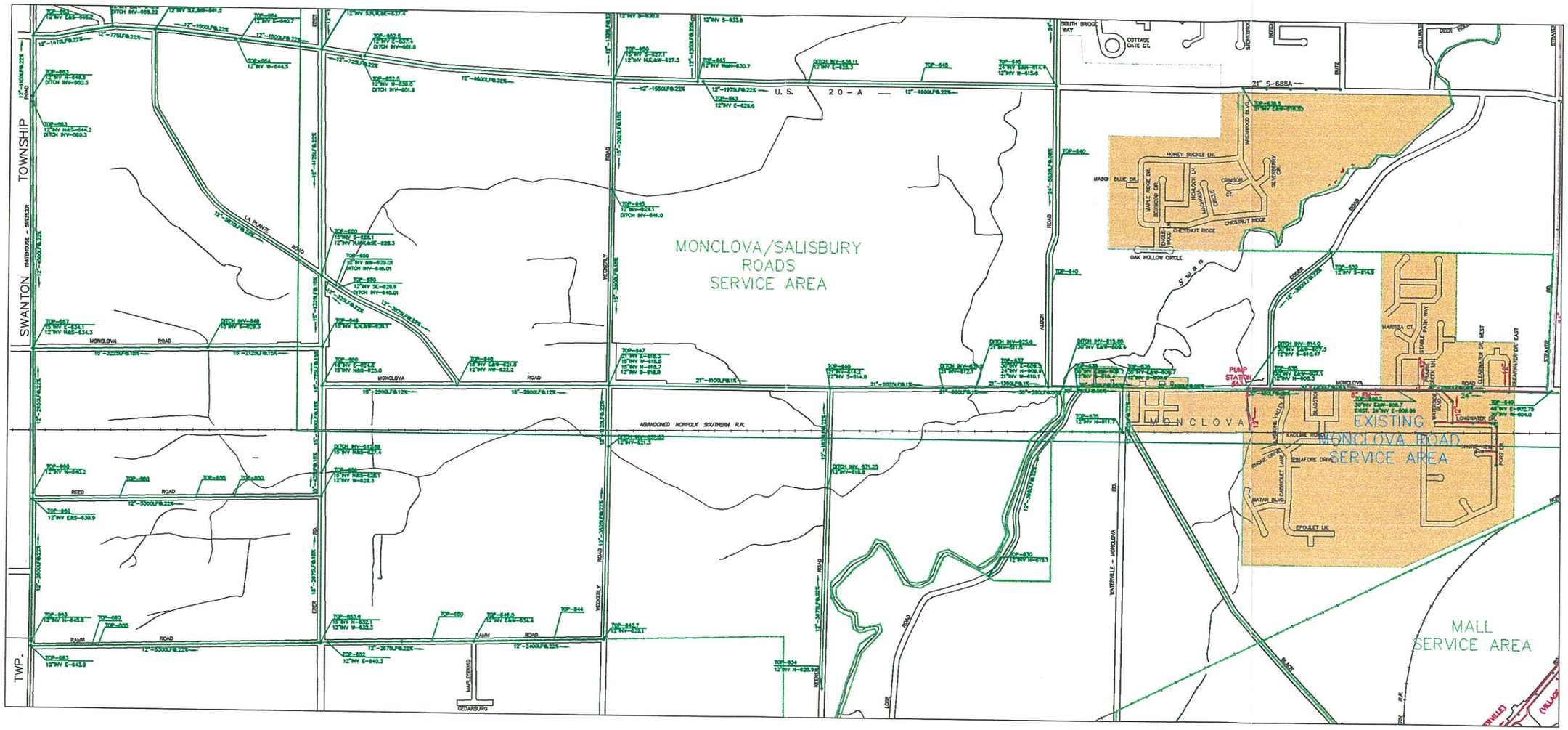
LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 3A
MONCLOVA/SALISBURY ROADS SERVICE AREA – NORTH
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002



LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 3B
MONCLOVA/SALISBURY ROADS SERVICE AREA – SOUTH
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINGERNER, PETRS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

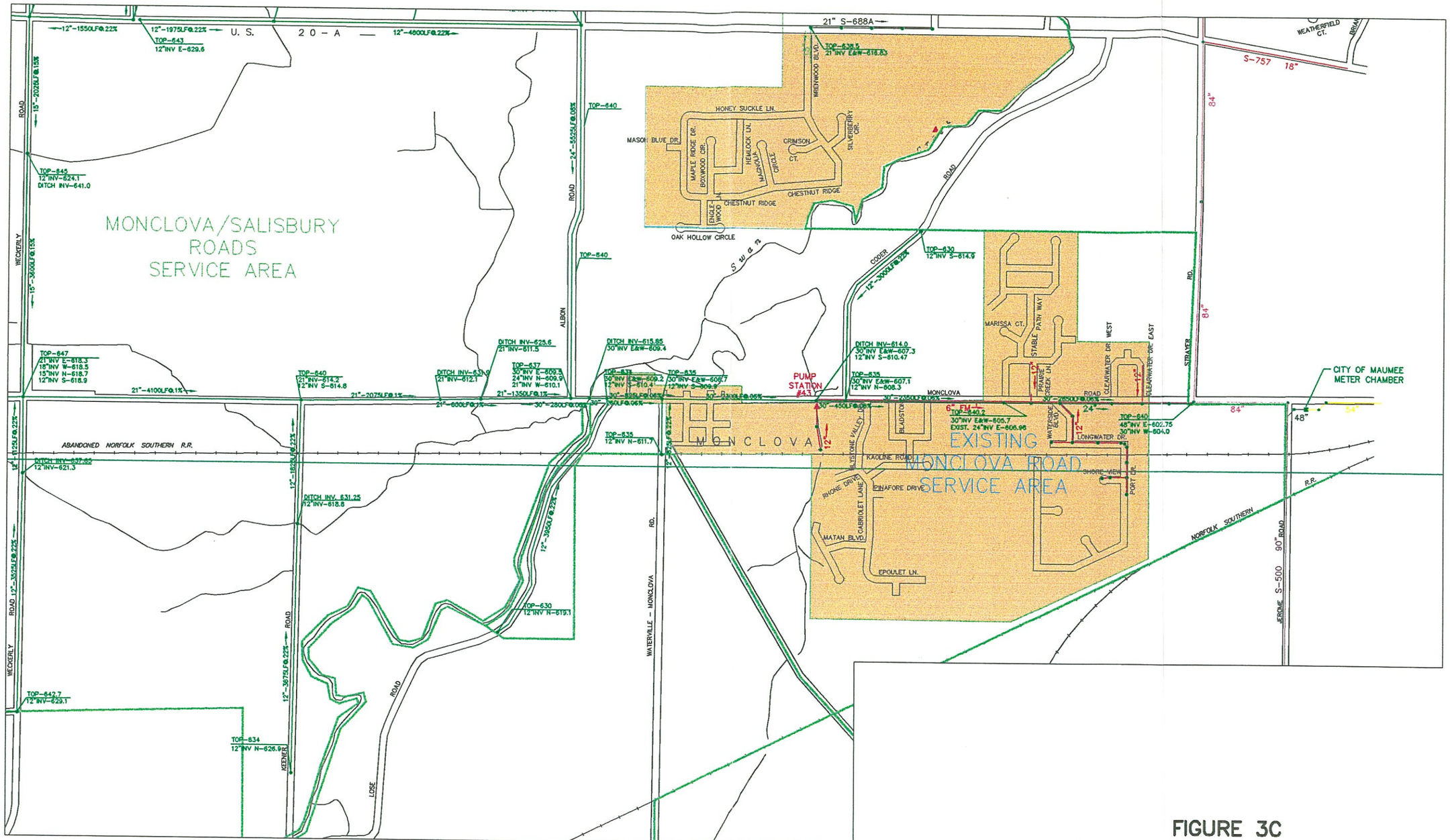


FIGURE 3C
MONCLOVA/SALISBURY ROADS SERVICE AREA – SE
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

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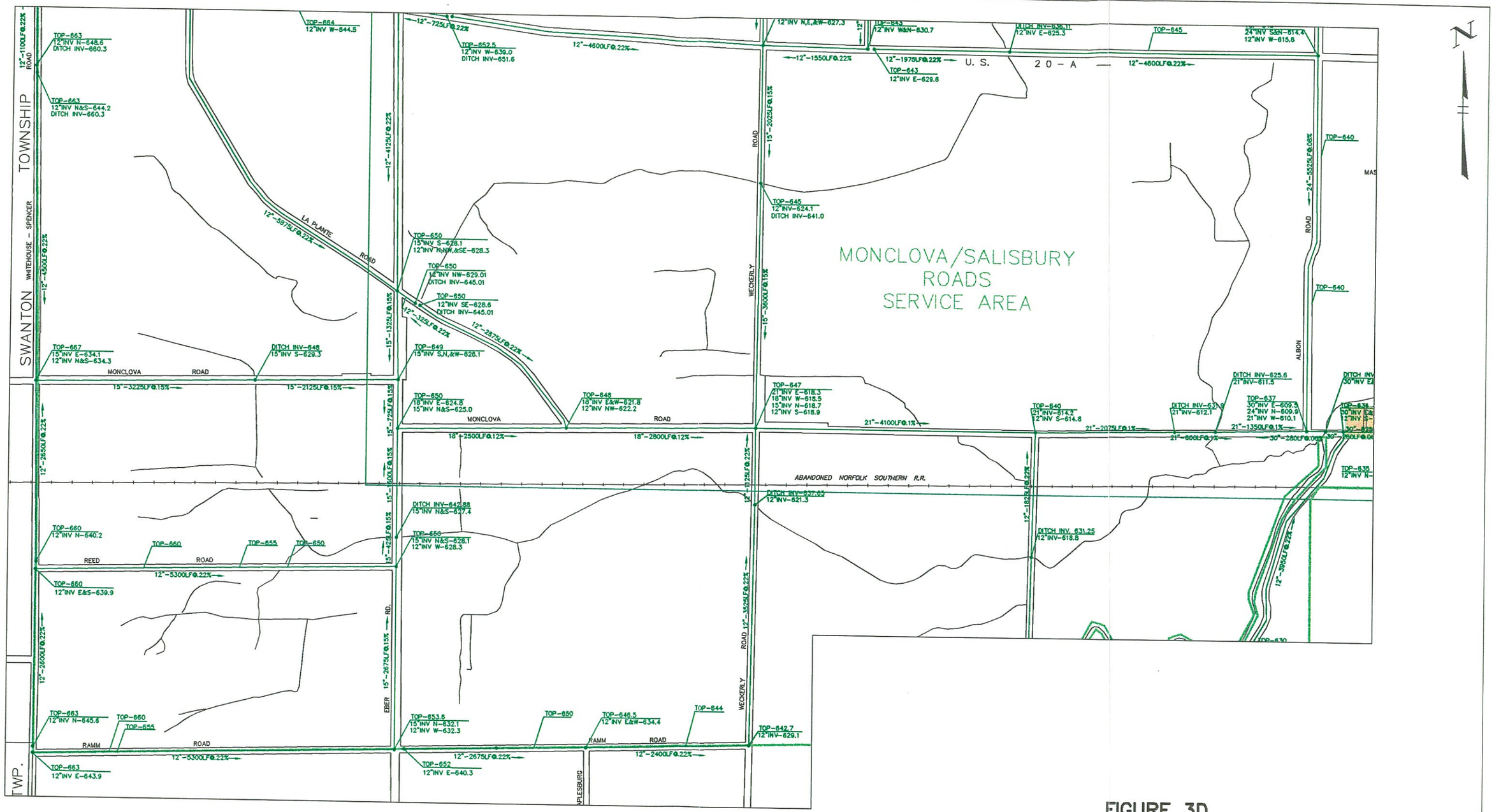

LEGEND

Proposed Sanitary Sewers	
Existing Sanitary Sewers	
Proposed Service Area Boundaries	
Existing Service Areas	

FIGURE 3D
MONCLOVA/SALISBURY ROADS SERVICE AREA – SW
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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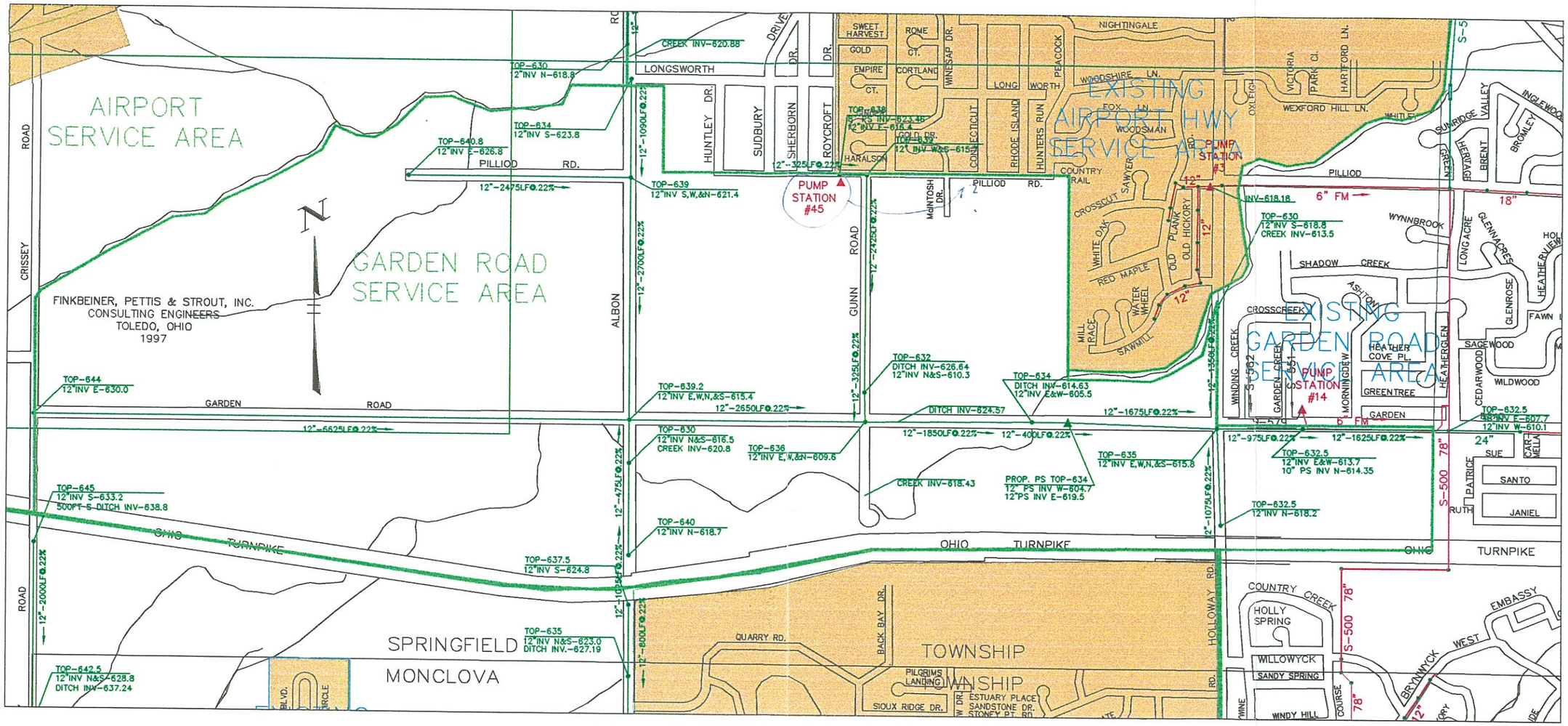

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 4
GARDEN ROAD SERVICE AREA
SANITARY SEWER MASTER PLAN
LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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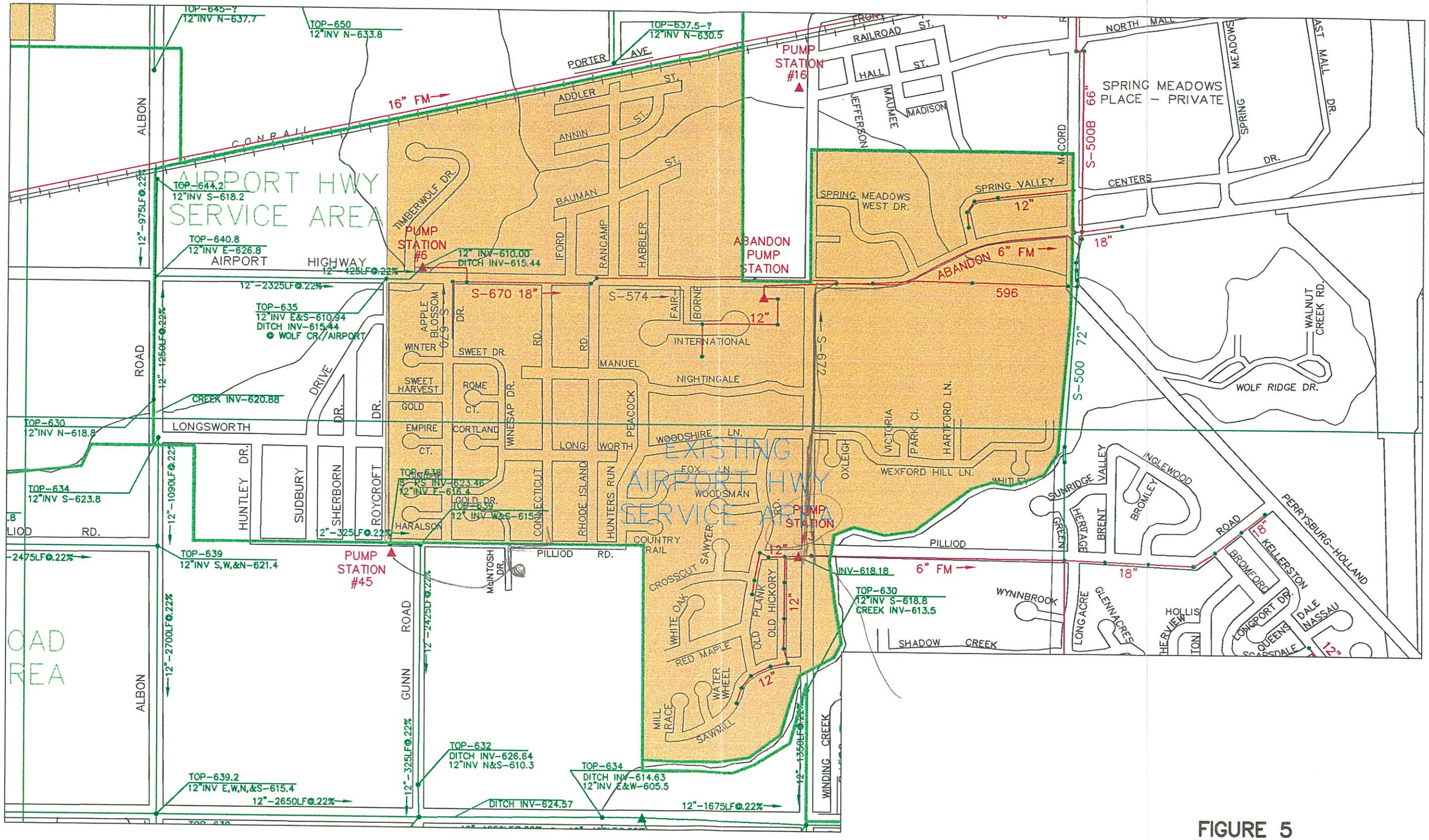

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 5
AIRPORT HIGHWAY SERVICE AREA
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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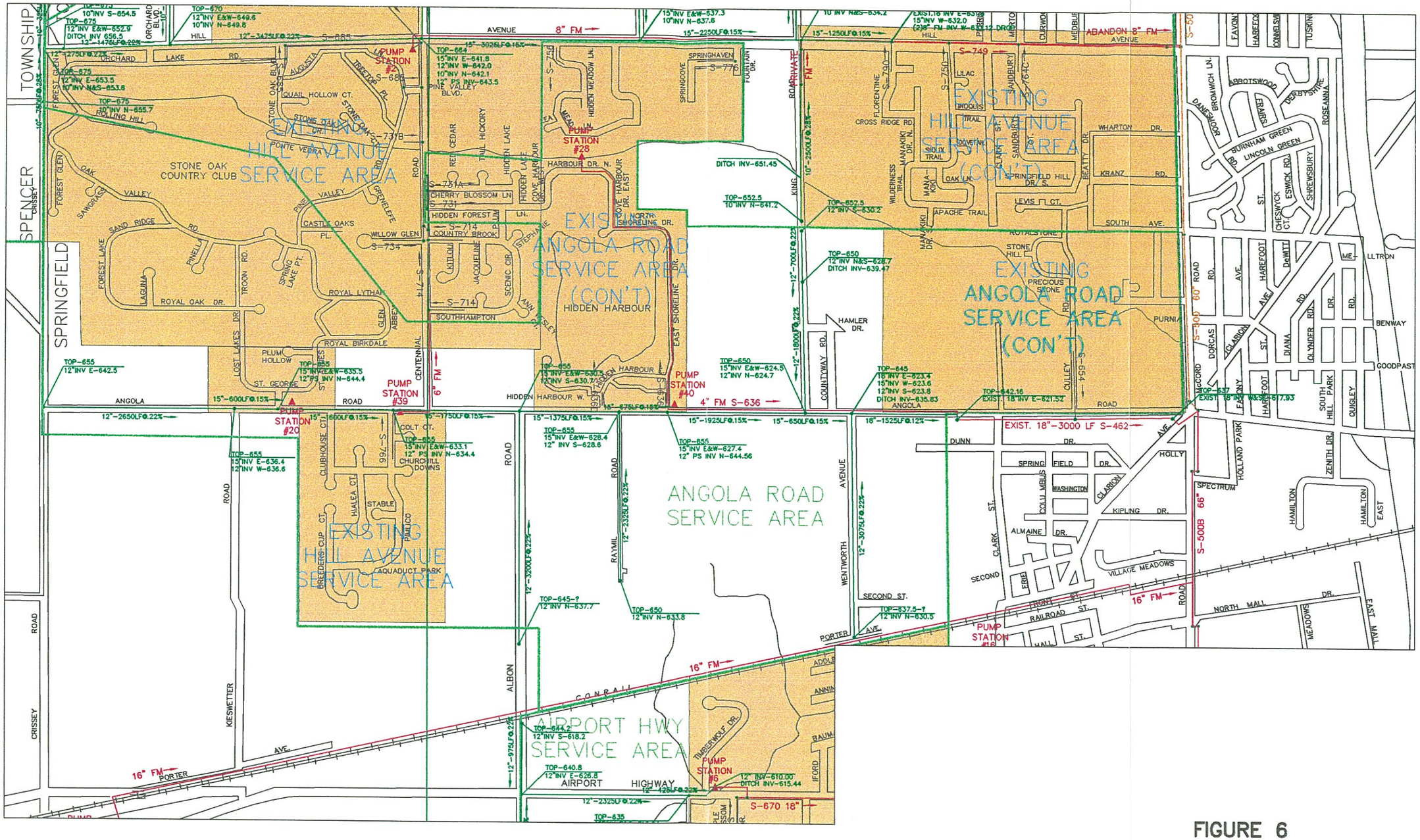

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 6
ANGOLA ROAD SERVICE AREA
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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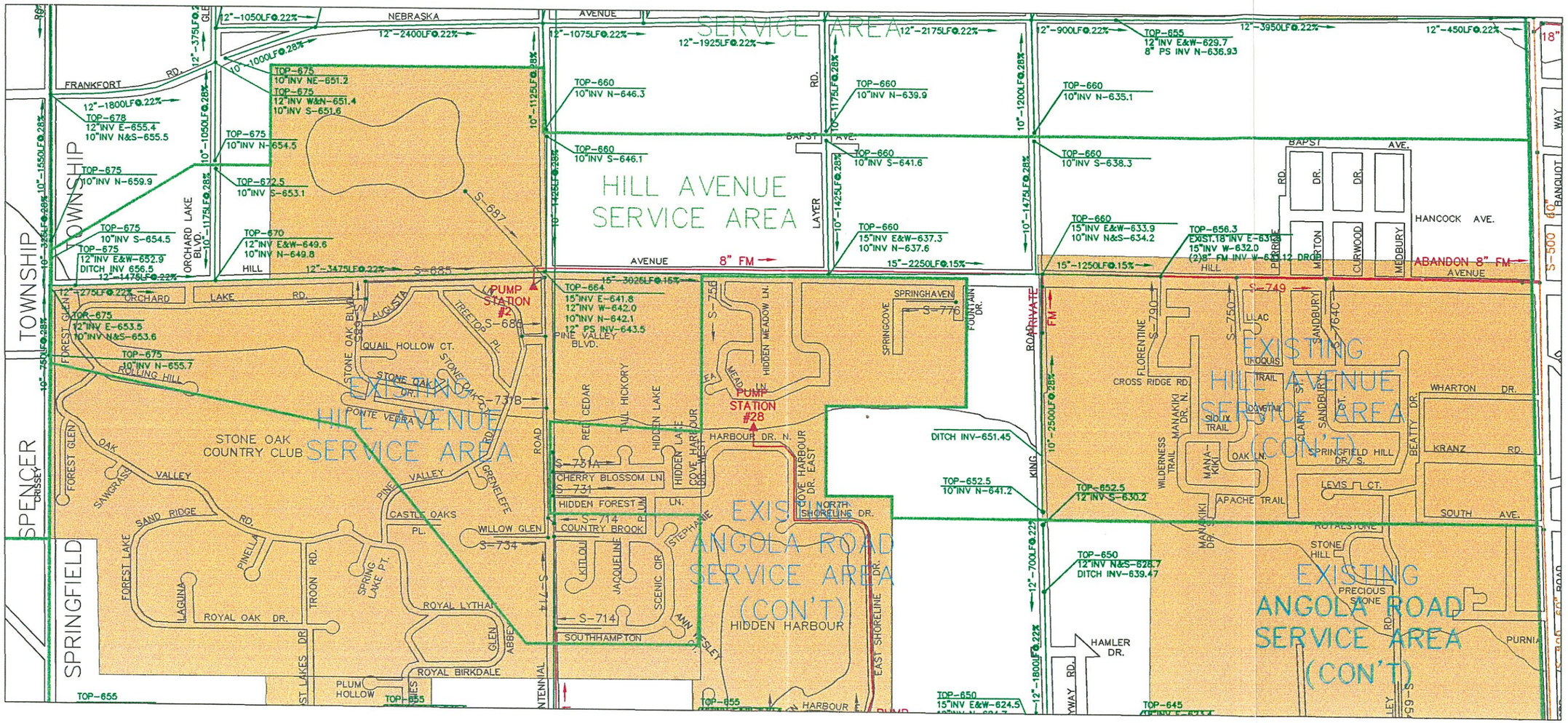

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 7
HILL AVENUE SERVICE AREA
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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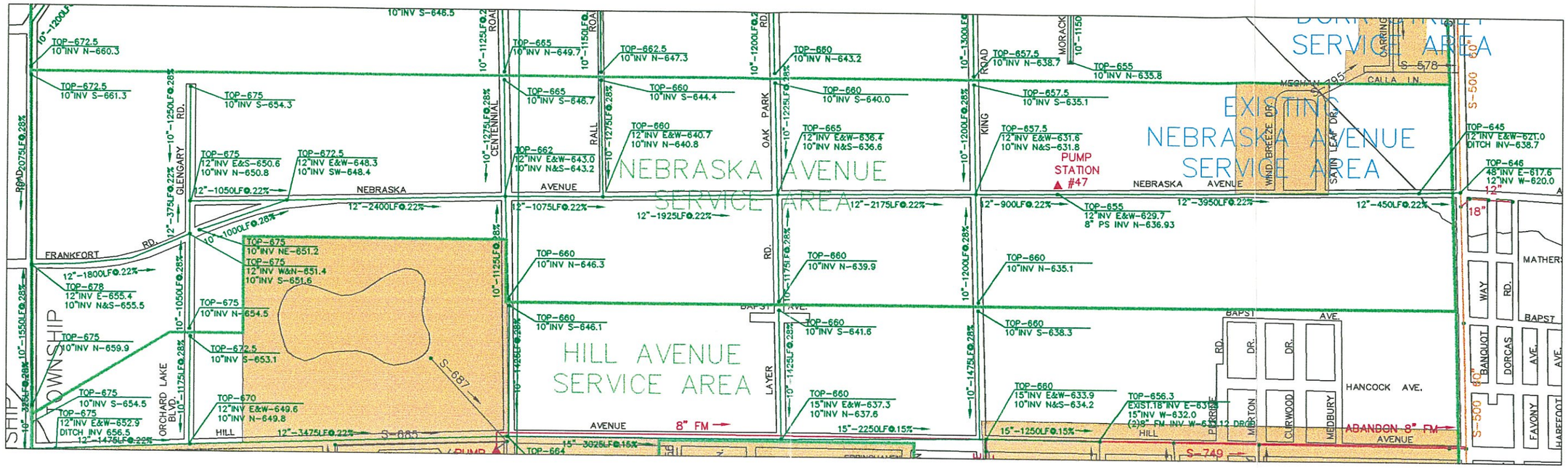

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 8
NEBRASKA AVENUE SERVICE AREA
SANITARY SEWER MASTER PLAN
LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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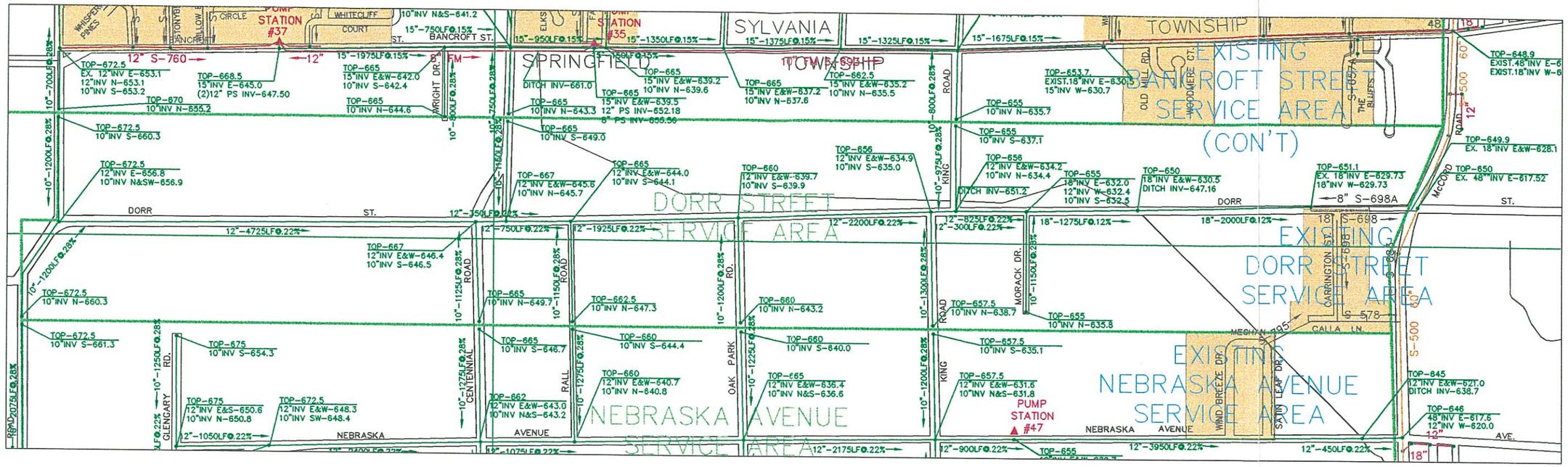

FIGURE 9
DORR STREET SERVICE AREA
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

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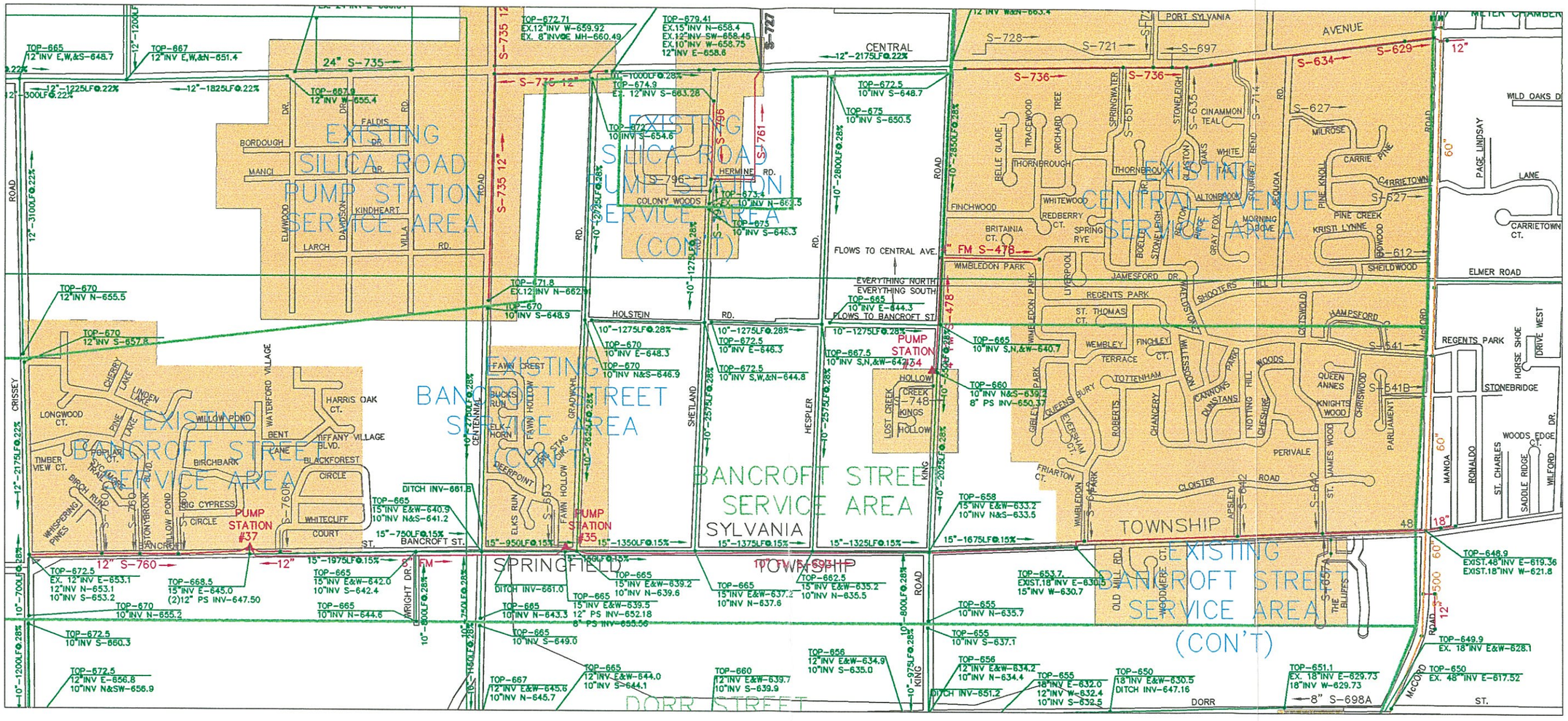

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 10
BANCROFT STREET SERVICE AREA
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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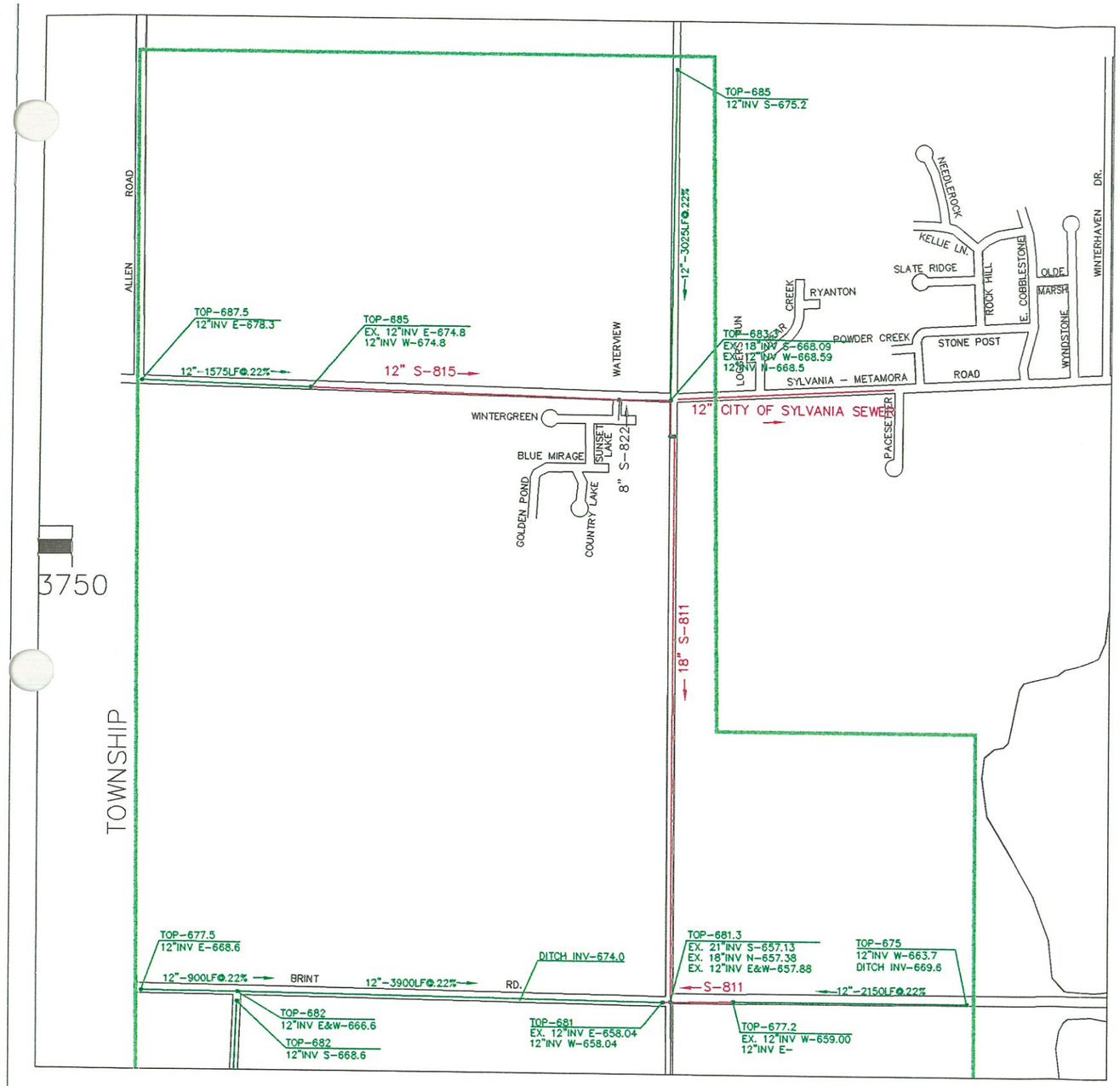

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 11A
SILCA ROAD PS SERVICE AREA – NORTH
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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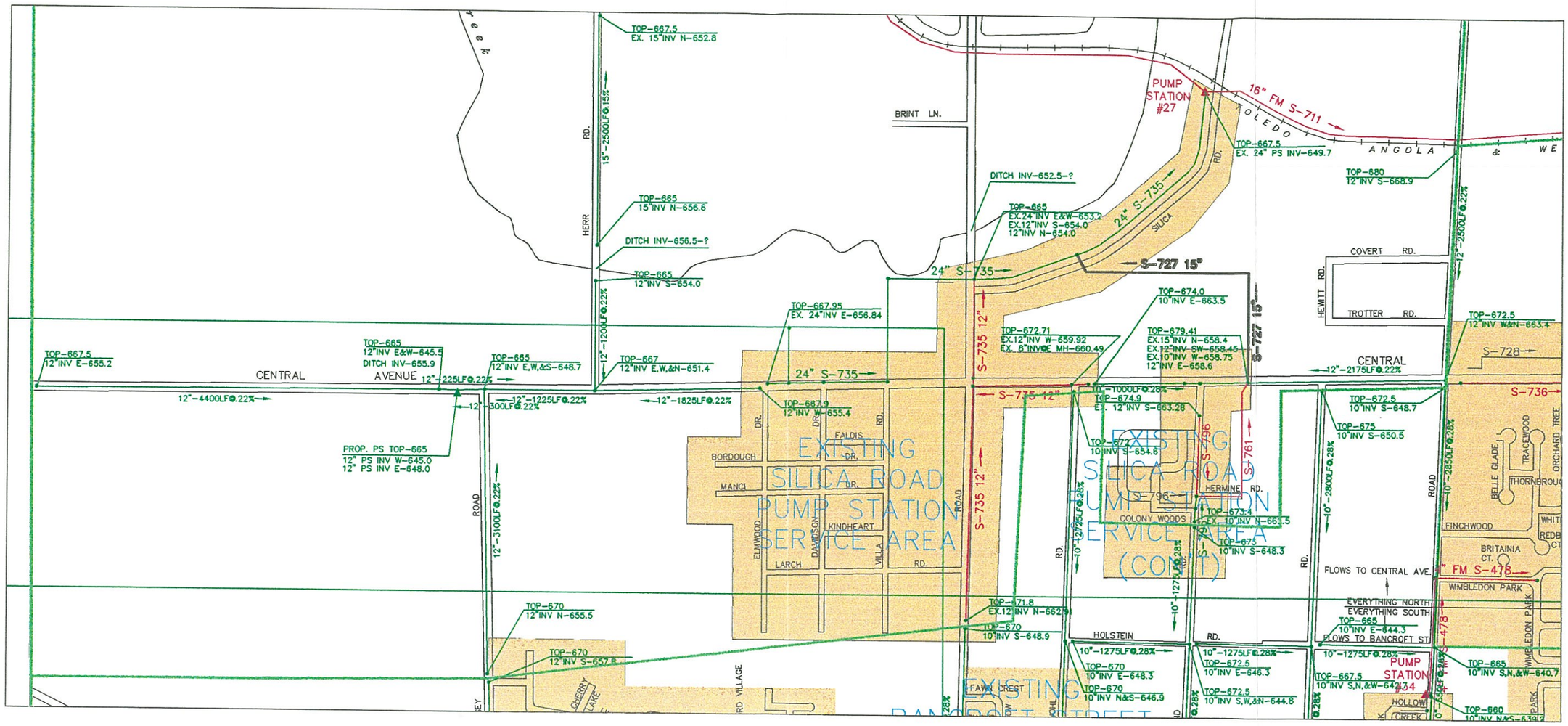

LEGEND

- Proposed Sanitary Sewers
- Existing Sanitary Sewers
- Proposed Service Area Boundaries
- Existing Service Areas

FIGURE 11C
SILICA ROAD PS SERVICE AREA – SOUTH
SANITARY SEWER MASTER PLAN

LUCAS COUNTY, OHIO

FINKBEINER, PETTIS & STROUT, INC.
CONSULTING ENGINEERS
TOLEDO, OHIO
2002

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APPENDIX B

SUMMARY OF SEWER DESIGN DATA

MONCLOVA / SALISBURY ROADS SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	GRADE	COMMENTS
MONCLOVA ROAD					
48			602.75		EXISTING STUB
30			603.95		CONNECTION TO EXISTING STUB
30	2850	0.06	605.66	640.20	EXISTING LAST 24" MH-INV 606.96
30	2350	0.06	607.07	635.00	CODER RD.
30	450	0.06	607.34		PUMP STATION #43-ELIMINATED INV-610.47, BLYSTONE DITCH INV-614.0
30	2300	0.06	608.72	635.00	WATERVILLE/MONCLOVA RD.
30	825	0.06	609.22	634.00	LOSE RD.
30	260	0.06	609.37		SWAN CREEK INV-615.85
30	280	0.06	609.54	637.00	ALBON RD.
21			610.14	637.00	ALBON RD.
21	1350	0.1	611.49		NACHTRAB DITCH INV-625.6
21	600	0.1	612.09		DITCH INV-631.9
21	2075	0.1	614.16	640.00	KEENER RD.
21	4100	0.1	618.26	647.00	WECKERLY RD.
18			618.46	647.00	WECKERLY RD.
18	2800	0.12	621.82	648.00	LA PLANTE RD.
18	2500	0.12	624.82	650.00	EBER RD. SOUTH
15			625.02	650.00	EBER RD. SOUTH
15	725	0.15	626.11	649.00	EBER RD. NORTH
15	2125	0.15	629.30		VAN FLEET DITCH INV-648.0
15	3225	0.15	634.14	667.00	WHITEHOUSE-SPENCER RD.
CODER ROAD					
30	E&W		607.07	635.00	CODER/MONCLOVA RD. INT.
12	N		608.27	635.00	CODER/MONCLOVA RD. INT.
12	3000	0.22	614.87	630.00	BOUNDARY OF SERVICE AREA
WATERVILLE MONCLOVA ROAD					
30	E&W		608.72	635.00	WHITEHOUSE MONCLOVA / MONCLOVA RD. INT.
12	S		609.92	635.00	WHITEHOUSE MONCLOVA / MONCLOVA RD. INT.
12	825	0.22	611.74	635.00	BOUNDARY OF SERVICE AREA
LOSE ROAD					
30	E&W		609.22	634.00	LOSE/MONCLOVA RD. INT.
12	SW		610.42	634.00	LOSE/MONCLOVA RD. INT.
12	3950	0.22	619.11	630.00	BOUNDARY OF SERVICE AREA
ALBON ROAD SEE ALBON WORKSHEET)					
30	E		609.54	637.00	ALBON/MONCLOVA RD. INT.
24	N		609.94	637.00	ALBON/MONCLOVA RD. INT.

MONCLOVA / SALISBURY ROADS SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	GRADE	COMMENTS
KEENER ROAD					
21	E&W		614.16	640.00	KEENER/MONCLOVA RD. INT.
12	S		614.76	640.00	KEENER/MONCLOVA RD. INT.
12	1825	0.22	618.78		VAN FLEET DITCH INV-631.25
12	3675	0.22	626.86	630-?	BOUNDARY OF SERVICE AREA
WECKERLY ROAD (NORTH)					
21	E		618.26	647.00	WECKERLY/MONCLOVA RD. INT.
15	N		618.66	647.00	WECKERLY/MONCLOVA RD. INT.
15	3600	0.15	624.06	645.00	STONE DITCH INV-641
15	2025	0.15	627.10	650.00	WECKERLY / MAUMEE-WESTERN RD.
12			627.30	650.00	WECKERLY / MAUMEE-WESTERN RD.
12	1325	0.22	630.22	645.00	BOUNDARY OF SERVICE AREA
MAUMEE WESTERN ROAD (EAST OF WECKERLY)					
15			627.10	650.00	WECKERLY / MAUMEE-WESTERN RD.
12			627.30	650.00	WECKERLY / MAUMEE-WESTERN RD.
12	1550	0.22	630.71	643.00	CHRISSY / MAUMEE-WESTERN RD.
CRISSEY ROAD (NORTH OF MAUMEE WESTERN RD INT)					
12			630.71	643.00	CRISSEY / MAUMEE-WESTERN RD.
12			630.71	643.00	CRISSEY / MAUMEE-WESTERN RD.
12	1300	0.22	633.57	645.00	BOUNDARY OF SERVICE AREA
MAUMEE WESTERN ROAD (WEST OF WECKERLY)					
15			627.10	645.00	STONE DITCH INV-641
12			627.30	650.00	WECKERLY / MAUMEE-WESTERN RD.
12	4600	0.22	637.42	652.50	BOUNDARY OF SERVICE AREA
WECKERLY ROAD (SOUTH)					
21	E		618.26	647.00	WECKERLY/MONCLOVA RD. INT.
12	S		618.86	647.00	WECKERLY/MONCLOVA RD. INT.
12	1125	0.22	621.34	640.00	VAN FLEET DITCH INV-637.65
12	3525	0.22	629.09	640.00	RAMM RD/WECKERLY RD. INT.
RAMM ROAD (WEST OF WECKERLY)					
12			629.09	642.70	RAMM RD/WECKERLY RD. INT.
12			629.09	642.70	RAMM RD/WECKERLY RD. INT.
12	2400	0.22	634.37	646.50	MAPLESBURG / RAMM RD. INT.
12	2675	0.22	640.26	652.00	BOUNDARY OF SERVICE AREA

MONCLOVA / SALISBURY ROADS SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	GRADE	COMMENTS
LA PLANTE ROAD (NW OFF MONCLOVA)					
18	E&W		621.82	648.00	LA PLANTE/MONCLOVA RD. INT.
12	NW		622.22	648.00	LA PLANTE/MONCLOVA RD. INT.
12	2875	0.22	628.55	650.00	BOUNDARY OF SERVICE AREA
EBER ROAD (NORTH)					
15	W&S		626.11	649.00	EBER/MONCLOVA RD. INT.
15	N		626.11	649.00	EBER/MONCLOVA RD. INT.
15	1325	0.15	628.10	650.00	EBER/LA PLANTE RD. INT.
12			628.30	650.00	EBER/LA PLANTE RD. INT.
12	4125	0.22	637.37	662.00	EBER/MAUMEE WESTERN RD. INT.
12	1050	0.22	639.68	660.00	WEOT DITCH INV 655.37
12	1375	0.22	642.71	660.00	BOUNDARY OF SERVICE AREA - ZALESKI DITCH INV 653.3
MAUMEE WESTERN ROAD (EAST OF EBER RD.)					
12			637.37	662.00	EBER/MAUMEE WESTERN RD. INT.
12			637.37	662.00	EBER/MAUMEE WESTERN RD. INT.
12	725	0.22	638.97	652.50	BOUNDARY OF SERVICE AREA - WEOT DITCH INV 651.6
MAUMEE WESTERN ROAD (WEST OF EBER RD.)					
12			637.37	662.00	EBER/MAUMEE WESTERN RD. INT.
12			637.37	662.00	EBER/MAUMEE WESTERN RD. INT.
12	1500	0.22	640.67	664.00	BOUNDARY OF SERVICE AREA
LA PLANTE ROAD (SE OFF NORTH EBER ROAD)					
15	N&S		628.10	650.00	EBER/LA PLANTE RD. INT.
12	SE		628.30	650.00	EBER/LA PLANTE RD. INT.
12	325	0.22	629.01	650.00	BOUNDARY OF SERVICE AREA (STONE DITCH)
LA PLANTE ROAD (NW OFF NORTH EBER ROAD)					
15	N&S		628.10	650.00	EBER/LA PLANTE RD. INT.
12	NW		628.30	650.00	EBER/LA PLANTE RD. INT.
12	5875	0.22	641.22	665.00	MAUMEE WESTERN / LA PLANTE RD. INT.
MAUMEE WESTERN ROAD (EAST OF LA PLANTE RD.)					
12			641.22	665.00	MAUMEE WESTERN / LA PLANTE RD. INT.
12			641.22	665.00	MAUMEE WESTERN / LA PLANTE RD. INT.
12	1500	0.22	644.52	664.00	BOUNDARY OF SERVICE AREA

MONCLOVA / SALISBURY ROADS SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	GRADE	COMMENTS
MAUMEE WESTERN ROAD (WEST OF LA PLANTE RD.)					
12			641.22	665.00	MAUMEE WESTERN / LA PLANTE RD. INT.
12			641.22	665.00	MAUMEE WESTERN / LA PLANTE RD. INT.
12	775	0.22	642.93	660.00	WEBSTER DITCH INV 658.22
12	1475	0.22	646.17	663.00	WHITE-SPEN RD. / MAUMEE WESTERN RD.
12	1100	0.22	648.59	663.00	BOUNDARY OF SERVICE AREA - WHITE-SPEN RD./WEBSTER DITCH INV 660.:
EBER ROAD (SOUTH)					
18	N&E		624.82	650.00	EBER/MONCLOVA RD. INT.
15	S		625.02	650.00	EBER/MONCLOVA RD. INT.
15	1600	0.15	627.42		VAN FLEET DITCH INV-642.88
15	425	0.15	628.06	650.00	REED RD.
15	2675	0.15	632.07	650.00	RAMM RD.
REED ROAD					
15	N&S		628.06	650.00	REED/EBER RD. INT.
12	W		628.26	650.00	REED/EBER RD. INT.
12	5300	0.22	639.92	660.00	WHITE-SPEN RD. / REED RD.
12	2600	0.22	645.64	663.00	BOUNDARY OF SERVICE AREA (N OF RAMM RD.)
RAMM ROAD (WEST OF EBER)					
15	N		632.07	650.00	RAMM/EBER RD. INT.
12	W		632.27	650.00	RAMM/EBER RD. INT.
12	5300	0.22	643.93	663.00	BOUNDARY OF SERVICE AREA (E OF WHITE-SPEN RD.)
WHITHOUSE SPENCER ROAD (NORTH)					
15	E		634.14	667.00	WHITEHOUSE SPENCER/MONCLOVA RD. INT.
12	N		634.34	667.00	WHITEHOUSE SPENCER/MONCLOVA RD. INT.
12	4500	0.22	644.24	663.00	BOUNDARY OF SERVICE AREA
WHITHOUSE SPENCER ROAD (SOUTH)					
15	E		634.14	667.00	WHITEHOUSE SPENCER/MONCLOVA RD. INT.
12	S		634.34	667.00	WHITEHOUSE SPENCER/MONCLOVA RD. INT.
12	2650	0.22	640.17	660.00	WHITEHOUSE SPENCER/REED RD. INT.

MONCLOVA / SALISBURY ROADS SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
ALBON ROAD					
30			609.54		ALBON /MONCLOVA RD. INT.
24			609.94		ALBON /MONCLOVA RD. INT.
24	5525	0.08	614.36	645.00	ALBON /MAUMEE WESTERN RD. INT.
24	2675	0.08	616.50	645.00	ALBON /SALISBURY RD. INT.
21			616.70	645.00	ALBON /SALISBURY RD. INT.
21	1525	0.1	618.22		STONE DITCH INT. INV 631.8
21	2125	0.1	620.35	640.00	PUMP STN #46 ELIMINATED INV-620.69
18			620.55	640.00	PUMP STN #46 ELIMINATED INV-620.69
18	3000	0.12	624.15	643.00	CRISSEY /SALISBURY RD. INT.
18	1550	0.12	626.01	644.00	WECKERLY /SALISBURY RD. INT.(SOUTH)
12			626.41	644.00	WECKERLY /SALISBURY RD. INT.(SOUTH)
12	900	0.22	628.39	650.00	WECKERLY /SALISBURY RD. INT.(NORTH)
12	1800	0.22	632.35	650.00	CAIRL DITCH INV 648.35
12	1800	0.22	636.31	660.00	BEND IN WECKERLY RD.
12	2200	0.22	641.15	664.00	EBER / WECKERLY RD. INT.
12	2050	0.22	645.66	660.00	BOUNDARY OF SERVICE AREA
MAUMEE WESTERN ROAD (WEST OFF ALBON)					
24			614.36	645.00	ALBON /MAUMEE WESTERN RD. INT.
12			615.16	645.00	ALBON /MAUMEE WESTERN RD. INT.
12	4600	0.22	625.28	645.00	STONE DITCH INV 636.11
12	1975	0.22	629.62	643.00	BOUNDARY OF SERVICE AREA
ALBON ROAD (NORTH OF SALISBURY INT)					
24			616.50	645.00	ALBON /SALISBURY RD. INT.
12			617.30	645.00	ALBON /SALISBURY RD. INT.
12	2600	0.22	623.02	635.00	STONE DITCH INV 627.19
12	800	0.22	624.78	637.50	BOUNDARY OF SERVICE AREA - OHIO TURNPIKE
CRISSEY ROAD (SOUTH OF SALISBURY INT)					
18			624.15	643.00	CRISSEY /SALISBURY RD. INT.
12			624.55	643.00	CRISSEY /SALISBURY RD. INT.
12	1300	0.22	627.41	645.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (NORTH OF SALISBURY INT)					
18			624.15	643.00	CRISSEY /SALISBURY RD. INT.
12			624.55	643.00	CRISSEY /SALISBURY RD. INT.
12	1900	0.22	628.73	640.00	ZALESKI DITCH INV 637.24
12	2000	0.22	633.13	645.00	BOUNDARY OF SERVICE AREA PAST BAYGOWSKI DITCH INV 638.8
WECKERLY ROAD (SOUTH OF SALISBURY INT)					
18			626.01	644.00	WECKERLY /SALISBURY RD. INT.
12			626.41	644.00	WECKERLY /SALISBURY RD. INT.
12	1325	0.22	629.32	645.00	BOUNDARY OF SERVICE AREA

MONCLOVA / SALISBURY ROADS SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
SALISBURY ROAD (WEST OF WECKERLY INT)					
12			628.39	650.00	WECKERLY /SALISBURY RD. INT.(NORTH)
12			628.39	650.00	WECKERLY /SALISBURY RD. INT.(NORTH)
12	4775	0.22	638.89	662.00	EBER /SALISBURY RD. INT.
EBER ROAD (SOUTH OF SALISBURY INT)					
12			638.89	662.00	EBER /SALISBURY RD. INT.
12			638.89	662.00	EBER /SALISBURY RD. INT.
12	375	0.22	639.72	657.50	BOUNDARY OF SERVICE AREA - ZALESKI DITCH INV 653.3
EBER ROAD (NORTH OF SALISBURY INT)					
12			638.89	662.00	EBER /SALISBURY RD. INT.
12			638.89	662.00	EBER /SALISBURY RD. INT.
12	2450	0.22	644.28	664.00	BOUNDARY OF SERVICE AREA

GARDEN ROAD SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
GARDEN ROAD					
48			607.71	632.50	48" STUB TO WWTP TRUNK
12			610.11	632.50	12" CONNECTION TO 48" STUB TO WWTP TRUNK
12	1625	0.22	613.69	632.50	PUMP STATION #14 - ELIMINATED, INV-614.35
12	975	0.22	615.83	635.00	HOLLOWAY/GARDEN RD. INT.
12	1675	0.22	619.52	634.00	PROPOSED PUMP STATION
GARDEN ROAD (WEST OF CAIRL CREEK)					
12			630.00	644.00	GARDEN/CRISSEY RD. INT.
12	6625	0.22	615.43	639.20	GARDEN/ALBON RD. INT.
12	2650	0.22	609.60	636.00	GARDEN/GUNN RD. INT.
12	1850	0.22	605.53	634.00	CAIRL CREEK INV 614.63
12	400	0.22	604.65	634.00	PROPOSED PUMP STATION 400FT EAST OF GARDEN / CAIRL CREEK INT. WITH 1075 FT OF FORCE MAIN
ALBON ROAD (NORTH OF GARDEN)					
12			615.43	639.20	GARDEN/ALBON RD. INT.
12	2700	0.22	621.37	639.00	PILLIOD/ALBON RD. INT.
12	1090	0.22	623.76	634.00	BOUNDARY OF SERVICE AREA - NEARING WOLF CREEK INV 620.88
PILLIOD ROAD (WEST OF GARDEN)					
12			621.37	639.00	PILLIOD/ALBON RD. INT.
12	2475	0.22	626.81	640.80	BOUNDARY OF SERVICE AREA
ALBON ROAD (SOUTH OF GARDEN)					
12			615.43	639.20	GARDEN/ALBON RD. INT.
12	475	0.22	616.47	630.00	CAIRL CREEK INV 620.8
12	1025	0.22	618.73	640.00	BOUNDARY OF SERVICE AREA - NEAR OHIO TURNPIKE
GUNN ROAD (NORTH OF GARDEN)					
12			609.60	636.00	GARDEN/GUNN RD. INT.
12	325	0.22	610.31	632.00	SCOTT DITCH INV 626.64
12	2425	0.22	615.65	639.00	GUNN/PILLIOD RD INT.
12	325	0.22	616.36	638.00	ELIMINATE PUMP STN # 45 INV 623.46
HOLLOWAY ROAD (NORTH OF GARDEN)					
12			615.83	635.00	HOLLOWAY/GARDEN RD. INT.
12			615.83	635.00	HOLLOWAY/GARDEN RD. INT.
12	1350	0.22	618.80	630.00	BOUNDARY OF SERVICE AREA-CAIRL CREEK INV 613.5
HOLLOWAY ROAD (SOUTH OF GARDEN)					
12			615.83	635.00	HOLLOWAY/GARDEN RD. INT.
12			615.83	635.00	HOLLOWAY/GARDEN RD. INT.
12	1075	0.22	618.20	632.50	BOUNDARY OF SERVICE AREA

AIRPORT HWY. SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
AIRPORT HWY.					
12			610.00		PUMP STATION #6 INV 610.00
12	425	0.22	610.94	635.00	ROYCROFT / AIRPORT INT.
12	2325	0.22	616.05	643.80	ALBON / AIRPORT INT.
ALBON ROAD (SOUTH OF AIRPORT HWY.)					
12			616.05	643.80	ALBON / AIRPORT INT.
12			616.05	643.80	ALBON / AIRPORT INT.
12	1250	0.22	618.80	630.00	BOUNDARY OF SERVICE AREA WOLF CREEK INV 620.88
ALBON ROAD (NORTH OF AIRPORT HWY.)					
12			616.05	643.80	ALBON / AIRPORT INT.
12			616.05	643.80	ALBON / AIRPORT INT.
12	975	0.22	618.20	644.20	BOUNDARY OF SERVICE AREA - RR

ANGOLA ROAD SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
ANGOLA ROAD					
18			617.93	637.00	18" CONNECTION TO CLARION AVE.
18	3000	0.12	621.53	642.16	END OF 18" S-462
18	1525	0.12	623.36	645.00	WENTWORTH / ANGOLA RD. INT.
15			623.56	645.00	WENTWORTH / ANGOLA RD. INT.
15	650	0.15	624.54	650.00	KING / ANGOLA RD. INT.
15	1925	0.15	627.42	655.00	EAST SHORELINE DR./PUMP STN#40 INV 644.56 ELIMINATED
15	675	0.15	628.44	655.00	RAYMILL / ANGOLA RD. INT.
15	1375	0.15	630.50	655.00	ALBON / ANGOLA RD.
15	1750	0.15	633.12	655.00	PIMLICO / PUMP STN#39 INV 634.37 - ELIMINATED
15	1600	0.15	635.52	655.00	PUMP STN#20 INV 644.0 - ELIMINATED
15	600	0.15	636.42	655.00	KIESWETTER / ANGOLA RD. INT.
12			636.62	655.00	KIESWETTER / ANGOLA RD. INT.
12	2650	0.22	642.45	655.00	CRISSEY / ANGOLA RD. INT. - BOUNDARY OF SERVICE AREA
WENTWORTH AVE.					
18			623.36	645.00	WENTWORTH / ANGOLA RD. INT.
12			623.76	645.00	WENTWORTH / ANGOLA RD. INT.
12	3075	0.22	630.53	637.50	BOUNDARY OF SERVICE AREA- PORTER AVE.
KING ROAD					
15			624.54	650.00	KING / ANGOLA RD. INT.
12			624.74	650.00	KING / ANGOLA RD. INT.
12	1800	0.22	628.70	650.00	DRENNAN DITCH INV 639.47
12	700	0.22	630.24	652.50	BOUNDARY OF SERVICE AREA
RAYMILL ROAD					
15			628.44	655.00	RAYMILL / ANGOLA RD. INT.
12			628.64	655.00	RAYMILL / ANGOLA RD. INT.
12	2325	0.22	633.75	650.00	BOUNDARY OF SERVICE AREA- END OF RAYMILL RD.
ALBON ROAD					
15			630.50	655.00	ALBON / ANGOLA RD.
12			630.70	655.00	ALBON / ANGOLA RD.
12	3200	0.22	637.74	645.00	SHORT OF BOUNDARY SERVICE AREA

HILL AVENUE SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
HILL AVENUE					
18			631.80	656.30	END OF EXISTING S-749 18" SEWER @ FLORENTINE DR.
15			632.00	656.30	15" CONNECTION TO EXISTING S-749 18" SEWER
15	1250	0.15	633.88	660.00	KING / HILL INT.
15	2250	0.15	637.25	660.00	LAYER / HILL INT.
15	3025	0.15	641.79	664.00	CENTENNIAL / HILL INT. - PUMP STN#2 INV 643.5 ELIMINATED
12			641.99	664.00	CENTENNIAL / HILL INT.
12	3475	0.22	649.63	670.00	ORCHARD LAKE BLVD. / HILL INT.
12	1475	0.22	652.88	675.00	DRENNAN DITCH INV 656.5
12	275	0.22	653.48	675.00	CRISSEY / HILL RD. INT.
KING ROAD (SOUTH OF HILL)					
15			633.88	660.00	KING / HILL INT.
10			634.21	660.00	KING / HILL INT.
10	2500	0.28	641.21	652.50	BOUNDARY OF SERVICE AREA
KING ROAD (NORTH OF HILL)					
15			633.88	660.00	KING / HILL INT.
10			634.21	660.00	KING / HILL INT.
10	1475	0.28	638.34	660.00	BOUNDARY OF SERVICE AREA
LAYER ROAD					
15			637.25	660.00	LAYER / HILL INT.
10			637.58	660.00	LAYER / HILL INT.
10	1425	0.28	641.57	660.00	LAYER -NORTH OF BAPST-BOUNDARY OF SERVICE AREA
CENTENNIAL ROAD (NORTH OF HILL)					
15			641.79	664.00	CENTENNIAL / HILL INT.
10			642.12	664.00	CENTENNIAL / HILL INT.
10	1425	0.28	646.11	660.00	BOUNDARY OF SERVICE AREA
ORCHARD LAKE BLVD.					
12			649.63	670.00	ORCHARD LAKE BLVD. / HILL INT.
10			649.77	670.00	ORCHARD LAKE BLVD. / HILL INT.
10	1175	0.28	653.06	672.50	BOUNDARY OF SERVICE AREA

HILL AVENUE SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
CRISSEY ROAD (SOUTH OF HILL)					
12			653.48	675.00	CRISSEY / HILL RD. INT.
10			653.62	675.00	CRISSEY / HILL RD. INT.
10	750	0.28	655.72	675.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (NORTH OF HILL)					
12			653.48	675.00	CRISSEY / HILL RD. INT.
10			653.62	675.00	CRISSEY / HILL RD. INT.
10	325	0.28	654.53	675.00	BOUNDARY OF SERVICE AREA - DRENNAN DITCH INV 656.6

NEBRASKA AVENUE SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
NEBRASKA AVENUE					
48			617.58	646.00	48" STUB TO WWTP TRUNK
12			619.98	646.00	12" CONNECTION TO 48" STUB TO WWTP TRUNK
12	450	0.22	620.97	645.00	ZINK DITCH INV 638.70
12	3950	0.22	629.66	655.00	PUMP STN#47 INV 636.93 ELIMINATED
12	900	0.22	631.64	657.50	KING / NEBRASKA INT.
12	2175	0.22	636.43	665.00	LAYER-OAK PARK LN / NEBRASKA INT.
12	1925	0.22	640.66	660.00	RALL / NEBRASKA INT.
12	1075	0.22	643.03	662.00	CENTENNIAL / NEBRASKA INT.
12	2400	0.22	648.31	672.50	FORK IN NEBRASKA W/ FRANKFORT
12	1050	0.22	650.62	675.00	GLENGARY / NEBRASKA INT.
12	375	0.22	651.44	675.00	FRANKFORT / GLENGARY INT.
12	1800	0.22	655.40	678.00	FRANKFORT / CRISSEY INT.
KING ROAD (SOUTH OF NEBRASKA)					
12			631.64	657.50	KING / NEBRASKA INT.
10			631.77	657.50	KING / NEBRASKA INT.
10	1200	0.28	635.13	660.00	BOUNDARY OF SERVICE AREA
KING ROAD (NORTH OF NEBRASKA)					
12			631.64	657.50	KING / NEBRASKA INT.
10			631.77	657.50	KING / NEBRASKA INT.
10	1200	0.28	635.13	657.50	BOUNDARY OF SERVICE AREA
LAYER-OAK PARK LN (SOUTH OF NEBRASKA)					
12			636.43	665.00	LAYER-OAK PARK LN / NEBRASKA INT.
10			636.56	665.00	LAYER-OAK PARK LN / NEBRASKA INT.
10	1175	0.28	639.85	660.00	BOUNDARY OF SERVICE AREA
LAYER-OAK PARK LN (NORTH OF NEBRASKA)					
12			636.43	665.00	LAYER-OAK PARK LN / NEBRASKA INT.
10			636.56	665.00	LAYER-OAK PARK LN / NEBRASKA INT.
10	1225	0.28	639.99	660.00	BOUNDARY OF SERVICE AREA
RALL ROAD (NORTH OF NEBRASKA)					
12			640.66	660.00	RALL / NEBRASKA INT.
10			640.79	660.00	RALL / NEBRASKA INT.
10	1275	0.28	644.36	660.00	BOUNDARY OF SERVICE AREA

NEBRASKA AVENUE SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
CENTENNIAL ROAD (NORTH OF NEBRASKA)					
12			643.03	662.00	CENTENNIAL / NEBRASKA INT.
10			643.16	662.00	CENTENNIAL / NEBRASKA INT.
10	1275	0.28	646.73	665.00	BOUNDARY OF SERVICE AREA
CENTENNIAL ROAD (SOUTH OF NEBRASKA)					
12			643.03	662.00	CENTENNIAL / NEBRASKA INT.
10			643.16	662.00	CENTENNIAL / NEBRASKA INT.
10	1125	0.28	646.31	660.00	BOUNDARY OF SERVICE AREA
FRANKFORT FORK IN NEBRASKA (SOUTH OF NEBRASKA)					
12			648.31	672.50	FORK IN NEBRASKA W/ FRANKFORT
10			648.44	672.50	FORK IN NEBRASKA W/ FRANKFORT
10	1000	0.28	651.24	675.00	EAST OF GLENGARY / CENTENNIAL INT.
GLENGARY ROAD (NORTH OF NEBRASKA)					
12			650.62	675.00	GLENGARY / NEBRASKA INT.
10			650.75	675.00	GLENGARY / NEBRASKA INT.
10	1250	0.28	654.25	675.00	BOUNDARY OF SERVICE AREA
GLENGARY ROAD (SOUTH OF NEBRASKA)					
12			651.44	675.00	FRANKFORT / GLENGARY INT.
10			651.57	675.00	FRANKFORT / GLENGARY INT.
10	1050	0.28	654.51	675.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (SOUTH OF FRANKFORT)					
12			655.40	678.00	FRANKFORT / CRISSEY INT.
10			655.53	678.00	FRANKFORT / CRISSEY INT.
10	1550	0.28	659.87	675.00	BOUNDARY OF SERVICE AREA - DRENNAN DITCH INV 656.6
CRISSEY ROAD (SOUTH OF FRANKFORT)					
12			655.40	678.00	FRANKFORT / CRISSEY INT.
10			655.53	678.00	FRANKFORT / CRISSEY INT.
10	2075	0.28	661.34	672.50	BOUNDARY OF SERVICE AREA

DORR STREET SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
DORR STREET					
48			617.52	650.00	EX., 48" STUB TO WWTP TRUNK-PER 18"S-698 PLAN
18	17		628.08	649.90	EX. 18" DROP TP 48" STUB PER 18" S-698 PLANS
18	1274		629.73	651.10	EX. 18" INV W PER 18" S-698 PLANS @ EX. MH
18			629.73	651.10	18" CONNECTION TO EXIST. 18" S-698 @ EX. MH
18	2000	0.12	630.48	650.00	ZINK DITCH INV 647.16
18	1275	0.12	632.01	655.00	MORACK / DORR ST. INT.
12			632.41	655.00	MORACK / DORR ST. INT.
12	825	0.22	634.23	656.00	KING NORTH / DORR INT.
12	300	0.22	634.89	656.00	KING SOUTH / DORR INT.
12	2200	0.22	639.73	660.00	ORCHARD PARK LN. / DORR INT.
12	1925	0.22	643.96	665.00	RALL / DORR INT.
12	750	0.22	645.61	667.00	CENTENNIAL NORTH / DORR INT.
12	350	0.22	646.38	667.00	CENTENNIAL SOUTH / DORR INT.
12	4725	0.22	656.78	672.50	CRISSEY / DORR INT.
MORACK DRIVE					
18			632.01	655.00	MORACK / DORR ST. INT.
10			632.54	655.00	MORACK / DORR ST. INT.
10	1150	0.28	635.76	655.00	BOUNDARY OF SERVICE AREA
KING ROAD (NORTH OF DORR ST.)					
12			634.23	656.00	KING NORTH / DORR INT.
10			634.36	656.00	KING NORTH / DORR INT.
10	975	0.28	637.09	655.00	BOUNDARY OF SERVICE AREA
KING ROAD (SOUTH OF DORR ST.)					
12			634.89	656.00	KING SOUTH / DORR INT.
10			635.02	656.00	KING SOUTH / DORR INT.
10	1300	0.28	638.66	657.50	BOUNDARY OF SERVICE AREA
ORCHARD PARK LN. (SOUTH OF DORR ST.)					
12			639.73	660.00	ORCHARD PARK LN. / DORR INT.
10			639.86	660.00	ORCHARD PARK LN. / DORR INT.
10	1200	0.28	643.22	660.00	BOUNDARY OF SERVICE AREA

DORR STREET SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
RALL ROAD (SOUTH OF DORR ST.)					
12			643.96	665.00	RALL / DORR INT.
10			644.09	665.00	RALL / DORR INT.
10	1150	0.28	647.31	662.50	BOUNDARY OF SERVICE AREA
CENTENNIAL ROAD (NORTH OF DORR ST.)					
12			645.61	667.00	CENTENNIAL NORTH / DORR INT.
10			645.74	667.00	CENTENNIAL NORTH / DORR INT.
10	1150	0.28	648.96	665.00	BOUNDARY OF SERVICE AREA
CENTENNIAL ROAD (SOUTH OF DORR ST.)					
12			646.38	667.00	CENTENNIAL SOUTH / DORR INT.
10			646.51	667.00	CENTENNIAL SOUTH / DORR INT.
10	1125	0.28	649.66	665.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (NORTH OF DORR ST.)					
12			656.78	672.50	CRISSEY / DORR INT.
10			656.91	672.50	CRISSEY / DORR INT.
10	1200	0.28	660.27	672.50	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (SOUTH OF DORR ST.)					
12			656.78	672.50	CRISSEY / DORR INT.
10			656.91	672.50	CRISSEY / DORR INT.
10	1200	0.28	660.27	672.50	BOUNDARY OF SERVICE AREA

BANCROFT STREET SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
BANCROFT STREET					
48			619.36	648.90	EX. 48"INV E STUB TO WWTP TRUNK PER S-642 PLANS
18			621.80	648.90	EX. 18" IN W CONNECTION TO STUB
18	4050		630.45	653.70	END OF EX. 18"
15			630.65	653.70	15" CONNECTION TO EX. 18"
15	1675	0.15	633.16	658.00	KING / BANCROFT INT.
15	1325	0.15	635.15	662.50	HESYLER / BANCROFT INT.
15	1375	0.15	637.21	665.00	SHETLAND / BANCROFT INT.
15	1350	0.15	639.24	665.00	GRADWOHL / BANCROFT INT.
15	150	0.15	639.46	665.00	PUMP STN#35 INV 652.18, 655.56 - ELIMINATED
15	950	0.15	640.89	665.00	CENTENNIAL / BANCROFT INT.
15	750	0.15	642.01	665.00	WRIGHT / BANCROFT INT.
15	1975	0.15	644.98	668.50	PUMP STN# 37 INV 647.50 - ELIMINATED
12			647.50	665.00	EXISTING 12" PIPE @ PUMP STATION
12	2525	0.22	653.06	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
KING ROAD (SOUTH OF BANCROFT)					
15			633.16	658.00	KING / BANCROFT INT.
10			633.50	658.00	KING / BANCROFT INT.
10	800	0.28	635.74	655.00	BOUNDARY OF SERVICE AREA
KING ROAD (NORTH OF BANCROFT)					
15			633.16	658.00	KING / BANCROFT INT.
10			633.50	658.00	KING / BANCROFT INT.
10	2025	0.28	639.17	660.00	PUMP STN#34 INV 650.37
10	550	0.28	640.71	665.00	HOLSTEIN / KING INT.
10	1275	0.28	644.28	665.00	EAST OF HOLSTEIN / HESYLER INT.
10	2850	0.28	648.69	672.50	BOUNDARY OF SERVICE AREA JUST SOUTH OF CENTRAL
HESYLER ROAD (NORTH OF BANCROFT)					
15			635.15	662.50	HESYLER / BANCROFT INT.
10			635.48	662.50	HESYLER / BANCROFT INT.
10	2575	0.28	642.69	667.50	HOLSTEIN / HESYLER INT.
10	1275	0.28	646.26	672.50	EAST OF HOLSTEIN / SHETLAND INT.
10	2800	0.28	650.53	675.00	BOUNDARY OF SERVICE AREA JUST SOUTH OF CENTRAL

BANCROFT STREET SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
SHETLAND ROAD (NORTH OF BANCROFT)					
15			637.21	665.00	SHETLAND / BANCROFT INT.
10			637.55	665.00	SHETLAND / BANCROFT INT.
10	2575	0.28	644.76	672.50	HOLSTEIN / SHETLAND INT.
10	1275	0.28	648.33	670.00	EAST OF HOLSTEIN / GRADWOHL INT.
10	1275	0.28	648.33	673.00	BOUNDARY NEAR EX. 10" FROM SILICA PS LINE
GRADWOHL ROAD (NORTH OF BANCROFT)					
15			639.24	665.00	GRADWOHL / BANCROFT INT.
10			639.57	665.00	GRADWOHL / BANCROFT INT.
10	2625	0.28	646.92	670.00	GRADWOHL / HOLSTEIN INT.
10	2725	0.28	654.55	672.00	BOUNDARY OF SERVICE AREA SOUTH OF CENTRAL AVE.
CENTENNIAL ROAD (SOUTH OF BANCROFT)					
15			640.89	665.00	CENTENNIAL / BANCROFT INT.
10			641.22	665.00	CENTENNIAL / BANCROFT INT.
10	750	0.28	643.32	665.00	BOUNDARY OF SERVICE AREA
CENTENNIAL ROAD (NORTH OF BANCROFT)					
15			640.89	665.00	CENTENNIAL / BANCROFT INT.
10			641.22	665.00	CENTENNIAL / BANCROFT INT.
10	2750	0.28	648.92	670.00	BOUNDARY OF SERVICE AREA
WRIGHT DR. (SOUTH OF BANCROFT)					
15			642.01	665.00	WRIGHT / BANCROFT INT.
10			642.35	665.00	WRIGHT / BANCROFT INT.
10	800	0.28	644.59	665.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (SOUTH OF BANCROFT)					
12			653.06	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
10			653.19	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
10	700	0.28	655.15	670.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (NORTH OF BANCROFT)					
12			653.06	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
12			653.06	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
12	2175	0.22	657.84	670.00	BOUNDARY OF SERVICE AREA

BANCROFT STREET SERVICE AREA - ELIMINATE PS

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
BANCROFT STREET					
48			619.36	648.90	EX. 48"INV E STUB TO WWTP TRUNK PER S-642 PLANS
18			621.80	648.90	EX. 18" IN W CONNECTION TO STUB
18	4050		630.45	653.70	END OF EX. 18"
18			630.45	653.70	18" CONNECTION TO EX. 18"
18	1675	0.12	632.46	658.00	KING / BANCROFT INT.
18	1325	0.12	634.05	662.50	HESYLER / BANCROFT INT.
18	1375	0.12	635.70	665.00	SHETLAND / BANCROFT INT.
18	1350	0.12	637.32	665.00	GRADWOHL / BANCROFT INT.
18	150	0.12	637.50	665.00	PUMP STN#35 INV 652.18, 655.56 - ELIMINATED
18	950	0.12	638.64	665.00	CENTENNIAL / BANCROFT INT.
18	750	0.12	639.54	665.00	WRIGHT / BANCROFT INT.
18	1975	0.12	641.91	668.50	PUMP STN# 37 INV 647.50 - ELIMINATED
18	2525	0.12	644.94	672.50	CRISSEY / BANCROFT INT.
18	5350	0.12	651.36	665.00	CENTRAL / CRISSEY RD. INT.
12	600	0.22	653.08	665.00	PRAIRE DITCH INV 655.9
KING ROAD (SOUTH OF BANCROFT)					
18			632.46	658.00	KING / BANCROFT INT.
10			632.99	658.00	KING / BANCROFT INT.
10	800	0.28	635.23	655.00	BOUNDARY OF SERVICE AREA
KING ROAD (NORTH OF BANCROFT)					
18			632.46	658.00	KING / BANCROFT INT.
10			632.99	658.00	KING / BANCROFT INT.
10	2025	0.28	638.66	660.00	PUMP STN#34 INV 650.37
10	550	0.28	640.20	665.00	HOLSTEIN / KING INT.
10	1275	0.28	643.77	665.00	EAST OF HOLSTEIN / HESYER INT.
10	2850	0.28	648.18	672.50	BOUNDARY OF SERVICE AREA JUST SOUTH OF CENTRAL
HESYLER ROAD (NORTH OF BANCROFT)					
18			634.05	662.50	HESYLER / BANCROFT INT.
10			634.58	662.50	HESYLER / BANCROFT INT.
10	2575	0.28	641.79	667.50	HOLSTEIN / HESYLER INT.
10	1275	0.28	645.36	672.50	EAST OF HOLSTEIN / SHETLAND INT.
10	2800	0.28	649.63	675.00	BOUNDARY OF SERVICE AREA JUST SOUTH OF CENTRAL

BANCROFT STREET SERVICE AREA - ELIMINATE PS

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
SHETLAND ROAD (NORTH OF BANCROFT)					
18			635.70	665.00	SHETLAND / BANCROFT INT.
10			636.23	665.00	SHETLAND / BANCROFT INT.
10	2575	0.28	643.44	672.50	HOLSTEIN / SHETLAND INT.
10	1275	0.28	647.01	670.00	EAST OF HOLSTEIN / GRADWOHL INT.
10	1275	0.28	647.01	673.00	BOUNDARY NEAR EX. 10" FROM SILICA PS LINE
GRADWOHL ROAD (NORTH OF BANCROFT)					
18			637.32	665.00	GRADWOHL / BANCROFT INT.
10			637.85	665.00	GRADWOHL / BANCROFT INT.
10	2625	0.28	645.20	670.00	GRADWOHL / HOLSTEIN INT.
10	2725	0.28	652.83	672.00	BOUNDARY OF SERVICE AREA SOUTH OF CENTRAL AVE.
CENTENNIAL ROAD (SOUTH OF BANCROFT)					
18			638.64	665.00	CENTENNIAL / BANCROFT INT.
10			639.17	665.00	CENTENNIAL / BANCROFT INT.
10	750	0.28	641.27	665.00	BOUNDARY OF SERVICE AREA
CENTENNIAL ROAD (NORTH OF BANCROFT)					
18			638.64	665.00	CENTENNIAL / BANCROFT INT.
10			639.17	665.00	CENTENNIAL / BANCROFT INT.
10	2750	0.28	646.87	670.00	BOUNDARY OF SERVICE AREA
WRIGHT DR. (SOUTH OF BANCROFT)					
18			639.54	665.00	WRIGHT / BANCROFT INT.
10			640.07	665.00	WRIGHT / BANCROFT INT.
10	800	0.28	642.31	665.00	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (SOUTH OF BANCROFT)					
18			644.94	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
10			645.47	672.50	EX. 12" @ CRISSEY / BANCROFT INT.
10	700	0.28	647.43	670.00	BOUNDARY OF SERVICE AREA

SILICA ROAD PUMP STATTION SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
EAST ON CENTRAL AVE. (FROM PROP. PS)					
12			648.00	665.00	12" INV TO PROP PS (FORCE MAIN 3375 LF)
12	300	0.22	648.66	665.00	CRISSEY / CENTRAL AVE. INT.
12	1225	0.22	651.36	667.00	HERR / CENTRAL AVE. INT.
12	1825	0.22	655.37	667.90	BOUNDARY OF SERVICE AREA NEAR EX. 24"
WEST ON CENTRAL AVE. (FROM PROP. PS)					
12			645.00	665.00	12" INV TO PROP PS
12	225	0.22	645.50	665.00	PRAIRE DITCH INV-655.9
12	4400	0.22	655.18	667.50	BOUNDARY OF SERVICE AREA
CRISSEY ROAD (SOUTH OF CENTRAL AVE.)					
12			648.66	665.00	CRISSEY / CENTRAL AVE. INT.
12			648.66	665.00	CRISSEY / CENTRAL AVE. INT.
12	3100	0.22	655.48	670.00	BOUNDARY OF SERVICE AREA
HERR ROAD (NORTH OF CENTRAL AVE.)					
12			651.36	667.00	HERR / CENTRAL AVE. INT.
12			651.36	667.00	HERR / CENTRAL AVE. INT.
12	1200	0.22	654.00	665.00	NEAR TEN MILE CREEK
WEST SYLVANIA AVE. FROM 24" THAT LEADS TO PS					
24			650.90	670.50	24" @ MITCHAW / SYLVANIA AVE. TO PUMP STATION #38
12			651.70	670.50	24" @ MITCHAW / SYLVANIA AVE. TO PUMP STATION #38
12	450	0.22	652.69	670.00	TENMILE CREEK INV 659.6
12	4425	0.22	662.43	675.00	BOUNDARY OF SERVICE AREA
EAST SYLVANIA AVE. FROM 24" THAT LEADS TO PS					
12			653.89	667.20	END OF EX. 12"
12			653.89	667.20	CONNECTION TO EX. 12"
12	1900	0.22	658.07	670.00	BOUNDARY OF SERVICE AREA
BRINT ROAD (WEST OF MITCHAW)					
12			658.04	681.00	MH ON W SIDE OF BRINT / MITCHAW INT.
12			658.04	681.00	MH ON W SIDE OF BRINT / MITCHAW INT.
12	3900	0.22	666.62	682.00	HOLT / BRINT RD. INT.
12	900	0.22	668.60	677.50	BOUNDARY OF SERVICE AREA

SILICA ROAD PUMP STATTION SERVICE AREA

SIZE(IN)	LENGTH(FT)	SLOPE(FT/FT %)	INV	APROX GRADE	COMMENTS
HOLT ROAD (NW OF MITCHAW)					
21			652.03	669.70	21" S-811 @ MH ON E SIDE OF MITCHAW RD.
12			652.63	669.70	21" S-811 @ MH ON E SIDE OF MITCHAW RD.
12	81	0.22	652.81	671.70	MH ON W SIDE OF MITCHAW CONNECTING TO 21" S-811 TO P!
12	7175	0.22	668.59	682.00	BOUNDARY OF SERVICE FROM MITCHAW RD 10" LINE
HERR ROAD (SOUTH OF EX. 15")					
15			652.80	667.50	END OF EX. 15" ON HERR
15			652.80	667.50	15" CONNECTION TO EX. 15"
15	2500	0.15	656.55	665-?	NEAR TENMILE CREEK
BRINT ROAD EAST (EAST OF EX. 12")					
12			659.00	677.20	END OF EX. 12"
12			659.00	677.20	CONNECTION TO EX. 12"
12	2150	0.22	663.73	675.00	BOUNDARY OF SERVICE AREA NEAR COMSTOCK DITCH
SYLVANIA-METAMORA ROAD (WEST OF EX. 12")					
12			674.81	685.00	END OF EX. 12"
12			674.81	685.00	CONNECTION TO EX. 12"
12	1575	0.22	678.27	687.50	BOUNDARY OF SERVICE AREA
MITCHAW ROAD (NORTH OF SYLVANIA-METAMORA RD.)					
18			668.09	683.30	MITCHAW / SYLVANIA-METAMORA RD. INT.
12			668.49	683.30	MITCHAW / SYLVANIA-METAMORA RD. INT.
12	3025	0.22	675.15	685.00	BOUNDARY OF SERVICE AREA
CENTRAL AVENUE (B/W EX. 8" & 10")					
10			660.71	675.00	END OF EX. 10" PIPE
10			660.71	675.00	CONNECTION TO EX. 10
10	1000	0.28	663.51	674.00	NEAR GRADWOHL / CENTRAL AVE. INT.
CENTRAL AVENUE (EAST OF 15" S-727 SEWER)					
15			658.40	679.41	CENTRAL / S-727 SEWER INT.
12			658.60	679.41	CENTRAL / S-727 SEWER INT.
12	2175	0.22	663.39	672.50	KING / CENTRAL AVE.
KING ROAD (NORTH OF CENTRAL AVE.)					
12			663.39	672.50	KING / CENTRAL AVE.
12			663.39	672.50	KING / CENTRAL AVE.
12	2500	0.22	668.89	680.00	BOUNDARY OF SERVICE AREA - RR

APPENDIX C

SUMMARY OF PROBABLE COST FOR PROPOSED SEWERS

Attached is a SAMPLE of 1 of the sections summarizing the probable cost. We have the others in a separate 3-ring binder.

FPS

FINKBEINER, PETTIS & STROUT, INC.

PROBABLE COST - OCTOBER 3, 2001

AIRPORT HIGHWAY SERVICE AREA - PHASE 1

LUCAS COUNTY SANITARY SEWER SYSTEM MASTER PLAN

ITEMS	QUANTITIES	RATE	AMOUNT
AIRPORT HIGHWAY FROM PUMPING STATION 6 TO ALBON ROAD			$241,000.00
ALBON ROAD FROM AIRPORT HIGHWAY TO RAILROAD			$102,000.00
ALBON ROAD FROM AIRPORT HIGHWAY TO NORTH OF LONGSWORTH			$87,000.00
TOTAL AIRPORT HIGHWAY SERVICE AREA - PHASE 1			$430,000.00

FINKBEINER, PETTIS & STROUT, INC.

PROBABLE COST - OCTOBER 3, 2001

AIRPORT HIGHWAY SERVICE AREA - PHASE 1

LUCAS COUNTY SANITARY SEWER SYSTEM MASTER PLAN

ITEMS	QUANTITIES		RATE	AMOUNT
AIRPORT HIGHWAY FROM PUMPING STATION 6 TO ALBON ROAD				
12 inch Pipe Sewer, 16'-20' deep	2,750	l.f.	$56.00	$154,000.00
24 inch Steel Encasement Pipe	60	l.f.	$236.00	$14,160.00
Granular Backfill	894	c.y.	$18.00	$16,092.00
Manholes	137	l.f.	$200.00	$27,400.00
Manhole Frames and Covers	7	each	$275.00	$1,925.00
Existing Pavement Replacement	115	s.y.	$30.00	$3,450.00
Existing Sewer and Drain Replacement	275	l.f.	$8.00	$2,200.00
	SUBTOTAL			$219,227.00
	CONTINGENCIES			$21,773.00
	TOTAL			$241,000.00

FPS

FINKBEINER, PETTIS & STROUT, INC.

PROBABLE COST - OCTOBER 3, 2001

AIRPORT HIGHWAY SERVICE AREA - PHASE 1

LUCAS COUNTY SANITARY SEWER SYSTEM MASTER PLAN

ITEMS	QUANTITIES		RATE	AMOUNT
ALBON ROAD FROM AIRPORT HIGHWAY TO RAILROAD				
12 inch Pipe Sewer, 20'-24' deep	975	l.f.	$64.00	$62,400.00
24 inch Steel Encasement Pipe	60	l.f.	$236.00	$14,160.00
Granular Backfill	325	c.y.	$18.00	$5,850.00
Manholes	40	l.f.	$200.00	$8,000.00
Manhole Frames and Covers	2	each	$275.00	$550.00
Existing Pavement Replacement	41	s.y.	$30.00	$1,230.00
Existing Sewer and Drain Replacement	98	l.f.	$8.00	$784.00
	SUBTOTAL			$92,974.00
	CONTINGENCIES			$9,026.00
	TOTAL			$102,000.00

FPS

FINKBEINER, PETTIS & STROUT, INC.

PROBABLE COST - OCTOBER 3, 2001

AIRPORT HIGHWAY SERVICE AREA - PHASE 1

LUCAS COUNTY SANITARY SEWER SYSTEM MASTER PLAN

ITEMS	QUANTITIES		RATE	AMOUNT
ALBON ROAD FROM AIRPORT HIGHWAY TO NORTH OF LONGSWORTH				
12 inch Pipe Sewer, 12'-16' deep	1,250	l.f.	$51.00	$63,750.00
Granular Backfill	263	c.y.	$18.00	$4,734.00
Manholes	38	l.f.	$200.00	$7,600.00
Manhole Frames and Covers	3	each	$275.00	$825.00
Existing Pavement Replacement	52	s.y.	$30.00	$1,560.00
Existing Sewer and Drain Replacement	125	l.f.	$8.00	$1,000.00
	SUBTOTAL			$79,469.00
	CONTINGENCIES			$7,531.00
	TOTAL			$87,000.00