

From Blante
To Trustee Wyatt 4/13/64
FILE COPY

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS
360 EAST GRAND AVENUE
CHICAGO 11, ILLINOIS

April 12, 1960

Chicago Construction Company
707 Dundee Road
Northbrook, Illinois

Attention: Mr. Harold Friedman

Gentlemen:

In accordance with our agreement dated February 8, 1960, we have investigated the feasibility of serving a tract of land lying north and south of County Line Road along the eastern Village Limits of Barrington with sanitary sewerage facilities. This tract contains an area of approximately 200 acres.

In the first part of our report we shall discuss the existing sanitary collector system of Barrington and the feasibility of extensions thereto. In the second part we shall discuss the adequacy of the existing sewage treatment plant facilities.

I. GENERAL

Barrington, with a population of almost 6,000 (1959) people, is located on both sides of the C. & N. W. Ry., 30 miles northwest of Chicago. Ground elevations range between Elev. 490+ in the south part of town to elevations around 800 along Flynn Creek at the west edge of town. This creek is the natural drainage artery to which the Village storm sewers connect. Its general course is east to west in the north half of Barrington.

The original combined sewer system installed in the 1920 decade was separated in the early 1930's under court order. The sanitary collector system now consists of lateral sewers taken over from the original combined system with additional trunk sanitary sewers constructed during this conversion and since.

II. EXISTING SANITARY TRUNK SEWERS

A. South of the C. & N. W. Ry.

1. Hager Avenue Trunk Sewer
2. Appleby Trunk Sewer
3. Liberty-Summit Street Trunk Sewer (serves also part of Village north of the C. & N. W. Ry.)

B. North of the C. & N. W. Ry.

1. Carl Avenue Trunk
2. Jewel Park Trunk
 - a. American Can Co. Collector
 - b. Glendale Avenue Collector
 - c. Barrington Meadows Collector

The respective routes and sizes of these existing sanitary trunk sewers are indicated on Sheet No. 1 of 2 sheets attached hereto.

The theoretical carrying capacities of the existing sanitary collection system and their existing respective contributory areas are as follows:

<u>Location</u>	<u>Contributory Area</u>	<u>Existing Capacity</u> (c. f. s.)
Sewage Treatment Plant	1,544 acres	
East of Raymond	1,102 acres	11.3
East of Carl	958 acres	11.3
N.E. of Appleby Trunk	795 acres	3.8
N.E. of Liberty Trunk	402 acres	2.0

The existing deficiencies are the most pronounced in that part of Barrington located north of the C. & N. W. Ry. where future growth is most likely to occur. Based on a design figure of 5,000 gallons per acre per day, the capacity of the trunk sewers for contributory areas northeast of the Liberty Street outfall sewer will have to be increased to 400% of the existing capacity to accommodate an expected increase of tributary area of 150% over the existing.

Actual flow observations made on February 22 and February 23, 1960, as expressed in % of the existing carrying capacity were as follows:

<u>Location</u>	<u>% of Capacity of Flow</u>
<u>Jewel Park Sanitary Trunk Sewer</u>	
at West Line Barrington Meadows Subdivision	5%
at North Line American Can Company	22%
at Bend in Lake Zurich Road	47%
at North Hough Street and Elm Street	62%
at North Hough Street and E. J. & E. R.R.	40%
<u>Liberty Street Sanitary Trunk Sewer</u>	
at E. J. & E. R.R.	70%
<u>Appleby Sanitary Trunk Sewer</u>	
at E. J. & E. R.R.	96%
<u>Hager Avenue Sanitary Trunk Sewer</u>	
at Raymond Avenue	200%

The flow observations tabulated above were made under dry weather conditions. The existing Barrington sanitary sewer system is susceptible to heavy infiltration. Therefore, we do not recommend connections to any existing sanitary collector sewer east of Hough Street to serve the proposed development.

III. PROPOSED SANITARY SEWER FACILITIES

The location of the proposed subdivision across town from the existing sewage treatment plant, the inability of existing sanitary trunks to accept additional flows from new areas, and soil conditions would ordinarily point to an internal sanitary collection system with an indigenous sanitary sewage treatment plant at the site. The construction cost for full treatment of sanitary wastes for a population of 1,100 people would amount to approximately \$100,000.

However, by an injunction in the late 1920's, the Village of Barrington was constrained to carry the effluent from its treatment plant in a 24 inch outfall sewer northwesterly for approximately one mile downstream to the crossing of Flynn Creek with Northwest Highway, at which location the 24 inch sewer empties into the creek.

While a separate sanitary sewage treatment plant for the proposed development would be an economical solution, it cannot be considered as long as the aforementioned injunction stands.

1. Alternate I
Gravity Sanitary Trunk Sewer

One alternate to the independent sewage treatment plant is a gravity collector sewer, a possible route for which we have indicated on Sheet No. 1. This route would follow the north line of the proposed development, as extended westerly to Northwest Highway, thence south-westerly to North Hough Street along the Elgin, Joliet and Eastern Railroad. There, the proposed sanitary sewer would connect to the existing 18 inch sanitary sewer.

Easements would have to be obtained from the Barrington Meadows Subdivision, the Jewel Tea Company and the Elgin, Joliet and Eastern Railroad.

We are aware of undesirable soil conditions along this route east of Lake Zurich Road. Through the major part of this section the sewer would need to be supported on a reinforced concrete cradle supported by timber piles varying in length between 15 and 25 feet. We would recommend further that a watertight joint, such as AMVIT, or equal, be used in this construction, since the sewer invert elevation would be below the existing ground water table. On a very detailed soil investigation an easement location somewhat south of this north line may prove to be practicable.

2. Alternate II

This proposal would move the proposed sanitary collector sewer to a route with assured, more favorable soil conditions. The route would follow from the west line of your proposed development along a dedicated public street to the west line of the Barrington Meadows Subdivision; thence in an easement paralleling the existing sanitary collector sewer in an easement along the north property line of the American Can Company or along the south line of the Jewel Tea Company, and paralleling the existing Jewel sanitary trunk sewer to the intersection of Lake Zurich Road and Northwest Highway extended easterly and northerly. From this point on it would follow the route described for Alternate I.

However, Alternate II would require the construction of a lift station near the northwest corner of that part of your proposed development north of Lake Cook Road. A force main would have to extend from this point to the west line of the subdivision at Center Court.

We have prepared and presented herewith preliminary estimates of construction cost for each one of these alternatives because either one merits consideration from an engineering point of view. For proper comparison we have included in the preliminary estimates all necessary sanitary collector trunk sewers north of County Line Road, including costs for engineering and inspection. The estimates do not, however, include easement costs.

Preliminary Estimates of Construction Cost

Alternate No. 1

8,500	L. F.	Sanitary Sewer	@ \$ 6.50	\$ 55,250.00
30	Ea.	Manholes, Complete	250.00	7,500.00
2,000	L. F.	Reinforced Concrete Cradle	8.00	16,000.00
2,500	L. F.	Wood Piling, 10" Dia.	4.00	10,000.00
100	L. F.	Sewer under Railroad and Paving	35.00	3,500.00
3,000	C. Y.	Trench Backfill	3.35	10,050.00
		Miscellaneous Construction & Contingencies		7,700.00
		Engineering & Inspection		<u>10,000.00</u>
Total Preliminary Project Cost - Alternate No. 1				\$ 120,000.00

Alternate No. 2

10,200	L. F.	Sanitary Sewer	@ \$ 6.50	\$ 66,300.00
35	Ea.	Manholes, Complete	250.00	8,750.00
100	L. F.	Sewer under Railroad and Paving	35.00	3,500.00
1	Ea.	Lift Station	15,000.00	15,000.00
1,400	L. F.	Force Main	5.75	8,050.00
		Miscellaneous Construction & Contingencies		3,400.00
		Engineering & Inspection		<u>10,000.00</u>
Total Preliminary Project Cost - Alternate No. 2				\$ 120,000.00

This cost comparison indicates that the initial cost for both Alternates would be the same, provided the acquisition cost for easements are the same. Of course, the cost of operation and maintenance of the lift station in Alternate No. 2 would tend to favor Alternate No. 1, in spite of the difficult soil conditions expected to be encountered east of Lake Zurich Road. As noted above there is some possibility of routing this gravity outlet a few hundred feet further north if easements can be obtained.

IV. USABLE LAND FOR RESIDENTIAL PURPOSES

On Sheet No. 2 we have shown on a topographic map of the area and indicated the location of borings recently completed by the KOF Company. From the results of these borings we have drawn a line which denotes the northernmost extent of potential residential development. We have computed the area excluded from development due to soil conditions as being 31.6 acres.

We recommend, however, that this tract be more closely defined by further soil explorations. Possibly an area as large as 10 acres (shown on Sheet No. 2) could be classified by further borings as suitable for development, thus reducing possibly the unusable acreage to approximately 21 acres.

V. EXISTING SEWAGE TREATMENT PLANT

The Village of Barrington is aware that some of the functional elements of the existing sewage treatment plant are reaching their design capacity and hence is aware of necessary additions to the sewage treatment plant in the future. Financing of additions has in the past been accomplished by revenue bond issues supported by established service charges, with additional customers supplying the added revenues required. As a matter of routine, we are forwarding a copy of this report to the Village of Barrington for their information.

Please advise if you desire us to enlarge on any part of this report.

Very truly yours,

CONSOER, TOWNSEND & ASSOCIATES


William W. Townsend


Walter Hodel

WWT/WH:JL

Enc.

Mr Wyatt :- Just for your information

watch for action

DCS 604 10M 7-48

DEPARTMENT OF HIGHWAYS
OF THE
COUNTY OF COOK
130 NORTH WELLS STREET
CHICAGO 6, ILLINOIS

DANIEL RYAN
PRESIDENT BOARD OF COUNTY
COMMISSIONERS

WILLIAM J. MORTIMER
SUPERINTENDENT

April 3, 1959

*✓ Copy to Mr. Plank
2/28/64*

Mr. Martin H. Schreiber, President
Village of Barrington
206 South Hough Street
Barrington, Illinois

Re: Dundee Avenue
Paving - General

Dear Sir:

Your letter with reference to the poor condition of Dundee Avenue, dated March 31, 1959, is acknowledged.

You are advised that Dundee Avenue, between Hillside and Lake-Cook Road, is included in an emergency resurfacing program prepared by this department and presented to the Board of County Commissioners for approval at their meeting held on March 31, 1959. The program was approved as presented, and was subsequently forwarded to the Department of Public Works and Buildings, Division of Highways, for their approval.

You are further advised that bids will be called for at the earliest date possible under the statutes, following State approval.

Very truly yours,

William J. Mortimer

William J. Mortimer
Superintendent of Highways
Cook County, Illinois

cc: Mr. J. P. Tuttle

DATE: April 3, 1959

This will acknowledge receipt of letter dated March 31, 1959 and has been submitted to the Department involved for investigation and reply.

Re:
11/26/57-Petition signed RECORDS BUREAU
in area-certain
improvements Dundee COOK COUNTY HIGHWAY DEPARTMENT
Ave. Barrington