

ENGINEER'S REPORT FOR SANITARY SEWER

Prepared for:

ER/UDC WEST WINDSOR LLC

Block 47; Lots 2-6

Township of West Windsor
Mercer County, New Jersey

Prepared by

BOHLER //

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Table of Contents

A.	Description of the Area to be Served	1
B.	Population or Equivalent	1
C.	Number of Proposed and Projected Ultimate Connections and the Anticipated Schedule of the Connections	2
D.	Evaluations of the Estimated Average Daily Sewage Flows and Peak Sewage Flows	2
E.	Computational Analysis.....	3

A. Description of the Area to be Served

This narrative outlines the construction of a sanitary sewer system for a 5,852 SF QuickChek Food Store (10 indoor and 16 outdoor seats), a fuel canopy with eight (8) fueling positions for fuel sales (eight (8) 3-product fuel dispensers and two (2) low flow diesel dispensers), associated asphalt/concrete parking/circulation areas, sidewalks, and landscaping on Proposed Lot 2.01 and for a 4,541 SF Restaurant with drive-thru with associated parking/circulation areas, sidewalks, and landscaping on Proposed Lot 2.02. The subject property is currently occupied by multiple structures (vacant office building, residential houses, garages) on Lots 2-6. The proposed sanitary sewer service will flow by way of gravity from the proposed QuickChek Food Store via a 6" sanitary sewer lateral to the existing 8" sanitary sewer main within McGetrick Lane and from the proposed restaurant building via 6" sanitary sewer lateral to the existing 8" sanitary sewer main within McGetrick Lane.

The 6" sanitary sewer lateral runs from the proposed 'QuickChek' Food Store in the rear of the site. Where it connects into a 1,000 GAL. Grease Trap then continues to a proposed monitoring pit junction that connects into the 6" sewer lateral. The 6" sewer lateral runs out of the QuickChek store where the bathrooms are located and runs parallel to the building and connects at the monitoring pit junction with a 6" sewer lateral. From this junction point the line runs as a single 6" sewer lateral that connects to the existing 8" sanitary sewer main via the existing sanitary manhole located in the McGetrick Lane right-of-way as shown on the Drainage and Utilities Plan.

The 6" sanitary sewer lateral runs from the proposed restaurant with drive-thru in the rear of the site. Where it connects into a 1,000 GAL. Grease Trap then continues to a proposed monitoring pit junction that connects into the 6" sewer lateral. Another 6" sewer lateral runs out of the proposed restaurant where the bathrooms are located and connects at a cleanout junction with a 6" sewer lateral. From this junction point the line runs as a single 6" sewer lateral that connects to the existing 8" sanitary sewer main via a 6" saddle connection and equipped with a sanitary cleanout located within the McGetrick Lane right-of-way as shown on the Drainage and Utilities Plan.

B. Population or Equivalent

In accordance with Plumbing Code, the proposed 'QuickChek' Food Store with Fuel Sales generate 37.0 Drainage Fixture Units. The intended sanitary sewer use for the proposed 'QuickChek' Food Store involves the following fixtures:

Quantity	Description	Drainage Fixture Units	
		Unit Value	Total Value
3	Water Closets	4.0	12.0
1	Urinal	4.0	4.0
6	Lavatory	1.0	6.0
1	Mop Sink	3.0	3.0
1	Hose Bibb	N/A	N/A
1	3-Bay Sink	6.0	6.0
1	Food Wash Sink	6.0	6.0
Total		37.0	

C. Number of Proposed and Projected Ultimate Connections and the Anticipated Schedule of the Connections

As noted in the 'Description of the Project', the proposed 'QuickChek' Food Store with Fuel Sales will connect to an existing manhole within the McGetrick lane right-of-way and the proposed restaurant with drive-thru will have a 6" saddle connection to the existing 8" sanitary sewer main located within the McGetrick Lane right-of-way.

D. Evaluations of the Estimated Average Daily Sewage Flows and Peak Sewage Flows

Our office has evaluated the estimated average daily sewage flows and peak daily sewage flows for the proposed 'QuickChek' Food Store with Fuel Sales as per NJAC 7:14A-23.3 found that the estimate average daily sewage flows to be 1,943 gpd and the estimated peak daily sewage flow to be 3,886 gpd for the proposed 'QuickChek' Food Store with Fuel Sales. The proposed restaurant with drive-thru as per NJAC 7:14A-23.3 found that the estimate average daily sewage flows to be 1,750 gpd and the estimated peak daily sewage flow to be 3,500 gpd for the proposed restaurant with drive-thru.

Proposed QuickChek Food Store with Fuel Sales (Proposed Lot 2.02):

Estimated Average Daily Sewage Flows = Estimated Average Daily Store Sewage Flows + Estimated Average Daily Automobile Service Station Sewage Flows + Estimated Average Daily Restaurant Flows

Estimated Average Daily Store Sewage Flows = (5852 sf) * (0.100 gpd/sf) = 586 gpd

Estimated Average Daily Automobile Service Station Sewage Flows = (16 filling positions) * (125 gpd/filling positions) = 2,000 gpd

Estimated Average Daily Restaurant Flows = (26 seats) * (50 gpd/seats) = 1,300 gpd

Estimated Average Daily Sewage Flows = 586 gpd + 2,000 gpd + 1,300 gpd

Estimated Average Daily Sewage Flows = 3,886 gpd

Estimated Peak Daily Sewage Flows = (Estimated Average Daily Sewage Flows) * (Peaking Factor)

Estimated Peak Daily Demands = (3,886 gpd) * (2)

Estimated Peak Daily Demands = 7,772 gpd

Proposed Restaurant with Drive-Thru (Proposed Lot 2.01):

Estimated Average Daily Sewage Flows = Estimated Average Daily Store Sewage Flows

Estimated Restaurant Number of seat = 100 seats

Estimated Average Daily Restaurant Sewage Flows = (100 seats) * (35 gpd/seat) = 3,500 gpd

Estimated Average Daily Sewage Flows = 3,500 gpd

Estimated Peak Daily Sewage Flows = (Estimated Average Daily Sewage Flows) * (Peaking Factor)

Estimated Peak Daily Demands = (3,500 gpd) * (2)

Estimated Peak Daily Demands = 7,000 gpd

E. Computational Analysis

Our office has evaluated the maximum drainage fixture unit load from the proposed 'QuickChek' Food Store and proposed restaurant with drive-thru as per the Plumbing Code and found that the proposed 6" sewer laterals at 1.04% is sufficient.