Engineer's Report for Wastewater Management

for

Rapp Road Residential/ Western Avenue Mixed Use Redevelopment Projects

Town of Guilderland
Albany County, New York

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Prepared for:

Rapp Road Development, LLC
One Crossgates Mall Road
Albany, NY 12203

Prepared by:

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Chazen Project No. 317AI.00

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APPENDICES

1.0 INTRODUCTION

This report documents the investigation and analysis completed for connection to the Town of Guilderland's public sewer system for the proposed Rapp Road Residential/Western Avenue Mixed Use Redevelopment Projects DEIS. This report includes the technical data supporting the proposed sewer mains and proposed sewer connection.

This report includes:

1. An evaluation of the Town of Guilderland's estimated existing sanitary sewer collection and treatment systems, regarding their adequacy;
2. An analysis of the expected hydraulic demands imposed by the proposed developments, and;
3. A definition of the anticipated upgrades to the Town's existing sewer system, if necessary.

The proposed development will connect to the Town of Guilderland's sewer system via an existing manhole within the Westmere Terrace cul-de-sac on the southern end of Site 1, and through newly constructed private and municipal infrastructure for Sites 2 and 3.

The investigation regarding the existing sanitary sewer system includes discussions with the Wastewater Department, Water Department, and Town Designated Engineer at the Town of Guilderland regarding the adequacy of their existing sanitary sewer systems as they relate to servicing the proposed development, as well as a review of record data supplied by the municipality.

Criteria outlined in the following references were considered:

- Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers (10 States-Standards), "Recommended Standards for Wastewater Facilities," 2014
- New York State Department of Environmental Conservation, "Design Standards for Intermediate Sized Wastewater Treatment Systems," 2014

Engineering drawings of the proposed development and the proposed sanitary sewer system offsite improvements shall be submitted as an accompanying site plan set. References made to "the plans" or to specific "sheets" are in reference to these drawings.

This report is intended to be part of the application made for the site plans completed on behalf of Rapp Road Development, LLC, One Crossgates Mall Road, Albany, NY 12203.

2.0 PROJECT DESCRIPTION

The overall project is comprised of three separate sites. Site 1 is located on the west side of Rapp Road on approximately 19.68 acres of vacant land. A portion of the site abuts the residential development at Westmere Terrace. The site is predominately woods with an asphalt cul-de-sac at the end of Westmere Terrace. Site 2 is located on the east side of Rapp Road on approximately 16 acres of the previously developed Lawton Terrace/Gabriel Terrace neighborhood. The site abuts the proposed Site 3, Crossgates Mall Road, Western Avenue and Rapp Road. Site 3 is located on the east site of Rapp Road, and east of Site 2, on approximately 11.34 acres of previously developed land including Rielton Court and an existing

parking lot. The site abuts Crossgates Mall Road, Western Avenue, Site 2 and an access road for the Tru and Homewood Suites hotels, connecting Western Avenue to Crossgates Mall Road.

The overall site plan proposes a combination of commercial and residential uses. Site 1 proposes the development of 222 one- and two-bedroom apartments and 3,900 square feet of commercial space. The proposed mixed-use development includes two five-story buildings and three two-story buildings with covered and surface parking spaces. Site 2 proposes the development of a +/-160,000 square feet Costco with an associated fueling facility and 700 surface parking spaces. Site 3 does not currently have plans for redevelopment. A TOD zoning-compliant conceptual plan including 115,000 square feet of retail, 50,000 square feet of office space and 48 apartments has been used as the basis of design and analyzed in this report.

3.0 EXISTING SANITARY SEWER FACILITIES

3.1 Sewer Collection System

The Town of Guilderland Department of Water and Wastewater Management provides sewer services to more than 25,000 customers in the Town of Guilderland by collecting wastewater for high-level treatment. The Town's systems meet or exceed the standards set by the Department of Environmental Conservation (DEC) and the New York State Department of Health (DOH). It is our understanding, based on conversations and records received from the Town Water/Wastewater Department and Town Designated Engineer, that the area of the project sites have the ability to discharge to the municipal system. Existing municipal sanitary sewer infrastructure is located on all three project sites. Sites 2 and 3 have existing sanitary sewer lateral connections on site and are within the Town of Guilderland Sewer District (GSD) boundary. Site 1 proposes a new connection to the existing municipal system and an extension of the GSD boundary.

Site 1 will connect to the existing municipal sanitary sewer main, utilizing the terminus manhole at the end of Westmere Terrace. Sites 2 and 3 will utilize the existing sewer service connection to the municipal system within the Lawton Terrace/Gabriel Terrace neighborhood. Wastewater from these service areas discharge to the Dillenbeck Pump Station which flows to and is treated at the Albany County North Wastewater Treatment Plant. Guilderland maintains collector and interceptor sewers as part of this system. Adequate capacity exists within the eight-inch main in Westmere Terrace to convey the anticipated sewer demand generated by Site 1, and new infrastructure is proposed to accommodate the flow generated by Sites 2 and 3.

Based on conversations with the Town Water/Wastewater Department and Town Designated Engineer, it is our understanding that the Dillenbeck Pump Station is at or near capacity. As such, an upgrade to the pump station would be required to accept the additional flow generated by the project site. However, the pump station's ability to be upgraded is limited. As such, ultimately, discharge from the service area will be redirected to the Nott Road Wastewater Treatment Plant.

4.0 PROPOSED SANITARY SEWER SYSTEM

4.1 Anticipated Hydraulic Loading

Site 1 proposes apartment units within two five-story buildings and three two-story buildings. These

buildings will have 222 units with a mix of one- and two-bedroom units for a total of 333 bedrooms. The anticipated water demand and sewage loading is calculated using the New York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014) standard of 110 gallons per day (gpd) per bedroom. In addition, the approximately 3,900 sf commercial space is calculated using an estimated loading of 0.1 gpd per sf. As such, the anticipated average daily sewage loading for the proposed development serviced by The Town of Guilderland's water and sewer infrastructure is as follows:

$$\boldsymbol{Q = (333\ bedrooms\ x\ 110\ GPD) + (3,900\ sf\ x\ 0.1\ GPD) = 37,020\ GPD}$$

Historic water usage data was provided by Costco and the total anticipated sewage flow for Site 2 is estimated to be 5,500 GPD.

Site 3 proposes the potential development of a 115,000 square foot commercial space, 50,000 square foot office space and 48 multi-family apartments. The multi-family apartments will have a mix of one- and two-bedroom units for an estimated total of 72 bedrooms. The anticipated water demand and sewage loading is calculated using the New York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014) an estimated loading of 0.1 gallons per day (gpd) per square foot for the commercial space, 0.1 gpd per square foot for office space and 110 gpd per bedroom for the residential space. As such, the anticipated average daily domestic water demand and sewage loading for the site development serviced by The Town of Guilderland's water and sewer infrastructure is as follows:

$$\boldsymbol{Q = (115,000\ sf\ x\ 0.1\ GPD) + (50,000\ sf\ x\ 0.1\ GPD) + (72\ bedrooms\ x\ 110\ GPD) = 24,420\ GPD}$$

Below is a table summarizing the total average day demands for each site by use and the total average daily demand, maximum demand and peak hourly demand for the three project sites.

Summary of Anticipated Sewer Loading

Use	No. of Units	Hydraulic Loading (GPD)	Average Day Demands (GPD)
Site 1			
Apartments	333 bedrooms	110 / unit	36,630
Commercial	3,900 sq.ft.	0.1 / unit	390
Site 2			
Costco	160,000 sq.ft.	5,500	5,500
Site 3			
Commercial	115,000sq.ft.	0.1 / unit	11,500
Office	50,000 sq.ft.	0.1 / unit	5,000
Apartments	72 bedrooms	110 / unit	7,920
Average Day Total			**66,940 GPD**
Maximum Day (2x Average Day)			**133,880 GPD**
Peak Hourly (4x Average Day)			**267,760 GPD**

4.2 Nott Road Wastewater Treatment Plant

An alternate to the project discharging to the Dillenbeck Pump Station is to redirect the flows from the project area, and some of the surrounding service area, to the receiving sewers that convey wastewater to the Nott Road Wastewater Treatment Plant (WWTP). It has been reported that the Nott Road WWTP has a permitted facility design flow of 3.60 MGD and is operating under capacity.

Redirecting existing and future demands to the Nott Road WWTP will require new distribution infrastructure, a new pump station to be constructed at the Project, as well as improvements to the municipal sewer network from the terminus manhole, near the intersection of Johnston Road and Western Avenue to Ashford Drive. The new pump station would be located near the newly constructed Tru and Homewood hotels. Approximately 4,900 lineal feet of new force main and gravity sanitary sewer lines would be required to be extended from the new pump station along Crossgates Mall Road to Johnston Road and connect near the intersection of Johnston Road and Ashford Drive.

4.3 Alternate Approach Municipal System Impacts

Improvements to the municipal sanitary sewer system will be required to connect to the Nott Road WWTP. A new force main would be constructed running along Crossgates Mall Road, in front of Sites 2 and 3, and along Rapp Road toward Western Avenue. After crossing Western Avenue, the force main would connect to the existing sanitary manhole near the intersection of Wendom Road and Johnston Road. Once this connection is made, a new 8 inch PVC gravity sanitary sewer main would be constructed from the Wendom Road/Johnston Road manhole to an existing manhole on Johnston Road, near 6247 Johnston Road, across from Westmere Elementary, discharging to the existing municipal system's 8" PVC sanitary main. This existing sanitary line would remain until reaching the existing manhole at the intersection of Johnston Road and Chainyk Drive.

As part the municipal system improvements necessary for the project, a portion of the service area discharging to the Dillenbeck Pump Station, in addition to the proposed project sites, will be redirected to the Nott Road WWTP. The service area expected to be redirected from the Dillenbeck Pump Station to the Johnston Road/Chainyk manhole includes:

Summary of Sewer Proposed to be Redirected to Nott Road WWTP

Use	No. of Units	Hydraulic Loading (GPD)	Average Day Demands (GPD)
Site 1 Residential	333 bedrooms	110	36,630 GPD
Site 1 Commercial	3,900 sf	0.1	390
Costco	N/A	N/A	5,500
Site 3 Residential	72 bedrooms	110	7,920
Site 3 Office	50,000 sf	0.1	5,000
Site 3 Commercial	115,000 sf	0.1	11,500
Hilton Hotel	N/A	N/A	19,200
Westmere Terrace Neighborhood (26 homes assuming 3 bedrooms each)	78 bedrooms	110	8,580
Turnpike Barber Shop	912 sf	0.1	92
Roman Jewels	960 sf	0.1	96
Capital City Diner (Assumed 100 seats)	100 seats	35	3,500

Crispy Basil (Assumed 24 seats)	24 seats	35	840
Mobil (Assumed 2 restrooms)	2 toilets	400	800
1 Lawton Terrace (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
8 Gabriel Terrace (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
8 Rielton Court (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
Westmere FD and EMS	N/A	N/A	1,000
		Average Daily Demand	**102,038**
		Maximum Daily Demand (2x Average Daily Demand)	**204,076**
		Peak Hourly Demand (4x Average Daily Demand)	**408,152**

Currently the contributing area to the existing municipal line within Johnston Road, to the intersection of Johnston Road and Chainyk Drive, is as follows based on record sewer mapping:

Summary of Existing Tributary Area to Johnston Road/Chainyk Drive Manhole

Use	No. of Units	Hydraulic Loading (GPD)	Average Day Demands (GPD)
6283 Johnston Road	2,427 sf	0.1	243
6281 Johnston Road	1,629 sf	0.1	163
Johnston Road Residential Lots (9 homes assuming 3 bedrooms each)	27 bedrooms[1]	110	2,970
		Average Daily Demand	**3,376 GPD**
		Maximum Daily Demand (2x Average Daily)	**6,752 GPD**
		Peak Hourly Demand (4x Average Daily)	**13,504 GPD**

As such, the total average daily demand at the Johnston Road/Chainyk Drive manhole is estimated to be 105,414 GPD, the maximum daily demand to be 210,828 GPD and the peak hourly demand to be 421,656 GPD.

After exiting the Chainyk Drive/Johnston Road manhole, the existing municipal sanitary sewer main continues to the intersection of Ashford Drive and Johnston Road. The tributary area to this manhole, based on record mapping includes:

Summary of Tributary Area to Johnston Road/Ashford Drive Manhole

Use	No. of Units	Hydraulic Loading (GPD)	Average Day Demands (GPD)
Johnston/Chainyk Manhole	N/A	N/A	105,414
6268 Johnston Road (Assumed max. 101 children)	101 children	20	2,020
Johnston Road Residential (12 homes assuming 3 bedrooms each)	36 bedrooms	110	3,960
1807-1809 Western Avenue	8,186 sf	0.1	819
1805 Western Avenue	1,485 sf	0.1	149
1801 Western Avenue	5,436 sf	0.1	544

Bank of America	2,440 sf	0.1	244
1789 Western Avenue	5,628 sf	0.1	563
Paesans Pizza (Assumed 30 seats)	30 seats	25	750
Sharon Fellowship Church	5,066 sf	0.1	507
Randall Law Firm	2,122 sf	0.1	213
1775 Western Avenue	1,701 sf	0.1	171
Autozone	7,360 sf	0.1	736
Colonial Car Wash (Assumed)	N/A	N/A	3,500
1173 Western Avenue (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
Camp Terrace Residential (8 homes assuming 3 bedrooms each)	24 bedrooms	110	2,640
Brooks Rd Residential (11 homes assuming 3 bedrooms each)	33 bedrooms	110	3,630
Capital District Area Labor	4,560 sf	0.1	456
Chainyk Drive Residential (6 homes assuming 3 bedrooms each)	18 bedrooms	110	1,980
Johnston Road Residential (7 homes assuming 3 bedrooms each)	21 bedrooms	110	2,310
Westmere Elementary (Assumed)	495 students	12	5,940
Homes Terrace Residential (4 homes assuming 3 bedrooms each)	12 bedrooms	110	1,320
Geisel Lane Residential (2 homes assuming 3 bedrooms each)	6 bedrooms	110	660
Wendom Residential (7 homes assuming 3 bedrooms each)	21 bedrooms	110	2,310
Living Resources (Assumed)	6 bedrooms	110	660
Athos (Assumed 96 seats)	96 seats	35	3,360
1810 Western Avenue	3,204 sf	0.1	321
1800 Western Avenue	19,941 sf	0.1	1,995
1780 Western Avenue (1 home assuming 4 bedrooms each)	4 bedrooms	110	440
1776 Western Avenue (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
1774 Western Avenue (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
1772 Western Avenue (1 home assuming 3 bedrooms each)	3 bedrooms	110	330
Cachet Salon (Assumed)	N/A	N/A	1,500
Liz's Closet	1,364 sf	0.1	137
Pai's Tae Kwon Do	3,420 sf	0.1	342
Westmere Beverage	8,528 sf	0.1	853
Albany Psychological	1,759 sf	0.1	176
1 Ardsley Road (1 home assuming 4 bedrooms each)	4 bedrooms	110	440
Café Calabria (Assumed 30 seats)	30 seats	35	1,050

Short and Stout Tea	2,500 sf	0.1	250
Burns Management	4,300 sf	0.1	430
Decision Hair Studio (Assumed)	N/A	N/A	500
Average Daily Demand			**154,610 GPD (108 GPM/ 0.24 CFS)**
Maximum Daily Demand (2x Average Daily Demand)			**309,220 GPD (215 GPM/ 0.48 CFS)**
Peak Hourly Demand (4x Average Daily Demand)			**618,440 GPD (430 GPM/ 0.96 CFS)**

Under existing conditions, per conversations with the Town Water/Wastewater Department and record drawings, the eight-inch sanitary sewer main within exiting the Johnston Road/Chainyk Drive manhole experiences a bottleneck where the slope of the main is approximately 0.27% and is underperforming. The existing sanitary sewer main between Johnston Road and Ashford Drive would be required to be upgraded to a ten-inch main with adequate slope, creating more capacity within the line. The existing eight-inch main, at the bottleneck, has a capacity of approximately 0.76 cfs. Improving the municipal sanitary sewer from the terminus Johnston Road manhole to the Ashford manhole to a 10-inch main would allow for enough capacity to accommodate the increase in flow, as well as alleviate the existing bottleneck in the main. A 10-inch PVC pipe laid at a slope of approximately 0.27%, to match the existing slope, would have a capacity 1.14 cfs (737,133 GPD; 512 GPM) of flow, enough to handle the flow generated by the Project.

4.4 Interim Approach

The proposed Costco is located on Site 2, the Lawton Terrace/Gabriel Terrace neighborhood. A majority of the homes within the neighborhood are vacant and controlled by the Applicant, with the exception of 8 Reilton Court which is currently occupied.

Each of the homes in the Lawton Terrace/Gabriel Terrace neighborhood has an existing sanitary sewer connection to the municipal main that discharges to the Dillenbeck Pump Station. As each of these homes has an existing connection, the Applicant would have the ability to sell/rent these homes and each sanitary service would be operational, sending unmitigated flow to the Dillenbeck Pump Station. The anticipated flow if each home was to be reoccupied is shown below:

Summary of Lawton Terrace/Gabriel Terrace Neighborhood

Use	No. of Units	Hydraulic Loading (GPD)	Average Day Demands (GPD)
6283 Johnston Road (20 homes assuming 3 bedrooms each)	60 bedrooms	110	6,600
Average Daily Demand			**6,600 GPD**
Maximum Daily Demand (2x Average Daily)			**13,200 GPD**
Peak Hourly Demand (4x Average Daily)			**26,400 GPD**

Costco has an anticipated average daily demand of 5,500 GPD, as stated above, less than if the Lawton Terrace/Gabriel Terrace neighborhood was to be reoccupied. As such, the Applicant is proposing an interim approach that would allow Site 1 and Site 2 to be occupied prior to the completion of the municipal sanitary sewer upgrades to connect to the Nott Road WWTP.

The Applicant proposes to construct a temporary holding tank on Site 1 and Site 2, sized to store wastewater throughout the day and discharge, at a rate and time acceptable to the Town, during off peak

hours to the Dillenbeck Pump Station. The advantage of this approach is that Site 1 and Site 2 would be able to operate while the municipal upgrades are constructed, the Dillenbeck Pump Station is not over taxed with the Costco discharge occurring off peak, and sanitary sewer infrastructure will already be in place when construction of the municipal upgrades is complete and Costco can discharge to the Nott Road WWTP.

5.0 CONCLUSIONS

Based on the above information, conversations with the Town Water and Wastewater Department, Town Designated Engineer and record information, discharging all three project sites to the Dillenbeck Pump Station is not feasible. However, the alternate design of discharging to the Nott Road WWTP would not only allow the project sites to discharge to the municipal system but improve the municipal system where it is currently under performing and reduce the flows to the stressed Dillenbeck Pump Station. In addition, the proposed interim approach for Site 1 and Site 2 would allow them to be occupied while the municipal upgrades are being constructed while maintaining the existing peak rates at the Dillenbeck Pump Station. Based on the above estimated calculations, it is our opinion that the proposed project will not have a negative impact on the municipal sanitary sewer system.

Appendix A:
Sanitary Sewer Option for Nott Road WWTP Alternative

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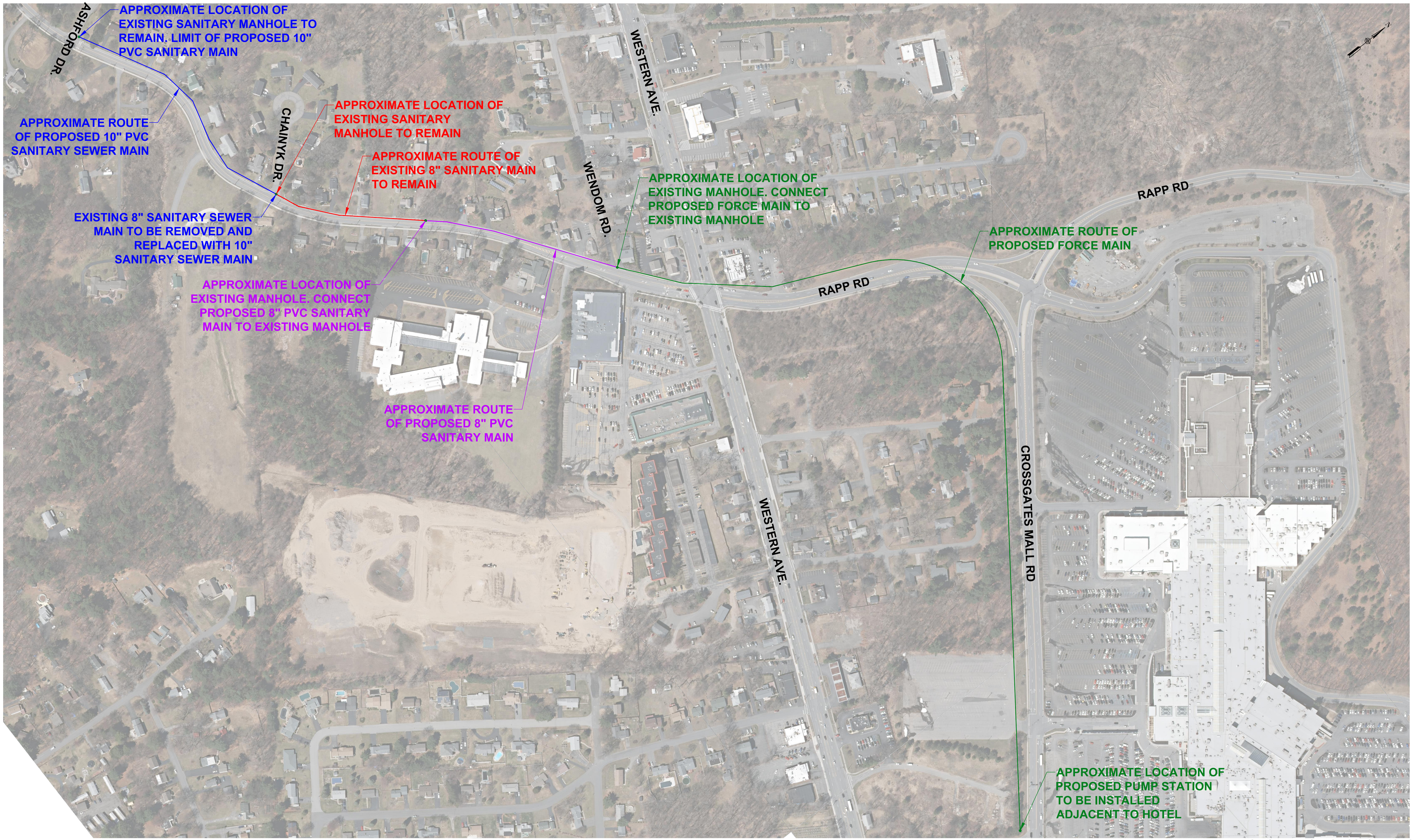

DEIS FIGURE - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

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☒ Capital District Office: 547 River Street, Troy, New York 12180, Phone: (518) 273-0055
☐ Westchester NY Office: 1 North Broadway, Suite 803, White Plains, New York 10601, Phone: (914) 997-8510
Nashville Tennessee Office: 2416 21st Ave S. (Suite 103), Nashville, Tennessee 37212, Phone: (615) 380-1359
Chattanooga Tennessee Office: 427 E. 5TH ST. (Suite 201), Chattanooga, Tennessee 37403, Phone: (423) 241-6575

rev.	date	description

RAPP ROAD RESIDENTIAL DEVELOPMENT

SANITARY SEWER OPTION FOR NOTT ROAD WWTP ALTERNATE

TOWN OF GUILDERLAND, ALBANY COUNTY, NY

designed SM	checked RK
date 02/14/20	scale 1"=150'
project no. 317AI.00	
sheet no. FIG.17B	

Drawing Name: Z:\projects\31700-31799\317AI.00 Rapp Road\DWG\ZZ_SANITARY_OPTS_317AI.00.dwg
Xref's Attached: XBASE_ENG_317AI-00; XLAYOUT_317AI-00 - Alt
Date Printed: Jun 05, 2020, 2:43pm

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Appendix B:
Marked Up Johnston Rd. As-Builts

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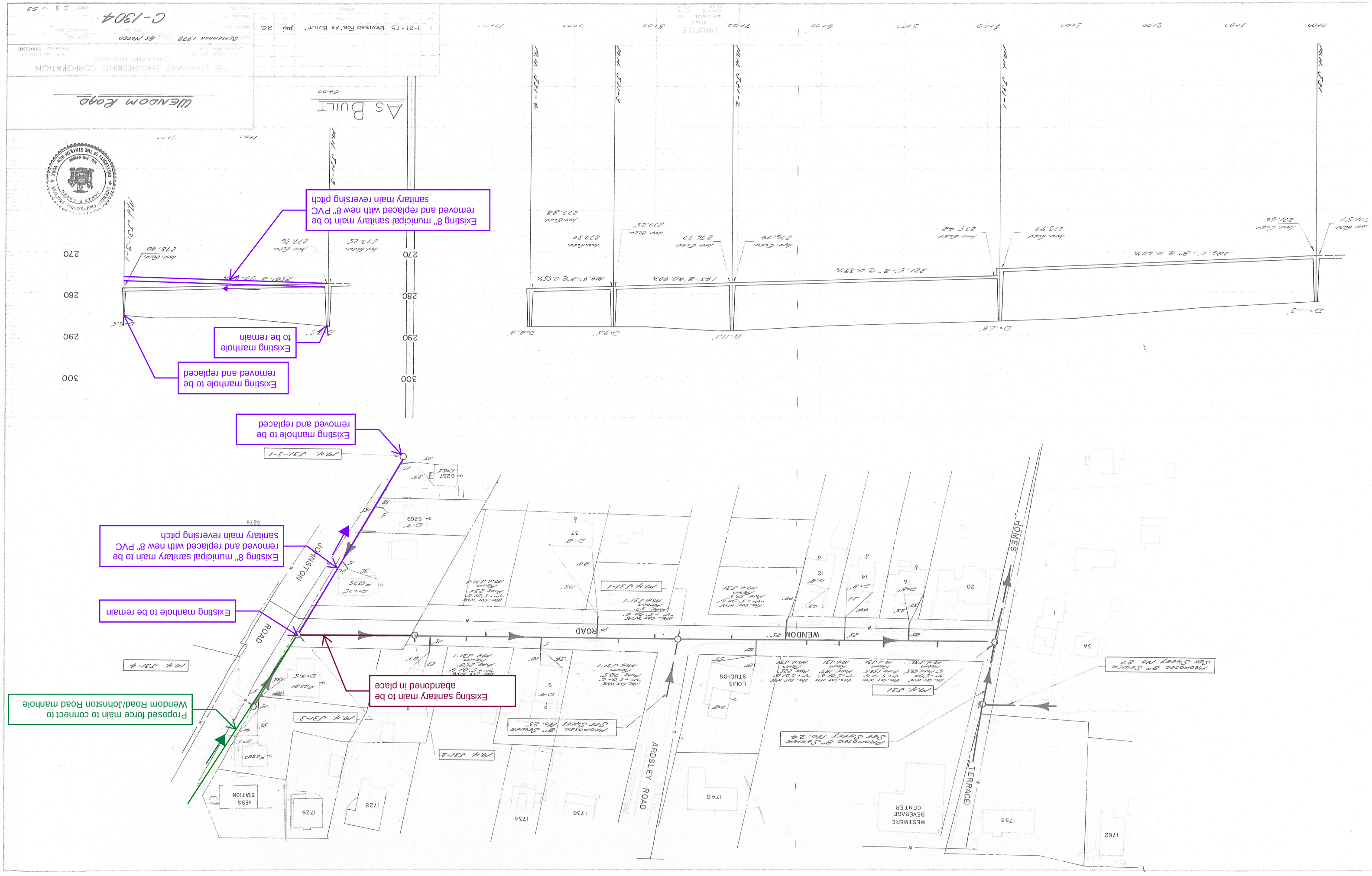
Town Of Guilderland, N.Y. - (H.H.D.B.-2)


Existing 8" municipal sanitary main to be removed and replaced with new 8" PVC sanitary main reversing pitch
Existing manhole to be remain
Existing manhole to be removed and replaced
Existing 8" municipal sanitary main to be removed and replaced with new 8" PVC sanitary main reversing pitch
Existing manhole to be remain
Existing sanitary main to be abandoned in place
Proposed force main to connect to Wendom Road/Johnston Road manhole
As Built
Wendom Road
THE STANDARD ENGINEERING CORPORATION
1 1-21-75 Revised For "As Built" jwu RC
Sentinax 1978 as Noted
C-1304
Sheet 23 of 33
PROFILE
WENDOM ROAD
JOHNSTON ROAD
ARDSLEY ROAD
HOMES TERRACE
Proposed 8" Sewer See Sheet No. 25
Proposed 8" Sewer See Sheet No. 27
Proposed 8" Sewer See Sheet No. 24
MH. J31-1
MH. J31-2
MH. J31-3
MH. J31-4
MH. J31
HESS STATION
WESTMERE BEVERAGE CENTER
LOUIS STUDIOS
1726
1728
1734
1736
1740
1758
1762
6267
6269
6276
6275
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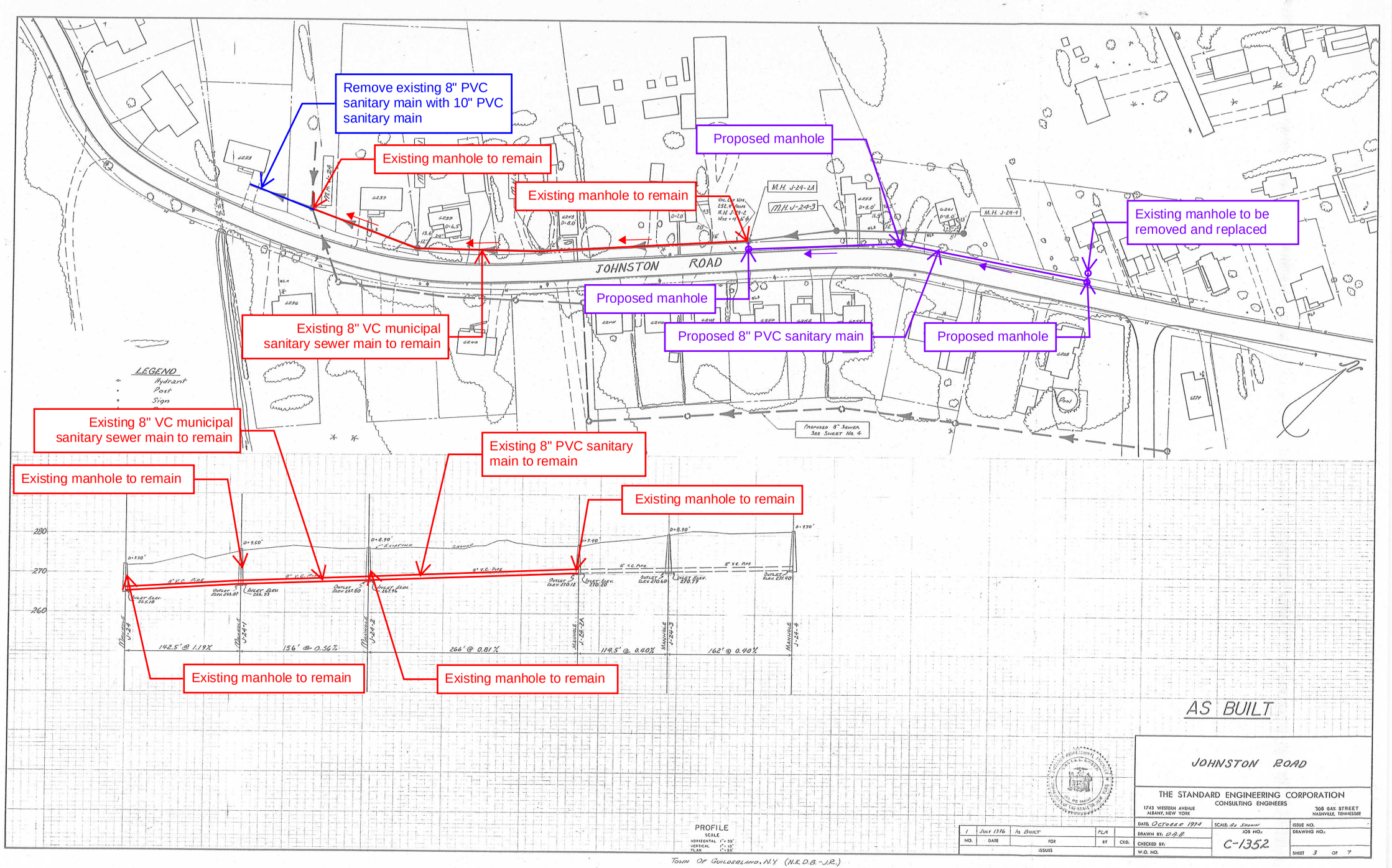
Remove existing 8" PVC sanitary main with 10" PVC sanitary main
Existing manhole to remain
Existing manhole to remain
Proposed manhole
Existing manhole to be removed and replaced
JOHNSTON ROAD
M.H. J-24-2A
M.H. J-24-3
M.H. J-24-4
Proposed manhole
Existing 8" VC municipal sanitary sewer main to remain
Proposed 8" PVC sanitary main
Proposed manhole
LEGEND
Hydrant
Post
Sign
Existing 8" VC municipal sanitary sewer main to remain
Existing 8" PVC sanitary main to remain
Existing manhole to remain
Existing manhole to remain
280
270
260
8" V.C. PIPE
142.5' @ 1.19%
156' @ 0.56%
266' @ 0.81%
114.5' @ 0.40%
162' @ 0.40%
Existing manhole to remain
Existing manhole to remain
PROFILE
SCALE
HORIZONTAL 1" = 50'
VERTICAL 1" = 10'
PLAN 1" = 50'
AS BUILT
JOHNSTON ROAD
THE STANDARD ENGINEERING CORPORATION
CONSULTING ENGINEERS
1743 WESTERN AVENUE
ALBANY, NEW YORK
309 GAY STREET
NASHVILLE, TENNESSEE
1 JULY 1976 As Built FLA
DATE OCTOBER 1974
SCALE As Shown
JOB NO. C-1352
ISSUE NO.
DRAWING NO.
SHEET 3 OF 7
TOWN OF GUILDERLAND, N.Y. (N.K. D.B. - J.R.)

Existing manhole to remain

Existing 8" VC municipal sanitary sewer main to be removed and replaced with 10" PVC sanitary sewer main. Maintain existing slope

Existing manhole to remain

Existing 8" VC municipal sanitary sewer main to be removed and replaced with 10" PVC sanitary sewer main. Maintain existing slope

Existing manhole to remain

M.H. J22

M.H. J23

M.H. J24

M.H. J25

M.H. J26

M.H. J27

Existing Sanitary Sewer

Existing M.H. J30

Termination Of Sanitary Sewer

See Proposed Sanitary Sewers Sheet 4 of 7

JOHNSON ROAD

HOMES TERRACE

Note: The Contractor shall obtain field locations of service laterals from the Engineer.

LEGEND
Hydrant
Post
Sign
Pole
Lamp Post

See K.K.D.B. Contract No. 16

Existing 8" VC municipal sanitary sewer main to be removed and replaced with 10" PVC sanitary sewer main. Maintain existing slope

Existing manhole to remain

Existing manhole to remain

Existing manhole to remain

15" R.C.P. Culvert

266'-8" V.C. @ 0.52%

200'-8" V.C. @ 0.50%

357'-8" V.C. @ 0.40%

168.5'-8" V.C. @ 0.38%

220.7'-8" V.C. @ 0.47%

287'-8" V.C. @ 0.37%

Inv. Elev. 261.80

Inv. Elev. 261.93

Inv. Elev. 263.33

Inv. Elev. 263.66

Inv. Elev. 264.45

Inv. Elev. 264.56

Inv. Elev. 265.99

Inv. Elev. 266.26

Inv. Elev. 266.89

Inv. Elev. 267.15

Inv. Elev. 268.19

Inv. Elev. 268.24

Inv. Elev. 268.37

Inv. Elev. 267.55

Inv. Elev. 267.30 (Existing)

280
270
260

As Built

PROFILE
SCALE
HORIZONTAL 1" = 50'
VERTICAL 1" = 10'
PLAN 1" = 50'

Alteration of this document, except by a licensed professional engineer, is illegal

NO.	DATE	ISSUES	BY	CK'D.
1	12-1-75	Revised For "As Built"	JMH	RC

HOMES TERRACE EXTENSION AND JOHNSTON ROAD

THE STANDARD ENGINEERING CORPORATION
CONSULTING ENGINEERS
1743 WESTERN AVENUE, ALBANY, NEW YORK
308 GAY STREET, NASHVILLE, TENNESSEE

DATE: October 23, 1974 | SCALE: As Shown | ISSUE NO.
DRAWN BY: D.A.B. | JOB NO.: C-1304 | DRAWING NO.:
CHECKED BY: JNL
W.O. NO.
SHEET 3 OF 7

Town Of Guilderland, N.Y. (K.K.D.B.-J.R.)

Existing 8" VC municipal sanitary sewer main to be removed and replaced with 10" PVC sanitary sewer main. Maintain existing slope

Existing manhole to remain

Existing manhole to remain

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LEGEND
Hydrant
Post
Sign
Pole
L.P. Lamp Post

ILDRA LANE
JOHNSTON ROAD
M.H. J16
M.H. J16A
M.H. J17
M.H. J18
M.H. J19
M.H. J20
M.H. J21
M.H. J22
SWAMP
See W.E.D.B. Contract 16
See W.E.D.B. Contract 14
See Proposed Sanitary Sewers Sheet 3 of 7
NOTE: THE CONTRACTOR SHALL OBTAIN FIELD LOCATIONS FOR SERVICE LATERALS FROM THE ENGINEER.

PROFILE
SCALE
HORIZONTAL 1" = 50'
VERTICAL 1" = 10'
PLAN 1" = 50'

280
270
260

THE ST... CORPORATION
CONSULTING ENGINEERS
1743 WESTERN AVENUE ALBANY, NEW YORK
308 GAY STREET NASHVILLE, TENNESSEE

DATE: OCTOBER, 1974	SCALE: AS SHOWN	ISSUE NO.	
DRAWN BY: D.A.B.	JOB NO.: C-1304	DRAWING NO.:	
CHECKED BY: J.M.			
W.O. NO.		SHEET 4 OF 7	

	FOR	BY	CKD.
	ISSUES		

Town of Guilderland, N.Y. (K.K.D.B.-J.P.)

Appendix C:
Sewer Service Area Maps

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CROSSGATES AREA SEWER

TOWN OF GUILDERLAND, NY

LEGEND

Sewer Lines
- 12,Gravity
- 4,Force
- 6,Force
- 8,Gravity
- 10,Gravity

- 14,Gravity
- 15,Gravity
- 16,Gravity
- Sewer Manholes

PROPERTY CLASS

48 RESIDENTIAL
35 VACANT
23 COMMERCIAL
3 SERVICE
1 ENTERTAINMENT

0 12.5 25 50 75 100 Yards

Site 1 & 1A

Site 2

Site 3

Westmere Terrace
26 Residential

Vacant

Capital City Diner

Roman Jewels

Barber

Occupied

Crispy Basil

Mobil

Hotel

1 Lawton Ter.

8 Relton Ct.

1 Gabriel Ter.
Unoccupied

Westmere Rd

Wendom Rd

Johnston Rd

Western Ave

Crossgates Mall Rd

Ramp

Krapp Rd

Lawton Ter

Gabriel Ter

Relton Ct

Heman Ct

Lehner Rd

Joseph Ter

Ruth Ter

Patricia Ln

Alton Rd

Leto Rd

Church Rd

Great Oaks Blvd

Paden Ct

Site 1 & 1A

EXISTING SEWER ON CAMP TERRACE, CENTRE DR, AND BROOKS RD

10/18/2019, 11:08:54 AM

County Boundary

Municipal Boundaries

Tax Parcels (2019)

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

In Cooperation with CHA, Inc.

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Earthstar Geographics |

EXISTING SEWER ON CHAINYK DR TO ASHFORD DR

10/18/2019, 11:13:46 AM

County Boundary

Tax Parcels (2019)

Municipal Boundaries

1:2,257

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

In Cooperation with CHA, Inc.

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Earthstar Geographics |

EXISTING SEWER ON JOHNSTON ROAD TO ASHFORD DRIVE

10/17/2019, 10:56:15 AM

County Boundary

Municipal Boundaries

Tax Parcels (2019)

1:4,514

0 0.04 0.08 0.16 mi

0 0.05 0.1 0.2 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/ Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

In Cooperation with CHA, Inc.

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Earthstar Geographics |

EXISTING SEWER ON JOHNSTON ROAD TO CHAINYK DRIVE

10/16/2019, 2:18:11 PM

County Boundary

Municipal Boundaries

Tax Parcels (2019)

1:2,257

0 0.02 0.04 0.08 mi

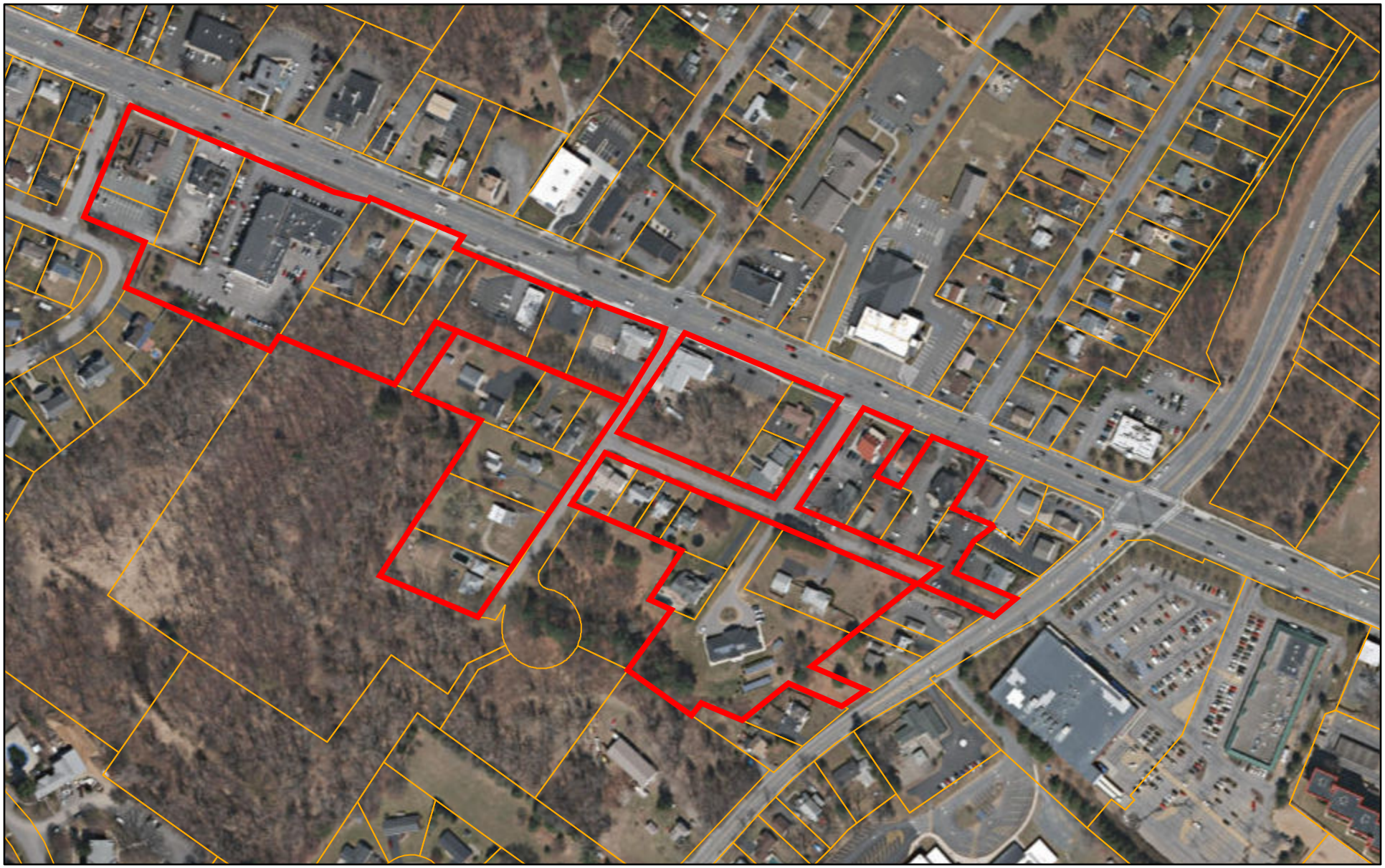
0 0.03 0.06 0.12 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/ Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

In Cooperation with CHA, Inc.

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Earthstar Geographics |

EXISTING SEWER ON WENDOM ROAD



10/18/2019, 11:36:31 AM

County Boundary

Municipal Boundaries

Tax Parcels (2019)

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

In Cooperation with CHA, Inc.

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Earthstar Geographics |

EXISTING SEWER ON WESTERN AVE TO KRAUS RD

10/17/2019, 10:43:55 AM

County Boundary

Municipal Boundaries

Tax Parcels (2019)

1:2,257

0 0.02 0.04 0.08 mi

0 0.03 0.06 0.12 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/ Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

In Cooperation with CHA, Inc.

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Earthstar Geographics |

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