SANDIDGE WAY

APARTMENTS

City of Albany

Albany County, N.Y.

ENGINEER'S REPORT
ON SEWER SERVICE

APPLICANT:
Dawn Home Management, LLC

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April 26, 2016
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INTRODUCTION

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by Dawn Homes Management, LLC (hereinafter the "Applicant") as site engineer in conjunction with the construction of apartments along Sandidge Way.

This report is prepared to address the sewer service to the site.

DESCRIPTION OF EXISTING SITE AND USE

The site is currently occupied by thirteen residential buildings which are proposed to be demolished. These are known as 2 through 11 Loughlin Street, 3 through 12 Loughlin Street and 263 through 277 Fuller Road.

DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE

The Applicant proposes to construct 252 residential units in 7 buildings, a clubhouse/office portion of Building No. 1, common areas and parking for 343 cars including 188 parking spaces at the lower level of the residential building. In addition 57 parking spaces are banked for potential futures use.

The buildings will be as follows:

Building No. 1 – portion of No. 1 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study) Office/Clubhouse occupy a portion of the garage level.

Building No. 2 – portion of No. 2 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study)

Building No. 3 – portion of No. 1 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study)

Building No. 4 – portion of No. 2 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study)

Building No. 5 – portion of No. 1 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study)

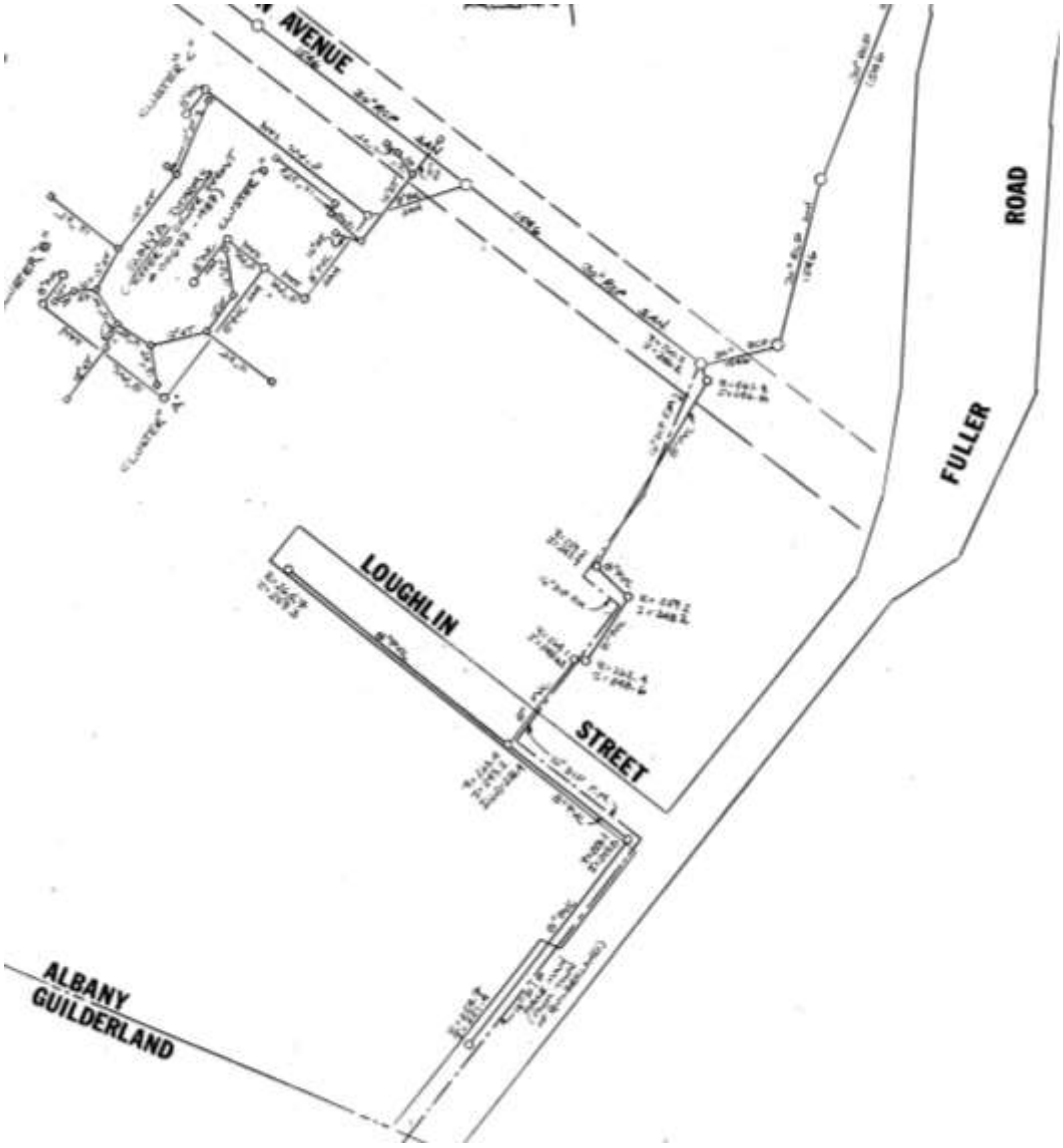
Building No. 6 – portion of No. 2 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study)

Building No. 7 – portion of No. 1 Sandidge Way – 5 stories with 36 units– – Sixteen – 2 BR Residential Units, Twenty -1 BR Residential Units (some with Study)

Total residential units are One hundred twelve (112) – 2 Bedroom Units and One hundred forty (140) - 1 Bedroom Units (some with Study). The final actual unit count and mix may change slightly as plans are finalized.

EXISTING SEWER SERVICE

The thirteen dwellings are served by an 8" PVC sewer which is connected to a manhole on the Pine Bush Interceptor Sewer. At this point the Pine Bush Interceptor Service is 36' RCP pipe sections of which had been relined due to deterioration which was caused by discharge which was untreated for Hydrogen disulfide from the Town of Guilderland Pumping Station. The 8" PVC pipe has an average grade of 0.4%. The only services to this sewer are from the existing 13 buildings to be demolished. Existing laterals will be abandoned.



Portion of Sheet 110b from Sewer Atlas

PROPOSED SEWER SERVICE

The applicant proposes to install new laterals from the existing 8" PVC sewer to serve proposed buildings.

SEWAGE GENERATION & DESIGN

Based upon the *New York State Design Standards for Intermediate Sized Wastewater Treatment Systems* (March 5, 2014) the Average Daily Flow for 364

bedrooms based upon 110 GPD per bedroom is 40,400 GPD. Based upon water use figures provided a 5 year history at the Reserve at Glenville sized units the average daily use is 80 GPD per apartment making the Average Daily Flow for the 252 units 20,160 GPD (See Appendix No. 1 for figures and Appendix No. 2 for Sewage Calculations). For the purpose of this analysis as permitted by Method 3 in the *New York State Design Standards for Intermediate Sized Wastewater Treatment Systems* (March 5, 2014) the actual use of 20,160 GPD (14.00 GPM) is utilized. The peak flow taken as 450% of the average is 0.14 CFS. The 8" PVC collection pipe has a flowing full capacity of 0.91 CFS (see Appendix 3). Since this project is the only uses connected to the 8" PVC pipe the system is adequate to accommodate the flow.

IMPACT ON PINE BUSH INTERCEPTOR SEWER & ALBANY COUNTY NORTH WASTEWATER TREATMENT PLANT

The Albany County Pine Bush Interceptor Sewer has a flowing full capacity of 27.15 CFS. The additional peak daily flow from this project will increase flow to the Albany County Pine Bush Interceptor Sewer by less than 0.5%.

The Albany County North Wastewater Treatment Plant is permitted for 35 MGD. During 2017 the average daily use was 21,033,000 GPD. The additional peak daily flow from this project will increase flow to the Albany County North Wastewater Treatment Plant by less than 0.1%.

FINANCING

All new water installations will be paid for by the applicant.

CONCLUSION:

The proposed 252 unit apartment complex can be served by the existing sewer system with no significant impact on any downstream sewers or treatment system.

Prepared by

Daniel R. Hershberg, P.E. & L.S.

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APPENDIX 1

WATER USE CALCULATION

THE RESERVE AT GLENVILLE							
PROPERTY	TIME PERIOD			METER READINGS			
	FROM	TO	DAYS	PREVIOUS	PRESENT	USAGE (CCF)	
The Reserve at Glenville - Glacier Albany							
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	545000	897000	471	
2 Reserve Court, Bldg 2	6/1/2010	5/31/2011	364	784000	1188000	540	
14 Sarnowski Drive, Bldg 3	6/1/2010	5/31/2011	364	493000	761000	358	
14 Sarnowski Drive, Bldg 4	6/1/2010	5/31/2011	364	447000	622000	234	
14 Sarnowski Drive, Bldg 5	6/1/2010	5/31/2011	364	514000	841000	437	
14 Sarnowski Drive, Bldg 6	6/1/2010	5/31/2011	364	398000	675000	370	
14 Sarnowski Drive, Bldg 7	6/1/2010	5/31/2011	364	447000	858000	549	
14 Sarnowski Drive, Bldg 8	6/1/2010	5/31/2011	364	580000	932000	471	
14 Sarnowski Drive, Bldg 9	6/1/2010	5/31/2011	364	421000	774000	472	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	427000	742000	421	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	483000	741000	345	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	514000	838000	433	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	570000	1046000	636	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	579000	967000	519	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	475000	798000	432	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	553000	916000	485	
14 Sarnowski Drive, Bldg 1	6/1/2010	5/31/2011	364	35000	40000	7	
YEARLY TOTAL (CCF)						**7180**	
YEARLY TOTAL (Gallons)						**5377821**	
AVERAGE DAILY USE (GPD)						**14734**	
AVERAGE DAILY USE PER APARTMENT (GPD/APT)						**82**	

THE RESERVE AT GLENVILLE							
PROPERTY	TIME PERIOD			METER READINGS			
	FROM	TO	DAYS	PREVIOUS	PRESENT	USAGE (CCF)	
The Reserve at Glenville - Glacier Albany							
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	897000	1154000	344	
2 Reserve Court, Bldg 2	6/1/2011	5/31/2012	365	1188000	1538000	468	
14 Sarnowski Drive, Bldg 3	6/1/2011	5/31/2012	365	761000	1063000	404	
14 Sarnowski Drive, Bldg 4	6/1/2011	5/31/2012	365	622000	936349	420	
14 Sarnowski Drive, Bldg 5	6/1/2011	5/31/2012	365	841000	1152000	416	
14 Sarnowski Drive, Bldg 6	6/1/2011	5/31/2012	365	675000	945000	361	
14 Sarnowski Drive, Bldg 7	6/1/2011	5/31/2012	365	858000	1152000	393	
14 Sarnowski Drive, Bldg 8	6/1/2011	5/31/2012	365	932000	1233000	402	
14 Sarnowski Drive, Bldg 9	6/1/2011	5/31/2012	365	774000	1042000	358	
14 Sarnowski Drive, Bldg 1(	6/1/2011	5/31/2012	365	742000	1137000	528	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	741000	989000	332	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	838000	1103000	354	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	1046000	1532000	650	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	967000	1364000	531	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	798000	1082000	380	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	916000	1312000	529	
14 Sarnowski Drive, Bldg 1	6/1/2011	5/31/2012	365	40000	45000	7	
YEARLY TOTAL (CCF)						**6876**	
YEARLY TOTAL (Gallons)						**5149881**	
AVERAGE DAILY USE (GPD)						**14109**	
AVERAGE DAILY USE PER APARTMENT (GPD/APT)						**78**	

THE RESERVE AT GLENVILLE							
PROPERTY	TIME PERIOD			METER READINGS			
	FROM	TO	DAYS	PREVIOUS	PRESENT	USAGE (CCF)	
The Reserve at Glenville - Glacier Albany							
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	1154000	1554000	535	
2 Reserve Court, Bldg 2	6/1/2012	5/31/2013	364	1538000	1944000	543	
14 Sarnowski Drive, Bldg 3	6/1/2012	5/31/2013	364	1063000	1349000	382	
14 Sarnowski Drive, Bldg 4	6/1/2012	5/31/2013	364	936349	1247962	417	
14 Sarnowski Drive, Bldg 5	6/1/2012	5/31/2013	364	1152000	1463000	416	
14 Sarnowski Drive, Bldg 6	6/1/2012	5/31/2013	364	945000	1195000	334	
14 Sarnowski Drive, Bldg 7	6/1/2012	5/31/2013	364	1152000	1404000	337	
14 Sarnowski Drive, Bldg 8	6/1/2012	5/31/2013	364	1233000	1598000	488	
14 Sarnowski Drive, Bldg 9	6/1/2012	5/31/2013	364	1042000	1445000	539	
14 Sarnowski Drive, Bldg 1(	6/1/2012	5/31/2013	364	1137000	1502000	488	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	989000	1233000	326	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	1103000	1426000	432	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	1532000	2006000	634	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	1364000	1895000	710	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	1082000	1378000	396	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	1312000	1705000	525	
14 Sarnowski Drive, Bldg 1	6/1/2012	5/31/2013	364	45000	53000	11	
YEARLY TOTAL (CCF)						**7511**	
YEARLY TOTAL (Gallons)						**5625748**	
AVERAGE DAILY USE (GPD)						**15413**	
AVERAGE DAILY USE PER APARTMENT (GPD/APT)						**86**	

THE RESERVE AT GLENVILLE							
PROPERTY	TIME PERIOD			METER READINGS			
	FROM	TO	DAYS	PREVIOUS	PRESENT	USAGE (CCF)	
The Reserve at Glenville - Glacier Albany							
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	1554000	1695000	188	
2 Reserve Court, Bldg 2	6/1/2013	5/31/2014	364	1944000	2274000	441	
14 Sarnowski Drive, Bldg 3	6/1/2013	5/31/2014	364	1349000	1686000	451	
14 Sarnowski Drive, Bldg 4	6/1/2013	5/31/2014	364	1247962	1527809	374	
14 Sarnowski Drive, Bldg 5	6/1/2013	5/31/2014	364	1463000	1688000	301	
14 Sarnowski Drive, Bldg 6	6/1/2013	5/31/2014	364	1195000	1446000	336	
14 Sarnowski Drive, Bldg 7	6/1/2013	5/31/2014	364	1404000	1630000	302	
14 Sarnowski Drive, Bldg 8	6/1/2013	5/31/2014	364	1598000	1915000	424	
14 Sarnowski Drive, Bldg 9	6/1/2013	5/31/2014	364	1445000	1813000	492	
14 Sarnowski Drive, Bldg 1(	6/1/2013	5/31/2014	364	1502000	1903000	536	
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	1233000	1438000	274	
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	1426000	1645000	293	
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	2006000	2357000	469	
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	1895000	2285000	521	
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	1378000	1654000	369	
14 Sarnowski Drive, Bldg 1(	6/1/2013	5/31/2014	364	1705000	1952000	330	
14 Sarnowski Drive, Bldg 1	6/1/2013	5/31/2014	364	53000	73000	27	
YEARLY TOTAL (CCF)						**6128**	
YEARLY TOTAL (Gallons)						**4589668**	
AVERAGE DAILY USE (GPD)						**12574**	
AVERAGE DAILY USE PER APARTMENT (GPD/APT)						**70**	

THE RESERVE AT GLENVILLE							
PROPERTY	TIME PERIOD			METER READINGS			
	FROM	TO	DAYS	PREVIOUS	PRESENT	USAGE (CCF)	
The Reserve at Glenville - Glacier Albany							
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	1695000	1729000	45	
2 Reserve Court, Bldg 2	6/1/2014	5/31/2015	364	2274000	2686000	551	
14 Sarnowski Drive, Bldg 3	6/1/2014	5/31/2015	364	1686000	1983000	397	
14 Sarnowski Drive, Bldg 4	6/1/2014	5/31/2015	364	1527809	1883906	476	
14 Sarnowski Drive, Bldg 5	6/1/2014	5/31/2015	364	1688000	1975000	384	
14 Sarnowski Drive, Bldg 6	6/1/2014	5/31/2015	364	1446000	1728000	377	
14 Sarnowski Drive, Bldg 7	6/1/2014	5/31/2015	364	1630000	1902000	364	
14 Sarnowski Drive, Bldg 8	6/1/2014	5/31/2015	364	1915000	2253000	452	
14 Sarnowski Drive, Bldg 9	6/1/2014	5/31/2015	364	1813000	2173000	481	
14 Sarnowski Drive, Bldg 1(	6/1/2014	5/31/2015	364	1903000	2349000	596	
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	1438000	1675000	317	
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	1645000	1947000	404	
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	2357000	2831000	634	
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	2285000	2792000	678	
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	1654000	1956000	404	
14 Sarnowski Drive, Bldg 1(	6/1/2014	5/31/2015	364	1952000	2255000	405	
14 Sarnowski Drive, Bldg 1	6/1/2014	5/31/2015	364	73000	85000	16	
YEARLY TOTAL (CCF)						**6980**	
YEARLY TOTAL (Gallons)						**5227728**	
AVERAGE DAILY USE (GPD)						**14323**	
AVERAGE DAILY USE PER APARTMENT (GPD/APT)						**80**	
AVERAGE DAILY USE PER APARTMENT (GPD/APT) OVER 5 YEARS						**79**	

APPENDIX 2

SEWAGE GENERATION

Sewage Generation
Lots #1 & 2 Sandidge Way

	Unit	Value	Water Use Per Unit per day(GPD) See Note 1	Water Use (GPD)
Residential	Beds	364	110	40040
	TOTAL			40040

1) Source: New York State Design Standards for Intermediate Sized Wastewater Treatment Works, NYSDEC, March 5, 2014

2) Sewage Generation is equivalent to potable water use

Utilizing Actual Water Use as per Method 3 of 80 GPD/Apartment

	Unit	Value	Water Use Per Unit per day(GPD) See Note 1	Water Use (GPD)
Residential	Apartment	252	80	20160
	TOTAL UTILIZED			**20160**
	AVERAGE FLOW GPM			**14.00**
	AVERAGE FLOW CFS			**0.0312**
	PEAK FLOW AT 450% OF AVERAGE - CFS			0.1402

APPENDIX 3

PIPE CAPACITY

THE FOLLOWING, IS THE CALCULATION FOR PIPES FLOWING FULL AS STATED IN THE CHEZY-MANNING FORMULA, WHERE: TRIBUTARY AREA

Qp = PROJECTED DISCHARGE IN C.F.S.
Q MAX = DISCHARGE FOR PIPE FLOWING FULL IN C.F.S.
n = COEFFICIENT OF ROUGHNESS
A = CROSS SECTIONAL AREA OF FLOW IN SQUARE FEET
R = HYDRAULIC RADIUS IN FT.
S = SLOPE IN FT./FT.
Vm = VELOCITY OF PIPE FLOWING FULL IN FT./SEC.
D = PIPE DIAMETER IN INCHES
Vp = PROJECTED VELOCITY IN FT./SEC.

LOCATION - 8" PVC Pipe	Qp	Q MAX	n	A	R	S	Vm	D
TOTAL	0.14	0.91	0.011	0.349	0.167	0.0040	2.6	8

LOCATION - 36" RCP Pipe	Qp	Q MAX	n	A	R	S	Vm	D
TOTAL	0.14	27.15	0.015	7.065	0.750	0.0022	3.8	36