



Loiederman
Soltesz Associates, Inc.

Drees of Thurmont

Sewer Capacity Study
LSA PROJECT NO. 1218-05-00

Prepared for: Drees Homes
7210 Corporate Court Suite B
Frederick, MD 21703
(301) 663-6104
Attn:

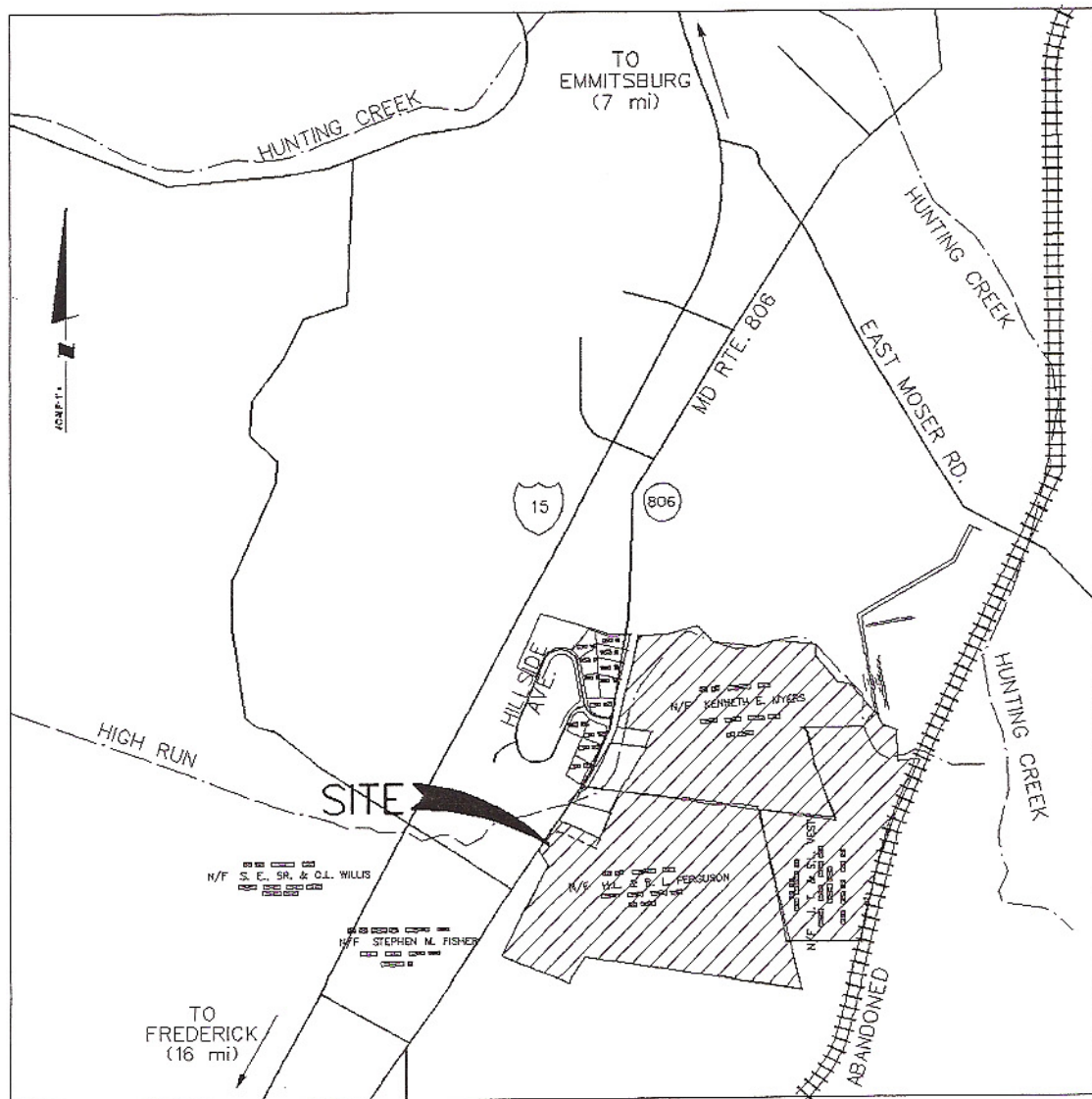
Prepared by: Loiederman Soltesz Associates, Inc.
92 Thomas Johnson Drive Suite 170
Frederick, MD. 21702
301-696-1240

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Drees of Thurmont Sewer Study

The proposed property is located in Thurmont, Frederick County, along the eastern side of Catoctin Furnace Road. The property is a proposed subdivision development of approximately 110 ac. with various housing units. The purpose of this study is to determine adequate capacity of proposed sewer systems and conveyance to downstream facility. Loiederman Soltesz Associates, Inc. will determine the estimated pipe size for conveyance of all proposed sewer peak flows.



Vicinity Map (NTS)



LOIEDERMAN SOLTESZ ASSOCIATES
 92 Thomas Johnson Drive Suite 170
 Frederick, Maryland 21701
 P:301-696-1240
 Fax 301-831-4865

Date: 8/30/2006
 Project Name: Drees Thurmont
 Project No.: 12180500
 Prepared By: RSA

Water Demand Site (Approximate 110 ac.)

AREA	SFH	TH	Average Daily Flow (gpd)	Average Daily Flow (MGD)	Peak Daily Flow (MGD)	Peak Daily Flow (gpm)
1	8	0	2000	0.002	0.008	5.6
2	3	0	750	0.001	0.003	2.1
3	4	6	2200	0.002	0.009	6.1
4	0	6	1200	0.001	0.005	3.3
5	0	12	2400	0.002	0.010	6.7
6	8	0	2000	0.002	0.008	5.6
7	10	0	2500	0.003	0.010	6.9
8	12	0	3000	0.003	0.012	8.3
9	9	0	2250	0.002	0.009	6.2
10	0	24	4800	0.005	0.019	13.3
11	0	24	4800	0.005	0.019	13.3
12	0	18	3600	0.004	0.014	10.0
13	0	24	4800	0.005	0.019	13.3
14	0	24	4800	0.005	0.019	13.3
15	0	16	3200	0.003	0.013	8.9
16	0	15	3000	0.003	0.012	8.3
17	7	0	1750	0.002	0.007	4.9
18	8	0	2000	0.002	0.008	5.6
19	5	0	1250	0.001	0.005	3.5
20	10	0	2500	0.003	0.010	6.9
21	10	0	2500	0.003	0.010	6.9
22	9	0	2250	0.002	0.009	6.2
23	11	0	2750	0.003	0.011	7.6
24	6	0	1500	0.002	0.006	4.2
25	6	0	1500	0.002	0.006	4.2
26	0	9	1800	0.002	0.007	5.0
27	0	12	2400	0.002	0.010	6.7
28	0	18	3600	0.004	0.014	10.0
Pool House	491		2946	0.003	0.012	8.2
Total	61	169	76046	0.076	0.304	211.2

SFH = Single Family Home
 TH = Townhouse or Multifamily

A Peaking Factor of 4 was used in calculating the PDF

Type of Unit	Flow Factor (gpd)	per unit
SFH	250	Per Capita
TH	200	Per Capita
Rec.	6	Per Member

Factor are taken from The Frederick County Water and Sewer Design Manual, 1994, Page C-



Pipe Capacity

Option 1

FROM PROPERTY

Flow = 0.3 MGD

LSA estimate 8" @ 0.2% SO USE 0.4%

(FREDERICK COUNTY ORDANCE IS 8" @ 0.4%)

Option 2

Existing SS 8" @ 1% Max Capacity is 0.94 MGD

Site flow – Max Capacity \leq Max Existing Flow

$0.3 - 0.94 = 0.64$ MGD

Therefore is the existing system must be less then 0.64 MGD.

The town engineer is to verify the existing system flows.



Conclusion

The proposed development was analyzed to have an 8" gravity sewer system at a minimum slope of 0.4%. The sewer flows generated by the proposed development will be treated by the existing wastewater treatment plant. The wastewater treatment plant is located adjacent to the Eastern property corner.

The first option would be a gravity line from the site to the treatment plant along the Eastern property line approximately 1200' of sewer line off site is required. The elevation of tie-in at the treatment plant has yet to be verified.

The second option proposes a tie-in to an existing gravity sanitary sewer line, approximately 600' parallel with the Northern property line. The existing line is under use at present. Development across Route 15, gravity flows through this system. The existing system was analyzed for max capacity and existing sewer flows are to be verified by the town engineer.

The final option if gravity sewer is not possible or capacity is not available. The proposed site has a gravity sewer system with a low-pressure pump station to the elevation required to tie-in to wastewater treatment plant.