Onsite Wastewater Concepts, Materials, Regulations & The Application Process Part I

E – Site Plan Review and Classroom Exercise

Instructor:
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Bureau of Environmental Health-Onsite Sewage Programs
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Classroom Exercise #1

Complete the classroom exercise #1 handout before reviewing the presentation

2

2

Classroom Exercise #1

1. What is the size of the lot in square feet? **70 ft. x 125 ft.**	**8,750 sq. ft.**
2. What is the size of the lot in acres? **8,750 sq. ft. / 43,560 sq. ft.**	**.20 acres**
3. What is the net usable area of the lot in acres? **Lot: 70 x 125 = 8750 sq. ft.** **ROW: 15 x 125 = 1875 sq. ft.** **Total: 10,625 / 43,560 = .24**	**.24 acres**

3

3

Classroom Exercise #1

4. What is the minimum setback requirement to the surface water body across the road? **There is no surface water body – only a conservation/wetlands area**	**None**
5. What is the minimum setback requirement for the private potable well?	**75 ft.**
6. What is the estimated sewage flow for the proposed residence? **From Table I**	**300 gpd**
7. What is the authorized sewage flow for the lot? **Net usable area x 1500 gal. per acre/per day** **.24 acres x 1500 = 360 gpd**	**360 gpd**

4

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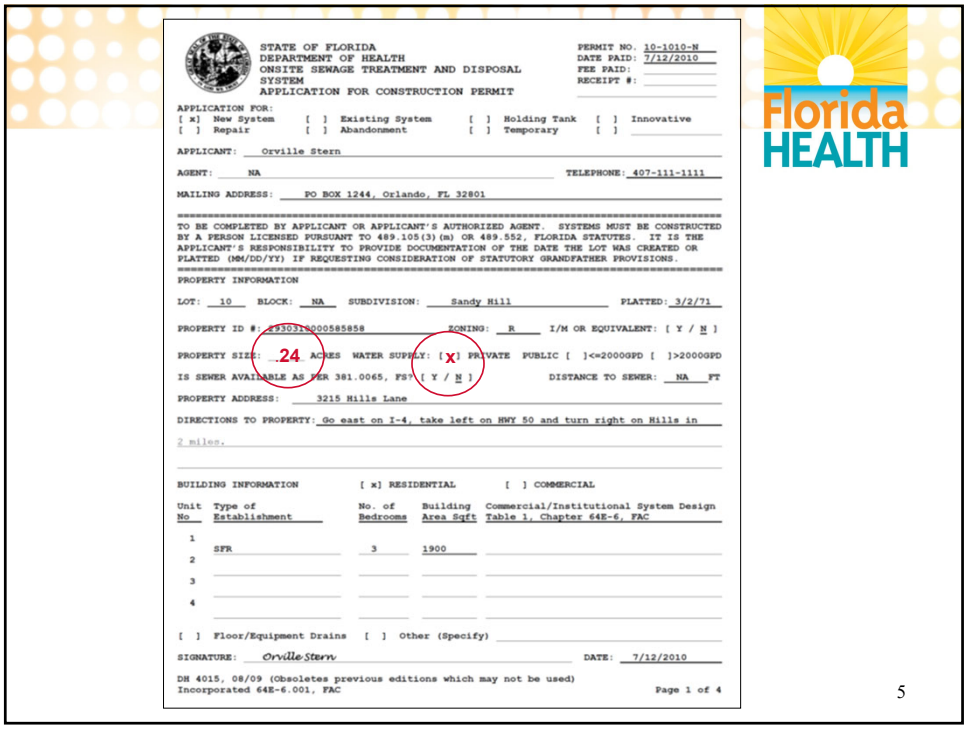

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
APPLICATION FOR CONSTRUCTION PERMIT

PERMIT NO. 10-1010-N
DATE PAID: 7/12/2010
FEE PAID:
RECEIPT #:

APPLICATION FOR:
[x] New System [ ] Existing System [ ] Holding Tank [ ] Innovative
[ ] Repair [ ] Abandonment [ ] Temporary [ ]

APPLICANT: Orville Stern

AGENT: NA TELEPHONE: 407-111-1111

MAILING ADDRESS: PO BOX 1244, Orlando, FL 32801

TO BE COMPLETED BY APPLICANT OR APPLICANT'S AUTHORIZED AGENT. SYSTEMS MUST BE CONSTRUCTED BY A PERSON LICENSED PURSUANT TO 489.105(3)(m) OR 489.552, FLORIDA STATUTES. IT IS THE APPLICANT'S RESPONSIBILITY TO PROVIDE DOCUMENTATION OF THE DATE THE LOT WAS CREATED OR PLATTED (MM/DD/YY) IF REQUESTING CONSIDERATION OF STATUTORY GRANDFATHER PROVISIONS.

PROPERTY INFORMATION

LOT: 10 BLOCK: NA SUBDIVISION: Sandy Hill PLATTED: 3/2/71

PROPERTY ID #: 293031000585858 ZONING: R I/M OR EQUIVALENT: [Y / N]

PROPERTY SIZE: .24 ACRES WATER SUPPLY: [X] PRIVATE PUBLIC [ ]<=2000GPD [ ]>2000GPD

IS SEWER AVAILABLE AS PER 381.0065, FS? [Y / N] DISTANCE TO SEWER: NA FT

PROPERTY ADDRESS: 3215 Hills Lane

DIRECTIONS TO PROPERTY: Go east on I-4, take left on HWY 50 and turn right on Hills in 2 miles.

BUILDING INFORMATION [x] RESIDENTIAL [ ] COMMERCIAL

Unit No	Type of Establishment	No. of Bedrooms	Building Area Sqft	Commercial/Institutional System Design Table 1, Chapter 64E-6, FAC
1	SFR	3	1900	
2				
3				
4				

[ ] Floor/Equipment Drains [ ] Other (Specify)

SIGNATURE: Orville Stern DATE: 7/12/2010

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Incorporated 64E-6.001, FAC

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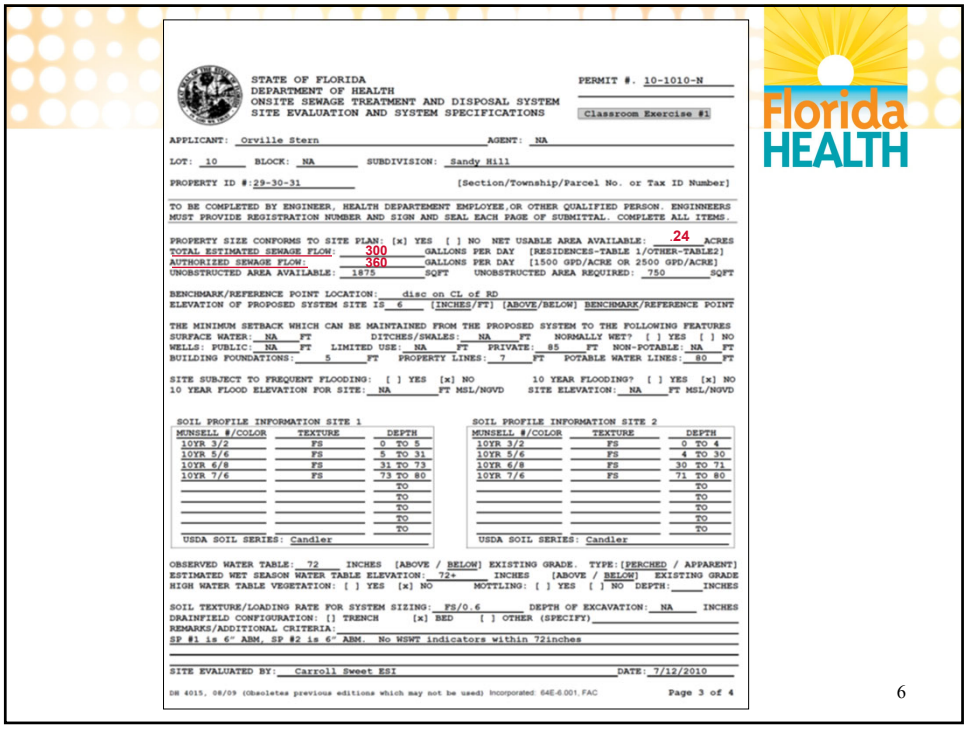

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
SITE EVALUATION AND SYSTEM SPECIFICATIONS

PERMIT #. 10-1010-N
Classroom Exercise #1

APPLICANT: Orville Stern AGENT: NA

LOT: 10 BLOCK: NA SUBDIVISION: Sandy Hill

PROPERTY ID #: 29-30-31 [Section/Township/Parcel No. or Tax ID Number]

TO BE COMPLETED BY ENGINEER, HEALTH DEPARTEMENT EMPLOYEE,OR OTHER QUALIFIED PERSON. ENGINNEERS MUST PROVIDE REGISTRATION NUMBER AND SIGN AND SEAL EACH PAGE OF SUBMITTAL. COMPLETE ALL ITEMS.

PROPERTY SIZE CONFORMS TO SITE PLAN: [x] YES [ ] NO NET USABLE AREA AVAILABLE: .24 ACRES
TOTAL ESTIMATED SEWAGE FLOW: 300 GALLONS PER DAY [RESIDENCES-TABLE 1/OTHER-TABLE2]
AUTHORIZED SEWAGE FLOW: 360 GALLONS PER DAY [1500 GPD/ACRE OR 2500 GPD/ACRE]
UNOBSTRUCTED AREA AVAILABLE: 1875 SQFT UNOBSTRUCTED AREA REQUIRED: 750 SQFT

BENCHMARK/REFERENCE POINT LOCATION: disc on CL of RD
ELEVATION OF PROPOSED SYSTEM SITE IS 6 [INCHES/FT] [ABOVE/BELOW] BENCHMARK/REFERENCE POINT

THE MINIMUM SETBACK WHICH CAN BE MAINTAINED FROM THE PROPOSED SYSTEM TO THE FOLLOWING FEATURES
SURFACE WATER: NA FT DITCHES/SWALES: NA FT NORMALLY WET? [ ] YES [ ] NO
WELLS: PUBLIC: NA FT LIMITED USE: NA FT PRIVATE: 85 FT NON-POTABLE: NA FT
BUILDING FOUNDATIONS: 5 FT PROPERTY LINES: 7 FT POTABLE WATER LINES: 80 FT

SITE SUBJECT TO FREQUENT FLOODING: [ ] YES [x] NO 10 YEAR FLOODING? [ ] YES [x] NO
10 YEAR FLOOD ELEVATION FOR SITE: NA FT MSL/NGVD SITE ELEVATION: NA FT MSL/NGVD

SOIL PROFILE INFORMATION SITE 1

MUNSELL #/COLOR	TEXTURE	DEPTH
10YR 3/2	FS	0 TO 5
10YR 5/6	FS	5 TO 31
10YR 6/8	FS	31 TO 73
10YR 7/6	FS	73 TO 80
		TO
		TO
		TO
		TO
		TO

USDA SOIL SERIES: Candler

SOIL PROFILE INFORMATION SITE 2

MUNSELL #/COLOR	TEXTURE	DEPTH
10YR 3/2	FS	0 TO 4
10YR 5/6	FS	4 TO 30
10YR 6/8	FS	30 TO 71
10YR 7/6	FS	71 TO 80
		TO
		TO
		TO
		TO
		TO

USDA SOIL SERIES: Candler

OBSERVED WATER TABLE: 72 INCHES [ABOVE / BELOW] EXISTING GRADE. TYPE:[PERCHED / APPARENT]
ESTIMATED WET SEASON WATER TABLE ELEVATION: 72+ INCHES [ABOVE / BELOW] EXISTING GRADE
HIGH WATER TABLE VEGETATION: [ ] YES [x] NO MOTTLING: [ ] YES [ ] NO DEPTH: INCHES

SOIL TEXTURE/LOADING RATE FOR SYSTEM SIZING: FS/0.6 DEPTH OF EXCAVATION: NA INCHES
DRAINFIELD CONFIGURATION: [] TRENCH [x] BED [ ] OTHER (SPECIFY)
REMARKS/ADDITIONAL CRITERIA:
SP #1 is 6" ABM, SP #2 is 6" ABM. No WSWT indicators within 72inches

SITE EVALUATED BY: Carroll Sweet ESI DATE: 7/12/2010

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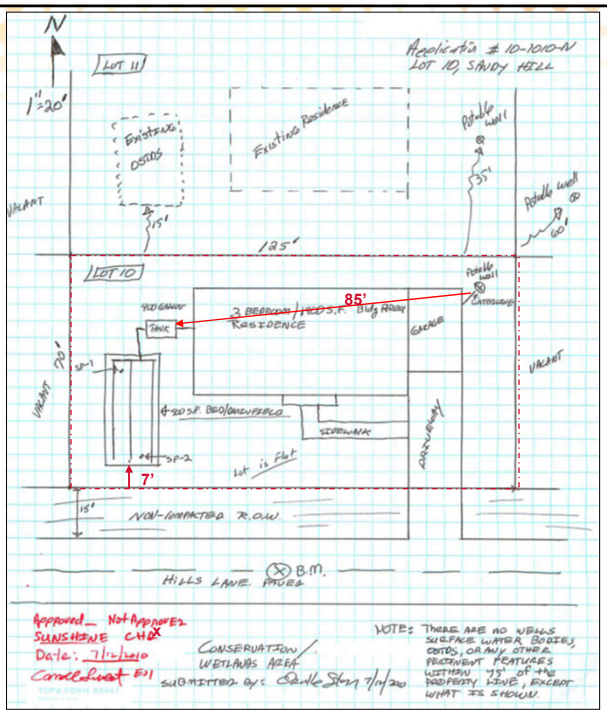

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TABLE I
For System Design
ESTIMATED SEWAGE FLOWS

RESIDENTIAL:	GPD
Residences	
(a) Single or multiple family per dwelling Unit	
1 Bedroom with 750 sq. ft. or less of building area	100
2 Bedrooms with 751-1200 sq. ft. of building area	200
3 Bedrooms with 1201-2250 sq. ft. of building area	300
4 Bedrooms with 2251-3300 sq. ft. of building area	400
For each additional bedroom or each additional 750 square feet of building area or fraction thereof in a dwelling unit, system sizing shall be increased by 60 gallons per dwelling unit.	
(b) Other per occupant	50

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Classroom Exercise #2

Complete the classroom exercise #2 handout during the presentation

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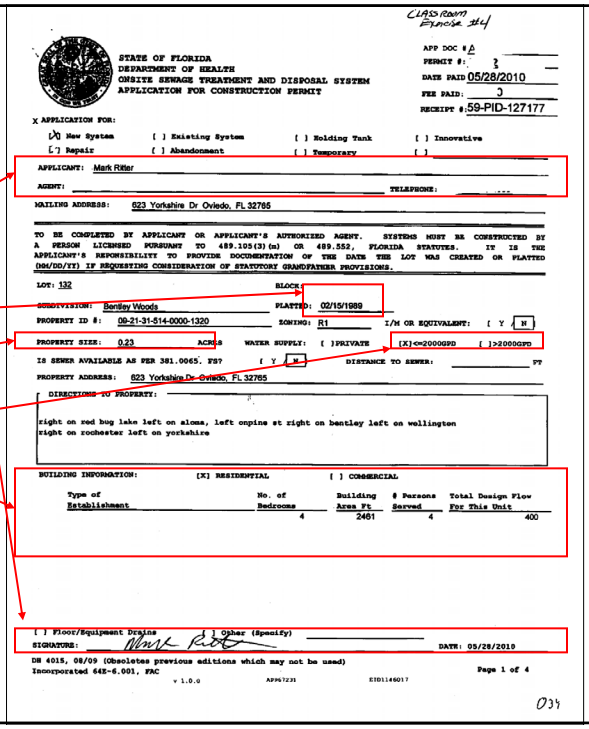
Application

Form DH 4015 pg 1 of 1
Classroom Exercise #2

- Applicant/ authorized agent (signature needed)
- Date lot platted/subdivided
- Property size
- Water supply
- Sizing criteria



CLASSROOM EXERCISE #4

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
APPLICATION FOR CONSTRUCTION PERMIT

APP DOC #: A
PERMIT #: 2
DATE PAID: 05/28/2010
FEE PAID: 3
RECEIPT #: 59-PID-127177

X APPLICATION FOR:
[X] New System [ ] Existing System [ ] Holding Tank [ ] Innovative
[ ] Repair [ ] Abandonment [ ] Temporary [ ]

APPLICANT: Mark Ritter
AGENT: TELEPHONE:
MAILING ADDRESS: 623 Yorkshire Dr Oviedo, FL 32765

TO BE COMPLETED BY APPLICANT OR APPLICANT'S AUTHORIZED AGENT. SYSTEMS MUST BE CONSTRUCTED BY A PERSON LICENSED PURSUANT TO 489.105(3)(m) OR 489.552, FLORIDA STATUTES. IT IS THE APPLICANT'S RESPONSIBILITY TO PROVIDE DOCUMENTATION OF THE DATE THE LOT WAS CREATED OR PLATTED (MM/DD/YY) IF REQUESTING CONSIDERATION OF STATUTORY GRANDFATHER PROVISIONS.

LOT: 132 BLOCK:
SUBDIVISION: Bentley Woods PLATTED: 02/15/1989
PROPERTY ID #: 09-21-31-514-0000-1320 ZONING: R1 I/M OR EQUIVALENT: [Y] [N]
PROPERTY SIZE: 0.23 ACRES WATER SUPPLY: [ ]PRIVATE [X]<=2000GPD [ ]>2000GPD
IS SEWER AVAILABLE AS PER 381.0065, FS? [Y] [N] DISTANCE TO SEWER: FT
PROPERTY ADDRESS: 623 Yorkshire Dr Oviedo, FL 32765
DIRECTIONS TO PROPERTY:
right on red bug lake left on aloma, left onpine st right on bentley left on wellington right on rochester left on yorkshire

BUILDING INFORMATION: [X] RESIDENTIAL [ ] COMMERCIAL

Type of Establishment	No. of Bedrooms	Building Area Ft	# Persons Served	Total Design Flow For This Unit
	4	2461	4	400

[ ] Floor/Equipment Drains [ ] Other (Specify)
SIGNATURE: DATE: 05/28/2010

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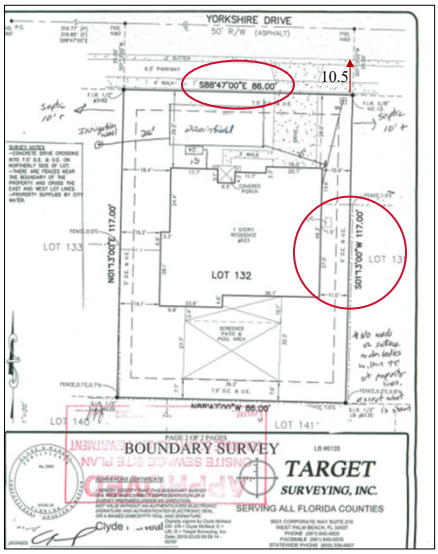
Has the lot size been confirmed?

Yes. With a survey.



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Does this lot meet lot size requirements?

The lot was platted on 2/15/1989

and is served by public water.

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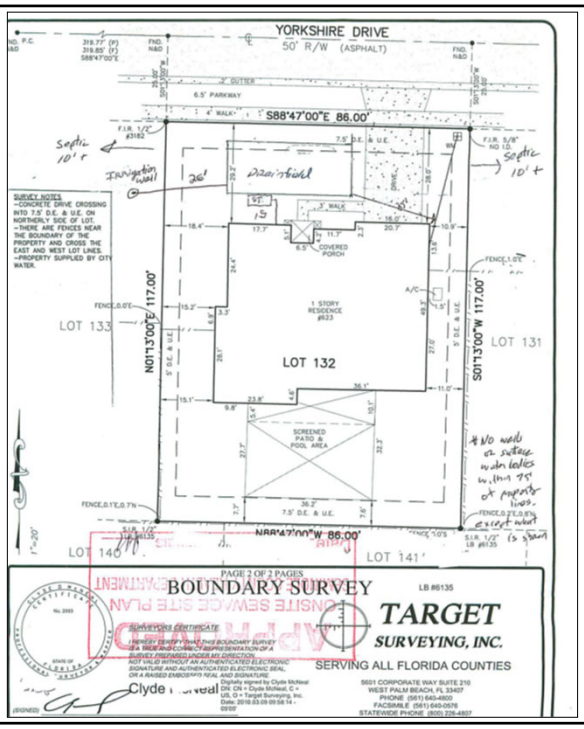
Site Plan



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Lot size and Determination of Net Usable Area:

- Calculate Property Dimensions (Lot Size)
  86 ft. x 117 ft. = 10,062 sq. ft.
- Add permissible public rights-of-way and easements
  10.5 ft. x 86 ft. = 903 sq. ft.
- Exclude paved and compacted road beds in rights-of-way
- Exclude surface water bodies
  NA
- Calculate in Acreage – **Net Usable Area of Lot**
  10,062 sq. ft. + 903 sq. ft. = 10,965 sq. ft.
  (10,965 sq. ft. / 43,560 sq. ft. per acre) = .25 **acres**

Net usable area of property in acres exclusive of all paved areas and prepared road beds within public rights-of way or easements and exclusive of streams, lakes, normally wet drainage ditches, marshes, or other such bodies of water. Contiguous unpaved an non-compacted road rights-of-way and easements with no subsurface obstructions may be included in calculating lot area. 6464E-6.005(7)(c), F. A. C.

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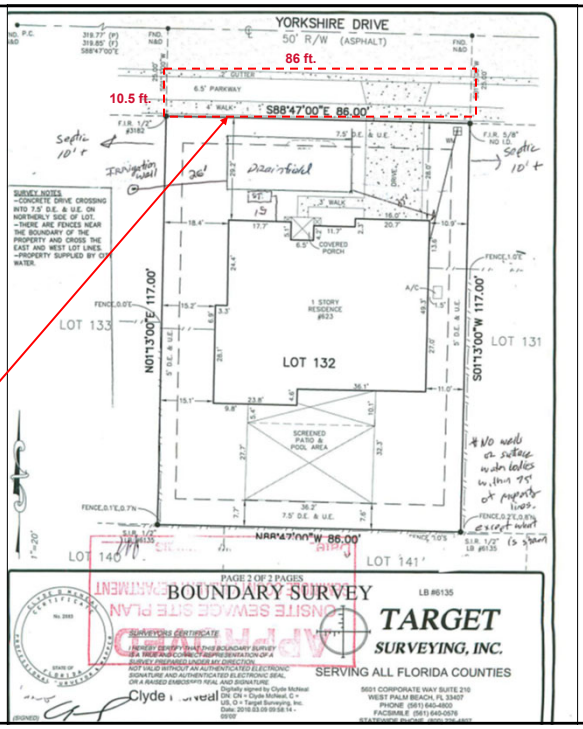
Site Plan Classroom Exercise

- Net Usable Area Available is **10,965** sq. ft. or **.25** acres
- Includes non-compacted ROW **(10.5 ft. x 86 ft = 903 sq. ft.)**



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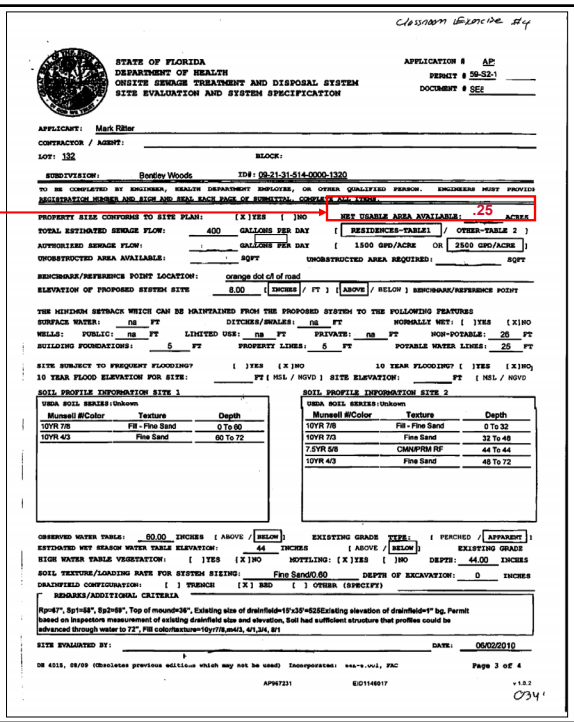
Site Evaluation
Form DH 4015
Classroom Exercise

- Net Usable Area Available



Note: The remainder of the site evaluation is covered in ACT days 2 and 3 – Soils Course

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Estimated Sewage Flow

64E-6.008, Table I

4 bedroom single family residence with **2461 sq. ft. bldg. area** requires

400 gallons per day

(must be consistent with the application sizing criteria and floor plan)

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TABLE I
For System Design
ESTIMATED SEWAGE FLOWS

RESIDENTIAL:	GPD
Residences	
(a) Single or multiple family per dwelling Unit	
1 Bedroom with 750 sq. ft. or less of building area	100
2 Bedrooms with 751-1200 sq. ft. of building area	200
3 Bedrooms with 1201-2250 sq. ft. of building area	300
4 Bedrooms with 2251-3300 sq. ft. of building area	400
For each additional bedroom or each additional 750 square feet of building area or fraction thereof in a dwelling unit, system sizing shall be increased by 60 gallons per dwelling unit.	
(b) Other per occupant	50

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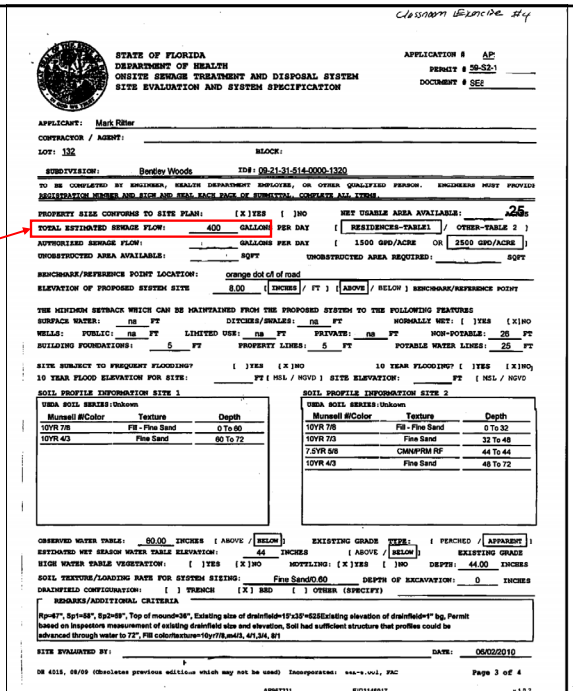
Site Evaluation
Form DH 4015
Classroom Exercise

- Estimated sewage flow



Classroom Exercise #4

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
SITE EVALUATION AND SYSTEM SPECIFICATION

APPLICATION # AP
PERMIT # 50-52-1
DOCUMENT # SE2

APPLICANT: Mark Ritter
CONTRACTOR / AGENT:
LOT: 132 BLOCK:
SUBDIVISION: Bentley Woods ID#: 09-21-31-514-0000-1320

TO BE COMPLETED BY ENGINEER, HEALTH DEPARTMENT EMPLOYEE, OR OTHER QUALIFIED PERSON. ENGINEERS MUST PROVIDE REGISTRATION NUMBER AND SIGN AND SEAL EACH PAGE OF SUBMITTAL. COMPLETE ALL ITEMS.

PROPERTY SIZE CONFORMS TO SITE PLAN: [X] YES [ ] NO NET USABLE AREA AVAILABLE: .25 ACRES
TOTAL ESTIMATED SEWAGE FLOW: 400 GALLONS PER DAY [RESIDENCES-TABLE1 / OTHER-TABLE 2]
AUTHORIZED SEWAGE FLOW: GALLONS PER DAY [1500 GPD/ACRE OR 2500 GPD/ACRE]
UNOBSTRUCTED AREA AVAILABLE: SQFT UNOBSTRUCTED AREA REQUIRED: SQFT
BENCHMARK/REFERENCE POINT LOCATION: orange dot of of road
ELEVATION OF PROPOSED SYSTEM SITE 8.00 [INCHES / FT] [ABOVE / BELOW] BENCHMARK/REFERENCE POINT

THE MINIMUM SETBACK WHICH CAN BE MAINTAINED FROM THE PROPOSED SYSTEM TO THE FOLLOWING FEATURES

SURFACE WATER:	ns FT	DITCHES/SWALES:	ns FT	NORMALLY WET:	[ ]YES [X]NO		
WELLS: PUBLIC:	ns FT	LIMITED USE:	ns FT	PRIVATE:	ns FT	NON-POTABLE:	26 FT
BUILDING FOUNDATIONS:	5 FT	PROPERTY LINES:	5 FT	POTABLE WATER LINES:	25 FT		

SITE SUBJECT TO FREQUENT FLOODING? [ ]YES [X]NO 10 YEAR FLOODING? [ ]YES [X]NO
10 YEAR FLOOD ELEVATION FOR SITE: FT [MSL / NGVD] SITE ELEVATION: FT [MSL / NGVD]

SOIL PROFILE INFORMATION SITE 1
USDA SOIL SERIES: Unkown

Munsell #/Color	Texture	Depth
10YR 7/8	Fill - Fine Sand	0 To 60
10YR 4/3	Fine Sand	60 To 72

SOIL PROFILE INFORMATION SITE 2
USDA SOIL SERIES: Unkown

Munsell #/Color	Texture	Depth
10YR 7/8	Fill - Fine Sand	0 To 32
10YR 7/3	Fine Sand	32 To 48
7.5YR 5/8	CMNPRM RF	44 To 44
10YR 4/3	Fine Sand	48 To 72

OBSERVED WATER TABLE: 60.00 INCHES [ABOVE / BELOW] EXISTING GRADE TYPE: [PERCHED / APPARENT]
ESTIMATED WET SEASON WATER TABLE ELEVATION: 44 INCHES [ABOVE / BELOW] EXISTING GRADE
HIGH WATER TABLE VEGETATION: [ ]YES [X]NO MOTTLING: [X]YES [ ]NO DEPTH: 44.00 INCHES
SOIL TEXTURE/LOADING RATE FOR SYSTEM SIZING: Fine Sand/0.60 DEPTH OF EXCAVATION: 0 INCHES
DRAINFIELD CONFIGURATION: [ ] TRENCH [X] BED [ ] OTHER (SPECIFY)

REMARKS/ADDITIONAL CRITERIA
Rp=67", Sp1=58", Sp2=68", Top of mound=36", Existing size of drainfield=15'x35'=525Existing elevation of drainfield=1" bg, Permit based on inspectors measurement of existing drainfield size and elevation, Soil had sufficient structure that profiles could be advanced through water to 72", Fill color/texture=10yr7/8,sm4/3, 4/1,3/4, 5/1

SITE EVALUATED BY: DATE: 06/02/2010

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AP967231 EID1146017 v1.0.2

034'

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Authorized Sewage Flow

Florida HEALTH

Lots served by a public water system:
Net usable area (acres) x 2500 gpd per acre

.25 acres x 2500 gpd per acre =
625 gpd.

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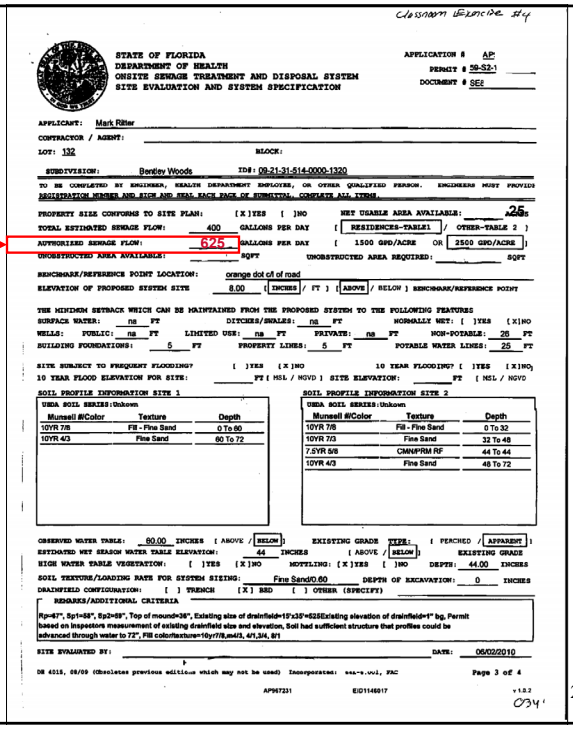
Site Evaluation
Classroom Exercise

- Authorized Sewage Flow



STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
SITE EVALUATION AND SYSTEM SPECIFICATION

APPLICANT: Mark Ritter
LOT: 132
SUBDIVISION: Bentley Woods
PROPERTY SIZE CONFORMS TO SITE PLAN: [X] YES [ ] NO
TOTAL ESTIMATED SEWAGE FLOW: 400 GALLONS PER DAY
AUTHORIZED SEWAGE FLOW: 625 GALLONS PER DAY

SOIL PROFILE INFORMATION SITE 1
USDA SOIL SERIES: Unkown

Munsell #/Color	Texture	Depth
10YR 7/8	Fill - Fine Sand	0 To 60
10YR 4/3	Fine Sand	60 To 72

SOIL PROFILE INFORMATION SITE 2
USDA SOIL SERIES: Unkown

Munsell #/Color	Texture	Depth
10YR 7/8	Fill - Fine Sand	0 To 32
10YR 7/3	Fine Sand	32 To 48
7.5YR 5/8	CMNPRM RF	44 To 44
10YR 4/3	Fine Sand	48 To 72

OBSERVED WATER TABLE: 60.00 INCHES
ESTIMATED WET SEASON WATER TABLE ELEVATION: 44 INCHES
SOIL TEXTURE/LOADING RATE FOR SYSTEM SIZING: Fine Sand/0.60
DRAINFIELD CONFIGURATION: [ ] TRENCH [X] BED [ ] OTHER (SPECIFY)
REMARKS/ADDITIONAL CRITERIA
Rp=67", Sp1=58", Sp2=58", Top of mound=36", Existing site of drainfield=15'x35'=525Existing elevation of drainfield=1" bg, Permit based on inspectors measurement of existing drainfield size and elevation, Soil had sufficient structure that profiles could be advanced through water to 72", Fill color/texture=10yr7/8,and3, 4/1,3/4, 5/1
SITE EVALUATED BY:
DATE: 06/02/2010
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Classroom Exercise #2

1. Has the lot size been confirmed? And how?	Yes, Survey
2. Does this lot meet lot size requirements? **Need to review adjacent lots**	?
3. What are the property dimensions of the lot?	86ft. X 117ft.
4. What is the total square footage of the lot? **86 ft. x 117 ft = 10,062 SF**	10,062 SF
5. What is the total square footage of permissible rights of ways and easements?	10.5 ft x 86 ft. = 903 SF

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Classroom Exercise #2

6. Are there surface water bodies present? If so, what is the total area excluded from the net usable area?	**No / NA**
7. What is the net usable area of the lot in **acres**? **10,026 sq. ft. x 903 sq. ft. = 10,965 sq. ft.**	**10,965/43,560 = .25 acres**
8. What is the estimated sewage flow for the residence?	**400 gpd**
9. What is the sizing criteria the estimated sewage flow is based on?	**4 beds/ 2461 sf bldg area**
10. What is the authorized sewage flow for the lot? **.25 acres x 2500 GPD =**	**625 gpd**

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Classroom Exercise #3

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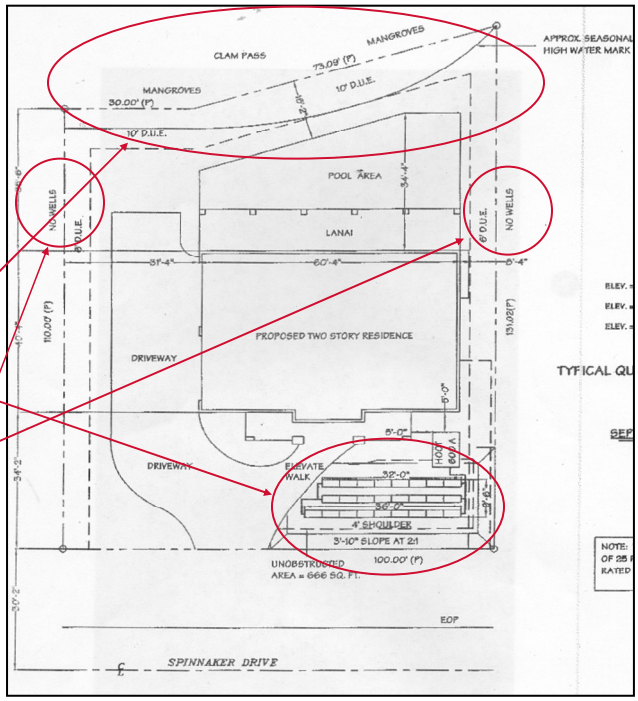
Sample

Site Plan

Is this site plan complete? **NO**

- Need MHWL labeled and elevation from surveyor
- Need soil profile locations and BM
- Need to address offsite features adequately



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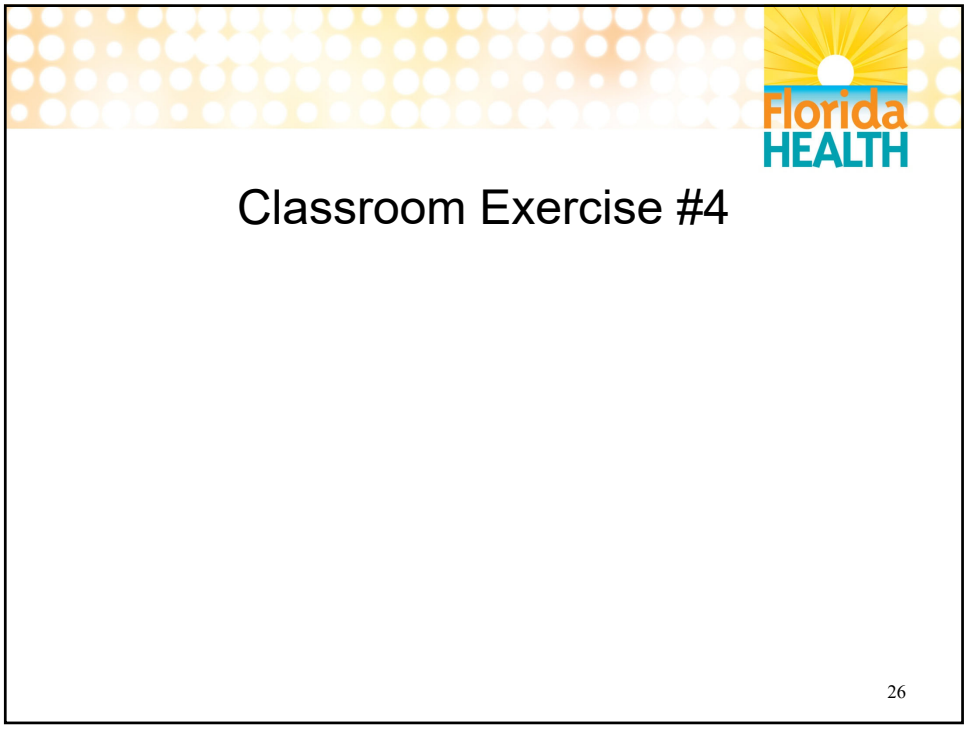

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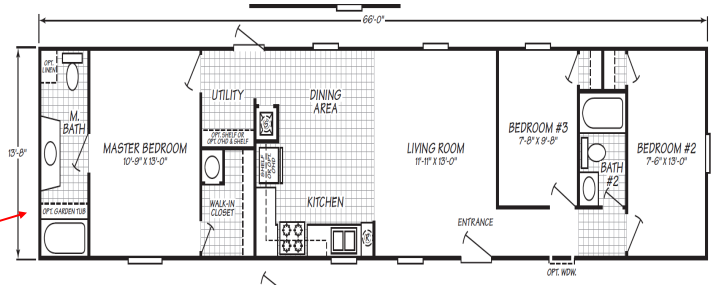
Review the differences.

What is the estimated sewage flow for each?

300 gpd

3 Bedrooms – 901 Sq. Ft. Building Area



2 Bedrooms, 1 Den – 901 Sq. Ft. Building Area

200 gpd

The "Den" would not count as a bedroom.

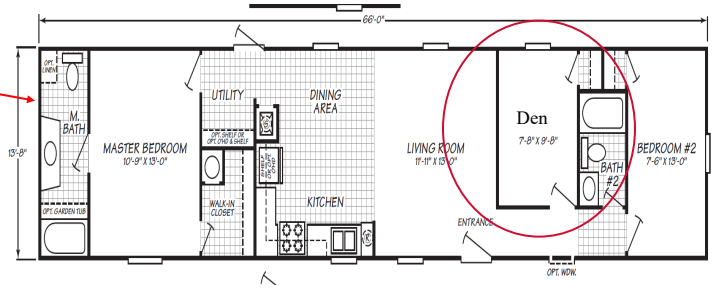


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TABLE I
For System Design
ESTIMATED SEWAGE FLOWS

RESIDENTIAL:	GPD
Residences	
(a) Single or multiple family per dwelling Unit	
1 Bedroom with 750 sq. ft. or less of building area	100
2 Bedrooms with 751-1200 sq. ft. of building area	200
3 Bedrooms with 1201-2250 sq. ft. of building area	300
4 Bedrooms with 2251-3300 sq. ft. of building area	400
For each additional bedroom or each additional 750 square feet of building area or fraction thereof in a dwelling unit, system sizing shall be increased by 60 gallons per dwelling unit.	
(b) Other per occupant	50

2 bedrooms with 901 sq. ft. bldg. area

3 bedrooms with 901 sq. ft. bldg. area

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