



Site Evaluation Requirements

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Division of Disease Control and Health Protection
Bureau of Environmental Health
Onsite Sewage Programs



What we will cover

- ✓ Net Usable Lot Area Validation
- ✓ Unobstructed Area Determination
- ✓ Establishing a Benchmark
- ✓ Sloping Lots
- ✓ System Setbacks Validation
- ✓ Excavation and Fill Determinations
- ✓ Frequent Flooding
- ✓ Soil Sizing Criteria
- ✓ Surface Water Boundaries (MAFL/MHWL)

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Site Evaluations

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**Net Usable Lot Area
64E-6.005 (7)**

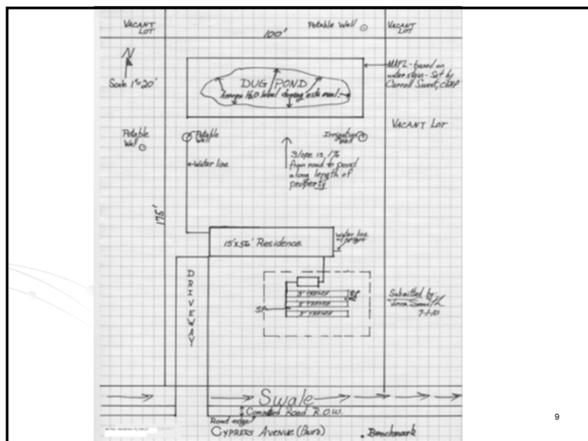
Net usable area is used to calculate the authorized sewage flow for the subject property.

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**Net Usable Lot Area
64E-6.005 (7)**

“Contiguous unpaved and non-compacted road rights-of-way, and easements with no subsurface obstructions that would affect the operation of drainfield systems, shall be included in total lot size calculations. Where an unobstructed easement is contiguous to two or more lots, each lot shall receive its pro rata share of the area contained in the easement. Surface water bodies shall not be included in total lot size calculations. subsection 64E-6.008(1), F.A.C., Table I, shall be used for determining estimated average daily sewage flows.”

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Unobstructed Area Determinations



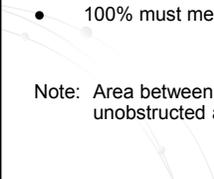
10

Unobstructed Area Determinations

64E-6.005 (4)

- Minimum 1.5 X the drainfield area
- Be contiguous (gravity and lift dosed systems)
- Does not include any tanks nor 18 inches from tank
- 100% must meet the same setbacks as the drainfield

Note: Area between drain trenches shall be included in the unobstructed area calculation.



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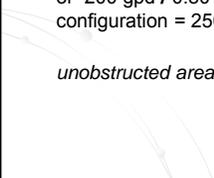
Unobstructed Area Examples

200 gpd / 0.60 gal. per sq.ft. per day for **bed**
 configuration = 334 sq.ft. drainfield

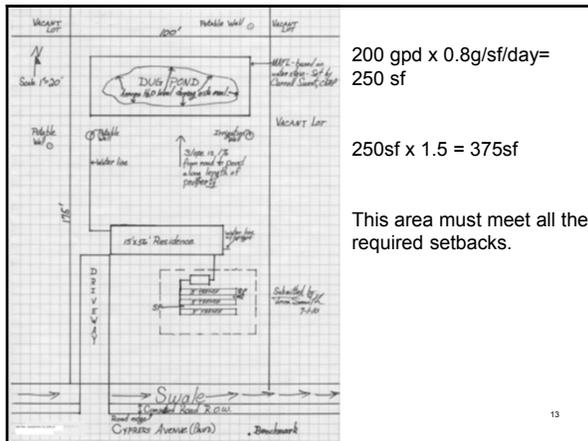
unobstructed area = (334 x 1.5) 500 sqft

or 200 gpd / 0.80 gal. per sq.ft. per day for **trench**
 configuration = 250 sq.ft. drainfield

unobstructed area = (250 x 1.5) 375 sqft



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Coastal Construction Control Line

Chapter 64E-6.004(3)(f), FAC and s. 381.0065(4), Florida Statutes (FS)

Part of the application information required for permitting.

Established per s. 161.053, FS

See Memos 06-004 and 07-007

Coastal Construction Control Line
Chapter 62B-33, FAC

- Provides the design and siting requirements that must be met to obtain a coastal construction control line permit.
- Approval or denial of a permit application is based upon a review of the potential impacts to the beach dune system, adjacent properties, native salt resistant vegetation, and marine turtles.

Coastal Construction Control Line

- Where the DEP permits construction seaward of the CCCL, the area landward of the construction setback line can be calculated as unobstructed area.
- Where DEP does not allow construction seaward of the CCCL, only that area landward of the CCCL can be calculated as unobstructed area.

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Benchmarks

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Benchmark/Fixed Point of Reference

Benchmark- "A mark on a permanent object of predetermined position and elevation used as a reference point."

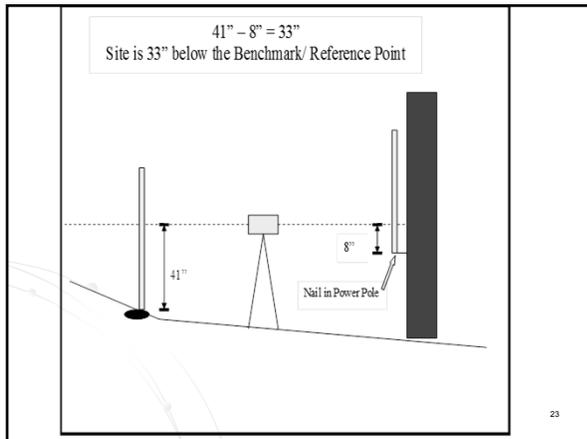
Reference Point- "A specific location (in plan elevation) to which measurements are referred."

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Establishing a Benchmark/Reference Point

- Choose a fixed point/location.
- Put an identifying mark.
- Identify the specific location on the site plan and on the form DH 4015 (3 of 4).
- Establish water table and property (at the site of the soil profiles) elevations using the benchmark or reference point.

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Shooting a Benchmark/Reference Point



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Shooting a Benchmark/Reference Point



Lot Slopes

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Lot Slopes

Slope: An elevation change over a specified distance.

Calculation:

$\Delta E/\Delta D$ where Δ = change in; E= elevation;
D= distance

Also calculated as Rise/Run

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Lot Slopes

Example: $\Delta E=15''$ over $\Delta D=75'$

- First make all units the same, convert to inches or feet (since we normally work in inches this would be best)

So: $75' = 75' \times 12''/1' = 900''$

Slope = $\Delta E/\Delta D = 15/900 = 0.0167$ or 1.67%

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Lot Slopes

This equals: 0.84" per 50" (4'2")
or 0.42" per 25" (2'1")
or 0.167" per 10"
or 0.40" per 24" (2')

(2' is the minimum distance between trenches)

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Lot Slopes

Calculate by comparison:

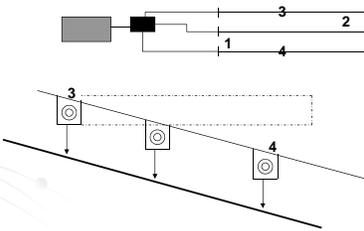
$$\Delta E/\Delta D = 1.67"/100" = x"/24" \rightarrow$$

$$1.67 \times 24/100 = x" = 40.08"/100 = x"$$

$$X" = 0.4008", \text{ or } 0.40"$$

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Lot Slopes



Need more profiles uphill and downhill
Use worst-case scenario from all sites.
Write special instructions in remarks section of the site evaluation form.

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System Setbacks (64E-6.005 and 64E-6.009)

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System Setbacks

- Setbacks must be verified at the time of the site evaluation.
- The actual measurements must be recorded on the form.
- The property lines should be located/marked prior to the site evaluation.
- For those features that are “proposed” and not on site at the time of the evaluation setbacks would be recorded based on the submitted site plan.

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System Setbacks

64E-6.005 (1)(2) & (3)

- ☞ Private potable wells (75 ft), non potable (50 ft)
- ☞ Public drinking water wells (100 – 200 ft)
- ☞ Monitoring wells (5 ft)
- ☞ Storm sewer pipe (10 ft or max possible, not <5 ft)
- ☞ Dry - ponds/drainage features, retention areas (15 ft)
- ☞ Building foundations, pilings, mobile home walls, swimming pool walls, property lines (5 ft)
- ☞ Drainfields shall not be installed below, sidewalks, decks and patios. Mound drainfield, (4 ft) from these features (the shoulder shall not be covered).

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System Setbacks

- ☞ Potable water lines (10 ft) or not less than (2 ft) if double sleeved or consist of schedule 40 PVC or stronger.
- ☞ Non-potable water lines (2 ft) and (<2 ft) if backflow devices.
- ☞ Groundwater interceptor drains (15 ft)
- ☞ Effluent transmission lines (schedule 40 PVC) – to **private potable wells, irrigation wells** and surface water bodies not less than (25 ft)
- ☞ Effluent transmission lines (schedule 40 PVC) – to property lines and building foundations not less than (2 ft)
- ☞ Effluent transmission lines (schedule 40 PVC or double sleeved) – potable water lines and storm sewer lines not less than (5 ft) see 64E-6.007(8)

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Entering a Soil Profile into the Environmental Health Database (EHD)

(formerly called "Rehost")

State of Florida
Department of Health
Onsite Sewage
Treatment and Disposal
System
Site Evaluation and
Specifications

Document #: 58795951
Permit #: 05-58-999523

Application Information:
Applicant's Name: Gainesville Church of God
Applicant's Address: 1414 30th Ave
Lot #: _____ Block #: 8-23
Subdivision: _____
Property ID #: 06187-002-000
Application Document Nbr: AP933959

Soil Profile Information:

Profile 1

Munsell #	Color	Texture	Depth	Edit
			000	

Add additional horizons for profile 1: **Click on "Add" button**

WSDA Soil Series: [Designated]

Profile 2

Munsell #	Color	Texture	Depth	Edit
			000	

Add additional horizons for profile 2:

WSDA Soil Series: [Designated]

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Soil Profile Information

Profile 1

Munsell #	Color	Texture	Depth	Edit
			000	

Add additional horizons for profile 1:

WSDA Soil Series: [Designated]

Add New Horizon For This Use:

Munsell #	Soil Texture	Depth From	Depth To
10B 2.5/3	Bedrock	0	

Profile 2

Munsell #	Color	Texture	Depth	Edit
			000	

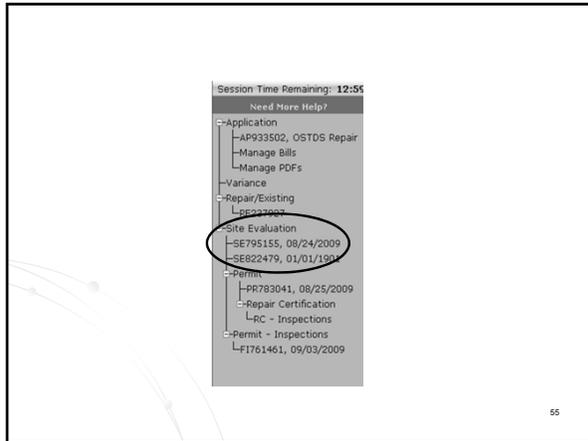
Add additional horizons for profile 2:

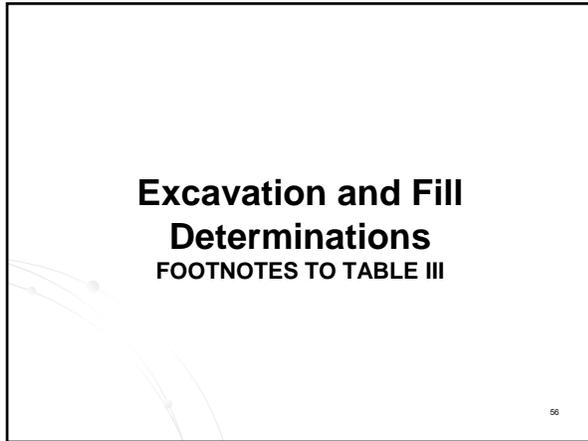
WSDA Soil Series: [Designated]

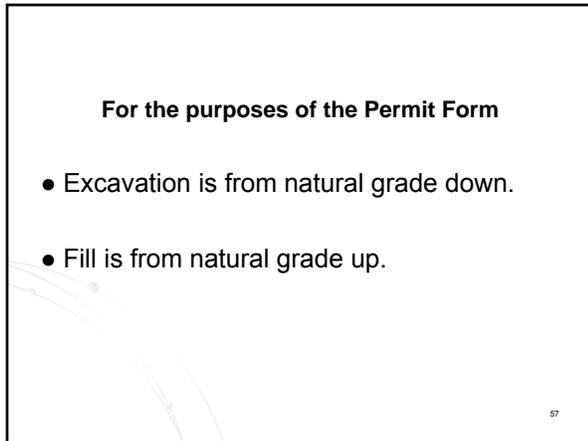
Go To Permit: [Go] [Back] [Forward] [Home] [Print] [Cancel] [Submit]

Use the Calculated Values

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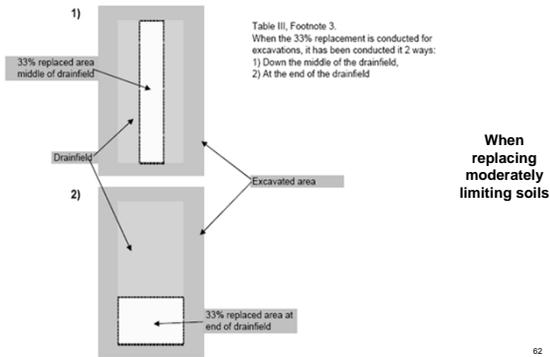


Excavation

- Must be complete removal of moderately or severely limited soil layer being replaced.
- Must be satisfactory to a minimum depth of 54 inches beneath the bottom surface of the proposed drainfield.

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Excavation



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Excavation

- When removing severely limited soil textures, removal must be 100% down to slightly limiting soil textures.
- Slightly limited soil horizon below the moderately or severely limited soil horizons must be at least 6" in thickness.

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If Spodic Layer Is Not Removed

To meet the 42 inch effective soil depth, elevate the bottom of drainfield to 24 inches above grade which equates to 36 inches above the benchmark/reference point.

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Fill

There are two things we call "fill".

Fill as the replacement material after an excavation
(must always be of slightly limited textures)

Fill used to construct the mound/filled systems
(can also be some specific moderately limited textures)

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Fill

- How do we determine how much fill is required for our example?
- How much if we excavate?
6" ESHWT = 36" of fill
- How much if we do not excavate?
Same 6" ESHWT = 42" of fill

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Soil Sizing Criteria

TABLE III
For Sizing of Drainfields Other Than Mounds

U.S. DEPARTMENT OF AGRICULTURE SOIL TEXTURE CLASSIFICATION	SOIL TEXTURE LIMITATION (PERCOLATION RATE)	MAXIMUM SEWAGE LOADING RATE TO TRENCH & BED ABSORPTION SURFACE IN GALLONS PER SQUARE FOOT PER DAY	TRENCH	BED
Sand, Coarse Sand not associated with a seasonal water table of less than 48 inches; and Loamy Coarse Sand	Slightly limited (Less than 2 Min/inch)	0.80	0.60	
Loamy Sand, Sandy Loam, Coarse Sandy Loam, and Fine Sand	Slightly limited (2-4 min/inch)	0.80	0.60	
Loam, Fine Sandy Loam, Silt Loam, Very Fine Sand, Very Fine Sandy Loam, Loamy Fine Sand, Loamy Very Fine Sand, and Sandy Clay Loam	Moderately limited (5-10 min/inch)	0.65	0.35	
Clay Loam, Silty Clay Loam, Sandy Clay,	Moderately limited (Greater than 15	0.35	0.20	

Soil Sizing Criteria

Silty Clay, and Silt	Min/inch but not exceeding 30 min/inch)		
Clay; Organic Soils; Hardpan, and Bedrock	Severely limited (Greater than 30 Min/inch)	Unsatisfactory for standard subsurface System	
Coarse Sand with an estimated wet season High water table within 48 inches of the bottom of the proposed drainfield; Gravel or Fractured Rock or Oolitic Limestone	Severely limited (Less than 1 Min/inch and a Water table less than 4 feet below The drainfield)	Unsatisfactory for standard subsurface System	

Soil Sizing Criteria 64E-6.009(3) Mounds

Fill Material	Maximum Sewage Loading Rate to Mound Drain Trench Bottom Surface in gallons per square foot per day	Maximum Sewage Loading Rate to Mound Absorption Bed Bottom Surface in gallons per square foot per day
Sand, Coarse Sand, and Loamy Coarse Sand	0.80	0.60
Fine Sand	0.80	0.60
Sandy Loam, Coarse Sandy Loam, and Loamy Sand	0.65	0.40
Fine Sandy Loam, Very Fine Sand, Loamy Fine Sand, and Loamy Very Fine Sand	0.35	0.25

How do you size a system if there was an excavation and replacement material?
(64E-6.008 Footnotes to Table III, 3)

Maximum sewage loading rates for standard subsurface systems installed in replacement areas shall be 0.80 gallons per square foot per day for trench systems and 0.60 gallons per square foot per day for absorption beds in slightly limited soil textures.

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64E-6.008, Footnote to Table III and 64E-6.009(3)

- Where more than one soil texture classification is encountered within a soil profile and it is not removed as part of a replacement, drainfield sizing for standard subsurface drainfield systems and fill drainfield systems shall be based on the most restrictive soil texture encountered within 24 inches of the bottom of the drainfield absorption surface.
- Where moderately limited soils underlie the mound within 36 inches of the bottom of the drainfield, drainfield sizing shall be based on the most restrictive soil texture existing in the profile to a depth of 36 inches below the bottom of the drainfield, using Table III for soil loading rates.

NOTE: If you cannot perform a soil boring to the required 72" depth, you can only size the system based on the information you know within the profile.

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**Frequent Flooding
Determination**

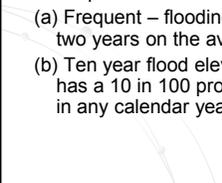


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Frequent Flooding Determination

64E-6.002(25) Flooding — a covering of soil surface by water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, elevation of the ground water table exceeding that of the soil surface, or combinations of these. Terms also associated with flooding and used elsewhere in this chapter are:

- (a) Frequent — flooding which occurs more than once every two years on the average;
- (b) Ten year flood elevation — that flood elevation which has a 10 in 100 probability of being equaled or exceeded in any calendar year.

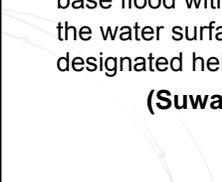


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Frequent Flooding Determinations

64E-6.002(46) Regulatory floodway — means the channel of a river or other water course and adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

(Suwannee and Aucilla)



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Frequent Flooding Determination

How do you know if the lot is subject to frequent flooding?

(FEMA FLOOD MAPS)

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Flood Zone Designations

FEMA website to look up flood information
(www.FloodSmart.Gov)

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Flood Zone Designations

B and X (shaded)-Area of moderate flood hazard.

C and X (unshaded)- Area of minimal flood hazard.

A- High Risk Area

AE-High Risk Area

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Frequent Flooding Determination

64E-6.006(6) The existing lot elevation at the site of the proposed system installation and any contiguous land referred to in subsection 64E-6.005(4), F.A.C., shall not be subject to frequent flooding. Except for areas affected by Section 381.0065(4)(t), F.S., fill material, *if permitted*, shall be placed in the area for the system and contiguous unobstructed area to raise the lot elevation above the 2 year flood.

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Surface Water Boundaries

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Surface Water Boundaries Mean Annual Flood Line (MAFL) and Mean High Water Line (MHWL)

In 1999 the Legislation amended s. 381.0065, F.S.; defining
"mean annual flood line" (MAFL)
"permanent nontidal surface water body"
"tidally influenced surface water body"

DOH shall not make the issuance of permits contingent on
DEP approval

The reason was because of consistency between the CHDs

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**MEAN ANNUAL FLOOD LINE (MAFL)
s. 381.0065(2)(i), FS**

Boundary of Permanent Non Tidal
Surface Water Bodies

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**Permanent nontidal surface water body
(PNSWB) s. 381.0065(2)(k), FS**

- PERENNIAL / INTERMITTENT STREAM
- PERENNIAL RIVER
- PERENNIAL LAKE
- SUBMERGED MARSH OR SWAMP
- SUBMERGED WOODED MARSH OR SWAMP
- SPRINGS
- SEEPS

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PNSWB

Must be identified on the most recent
quadrangle map, 7.5 minute series
(topographic), produced by the United
States Geological Survey.

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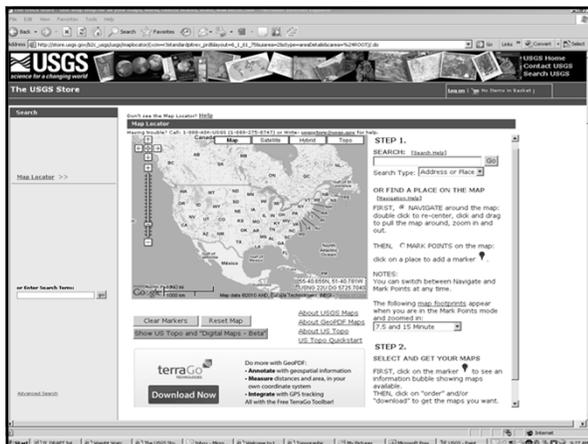
NOTE that the quad sheets cannot be used to determine the mean annual flood line. The MAFL may encompass areas that are actually distant from the PNSWB identified on the quad sheet.

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QUAD SHEETS

All CHD's should have the most recent quad sheets at this time. Additionally they should have the pamphlet on "Topographic Map Symbols" which is the legend for identification of features on the quad sheet.

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[http://store.usgs.gov/b2c_usgs/usgs/maplocator/\(xcm=r3standardpitrex_prd&layout=6_1_61_48&uiarea=2&ctype=areaDetails&area=%24ROOT\)/.do](http://store.usgs.gov/b2c_usgs/usgs/maplocator/(xcm=r3standardpitrex_prd&layout=6_1_61_48&uiarea=2&ctype=areaDetails&area=%24ROOT)/.do)

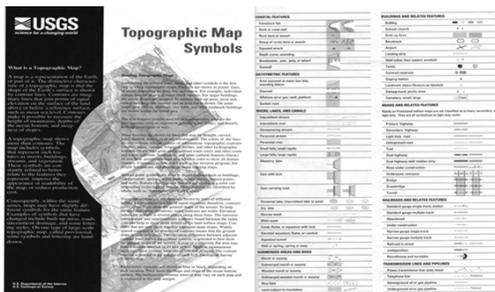
(USGS-The USGS Store-Map Locator)

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7.5 minute
Topographic
Quad Sheet



The legend for the Quad Sheets



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QUAD MAPS

Web soil survey now allows you to look at the area of interest with an overlay of the topographic maps.

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PNSWB s. 381.0065(2)(k), FS

It also means:

an artificial surface water body that does not have an impermeable bottom and side and that is designed to hold, or does hold, visible standing water for at least 180 days of the year.

Impermeable - a condition where the maximum hydraulic conductivity is less than or equal to 1×10^{-7} cm/s

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This Means:

Creeks, pond, gully, etc. could fit where the 180 day criteria is met on an annual basis, based on the artificial surface water body definition.

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**MEAN ANNUAL FLOOD LINE
(MAFL) s. 381.0065(2)(i), FS**

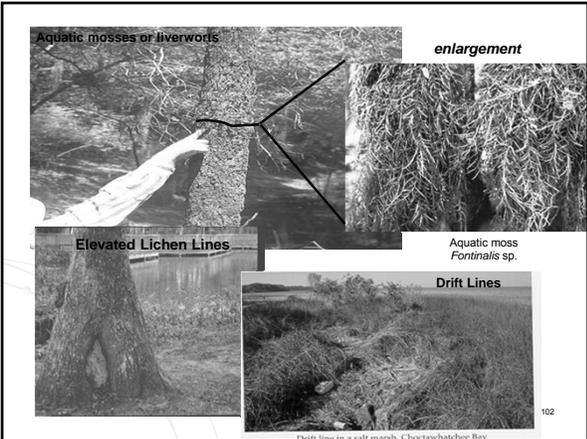
- 10 years of recorded data
- Field verify using one or more of the 7 indicators
- Combination of both

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The 7 Indicators

1. **Water stains**
2. **Hydric adventitious roots**
3. **Drift lines**
4. **Rafted debris**
5. **Aquatic mosses and liverworts**
6. **Moss collars**
7. **Lichen lines**

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**MEAN ANNUAL FLOOD LINE
s. 381.0065(2)(i), FS**

Who can determine the MAFL?

- A certified professional surveyor and mapper with experience in the determination of flood water elevation lines

OR

- Department personnel (this is at the option of the applicant)

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**MAFL Alternate Surface Water Boundary
Delineation Procedure (ASWB)**

- Applicant makes request for CHD determination in writing (see attachment in Memorandum HSES 11-006)
- If done in conjunction with CHD site evaluation, no additional fees charged.
- Applicant must mark property lines
- CHD will field verify the MAFL and clearly mark the indicator and document their determination.
- The highest indicator will be used to set the ASWB line by using basic geometric shapes whose areas can easily be calculated.
- This area will be subtracted from the total lot size to determine the net usable area and authorized sewage flow.
- If this determination means that the authorized sewage flow will be exceeded the CHD would inform the applicant that they must obtain the services of a certified professional surveyor or mapper to determine the area.
- If the applicant declines obtaining the services of a certified professional surveyor or mapper, the CHD would deny the permit based on the CHD determination.

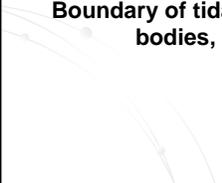
Note that setbacks will be from the actual MAFL indicator that creates the shortest distance and not from the ASWB.

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**Mean High Water Line
MHWL**

Governed by Chapter 177, Florida Statutes

Boundary of tidally influenced surface water bodies, defined in s. 177.27(15)



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**Tidally influenced surface water body
s. 381.0065(2)(o), FS**

Means a body of water that is subject to the ebb and flow of the tides



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**Tidally influenced surface water body
s. 381.0065(2)(o), FS**

Who can determine the MHWL?

- Professional Surveyor or Mapper
- Representative of U.S. Government (when approved by DEP to perform this determination)



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Mean High Water Line

Safe Uplands Line

More restrictive alternative to determining the MHWL.

A surveyor is still required.

Determined by adding 0.5ft to the nearest tidal datum point (within ½ mile radius of the established safe uplands line).

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Mean High Water Line

Sea Wall or Canal Wall

Top of wall can be used as more restrictive alternative to MHWL

Elevation of top of wall established by surveyor or mapper must be higher than the tidal datum point within ½ mile of the wall otherwise MHWL must be established by surveyor or mapper.

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Mean High Water Line

- DEP maintains information on MHWLs
- DEP also allows mathematical calculations, but a letter from DEP is necessary to validate.

More information can be found in LABINS or by calling or emailing Mr. Lamar Evers at 850-245-2606, lamar.evers@dep.state.fl.us

See interoffice memorandum 11-006 for more detail.

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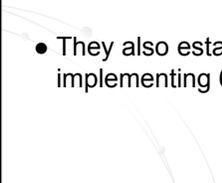
Jurisdictional Areas



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Permitting Coordination in Jurisdictional Areas

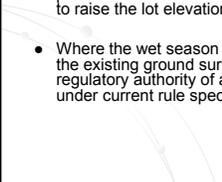
- Memo 00-014 and 11-006 describes some instances where other agencies may have jurisdiction.
- They also establish a uniform policy for implementing 64E-6.006(2) and (6), FAC.



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Permitting Coordination in Jurisdictional Areas

- For permit applications where the wet season water table is determined to be at or above the elevation of existing ground surface, the permit shall be issued requiring sufficient fill to provide a 24 inch separation from the bottom of the drainfield to the wet season water table elevation.
- For permit applications where the proposed system site is subject to frequent flooding, the permit shall be issued requiring sufficient fill be placed in the area of the system and contiguous unobstructed area to raise the lot elevation above the 2 year flood elevation.
- Where the wet season water table is not at or above the elevation of the existing ground surface, but the area may be under the regulatory authority of another agency, the permit shall be issued under current rule specifications.



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Permitting Coordination in Jurisdictional Areas

- The applicant shall be notified of the jurisdictional issues in writing.
- The appropriate regulatory agencies shall be notified of the permit issuance by copy of the letter to the applicant. In these cases, it is not appropriate to "hold" an application pending action by another regulatory agency.

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Permitting Coordination in Jurisdictional Areas

Dear Applicant:

The above referenced permit has been issued on property that may contain areas under the regulatory authority of the Florida Department of Environmental Protection, U.S. Corps of Engineers, or a local permitting agency, such as your county building department or local environmental program. The above referenced permit does not authorize you either to excavate or to place fill in a jurisdictional area. If applicable, you must obtain the necessary permit from the appropriate regulatory agency.

By copy of this letter, we are advising the appropriate regulatory agencies and the local building department that we have issued a construction permit for an onsite sewage treatment and disposal system on a site that may be under their regulatory authority.

If you have any questions on this matter please call our office at 999-9999.

Sincerely,

Environmental Health Director

Copy to:
Florida Department of Environmental Protection (appropriate district)
U.S. Corps of Engineers
XXXXXX Building Department

This letter is available through the EHD

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