

**ONSITE SEWAGE  
PROGRAM  
ACCELERATED  
CERTIFICATION  
TRAINING**



ONSITE SYSTEM CONSTRUCTION  
PERMITS AND INSPECTIONS  
(MASTER CONTRACTOR PART III)

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**Day 4 – Thursday 8:00 AM-4:00 PM**  
**(6 CEUs)**

**Objective:**

**To give a clear understanding of the permitting and inspection process for Onsite Sewage Treatment and Disposal Systems as provided for in 64E-6, FAC.**



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8:00 – 8:15  
Welcome, Introduction and Course Overview



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**Florida  
HEALTH**

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**Florida  
HEALTH**

A - 8:15 - 10:15  
Construction Permits for Conventional Systems

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**Florida  
HEALTH**

### Items Required for Permit Writing

- Completion of a New System Construction Permit (DH4016pg1) for a conventional system requires the following documents:
  - Application (DH4015pg1).
  - Site Plan (DH4015pg2).
  - Site Evaluation (DH4015pg3).
  - Floor Plan
  - (64E-6.004(3)(b))

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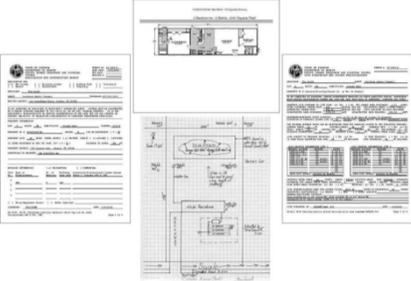
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## Items Required for Permit Writing


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► These are used to determine:

- Tank Sizes.
- Drainfield sizes.
- Drainfield elevation.

On Form DH4016pg1 (System Construction Permit)




Items Determined                      Location on Permit

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## Conventional Systems



- Tank size determinations and permitting
- Drainfield size determinations and permitting
- Drainfield Elevation Permitting
- Fill, Mound and Excavation Permitting
- Maintenance Requirements

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

PERMIT # 10-1000-N

APPLICANT: Tom Smith AGENT: Sunshine Septic Company

LOT: 5 BLOCK: NA SUBDIVISION: Oviedo Oaks

PROPERTY ID #: [Section/Township/Parcel No. or Tax ID Number]

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:  YES  NO NET USABLE AREA AVAILABLE: 0.37 ACRES  
TOTAL ESTIMATED SEWAGE FLOW: 200 GALLONS PER DAY (RESIDENCES-TABLE I/OTHER-TABLE I)  
AUTHORIZED SEWAGE FLOW: 354.41 GALLONS PER DAY (1500 GPD/ACRE OR 2500 GPD/ACRE)  
UNOBSTRUCTED AREA AVAILABLE: 3375.00 SQFT UNOBSTRUCTED AREA REQUIRED: 375.00 SQFT

REGULATIONS AND STANDARDS: 64E-6.008(2)

DATE EVALUATED BY: David Smith, PE DATE: 10/20/2010

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DH4015pg3  
Site Evaluation Form

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

PERMIT # 10-1000-N

APPLICANT: Tom Smith AGENT: Sunshine Septic Company

LOT: 5 BLOCK: NA SUBDIVISION: Oviedo Oaks

PROPERTY ID #: [Section/Township/Parcel No. or Tax ID Number]

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AUTHORIZED SEWAGE FLOW: 354.41 GALLONS PER DAY (1500 GPD/ACRE OR 2500 GPD/ACRE)  
UNOBSTRUCTED AREA AVAILABLE: 3375.00 SQFT UNOBSTRUCTED AREA REQUIRED: 375.00 SQFT

**Total Estimated Sewage Flow from form  
DH4015pg3 (Site Evaluation)**

**200 Gallons Per Day**

•Total estimated sewage flow from the site evaluation form is 200 gallons per day.  
•Use Table II [64E-6.008(2)] to determine the minimum required Septic Tank effective capacity.

Florida HEALTH

TABLE II  
SEPTIC TANK AND PUMP TANK CAPACITY

AVERAGE SEWAGE FLOW GALLONS/DAY	SEPTIC TANK MINIMUM EFFECTIVE CAPACITY GALLONS		PUMP TANK MINIMUM TOTAL CAPACITY GALLONS	
	Residential	Commercial	Residential	Commercial
0-200	900	1150	150	225
201-300	900	1150	225	375
301-400	1050	1300	300	450
401-500	1200	1450	375	600
501-600	1350	1600	450	600
601-700	1500	1750	525	750

•Find the corresponding sewage flow in Column 1.  
•Then look across the row to find the minimum required tank capacity in Column 2.













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- So we've determined a starting point for our calculations:
  - "12 inches" above** the elevation of the "disc on CL of RD near SE corner of property..."
- We've determined our WSWT elevation:
  - "6 inches below** grade..."
- ...And we've determined the required WSWT separation to the bottom surface of the drainfield:
  - "24 inches..."**
- So, now we must use this information to calculate the minimum required elevation for the bottom surface of the proposed drainfield.

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**To calculate the bottom of drainfield elevation relative to the BM:**

- Start at the benchmark (BM)/reference point (RP) elevation.
  - Consider this to be **"zero inches above the benchmark."**
  - Next, add or subtract to get to the proposed site, which is 12" above the benchmark, meaning we went "uphill" from the BM location:
    - Add 12 inches.** This is grade, 12" above the BM.
  - Next, add or subtract to get to the WSWT elevation.
    - Our WSWT is 6" below grade, so **subtract 6"**. We are now at the WSWT, 6" above the BM.
  - Last, we **add 24"**, the required WSWT separation, and this takes us to our required bottom of drainfield elevation:
    - 30" above the benchmark/reference point.**

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**To calculate the bottom of drainfield elevation relative to the BM:**

- Start at the benchmark (BM)/reference point (RP) elevation.
  - 0 (Benchmark = Starting Point)
  - + 12 (Add or subtract to go uphill or downhill to grade)
  - - 6 (Add or subtract to get to the WSWT above or below grade)
  - + 24 (Add to raise the drainfield above the WSWT)
  - = 30" (Elevation of the bottom of the drainfield, above or below the benchmark/reference point)

We enter this number on the permit: **"Bottom of drainfield to be 30 inches above the benchmark."**

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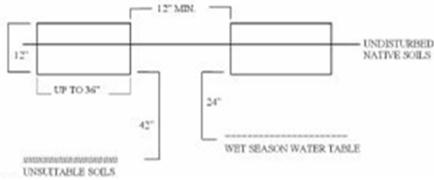


\*A system is considered filled if any portion of the drainfield sidewall area is above natural grade. The definition reads:

\*"An drainfield system where a portion, but not all, of the drainfield sidewalls are located at an elevation above the elevations of undisturbed native soil on the site." (64E-6.002(24))



FILLED TRENCH DRAINFIELD SYSTEM



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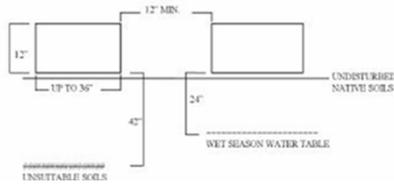
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\*A system is considered a mound system if any portion of the bottom surface of the drainfield is at or above natural grade. The definition reads:

\*"An drainfield constructed at a prescribed elevation in a prepared area of fill material. All drainfields where any part of the bottom surface of the drainfield is located at or above the elevation of undisturbed native soil in the drainfield area is a mound system." (64E-6.002(37))



MOUND TRENCH DRAINFIELD SYSTEM



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## Fill, Mound and Excavation Permitting



- These options are permitted in order to keep the OSTDS drainfield in compliance with:
  - The required WSWT separation.
  - Effective soil depth requirements.

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**Florida HEALTH**

**For example, to attain the required WSWT separation:**

- If the WSWT is 6 inches below grade, and the bottom of the drainfield must maintain a 24-inch separation to it, what are the options?
  - 1 – The drainfield area can be raised 24 inches above the WSWT by placing sufficient fill on site to construct a mound.
    - This would be considered a mound because the bottom of the drainfield is 18 inches above natural grade.
  - 2 – The entire lot can be filled to raise the elevation of both the structure and the drainfield area.
    - This would also be considered a mound because the bottom of the drainfield is still 18-inches above natural grade.
- In both of these cases, the bottom of the drainfield is above natural grade, and so mound specifications will apply, requiring proper:
  - Shoulders.
  - Slopes.
  - Amount of cover.
  - Stabilization material.

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**Florida HEALTH**

**Example: to keep the bottom of the drainfield out of areas subject to frequent flooding:**

- If the WSWT is above natural grade, and the OSTDS is not being installed in a surface water body, what are the options?
  - 1 – The drainfield area or the entire lot can be raised above the unsuitable soil by placing sufficient fill on site to keep the bottom of the drainfield 24 inches above the WSWT.
    - This would be considered a mound because the bottom of the drainfield is 24 inches or more above natural grade.
    - In this circumstance, the CHD employee must notify all parties that there may be jurisdictional wetlands area impacted, however, this would not delay the issuance of the OSTDS permit if all other rule and statute requirements can be met.

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**So we know we will need to maintain the WSWT separation:**

- How do we know if it will require a subsurface, filled, or mound system?
  - First, determine where natural grade (the undisturbed native soil) is in relation to the bottom of the proposed drainfield.
  - Second, compare this to the definition of subsurface, filled, or mound system.
- How do we determine the bottom of drainfield elevation relative to natural grade?

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**To calculate the bottom of drainfield elevation relative to grade:**

- How would we determine how far above natural grade the bottom of the drainfield is?
- First, find the elevation of the bottom of the drainfield relative to the benchmark:
  - In this case, it is 30 inches above the benchmark.
- Next, find the elevation of grade relative to the benchmark:
  - In this case, it is 12 inches above the benchmark.
- Last, find the difference between the two elevations.
  - In this case, the difference is 18 inches.

This means the system will be 18 inches above undisturbed native soil, so it is a: **MOUND**

Enter this information onto the permit form (DH4016pg1).

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**System Type as entered onto the system construction permit form (DH4016pg1).**

The type of system is entered into the appropriate section of the system construction permit form.

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**So we must build a mound system:**

- How do we keep the drainfield elevated 18 inches above natural grade?
- We must add fill to the site.
  - Fill requirements only consider the amount of fill above natural grade.
  - Fill must be of slightly limited material for standard system construction.
  - (If moderately limited material is to be used, a Low-Pressure Dosing System must be designed and installed)
  - Before fill can be placed in the drainfield area, the O-horizon must be removed, and the area roughened, so there is no barrier between the fill and the native soil.

How do we calculate the minimum amount of fill that will be required?

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**Calculate the amount of Fill Required:**

- In order to keep the drainfield elevated 18 inches above natural grade, the installer must add fill material to the lot. In order to do so, they must:
  - Remove the O horizon, vegetation, and roughen the area to be filled.
  - Next, add sufficient fill to raise the drainfield elevation (18").
- Is this all the fill material that is needed?
  - No, there must also be enough fill to cover the drainfield.
  - To calculate the additional fill:
    - Add the height of the drainfield (standard is 12").
    - Next add the minimum amount of drainfield cover (6" minimum).
- The sum of these numbers is the amount of fill required on the permit: 36 inches.

This is the number we enter on the construction permit for: "Fill Required"

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**Fill Required as entered onto the system construction permit form (DH4016pg1).**

Florida HEALTH

N LOCATION OF BENCHMARK: Disc in CL of Road near SE property corner

I ELEVATION OF PROPOSED SYSTEM SITE [12.00] [INCHES/FT] [ABOVE/BELOW] BENCHMARK/REFERENCE POINT

E BOTTOM OF DRAINFIELD TO BE [30.00] [INCHES/FT] [ABOVE/BELOW] BENCHMARK/REFERENCE POINT

L D FILL REQUIRED: [36.00] INCHES EXCAVATION REQUIRED: [48.00] INCHES

O The licensed contractor installing the system is responsible for installing the minimum

The minimum amount of fill required for system construction is entered into the appropriate section of the system construction permit form.

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**Methods for attaining the required effective soil depth:**

- If there is unsuitable soil 18 inches below grade, what are the options?
  - The drainfield area or the entire lot can be raised above the unsuitable soil by placing sufficient fill on site to keep the bottom of the drainfield 42 inches above the unsuitable soil.
    - This would be considered a mound, as the bottom of the drainfield is above natural grade (24 inches above).
  - ? What other option is available?

A second option in this case would be: excavation.

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**Permit Specifications:**

- Permit specifications are attributed to the person establishing tank size, drainfield size, elevation, configuration, etc.
  - Usually, it is the health department employee completing the permit form (DH4016pg1).
    - DOH employees may only write a permit containing the minimum specifications required by rule.
  - An applicant or their agent may request a permit with specifications exceeding the minimum requirements of the rule. This is often provided on form DH4016pg1 or DH4015pg3 but may be on the site evaluation or other sheet.
    - The "specifications by" line would reference that party if they provide the permit specifications – not just site evaluations.
    - A note in the comments section should be added to indicate the rule requirements are being exceeded per the applicant or their agent.
    - On inspection, the system must meet the requested standards or it cannot be approved without amendment of the permit.

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**Permit Approval:**

- Permit approval is always attributed to the DOH employee issuing the permit.
  - This person must be certified in the OSTDS program per Section 381.0101, FS.
    - This person also specifies:
      - The Date Issued.
      - The Expiration Date.
  - The length of time a permit is valid is specified in 64E-6.001(4), FAC and 381.0065(4), FS.
    - (18 months)
    - These sections also specify that, at the end of the 18-month period, the permit may be extended by 90 additional days.
      - » Per 64E-6.001(4), FAC, this only applies if building construction has commenced.
  - An expired permit cannot be "re-issued;" once a permit has expired, a new permit must be applied for.

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**Permit Specifications, Approval, Date Issued, and Expiration Date as entered onto the system construction permit form (DH4016pg1).**

O The licensed contractor installing the system is responsible for installing the minimum  
 T category of tank in accordance with s. 64E-6.013(3)(f), FAC.  
 H \_\_\_\_\_  
 E \_\_\_\_\_  
 R \_\_\_\_\_

SPECIFICATIONS BY: Carroll Sweet TITLE: Environmental Specialist I  
 APPROVED BY: John Forest, ES TITLE: Environmental Manager Sunshine CHD

DATE ISSUED: 7/6/2010 EXPIRATION DATE: 1/2/2012

DH 4016, 08/09 (Obsoletes all previous editions which may not be used)  
 Incorporated: 64E-6.003, FAC Page 1 of 3

The names of who determined permit specifications, who approved the permit, its issue date, its expiration date, are entered into the appropriate section of the system construction permit form.

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**Maintenance Requirements:**

- Minimum recommended maintenance for conventional systems.
  - Pump the septic tank at least once every 3 to 5 years.
  - Service the outlet filter as needed between pump-outs.
  - Maintain the original site conditions as permitted and approved by the department.
  - Operate the system without exceeding the design parameters.



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