B - 10:30 - 12:00

Conventional System Inspection Requirements and Field Standardization

66

STATE OF FLORIDA
DEPARTMENT OF HEALTH
ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM
CONSTRUCTION INSPECTION AND FINAL APPROVAL

PERMIT NO: _____
DATE PAID: _____
FEE PAID: _____
RECEIPT #: _____

APPLICANT: _____

AGENT: _____

PROPERTY ADDRESS: _____

LOT: _____ BLOCK: _____ SUBDIVISION: _____ PROPERTY ID #: _____

CHECKED [X] ITEMS ARE NOT IN COMPLIANCE WITH CHAPTER 64E-6 AND MUST BE CORRECTED

TANK INSTALLATION
[ ] [01] TANK SIZE [1] _____ [2] _____
[ ] [02] TANK MATERIAL _____
[ ] [03] OUTLET DEVICE _____
[ ] [04] MULTI-CHAMBERED [Y / N]
[ ] [05] OUTLET FILTER _____
[ ] [06] LABORS _____
[ ] [07] WATERTIGHT
[ ] [08] LEVEL
[ ] [09] DEPTH TO LID

DRAINFIELD INSTALLATION
[ ] [10] AREA [1] _____ SQFT
[ ] [11] DISTRIBUTION BOX _____ SEALED ____
[ ] [12] NUMBER OF DRAINLINES _____
[ ] [13] DRAINLINE SEPARATION _____
[ ] [14] DRAINLINE SLOPE _____
[ ] [15] DEPTH OF COVER _____
[ ] [16] ELEVATION (ABOVE/BELOW) BH ____ _____
[ ] [17] SYSTEM LOCATION _____
[ ] [18] SYSTEM SIZE _____
[ ] [19] AGGREGATE SIZE _____
[ ] [20] AGGREGATE EXCESSIVE FINES _____
[ ] [21] AGGREGATE DEPTH _____

FILL / EXCAVATION MATERIAL
[ ] [22] FILL AMOUNT _____
[ ] [23] FILL TEXTURE _____
[ ] [24] EXCAVATION DEPTH _____
[ ] [25] AREA REDLINED _____
[ ] [26] REPLACEMENT MATERIAL _____

SETBACKS
[ ] [27] SURFACE WATER _____ FT
[ ] [28] DITCHES _____ FT
[ ] [29] PRIVATE WELLS _____ FT
[ ] [30] PUBLIC WELLS _____ FT
[ ] [31] IRRIGATION WELLS _____ FT
[ ] [32] POTABLE WATER LINES _____ FT
[ ] [33] BUILDING FOUNDATION _____ FT
[ ] [34] PROPERTY LINES _____ FT
[ ] [35] OTHER _____ FT

FILLED / BOUND SYSTEMS
[ ] [36] DRAINFIELD COVER _____
[ ] [37] ENCROACHES _____
[ ] [38] SLOPES _____
[ ] [39] FINALIZATION _____

ADDITIONAL INFORMATION
[ ] [40] UNDERSIZING AREA _____
[ ] [41] ENCROACHING ROOFS _____
[ ] [42] ALARM _____
[ ] [43] MAINTENANCE AGREEMENT _____
[ ] [44] BUILDING AREA _____
[ ] [45] LOCATION CONFORMS WITH SITE PLAN _____
[ ] [46] FINAL SITE GRADING _____
[ ] [47] CONTRACTOR _____
[ ] [48] OTHER _____

ABANDONMENT
[ ] [49] TANK PUMPED __/__/__
[ ] [50] TANK CRUSHED & FILLED __/__/__

EXPLANATION OF VIOLATIONS / REMARKS:
[ ] _____
[ ] _____
[ ] _____
[ ] _____

CONSTRUCTION (APPROVED/DISAPPROVED): _____ _____ CHD DATE: _____

FINAL SYSTEM (APPROVED/DISAPPROVED): _____ _____ CHD DATE: _____

DH 4016, 08/09 (Obsoletes all previous editions which may not be used)
Incorporated: 64E-6.013, FAC

Page 2 of 3

DH4016pg2

OSTDS Construction Inspection and Final Approval.

67

Inspections:

- Inspections are required in order to verify that all rule and statute requirements have been addressed.
- The CHD verifies the permit conditions, including items submitted as existing portions the inspector on-site has not physically approved in previous inspections (for example, a recently-covered mound inspected by another CHD employee).

68

Conventional System Inspection Requirements:

- Responsibilities and procedures for conventional system inspection:
  - Who can perform an inspection?
  - What tools are needed?
  - The final inspection form and standardized inspection procedures.
  - Examples of items that arise during an inspection, how are deficiencies corrected, and by whom?

69

Who can perform an Inspection?

- DOH employees certified per 381.0101, FS.
- Master Septic Tank Contractors registered with the DOH per 64E-6.020, FAC.:
  - Only for System Repairs.
  - Must use form DH4016pg3 – "System Repair Certification."
    - This form is then reviewed by the CHD inspector and used to complete the "Construction Inspection and Final Approval" form (DH4016pg2).

70

Conventional System Inspection Requirements:

- Responsibilities and procedures for conventional system inspection:
  - Who can perform an inspection?
  - What tools are needed?
  - The final inspection form and standardized inspection procedures.
  - Examples of items that arise during an inspection, how are deficiencies corrected, and by whom?

71

Tools Required:

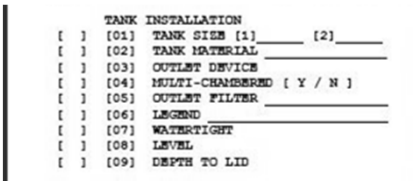
- At minimum, the following tools are required in order to properly conduct a standard system inspection:
  - Six–foot Auger.
  - Water Bottle.
  - 100-foot or longer measuring tape.
  - Sharpshooter Shovel.
  - Insulated Probing Rod.
  - Laser Level or Surveyor's Level with Stadia Rod.
  - Soil Survey of the County.
  - Munsell Soil Color Book.
  - 25-ft x 1-inch stainless steel and self-locking measuring tape.

72

Conventional System Inspection Requirements:

- Responsibilities and procedures for conventional system inspection:
  - Who can perform an inspection?
  - What tools are needed?
  - The final inspection form and standardized inspection procedures.
  - Examples of items that arise during an inspection, how are deficiencies corrected, and by whom?

73



TANK INSTALLATION

[ ] [01] TANK SIZE [1]_____ [2]_____
[ ] [02] TANK MATERIAL _____
[ ] [03] OUTLET DEVICE
[ ] [04] MULTI-CHAMBERED [Y / N]
[ ] [05] OUTLET FILTER _____
[ ] [06] LEGEND _____
[ ] [07] WATERTIGHT
[ ] [08] LEVEL
[ ] [09] DEPTH TO LID

DH4016pg2

Tank Installation
Items [01] – [09]

74

On Form DH4016pg2

```
TANK INSTALLATION
[ ]  [01]  TANK SIZE [1]_____ [2]_____
[ ]  [02]  TANK MATERIAL _____
[ ]  [03]  OUTLET DEVICE
[ ]  [04]  MULTI-CHAMBERED [ Y / N ]
[ ]  [05]  OUTLET FILTER _____
[ ]  [06]  LEGEND _____
[ ]  [07]  WATERTIGHT
[ ]  [08]  LEVEL
[ ]  [09]  DEPTH TO LID
```

- [01] Tank Size:
  - From the tank Legend.
- [02] Tank Material:
  - Visually Determined.
- [03] Outlet Device:
  - Verified at outlet end of tank.
- [04] Multi-Chambered [Y/N]:
  - Ensure compliance with 2/3 – 1/5 rule for chamber sizing and total required capacity.
  - Alternative is tanks in series.
- [05] Outlet Filter:
  - Physically remove, inspect, record make and model – verify sizing.
- [06] Legend:
  - Record to verify tank size.
- [07] Watertight:
  - Ensure proper sealing and construction.
- [08] Level:
  - Ensure level from end to end and side-to side within 0.5" with no pitch upwards. Use floor of tank.
- [09] Depth to Lid:
  - Ensure access will be within 8" of final grade and maximum cover will not exceed tank category.

75

```
DRAINFIELD INSTALLATION
[ ]  [10]  AREA [1]_____ [2]_____SQFT
[ ]  [11]  DISTRIBUTION BOX ___ HEADER____
[ ]  [12]  NUMBER OF DRAINLINES _____
[ ]  [13]  DRAINLINE SEPARATION
[ ]  [14]  DRAINLINE SLOPE
[ ]  [15]  DEPTH OF COVER
[ ]  [16]  ELEVATION [ABOVE/BELOW] BM ____
[ ]  [17]  SYSTEM LOCATION
[ ]  [18]  DOSING PUMPS _____
[ ]  [19]  AGGREGATE SIZE
[ ]  [20]  AGGREGATE EXCESSIVE FINES
[ ]  [21]  AGGREGATE DEPTH
```

DH4016pg2

Drainfield Installation
Items [10] – [21]

76

On Form DH4016pg2

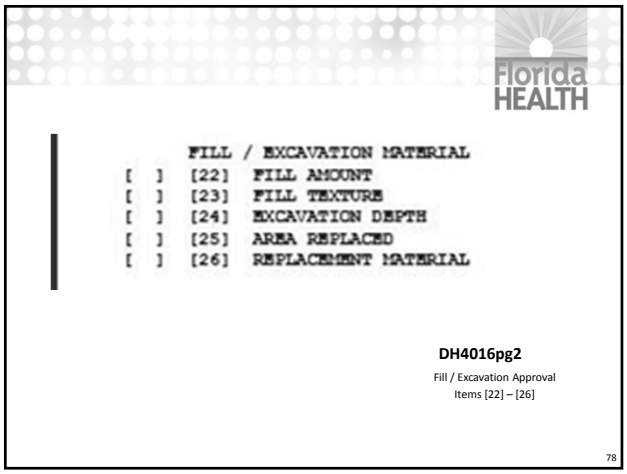
```
DRAINFIELD INSTALLATION
[ ]  [10]  AREA [1]_____ [2]_____SQFT
[ ]  [11]  DISTRIBUTION BOX ___ HEADER____
[ ]  [12]  NUMBER OF DRAINLINES _____
[ ]  [13]  DRAINLINE SEPARATION
[ ]  [14]  DRAINLINE SLOPE
[ ]  [15]  DEPTH OF COVER
[ ]  [16]  ELEVATION [ABOVE/BELOW] BM ____
[ ]  [17]  SYSTEM LOCATION
[ ]  [18]  DOSING PUMPS _____
[ ]  [19]  AGGREGATE SIZE
[ ]  [20]  AGGREGATE EXCESSIVE FINES
[ ]  [21]  AGGREGATE DEPTH
```

- [10] Area:
  - Length & Width of aggregate drainfields.
  - Total amount of drainfield present.
- [11] Distribution Box or Header:
  - Visually Determine. Verify Level & Equal Distribution.
- [12] Number of Drainlines:
  - Count, record, & ensure equal length.
- [13] Drainline Separation:
  - Ensure proper separation between trenches or beds.
  - Ensure lines are properly looped if required.

Drainfield Installation
Items [10] – [21]

- [14] Drainline Slope:
  - Verify drainline slope does not exceed 1 (one) inch in any 10 (ten) feet.
- [15] Depth of Cover:
  - Ensure the bottom of the drainfield will not be deeper than 30" below grade.
- [16] Elevation [Above/Below] BM:
  - Use laser transit to ensure compliance with permit specification.
- [17] System Location:
  - Ensure compliance with the site plan.
- [18] Dosing Pumps:
  - Verify proper installation and float settings. Verify use for sewage effluent. Record # of pumps.
- [19] Aggregate Size:
  - Visually determine whether gradation is adequate. If unable to verify, request bill of lading or require further testing.
- [20] Aggregate: Excessive Fines:
  - Visually determine whether an excessive amount of fine particles are present.
- [21] Aggregate Depth:
  - Probe to ensure sufficient depth of drainfield aggregate.

77



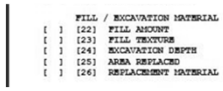
DH4016pg2

Fill / Excavation Approval
Items [22] – [26]

78

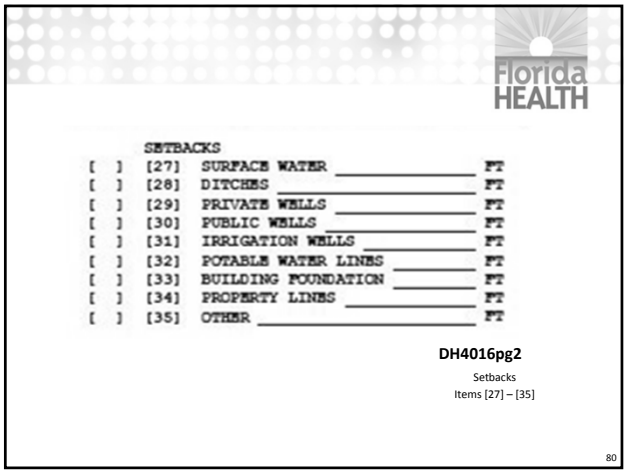
On Form DH4016pg2

Fill/Excavation Material
Items [22] – [26]



- [22] Fill Amount:
  - Ensure sufficient fill has been placed on-site to properly construct the above-grade portion of the system.
- [23] Fill Texture:
  - Ensure fill is slightly-limited, or (if LPDS) moderately limited – in accordance with permit specifications.
  - If unable to determine, require further analysis.
- [24] Excavation Depth:
  - Auger to ensure that the excavated area meets the permit requirements.
  - Ensure the excavated area meets footnote 3 or 4 requirements as appropriate.
- [25] Area Replaced:
  - Ensure the area replaced is 2' longer and wider than the drainfield area, and the drainfield area is centered in this excavation.
- [26] Replacement Material:
  - Ensure the material used to replace any unsuitable soils originally found below-grade is in accordance with permit specifications.
  - If unable to determine, require further analysis.

79



DH4016pg2

Setbacks
Items [27] – [35]

80

On Form DH4016pg2

SETBACKS

[ ] [27] SURFACE WATER _____ FT
[ ] [28] DITCHES _____ FT
[ ] [29] PRIVATE WELLS _____ FT
[ ] [30] PUBLIC WELLS _____ FT
[ ] [31] IRRIGATION WELLS _____ FT
[ ] [32] POTABLE WATER LINES _____ FT
[ ] [33] BUILDING FOUNDATION _____ FT
[ ] [34] PROPERTY LINES _____ FT
[ ] [35] OTHER _____ FT

All setbacks must be measured in feet, and the actual result recorded on the inspection form.

- [27] Surface Water:
  - Measured from the MAFL or MHWL
  - Ensure all surface water bodies are accounted for
- [28] Ditches:
  - Account for all Ditches and ensure they appear on the site plan
- [29] Private Wells:
  - Verify per site plan and site evaluation
- [30] Public Wells:
  - Verify per site plan and site evaluation
- [31] Irrigation Wells:
  - Verify per site plan and site evaluation
- [32] Potable Water Lines:
  - Verify per site plan and site evaluation
- [33] Building Foundation:
  - Verify per site plan and site evaluation
- [34] Property Lines:
  - Verify per site plan and site evaluation
- [35] Other:
  - Ensure all other setbacks required by the permit, site evaluation, and site plan have been met.

81

FILLED / MOUND SYSTEM
[ ] [36] DRAINFIELD COVER
[ ] [37] SHOULDERS
[ ] [38] SLOPES
[ ] [39] STABILIZATION _____

DH4016pg2

Filled/Mound System
Items [36] – [39]

82

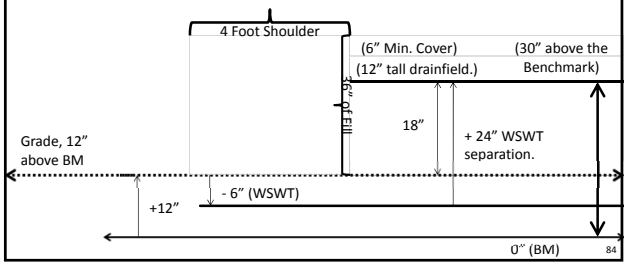
Notes on Mound Specifications

- As in the example system, mounds are drainfields whose bottom surface is held above native soil by suitable fill.
  - In order to prevent a sanitary nuisance (sewage effluent surfacing and affecting public health or the environment), a 4-foot shoulder area of fill surrounds the drainfield.
  - To keep this structure in place, and prevent erosion, additional fill material and vegetative stabilization is required.

83

So we've added fill to the lot:

- How do we keep the drainfield effluent from spilling out into the environment?
  - We must add shoulder area around the fill already in place.
    - For new conventional systems, 4 feet of shoulder area is required.

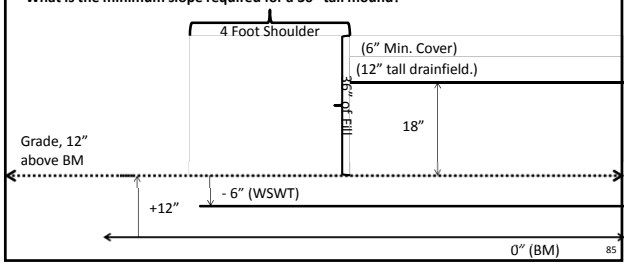


84

So we've added fill to the lot:

- How do we keep the drainfield and shoulder area from eroding or falling apart?
  - We must add slopes to hold up the mounded drainfield.
    - At minimum, the slope must be 2:1 (two foot horizontal to one foot vertical).
    - For mounds exceeding 36" in height, slopes must be at least 3:1.
  - How tall is our mound?
    - We only measure from natural grade to the top of the fill:
      - This mound is 36 inches tall.

What is the minimum slope required for a 36" tall mound?

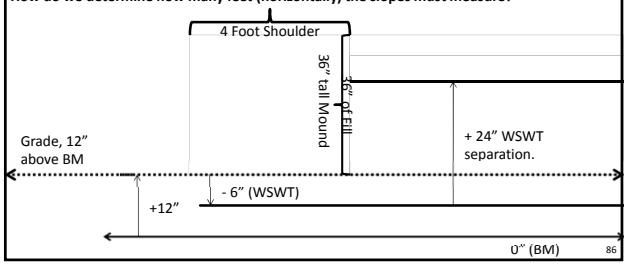


85

To determine the minimum slope required:

- Determine whether the mound exceeds 36 inches in height.
  - This mound is 36 inches tall, so it does not.
- Reference the rule requirement for drainfield slopes [64E-6.009(3)(f)].
  - This section requires at minimum, 2:1 slopes for mounds not exceeding 36 inches in height.
    - This mound requires at minimum, 2:1 slopes.
    - The slopes must be extended out two feet (horizontally) for every 1 foot of mound height.

How do we determine how many feet (horizontally) the slopes must measure?

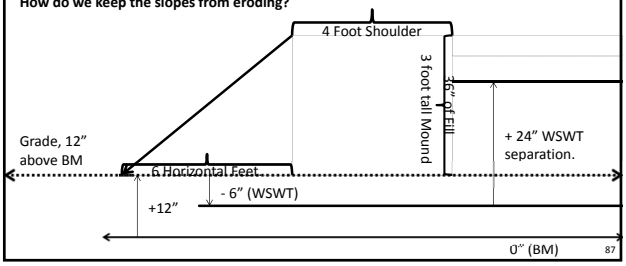


86

To calculate the minimum slope required:

- Determine the mound height in feet.
  - This mound is 36 inches tall, so:
  - 36" / 12" = 3 feet.
- Because the minimum slope requirement (2:1) means we must cover one horizontal foot of area for each vertical foot the mound covers, we multiply the height by 2 to determine how many feet of slope are required.
  - 3 x 2 = 6
  - 6 feet of slope must be added for a 3 foot tall mound.

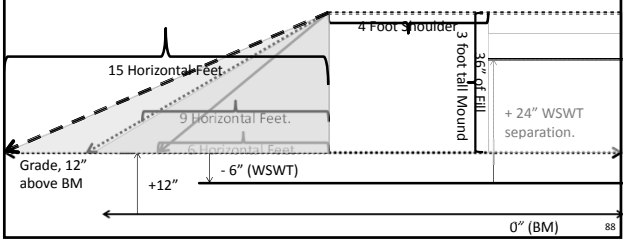
How do we keep the slopes from eroding?



87

To keep slopes from eroding, stabilization material must be applied:

- The rule specifies that the required stabilization material depends on the steepness of the slope.
  - For 2:1 slopes, sod (or equivalent) is required.
  - For 3:1 slopes, sod (or equivalent) is required.
    - And if the mound height exceeds 36", the entire mound must be stabilized with sod (or equivalent).
  - For 5:1 slopes or greater, seed and hay is acceptable.



88

On Form DH4016pg2

Filled / Mound System Items [36] – [39]

```
    FILLED / MOUND SYSTEM
[ ] [36] DRAINFIELD COVER
[ ] [37] SHOULDERS
[ ] [38] SLOPES
[ ] [39] STABILIZATION _____
```

- [36] Drainfield Cover:
  - Ensure fill material is in accordance with permit specifications.
- [37] Shoulders:
  - Ensure shoulders measure at least 4-feet from the edge of the drainfield and is composed of suitable material.
  - Ensure the O-horizon and original vegetation were removed prior to placement of fill material.
- [38] Slopes:
  - Ensure the adequate slopes are in place based on the actual drainfield height.
  - Measure from the outermost edge of the shoulder to the toe of the drainfield slope.
  - Ensure slopes are composed of slightly or moderately limited material.
  - Ensure the O-horizon & vegetation were removed prior to slope construction.
- [39] Stabilization:
  - Ensure the type, quantity, and quality of stabilization material is appropriate for the constructed mound height and slopes. Record the type of stabilization (seed & hay, sod, etc.).

89

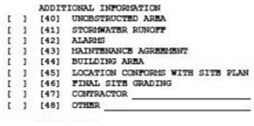
ADDITIONAL INFORMATION

[ ] [40] UNOBSTRUCTED AREA
[ ] [41] STORMWATER RUNOFF
[ ] [42] ALARMS
[ ] [43] MAINTENANCE AGREEMENT
[ ] [44] BUILDING AREA
[ ] [45] LOCATION CONFORMS WITH SITE PLAN
[ ] [46] FINAL SITE GRADING
[ ] [47] CONTRACTOR _____
[ ] [48] OTHER _____

DH4016pg2

Additional Information
Items [40] – [48]

On Form DH4016pg2


ADDITIONAL INFORMATION
[ ] [40] UNOBSTRUCTED AREA
[ ] [41] STORMWATER RUNOFF
[ ] [42] ALARMS
[ ] [43] MAINTENANCE AGREEMENT
[ ] [44] BUILDING AREA
[ ] [45] LOCATION CONFORMS WITH SITE PLAN
[ ] [46] FINAL SITE GRADING
[ ] [47] CONTRACTOR _____
[ ] [48] OTHER _____

- [40] Unobstructed Area:
  - Measured area must comply with site plan and meet measured setbacks.
- [41] Stormwater Runoff:
  - Installation area and unobstructed area must not be subject to saturation due to stormwater.
- [42] Alarms:
  - Visually examine installation.
  - Check function with alarm float.
- [43] Maintenance Agreement:
  - Ensure maintenance agreement is in place for ATU and PBTS requirements.

- [[44] Building Area:
  - Ensure conformity with the approved floor plan.
- [45] Location Conforms with Site Plan:
  - Ensure all pertinent features are in place and conform to the approved site plan.
- [46] Final Site Grading:
  - Ensure the bottom of drainfield is no deeper than 30" below final grade.
- [47] Contractor:
  - Record name of contractor/company.
- [48] Other:
  - Record the make, model, and total amount of alternative drainfield units used in the system installation.

Additional Information
Items [40] – [48]

ABANDONMENT

[ ] [49] TANK PUMPED ___/___/___
[ ] [50] TANK CRUSHED & FILLED ___/___/___

DH4016pg2

Abandonment
Items [49] – [50]

On Form DH4016pg2

Abandonment
Items [49] – [50]

- [49] Tank Pumped:
  - Visually confirm complete removal of tank contents.
  - Verify that the bottom of the tank is ruptured.
  - Record the date the tank was pumped.
- [50] Tank Crushed & Filled:
  - Confirm that the amount of fill material on site is sufficient and satisfactory to fill the abandoned tank.
  - Confirm that the tank has been crushed or collapsed.
  - Record the date the tank was crushed or collapsed.

93

DH4016pg2

Explanation of Violations/Remarks

94

On Form DH4016pg2

- Explanation of Violations/Remarks:
  - Document, Document, Document!
  - Ensure all violations are explained, using additional sheets as required.
  - Ensure any additional items of note are documented.

95

CONSTRUCTION (APPROVED/DISAPPROVED):_____ _____CHD DATE:_____

FINAL SYSTEM (APPROVED/DISAPPROVED):_____ _____CHD DATE:_____

DH4016pg2

OSTDS Construction and Final Approval.

On Form DH4016pg2

CONSTRUCTION (APPROVED/DISAPPROVED):_____ _____CHD DATE:_____

FINAL SYSTEM (APPROVED/DISAPPROVED):_____ _____CHD DATE:_____

DH 4016, 08/09 (Obsoletes all previous editions which may not be used)
Incorporated: 64E-6.003, FAC Page 2 of 3

Construction Approval & Final Approval

- Construction Approval:
  - Designate whether the system construction is approved or disapproved.
  - Must be signed and dated by a certified CHD employee.
  - All re-inspections must be recorded on a separate form, each approved or disapproved in turn.
- Final Approval:
  - Record as "disapproved" until all OSTDS rule and statute requirements have been met.
  - All re-inspections must be recorded on a separate form, each approved or disapproved in turn.

Conventional System Inspection Requirements

- Responsibilities and procedures for conventional system inspection:
  - Who can perform an inspection?
  - What tools are needed?
  - The final inspection form and standardized inspection procedures.
  - Examples of items that arise during an inspection, how are deficiencies corrected, and by whom?

Corrections to an installation:

- What happens when deficiencies are encountered?
  - How they are corrected?
  - By whom?
  - What are the associated fees?
  - What would void an otherwise viable permit?

99

C - 1:00-2:15
Conventional System Inspection Field Exercise

103

Conventional System Inspection Field Exercise

- Go outside. Bring Water. Dress Appropriately.
  - Show how the items discussed for inspection are collected from the field.
  - Discuss correct and incorrect methods for measuring or determining compliance.
  - Demonstrate procedure for assessing and documenting items in the field.
  - Demonstrate a system inspection, fill out the inspection form.

104