

ONSITE SEWAGE PROGRAM ACCELERATED CERTIFICATION TRAINING

ONSITE SYSTEM CONSTRUCTION PERMITS AND INSPECTIONS

(MASTER CONTRACTOR PART III)





11:00–12:00

Conventional System Inspection Requirements



STATE OF FLORIDA
DEPARTMENT OF HEALTH
ON-SITE 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 STATUTE OR RULE AND MUST BE CORRECTED.

- | | | | |
|-------------------|--------------------------------------|----------|-----------------------------------|
| TANK INSTALLATION | | SETRACKS | |
| [] | [01] TANK SIZE [1] _____ [2] _____ | [] | [27] SURFACE WATER _____ FT |
| [] | [02] TANK MATERIAL _____ | [] | [28] DITCHES _____ FT |
| [] | [03] OUTLET DEVICE _____ | [] | [29] PRIVATE WELLS _____ FT |
| [] | [04] MULTI-CHAMBERED [Y / N] _____ | [] | [30] PUBLIC WELLS _____ FT |
| [] | [05] OUTLET FILTER _____ | [] | [31] IRRIGATION WELLS _____ FT |
| [] | [06] LEGEND _____ | [] | [32] POTABLE WATER LINES _____ FT |
| [] | [07] WATERTIGHT _____ | [] | [33] BUILDING FOUNDATION _____ FT |
| [] | [08] LEVEL _____ | [] | [34] PROPERTY LINES _____ FT |
| [] | [09] DEPTH TO LID _____ | [] | [35] OTHER _____ FT |

- | | | | |
|-------------------------|--|------------------------|---------------------------------------|
| DRAINFIELD INSTALLATION | | FILLED / MOUND SYSTEM | |
| [] | [10] AREA [1] _____ [2] _____ SQFT | [] | [36] DRAINFIELD COVER |
| [] | [11] DISTRIBUTION BOX _____ HEADER _____ | [] | [37] SHOULDERS |
| [] | [12] NUMBER OF DRAINLINES _____ | [] | [38] SLOPES |
| [] | [13] DRAINLINE SEPARATION _____ | [] | [39] STABILIZATION _____ |
| [] | [14] DRAINLINE SLOPE _____ | ADDITIONAL INFORMATION | |
| [] | [15] DEPTH OF COVER _____ | [] | [40] UNOBSTRUCTED AREA |
| [] | [16] ELEVATION [ABOVE/BELOW] BM _____ | [] | [41] STORMWATER RUNOFF |
| [] | [17] SYSTEM LOCATION _____ | [] | [42] ALARMS |
| [] | [18] DOSING PUMPS _____ | [] | [43] MAINTENANCE AGREEMENT |
| [] | [19] AGGREGATE SIZE _____ | [] | [44] BUILDING AREA |
| [] | [20] AGGREGATE EXCESSIVE FINES _____ | [] | [45] LOCATION CONFORMS WITH SITE PLAN |
| [] | [21] AGGREGATE DEPTH _____ | [] | [46] FINAL SITE GRADING |

- | | | | |
|----------------------------|---------------------------------|-------------|--------------------------------|
| FILL / EXCAVATION MATERIAL | | [] | [47] CONTRACTOR _____ |
| [] | [22] FILL AMOUNT _____ | [] | [48] OTHER _____ |
| [] | [23] FILL TEXTURE _____ | ABANDONMENT | |
| [] | [24] EXCAVATION DEPTH _____ | [] | [49] TANK PUMPED / / |
| [] | [25] AREA REPLACED _____ | [] | [50] TANK CRUSHED & FILLED / / |
| [] | [26] REPLACEMENT MATERIAL _____ | | |

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

CONSTRUCTION [APPROVED/DISAPPROVED]: _____ CHD DATE: _____

FINAL SYSTEM [APPROVED/DISAPPROVED]: _____ CHD DATE: _____

DH4016pg2
OSTDS Construction
Inspection and Final
Approval.

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).

Conventional System Inspection Requirements

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

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).

Conventional System Inspection Requirements

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

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.

Conventional System Inspection Requirements

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

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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]

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 _____

Tank Installation Items [01] – [09]

- ▶ [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.

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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

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DH4016pg2

Drainfield
Installation
Items [10] - [21]

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.
- ▶ [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.

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

DH4016pg2

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

On Form DH4016pg2

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

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.

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

DH4016pg2

Setbacks

Items [27] - [35]

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.

Setbacks Items [27] – [35]

- ▶ [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.

FILLED / MOUND SYSTEM

- [] [36] DRAINFIELD COVER
- [] [37] SHOULDERS
- [] [38] SLOPES
- [] [39] STABILIZATION _____

DH4016pg2

Filled/Mound System

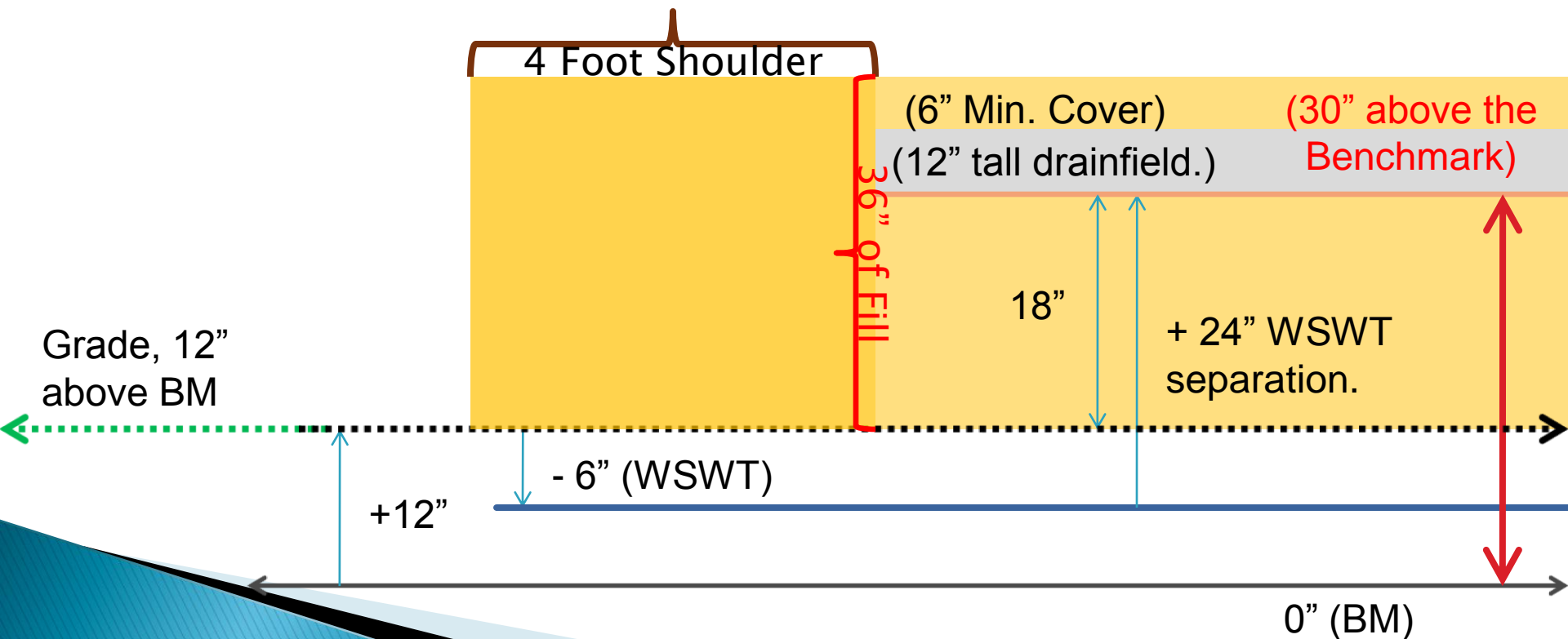
Items [36] - [39]

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.

So we've added fill to the lot:

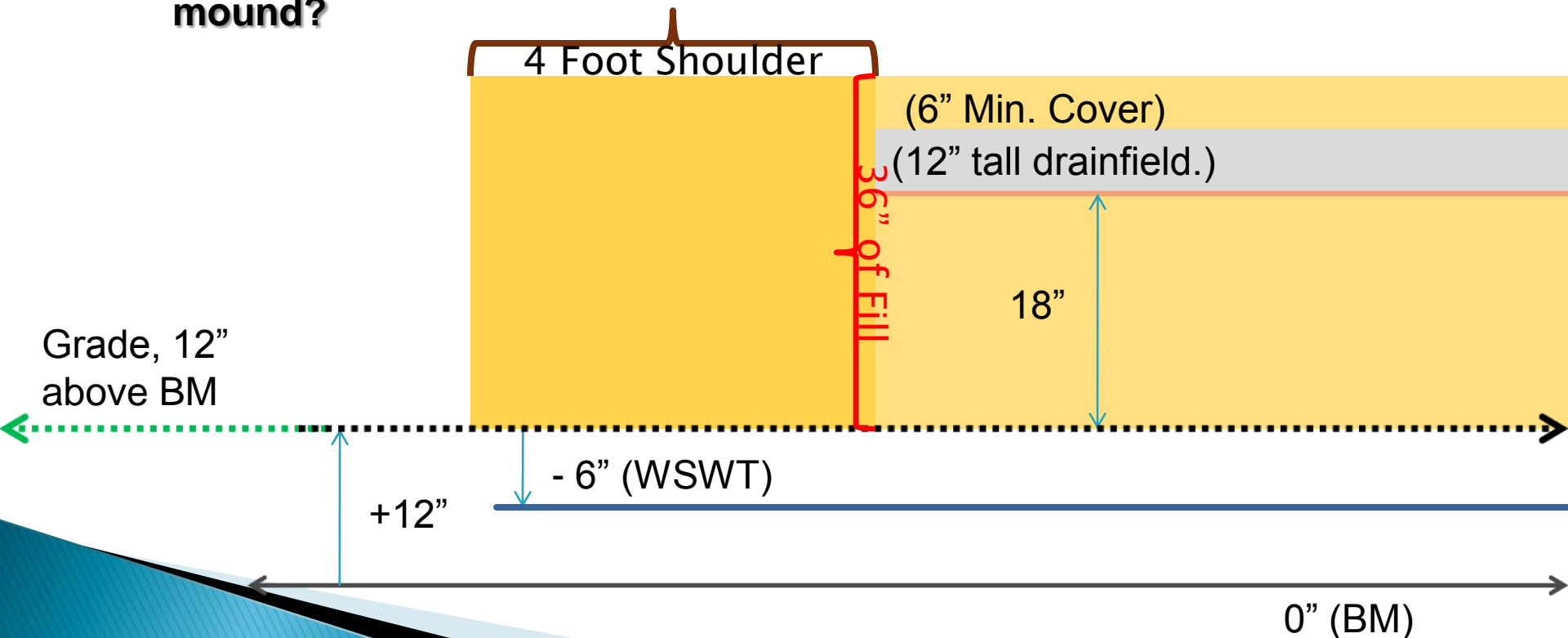
- How do we keep the drainfield effluent from spilling out into the environment?
 - We must add shoulder area around the fill already in place.
 - For new conventional systems, 4 feet of shoulder area is required.



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.

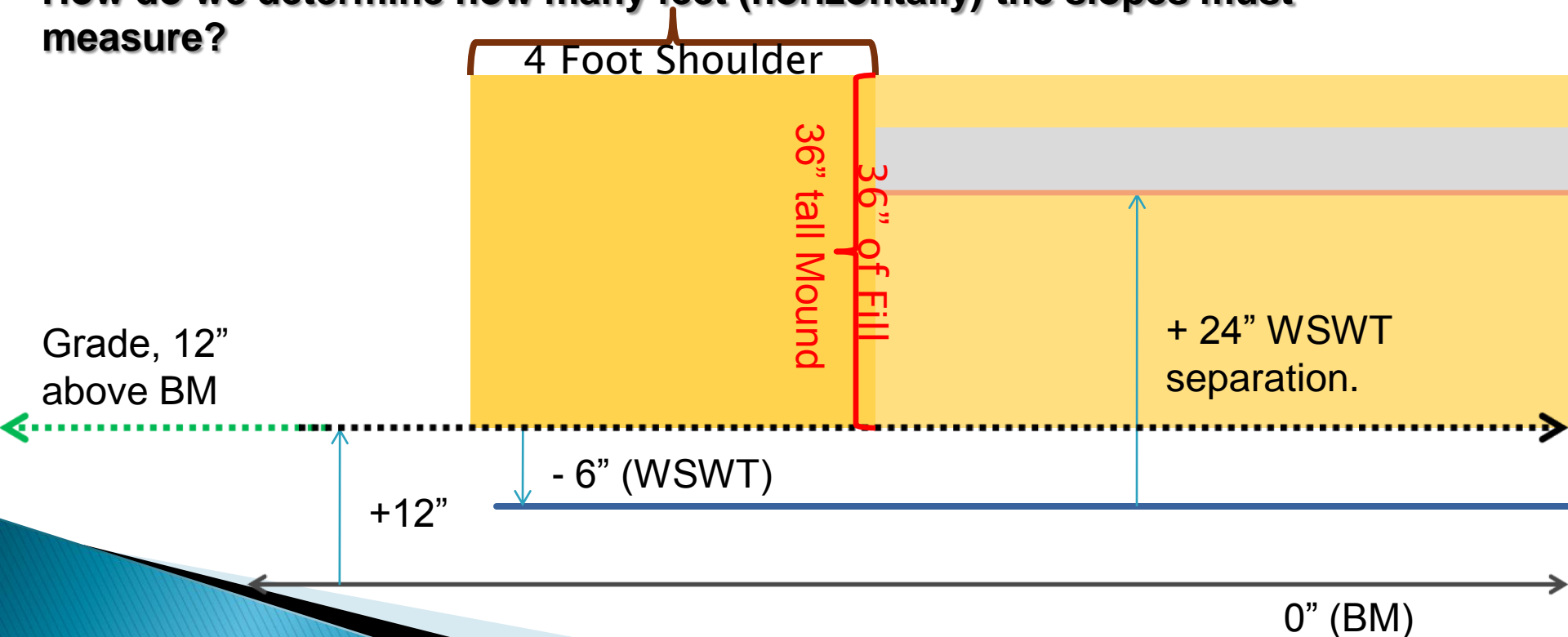
What is the minimum slope required for a 36" tall mound?



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.

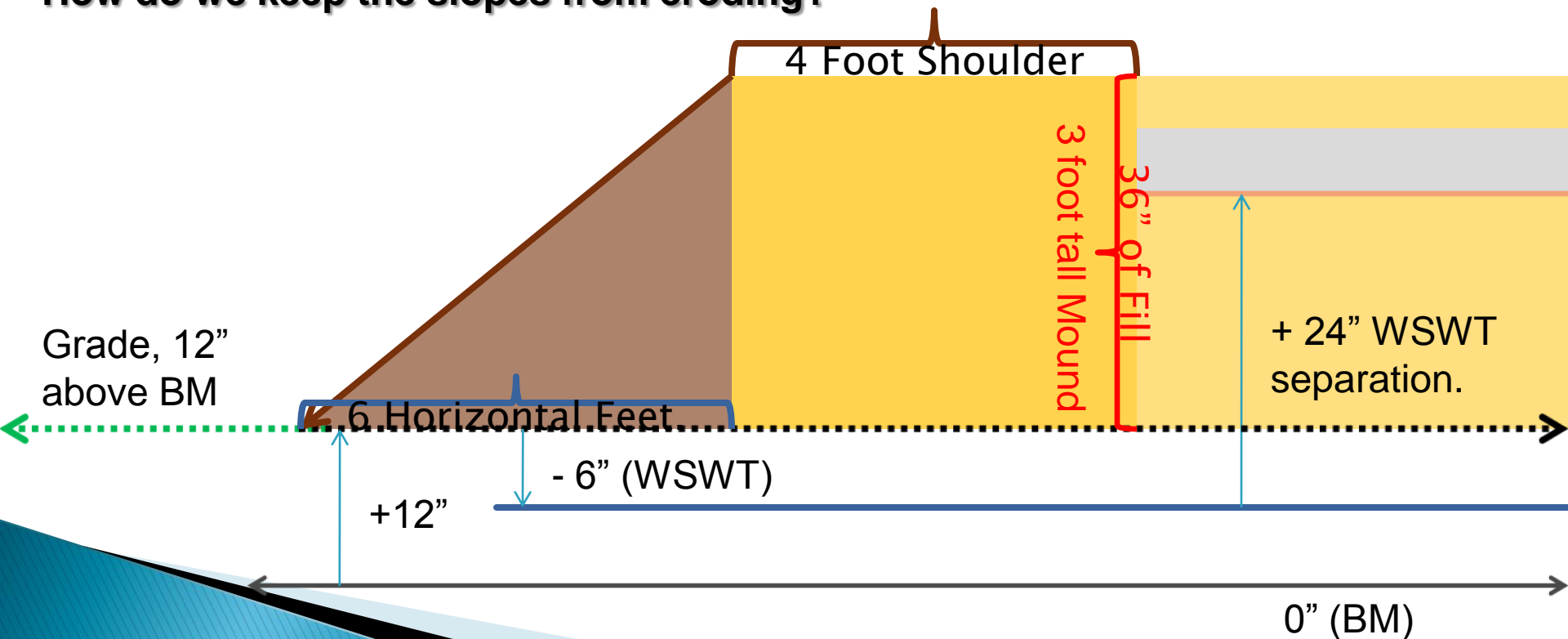
How do we determine how many feet (horizontally) the slopes must measure?



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.
 - $3 \times 2 = 6$
 - 6 feet of slope must be added for a 3 foot tall mound.

How do we keep the slopes from eroding?



On Form DH4016pg2

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.

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

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

- ▶ [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.

Abandonment
Items [49] – [50]

EXPLANATION OF VIOLATIONS / REMARKS:

[]	_____
[]	_____
[]	_____
[]	_____

DH4016pg2

Explanation of
Violations/Remarks

On Form DH4016pg2

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

- ▶ 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.

Explanation of Violations
/ Remarks

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: 64B-6.003, FAC

Page 2 of 3

- ▶ 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.

Construction Approval & Final Approval

Conventional System Inspection Requirements

- ▶ Responsibilities and procedures for conventional system inspection:
 - Who can perform an inspection?
 - What tools are needed?
 - The final inspection form.
 - 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?



12:00–1:00
LUNCH (Provided)



Eat

- ▶ Eat.
- ▶ Drink.
- ▶ Pick up after yourself.
- ▶ Digest.
- ▶ Stretch your legs.
- ▶ Have a snack.



12:00–1:00
LUNCH (Provided)

