WBN2Public Resource

From: Hamill, Carol L [clhamill@tva.gov]
Sent: Thursday, June 02, 2011 11:38 AM
To: Epperson, Dan; Poole, Justin; Raghavan, Rags; Milano, Patrick; Campbell, Stephen
Cc: Crouch, William D
Subject: Presentation package_Part 2 of 2.
Attachments: image001.jpg; Presentation package_Part 2 of 2.pdf

Attached is Part 2 of 2, pages 15-28, of the presentation package.

Please let me know if you have any questions. Thanks.

Carol L. Hamill

Licensing/Quality Assurance
WBN Unit 2 Project, EQB 1B- WBN
423-365-3177
423-365-3833 clhamill@tva.gov

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"Crouch, William D" <wdcrouch@tva.gov>
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Tracking Status: None
"Poole, Justin" <Justin.Poole@nrc.gov>
Tracking Status: None
"Raghavan, Rags" <Rags.Raghavan@nrc.gov>
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"Milano, Patrick" <Patrick.Milano@nrc.gov>
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PART 2 OF 2

ENCLOSURE 1

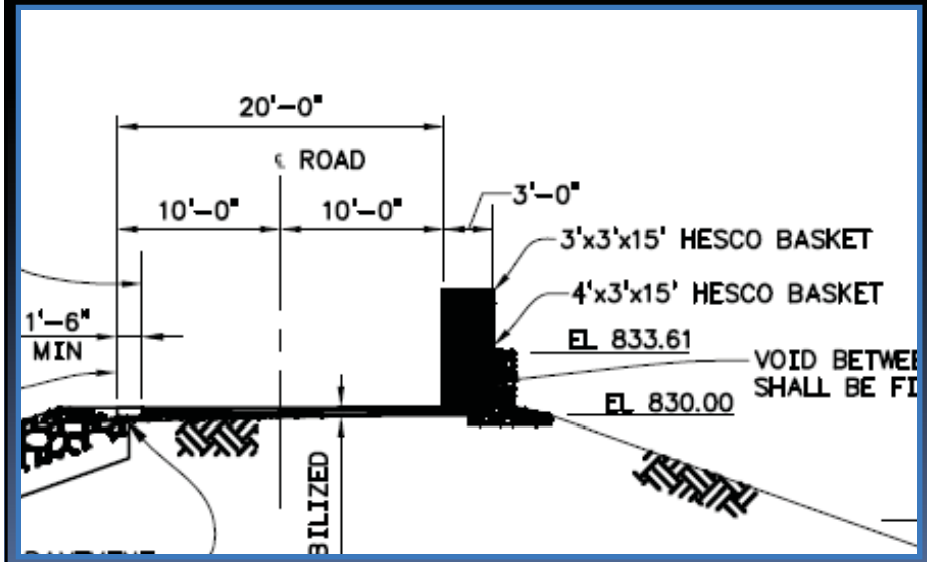
PRESENTATION PACKAGE
“TEMPORARY DAMS’ MODIFICATION PROJECT”

Temporary Dams' Modification Project

Fort Loudoun Hwy 321

Temporary Dams' Modification Project

Fort Loudoun Marina Saddle Dam



Temporary Dams' Modification Project

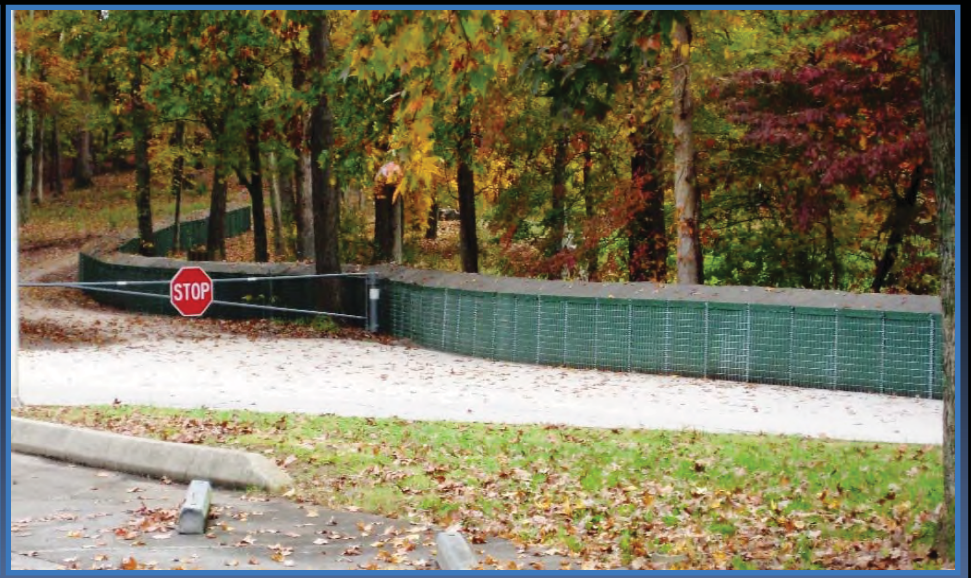
Fort Loudoun Dam

- Dam's length raised by 4' = 3785 feet (570 feet Saddle Dam).
- HESCO baskets used = 1907;
  1095 - (3'X3'X4') ; 812 - (3'X3'X3')
- Sand used = 9.8 million pounds

Temporary Dams' Modification Project

Watts Bar Dam – East Embankment

Temporary Dams' Modification Project
Watts Bar East Embankment



Temporary Dams' Modification Project

Watts Bar Dam East Embankment Raising

- Dam's length raised by 3' = 1620 feet
- HESCO baskets used:
  - ✓ Main Embankment = 540 (3'X3'X3')
- Sand used = 1.5 million pounds

Temporary Dams' Modification Project

Temporary Dams' Modification Project

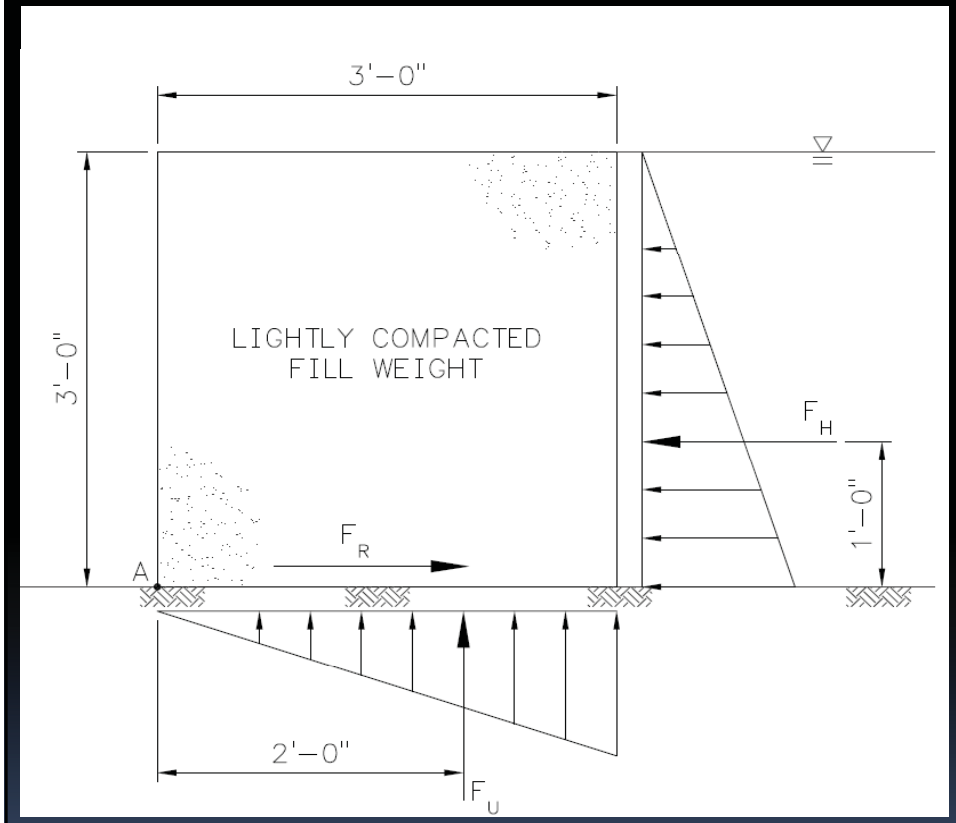
Dam	Ne PMF H ft	Ne PMF T ft	Current Ele ation ft	Ne Ele ation ft
Watts Bar	768.27	739.0	767.22	770.22
Fort Loudoun	835.65	821.2	833.25 (S. Emb.) 833.61 (Saddle Dam)	837 837.6
Tellico	833.34	820.3	830.5	834.5
Cherokee	1090.68	981.5	1089	1092

Total raised	HESCO baskets	Sand Used
18,200 feet	6,900	30 Million pounds

Temporary Dams' Modification Project

Stability Analysis of the HESCO Baskets

PMF



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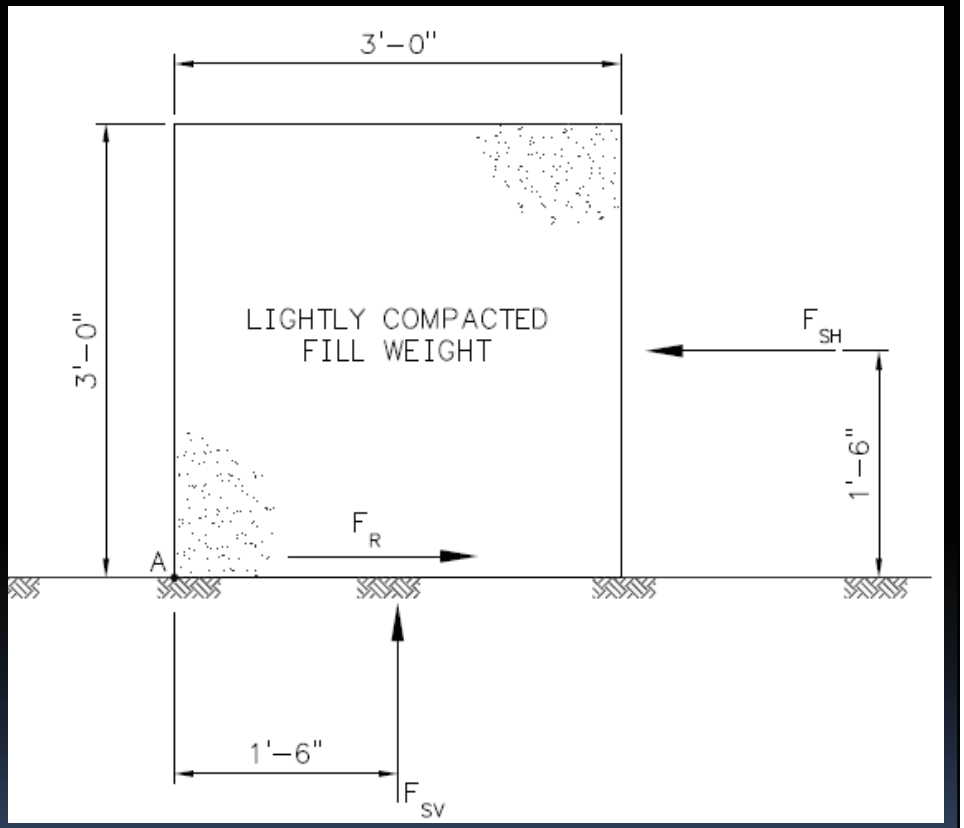
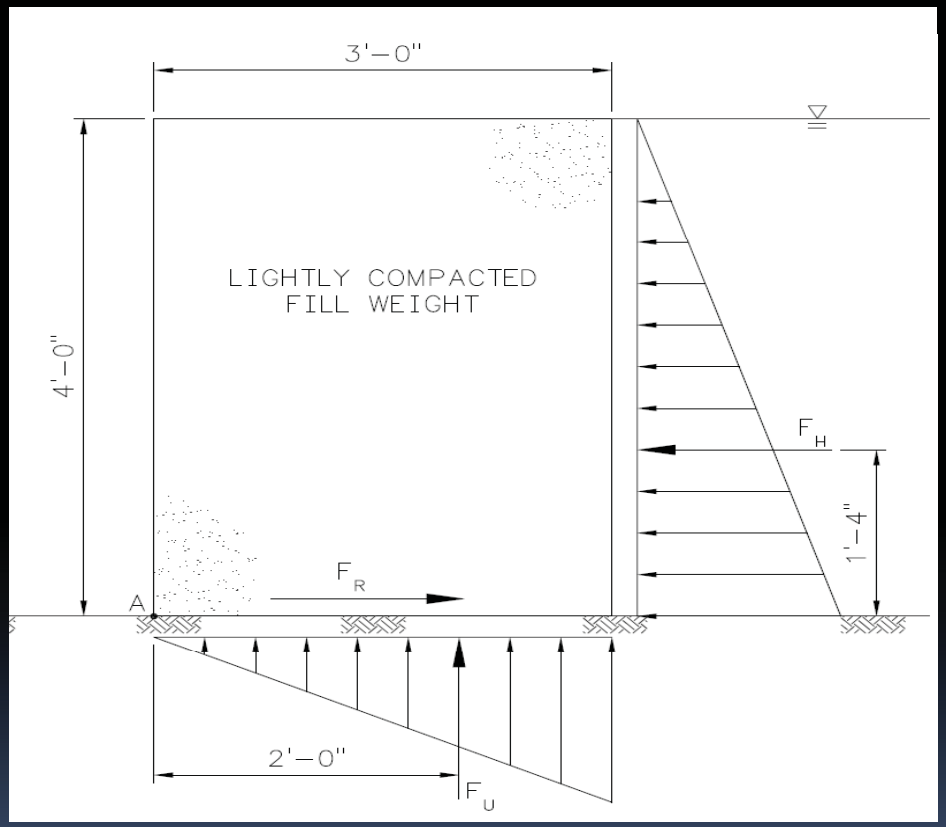


Configuration #1
3-foot Single Basket

Temporary Dams' Modification Project

Stability Analysis of the HESCO Baskets

PMF



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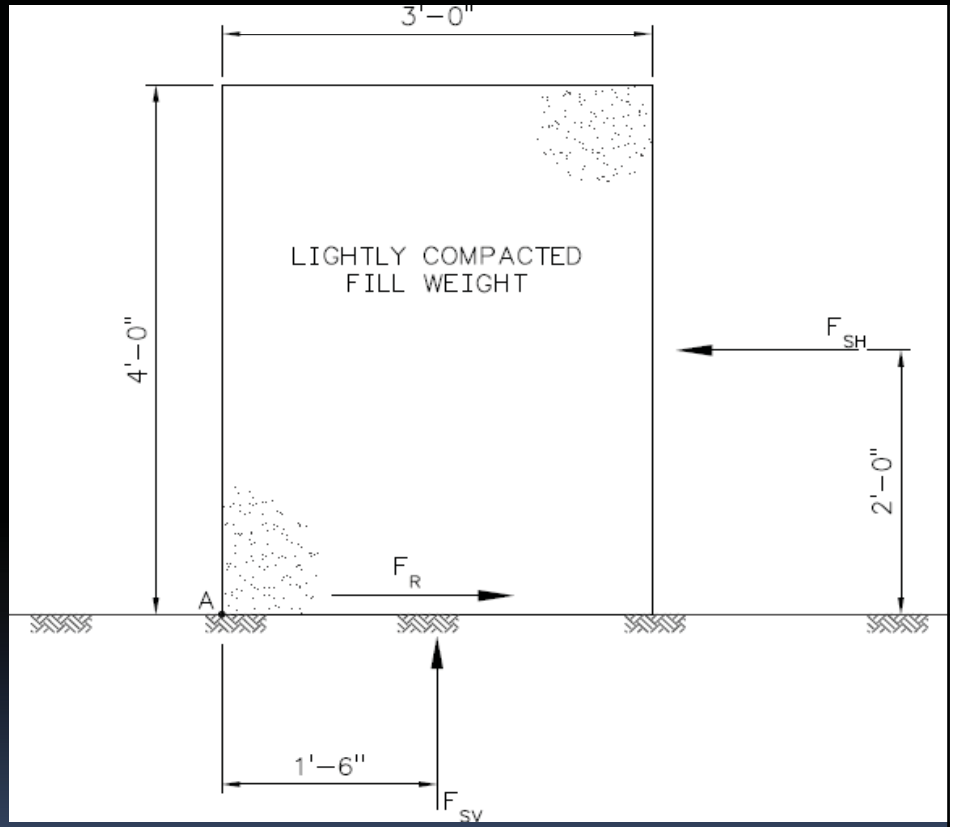
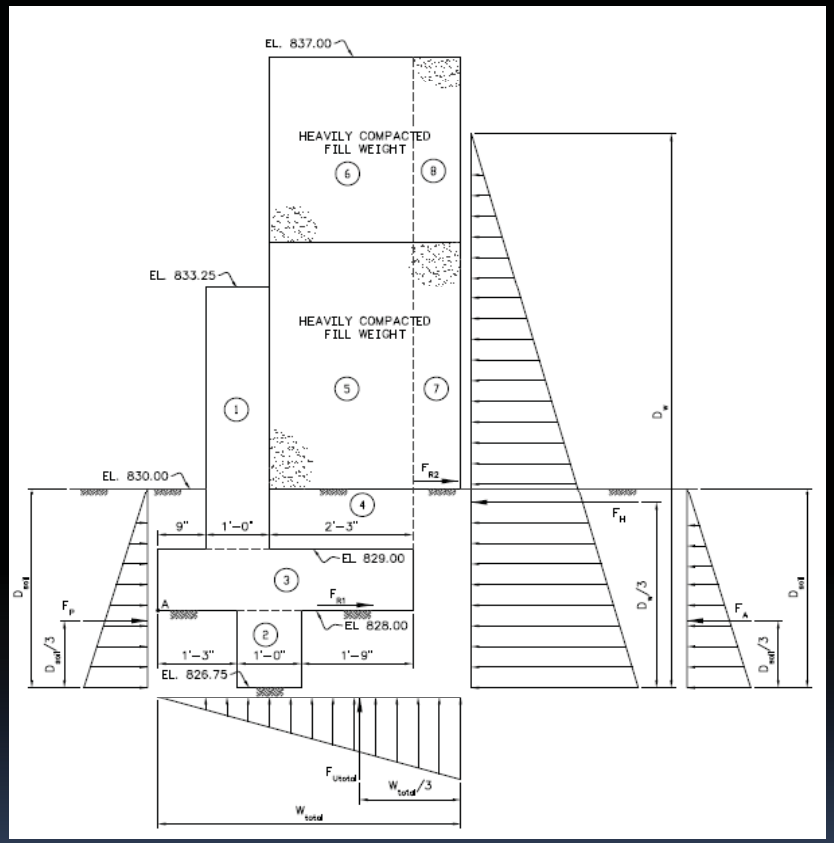


Configuration #2
4-foot Single Basket

Temporary Dams' Modification Project

Stability Analysis of the HESCO Baskets

PMF



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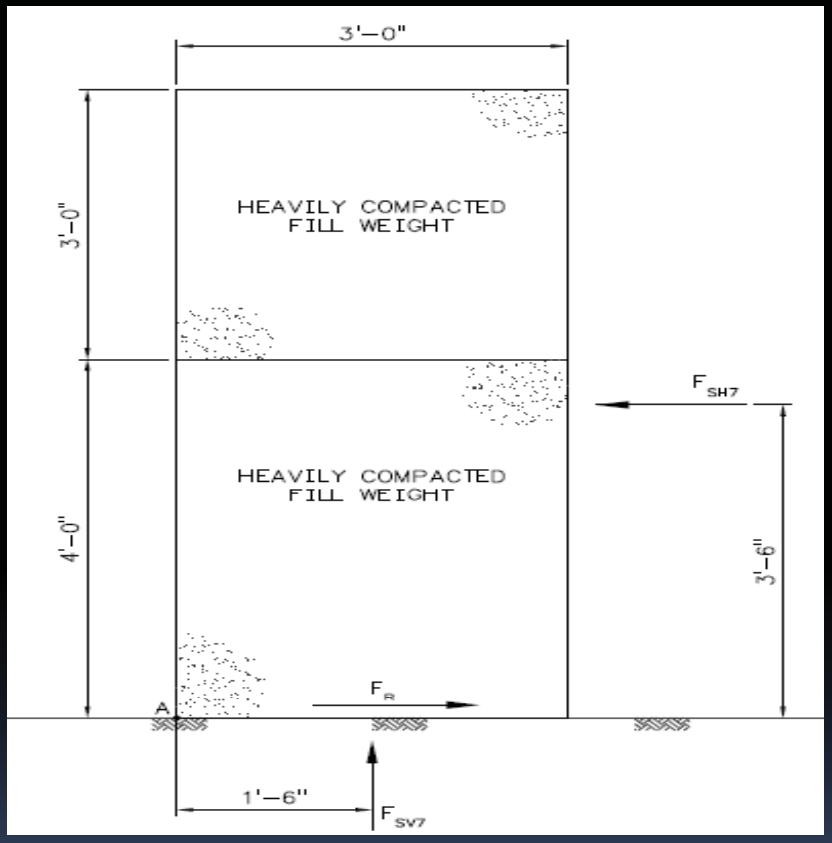


Configuration #3

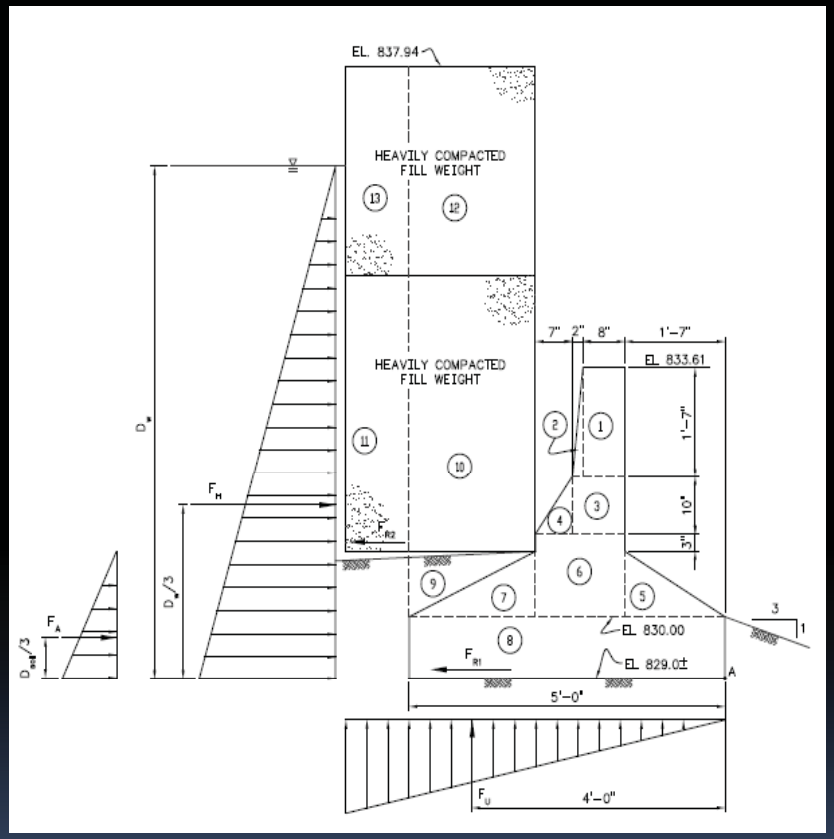
3+4 foot Double Baskets

Fort Loudoun South Embankment

Temporary Dams' Modification Project

Stability Analysis of the HESCO Baskets

PMF



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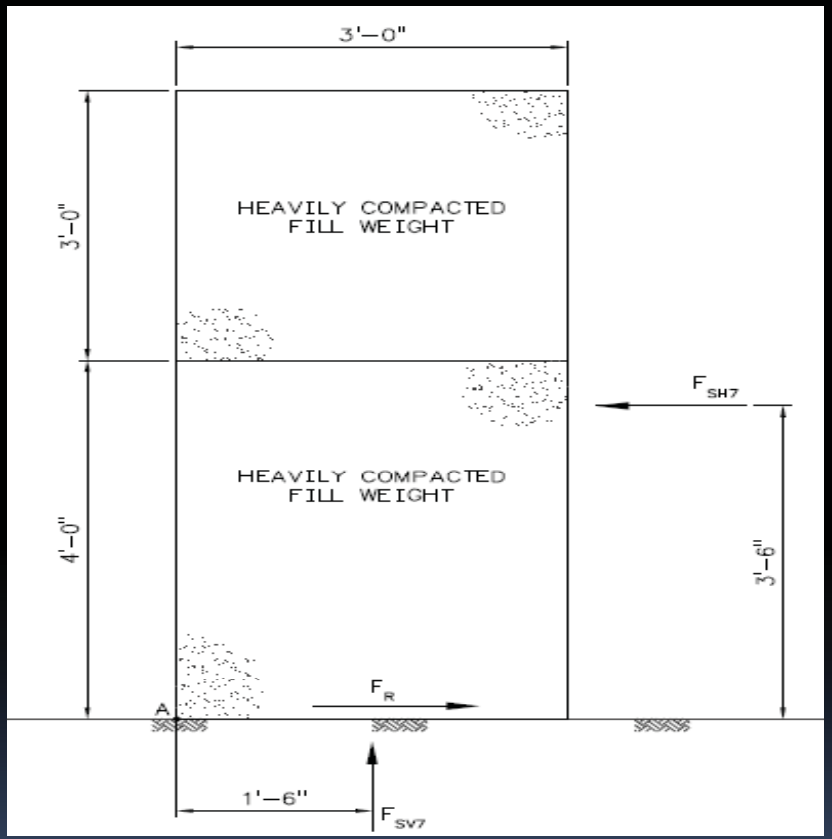
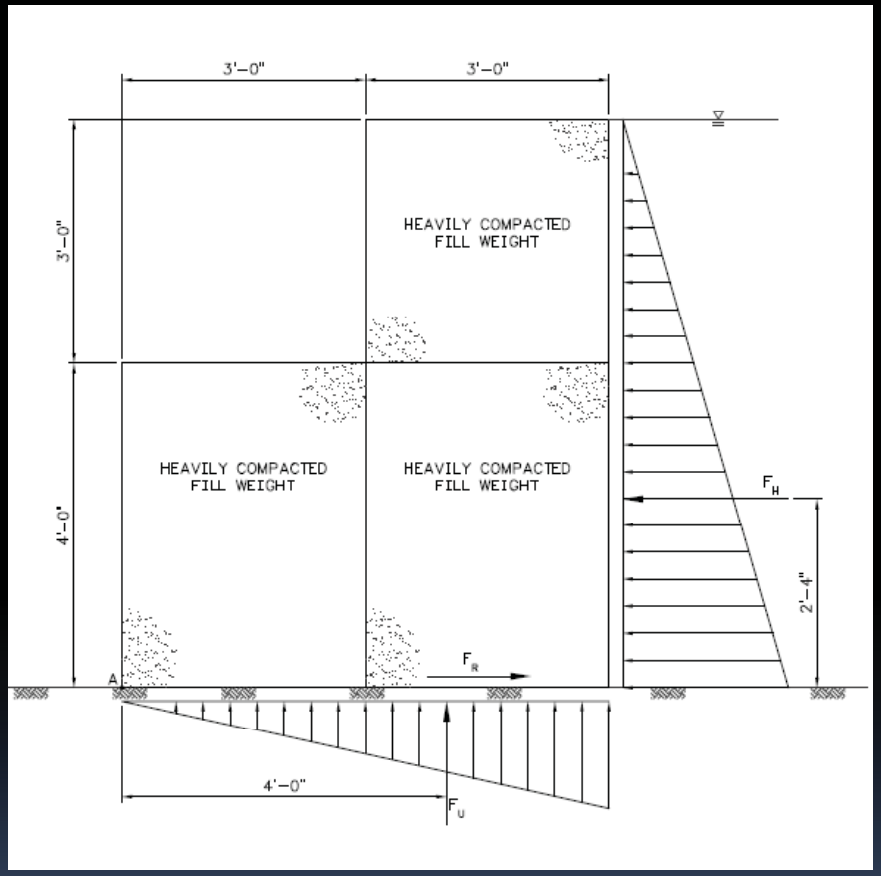


Configuration #4
3+4 foot Double Stacked Baskets
(Fort Loudoun Saddle Dam)

Temporary Dams' Modification Project

Stability Analysis of the HESCO Baskets

PMF



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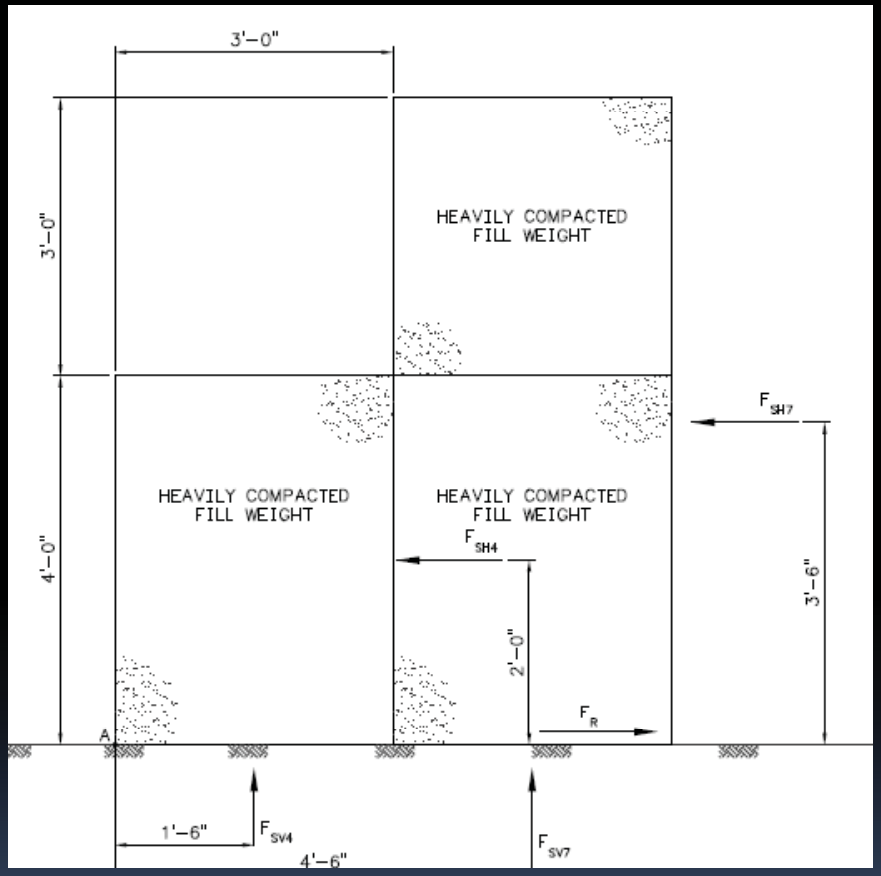

Configuration #5
L- Shaped Double Stacked Baskets
Fort Loudoun South Embankment

Temporary Dams' Modification Project

Stability Analysis for the HESCO Baskets for PMF and Seismic Loading Results

Configuration and Applicable Site	Factor of Safety					
	Sliding			Overturning		
	Minimum Calculated		Required	Resultant Location		Required
	PMF	Seismic		PMF	Seismic	
3-foot Single Basket Cherokee; Watts Bar	1.5	2.8	1.1	Within Base (0.95 ft)	Within Base (1.2 ft)	Within Base
4-foot Single Basket (Tellico and Fort Loudoun)	1.2	2.8	1.1	Within Base (0.66 ft)	Within Base (1.1 ft)	Within Base
3+4 foot Double Stacked Baskets (Fort Loudoun S. Embankment)	1.1	2.8	1.1	Within Base (0.08 ft)	Within Base (0.78 ft)	Within Base
3+4 foot Double Stacked Baskets (Fort Loudoun Saddle Dam)	1.1	2.8	1.1	Within Base (2.77 ft)	Within Base (0.78 ft)	Within Base
L-Shaped Double Stacked (Fort Loudoun)	1.1	2.8	1.1	Within Base (1.95 ft)	Within Base (2.8 ft)	Within Base