

Particular Concepts™

INTRODUCTION

Particular Concepts™

LLC



**“Bringing
Ancient Technologies
To Life”™**

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<http://particularconcepts.org>

<http://particularconcepts.com>

Particular Concepts LLC

Particular Wall™

[US7507056](#) / [GB2460558](#) / [NZ587679](#) (Under Examination)

Thank you for considering the Particular Wall™ for retaining slopes. The technology is as powerful as a landslide -- without the ill effects. With licensing, it can be your innovative technology.

The Particular Wall™ applies the gravitational force of particulates -- earth, gravel, shell, etc. -- against itself. It achieves this through angle-of-repose, or drained friction angle (dfa). Civil Engineers familiar with dfa and the forces of particulates (first quantified by William McQuorn Rankine) will recognize the following -- newly "turned" from motive to retentive -- applications:

- **Eliminating Wall Rotation**
- **Stabilizing Slopes** under more circumstances -- including soil liquefaction
- **Catching Landslides** when extended above a slope
- **Relieving Lateral Events** such as uneven earthquake movement
- **Sloping Steeply** (79 ° degrees with a fill angle-of-repose/dfa of 30°), with a small baffle (11° with a fill angle-of-repose/dfa of 30°).

Without heavy mass or intensive earth conditioning, the Particular Wall™ reduces the following costs:

- **Off-site Manufacture and Transportation** -- The Particular Wall™ is more stable the more holes (Particular Valves™) it has. Holes do not cost anything to make or haul.
- **Trucked-in Fill** -- The Particular Wall™ can be engineered for on-site fill.

Attached are several explanations of the Particular Concepts™ technology:

- **Valve Diagram** (page 1) -- The Particular Valve™ is the building block for the Particular Wall™. The diagram shows how angle-of-repose design can either "stop" or "go" a flowing particulate.
- **Sand Box Explanation** (page 3) -- This shows how stacking the Particular Valve™ vertically controls the flow of a pile or hill. It starts with a simple "Sand Box" description, and then moves to basic force analyses. The engineered Particular Wall™ matches traditional walls while eliminating rotation and shifting center of gravity ("leaning" toward the retained earth.)
- **Piston Explanation** (page 10) -- Although the geometry of angle-of-repose is a powerful explanation, you can also describe the Particular Valve™ application as a piston reacting to the forces involved.
- **Beach Blanket Explanation** (page 14)-- Not only can the Particular Valve™ stack vertically to form the Particular Wall™, it can stack horizontally to form a Particular Beach Blanket™ to control erosion.
- **Particular Wall™ /Tzagareli Wall Comparison** (page 20) -- The Tzagareli Wall was introduced in 1967(*Smith's Elements of Soil Mechanics*). It is the closest to the Particular Wall™ application. However, this comparison shows how different the Particular Wall™ is to all prior art.
- **History of Invention** (page 23) -- A background of the inventions and the inventor.

Thank you for the chance to add to your proprietary innovations.

Best regards,

Elsie Spry

President

Particular Concepts LLC

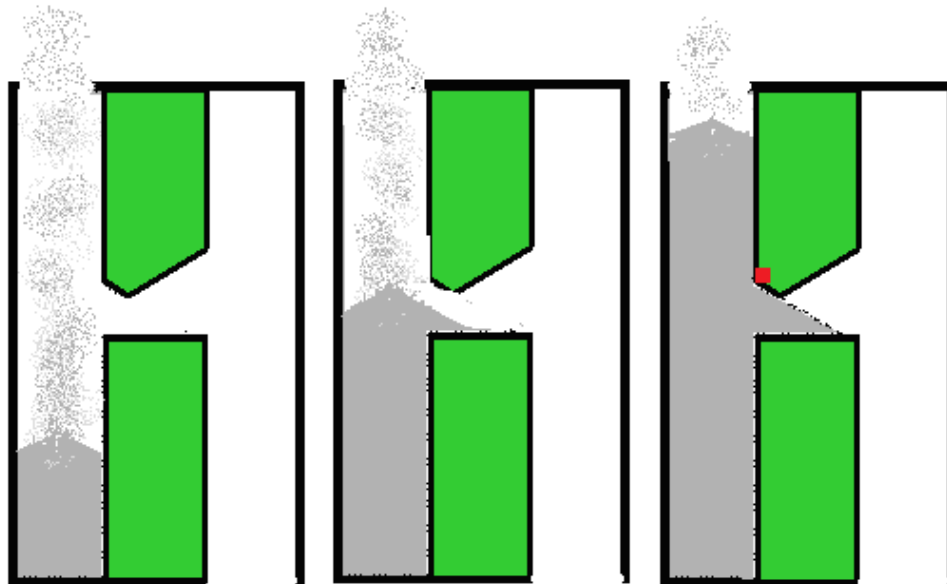
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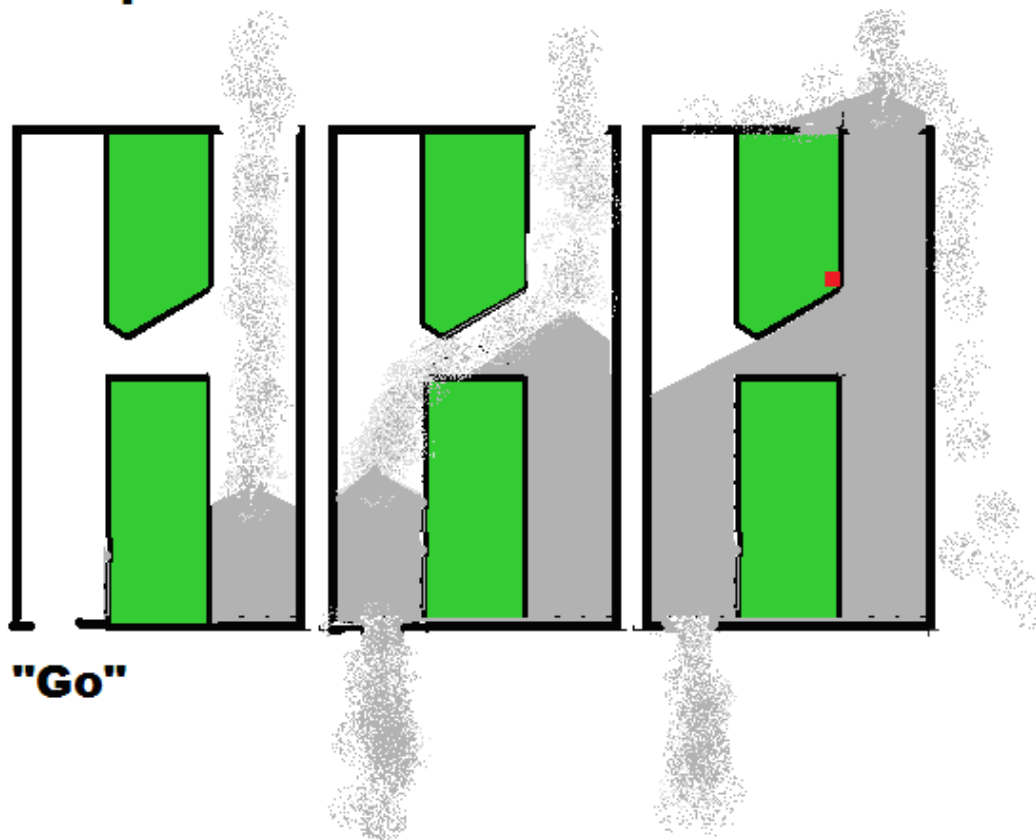
PS: A schoolroom **YouTube®** video demonstrates the surprising stability of the Particular Wall™. Click on [Particular Wall™](#) at <http://particularconcepts.com>.

Particular Valve™ Diagram

US7341399 / GB2441073 / NZ563219



"Stop"



"Go"

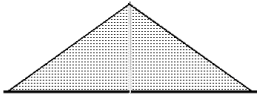
Note the red dots (■) for each application. This is where the angle of repose STARTS!

Particular Wall™

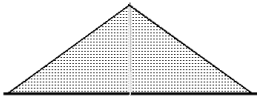
Sandbox Explanation

(With added evaluations for the Civil/Geo Engineers' Sandboxes)

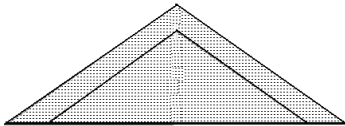
A Regular Sandbox



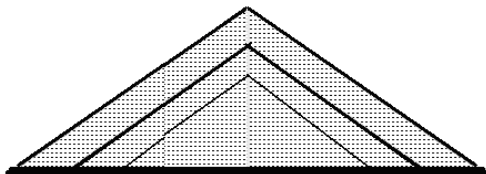
A Pile



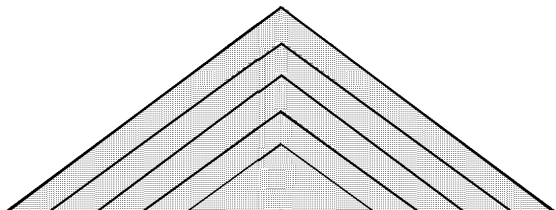
A Pile



Bigger Pile

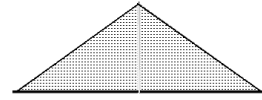


Bigger Bigger Pile

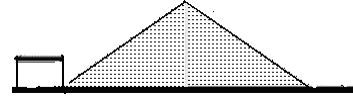


Bigger Bigger Bigger Bigger Pile

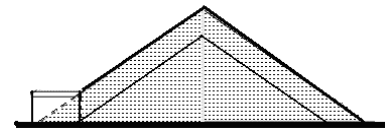
A Particular Concepts™ Sandbox



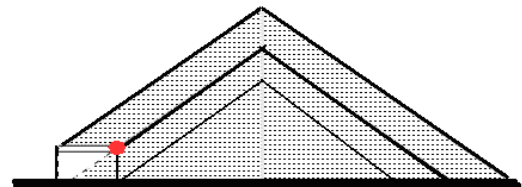
A Pile



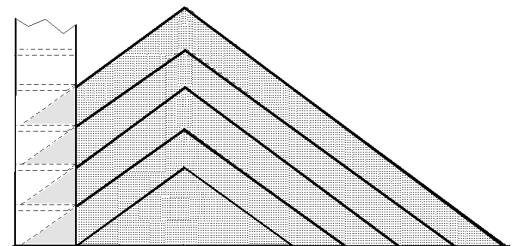
A Pile
With a "Step"



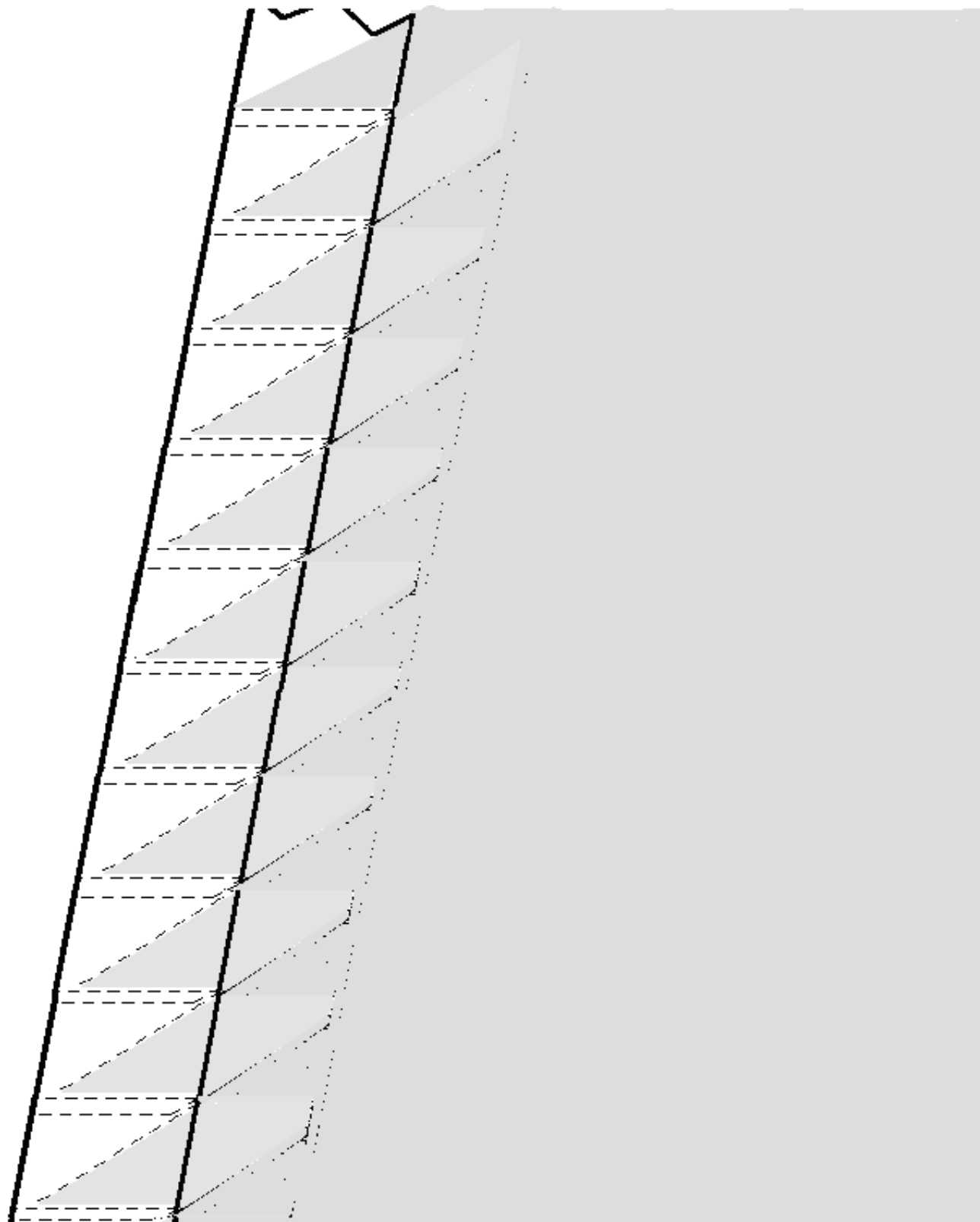
Bigger Pile
With a "Step"



Bigger Bigger Pile
With a **Particular Valve™***



Bigger Bigger Bigger Bigger Pile
With a **Particular Wall™**




REALLY BIG (almost forever) Pile

With the Particular Wall™ baffled at 11° for dfa = 30° (79° slope)

Particular Wall™ Engineer Explanation

#1 -- A stable “Particular Pile” -- made up of flowable, loose particulate -- at rest at its natural angle of repose.

#2 -- The same pile, with an added layer of particulate. The new layer has the same angle of repose.

#3 -- Same pile, with a “step”. The particulate is seen through the “step” supports --  -- at its angle of repose.

#4 -- New layer is stable at its angle of repose. The “step” is the patented Particular Valve™*.

Note: The Right Upper Edge of the Particular Valve™* precisely sets the point where the angle of repose of the first layer starts (●)

#5 -- The Particular Valve™** is one unit of the patented Particular Wall™**. The Particular Wall™** retains and controls all layers.

NOTE: The top Particular Valves™** -- when left open -- will “catch” and control any future additions (such as landslides).

#6 -- The Particular Wall™** retains the particulate (R), and the soil behind it.

Density of (R) = or > Density of SOIL

NOTE: Force is even along the wall height, minimizing rotation. Center of gravity (cg) is right of center, due to the weight of particulate.

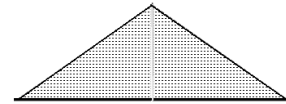
#7 -- The Particular Valve™ Resultant Force Vector (dotted arrow) must fall within the base.

Note: “Baffling” -- 11° for particulate with 30° angle of repose (“dfa”) -- assures an infinitely high stable wall (with gravity).

“Infinite” Baffle Angle Tangent =

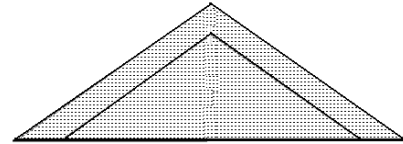
$$\frac{((1 - \sin(\text{RADIANS}(\text{dfa}))) / (1 + \sin(\text{RADIANS}(\text{dfa}))))}{(1 / (\tan(\text{RADIANS}(\text{dfa}))))}$$

#1



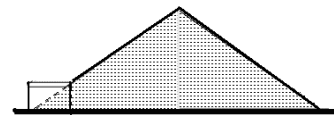
A Pile

#2



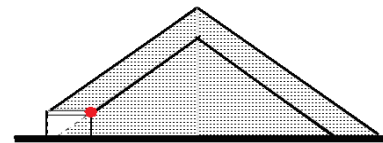
A Bigger Pile (with new layer).

#3



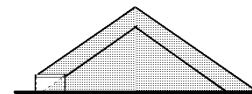
A Pile with a “Step”

#4.

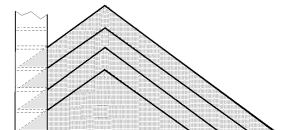


A Bigger Pile with Particular Valve™** (new layer held up)

#5

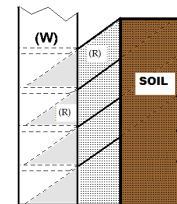


The Particular Valve™ is one unit of the Particular Wall™



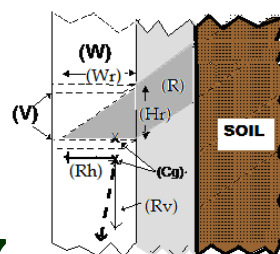
The Particular Wall™** Retains all layers at their angles of repose

#6

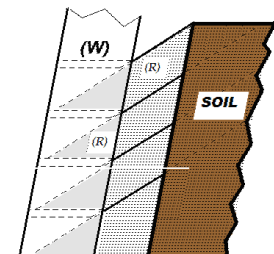


Particular Wall™** Retains the Particulate (R) and Soil.

#7



Particular Valve™** Force Diagram



“Infinite” Baffle 11 °

Particular Wall™ Engineer Evaluation 2

- The **Particular Wall™** is built from **Particular Valves™***.
- Each valve is an independent and force-relieving unit (refer to Tsagareli as prior -- but not complete -- art).
- The particulate within each valve makes up the vertical force **AT THE NEW CENTER OF GRAVITY**.
- The customary triangular effect of force applies to each unit only -- **NOT THE ENTIRE WALL**.
- Forces on a valve at the top of a **Particular Wall™**** are identical to those on one at the bottom.
- This is because the noncohesive particulate is "stopped" at its angle of repose **AT EACH LEVEL**.
- If the Particular Valve Units are baffled parallel with the Resultant Vector Angle, the **Particular Wall™**** can be built to any height (with gravity) -- for an "infinite" retaining wall.

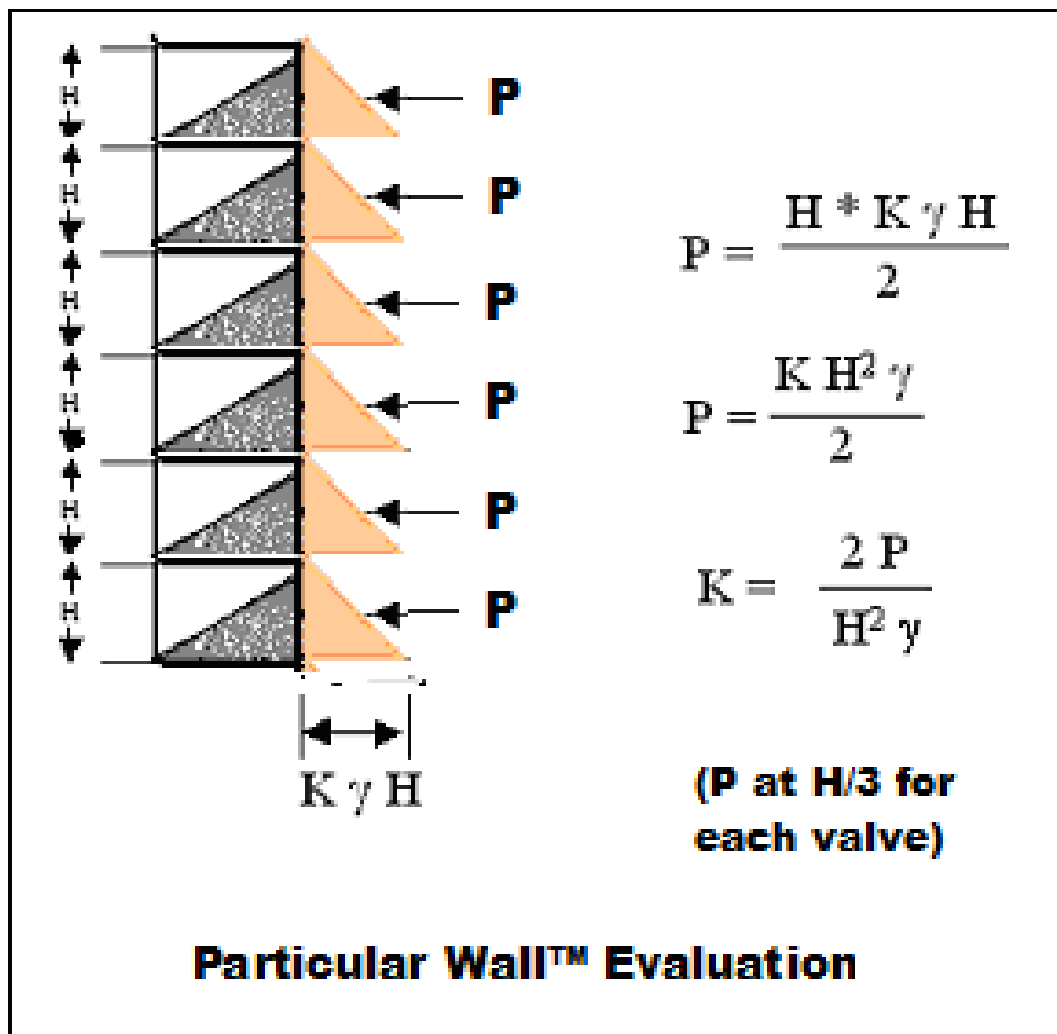
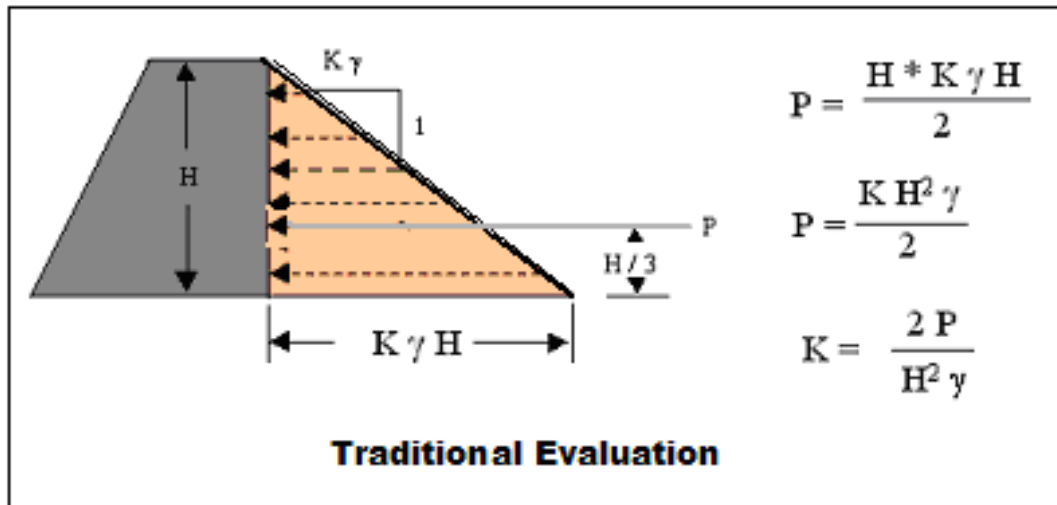
Spreadsheet Force Values and Calculations

- Only Rankine is used for evaluation of the **Particular Valve™***.
- Coulomb does not apply since there is no vertical surface of friction.
- The necessary structure surrounding the valve is not evaluated. (The vertical surfaces of the necessary structure would be evaluated conventionally.)
- The necessary structure would shift cg, increase Ka, and increase **TOTAL VERTICAL FORCE**.
- Surcharge is not evaluated

		variables		
	Y	= 120.00	pcf	Particulate Weight
	dfa	= 30.00	degrees	Particulate Angle of Repose or "dfa"
	H	= 1.50	feet	Height of particulate in Particular Valve™*
	W	= 3.00	feet	Width of particulate in Particular Valve™*
	H/2	= 0.75	feet	
	H/3	= 0.5	feet	
$H/TAN(RADIANS(dfa)) =$	D	= 2.60	feet	Depth of particulate in Particular Valve™*
$(1-SIN(RADIANS(dfa)))/(1+SIN(RADIANS(dfa))) =$	Ka	= 0.33		Rankine Coefficient
$Ka (Y) (H) (W) =$	pa	= 60.00	psf	Rankine Active pressure / foot
$1/2 Ka (Y) (H^2) (W) =$	Pa	= 135.00	#	Total Earth Pressure Force (acting at H/3 from base of valve)
$Pa =$	Rh	= 135.00	#	TOTAL HORIZONTAL FORCE
$((H \times W \times D) / 2) \times Y =$	Rv	= 701.48	#	TOTAL VERTICAL FORCE (particulate weight in Valve™*)
Rh / Rv		= 0.19245	radians	Resultant Vector Angle Tangent
$(DEG(ATAN(0.19245)))$		= 10.89	degrees	Resultant Vector Angle
$SQRT(D^2 + Pa^2)$		= 135.02	#	Resultant Vector Force
Rounding UP		≅ 11.00	degrees	Baffle for "Infinite" Particular Wall™**
$D / SQRT (2) =$	cg	= 1.84	feet	From front of particulate in Particular Valve™*

Simplified Baffle for "Infinite" Particular Wall™ inserted in Excel® (result is 10.69° ≅ 11°)
 $DEGREES(ATAN((1-SIN(RADIANS("dfa")))/(1+SIN(RADIANS("dfa")))/(1/(TAN(RADIANS("dfa"))))))$

Particular Wall™ Engineer Evaluation 3



Particular Wall™

Piston Explanation



Activity 9

"Concept of Applied Rankine Active Force as a Piston" by William J. Spry, PhD Nuclear Physics

A Rankine material is defined as a composite of particles which interact solely by the frictional forces between them. As a consequence -- under the influence of gravity -- a pile of such material can be formed on a flat, horizontal surface. The angle that the top surface of that pile makes to the supporting plane surface is directly related to the average coefficient of friction among the particles in the composite. It is generally identified as the angle-of-repose: the greater the angle, the greater the average friction between particles.

If the inter-particle frictional forces are essentially zero (such as in ball bearings), no pile is formed (the angle-of-repose becomes zero). If the inter-particle frictional forces are very high (such as in irregular, freshly crushed dry sand) the material is rapidly contained and the angle-of-repose approaches ninety degrees.

Figure #1 shows this relationship with Rankine material restrained by a retaining wall consisting of flat plates supported by vertical posts. Consider the forces to the left and right of the Reference Plane. In the upper and lower sections (A), the material has flowed to the right of the Reference Plane until the Rankine active force is constrained by the sloping pile of material (at the Rankine material's angle-of-repose). The force "Out" on the Piston in the middle section is this same Rankine active force (here restraining particle flow). The "Motive and Retentive Particulate Force Table" calculates Rankine active forces, dependent on the particulate used.

If the Rankine material had essentially zero internal friction between particles (such as ball bearings), the force to move the Piston "In" would be the same as that attempting to move the piston "Out". This would be normal hydraulics. However, the internal friction between the particles of normal Rankine material (such as in various dry sands) must be overcome to move the Piston "In". This force, also calculated by Rankine, is the Rankine passive force. Due to this internal friction between particles the Rankine passive force is opposite to, and greater than the Rankine active force. All the activities of the Particular Concepts manual involve Rankine Active Forces. The Spry patents and the Particular Concepts activities are applications of the Rankine Active Force.

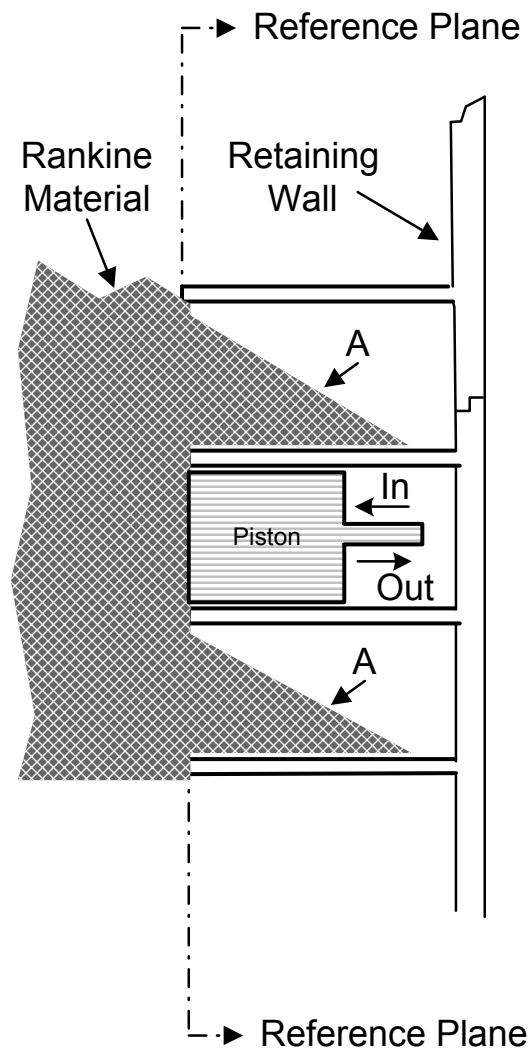
(References: Rankine, J. B. (1857), "On the Stability of Loose Earth," Philosophical Transactions of the Royal Society of London, Vol. 147, Part 1, pp. 9-27; Braja M. Das, *Advanced Soil Mechanics*, Second Edition, California State University)



Activity 9

"Concept of Applied Rankine Active Force as a Piston" continued

Figure #1:





Activity 9

"Concept of Applied Rankine Active Force as a Piston"

Motive and Retentive Particulate Force Table

The Rankine Active Force For a Free Standing Particle Pile 1

	B	C	D	E	F	G	H	I	J	K	L
2	Density =	1	lbs/cu.ft.								
3	Width =	1	ft.								
4											
5											
6	Angle of Repose = Ø		Degrees								
7											
8	Excel Formula for 1 foot high at 90 degrees: $\$C\$4*\$C\$3*((C\$14*C\$14)/2)*(TAN(PI()*((45-($B16/2))/180)))*(TAN(PI()*((45-($B16/2))/180)))$										
9	OR										
10	F=WxDx Integral{z(dz)/((Tan(45-Ø/2)) squared)}										
11											
12	W= width in feet		z=depth in feet								
13											
14	H(feet)										
15	Ø(degrees)										
16	90	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
17	80	0.00383	0.01531	0.03444	0.06123	0.09568	0.13778	0.18753	0.24494	0.31000	0.38271
18	75	0.00867	0.03466	0.07800	0.13866	0.21665	0.31198	0.42464	0.55464	0.70196	0.86662
19	70	0.01555	0.06218	0.13991	0.24873	0.38864	0.55964	0.76173	0.99492	1.25919	1.55456
20	65	0.02457	0.09830	0.22117	0.39319	0.61436	0.88467	1.20414	1.57275	1.99052	2.45743
21	60	0.03590	0.14359	0.32309	0.57437	0.89746	1.29234	1.75902	2.29750	2.90777	3.58984
22	55	0.04971	0.19883	0.44736	0.79531	1.24267	1.78944	2.43563	3.18123	4.02624	4.97067
23	50	0.06624	0.26495	0.59613	1.05979	1.65593	2.38454	3.24562	4.23918	5.36521	6.62372
24	45	0.08579	0.34315	0.77208	1.37258	2.14466	3.08831	4.20354	5.49033	6.94870	8.57864
25	40	0.10872	0.43489	0.97849	1.73954	2.71804	3.91397	5.32735	6.95817	8.80643	10.87214
26	35	0.13550	0.54198	1.21946	2.16792	3.38738	4.87782	6.63926	8.67168	10.97510	13.54950
27	30	0.16667	0.66667	1.50000	2.66667	4.16667	6.00000	8.16667	10.66667	13.50000	16.66667
28	25	0.20293	0.81172	1.82636	3.24687	5.07323	7.30545	9.94353	12.98747	16.43727	20.29293
29	20	0.24515	0.98058	2.20631	3.92232	6.12863	8.82523	12.01212	15.68930	19.85677	24.51453
30	15	0.29440	1.17758	2.64956	4.71033	7.35988	10.59823	14.42537	18.84130	23.84602	29.43954
31	10	0.35204	1.40818	3.16840	5.63271	8.80110	12.67359	17.25016	22.53082	28.51557	35.20441
32	5	0.41983	1.67933	3.77848	6.71730	10.49579	15.11393	20.57174	26.86921	34.00634	41.98314
33	0	0.50000	2.00000	4.50000	8.00000	12.50000	18.00000	24.50000	32.00000	40.50000	50.00000

Beach Blanket™

Explanation

Particular Beach Blanket™

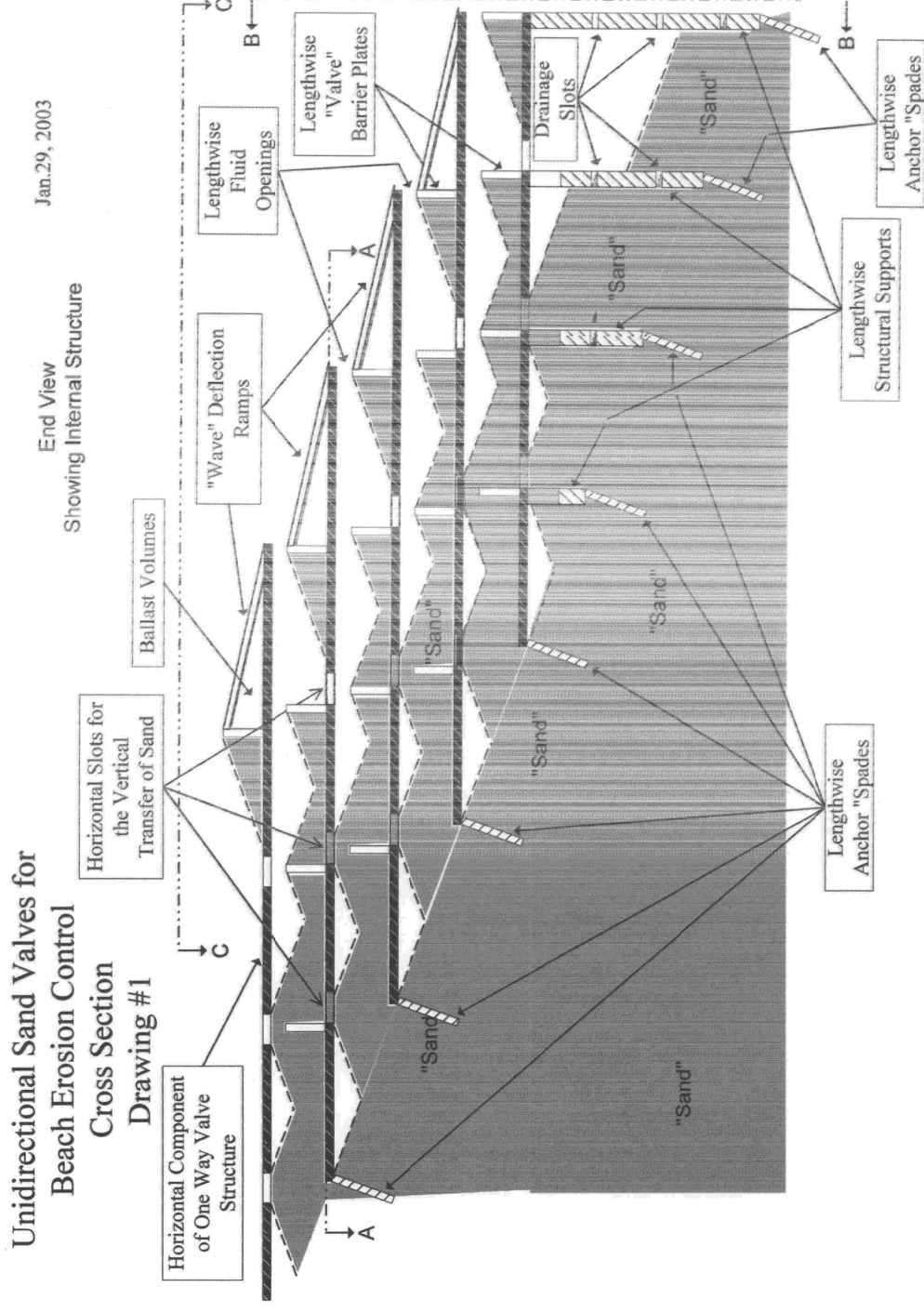
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With the power and physics of particulate (sand, gravel, soil, etc.), the Particular Blanket™ is a horizontal application of the Particular Valve™. With a “Blanket” of horizontal valves, staggered at each layer, the Particular Blanket™ can:

- “Catch” the particulate in wave action, building up more beach or silt over time.**
(The density of the material used to construct the valve would have to be 1.5 to 2 times that of water -- so it won't float away!).
- Rise as it fills with sand/silt, building up the bank automatically.**
- Maintain a specific height/slope if you anchor the blanket. This is useful in channel maintenance as well as at construction and agricultural sites.**

In the case of construction and agricultural site mitigation of erosion or runoff, the Particular Blanket™ does not need US Army Corp of Engineer' approval.

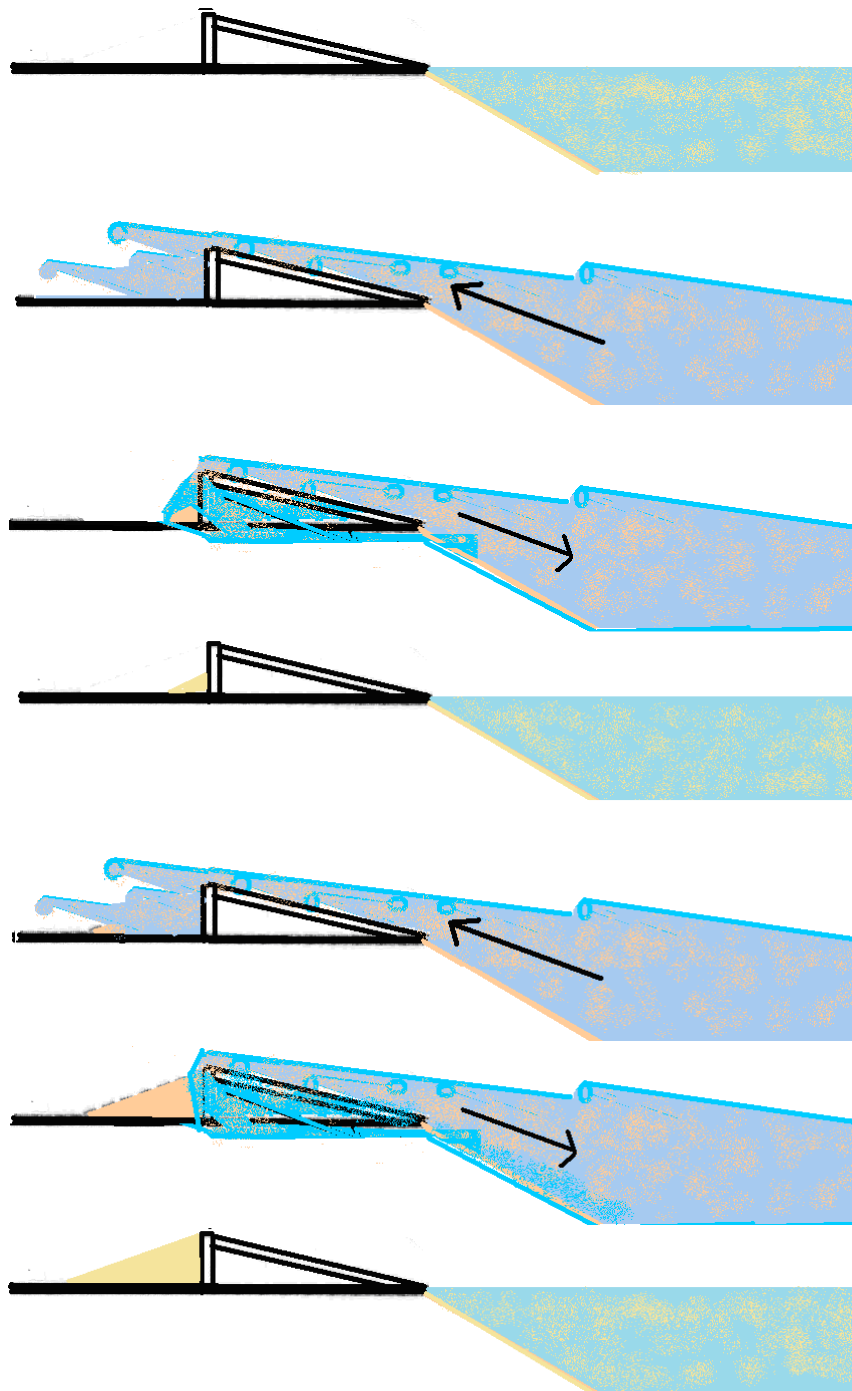
Particular Beach Blanket Diagram



Basic Particular Blanket™ Unit



Particular Blanket™ Wave Progression



Particular Concepts™

Particular Wall™ /Tsagareli Wall Comparison

Particular Wall™ vs. Tsagareli Wall

- 1. The primary design component of the Particular Wall is the type of **Rankine Particulate** used to fill and backfill the **Particular Wall™**; it is either chosen or measured. The characteristics of the retained material are used in the design of the wall itself.
 - The **Tsagareli Wall** does not make nor control this design choice. It may accommodate, but does not use the characteristics of the retained material itself.
- 2. The **Rankine Particulate** used dictates the design of the **Particular Valves™** (vertical to horizontal proportions)
 - The **Tsagareli Wall** does not specify the proportions of the Tsagareli Plates to the vertical part of the wall.
- 3. The **Particular Wall™** horizontal plates support ALL of the chosen **Rankine Particulate**.
 - The **Tsagareli** horizontal plates do NOT necessarily support all of the retained earth (some earth may or may not reach the vertical wall structure).
- 4. The Particular Wall is NOT a cantilever wall. An “L” cross section at the base is NOT needed.
 - The **Tsagareli Wall** is a cantilever wall. It needs the “L” shaped cross section at the base.
- 5. In the **Particular Wall™**, the force diagram is completely within the valves of the wall.
 - The horizontal component of the vector is the **Active Rankine Force** within the valve.
 - The vertical component is the weight of the Rankine Particulate within the valve, and stays within the vertical section of the wall;
 - (Both the horizontal component and the vertical component can be considered as acting from a single point).
 - (The third vector component is an equal and opposite **Rankine Force** into the retained material.)
- 6. In the **Tsagareli Wall**, the force diagram is not just within the plate structure of the wall
 - The horizontal component of the vector is the earth’s **Active Rankine Force** within the Tsagareli plates, and against the vertical structure.
 - The vertical component is the weight of the earth on the Tsagareli plates and the vertical structure;
 - (The horizontal component and the vertical component can not be assumed to act from a single point.)

The force being transposed (piston) is still there. We reduce to the **Active Rankine Force** to horizontal. The downward force is the weight of the material in the stop valve. The rankine active force is outward,. The resolving force vector stays within the wall itself, which is why the wall does not turn over.

The weight of the Rankine Particulate on the horizontal plate is being pushed by the Rankine material on the outside

Particular Concepts™

History of Invention

Particular Concepts™ -- Patent Summary

“Bringing New Technologies to Life”™

The “PARTICULAR ENGINE”™, the “PARTICULAR VALVE”™, the “PARTICULAR WALL”™, and the “PARTICULAR BLANKET”™ are new patented physics and engineering technologies.

Available thru <http://particularconcepts.com>:

- Grades PK thru College level Educational Workbooks

Available thru <http://particularconcepts.org>:

- Licenses for industrial, commercial, government, and humanitarian uses to Control Erosion, Protect Structures, Precision Movement of giant and tiny objects, Improve Efficiencies of materials handling.

Ancient technologies were recently re-discovered and patented that can be used today to uniquely and efficiently USE and CONTROL the FORCE of GRAVITY - FLOWING PARTICULATES to achieve the following example engineering feats:

- Beach and beach structure protection
- Earth retaining wall performance
- Industrial handling efficiency of grains, sands, rocks, pigments, solid chemicals, pills, and other solid particulates
- Precision movement and placement of giant obelisks or tiny crystals

These ancient technologies for the USE and CONTROL of forces contained in piles of flowing sand, rock, crystals, and all other solid particles were re-discovered and patented by the physicist who brought the world Carbon Fibers for aerospace, sporting goods, transportation, medicine, and many other world changing uses. Physicist, teacher, and inventor, Dr. William J. Spry discovered Carbon Fibers made from “RAYON” in 1969 ([US3454362](#)). From his physics training thru the GI Bill, after serving in WWII, Dr. Spry helped to create many new technologies for the world. Ceramic shields for space capsules, brakes for railroad engines, infrared motion detectors, energy field for shale oil recovery, radiation shields for nuclear reactors, and his pioneering discovery of “RAYON” based carbon-fibers all set the stage for his latest discoveries -- [How to USE and CONTROL the Force of Gravity-Flowing Particulates](#).

Dr. Spry “re-discovered” these ancient technologies by researching the physics, tools, energy requirements, resources, and skills needed by the Ancient Egyptians to move and raise giant obelisks. Archeologists have since confirmed the ancients’ specific use of particulates that provided the greatest force. How did the ancients achieve those marvels without modern machines or giants or spaceships? The answer that Dr. Spry discovered is the power and force of controlled, gravity-flowing sand. In basic terms, all particulates like sand that are piled up on the earth are being constantly pushed down by gravity. We modern people think of using giant thick walls to hold back

these forced, but very often our retaining walls fail under particulate forces: landslides occur, roads are lost, and structures collapse. But, ancient peoples Used and Controlled the force of piles of sand and other particulates to move and place giant objects and to protect structures.

Dr. Spry has patented two of the re-discovered technologies to USE and CONTROL the Force of Gravity-Flowing Particulates. The first technology is the “USE of the Force of Piled Particulates to Move Something” ([US6739827](#), and foreign patent). Whether to move a 412.26 ton (374 metric ton) and 93.5 feet (28.5 meters) tall giant obelisk into pin point placement, or to move a tiny crystal door in a microscopic surgical instrument, opportunities to Use the Force of Gravity-Flowing Particulates are endless. As the particulate pile is made higher, the force gets bigger to move something. The USE of Piles of Gravity-Forced Particulates to move things is called the PARTICULAR ENGINE™. Just like a long lever, a big horse, or a steam locomotive, the PARTICULAR ENGINE can move things. Perhaps in ancient times it would have been known as “Pharaoh’s Sand Engine”™.

The second technology is the “CONTROL of the Particulate Force with VALVES” ([NZ563219](#), [GB2441073](#), [US7341399](#) patents). These PARTICULAR VALVES™ are openings in walls, floors, and ceilings that are specially designed to control the gravity-flow forces of the particulates. The VALVES Control the gravity-flow of the particulates to achieve engineering feats. Just like gates in dams, resistors in circuits, or heads in gas motors, the PARTICULATE VALVE can direct the force of solid particles to move things precisely or to protect things from the force. Whether to protect a retaining wall from collapse or to minutely measure and deliver the dose of a powdered drug, there are many ways that the control of sold particles can now be used. “Magic” comes to mind when you think about how the ancients would have employed such simple but effective technology as the “Sand Valve”™.

As you might expect with any technology, there are a few basic principles that define the USE and CONTROL of the Force of Gravity-Flowing Particulates, covered in the following pages.

USE and CONTROL of Particulate Gravity-Flowing Force Summary

Each particle -- whether tiny crystal, marble, sand, or boulder -- has its own inherent force when it is piled up with other particles. The force of gravity on the pile of particles causes the particles in the pile to flow. The force, the flow, the USE and CONTROL are determined by four particle properties,

1. particle size and weight (density)
2. ease that the particle slides down other particles (angle of repose)
3. similarity of the particles in the pile (distribution)
4. material between the particles (gases, liquids, voids)

With knowledge and measurement of the four properties of the particles in a pile, the particle pile can be used to provide the force needed to move an object, and the openings in a wall can be designed to control the force.

There are many uses that come to mind on how Particular Engines and Particular Valves can help us to protect structures, move objects, and to design new walls; but, there are even more opportunities to tackle old problems if we take the time to apply the two re-discovered technologies. Dr. Spry has already provided two examples for us: more effective retaining walls, and a solution to beach and other erosion:

NZ587679 (Under Examination), **US7507056**, **GB2460558**, :

Slope maintenance of earthworks is an ongoing issue. Dr. Spry's third patent takes the knowledge of the two ancient technologies to USE and Control the Force of the Gravity-Flowing Particulates in an engineering design to apply the force of the particles retained against themselves, either using onsite particulate (such as onsite soil or sand), or introducing a chosen particulate (such as trucked in gravel).

By stacking the Particular Valve vertically (think of making a ladder with deep steps), the particulate is stopped by the equal force of the valve (each ladder step), while reducing both the rotation and shear between courses on the new wall. The performance of the valve does not alter from the bottom of the wall, to the top, no matter what the distance (as long as there is similar gravity working on the system). Just as Archimedes claimed he could move the earth with a big enough lever, with the Particular Wall there are no theoretical height restrictions.

In addition, since the wall is comprised of "open" Particular Valves, drainage is assured through the chosen particulate itself, as well as alleviation of increased horizontal forces such as occur during earthquakes or underground explosions (the chosen particulate flows out until the force recedes, leaving the wall standing longer than traditional retaining walls).

Finally, when properly anchored, designed, and extended above the maintained slope, the Particular Wall will "catch" and retain landslide from sources above the retained slope.

US7748929, and **GB2462742**:

Piles of sand moving in a liquid have always been a challenge to humans as rivers and oceans move our sandy shores. Dr. Spry's fourth patent takes the knowledge of the two ancient technologies to USE and Control the Force of the Gravity-Flowing Particulates in an engineering design to capture

and hold beach sand. The design traps and holds the piles of sand using Particular Valves placed in a “blanket”. Rows of these “PARTICULAR BLANKETS”™ allow us to build up beaches, to stabilize beaches, and to protect beach structures.

More than the protection of beaches and high rise beach buildings, Dr. Spry’s design of the “sand blanket”™ gives rise to many other ideas for other needed uses of the PARTICULAR ENGINE, PARTICULAR VALVE, and PARTICULAR BLANKET for pipelines, pre-fabricated wall units, powder conveyors, arterial controllers, and many others.

The PARTICULAR CONCEPTS are available for study in the form of workbooks, videos, and for licensed use in commerce.

For more information about the Particular Concepts™, including the PARTICULAR ENGINE, the PARTICULAR VALVE, and the PARTICULAR BLANKET, please look into the following resources:

Physics and Engineering workbooks are available for sale at <http://particularconcepts.com>. These workbooks qualify for Grades PK to 6, and Grades 7 to Adult for science programs (copyright 2009).

Videos of the USE and CONTROL of the gravity flowing force of particulates using the ENGINE, VALVE, and WALL technologies are available on YOUTUBE by clicking on the videos listed at the <http://particularconcepts.com> site (copyright various 2009 - 2010)

Licenses available to use the patented technologies:

Particular Engine

[US6739827](#)

Particular Wall

[US7507056](#)

[GB2460558](#)

[NZ587679 \(Under Examination\)](#)

Particular Valve

[US7341399](#) ;

[GB2441073](#)

[NZ563219](#) ,

Particular Blanket

[US7748929](#),

[GB2462742](#)

For licenses for outreach, education, industry, government, and humanitarian applications contact Particular Concepts: <mailto:contact@particularconcepts.org>

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