

17 Nov '09

Ben -

We are taking you up on your offer to give us technical help on the Georgetown Central School's total water project. I hope you don't regret it.

We have been measuring tides at the beach of the old station May/June for a while. There is a spring + neap tide. This was done at half tide on the beach with two methods: ① a pilot tide, and ② timing water level in the current over a distance of 25'.

We have chosen a rough plan for the floating paddle wheel, also have measured + recorded the area that is flooded at an average high tide about the dam. We have calculated the velocity of the flow in feet per second at half tide + have tentative calculations of RPM's of the mill wheel with the load on it. Could you see the material over + give us your thoughts?

The big question concerns power generation: generator or alternator? Pros + cons of each, paper available, RPM's that might be

required, can generator or alternator from lead, can a car starter be converted to a generator?

The two considerations: 1) the reverse every bit known, going from zero to 3000 RPM. This

then effect generator or alternator question? 2) torque & gearing.

The torque plan has a roller on the inside which runs, which gives

experimenting RPMs that the belt & wheels can give other combinations

of RPM + torque, if not known that

the power. One observation is that we are

getting very little power out of the

test, the energy passing through the

was quite efficient apparently, perhaps because of many losses

used gases to ~~the~~ impound & contact the flow & transferred the

claimed to a conduit & then raised the velocity, it may have

had a further action that we understood that made ATM wheel,

data, 3) a set of problems, 4) the sampling

3) and sheets of rough plans,

concerning flow velocity & RPM.

data, 3) a set of problems, 4) the sampling

② a map of the site, and ③ an historic plot of the tract from around 1900. We're working with the project's city historians + corrections, + Historic City Council. We will appreciate for help we can help develop, we hope we can help make quarters on the spot -
Thank you,

Will Green

Printer

Walter H. Brown

Henry B. Joyce

TIDE FLOW SAMPLING AT
HALF-OR MID-TIDE

4 Nov '09, Wednesday 0541 1141 HIGH
 high 11.3 low - 9 Sample 2.2
 2 FTS 3.33' / acc
 Pitot tube
 blood block
 moon

5 Nov '09, Thursday 0927 1227
 high 11.3 low - 9 Sample 2.2
 2 1/4 FTS 3.75' / acc
 7.5 acc
 Pitot
 Block

6 Nov '09, Friday 1016 1316
 high 11.2 low - 7 Sample 11.5
 1 1/4 FTS 2.08' / acc
 7.5' / acc
 Pitot
 Block

7 Nov '09 Sat, 1410 1710
 high 11.0 low - 5 Sample 11.5
 2 1/4 FTS 3.75' / acc
 6 1/2 acc
 Pitot
 Block

8 Nov '09 Sun 1208 1508
 high 10.7 low - 2 Sample 10.9
 2 FTS 5.33' / acc
 6 3/4 acc
 Pitot
 Block

9 Nov '09 Mon 1311 1611
 high 10.3 low - 1 Sample 10.2
 1 3/4 FTS 2.9' / acc
 8.9 acc 2.8' / acc
 Pitot
 Block

10 Nov '09 TUES, 1417 1717
 high 10.1 low - 2

NOTE →
 DISCARD,
 SAMPLING
 LATE.

TIDE FLOW SAMPLING (CONT.)

10 Nov. (CONT.)

RANGE 9.9'

1 1/2 kts	6.5 Ave	PLOT
2.5' / sec.	3.8' / sec.	BLOCK

Moon's
1st quarter

Deposits (A) gmaill.com

Ben Potts's Mail

Problem # 1

① If the pitot tube records 2 ft/s (one ft. in 2000 yds per hour), what is the flow at the break in feet per second?

② If the block of wood travels 25' in 7 seconds, what is the flow at the break in feet per second? That's easy!

Problem #2

of the velocity of water through
the figure is 3.3' per second, and
the diameter of the pipe is 3.0' and
5' have many ft? to be turning at?

Problem # 3

If the parallel wheel has a roller matching in diam at its greatest circumference, and the parallel wheel's diameter is 5" and the roller is 2 1/2", what are the RPM's of the roller?

Note: ① you have to have the RPM's of

the parallel wheel first.

② The roller will turn a given number of revolutions, which will be the same as the number of RPM's.

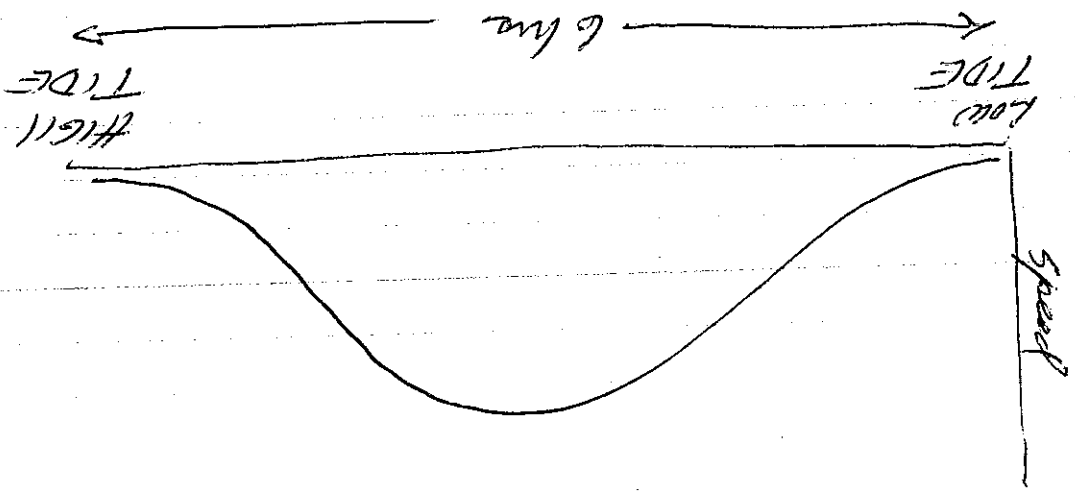
③ It will turn the same amount of revolutions as the roller, which will be the same as the RPM's.

the head of the generator or alternator, which will affect the motor, which will affect the speed of the parallel wheel, etc.

factor; no one figuring in total efficiency, but it gets us back to the roller.

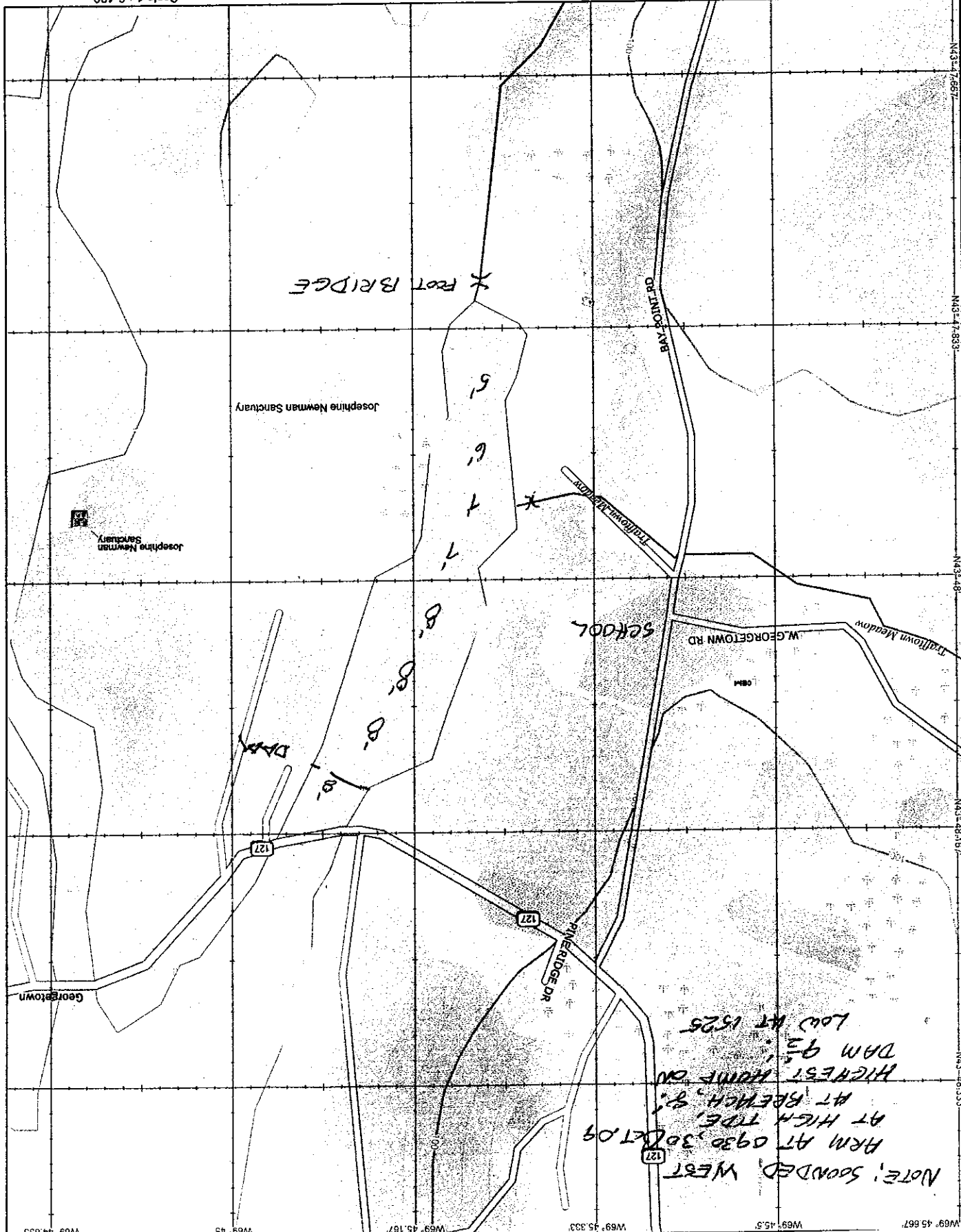
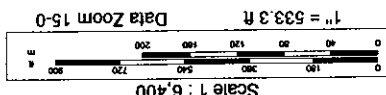
Also we are not factoring in things that affect efficiency of the roller.

1.17.21



The volume of the water above the dam at an average height tide affects the flow + the kinetic energy at the head. The water above the dam flows + drains in 'tidal regime' passing through the break. In six hours it is gone in one direction; then it reverses + the entire amount goes in the other. What is the volume in cubic feet of this water? The flooded area is 1600' long, 133' wide, and 8' deep. The head is about 30' wide and 8' deep. The speed of the flow is fastest at about half tide.

Problem #4

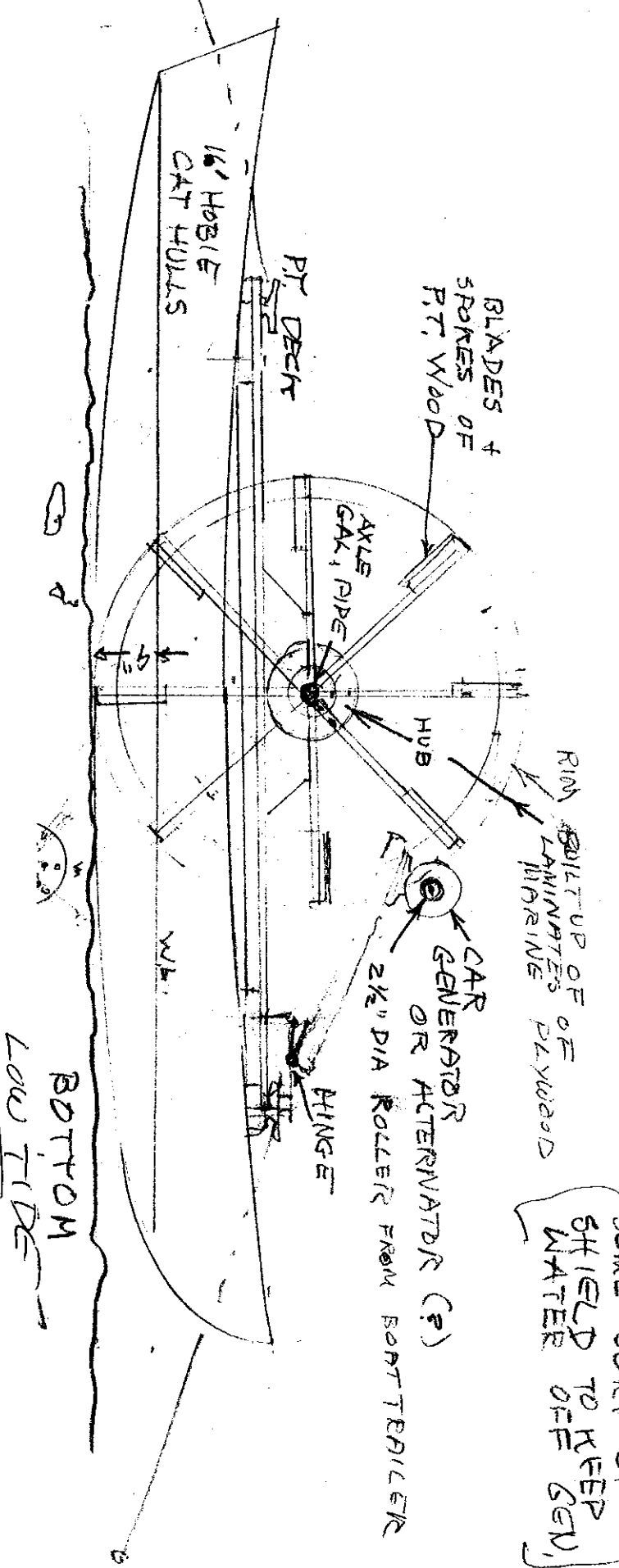
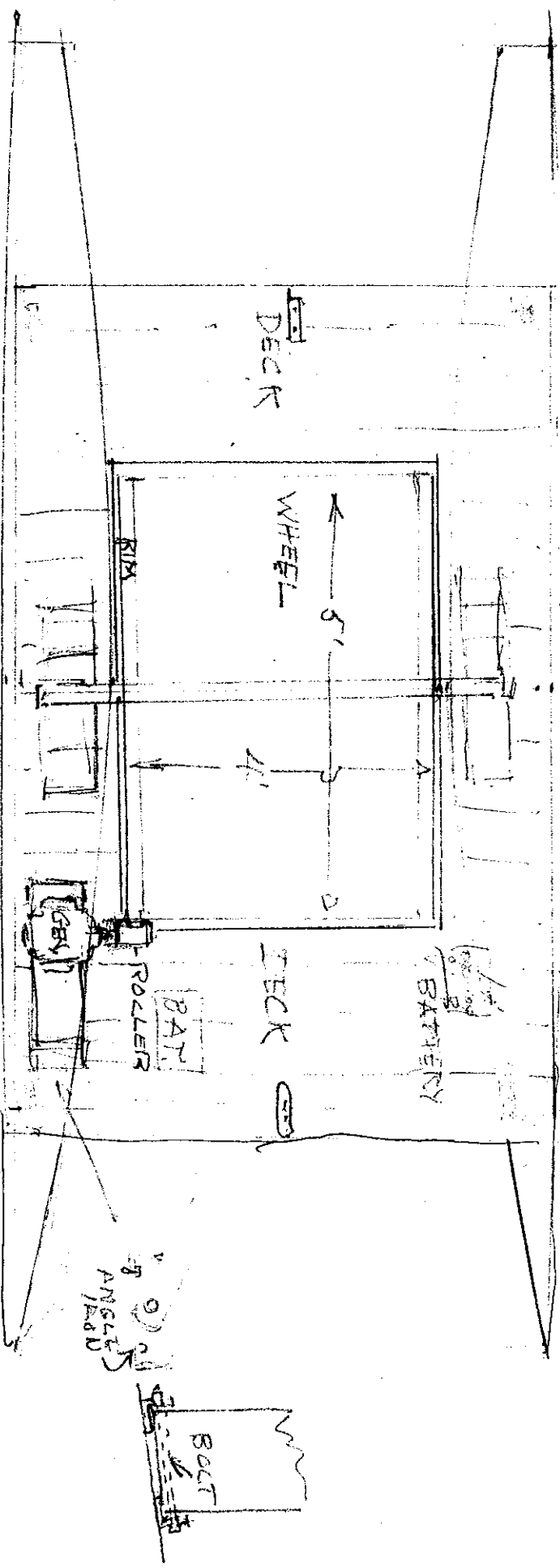


NOTE: SOUNDED WEST
ARM AT 0930, 30 OCT 09
AT HIGH TIDE, 8'
AT RISE, 8'
HIGHEST POINT ON
DAM 93'
LOW AT 1525

W69° 45.667' N43° 48.333' W69° 45.187' N43° 48.187' W69° 45.333' N43° 48.333' W69° 45.483' N43° 48.187' W69° 45.633' N43° 48.333' W69° 45.783' N43° 48.187'

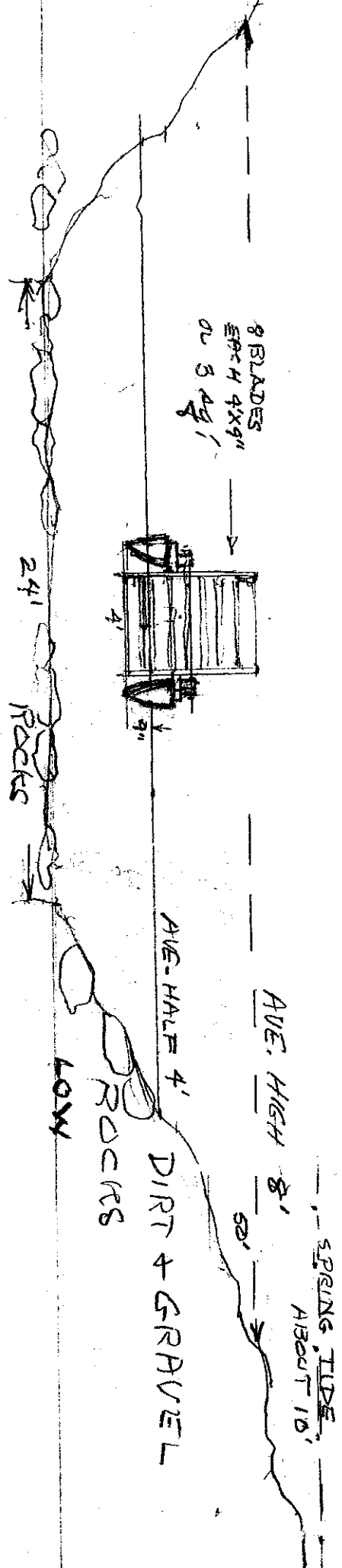


LOA 16' BEAM 6' 3" DRAFT 9"



SOME SORT OF SHIELD TO KEEP WATER OFF GEN

BTOM LOW TIDE



MUD

24'

ROCKS

LOW

ROCKS

DIRT + GRAVEL

Ave. HALF 4'

Ave. HIGH 8'

SPRING TIDE ABOUT 10'

8 BLADES
5 FT x 4 x 9"
or 3 1/2'

BREACH AT
AVE. HIGH TIDE!
ABOUT 300 SQUARE FEET

Which means we are
releasing 1000 of the energy
coming through =