C. Catri notes

~~8~~ 27/13 Meeting w/ Communication re. proposed expanded blasting

Bill Chet Eric Chris Greg
Elaine Kim Mike Phil Jackie Carl Ginny

Bill - more intensive investigation of dredge ftpr. - shows model more diverse rock than anticipated
thought sloping down but instead peaks + valleys.
= 3x rock than found in initial investigation
- means add'l costs
- changes to blasting
- may have JASCO final report in next day or so.

discuss w/ EPA should new draft ISR

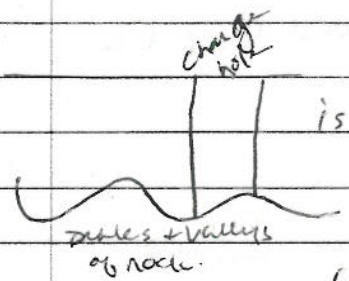
Chet - Prior to ED + bidding - pre-design studies
20 borings cored
32 footprint
6' dark thin lighter thick
showed 3 areas of rock - (from contractor)
- 2-3' of rock all ftprint
max 5' at southern side
is depth of rock to go to 32'
& peaks 15'
average 6' - more thickness at southern end of ftprint.
borings were 100' apart.
Initially given to EPA 7500 cu yds of rock to be blasting
possible to do more ~~more~~ borings may've found it
pre-split blasting along ~~bulkhead~~ bulkhead line
have tested some areas more specifically - will get down to an 8' grid

SDMS Doc ID 549043

7500 to 23,000 cyd^3 is change in amount of rock to be blasted
certainty - is in blasting plan

depth of hole drilled is same

Sub drill is consistent throughout site
- taken 32' to fracture rock above + indirectly on 8 x 8' ~~grid~~ grid.
stem top 2' on each hole
longer drill - higher charge
is still estimate but based on greater body of area



want to change charge wt - not much for high peaks - will also have least amt of overburden in place (coupling efficiency)
- charge is just to fracture

JASCO assumption
blasting w/ a piling (similar to hole w/ stemming)

Charge wt -
COE parameters 50' further north from barrier - decreased as we moved south toward barrier - down to 15 lbs. (did not have to do w/ pre-split blasting)

Never pushed models because COE was setting parameters based on barrier impacts

Discussed w/ COE - significantly overestimate effect on barrier.

No blasting on 14' area
No pre split blasting along terminus in area

Not asking for pre-split
Trying line blasting (instead of pre-split)
will stay at 25 ~~sec~~ mil-second delay
Boring just closer together - no change - no blasting

Will focus on avg of 150 lbs

Chet
JASCO doesn't look at borings - don't think is noise generating activity

COE / Barrier
See handout -
To Determine Factor of Safety
N value
Dumped earth fill - unsure of material - could be liquefiable - used highest N value - (most liquefiable) if were to liquify, top of barrier would slump inward

K value
Rock berm sloughing K value
is for slope stability
vibration travel? - based on comparison of acceleration from earthquake is standard industry practice to use this comparison
need 2x 0.5 - so used 1

Demand size - how powerful is the shaking
pt source - distance away as vibration moves away from source
how powerful vibration is a any certain pt.

A value - base from Bur. of Mines 25-50
GZA doubled = 100
asking COE to use 50

Same charge - half the acceleration
* would overestimating impacts to adjacent areas by factor of 2

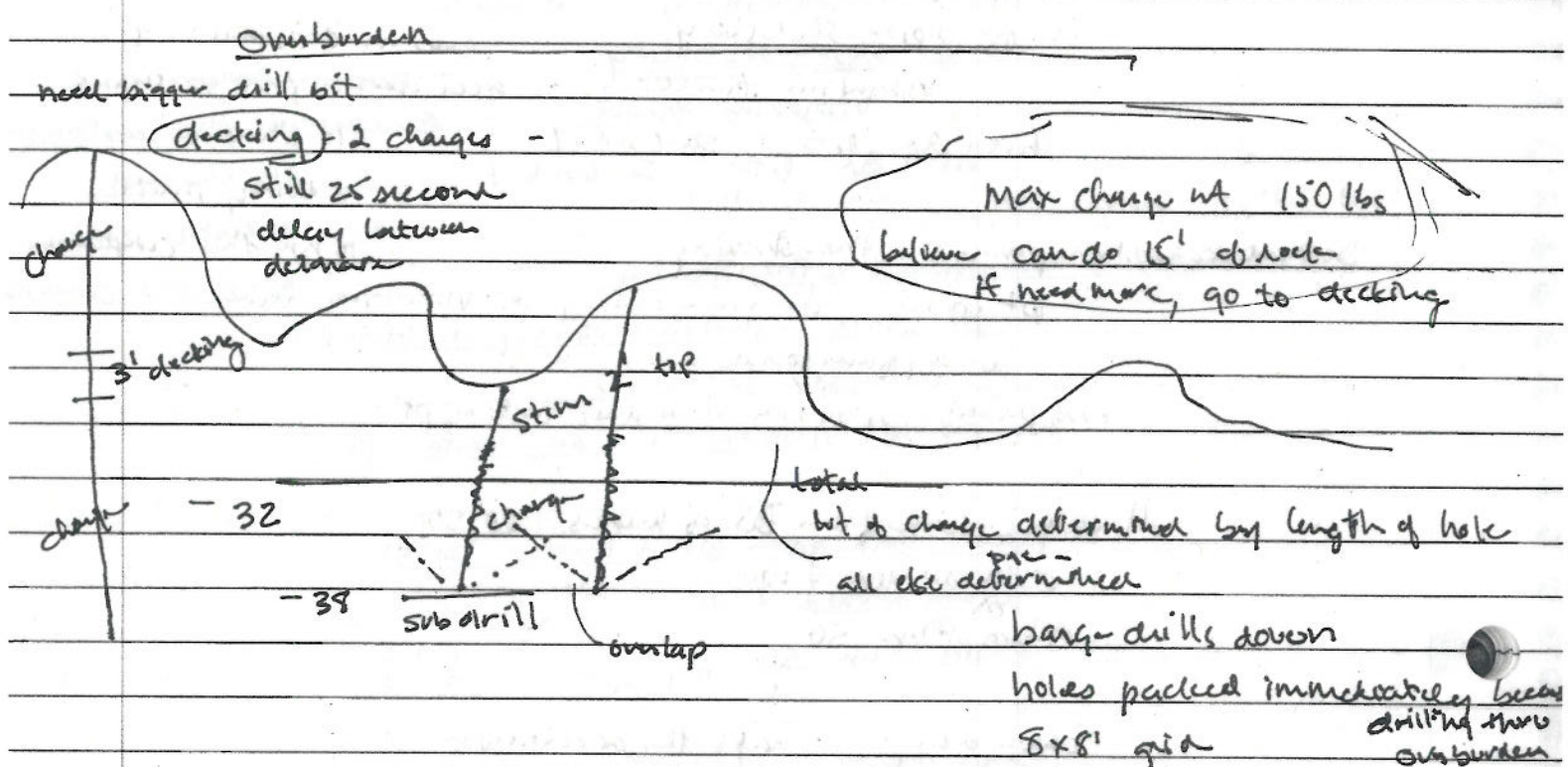
using demarco formula

Not linear reduction because of formula factors
not 2x is really 1.7 – then changes to 10.2
150 lb

frequency likely to be 40, not 60 or 90
vibration loses impact from ~~bang~~ source
(wave energy)

Mike – could be additive?
waves from one source deteriorates
bumps into wave from successive
blast from next hole after 25 sec
delay

Saying will lift parameters to ensure barrier integrity
will have monitors w/i barrier



indicator bottle w/ float in each hole
floats to top.

What is COE providing?
GZA provide rept to COE thurs
COE will give letter to EPA.
COE doesn't think revision needed to go to COE HQs

Fish Impacts
duration - 2 months not 1
still do 1 area on Sept. 15

even ~~[illegible]~~ areas 2&3
Complete all blast by Nov 15

9/15 → Only beginning blasting in northern area of deep draft dredge area - this is area 1 - And work down south - don't know when finish A

Impact consultation?

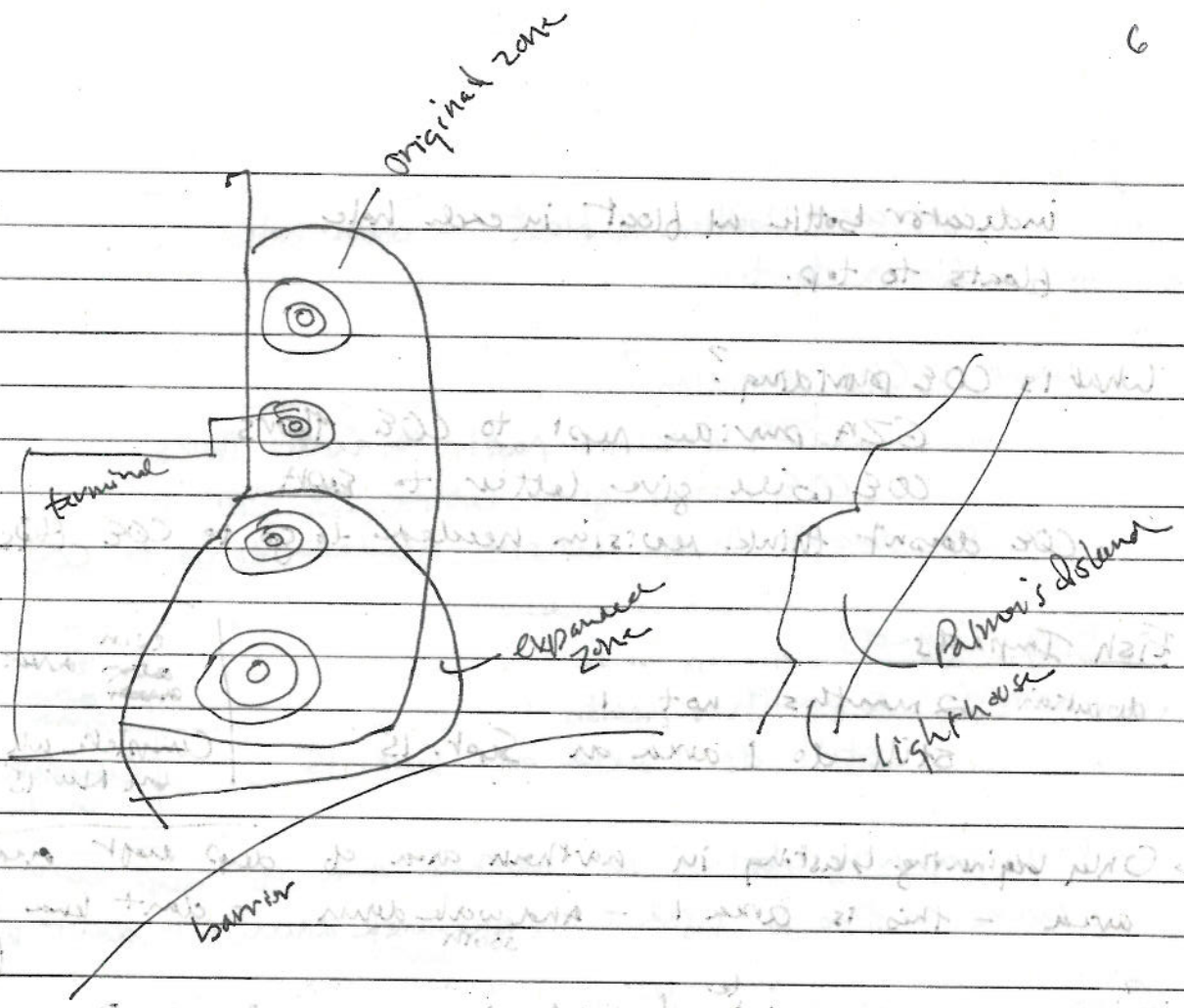
Did not ~~[illegible]~~ profile bedrock in areas 2 or 3, beyond what was already done. [area not as important for construction of terminal]

Coupling efficiency
w/ overburden, 50 lbs acts like 20 lb charge

JASCO - ~~doesn't account~~ added modifier for overburden
→ assumes just in water - underlying model
Second revised JASCO model will reflect overburden

higher peaks = less overburden + highest charges
- model will figure this in.

Using JASCA model - zone of impact - impulse criteria
terminal to top of so terminal
will need NMFS consult
<18.4 NMFS outside zone
150 lb. expands impulse criteria - not significantly but enuf to trigger re-initiate consult.



How to document under ESA
need to discuss w/ NMFS

~~of lbs~~ of limited to 50 lbs

Community limits - 150 lb overburden

1st round - blast
2nd round - remove overburden + rock - blast again w/o overburden
3rd - ~~blast again~~ remove rock - blast again.

Makes argument for 150 max as (CEQA)

~~Palcot~~ · Paleosol - June 2012 submittal
100' south modified - blasting envisioned
no impact
impact to paleosol measured the same as
impacts to hurricane barrier.
-can be applied to any structure

Consultation w tribe - Solis change not discussed

Will discuss in new submittal

Not mentioned publicly change size
Standard protocol by COE for public outreach
won't practically change
1500' zone still maintained
Apex will cover this in submittal

Schedule
mobilization ~~is~~ takes ~ 2 wks
still trying to make schedule 9/15 to begin blast

Phil 3 5 6 Mike 4, 5, 6
meet w NMFS

Impacts
Barrier - have safety factors apex is applying (measurement approved)
will be in GDR rpt to COE
Fish - updated JASCO report. -

Prepare map w areas 2 + 3 showing (not doing more borings due to schedule constraints)
also chronology of blasting

Email from Phil re: impact on BRARs evaluation

JASCA report

new model - more sophisticated but safety factors same
incorporates overburden rather than include } just explains them + translation shows orig conclusions too conservative
coupling efficiency
would show extent overburden mitigates blast.

EPA needs to establish no take
need fuller report.

for NMFS show larger footprint - summary of report may be suf.
basis was not fish in area to begin with
~~so larger foot - [illegible]~~

Provide blasting plan.

Pot. mtg tomorrow @ 9:30 to go thru JASCA rept

Upland remediation
Vacant shuster + 2 DMF properties
top soil > concen. than Brig thought. for PCBs
now in 11 stockpiles + know where came from
each tested separately
most > 50
those < 50 sent for sampling + they came back
w/ discrete > 50.

of 11 piles (or 14) 5 are > 50 ppm PCBs; otherwise btwn 2+10 ppm.
no analytical on 2 or resampling

grid sampling areas where top soil
taken that was > 50 ppm - below high water

add'l excavation needed in hot spot 1 (already in water table)

few grid samples back D2 1st - ~~same~~ not above 1 ppm

(want to leave up to ~50 onsite)

Kim - leave up to 49; otherwise cap must change - 3' cap ok

mass 100 mlg / kgm is engineered barrier

monitoring won't change

Revise TSCA Determination

Written request

no change to aggregate cap

excavations off TSCA area (ie Dartmouth Finishing)

going offsite, not consolidated w/i TSCA area

TSCA Det.

If leaving concrete structure - state so - (need concent.)

Make statement that ARAR analyzed.

25' grid now - if nothing need to go smaller, (~10')

Kim not requiring 5' except hot spot.

- rsn -

[Stockpiles hot, ~~so~~ so since no insitu sampling, need to sample on grid.]

this would identify hot spots.

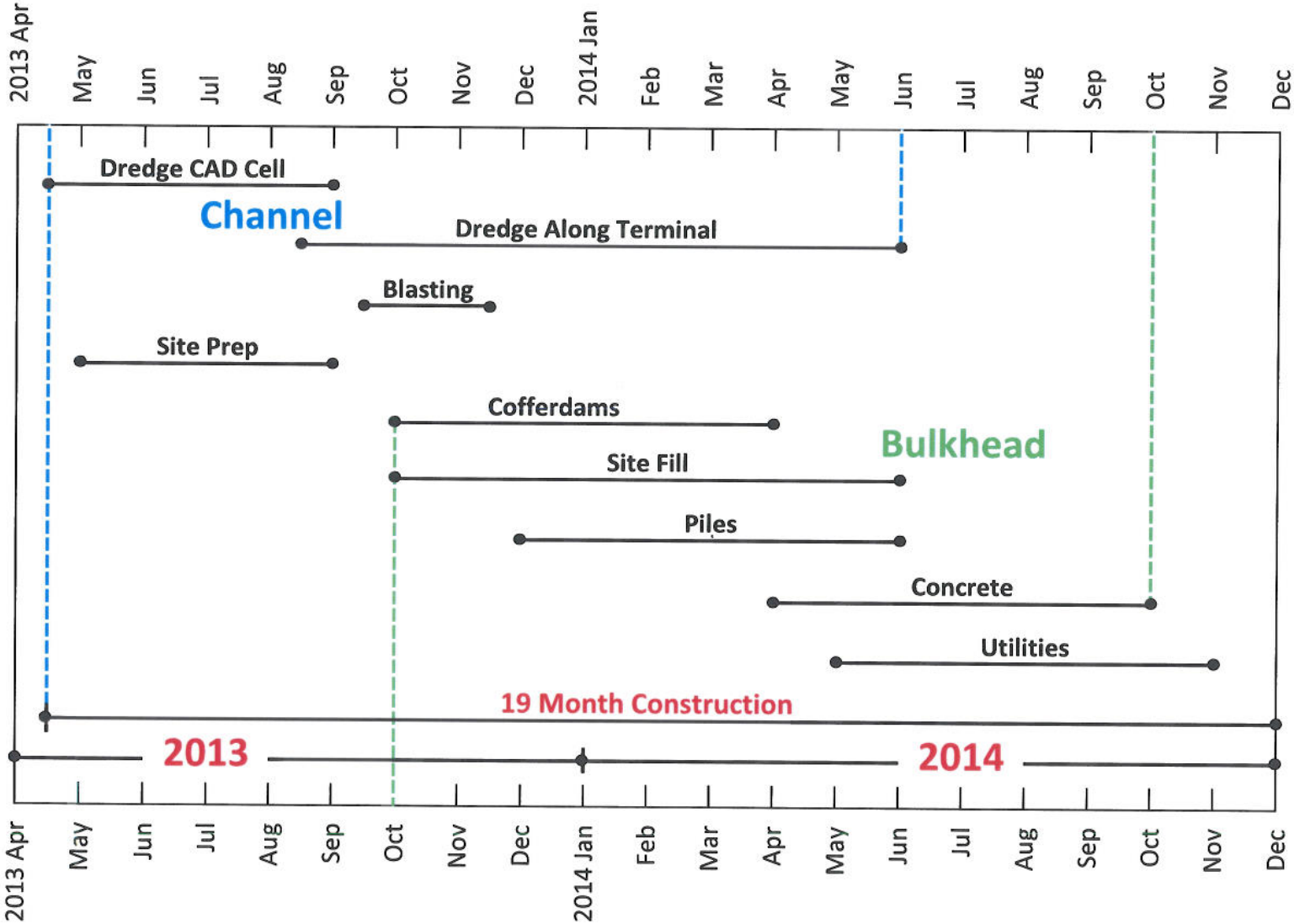
Kim - Need work plan? as a condition?

- Radio Tower

[can we extend TSCA Det. to properties outside TSCA Det.]

CEC handout 8/27/13

New Bedford Marine Commerce Terminal
Construction Schedule
(Rev. 8-23-2013)



CEC handout 8/27/13

New Bedford South Terminal
File No. 33734.03
File Name: J:\Geo\33734.03.dyb\Work\Slope Stability-Blasting\33734.00_Secton A-A'_BLASTING_HORIZONTAL

Parameter	Range	Current Specification	Proposed Specification	Factor on Acceleration
CAPACITY SIDE				
k, psuedostatic coefficient	0.5-1	1	0.5	2
N-value	4-10	4	4	1
Compounded Factor on Acceleration in Current Spec				2

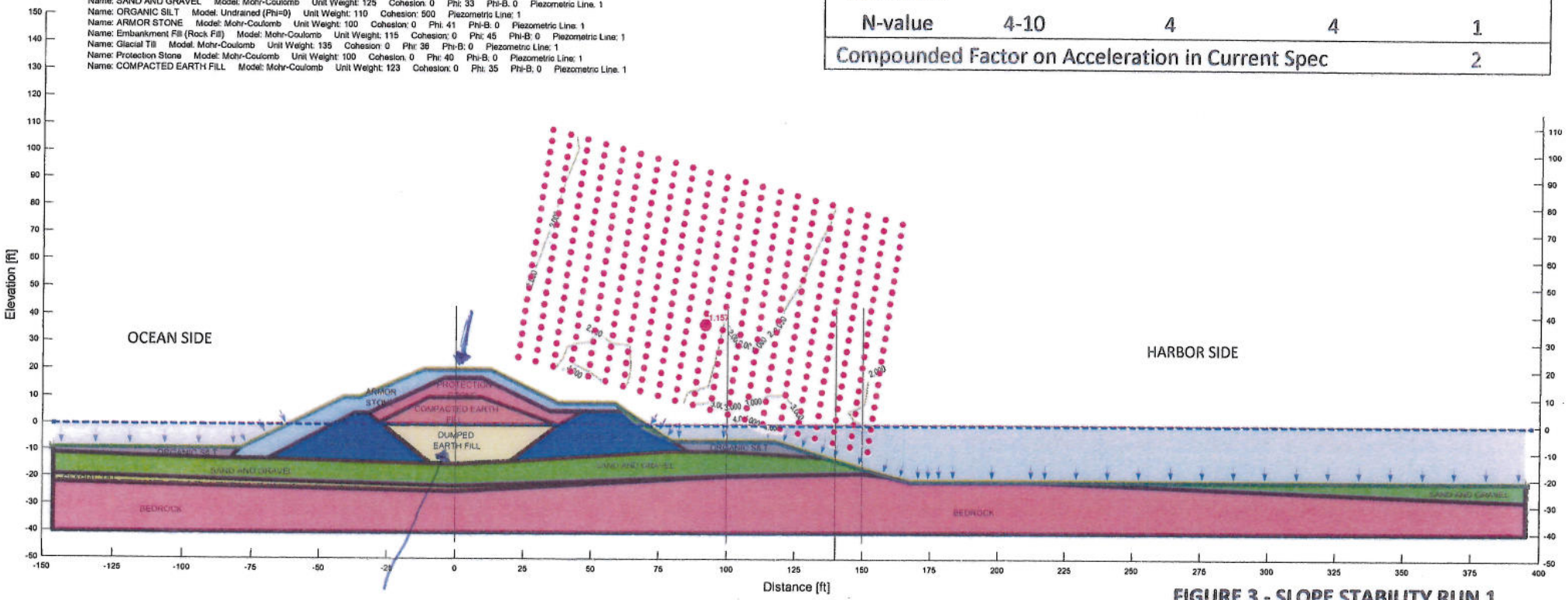


FIGURE 3 - SLOPE STABILITY RUN 1

DEMAND SIDE

$$Acceleration = H\left[\frac{D}{\sqrt{W}}\right]^{\beta}\left(\frac{2\pi f}{g}\right)$$

Where:
- H = Attenuation constant
- D = Distance (ft)
- W = Weight of charge per delay (lbs)
- β = Attenuation slope factor = -1.6
- f = frequency
- g = gravitational constant = 386.1 in/sec^2

Parameter	Range	Current Specification	Proposed Specification	Factor on Acceleration
DEMAND SIDE				
H	20-50	100	50	2
W		Halved GZA's allowable charge weights	no factor	1.7
f	40-60	60	40 (expanded table)	1.5
CAPACITY SIDE				
k, psuedostatic coefficient	0.5-1	1	0.5	2
N-value	4-10	4	4	1
Compounded Factor on Acceleration in Current Spec				10.2

EXAMPLE AT DISTANCE = 500 FT, FREQUENCY = 40 HZ

$$Acceleration = H\left[\frac{D}{\sqrt{W}}\right]^{\beta}\left(\frac{2\pi f}{g}\right)$$

Where:

H = Attenuation constant = 50
D = Distance (ft) = 500
W = Weight of charge per delay (lbs) = 140 lbs
β = Attenuation slope factor = -1.6
f = frequency = 40 Hz
g = gravitational constant = 386.1 in/sec^2

$$0.081 = 50\left[\frac{500}{\sqrt{140}}\right]^{-1.6}\left(\frac{2\pi(40)}{386.1}\right)$$

Acceleration = 0.081 in/sec^2 for
FS = 1.2 on liquefaction > 1.1 OK
FS = 1.35 on slope stability > 1.15 OK
Weight = 140 lbs