## Jason Mayrand

**From:** Mark Sherman [mark@shermanengr.com]
**Sent:** Tuesday, March 22, 2011 5:18 PM
**To:** 'Jason Mayrand'
**Cc:** Don Carlson; Leroy Hulsey
**Subject:** Port alternatives
**Attachments:** Pile Alternatives.pdf

Jason

Attached FYI are 3 potential alternative configurations for the bulkhead at the Port site. We have included a barge removal feature in each option to facilitate barge removal from the river at the end of each season.

Option 1 (Figure 1): A double 600 foot bulkhead wall that creates a slack water port, with an open ramp at the north end for removing barges. The river side of the port will have a hardened riprap erosion protection wall, with enough room between the bulkhead and the river for vehicle access to service the barges. The slack water port will likely need periodic silt removal from Tanana River backwater, but won't require sand/gravel dredging maintenance since it is not connected to the Nenana River.

Option 2 (Figure 2): A single 1200 foot bulkhead wall with active river movement along entire length. The bulkhead will be placed about 75 feet west of the entrance to the barge removal ways to provide for an earth ramp for barge removal at the river end of the ways behind the bulkhead. The river channel along the bulkhead will likely not require dredging most of the time since the Nenana will be straightened out and have an increased velocity that should keep bed load moving down to the Tanana. There will be some maintenance necessary to keep the ramp and the base of the marine ways clear of silt.

Option 3 (Figure 3): A single 1200 foot bulkhead wall with active river movement along entire length similar to Option 2. The difference will be a 50 foot wide gate in the bulkhead that will provide a ramp for barge removal access. Maintenance issue will be more or less the same as for Option 2, except that gate operation will require maintenance each time the gate is used, including removing accumulated silt and sand from behind the gate to create and maintain the ramp. There will also be maintenance on the gate itself due to potential debris damage from the Nenana River.

These concepts are in the early form of development and your comments are welcome.

Mark

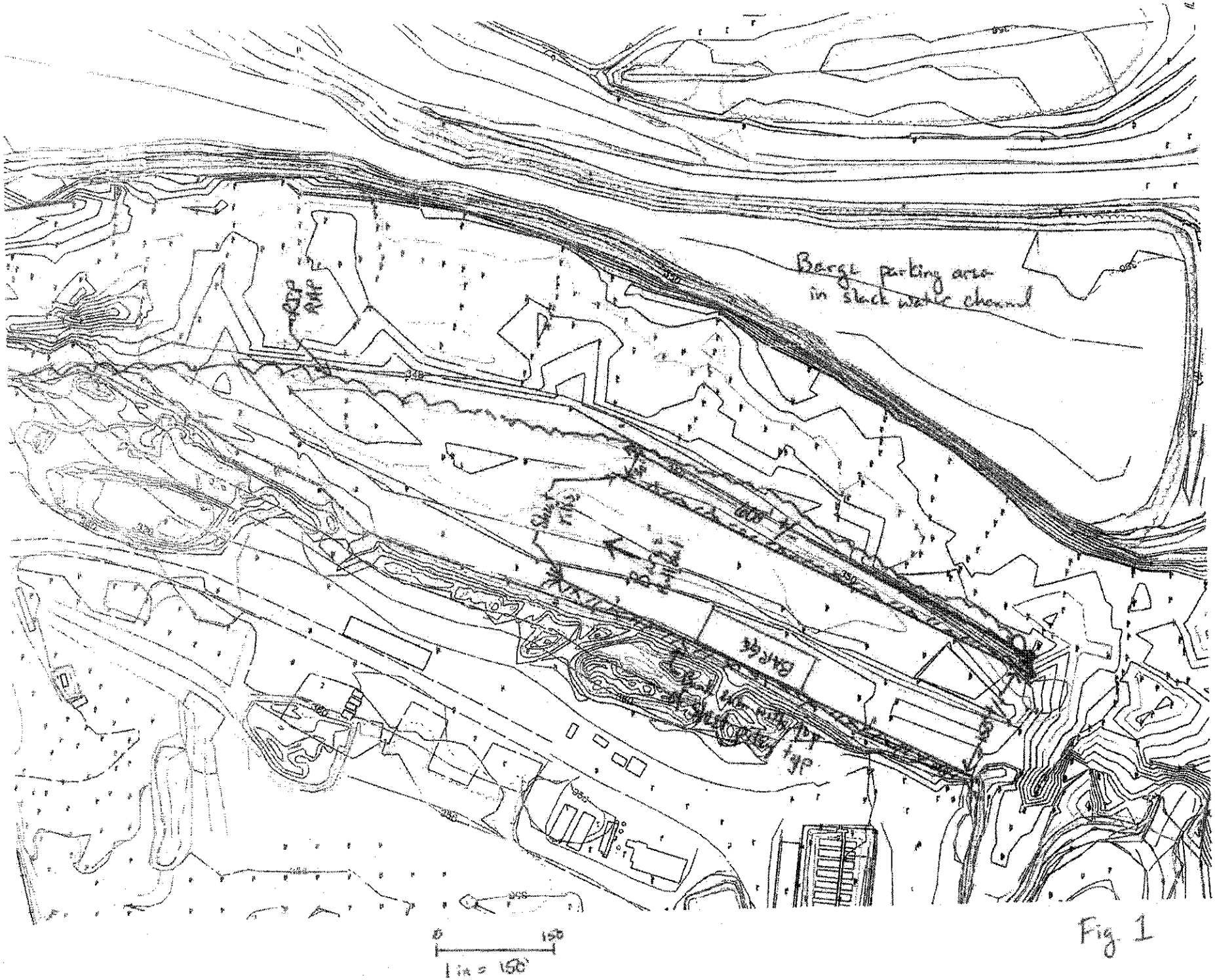

Barge parking area
in slack water channel
Barge
0
150
1 in = 150'

Fig. 1

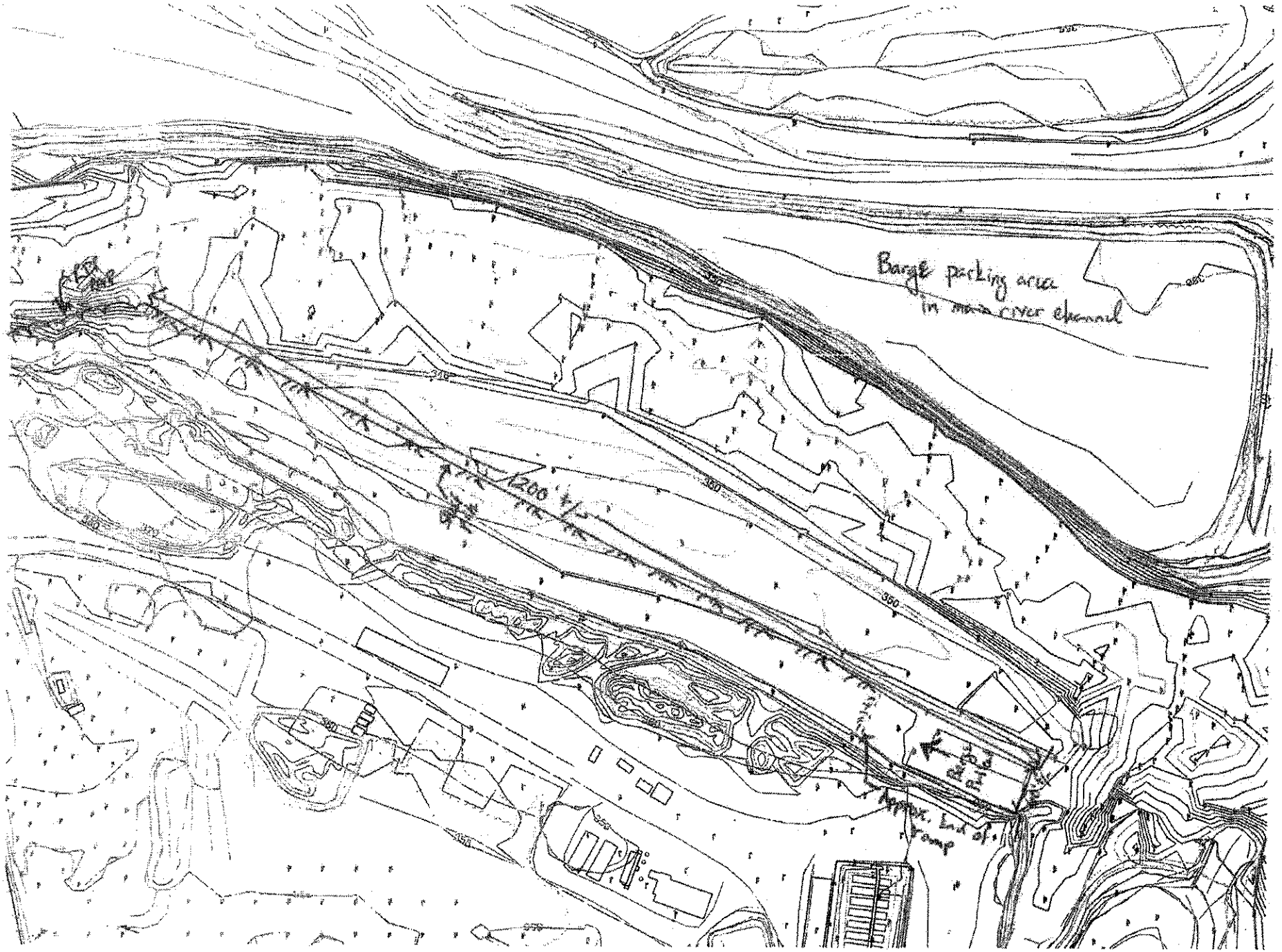
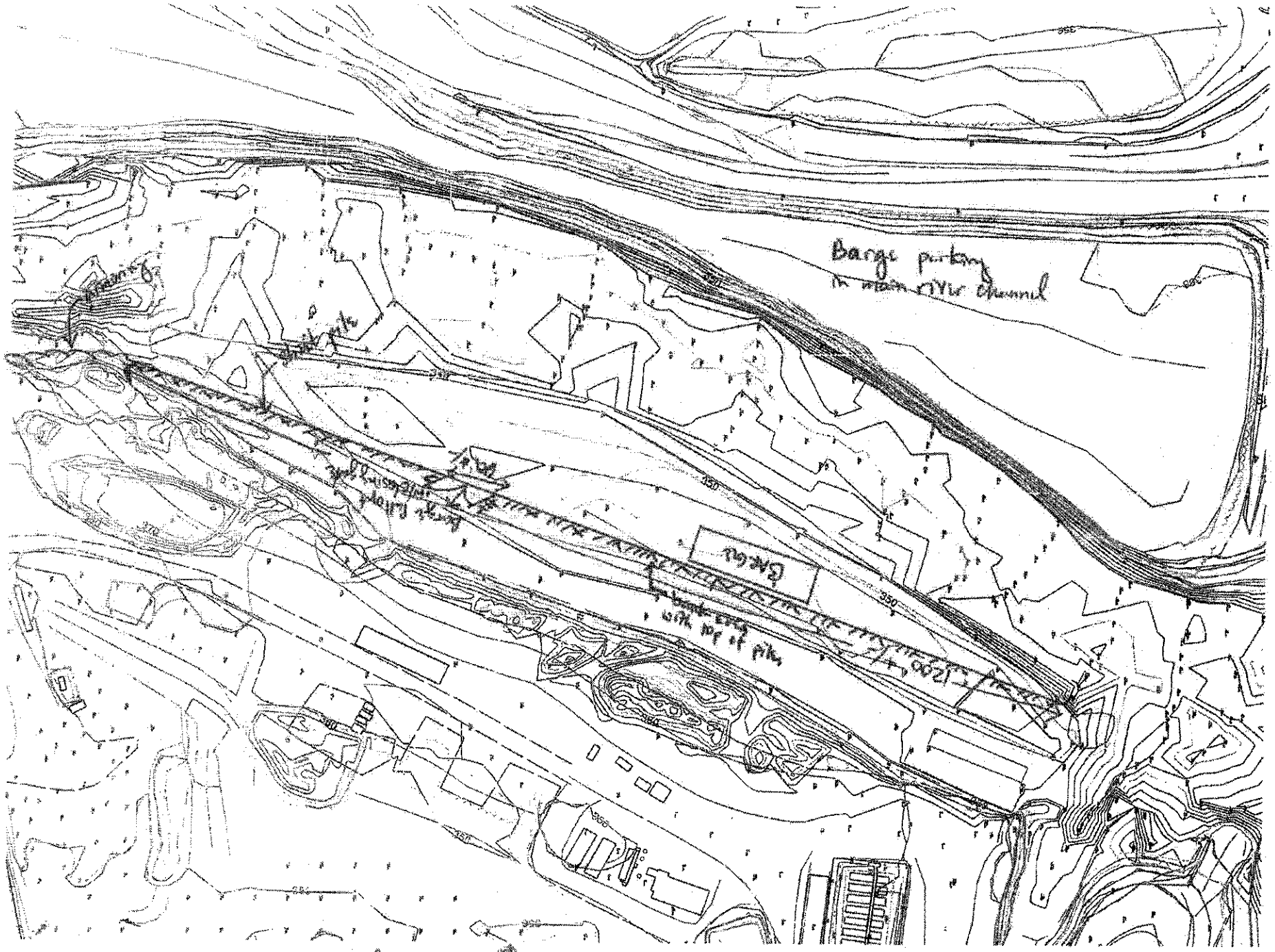

Barge parking area
in main river channel
1200 ft
Approx. End of ramp
0
150
1in = 150 ft

Fig. 2


Barge parking
in main river channel
Dam
350
350
350

## Jason Mayrand

**From:** Mark Sherman [mark@shermanengr.com]
**Sent:** Tuesday, February 08, 2011 9:21 AM
**To:** Jason Mayrand
**Subject:** FW: Nenana Port
**Attachments:** 1-17-2011 2-47-02 PM.jpg; 1-17-2011 2-55-28 PM.jpg

fyi

---

**From:** J. Leroy Hulsey [mailto:asi.jlhulsey@att.net]
**Sent:** Monday, January 17, 2011 2:57 PM
**To:** Mark Sherman, P.E.
**Cc:** Xiong Zhang
**Subject:** Nenana Port

Hello Mark:

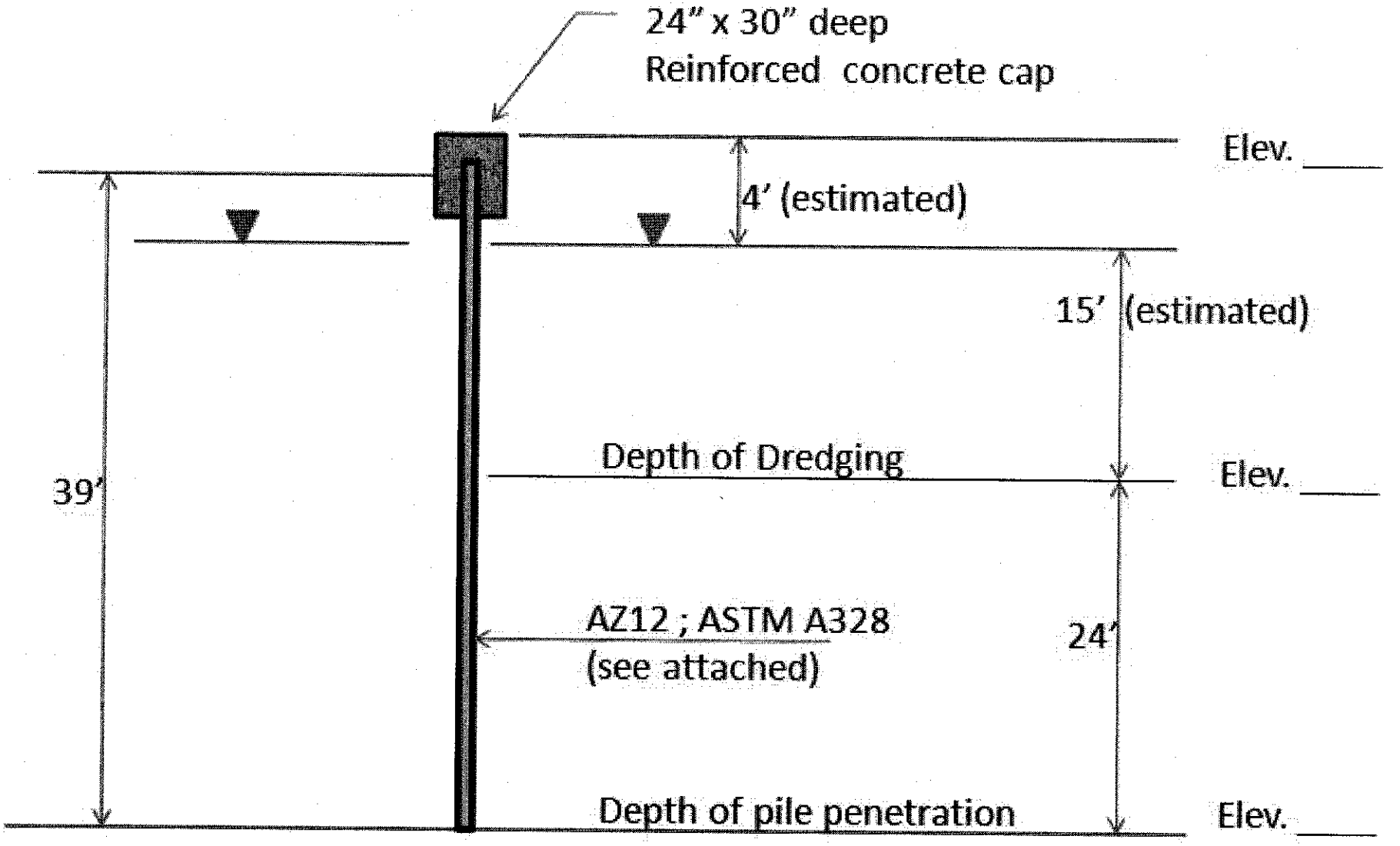
We are trying to finalize the pile design for the subject project.
Please verify the geometry that we should design the sheet pile system for.
I have included sketches for purposes of communicating the ideas. These sketches do not show the surchage load nor the tie back conditions. This will be completed once the design conditions are established.

a) We will assume 2.5 ft (about 300 psf) soil surcharge load behind the wall to account for future vehicle traffic;

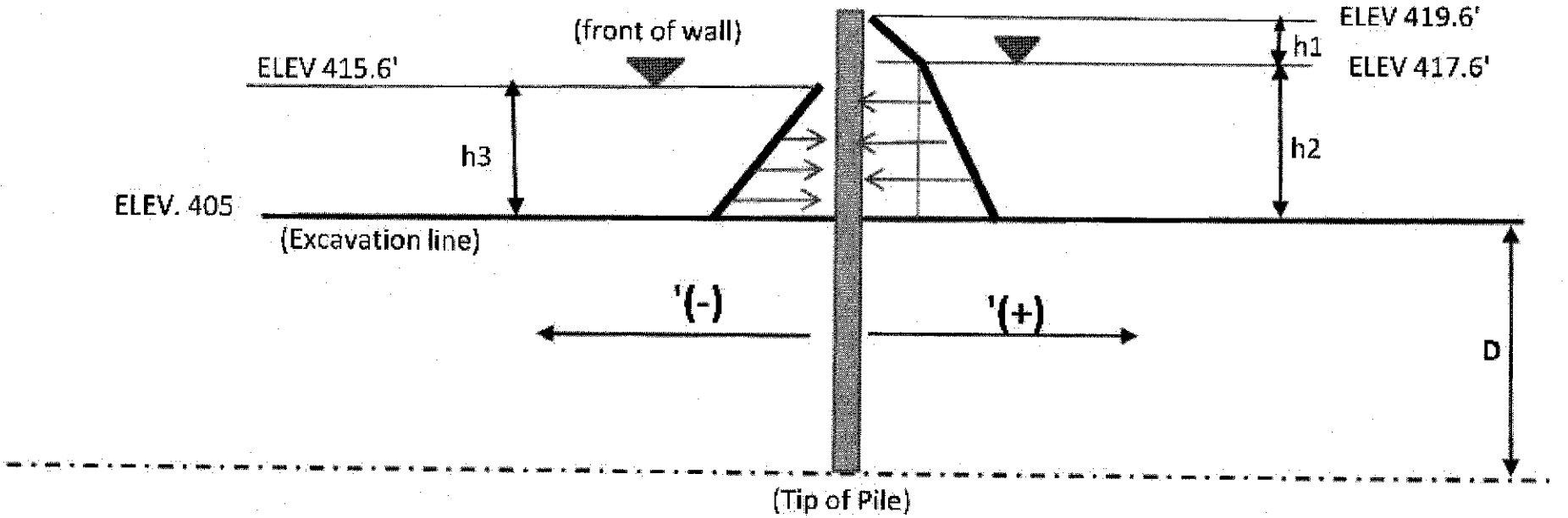
b) Please verify the depth of dredging, as I am confused.
   1. I understand that it is 15-ft below top of bank; or
   2. Is it 15-ft below the river elevation which is about 4-ft below top of bank.

My current design allows for a drawdown between the top of bank water level (2-ft below ground) and the height of the river (4-ft below ground). I will also account for a condition in which the backfill is free draining
and the ground water is equal to river level elevation.

Leroy




**Draft (Preliminary Submittal); 11/22/2010**

Note: size & depth of penetration may change with refined computer models

**Condition (1): ground line**