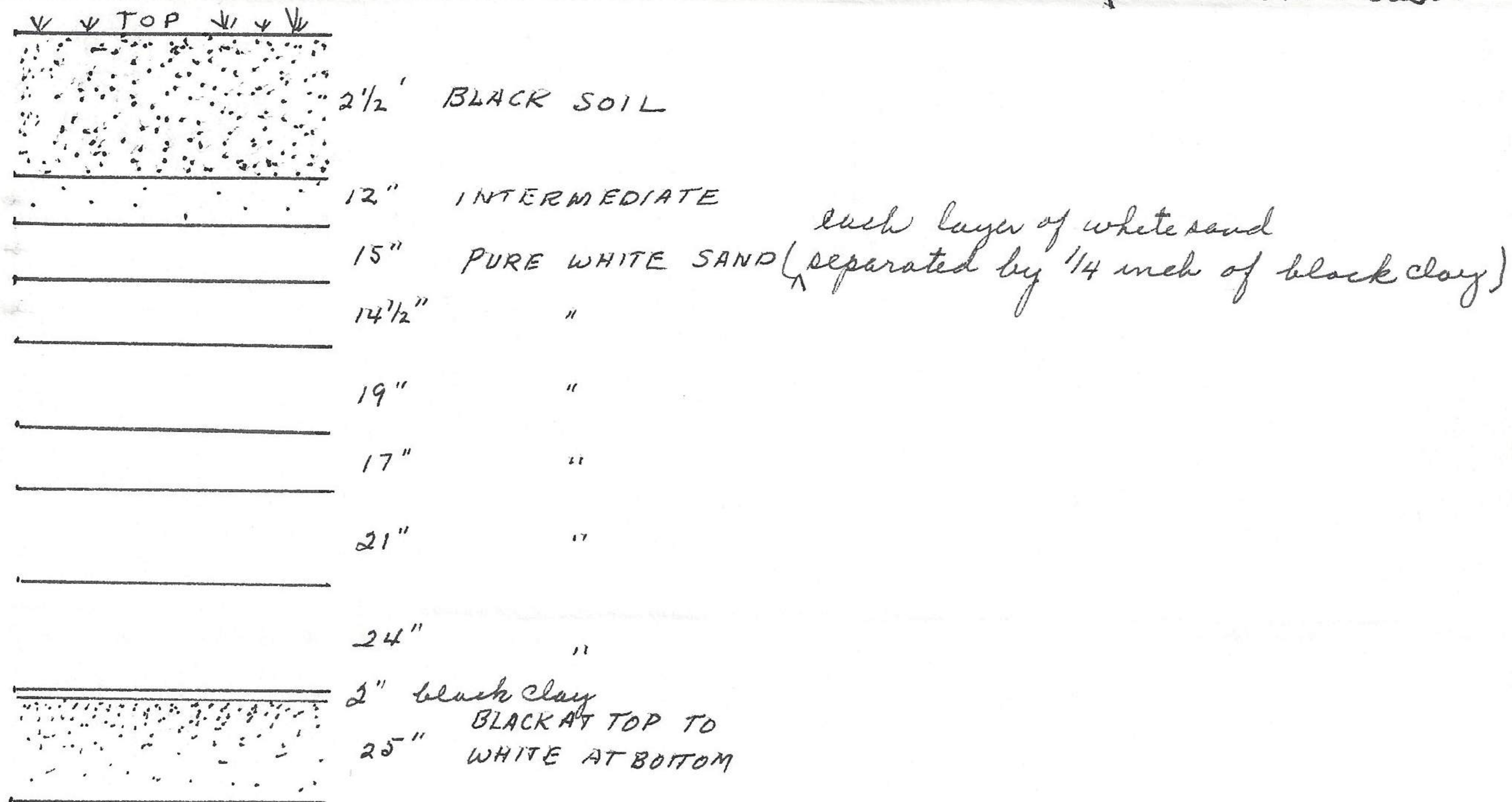


This tree is the first of the Cottonwoods on bank above log jam + side channel. Log jam 1:37. Traversing left side of this channel. It is believed that this new channel is being developed as the main channel as the current is much faster than main river to south. Temp 55°F. no sun since this morning before front started. 1:56 ♀ mallard on S side channel and under cover of a few branches at edge of river. It remained there until approached by canoe at which time it left and flew up river. 2 ♂♂ mallards were on bank on N side about 200' down stream from ♀. This area between the island of sand + willows and the mainland to the north has always been a place favored by ducks. The blue goose recently collected (see notes of Nov. 17) was from here. Besides being remote from man's activities, this area is characterized by relatively narrow channel and fast moving water. The river just beyond here is about as wide as I have seen on the Kaw. 3:10 arched bridge to right. 3:15 atis of head. Great horned owl calling from land to left (N). at an average of 4 calls per minutes. 2:45 measured cliffs on S side river about 1/10 mi upstream from <sup>first</sup> rock barrier. From general appearance this sandy cliff looks like a cement block wall with regular intervals of seams. I know of no other profile of this character. This is the area of the large bank swallow colony 400-500 nests, all gone except 2 holes. The rest have been eliminated by erosion of wall.



8 feet to level of water (hidden by talus). At approx 1 1/2' from level of water is a layer of mud balls covered with large sand (gravel). This layer supported deer antler of last week's collection. (Nov. 3, 1948)