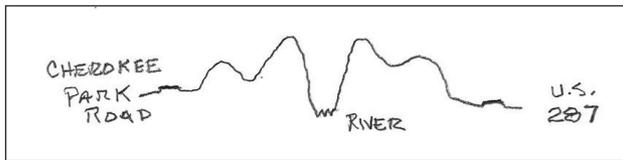


42. LIVERMORE STREAMS

Why the North Fork of the Cache la Poudre River picked such a hard place to cut Phantom Canyon – right down along the top of a high ridge – seems odd. It's also had a lot to do with why Phantom Canyon had been such a well-kept secret for so long.

If you took a big saw and cut a cross-section of Phantom Canyon, it would look something like this:¹



From US 287 or the Cherokee Park Road, the topography doesn't offer many clues that there is a spectacular canyon hidden beyond view.

One explanation (my favorite) is that the direction of the modern watercourse was determined by a prehistoric stream channel cutting down through upper layers of sediments since eroded away.² When the stream bed hit the harder granite of Phantom Canyon, it just kept cutting. The course of this initial channel may have also been influenced by preexisting faults and fractures in the rock.³

Another explanation is that Canadian ice sheets in bygone ice ages may have melted much more rapidly than previously thought. The resulting torrents poured south scouring north-south trending channels,⁴ before being turned to flow east from the Rockies.⁵

The distribution of rough water-worn boulders on top of the hills dotting the Livermore Valley lends support for evidence of ice age runoff. It could be that the course of the Laramie River then ran south to join the course of the Poudre River near what is now Chambers Lake, running east to the vicinity of Gray Rock, turning north and then east again to leave

a trail of flood deposited boulders, now parked on top of the hills in the Livermore Valley (Chapter 41).

If nature has gone out of its way to influence the streams in the area, so did white settlers and fire fighters. The natural character of the flows in the North Fork of the Cache la Poudre River and its tributaries has been modified dramatically by human meddling over the past 150 years. Mountain men trapping beaver in the 1820s and their Indian contemporaries probably would not recognize these streams today.

The *Eaton Ditch* aka *Deadman Ditch*, west of Red Feather Lakes, diverts the headwaters of Deadman Creek (a tributary of the Laramie River, itself a tributary of the North Platte River) across a divide to the headwaters of Sand Creek, another, but lower tributary of the Laramie River. Sand Creek flows are then diverted into the *Wilson Ditch* aka *Sand Creek Ditch*, which carries the water east across another divide, Boulder Ridge, into Sheep Creek (in the South Platte watershed) and down to *Eaton Reservoir* fka *Worster Reservoir*, constructed about 1903⁶.

Above *Halligan Reservoir*, constructed in 1907, small hay meadows on mountain ranches have historically been irrigated from diversions on the North Fork and its tributaries: Sheep Creek⁸, Trail Creek, Mill Creek, Fish Creek, Dale Creek and Meadow Creek.

Halligan Reservoir dams the North Fork at the head of Phantom Canyon. Much of the water that flows through Phantom Canyon never sees the mouth of the canyon. It is diverted from the river into the Livermore Main [canal] via the North Poudre Tunnel⁹ (further adding to the camouflage of Phantom Canyon by reducing summer flows passing under the Cherokee Park Road to a trickle).

The Livermore Main emerges from its tunnel up on the hillside east of the canyon mouth and flows southeasterly for several miles, irrigating some of the Livermore Valley as it passes. It crosses a divide to the

headwaters of Park Creek, runs down to Park Creek Reservoir and thence by canals and beyond.

Below the mouth of the canyon there are several diversions on the river to irrigate hay meadows. In the valley, the river is augmented by the flows of three major tributaries: Rabbit Creek, Stonewall Creek and Lone Pine Creek, each of which in turn have irrigation diversions for hay meadows along their banks.

¹ This sketch was referenced in Chapter 38 as a feature of my capital raising 'dog and pony show'.

² During the Oligocene Epoch (23-34 million years ago) much of this area was covered by a thick layer of volcanic ash. At one point, this ash covered all but the tips of the peaks in the Medicine Bow Mountains west of Laramie (you can still make out the 'high ash' line).

³ However, the Geological Maps (Chapter 41) don't show much evidence of faults along the course of Phantom Canyon.

⁴ Ice Age flooding took place on an unimaginable scale. At least one Ice Age flash flood (estimated to have been 500 cubic miles of water and lasting only a few days) is responsible for the scouring of the *Scab Lands* of eastern Washington and carving the *Columbia River Gorge*. Similar cataclysmic Ice Age flooding apparently formed the *English Channel* by breaching the land bridge between Dover and Calais when sea levels were much lower.

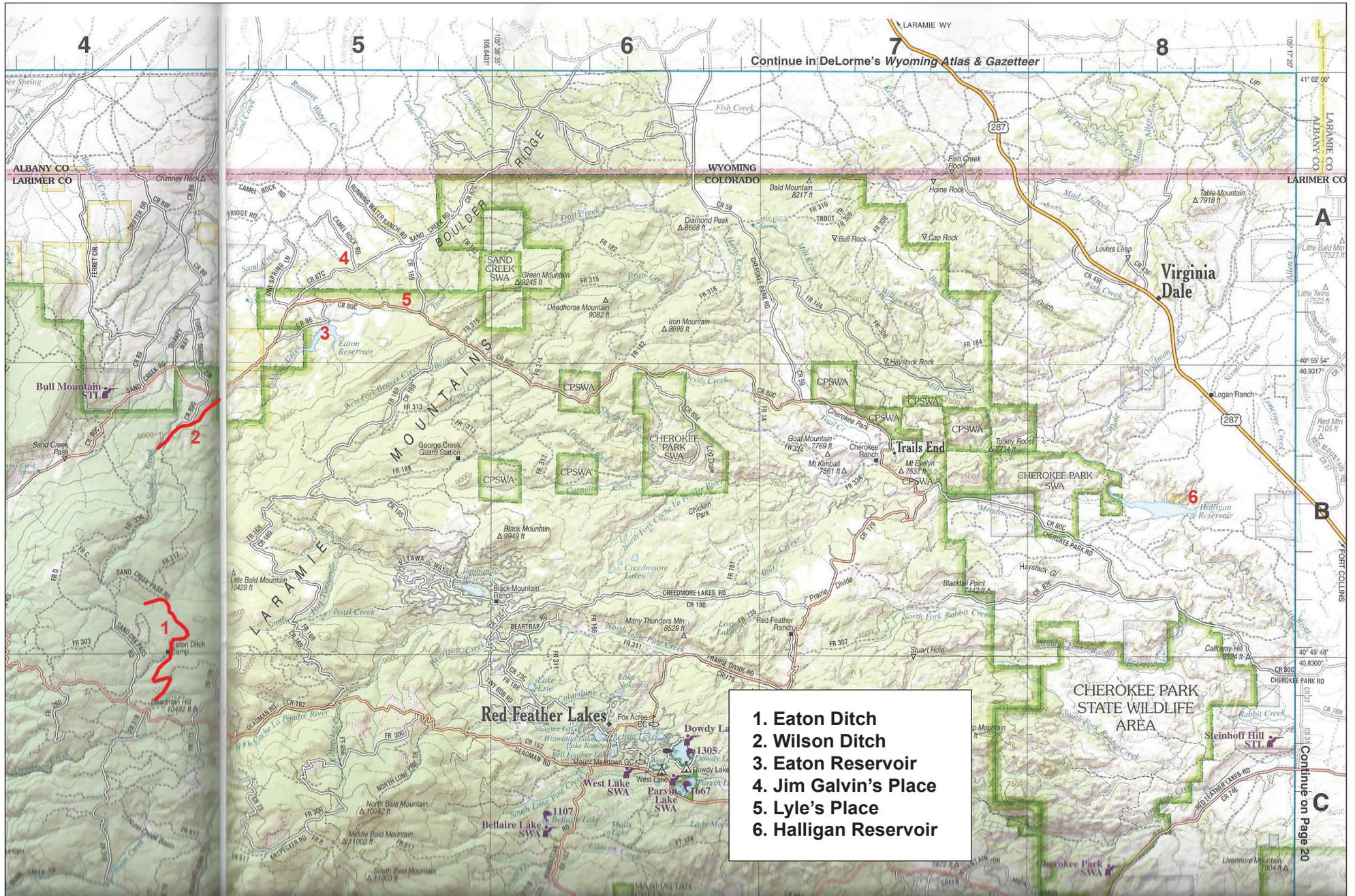
⁵ Prevailing northwesterly winds worrying away at sandbars along huge Ice Age rivers flowing eastward from the Rockies are responsible for the *Nebraska Sandhills*, a sand dune formation second only in size to the largest dune formation in the Sahara Desert.

⁶ For fans of *The Meadow* by James Galvin, the caretaker of Eaton Reservoir was Ray Worster, whose duties in the spring included removal of snow from the Wilson Ditch to enable early flows into the Reservoir.

⁷ (more about this later)

⁸ Ditto RE *The Meadow*: Lyle's 'meadow' was located just downstream from Eaton Reservoir and irrigated with water from Sheep Creek. Phantom Canyon Ranch Co. leased pastures from Lyle, Ray and Jim Galvin to augment its National Forest Permits and Union Pacific lease in the Sheep Creek drainage. As caretaker, one of Ray's perks was the pasture rent from the 640 acres owned by the Larimer & Weld Irrigation Co.

⁹ (more about this later)



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