

Evaluating the Land:
Evolving Perceptions of Landscape
in Gallatin Valley Settlement

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1864 - 1918

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May 1997
Geography 503
Montana State University

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Introduction

This study investigates how people have viewed the environment and the terrain of the Gallatin Valley through a cross section of time. The period during which the region was settled is explored for its impact on the present palimpsest of the landscape. The choices people made about where to farm and where to site their houses reveals much about their perceptions and attitudes toward the land. What people thought about its potential and its threats are reflected not only in their journals, but in the physical markings they have made in the form of buildings, fences, roads, and irrigation ditches.

Method

A variety of sources are used here as ways of evaluating how people have perceived the landscape of the Gallatin Valley over time. These indicators of land appraisal can be variously interpreted. By triangulating with different measures, however, we can begin to get a more reliable reading of how people actually viewed the landscape in which they chose to settle. Diaries and journals have been used as sources for research of individual experiences, and directly reflect individual perception. Field notes from the original surveys (beginning in 1867) of the region have provided general impressions and evaluations of soil quality. Subsequent retracement surveys of 20 or 30 years later provide soils evaluations which reflect changing perceptions. Land alienation maps of individual townships have provided a means of

analysis of the sequence of individual land claims (primarily homestead claims but also desert lands claims, agricultural college scrip, and others) also allows an interpretation of why people chose certain pieces of land over others within the larger landscape. Another order of priorities and perceptions can be suggested by a closer look at homestead claims, examining the position of the building site upon the land claim. Finally, recent USGS maps are studied for their implications, and compared with former uses and perceptions. At a detailed level of analysis, one homestead farm site is examined in its growth and development over time. An interview process is introduced in order to evaluate the perceptions of current and former occupants of the farm setting. The current farm site has been mapped, and former arrangements of the site reconstructed from family stories related in the interviews.

Setting

The physical setting of the Gallatin is typical of southwest Montana on the east side of the continental divide. It is a broad valley framed by mountain ranges. The topography varies from river bottom lands with occasional bluffs, and broad, gently rising expanses, to drier bench lands and foothills (figure 1). Annual precipitation measures about 12 inches in Three Forks area, and about 18 inches in the Bozeman area. A fan of gradual river drainages are fairly evenly distributed through the valley, flowing primarily from mountain ranges which rim the south and east sides of the valley. The major drainages being the East and West Gallatin Rivers and the Madison River. The Jefferson, Madison and Gallatin Rivers converge in the Three Forks area to form the north-flowing Missouri. The elevation varies between 4000 to 5000 feet,

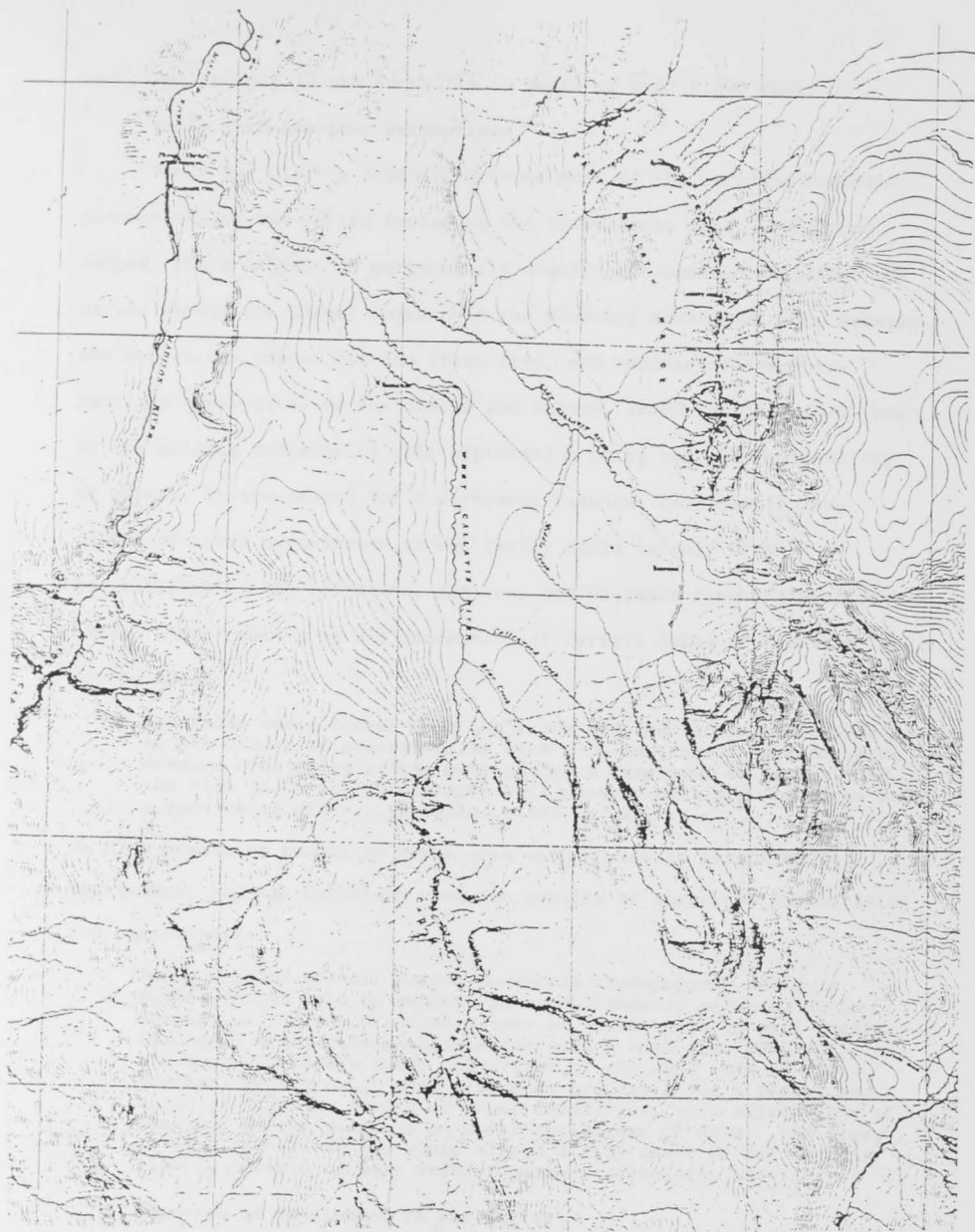


Figure 1. Topographical map of the Gallatin Valley, including major drainages of the East and West Gallatin, and Madison Rivers.

and rises steeply in the foothills to peaks of over 9,000 feet.

Early Euro-American Perceptions

Lewis and Clark's journals provide some of the earliest recorded perceptions of the valley including the Three Forks area, where they camped. Their passage is particularly significant because it placed the valley within the larger context of the Missouri River drainage, because the region was mapped for the first time, and because of the Euro-American names given to the rivers and valley, which have remained. One of the primary concerns of this exploration party was the navigability of rivers, in the search for a Northwest Passage. As a result, the record of their experiences in the valley deals largely with navigability of the Jefferson, Madison, and Gallatin Rivers (Thwaites, 1964). Lewis remarks on his perception of fertile soils at the river bottom lands:

Mountains again recede from the river and the valley again widens to the extent of several miles with wide and fertile bottom lands covered with grass and in many places a fine turf of greensward. the high lands are thin meagre soil covered with dry low sedge and a species of grass...(Thwaites, 1964, p. 2).

He also evaluated the Three Forks area with a view to establishing settlement, and was concerned with the quality of resources for building and agriculture:

These streams...their waters perfectly transparent. There is timber enough here to support an establishment, provided it be erected with brick or stone either of which would be much cheaper than wood as all the materials for such a work are immediately at the spot. I observe large quantities of the sand rush in these bottoms which grow in many places as high as a man's breast and stand as thick as stalks of wheat usually do. this affords one of the best winter pastures on earth for horses or cows...the grass is also luxuriant and would afford a fine swath of hay at this time in parcels of many acres together. (Thwaites, 1964, p. 6, 7).

Overview of Settlement in the Valley

Although fur trappers had known the region long before, the first significant Euro-American settlement of the Gallatin Valley was prompted

by the 1862 gold rush in the region, and the sudden demand this created for agricultural produce. The valley must have appeared to settlers to be well suited for the development of farming and stock raising. The western end in particular -- the Willow Creek and Gallatin City areas -- had the advantage of proximity to the earliest and easiest transportation routes from the mines. This area was only about sixty miles from the mining region of Virginia City, and was connected by a wagon road which ran between Helena to the north, and Sterling to the southwest, facilitating delivery of hay and other products to the mining regions (Karsmizki & Brownell, 1983).

More importantly, the Missouri headwaters area attracted settlement because rivers were still considered the primary transportation routes just as Lewis and Clark had seen them. People perceived the rivers in terms of their navigability for freight. In 1862 the most widely used route into the Gallatin Valley from the East was by the Missouri River to Fort Benton, and then overland more than 200 miles. This aspect of accessibility for freighted goods made the northwestern end of the valley at first a more attractive potential than the eastern reaches for farming.

Development of the eastern end of the valley was spurred very soon afterward in 1864, with the establishment of the Bozeman Trail through the Bridger Range, which provided a far more direct, though treacherous overland connection from the Oregon Trail. Settlement was bolstered due to the early presence of Fort Ellis (established in 1867) in the Bozeman area. Early accounts of ranchers in the valley itself indicate a peaceful and tolerant relationship between white and Indian populations (Spray, 1937). Military presence, however, appears to have increased the

perceived viability of the Bozeman Trail in particular, further east where it was considered subject to frequent attack.

These overall patterns suggest that early settlement was guided by the desire to raise agricultural produce profitably. Settlers desired access and proximity to established transportation routes for their freight, and they sought some sense of community in a setting which seemed to them isolated.

By looking at Land Status and Use Record maps and Control Document Indexes (CDI) we can reconstruct the order in which federal land was claimed and settled. Karsmizki and Brownell (1983) reconstructed the entire valley settlement process in ten year intervals, from 1870 to 1910 (figure 2). This illustration reveals an initial tendency to cluster settlement fairly closely together in the bottom lands of rivers and secondary streams. While it is most likely that farmstead location was based in large part on the availability of running water, there may have been other reasons that reinforced a desire to settle at the major river bottoms, such as the availability of timber for shelter and fuel, or comfort and familiarity with the riverine environment.

The configuration of these early lowland claims tended to be uneven in shape, rather than the later claims which were clear quarter sections. This reflected the tendency of settlers to respond to the character of the topographic, geographic, and vegetative characteristics of their surroundings. The earliest claims were made by preemption, and were settled long before the survey imposed its rigid, abstract geometry on the territory. As preemption claims were made final after the completion of the survey, an irregularly shaped land claim had to be approximated into a legal boundary which adhered to the section lines of the survey, or regular subdivisions of them. The resulting claim was a quarter section comprised of a conglomeration of sixteenths. (O'Neill & Karsmizki, 1996)

Settlers began to claim slightly higher land as the river edges were taken-up, or perhaps in places where experience revealed flood plains. The development of irrigation ditches to carry water to dryer

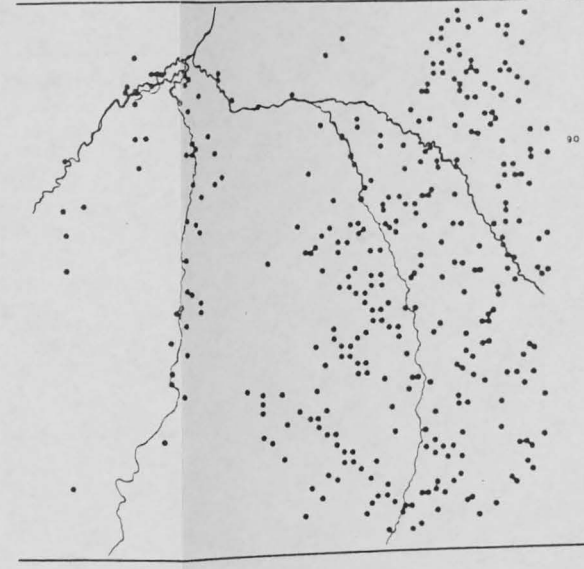
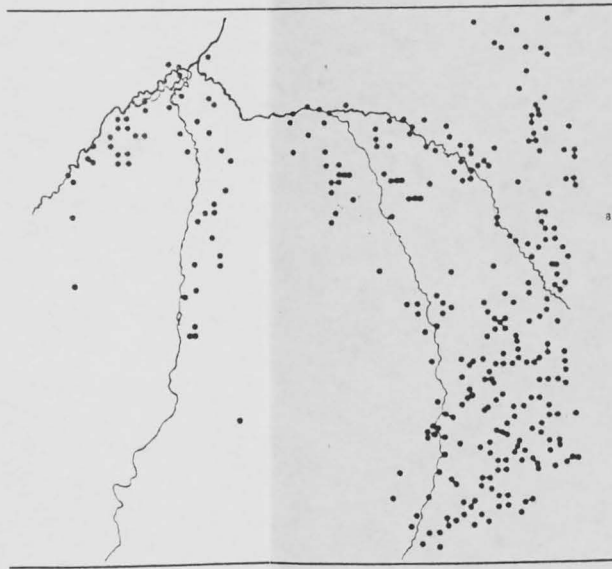
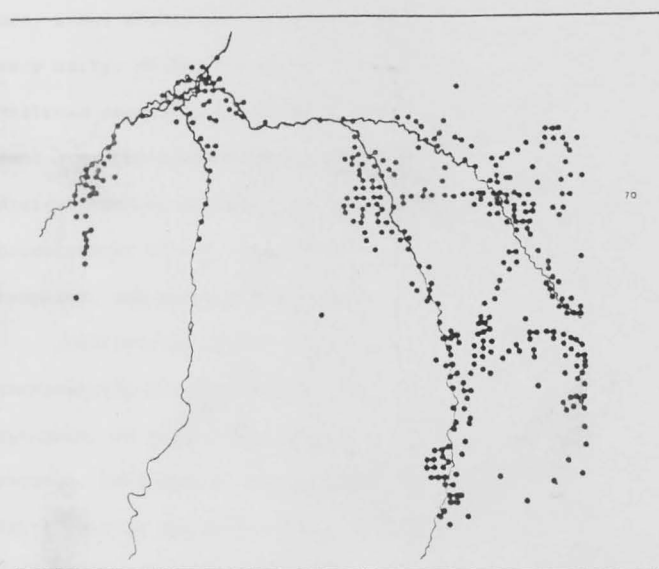


Figure 2. All federal land claims in the Gallatin Valley from 1870 to 1910 in 10 year intervals. (Reproduced by permission: Karsmink & Brownell, 1983)

farmland was essential to the agricultural use of the higher ground. In many areas around the valley construction of smaller ditches was begun very early. (O'Neill & Karsmizki, 1996). As the Northern Pacific Railroad reached completion in 1883, the entire East side of the valley, including the Springhill and Bozeman areas began to fill, in an even distribution of claims. This suggests that people already understood the productivity of the land, or went on faith in the railroad's promotional campaign, and responded quickly to new access to markets.

Cultivation of the drier, more remote bench lands became increasingly possible as the simple, early ditches were widened and extended, or as irrigation systems began to penetrate the more elevated regions. Evidence of the productivity of the drier grassland increased faith that it was worth the investment of labor involved in establishing or improving ditches. The presence of the railroad, of course, guaranteed a market for grain, making this effort seem more worthwhile. In the decade 1890 to 1900 settlement and farming spread increasingly onto the higher benches (figure 2). As dry land farming technology became widely promoted and recognized, more broad settlement of high bench land became possible, such as between the West Gallatin and the Madison rivers. (O'Neill & Karsmizki, 1996).

Analysis of Three Townships

Three townships of (36 sections each) have been singled-out for closer analysis: Willow Creek (T1NR1E -- near Three Forks on the Jefferson River) consisting of river bottom land and dry bench land in an open expanse of the valley, Springhill (T1NR5E -- the agricultural region west of the community of Springhill) consisting of a very gradual bench land nestled at the foot of the Bridger Range with many creeks,

and Bridger Creek (T1SR6E -- immediately north of Bozeman at the head of the East Gallatin River) consisting of some river bottom land, some dry rolling bench land, and a large quantity of steep, mountainous terrain. They were selected based on their significance during different phases of settlement, on the range of terrain characteristics they represent, and on the availability of data.

Willow Creek

The Willow Creek township (T1NR1E) marks the point of origin for the 1868 General Land Survey in Montana. It was not only a geographically advantageous starting point, but as mentioned above, agricultural settlement had already begun there, and the federal government wanted the survey to precede settlement as much as possible.

The surveyor's map of 1868 (figure 3) reveals the established Helena-Sterling road, and a number of houses and fences, some of which may have been in place since 1864. These early established claims fall into a pattern in keeping with Lewis and Clark's perceptions of the same region. Looking at this early pattern in relation to a topographical rendering of the township (figure 4), settlement and fence lines are located in the river bottoms generally, and in some major creek drainages. The bottom land seems to have indicated to them greater fertility of soils, and therefore greater potential productivity.

Settlers were also interested in proximity to major fresh running water sources, and to the road or the river as transportation routes for freight. Although I have found no documentation of the Gallatin Valley rivers being used for transport of goods, people may never-the-less have held a perception that such an infrastructure would develop in the area.

By 1918 the last homestead patent in the Willow Creek township was

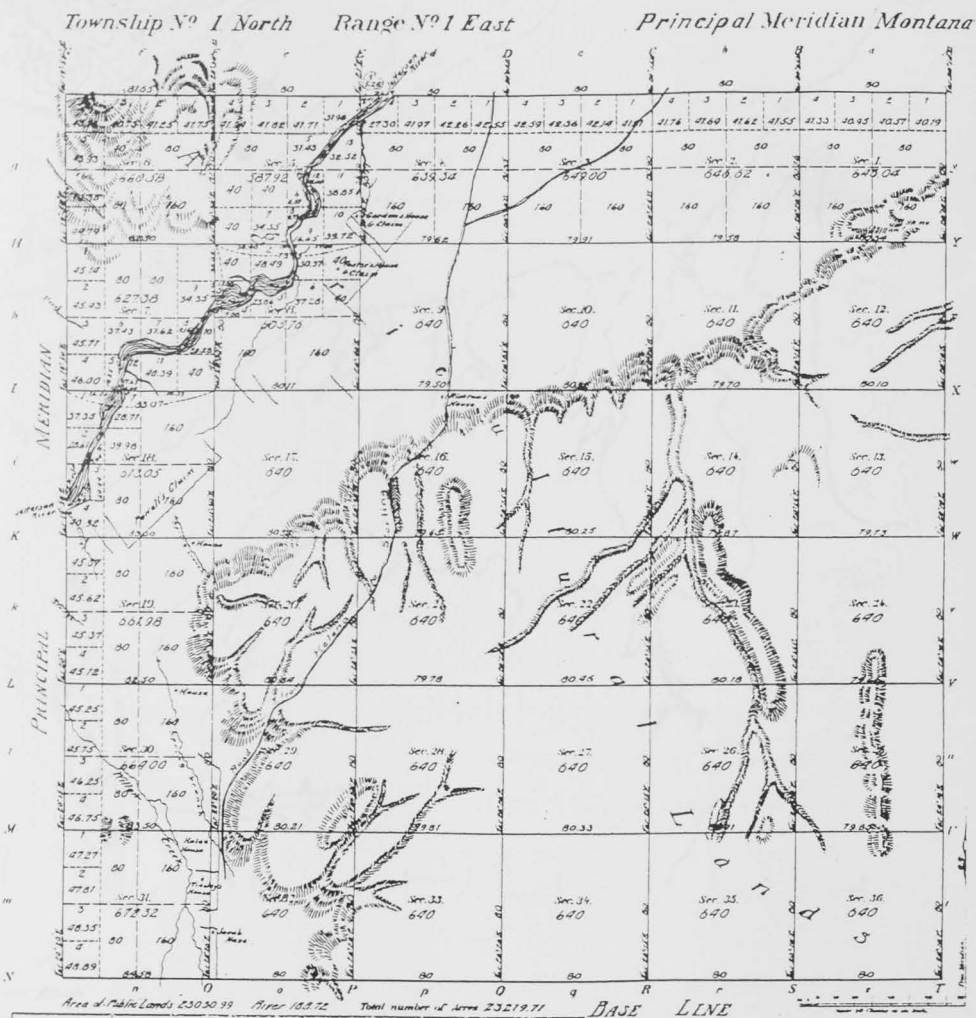


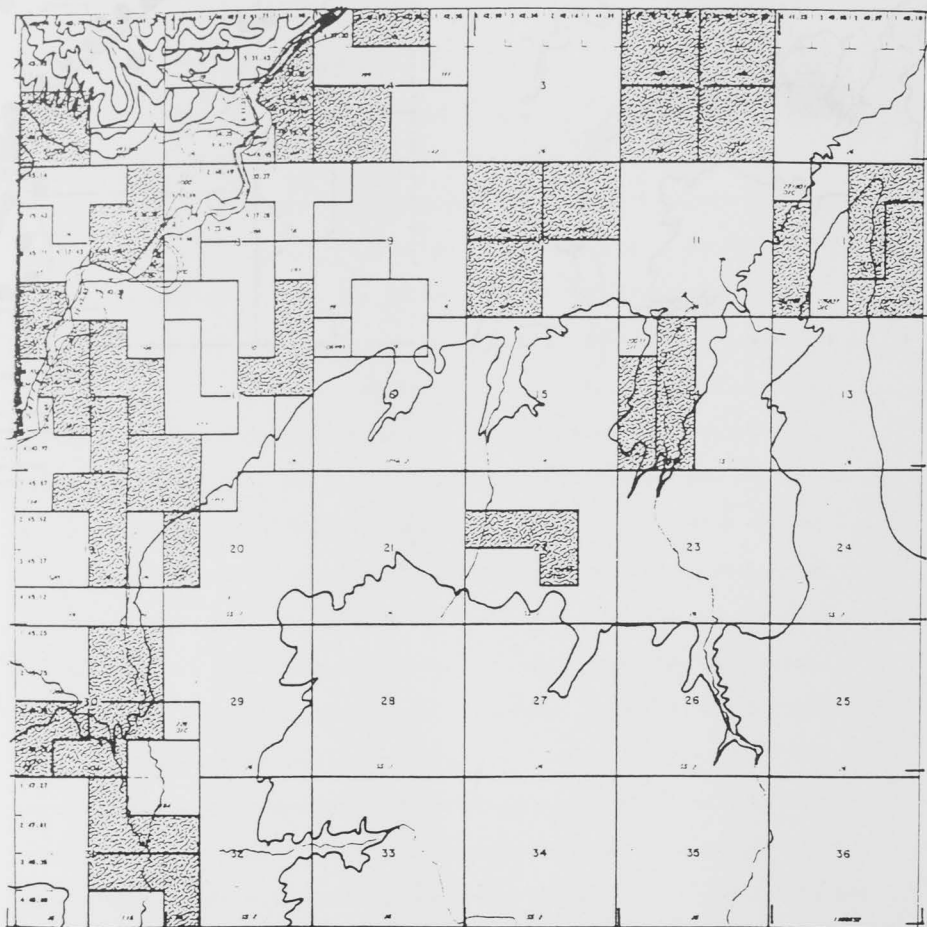
Figure 3. Willow Creek township (T1N1E). Surveyor's map 1868.



Figure 4. Willow Creek township. Settlement observed by surveyors, 1868.

proved-up. The pattern of all homestead settlement in the area over a span of fifty years (figure 5) seems to have followed somewhat with the typology established by 1868 in the first 4 years of settlement. The major difference is the lack of development along the original Helena-Sterling road. A glance at a recent map of settlement marking individual buildings or groups, rather than land claims, (figure 6) reveals an important spatial shift in where actual buildings and roads were located. The Northern Pacific Railroad opening in 1883 (and in 1909 the Milwaukee line) passed directly through the township, following the even ground parallel with the river. The introduction of the railroad almost certainly caused a shift in wagon roads that connected people to the Willow Creek town site, Three Forks, and Gallatin City. The major road through the area in 1987 runs along side the rail line (USGS 1987), and this may have happened at the time of the rail construction over 100 years earlier. Other roads in the township have shifted in the contemporary map to a pattern which almost entirely disregards the topography, and follows the orthogonal grid of section lines, and the resulting parallel and perpendicular property lines. The construction of fences on the open range by the 1890s undoubtedly played a dominant role in cementing the position of roads along these orthogonal property lines.

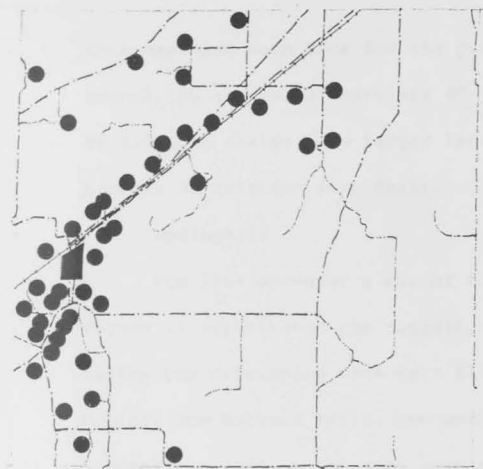
The new configuration of roads also influenced the placement of later buildings, which began to shift away from the river itself, and began to be organized linearly along major roads, and around the town site. A general shift away from the river may also have been prompted by the occurrence of 50 or 100 year floods. Lewis and Clark noted repeatedly that they saw no evidence of inundation (Thwaites, 1964), and



~~~~~ CREEK

~~~~~ 200 FT. CONTOUR

Figure 5. Willow Creek township. All homestead settlement by 1918.



1987 WILLOW CREEK TOWNSHIP

- town - approx. 70 structures
- building structure or group
- paved road
- unpaved road
- railroad



Figure 6. Willow Creek township. 1987 buildings and roads compared with topography. (USGS maps, 1987)

this may have been true for the period preceding their exploration, and before the arrival of settlers 60 years later. More recent consolidation of 160 acre claims into larger land holdings may have expedited the process of shifting settlement.

Springhill

The 1868 surveyor's map of the Springhill township (T1NR5E - figure 7) illustrates the rapidity with which the eastern end of the valley was developing once Fort Ellis (1867) was clearly established to protect the Bozeman Trail. The earliest sites were first settled, however, in 1864 -- the same year as in Willow Creek. A representation of houses and roads that the surveyor saw in 1868 is overlaid onto a simplified contour drawing (figure 8). The pattern is remarkably similar to that in Willow Creek. People chose to concentrate in the low-lying areas first near the East Gallatin River, and to settle in the major creek drainages of Reese Creek and the South Fork of Ross Creek. In these areas water was readily available for household and stock use, and it was easy to channel for irrigating crops. Two very extensive irrigation ditches have already been developed. While it is possible that individuals with considerable capital executed this work, it is more likely that the agricultural community pooled their efforts for common benefit. In either case it is clear that the value of the dryer slopes between the creeks had already been recognized for their richness of soils and potential productivity as crop land.

A notable characteristic of the landscape of 1868 is the proliferation of roads leading toward the community of Springhill to the east. These roads seem more than a simple choice of routes from farm sites to the uphill community. They suggest a more intensive use of the

G *f* *F* *e* *E* *d* *D* *c* *C* *b* *B* *a* *A*



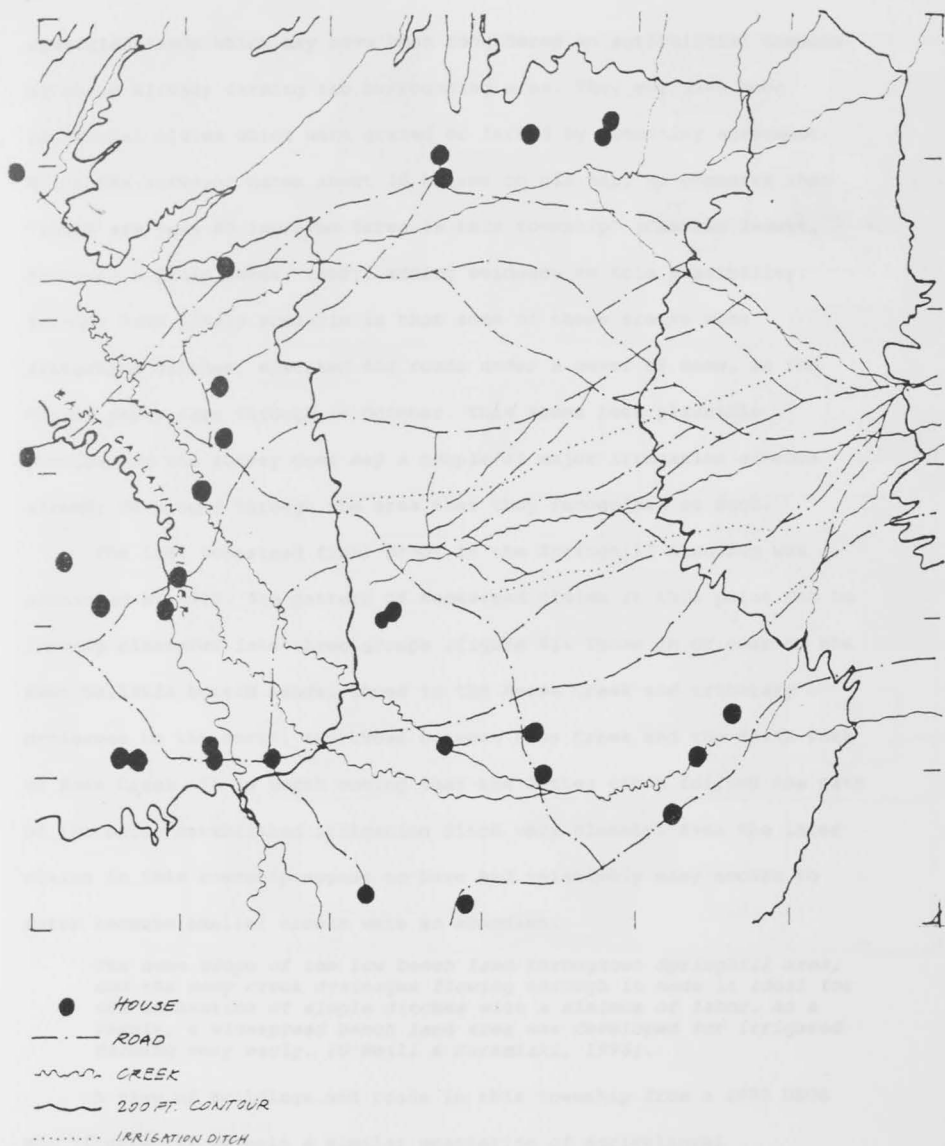


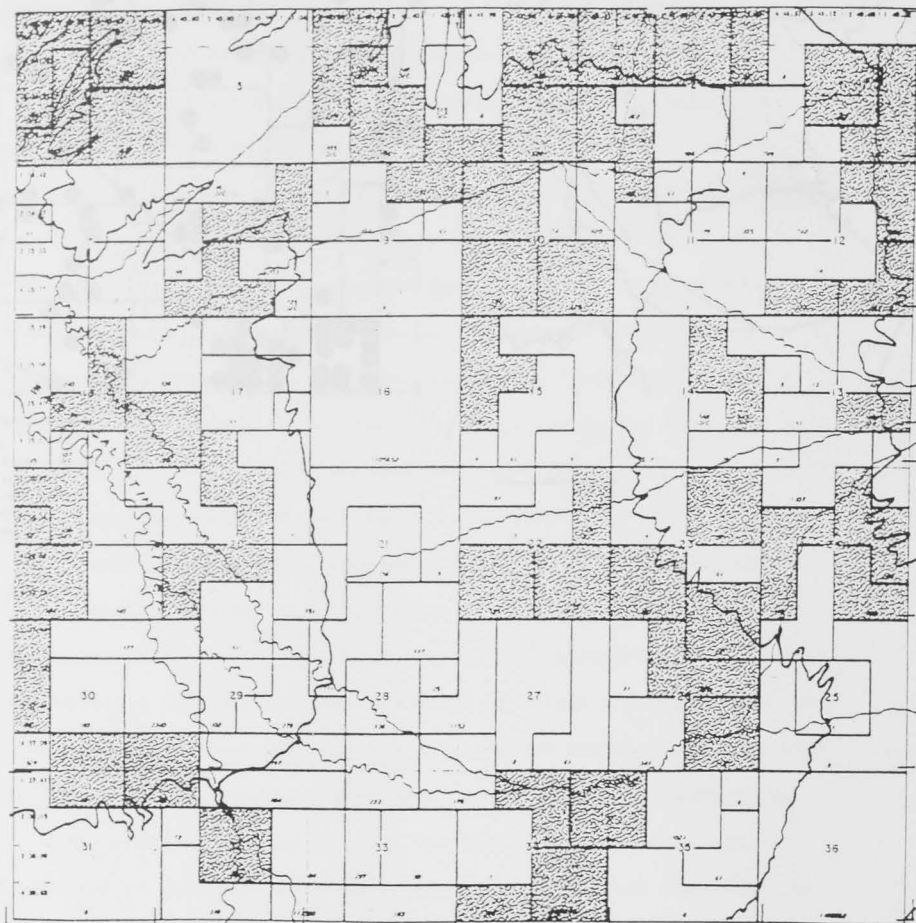
Figure 8. Springhill township. Houses and roads observed by the surveyor in 1868.

unsettled lands which may have been considered an agricultural commons by those already farming the surrounding area. They may have been unofficial claims which were grazed or farmed by community agreement. While the surveyor notes about 30 houses on his map, he comments that "there are some 60 improved farms in this township" (Charles Jewett, Surveyor's Field Notes, 1868), adding evidence to this possibility. Another less likely scenario is that some of these tracks were irrigation ditches, mistaken for roads under a cover of snow, as the survey party came through in October. This seems less plausible considering the survey does map a couple of major irrigation ditches already developed through the area that they recognized as such.

The last homestead final proof in the Springhill township was submitted by 1910. The pattern of homestead claims at this point can be loosely clustered into three groups (figure 9): Those in or near to the East Gallatin bottom lands, those in the Reese Creek and tributary drainages to the north, and those between Ross Creek and the South Fork of Ross Creek. It is worth noting that the latter group follows the path of the early established irrigation ditch very closely. Even the later claims in this township appear to have had relatively easy access to water because smaller creeks were so abundant.

The even slope of the low bench land throughout Springhill area, and the many creek drainages flowing through it made it ideal for the excavation of simple ditches with a minimum of labor. As a result, a widespread bench land area was developed for irrigated farming very early. (O'Neill & Karsmizki, 1996).

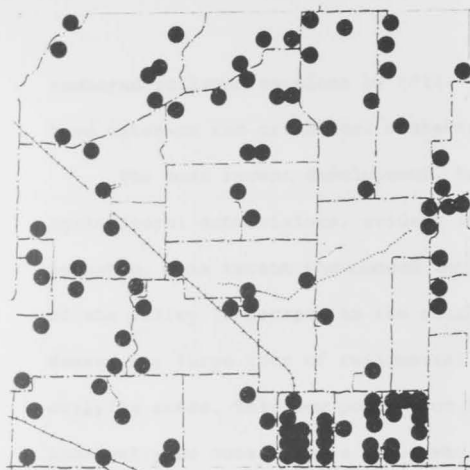
A view of buildings and roads in this township from a 1987 USGS map (figure 10) reveals a similar scattering of agricultural settlements, with a couple of major differences. The Red Turkey Spur line of the Milwaukee railroad was fairly cleanly laid through odd-



~~~~~ CREEK

----- 200 FT. CONTOUR

Figure 9. All homestead settlement by 1910.



1987 SPRINGHILL TOWNSHIP

- Building structure or group
- paved road
- - - unpaved road
- x-x- railroad
- ..... major creek



- ~~~~~ CREEK
- 200 FT. contour

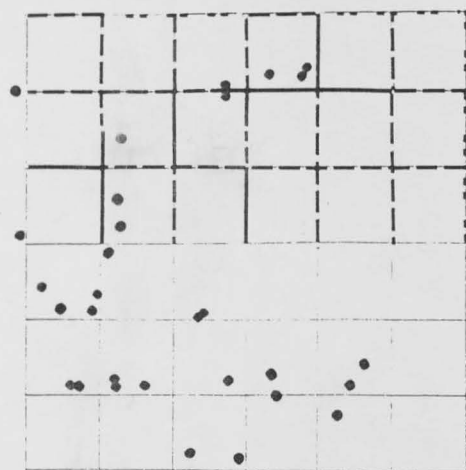
Figure 10. Springhill township. 1987 buildings and roads compared with topography.

numbered railroad sections by 1913. The roads, like at Willow Creek, have taken-on the orthogonal characteristics of the survey lines.

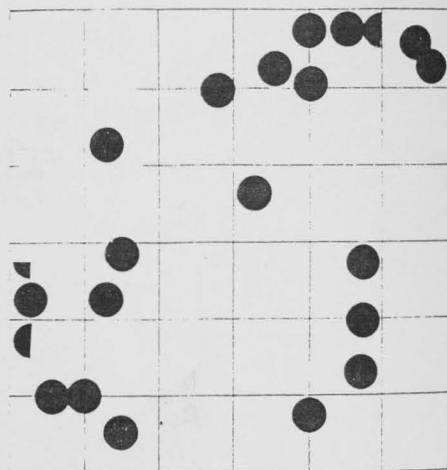
The most recent development, however, is the introduction of non-agricultural subdivisions, evident in the southeastern part of the township. This recent phenomenon introduces a new twist to perceptions of the valley landscape. As the nearby town of Bozeman has grown, the demand for large lots of residential building space has expanded into outlying areas. This new population influx into the township might ironically be considered a group who values the landscape for its openness and uncrowded scale. They are interested in the landscape as a visual amenity, while requiring improved roads for ease of mobility, and daily connection with the services of the larger town.

Tracing the homestead settlement process in the township in approximately five year intervals (figure 11) from 1868 to 1896 strengthens the visible pattern of clustering. Related families of kith and kin often laid claims simultaneously, or within a few months of each other. This points out not only their desire for community, but perhaps specifically their need to share labor in making the land productive.

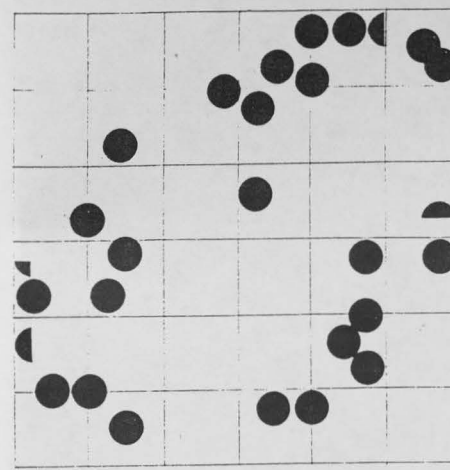
The surveyor's field notes on Springhill were examined for his evaluation of the land. A rating of the quality of soils from first to fourth rate was noted as the surveyor moved along each section boundary. The settlement pattern in 1868 (figure 11) is superimposed with a grid which is keyed to represent this rating. There is a fairly strong correlation between the areas which settlers had deemed valuable and productive soils, and the areas that rated high in the surveyor's appraisal. In 1885, however, a segment of the northern boundary which had been assessed as second or third rate was re-surveyed, and was



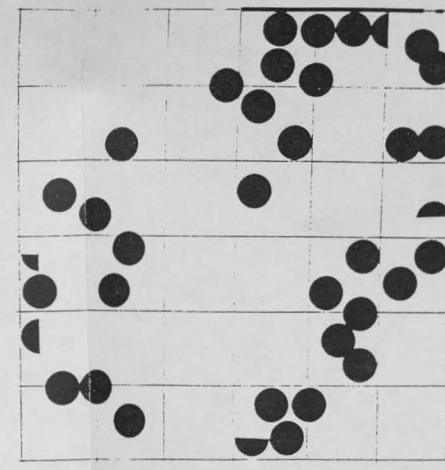
1868 surveyor's appraisal  
 • houses noted on surveyor's map



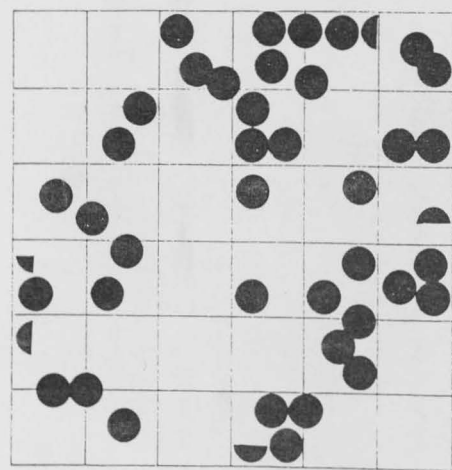
1872 initial settlement of homestead patents



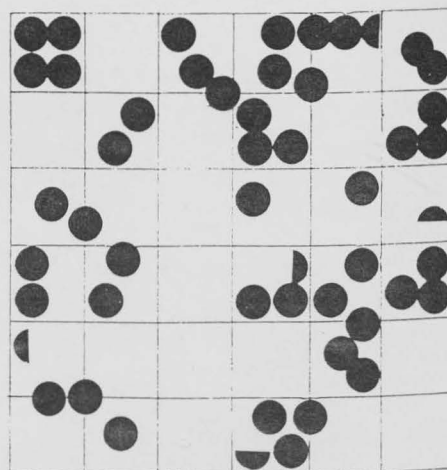
1877 initial settlement and patented homesteads



1882 initial settlement and patented homesteads  
 1885 surveyor's appraisal



1887 initial settlement and patented homesteads



1896 initial settlement and patented homesteads

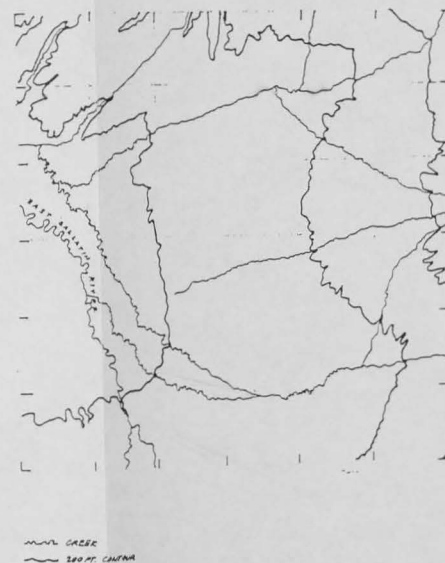
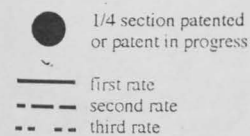


Figure 11. Springhill township. Homestead settlement process in approximately 5 year intervals from 1868. Overlaid: surveyor's evaluations of soils quality in 1868 and 1885.

deemed to consist of first rate soils. Note that by the time this second survey was executed there were numerous homestead claims along this boundary. This comparison suggests that the surveyors' appraisals of soils were based in large part on evidence of cultivation, productivity, and possibly irrigation.

#### **Bridger Creek**

It is telling that in 1867 and 1870, when the initial survey of the Bridger Creek township (T1SR6E) was done, the surveyors made only a partial study of the area (figure 12). They deemed the steeper, more mountainous parts of the township to be of little value as land claims.

The land fit for agriculture in this township is generally confined to the bottom of the creeks and river, where any fine wheat or barley can be raised. The foothills adjoining the bottom can be cultivated also, but will need irrigation by means of ditches, and the expense of making these is at present too great for the means of the farmer. The hills are covered with excellent grass which will afford pasturage for large herds of cattle and horses. There is timber except on the stream, which are generally bordered with Cottonwood and Willows. (Benjamin Marsh, Surveyor's Field Notes, 1867).

The eastern portion of this township is mountainous, and the balance hills and bench. Township north and east are very rough and mountainous, including the Belt Range [Bridger Range]. There is much pine and fir timber in the mountains, otherwise they are of little value. The soil in this township, where not mountainous or stony, is a rich black loam. (Robert Green, Surveyor's Field Notes, 1868).

Early surveyors saw the utility of forested mountains much as the settlers did, their value was limited to resource extraction of construction timber and fuel.

The progression of all settlement of federal lands in the township was largely complete within twenty-five years (figure 13). Again the pattern is consistent with others studied. The lowlands being first claimed were not only perceived as the most fertile in 1868, but were also in close proximity to the north edge of Bozeman, making stock and

$G$        $F$        $F$        $e$        $E$        $d$        $D$        $c$        $C$        $b$        $B$        $a$        $A$

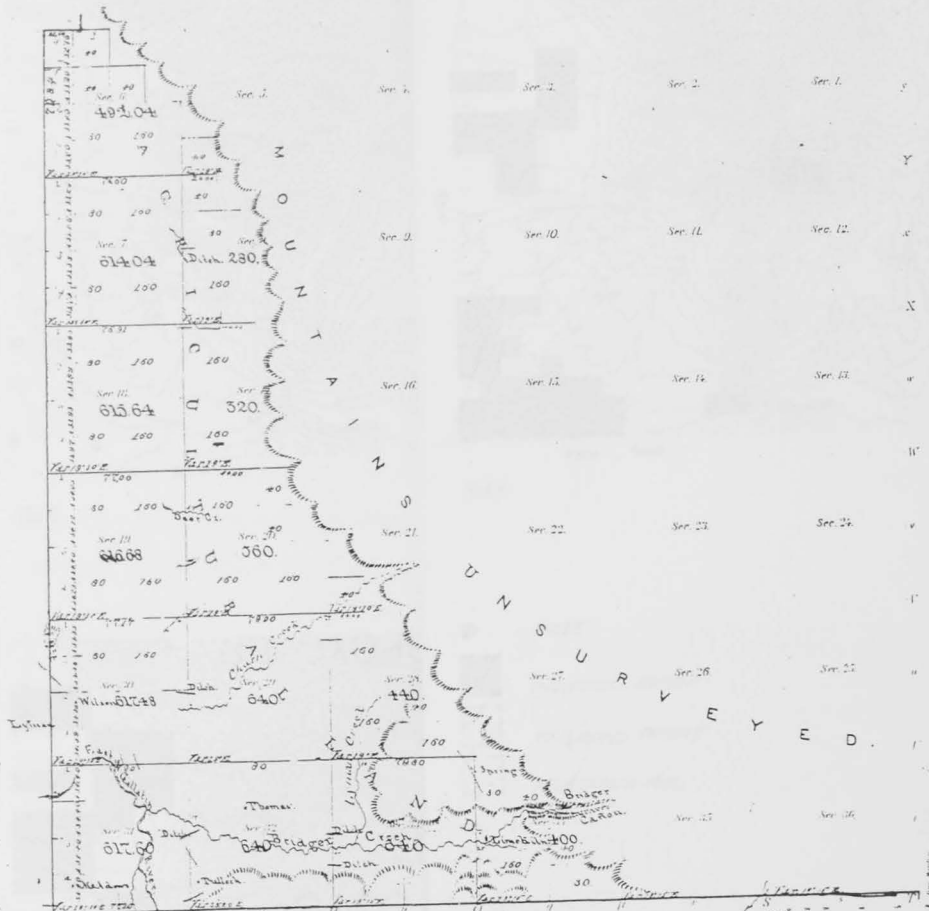
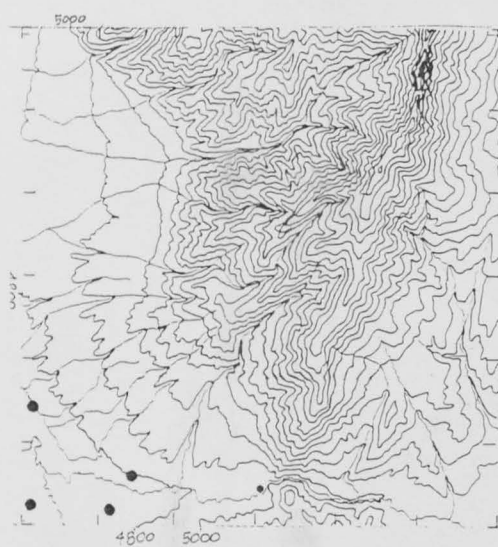
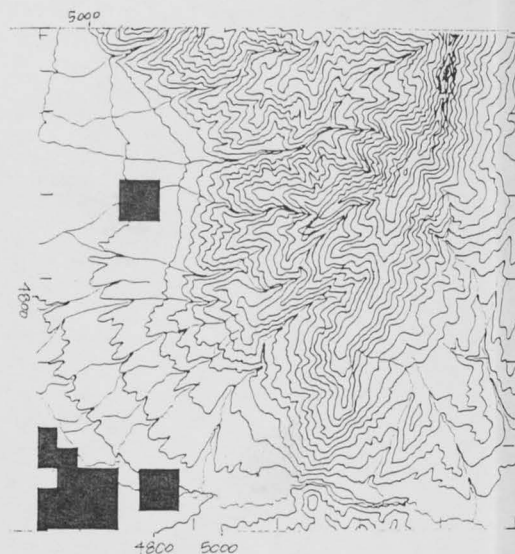


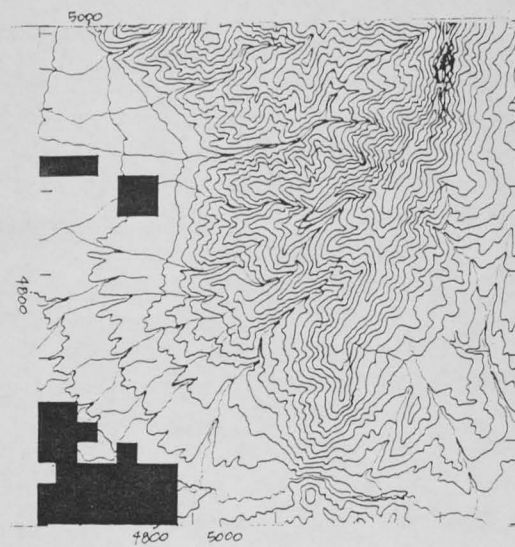
Figure 12. Bridger Creek township (T1SR6E). Surveyors' map, 1868-1870.



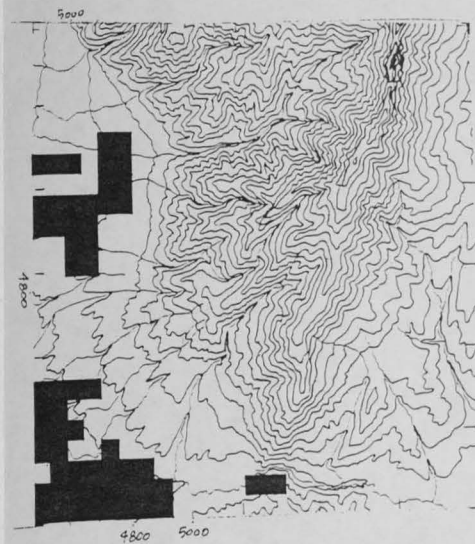
1868



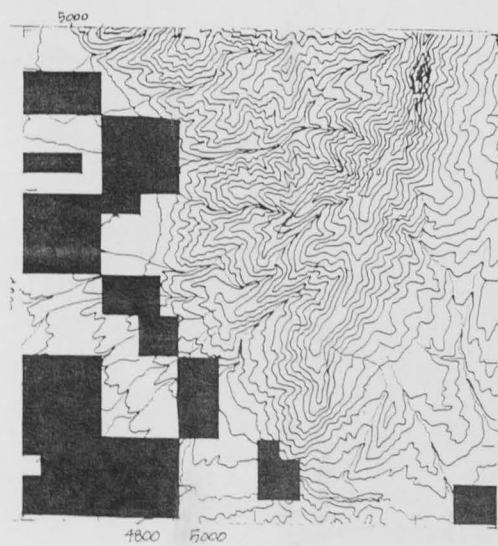
1877



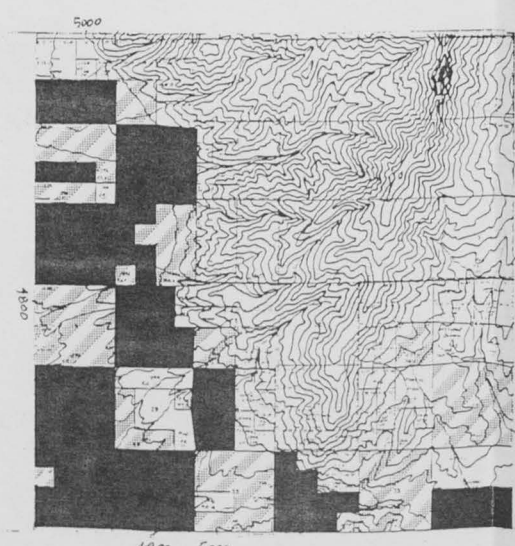
1882



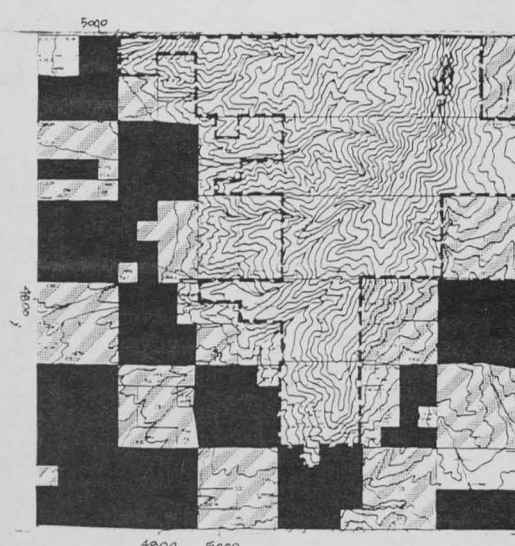
1887



1892



1897



1907

- HOUSE
- INDIVIDUAL PATENT
- ▨ RAILROAD PATENT
- WITHDRAWN 1902

Status of public domain and acquired lands from 1868 to 1907,  
Bridger Creek township (T1SR6E).

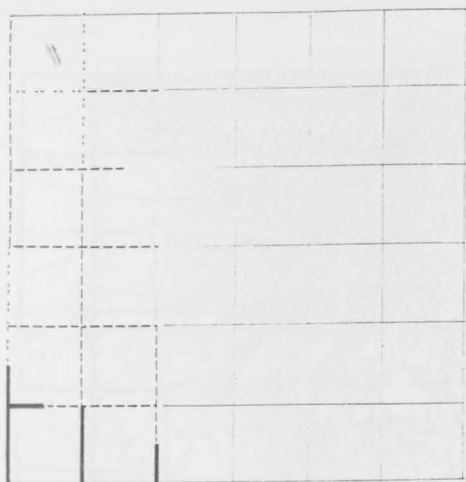
Figure 13. Bridger Creek township. Progression of all claims on public domain 1868 to 1907 in approximately 5 year intervals.

produce very marketable. It was not until 1896 that Northern Pacific was able to make its official claim on what remained of its odd-numbered sections (Control Document Index, n.d.), although they had been withdrawn from settlement some years earlier. The railroad had an interest in widespread settlement to increase its long-term profitability, but it was also anxious to lay claim to its granted lands for immediate profit (Malone, et al, 1991). Competing private and railroad interests in the land illustrate its value for both individual and corporate profit.

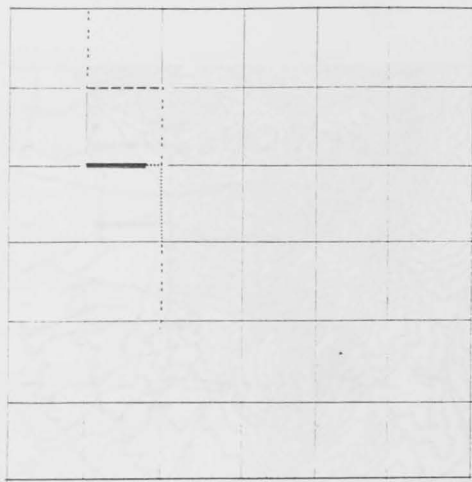
In 1902, when the General Land Office was assisting in efforts to set aside forest reserves, the mountainous portion of the township was thoroughly surveyed (figure 14). In the same year they were withdrawn from settlement (figure 13). The withdrawal of forest reserves reveals a shift in the evaluation of mountainous lands throughout the west (Jackson, 1995). There was a growing perception that forest lands were a public amenity which required management and a degree of protection. The importance of the forest as a stabilizer of water drainages was a perception that could not have been overlooked by settlers who relied on mountain creeks for drinking water. It appears, however, that for many years they forested upstream of their own settlements.

The three different surveys that were done in parts of this township offer a great opportunity to compare appraisals of overlapping segments (figure 15). The composite reveals some widely differing perceptions of soils in these sections from 1868, 1888, and 1902. These surveyors' ratings are overlaid onto the topography to explore patterns (figure 16). It is evident that there was an increasing evaluation of soils at higher elevations over time. A plausible reason for this

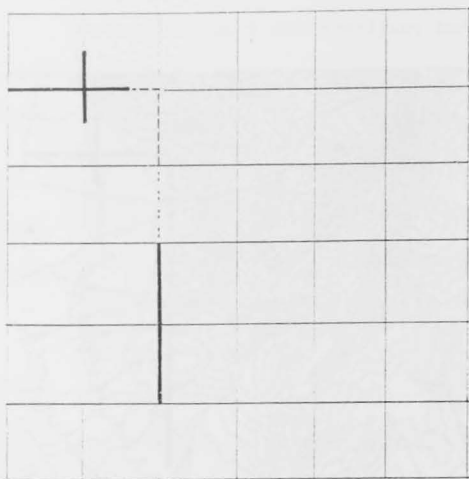




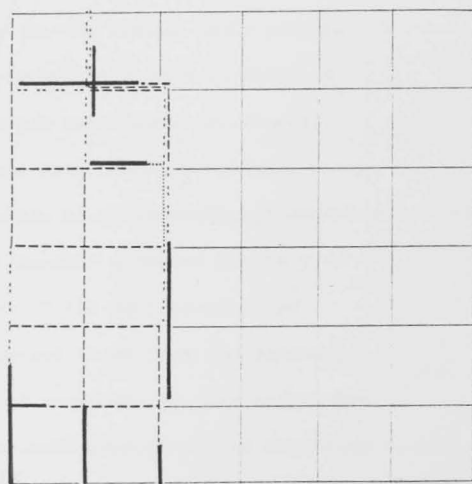
1868-70



1888



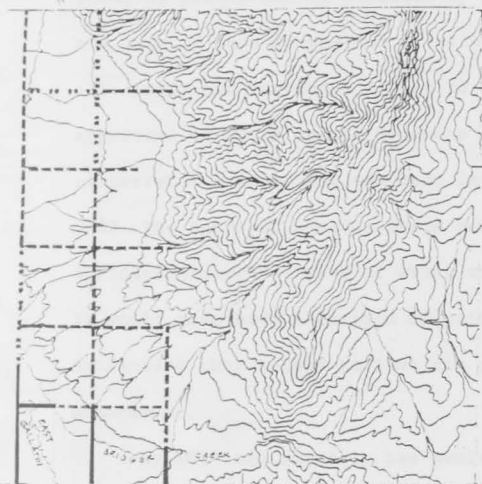
1902



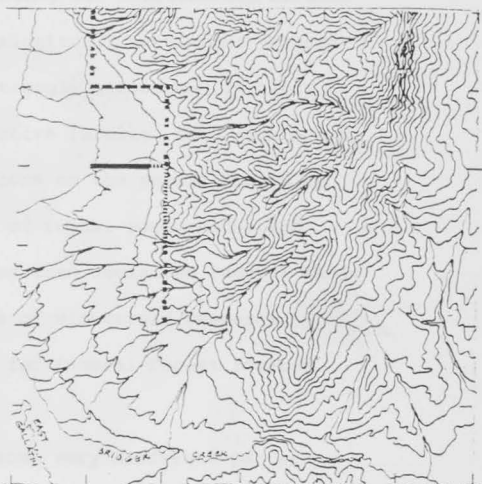
COMPOSITE

— first rate  
 --- second rate  
 - - - third rate  
 ..... fourth rate

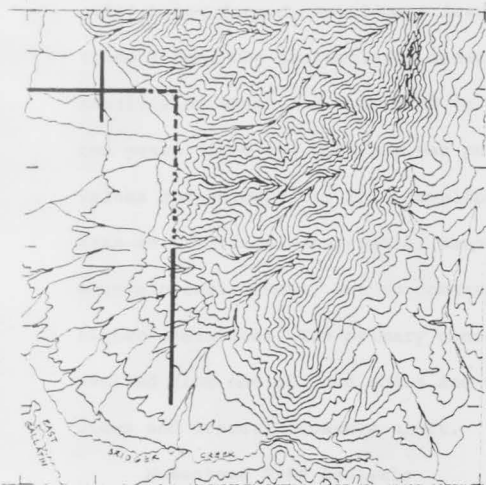
Figure 15. Bridger Creek township. Surveyors' soils appraisals.



1868-70 surveyor's appraisals



1888 surveyor's appraisal



1902 surveyor's appraisal

- first rate
- - - second rate
- .. .. third rate
- ..... fourth rate

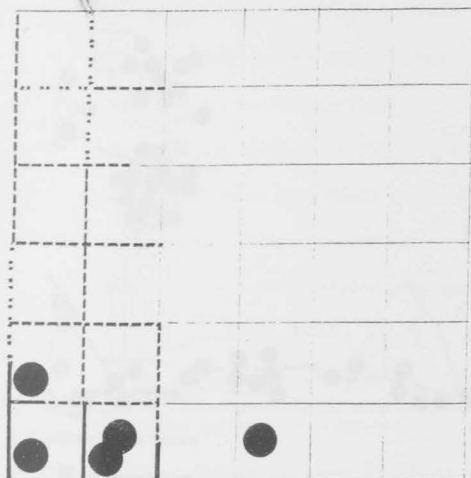
Figure 16. Bridger Creek township. Surveyors' appraisals overlaid on topographical maps.

changing perception is revealed by examining the relationship between the date of each survey and existing agricultural settlement (figure 17). Again the surveyors appear to be strongly influenced in their appraisal of soils by the evidence of active farming. This figure also illustrates some of the man made intrusions on the public domain by 1902. The surveyor noted a large number of roads, wood roads, and irrigation ditches, many of which crossed into unclaimed federal lands. It would have been this type of evidence of widespread resource extraction that helped to fuel the push for federal forest reserve management.

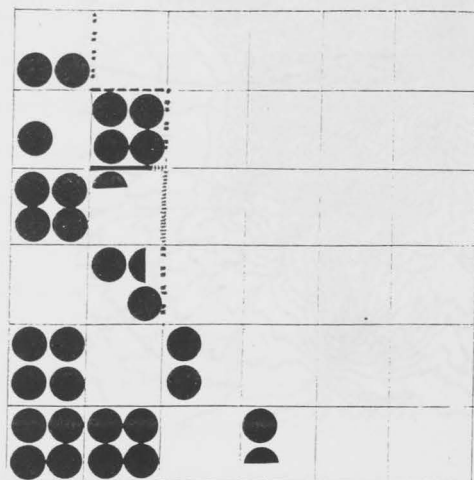
By 1987 the township has evolved some very different patterns (figure 18). The widespread agricultural settlement has tended to concentrate in a few low-lying areas. While the uneven bench land is still being farmed, settlement itself represents a consolidation of those farms. One particularly dense portion represents residential subdivision which has continued to spread into higher elevations in the ten years since the USGS map was published. As an indicator of shifting values and perceptions this development reveals a desire not only to take-in the visual and spatial amenities of the agricultural and mountain environment, but to command distant views from increasingly higher elevations. The primary concern of residents in this region has evolved from one of good soils and water underfoot to one of expansive views and dramatic scenery aloft.

#### **Homestead Site Analysis**

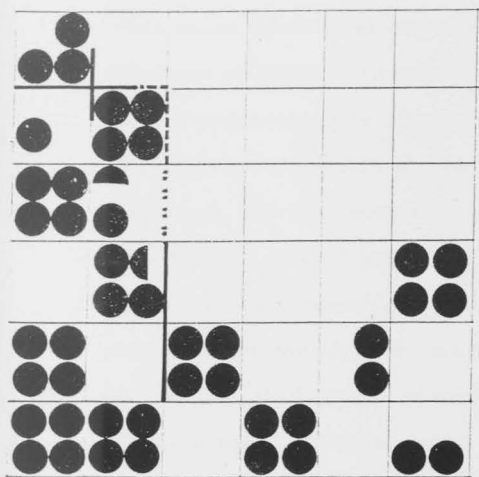
Taking a closer look at individual homestead claims, it is instructive to study the placement of the dwelling and farm site on the land claim. Homestead site information is available for only two of the



1868-70 surveyor's appraisals



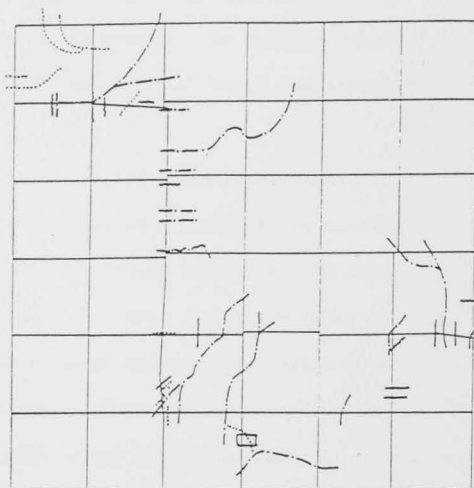
1888 surveyor's appraisal



1902 surveyor's appraisal

● 1/4 section patented  
or patent in progress

— first rate  
- - - second rate  
.. .. third rate  
m m m fourth rate



1902 surveyor's map

— roads  
..... ditches  
~~~~~ fences

Figure 17. Bridger Creek township. Surveyors' appraisals and existing settlement. Lower right: Roads and ditches noted on surveyor's map, 1902



1987 BRIDGER CREEK TOWNSHIP

- building structure or group
- paved road
- - - unpaved road
- railroad

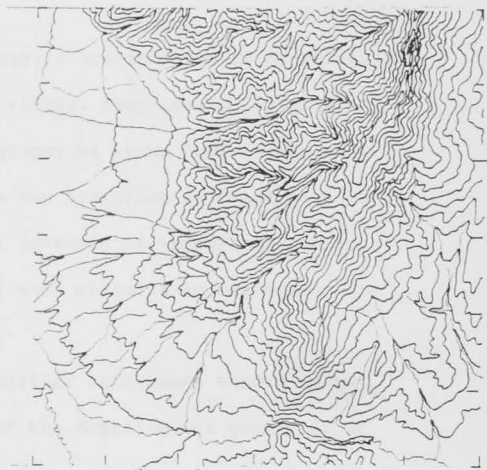


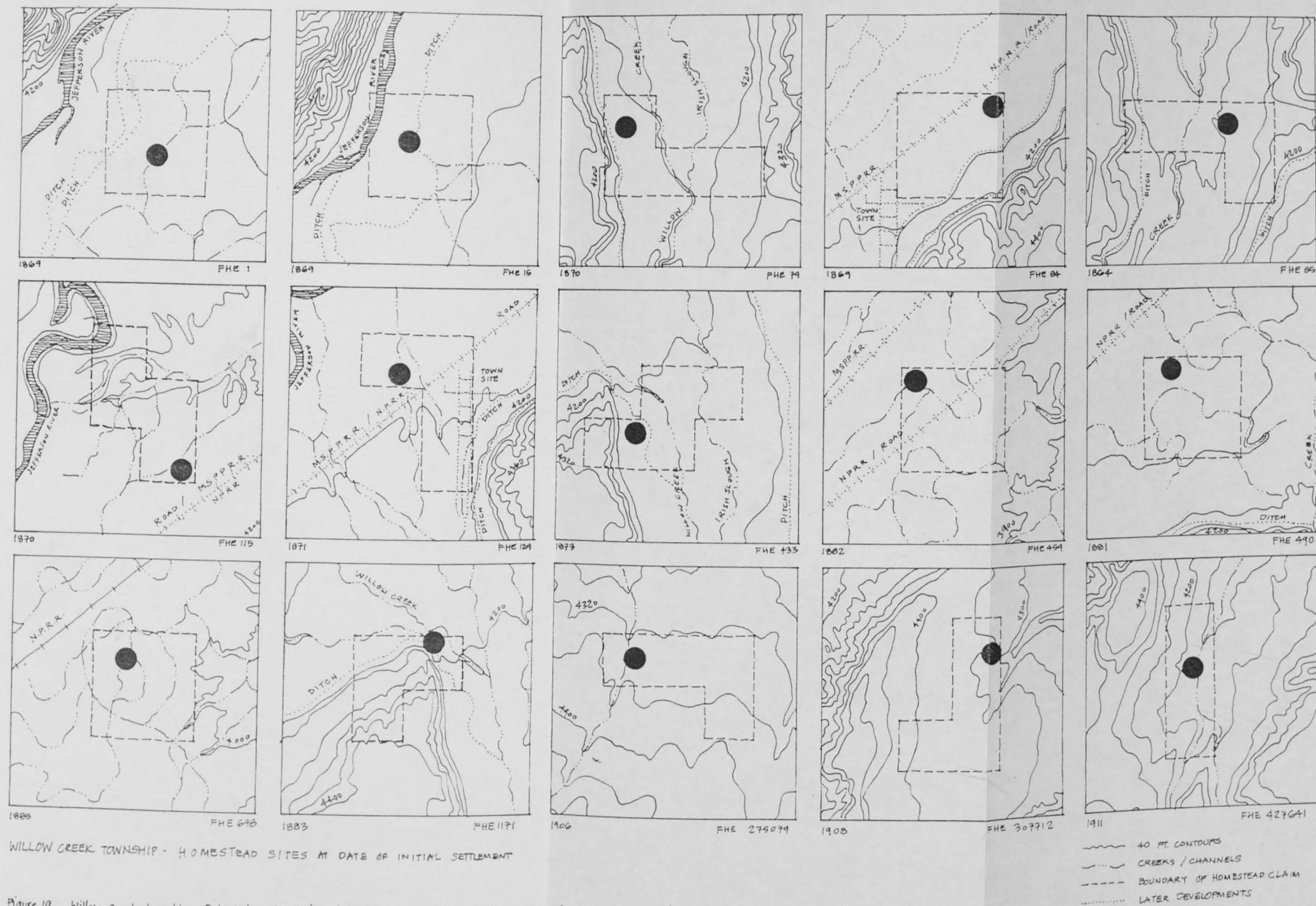
Figure 18. Bridger Creek township. 1987 bridges and roads compared to topographical map.

townships studied. Willow Creek and Springhill are included in Karsmizki and Brownell's extensive homestead study (1983). They located original dwelling sites by analyzing aerial photography of known homesteads, and transferred them onto recent USGS maps. A new iteration of these maps is presented here including only the natural features of topography, rivers and creeks. This reveals the landscape of each claim as it may have appeared to the settler (figures 19, 20).

In Willow Creek, (figure 19), the earlier settlement tended to be at the lowest elevations, and placement of the dwelling was generally at a middle elevation within the claim. One of the characteristics of the lowland claims is that creek water could be very easily channeled in a number of directions to irrigate crops or to bring it close to a desirable dwelling site. This ease of channeling is illustrated in some areas which are riddled with intersecting waterways. The major ditches are shown as later developments, although the date of their construction was not investigated in this study.

After 1881, dwelling sites were all located immediately adjacent to a creek, and at a middle or lower elevation on the claim. In these later claims, some of which were at slightly higher elevations in the dry benches, the creeks may have been less reliable and their lower reaches proved better water sources year-round, causing the dwelling to sit lower on the hillside claims. Protection from prevailing winds may also have been sought, as 71% of hillside sites appear to face distinctly toward the east, with a protective hillside to the west.

Analysis of Springhill township's dwelling sites (figure 20) also reveals a strong, but different pattern of orientation. At least 75% of the hillside sites appear to face south, the remainder facing west. This



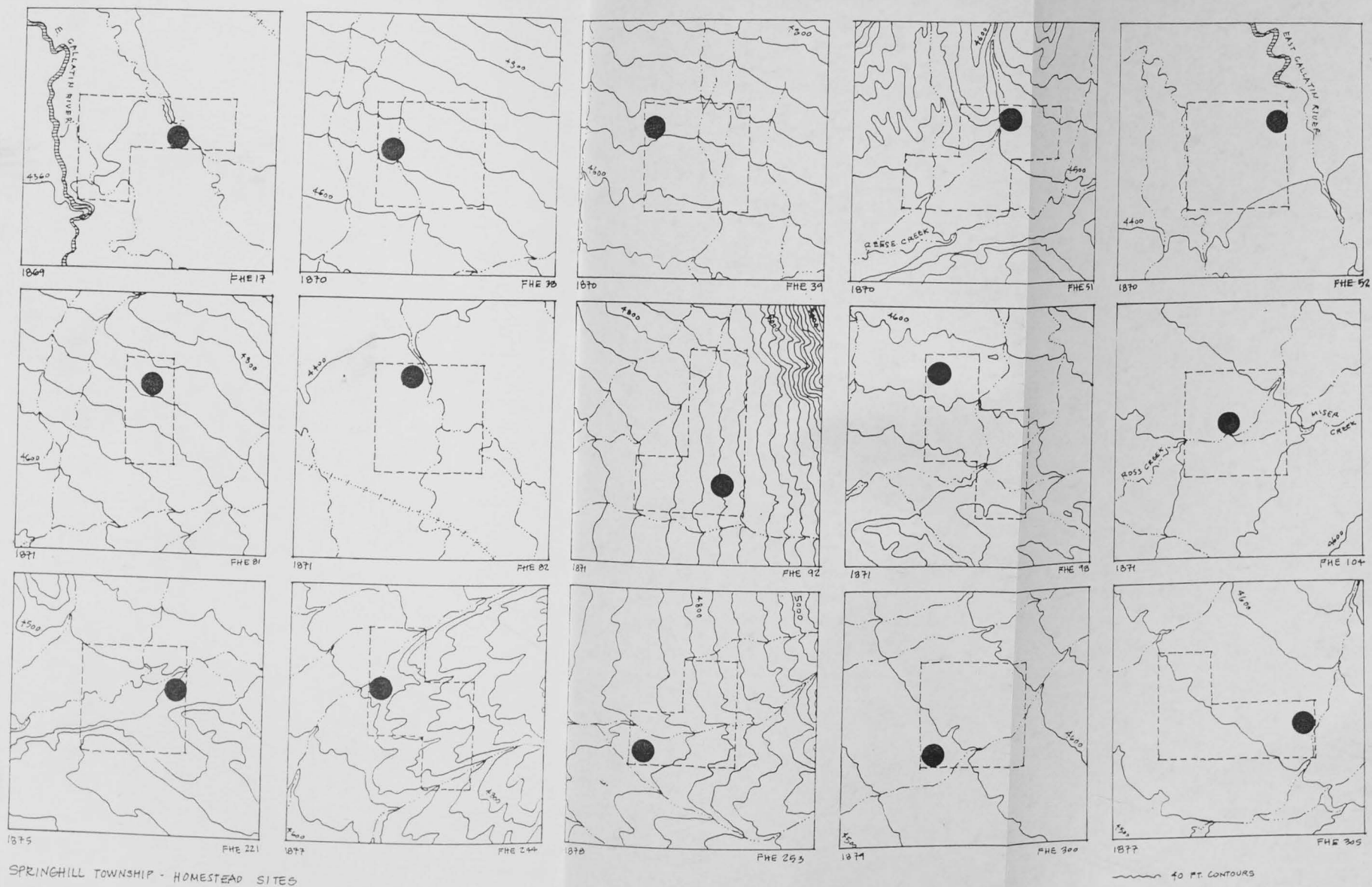


Figure 20. Springhill township. Extant homestead sites located on land claim. Dated at year of initial settlement. (From Karsmicki & Brownell, 1983)

is particularly extraordinary when the general topography of the basin faces to the west. It appears that residents of the Springhill township, being generally at a higher elevation than Willow Creek, may have responded to micro climatic conditions which favored exposure to the winter sun for warmth, and took advantage of the Bridger Range as shelter from the coldest eastern storm winds. Dwellings and farm sites tended to be located in the upper half of their claims. The reason for this may have been to keep an easy eye on grazing stock.

Immediate adjacency or very close proximity to natural surface water seems to be a strong defining characteristic of dwelling sites. However, 14% show no visible natural water supply anywhere on the claim, although smaller creeks may simply not be shown on the USGS map. It is possible that creeks which ran 100 years ago may have altered their course or dried up. Alternatively, the lack of natural water supply may suggest a dependence on early agreements with neighbors for water rights from ditches.

Case Study

Land Holding

One farmstead land holding and site in the Bridger Creek township is identified here for closer study. The sequence of its development has been reconstructed here from homestead records (Control Document Index, n.d.), from county records, from extant site evidence, and from interviews with two generations of the family who have lived and farmed there for about five generations.

The land was first settled by at least 1873, and the homestead final certificate issued in 1878. The claim of 160 acres (figure 21)

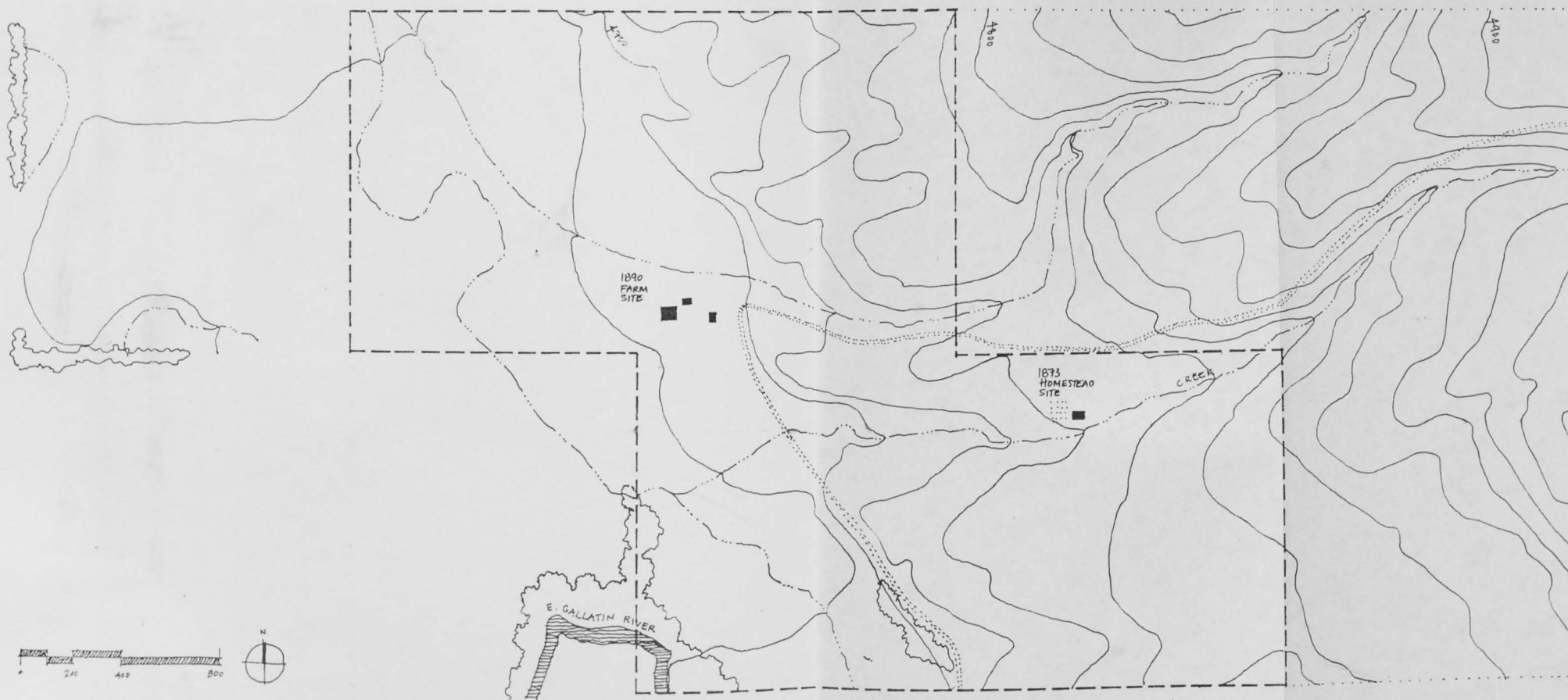


Figure 21. Site #1 - Land holding 1870 - 1890.

consisted of river bottom lands fed by two smaller creeks, and low benches extending partially up the rear-round creek drainages. The original dwelling was a log structure, about 20'x 33' with a stone foundation which can still be seen. It was exquisitely sited on the edge of a protected south and west facing shelf within 30 feet of the creek. It was protected from west winds by an apple orchard of about 20 trees. A road from the higher bench lands passed about 100 yards north of the dwelling, making it well-connected with the main route into town.

By 1890 a new house and a large barn, both of which are still in use, were constructed of light wood frame. These buildings were organized to form a simple cluster with a log barn which may have already stood on the site, and together they surrounded a central work space. These buildings are elegantly sited on a slightly raised bench overlooking the pasture lands. In the words of one who has lived much of his life on the site:

It seems to me it was kind of hand-picked, because it's about half way between C___ Creek over here and then there's also a spring that used to run full-time down in front of the [building] here. At that time they were concerned with making sure that you had a good water source, so they put in the pipe line to the spring up above up there for their domestic use, so it's just an ideal spot as far as water rights and everything. (#1A, p.12)

The present generation of ranchers are well aware of the importance of water rights for early settlement, and express a sense of admiration for their relatives who had the wisdom and sensibility to choose a farm site and building site that was rich in critical qualities.

I think they built it there because it was in the center of the property. And it was a place that wasn't going to flood, they've never had any flood problems there. And it's on the road -- it's always been there. (#1B, p.12)

A lot of these farms were set up like this, right at the base of the foothills, so that they had sub-irrigated [pasture], and also some dry hills to farm. Because it's usually too wet down here to do too much farming in that. (#1A, p.11)

During the same period of time the neighboring homestead to the east was acquired from a widow, almost doubling the size of the land holding, and vastly increasing the crop land. The bottom land pastures were used for grazing cattle, and later dairy cows. By being diversified in various hay and grain crops, beef as well as dairy, the farm was able to survive vicissitudes of the market.

By 1913 the Chicago Milwaukee Railroad completed construction of the Turkey Red spur line from Bozeman to service grain producers in Springhill and Maudlow to the northwest. Construction required the acquisition of private lands, which were condemned. The farm site under study was directly in the path of this route (figure 22). Three generations later there is still some understandable bitterness toward the institution of the railroad for taking possession of family lands:

When they put in the railroad that [land] was condemned from my grandfather, they didn't pay him a cent for it. They just condemned it. Then when the railroad got ready to sell it, they sold it to the highest bidder...so we ended-up having to pay through the nose... or my mother did...in order to buy the stuff back that they stole from us. (#1A, p.10)

The loss of the railroad lands caused other problems. Two triangles of land became cut-off and difficult to access for grazing or farming. They had less value to the family in this organization, and one of these lots was sold off as a result. In the process of buying back the railroad right of way after the railroad closed in 1978, there was a misunderstanding between neighbors, and a bitter dispute resulted:

After a few years I sent ___ to buy ours back, and I said "if the W___ piece is still for sale, I assumed he didn't want it, and I'd buy that too along with the rest. W___ was furious, because he was still waiting for them [the railroad] to give his back, and a rumor went around that I was buying the whole railroad. He hated me for that. He left strict instructions in his will not to sell any of his land to those _____. (#1C, p.4)

During this period the main road into town shifted to run along the base

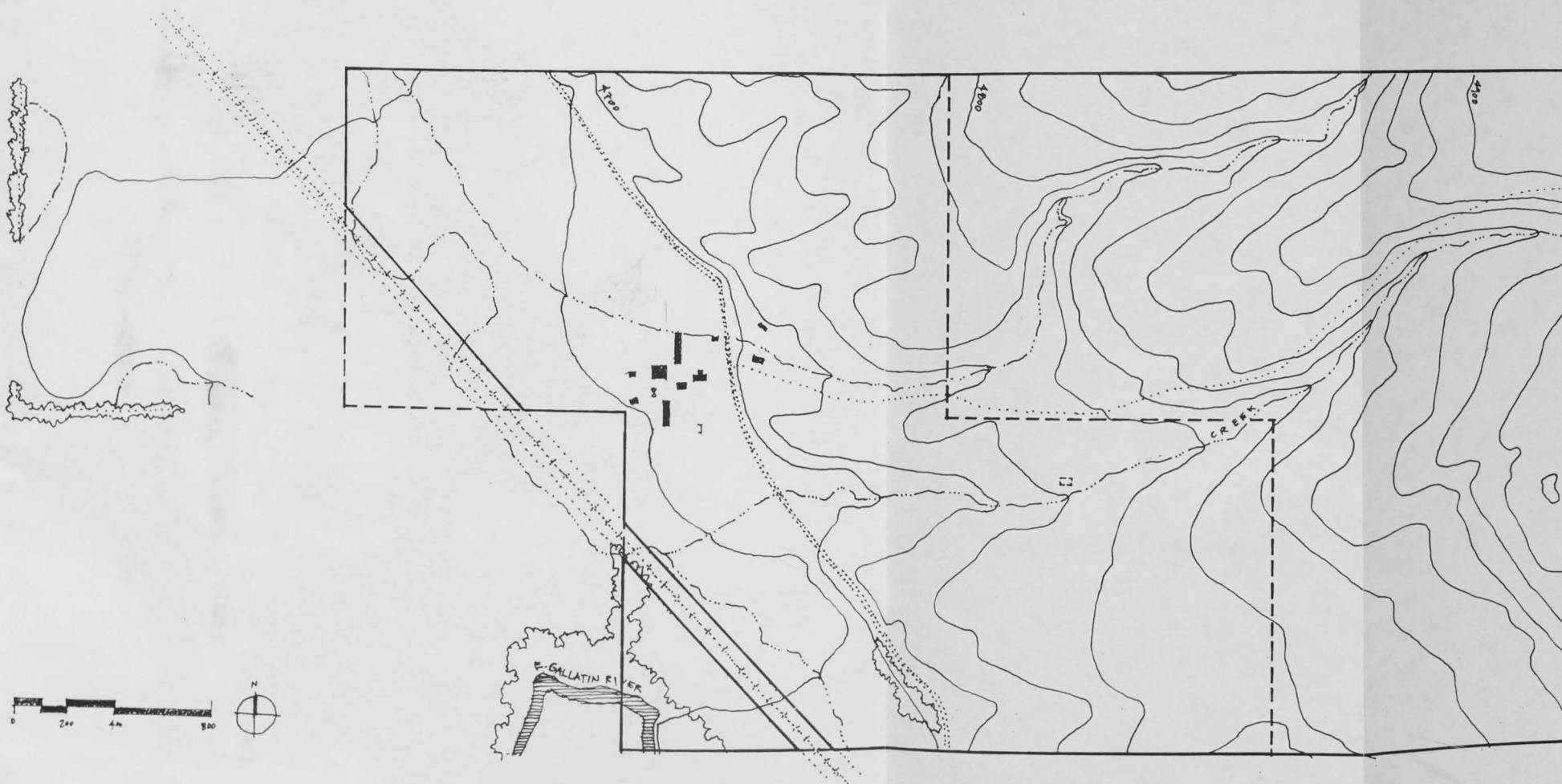


Figure 22. Site #1. Land holding 1913 to 1960s.

of the bench land, parallel with the railroad, entirely bisecting the land from northwest to southeast.

As the city of Bozeman continued to grow, lands on the outskirts increased in value. At a point when one generation was ready to retire, and the next was still in college, the entire eastern bench land was sold off for what seemed at the time a tidy sum (figure 23). The senior family member, who had struggled with farming during the depression, felt that the land could never be farmed profitably compared to the sum the buyer was offering. The transaction is still the source of deep regret on the part of the present generation, who had plans to continue farming, and felt a deep attachment to land they had grown-up on. They made attempts to buy part of it back, but couldn't: "They wouldn't sell it too me. I don't know what they're going to do with it, because they said it's too full of springs and creeks to use." (#1,A). Within the last 20 years, however, the family has acquired some neighboring pasture and hay ground to the west (figure 24) which has kept their farming viable with intensive and seasonally rotating uses.

Farm Site

Reconstructing the farm building site in phases of its development, an incremental pattern of growth can be observed (figures 25-28), which has remained centered on the early cluster established in 1890. Many buildings were built, re-built, burned down, or torn down in the process of time and adaptation to changing needs. Smaller buildings were moved around on the site, or they were moved off or onto the farm by hitching them to teams and dragging them on the snow. Many building functions changed fluidly over time, and often several times as stock or machinery requirements changed. The house was added onto seven times,

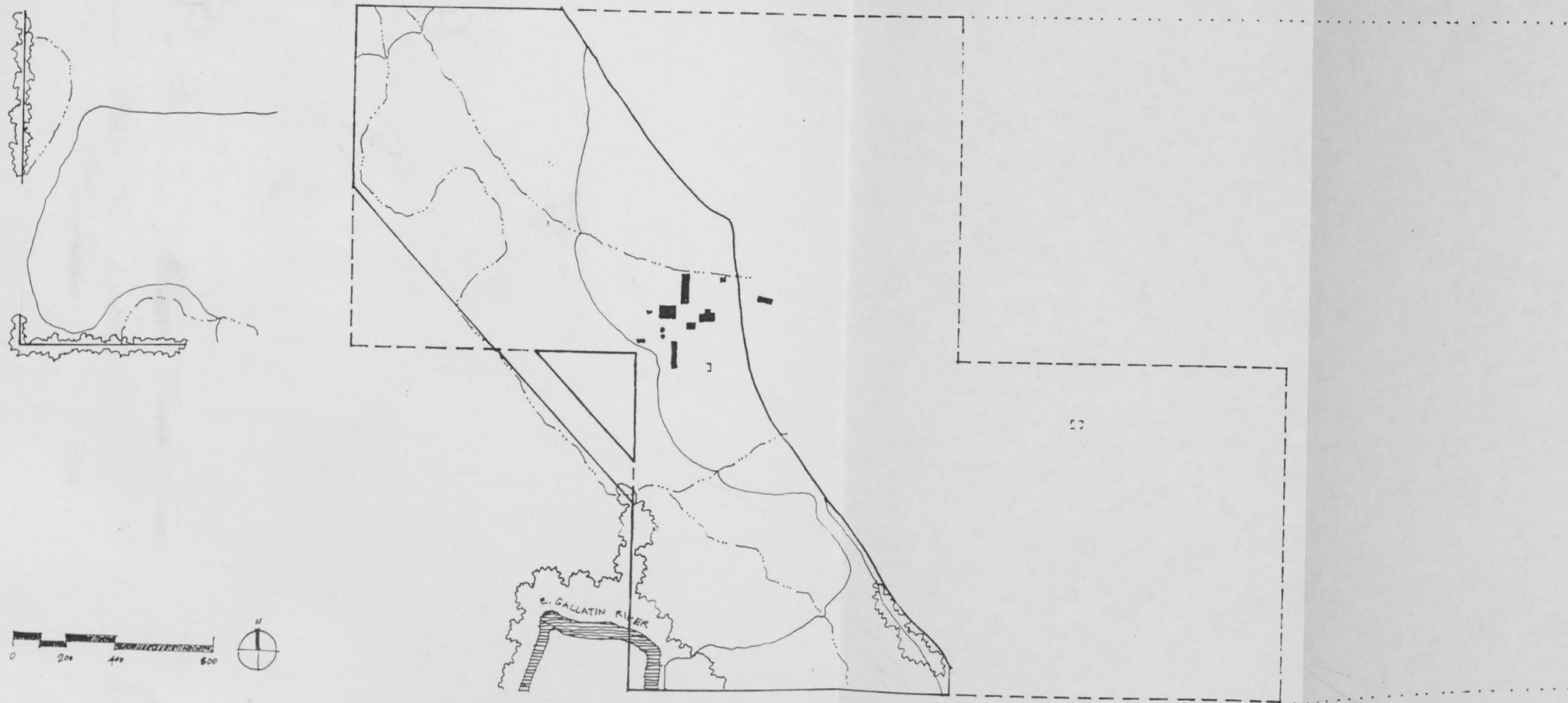


Figure 23. Site #1 - Land holding 1960s - 1970s.

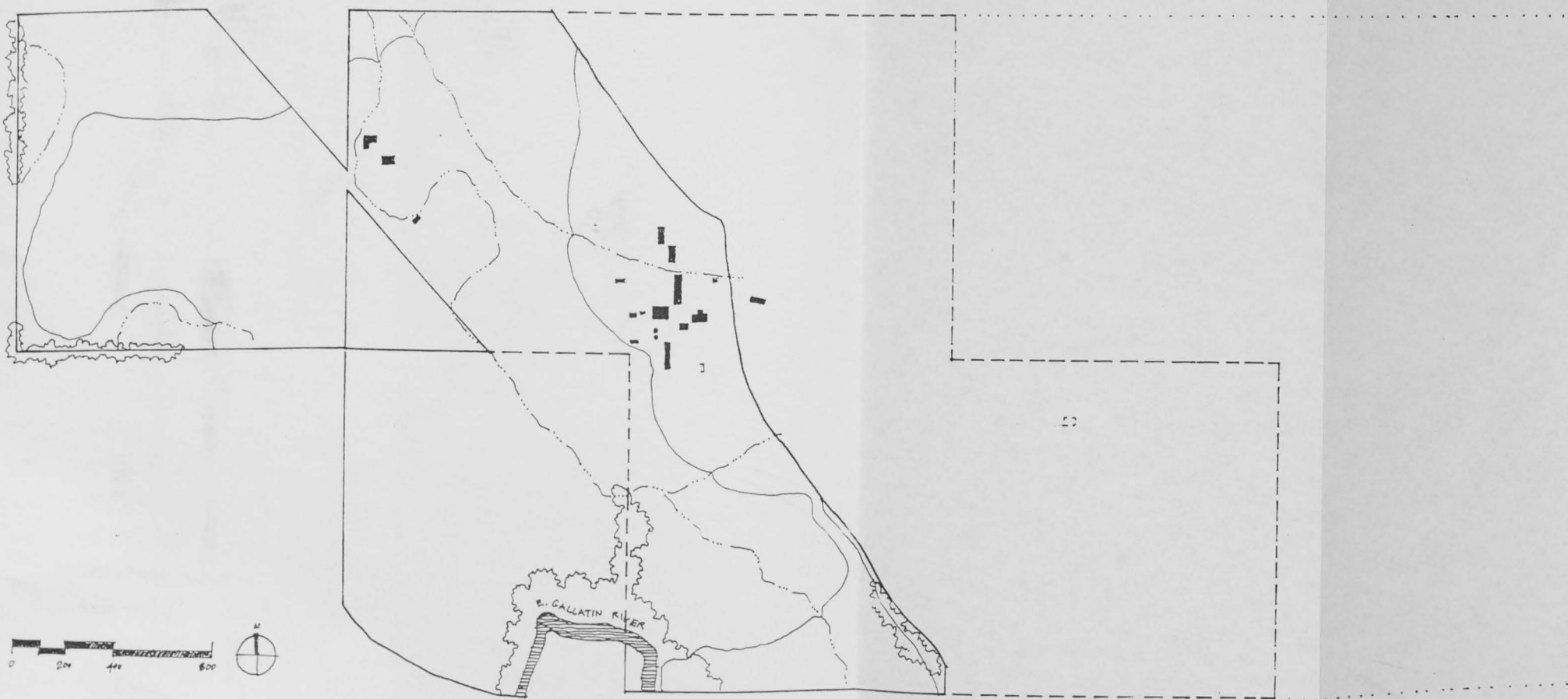


Figure 24. Site #1 - Land holding 1970s - 1997.

and a large brick building was moved onto the site from downtown.

It's just a clutter of buildings. As things matured, there was a necessity for another barn. Things were more or less in a circle around the driveway, but the buildings have changed so much over the years...they've been moved around or replaced. (#1C, p.5-6)

The wisdom of the original siting is highly valued among the present members of the family, as it was based on timeless principles which are just as important today as they were 100 years ago.

...it was built so that part [the working operation] was all close to the house. And part of that's because of the weather. And then it's built so that it will all drain, it's all... going to run right out, right down that driveway, way down to that corral, and keep going. (#1B, p.8)

One small but significant change to the building site reflects a growing cultural distaste for the perceived primitiveness of the outhouse:

Our wood shed ran North / South -- kind of a nice looking building. There was an outhouse there, because we didn't have indoor plumbing, and my mother, who was from the East coast, couldn't stand the sight of it. So we built the wood shed over it. It was a long shaped building, but the Southwest corner was the outhouse. (#1C, p.2)

While the land itself was considered a scarce resource, the shape and size of land holdings did in fact change considerably over time according to changing perceptions. The building structures, however were and still are considered entirely flexible and mutable. They were adaptable spaces that shifted rapidly to accommodate the changing nature of work that took place on the land. The palimpsest of the building site has become gradually more complex as the evidence of former uses has been traced over by more recent ones. The layered result reveals the necessity of the farm to evolve with changing markets in order to survive.

Each informant expressed a sense that this farm place of work and dwelling, and their own lifelong engagements in daily and seasonal routines with the land and livestock had kindled in them a strong sense



Figure 25. Site #1 - Farm site plan, 1890.

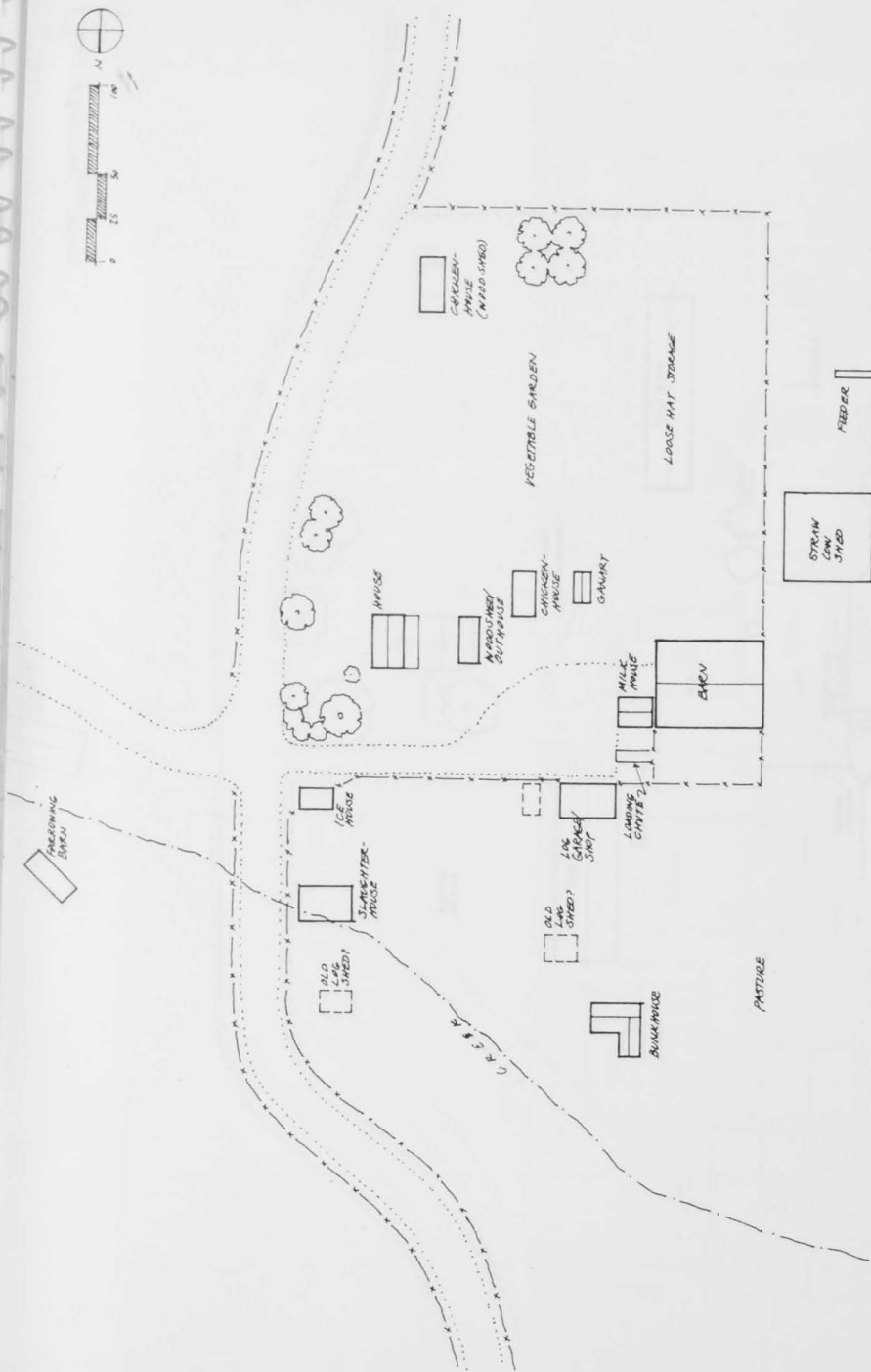


Figure 26. Site #1 - Farm site plan, 1915 - 1930.

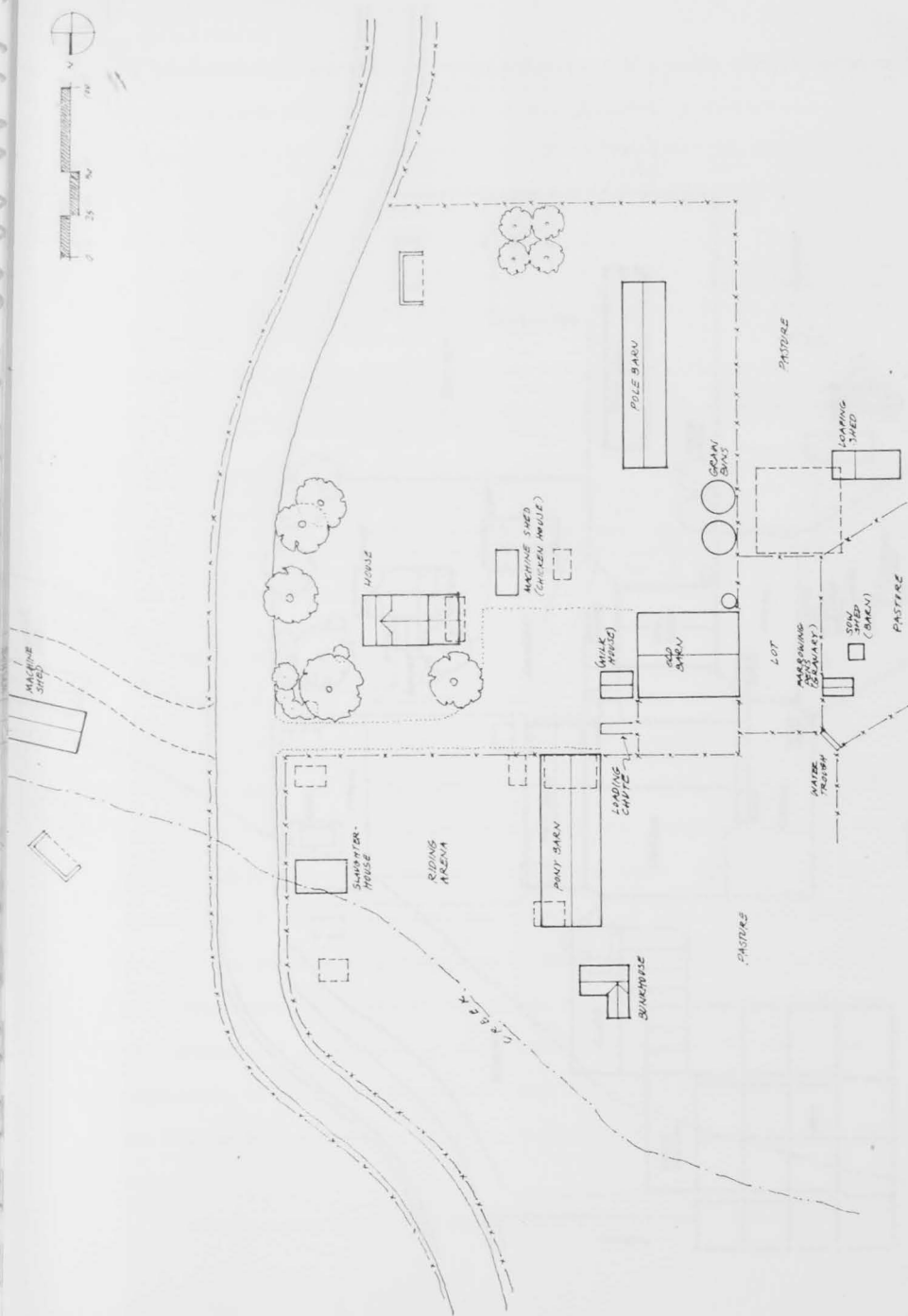


Figure 27. Site #1 - Farm site plan, 1955 - 1975.

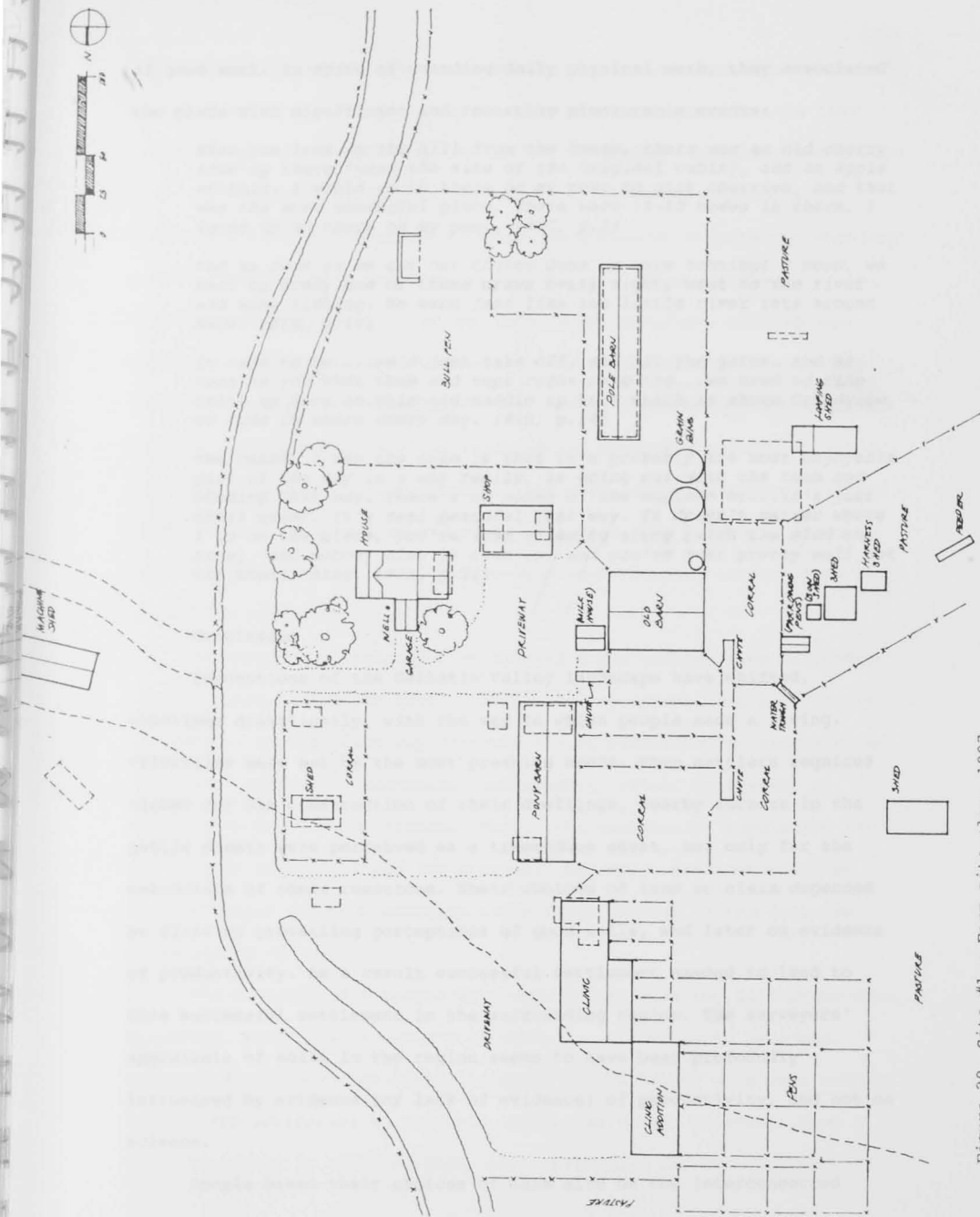


Figure 28. Site #1 - Farm site plan, 1997.

of good work. In spite of unending daily physical work, they associated the place with significant and recurring pleasurable events:

When you look up the hill from the house, there was an old cherry tree up there [near the site of the original cabin], and an apple orchard. I would go up there on my pony to pick cherries, and that was the most wonderful place. There were 15-20 trees in there. I loved to go there on my pony. (#1C, p.2)

And as soon as we got our chores done we were hunting! I mean, we went up every one of these draws every night, went to the river and went fishing. We were just like two little river rats around here. (#1B, p.10)

It used to be ...we'd just take off, and hit the gates, and as long as you shut them and kept right on going...we used to ride ' colts up here to this old saddle up here which is above Grandview, we rode in there every day. (#1B, p.14)

The reason I use the team is that it's probably the most enjoyable part of the day in a way really, is going out with the team and feeding that way. There's no noise of the engines or...it's just total quiet. It's real peaceful that way. It doesn't matter where I go on the place, you're just skimming along [with the sled on snow], and nobody else is even up, and you've just pretty well got the whole thing. (#1A, p.12)

Conclusion

Perceptions of the Gallatin Valley landscape have shifted, sometimes dramatically, with the way in which people made a living. Priorities were set by the most pressing needs. When settlers required timber for the construction of their dwellings, nearby forests in the public domain were perceived as a tremendous asset, but only for the extraction of these resources. Their choices of land to claim depended at first on prevailing perceptions of good soils, and later on evidence of productivity. As a result successful settlement seemed to lead to more successful settlement in the surrounding region. The surveyors' appraisals of soils in the region seems to have been profoundly influenced by evidence (or lack of evidence) of productivity, and not on science.

People based their choices of farm site on the interconnected

influences of terrain, water, transportation routes, and micro climate. By dwelling on the place (often in temporary conditions for the first months or years) and working the land, they became intimately acquainted with the complexities that it had to offer. They had considerable experience on the land which informed their choice of permanent dwelling place. People working the land or reliant on grazing stock were -- and still are -- acutely aware of the details of topography and the exact condition of the ground. For settlers, understanding the importance of water sources and how to make the best use of them was closely tied with survival. There was an inverse relationship between proximity to water and work -- greater proximity meant less work. Water rights were -- and still are -- highly prized and often contested. The land was looked at with an eye to its potential -- how much work it would take to make it productive and profitable.

In general, an awareness of elevation has shifted from weariness of deep snows, a shorter growing season, steep access, and more costly irrigation, to a present day desirability of elevation for proximity to the visual amenity of mountains, and dramatic views. This shift is mainly possible for two reasons. First, the residential population is not reliant on their lands for survival. Secondly, the technology of transportation has made possible their daily passage to and from the conveniences of town.

The analysis of a single farm site illustrated the perception that buildings, while costly, were a flexible asset that could be added, subtracted, and modified without regret. The buildings were seen only as serving the activities on the land. While individual buildings have a fluid character in the long-term, their placement was unconsciously

anchored by the prime choices in the siting of two initial buildings. The inertia of an established pattern remains strong throughout the history of the site.

Attachment to the land itself was deeply held. While the patterns of ownership changed over time, sometimes by choice and sometimes imposed, each loss in particular was accompanied by a degree of conflict or discontent. The land of the farm was considered a precious and disappearing resource, and was far more sacred and sensitive material to individuals than were the buildings. The fact of the ranch surviving in the family for over a hundred years, and being adapted from one kind of operation to another as the market demanded surely adds weight to a contemporary appraisal of the land:

I think a person doesn't realize how good this soil is, and how fortunate we are to have soil like this, until you try to farm someplace else. ... you don't have any idea how good this really is until you don't have it. I think when you grow up in this kind of a situation, and you can dig a post hole without it being solid rock, and you can farm and get a crop without having to worry about a tornado or it drying up, or whatever. I think you really have a sense of appreciation for this valley. You don't realize how damn good it is until you go someplace else. I don't know where you'd go anyplace and have a better deal. (#1B, p.19)

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