

**FINAL
ENVIRONMENTAL ASSESSMENT/
HABITAT CONSERVATION PLAN
FOR ISSUANCE OF
AN ENDANGERED SPECIES ACT SECTION 10(A)(1)(B) PERMIT
FOR THE INCIDENTAL TAKE OF
THE PREBLE'S MEADOW JUMPING MOUSE
(*Zapus Hudsonius Preblei*)
FOR CONSTRUCTION AND DEVELOPMENT OF
AN OFFICE PARK AND BUSINESS CENTER ON
7.28 ACRES ON PORTIONS OF SECTIONS 11, 14, 15, AND 23 OF
TOWNSHIP 8 SOUTH, RANGE 67 WEST, 6TH PRINCIPAL MERIDIAN,
TOWN OF CASTLE ROCK, DOUGLAS COUNTY, STATE OF COLORADO**

**U.S. FISH AND WILDLIFE SERVICE
COLORADO FIELD OFFICE
ECOLOGICAL SERVICES
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December 14, 1999

COVER SHEET

Title for Proposal Action: Issuance of an Endangered Species Act Section 10(a)(1)(B) permit allowing for the incidental take of the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) for construction and development of an office park and business center on 7.28 acres on portions of Sections 11, 14, 15, and 23 of Township 8 South, Range 67 West, 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado.

Unit of Fish and Wildlife Service Proposing Action: Permits Branch, Refuges and Wildlife Permits, Regional Office, U.S. Fish and Wildlife Service, 134 Union Boulevard, 3rd Floor, Lakewood, Colorado, 80228.

Legal Mandate for Proposed Action: Endangered Species Act of 1973, as amended, Section 10(a)(1)(B), as implemented by 50 C.F.R. §17.32 for threatened species.

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1.0 Introduction

This combined Environmental Assessment and Habitat Conservation Plan (this “EA/HCP”) is prepared in conjunction with the Form 3-200 Permit Application for issuance of a threatened species Section 10(a)(1)(B) permit (the “Proposed Permit”) for the incidental take of the Preble’s Meadow Jumping Mouse, *Zapus hudsonius preblei* (“Preble’s mouse”) for construction and development of an office park and business center on parcels of certain property (the “Property”) more particularly described in Section 1.1 below and depicted on Figures 1-7. This combined EA/HCP provides the required National Environmental Policy Act (“NEPA”) documentation for a Federal action (Section 10(a)(1)(B) permit issuance) and the components of a Habitat Conservation Plan (“HCP”) as mandated by Section 10 of the Act.

The Proposed Permit is submitted pursuant to the agreement (the “Agreement”) reached between Hier & Co. (“Hier”) and the United States Department of Interior and the Fish and Wildlife Service (the “Service”), dated April 15, 1999. A copy of the Agreement is attached hereto as Exhibit A. The Proposed Permit and this EA/HCP cover the construction and development of two specific projects that may have potential impacts on habitat for the Preble’s mouse, a species listed as threatened under the Endangered Species Act (the “Act”). The two projects (the “Projects”) are (1) the Brookside Office Park (the “Office Park”) and (2) the Brookside Business Center (the “Business Center”). The Agreement expressly provided for a joint application for both Projects for issuance of a threatened species Section 10(a)(1)(B) permit. Moreover, the Agreement committed the Service to consideration and approval of the Proposed Permit provided the mitigation plan contained in the HCP satisfies the conditions and mitigation ratios of the Agreement discussed in Section 6.0 below and is otherwise deemed sufficient by the Service pursuant to its discretion under the Act.

Robert L. Hier and H. R. Gannon, both Colorado residents, are the respective successors and assigns of Hier with respect to and are bound by and entitled to all of the rights, privileges, and obligations conferred by the Agreement. Robert L. Hier is the Manager of Brookside Office Park LLC, a Colorado limited liability company, which owns and plans to develop the Office Park. Both Robert L. Hier and H. R. Gannon also are the Members of Brookside Office Park LLC. Robert L. Hier and H. R. Gannon jointly own and plan to develop the Business Center. H. R. Gannon owns the areas depicted as Units A, B, C, D, and E on Figures 3 and 5, which are designated in this EA/HCP as mitigation areas (see Section 6.4.3.3 below). Therefore, pursuant to the Agreement, Robert L. Hier and H. R. Gannon (the “Applicants”) jointly filed and submitted the Proposed Permit.

1.1 Location of Requested Permitted Activity

The Property is known as portions of Sections 11, 14, 15, and 23 of Township 8 South, Range 67 West, 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado (Figure 1). The Property comprises 33.42 acres, including the Office Park, the Business Center, and various other areas designated as the location of mitigation activities pursuant to the HCP (Units A,

B, C, D, and E as depicted on Figures 3 and 5). Although all of the Property originally was part of a single parcel, the Property subsequently has been subdivided for development. The Office Park is more specifically described as The Centre on Plum Creek Filing No. 2, a part of Sections 11 and 14, Township 8 South, Range 67 West, 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado. The Business Center is more specifically described as Filing No. 5, a part of Sections 11, 14, 15, and 23, Township 8 South, Range 67 West, 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado.

The Property lies within areas designated under the 4(d) Rule proposed by the Service for the Preble's mouse as Mouse Protection Areas ("MPA's") and Potential Mouse Protection Areas ("PMPA's") that are adjacent to East Plum Creek in Castle Rock (Figure 2). The Preble's mouse has been documented to exist within one linear mile from sections of East Plum Creek that are adjacent to portions of the Property. Upon review of biological information submitted by the Applicants and other sources, the United States Department of Interior and the Service has determined that the proposed development of the Projects may result in an incidental take of the Preble's mouse.

1.2 Description of Requested Permitted Activity

The requested permitted activity includes any and all activities on the Property associated with the construction and development of the Projects. Specifically, the requested permitted activity covers all disturbances of areas at the Office Park and Business Center subsequent to May 13, 1998, the date of the listing of the Preble's mouse as a threatened species (the "Listing Date"), including disturbances that occur prior to the date of issuance of the Proposed Permit, as detailed in the Agreement.

As discussed in Section 6.4.3 below, the Projects will disturb 7.28 acres of ground undisturbed as of the Listing Date that may result in an incidental take of the Preble's mouse. Of this area, 1.04 acres at the Office Park site were disturbed after the Listing Date but prior to the Agreement. Another .11 acres will be disturbed at the Office Park site as a result of completion of the Office Park project. The remaining 6.13 acres to be disturbed, none of which has yet been disturbed, will be disturbed at the Business Center site by completion of the Business Center project. Also, as discussed in Section 6.4.3.1 below, an additional 2.1 acres at the Office Park site has been disturbed and will be developed as a result of the Office Park project. However, all of this additional 2.1 acre area was disturbed prior to the Listing Date, as early as 1981. Pursuant to the Agreement, none of the activity on this additional acreage requires a permit under Section 10(a)(1)(B) of the Act, although activities on this area will be covered by the Proposed Permit and the HCP contained herein.

Pursuant to the Agreement, the Service shall consider the proposed mitigation under the HCP contained herein as off-setting both past and future disturbances at the Office Park and Business Center. The Office Park will consist of office buildings and related facilities such as parking. The Business Center will consist of certain multi-family/assisted living and commercial facilities and parking. Development and construction of the Projects will impact approximately 7.28 acres .

1.3 Permittees

The Proposed Permit specifically includes as Permittees and authorizes an incidental take by both Applicants. In addition, in Robert L. Hier's capacity as Manager of Brookside Office Park LLC, the Proposed Permit would cover the activities of Brookside Office Park LLC, its officers, members, employees, agents, contractors, and licensees. The Proposed Permit also would cover the employees, agents, contractors, and licensees of the Applicants. Activities by any of the above listed persons or entities related to the Projects will not violate the prohibitions under 50 C.F.R. §13.25 against permit transfers. Both Applicants accept and agree to joint responsibility for adhering to the requirements and conditions of the Proposed Permit and of this EA/HCP and for implementing and managing the mitigation plan contained herein, except as expressly provided in Section 6.4.6 below.

1.4 Applicants Qualifications

Neither of the Applicants are disqualified under any of the factors listed under 50 C.F.R. §13.21.

1.5 Term

The duration of the Proposed Permit is 11 years from the date of issuance. This five-year time-frame will allow the Applicants to take Preble's mouse, either directly or through disturbance of actual or potential Preble's mouse habitat, within the geographical boundaries identified in the Proposed Permit and the HCP contained therein over that period. After expiration of the Proposed Permit, any "take" within the said geographic boundaries not specifically covered by this application, will require authorization by the Service, either through a subsequent permit application under Section 10(a)(1)(B) of the Act for an incidental take or through other procedures adopted by the Service under Section 4(d) of the Act. However, the terms and conditions contained in the HCP shall not expire and shall be subject to the enforcement authority of Section 11(b) of the Act.

1.6 Other Conditions

The Proposed Permit and the HCP contained herein shall be subject to the conditions listed under 50 C.F.R. §13.21(e). In addition, the Proposed Permit and this HCP shall be subject to the terms of the Agreement.

1.7 Acreage Estimates

All acreage and square footage figures contained herein represent estimates made at the site in collaboration with the surveyor for the Projects. Calculations were made by measuring area perimeters in the field using a cloth measuring tape. Any measurements on slopes were measured as horizontal distances. Curves encountered on areas already disturbed or to be disturbed were squared off outside of the curve, thereby creating estimates of areas to be disturbed slightly larger than actually found on the ground. In addition, all areas within the boundaries of the site plans for the

Projects (Figures 6 and 7) were included as areas to be disturbed, even though not all of the areas actually will be disturbed.

ENVIRONMENTAL ASSESSMENT

2.0 Purpose And Need For Action

The purpose of this EA/HCP is to evaluate the environmental impacts of the proposed action and alternatives. This EA/HCP is required because the Applicants have submitted an application for a permit to allow the incidental take of the Preble's mouse, which is a federally listed threatened species and which has been documented along East Plum Creek adjacent to current and proposed development on the Property. The implementing regulations for Section 10(a)(1)(B) of the Act of 1973 as amended, as provided by 50 CFR §17.32, specify the criteria by which a permit allowing incidental take of a threatened species pursuant to otherwise lawful activities may be obtained.

3.0 Description of the Affected Environment

3.1 Vegetation

Riparian areas along East Plum Creek in Douglas County, Colorado are generally composed of plains cottonwood (*Populus sargentii*), coyote willow (*Salix exigua*), mesic grasses, and sedges (*Carex spp.*). The Colorado Natural Heritage Program ("CNHP") catalogs this habitat as a *Salix Exigua/Mesic Graminoid* type and classifies it as "demonstrably secure" on both a global and a state level ("G5" and "S5"). (CNHP 1999). Adjacent upland sites are described by the presence of western wheatgrass (*Pascopyrum smithii*), blue gramma (*Bouteloua gracilis*), and smooth brome (*Bromus inermis*).

Nonnative plant species, such as cheat grass (*Bromus tectorum*), and Russian knapweed (*Acroptilon repens*), have invaded much of Douglas county and are a significant component to the upland vegetation bordering East Plum Creek.

3.2 Wildlife

Wildlife found along East Plum Creek include species likely to be found wherever riparian areas abut grasslands throughout the Front Range of Colorado. Some common riparian nesting bird species include the yellow warbler (*Dendroica petechia*), northern oriole (*Icterus galbula bullockii*), song sparrow (*Melospiza melodia*), and spotted sandpiper (*Actitis macularia*). Bird species likely to be encountered in the grassy uplands adjacent to East Plum Creek include horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), and red-winged blackbird (*Agelaius phoeniceus*).

Mammals that may use riparian habitat and/or adjacent upland habitat along East Plum Creek include mule deer (*Odocoileus hemionus*), muskrat (*Ondatra zibethicus*), desert cottontail (*Sylvilagus audubonii*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), plains pocket gopher (*Geomys bursarius*), meadow vole (*Microtus pennsylvanicus*), and deer mouse (*Peromyscus maniculatus*).

Animals that have actually been observed at the site (or whose sign has been observed) include beaver (*Castor canadensis*), mule deer, great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), American goldfinch (*Carduelis tristis*), western bluebird (*Sialia currucoides*), common flicker (*Colaptes auratus*), and belted kingfisher (*Ceryle alcyon*).

3.3 Threatened or Endangered Species

To the best of Applicants' knowledge and belief, no threatened or endangered species other than the Preble's mouse exist on or use the Property as habitat.

Five federally threatened or endangered terrestrial animal species are listed by the Colorado Natural Heritage Program as potentially occurring in Douglas County (CNHP 1999). They are the American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), Mexican spotted owl (*Strix occidentalis lucida*), Preble's mouse, and the Pawnee montane skipper (*Hesperia leonardus montana*). Currently there is no known presence of peregrine falcons, bald eagles, or Mexican spotted owls on the subject property (Craig 1999). The Pawnee montane skipper butterfly occurs in Douglas County but only within South Platte Canyon, no further south than the town of Deckers, and not below 6,200 feet.

The Colorado state endangered plains sharp-tailed grouse (*Tympanuchus phasianellus jamesi*) is listed by CNHP as occurring in Douglas County. The grouse is a shrub-prairie ecotone species historically occurring along the foothills or along stream courses in the plains. (Andrews 1992). There is no evidence that the sharp-tailed grouse exists on or uses the Property.¹

The Service requires surveys for the federally threatened Ute ladies' tresses orchid (*Spiranthes diluvialis*) prior to disturbance within riparian areas, wet meadows, or flood plains along perennial tributaries of the South Platte River from the Front Range east to the town of Brush in Morgan County. This includes East Plum Creek. However, according to CNHP, the threatened Ute ladies' tresses orchid does not occur in Douglas County (CNHP 1999). Furthermore, no development associated with the Projects is proposed within riparian habitat, flood plain, wet meadow, or other *Spiranthes* habitat. Therefore this project does not need a *Spiranthes* survey according to Service guidelines. The proposed as threatened Colorado butterfly plant (*Gaura neomexicana coloradensis*) is listed as occurring in Douglas County but has not been documented since 1942 (Pineda 1999).

Four species of fish are listed as Colorado state threatened, endangered, or of concern: the northern redbelly dace (*Phoxinus eos*), listed as endangered; the common shiner (*Notropis cornutus*), listed as threatened; the brassy minnow (*Hybognathus hankinsoni*), listed as threatened; and the Iowa darter (*Etheostoma exile*), listed as of concern. There is no evidence of any of these species occurring

¹The sharp-tailed grouse only has been identified in Douglas County at the Woodhouse State Wildlife Area and around Dakin Road. (Personal Communication with Clait Braun, Biologist, Colorado Division of Wildlife, on May 11, 1999).

anywhere in East Plum Creek running through or adjacent to the Property. Nevertheless, proposed development associated with the Projects will occur only on upland sites.

The Preble's mouse is known to occur along East Plum Creek within the Town of Castle Rock. The northern portion of the Property, including all of the Office Park and part of the Business Center, lies within an MPA, an area where Preble's mouse presence is documented and the Service is proposing special protection under a 4(d) Rule. The southern portion of the Property, including part of the Business Center, lies partially within a PMPA, an area suspected to have Preble's mouse and proposed for special protection by the Service under a 4(d) Rule.

3.4 Wetlands

Areas subject to jurisdiction under Section 404 of the Clean Water Act include those areas that fall at or below "the plane of ordinary high water" of these waterways as defined by 33 CFR §323.2. Wetlands do exist on the Property that meet the definition as defined by the criteria established in the 1987 Corps of Engineers Wetland Delineation Manual. However, no areas planned for development or disturbance contain wetlands.

3.5 Geology/Soils

The site of the Projects is underlain by sedimentary units of the upper Tertiary (Paleocene/Oligocene) age Castle Rock Conglomerate Member, of the Dawson Formation. This unit consists of claystones, siltstones, and light colored arkosic conglomerates, sandstones and gravels. Additionally, limestones, lignites and coals occur throughout the 300-1400 foot thickness of the unit. (Chase/McConaghy USGS Publication I-731, 1972). Alluvial material within drainages, including Plum Creek, is of Pleistocene and Holocene age (post Piney Creek). The geologic formations are highly permeable and often contain low levels of organic material. These conditions result in highly erodible, poorly vegetated soil.

The site of the Projects contains the Larkson, Newlan, and Sampson soil Series according to the US Soil Conservation Service (USSCS) publication "Soil Survey of the Castle Rock Area, Colorado, 1977." The soils along East Plum Creek, approximately within the 100-year flood plane, in the areas designated as Units A, B, C, D, and E in Figures 3 and 5 are classified as the Sampson Series. This material consists of well drained alluvium derived from weathered arkosic sedimentary rocks. (Dawson). They occur on slopes of between 1-4 percent and can be up to 60 inches thick, with moderate permeability. They are used to grow both irrigated and dryland crops.

Soil of the Business Center site is classified as the Larkson Series loamy alluvial (dark surface). This soil is derived from weathered in-place rock or transported from soft sediments nearby. It is generally well drained and occurs on slopes of between 0-4 percent. The surface layer is 7 to 20 inches deep, and extends to approximately 30 inches. Below this level excellent gravel sources occur. The soil is utilized for meadow, pasture and alfalfa.

The soil beneath the Office Park is the Newland Series. These soils formed from alluvial material derived from mixed sources are moderately deep over unconformable very gravely sand. These soils occur on moderately steep uplands and side slopes. They are moderately permeable and approximately 22 inches in depth. Newland soils are primarily vegetated in native grasses and are used for grazing. According to the USSCS they produce important wildlife habitat.

3.6 Land Use

The Property is bordered on the north by established commercial development, on the east by established commercial development and some residential development, and on the west and south by limited commercial and residential development and undeveloped property, none of which, except some areas to the south of Parcel E, are controlled or owned by the Applicants. In particular, other than Parcels A, B, C, D, and E, the Applicants do not control or own any of the property between or to the east, north, or west of the Office Park and Business Center. Although East Plum Creek runs through the middle of the Property, East Plum Creek is to the west of and is not included in any of the area affected by the Projects. The sites of the Projects are located within the city limits of Castle Rock in south-central Douglas County which has experienced increasing urban development over the past five to ten years. Both sites are zoned Planned Unit Development (“PUD”), with an initial integrated business designation.

3.7 Cultural Resources

There are no properties or archeological sites listed on the National or State Registers of Historic Places on this site.

3.8 Air Quality

The town of Castle Rock lies within the Denver-Metro non-attainment area for air quality criteria of the Environmental Protection Agency.

3.9 Water Resources and Water Quality

Water quality on the proposed development site is presently estimated to be good because it runs through largely undeveloped property with little commercial or residential use.

4.0 Alternatives Including the Proposed Action

This section presents details of the proposed action and the alternatives that have been considered. The alternatives include: 1) proposed action, 2) selection of an alternate site, 3) modification of site design and layout, and 4) no action.

4.1 Alternative 1 – Proposed Action

The proposed action is the issuance of the Proposed Permit under Section 10(a)(1)(B) of the Act to authorize the incidental take of the threatened Preble's mouse during the development and construction of the Projects. As discussed in Section 6.4.3 below, this will result in the disturbance of 7.28 acres of potential Preble's mouse habitat on the Property after the Listing Date. Of this area, 1.04 acres at the Office Park site were disturbed after the Listing Date but prior to the Agreement. Another .11 acres will be disturbed at the Office Park site as a result of completion of the Office Park project. The remaining 6.13 acres to be disturbed, none of which has yet been disturbed, will be disturbed at the Business Center site by completion of the Business Center project. Also, as discussed in Section 6.4.3.1 below, an additional 2.1 acres at the Office Park site has been disturbed and will be developed as a result of the Office Park project. However, all of this additional 2.1 acre area was disturbed prior to the Listing Date, as early as 1981. The Projects are more fully described and depicted on Figures 3-7. The anticipated onsite and offsite impacts of the proposed action are addressed in Section 5.1 herein.

The HCP included herein has been developed as part of the proposed alternative as mitigation for any incidental taking of the Preble's mouse. The conservation plan indicates that .69 acres of areas disturbed at the Office Park site will be restored. In addition, 23.6 acres of Preble's mouse habitat within the relevant proposed MPA and PMPA, including .56 acres at the Office Park and 23.04 acres on Units A, B, C, D, and E (Figures 3 and 5), will be enhanced and created. The HCP proposes that these actions will mitigate areas disturbed by development of Office Park and the Business Center. The HCP is detailed in Section 6.0 herein.

As the Agreement makes clear, the majority of the area required for development activity at the Office Park site already has been disturbed. Only .11 acres of additional area will be disturbed at the Office Park by the proposed development.

Thus, this alternative was selected as the proposed action as it will allow development of the Property while minimizing and offsetting to the greatest extent practicable any and all potential impacts to the Preble's mouse by providing for onsite and offsite conservation measures which will facilitate future management and recovery of the species.

Moreover, under the Agreement, the Service agreed to the proposed action if the proposed mitigation met the agreed-upon mitigation ratios and was otherwise satisfactory. These ratios are satisfied by the HCP (see Section 6.0 below). The Applicants and the Service engaged in extensive negotiations regarding activities relating to the Projects which culminated in the Agreement. In the Agreement, the Service expressly consented to completion of significant portions of the Office Park project, conditioned on issuance of the Proposed Permit. In addition, as discussed above, the Service agreed to consider a joint application for single permit to cover both Projects. The Agreement itself committed the Service to *considering* the proposed action as the basis for the Proposed Permit.

4.2 Alternative 2 – Alternate Site Location

This alternative assumes that the Applicants could equitably divest the Property and develop commercial properties elsewhere that would not result in a take of the Preble's mouse. This alternative is discussed in Section 5.2 below.

4.3 Alternative 3 – Alternate Site Design

This alternative assumes that alteration of site layout is possible and that relocation of proposed construction would eliminate any take of the Preble's mouse. This alternative is discussed in Section 5.3.

4.4 Alternative 4 – No Action Alternative

This alternative assumes that all proposed development does not occur and that no application for an incidental take is processed. This alternative is discussed in Section 5.4.

5.0 Environmental Consequences/Ecological Assessment

The objective of the following environmental consequences analysis and ecological assessment is to quantify the ecological effects of the various alternatives described in Section 4.0 above. The objective of this assessment is to identify whether any of those alternatives, in conjunction with any proposed mitigation activities, would have any significant impact on the Preble's mouse and other ecological factors.

5.1 Alternative 1 – Proposed Action

5.1.1 Onsite Impacts

Although disturbances resulting from the development and construction of the Projects will destroy vegetation onsite and reduce habitat for wildlife, including the potential destruction and degradation of Preble's mouse habitat, implementation of the HCP contained herein should offset such impacts and create an opportunity to improve habitat for the Preble's mouse and other riparian dependent wildlife.

5.1.1.1 Vegetation

The proposed action of issuing an incidental take permit would remove or alter vegetation on 7.28 acres (Figures 4 and 5). Areas to be altered are composed primarily of upland grasses such as western wheatgrass, blue gramma, and smooth brome. These areas would be converted to asphalt, buildings and other infrastructure, and landscaped vegetation including planted grass, shrubs and trees. Vegetation within the adjacent riparian area will not be altered by the proposed development.

5.1.1.2 Wildlife

Wildlife existing within the 7.28 impacted acres largely would be displaced by the Projects associated with permit issuance. Such displacement could result in increased competition for breeding, nesting, and foraging habitat, as well as cover, in adjacent undisturbed habitat. However, planned restoration will replace .69 of the 1.04 acres of habitat lost at the Office Park site, as proposed in the HCP included herein, over time. As discussed in Section 5.3 below, all 6.13 acres of disturbed areas at the Business Center site will be lost as habitat to most species but will be fully mitigated.

Landscape vegetation on portions of the proposed Office Park Business Center will provide habitat for wildlife species suited to coexistence with urban development and human presence. These may include habitat generalists such as the deer mouse (*Peromyscus maniculatus*), American robin (*Turdus migratorius*), and magpie (*Pica nuttalli*), or riparian specialists that thrive around human development such as the raccoon (*Procyon lotor*).

Grassland specialists such as the horned lark may be completely displaced by proposed development. Undetermined effects associated with the promotion of urban wildlife species and human activities associated with the planned development may result in the decline of more specialized species in general. The adjacent undeveloped riparian area of the Property bordering East Plum Creek (23.04 acres) will remain undeveloped and continue to provide habitat for wildlife species currently using this area. These areas will be enhanced with willow plantings, as detailed in the HCP contained herein, and may provide better quality and quantity of habitat for riparian species in the future.

5.1.1.3 Threatened or Endangered Species

5.1.1.3.1 Assessment of Take of the Preble's Mouse

Development of 7.28 acres on the Property will occur in upland grass habitat adjacent to East Plum Creek. Preliminary analysis of data collected on radio-collared mice indicate greater use of upland habitat than previously assumed (Shenk 1999). Therefore the project area may be described as suitable foraging and/or hibernating habitat for the Preble's mouse, or possibly as unsuitable habitat, depending on distance from the riparian corridor along East Plum Creek.

Development activities will probably have indirect impacts to the Preble's mouse due to an overall decrease of contiguous habitat patch size. Also, encroachment of noise and activity within close proximity to Preble's mouse activity, introduction or increase of predator species (jays, magpies, domestic cats), increase of species that may compete with Preble's mouse for resources (deer mice and other small rodents) are potential indirect impacts of adjacent development.

Based on the results of previous Preble's mouse surveys the Service has determined that Preble's mouse does occur within the riparian corridor along East Plum Creek adjacent to proposed development. Disturbance due to development will likely result in the direct and/or indirect destruction of 7.28 acres of potential foraging and/or hibernation habitat.

5.1.1.3.2 Assessment of Take of Other Listed Species

No take is anticipated for any other federally listed or proposed species. The Property has been evaluated for the presence of the federally listed threatened or endangered species discussed under Section 3.3 above. Other than evidence of potential use of the Property by the Preble's mouse, there is no evidence of any other threatened or endangered species on the Property. Thus, there appears to be little chance of onsite impacts to listed species other than the Preble's mouse.

5.1.1.4 Wetlands

Areas subject to Section 404 of the Clean Water Act jurisdiction are limited to the existing East Plum Creek and adjacent riparian corridor, which is not proposed for development. Runoff into this area is to be treated according to local regulations and EPA standards for nonpoint-source pollution and sedimentation prevention. No impacts are expected.

5.1.1.5 Geology/Soils

No significant geologic alterations are anticipated from the proposed project. Some surface soil alterations will result from the proposed development.

5.1.1.6 Land Use

Current and past land use trends in the vicinity and within Castle Rock City limits are toward commercial use.

5.1.1.7 Cultural Resources

No sites registered with the National or Colorado State Register of Historic Places exists within or in the immediate vicinity of the subject tract. No impacts to sites of historic value are anticipated.

5.1.1.8 Air Quality

The proposed development may contribute to increased local automobile traffic, which may increase traffic noise and exhaust emissions in the immediate area. The proposed removal of several trees in the Office Park site will slightly reduce the local air filtering capabilities. A temporary increase of dust emissions and noise are expected during construction activities.

5.1.1.9 Water Resources and Water Quality

Surface water resources will be directed to appropriate sedimentation facilities. In the case of Office Park, all runoff is channeled into a storm "ceptors," which are already in place. A storm

ceptor has a sediment trap which catches a high proportion of total suspended solids. The proposed Business Center will have a similar system (ceptor, silt pond, or other appropriate system) to remove sediment from runoff, as required by the Town of Castle Rock. Subsurface groundwater resources will be slightly altered by the construction of impervious cover in the form of roadways and building foundations. There could be an increase in sediment loading and other pollutants in surface water runoff, however, these increases should be partially mitigated by existing and planned sedimentation controls.

No significant impacts are expected from runoff from newly developed areas. All City of Castle Rock and Douglas County land development codes are expected to be complied with during all aspects of development. All impervious cover impact will be directed to sedimentation facilities as described above.

5.1.2 Offsite Impacts

The proposed action, in conjunction with the proposed HCP, will not result in any significant offsite impacts.

5.1.2.1 Vegetation

No offsite impacts to vegetation are expected due to proposed development.

5.1.2.2 Wildlife

The proposed development will result in the reduction of overall habitat available to local offsite wildlife species. However, mitigation measures included in the HCP contained herein not only would offset such habitat reduction, but may increase the amount of quality habitat available to wildlife species.

Offsite impacts to wildlife include displacement of some species from proposed development areas, possible increase of generalist species, possible introduction and/or increase of predator species, and the reduction in overall habitat available to wildlife. Wildlife utilizing the subject lots would largely be displaced to adjacent areas, which could result in increased competition for nesting, foraging, and breeding habitat, as well as cover in general.

Urban development often results in increases in generalist species, or species that are successful within a wide range of habitats including human impacted areas. Increases in species that are habitat generalists (crows, jays, deer mice) often occur at the expense of species with more narrow habitat requirements. Possible introduction and/or increase of predators such as house cats, crows, and jays can have an impact on wildlife communities, particularly nesting birds. Therefore, the wildlife community of the offsite property could be impacted.

5.1.2.3 Threatened or Endangered Species

Offsite impacts pertaining to endangered species may include a reduction in overall foraging and hibernation habitat for the Preble's mouse. However, implementation of the conservation measures described in Section 6.0 illustrate methods that will minimize and mitigate potential onsite impacts, and may actually increase the amount of quality habitat available to the Preble's mouse.

5.1.2.4 Wetlands

Existing and proposed onsite sedimentation controls will minimize the amount of sediment introduced into downstream areas. No offsite impacts to wetlands are expected to occur.

5.1.2.5 Geology/Soils

No offsite impacts to geologic or soil resources are expected to occur.

5.1.2.6 Land Use

No significant alterations to existing or proposed land uses are expected to occur as a result of the proposed action.

5.1.2.7 Cultural Resources

No offsite impacts to cultural resources are expected.

5.1.2.8 Air Quality

Vehicle emissions and noise may increase slightly due to an increase in the number of vehicles in the area. The local increase may have minor effects on regional air quality.

5.1.2.9 Water Resources and Water Quality

Offsite surface and groundwater resources are not expected to be impacted by this activity. Proposed water quality control devices are discussed in the onsite impacts section. Existing offsite water quality conditions are expected to be maintained by these control devices.

5.1.3 Cumulative Impacts Analysis

5.1.3.1 Vegetation

The proposed action would result in the disturbance 7.28 acres of vegetation, although at least .69 acres will be restored. The remaining 6.59 acres disturbed would contribute to the cumulative disturbance of these vegetation types in Douglas County from development and other land use projects. The development also necessitates the removal of several cottonwood trees.

5.1.3.2 Wildlife

The proposed action will contribute to a cumulative reduction of habitat for some wildlife species when added to impacts from development and other land uses in Douglas County. Wildlife species better adapted to urban and suburban habitats (generalists) may increase and exacerbate displacement of species intolerant to development, which may locally decrease. No significant cumulative impacts to wildlife species in Douglas County or the region are expected.

5.1.3.3 Threatened or Endangered Species

The proposed action may contribute to take of Preble's mouse and/or their habitat in the region when added to Section 10(a)(1)(B) incidental take permits that may be issued by the Service for other projects. However, any Preble's take or habitat loss that may occur in the short term by loss of upland habitat should be offset by increasing the quality and quantity of riparian habitat through mitigation which could result in an increase in the number of Preble' on the Property.

5.1.3.4 Wetlands

There are no impacts to wetlands as a result of the proposed action. Therefore, no cumulative impacts are anticipated.

5.1.3.5 Geology and Soils

No significant cumulative impacts to geology and soils would occur as a result of the proposed action.

5.1.3.6 Land Use

The proposed action contributes to the cumulative conversion of undeveloped land to developed land in the Town of Castle Rock. Other development alternatives must comply with relevant development codes, therefore cumulative impacts will be the same for all development alternatives.

5.1.3.7 Cultural Resources

The proposed action, due to its limited scope, will not result in cumulative impacts to sites eligible for the National or State registers of Historic Places.

5.1.3.8 Air Quality

The proposed action will contribute to limited degradation of air quality in the Castle Rock area due to a slight increase in vehicle exhaust emissions. Continued development of the area could result in a significant cumulative impact on air quality.

5.1.3.9 Water Resources and Water Quality

The proposed action will cause some change in existing water quality. This change should not result in a significant cumulative impact to area water quality due to the limited size of the Projects and existing and proposed structures to minimize pollution from runoff. However, rapid, uncontrolled development in areas without adequate water quality standards will result in a significant cumulative impact on water quality.

5.2 Alternative 2 - Alternative Site Location

An alternative site location could result in more environmental impacts than the proposed action and is impractical. There are few remaining sites in the Castle Rock area open for commercial development, and even fewer are available that are not located in potential Preble's mouse habitat areas. Also, the Office Park is located within an active commercial area, and most of the vegetation on the site of the Office Park has been impacted since the early 1980's (2.1 acres of the 3.25 total acres to be disturbed at the Office Park site were already disturbed and denuded of vegetation as early as 1981). Using an alternate site could result in a more pristine location being impacted. Moreover, the site's proximity to areas that can be enhanced to the benefit of the Preble's mouse create an opportunity to actually increase quantity and quality of habitat for Preble's mouse and other wildlife.

5.3 Alternative 3 - Alternative Site Layout

Preble's have been found to use uplands several hundred feet from riparian areas. Thus, due to the size and shape of the property, the entire property comprises potential Preble's habitat. Therefore, the development could not be moved to a different *location* within the property to minimize take.

Alternative site layouts were considered to minimize *area* of disturbance, but no layout could be designed that would appreciably reduce the area to be impacted by the proposed alternative. Specifically, as discussed in Section 6. below, almost all of the area of disturbance at the Office Park site already has been disturbed. In fact, only an additional 5,000 square feet (.11 acres) will be disturbed by completion of the Office Park project. The Applicants already have altered the site layout

as much as possible, eliminating 200 square feet of area that would have been disturbed under the original plans. Further alterations are not possible given parking, access, and other constraints imposed by the Town of Castle Rock. Similarly, a number of factors limit flexibility in area of disturbance at the Business Center site, including physical (gravity) limitations on location of the sewer line towards the west side of the Business Center site, the necessity of disturbing and grading the area between any proposed development and the sewer line to provide for required utility connections,² and roads, parking, and vehicle access required by the Town of Castle Rock.

5.4 Alternative 4 – No Action

This scenario would result in no disturbance of any additional areas at the sites of the Projects. This is not a viable alternative because, as discussed above, under the Agreement, the Service agreed to the proposed action if the proposed mitigation met the agreed-upon mitigation ratios and was otherwise satisfactory. These ratios are satisfied by the HCP (see Section 6.0 below). In addition, as privately owned land, the Applicants are responsible for economic maintenance of the Property, including taxes and upkeep. The sale of the sites of the Projects for purposes other than development is not economically feasible. Given the expenses already incurred by the Applicants for development of the Property, Applicants will suffer tremendous losses if forced to hold the Property.

²Note that the sewer line at the Business Center is located as far as possible from the contour of the edge of the upland areas, which is demarcated by a sharp cliff drop-off that varies from 10 to 20 feet. The sewer location was specifically designed to avoid disturbing any portion of the contour except where the sewer line is brought onto the Business Center site from the adjacent land, which is included in the .064 acres to be disturbed by the sewer line for the Business Center as described in Section 6.4.3.2 below. The sewer line is located generally 20 feet but not less than 15 feet away from the contour edge. No development will take place between the edge and the sewer line, and this area will be marked with a visible barrier such as an orange snow fence or silt fence.

6.0 HABITAT CONSERVATION PLAN

6.1 Description of Plan Area

Impact areas of the Projects are illustrated in Figures 3 and 5 and include the Office Park and the Business Center. The Projects will disturb 7.28 acres of ground undisturbed as of the Listing Date that may result in an incidental take of the Preble's mouse. Of this area, 1.04 acres at the Office Park site were disturbed after the Listing Date but prior to the Agreement. Completion of the Office Park project will impact an additional .11 acres, resulting in a total impacted area of 1.15 acres. The remaining 6.13 acres, none of which has yet been disturbed, will be disturbed at the Business Center site by completion of the Business Center project. Both sites will impact upland areas only. Additional areas identified as Units A, B, C, D, and E on Figures 3 and 5 will be enhanced by mitigation activities proposed in this HCP. Pursuant to the Agreement, all of the proposed mitigation areas under the HCP are within the boundaries of the Property, all of which is included in the drainage basin of East Plum Creek.

6.2 Determination of Proposed Activities

The principal action likely to result in possible incidental take as described in Section 6.3 below is site preparation prior to construction of the Projects. Such site preparation activities consist of leveling the sites of the Projects with a grader, including disturbance and destruction of existing vegetation, grading and paving of an existing road surface, and installing utility facilities, including sewer, water, and gas lines. Other activities associated with construction and development of the Projects will also account for some of the disturbance.

6.3 Determination of Incidental Take

Preble's mouse presence has been established through State and Federal trapping efforts within the MPA containing the Office Park site and portions of the Business Center. Portions of the Business Center also lie within or are adjacent to a proposed PMPA, which is suspected to support Preble's mouse (Figure 2). However, both the current Office Park project and the proposed Business Center project lie on upland sites within the buffer section in the proposed 4(d) Rule and no impact has occurred or is anticipated to occur within the riparian area bordering East Plum Creek other than the mitigation activities detailed herein. In addition, construction activities will occur primarily in the daytime, when the Preble's mouse generally is not engaged in foraging and other activities that might bring it to the sites of the Projects. Therefore, no direct incidental take of the Preble's mouse by harassment, pursuit, hunting, shooting, wounding, killing, trapping, capturing, or collecting is anticipated. Nevertheless, areas disturbed by the Projects may constitute Preble's mouse habitat. Thus, some modification or degradation of Preble's mouse habitat may occur as a result of activity associated with completion of the Projects. Although not the intended purpose of the Projects, such potential harm of the Preble's mouse is prohibited as an unlawful take under Section 9 of the Act and 50 C.F.R. §17.3. The incidental take permit will allow for the destruction or degradation of any Preble's mouse habitat included within the 7.28 acres disturbed as a result of completion of the

Projects. Incidental take through harassment during mitigation activities is possible, but should be minor and more than offset by the anticipated results of the mitigation.

6.4 Mitigation Plan

The mitigation plan proposed herein shall, to the maximum extent practicable, minimize and mitigate the impacts of any incidental taking associated with the Projects, and will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

6.4.1 Requirements of the Agreement

The Agreement provides that mitigation under this HCP for the disturbance of areas designated as habitat by the Service which are disturbed after April 15, 1999, as a result of the Projects shall require a restoration ratio of 1.5 to 1 and an enhancement and creation ratio of 3 to 1. The Agreement further provides that mitigation under this HCP for the disturbance of areas designated as habitat by the Service which is disturbed after the Listing Date but before April 15, 1999, as a result of the Projects shall require a restoration ratio of 3 to 1 and an enhancement and creation ratio of 6 to 1. The mitigation plan proposed as part of this HCP complies with these requirements.

6.4.2 Preble's Mouse Habitat Requirements

According to Shenk (1998), "The majority of sites where *Z.h. preblei* have been found consist of multistoried cover but the species composing the cover vary greatly... Thus, the mouse does not appear to have an affinity toward any single plant species but instead favors sites that are structurally diverse and provide adequate cover and food throughout its life cycle." Regarding food preferences, Shenk cites Armstrong (1997), who interpolated food habits from central and eastern meadow jumping mice as follows: "Grass seeds of several species are probably the most important component of the diet, and mice will shift to those species that have available seed. Invertebrates and fungi are also readily eaten." This mitigation plan relies on this information as a guide for the proposed mitigation activities.

6.4.3 Mitigation Activities

Mitigation activities will be discussed in three sections. First, Section 6.4.3.1 details the areas already disturbed and areas to be disturbed and the areas to be restored and enhanced at the Office Park. Section 6.4.3.1 also calculates the amount of additional acreage required to be enhanced elsewhere on the Property to mitigate for disturbances at the Office Park under the conditions outlined in the Agreement. Second, Section 6.4.3.2 details the areas to be disturbed at the Business Center and calculates the amount of additional acreage required to be enhanced elsewhere on the Property to mitigate for disturbances at the Business Center under the conditions outlined in the Agreement. Third, Section 6.4.3.3 details the areas to serve as the additional acreage required for mitigation.

6.4.3.1 Office Park

The Office Park (Figures 3, 4, 5, and 6) contains a large area of approximately 2.1 acres disturbed prior to the Listing Date. Pursuant to the Agreement, no mitigation is required for activities associated with the Office Park project on this area. However, approximately 1.04 acres of ground has been disturbed by activities since the Listing Date (Table 1). Mitigation ratios for this area, as required by the Agreement, will be 3:1 for restoration and 6:1 for enhancement. This 1.04 acres is subdivided into 3 quantities to facilitate logistics of mitigation. A portion (.69 acres) of the site will be restored (Figure 4). This .69 of restored area, under the 3:1 mitigation ratio, accounts for .23 acres ($.69/3$) of disturbed ground. To mitigate for the remaining .81 acres of disturbed ground, 4.86 acres ($.81 \times 6$) must be enhanced. Figure 4 shows a plan to enhance .56 acres on the sewer easement area for the Office Park site, accounting for .09 acres of disturbed ground ($.56/6$). Therefore, a remaining 4.32 acres must be enhanced to mitigate this disturbance. In addition, .11 acres will be disturbed by proposed future activities at the Office Park site (Figure 4). This area must be mitigated at a ratio of 3:1 for enhancement, equaling an additional .33 acres ($.11 \times 3$) of enhancement area. The total of 4.65 acres ($4.32 + .33$) of additional enhancement area required for mitigation of the Office Park is included as part of the other enhancement areas of the Property illustrated in Figures 3 and 5 and detailed in Section 6.4.3.3 below.

In summary the total mitigation requirements for Office Park are (1) restoration at .69 acres, all of which occurs on the Office Park site, and (2) enhancement at 5.19 acres, .56 acres of which occur on the Office Park site and 4.65 acres offsite.

Table 1. Area (acres) of disturbances and mitigation proposed at Office Park and Business Center, Castle Rock, Colorado.

| Property Description | Disturbed Area (acres) | Restored Area Onsite (acres) | Enhanced Area Onsite (acres) | Enhanced Area Offsite (acres) |
|--|---|---|---|--|
| Office Park Disturbed Prior to Listing Date | (2.1) No mitigation necessary | 0 | 0 | 0 |
| Office Park Disturbed After Listing Date But Before 4/15/99 | 1.04 is subdivided into 3 quantities and types of mitigation (0.23+0.09+0.72) = 1.04 disturbed | 0.23 disturbed are mitigated at a 3 to 1 ratio = 0.69 restored onsite | 0.09 disturbed are mitigated at a 6 to 1 ratio = 0.56 enhanced onsite | 0.72 disturbed are mitigated at a 6 to 1 ratio = 4.32 enhanced offsite |
| Office Park To Be Disturbed | 0.11 | 0 | 0 | 0.11 disturbed are mitigated at a 3 to 1 ratio = 0.33 enhanced offsite |
| Office Park Subtotals | <u>1.15</u> | <u>0.69</u> | <u>0.56</u> | <u>4.65</u> |
| Business Center To Be Disturbed | <u>6.13</u> | <u>0</u> | <u>0</u> | 6.13 disturbed are mitigated at a 3 to 1 ratio = <u>18.39</u> enhanced offsite |
| Total Requiring mitigation | <u>7.28</u> | <u>0.69</u> | <u>0.56</u> | <u>23.04</u> |
| Total Area | <u>9.38</u> | <u>0.69</u> | <u>0.56</u> | <u>23.04</u> Subdivided below |
| Enhancement Area A | n/a | n/a | n/a | 4.708 |
| Enhancement Area B | n/a | n/a | n/a | 2.188 |
| Enhancement Area C | n/a | n/a | n/a | 5.588 |
| Enhancement Area D | n/a | n/a | n/a | 3.337 |
| Enhancement Area E | n/a | n/a | n/a | 7.220 |

Note: 7.28 impacted requiring mitigation + 2.1 impacted not requiring mitigation + 23.04 enhanced offsite = 32.42 acres covered by HCP. The 0.69 restored and 0.56 enhanced onsite are not included in this calculation because they will occupy the same land as the previously disturbed areas of the Office Park.

6.4.3.1.1 Onsite Restoration

Approximately .69 acres (the "Restoration Area") of the Office Park project which already has been disturbed will be restored to suitable Preble's mouse habitat. This area (Figure 4) is a southwest facing hillside with little residual vegetation. The Restoration Area will be planted with a combination of grass and shrubs. The shrubs will add structure to allow for Preble's mouse cover and the grass mix will provide grass seed throughout the Preble's mouse's yearly activity period.

Figure 4 shows proposed locations of shrub plantings. The proposed shrub plantings in the restoration area lie within a small natural drainage. Shrubs in this area would provide cover and a travel corridor from the willow riparian area along East Plum Creek up to the restored grasslands.

Grass restoration would be accomplished by planting annuals in spring to insure ground cover and an adequate interim seed source. Perennial grasses would be planted in fall to insure grass establishment in future years. The grass mix would include annuals for establishment of the site and perennials for long term habitat creation. All grasses planted will be natives. A perennial mix would include a variety of grasses including cool rhizomatous and bunch grasses, and warm rhizomatous and bunch grasses. Cool grasses produce seed in the spring and fall, whereas warm grasses seed in the summer. A blend of these grasses provide a likely seed source throughout the active cycle of the Preble's mouse. Planting both bunch and rhizomatous grasses increase the odds of successful grass establishment. The exact species used in the mixture would be determined in conjunction with habitat biologists from the Colorado Division of Wildlife and approved by staff of the Colorado Field Office of the U.S. Fish and Wildlife Service.

6.4.3.1.2 Enhancement Area

The .56 acres (the "Enhancement Area") proposed for enhancement at the Office Park include areas used by city of Castle Rock for a sewer easement. However, Applicants retained right of access, ingress, egress, and use of the Enhancement Area not inconsistent with the sewer easement. The sewer line in the Enhancement Area does not require regular maintenance, by heavy equipment or otherwise, and has not had any significant maintenance activities since its installation in 1987. Moreover, the Applicants retain the right to erect fences or other barriers around the Enhancement Area, provided the city has access to the area in the event of an emergency or similar event necessitating maintenance of the sewer line. Thus, enhancement activities proposed for the Enhancement Area will not be inconsistent with the use of the area for the city's sewer easement.

The Enhancement Area is a long narrow bench lying between the Restoration Area and the riparian area bordering East Plum Creek to the southwest of the Office Park site which continues several hundred feet south of the Office Park site (Figure 4). Throughout the length of the bench a riprapped slope, varying from 5-8 feet in height (erected in 1987), delineates the East Plum Creek riparian area from the proposed Enhancement Area. The Enhancement Area contains some perennial grasses and has a significant Russian knapweed (*Acroptilon repens*) component. There is no significant shrub component to the vegetation of this parcel.

Enhancement activities would first involve removal of as much of the visible knapweed as possible. Russian knapweed is a noxious weed that is listed as one of the plants that must be managed in accordance with the Colorado Weed Management Act. A field crew would remove knapweed by hand, thereby disturbing as little of what valuable vegetation currently exists on the site. Subsequent control would be accomplished by periodic spot application of an herbicide.

Next, shrubs would be planted on the Enhancement Area at locations along the border of the area adjacent to the riprapped area and the riparian area of East Plum Creek. A shrub zone in this location creates cover for mice traveling up from the riparian zone (across the riprap) into the proposed enhanced grasslands. Finally, grass enhancement would be accomplished as described above for the restoration area.

6.4.3.2 Business Center

Figures 5 and 7 illustrate a total of approximately 6.13 acres proposed to be disturbed by development of the Business Center. The 6.13 acre figure includes approximately 5.02 acres of Lots 1, 2 and 3 that will be disturbed, .064 acres that will be disturbed by extending utilities, particularly a sewer line, onto the Property from adjacent land, and 1.05 acres that will be disturbed by the extension of Perry Road. There is an existing dirt and gravel extension of Perry Road that was built prior to the Listing Date. Therefore, actual disturbance due to road construction will be less than the 1.05 acre estimate.

Pursuant to the Agreement, acreage proposed to be disturbed will be mitigated at a 3 to 1 enhancement ratio. Therefore 18.39 acres will be enhanced for the proposed 6.13 acres disturbed for the development of the Business Center (Table 1). Pursuant to the Agreement, no areas on the Business Center site will be available for mitigation activities.

6.4.3.3 Additional Mitigation Areas

The 4.65 acres remaining to be enhanced for mitigation of Office Park and 18.39 acres required for enhancement to mitigate the impacts of the Business Center necessitate a total additional enhancement of 23.04 acres. Figures 3 and 5 shows the proposed enhancement/creation areas of the Property. The property has been partitioned into five enhancement units (Units A, B, C, D, and E) to more accurately estimate acreage and to facilitate photo reference. Enhancement A is 4.708 acres, B is 2.188 acres, C is 5.588 acres, D is 3.337 acres, and E is 7.220 acres.

Enhancement within these units will focus on establishment and augmentation of coyote willow (*Salix exigua*) along the riparian corridor and adjacent flood plain of East Plum Creek.

The units are primarily riparian corridor and flood plain (see photographs).³

The enhancement property is suitable for willow planting as evidenced by the current presence of willows on the site, and the absence of undercut banks and sharp curves (Hoag 1992). Moreover, as depicted in the photographs, all of the areas are prime candidates for enhancement activities and could benefit substantially from the proposed enhancement activities.

Willows will be obtained from native stands near the rehabilitation site. Cuttings will be taken from live but dormant plants either in late fall or early spring, before the buds start to break. Cuttings will be stored in a cool dark environment until planted. Plantings will be carried out using a soil auger and/or planting shovel. Willow cuttings will be spaced about 1.5-3 feet apart on stable soil and 1-1.5 feet apart on areas (especially banks) prone to erosion (Hoag 1992). All willow plantings will be consistent with National Resource Conservation Service ("NRCS") guidelines.

6.4.4 Biological Goals and Objectives – Achieving Mitigation Plan Success

The biological goals and objectives of the mitigation plan and this HCP for both restoration and enhancement activities are (1) to provide as much or more habitat for the Preble's mouse as the amount of potential habitat – 7.28 acres – to be taken by the Projects and (2) to ensure population viability by maintaining habitat contiguity. The mitigation plan under the ratios outlined above should be sufficient to achieve these biological goals and objectives. In particular, the Restoration Area, Enhancement Area, and Units A, B, C, D, and E all represent contiguous tracts of land. As a result, the mitigation plan will ensure an adequate number of acres of habitat in a certain configuration, so that a viable corridor is maintained.

Moreover, comparison between the areas to be disturbed by the Projects and the areas to be enhanced under the mitigation plan shows that the enhancement activities likely will produce a net benefit for the Preble's mouse and other wildlife because the Projects will only disturb upland areas, which are less biologically productive and include less significant potential Preble's mouse habitat than the riparian and ecotone areas undisturbed by the Projects and the focus of the mitigation activities.

Plantings as required by this mitigation plan will commence in the fall and spring following the issuance of the Proposed Permit as appropriate. Applicants will plant on 100% of the area available for such plantings in the Restoration and Enhancement Areas and Units A, B, C, D, and E. If 70% of these plantings survive and become established, sufficient habitat will have been restored and enhanced to meet the above stated biological goals and objectives. Thus, the mitigation plan will have achieved success when 70% of the plantings planted are established.

³Where appropriate, multiple photographs were taken from the same directional views from different portions of the Units to depict significant changes in vegetation type and coverage area. The photographs were taken in April of 1999 and represent various directional views from the indicated Units. Disregard the notation on photographs indicating an alternate date and year, this camera generated data is in error.

6.4.5 Monitoring

6.4.5.1 Success Monitoring

Success will be monitored annually in the Summer by the Applicants for the first five-year period following issuance of the Proposed Permit. The Applicants will be responsible for replanting in order to achieve success if success is not achieved by the end of the first five-year period. Success will be measured by the use of photo points analysis using statistically significant sample areas of each of the mitigation areas (the Restoration Area, the Enhancement Area, Units A, B, C, D, and E). The same sample areas will be used for all monitoring analysis. In conjunction with annual success monitoring, the Applicants shall submit simple, annual compliance reports to the Service regarding the implementation and success of this HCP. Such reports also shall detail any new disturbance of areas covered by the Proposed Permit during the preceding year. The Service shall have the right to visit and inspect the Property to insure compliance of this HCP pursuant to 50 C.F.R. §13.21(e)(1).

6.4.5.2 Compliance Monitoring

Following the first five-year period, and consistent with Section 6.4.6 below, compliance monitoring shall be performed once every two years for six years in the Summer to ensure that success is maintained, and a simplified report detailing the results of such monitoring shall be submitted to the Service. The Service shall have the right to visit and inspect the Property to insure compliance of this HCP pursuant to 50 C.F.R. §13.21(e)(1).

6.4.6 Conservation Easement and Future Monitoring and Maintenance

All management, maintenance, and monitoring activities of the proposed mitigation activities during the first five-year period will be conducted by the Applicants. However, pursuant to the Agreement, all of Units A, B, C, D and E required for enhancement under this mitigation plan may be dedicated under a conservation easement in perpetuity for such mitigation purposes. Although the Applicants will retain the option of managing and maintaining the enhancement activities on such Units, the Applicants likely will utilize a conservation easement for the permanent maintenance, management, and monitoring of the areas once the five-year period expires and success as defined above has been achieved. Proposed beneficiaries of the easement include: Douglas County Board of County Commissioners, Town of Castle Rock, and Douglas County Land Board. In addition, Applicant may contract with the above listed proposed beneficiaries to maintain, manage, and monitor the Restoration and Enhancement Areas. The Service will expressly allow the Applicants to assign responsibility for any necessary monitoring, management, and maintenance activities to one or more of the above listed proposed beneficiaries.

6.4.7 Funding

Conservation planning requires sufficient funding be made available to implement the HCP. The Applicants are committed to provide the necessary funding to support the mitigation. The Applicants will place funds in an escrow or similar type account that will limit use of the funds for

mitigation activities. The applicants will cover any cost necessary to reach mitigation success as defined in this document.

6.4.8 Restricted Access

In order to ensure the success of this mitigation plan, the Applicants agree to restrict access to the Enhancement Area and all of Units A, B, C, D and E by erecting a fence with metal poles and non-barbed wire around those areas and by erecting "No Trespassing" signs at reasonable intervals on such fencing. Such actions should prevent unauthorized human access to and disturbance of the areas while still allowing for sufficient freedom of range for wildlife. A gate may be constructed on the boundary of the Enhancement Area to allow for access to the sewer line required in the event of an emergency.

In addition, in order to avoid any disturbance of undisturbed areas beyond the 7.28 acres described herein, the Applicants shall erect silt fences and other similar barriers at the edge of all construction areas to demarcate the boundaries of the areas covered by the Proposed Permit, shall inform all employees, contractors, licensees, and agents of the reasons for such barriers, and shall instruct all such persons not to cross such barriers.

6.4.9 Foreseeable Events

No significant impact to success of the mitigation plan is likely from any foreseeable event. Foreseeable events include a 500-year flood and wildlife browsing on new plantings, particularly by mule deer and beaver. With respect to a 500-year flood, the types of plantings contemplated by this mitigation plan, once established, should survive such a flood. If such a flood occurs prior to the conclusion of the first five-year period and destroys significant portions of the plantings, success as defined in Section 6.4.4 above will not have been achieved and the Applicants will be required to engage in further activities to achieve such success. In the unlikely event that such a flood changes portions of the channel of the East Plum Creek or washes away sections of land, the applicants agree to provide the funds for replanting.

Browsing by mule deer and beaver or other wildlife should not have any appreciable impact on the plantings once established. If substantial damage from such browsings occurs to the plantings before they are established (during the first five-year period), then Applicants will be required to engage in further activities to achieve success as defined in Section 6.4.4 above.

The Applicants are aware of other proposed development and construction activities on lands adjacent to the Property. The Applicants shall, to the greatest extent practicable, coordinate with the owners of such lands to ensure that any such proposed activities do not result in any indirect impacts to any aspect of the mitigation plan.

Owners of property surrounding the area covered by the HCP, including both riparian and upland, are subject to all the requirements of the Endangered Species Act which should adequately protect the biological integrity of the mitigated area.

6.4.10 Unforeseen Events

Reserves for future activities established as part of the escrow fund described in Section 6.4.6 above should be sufficient to provide for any necessary replantings in the event of any unforeseen circumstances. In the event of a catastrophic event which renders the mitigation plan unworkable, the Service and the Applicants may agree to implement an adaptive management plan to ensure that appropriate mitigation measures are enacted. In negotiating such adaptive management plan, the Service shall not require the commitment of additional land or financial compensation beyond the level of mitigation otherwise provided in this HCP, recognizing that the mitigation provided herein is adequate to provide for the conservation of the Preble's mouse. If additional mitigation measures are subsequently deemed necessary to provide for the conservation of the Preble's mouse, the obligation for such measures shall not rest with the Applicants unless the Applicants consent to such measures.

6.5 Amendment Procedure

It is necessary to establish a procedure whereby the Proposed Permit can be amended. However, it is extremely important that the cumulative impacts of amendments will not jeopardize any endangered species or other species of concern. Amendments must be evaluated based on their effect on the habitat as a whole. The Service must be consulted on all proposed amendments. The types of proposed amendments and the applicable amendment procedures are as follows:

6.5.1 Amendments to Development Plans

It is acknowledged that upon written request of the Applicants, the local agency having land use regulatory jurisdiction is authorized in accordance with applicable law to approve amendments to development plans for the Property which do not result in the disturbance, degradation, destruction, or take of any Preble's mouse or other federally listed threatened or endangered species habitat that is not contemplated to be taken as a consequence of the issuance of the Proposed Permits and the development of the Projects and which do not alter the conditions set forth in this HCP.

6.5.2 Minor Amendments to the HCP

Minor amendments involve routine administrative revisions or changes to the operation and management program and which do not diminish the level or means of mitigation. Such minor amendments include corrections in land ownership, minor revisions to surveys, property descriptions, monitoring, or reporting protocols, and minor changes in the boundaries of the Enhancement Area and Units A, B, C, D, and E that result in no net loss of enhancement area or do not otherwise alter the effectiveness of the HCP. Such minor amendments do not alter the terms of the Proposed Permit. Upon the written request of the Applicants, the Service is authorized to approve minor amendments to this HCP, if the amendments do not conflict with the primary purpose of this HCP as stated in Section 2.0 above.

6.5.3 All Other Amendments

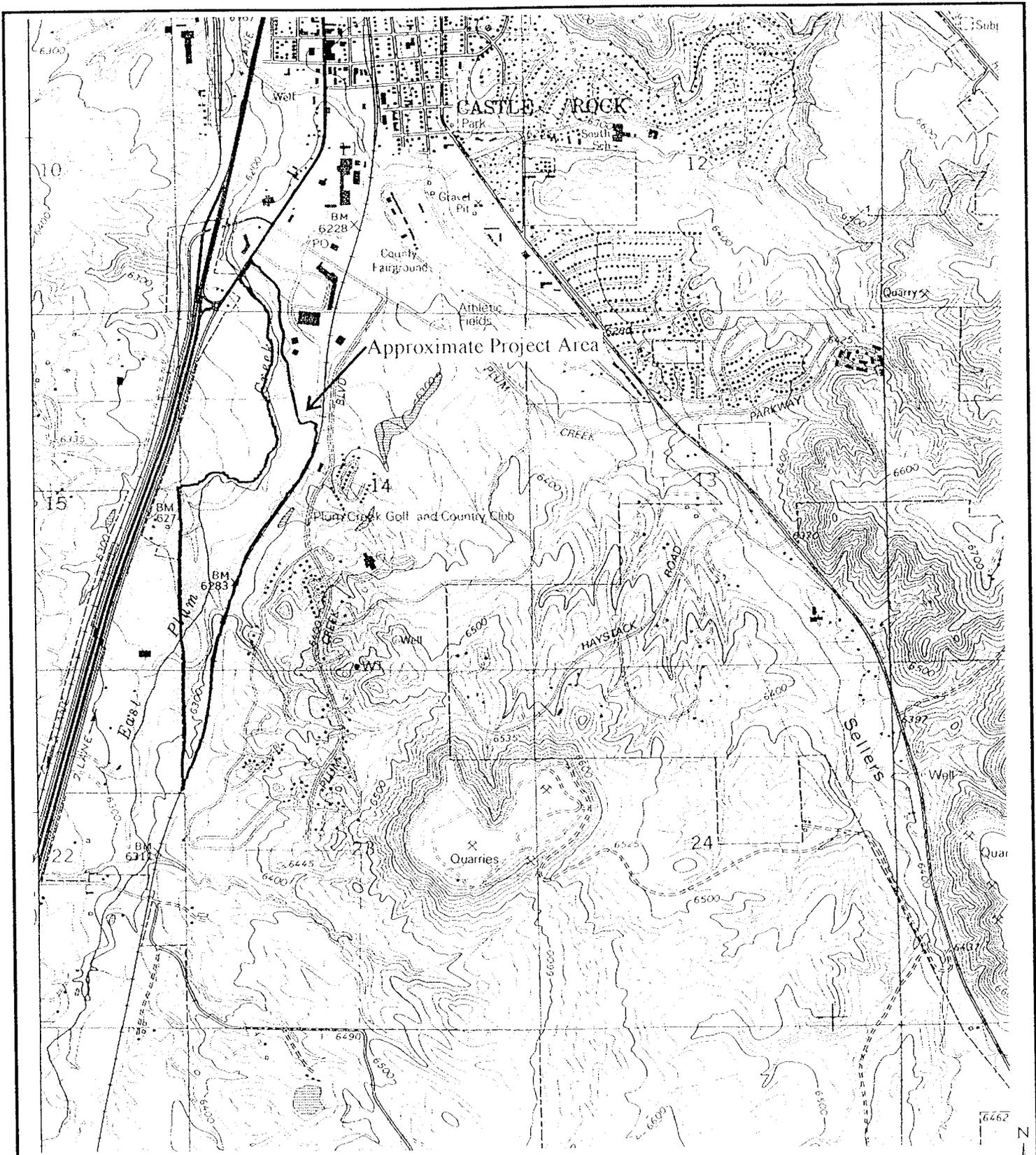
All other amendments will be considered an amendment to the Proposed Permit, subject to any other procedural requirements of federal law or regulation which may be applicable to amendment of such a permit.

References

- Andrews, R., Righter, R. Colorado Birds. A Reference to their Distribution and Habitat. Denver Museum of Natural History, 1992.
- Armstrong, D.M., Bakeman, M.E., Deans, A., Meaney, C.A., and Ryon, T.R. Conclusions and recommendations in: Report on habitat findings on the Preble's meadow jumping mouse. Edited by M.E. Bakeman. Report to the USFWS and the Colorado Division of Wildlife, 1997.
- Braun, C. Biologist. Colorado Division of Wildlife, Personal Communication, May 11, 1999.
- Colorado Natural Heritage Program. Database of endangered and threatened species in Douglas County, Colorado, 1999.
- Craig, G. State Raptor Biologist. Colorado Division of Wildlife,. Personal Communication, April 26, 1999.
- Hoag, C.J. How to Plant Willows for Riparian Rehabilitation. Report for the Aberdeen Plant Materials Center, Aberdeen, Idaho, 1992.
- Nesler, D. Biologist. Colorado Division of Wildlife, Personal Communication, May 11, 1999.
- Pineda, P. Ecologist. Colorado Natural Heritage Foundation. Personal Communication, April 25, 1999.
- Shenk, T. Conservation Assessment and Preliminary Conservation Strategy for Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*). Report to the Colorado Division of Wildlife, 1998.
- Shenk, T. Wildlife Researcher, Colorado Division of Wildlife. Personal Communication, April 25, 1999.

FIGURE 1

SITE LOCATION MAP



U.S.G.S CASTLE ROCK SOUTH QUADRANGLE 1965,
PHOTOREVISED 1994

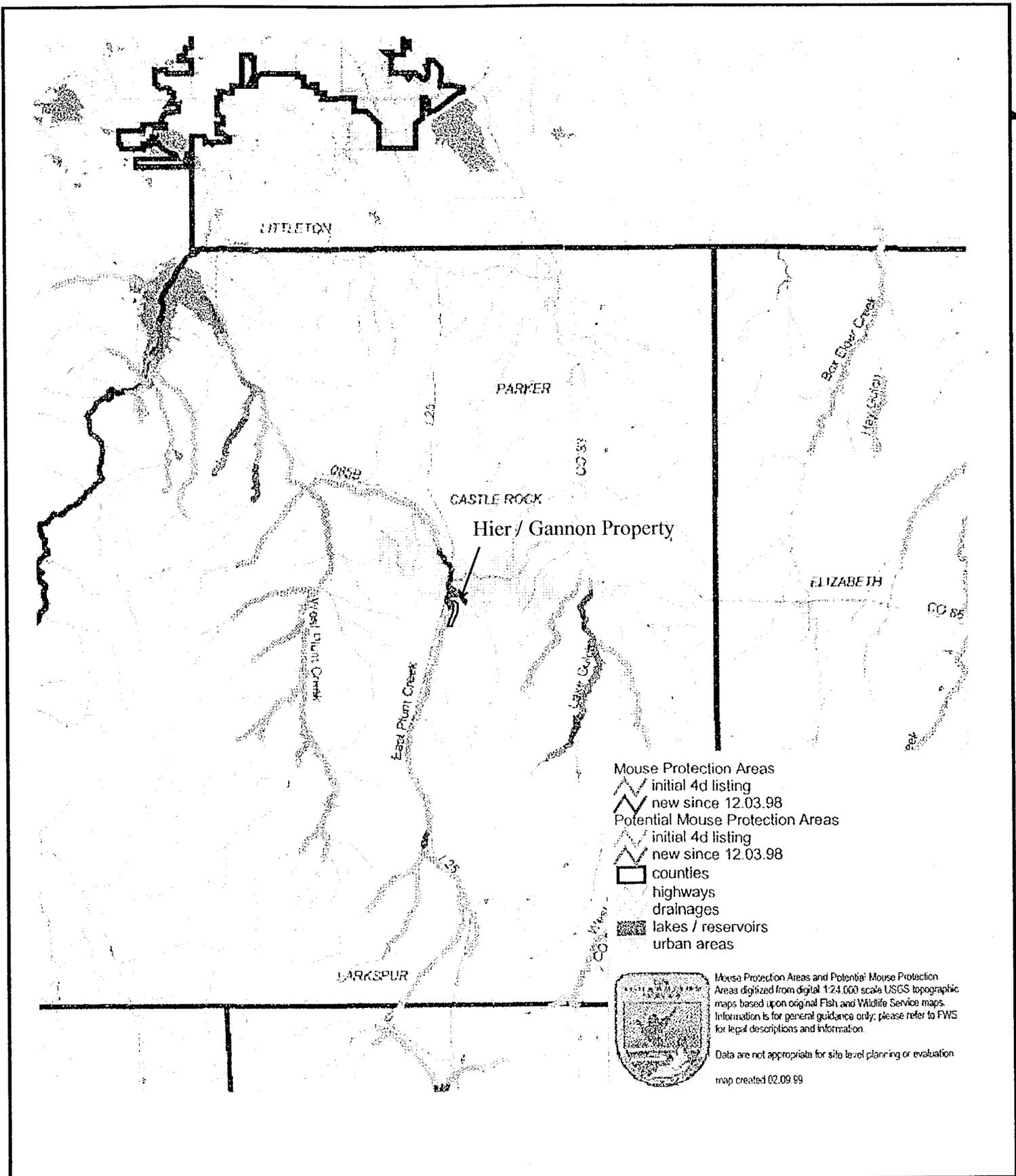
SCALE 1 : 24,000

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AND ECOLOGY INC.**
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 1 - Site Location Map
Hier/Gannon Property
Castle Rock, Colorado

FIGURE 2

**PROPOSED MOUSE PROTECTION AND POTENTIAL
MOUSE PROTECTION AREAS MAP**

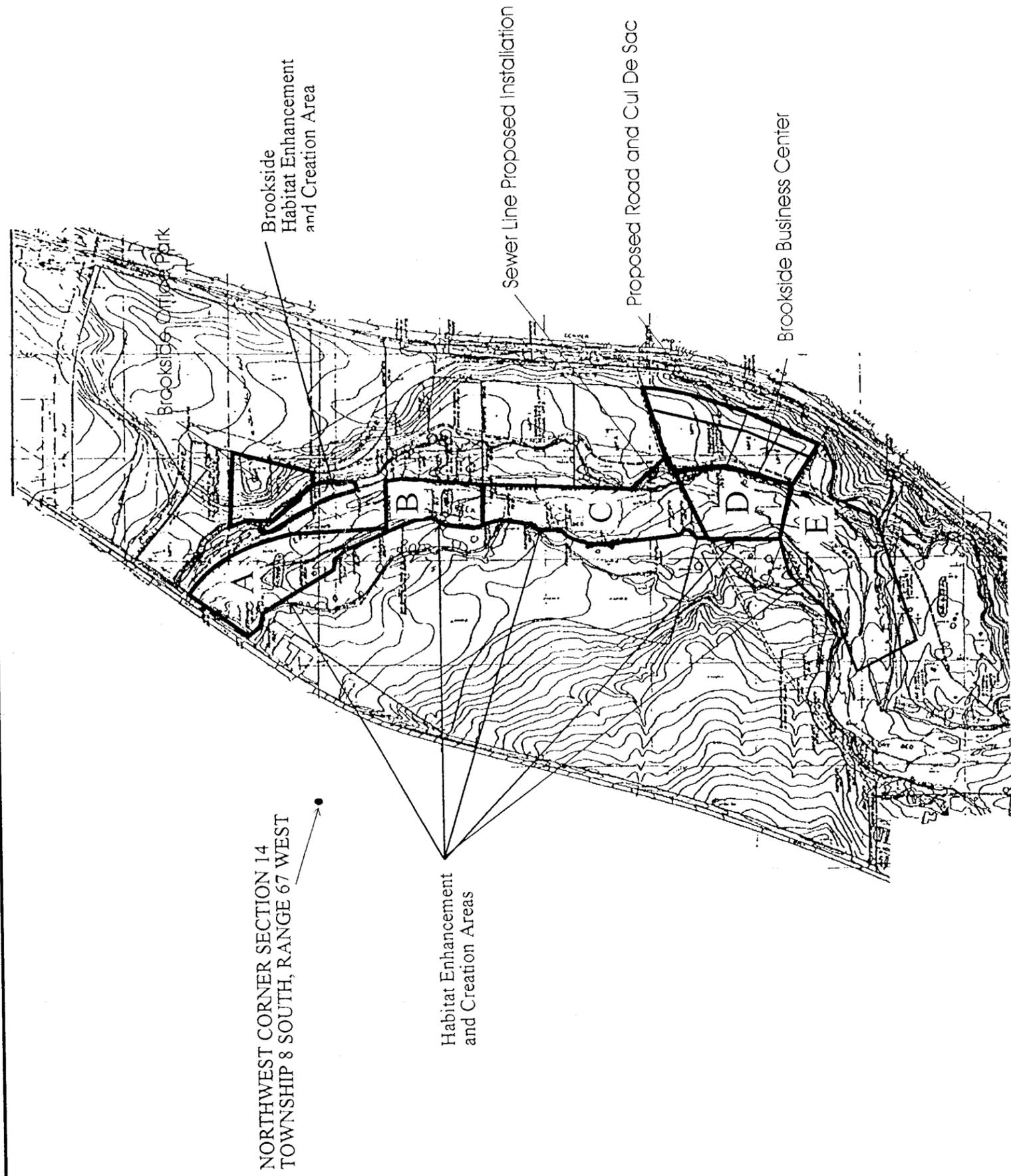


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 email - West2217@aol.com

Figure 2
 Proposed Mouse Protection and
 Potential Mouse Protection Areas
 Hier / Gannon Project Area
 Castle Rock, Colorado

FIGURE 3

HABITAT IMPACT AREA MAP



NORTHWEST CORNER SECTION 14
TOWNSHIP 8 SOUTH, RANGE 67 WEST

Habitat Enhancement
and Creation Areas

Brookside
Habitat Enhancement
and Creation Area

Sewer Line Proposed Installation

Proposed Road and Cul De Sac

Brookside Business Center

BROOKSIDE OFFICE PARK

1.15 ACRES TOTAL AREA IMPACTED

AREA DISTURBED AFTER
MAY 13, 1998 = 1.04 ACRES

AREA TO BE DISTURBED = 0.11 ACRES

**HABITAT ENHANCEMENT
AND CREATION AREAS**

- A - 4.708 ACRES
- B - 2.188 ACRES
- C - 5.588 ACRES
- D - 3.337 ACRES
- E - 7.220 ACRES
- BROOKSIDE - 0.551 ACRES

1 INCH = 600 FEET



(DAVID E. ARCHER AND ASSOCIATES 1982)

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Figure 3
Hier / Gannon Property
Habitat Impact Area
Castle Rock, Colorado

FIGURE 4

**OFFICE PARK
PROPOSED RESTORATION AND PARTIAL ENHANCEMENT MAP**

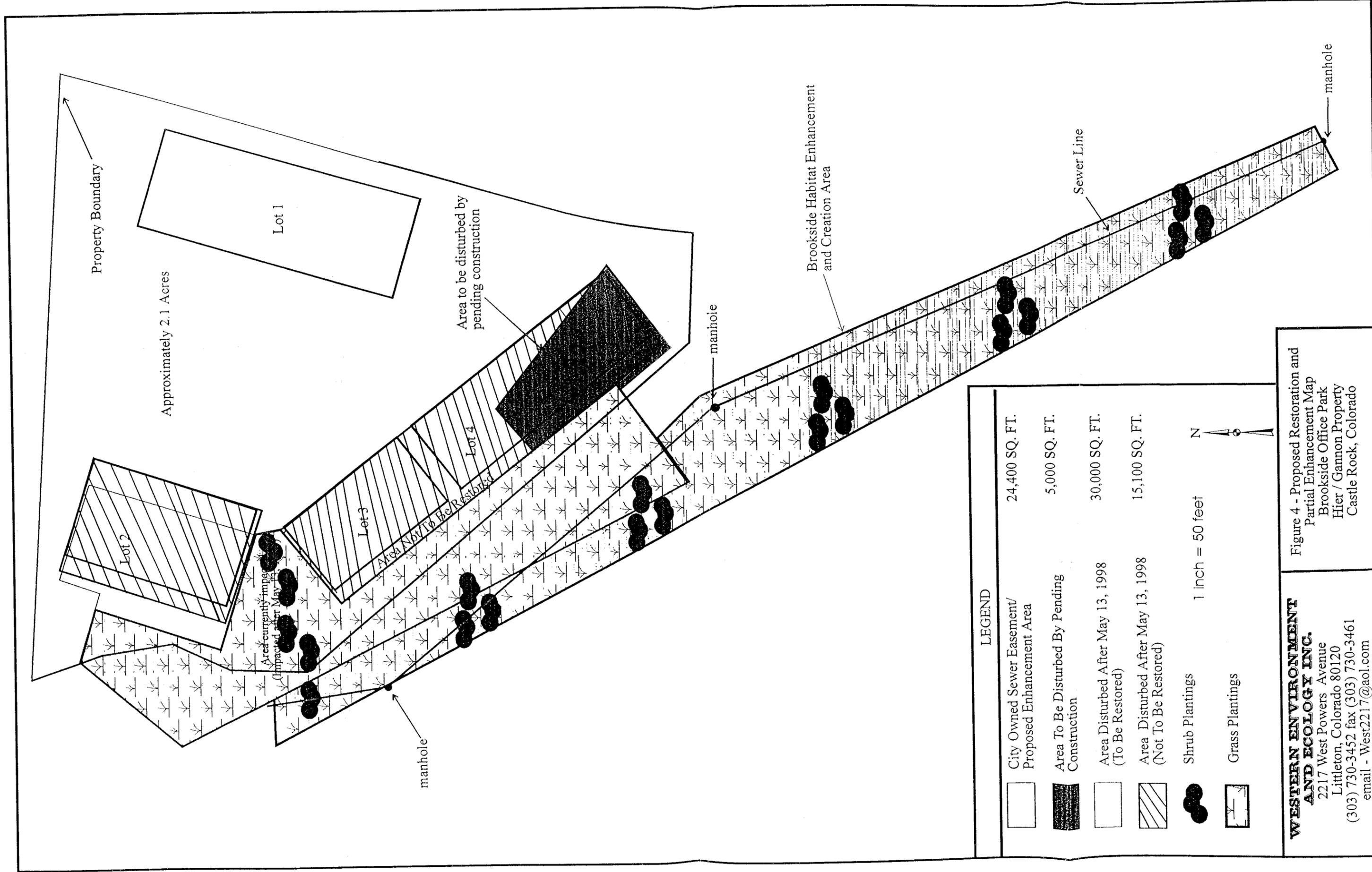
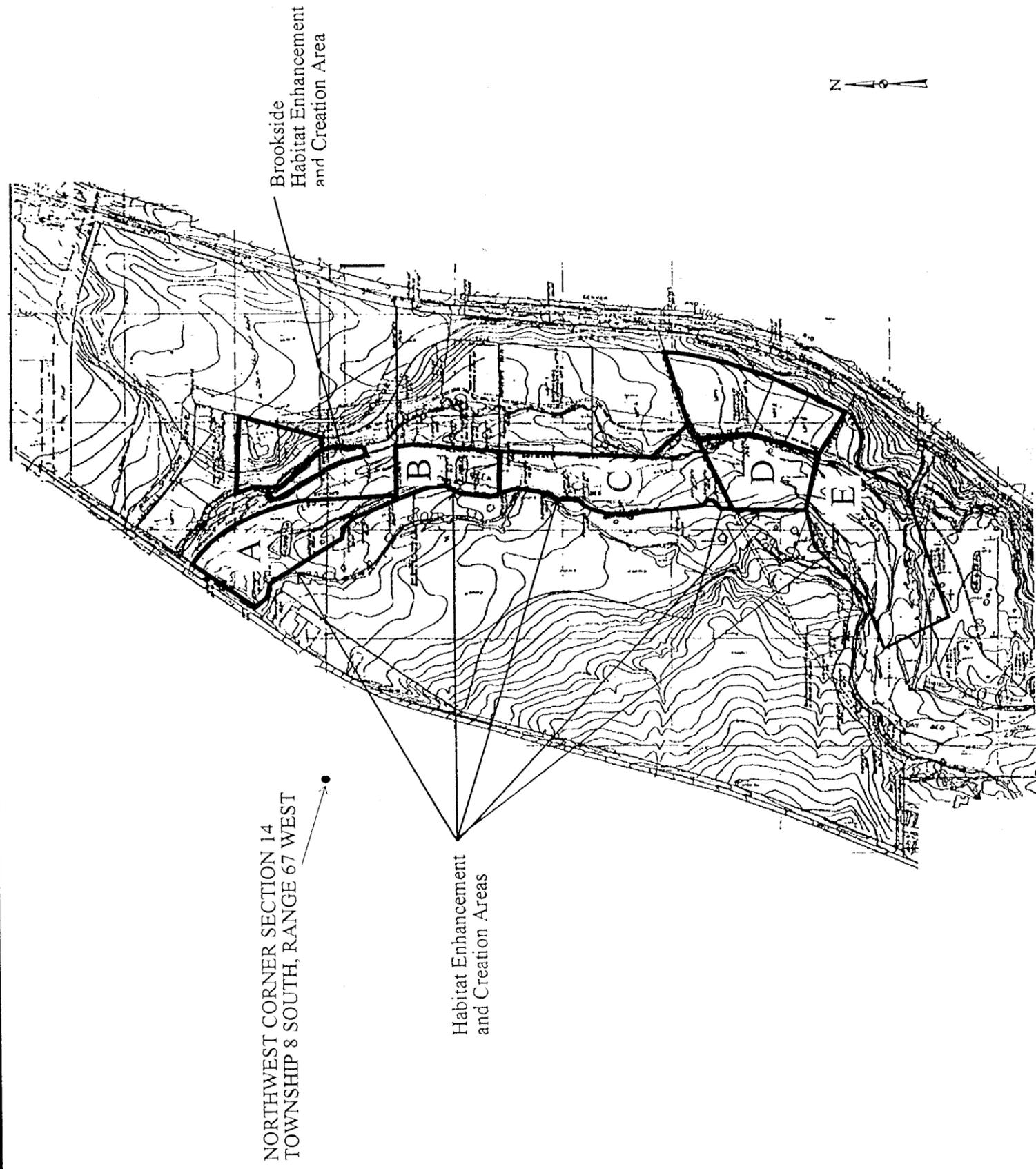


Figure 4 - Proposed Restoration and Partial Enhancement Map
Brookside Office Park
Hier / Gannon Property
Castle Rock, Colorado

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FIGURE 5

HABITAT ENHANCEMENT AND CREATION AREAS MAP



HABITAT ENHANCEMENT
AND CREATION AREAS

- A - 4.708 ACRES
- B - 2.188 ACRES
- C - 5.588 ACRES
- D - 3.337 ACRES
- E - 7.220 ACRES
- BROOKSIDE - 0.551 ACRES

1 INCH = 600 FEET

(DAVID E. ARCHER AND ASSOCIATES 1982)

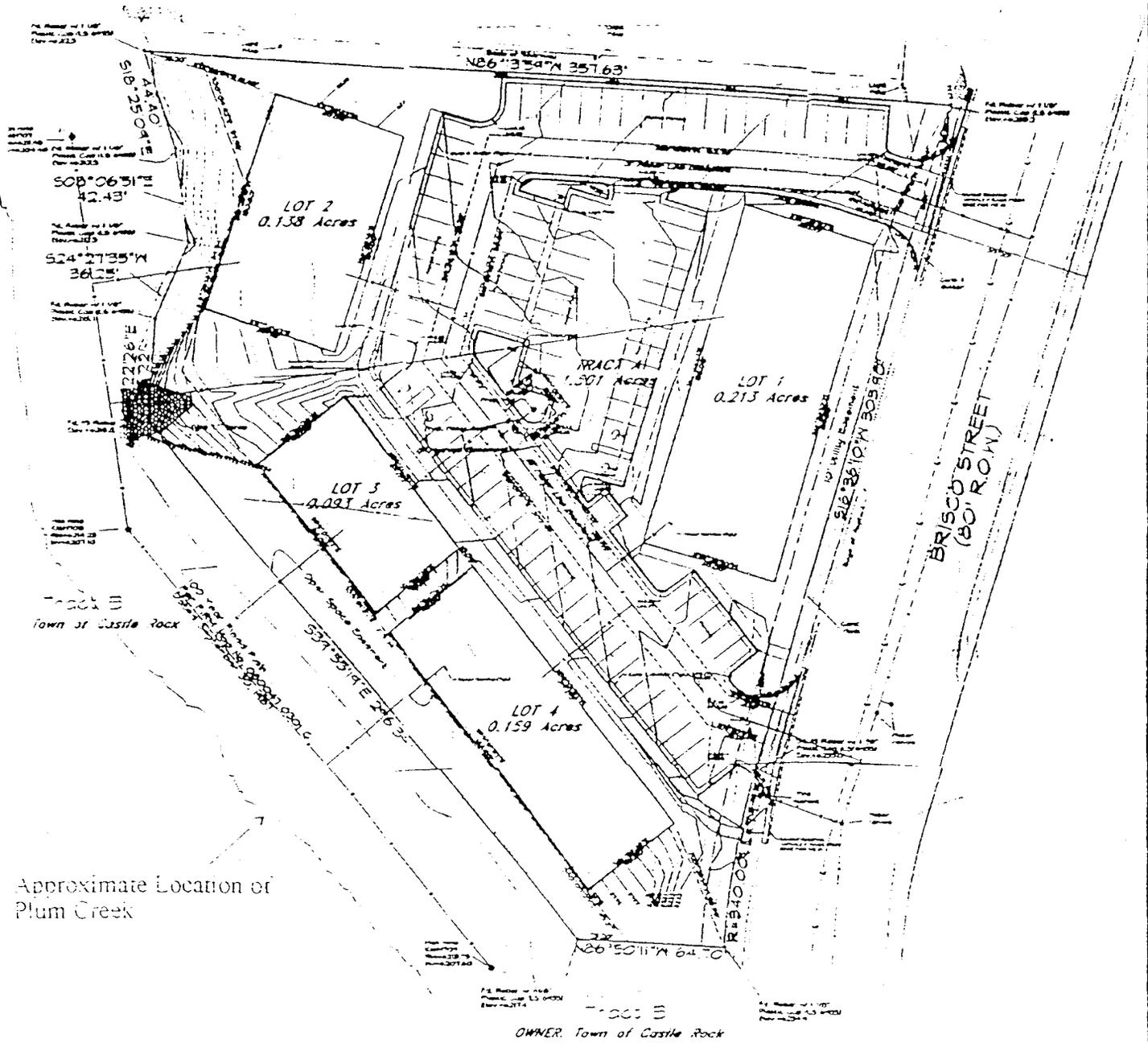
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Figure 5
Hier / Gannon Property
Habitat Enhancement and Creation Areas
Castle Rock, Colorado

FIGURE 6

OFFICE PARK SITE PLANS

The Hundred Year Flood Plain



Adapted from David E. Archer and Associates Inc. 3/25/98

SCALE 1" = 60'

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AND ECOLOGY INC.**
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Littleton, Colorado 80120

Site Map, Office Park
Castle Rock, Colorado

FIGURE 7

BUSINESS CENTER SITE PLANS

PHOTOGRAPHS



East Plum Creek and Office Park, view to the southwest



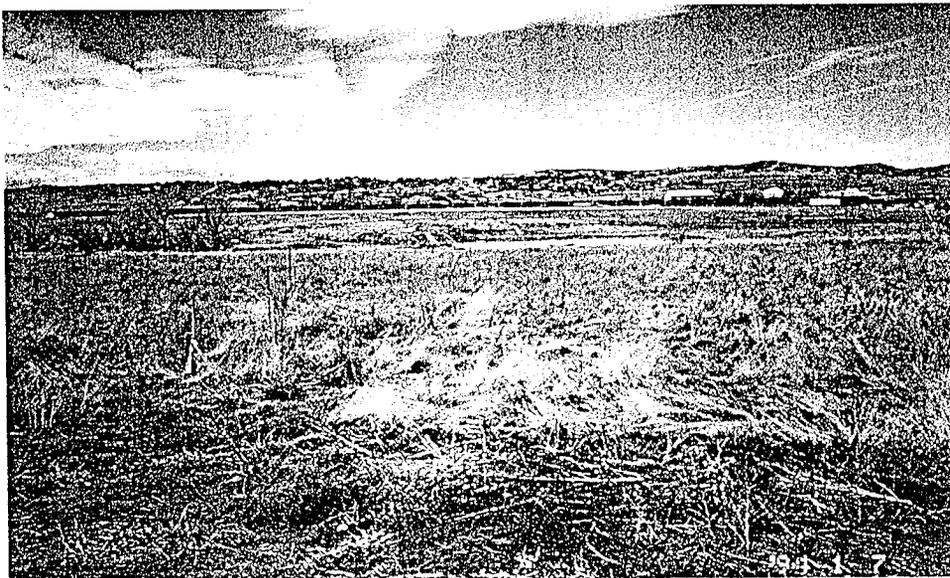
East Plum Creek and Office Park, view to the north

BUSINESS CENTER

VIEWS TO:



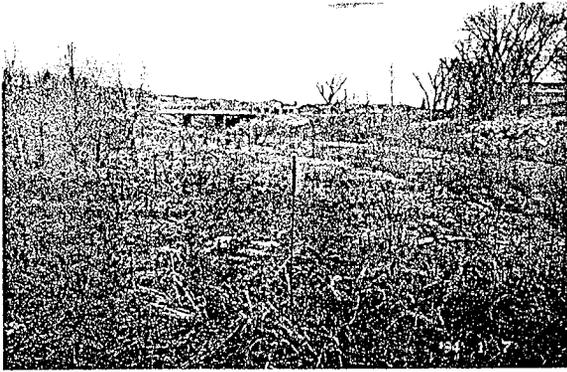
East



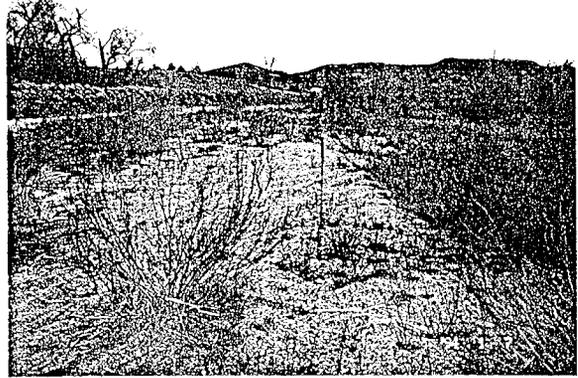
West

HABITAT ENHANCEMENT AND CREATION AREA A

VIEWS TO:



North



South



East



South

HABITAT ENHANCEMENT AND CREATION AREA B

VIEWS TO:



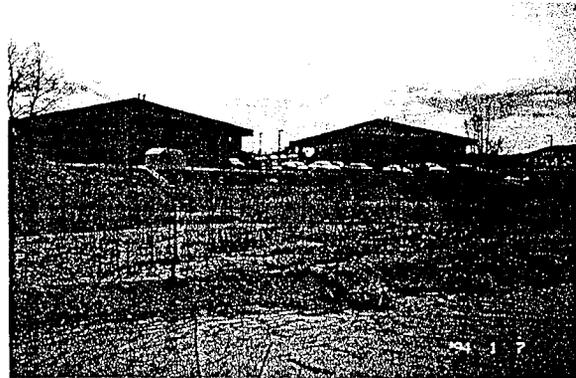
South



East



South



East

HABITAT ENHANCEMENT AND CREATION AREAS C&D

VIEWS TO:



South, C & D



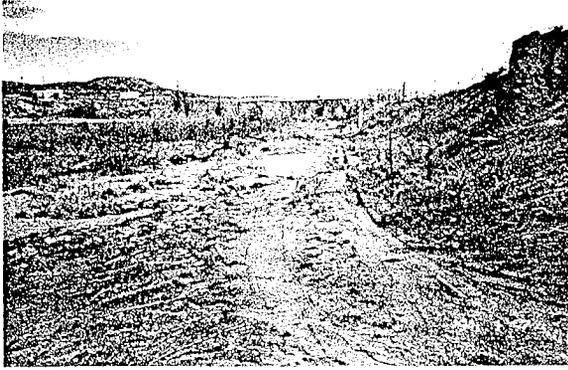
East, C & D



South, C Only

HABITAT ENHANCEMENT AND CREATION AREA E

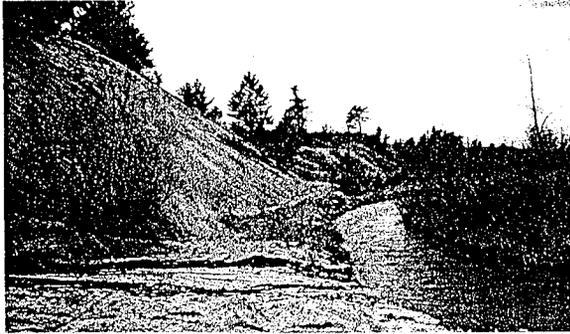
VIEWS TO:



North



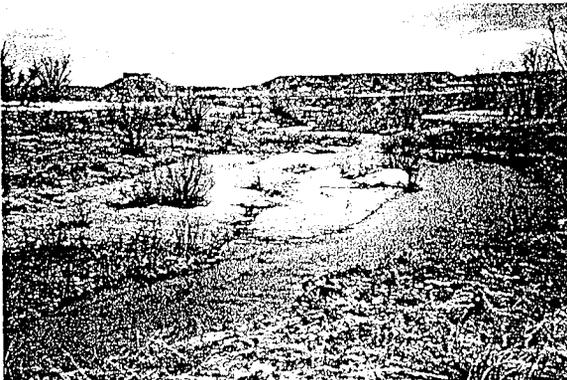
North



South



West



North

EXHIBIT A
THE AGREEMENT

BROWNSTEIN HYATT FARBER & STRICKLAND, P.C.

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Chad G. Asarch
email: casarch@bnfs.com

April 15, 1999

RECEIVED
APR 1 1999

VIA HAND DELIVERY

OFFICE OF THE REGIONAL SOLICITOR
DENVER, COLORADO

Gina Guy
United States Department of Interior
Regional Solicitor
755 Parfet Street, Suite 151
Lakewood, Colorado 80215
303-231-5353 ext. 331
303-231-5363 (fax)

*Re: Development of the Brookside Office Park and Brookside Business Center,
Castle Rock, Colorado*

Dear Gina:

As per our telephone conference on Thursday, April 15, 1999, this letter reflects the agreement between the United States Department of Interior and the Fish and Wildlife Service (the "Service") and Hier & Co., its employees, officers, agents, contractors, successors and assignees ("Hier"), regarding development of the property known as Brookside Office Park, The Centre on Plum Creek Filing No. 2, a part of sections 11 & 14, Township 8 South, Range 67 West, 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado (the "Office Park"), and the property known as the Brookside Business Center, Filing No. 5, a part of sections 11, 14, 15, & 23, Township 8 South, Range 67 West, 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado (the "Business Center").

Lots 1, 2, 3, and 4 of the Office Park are generally described and depicted in the map prepared by Western Environment and Ecology Inc. (the "WEE Map") and the Office Park Final Plat, both of which were attached to the letter from Chad G. Asarch to Pete Pleage dated March 18, 1999 and are attached hereto and incorporated herein by reference. The Service recognizes that areas at the Office Park were disturbed after May 13, 1998, the date the Service listed the Preble's Meadow Jumping Mouse, *Zapus hudsonius preblei* (the "Preble's Mouse"), as a

Gina Guy Letter
April 15, 1999
Page 2

threatened species under the Endangered Species Act (the "Act"). Specifically, as depicted on the WEE Map, there was disturbance of areas on Lot 2, Lot 3, and Lot 4 and other areas of the Office Park from May 13, 1998, to the date of this letter totaling 45,100 square feet (the 50,300 total square feet of "Area Disturbed After May 13, 1998" less the 5,200 square feet of "Area To Be Disturbed By Pending Construction" depicted on the WEE Map). However, any disturbance on Lot 1 occurred before May 13, 1998. In addition, construction activities associated with the proposed developments for Lot 1 and Lot 3 at the Office Park shall not result in the disturbance of any area in addition to areas already disturbed as shown on the WEE Map.

As a result, the Service consents to and approves of the immediate commencement of the proposed construction on Lot 1 and Lot 3 of the Office Park; provided, however, that all three of the following conditions are met:

Condition One. Without admitting liability and as a settlement of all claims by the Service against Hier, Hier shall pay a civil fine in the amount of \$1,000 to the Service for activities that resulted in the disturbance of previously undisturbed areas at the Office Park after May 13, 1998 but before the date of this letter. The precise terms of the document stipulating the fine shall be as outlined herein and as more specifically determined by mutual agreement between the Service and Hier.

Condition Two. No further disturbance of any currently undisturbed areas at the Office Park or Business Center shall occur until and unless the Service grants its consent and approval to such disturbance pursuant to Section 10 of the Act as outlined below.

Condition Three. Within thirty days of the date of this letter, Hier shall submit an application for a permit for an incidental take of habitat of the Preble's Mouse under Section 10 of the Act to cover activities at the Office Park and Business Center. The Service agrees to consider a single Section 10 permit application for both the Office Park and the Business Center. The Section 10 permit shall cover all disturbances of areas at the Office Park and Business Center subsequent to May 13, 1998, including Lot 3 of the Office Park. The Section 10 permit application shall include a habitat conservation plan ("HCP") that provides for vegetation restoration and habitat enhancement and creation ("mitigation") for the Office Park and the Business Center. The Service shall consider the proposed mitigation under the HCP as off-setting both past and future disturbances at the Office Park and Business Center. The Service shall not require at this time the mitigation to occur at any particular location and shall not require any particular mix of restoration, enhancement, or creation of habitat as mitigation, subject, however, to the following parameters:

a. Mitigation for the disturbance of habitat which is disturbed after the date of this letter shall require a restoration ratio of 1.5 to 1 and an enhancement and creation ratio of 3 to 1 (although no such areas shall be disturbed until Condition Two outlined above is satisfied).

b. Mitigation for the disturbance of areas at the Office Park which were disturbed after May 13, 1998, but before the date of this letter and which total 45,100 square feet shall require a restoration ratio of 3 to 1 and an enhancement and creation ratio of 6 to 1.

c. The Service shall allow mitigation under the HCP to include restoration, enhancement, and/or creation of habitat anywhere within the drainage basin of the East Plum Creek pursuant to the mitigation ratios outlined above.

d. The HCP may include areas to be preserved as Preble's Mouse habitat pursuant to the dedication of land under a conservation easement for such purposes as acceptable mitigation.

e. If proposed by Hier, the Service agrees to consider allowing mitigation under the HCP to include restoration, enhancement, and/or creation of habitat outside of the drainage basin of the East Plum Creek.

f. If a special rule (the "Rule") under Section 4(d) of the Act is promulgated for the Preble's Mouse that becomes effective prior to the resolution of this matter as outlined above and would provide more favorable treatment or expedited approval of Hier's proposed developments with respect to future activity at the Office Park and Business Center resulting in the disturbance of currently undisturbed areas, Hier reserves the right to proceed under the Rule if applicable at Hier's option.

If these conditions are met, the Service agrees to release all claims against Hier for any alleged violation of the Act with respect to any prior or future disturbance of areas at the Office Park and Business Center that were undisturbed as of May 13, 1998 and that are covered by the Section 10 permit discussed above.

Thank you for your attention to this matter. We greatly appreciate your continued consideration of this project, and we remain committed to working with you in a spirit of cooperation to arrive at a final resolution of the situation as soon as possible.

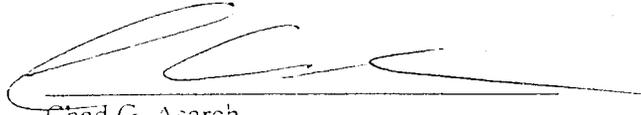
Gina Guy Letter
April 15, 1999
Page 4

Please indicate the Service's agreement to the terms of this letter by executing the enclosed copy and returning it to me at the address and fax number above (both by first class mail and facsimile transmission) as soon as possible.

Very Truly Yours

BROWNSTEIN HYATT FARBER & STRICKLAND, P.C.

By:


Chad G. Asarch

ATTORNEYS FOR HIER & Co.

ACCEPTED and AGREE TO this 16 day of April, 1999.

United States Department of Interior, Fish &
Wildlife Service

By:

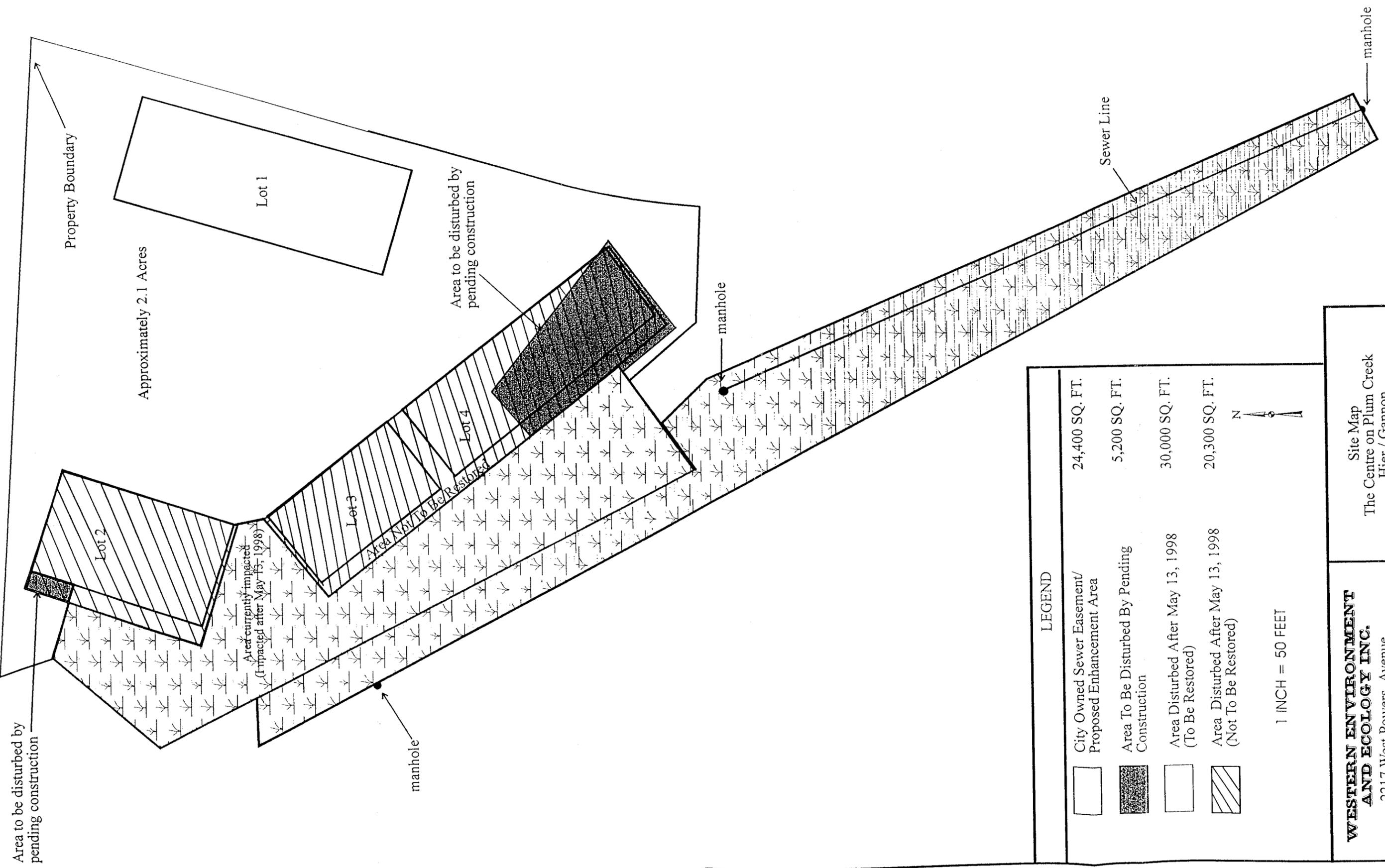

Gina Guy

United States Department of Interior,
Regional Solicitor

Encl: WEE Map
Office Park Final Plat

cc: Bob Hier, Hier & Co.
Walter Slatkin, Esq.
James S. Lochhead, Esq.

“WEE MAP” ENCLOSURE WITH “THE AGREEMENT”



LEGEND

| | | |
|---|---|----------------|
|  | City Owned Sewer Easement/ Proposed Enhancement Area | 24,400 SQ. FT. |
|  | Area To Be Disturbed By Pending Construction | 5,200 SQ. FT. |
|  | Area Disturbed After May 13, 1998 (To Be Restored) | 30,000 SQ. FT. |
|  | Area Disturbed After May 13, 1998 (Not To Be Restored) | 20,300 SQ. FT. |

1 INCH = 50 FEET



**WESTERN ENVIRONMENT
AND ECOLOGY INC.**
2217 West Powers Avenue
Littleton, Colorado 80120

Site Map
The Centre on Plum Creek
Hier / Gannon
Castle Rock, Colorado