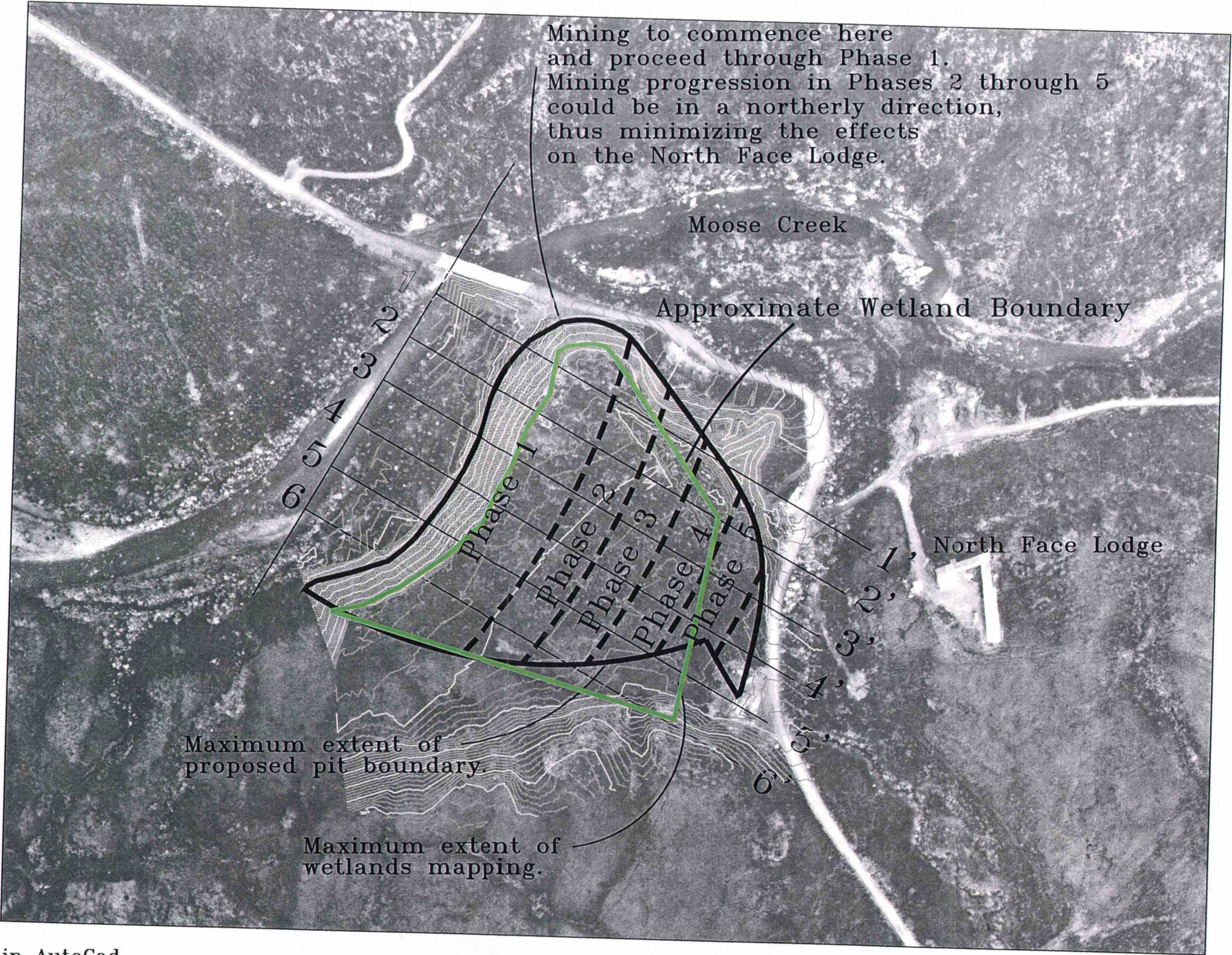


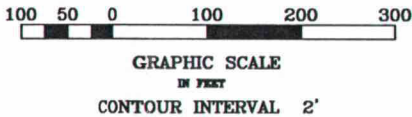
Numbers
identify cross
section locations.

Phase 1 - 6 to
be mined in
succession with
mining to proceed
in a southerly
direction.



Contours were generated in AutoCad
from a GPS survey of the project area.

Aerial Photo: 9-19-86, # 7420



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
ALASKA SYSTEMS SUPPORT OFFICE
PHYSICAL RESOURCES

Figure D.5 North Face
Mining Area and Wetlands
DENALI NATIONAL PARK AND PRESERVE

DRAWING NO.
AUTO CAD
FILE NAME



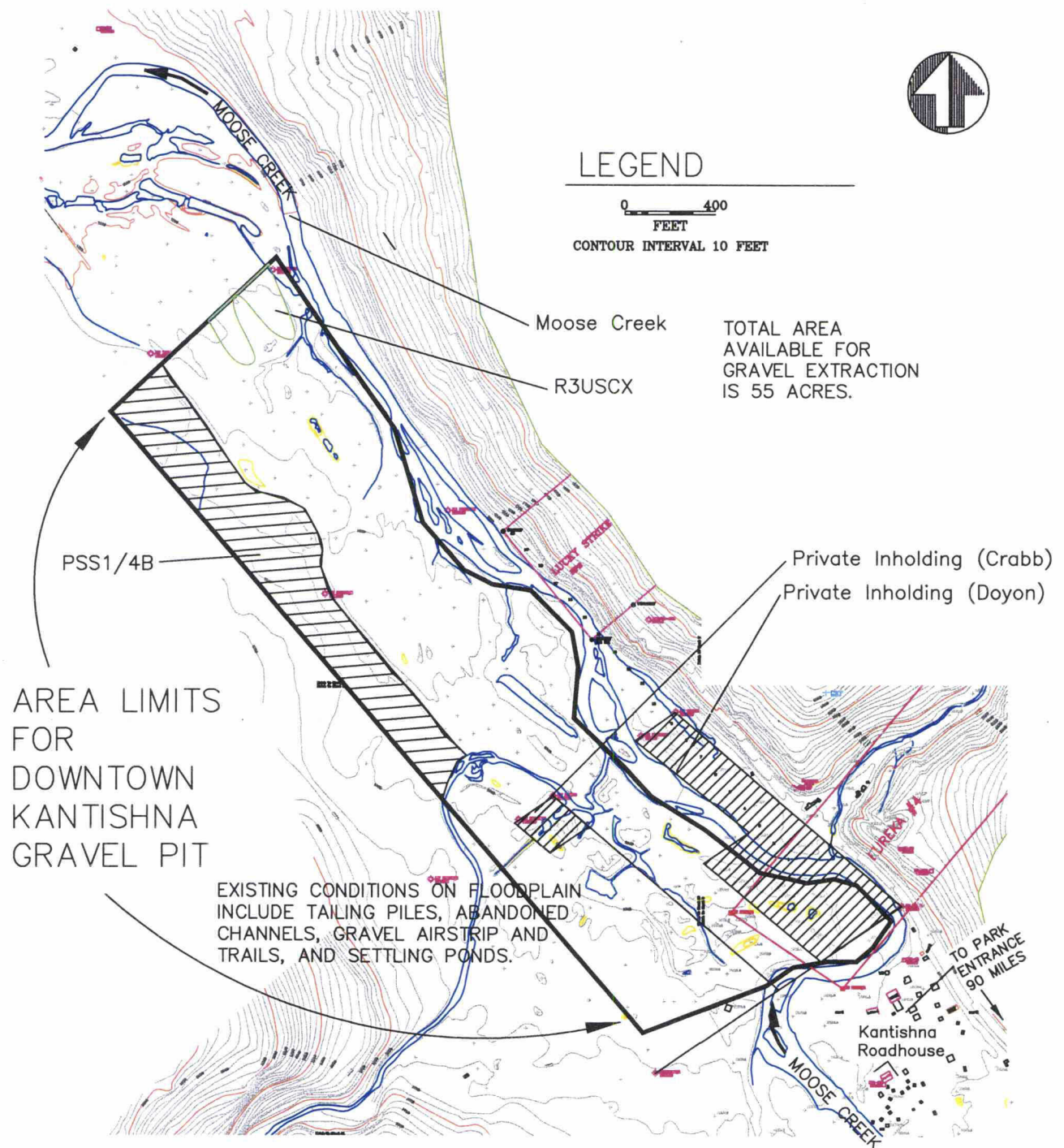


FIGURE D.7—DOWNTOWN KANTISHNA MINING AREA AND WETLANDS

SITE SELECTION CRITERIA

In accordance with NPS Special Directive 91-6, Field Guide to Implementing the NPS Management Policies Re: Administrative Use of In-Park Borrow Material, park management determined it economically infeasible to obtain gravel for road maintenance entirely from external sources. Most gravel, therefore, is obtained from sources within the park. The Denali Park Road corridor was deemed to be the best general location within the park for gravel sources. The NPS used nine specific criteria for identifying preliminary gravel source sites within the park road corridor; criteria that are relevant to considerations of potential wetland impacts include the following:

- Development of the source will minimize wetlands and floodplains disturbance, as directed by pertinent NPS policies.
- Access to the source will not involve multiple crossings of rivers or perennial streams (Toklat River excepted), particularly streams in the Kantishna area where anadromous fisheries could be adversely impacted.
- Sites must be situated such that full restoration is possible after extraction is completed.
- The source contains good quality material in sufficient quantity.

Based on these criteria, the NPS developed a preliminary site index of 19 possible gravel sources within the park road corridor. Eight of those sites were subsequently eliminated from the list based on deficiency with one or more of the site selection criteria, including three sites considered deficient with respect to the wetland and floodplain criterion. The 10 source sites evaluated in the EA, and one site reserved for future testing, were considered to be consistent with the site selection criteria. Evaluation of the 10 sites indicated that wetland impacts could be avoided to a considerable extent or minimized through site-specific planning, and that the NPS would be able to compensate for unavoidable wetland impacts through restoration of degraded wetlands.

MITIGATION PROPOSED

The proposed action includes a variety of measures in all alternatives to mitigate and monitor impacts of the actions on wetlands and other environmental resources. Measures used to mitigate impacts include avoidance, minimization through modification of proposed mining plans and, lastly, compensation for unavoidable impacts. The process to be followed for development and operation of upland and floodplain extraction and processing sites (described in detail in Chapter 2 of the EA) include specific prescriptions for identifying the area to be included in the active operations and installing erosion and sedimentation control measures. Sites would be designed so that restoration of the extraction area could occur quickly and return natural functions and processes to the sites. Operational monitoring, sediment monitoring and project documentation common to all sites and alternatives would include monitoring and records pertinent to wetland conditions before and after extraction activities. Restoration of the gravel source sites operated through this plan will, in general, not be considered to provide the compensation necessary for new wetland impacts.

The Downtown Kantishna site represents an exception to this condition. Wetland and floodplain resources at the Downtown Kantishna site have been considerably disturbed by past placer mining activity at the site, and the NPS has identified this site as a high priority for reclamation. While this site would be used for gravel extraction, the gravel removal would occur as an integral and necessary component of site reclamation. Because of the current degraded status of the Downtown Kantishna site, the serious need for reclamation of a functional

stream/wetland/riparian system, and the need to recontour the floodplain to accomplish the reclamation, the Downtown Kantishna site would serve both purposes of gravel supply and compensation for wetland impacts. Map D.8 shows the conceptual reclamation plan for the Downtown Kantishna site.

The NPS has also identified 13 former gravel extraction sites within the park road corridor that would be available for reclamation (i.e., compensatory mitigation) under any of the GAP alternatives, to mitigate visual and ecological impacts from expanding existing source sites or developing new sites through the GAP. The NPS could restore a total of up to 65 acres at these sites (including the 55 acres at Downtown Kantishna), which could include potential wetland restoration. Restoration of previously disturbed wetland areas at these sites could be used to fulfill needs for compensation of new wetland impacts that would occur under the gravel acquisition plan.

Compensation, by restoration of previously degraded wetlands, is required under the NPS no-net-loss policy for projects involving disturbance or loss of wetlands. Gravel extraction and processing operations are not exempt from this requirement. Compensation will occur for the unavoidable loss or disturbance of wetland area at gravel source sites over the next 10 years. Compensation requirements and corresponding restoration plans have not yet been developed, pending NPS selection of a GAP alternative to be implemented, confirmed determination of the jurisdictional character of the affected wetlands, and final determination of the affected wetland acreages and functions. However, the NPS has identified two sites as priority candidate locations for restoration of previously disturbed wetland areas. The sites are the Little Aubrey and Yellow Pup mining claims, located in the Glacier Creek drainage northeast of Kantishna (see Maps D.9 and D.10). Wetland and riparian areas at both sites were disturbed by historic placer mining activities. The NPS estimates that the restoration areas for these sites could be approximately 10 acres at the Little Aubrey claim on Glacier Creek and 7.5 acres at the Yellow Pup claim on Yellow Pup Creek, a tributary to Glacier Creek. Restoration work would begin at these sites in 2004, and would follow an approach similar to NPS restoration of comparable disturbed areas along Caribou Creek in 2002.

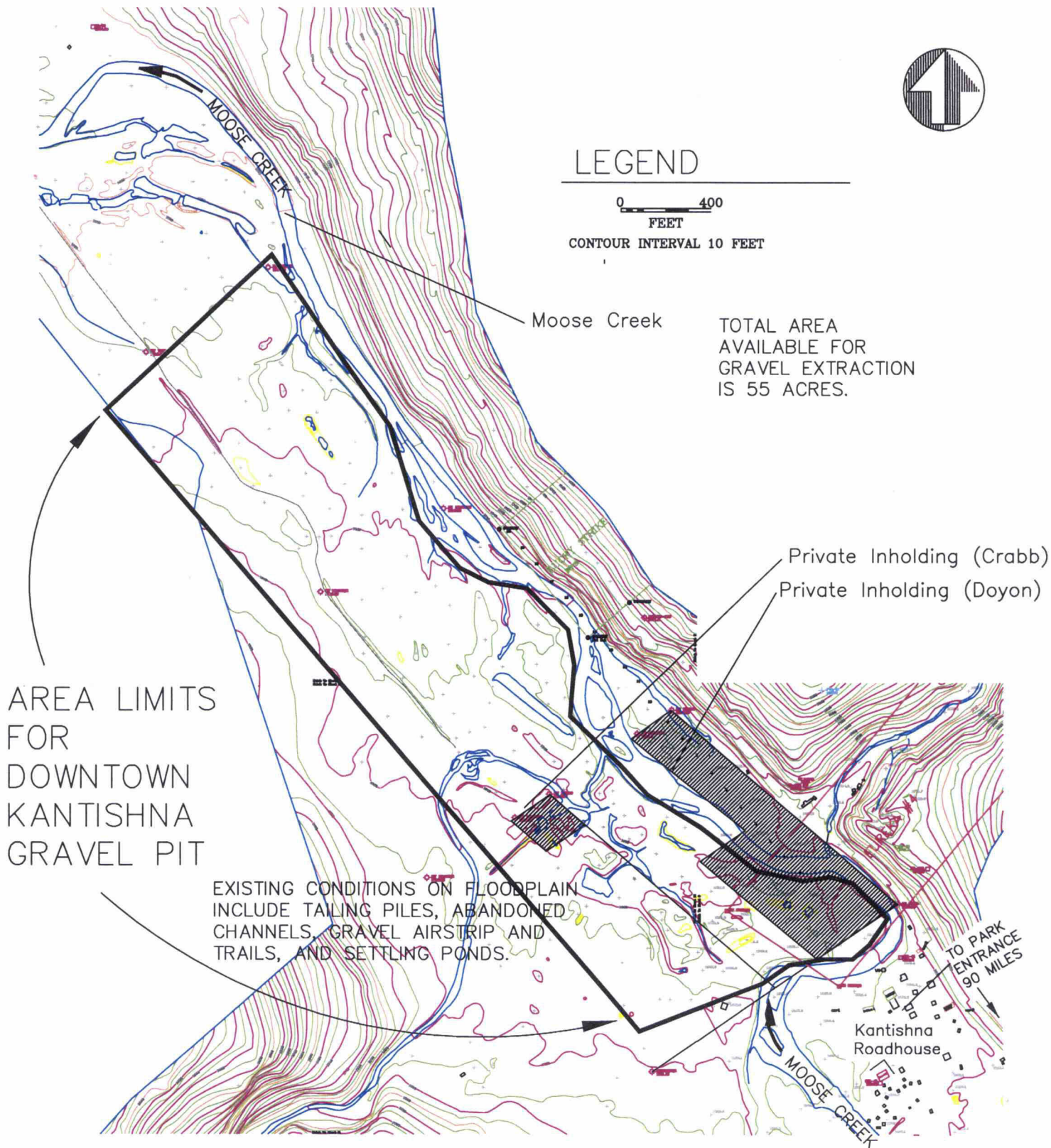


FIGURE D.8—DOWNTOWN KANTISHNA RESTORATION PLAN