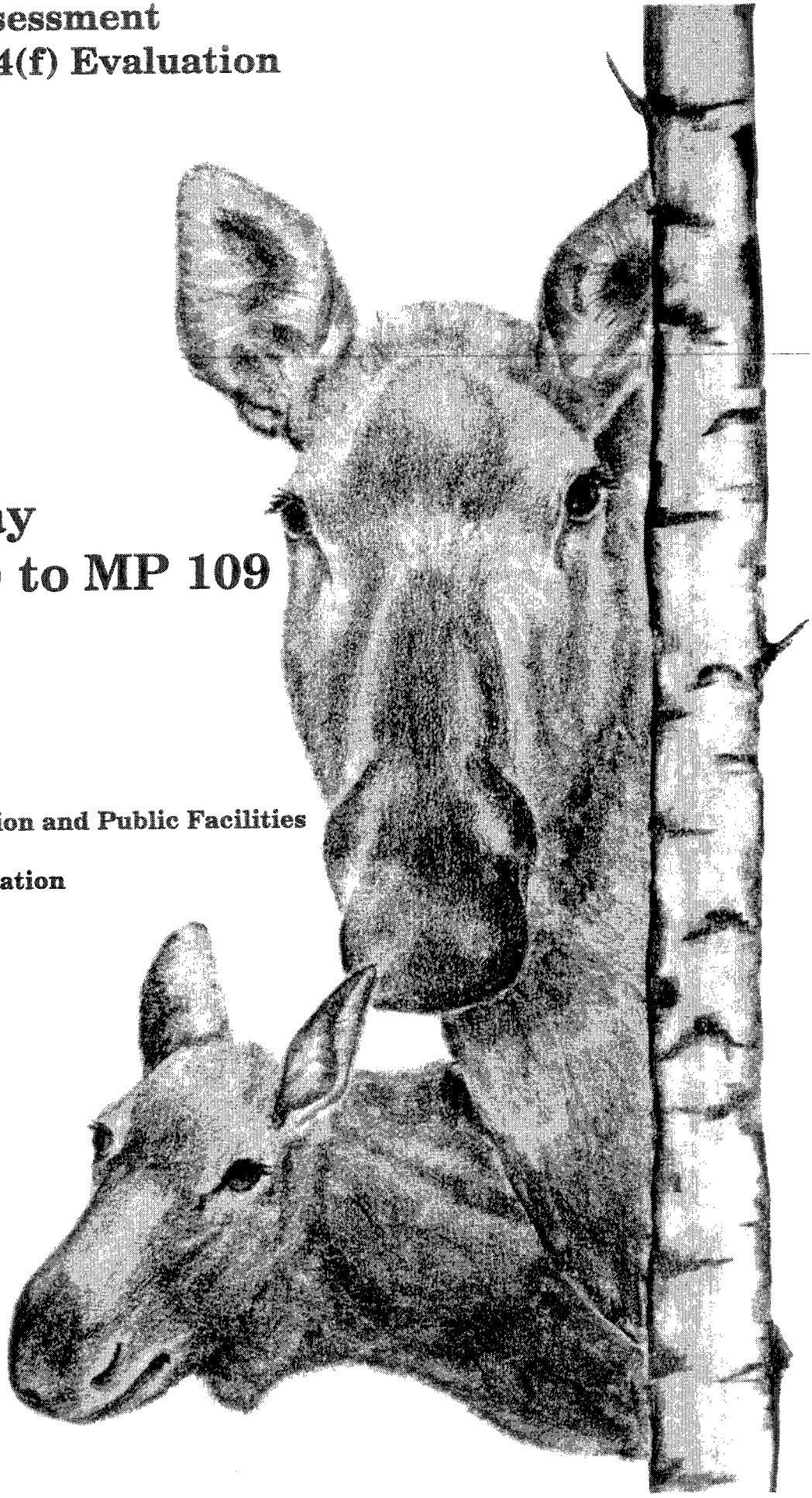
Environmental Assessment and Final Section 4(f) Evaluation



Glenn Highway Parks (MP 35) to MP 109 F-042-2(11)

State of Alaska
Department of Transportation and Public Facilities
and
Federal Highway Administration

FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

for

Glenn Highway, Parks Highway (MP 35) to MP 109
Project No. F-042-2(11)

The Federal Highway Administration (FHWA) has determined that the proposed reconstruction of the Glenn Highway from MP 35 to MP 109 will have no significant impact on the human environment. This Finding of No Significant Impact (FONSI) is based on the attached revised Environmental Assessment (EA)/Final Section 4(f) Evaluation.

The FHWA approved the Draft EA/Section 4(f) Evaluation [April 16, 1992] which was revised to incorporate agency and public comments.

The FHWA has independently evaluated the revised EA/Final Section 4(f) Evaluation and determined that it adequately addresses the agencies concerns, and accurately discusses the environmental issues and impacts of the proposed project. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the attached EA/Final Section 4(f) Evaluation.

1/5/93 — Date

Robert E Ruby — Responsible Official

DIVISION ADMINISTRATOR — Title

Glenn Highway, Parks Highway (MP 35) to MP 109

ENVIRONMENTAL ASSESSMENT

AND FINAL SECTION 4(f) EVALUATION

and

Finding of No Significant Impact

Submitted Pursuant to 42 U.S.C. 4332 (2)(c) and 49 U.S.C. 303

by the

U.S. Department of Transportation

Federal Highway Administration

and

State of Alaska

Department of Transportation and Public Facilities

This action complies with Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.

11/20/92 — Date of Recommendation — For ADOT&PF — Title

1-5-93 — Date of Approval — For FHWA — Division Administrator — Title

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This project involves reconstruction of the Glenn Highway between Milepost 35 and Milepost 109.

INTRODUCTION

The Alaska Department of Transportation and Public Facilities (ADOT&PF) proposes to reconstruct the Glenn Highway from the Parks Highway (MP 35) to MP 109, 3 miles east of Caribou Creek. The Glenn Highway is considered a major transportation corridor, providing access to interior Alaska and the "Lower 48". Originally, much of the roadway was constructed as a military supply route during World War II.

During the mid 1970's to early 1980's. a period of rapid population growth in the Matanuska-Susitna Valley, major highway upgrades were proposed to serve anticipated traffic volumes. Numerous location alternatives north and south of the Matanuska River were evaluated.

The recession of the mid 1980's and subsequent downturn in population growth necessitated updating traffic projections. Traffic analysis in 1988 and 1990 determined that reconstruction along the existing alignment would provide an acceptable facility except in areas where terrain conditions were prohibitive and required alignment shifts: Moose Creek, Ida Lake, Chickaloon River, Long Lake, Hicks Creek, Pinochle Hill, and Caribou Creek.

The length of the project makes it impractical to reconstruct the entire facility at one time. Project sections would be prioritized according to funding availability, roadway deficiencies, and public need. Section lengths of 7 to 10 miles are anticipated. Phased construction would occur over several years; a two-year period is required for each section.

It is anticipated that some sections of the highway could receive improvements prior to full reconstruction under the Resurfacing, Restoration, and Rehabilitation (3R) program, such as currently under construction between MP 35 and MP 54. These 3R projects provide immediate repair, extending the service life of the roadway by 10 years. Major reconstruction of sections improved by 3R projects would not be considered within the 10-year 3R design life period.

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I. DESCRIPTION, PURPOSE, AND NEED OF PROJECT

The Alaska Department of Transportation and Public Facilities (ADOT&PF) proposes to upgrade the Glenn Highway from the Parks Highway (MP 35) to MP 109. This highway is a major travel corridor in Matanuska-Susitna Borough serving the communities of Palmer, Sutton, Chickaloon, and Matanuska Glacier; several State Parks; and the Matanuska Valley Moose Range (Figures 1 and 4). It is the primary link to the Alaska Highway, connecting Palmer with Glennallen and Valdez. The purpose of this project is to provide a safe highway with an acceptable 20-year Level of Service (LOS) for anticipated traffic in the year 2015.

The Glenn Highway is designated as Route A1 of the Federal-Aid Interstate System (FAI). Originally, this roadway was built during World War II to serve as a supply route. Urgency to open this supply route permitted minimal earthwork to be employed for the development of the route. As it is considered a rural highway (arterial), and situated for the most part in rolling to mountainous terrain, respective design speeds of 60 mph and 50 mph are appropriate.

Steep grades in much of the area reduce speeds of passenger vehicles and cause some trucks to operate at crawl speeds. While cars can negotiate grades as steep as 4 to 5 percent without appreciable changes in speed, effects on truck operation are more pronounced. Within the Glenn Highway project area, some gradients are 6 to 8 percent.

In addition, curves as great as 26 degrees exist along this portion of the Glenn Highway. Although the aesthetic quality of curving alignment is important, vehicular passing necessitates long tangents of roadway. Excessive curvatures compounded by terrain and climatic conditions limit traffic capacity. A 10-degree curve is compatible with a 35 mph operating speed.

A 1987 report, "Alaska Interstate Highway Needs Assessment Executive Summary," identifies the entire Glenn Highway project area as a series of deficient segments. As defined in the report, deficiency is an intolerable condition not meeting minimum conditions and requires improvements to the facility. Report findings were based upon data analysis of 1984 traffic, 1982-1984 accidents, and highway and bridge location and condition status from 1985. The conclusion: improvement of the Glenn Highway between Palmer and MP 109 is needed.

The Institute of Social and Economic Research (ISER) at the University of Alaska estimated the 1987 Matanuska-Susitna Borough population at 39,700. Growth rate projections for the Borough population in the year 2015 vary from 51,000 to 104,000. About 37.9 percent of the total employed population in the Matanuska-Susitna Borough worked outside of the Borough boundaries in November, 1988. Traffic from the Matanuska-Susitna Borough to Anchorage reflects the high level of urban commuter travel from suburban locations.

The 6.7-~~mile segment from the~~ proposed Parks Highway-Glenn Highway Interchange to the Palmer-Wasilla Highway comprises the beginning of the proposed project. Located within this segment is the Alaska State Fairgrounds and the Palmer Industrial Park, both generating considerable traffic. The 2-mile section from the Palmer-Wasilla Highway to the Fishhook-Willow Road (MP 49) forms the second segment. Annual Average Daily Traffic (AADT) for these sections is shown in Appendix A.

LOS analysis for the anticipated traffic volume from the Parks Highway-Glenn Highway Interchange through Arctic Avenue indicates that the existing two-lane roadway would not provide the LOS desirable for an urban or suburban arterial. Four lanes would be necessary to sustain the desirable LOS for these roadway segments.

From Arctic Avenue through the project terminus (MP 109), existing and anticipated traffic volumes decrease considerably (Appendix A). Acceptable LOS would be provided with a two-lane facility having auxiliary climbing/passing lanes.

There are other major actions being developed or proposed in the project area. A multi-lane divided controlled access facility is under construction for the Glenn Highway from Eklutna to the Parks Highway near the beginning of this project. A Resurfacing, Restoration, and Rehabilitation (3R) project is being developed from Glenn Highway MP 35 to MP 54 to accommodate existing needs. The State funded a roadway upgrading project between MP 54 and MP 56 in 1992. Roadway embankment protection for Sutton through Chickaloon to arrest Matanuska River erosion was completed in 1992. Another reconstruction project in design is the Glenn Highway, MP 109 to MP 118, the Central Region boundary.

II. ALTERNATIVES

A. No-Build Alternative

The existing facility would remain a two-lane roadway and existing problems would continue. Based on the LOS analysis, this would not support projected traffic volumes. Traffic congestion would continue during rush hour periods in the Palmer area. Throughout the remainder of the project, slower moving vehicles would continue to hinder traffic flow; there are few opportunities for vehicular passing or emergency pulloffs. Safety concerns which include narrow shoulders, limited sight distance, and rockfall would not be improved. Maintenance would require the placement of riprap to counter erosion of the roadway embankments along the Matanuska River.

B. Transportation System Management (TSM) Alternative

The TSM Alternative would increase existing highway efficiency through one or a combination of options which include ride sharing and fringe parking, bus and/or high occupancy vehicle (HOV) lanes, rail services, traffic signal timing optimization, and resurfacing and rehabilitation. However, this alternative is most practicable in urban settings with populations of 200,000 or greater.

As most of the project area is considered rural, and high volumes of trucks and Recreational Vehicles (RV's) exist throughout the project corridor, the TSM Alternative would not be cost effective. There would be minimal potential for reducing congestion and improving roadway conditions with this alternative.

C. Proposed Action

During the past two decades, numerous location alternatives north and south of the Matanuska River were evaluated for the Glenn Highway. These alternatives were based upon projections which indicated that there would be a substantial traffic increase in the future. At that time, the proposed facility was a multi-lane bypass. Major intersections, interchanges, and frontage roads were proposed along much of the project.

The Department revised traffic analysis in 1991 to reflect ISER population growth

rates and development activities. With the reduced traffic projections, it was determined that the existing Glenn Highway could be upgraded to acceptable standards except in those areas where terrain conditions were prohibitive and required alignment shifts. The project was segmented to develop options according to the needs of each section because of the varying roadway conditions and terrain. Only 14.3 miles of the project would require realignment with the proposed action. Approximate cost estimate for this project is $191,000,000.

Advantages of remaining on the existing alignment are: 1) reduced construction costs per mile when compared to building an entirely new corridor; 2) the possibility of staged construction; 3) less impacts to winter moose habitat, wetlands, and anadromous streams; 4) ROW acquisitions would be minimized; 5) less disruption would be caused to existing residences and businesses; 6) because continued services and access to communities and residences along the existing route are required, costs to maintain two roadways would be substantial; and 7) the deficiencies in the old alignment would need to be addressed where it remains open to public travel.

For the above reasons, the proposed action would optimize the existing facility according to current desirable design standards while providing the desired LOS and improving safety.

1. Parks Highway-Glenn Highway Interchange to Arctic Avenue Segment (MP 35 to MP 42.1)

Characteristics of this area are gently rolling terrain and rural to suburban development. Gravel based silt and sandy loam soils are well-drained, excellent for agricultural and other development purposes. The Alaska Railroad bounds the Glenn Highway to the east.

A divided four-lane facility is proposed, having partial control of access. Partial control would provide median breaks at important intersections, but minimize driveway access. As a result, it may be necessary to acquire access rights from some adjacent properties.

The proposed facility would consist of two 12-foot lanes in each direction, 8-foot outer shoulders and 4-foot inner shoulders, and a 32-foot wide depressed median (Figures 2, 3-1, and 3-2).

In the Kepler-Bradley Lakes area, retaining walls would be needed to avoid encroaching into the lakes. From Colleen Street (MP 38) through Arctic Avenue (MP 42.1) the existing alignment would be retained for northbound traffic. A frontage road would be constructed west of the Glenn Highway, from the Cienna Avenue/Inner Springer Loop (MP 39) to the Valley Street/South Colony Way intersections (MP 41). The frontage road would separate the higher speed through traffic from the business/residential property traffic.

Right-of-way acquisition based on the conceptual design would impact 16 residences and 12 business properties (Figures 6-1 and 6-2). This alternative would also require approximately 0.28 acre of right-of-way from a historic property considered eligible by the Matanuska-Susitna Borough (MSB) for the National Register of Historic Places (Refer to Section R. Historic and Archaeological Preservation).

2. Arctic Avenue to Fishhook-Willow Road Segment (MP 42.1 to MP 49)

The terrain is rolling, the area has mixed commercial and residential development. Soils are wind deposited silts over loose coarse sand and gravel.

The proposed action would resurface the existing roadway (Figures 2 and 3-3). A separate 3R project (refer to page 3) scheduled for construction in 1992 would provide an improved two-lane highway with a northbound climbing lane. The paved width of the highway would be 48 feet: three 12-foot lanes with shoulders of 8 feet to the west and 4 feet to the east. No additional right-of-way would be required.

3. Fishhook-Willow Road to Milepost 109 Segment (MP 49 to MP 109)

For the remainder of the project area, the terrain is rolling to mountainous. Roadway gradients in some areas are 6 to 8 percent. Development is considered rural.

Through the Chickaloon area, soils are associated with broad terraces and moraines. Bedrock lies under thick deposits of very gravelly and sandy glacial drift, capped with windblown silt and fine sand loess. The foothills, high ridges, and valleys east of Chickaloon are gravelly soils formed in glacial till or loamy colluvial sediments. For the most part, these soils present limitations for roads and structures.

Between Sutton and Chickaloon, the Matanuska River channel is subject to shifting, requiring placement of riprap to armor adjacent roadway embankments. East of Sutton, the roadway crosses the alluvial fan of Granite Creek (Figure 3-6). Aggradation from high water periods has built up the creek bed elevation and floodwater discharge now exceeds the capacity of the existing bridge, threatening the structure.

Talus type slopes exist along the highway, most notably in the Long Lake and Caribou Creek areas where the existing alignment necessitated road cuts into sidehills. Rock, snow, and mud slides are encountered in these areas, creating safety and maintenance problems.

Upgrading the two-lane roadway to meet current design standards would provide an acceptable LOS for this segment. The total surface width of the facilities would be 40 feet: two 12-foot lanes and two 8-foot shoulders. Where needed, a 12-foot climbing lane with a 4-foot outer shoulder would be provided (Figures 2, 3-4 through 3-12).

According to the conceptual design, the proposed action between MP 49 and MP 109 would relocate 16 single family residences and 5 business properties (Figures 6-4 through 6-7).

The following areas required alignment shifts due to prohibitive terrain conditions:

a. **Moose Creek Hill Alternatives (MP 54)**

The existing road follows the steep bluffs along the Matanuska River and the Tsadaka Canyon, through which flows Moose Creek. Sharp horizontal curves of 11, 14, and 19 degrees, and grades exceeding 7 percent exist in this area. A road cut into the gravel bluff on the west side of the canyon has caused erosion with resultant maintenance problems. Jersey barriers are used along the shoulder to contain loose gravel and rock.

Independent of the proposed project is the State funded improvement between MP 54 and 56 to address existing road conditions. This project is under construction and will add 5-foot shoulders and a southbound climbing lane on Moose Creek Hill and construct turn lanes at the Moose Creek Wayside and the proposed Wishbone Hill Mine

access road. However, because of the limited project scope, the steep grades and sharp horizontal curves would remain.

Alternative 1 would upgrade the existing roadway. Wetlands would not be impacted. However, this would not improve the alignment or reduce the grades. The Moose Creek State Recreation Site entrance is located in an area of limited sight distance where through traffic encounter slower vehicles accessing this site. This alternative is not viable because acceptable geometrics cannot be obtained with the existing alignment.

Alternative 2 would involve an approximate ten mile realignment through presently undisturbed areas from Moose Creek to King River. Maintenance of the existing road for local service would still be needed, problems of the existing alignment would not be eliminated. The projected traffic does not require two roadways for an acceptable LOS. Based on the above considerations, this alternative was rejected.

Alternative 3, the preferred, would replace the existing Moose Creek Hill alignment with a tangent having a grade of 5 percent (Figure 3-4). Climbing lanes would be provided. The proposed straight roadway section would leave the existing highway at an acceptable location off a west bluff bench and cross the valley, bisecting the Moose Townsite. The designated Moose Townsite Park Reserve would be bypassed. A new bridge would be constructed across Moose Creek, not requiring the placement of piers within the stream bed. No fill or dredging activities would occur within Moose Creek. Approximately 0.01 acre of Palustrine wetlands would be impacted. Proposed right-of-way acquisition could impact 2 residences.

With this action, through traffic would be moved away from the Moose Creek State Recreation Site, thus reducing noise levels at the park. A portion of the existing roadway would be maintained for campground access. For the remainder of the segment, the existing road would be abandoned. This action would minimize erosion problems and improve sight distance and roadway geometrics.

b. Ida Lake Alternatives (MP 72)

Terrain is rolling through this area, steep slopes consistently rise above and fall below the existing road grade. The roadway alignment contains sharp horizontal and vertical curves, limiting sight distance and highway speeds. Ida Lake is adjacent to the roadway on the north. A number of driveways access the highway since much

of the area is residential in development. On the east side of Ida Lake, the Fish Lake Road intersects the Glenn Highway.

Alternative 1 would upgrade the existing roadway. Wetlands would not be impacted. However, changes in roadway gradients would be required to improve sight distances. Grades of some existing driveways would be increased to match the improved roadway elevations, creating access difficulties for homeowners especially during the winter. This alternative was eliminated from further consideration for these reasons.

Alternative 2, the preferred, is an approximate one mile realignment (Figure 3-7) which shifts for the most part south of the existing highway. This action would reduce curvature and increase sight distance. Grades would not exceed 4 percent and climbing lanes would be provided.

The existing roadway would become a frontage road. Higher speed through traffic would be removed from the residential development. Opportunity for vehicular passing would be created with the straight roadway segment and climbing lanes. The Fish Lake Road intersection would be improved. Approximately 1.81 acres of Palustrine wetlands would be involved with this action.

c. Chickaloon River and Hill Alternatives (MP 77)

The existing roadway alignment follows along the Matanuska River for approximately one half mile at the toe of a steep bluff before reaching the Chickaloon River Canyon. Road cuts into the bluff have created an erosion problem with gravel and rock slides which require continued maintenance. In this vicinity, the Matanuska River floodplain abuts the roadway and the river is eroding the embankment. Riprap to arrest the erosion is being provided with the Glenn Highway Erosion Control project.

Through Chickaloon proper, the roadway is a straight segment and accessed by numerous private driveways. Safety is a concern as local traffic must merge with highway traffic. Higher speed traffic frequently utilize this tangent within the community for vehicular passing opportunities. The Chickaloon Branch Road intersection is hidden from northbound traffic by the high bluff, skirted by a 10-degree curve. Limited passing sight distance occurs at this site and eastward up

the Chickaloon Hill where curvatures are sharp and grades exceed 7 percent. Traffic congestion and reduced travel speeds are typical through this section.

Alternative 1 would upgrade the existing alignment while remaining within the current right-of-way. A large portion of the bluff at the Chickaloon Branch Road would be excavated to flatten the curve and improve intersection sight distance. Higher speed traffic would continue through the community proper, merging with local traffic. However, throughout the remainder of the segment, limited passing sight distance would not be eliminated, nor would the problems associated with the steep gradients of the Chickaloon Hill. These combined factors have eliminated this alternative.

Alternative 2 is a three and three quarters-mile realignment (Figure 3-8) which would leave the existing highway 4,000 feet before the Chickaloon Branch Road intersection. A proposed bridge structure, about 350 feet in length and 100 feet in height, would cross over the Chickaloon Branch Road and the Chickaloon River, climbing to a saddle approximately 1,000 feet upstream of the existing Chickaloon River Bridge.

The realignment would rejoin the existing Glenn Highway around MP 78.5, beyond the summit of Chickaloon Hill, avoiding the edge of the steep eroding bluff. Grades up the Chickaloon Hill would be flattened to about 5 percent and a northbound climbing lane provided, reducing traffic congestion. Chickaloon Branch Road access would be maintained for local traffic. Through traffic would be removed from the Chickaloon Branch Road intersection, but would continue through the community proper. Problems with local traffic merging with higher speed traffic would remain.

This site is included within the Glenn Highway Erosion Control, MP 61-78 Project. There would not be any placement of bridge piers, fill, or dredging activities within Chickaloon River. Based on the above considerations, this alternative was eliminated.

Alternative 3, the preferred, is a realignment of approximately four and a quarter miles (Figure 3-8). This action would leave the existing roadway north of the King Mountain Recreation Site and cross behind the community proper, joining the proposed alignment of Alternative 2 on the ridge west of the Chickaloon River Canyon.

Benefits of the alternative would be similar to those discussed with Alternative 2. In addition, through traffic would be removed from the community proper, thus enhancing safety conditions, and the highway would be shifted away from the Matanuska River floodplain. According to conceptual design, one residence would be relocated. This alternative would impact 1.61 acres of Palustrine wetlands.

d. Long Lake Hill Alternatives (MP 85)

The existing alignment traverses the 480-acre Long Lake State Recreation Site (SRS) (Figures 10-1 and 10-2). A 10-acre State Wayside development, which encroaches within the existing right-of-way, and some private inholdings exist on the west side of Long Lake. The lake is located at the toe of the sidehill.

Mountainous terrain prevails through this segment. The existing alignment is cut into a steep sidehill and climbs for a considerable distance, ascending to the highest elevations within the Long Lake SRS. The highway separates Long Lake and the large cliff to the north, the two primary natural features of the park, creating a visual scenic detraction. The steep terrain and talus slopes restrict development of pulloffs along the cliff and limit scenic viewing opportunities for travelers.

Adjacent slopes are 1:1 and 1.5:1 and drop several hundred feet to and from the roadway. The total roadway width is approximately 22 feet. Adequate shoulders are lacking and grades exceed 7 percent. Heavy trucks operate at crawl speeds to overcome the gradients while climbing this hill, causing interference with other traffic.

The 10-year accident history for years 1979 through 1989 was checked for the Long Lake hill, MP 85 through 87. Altogether, there were 20 recorded accidents involving 25 vehicles, with 1 fatality and 5 injuries. Five accidents were collisions with another vehicle, 5 were overturns, and 10 were collisions with fixed objects, (i.e., embankments, ditches, rocks).

In some parts of the hill, Jersey barriers are used to minimize rockfall debris from reaching the roadway. Talus slopes typical in this segment are considered to comprise some of the most hazardous rock slide zones of the entire project corridor. Ongoing maintenance is required to clear rock and large boulders from the road surface. Winter conditions compound these problems. Snow removal and rockfall maintenance operations hinder vehicular flow in a restricted traffic area.

The Long Lake SRS is considered a Section 4(f)/6(f) property. Section 4(f) of the Department of Transportation (DOT) Act of 1966 applies to the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance. When a project uses land from a Section 4(f) property, an evaluation must be prepared to demonstrate that there is no feasible and prudent alternative to the use of the property.

Section 6(f) of the Land and Water Conservation Funds (L&WCF) Act states that no property acquired or developed with L&WCF assistance shall be converted to other than public outdoor recreation use unless recreation property of equivalent value is substituted. (Refer to the Section 4(f)/6(f) Evaluation.)

The Department evaluated four alternatives to avoid and/or minimize impacts to the Section 4(f) property. Two actions involved the existing highway alignment within the park, the No-Build Alternative and Alternative 1. Two realignments were also considered. Alternative 2 traverses parkland south of Long Lake and Alternative 3 avoids parkland by passing around its southern boundaries. As the project now stands, the preferred action is Alternative 2.

The **No-Build Alternative** would not involve the use of Section 4(f) property. However, according to the Division of Park and Outdoor Recreation (DPOR), the existing road detracts from the quality of the recreational experience of the Long Lake SRS, especially on users of the lake. With this alternative there would not be any highway improvements and the issue of safety would remain. The highway and through traffic would continue to be adjacent to the existing public use area and the lake, an area which lacks natural screening buffers. This alternative does not meet the purpose and need for the project.

Alternative 1 would upgrade the existing alignment between MP 85 and MP 92 but not alleviate the severe erosion conditions nor the excessive grades of the Long Lake hill. This action would not require additional right-of-way from the park, although, as previously described, reconstruction of the existing highway alignment would affect the quality of the recreational experience at the Long Lake SRS.

There are two conceptual designs for this alternative along the 8,500-foot long hill segment beginning at the Long Lake SRS wayside. Both designs involve sheet pile retaining walls which would be driven into the slope to minimize excavation.

Alternative 1A retaining walls would add an estimated $39.6 million to the overall construction cost. **For the entire** highway segment, the total cost would be approximately **$61.6 million.**

This design **would require two retaining** walls (Appendix D). A downslope retaining wall would **support the proposed** 48-foot wide surface roadway embankment which would include **a** 12-foot **climbing lane.** The wall would extend about 4 feet above the roadway **surface, roughly 15 feet above** the slope. Concrete jersey barriers, curved to deflect ~~the wheels of any impacting~~ vehicles, would be placed along the entire wall length.

Another **retaining** wall would be required to support the slope on the uphill side and placed approximately 16 feet from the edge of the highway shoulder. The existing slope would be cut back this distance to provide a ditch to function as a safety clear zone, facilitate snow storage, and contain errant rocks. The uphill wall would extend about 20 feet above the highway.

Alternative 1B retaining wall would add an estimated $27.8 million to the overall construction cost. For the entire highway segment, the total cost would be approximately $49.8 million.

This design would require the downslope retaining wall to contain the 48-foot wide roadway surface embankment (Appendix D). Concrete jersey barriers would be placed along the entire wall length. On the uphill side, a 20-foot ditch would contain rock slides and provide for snow storage.

With either design, safety would still be a problem due to rockfall slides onto the roadway. Steep grades would not be reduced. High construction and continued slope and ditch maintenance costs of such a facility are prohibitive. Expected rock slides could affect the long term stability of the roadway. In addition, the presence of these retaining walls could affect scenic viewing from the roadway and present an additional visual scenic intrusion along the cliff. Based on the above, Alternative 1 was eliminated from further consideration.

Alternative 2, the preferred, is a 6.3 mile realignment which would involve Section 4(f) property. This action initially crosses a series of saddles and benches immediately south of Long lake and within the Long Lake SRS (Figures 3-9 and 3-10). The proposed road would leave the existing roadway southwest of the park

wayside (MP 85). Access to this recreation development and private in-holdings adjacent to the south would be provided at this vicinity. Within the park, approximately 43 acres of right-of-way would be required, a portion of which contains an existing utility line and service road. About 66 acres of abandoned highway roadbed and right-of-way would be relinquished to DPOR.

Near the southeast corner of the park, the proposed realignment would gradually descend and traverse a valley between two steep ridges which terminates at the Purinton Creek Canyon. A series of palustrine wetlands are encountered within this valley and a bridge is proposed to span the canyon. Eastward, the realignment would continue to climb, merging with the existing roadway near the Cascade Maintenance Station at MP 92 (Figures 3-9 and 3-10).

Since the realignment does not traverse steep sidehills retaining walls would not be needed. Grades would be reduced substantially from the existing and not exceed 3.5 percent within the Long Lake SRS or 4.5 percent for the remainder of the alternative. Overall, safety conditions would be improved. Access to Weiner Lake (which is stocked by Alaska Department of Fish and Game) and residential properties would be allowed from a portion of the existing road east of Long Lake hill. The amount of roadway to be maintained for access would be determined during design.

The southern shift of the proposed highway would reduce existing noise levels at the wayside development and remove through traffic from the wayside development [See Section 4(f)]. It would provide opportunities for future park development. This alternative is supported by the DPOR. Approximately 17.30 acres of palustrine wetlands would be impacted, of which 1.25 acres are within the Long Lake SRS. The estimated total cost for this entire roadway segment is approximately $22 million.

Alternative 3 would be a realignment through presently undisturbed areas south of the existing Long Lake SRS. There would not be any Section 4(f) property involvement with this action, providing the corridor was established prior to park expansion. The terrain is mountainous and abrupt. Excessive earthwork would be required to negotiate the high ridges and deep ravines. A cost effective and feasible roadway corridor to the south of the Long Lake SRS could not be defined. Based upon these factors, this alternative has been eliminated from further consideration.

e. Hicks Creek Area Alternatives (MP 96)

Vertical bluffs and severe terrain restrict the highway corridor. The existing alignment follows the bluff west of Hicks Creek and the canyon walls of Pinochle Creek, which flows east to west, parallel to the roadway on the north side. The alignment has extreme curvatures and gradients which limit sight distances and reduce traffic speeds. A lodge, located at Hicks Creek, is adjacent to the existing road.

Several alignments were investigated to attain the desired geometrics while avoiding the lodge. However, cost effective construction requires relocation of the lodge. This action (Figure 3-11) would improve roadway conditions by softening curves, requiring cuts into the rock knob southeast of the existing bridge. On the realignment, a replacement bridge structure would be constructed over Hicks Creek. Pinochle Creek crossings would consist of culverted fill embankments. Approximately 0.86 acre of wetlands would be involved. Of this total, 0.72 acre would be Riverine (Matanuska River) and 0.14 acre would be Palustrine.

f. Pinochle Hill Alternatives (MP 97)

The existing roadway is cut into the face of the steep rock bluff of Pinochle Hill. This area has gradients of 6 to 8 percent and curvatures to 26 degrees, the roadway containing some of the steepest grades and sharpest curves within the state. Desirable sight distances are not available throughout this winding segment. Much of the adjacent area was homesteaded and is now residential in development.

Alternative 1 would upgrade the existing facility to desirable geometrics but would require large quantities of earthwork (Figure 3-11). Modification of the existing alignment would be required to improve the roadway conditions, reducing gradients and curves. Through traffic would continue through the residential area. One structure located at approximately MP 97 would be within the proposed right-of-way. Approximately 0.20 acre of wetlands would be involved. Based on these considerations, this alternative was eliminated.

Alternative 2, the preferred, is a 2-mile realignment south of the hill and the focus of residential development (Figure 3-11). This proposed alignment would be constructed on a bench along the Matanuska River, departing from MP 97 and rejoining the existing highway at the summit near Hundred Mile Lake (MP 99).

Grades of this facility would be about 6 percent, requiring a northbound climbing lane. Through traffic would be removed from the residential properties, with local access provided by retaining a portion of the existing roadway. One residence would be relocated with this alternative. Approximately 0.71 acre of Palustrine wetlands would be involved.

g. Caribou Creek Crossing Alternatives (MP 106)

Rugged, mountainous terrain is indicative of the Caribou Creek Canyon. Road conditions and safety concerns are similar to those described for the Long Lake Hill area. Existing grades are in excess of 7 percent. Overall, this roadway segment has a low speed alignment; it follows canyon walls, crossing the creek with a low speed bridge on a curve. Geometrics are consistent with a 35 mph design speed. The canyon has talus type slopes and a hazardous slide zone exists along the east canyon wall. Adjacent slopes drop several hundred feet to and from the roadway.

Alternative 1 would upgrade the existing roadway necessitating cuts exceeding 200 feet in height along both sides of the canyon. This alternative would not reduce the grades, improve the alignment, or avoid the avalanche area. Safety would still be a problem. Therefore, this alternative is not considered further.

Alternative 2, the preferred, is a realignment across the Caribou Creek Canyon having a 5 to 6 percent grade (Figure 3-12). This proposed bridge structure would accommodate a 50 mph design speed at a cost of $23.9 million and be about 400 feet in height. The 50 mph design is recommended because it is consistent with mountainous terrain design standards. Approximately 0.15 acre of Riverine wetlands would be involved with this alternative.

Alternative 3, would be a straight alignment (Figure 3-12), designed for 60 mph speeds, crossing the mouth of Caribou Creek. This major structure would be 2,200 feet in length and 400 feet in height. Estimated cost would be about $27.7 million. Approximately 72,600 cy of fill would be placed in roughly 5.10 acres of Palustrine and Riverine wetlands. This action would impact a Section 4(f) property, the Caribou Creek Recreational Mining Area, enacted in 1990 by the State Legislature. Based on the cost of construction and the presence of a feasible and prudent alternative not affecting a Section 4(f) property, this alternative was eliminated from further consideration.

III. AFFECTED ENVIRONMENT

The project area follows the Matanuska River Valley in southcentral Alaska. The Matanuska River is a major glacial-fed river draining into the Knik Arm of Cook Inlet. Along the north perimeter of the valley are the Talkeetna Mountains, bordering to the south are the Chugach Mountains. Steep mountainous terrain, river-cut slopes, and glacial U-shaped valleys occur along the route. Numerous glacial features such as moraine traces, till deposits, glaciolacustrine, and glaciofluvial deposits are evident. A large alluvial fan deposit has accumulated where the Matanuska and Knik Rivers drain into the Knik Arm.

The potential for seismic activity in this region is high. Along the north perimeter of the Matanuska Valley, from west to east, is the active Castle Mountain fault. Because this is an area with an active fault there is potential for earthquake induced ground creep, landslides, avalanches, and ground rupture.

The Matanuska River Valley is located in a transitional zone between coastal and interior climates. The average summer temperatures range from 40 to 69 degrees Fahrenheit with winter temperatures averaging between minus 3 to plus 39 degrees Fahrenheit. Estimated annual precipitation is 14 inches with 69 inches of snowfall. Late summer and early autumn are the periods of the heaviest rainfall. The Talkeetna and Chugach Mountains and the Matanuska River influence climate and create conditions which produce precipitation on the windward slopes.

Vegetation along the project area is categorized into two land ecosystems, tundra and coniferous. Tundra includes both moist and alpine tundra plants. Most of these treeless areas are muskegs and grassy openings on mountain foot slopes. Coniferous includes upland spruce-hardwood forest and lowland spruce-hardwood forest.

This portion of the Glenn Highway is within the Matanuska-Susitna Borough. Statistics for 1987 provided by ISER list the Matanuska-Susitna Borough population at 39,700. Four communities along the highway are in the vicinity of the project: the city of Palmer, and the unincorporated settlements of Sutton, Chickaloon, and Matanuska Glacier. Estimated community populations provided by the Alaska Department of Fish and Game (ADF&G) and the Department of Community and Regional Affairs (DCRA) are included in Table 1.

Table 1
Area Populations

COMMUNITY	POPULATION	YEAR
Palmer	2,988	1989
Sutton	279	1989
Chickaloon	136	1983
Matanuska Glacier	179	1983

The State's oil related industry with its subsequent revenues to the municipalities influenced high growth rates in the Borough. The State Department of Labor determined that 89 percent of these population gains were the result of in-migration; State residents moved into the Borough to take advantage of the lower cost of housing compared to Anchorage. The total labor force in the Borough was 17,572 in July of 1986 (ADOT&PF, 1987). According to ISER, 30.9 percent of the Borough's workforce was employed outside the Borough in 1980, 37.8 percent in 1985, and in 1988, 37.9 percent.

The economic base of the region has changed historically. Within the project area there exists a major coal deposit in the Matanuska Coal Fields which has been mined since the early 1900s. Discoveries of local coal resources led to the development of several active mines, including those at Wishbone Hill, Eska Creek, and Chickaloon River. The Alaska Railroad was constructed to Chickaloon by 1916 because of the U.S. Navy's interest to acquire coal. The track was removed in the 1940s and 1960s after the mines were closed. Although coal mining is not currently active, mines may be developed at Wishbone Hill and Castle Mountain.

During the 1930s, the economic base of the region shifted to agriculture. Two hundred families from Midwestern states arrived for settlement in 1935 through the Federal Matanuska Valley Colony Program. Palmer was established during this period as the agricultural center for the valley.

Beginning in the 1950s, when Anchorage became a major distribution center, the Matanuska-Susitna Borough became an alternate residence for Anchorage employees. Palmer and Wasilla economies expanded to include support industries such as construction, retail trade, and services; Borough economy became integrally linked to the economy of Anchorage.

Rural areas of the Borough are removed from major concentrations of employment. Highway related services, mining, hunting, and trapping, and other recreational activities, are major income producing activities. A few commercial lodges provide employment.

The Matanuska River Valley is an area with abundant natural resources. This ample resource base supports an array of recreation and tourism activities which are of significant economic importance to the Matanuska-Susitna Borough and the regional economy. Several State Parks exist in the project area along the Glenn Highway with camping and picnicking facilities.

Located along the Glenn Highway from MP 56.7 to MP 80.8, in the foothills of the Talkeetna Mountains, is the Matanuska Valley Moose Range. The Moose Range was organized in 1984 in response to the increasing need to both utilize and protect area resources. Local moose populations and habitat, along with other wildlife, are maintained and enhanced while encouraging public multiple use of the area. The management plan policies apply to State held land, approximately 76 percent (101,000 acres) of the total Range area.

The fish and wildlife resources are among the most diverse in the state. The Matanuska Valley area provides habitat for about 134 species of birds, 14 species of freshwater and anadromous fish, and 28 species of mammals (DNR, 1986). Hunting of moose, bear, Dall sheep, small game, and birds is popular in this area especially during Fall. Sport fishing is predominant in the area and occurs not only in the Matanuska River but in lakes and many anadromous fish streams as well. Fish harvested are Dolly Varden, rainbow trout, arctic grayling, whitefish, and several species of salmon.

Opportunities for hiking, horseback riding, cross-country skiing, snowmachining, and driving off-road vehicles are abundant. The extensive trails of the historic Chickaloon-Knik-Nelchina Trail System and several old mining roads are utilized for these recreational purposes. River sports such as whitewater kayaking and rafting are popular on the Chickaloon and Matanuska Rivers.

IV. ENVIRONMENTAL CONSEQUENCES

A. Land Use Impacts

Most of the Borough's 22,000 square miles are patented to the State. The Matanuska-Susitna Borough received 355,210 acres through the Municipal Land Entitlement Act of 1978. Small parcels of Borough land and private land holdings are located along the Glenn and Parks Highways. The Alaska Native Claims Settlement Act (ANCSA) provided for a land settlement to the Native villages of Chickaloon and Eklutna, and for the regional Native for-profit Cook Inlet Region, Incorporation (CIRI). Within the Borough, CIRI is entitled to 211,287 surface and 316,282 subsurface acres. Some of these selected lands are in or near the project area.

Several State Parks exist in the project area and are located at: Kepler-Bradley Lakes, Moose Creek, near King Mountain, Bonnie Lake, Long Lake, and near Matanuska Glacier (Figure 4). At Caribou Creek, there is a State Recreational Mining Area, created through State Legislation in 1990. An extensive trail network used for recreation and other utilitarian purposes traverses the Borough region, comprising hundreds of miles. Trails identified as historic include the Chickaloon River Trail, the Chickaloon-Knik-Nelchina Trail System, the Boulder Creek Trail, and the Old 98 Trail (Figure 4).

Approximately 132,500 acres along the Glenn Highway are within the Matanuska-Susitna Moose Range (Figure 4). The Department of Natural Resources (DNR) and ADF&G prepared a twenty year comprehensive management plan for the State-held Range lands in 1986. The management intent of the Range is to enhance moose habitat and other fish and wildlife habitat, while providing for outdoor recreation, timber harvest, grazing, and mineral, oil and gas extraction, and surface transportation. Coal mining in the Wishbone Hill and Castle Mountain localities is already proposed. Planning priorities also include preservation of area scenic values and the continuation of dispersed outdoor recreational activities. Guidelines within the management plan are established for realignment and/or reconstruction of the Glenn Highway.

The Matanuska-Susitna Borough (MSB) does not have a comprehensive Borough land use plan. However, a MSB Transportation Plan was approved in 1984 and a Coastal Management Plan in 1987. The MSB is developing comprehensive plans for both the

Palmer Core and Chickaloon areas. Land use within the Borough is divided between settlement areas along the highway systems and remote areas. Uses in settlement areas include residential subdivision, local businesses, commercial and industrial services, recreational, timber processing, tourism, and agriculture. In the remote areas, typical uses include recreation, hunting, fishing, mining, commercial trapping, and bush settlement.

Heavy demand is placed on this region for providing public hunting and fishing opportunities. Although it appears that the heaviest user group represents State residents from outside the Borough, but communities of Chickaloon and Matanuska Glacier are dependent on resource harvesting activities. This was emphasized by members of the Chickaloon/Moose Creek Native Council (Sept. 5, 1989). Harvest areas used by both communities are shown in Figures 5-1 and 5-2.

The proposed highway improvements appear consistent with primary management goals for land use in the project area. Substantial development is not likely to occur as a result of this project. Recreational and tourism opportunities and use of the project area may increase because of the improved roadway conditions. Opportunities for wildlife and scenic viewing from the roadway would be enhanced. The improved roadway would provide better access to hunting, fishing, and gathering/foraging localities.

The Matanuska Moose Range Management Plan addresses the reconstruction and proposed realignments of the Glenn Highway and lists trails, roads, and potential scenic turnouts and pullouts within the Range. The Department would maintain public access to existing roads and trails. An extensive list of trails which are accessed off the Glenn Highway is included within the Matanuska-Susitna Borough Comprehensive Development Plan, Trails Inventory (Appendix F).

Locations for wayside and turnout sites were coordinated with MSB, the MSB Parks and Recreation Board Wayside Committee, DPOR, and ADF&G. Where feasible and desirable, trailheads and scenic turnouts and pullouts would be provided throughout the project. A viewing area adjacent to the junction of Glenn Highway and Fishhook-Willow Road is currently under construction with the Glenn Highway, MP 35 to MP 54 3R project. Pulloff recommendations include near Granite Creek (MP 63), east of King's River (MP 67.5), the Weiner Lake area (MP 87.5), and near Caribou Creek (MP 107.5). As agreed with local agencies, the Department will continue coordination to incorporate these features where possible during the design phase.

B. Farmland Impacts

There are no prime or unique agricultural lands, as defined in the Farmland Protection Policy Act, located within the project area. (Debra A. Swanson, U.S. Department of Agriculture, Soil Conservation Service, August 1, 1989)

C. Social

Matanuska-Susitna Borough population has had substantial gains over the 1960 total of 5,188 residents (Table 2). From 1970 to 1985, the Matanuska-Susitna Borough grew two to three times faster than Anchorage. The reduction seen in 1987 population statistics was attributed to a statewide recession. Year 2015 mid-range population estimate for the Borough is 72,000 (ISER, 1989). Over 80 percent of the Borough population currently lives in the Palmer-Wasilla core area.

According to the 1980 census, 94.5 percent of the surrounding communities inhabitants are white, while 5.5 percent are minorities. Chickaloon Traditional Village Council records in 1987 indicate approximately 160 Native members.

Table 2
Matanuska-Susitna Borough Population

YEAR	POPULATION	INCREASE /DECREASE
1960	5,188	
1970	6,509	+25%
1980	17,816	+174%
1985	41,093	+131%
1987	39,684	-3%

(Population statistics from DCRA and ISER)

Housing and settlement types vary according to distance from Anchorage. Around the suburban Palmer region, single home and multi-unit residential lots are typical. Farther north is designated rural with single home residential lots and lodges (Mat-Su, 1985). Residential and commercial activities in the rural region tend to cluster around recreation and tourism areas.

Since this project would utilize the existing roadway whenever possible, the proposed project would not create any new division of neighborhoods or change land use patterns. There would be a need for additional right-of-way to accommodate the proposed facility in some areas. This would necessitate relocation of residential and business properties (refer to Section D, Relocation). The proposed project relocations would not adversely affect any special class of people (i.e., minority, ethnic, handicapped, elderly) more than others.

All Build Alternatives would improve the existing highway thus increasing capacity and enhancing traffic safety. During construction, highway users could experience minor delays and inconvenience. Noise levels from construction would be temporary.

In the Palmer area (MP 35-42.1), the Build Alternative would require some changes in travel patterns. To improve safety conditions and traffic flow, the preferred alternative is a four-lane facility with a depressed median, having partial control of access. Two additional travel lanes would reduce traffic congestion. The median would restrict left-turn movement onto the highway for driveways and some streets. Intersections would be provided for major connecting arterials and other access points where traffic is substantial. Frontage roads would be constructed to separate local traffic from the higher speed through traffic (Figures 3-2 and 3-3). Disadvantages such as readjustment to new traffic patterns and increased travel time would be minimal.

For the most part, public and community facilities are located away from the Glenn Highway in the Palmer vicinity. The exception is the Stephen Fire Hall located at approximately MP 51. This facility's access would not be affected.

Strip development in the rural communities is more pronounced than in the suburban setting of Palmer. Local traffic must merge with through traffic to access community buildings, residences, and business establishments. Passing sight distance is limited in some of these areas. The provision of climbing lanes and a smoother profile throughout the project corridor would provide increased opportunities to pass slower traffic. Improved pullouts would provide areas for emergency stops and scenic viewing.

D. Relocations

A Conceptual Stage Relocation Study was conducted by the Department based on the preliminary right-of-way. Affected residential dwellings and businesses were determined during field inspection (Table 3). Altogether, 30 single family residences and 16 business properties may be impacted with this project (Figure 6).

For the purposes of this document, all affected properties are listed as relocations. These include structures within the designated right-of-way, as determined by preliminary design, and those having the potential loss of access rights. In several cases, relocation may be provided by moving existing structures back on the lots. Other properties may receive alternate access. The final determination of all impacts on specific properties would be made during the detailed design phase.

Table 3
Conceptual Stage Relocations

Area	Residences	Businesses
Palmer (MP 35-42.1)	16	12
MP 49-60.5	3	
Sutton (MP 60.5-64.5)	6	1
Chickaloon (MP 76)	1	
Hicks Creek (MP 96)	1	
MP 97	1	
Matanuska Glacier (MP 101.5-105)	3	2
Total	30	17

Displacement would not produce long-term effects; sufficient vacant land for residential and commercial development is available throughout the project. Vacant housing and business structures are estimated to be greater than 20 percent in the Borough core area, resulting from the 1986-1988 recession (ISER, 1989). Approximately 27 percent of the employed population within the Matanuska-Susitna Borough commuted to Anchorage in 1988. For this reason, distance to jobs and other destinations may not be a critical factor for relocation. It is recommended that one full building season be allowed for relocation on this project.

An inventory of about 150 repossessed homes exists in the Palmer/Wasilla area. Most are 800 to 1,200 square foot size ranch style houses. As most structures are

movable, they could be considered for rural areas where replacement housing is limited. Larger homes may require new construction if the occupants do not want to relocate to urban areas.

Business dislocation and economic effects on communities and neighborhoods are always areas of concern. For this project, relocation impacts should be minor as some buildings can be moved back on the property. Replacement commercial property is available along the Glenn Highway for other displaced businesses.

According to the Conceptual Stage Relocation Study, there would not be adverse impacts on any particular social group from relocation. Displaced occupants of the single family residences would be primarily middle income families. The proposed project relocations would not adversely affect any special class of people more than others.

The final disposition of all relocations will be done in full conformance with applicable State and federal laws (A.S. 34.60, Uniform Relocation Assistance and Real Properties Acquisition Practices Act of 1971, and Public Law 91-646). Special relocation advisory services will not be required for this project because there were not any unusual conditions identified. Based on this Conceptual Stage Relocation Study and previous studies, surveys and investigations, the Department does hereby assure that there will be adequate replacement housing.

E. Economic

Matanuska-Susitna Borough trends for suburbanization and commercial development in the 1970's and early 1980's have subsided. A statewide recession during 1986-1988 left an excess capacity of retail building space, supply of service and retail personnel, and housing.

The total labor force in the Borough was 17,572 in July of 1986 (ADOT&PF, 1987), the annual growth rate is 3.2 percent. For the most part, Borough growth is dependent on employment opportunities in Anchorage and elsewhere in the state. According to ISER, approximately 37.9 percent of the Borough's workforce was employed outside the Borough in 1987 and is projected to increase to 48 percent by 2015. Presently, an estimated ten percent of newly created jobs in Anchorage go to Mat-Su Borough residents.

Visitors from outside Alaska benefited the Palmer and Wasilla economies by spending an estimated 4.3 million dollars, according to an Alaska Division of Tourism report for October 1985 to September 1986. Although no figures are available, it is probable that additional expenditures in the rural areas are substantial. Tourism by Alaska residents is difficult to estimate; these visitors are more likely to make day-trips.

Industrial development in the Borough is concentrated around Wasilla, the vicinity of the Palmer Industrial Park, and gravel sites scattered throughout the Borough. The Borough exports large amounts of gravel and sand to Anchorage over the Alaska Railroad.

Subsurface coal resources of the Matanuska coal field are extensive. Coal potential for the entire Matanuska coal field has been estimated as high as 2.4 billion tons (DOWL, 1982). Beginning in the 1990's, the Japanese company Idemitsu-Kosan hopes to mine coal in the Wishbone Hill area for fifteen years. This venture would provide employment for an estimated 200 individuals and yield approximately 1 million tons of coal per year. Coal mining is also proposed at Castle Mountain, north of Chickaloon, by Hobbs Industries. This 21-year venture is scheduled to begin in late 1991.

Since the Glenn Highway is the primary transportation link between Anchorage, Palmer, Glennallen, Valdez, and Canada by way of the Alaska Highway, this highway is important to the local and regional economies. During construction of the roadway there would be minor delay and inconvenience to highway users. Temporary road closures and detours are expected. As a result, travel times would increase somewhat. Construction contracts would define when traffic can be delayed. Impacts resulting from construction activities are discussed in Section U. of this document.

Overall, economic opportunities may increase because of improved traffic flow and highway capacity for commuters and travelers. The proposed action would not change land use patterns. There would be relocations resulting from construction of the project because of the need for additional right-of-way. However, relocation of displaced businesses and residents should occur within the same local government boundaries. Local employment opportunities would result from the construction activities and local businesses may benefit as well.

Where feasible and desirable, the proposed project would include provisions to improve or relocate existing turnouts for scenic viewing opportunities and provide better access to popular recreational areas (refer to Section A, Land Use). The project would not impact park facilities, with the exception of the Long Lake State Recreation Site (SRS) (refer to the Draft Section 4(f)/6(f) Evaluation for a discussion).

Improved approaches would be provided at the Kepler-Bradley SRS entrance and at the secondary access via Colleen Street. The roadway alignment would be shifted south of the Moose Creek SRS, thus removing through traffic away from the park and reducing noise levels at the facility. At King Mountain SRS and Bonnie Lake SRS, approaches would be improved. The proposed realignment at Long Lake would remove through traffic away from existing park development and reduce noise levels at the lake, providing future development options adjacent to the new roadway. Roadway improvements would be made on the existing highway which traverses the Matanuska Glacier SRS. At the Caribou Creek Recreational Mining Area, the approach would be improved. The proposed realignment was included within the legislative act which created the public recreation area.

F. Pedestrian and Bicycle Facilities

The Matanuska-Susitna Borough (MSB) does not have a comprehensive trails development plan. However, in 1984, MSB compiled a Trails Inventory, which was updated in 1987. Within this document, separate paths are recommended to provide for safety of pedestrians and bicyclists in Palmer school vicinities. No school facilities exist within the immediate project area: Palmer High School is reached by Hemmer Road, 3/4 mile west of the Glenn Highway; Palmer Central Junior High and Sherrod Elementary Schools are located along Chugach and Gulkana Roads respectively, east of South Colony Way. There are no requirements for dedication of pedestrian or non-vehicular access within the MSB 1987 Comprehensive Development Plan for Public Facilities.

With this project, the existing pedestrian underpass at Auklet Avenue in Palmer would remain. A dirt path exists in the right-of-way in the Palmer area, a paved pathway exists in Sutton. A wider shoulder would be provided by this project. This would provide pedestrian and bicyclist area adjacent to the travel lanes. A proposed pathway in Palmer between Wasilla-Fishhook Road and West Arctic Avenue is currently included in the MSB Capital Improvement Plan (CIP) priority list.

G. Air Quality Impacts

The proposed project is located within an attainment area for air quality. The State Implementation Plan (SIP) does not contain any transportation control measures for the project corridor, therefore, the project is not subject to conformity review as outlined in 23 CFR 770. Some temporary impacts on air quality are expected to occur during construction activities and are discussed in the Construction Impact Section of this document.

H. Noise Impacts

The project involves both urban and rural areas. There are no ordinances or land use controls which address noise generated by vehicles using the highway or prevent mixed development of noise sensitive and non-sensitive locations in the project area. Residential zoning exists north of the Old Glenn Highway/West Caribou Avenue, mixed commercial and residential to the south.

A traffic noise analysis was completed for the proposed project using the FHWA Highway Traffic Noise Prediction Nomograph (Hard Site) Model. Four noise receiver locations were evaluated for Palmer and two for Sutton (Figure 7). These analyses are based on existing and design year peak hour highway traffic and utilize average traffic speed, estimated number of vehicles according to vehicle type, and receiver distance from the highway centerline. The nomograph does not account for reflections from buildings or surface terrain variations. Traffic data used for this analysis are found in Appendix B. Analyses results are shown in Tables 4 and 5.

Table 4
Noise Analysis
Palmer

Receiver	Existing dBA (Leq)	Build dBA (Leq)	No Build dBA (Leq)
1	63.5	68.0	66.5
2	65.5	71.5	71.5
3	68.0	70.5	70.5
4	67.0	70.0	70.0

Receiver 1, the historic Matanuska Colony Patten Farm near MP 40, was identified by the State Historical Preservation Office (SHPO) as being potentially affected by traffic noise resulting from the proposed project. This site is approximately 280 feet west of the existing centerline of the Glenn Highway. The terrain in this area is relatively level.

With the proposed four-lane facility, the Patten Farm structures would be roughly 220 feet from the centerline of the southbound lanes and 120 feet from the proposed frontage road. A stand of trees exists to the south of the farm building complex on the southeast corner of the property. A portion of these trees may be removed as a result of the proposed action. The study indicates that noise levels in design year 2015 would increase at this site by 3.0 to 4.5 dBA, without or with the project. Generally, a 3 dBA change in noise levels is barely perceivable to the human ear in a field situation.

Receiver 2 is located at the corner of West Fern Avenue and Rhonda Way, within the Golden Glenn Estates, 170 feet west from the existing highway centerline and 90 feet from the proposed four-lane facility. This subdivision is located on a hillside overlooking the highway. The hillside is presently forested. With the proposed action, cuts would be made into the hillslope and trees removed to accommodate the two southbound lanes. Based on the analysis, the predicted increase in noise levels would be about 6 dBA in the design year.

Based on the analysis, the predicted increase in noise levels at Receiver 2 would be about 6 dBA in the design year, causing a noise impact. The Department considers an increase of 10 or 15 dBA over the existing noise levels as being substantial.

The two remaining Palmer sites were selected from the north Palmer area. In this section of rolling terrain, the existing highway would be repaved and there would be no change in alignment. Receiver 3, the Seventh Day Adventist Church, is on West Beaver Avenue, approximately 90 feet downhill from the existing centerline of the Glenn Highway. Receiver 4 is the historic Puhl-Bacon Farmhouse, a Matanuska Colony structure, 100 feet west of the existing roadway centerline near Scott Road. Distances between the receivers and the centerline would not change with the project. At both sites, noise levels increases would be minimal, ranging from 2.5 to 3 dBA.

Noise levels in Palmer approach and exceed the FHWA Noise Abatement Criterion of 67 dBA for Land Use Category B, which includes residential development. When FHWA noise abatement criteria are approached or exceeded, a noise impact is said to exist. Future traffic noise levels could increase with the proposed project; additional lanes would provide increased traffic capacity. In some areas, the noise source would be moved closer to receivers. However, future noise levels are expected to intensify regardless of the selected project alternative, including the No-Build, due to the anticipated increase of traffic levels.

Abatement includes changes in horizontal and vertical alignment, reduced speed or other modes of traffic control, and construction of earthen berms and/or noise barriers. No noise abatement measures are likely to be implemented for the proposed project. This recommendation is based on studies conducted to date and existing area conditions: there are no land use controls along the project corridor, and noise barriers would not be cost effective because of the low density residential development. If during the formal design, conditions substantially change, the need for noise abatement measures would be reevaluated.

Two noise receiver locations were evaluated for the rural community of Sutton. The existing alignment would be used for the upgrading of the two lane roadway, therefore, receiver distance from the source would not change for the design year. There are no land use controls or zoning within the rural communities in the project area.

The sites from Sutton were selected randomly. Receiver 5 is located near the intersection of Park Road, approximately 100 feet north from the centerline of the Glenn Highway. Receiver 6 is 130 feet south of the roadway and across from the future site of Sutton's historic park. According to the nomograph, an increase of 1 to 2 dBA would occur, representing nondetectable changes in noise levels.

Table 5
Noise Analysis
Sutton

Receiver	Existing dBA (Leq)	Build dBA (Leq)	No Build dBA (Leq)
5	66.0	68.0	68.0
6	65.0	66.0	66.0

According to the Department of Parks and Outdoor Recreation (DPOR), the existing highway introduces traffic noise on the west end of Long Lake where the Long Lake State Recreation Site wayside is located.

Although highway traffic is not heavy in the Long Lake area and is not expected to increase substantially, commercial trucks comprise 19 percent of the total vehicle volume. Loudness of traffic noise increases with the greater numbers of trucks. Conditions such as the steep grades along the 8,500-foot length of the Long Lake hill cause heavy laboring of motor vehicle engines, or the use of jake brakes to slow descending vehicles. At a distance of 50 feet, trucks typically emit noise levels ranging between 82 and 94 dBA. The park wayside is immediately adjacent to the highway.

With the proposed action, the highway would be moved from the exposed location on the cliff and be located 450 feet south of the existing park facilities. Truck traffic noise at the wayside and on Long Lake would be reduced for three primary reasons: 1) the park facility and the lake would be separated from the highway by a buffer zone; 2) noise would be absorbed in the lower elevation valley corridors by vegetation and no longer be reflected off steep cliff walls onto the lake; and 3) the reduced grades, which would not exceed 3.5 percent through the park, would lessen the need for the heavy laboring of motor vehicle engines or the use of jake brakes. Due to limitations with prediction models, the decrease in noise levels at the wayside cannot be quantified.

Temporary increases in noise could be expected throughout the project during the construction phase. Impacts would be mitigated by scheduling construction activities for hours which would cause the least impact on residences, and noncritical wildlife seasons.

I. Water Quality Impacts

The Matanuska River and its tributaries comprise the primary source of surface water in the project area. This river system is sustained by snow and glacial melt water, the sediment load (silt and glacial flour) is one of the highest in the state. According to the Matanuska-Susitna Borough Coastal Management Plan (1987), the Matanuska River contains high concentrations of sulfate. The U.S. Geological Survey (USGS) Water Resources Division concludes that this is a natural occurrence

and is attributed to large deposits of calcium sulfate and gypsum which exist in the Talkeetna Mountains (Bill Long, USGS). Further investigations are not proposed by the Department because storm water runoff from the proposed roadway to the Matanuska River is expected to be minimal.

Springs occur along the base of the mountains in the Borough and the largest is located near Palmer. Aquifers are located in glacially deposited sand and gravel lenses. The City of Palmer has municipal water, well depths vary 30 to 295 feet. Residents of remote areas tend to rely more on surface water sources or very shallow wells.

A plan to control erosion and sedimentation would be developed prior to construction (refer to Section U, Construction Impacts). However, temporary degradation of water quality may result from construction. No significant or long-term impacts to water quality or potable water sources are expected to result from the proposed project.

J. Permits

The proposed project would require the following Federal and State permits and certification:

1) Department of the Army, Corps of Engineers, Section 404/10 Permit

2) Alaska Department of Environmental Conservation, Section 401 Permit

3) Alaska Department of Fish and Game, Title 16 Permit

4) Alaska Division of Governmental Coordination, Coastal Consistency Certification

5) Matanuska-Susitna Borough, Flood Hazard Area Land Use Permit

In addition to the above permits which would be obtained by the Department, the following may be acquired by the contractor if needed: Air Quality and ADNR Water Extraction Permits. U.S. Coast Guard Section 9 permits may also be required pending navigability determinations of the Matanuska River and its tributaries. The work would also be done under the Environmental Protection Agency National

Pollutant Discharge Elimination System general permit for construction activities in Alaska. The Contractor would be required to submit the Notice of Intent and prepare and implement the necessary Storm Water Prevention Pollution Plan (SWPPP).

K. Wetlands

Wetlands as defined by Executive Order 11990 are involved in the project area (Figure 8). The project borders the Matanuska River and crosses several tributaries and adjacent wetlands. Riverine and palustrine wetlands would be involved, the majority being palustrine wetlands which are located throughout the project corridor.

The palustrine system includes shallow, nontidal wetlands. Dominant vegetation of this wetlands class include spruce, shrubs, persistent emergents, and emergent mosses or lichens. Wetlands within stream or river channel areas are classified as Riverine. Several anadromous streams are crossed in the project area: Moose Creek, Eska Creek, Granite Creek, King's River, Chickaloon River, and Caribou Creek.

These wetlands are important habitat for a variety of furbearers, birds and migratory waterfowl, large mammals (especially moose), and provide habitat for freshwater and anadromous fish. Other functions of wetlands include: floodwater attenuation, sediment trapping, nutrient retention, groundwater recharge, and recreational use. Proposed wetlands involvement would have an overall net loss of functional values.

Approximately 520,700 cubic yards (cy) of fill material would be placed on nearly 34.2 acres of palustrine and riverine wetlands. Of this total, about 22.3 acres would be impacted in areas where the roadway would be realigned. Table 6 shows acreage involvement and fill amounts per realignment.

In those portions of the Glenn Highway where widening and reconstruction activities would occur along the existing alignment, approximately 11.9 acres of wetlands and 163,700 cy of fill would be involved. In riverine wetlands (Matanuska River) approximately 98,000 cy would be placed along 4.2 acres. Palustrine wetlands would involve placement of about 65,700 cy in 7.7 acres. Wetlands, as determined by the U.S. Fish & Wildlife Service, are shown in Figures 8-1 through 8-8.

All alternatives, including the No-Build, would impact wetlands. Maintenance of the existing highway would require riprap to armor roadway embankments to counter erosion by the Matanuska River. The proposed project corridor was located to avoid and/or minimize wetlands involvement (refer to the Only Practicable Alternative Finding, Appendix G).

Table 6
Realignment Wetlands Involvement

Realignment Area	Acreage approximate	Fill (cy) approximate	Wetlands Type
Moose Creek	0.01	1,200	Palustrine
Ida Lake	1.81	70,000	Palustrine
Chickaloon River	1.61	22,900	Palustrine
Long Lake	17.32	222,100	Palustrine
Hicks Creek	0.72	22,700	Riverine
	0.14	4,700	Palustrine
Pinochle Hill	0.71	15,000	Palustrine
Caribou Creek	0.19	1,300	Palustrine
	0.15	5,300	Riverine
Subtotals according to wetlands type:			
	1.34	39,200	Riverine
	20.98	290,800	Palustrine
Total:	22.32	330,000	

Mitigation alternatives, to minimize loss of wetland functional values, will be evaluated according to FHWA Publication No. FHWA-RE-88-028, "Applying the Section 404 Process to Federal Aid Highway Projects", which is consistent with 40 CFR 1508.20 (NEPA) stated below:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

e) Compensating for the impact by replacing or providing substitute resources or environments.

In the Long Lake area, alternatives are restricted by severe terrain. Avoidance of wetlands east of the Long Lake SRS is not possible. There are clusters of scrub/shrub broad-leafed deciduous bogs (PSS1), emergent vegetation marshes (PEM1), and unconsolidated bottom open water ponds (PUBH) which appear to be hydrologically connected. A bird survey of a portion of these wetlands was conducted by USF&WS and Department staff in July of 1992. The USF&WS concluded that the area provided habitat for snipes, a migratory bird that lives chiefly in marshes and having general distribution, and moose. No unique bird or mammal species or unusual concentration of other animals were observed during the survey. In this locality and elsewhere along the project corridor where impacts are unavoidable, the following mitigation plan is proposed:

1) As agreed to with agencies, abandoned roadway segments would be revegetated with willow or other suitable species for moose browse (provided the areas are not next to a road). In the Long Lake area, the old roadbed would be converted into a recreational trail. On the east side of the Long Lake State Recreation Site (SRS), the roadbed would be dead-ended near Wiener Lake with a parking area and scenic overlook.

2) A mining reclamation plan would be implemented during and upon completion of all gravel extraction activities. The plan shall comply with the requirements of 11 AAC 97 and Title 27 of the Alaska Statutes. The materials sites would be rehabilitated immediately after all usable material is removed. Slopes would be terraced to prevent erosion and facilitate revegetation, and, except for bedrock slopes, would be revegetated.

3) All culverts would be placed in and aligned with the natural stream or drainage channels and hydraulic gradient. Any realignment or channelization of fish streams and drainages would be done in accordance with the Alaska Department of Fish and Game's "Fishstream Protection and Enhancement Strategies." Cross-culverts would be placed at appropriate intervals to maintain surface and subsurface wetland drainage. Proposed roadway facilities and bridge structures would be

designed and constructed to accommodate fish passage while meeting floodwater flow requirements. Bridges would be wide and high enough to allow movement of moose, with the exception of the Eska Creek crossing (MP 61). At this site, the creek bed is narrow and shallow, and only requires a minimally sized structure for the road crossing.

4) All erodible slope cuts, fill embankments, and other exposed earth work would be stabilized to prevent erosion. Proposed road alignments would be shifted whenever possible to avoid or minimize impacts to wetlands. Slopes consisting of soils would be seeded to reestablish vegetation. Direct loss of habitat in the wetland margins would be partially regained in time when slopes become revegetated.

5) Flattened roadway embankments and clear zones would help reduce wildlife/vehicle conflicts by making animals more visible to traffic and facilitate wildlife crossings. In areas of new alignments, roadway tangents would improve drivers' sight distances to avoid animals encountered along the highway. To identify any critical moose crossing zones, a Reimbursable Services Agreement (RSA) will be developed with ADF&G during the project's design phase (refer to Section M, Wildlife Impacts). Signing cautioning motorists of moose in the area would be incorporated into the project to reduce these conflicts.

6) To reduce potential disturbance of side slopes along the stream corridors, use of heavy equipment and tree/vegetative clearing would be minimized within the riparian zone. Vegetative cover would be reestablished on disturbed areas within the riparian zone.

Mitigation for project effects on wetlands and wildlife habitat would be chiefly through avoidance and minimization measures. Due to the abundance of similar habitats in the vicinity, compensatory mitigation is not proposed at the current time. The ADF&G and USF&WS could not identify any needed mitigation projects in the project area, but have requested that the project impacts be reassessed prior to final design for each roadway segment to determine the need for any compensatory mitigative measures in the future. The reevaluation would include a field review with State and federal resource agencies.

Due to the passage of time between document approval and actual design of the various project segments, ADOT&PF will have to reevaluate its approved environmental document. Should project scope, affected environment, impacts and

mitigation change, additional environmental documentation is required.

All practicable and appropriate measures to minimize wetlands impacts would be incorporated into the project design and construction. Best Management Practices for erosion and sediment control and stream crossings would be employed. However, temporary degradation of water may occur during construction activities. No significant impact to wetlands would result from this project.

L. ~~Water Body Modification~~

The total extent of water body modifications along the Glenn Highway would not be determined until the design phase. For the most part, fill would not be placed within streams. Riprap would be placed along eroding Matanuska River banks which are threatening roadway embankments. Impacts to streams would be minimized through coordination with appropriate resource agencies and, during construction, employment of Best Management Practices.

M. Wildlife Impacts

Moose are year-round residents in the Matanuska River Valley area. Projections for the 1986 moose population of the Moose Range ranged between 426 and 986 (DNR, 1986). The ADF&G Habitat Maps (1985) show winter range moose distribution throughout the project corridor. A known concentration is around the east side of Long Lake, within the Long Lake SRS. This area is within the 1962 fire burn of approximately 1,000 acres (Jack Louis, Bureau of Land Management) and is in early stages of forest succession. The ADF&G indicates that fire increases available moose browse for 25 to 30 years following disturbance. According to statistics from the Alaska State Troopers, there were 33 moose road kills in the MP 35 to MP 109 project area between October 1991 and August 1992. Accident clusters are seen at the western terminus (MP 35), near Farm Loop Road (MP 51), at MP 70, and in the Chickaloon area (MP 75-79).

Brown and black bear inhabit the area. A high concentration of bear exist in the eastern third of the Moose Range. Dall Sheep have a widespread distribution and are concentrated in the Sheep Mountains which are east of Caribou Creek. Wolf inhabit middle and upper limits of some drainages. Other wildlife species which are present include wolverine, mountain goat, caribou, coyote, land otter, fox, marten, beaver, mink, weasel, lynx, hare, red squirrel, and porcupine.

Several important raptors such as the peregrine falcon, gyrfalcon, and bald and golden eagles, inhabit the area. A number of species of migratory waterfowl utilize the wetlands. Rock, white-tailed, and willow ptarmigan, and spruce grouse are present. A bird survey was conducted by USF&WS and Department staff in wetlands along the proposed Long Lake realignment in July of 1992. Birds were not present at the wetlands, but chickadees, juncos, and thrushes were seen in surrounding woodlands. The USF&WS concluded that snipes, a migratory bird that lives chiefly in marshes and having general distribution, probably inhabited the wetland areas.

Anadromous fish includes sockeye, pink, chinook, coho, and chum salmon, char, and Dolly Varden. The Matanuska River is a major spawning drainage system of the Cook Inlet. Nearly every stream in the area provides spawning habitat. Freshwater fish includes rainbow trout, arctic grayling, white fish, burbot, suckers, and two species of stickleback. Small lakes supporting these freshwater stocks are numerous and include Seventeen Mile Lake, Long Lake, Bonnie Lake, Fish Lake, Ida Lake, and Kepler-Bradley system Lakes.

Impacts to wildlife resulting from construction of the proposed project would include a minor loss of habitat. The proposed realignment borders the identified 1962 fire burn but does encroach wetlands east of the Long Lake SRS that provide moose habitat. To identify any critical winter moose crossing zones, a Reimbursable Services Agreement (RSA) will be developed with ADF&G. Moose surveys will be conducted over a multi-year period prior to final design.

Throughout the project, the proposed wide roadway embankments and clear zones would facilitate crossing of wildlife by making them more visible to traffic. In areas of new alignments, roadway tangents would improve drivers' sight distances to avoid animals encountered along the highway. Signing cautioning motorists of moose in the area would be incorporated into the project to reduce these conflicts. Bridges would be wide and high enough to allow movement of moose, with the exception of the Eska Creek crossing (MP 61). At this site, the creek bed is narrow and shallow, and only requires a minimally sized structure for the road crossing.

The ADF&G and USF&WS have requested that the project impacts be reassessed prior to final design for each roadway segment to determine the need for any additional mitigative measures. The assessment would include a field review with State and federal resource agencies.

Stream crossings would not involve placement of fill or piers within the streambeds. However, riprap would be required to armor roadway embankments eroding into the Matanuska River. Scheduling of construction would be addressed in the construction contracts. Stipulations would consider impacts to wildlife, including sensitive calving, lambing, and spawning seasons.

N. Floodplain Impacts

Floodplains ~~as defined by Executive Order 11988~~ would be involved with this project. The known 100-year floodplain for the Matanuska River extends through Sutton. Designated by the Matanuska-Susitna Coastal Management Plan because of flood hazards (Mat-Su, 1987), the Western boundary of the Knik/Matanuska River Floodplain AMSA (Area Meriting Special Attention) is approximated by the Glenn Highway. In August, 1971, extensive flooding occurred along the Matanuska River and several tributaries including Moose, Granite, and Eska Creeks, and Kings River. The Matanuska River area was subjected to severe flooding and erosion in July and August of 1989, as a result of high rainfall levels, prompting the governor to declare the situation a state disaster.

National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM) are not available for the Matanuska Valley area. Therefore, coordination will not be required with the Federal Emergency Management Agency (FEMA).

Two hydrologic regimes exist in the Glenn Highway project area. In the lower part of the Matanuska Valley from Palmer to the Chickaloon River, streams draining the south slopes of the Talkeetna Mountains have high runoff rates caused from frequent, high intensity storms. Resultant heavy precipitation rapidly enters streams and rivers due to the steep slopes and impervious soils. Stream flooding is frequent, and usually occurs in August and September.

The second hydrologic regime is in the upper Matanuska Valley, east of the Chickaloon River to the Gulkana Basin. This area receives less precipitation. Floods occur in the upper valley during August and September, but are of less magnitude than the lower Matanuska Valley.

The existing roadway follows the Matanuska River floodplain (refer to the Only Practicable Alternative Finding, Appendix G). To avoid future potential flood damage, the intent of the proposed action is to relocate the facility out of the

floodplain whenever possible and include measures to minimize unnecessary encroachments. Construction would not promote any incompatible development with floodplains, area facilities would accommodate 100-year flooding events. Elsewhere, bridges and culverts would be designed to withstand a 50-year flood.

The Glenn Highway Erosion Control, MP 61-78, project was constructed during the Summer of 1992. With this project, roadway embankment was armored with riprap to prevent further erosion in this area along the Matanuska River.

O. Wild and Scenic Rivers

There are no Wild and Scenic Rivers located within the project area.

P. Coastal Zone Impacts

A major portion of the project corridor is within the coastal management boundary described in the Matanuska-Susitna Borough Coastal Management Plan (MSBCMP), and within the Knik/Matanuska River Floodplain Area Meriting Special Attention (AMSA).

The Borough's coastal district includes approximately 4,000 square miles, containing 200 square miles of offshore area and 75 miles of coastline. Coastal management boundaries extend to the 1,000-foot contour level on major drainages and primary tributaries. This district includes the Matanuska River and Moose Creek, extending eastward until the Bonnie and Long Lakes area (approximately MP 85). The width of this extended boundary includes the 100-year floodplain or 200 feet on each side from the ordinary high water mark, whichever is greater.

The designation for the Knik/Matanuska River Floodplain AMSA results from the area's severe flood hazard potential, waterfowl and wildlife resources and habitat, and areas of substantial recreational opportunities. Total area of the AMSA is approximately 54,000 acres. Boundaries of the Knik/Matanuska River Floodplain AMSA coincide with the known 100-year floodplain for the Knik and Matanuska Rivers. For the Matanuska River, this floodplain extends through Sutton and is bordered to the west by the Glenn Highway.

Proposed activities and improvements are consistent with the policies and provisions of the MSBCMP which were developed under the standards and guidelines (6 AAC 80

and 6 AAC 85) of the Alaska Coastal Management Program (ACMP). There is no management scheme for the Knik/Matanuska River Floodplain AMSA. A formal consistency determination will be made during the permitting phase of this project.

Q. Threatened or Endangered Species

The only threatened or endangered species in the project corridor is the American peregrine falcon (Falco peregrinus anatum). Peregrine falcons are not known to nest in the vicinity but sightings are reported during migration periods in Palmer and along the Glenn Highway. A survey of proposed realignment areas was conducted by the U.S. Fish and Wildlife Service (USF&WS) in July of 1989. There were no peregrine nesting sites located in the Glenn Highway project area (pers. comm., Michael Amaral, U.S. Fish & Wildlife Service).

An additional bird survey was conducted by USF&WS and Department staff in wetlands along the proposed Long Lake realignment in July of 1992. Birds were not present at the wetlands, but chickadees, juncos, and thrushes were seen in surrounding woodlands and an eagle was perched in a tree overlooking Long Lake. The USF&WS concluded that snipes, a migratory bird that lives chiefly in marshes and having general distribution, probably inhabited the wetland areas.

R. Historic and Archaeological Preservation

Historic and archaeological resources within the project vicinity were identified and evaluated in accordance with the requirements of 36 CFR 800.4. According to 36 CFR 800, Protection of Historic Properties, federally assisted projects must take into account the effects on properties included in or eligible for the National Register of Historic Places (NRHP). These potential impacts of the proposed project are discussed in the Alternatives Section.

Within the Palmer vicinity, several historic sites are within or immediately adjacent to the project corridor. Those considered eligible for the NRHP are the Hecky Barn (ANC-473) and Matanuska Agricultural Colony structures: Patten Farm (ANC-472), Puhl-Bacon Farmhouse (ANC-057), and Bailey-Estelle House and Barn (ANC-036). Those considered not eligible are the Husby House, Lucas House (ANC-023), Campbell Outbuilding, and Eckert Barn (ANC-173).

Section 106 Coordination with the State Historic Preservation Office (SHPO) and the Matanuska-Susitna Borough (MSB) determined that the project as proposed would have no effect on two properties: the Puhl-Bacon Farmhouse, and the Bailey-Estelle property; a no adverse effect on the Hecky Barn, and would have an adverse effect on the Patten Farm. (Minor amounts of right-of-way would be required from the property.) The adverse effect would not substantially impair the historic integrity of the Patten Farm or the Matanuska Agricultural Colony District, and, therefore, according to 23 CFR 771.135(f), Section 4(f) requirements do not apply.

Mitigation for the Patten Farm was formalized within a Memorandum of Agreement and include a vegetative buffer along the eastern property line. Continued access will be provided on the existing driveway via the frontage road. The Advisory Council of Historic Preservation concurrence on the project effects and proposed mitigation is included within Appendix E.

Around the community of Sutton there are historic sites adjacent to the project corridor that would not be impacted by the proposed project. Approximately 1,000 feet west of the Chickaloon Way intersection and 80 feet north of the highway (outside the proposed right-of-way) shoulder are four Athabaskan grave houses (ANC-255). Located on the east corner of the intersection, and within the proposed Sutton Alpine Historical Park, is a coal washing plant foundation (ANC-256). This site is not considered eligible for nomination to the NRHP but is recognized locally.

In 1989 and 1990, field crews from the Office of History and Archaeology (OHA) conducted cultural resources reconnaissance surveys. Altogether, seven archaeological sites in the Long Lake District (ANC-017, ANC-731, ANC-732, ANC-736, ANC-737, and ANC-739) and the Pinochle Hill area (ANC-735) were identified as being within or adjacent to the proposed right-of-way. Archaeological data is not included in this public document because of the resource sensitivity.

Four sites, ANC-017, ANC-732, ANC-736, and ANC-737, appear to be eligible for the NRHP under Criterion "D"; these sites "may be likely to yield information important to prehistory or history" (36 CFR 60.4)." The SHPO has determined that previous area development activities had disturbed sites ANC-731, ANC-735, and ANC-739, destroying their integrity.

Section 106 Coordination with SHPO and ACHP determined that the project as proposed would have no effect on ANC-017 and ANC-732; and would have no adverse effect through data recovery [36 CFR 800.9(c)(1)] on ANC-736 and ANC-737. Although site ANC-732 is within the proposed right-of-way, it is outside the cut/fill limits. The site would be staked and avoided by all mechanized equipment during construction. According to 23 CFR 771.135(g), Section 4(f) requirements do not apply to archaeological resources that are important for potential prehistoric/historic information when data recovery is proposed.

The proposed data recovery/mitigation will be fully developed and coordinated with SHPO and ACHP when the design phase is completed, and implemented prior to and in coordination with those project activities that could disturb archaeological resources. Refer to Appendix E for the excavation strategy of sites ANC-736 and ANC-737.

Should any other archaeological, historic, architectural, and/or cultural resources be identified during the construction of the project, all work which would impact these resources would be halted and SHPO would be contacted immediately.

S. Hazardous Waste Sites

A preliminary reconnaissance survey to identify underground storage tanks within the proposed right-of-way was conducted by Department staff on March 13, 1990. Three sites were located (Table 7). No hazardous waste sites were identified.

Altogether, 6 underground tanks are known to exist within the project area. Information regarding the status of the tanks at these sites is not available. However, one of these tanks is within the highway right-of-way at Hick's Creek. It appears that the last fuel delivery at the abandoned tank may have occurred approximately 20 years ago. Private contractors conducted an investigation of this site in 1989. Probes indicated that the tank is empty of any liquids and there was no smell of fuel evident in the organics sample. Coordination with DEC is ongoing at this site. No additional investigations are proposed during preliminary design. However, it is likely that tank closure according to DEC quidelines will be completed before this segment of the highway is upgraded.

Table 7
Underground Storage Tank Locations

Site	Number Tanks
Palmer: Tesoro (Sta. 1590 Lt)	2
Sutton: Dolfi Residence (Sta. 2370 Lt)	1
Matanuska Glacier: Long Rifle Lodge (Sta. 545 Rt)	2
Hicks Creek:** Hicks Creek Lodge (Sta. 258 Rt)	1

** Previously identified by the Department of Environmental Conservation (DEC)

A Hazardous Material Control Plan will be developed by the Contractor to address containment, cleanup, and disposal of all construction-related discharges of petroleum fuels, oil, and/or other hazardous substances. The plan shall comply with the requirements of 18 AAC 75 and Title 46 of the Alaska Statutes. A specification requiring the use of material "free from contamination" will also be incorporated into the contract. Coordination with the DEC, EPA, and appropriate agencies will continue throughout the project.

T. Visual Impacts

According to the MSB Comprehensive Development Plan, the Glenn Highway is a particularly scenic drive and encourages more stopping. More improved and maintained pullouts and waysides are needed along the roadway. There should be sufficient pullouts, waysides, and campgrounds to meet the recreation needs of persons living in the Borough and those coming into the Borough for recreation purposes. There should be adequate signage along the road to identify sites, including trailheads and waysides, of scenic, historic, or recreation interest. Trailheads and waysides should be developed along the Glenn Highway. Pullouts and waysides should be constructed along the major highways, particularly the Glenn Highway east of Sutton.

Rugged mountain scenery along this portion of the Glenn Highway is some of the most spectacular in the state. Travelers are presented with the panorama of the Matanuska Glacier, views of Castle Mountain in the Chickaloon area, Granite Peak

near Sutton, the Matanuska River, and the Chugach Range to the south. There are abundant opportunities year round for wildlife viewing as well.

The project would not diminish the visual quality of the highway. Where feasible and desirable, trailheads and scenic turnouts and pullouts would be provided, mainly utilizing the old roadbed. The Matanuska Moose Range Management Plan addresses the reconstruction and proposed realignments of the Glenn Highway. Guidelines and recommendations are provided within the document for scenic turnouts and pullouts, and access to trails and recreational facilities within the Range.

Locations for wayside and turnout sites were coordinated with MSB, the MSB Parks and Recreation Board Wayside Committee, DPOR, and ADF&G. A viewing area adjacent to the junction of Glenn Highway and Fishhook-Willow Road is currently under construction with the Glenn Highway, MP 35 to MP 54 3R project. Pulloff recommendations include near Granite Creek (MP 63), east of King's River (MP 67.5), the Weiner Lake area (MP 87.5), and near Caribou Creek (MP 107.5). As agreed with local agencies, the Department will continue coordination to incorporate these features during the design phase where appropriate.

Abandoned roadway segments lacking potential for off-road parking or scenic turnouts would be scarified and seeded for revegetation. All disturbed areas, with the exception of rock faces, would be seeded after construction.

U. Construction Impacts

Construction impacts would extend over many seasons and necessitate blasting operations, road closures and traffic detours. Scheduling of construction periods would be coordinated with agencies and local governments. Proposed activities would occur at a time with the least amount of impact to the public, with regards to transportation and safety, and to wildlife, especially during sensitive calving, lambing, and spawning seasons. Construction activities would be suspended during winter, therefore, it is likely that only minor construction impacts to moose would occur.

Traffic congestion would be the primary impact resulting from construction. Heavy traffic occurs along the Glenn Highway during commuter rush hour periods and the summer months when tourism and recreation activities in the area peak. Short-term closures, detours, or temporary delays would be scheduled to minimize disruption

to the travelling public. Traffic would be maintained on the existing road while realignment segments are constructed. A construction traffic control plan would be developed as part of the design plans. The Department will work with the MSB Emergency Services Division to incorporate provisions for emergency response vehicles within the plan.

Air quality would temporarily degenerate slightly as a result of dust and exhaust from construction activities. An erosion and sediment control plan and/or other protective measures would be developed prior to and employed during and after construction. Best Management Practices would be employed. Temporary degradation of water and increased noise levels may occur during construction.

Phased construction would occur over many years because of the length of the proposed action. Project segments would be prioritized according to funding availability, roadway deficiencies, and public need. The phases will be determined at a later date.

As discussed earlier, the proposed project would be constructed under the NPDES general permit (GP) for construction activities in Alaska. The Contractor will be responsible for performing all work in accordance with the GP conditions. A stormwater pollution prevention plan would be implemented by the Contractor as required by the GP.

V. Final Section 4(f)/(U.S.C. 303) Evaluation

Section 4(f) of the U.S. Department of Transportation Act recodified as U.S.C. 303 requires that no Administration approval may be granted for a project using land from a publicly owned park, recreation area, wildlife and waterfowl refuge, or any significant historic site unless there are no prudent and feasible alternatives

This project would involve property from the Long Lake State Recreational Site (SRS) (Figures 9, 10-1, and 10-2). At the Long Lake SRS, Section 4(f) property involves a concurrent federal requirement, Section 6(f) of the Land and Water Conservation Fund Act (L&WCF). Section 6(f) involvement mandates land replacement of equal value, location and usefulness for highway projects when the property involved has been purchased or improved with L&WCF funds.

Site Description

The Long Lake SRS is located 38 miles north of Palmer, MP 85 of the Glenn Highway. Established in 1972, this 480-acre park is under the jurisdiction of the Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation (DPOR). The park was established on either side of the Glenn Highway right-of-way.

Wayside facilities are at the west end of the lake and adjacent to the highway, restricted to the immediate vicinity because road access to the park is limited. There are picnic tables, a gravel parking area, privy, and a potable water well. The well was constructed with 1971 L&WCF funding and drilled within the existing highway right-of-way.

Park boundaries encompass Long Lake, which is approximately one mile in length and one quarter mile wide. The DPOR considers the lake a valuable resource; it provides an array of recreational opportunities and habitat for a variety of birds and other wildlife. Popular recreation activities include picnicking, canoeing, grayling fishing, berry picking, hiking, and wildlife viewing. Estimates of park visitors and users are not available.

Abrupt mountainous terrain is the limiting constraint for area development (Figure 10). Steep sidehills with unstable talus slopes exist to the north of Long Lake.

These talus slopes comprise some of the most hazardous rock slide zones of the Glenn Highway.

The existing highway right-of-way traverses the park and is cut into the north sidehill, climbing for a considerable distance with grades exceeding 7 percent. Heavy trucks operate at crawl speeds to overcome the gradients and cause interference with other traffic. Adjacent slopes are 1:1 and 1.5:1 and drop several hundred feet to and from the roadway. The total roadway width is approximately 22 feet. There are no shoulders for emergency pulloffs along this segment of road.

The 10-year accident history for years 1979 through 1989 was checked for the Long Lake hill, MP 85 through 87. Altogether, there were 20 recorded accidents involving 25 vehicles, with 1 fatality and 5 injuries. Five accidents were collisions with another vehicle, 5 were overturns, and 10 were collisions with fixed objects, (i.e., embankments, ditches, rocks).

In some parts of the hill, Jersey barriers are used to help decrease rockfall from reaching the travel lanes. Continued maintenance to clear rocks and boulders from the roadway when combined with winter snow removal substantially hinders travel through the area. Safety is also a concern with maintenance operations as these activities are being conducted in the rockfall zone.

According to DPOR, even though the SRS was established after the highway, the existing highway alignment affects the quality of the recreational experience at the park. It separates the lake and the large steep cliff, creating a visual scenic detraction, and introduces traffic noise particularly on the west end of the lake where the wayside is located.

A traffic noise analysis was completed using the FHWA Highway Traffic Noise Prediction Nomograph (Hard Site) Model. The analysis was based on existing and design year (2015) peak hour highway traffic (Appendix B) and utilizes average speed, estimated number of vehicles according to vehicle type, and receiver distance from the highway centerline. The nomograph does not account for surface terrain variations. According to the study results, the existing noise level at the boat launch, 150 feet from the centerline, is 60 dBA.

Although highway traffic is not heavy and is not expected to increase substantially, commercial trucks comprise 19 percent of the total vehicle volume. Loudness of

traffic noise increases with the greater numbers of trucks. Conditions such as the steep grades along the 8,500-foot length of the Long Lake hill cause heavy laboring of motor vehicle engines, or the use of jake brakes to slow descending vehicles. At a distance of 50 feet, trucks typically emit noise levels ranging between 82 and 94 dBA. The park wayside is immediately adjacent to the highway. While these occasions of truck noise exist, they do not affect the weighted hourly results of the noise prediction model.

In 1989 and 1990, field crews from the Office of History and Archaeology (OHA) conducted cultural resources reconnaissance surveys. Altogether, seven archaeological sites in the Long Lake District (ANC-017, ANC-731, ANC-732, ANC-736, ANC-737, and ANC-739) and the Pinochle Hill area (ANC-735) were identified as being within or adjacent to the proposed right-of-way. Archaeological data is not included in this public document because of the resource sensitivity. These archaeological resources are important primarily for potential data recovery.

Four sites, ANC-017, ANC-732, ANC-736, and ANC-737, appear to be eligible for the NRHP under Criterion "D"; these sites "may be likely to yield information important to prehistory or history" (36 CFR 60.4)." The State Historic Preservation Officer (SHPO) has determined that previous area development activities had disturbed sites ANC-731, ANC-735, and ANC-739, destroying their integrity.

There are no comprehensive plans for the park, however, three **Conceptual Park Development and Management Scenarios** drafted by DPOR are shown in Appendix D. In the future, DPOR intends to expand park boundaries south to the Matanuska River. A brief description of the park development scenarios follows.

Concept A1: The park boundaries would be expanded with the Glenn Highway on the existing alignment.

Parking facilities would remain at the current wayside site to provide for a proposed trailhead to Bonnie Lake. The picnic facilities and boat launch would be relocated to the south side of Long Lake and additional parking provided. Private inholdings would be acquired and used as the site of a proposed rangers headquarters.

On the western park perimeter, a campground with tent sites and parking for recreation vehicles would be developed along a ridge overlooking the Matanuska

River. Road construction would be required to access these sites. Additional trails would be developed to the ridge and river areas.

This park concept is not preferred by DPOR. Future park management and development options would be restricted, mostly to the immediate lake vicinity, and would probably not occur because of limited DPOR funding. High costs to construct access roads into the park are prohibitive with DPOR's anticipated budget.

Concept A2: ~~The park boundaries would remain~~ the same with the Glenn Highway on the existing alignment.

The boat launch and parking facilities would be relocated to the south side of Long Lake. A campground with tent sites would be constructed farther east. Road construction would be required to access these facilities. Additional trails would be developed along the lake and south to the ridge and river areas.

Road conditions and impacts, and limited DPOR funding constraints, previously discussed in Concept A1 would remain. There would be little potential for DPOR to develop this park into a recreational destination point. This park concept is not preferred by DPOR.

Concept B: The park boundaries would be expanded and the Glenn Highway realigned south of Long Lake.

A proposed trailhead to Bonnie Lake would be developed at the existing wayside. The boat launch would remain at the site. Portions of the old highway would be converted into a recreational trail and additional parking facilities. On the eastern perimeter of the park, the roadbed would be dead-ended near Wiener Lake with a trailhead, parking area, scenic overlook, and picnic facilities. Wiener Lake is stocked by the Alaska Department of Fish and Game (ADF&G) and fishing opportunities could be optimized.

The existing picnic facilities would be relocated to the south side of Long Lake and additional parking provided. Private inholdings would be acquired for the site of a proposed rangers headquarters. Additional trails would be developed to the ridge and river areas. Along the highway realignment, a Matanuska River trailhead parking facility is proposed. Two pedestrian underpasses are included where the

highway would traverse proposed recreation trails. On the western park perimeter, a remote campground with tent sites would be developed along a ridge overlooking the Matanuska River.

It is DPOR's intent to develop this preferred park concept into their long term comprehensive plans because of the potential future economic and social benefits. The new highway to the south side of Long Lake would provide improved public access and create a more pleasant recreational setting for persons using the SRS.

Section 4(f) Impacts

As discussed in the Alternatives Section of the Environmental Assessment (EA), four alternatives were evaluated in the Long Lake vicinity. Only Alternative 2, the proposed realignment, was determined to be feasible and prudent. The No-Build Alternative and Alternatives 1 and 3 would avoid use of Section 4(f) property but were deemed not practicable for the reasons evaluated in the Alternatives Section and in the subsequent Section 4(f) Avoidance Alternatives Section.

The preferred Alternative 2 would establish a new transportation corridor along an existing utility road on the south side of Long Lake, then continue along lower lying areas of undeveloped parkland. Access would be provided to the existing park wayside. Total surface width of the roadway would be 40 feet: two 12-foot lanes and two 8-foot shoulders. Where needed, a 12-foot climbing lane with a 4-foot outer shoulder would be provided (Figures 2, 3-49 and 3-10).

The highway would be moved from the exposed location on the cliff and be located approximately 550 feet south of the existing boat launch and park facilities. Vegetation and terrain would provide screening between the highway and the wayside and lake. Assuming the same speeds of the existing traffic, results of the prediction models indicate that for year 2015 there would be a 4 dBA reduction in noise levels at the boat launch which is discernible to the human ear. This is 6 dBA less than that predicted for the No-Build Alternative or Alternative 1.

Truck traffic noise at the wayside and on Long Lake would be reduced for three primary reasons: 1) the park facility and the lake would be separated from the highway by a buffer zone; 2) noise would be absorbed in the lower elevation valley corridors by vegetation and no longer be reflected off steep cliff walls onto the lake; and 3) the reduced grades, which would not exceed 3.5 percent through the

park, would lessen the need for the heavy laboring of motor vehicle engines or the use of jake brakes.

Section 106 Coordination with SHPO and the Advisory Council on Historic Preservation (ACHP) determined that the project as proposed would have no effect on ANC-017 and ANC-732; and would have no adverse effect through data recovery [36 CFR 800.9(c)(1)] on ANC-736 and ANC-737. Although site ANC-732 is within the proposed right-of-way, it is outside the cut/fill limits. The site would be staked and avoided ~~by all mechanized equipment~~ during construction. According to 23 CFR 771.135(g), Section 4(f) requirements do not apply to archaeological resources that are important for potential prehistoric/historic information when data recovery is proposed.

The proposed data recovery/mitigation will be fully developed and coordinated with SHPO and ACHP when the Design Phase is completed, and implemented prior to and in coordination with those project activities that could disturb archaeological resources. Refer to Appendix E for guidance which was developed for the excavation strategy of sites ANC-736 and ANC-737. Should any other archaeological, historic, architectural, and/or cultural resources be identified during the construction of the project, all work which would impact these resources would be halted and SHPO would be contacted immediately.

Impacts to wildlife resulting from construction of the proposed project would include a minor loss of habitat. A known concentration of moose is around the east side of Long Lake, within the Long Lake SRS. This area is within the 1962 fire burn of approximately 1000 acres (Jack Louis, Bureau of Land Management) and is in early stages of forest succession. The proposed realignment borders the identified 1962 fire burn but does encroach wetlands east of the Long Lake SRS that provide moose habitat. This habitat is not unique to the area. The Alaska Department of Fish and Game (ADF&G) Habitat Maps (1985) show winter range moose distribution throughout the project corridor. To identify any critical moose crossing zones within the proposed realignment, a Reimbursable Services Agreement (RSA) will be developed with ADF&G (refer to Section M, Wildlife Impacts).

A bird survey was conducted by the U.S. Fish and Wildlife Service (USF&WS) and Department staff in wetlands along the proposed Long Lake realignment in July of 1992. Birds were not present at the wetlands, but chickadees, juncos, and thrushes were seen in surrounding woodlands and an eagle was perched in a tree overlooking

Long Lake. The USF&WS concluded that snipes, a migratory bird that lives chiefly in marshes and having general distribution, probably inhabited the wetland areas. No unique bird or mammal species or unusual concentration of other animals were observed during the survey.

This action would require the placement of approximately 14,400 cy in 1.25 acres of palustrine wetlands within the park. Avoidance of these wetlands is not possible because of the severe terrain. The types of wetlands impacted by the proposal are widespread throughout the vicinity and region are not of particularly high functional value (refer to the Only Practicable Alternative Finding, Appendix G).

Approximately 43 acres would be required from the park for right-of-way. About 66 acres of abandoned highway roadbed and right-of-way would be relinquished to DPOR: 41 acres within park boundaries and 25 acres east of the park. Portions of the old roadway would be converted into a recreation trail. In abandoned roadbed areas away from the cliff, natural conditions would be restored.

Construction activities could result in temporary degradation of air and water quality, temporary increases in noise levels, and temporary visual impacts.

Secondary impacts could result from the construction of this project. It is DPOR's intent to develop the preferred Conceptual Park Development and Management Scenario B, which is based on the proposed realignment, into their long term comprehensive plans. As proposed, development of Concept B may affect identified archaeological sites, wetlands, and wildlife habitat.

Avoidance Alternatives

Three alternatives evaluated within the Alternatives Section of the EA avoided using Section 4(f) property but were deemed not practicable: The No-Build Alternative and Alternatives 1 and 3.

The **No-Build Alternative** would not meet the purpose and need of the project. It is DPOR's opinion that the existing alignment affects the quality of the recreational experience, especially on users of Long Lake.

The highway separates Long Lake and a large steep cliff to the north, the two primary natural features of the park. The road segment is highly visible along the

cliff, ascending to the highest elevations within the park, creating a visual scenic detraction for those using the park. The steep terrain and talus slopes restrict development of pulloffs along the cliff, and limits scenic viewing opportunities for travelers. The highway and through traffic would continue to be adjacent to the existing public use area and the lake, an area which lacks natural screening buffers. Noise analysis for year 2015 indicates that traffic noise levels at the boat launch would increase by 2 dBA. Loud truck noise would remain, especially at the west end of Long Lake.

The issue of safety is the major consideration for abandoning the No-Build Alternative on Long Lake hill. For the most part, this concern results from rock slides onto the roadway, compounded by excessive grades and effects on heavy trucks to climb the steep grades.

Alternative 1 would upgrade the existing alignment but not alleviate the severe erosion conditions nor the excessive grades of the Long Lake hill. As previously described, reconstruction of the existing highway alignment would affect the quality of the recreational experience at the Long Lake SRS.

A 48-foot wide roadway surface is required for the hill segment: two 12-foot travel lanes and a 12-foot climbing lane; an 8-foot inner shoulder and a 4-foot outer shoulder. Sheet pile retaining walls would be constructed along the 8,500-foot length beginning at the Long Lake SRS wayside (Appendix D).

Roadway improvements along the hillside would require additional road cuts into the unstable slopes, thus aggravating an already serious erosion condition. Construction activities would result in temporary disruption of traffic flow. The presence of the widened roadway and retaining walls would present an additional visual intrusion along the cliff for those using the park. The barriers needed to redirect errant vehicles would affect scenic viewing from the roadway. As with the No-Build Alternative, the issue of safety along the hill would remain. Based on the above, this alternative was eliminated from further consideration.

Alternative 3 would be a realignment through presently undisturbed areas south of the existing Long Lake SRS. There would not be any Section 4(f) property involvement, providing the corridor was established prior to park expansion. The terrain is mountainous and abrupt. Excessive earthwork would be required to negotiate the high ridges and deep ravines. A cost effective and feasible roadway

corridor to the south of the Long Lake SRS could not be defined. Based upon these factors, this alternative has been eliminated from further consideration.

Minimization

To reduce proposed Alternative 2 realignment impacts to the Long Lake SRS, the facility would be designed to minimize right-of-way requirements. The southern shift would reduce truck noise at the existing wayside facilities and provide opportunity to develop pullouts, trailheads, interpretive and camping sites, etc. Clearing would be kept to a minimum and all erodible slopes revegetated.

The following measures are proposed to minimize the impacts of the proposed action on the Park, corresponding with DPOR's Concept B:

1. Replace the 43 acres of parkland that would be converted to transportation use with approximately 66 acres of excess existing right-of-way. Upon final appraisal, if the fair market value of the converted land does not equal or exceed the value of the replacement parcels, then additional replacement land will be provided.

2. Rehabilitate the abandoned roadway segment: a) remove existing pavement; b) reduce the width of the travelled way to provide a 12-foot wide gravel trail and service vehicle access; c) remove existing roadway culverts and construct low swales through the embankment to allow water drainage; d) construct a wide ditch on the uphill side of the embankment to contain errant rocks; e) revegetate disturbed areas, with the exception of rock faces; and f) provide a park gate at each trailhead.

3. Construct two arch pedestrian tubes at highway crossings of proposed park trails (refer to Appendix D, Concept B).

4. Construct two gravel parking lot pads and approaches: one for a proposed picnic area and one for a proposed trailhead (refer to Appendix D, Concept B). Each parking facility would provide spaces for 15 vehicles.

5. Construct a turnaround and trailhead parking where the roadbed dead-ends near Weiner Lake, using a site that offers a good vantage point.

Section 6(f) Conversion

As required by Section 6(f) of L&WCF, substitution of other property of at least equal fair market value and of reasonably equivalent recreation usefulness and location will be provided to DPOR to replace the land converted from park use by the proposal. The Department proposes to replace the converted land with the existing highway right-of-way to be abandoned. The DPOR has also identified in-holdings within the present park boundaries which may be suitable replacement parcels.

A preliminary "opinion of value" of the existing highway right-of-way, which is proposed as the replacement parcel and the potential conversion parcel, is included within Appendix D. An appraisal, meeting the requirements of Section 6(f), will be conducted on replacement and conversion parcels during the Design Phase of the project after the Federal Highway Administration grants authority to appraise and acquire.

If the appraisal indicates that the replacement parcel(s) is not of at least fair market value and of reasonably equivalent recreation usefulness and location, then additional replacement property will have to be identified and provided.

Coordination

The proposed action and associated Section 4(f) and Section 6(f) properties involvement was coordinated with DPOR, the National Park Service (NPS), and the U.S. Department of the Interior (DOI). The DPOR supports the project and developed conceptual plans for the Long Lake SRS (Appendix D) to coordinate pullouts for trailheads and scenic views, and accesses to existing and proposed recreation facilities. A Memorandum of Agreement (MOA) was developed to formalize mitigation commitments and is included within Appendix D.

The Department also coordinated with ADF&G and USF&WS to develop measures to minimize potential impacts to wildlife habitat and wetlands. The DOI had no objection to Section 4(f) approval of the project providing the Section 6(f) and Section 106 Memorandums of Agreement were finalized and that the Department further coordinate with USF&WS for a bird survey to determine the need for any wildlife mitigation (see Appendix I). Coordination with the resource agencies will continue throughout the project.

VI. COMMENTS AND COORDINATION

This project has been in development for many years with much agency and public involvement. Correspondence is on file at the Department's Anchorage Office. The latest coordination with agencies was initiated through correspondence on May 9, 1989. Notices of the proposed project were published in both Anchorage newspapers on June 30 and July 9, 1989, and in the Frontiersman (a Matanuska-Susitna area paper) on July 5 and July 14, 1989. Concerns of various agencies and the general public were later identified through correspondence, telephone contacts, and meetings, and are also on file at the Department.

Notices of public hearing and document availability were published in the newspapers on May 4 and June 1, 1992. Copies of the document were distributed to the agencies on May 13, 1992. Public Hearings were held in Palmer, Chickaloon, Sutton, and Glacier View between June 8 and June 11, 1992. Comments and recommendations received are contained in Appendix I and included below.

National Marine Fisheries Service (NMFS) concluded that the proposed highway modifications would have minimal impacts to fishery resources. They request that wetlands fill be minimized and no fill or structures be placed in such a manner that would alter or impede stream flow.

U.S. Coast Guard (USCG) reviewed the draft EA and concluded that navigability determinations are needed for project area rivers where new bridge crossings are proposed. Should USCG determine that any of these rivers are navigable, Section 9 permits will be required. Navigability information will be collected by the Department and provided to USCG prior to final design.

U.S. Fish and Wildlife Service (USF&WS) was concerned about the presence of the American peregrine falcon, a species listed as endangered or threatened, reported to be in the project area during migration periods. A survey was conducted during July of 1989 to determine if nests are located within the area. None were located. USF&WS provided an initial wetlands determination for the project area. A bird survey was also conducted by USF&WS and Department staff in wetlands along the proposed Long Lake realignment in July of 1992. No unique bird or mammal species or unusual concentration of other animals were observed during the survey. The USF&WS has concluded that project impacts be reassessed prior to final design for

each roadway segment to determine the need for any wildlife or wetlands compensatory mitigation.

Recommendations and comments were provided by the U.S. Department of the Interior (DOI) after their review of the draft Environmental Assessment (EA). These were incorporated into the EA and included the following: provision for public access to the Caribou Creek Recreational Mining Area, water quality near Palmer, wildlife mitigation, and historic and archaeological preservation. There was no objection to ~~Section 4(f) approval of the~~ project providing the Section 6(f) and Section 106 Memorandums of Agreement were finalized and that the Department further coordinate with USF&WS for a bird survey to determine the need for any wildlife mitigation (refer to Appendix I).

Alaska Department of Fish and Game (ADF&G) had comments and concerns about potential impacts to fish and wildlife habitat, the need for continued access to trailheads, and provisions for scenic and wildlife viewing pullouts (refer to Appendix I). The Department met with ADF&G on September 4 and 18, 1992. As a result of the meetings, a Reimbursable Services Agreement (RSA) will be developed with ADF&G to identify any critical moose crossing zones within the project corridor. The ADF&G has requested that project impacts be reassessed prior to final design for each roadway segment to determine the need for any wildlife or wetlands compensatory mitigation. Due to the passage of time between document approval and actual design of the various project segments, ADOT&PF will have to reevaluate its approved environmental document. Should project scope, affected environment, impacts and mitigation change, additional environmental documentation is required.

Alaska Department of Environmental Conservation (ADEC) reviewed the draft EA and had concerns on potential construction impacts to wetlands. Their recommendations were incorporated into Section U., Construction Impacts.

A memorandum from the **Matanuska-Susitna Borough (MSB), Planning Department** provided comments from various Borough Divisions and Departments. According to the Platting Division, proposed right-of-way acquisition must conform to MSB 16.15.070 - Right-of-Way Acquisition Plats. Code compliance, MSB 17.55, for easement requirements, and building setback lines, shall be met. Coastal Management consistency will be adhered to, and a cultural resources survey should be conducted. Department of Public Works suggests a more western shift of the road in the vicinity of Fishhook-Willow Road (MP 49) because of severe erosion of the

Matanuska River bluff. They also request that during the design phase we address access congestion at the fairground and heavy truck traffic at the entrance to the gravel pits south of the highway at MP 37.

The MSB also reviewed the draft EA and the assembly adopted Resolution No. 92-098 approving the project, identifying a need for scenic pullouts and access to existing trailheads, and to consider a separated pathway between MP 35 and Sutton.

State Historical Preservation Office (SHPO) and the Office of History and Archaeology (OHA) have been involved with reconnaissance level surveys for the proposed realignments and Section 106 coordination. An area identified as crucial is the Long Lake District. Other concerns include the historic properties in the Palmer vicinity. A Memorandum of Agreement (MOA) was developed to formalize mitigation commitments on the Patten Farm (refer to Appendix E).

Historic Borough area structures are the primary concerns of the **Matanuska-Susitna Borough, Division of Cultural Resources**. An initial assessment of Matanuska Colony and other historic structures within the Palmer vicinity was conducted during 1986. The Borough submitted a multiple property nomination to the National Register of Historic Places (NRHP) on September 30, 1990. Structures of primary concern in Palmer are the Patten Farm, the Puhl-Bacon Farmhouse, and the Bailey-Estelle House and Barn. The Bennet home near Sutton (MP 60) was investigated by the Cultural Office. (A MOA was developed to formalize mitigation commitments as stated above.)

Department of Natural Resources, Division of Parks & Outdoor Recreation (DPOR), has developed conceptual plans for park development and management opportunities for the Long Lake State Recreation Site (SRS). The DPOR supports the proposed realignment through the park. A MOA was developed to formalize mitigation commitments for the park (refer to Appendix D). They would like to coordinate pullouts for trailheads and scenic views, and accesses to existing and proposed campground and recreation facilities.

At the Long Lake State Wayside, a well was drilled within the right-of-way with grant money from the Land and Water Conservation Fund (L&WCF). **National Park Service (NPS)** determined that right-of-way acquisition within the parkland would require Section 6(f) conversion. A MOA was developed to formalize conversion commitments for the park which was reviewed and approved by NPS.

A meeting was held with the Matanuska-Susitna Borough Department of Natural Resources DPOR and Matanuska-Susitna Trails Committee on August 18, 1989. The DPOR submitted wayside recommendations for the project corridor, and a separate bike pathway in the vicinity of Palmer was requested by the Mat-Su Trails Committee.

Eklutna, Incorporated has patent to the Moose townsite which would be traversed with the proposed realignment. They recommend the reduction of the 300-foot easement to 100 feet through this area, and would like to see a highway wayside constructed adjacent to Moose Creek in the vicinity of the dedicated park land.

Sutton Community Council wants rehabilitation of the roadway to improve safety conditions. Foremost are the problems of vehicular passing of slower moving traffic and the merging of local and through traffic within the community. However, they want the Department to be sensitive to potential right-of-way impacts on local property owners. Property mentioned included the designated future Cultural Center and Council Office of the Chickaloon Native Community, located at Moose Creek, and a possible historic site, converted into a residence, at MP 60. A meeting was held with the community council on August 7, 1989.

Sutton Alpine Historical Society is proposing a future historical park within the community, located on the east corner of the Chickaloon Way intersection. They would like to coordinate on park access although conceptual park plans are not complete. Sites of local significance within the community are adjacent to the roadway, the coal washing plant foundation and four grave houses.

There are three primary concerns of the Chickaloon/Moose Creek Native Association, and Chickaloon Traditional Village Council. Potential impacts on local subsistence resources and protection of critical moose habitat areas. Avoidance and preservation of burials and other cultural sites. A meeting was held with the village council on September 5, 1989.

Chickaloon Community Council concerns focus on safety issues and condition of the existing roadway: narrow facility lacking adequate shoulders, need for passing lanes on the hills, vehicular passing of slower moving traffic within the community proper, and lack of sight distance around the bluff at the Chickaloon River Road intersection. They want an opportunity to review and comment on proposed pulloff

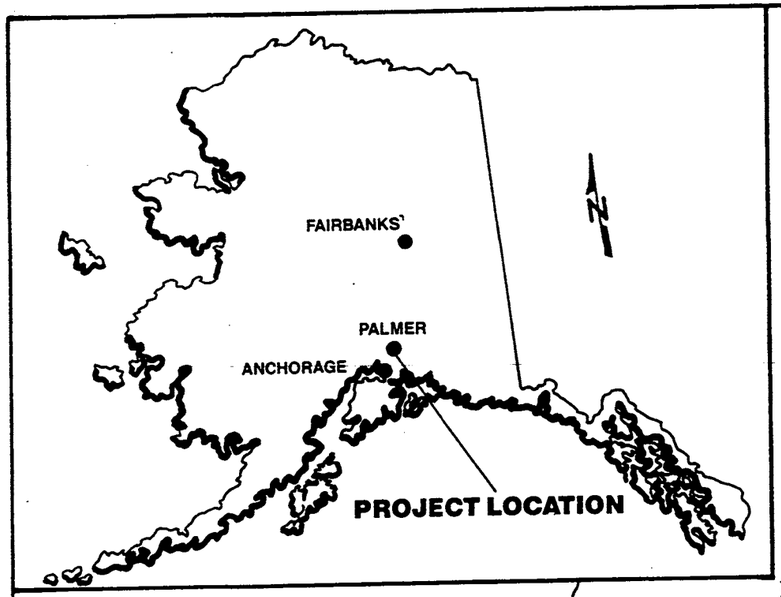
sites in their locality. A meeting was held with the community council on October 10, 1989.

Alaska Railroad Corporation (ARRC) reviewed the draft EA and has requested opportunity for review of any plans for the proposed Moose Creek realignment, and for plans in other areas which would involve ARRC right-of-way (refer to Appendix I).

VII. LIST OF PREPARERS

Name/Education	Expertise Applied to the EA	Professional Discipline Experience
	COORDINATION AND SUPERVISION	
Steve Moreno B.S. Civil Engineer M.S. Transportation	FHWA Guidance, Participation, and Evaluation of EA	Field Operations Engineer 21 years FHWA highway engineering and transportation planning
John Lohrey	FHWA Guidance, Participation, and Evaluation of EA	Area Engineer 8 years FHWA highway engineering
Steven R. Horn, P.E.	Environmental Supervisor, Guidance in Preparation of EA	Preliminary Design & Environmental Supervisor 16 years ADOT&PF design; progressive experience with project development, management, and supervision
Hank Wilson, P.E.	Preliminary Design and Document Review	Preliminary Design Project Manager 15 years ADOT&PF; 13 years Alaska consulting engineer
	TEXT AND ORGANIZATION	
Laurie Mulcahy B.S. Anthropology	Environmental Research and Author	Environmental Analyst 3 years ADOT&PF; 2 years archaeologist; 4 years historian
Jerry O. Ruehle B.S. Wildlife Management	Document Review and Revision	Environmental Team Leader 11 years ADOT&PF; 2 years USF&WS; 1 year ADF&G
William F. Ballard Fisheries Biology	Environmental Team Leader, Document Review and	Environmental Team Leader 10 years ADOT&PF; 2 years revision ADF&G fisheries biologist
Karin U. Andersen A.A.S. Graphic Arts	Graphic Artist	Graphics & Printing Supervisor 24 years ADOT&PF; 13 years NASA technical illustrator

FIGURES



TALKEETNA MOUNTAINS

CHUGACH MOUNTAINS

Moose Creek
Eska Creek
Granite Creek
Kings River
Chickaloon River
Boulder Creek
Hicks Creek
Caribou Creek
Purinton Creek
Pinochle Creek
Long Lake
Ida Lake
Little Granite Creek
Carpenter Creek
Wolverine Creek
Matanuska River
Matanuska Glacier

CHICKALOON BRANCH ROAD
GLENN HIGHWAY
CHICKALOON
MATANUSKA GLACIER
TO GLENNALLEN
END PROJECT M.P. 109.5

JONESVILLE ROAD
SUTTON
58 MILE ROAD
BUFFALO MINE ROAD
BEGIN PROJECT PARKS HWY (M.P. 35)
GLENN HIGHWAY
FISHHOOK WILLOW RD.
PALMER — WASILLA HWY
PARKS HIGHWAY
PALMER
OLD GLENN HIGHWAY
TO ANCHORAGE

N

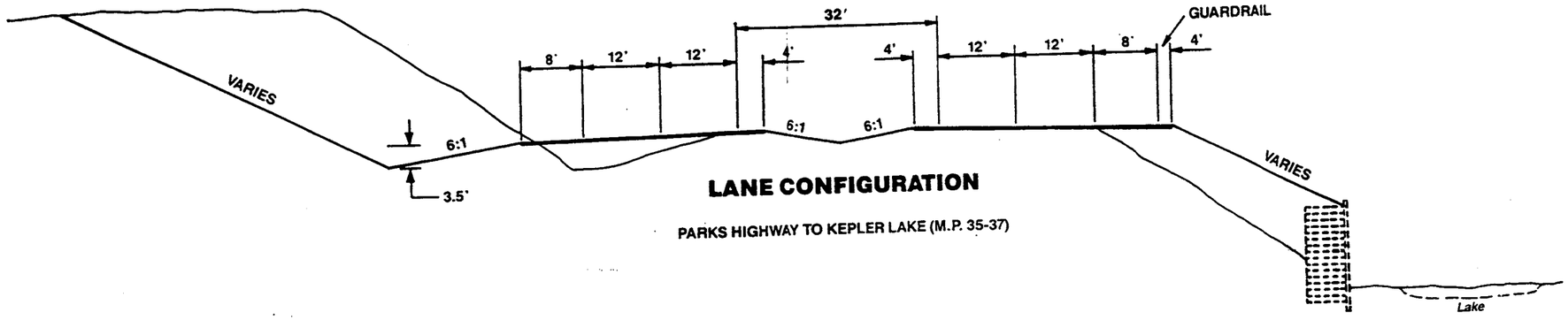
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

EXISTING GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

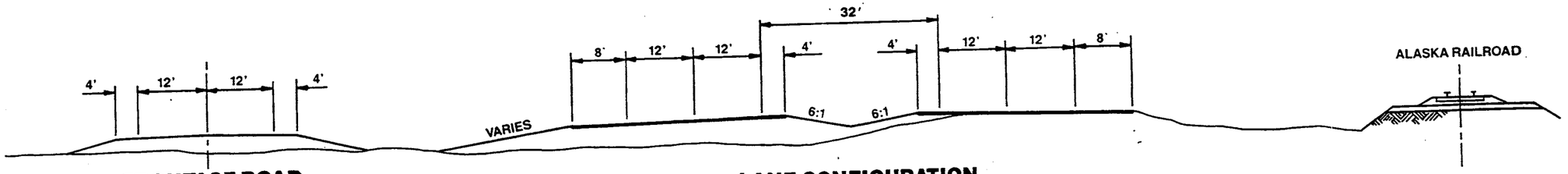
LOCATION AND VICINITY MAP

FIGURE 1



LANE CONFIGURATION

PARKS HIGHWAY TO KEPLER LAKE (M.P. 35-37)

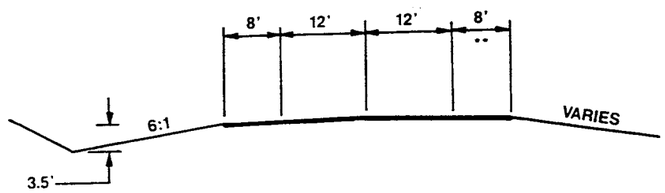


FRONTAGE ROAD

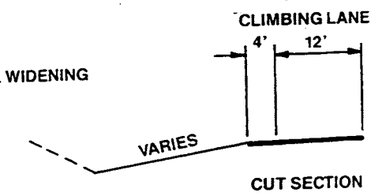
STA. 1524 + 00 TO STA. 1615 + 00

LANE CONFIGURATION

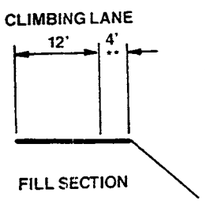
KEPLER LAKE TO OLD GLENN HIGHWAY (M.P. 37-42)



**ADD 4' FOR GUARDRAIL WIDENING



CUT SECTION



FILL SECTION

LANE CONFIGURATION

ARCTIC AVENUE TO END OF PROJECT (M.P. 49-109)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

LANE CONFIGURATIONS

FIGURE 2

TALKEETNA MOUNTAINS

Hicks Lake

Hicks Creek

END PROJECT
M.P. 109.5

Caribou Creek

Pinochle Creek

Boulder Creek

Chickaloon River

Purinton Creek

Long Lake

GLENN HIGHWAY

CHICKALOON

TO GLENNALLEN

MATANUSKA GLACIER

Matanuska Glacier

Matanuska River

Ida Lake

Kings River

Eska Creek

Granite Creek

Little Granite Creek

Moose Creek

SUTTON

SEE FIGURE 3-6

SEE FIGURE 3-7

SEE FIGURE 3-8

SEE FIGURE 3-9

SEE FIGURE 3-10

SEE FIGURE 3-11

SEE FIGURE 3-12

SEE FIGURE 3-5

SEE FIGURE 3-4

BEGIN PROJECT
PARKS HWY
(M.P. 35)

SEE FIGURE 3-3

SEE FIGURE 3-2

SEE FIGURE 3-1

GLENN HIGHWAY

PALMER

OLD GLENN HIGHWAY

TO WASILLA

TO ANCHORAGE

CHUGACH MOUNTAINS

N

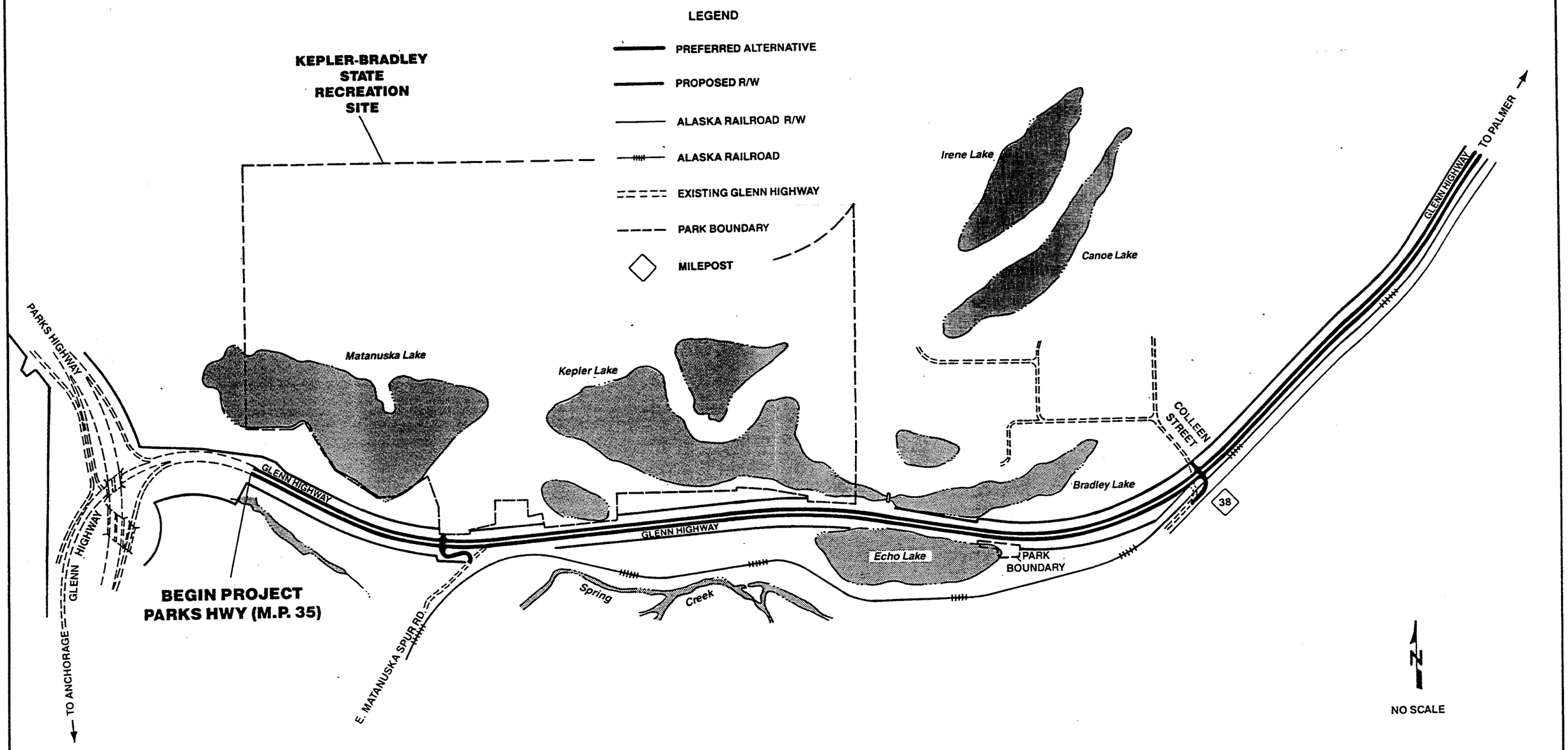
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE

FIGURE 3



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-1

LEGEND

- PREFERRED ALTERNATIVE
- PROPOSED R/W
- ALASKA RAILROAD R/W
- ALASKA RAILROAD
- EXISTING ROAD
- MILEPOST

CRIMSON VIEW SUBD.

CIENNA AVENUE

TOWN & COUNTRY SUBDIVISION

BLUNCK STREET

HODSDON SUBD.

DRIFT LANE

WILD ROSE EST.

MOFFITT SUBD

MOORE ROAD

CITY OF PALMER

PALMER-WASILLA HWY.

ELLEN STREET

CITY LIMITS

GREATLAND TERRACE

W. EVERGREEN AVENUE

41

GLENN HIGHWAY

LUCAS ADD. NO.1

SOUTH COLONY WAY

GLENN HIGHWAY

39

OUTER SPRINGER LOOP ROAD

INNER SPRINGER LOOP ROAD

OUTER SPRINGER LOOP ROAD

COMMERCIAL DR.

CITY OF PALMER

ALASKA STATE FAIRGROUNDS

CITY LIMITS

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-2

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

MILEPOST

OLD GLENN HIGHWAY MILEPOST

CITY LIMITS

CITY OF PALMER

PALMER — WASILLA HWY

ARCTIC AVENUE

SCOTT ROAD

MARSH ROAD

PIONEER PARKWAY

FISHHOOK WILLOW ROAD

ARCHIE ROAD

GLENN HIGHWAY

42.1

29.6

49

W. EVERGREEN AVENUE

OLD GLENN HIGHWAY/ARCTIC AVENUE

W. CARIBOU AVENUE

ALBRECHT AVE

Matanuska River

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE
DETAIL MAPS

FIGURE 3-3

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

PARK BOUNDARY

EXISTING GLENN HIGHWAY

MILEPOST

MOOSE CREEK STATE RECREATION SITE

Moose Creek

BUFFALO MINE ROAD

GLENN HIGHWAY

PARK AND WISHBONE HILL COAL MINE ACCESS

GLENN HIGHWAY

MOOSE TOWNSITE

GLENN HIGHWAY

53

Matanuska River

Matanuska River

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-4

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

MAT. VALLEY MOOSE RANGE BOUNDARY

EXISTING GLENN HIGHWAY

MILEPOST

MOKI DR.

59

GLENN HIGHWAY

PROPOSED R/W

COMMUNITY PROPER

SUTTON

Eska Creek

JONESVILLE ROAD

River

Matanuska

Matanuska River

58 MILE ROAD

GLENN HIGHWAY

PROPOSED R/W

N

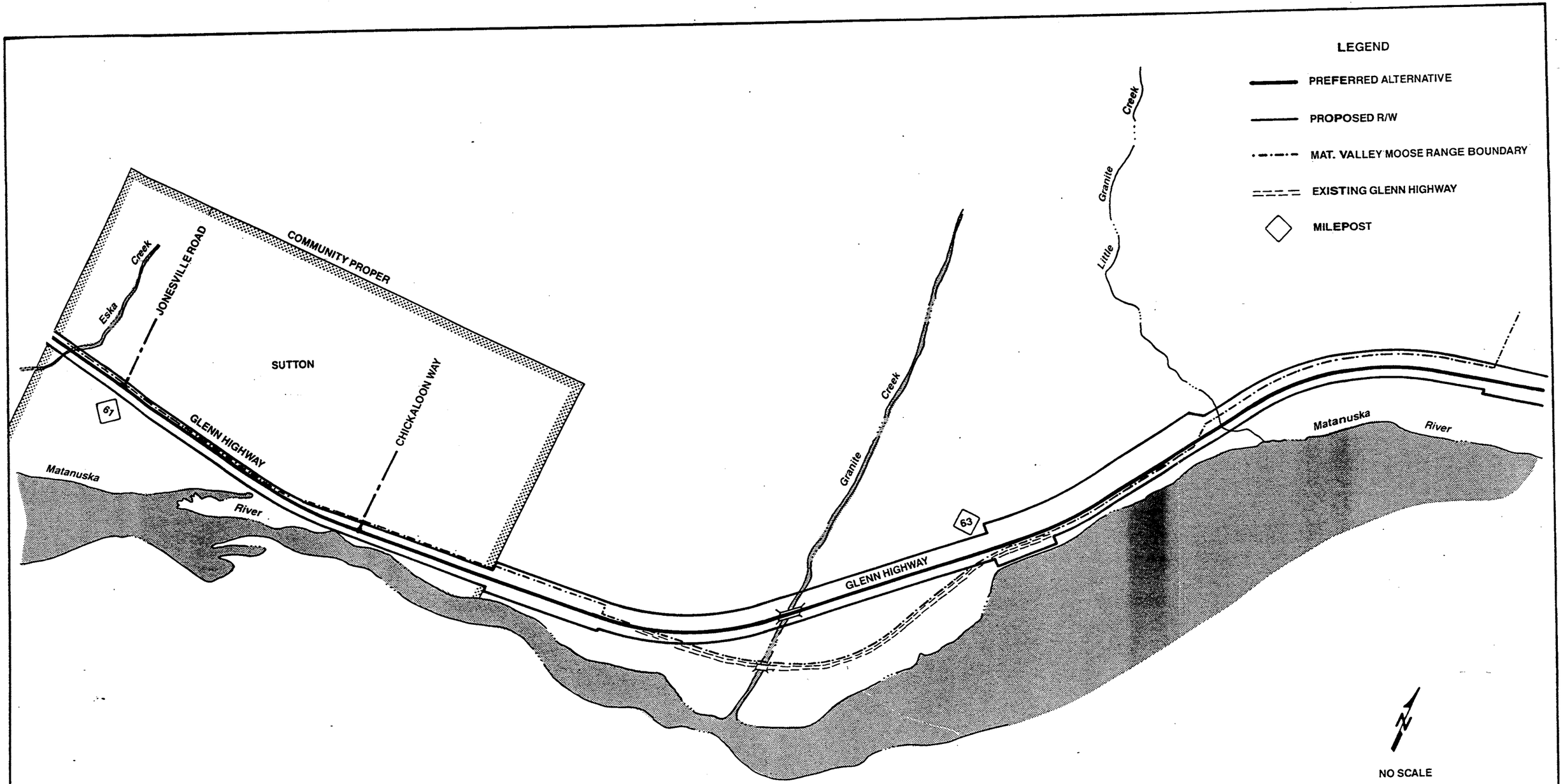
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-5



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-6

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

MILEPOST

FISH LAKE ROAD

Ida Lake

72

GLENN HIGHWAY

73

Matanuska River

N

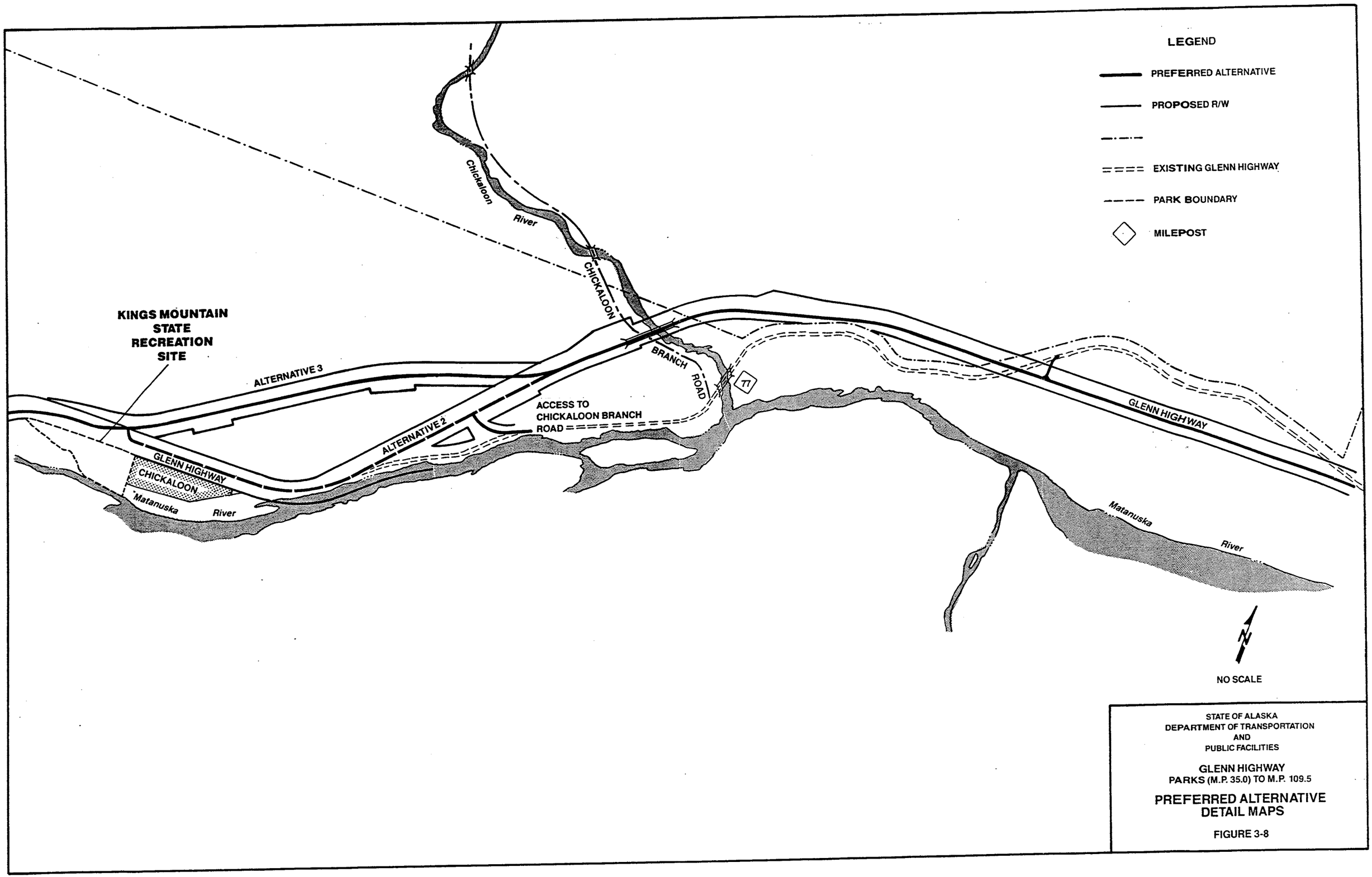
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-7



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-8

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

MILEPOST

MAT. VALLEY [illegible]

Purinton Creek

GLENN HIGHWAY

GLENN HIGHWAY

92

GLENN HIGHWAY

Purinton Creek

Matanuska River

N

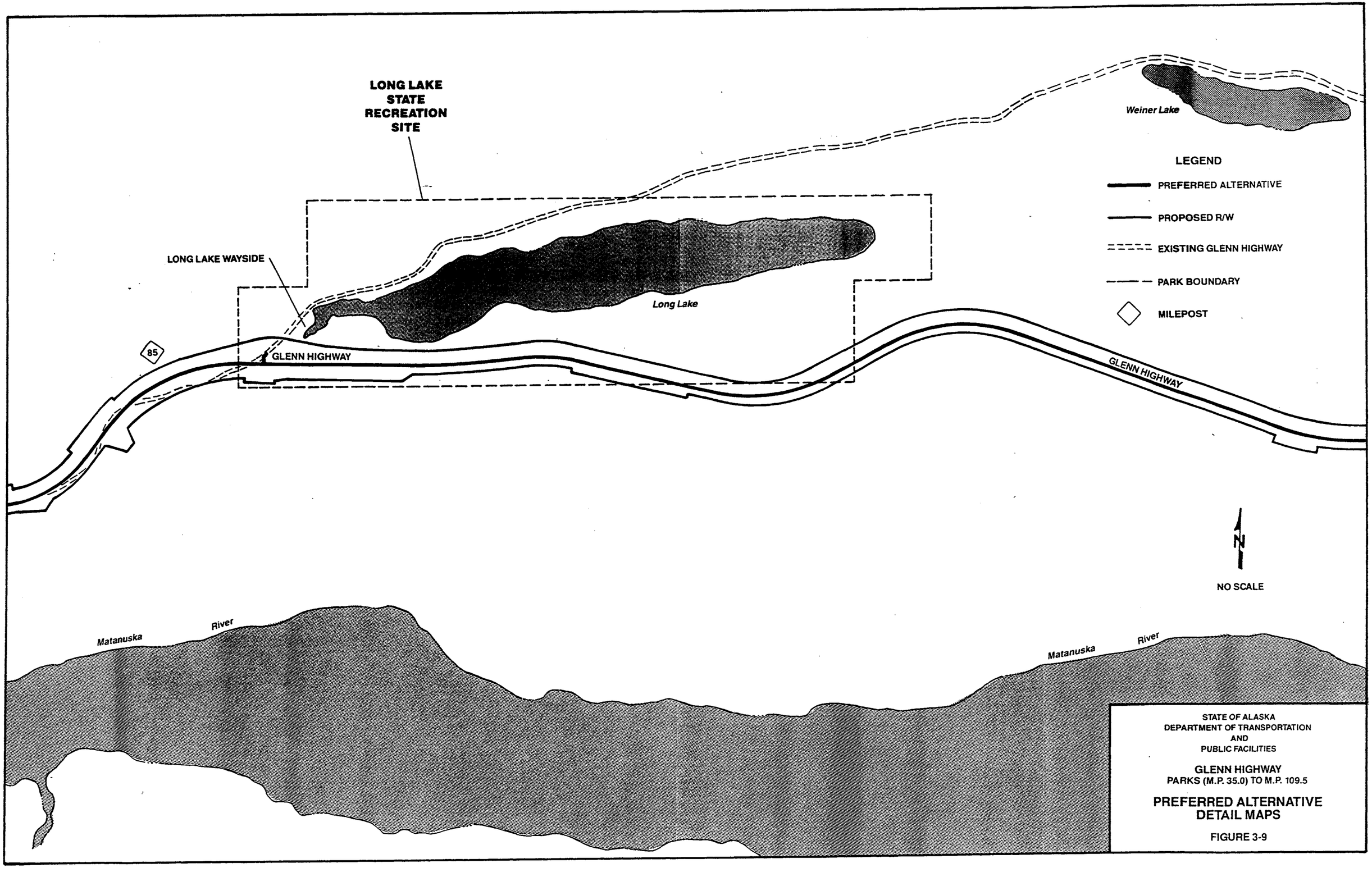
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE
DETAIL MAPS

FIGURE 3-10



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3-9

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

MILEPOST

Hicks Creek

96

GLENN HIGHWAY

Pinochle Creek

Hundred Mile Lake

ALTERNATIVE 1

GLENN HIGHWAY

ALTERNATIVE 2

GLENN HIGHWAY

Matanuska River

Matanuska River

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE DETAIL MAPS

FIGURE 3 - 11

LEGEND

'PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

MILEPOST

PARK BOUNDARY

PARK ACCESS

Caribou Creek

107

GLENN HIGHWAY

END PROJECT
M.P. 109.5

TO GLENNALLEN

GLENN HIGHWAY

ALTERNATIVE 2

Caribou Creek

ALTERNATIVE 3

GLENN HIGHWAY

CARIBOU CREEK
RECREATION
MINING AREA

Matanuska River

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

PREFERRED ALTERNATIVE
DETAIL MAPS

FIGURE 3 - 12

TALKEETNA MOUNTAINS

MAT. VALLEY MOOSE RANGE BOUNDARY

MAT. VALLEY MOOSE RANGE BOUNDARY

Boulder Creek

Hicks Lake

Hicks Creek

Caribou Creek

Chickaloon River

CHICKALOON RIVER TRAIL

Chickaloon

Boulder Creek

NELCHINA TRAIL

Purinton Creek

CHICKALOON-KNIK

CHICKALOON

Kings River

KNIK-NELCHINA TRAIL

GLENN HIGHWAY

GLENN HIGHWAY

Pinochle Creek

Hundred Mile Lake

GLENNALLEN

Ida Lake

Matanuska River

MATANUSKA GLACIER

Matanuska Glacier

Glacier Creek

CHICKALOON-KNIK

Moose Creek

Eska Creek

Granite Creek

Little Granite Creek

SEVENTEEN MILE LAKE TRAIL

SUTTON

Matanuska River

Carpenter Creek

KINGS MOUNTAIN STATE RECREATION SITE

BONNIE LAKE STATE RECREATION SITE

LONG LAKE STATE RECREATION SITE

MATANUSKA GLACIER STATE RECREATION SITE

CARIBOU CREEK RECREATION MINING AREA

MAT. VALLEY MOOSE RANGE BOUNDARY

MOOSE CREEK STATE RECREATION SITE

Wolverine Creek

KEPLER-BRADLEY STATE RECREATION SITE

TO ANCHORAGE PARKS HIGHWAY

GLENN HIGHWAY

PALMER

OLD GLENN HIGHWAY

Matanuska River

CHUGACH MOUNTAINS

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

EXISTING GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

MOOSE RANGE, PARKS AND RECREATION TRAILS

FIGURE 4

TALKEETNA MOUNTAINS

Chickaloon River

Boulder Creek

Purinton Creek

Hicks Creek

Pinochle Creek

Caribou Creek

GLENN HIGHWAY

TO GLENNALLEN

CHICKALOON

Kings River

Ida Lake

Matanuska River

MATANUSKA GLACIER

Matanuska Glacier

Eska Creek

Granite Creek

Little Granite Creek

Moose Creek

SUTTON

Matanuska River

GLENN HIGHWAY

PALMER

TO WASILLA

TO ANCHORAGE

CHUGACH MOUNTAINS

LEGEND

EXISTING GLENN HIGHWAY

SHEEP

MOOSE

CARIBOU

WATERFOWL

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

EXISTING GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

COMMUNITY RESOURCE HARVEST AREAS - BIG GAME

FIGURE 5 - 1

TALKEETNA MOUNTAINS

CHUGACH MOUNTAINS

Chickaloon River
Boulder Creek
Purinton Creek
Hicks Creek
Pinochle Creek
Caribou Creek
Kings River
Ida Lake
Eska Creek
Granite Creek
Little Granite Creek
Moose Creek
Matanuska River
Matanuska Glacier

CHICKALOON
GLENN HIGHWAY
TO GLENNALLEN
SUTTON
MATANUSKA GLACIER
PALMER
GLENN HIGHWAY
TO WASILLA
TO ANCHORAGE

LEGEND

EXISTING GLENN HIGHWAY

FURBEARERS

VEGETATION

FRESHWATER FISH

N

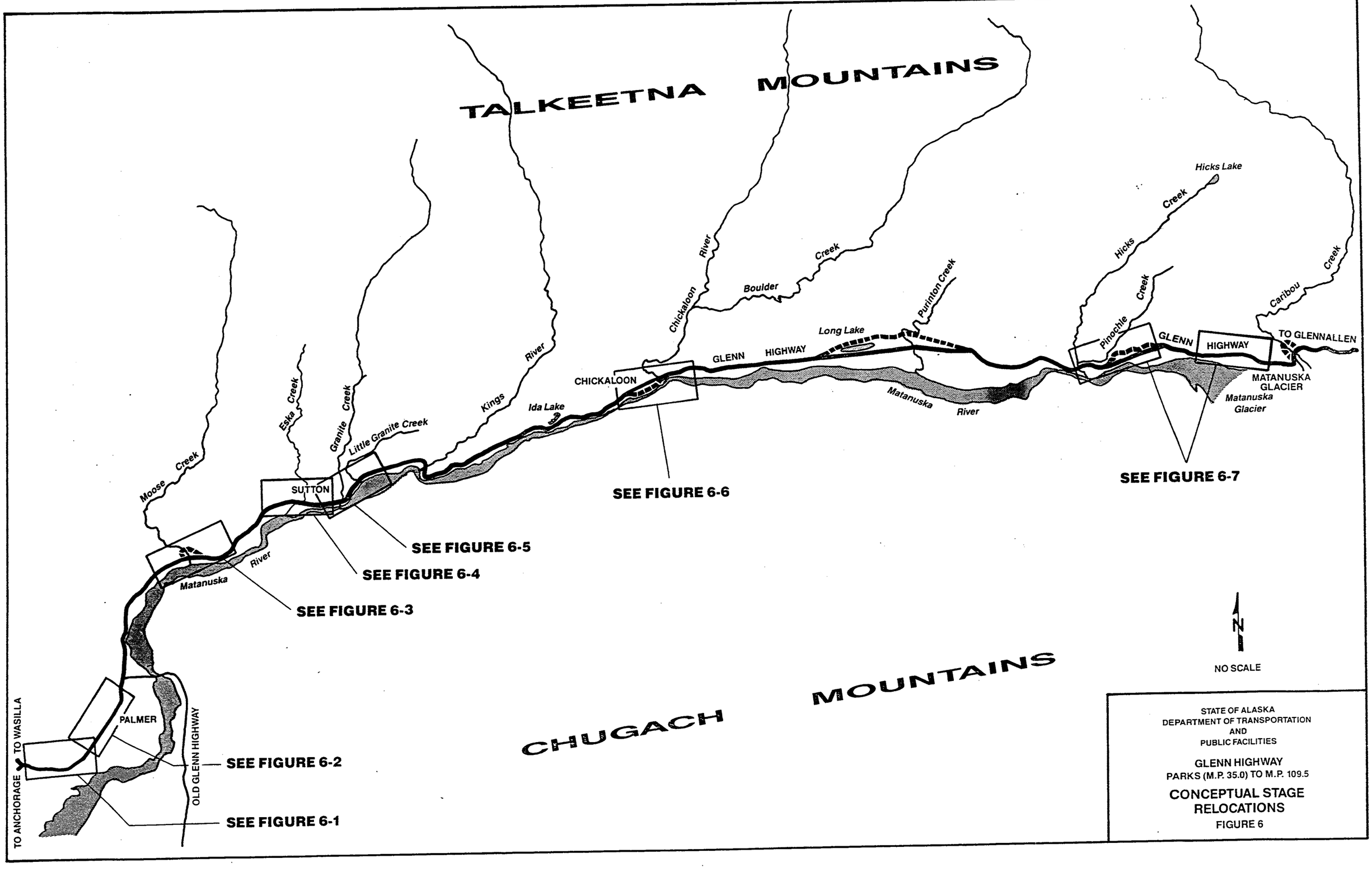
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

EXISTING GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

COMMUNITY RESOURCE HARVEST AREAS - SMALL GAME

FIGURE 5-2

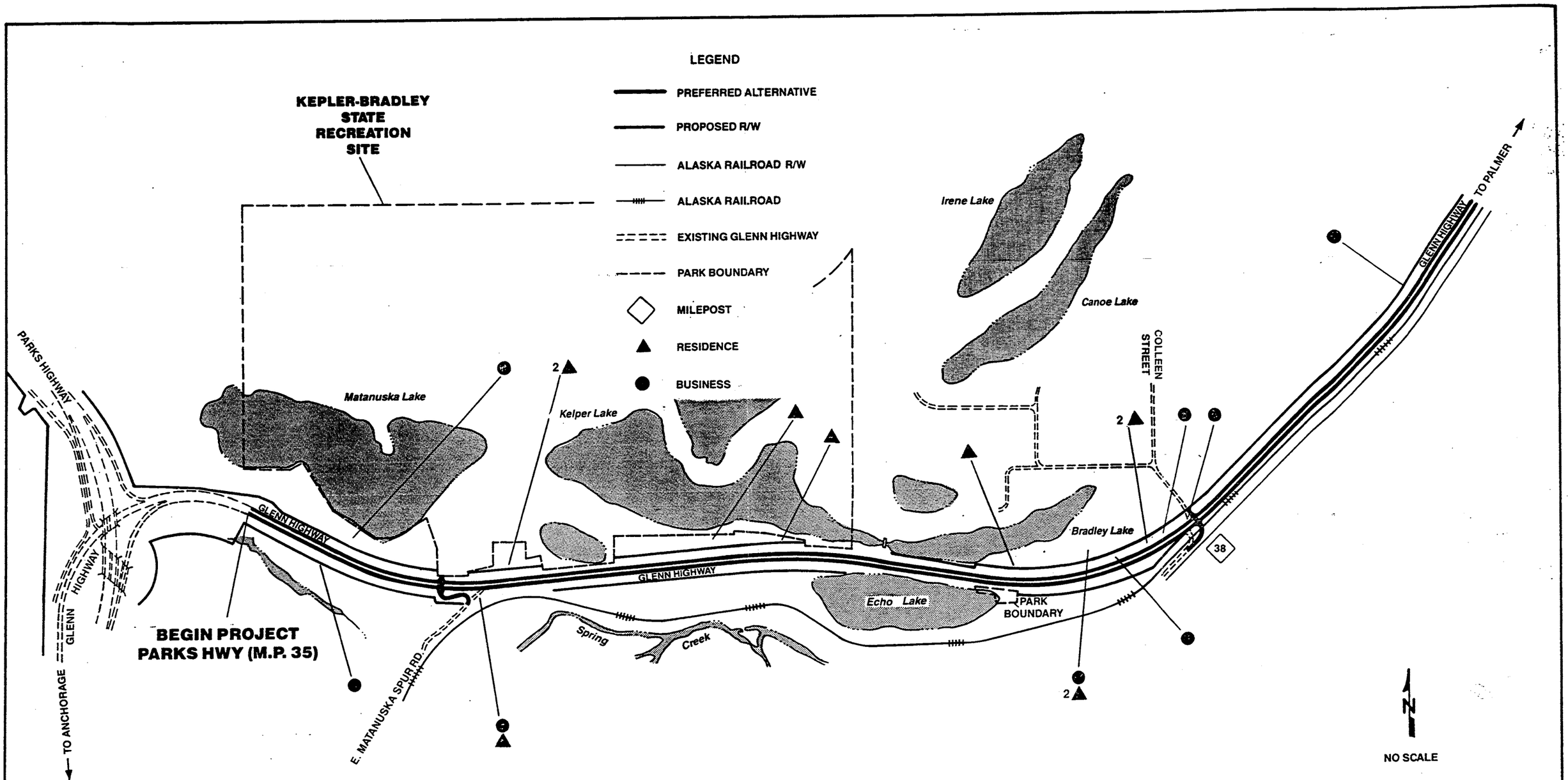


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE
RELOCATIONS

FIGURE 6

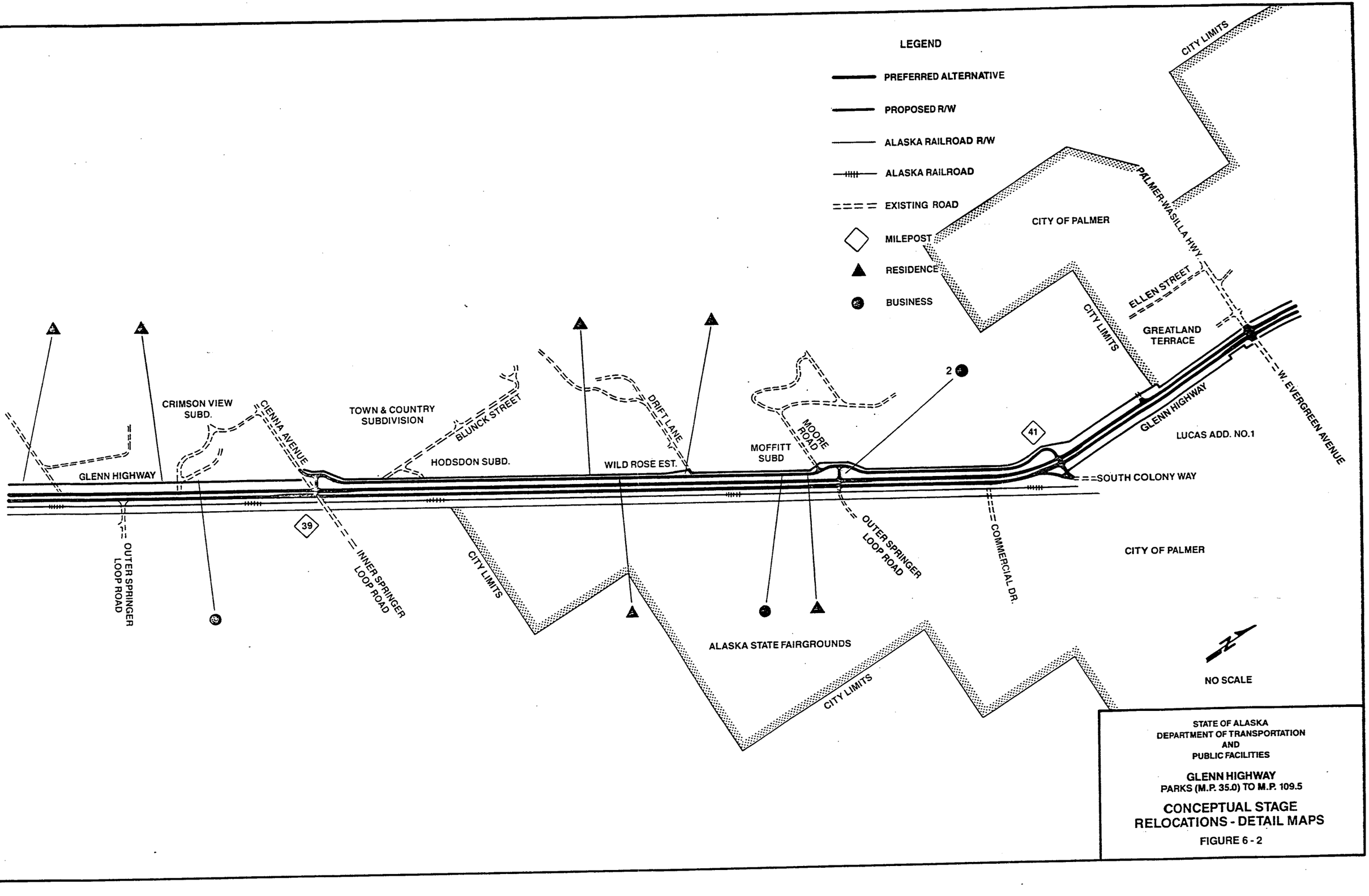


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE RELOCATIONS - DETAIL MAPS

FIGURE 6 - 1



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE RELOCATIONS - DETAIL MAPS

FIGURE 6 - 2

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

PARK BOUNDARY

EXISTING GLENN HIGHWAY

MILEPOST

RESIDENCE

MOOSE CREEK STATE RECREATION SITE

Moose Creek

BUFFALO MINE ROAD

GLENN HIGHWAY

PARK AND WISHBONE HILL COAL MINE ACCESS

2

GLENN HIGHWAY

GLENN HIGHWAY

MOOSE TOWNSITE

53

Matanuska River

Matanuska River

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE
RELOCATIONS - DETAIL MAPS

FIGURE 6 - 3

LEGEND

PREFERRED ALTERNATIVE

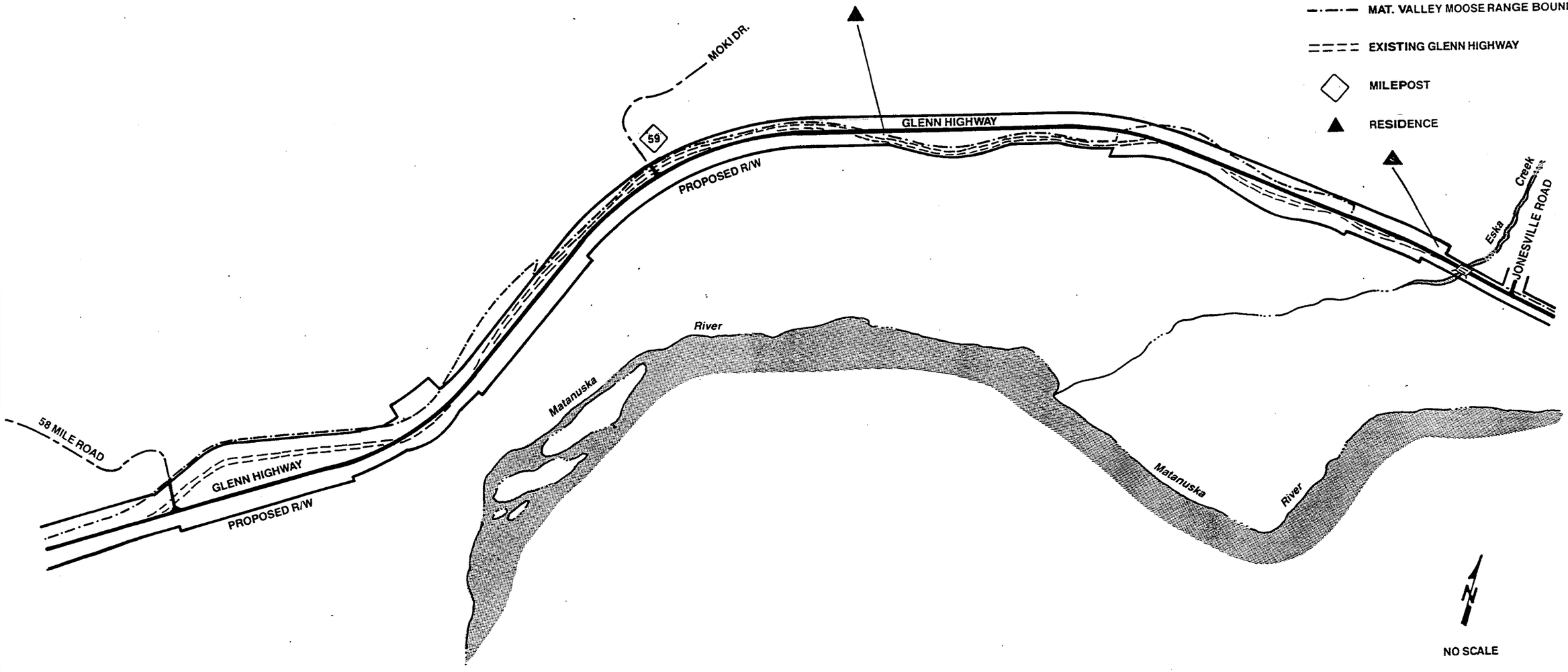
PROPOSED R/W

MAT. VALLEY MOOSE RANGE BOUNDARY

EXISTING GLENN HIGHWAY

MILEPOST

RESIDENCE



NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE
RELOCATIONS - DETAIL MAPS

FIGURE 6 - 4

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

MAT. VALLEY MOOSE RANGE BOUNDARY

EXISTING GLENN HIGHWAY

MILEPOST

RESIDENCE

BUSINESS

COMMUNITY PROPER

JONESVILLE ROAD

Eska Creek

SUTTON

CHICKALOON WAY

61

GLENN HIGHWAY

Matanuska River

Granite Creek

Little Granite Creek

2

63

GLENN HIGHWAY

Matanuska River

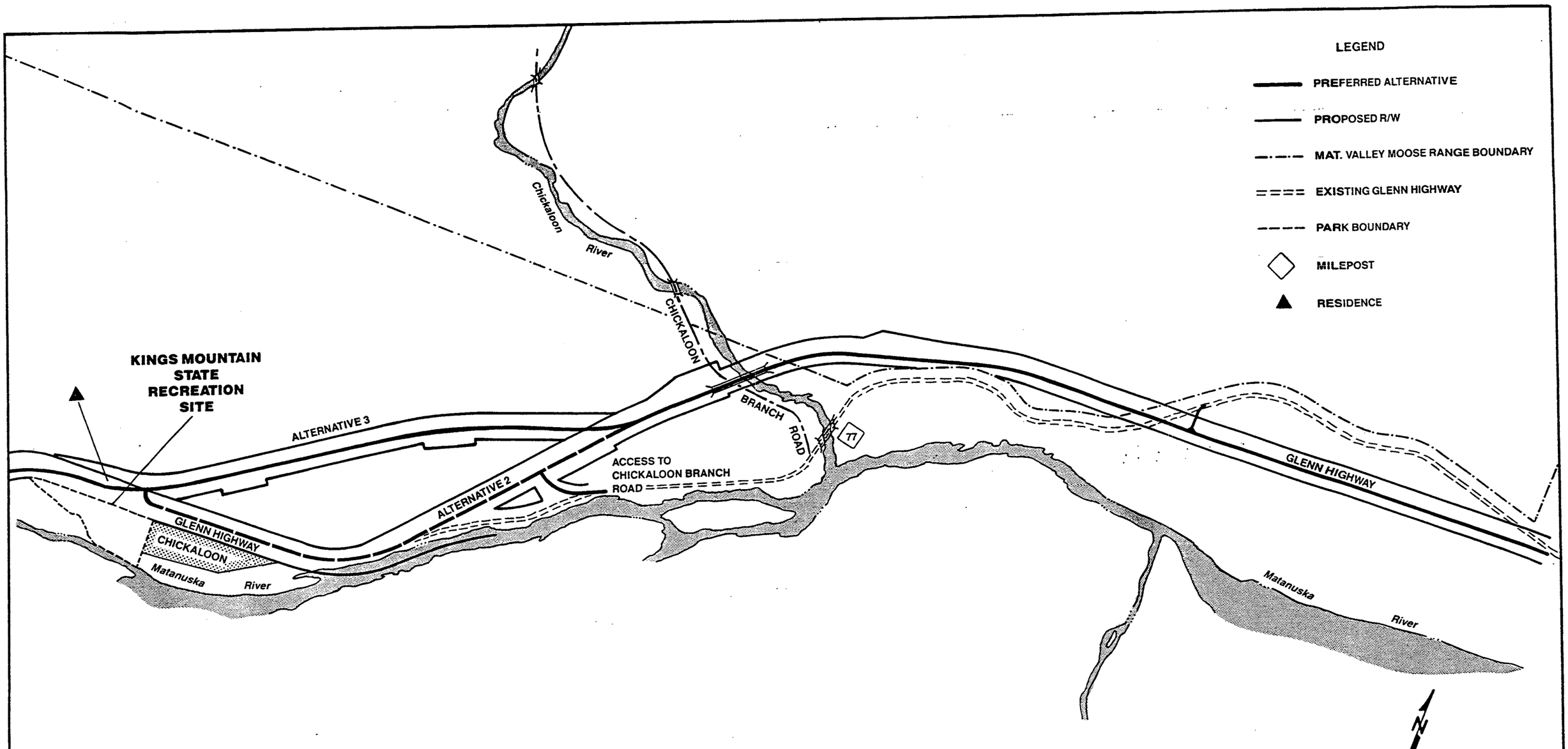
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE RELOCATIONS - DETAIL MAPS

FIGURE 6 - 5

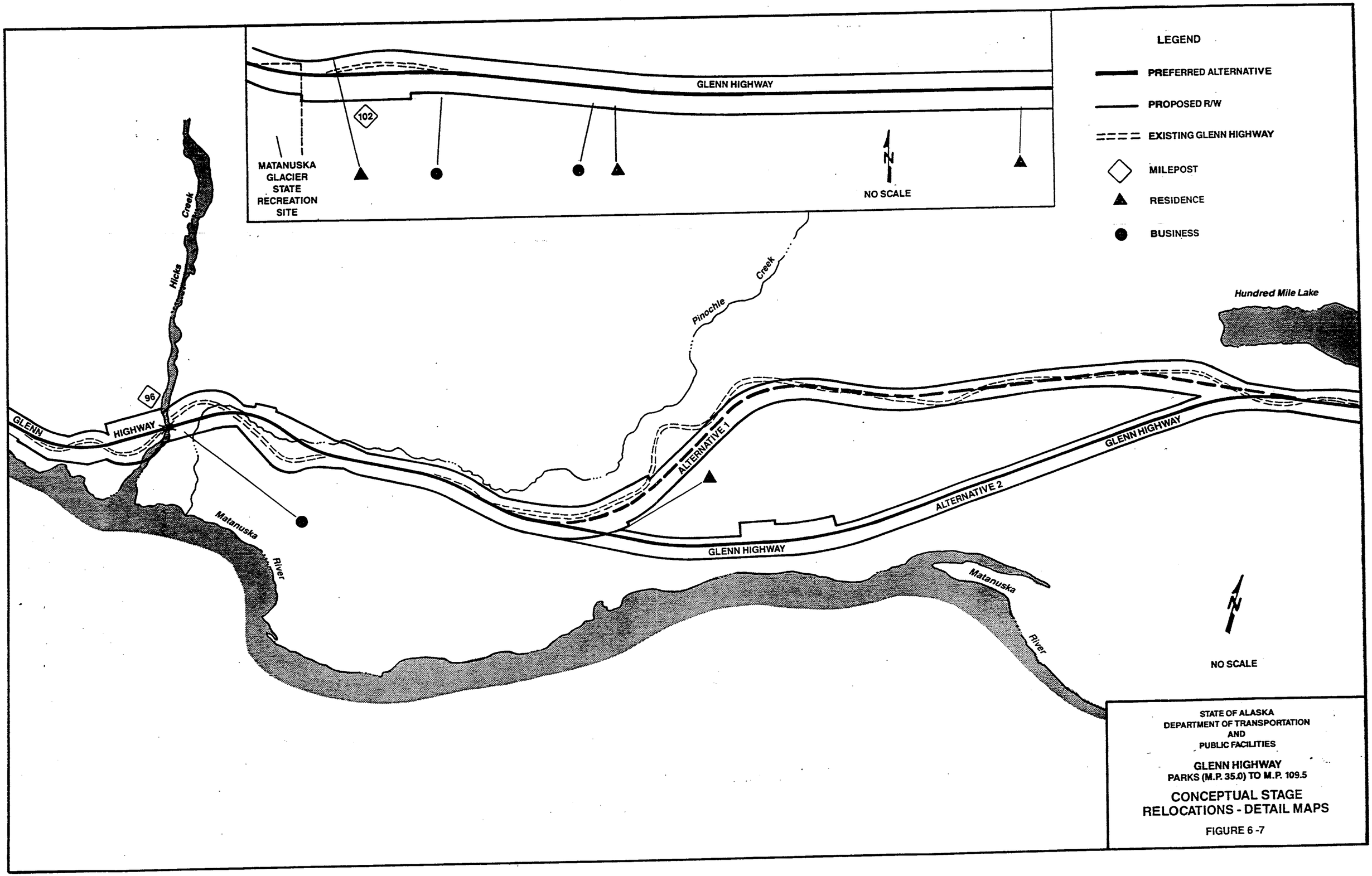


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

CONCEPTUAL STAGE RELOCATIONS - DETAIL MAPS

FIGURE 6 - 6

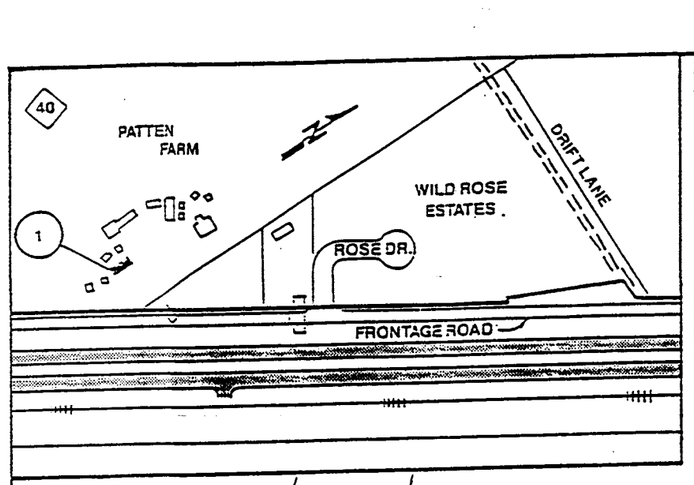


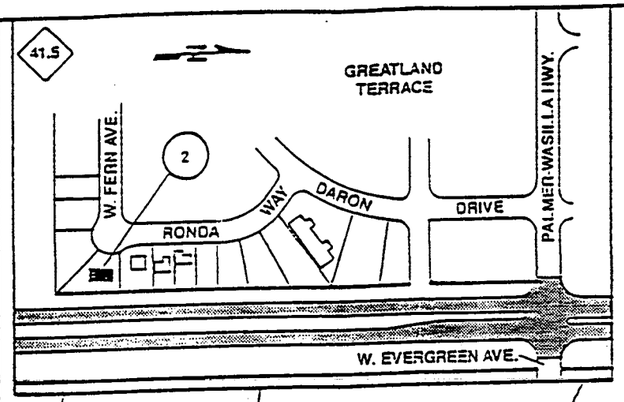
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

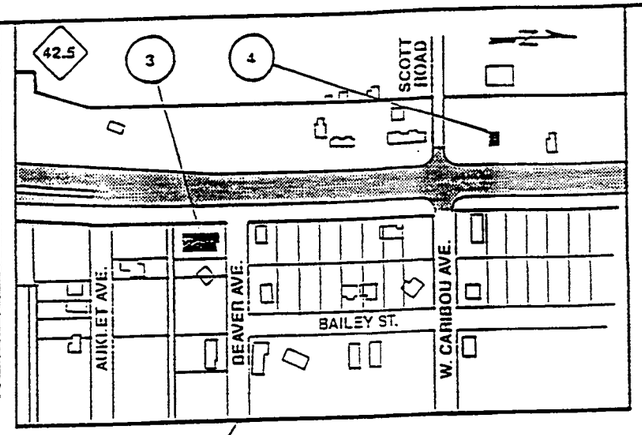
GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

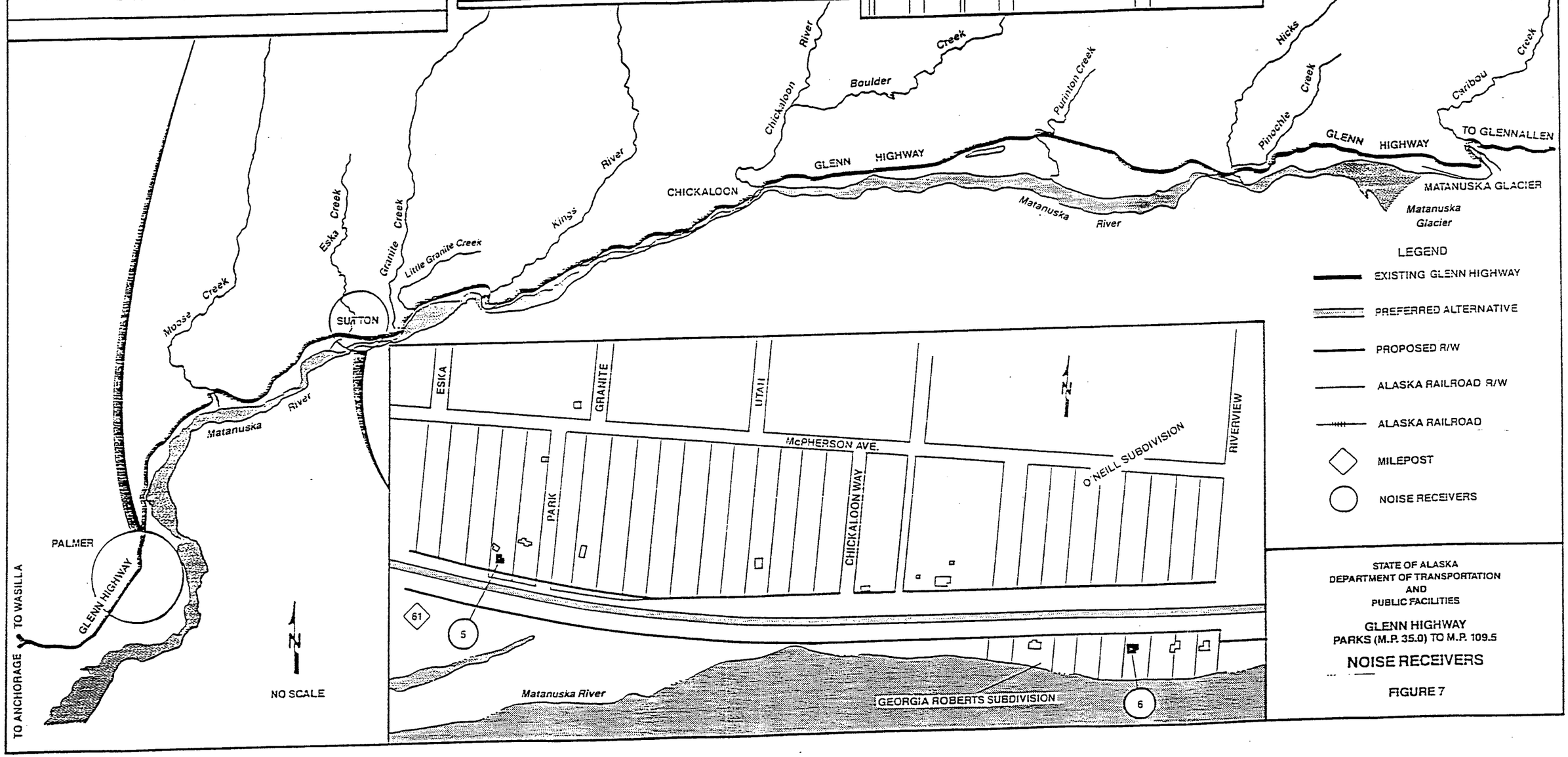
CONCEPTUAL STAGE
RELOCATIONS - DETAIL MAPS

FIGURE 6 -7









LEGEND

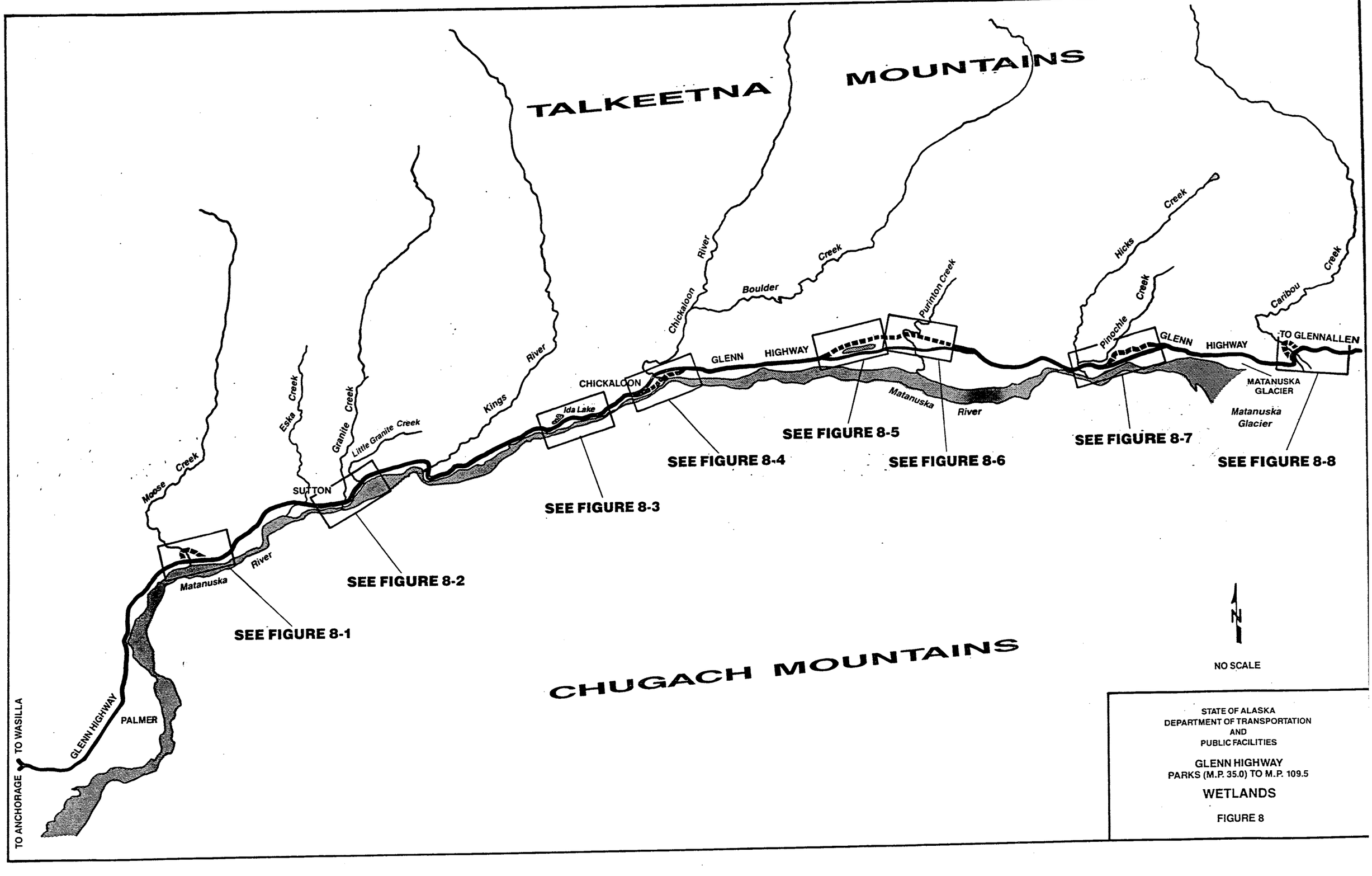
- EXISTING GLENN HIGHWAY
- PREFERRED ALTERNATIVE
- PROPOSED R/W
- ALASKA RAILROAD R/W
- ALASKA RAILROAD
- MILEPOST
- NOISE RECEIVERS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

NOISE RECEIVERS

FIGURE 7

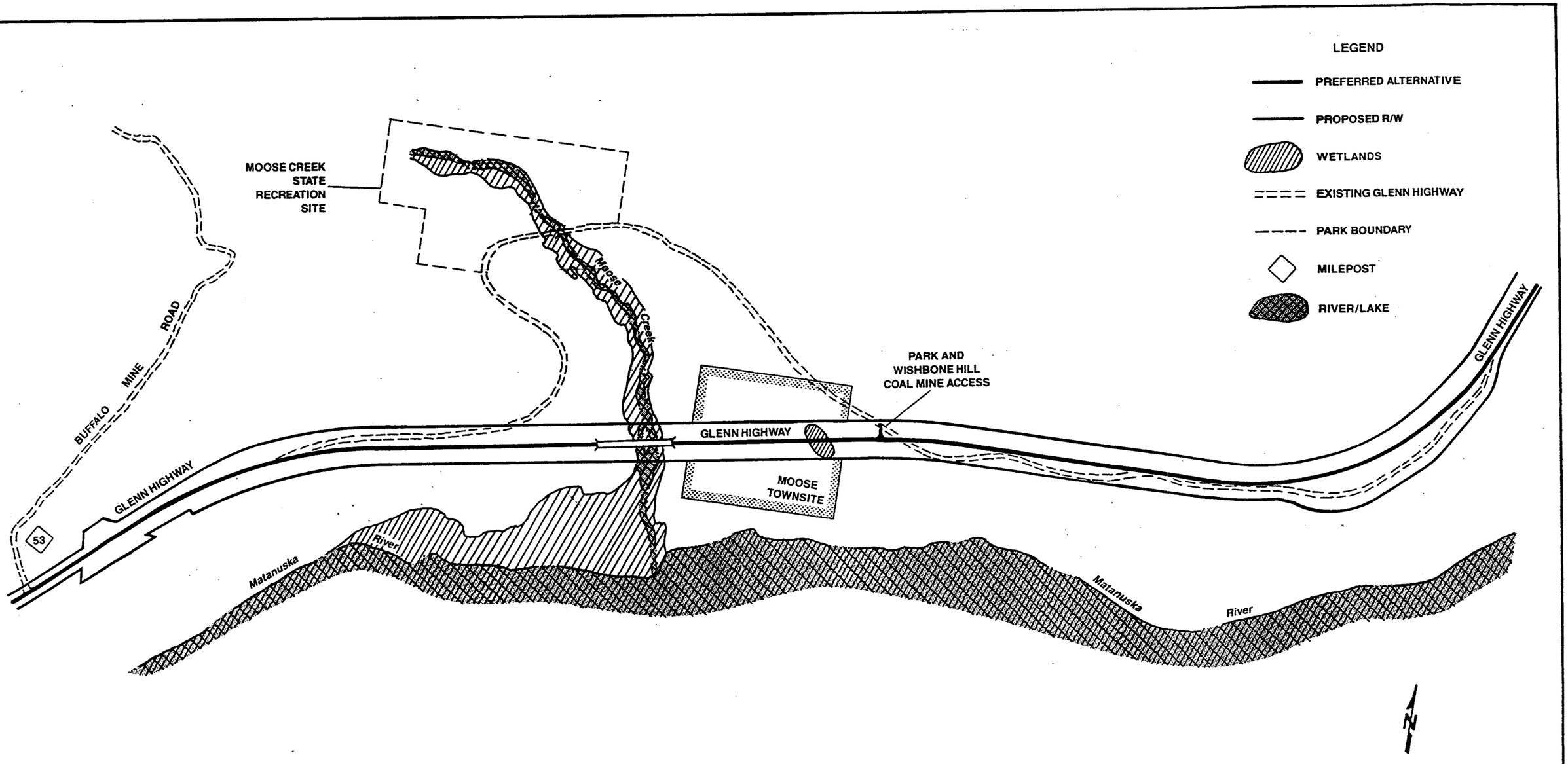


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8

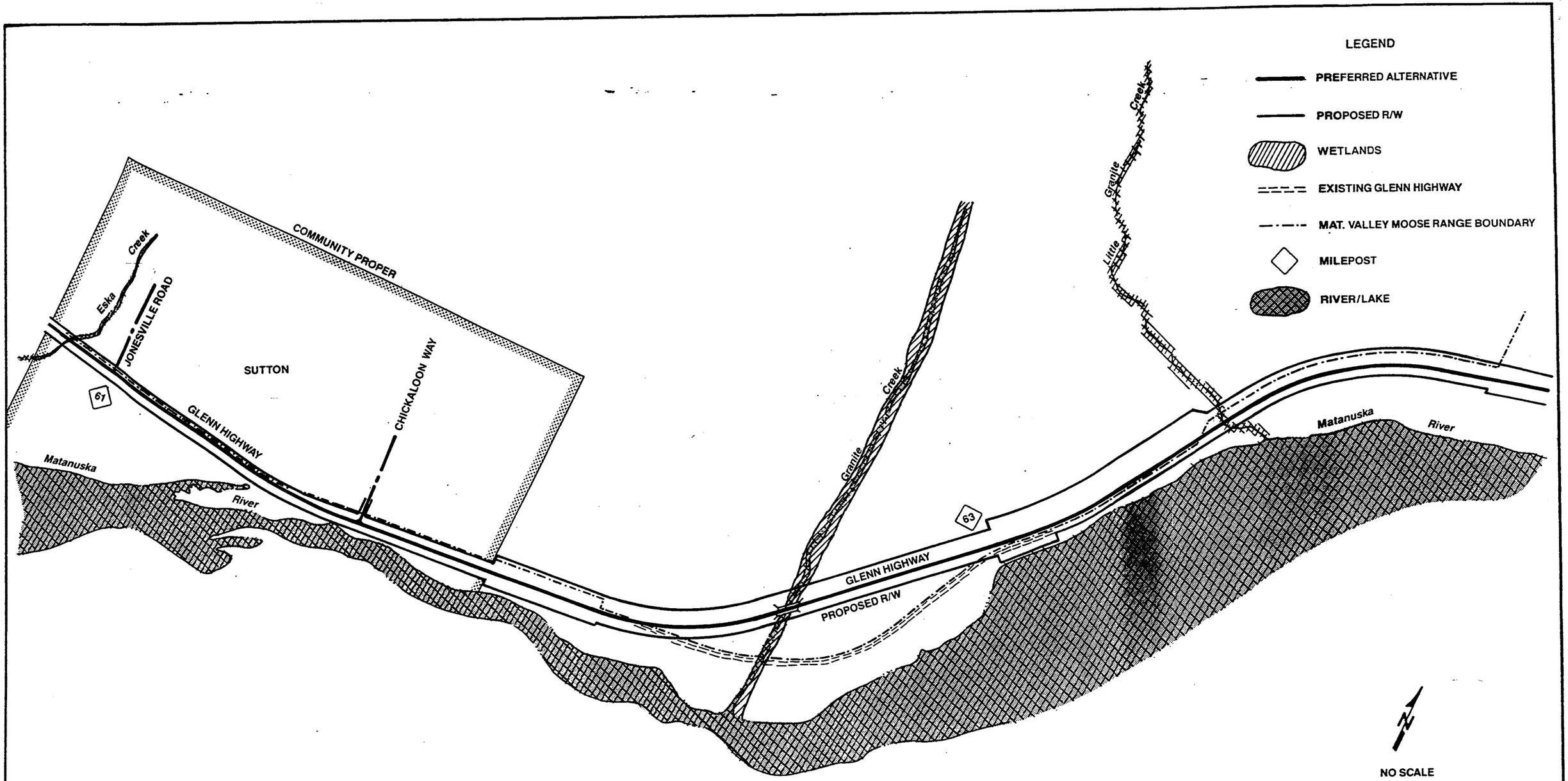


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 1



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 2

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

WETLANDS

MILEPOST

RIVER/LAKE

FISH LAKE ROAD

Ida Lake

T2

GLENN HIGHWAY

T3

Matanuska River

N

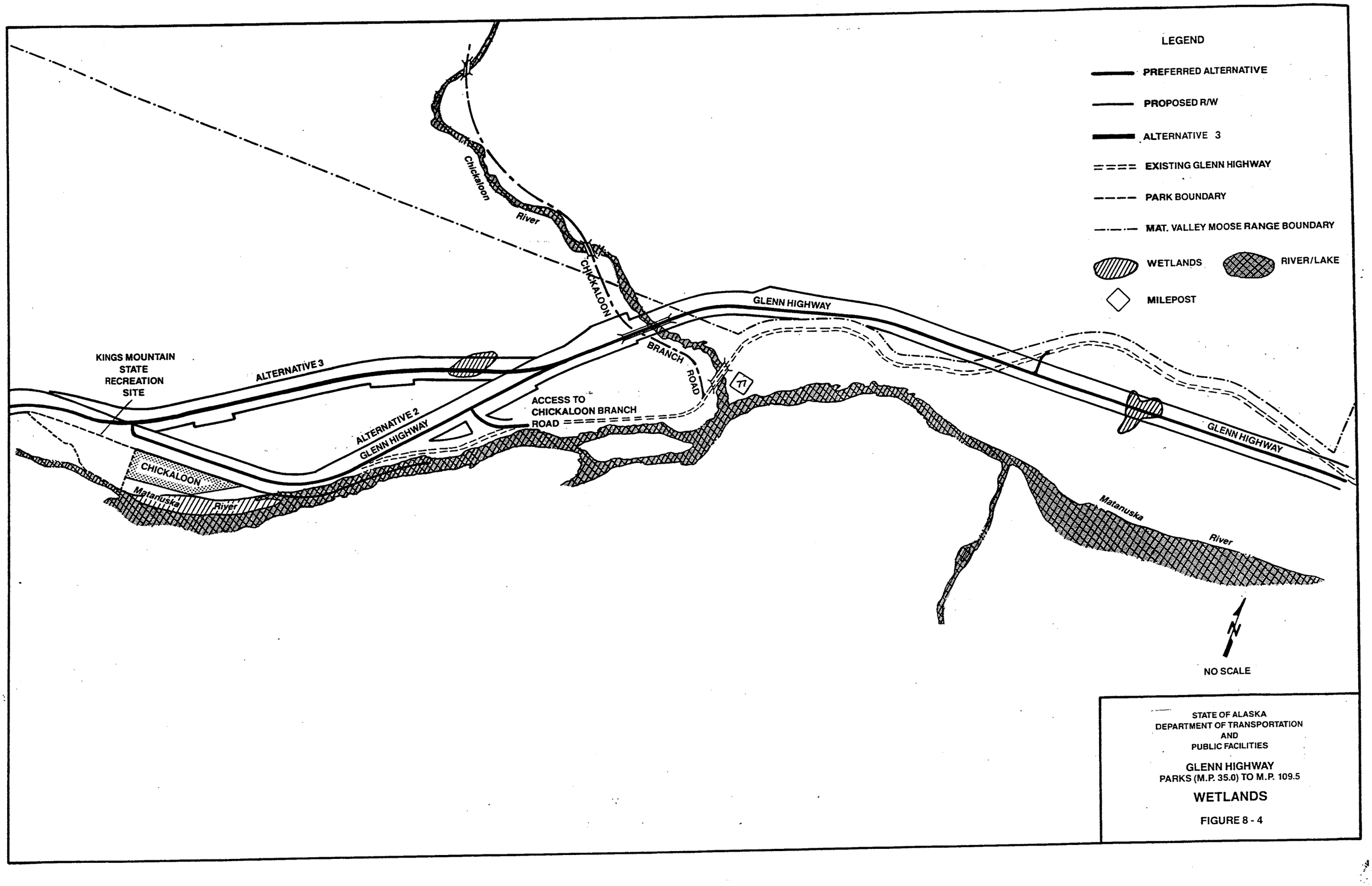
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 3

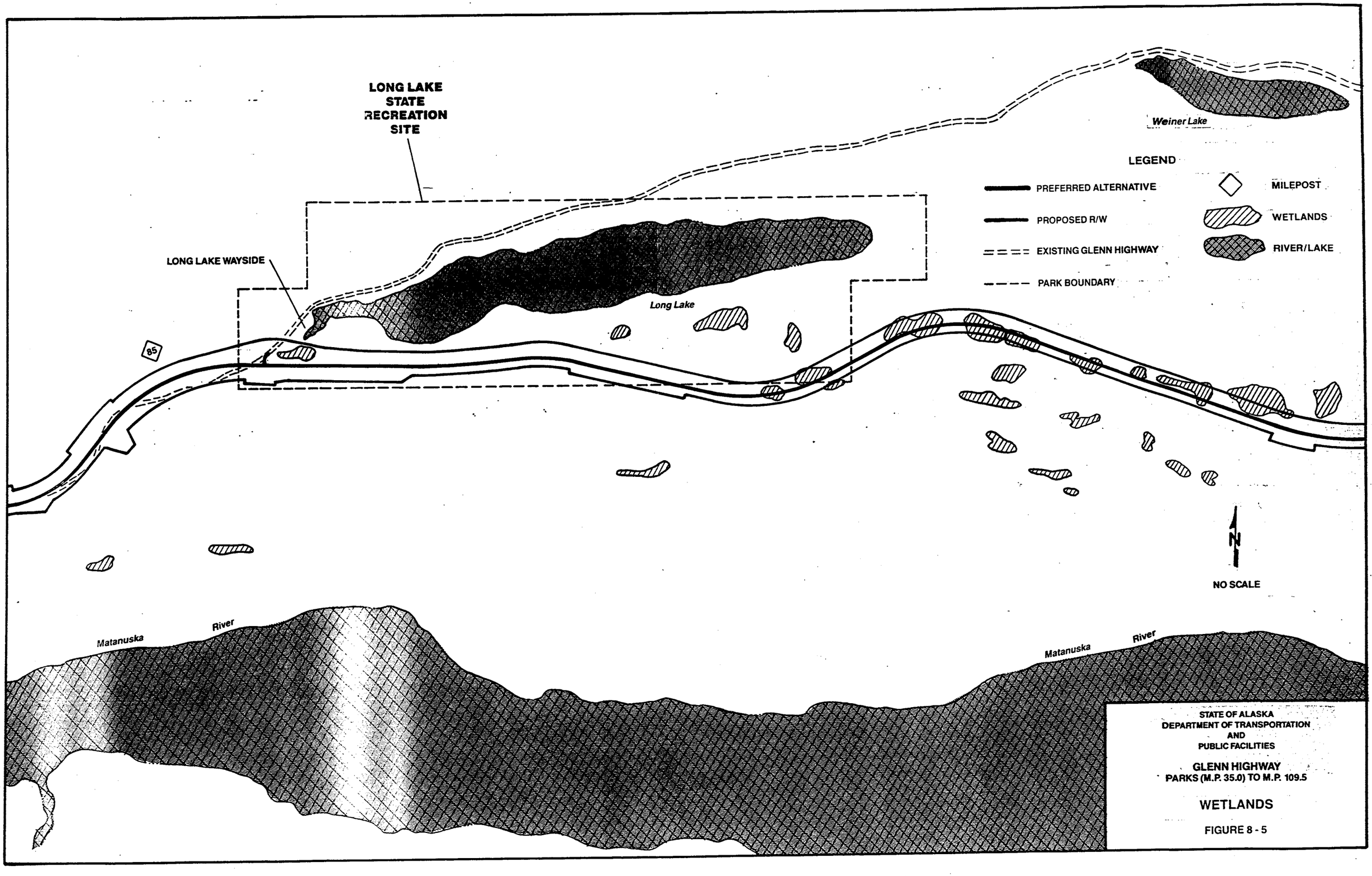


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 4

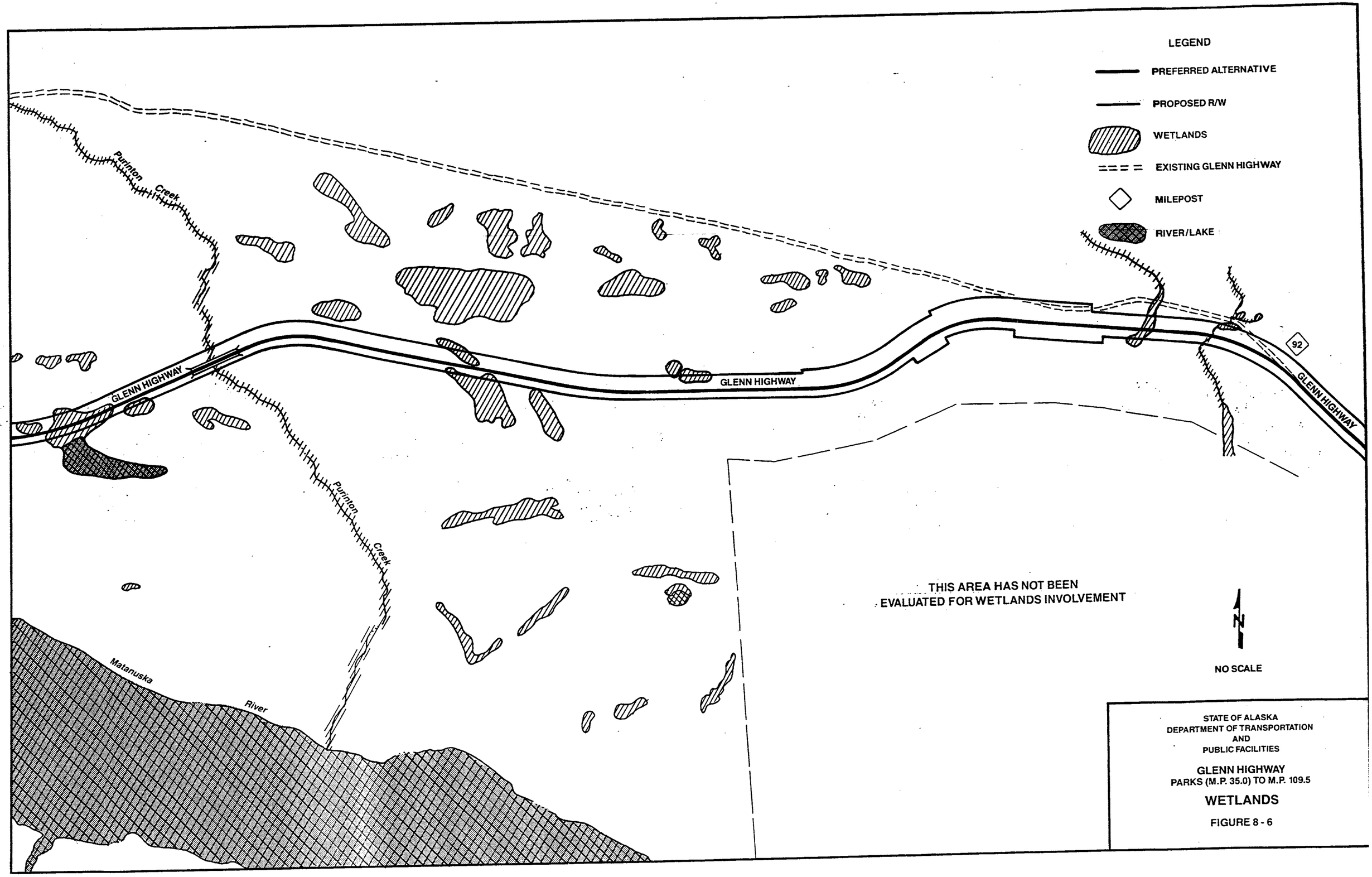


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 5


LEGEND
PREFERRED ALTERNATIVE
PROPOSED R/W
WETLANDS
EXISTING GLENN HIGHWAY
MILEPOST
RIVER/LAKE
Purinton Creek
GLENN HIGHWAY
GLENN HIGHWAY
92
GLENN HIGHWAY
Purinton Creek
Matanuska River
THIS AREA HAS NOT BEEN
EVALUATED FOR WETLANDS INVOLVEMENT
N
NO SCALE
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5
WETLANDS
FIGURE 8 - 6

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

WETLANDS

EXISTING GLENN HIGHWAY

MILEPOST

RIVER/LAKE

Hicks Creek

96

Pinochle Creek

Pinochle Creek

Hundred Mile Lake

ALTERNATIVE 1

ALTERNATIVE 2

GLENN HIGHWAY

GLENN HIGHWAY

Matanuska River

Matanuska River

N

NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 7

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

WETLANDS

EXISTING GLENN HIGHWAY

MILEPOST

RIVER/LAKE

PARK BOUNDARY

PARK ACCESS

Caribou Creek

107

ALTERNATIVE 2

ALTERNATIVE 3

Caribou Creek

GLENN HIGHWAY

LION HEAD

CARIBOU CREEK
RECREATION
MINING AREA

END PROJECT
M.P. 109.5

GLENN HIGHWAY

TO GLENNALLEN

Matanuska River

N

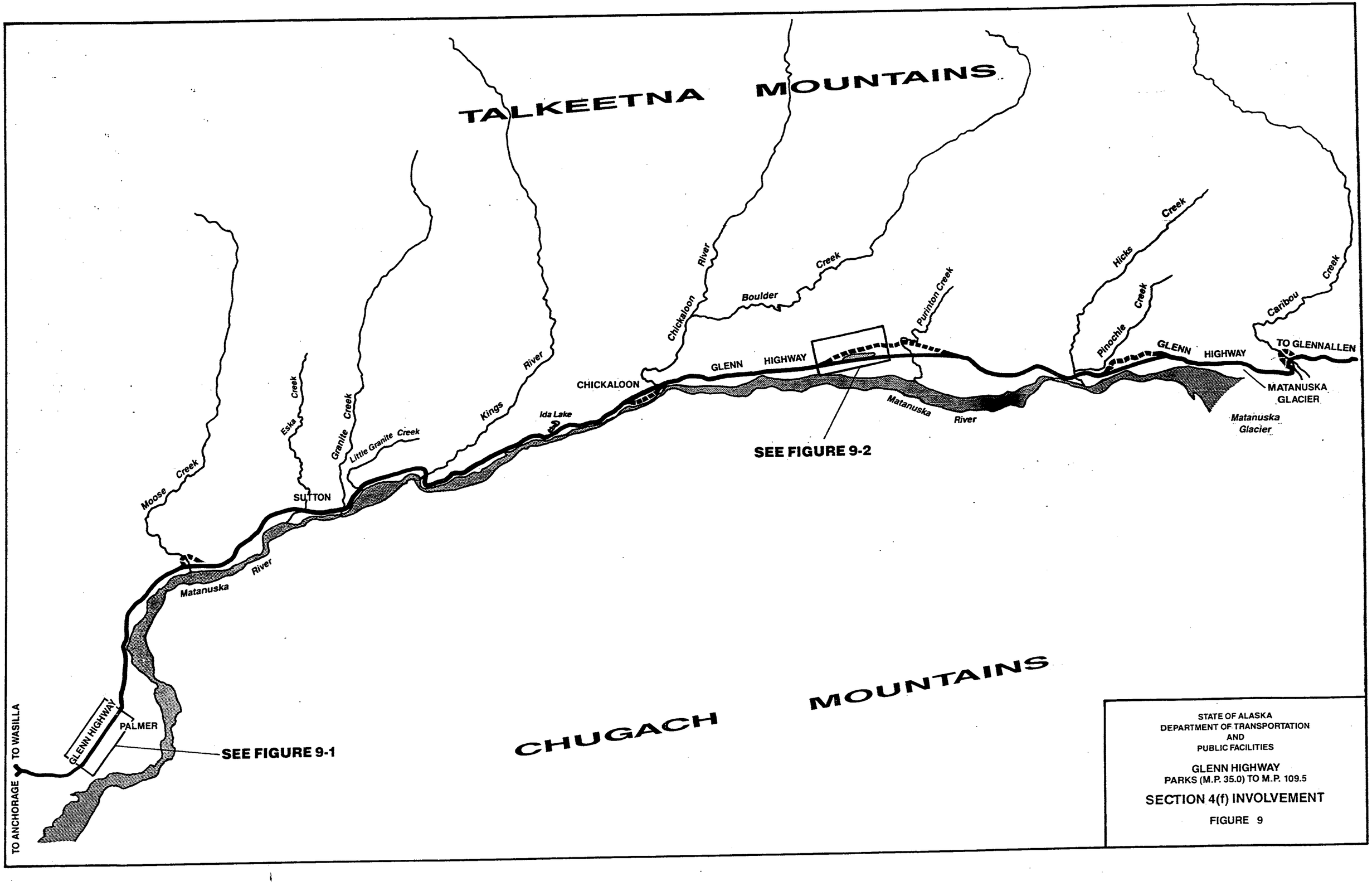
NO SCALE

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

WETLANDS

FIGURE 8 - 8

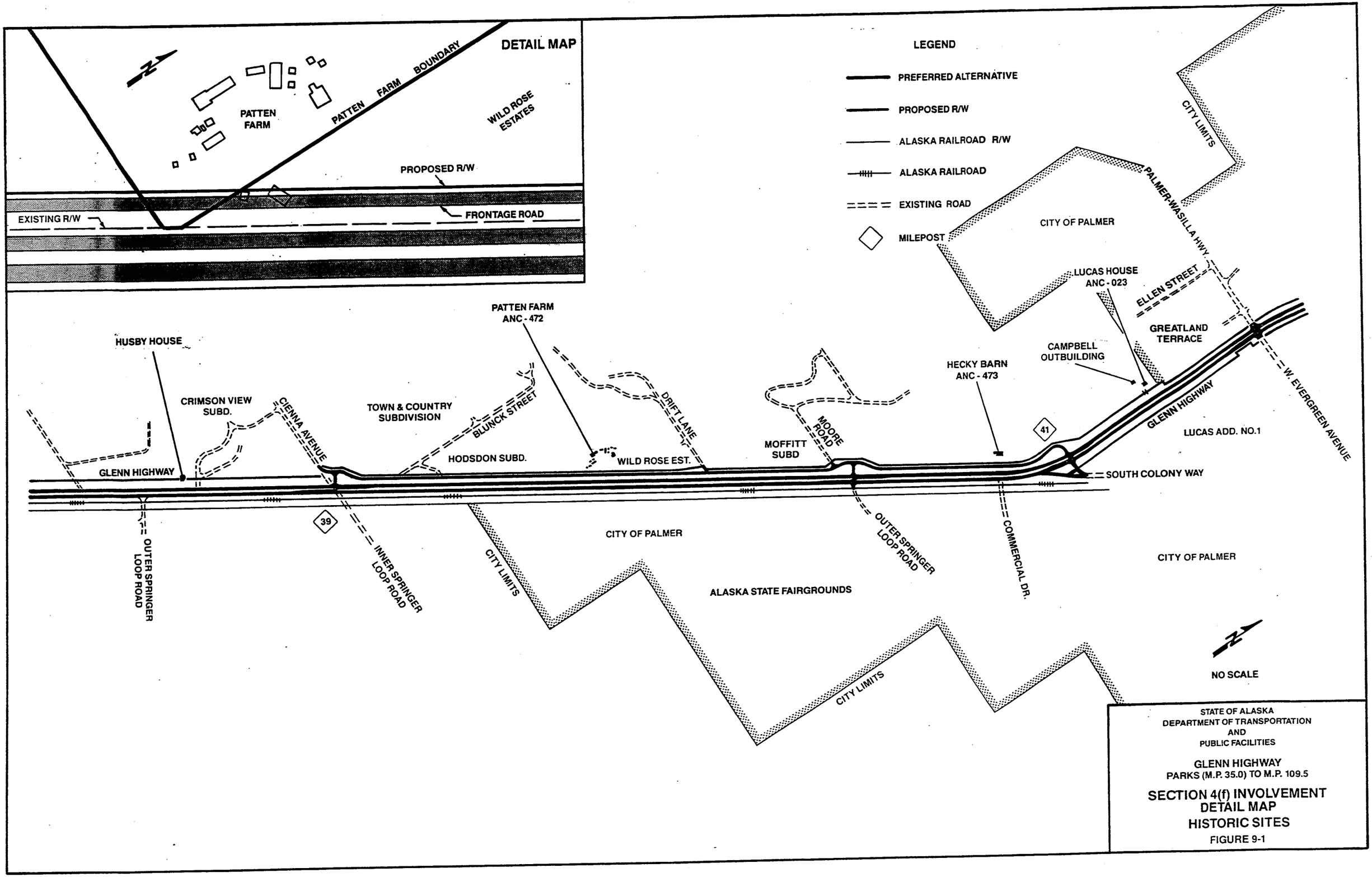


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

SECTION 4(f) INVOLVEMENT

FIGURE 9



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

SECTION 4(f) INVOLVEMENT DETAIL MAP HISTORIC SITES

FIGURE 9-1

LEGEND

PREFERRED ALTERNATIVE

PROPOSED R/W

EXISTING GLENN HIGHWAY

PARK BOUNDARY

MILEPOST

LONG LAKE STATE RECREATION SITE

LONG LAKE STATE RECREATION SITE

Long Lake

GLENN HIGHWAY

85

GLENN HIGHWAY

ARCHAEOLOGICAL SITES

ANC - 017
ANC - 731
ANC - 732
ANC - 736
ANC - 737
ANC - 739

These sites are located in the Long Lake Project Area.

ANC - 735 is located in the Pinochle Creek Realignment Area.

N

NO SCALE

Matanuska River

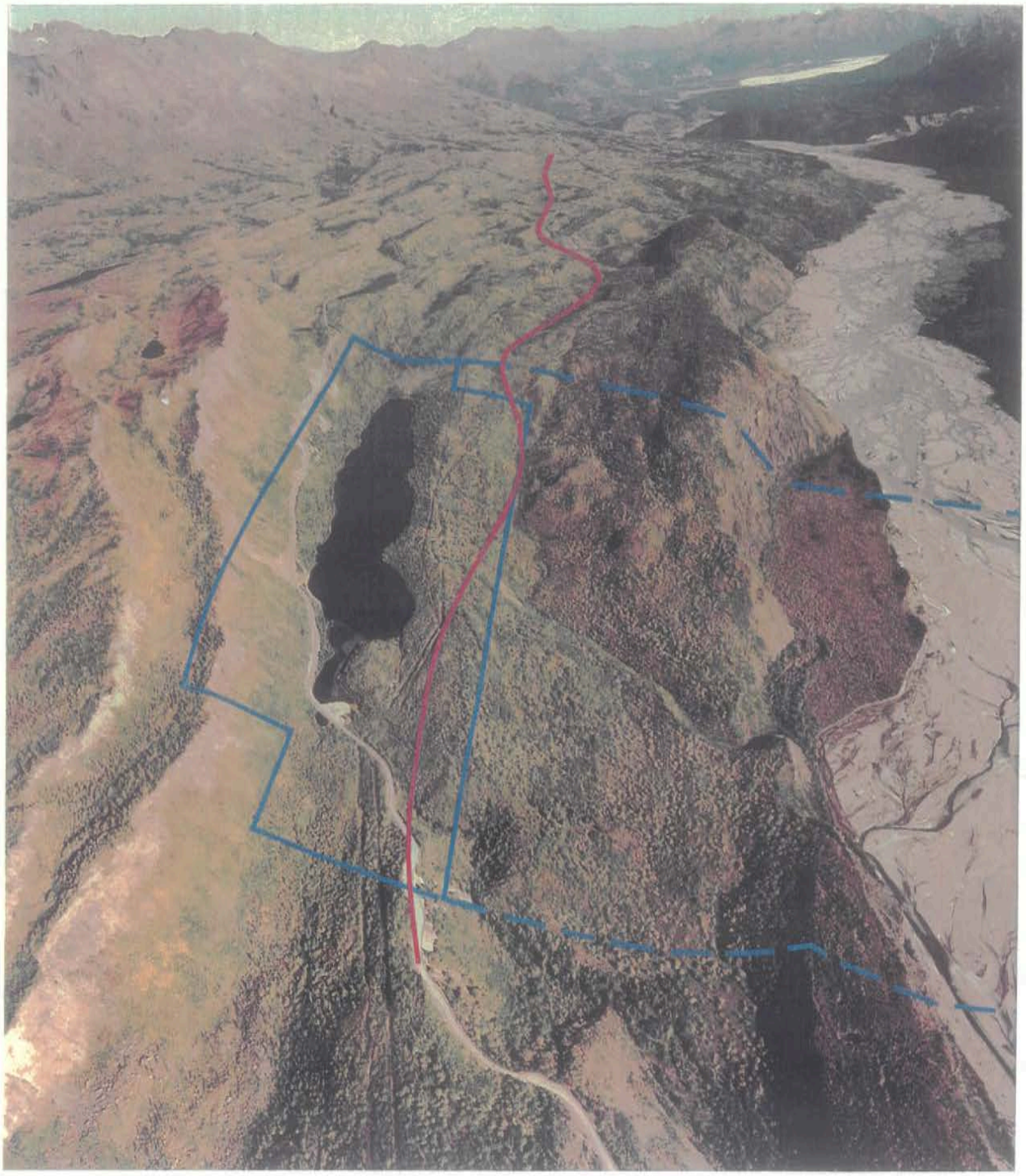
Matanuska River

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO M.P. 109.5

SECTION 4(f) INVOLVEMENT
DETAIL MAP
LONG LAKE
FIGURE 9- 2

FIGURE 10-1



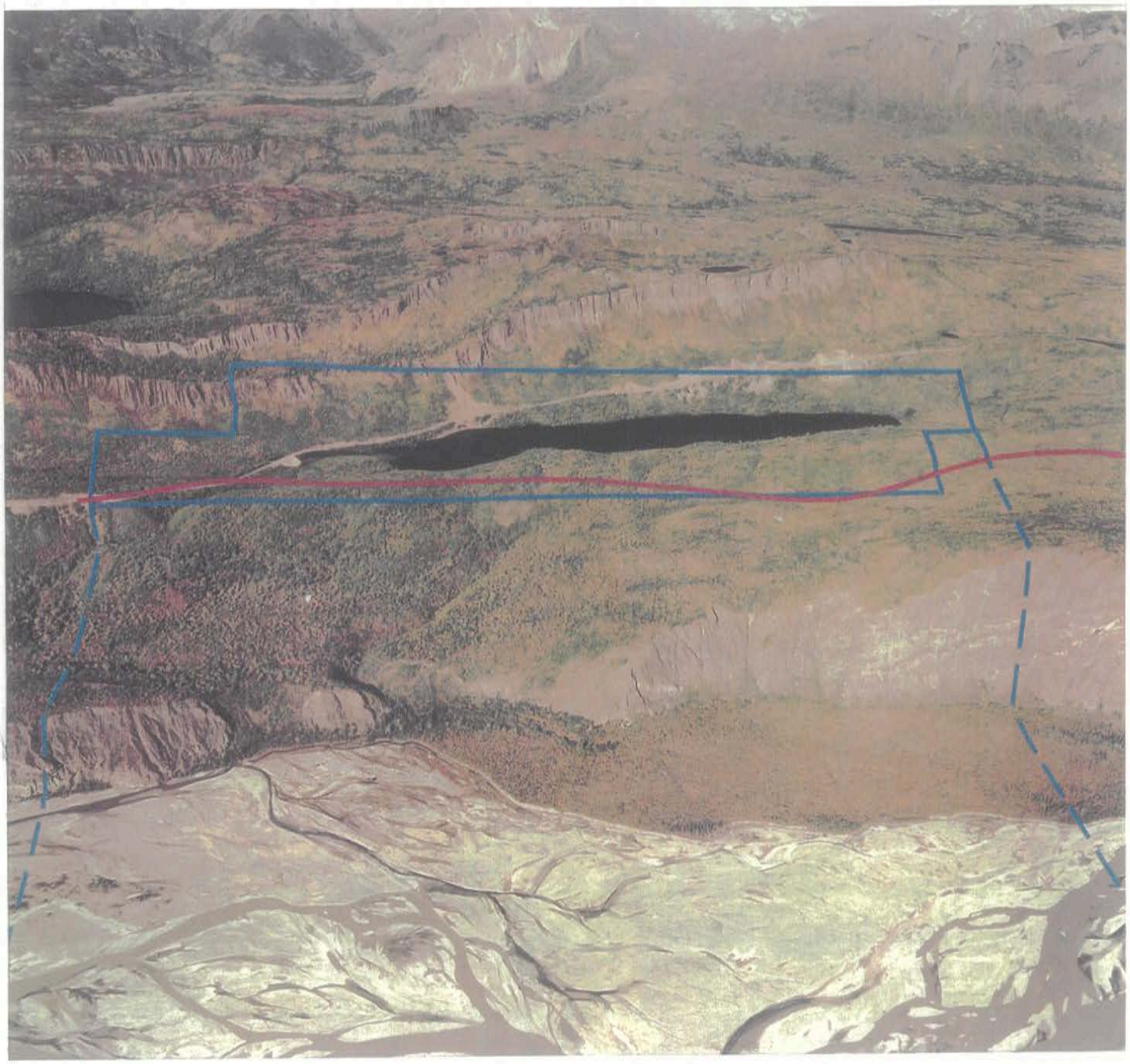
LONG LAKE STATE RECREATION SITE

Existing Park Boundaries

Proposed Park Boundaries

Proposed Highway Realignment

FIGURE 10-2



LONG LAKE STATE RECREATION SITE

Existing Park Boundaries

Proposed Park Boundaries

Proposed Highway Realignment

APPENDIX A

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Highway
TERMINI FROM CDS ROUTE MILE: 163.57 TO CDS MILE: 165.87
STATE PROJECT NO.: 53009 FED PROJECT NO: F-042-2(11)

VICINITY: Parks Highway to Dike Spur

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT	5,650	6,600	9,050	12,400
DESIGN HOURLY VOLUME	9.4%	9.4%	9.4%	9.4%
RECREATIONAL VEHICLES	3.7%	3.7%	3.7%	3.7%
COMMERCIAL TRUCKS	8.5%	8.5%	8.5%	8.5%
COMMERCIAL BUSSES	0.3%	0.3%	0.3%	0.3%
EQUIVALENT AXLE LOADS	58,434	68,382	790,970	1,874,174
PEAK HOUR FACTOR	0.92	0.93	0.93	0.94
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	40/60
COMPOUND GROWTH RATE	3.19%	3.19%	3.19%	3.19%
PEDESTRIANS	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Highway
TERMINI FROM CDS ROUTE MILE: 165.87 TO CDS MILE: 167.49
STATE PROJECT NO.: 53009 FED PROJECT NO: F-042-2(11)

VICINITY: Dike Spur to Springer Loop (North End)

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT.....	5,550	6,600	9,300	13,050
DESIGN HOURLY VOLUME ...	9.4%	9.4%	9.4%	9.4%
RECREATIONAL VEHICLES...	3.7%	3.7%	3.7%	3.7%
COMMERCIAL TRUCKS.....	9.0%	9.0%	12.0%	14.0%
COMMERCIAL BUSSES.....	0.3%	0.3%	0.3%	0.3%
EQUIVALENT AXLE LOADS...	124,639	147,825	1,731,864	4,167,967
PEAK HOUR FACTOR.....	0.92	0.93	0.93	0.95
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	40/60
COMPOUND GROWTH RATE....	3.47%	3.47%	3.47%	3.47%
PEDESTRIANS.....	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES.....	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

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CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Highway
TERMINI FROM CDS ROUTE MILE: 167.49 TO CDS MILE: 169.15
STATE PROJECT NO.: 53009 FED PROJECT NO: F-042-2(11)

VICINITY: Springer Loop (North End) to S. Colony Way

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT	7,200	8,500	11,850	16,500
DESIGN HOURLY VOLUME	9.4%	9.4%	9.4%	9.4%
RECREATIONAL VEHICLES	2.5%	2.5%	2.5%	2.5%
COMMERCIAL TRUCKS	10.8%	10.8%	12.0%	14.0%
COMMERCIAL BUSSES	1.5%	1.5%	1.5%	1.5%
EQUIVALENT AXLE LOADS	161,604	190,670	2,222,730	5,316,908
PEAK HOUR FACTOR	0.93	0.93	0.94	0.96
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	45/65
COMPOUND GROWTH RATE	3.36%	3.36%	3.36%	3.36%
PEDESTRIANS	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

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CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Highway
TERMINI FROM CDS ROUTE MILE: 169.15 TO CDS MILE: 169.77
STATE PROJECT NO.: 53009 FED PROJECT NO: F-042-2(11)

VICINITY: S. Colony Way to Pal/Was

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT.....	6,100	7,200	10,050	12,400
DESIGN HOURLY VOLUME ...	9.4%	9.4%	9.4%	9.4%
RECREATIONAL VEHICLES...	2.8%	2.8%	2.8%	2.8%
COMMERCIAL TRUCKS.....	7.7%	7.7%	10.0%	12.1%
COMMERCIAL BUSSES.....	1.8%	1.8%	1.8%	1.8%
EQUIVALENT AXLE LOADS...	130,367	153,986	1,797,004	4,304,136
PEAK HOUR FACTOR.....	0.92	0.93	0.93	0.94
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	45/65
COMPOUND GROWTH RATE....	3.39%	3.39%	3.39%	3.39%
PEDESTRIANS.....	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES.....	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 **ROUTE:** Glenn Highway
TERMINI FROM CDS ROUTE MILE: 169.77 **TO CDS MILE:** 170.30
STATE PROJECT NO.: 53009 **FED PROJECT NO:** F-042-2(11)

VICINITY: Pal/Was to Arctic

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT.....	7,450	8,600	11,400	15,150
DESIGN HOURLY VOLUME ...	9.4%	9.4%	9.4%	9.4%
RECREATIONAL VEHICLES...	2.5%	2.5%	2.5%	2.5%
COMMERCIAL TRUCKS.....	7.8%	7.8%	10.6%	12.2%
COMMERCIAL BUSSES.....	0.6%	0.6%	0.6%	0.6%
EQUIVALENT AXLE LOADS...	158,765	183,014	2,086,851	4,859,881
PEAK HOUR FACTOR.....	0.93	0.93	0.94	0.95
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	45/65
COMPOUND GROWTH RATE....	2.88%	2.88%	2.88%	2.88%
PEDESTRIANS.....	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES.....	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly **DATE:** 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Highway
TERMINI FROM CDS ROUTE MILE: 170.30 TO CDS MILE: 171.82
STATE PROJECT NO.: 53009 FED PROJECT NO: F-042-2(11)

VICINITY: Arctic to Fishhook/Willow

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT.....	4,950	5,550	6,850	8,450
DESIGN HOURLY VOLUME ...	10.1%	10.1%	10.1%	10.1%
RECREATIONAL VEHICLES...	3.7%	3.7%	3.7%	3.7%
COMMERCIAL TRUCKS.....	7.8%	7.8%	11.4%	12.9%
COMMERCIAL BUSSES.....	0.3%	0.3%	0.3%	0.3%
EQUIVALENT AXLE LOADS...	117,682	130,877	1,442,809	3,227,291
PEAK HOUR FACTOR.....	0.91	0.92	0.93	0.93
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	40/60
COMPOUND GROWTH RATE....	2.15%	2.15%	2.15%	2.15%
PEDESTRIANS.....	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES.....	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Highway
TERMINI FROM CDS ROUTE MILE: 171.82 TO CDS MILE: 175.26
STATE PROJECT NO.: 53009 FED PROJECT NO: F-042-2(11)

VICINITY: Fishhook/Willow to Buffalo Mine Road

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1990)	CONSTRUCTION YEAR (1995)	MID-LIFE YEAR (2005)	FUTURE YEAR (2015)
AADT	2,350	2,700	3,650	4,850
DESIGN HOURLY VOLUME	10.1%	10.1%	10.1%	10.1%
RECREATIONAL VEHICLES	5.8%	5.8%	5.8%	5.8%
COMMERCIAL TRUCKS	8.6%	8.6%	14.3%	17.4%
COMMERCIAL BUSSES	0.3%	0.3%	0.3%	0.3%
EQUIVALENT AXLE LOADS	87,667	101,338	1,158,559	2,706,620
PEAK HOUR FACTOR	0.90	0.91	0.92	0.92
DIRECTIONAL DISTRIBUTION	35/65	35/65	40/60	40/60
COMPOUND GROWTH RATE	2.94%	2.94%	2.94%	2.94%
PEDESTRIANS	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 4/22/91
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

Area Planner : Roger Maggard
Date Reviewed: 4-22-91 By: Roger Maggard

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Hwy

TERMINI FROM CDS ROUTE MILE: 175.26 TO CDS MILE: 184.75

STATE PROJECT NO.: 53009 FED PROJECT NO.: F-042-2(11)

VICINITY: Buffalo Mine Road to Granite Creek

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1989)	YEAR (1995)	YEAR (2005)	YEAR (2015)
AADT	2,100	2,300	2,700	3,150
*DESIGN HOURLY VOLUME	18.00%	18.00%	18.00%	18.00%
RECREATIONAL VEHICLES	9.00%	9.00%	9.00%	9.00%
COMMERCIAL TRUCKS	15.00%	15.00%	16.00%	16.00%
COMMERCIAL BUSSES	0.10%	0.10%	0.10%	0.10%
EQUIVALENT AXLE LOADS	67,800	74,300	799,400	1,732,400
PEAK HOUR FACTOR	0.91	0.91	0.91	0.92
DIRECTIONAL DISTRIBUTION	40/60	40/60	40/60	40/60
COMPOUND GROWTH RATE	1.34%	1.53%	1.62%	1.55%
PEDESTRIANS	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 9/14/89
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

cc: Ben Davis, Statewide Planning
Highway Systems Branch

Area Planner :
Date Reviewed: 9-14-89 By: Roger Maggard

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 ROUTE: Glenn Hwy

TERMINI FROM CDS ROUTE MILE: 184.75 TO CDS MILE: 200.26

STATE PROJECT NO.: 53009 FED PROJECT NO.: F-042-2(11)

VICINITY: Granite Creek to Chickaloon Branch Road

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1989)	YEAR (1995)	YEAR (2005)	YEAR (2015)
AADT.....	1,500	1,650	1,950	2,300
*DESIGN HOURLY VOLUME ...	19.40%	19.40%	19.40%	19.40%
RECREATIONAL VEHICLES...	15.00%	15.00%	15.00%	15.00%
COMMERCIAL TRUCKS.....	19.00%	19.00%	19.00%	19.00%
COMMERCIAL BUSSES.....	0.02%	0.02%	0.02%	0.02%
EQUIVALENT AXLE LOADS...	54,600	60,100	648,450	1,413,400
PEAK HOUR FACTOR.....	0.90	0.90	0.91	0.91
DIRECTIONAL DISTRIBUTION	40/60	40/60	40/60	40/60
COMPOUND GROWTH RATE....	1.34%	1.60%	1.68%	1.66%
PEDESTRIANS.....	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES.....	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly DATE: 9/14/89
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

cc: Ben Davis, Statewide Planning
Highway Systems Branch

Area Planner :
Date Reviewed: 9-14-89 By: Roger Moyer

All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

CENTRAL REGION
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES

PLANNING SECTION
CENTRAL REGION

DESIGN DESIGNATIONS

CDS ROUTE NO.: 130000 **ROUTE:** Glenn Hwy

TERMINI FROM CDS ROUTE MILE: 200.26 **TO CDS MILE:** 230.91

STATE PROJECT NO.: 53009 **FED PROJECT NO.:** F-042-2(11)

VICINITY: Chickaloon Branch Road to Mile Post 109

FUNCTIONAL CLASSIFICATION: Interstate

IMPROVEMENT TYPE: New Construction

	EXISTING YEAR (1989)	YEAR (1995)	YEAR (2005)	YEAR (2015)
AADT.....	1,200	1,350	1,600	1,900
*DESIGN HOURLY VOLUME ...	19.40%	19.40%	19.40%	19.40%
RECREATIONAL VEHICLES...	15.00%	15.00%	15.00%	15.00%
COMMERCIAL TRUCKS.....	19.00%	19.00%	19.00%	19.00%
COMMERCIAL BUSSES.....	0.02%	0.02%	0.02%	0.02%
EQUIVALENT AXLE LOADS...	43,700	49,150	531,250	1,162,000
PEAK HOUR FACTOR.....	0.88	0.89	0.90	0.91
DIRECTIONAL DISTRIBUTION	40/60	40/60	40/60	40/60
COMPOUND GROWTH RATE....	1.30%	1.98%	1.71%	1.73%
PEDESTRIANS.....	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
BICYCLES.....	<200	<200	<200	<200

Notes:

APPROVED: Daniel A. Kelly **DATE:** 8/14/89
Daniel A. Kelly
TRAFFIC ANALYST
HIGHWAY DATA SECTION

cc: Ben Davis, Statewide Planning
Highway Systems Branch

Area Planner :
Date Reviewed: 9-14-89 By: Kayla Maynard

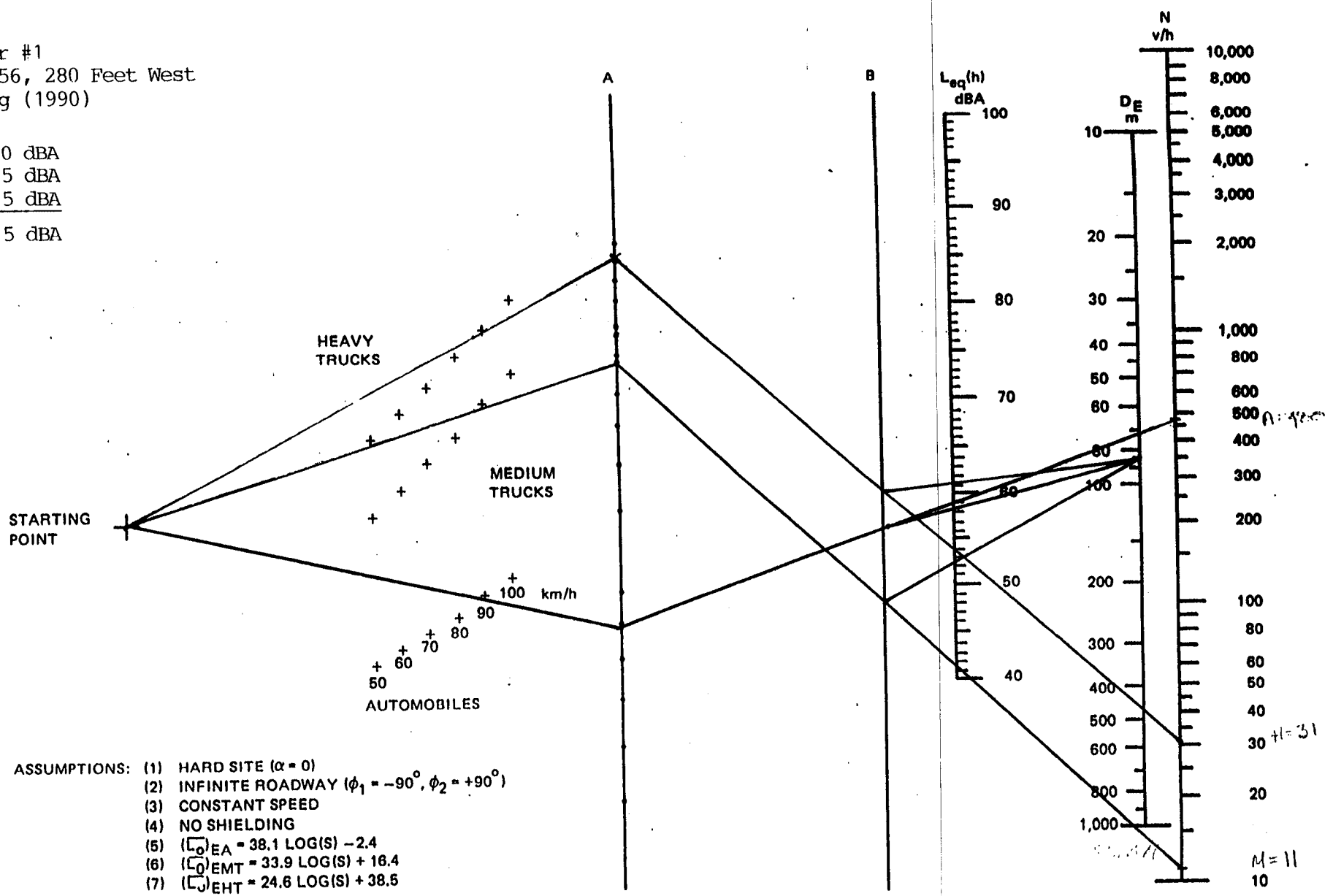
All information on this form is to be considered PRELIMINARY until initialed and dated by the area planner!

APPENDIX B

Receiver #1
Sta. 1556, 280 Feet West
Existing (1990)

A = 58.0 dBA
M = 52.5 dBA
H = 61.5 dBA

63.5 dBA



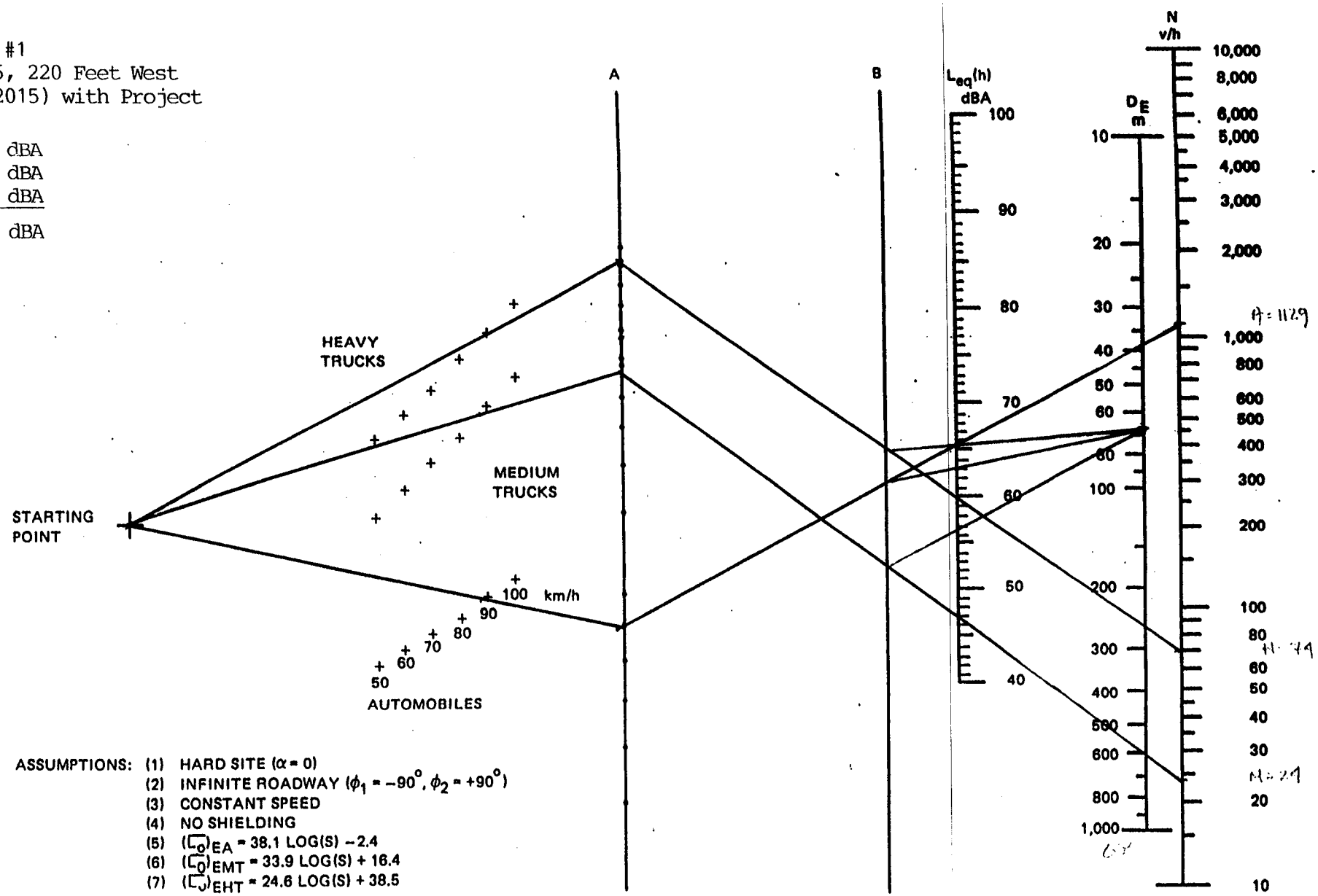
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{C_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{C_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{C_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #1
Sta. 1556, 220 Feet West
Future (2015) with Project

A = 63.0 dBA
M = 56.5 dBA
H = 65.5 dBA

68.0 dBA



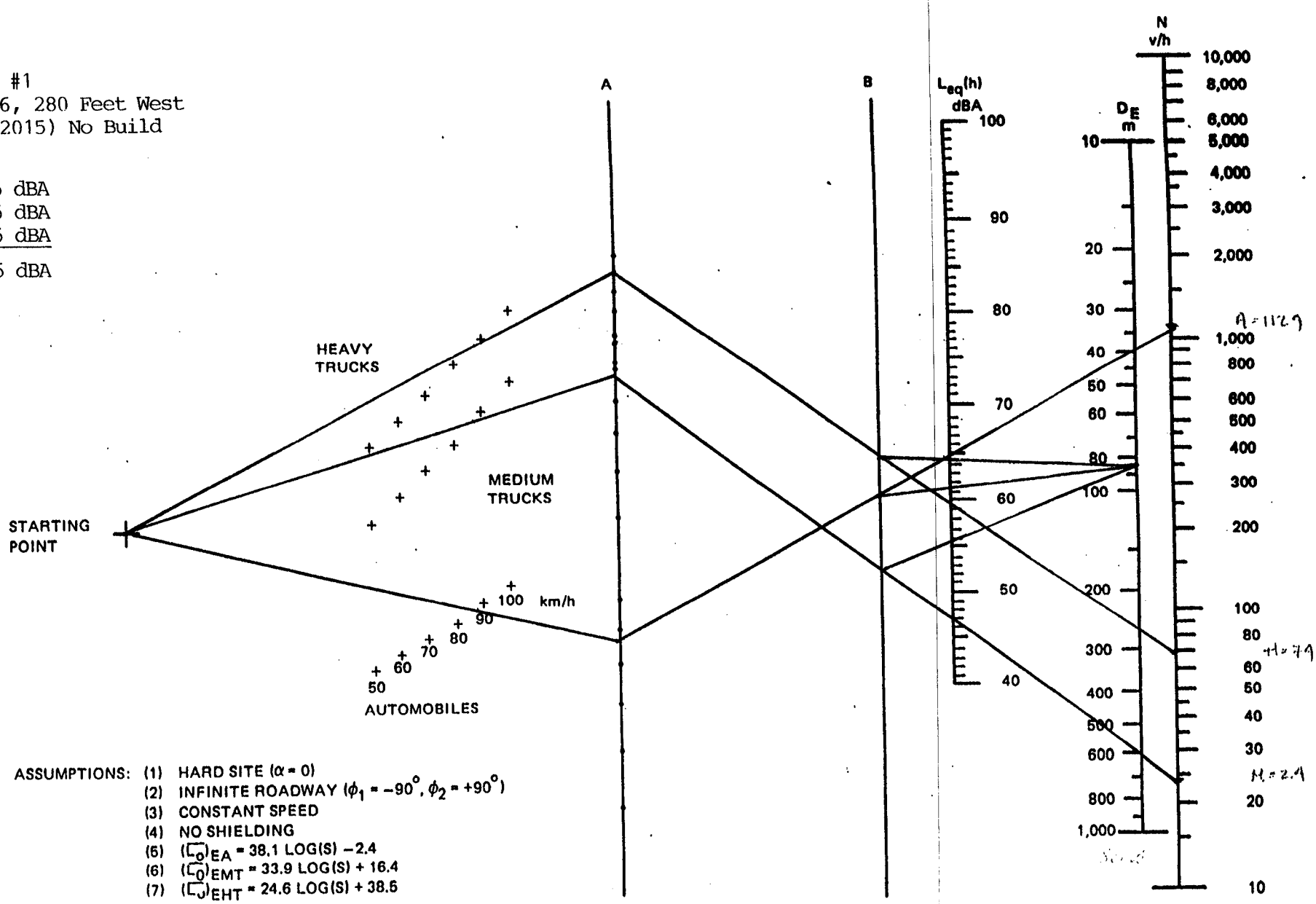
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #1
Sta. 1556, 280 Feet West
Future (2015) No Build

A = 61.5 dBA
M = 55.5 dBA
H = 64.5 dBA

66.5 dBA



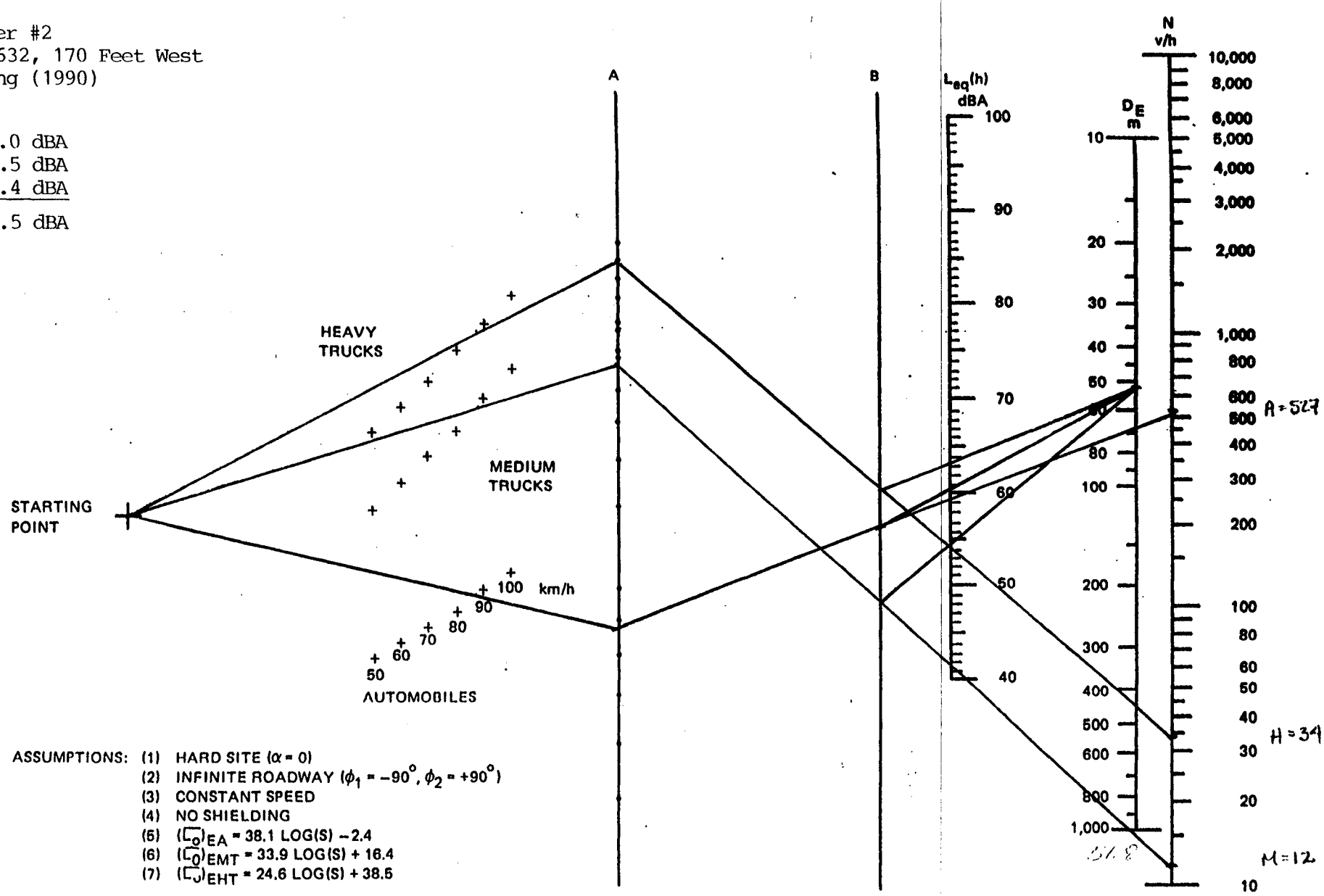
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #2
Sta. 1632, 170 Feet West
Existing (1990)

A = 60.0 dBA
M = 54.5 dBA
H = 63.4 dBA

65.5 dBA



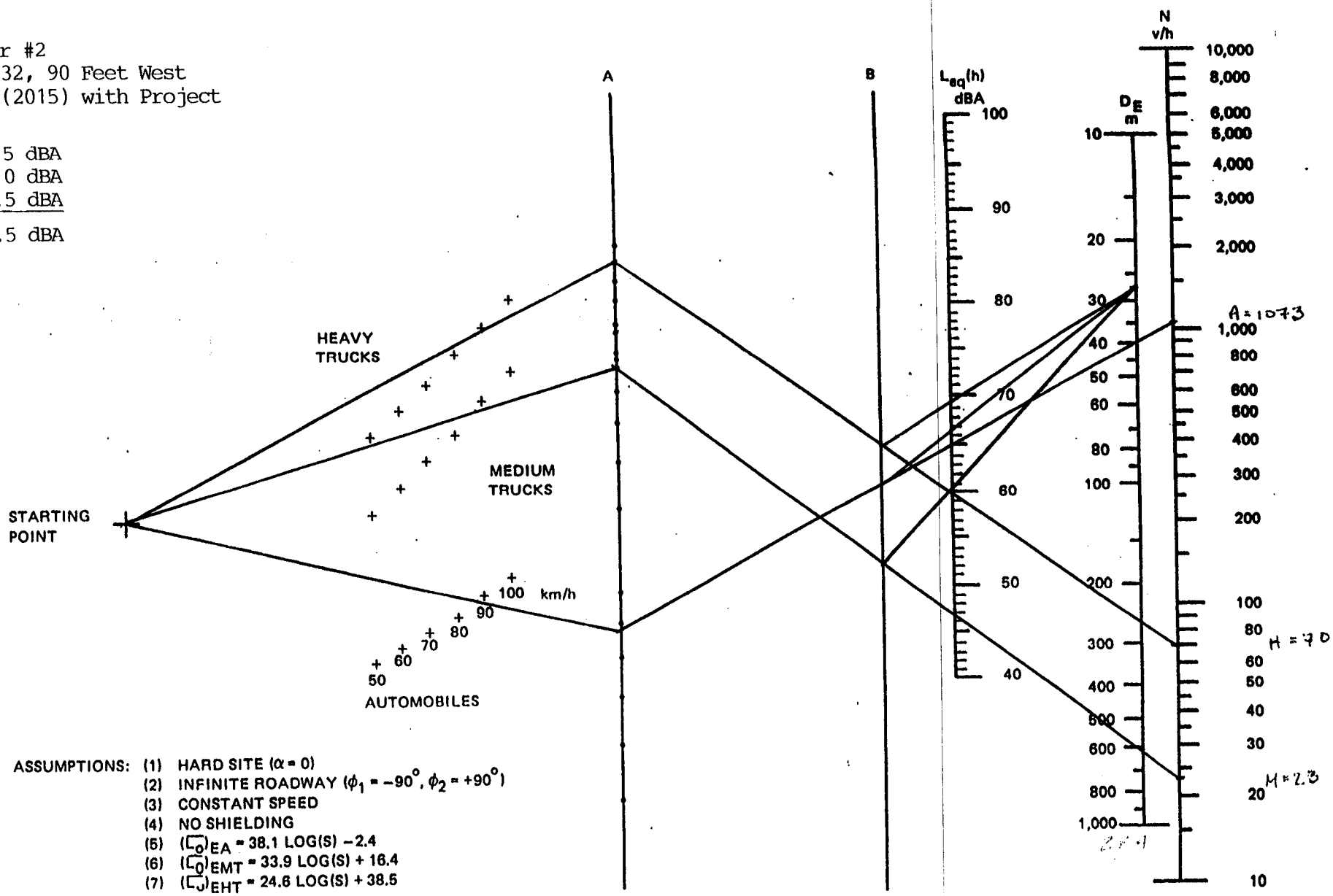
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #2
Sta. 1632, 90 Feet West
Future (2015) with Project

A = 66.5 dBA
M = 60.0 dBA
H = 69.5 dBA

71.5 dBA



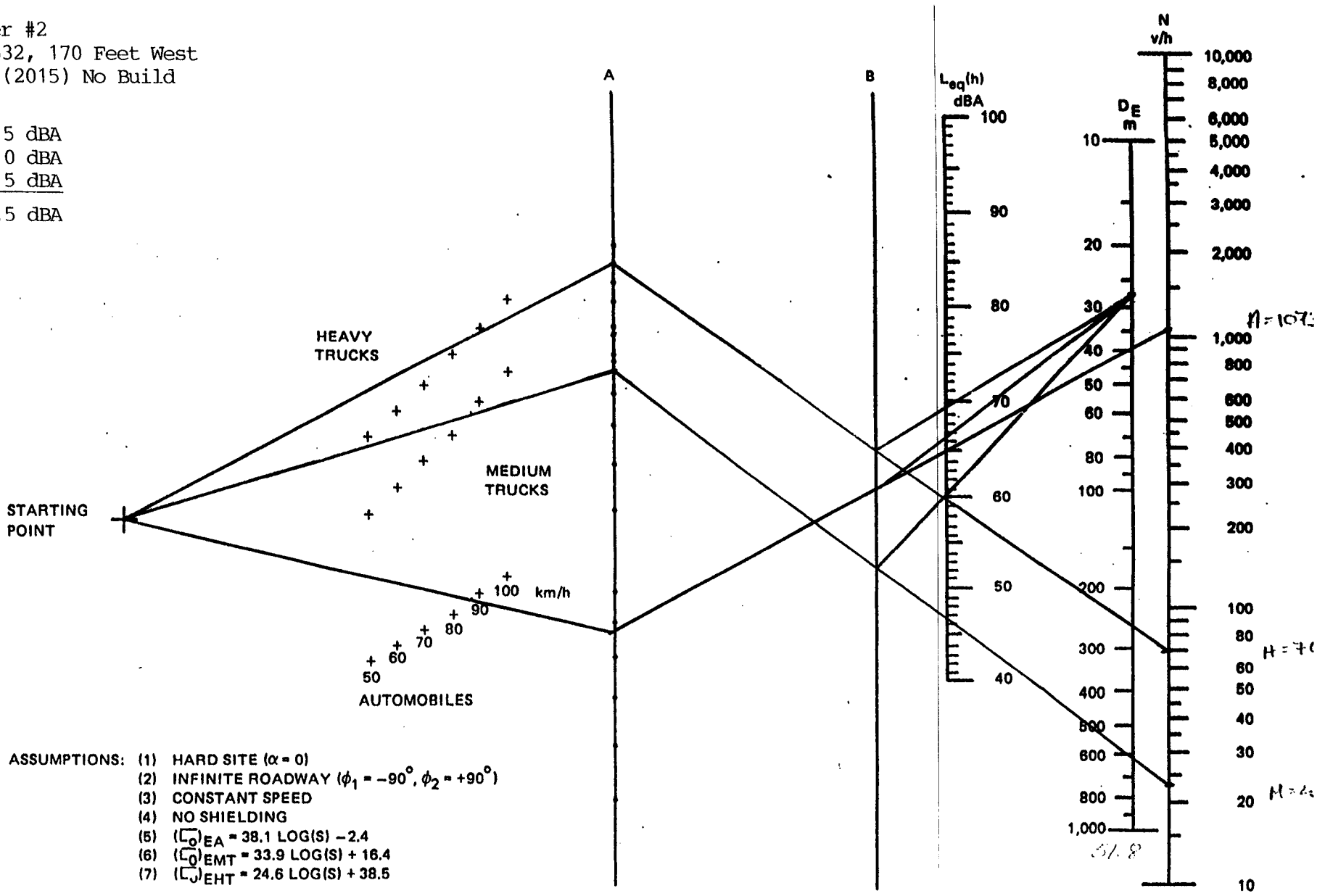
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_0})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_0})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_0})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #2
Sta. 1632, 170 Feet West
Future (2015) No Build

A = 66.5 dBA
M = 60.0 dBA
H = 69.5 dBA

71.5 dBA



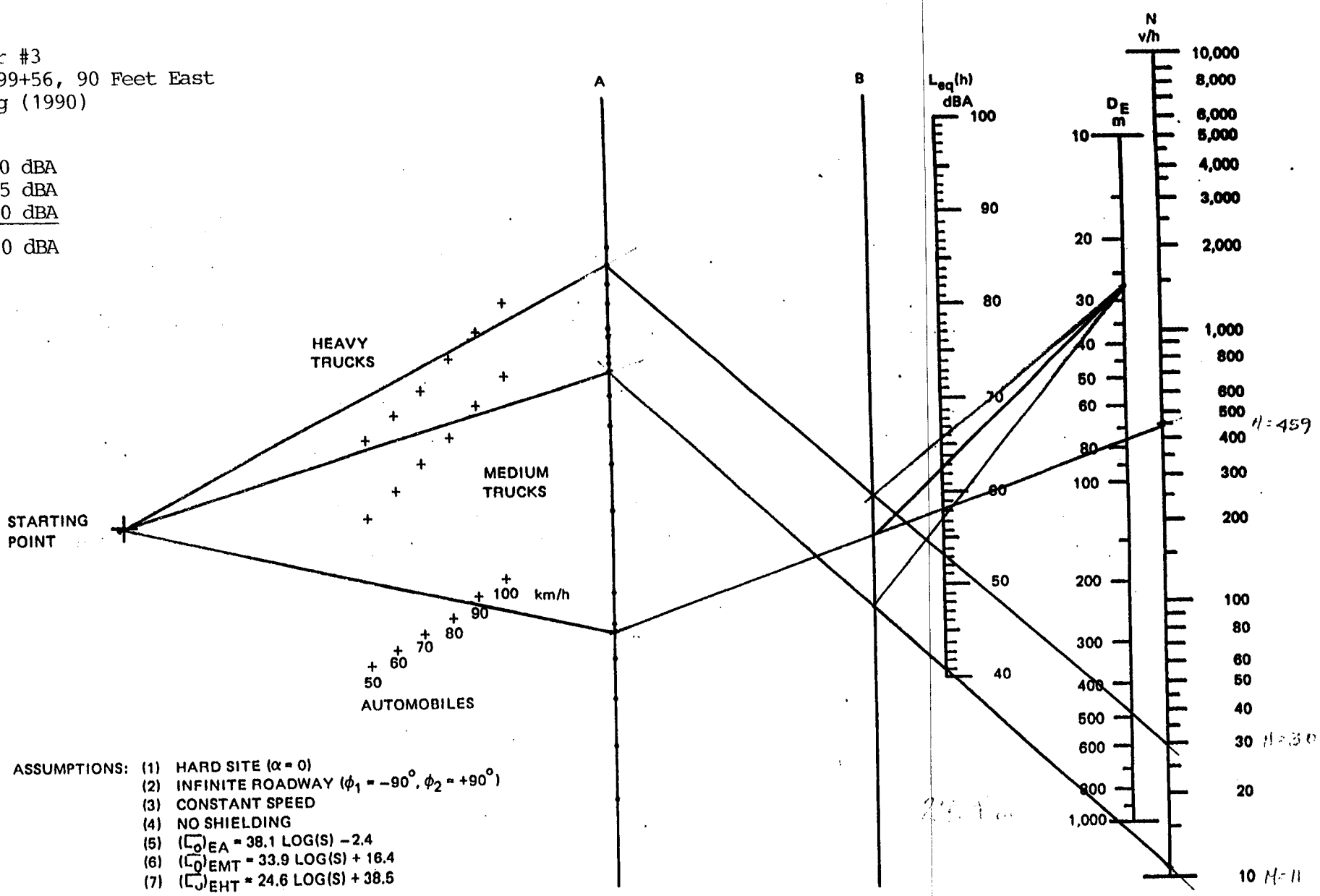
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #3
Sta. 1599+56, 90 Feet East
Existing (1990)

A = 63.0 dBA
M = 57.5 dBA
H = 66.0 dBA

68.0 dBA



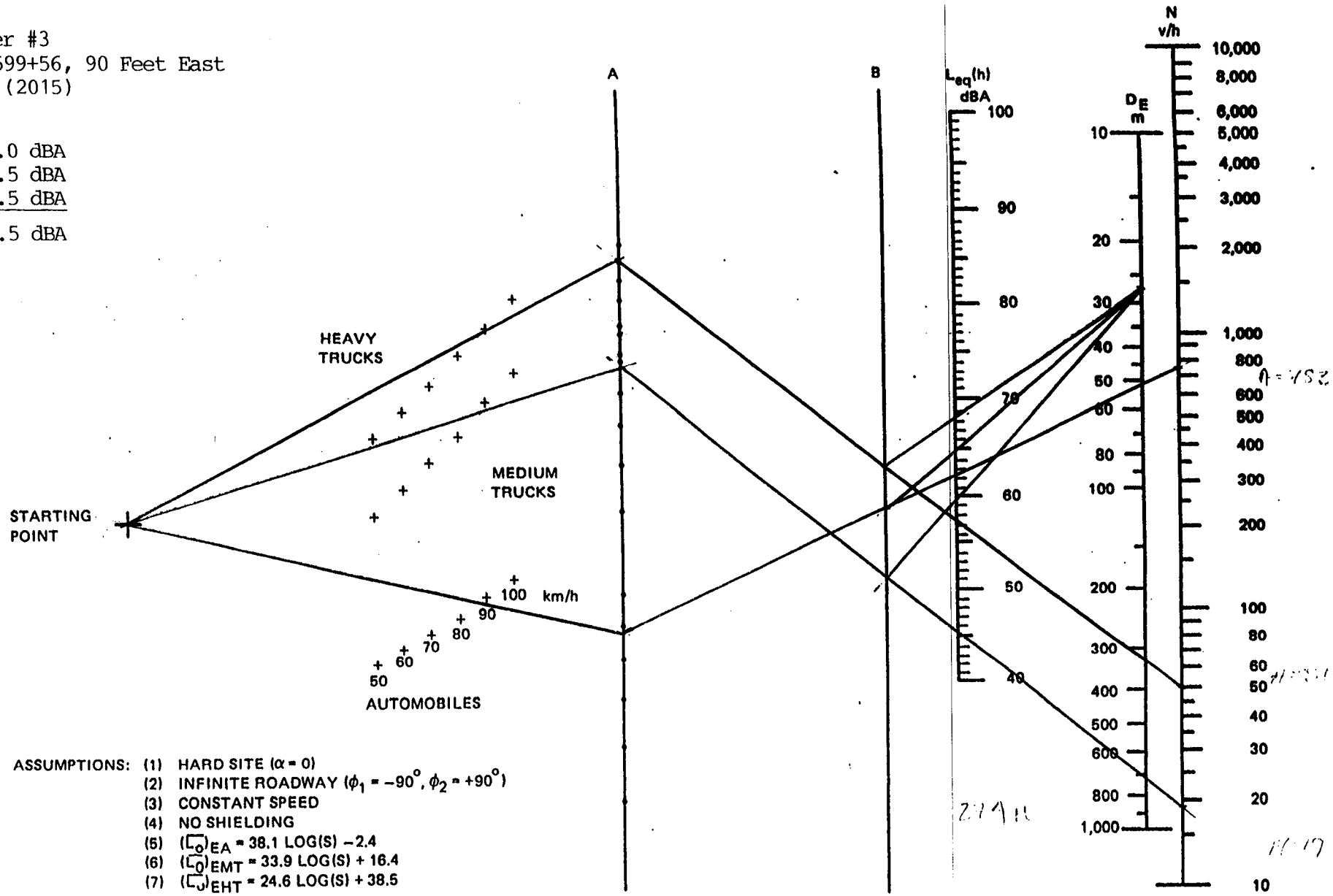
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_0})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_0})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_0})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #3
Sta. 1599+56, 90 Feet East
Future (2015)

A = 65.0 dBA
M = 59.5 dBA
H = 68.5 dBA

70.5 dBA



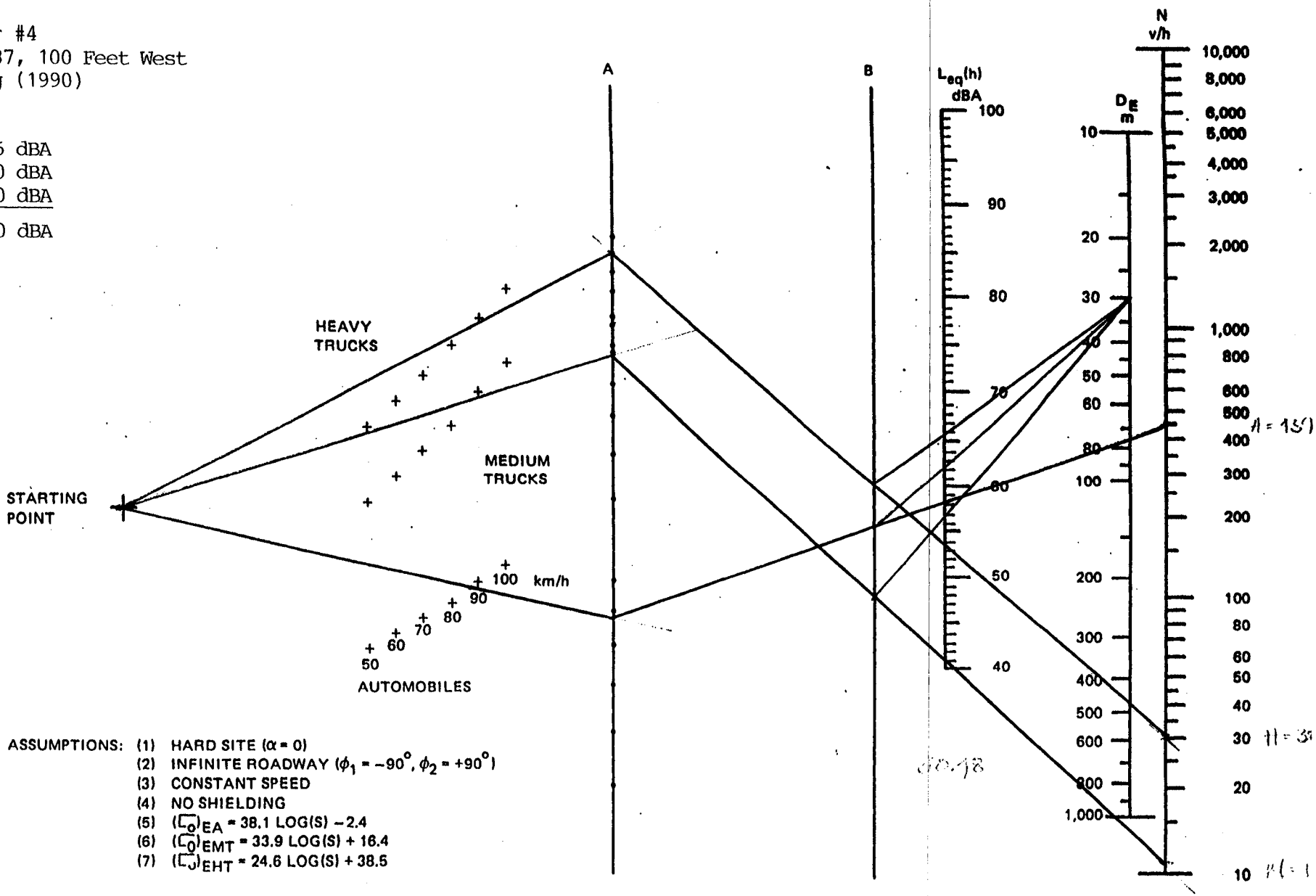
ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #4
Sta. 1687, 100 Feet West
Existing (1990)

A = 58.5 dBA
M = 57.0 dBA
H = 66.0 dBA

67.0 dBA



ASSUMPTIONS:
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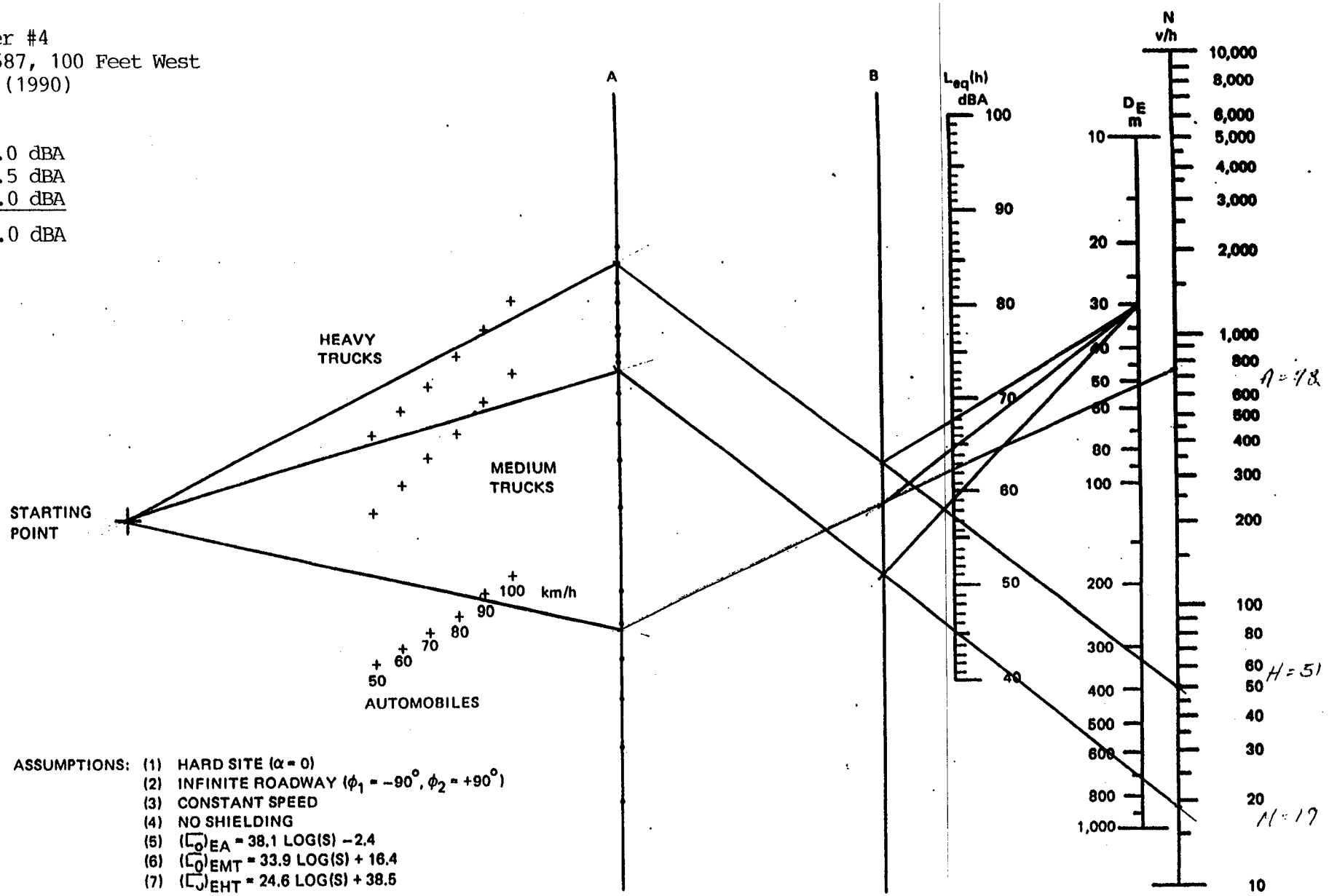
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{C_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{C_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{C_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #4
Sta. 1687, 100 Feet West
Future (1990)

A = 65.0 dBA
M = 59.5 dBA
H = 68.0 dBA

70.0 dBA



ASSUMPTIONS:
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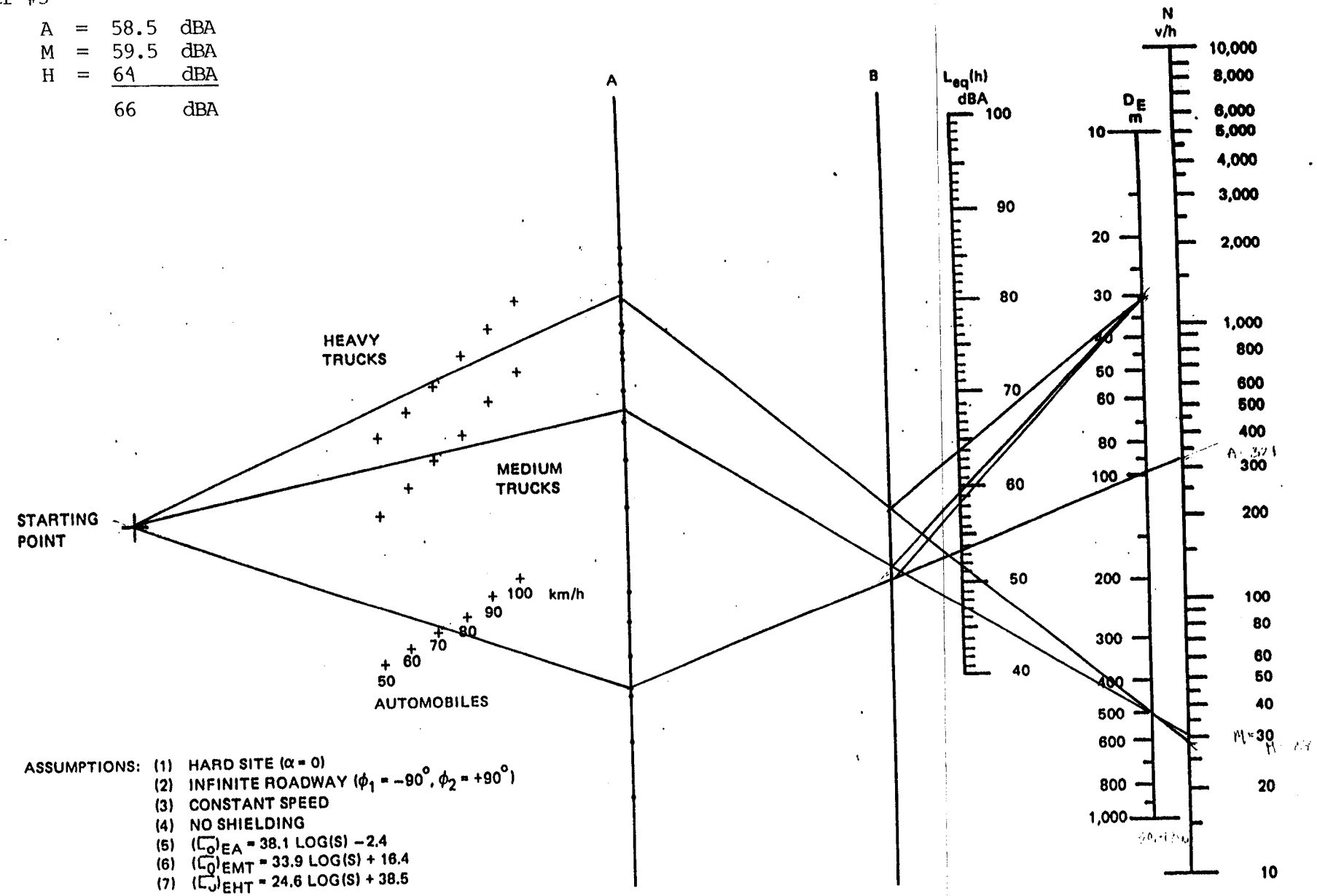
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

Receiver #5

A	=	58.5	dBA
M	=	59.5	dBA
H	=	64	dBA
		66	dBA



ASSUMPTIONS:
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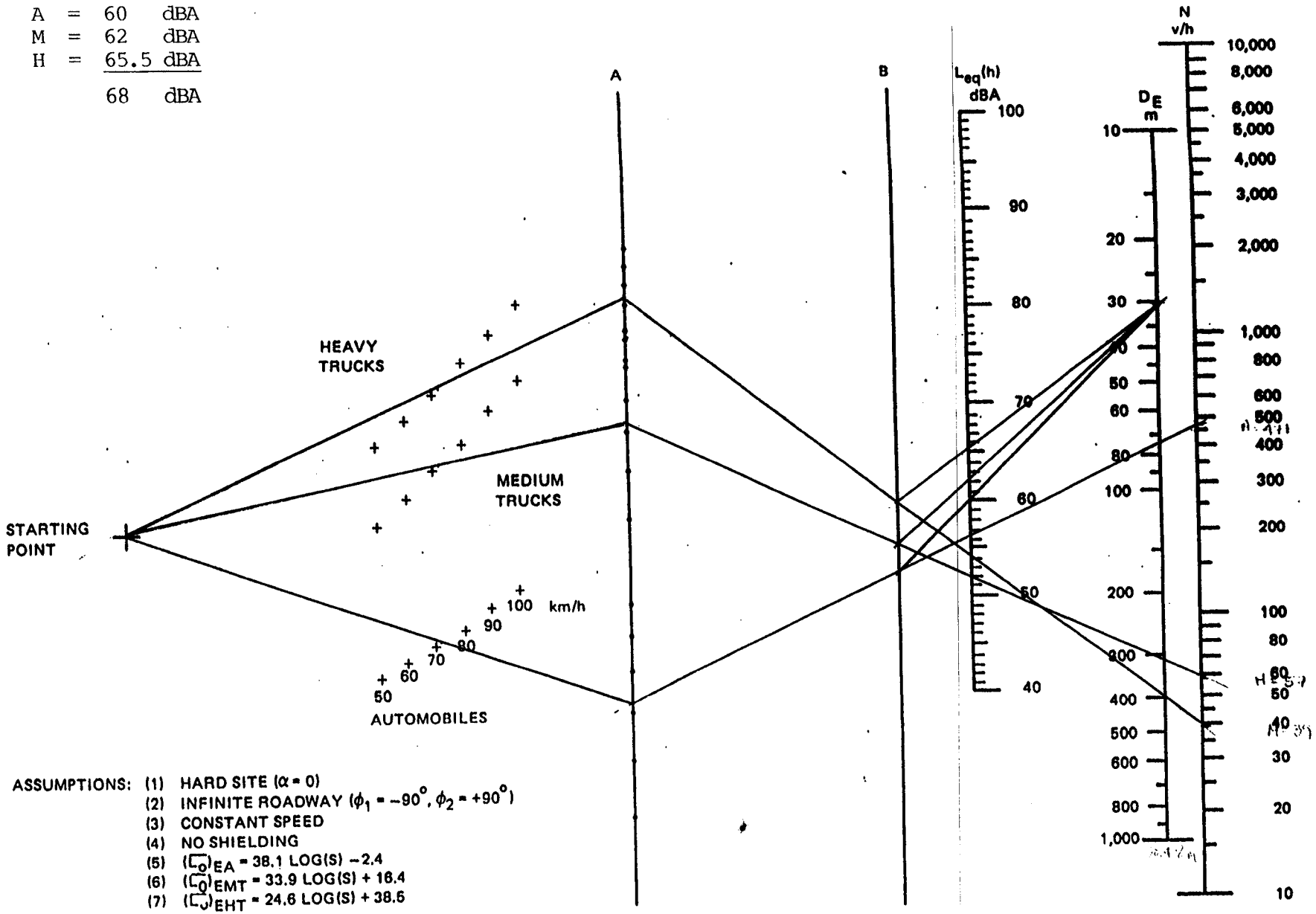
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\square_0)_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\square_0)_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\square_0)_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)
Sutton
1989
Receiver: Sta. 2246, 100 Feet North

Receiver #5

A	=	60	dBA
M	=	62	dBA
H	=	65.5	dBA
		68	dBA



ASSUMPTIONS:
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(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(C_o)_{EA} = 38.1\ LOG(S) - 2.4$
(6) $(C_o)_{EMT} = 33.9\ LOG(S) + 16.4$
(7) $(C_o)_{EHT} = 24.6\ LOG(S) + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

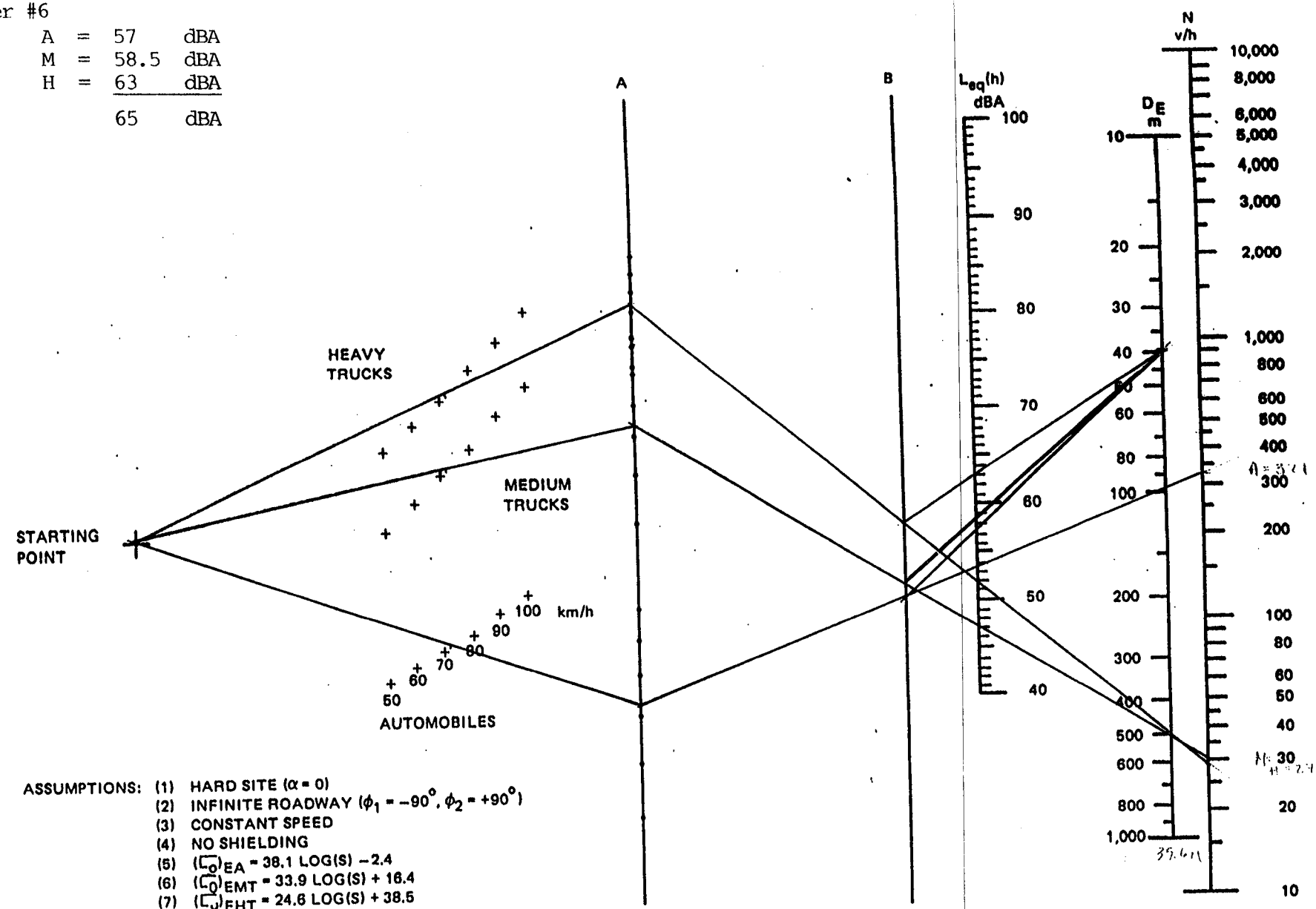
Sutton

2015

Receiver: Sta. 2246, 100 Feet North

Receiver #6

A	=	57	dBA
M	=	58.5	dBA
H	=	63	dBA
		65	dBA



ASSUMPTIONS:
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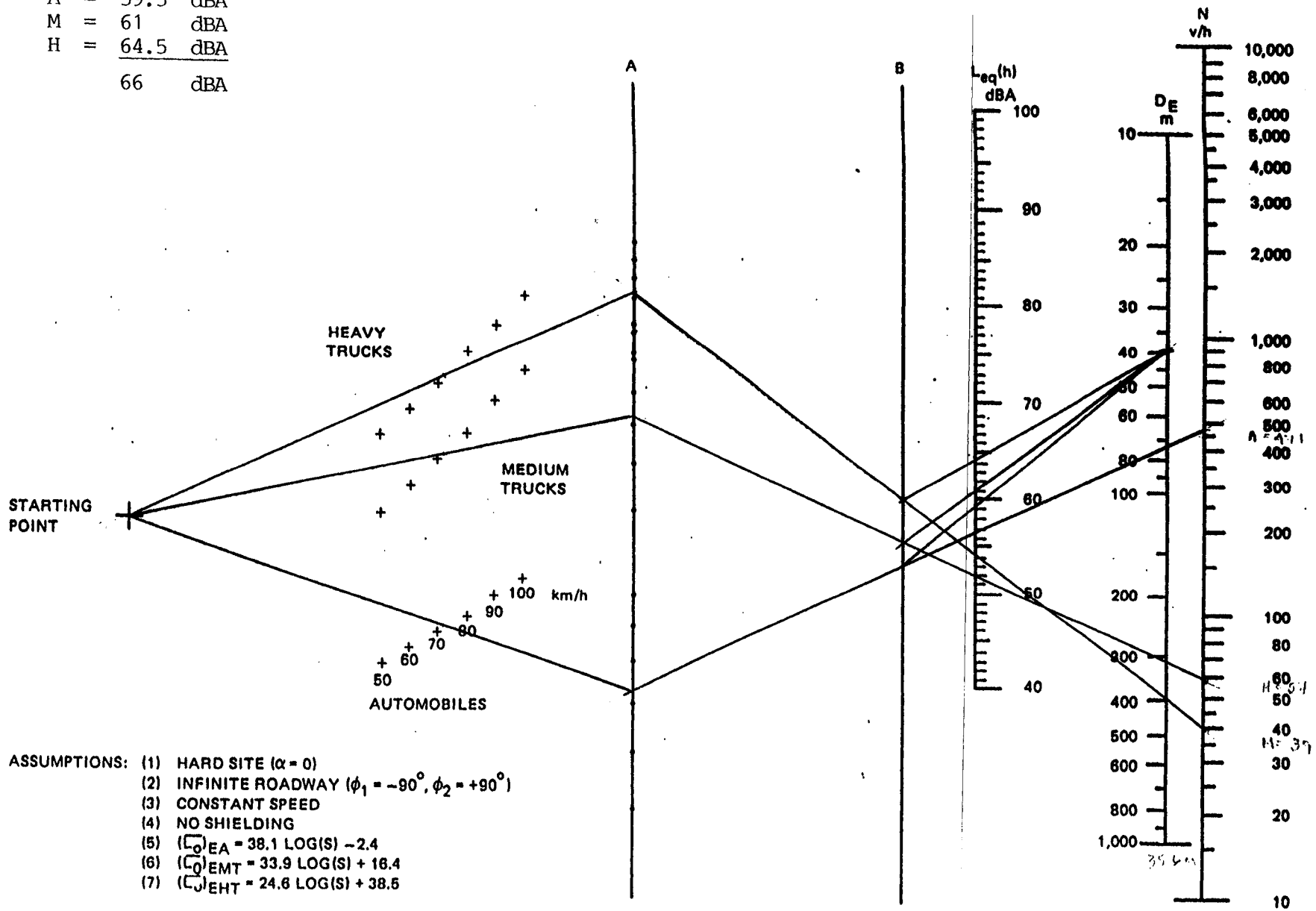
(2) INFINITE ROADWAY ($\phi_1 = -90^\circ, \phi_2 = +90^\circ$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{C_0})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{C_0})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{C_0})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)
Sutton
1989
Receiver: Sta. 2272, 130 Feet South

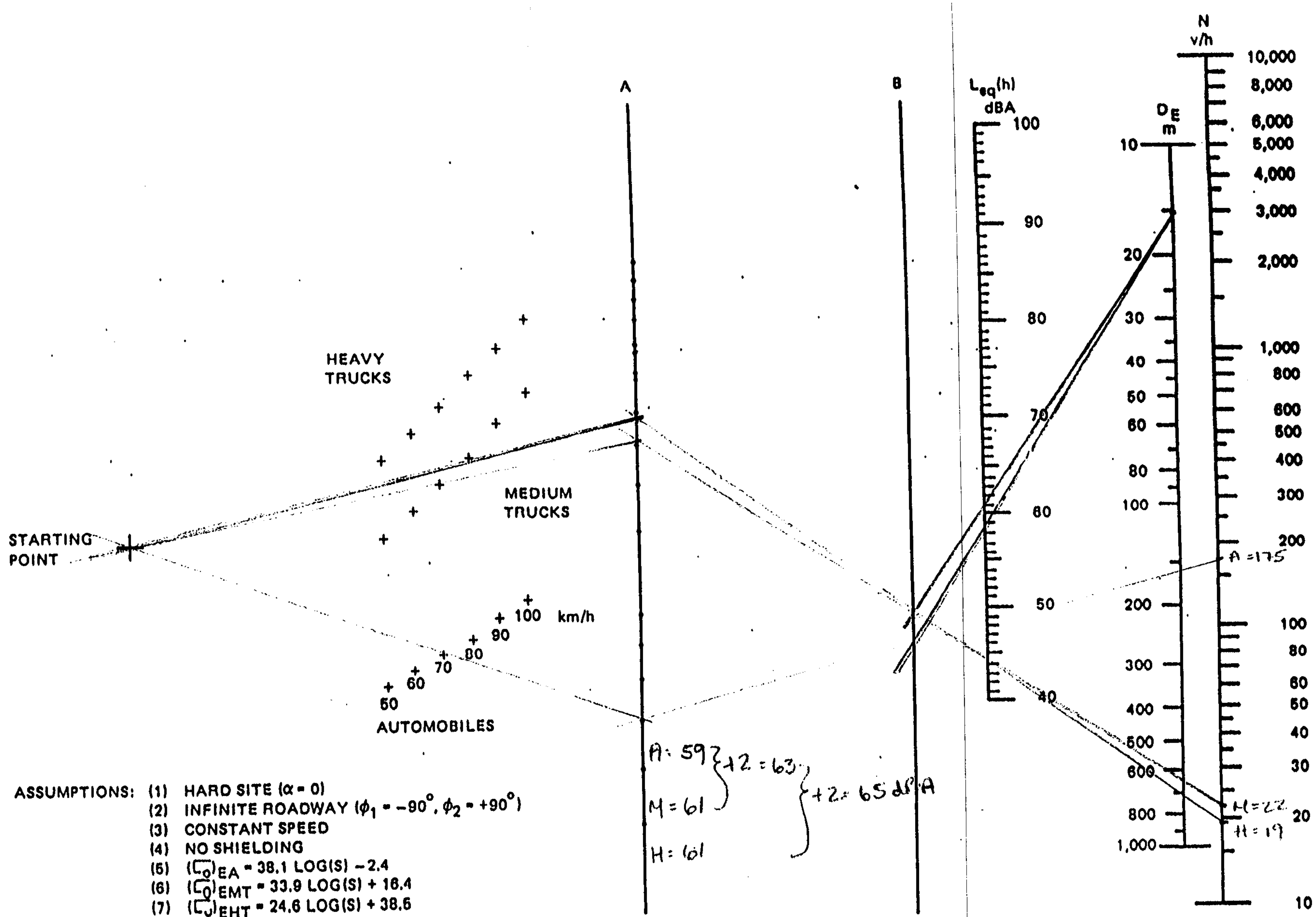
Receiver #6

A	=	59.5	dBA
M	=	61	dBA
H	=	64.5	dBA
		66	dBA



ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90°, \phi_2 = +90°$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L_o})_{EA} = 38.1 \text{ LOG(S)} - 2.4$
(6) $(\overline{L_o})_{EMT} = 33.9 \text{ LOG(S)} + 16.4$
(7) $(\overline{L_o})_{EHT} = 24.6 \text{ LOG(S)} + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)
Sutton
2015
Receiver: Sta. 2272, 130 Feet South

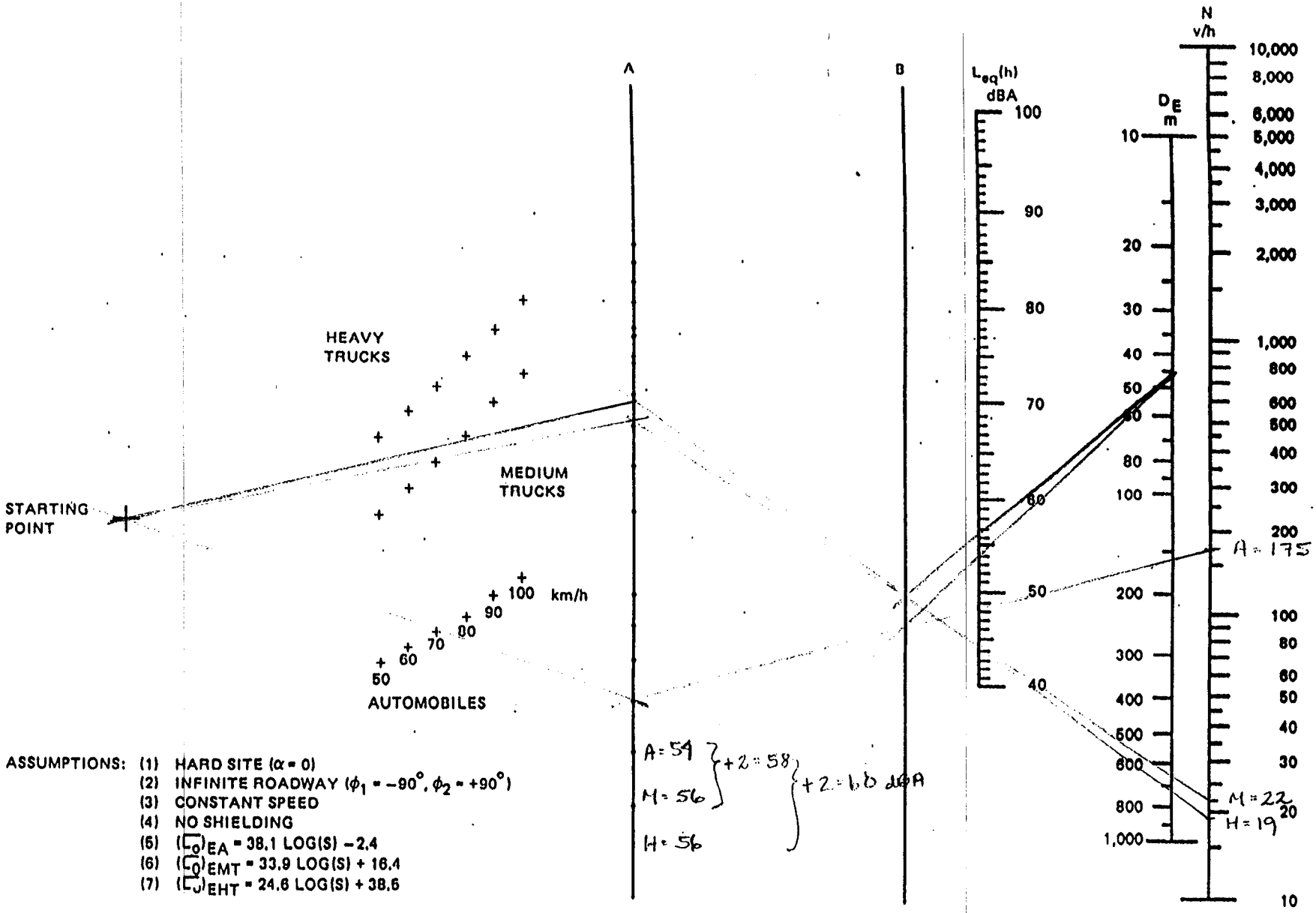


FHWA Highway Traffic Noise Prediction Nomograph (Hard Site) 15.24 m

LONG LAKE STATE RECREATION SITE

50 FEET FROM OVERLOOK

1989 EXISTING



ASSUMPTIONS:
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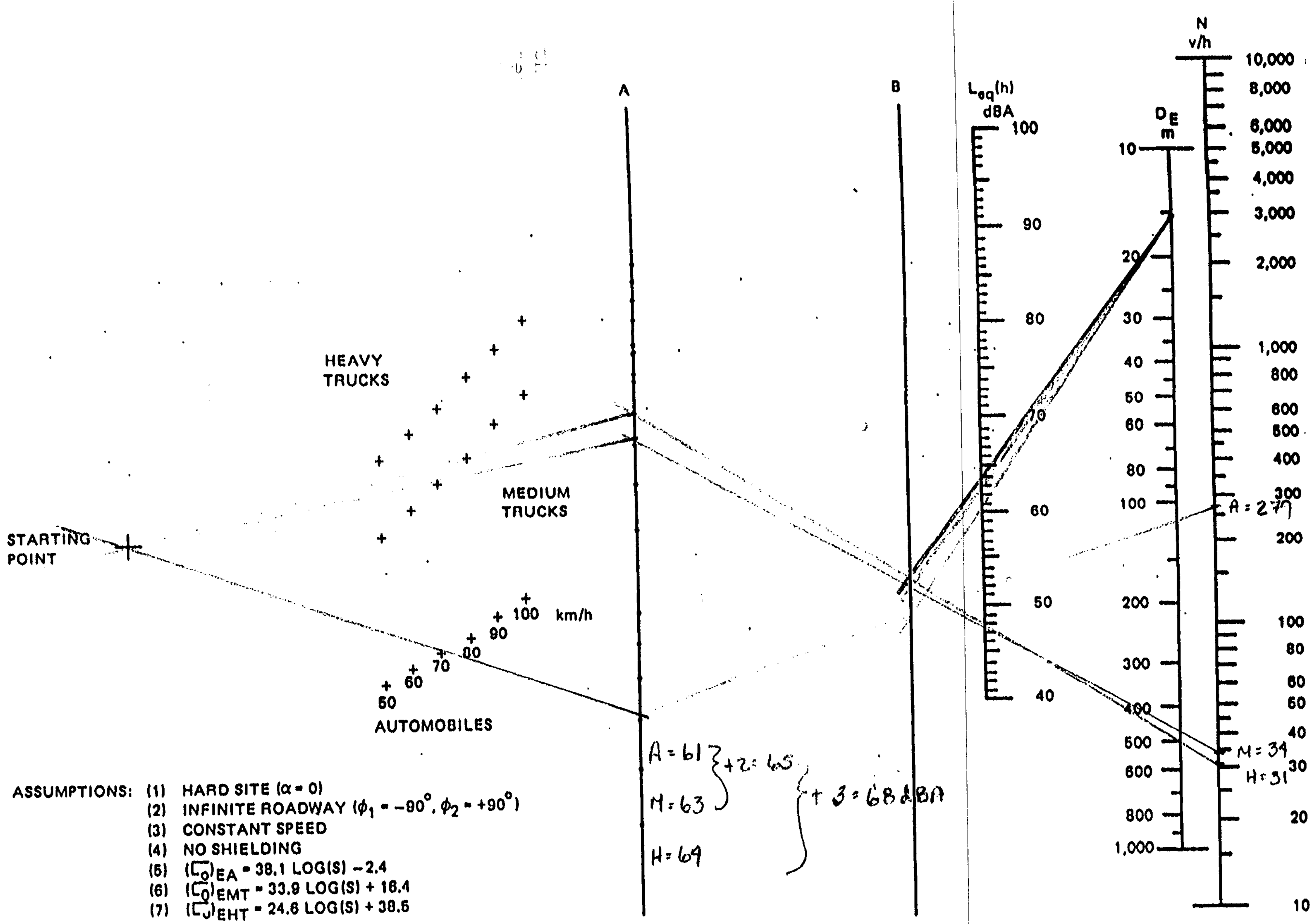
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(L_o)_{EA} = 38.1 \text{ LOG}(S) - 2.4$
(6) $(L_o)_{EMT} = 33.9 \text{ LOG}(S) + 16.4$
(7) $(L_o)_{EHT} = 24.6 \text{ LOG}(S) + 38.6$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site) 15.72 m

A & M = 45 mph
H = 20 mph

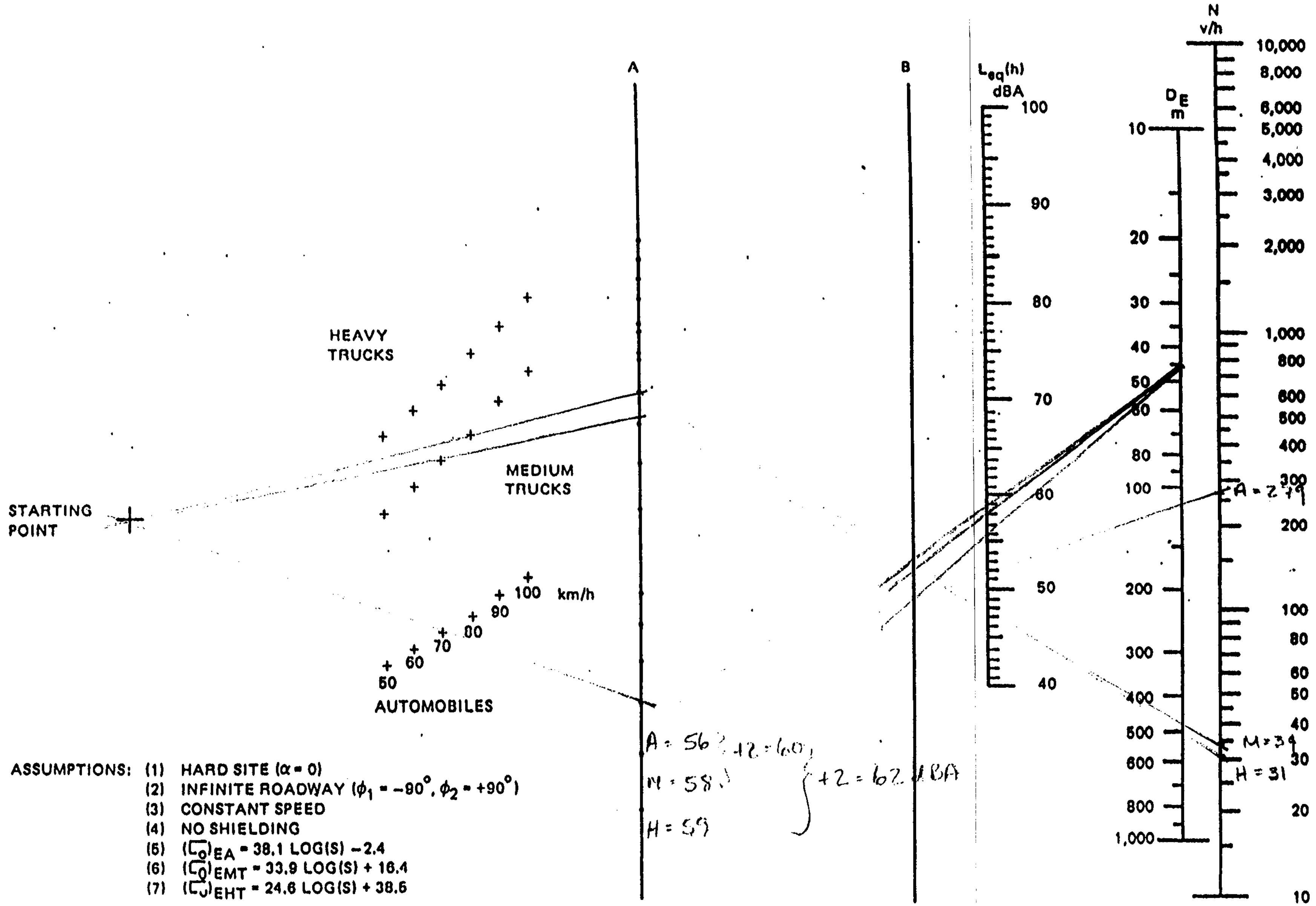
LONG LAKE STATE RECREATION SITE
150 FEET FROM CENTERLINE



FHWA Highway Traffic Noise Prediction Nomograph (Hard Site) 15.24 M

LONG LAKE STATE RECREATION SITE.
50 FEET FROM CENTERLINE.

2015 EXISTING

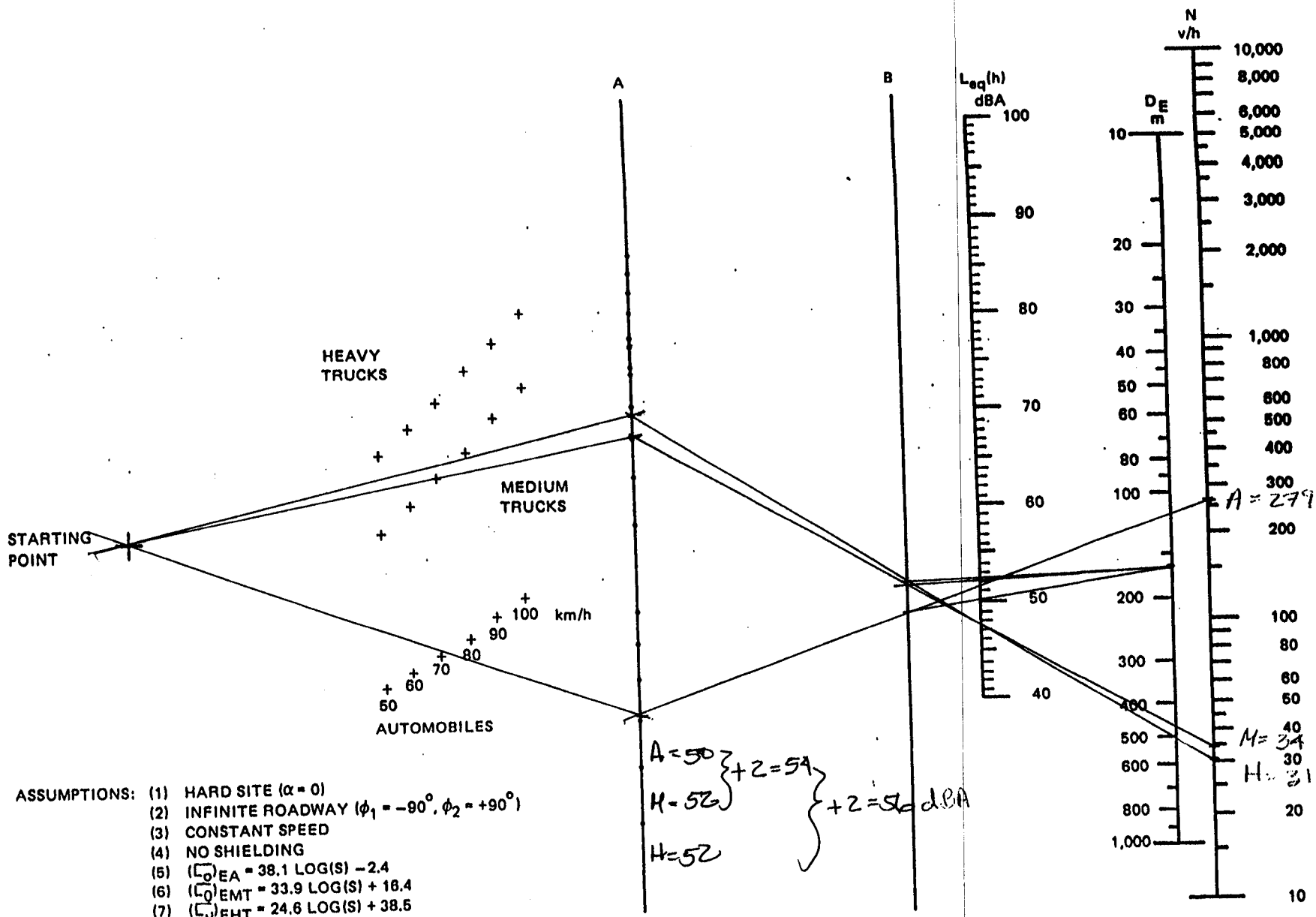


ASSUMPTIONS:
(1) HARD SITE ($\alpha = 0$)
(2) INFINITE ROADWAY ($\phi_1 = -90°, \phi_2 = +90°$)
(3) CONSTANT SPEED
(4) NO SHIELDING
(5) $(\overline{L}_0)_{EA} = 38.1\ LOG(S) - 2.4$
(6) $(\overline{L}_0)_{EMT} = 33.9\ LOG(S) + 16.4$
(7) $(\overline{L}_0)_{EHT} = 24.6\ LOG(S) + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site) 45.72 M

Avg M = 45 mph
H = 20 mph

Long Lake State Recreation Site.
150 feet from [illegible]



ASSUMPTIONS:
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(3) CONSTANT SPEED
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(6) $(L_0)_{EMT} = 33.9 \text{ LOG}(S) + 16.4$
(7) $(L_0)_{EHT} = 24.6 \text{ LOG}(S) + 38.5$

FHWA Highway Traffic Noise Prediction Nomograph (Hard Site)

LONG LAKE SPA RECREATION AREA
550 FEET FROM CENTERLINE

2015 REACH1

APPENDIX C

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APPENDIX D

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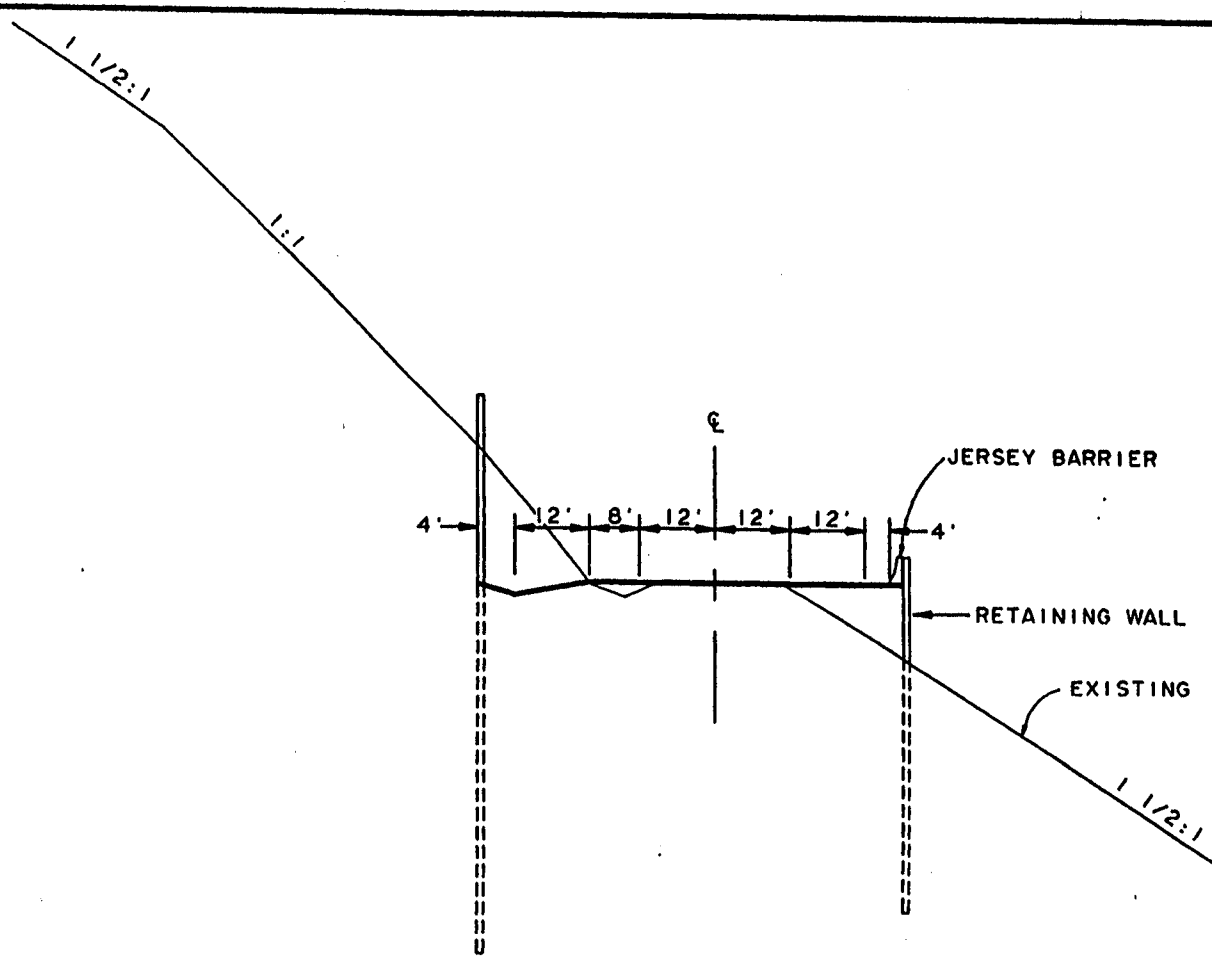


LONG LAKE HILL

ALTERNATIVE 1A

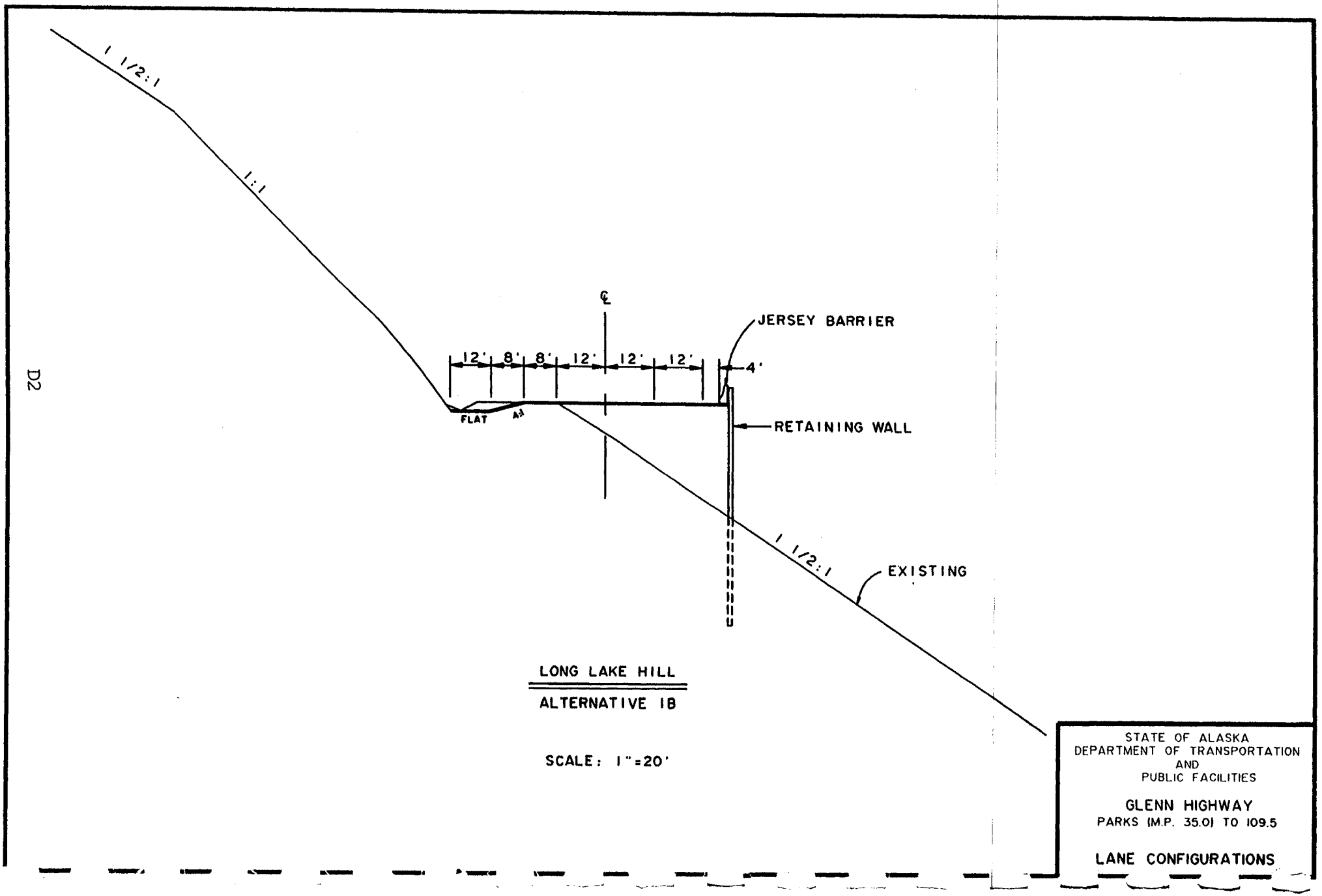
SCALE: 1"=20'

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

GLENN HIGHWAY
PARKS (M.P. 35.0) TO 109.5

LANE CONFIGURATIONS

D1


1 1/2:1
1:1
℄
JERSEY BARRIER
12'
8'
8'
12'
12'
12'
4'
FLAT
RETAINING WALL
1 1/2:1
EXISTING
LONG LAKE HILL
ALTERNATIVE 1B
SCALE: 1"=20'
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
GLENN HIGHWAY
PARKS (M.P. 35.0) TO 109.5
LANE CONFIGURATIONS

D2

RECEIVED

JAN 18 '91

MEMORANDUM State of Alaska

DEPARTMENT OF NATURAL RESOURCES **DIV OF PARKS & OUTDOOR REC**

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.	✓	
Project Mgr.		
Survey Mgr.		
Env. Loader	✓	
Staff		
Project File		
File	✓	

TO: Laurie Mulcahy
Environmental Analyst
Environmental Section

DATE: January 11, 1991

FILE NO: w/map

TELEPHONE NO.: 762-2617

FROM: Al Meiners
Southcentral Region Manager

SUBJECT: Glenn Higway Upgrade & Long Lake State Recreation Site

The Division of Parks and Outdoor Recreation supports the proposed realignment of the Glenn Highway through Long Lake State Recreation Site.

We have reviewed the alternative alignments for the upgrade of the highway which you provided to us. Our analysis included several field trips and a review of the effect of the two alignments on future park development and management opportunities for the recreation site. Our Landscape Architect, Bill Evans, prepared conceptual park development scenarios using the two alignments as givens. The draft plans are attached to this memo. We are confident that, because of the terrain of the area, the alignments developed by your office are realistic and that there are no other reasonable alternatives.

The existing alignment protects the presently undeveloped portion of the recreation site which is south of the lake. This is good in term of our development options for future park facilities but would be expensive for us to develop road access in this area (see concepts A1 and A2). The present highway location creates a severe impact on the quality of the recreational experience on Long Lake. Noise from the highway is severe, particularly on the west end of the lake. The attractive features of the recreation area are, obviously, the lake , but also the large steep cliff to the north. The highway presently separates these two primary natural features. Building a larger roadway in this same general alignment will exacerbate these impacts. We are of the opinion that the relocation to the south side of the lake will create a more pleasant recreational setting for persons using the lake. Water features always rank high in terms of how park visitors value park sites. As a side benefit, the existing parking area can be expanded and the old roadway converted to a recreational trail. The old riadway near Wiener Lake could be dead-ended with a parking area/scenic overlook. The trail from this site would connect with the day-use parking area and boat launch at the west end of the

lake.

On the negative side, the new alignment may adversely impact moose and other wildlife habitat. However, we will defer to ADF&G Habitat Protection Section to properly assess this consideration. The road between the lake and the Matanuska River, which we plan to expand the recreation site towards, does split these two features for park visitors. To mitigate this impact we ask that the roadway be designed to include two pedestrian tubes, or culverts, to allow for the development of trails between the lake and river which do not have to cross the highway at grade. The location of these tubes is shown on Bill Evan's development concept B and highlighted in yellow. We can work with your design engineers during the design phase of the project to more specifically locate these undercrossings.

It is our intent to develop a campground and other park facilities as shown on the attached concept B, if the new alignment is constructed. We would appreciate if some of the turnouts can be developed as highway rest areas, scenic overlooks or material waste sites during your project.

From a purely park management standpoint, it might be best to keep the highway in its current location and design or avoid the park lands altogether. However, we recognize that public interest in upgrading the Glenn Highway and also the severe terrain constraint that you are dealing with in this area.

It is our opinion that, with the pedestrian tubes, abandonment of the old right-of-way for recreational use and the development of several turnouts in the recreation site on the new alignment, that the adverse impacts of the proposed project on the Long Lake State Recreation Site will be dealt with in an acceptable manner.

If you have any questions or need more information, please feel free to contact me, Bill Evans or Dale Bingham.

cc: Pete Panarese
Dale Bingham
Bill Evans

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES

State of Alaska

DIV OF PARKS & OUTDOOR REC

TO: Laurie Mulcahy
Environmental Analyst
Environmental Section

DATE: December 19, 1991

FILE NO: 453009

TELEPHONE NO.: 762-2617

FROM: Al Meiners
Southcentral Region Manager

SUBJECT: Glenn Highway Upgrade, Long Lake SRS

The note on our Concept B plan was written by our Landscape Architect Bill Evans. Bill thought that if we could not expand the recreation site to the south then significant benefits of the new highway alignment would be lost. For example, we would lose, without boundary expansion, the opportunity to build the new campground in the NW4 of Section 29 or the trail to the scenic overlook near the center of Section 28. The new alignment provides new park development opportunities.

The land to the south of the existing recreation site is state owned. Park expansion can occur by either legislative or administrative action. The most likely scenario is for our agency to apply to the Division of Land for an amendment to our existing land management agreement to add 160 acres to the existing 480 acre park unit. If we expand the park beyond 640 acres an act of the legislature is required. Expanding the park to the river would require legislation would be pursued if sufficient legislative support and interest exists and we have time to work with the legislation.

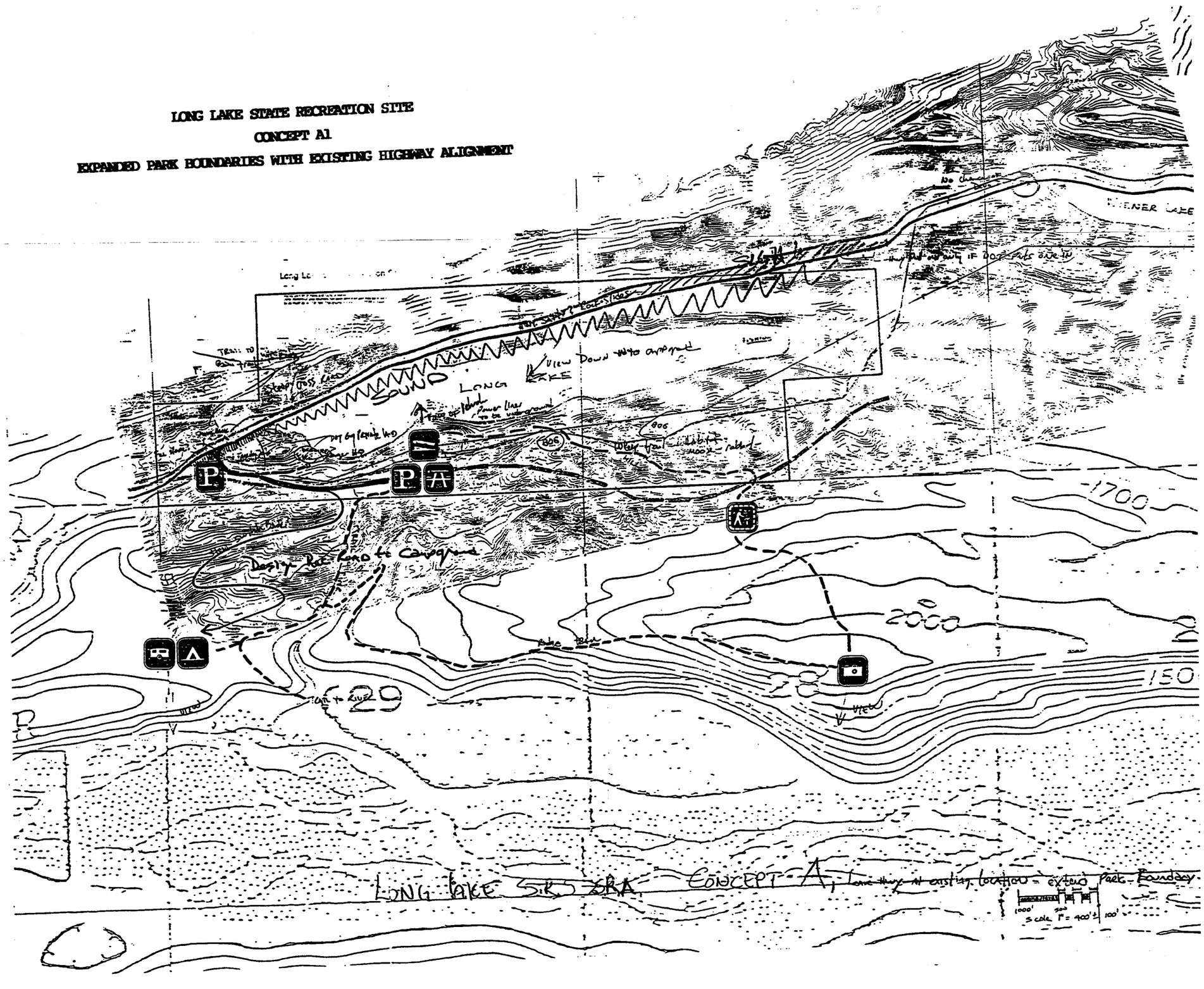
I do not consider Bill's note to be a factor in our decision to support the new alignment because I am confident that the park expansion will occur. Further, I am of the opinion that even if the expansion did not occur, the value of the state recreation site would be enhanced by the new highway location. In other words, I do not agree with the note. Because of this I have removed the note from the concept plan drawing.

If you have further questions, please contact me.

LONG LAKE STATE RECREATION SITE

CONCEPT A1

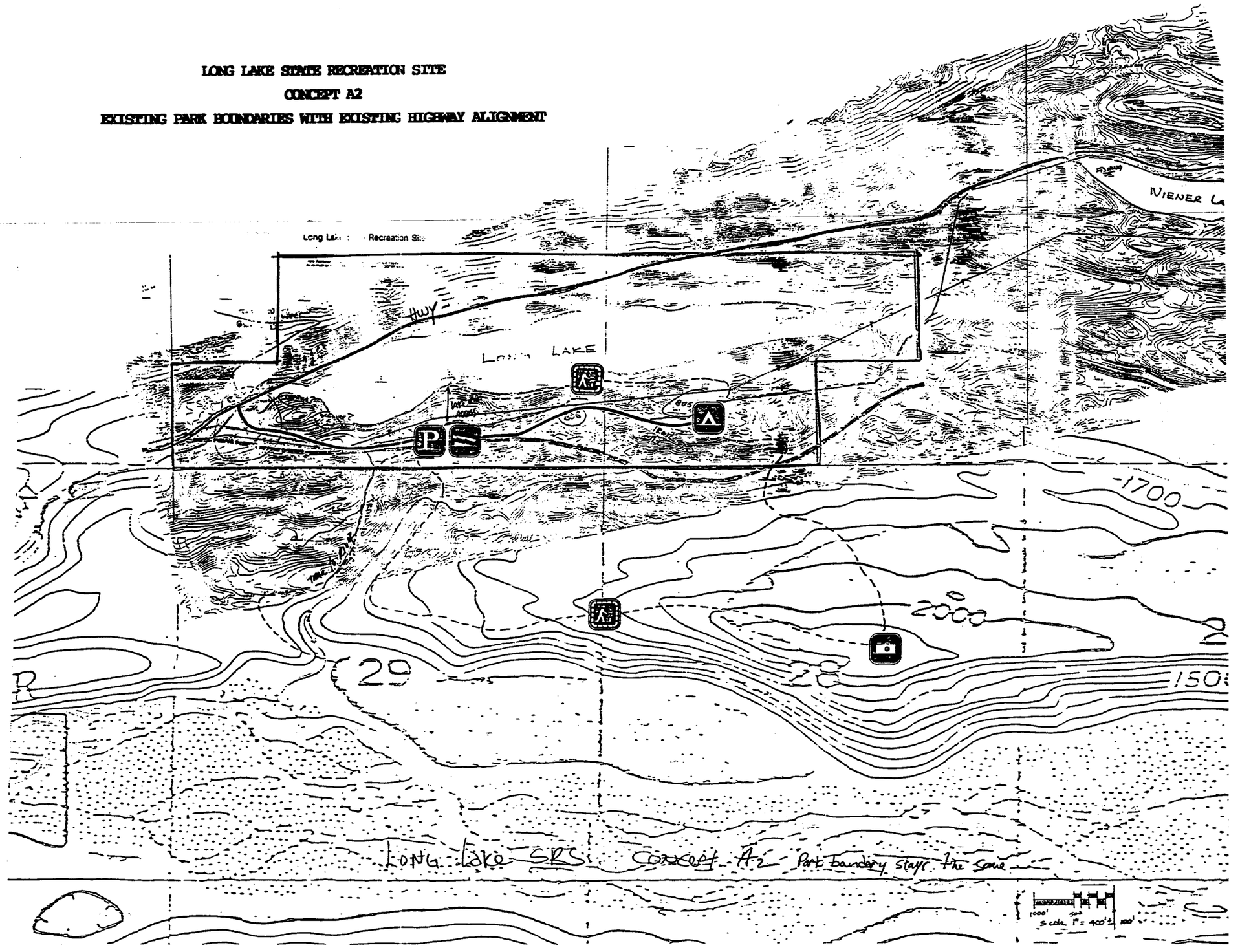
EXPANDED PARK BOUNDARIES WITH EXISTING HIGHWAY ALIGNMENT

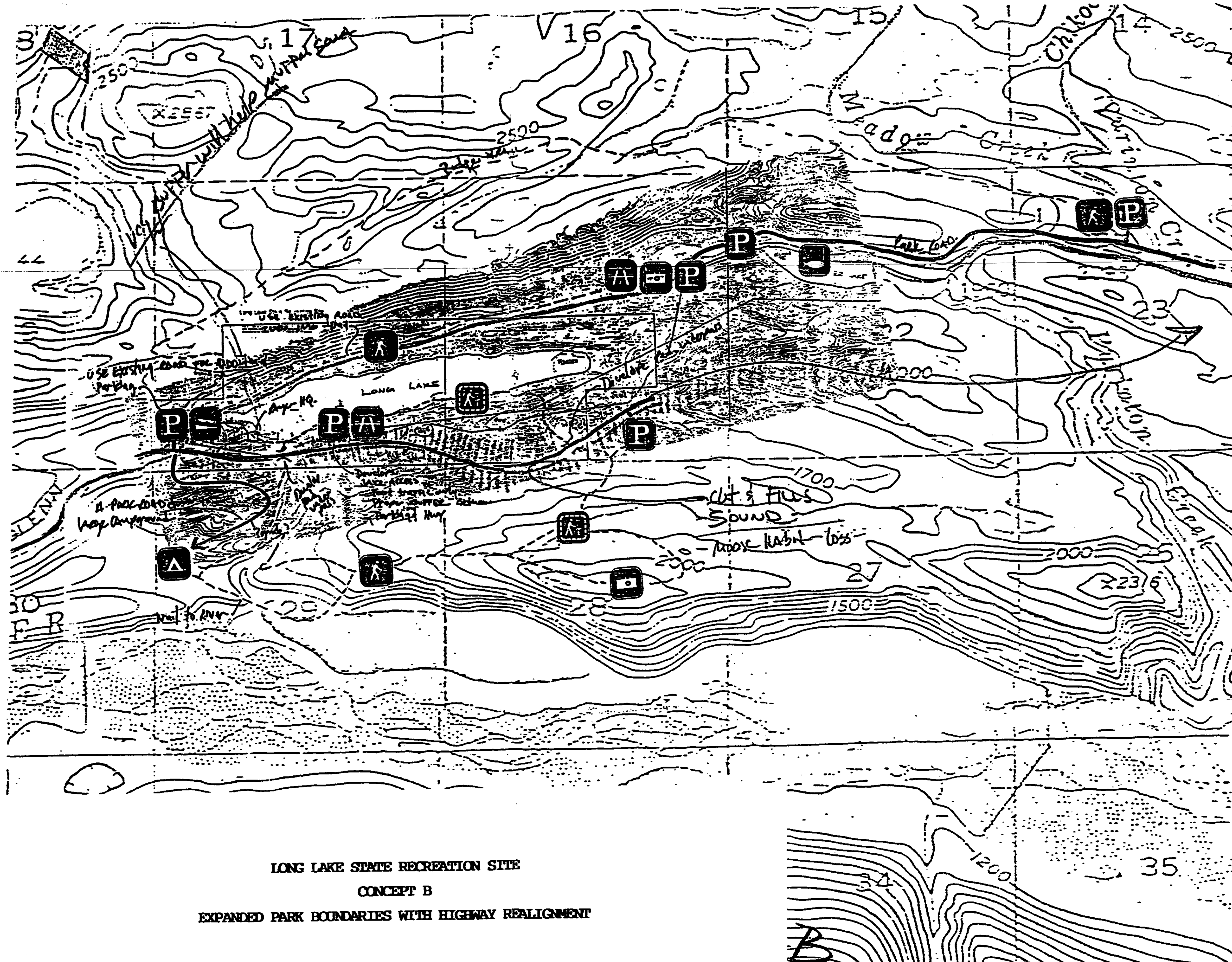


LONG LAKE STATE RECREATION SITE

CONCEPT A2

EXISTING PARK BOUNDARIES WITH EXISTING HIGHWAY ALIGNMENT





LONG LAKE STATE RECREATION SITE

CONCEPT B

EXPANDED PARK BOUNDARIES WITH HIGHWAY REALIGNMENT

MOVING ROAD - EXPAND PARK Boundary

SCALE 1"=1000'

GLENN HIGHWAY, PARKS HWY. TO MILEPOST 109
PROJECT NO. F-042-1(11)/53009

MEMORANDUM OF AGREEMENT

WHEREAS, the Alaska Department of Transportation and Public Facilities (ADOT&PF) and the Alaska Department of Natural Resources (DNR), Division of Parks and Outdoor Recreation, have determined that the Glenn Highway, Parks Highway (MP 35) to MP 109 project [Federal Project No. F-042-2(11)] would involve the Long Lake State Recreational Site (SRS), a Section 4(f) property of the U.S. Department of Transportation Act and a Section 6(f) property of the Land and Water Conservation Fund Act; and

WHEREAS, the DNR has drafted Conceptual Park Development and Management Scenarios for the Long Lake SRS, preferring Concept B which involves expanded park boundaries and the Glenn Highway realignment south of Long Lake; and

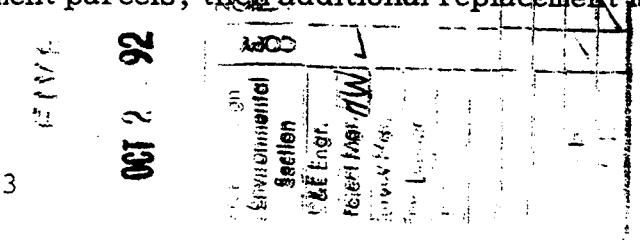
WHEREAS, both parties have participated in the consultation and development of this Memorandum of Agreement;

NOW, THEREFORE, the ADOT&PF and the DNR agree that the undertaking shall be implemented in accordance with the following stipulations.

STIPULATIONS

Subject to the Federal Highway Administration approval of the Section 4(f) Evaluation and the Department of the Interior, Bureau of Outdoor Recreation, approval of the Section 6(f) Statement, the ADOT&PF will ensure that the following measures are carried out:

1. Replace the 43 acres of parkland that would be converted to transportation use with approximately 66 acres of excess existing right-of-way. Upon final appraisal, if the fair market value of the converted land does not equal or exceed the value of the replacement parcels, then additional replacement land will be provided.



2. Rehabilitate the abandoned roadway segment: a) remove existing pavement; b) reduce the width of the travelled way to provide a 12-foot wide gravel trail and service vehicle access; c) remove existing roadway culverts and construct low swales through the embankment to allow water drainage; d) construct a wide ditch on the uphill side of the embankment to contain errant rocks; e) revegetate disturbed areas, with the exception of rock faces; and f) provide a park gate at each trailhead.

3. Construct two arch pedestrian tubes at highway crossings of proposed park trails of Concept B.

4. Construct two gravel parking lot pads and approaches: one for a proposed picnic area and one for a proposed trailhead of Concept B. Each parking facility would provide spaces for 15 vehicles.

5. Construct a turnaround and trailhead parking where the roadbed dead-ends near Weiner Lake, using a site that offers a good vantage point.

Execution of this Memorandum of Agreement by the Alaska Department of Transportation and Public Facilities (ADOT&PF) and the Alaska Department of Natural Resources (DNR), Division of Parks and Outdoor Recreation, and implementation of its terms, evidence that the ADOT&PF has coordinated with the DPOR to minimize realignment impacts to the Long Lake SRS and substitute other property of at least equal fair market value, location, and of reasonably equivalent recreation usefulness.

Alaska Department of Transportation and Public Facilities

By: [signature] for Director DEC Date: 10/2/92
(Name and Title)

Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation

By: [signature] Director Date: 16 OCT 92
(Name and Title)

APPENDIX E

TABLE OF CONTENTS

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

3601 C STREET, Suite 1278
ANCHORAGE, ALASKA 99503
PHONE: (907) 762-2622

DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History and Archaeology

MAILING ADDRESS:
P.O. Box 107001
ANCHORAGE, ALASKA 99510-7001

November 4, 1991

File No.: 3130-2R DOT/PF

Subject: Glenn Highway MP 35-109, Project No. F-042-2(11)/53009

Mr. Hank Wilson, Project Manager
Preliminary Design and Environmental
Central Region - Division of Design and Construction
Department of Transportation and Public Facilities
4111 Aviation Ave.
P.O. Box 196900
Anchorage, AK 99519-6900

ATTN: Laurie Mulcahy

Dear Mr. Wilson;

Thank you for your letter updating the plans for the Glenn Highway project, Milepost 35-109. The determinations of eligibility have been taken care of in previous correspondence, so it is now possible to concentrate on findings of effect and possible mitigation plans. The historic properties to be affected are:

MP40 Patten Farm (ANC-472). In our meeting of 12/20/90, my staff indicated that there would be an effect and that some kind of mitigative action would be required to protect the setting of this fine property. In our letter of March 29, 1991, we suggested that the effect would probably be adverse. The new southbound lanes and frontage road will take 180' of the 380' between the structures and the road, placing the edge of the frontage road about 200' from the house and barn. It now seems somewhat sarcastic to suggest a finding of no effect. We find the effect to be adverse or possibly not adverse with considerable efforts to provide a vegetative buffer along the eastern property line. Also, the current plans show no proposal for access to the property from the frontage road. This must be developed in keeping with the historic character of the property. Plans for the vegetative buffer and access should be detailed in the project Memorandum of Agreement.

MP41 Hecky Barn (ANC-473). In our meeting of 12/20/90, Smith's notes indicate that there will be an effect but it may not be adverse. The southbound lanes and frontage road will take 150' of the 275' between the barn and the road, placing the frontage road about 125' from the structure. Our March 29 letter suggests that the effect would not be adverse because of the limited remaining visual integrity of the property. Our opinion, no adverse effect, remains the same.

MP43 Puhl-Bacon House (ANC-057) and Bailey-Estell Colony Farm (ANC-056). This project will only repave the existing road. We concur with your finding of no effect.

MP85 ANC-737/ANC-736. Two sites just west of Long Lake on centerline. We concur with your finding of adverse effect and that excavation will be required for mitigation. Excavation strategy will be specified in the project Memorandum of Agreement.

MP85 Long Lake (ANC-017). How does DOT&PF intend to deal with this large site around the west end of Long Lake? We suggested in the March letter that the main Long Lake site, all its localities, and all the sites around the lake be combined into the Long Lake Archaeological District. However, neither the idea nor the site localities are addressed.

MP86 ANC-732. If an archaeological district is established, this would be considered a contributing property. The boundary is not known but probably extends into the proposed ROW. Mitigation would involve testing to determine the southern boundary and excavation of any portions of the site that would be destroyed by construction.

Now that the right-of-way route is reasonably well established, it is time to determine if intensive survey is necessary on the south side of Long Lake. Previous surveys have been at a reconnaissance level and appear to have largely followed the powerline access road up to roughly Station 2000 for ease of access.

The boundaries of the Long Lake site (ANC-017) are far from clearly established and may well continue into the cut/fill limits between Stations 1965 and 1970.

In addition, there are a number of small knolls in the ROW at Stations 1975-1980, 1990, 2000, 2006, 2010, 2020, 2025, and 2035 that appear to have high potential for cultural resources and should receive more intensive investigation including shovel testing at regular intervals.

We would be pleased to meet with you and the Mat-Su Borough cultural resources staff to reach agreement on these points and begin drafting the Memorandum of Agreement.

Please call Tim Smith at 762-2625 if there are any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner
State Historic Preservation Officer

JEB:tas

cc: Fran Seager-Boss, MSB

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History and Archaeology

WALTER J. HICKEL, GOVERNOR

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RECEIVED JAN 17 '92

Prelim. Design & Environmental Section | COPY
PD&E Engr.
Project Mgr.
Survey Mgr.
Env. Section
Staff
Project File
Central File

Hw Wilson

January 16, 1992

File No.: 3130-2R DOT/PF

Subject: Glenn Highway MP 35-109, Project No. F-042-2(11)/53009

Mr. Hank Wilson, Project Manager
Preliminary Design and Environmental
Central Region - Division of Design and Construction
Department of Transportation and Public Facilities
4111 Aviation Ave.
P.O. Box 196900
Anchorage, AK 99519-6900

ATTN: Laurie Mulcahy

Dear Mr. Wilson;

Thank you for your letter of 12/20/91 concerning additional survey needs and findings of effect for the Glenn Highway project, Milepost 35-109. It appears that additional survey would not be useful based on additional information presented by the original RSA survey party.

Basically, we concur with your findings of effect and possible mitigation plans, as follows:

MP40 Patten Farm (ANC-472). We now appear to agree that the effect of the project would be adverse. However, the effect can be satisfactorily mitigated. Mitigative measures will be detailed in a Memorandum of Agreement to be negotiated in the coming weeks. Issues to be addressed will include keeping the historic character of the property reasonably intact, a vegetative buffer, and access. In terms of 4(f) requirements, we agree that the effect will not substantially impair the historic integrity of the property or the Matanuska Colony of which it is a part.

MP41 Hecky Barn (ANC-473). No adverse effect.

MP43 Puhl-Bacon House (ANC-057) and Bailey-Estell Colony Farm (ANC-056). No effect.

MP85 Long Lake Archaeological District. The boundaries you have chosen are satisfactory for the purposes of this project. We are in agreement that the contributing properties are ANC-017 (the original Long Lake site), 732, 736, 737, are 738. ANC-731 and 739 are highly disturbed and therefore non-contributing properties. They need no further consideration. It appears that a finding of no adverse effect through negation/data recovery/mitigation would be appropriate for the district. ANC-017, 732, and 738 will not be impacted and require no mitigation. ANC-736 and 737 are on centerline and will require mitigative excavation.

Planning mitigative excavations in detail at this time is difficult since we have little information on the boundaries (and therefore, size) of the sites. Generally, mitigation works best if done in two phases. The first phase involves finding the site boundaries. The boundaries must be known so that rational decisions on how much of the site area should be dug. A typical way to bound a site is to establish a 1 or 2 meter-square grid over the potential site area and dig a shovel test in each square. The distribution of positive tests are then used to establish boundaries and estimate artifact density distributions within the site. With this data, the second phase (actual excavation) begins, starting with decisions about which and how many squares will be fully excavated. Density information is very useful as well for estimating the total amount of cultural material that will need to be analyzed after the excavation.

We would be pleased to meet with you and the Mat-Su Borough cultural resources staff to reach agreement on these points and begin drafting the Memorandum of Agreement for the Patten Farm.

Please call Tim Smith at 762-2625 if there are any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner
State Historic Preservation Officer

JEB:tas

cc: Fran Seager-Boss, MSB

GLENN HIGHWAY, PARKS HWY. TO MILEPOST 109
PROJECT NO. F-042-1(11)/53009
MEMORANDUM OF AGREEMENT

WHEREAS, the Federal Highway Administration (FHWA) has determined that the Glenn Highway, Parks Highway (MP 35) to MP 109 project [Federal Project No. F-042-2(11)], Matanuska-Susitna Borough, Alaska, would have an effect upon the ~~Patten Farm; the Hecky Barn; and~~ archaeological sites ANC-736 and ANC-737; properties eligible for inclusion in the National Register of Historic Places, and has consulted with the Alaska State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Matanuska-Susitna Borough, Mrs. Margaret Patten, the owner of the Patten Farm, and the Alaska Department of Transportation and Public Facilities (ADOT&PF) have participated in the consultation, and have been invited to execute this Memorandum of Agreement;

NOW, THEREFORE, the FHWA and the Alaska SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The FHWA will ensure that the ADOT&PF will carry out the following measures:

1) The Patten Farm (ANC-472) will be landscaped to extend the vegetative buffer along the eastern property line. Two rows of trees will be planted at 10-foot intervals adjacent to the ROW between approximately Sta. 1556 and Sta. 1557, in areas lacking foliage. The rows will be offset to provide maximum screening. If practicable, the ADOT&PF will save some of the larger trees and transplant them with saplings of native tree species. The existing farm driveway access would continue to be used with an improved driveway approach from the frontage road.

2) The FHWA and the ADOT&PF have determined in consultation with the SHPO that the addition of the frontage road and additional two through lanes would not detract from the barn's setting or affect its integrity and will have no adverse effect on the Hecky Barn (ANC-473). The roadway will be designed so that access to the Hecky property will be maintained from the proposed frontage road.

3) When the Highway Design Phase is completed, a data recovery plan will be developed in consultation with the SHPO for the recovery of archaeological data from Long Lake archaeological district sites ANC-736 and ANC-737. The plan will be implemented prior to and in coordination with those project activities that could disturb archaeological resources. The FHWA and the ADOT&PF have determined in consultation with the SHPO that data recovery at these sites will not have an adverse effect since it will be accomplished pursuant to a plan that is consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37) and take into account the Council's publication, Treatment of Archaeological Properties (Advisory Council on Historic Preservation, [draft] 1980), subject to any pertinent revisions the Council may make in the publication prior to completion of the data recovery plan. It shall specify, at a minimum:

* the property, properties, or portions of properties where data recovery is to be carried out;

* any property, properties, or portions of properties that will be destroyed without data recovery;

* the research questions to be addressed through the data recovery, with an explanation of their relevance and importance;

* the methods to be used, with an explanation of their relevance to the research questions;

* the methods to be used in analysis, data management, and dissemination of data, including a schedule;

* the proposed disposition of recovered materials and records;

* proposed methods for involving the interested public in the data recovery;

* proposed methods for disseminating results of the work to the interested public; and

* a proposed schedule for the submission of progress reports and the final report to the ADOT&PF.

All materials and records resulting from the data recovery conducted at sites ANC-736 and ANC-737 will be curated by the University of Alaska Fairbanks in accordance with 36 CFR Part 79. The SHPO will be provided three copies of the final report.

4) The data recovery plan for sites ANC-736 and ANC-737, guided by Appendix A, shall be submitted by the ADOT&PF to the SHPO and by the FHWA to the Council for 30 days review. Should the SHPO or the Council object within 30 days to the plan provided for review pursuant to this agreement, the FHWA and the ADOT&PF shall consult with the objecting party to resolve the objection, and develop and submit a revised plan. If the FHWA determines that objection cannot be resolved, the FHWA shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

* provide the FHWA with recommendations, which the FHWA will take into account in reaching a final decision regarding the dispute; or

* notify the FHWA that it will comment pursuant to 36 CFR Part 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the FHWA in accordance with 36 CFR Part 800.6(c)(2) with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

5) **Should any other archaeological, historic, architectural, and/or cultural resources be identified during the construction of the project, all work which would impact these resources would be halted and the ADOT&PF would immediately contact the SHPO. The FHWA will notify the Council pursuant to 36 CFR Part 800.11.**

Execution of this Memorandum of Agreement by the Federal Highway Administration and the Alaska State Historic Preservation Officer, its subsequent acceptance by the Council, and implementation of its terms, is evidence that the FHWA has afforded the Council an opportunity to comment on the Glenn Highway, Parks to MP 109 project and its effects on historic properties, and that the FHWA has taken into account the effects of the undertaking on historic properties.

Alaska State Historic Preservation Officer

By: Robert W. Shaw, Deputy SHPO for Judy Bittner, SHPO Date: 10/9/92
(Name and Title)

Federal Highway Administration

By: Robert E Ruby, DIVISION ADMINISTRATOR Date: 10/23/92
(Name and Title)

Concur

Matanuska-Susitna Borough

By: [signature] Date: 10/8/92
(Name and Title) Cultural Resources Specialist.

Mrs. Margaret Patten

By: Margaret Patten Date: 10/7/92

Alaska Department of Transportation and Public Facilities

By: [signature] For Director O&C Date: 10/7/92
(Name and Title)

Accepted for the Advisory Council on Historic Preservation

By: Robert D. Bush Date: 10/27/92
(Name and Title)

APPENDIX F

Matanuska-Susitna Borough

Parks & Outdoor Recreation Division

Comprehensive Development Plan

TRAILS INVENTORY

September 1987

GLENN HIGHWAY REGION

INTRODUCTION TO THE AREA.

This section discusses trails off of the Glenn Highway between Moose Creek and the Borough boundary to the east.

The area is described in an Anchorage Times, July 8, 1982 article entitled: "GLACIERS, MINES ARE VALLEY HIGHLIGHTS" "Great Getaways" by Janice Weiss.

"The rushing white waters of the Matanuska River flow through the Valley of the same name. Back on land, the Glenn HIghway follows the meandering of the river. Both the river and highway offer access to a variety of things to do in the Matanuska River Valley--from walking on a glacier to watching riding in a river raft to exploring old coal mines.

All can be done in a day-trip from Anchorage; the area is just north of Palmer.

The headwater source of the river is the Matanuska Glacier, which gives the river its milky-white color. The glacier is visible from many points along the highway after passing Sutton, heading north, and there's a turnout with a good view at Mile 101.7. To get to the glacier, which is one of the few in the State on which one can walk, turn toward Glacier Park Resort at Mile 102 of the highway. The road leading to the glacier is private and a fee is charged to use it, $3.50 for adults, $1.75 for children 6 to 12. The road leads to a parking area and from there you can walk across the glacial deposits to reach the ice, a distance of about 250 feet. The walk to the ice is becoming shorter--since 1979 the glacier has advanced about three to four inches a day. After you've walked on the glacier, you might like to take a ride down the river.

Nova River Runners of Alaska offers float trips down the Matanuska River. The four-hour day trips begin at 11:30 a.m. at Kings Mountain Lodge, Mile 76.5 of the highway. This trip goes through 15 miles of scenic canyons in the Chugach and Talkeetna Mountains. After lunch, riders are given a chance to try their hands at the oars. Bald eagles and moose are occasionally seen along the way. The Chickaloon River back-country trip also begins from King Mountain Lodge where a helicopter will take you to Chickaloon. After a night of camping at the foot of Castle Mountain, the guides will take you on a river run.

Also available is the horseback option. Rather than taking the helicopter, you can ride horseback to Chickaloon. For more information on any of these trips, call 694-3750. If good fishing is what you are looking for, you'll find many places to drop a line in the water in the Matanuska River Valley.

Long Lake at Mile 85.3 is in a narrow canyon below the highway. Spring through fall, grayling up to 18 inches can be caught there. Grayling and also small rainbow trout can be found in Lower Bonnie Lake at Mile 83.3

Closer to Anchorage, at Mile 54.5, Moose Creek offers trout and Dolly Varden in the summer.

This history buff will also find many items of interest in the river valley. The Glenn Highway crosses Hicks Creek at Mile 96.4 which was named by Captain Glenn in 1989 for H. H. Hicks, the guide of his expedition.

An old road by the Chickaloon River and canyon at Mile 77.7 leads to an abandoned oil well and a coal mine. Trails in this area lead into the big game country of the rugged Talkeetna Mountains, home of sheep, moose, caribou, black and grizzly bear. At Mile 61, the Jonesville road turnoff, paved for only about two miles, will lead to the old Jonesville Mine and the old Eska Coal mine area.

Sutton, established as a railroad siding in 1981, is at Mile 60.4. The town was once the heart of the flourishing coal industry and is now a small community of about 800 people.

At Mile 112.5 is Sheep Mountain, elevation 6,300 feet. The mountain is visible for about 11 miles on the highway and sheep are often seen on its higher slopes. By Caribou Creek and the bridge at Mile 107 are turnouts that offer good views of the Matanuska Glacier and Fortress Ridge, elevation 5,000 feet, that looms above the highway. Beginning at about Mile 80, Kings Mountain, elevation 5,809 feet, can be seen. And at about Mile 68, Pinnacle Mountan can be seen rising southeast of the highway. A hill at Mile 53 on the highway will give southbound travelers a view of the homes and farms of the Matanuska Valley. Along the highway are several resorts and lodges that offer cold and hot drinks, food and spectacular views." (Reprinted with permission of the Anchorage Times.) Most of the trails connecting to the Glenn Highway are described in "Trails and Signs Plan of the Glenn Highway--Chickaloon to Glennallen" prepared by the State of Alaska Department of Fish and Game (ADF &G) and the Bureau of Land Management (BLM) in 1964 to identify and mark trails off of the Glenn Highway. In the introduction to the report the author stated: It is intended that eventually all the public trails leading off the main highway net in Alaska will be researched and mapped to permit the data to be put into the hands of the general public in the form of brochures such as the ADF&G Fishing Guide or the BLM Gulkana Basin Guide. Trails should be posted with information, interpretative and identification data for the benefit of all concerned.

All trails will normally have the Federal S-12 or S-45 signs, as applicable, and the ADF&G Trail Marker signs posted. ... In due course, routed trail signs, giving the name of each trail, will be erected along the side of the highway. These plans were never realized. Shortly after 1964 the State apparently lost interest in the scenic and outdoor recreation potential of the Glenn Highway and did not pursue the signing of the trails. The Borough, in 1979, arrived at cost estimates for brushing trailheads and trails off of the Glenn Highway, usually at about $8,000 per trail. Presumably the work would have been done with federally funded Comprehensive

Employees Training Act (CETA) employees, a program which has since been discontinued.

The State Department of Transportation and Public Facilities (DOT/ PF) has identified the many pullouts and waysides, many at trailheads, which ought to be developed or enlarged. Presumably some of these projects will be included in the reconstruction and realignment of the Glenn Highway from Palmer to Eureka Lodge which is planned after completion of a route alignment reconnaissance and environmental study.

Many of the best known trails are segments of the Chickaloon-Knik-Nelchina Trail or connect with that trail from various trailheads along the Glenn Highway. This long trail, originally an Indian trail, was used in the 1890's by U. S. surveyors and prospectors.

The first part of the trail was also called the Matanuska Trail. It followed the north side of the Matanuska River to Sheep Mountain. The Glenn Highway follows much of this route today except at the eastern end where the old trail is in the river bottoms, and the road is at higher elevations. In the summer, supplies would be freighted up from Chickaloon along the Boulder Creek, Caribou Creek and Alfred Creek, and, in winter, the Matanuska Trail along the Matanuska River to Tahneta Pass would be used.

From the 1900's to the early 1940's it was used as a freighting trail for mining camps in the Nelchina area and the gold fields of Alfred and Albert Creeks. After completion of the Glenn Highway, portions of the trial between the Glenn Highway (Sheep Mountain) and the old Nelchina townsite to the north were used for freighting in mining equipment and supplies.

Although the trail from Knik to Nelchina was in existence from discovery of placer gold in the Nelchina area in the early 1900's, the great bulk of freighting was originally from the east from Valdez, up the Richardson Trail, westward along the north side of the Tazlina River (just south of the Glenn Highway) and then north to Nelchina.

The construction of an Alaska Railroad spur from Matanuska to the Chickaloon coal fields in 1929 now made it more economical to transport freight from the west--from railroad to up the Nelchina Trail to Nelchina. Traffic from the Richardson Trail dropped off sharply. Completion of the Glenn Highway in the early 1940's completed the shift of freighting from the east to the west. Gold mining was terminated in 1942 as a World War II measure and there was very little use of the old mining trails until the early 1970's when there was a renewed interest in placer gold exploration and mining in the Nelchina area.

Portions of the trail north of Sheep Mountain are once again used for freighting--this time by caterpillar tractors.

Although the trail originally began at Knik, the Chickaloon access point is used as a trailhead today. This reduces the trail length to about 60 miles. Eventually the Kings River Trail, Mile 66.7, a part of Chickaloon-Knik-Nelchina Trail, may

be extended across Kings River along the south slope of Castle Mountain to the Chickaloon River Trail, at Mile 77.6. The trail between Kings River and Chickaloon River is indistinct today. This area is good for hunting, fishing, backpacking, camping, horseback riding, photography, berry picking, off-road vehicle travel, snow machining and wildlife observation.

RECREATION SITES.

Moose Creek State Recreation Site-eight campsites, drinking water, pit toilets and trails. MP 54.7

Coyote Lake Recreation Area, 40-acre day-use site under Borough management. Picnic area, swimming, hiking trails, overlook of Matanuska Valley. Coal mining reclamation site, Mile 2 on Jonesville Road.

King Mountain State Recreation sites, 22 campsites, covered fireplace, picnic tables, water, toilets. MP 76.1

Bonnie Lake State Recreation Site, 13 campsites, toilets. Reached by 6-mile dirt road, not recommended for large trailers or motorhomes. Mile 83.3

Long Lake State Recreation Site, picnic sites, camping, firepits, toilets, short trails. MP 85.3

Matanuska Glacier State campground, 8 sites, picnic tables and outhouses. MP 101.0

Little Nelchina River campsite, tables, firepits, toilet. MP 137.5

Most of the trails are excellent for horse back riding. The trails are:

PREMIER MINE TRAIL this trail takes off to the east at about Mile 3 of the Buffalo Mine Road. The Premier Mine is between the Buffalo Mine Road and

Moose Creek. The Premier Mine Trail goes approximately one and one-half miles from Premier Mine south by southeast to just south of Elks Lake and to the Elks Lake Trail. The Premier Mine Trail is a necessary leg of the Sutton Power Line Trail, since it is not possible to get across the Moose Creek Canyon at the point where the Matanuska Electric Association power line crosses Moose Creek.

BUFFALO MINE TRAIL is a 1.5 mile trail from the end of Buffalo Mine Road across Moose Creek to Elks Lake and to the Elks Lake Road. Once off Buffalo Mine Road, access is primarily by foot due to continually changing road and creek crossing conditions.

WISHBONE LAKE TRAIL is a one mile four-wheel drive trail from the mid-portion of the Buffalo Mine Trail to Wishbone Lake. The lake area provides recreational opportunities such as: fishing, hunting, wildlife observation, and picnicking; off-road driving (ORV) and snow machining. The lake is stocked with rainbow trout and receives moderate fishing activity from mid-May to September. There is unmaintained public access at the southwest corner of the lake.

BAXTER MINE TRAIL is a very rough trail along the east side of Moose Creek between the Premier Mine and the Buffalo Mine. Although the trail is quite close to Moose Creek, you cannot see Moose Creek from the trail. It is not suitable for four-wheel drive use.

ELKS LAKE TRAIL is a road to Elks Lake off of the Palmer Correction Facility road at Mile 58, Parks Highway, also known as 58 Mile Road threading north

by northwest to intersect with the Premier Mine Trail. The Elks have built a parking lot and a large barbecue pit at Elks Lake. Just north of Elks Lake the road divides and becomes a four-wheel drive and equestrian trail. A northwesterly spur, the Buffalo Mine Trail, heads north by northwest to the Buffalo Mine area at Moose Creek. At the fork, the Seventeen Mile Trail heads off in a northeasterly direction for two miles to Seventeen Mile Lake. (Usual access to Seventeen Mile Lake is from the east by way of Jonesville Road.)

JONESVILLE MINE TRAIL, Glenn Hwy., Mile 60 is a one mile trail from the Glenn Highway to the end of the State maintained road which forks left toward the end of Jonesville Road. It is a four-wheel drive, equestrian and hiking trail.

SEVENTEEN MILE TRAIL is a 3.5 mile road and trail from Mile 2.5 of the Jonesville Mine Road to Elks Lake. The easterly two miles is a road which can be driven in the summer to a public access site on the west end of Seventeen Mile Trail. The lake attracts a moderate number of grayling fishermen in mid and late May. There is heavy off-road vehicle and sow machine traffic in the area. The road from Seventeen Mile Lake to Elks Lake can only be driven by four-wheel drive vehicles.

ESKA CREEK FALLS TRAIL is a 3.5 mile continuation of the right fork of Jonesville Road approximately one and one-half miles north of Sutton. One fork of the Jonesville Road turns west, north of Slipper Lake to the airstrip and the garbage dump, while the northeast fork heads to the old Eska Mine. The Eska Mine Trail heads northeast from Eska to Eska Creek Falls.

KINGS RIVER TRAIL is part of the Chickaloon-Knik-Nelchina Trail constructed in 1914 and 1915. It starts just north of the Kings River bridge. It is now a four wheel drive road that goes about five miles to the east along the north side of Kings River. The mouth of Kings River where the river joins the Matanuska River is a popular picnicing and walking area. There is parking on both sides of the Kings River bridge.

CASTLE MOUNTAIN TRAIL, is an approximate four mile four-wheel drive road over a ridge, along the west flank of Castle Mountain, and then down to the east bank of Kings River. There is a trail across Kings River along the west side of the River that goes north for another six miles. The road is used primarily by hunters. The road was built in the 1960's by Kaiser Gypsum to obtain access to various limestone claims. The road is sometimes called the " Perminenti Trail" after a subsidiary of Kaiser Industries. Castle Mountain is a dramatic peak consisting of almost pure limestone. It can be seen from the Glenn Highway. The road provides access into the Kings River Canyon area and fine views down the river toward the Matanuska River. It has high recreational potential, if upgraded.

CHICKALOON RIVER TRAIL starts at the end of the Chickaloon River Road at MP 77 Glenn Hwy. and goes up the left side of the Chickaloon River for

several miles. Part of the right of way is the old railbed for an Alaska Railroad line to a Chickaloon coal mine. One of the two railroad bridges is sitting in tact just south of the first Chickaloon River bridge. The Chickaloon River Trail provides access to the State of Alaska Chickaloon Bench subdivision which is east of the river and about two miles north of the Glenn Highway.

It is possible to go all of the way to Talkeetna over glacier free river trails, although this is rarely done. Distance is estimated at 100 miles. Johnny Luster, a long-time guide in the area, outlined this route to Talkeetna. Go up Chickaloon River, sometimes walking banks, sometimes using gravel bars, to headwaters and Camel's Back Pass; down Talkeetna to Jellow Jacket Creek; up Yellow Jacket Creek and cross over into Iron Creek, using obvious passes; down Iron Creek to Rainbow Lake and cross into Sheep River to Talkeetna River; Talkeetna River to town of Talkeetna.

The Chickaloon River is a popular access to those running the Matanuska. Kayakers put in on the Chickaloon about two miles up the Chickaloon Road. The run from Chickaloon to the Matanuska is Class III white water. Kayakers can take out at the Glenn Highway bridge before entering the Matanuska, or continue to enter the Matanuska and float to Kings Mountain Campground or Kings Mountain Lodge. This run involves Class II white water. Rafters run the Chickaloon only one-fourth to one-half mile before they enter the Matanuska. Take-out points are the same as for kayaks.

CHICKALOON TRAIL, starts at Mile 1 of the Chickaloon Road about 50 yards south of the second Chickaloon River bridge, goes up the edge of a ridge south of the Chickaloon River, crosses Sawmill Creek and comes out in the middle of the Chickaloon Subdivision where a right of way is reserved for it. At about nine miles the trail forks. The Chickaloon-Knik-Nelchina Trail follows the foot of Anthracite Ridge two miles north of the Glenn Highway while the Boulder Creek Trail crosses Boulder Creek at Boulder Creek Flats to follow Boulder Creek on the north side. A trailhead sign would appropriately read: "Chickaloon-Knik-Nelchina-Trail--Chickaloon Trailhead 9 miles." Trail will also have to be brushed out.

BOULDER CREEK TRAIL, MP 77 Glenn Highway, starts at Mile 9 of the Chickaloon-Knik-Nelchina Trail. After 19.5 miles the trail forks with the barely existent 35.5 mile Oshetna River Trail to the north and the 18 mile Caribou Creek Trail along Caribou Creek to the east. It is a summertime horse trail.

BONNIE LAKE ROAD, MP 83.2 Glenn Hwy. to Ravine Lake and Bonnie Lake and also to Sawmill Point approximately four miles. Access to Ravine Lake is by an .8 mile gravel road north of the Glenn Highway at Mile 83.3. Public access is at the west end of the lake. From there it is another .6 mile to the turn off to Lower Bonnie Lake, where there is a state wayside with campsites, pit toilets and boat launch. These are rainbow trout fishing lakes.

LONG LAKE TRAIL is on the south side of the Glenn Highway, MP 85.3. There is a trail

on the south side of the lake and over the ridge for views of the Matanuska River 800 feet below.

WEINER LAKE TRAIL. The pullout for Weiner Lake lies just south of the Glenn Highway at MP 87.8. There is a picnic site at Weiner Lake. This trail takes off from the west end of Weiner Lake continuing up a canyon to the north. It was brushed out, cleared of rocks and posted with BLM and State Fish and Game signs in 1964. It is used mostly by hunters. The trail could be extended to Meadow Creek and the unnamed lake one mile to the north to accommodate fishermen.

PURINTON CREEK TRAIL is a 1.3 mile trail linking the Glenn Highway at MP 89 to the Chickaloon-Knik-Nelchina Trail. The latter trail follows the foot of Anthracite Ridge. Caribou Creek Flats is 4 miles to the east. The road into a parking area is about two hundred feet east of Purinton Creek. It is marked "Chickaloon-Knik-Nelchina Trail--Purinton Creek entrance."

MUDDY CREEK TRAIL, Mile 94.6 Glenn Hwy., 200 yards west of Victory Bible Camp turnoff, follows Packsaddle Gulch south to Muddy Creek, crosses the Matanuska River and onto Tatondan Lake, 2-1/2 miles. The Matanuska River can only be forded in low water. Hip boots are needed.

HICKS CREEK TRAIL departs north from Glenn Highway at Mile 99.4 just east of the Pinochle Creek bridge and heads to the east side of Packsaddle Peak Ridge, off the side of the ridge into Hicks Creek and then follows the creek northeast to Caribou Creek for approximately 20 to 25 miles. Hicks Creek Trail is a major spur of the Chickaloon-Nelchina Trail network. It was the southern route to the Nelchina gold camps at the turn of the century.

The key role of this trail can be seen in the 1899 U. S. Geological Survey Map--Maps and Descriptions of Routes of exploration in Alaska and the 1907 U. S. Geological Survey Map in Geologic Reconnaissance Map of Matanuska and Susitna Region where the

Hicks Trail is shown as the easterly trail, and the Old Matanuska-Crooked Creek Trail turning northeast of Sheep Mountain (Gunsite Mountain) is shown as the westerly route. The Hicks Creek Route was the summer route, and the Old Matanuska Trail tended to be the winter route. In 1899 and in 1907 the U. S. Geological Survey parties did not make a right turn onto Caribou Creek (Chickaloon--Knik-Nelchina Trail), but rather continued on up Billy Creek, northward across Limestone Gap, down Bubb Creek to the Little Nelchina River. This is a feasible route today.

Today, the trail is used for recreation. It is unmarked and follows tractor, horse, and game trails. In autumn and winter the trail is used by hunters on foot or horseback looking for moose, caribou, and sheep in the Talkeetna Mountains. Hicks Creek Trail is used by backpackers in the summer. It is fairly easy hiking. There are no rivers to ford. It provides access to several major regional and historical trails in the area

and offers, combining trails, an uninterrupted trek of 43 miles.

PINOCHLE CREEK TRAIL at Mile 99.5 Glenn Highway heads northeast to Hicks Lake and up to Caribou Creek. The first mile and a half crosses private property, then into state land where the trail meets Pinochle Creek.

MATANUSKA RIVER TRAIL at Mile 101.1 Glenn Highway literally falls off the river bluff at the edge of Matanuska State Campground and crosses the river and climbs the bluff on the south side of the river to an old coal mine claim, 5 miles.

GLACIER CREEK TRAIL, at Mile 101.9 of the Glenn Highway drops down onto east fork of Matanuska River and up a glacial bar to a tram over Matanuska River and onto Glacier Creek, approximately four miles.

LOWER DAN CREEK TRAIL, at Mile 104.3 Glenn Hwy. takes off to the northeast just across the highway from a barrow pit. Although the trail is only 1.5 miles long before getting into open country, it is well used by sheep and moose hunters.

CARIBOU CREEK TRAIL, at Mile 107 Glenn Highway, is a foot trail to the north, just east of the Caribou bridge. It is used by hunters and hikers. It was brushed out during the winter of 63-64 by a BLM crew and is noted on the official records. The trail is about 16 miles long before joining Alfred Creek, another spur of the Chickaloon-Knik-Nelchina Trail. Alfred Creek is behind Sheep Mountain. The trail is rough and becomes indistinct well before reaching Alfred Creek. Moose, brown bear and caribou are hunted along the north end of the trail. There are usually sheep on Sheep Mountain.

JACKASS CANYON TRAIL descends steeply into the Matanuska River rom Mile 101 of the Glenn Hwy. along the west side of Jackass Canyon. It is one of the very few routes into this river. The first 500 yards were constructed by Bureau of Public Roads before construction of the Glenn Highway. This is a difficult one and one-half mile trail that descends to the Matanuska River and then ascends steeply on the south side of the river. The Matanuska River can be forded except at high water.

LONG LAKE TRAIL, is a five-mile hunting trail heading southeast of the Glenn Highway from Mile 114.

CAMP CREEK TRAIL. This was a major highway construction camp, with the road leading southerly from MP 117.1 through tall spruce timber to the steep canyon walls of the Matanuska. It is used heavily by moose hunters. The trail was brushed out and two S-45 signs are posted.

GUNSHIGHT MT.-SQUAW CREEK TRAIL, Mile 117.6 Glenn Hwy., is in open country, requiring no brushing out. It was constructed prior to the Glenn Highway and affords excellent access to outstanding caribou, hunting area. Today the trail leaves a gravel pit opposite Powerline Pole No. 7151 and ascends to the north. A lower road has been cut out about one mile to circumvent a washed out creekbed. It then continues over the toe of Gunsight

APPENDIX G

Only Practicable Alternative Finding

Glenn Highway, Parks (MP 35) to MP 109
Project No. F-042-2(11)/53009

This statement concludes that there is not a practicable alternative to the construction in wetlands adjacent to the proposed Federal-aid highway project designated Glenn Highway, Parks (MP 35) to MP 109, and that the proposed action includes all practicable measures to minimize harm to wetlands and floodplains which may result from such use. This finding is made in accordance with the requirements of Executive Order 11990, Protection of Wetlands, and Executive Order 11988, Floodplain Management.

Wetlands Involvement

Construction of the Preferred Alternative would require placement of approximately 520,700 cubic yards (cy) of fill material on nearly 34.2 acres of palustrine and riverine wetlands. Of this total, about 22.3 acres would be impacted in areas where the roadway would be realigned. The following table shows acreage involvement and fill amounts per realignment.

Long Lake area wetlands are clusters of scrub/shrub broad-leafed deciduous bogs (PSS1), emergent vegetation marshes (PEM1), and unconsolidated bottom open water ponds (PUBH) which appear to be hydrologically connected.

In those portions of the Glenn Highway where widening and reconstruction activities would occur along the existing alignment, approximately 163,700 cy of fill would be placed within 11.9 acres of wetlands: 98,000 cy in 4.2 acres of riverine wetlands (Matanuska River) and 65,700 cy in 7.7 acres of palustrine wetlands.

These wetlands also include the 100-year floodplain for the Matanuska River, which extends through Sutton. The floodplain encroachments of the proposed action would not increase the impacts caused by a 100-year flooding event, and would not impact natural and beneficial floodplain values.

The known 100-year floodplain for the Matanuska River extends through Sutton.

Designated by the Matanuska-Susitna Coastal Management Plan because of flood hazards (Mat-Su, 1987), the Western boundary of the Knik/Matanuska River Floodplain AMSA (Area Meriting Special Attention) is approximated by the Glenn Highway.

Realignment Wetlands Involvement

Realignment Area	Acreage approximate	Fill (cy) approximate	Wetlands Type
Moose Creek	0.01	1,200	Palustrine
Ida Lake	1.81	70,000	Palustrine
Chickaloon River	1.61	22,900	Palustrine
Long Lake	17.32	222,100	Palustrine
Hicks Creek	0.72	22,700	Riverine
	0.14	4,700	Palustrine
Pinochle Hill	0.71	15,000	Palustrine
Caribou Creek	0.19	1,300	Palustrine
	0.15	5,300	Riverine
Subtotals according to wetlands type:			
	1.34	39,200	Riverine
	20.98	290,800	Palustrine
Total:	22.32	330,000	

National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM) are not available for the Matanuska Valley area. Therefore, coordination will not be required with the Federal Emergency Management Agency (FEMA).

Two hydrologic regimes exist in the Glenn Highway project area. In the lower part of the Matanuska Valley from Palmer to the Chickaloon River, streams draining the south slopes of the Talkeetna Mountains have high runoff rates caused from frequent, high intensity storms. Resultant heavy precipitation rapidly enters streams and rivers due to the steep slopes and impervious soils. Stream flooding is frequent, and usually occurs in August and September.

The second hydrologic regime is in the upper Matanuska Valley, east of the Chickaloon River to the Gulkana Basin. This area receives less precipitation. Floods occur in the upper valley during August and September, but are of less magnitude than the lower Matanuska Valley.

Alternatives Considered

For the proposed project, build alternatives and the No-Build Alternative were considered prior to the selection of the preferred Alternative. The proposed project corridor was located to avoid and minimize wetlands involvement.

All alternatives, including the No-Build, would impact wetlands. Maintenance of the existing highway would require riprap to armor roadway embankments to counter erosion by the Matanuska River. The No-Build Alternative was dismissed due to public safety concerns. The existing facility would remain a two-lane roadway and existing problems would continue. Throughout the project, slower moving vehicles would continue to hinder traffic flow; there are few opportunities for vehicular passing or emergency pulloffs. Safety concerns which include narrow shoulders, limited sight distance, and rockfall would not be improved.

In the Long Lake area, alternatives are restricted by severe terrain. Avoidance of wetlands east of the Long Lake SRS is not possible. The area consists of abrupt mountains with steep sidehills having unstable talus slopes. Improvements along the existing alignment would required additional road cuts into the unstable slopes, thus aggravating an already serious erosion condition. Excessive earthwork would be required to negotiate the high ridges and deep ravines.

Measures to Minimize Harm

This project has been coordinated with all appropriate federal, State, and local agencies, as well as the public through public notices, meetings, hearings and written correspondence.

The existing roadway follows the Matanuska River floodplain. To avoid future potential flood damage, the intent of the proposed action is to relocate the facility out

of the floodplain whenever possible and include measures to minimize unnecessary encroachments. Construction would not promote any incompatible development with floodplains, area facilities would accommodate 100-year flooding events. Elsewhere, bridges and culverts would be designed to withstand a 50-year flood.

Mitigation for project effects on wetlands and wildlife habitat would be chiefly through avoidance and minimization measures. Due to the abundance of similar habitats in the vicinity, compensatory mitigation is not proposed at the current time. The ADF&G and USF&WS could not identify any needed mitigation projects in the project area, but have requested that the project impacts be reassessed prior to final design for each roadway segment to determine the need for any compensatory mitigative measures in the future. The reevaluation would include a field review with State and federal resource agencies.

All practicable and appropriate measures to minimize wetlands impacts would be incorporated into the project design and construction. Best Management Practices for erosion and sediment control and stream crossings would be employed. However, temporary degradation of water may occur during construction activities. No significant impact to wetlands would result from this project.

In addition, ADOT&PF Best Management Practices would be implemented during construction to minimize harm to wetlands. These measures would include, but are not limited to, the following:

1) State fill slopes prior to construction;
2) Use of clean fill;
3) Revegetate all disturbed area, except rock faces; and
4) Implement appropriate erosion and sediment control measures during construction.

Coordination

This project has been coordinated with all appropriate federal, State, and local agencies, as well as the public through public notices, meetings, hearings, and written correspondence. Due to the passage of time between document approval and

actual design of the various project segments, ADOT&PF will have to reevaluate its approved environmental document. Should project scope, affected environment, impacts and mitigation change, additional environmental documentation will be required. The Department will continue to coordinate with the resource agencies during the project design phase to develop detailed design features.

Conclusion

Based upon the above facts and consideration, it is determined that there is no practicable alterative to the proposed construction in wetlands. The wetlands involved are not unique in the area and represent only a small portion of the total wetlands resource in the project area. The proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

APPENDIX H

ADOT&PF BEST MANAGEMENT PRACTICES

1. Construction camps shall be located at upland sites whenever practical.

2. Materials stored for use in the construction project shall be stored at an upland site and out of floodplains.

3. Excavated materials shall be disposed of at upland sites unless otherwise approved.

4. Existing access trail, natural corridors, pipeline rights-of-way, and ditches shall be utilized whenever possible.

5. "Dry" dredging, leaving a dike or earth plug between open water and dredge area, is required.

6. Drainage of an area that is hydrologically linked with, or in close proximity to, other wetland areas shall be avoided if out of permitted area.

7. Diverted or construction-related water shall not be directed into receiving waters unless sediment retention structures and water quality control devices are used prior to discharge.

8. Channelization shall be restricted to existing stream channels or to existing drainage ditches unless otherwise shown on the plans.

9. Culverts shall be installed such that they do not create a barrier to fish in designated fish waters under all flow conditions.

10. The duration and area of exposed soil shall be minimized to reduce erosion potential.

11. Existing drainage patterns shall be retained by installing culverts or other drainage features.

12. Soils or fill shall not be placed near streambanks where it may be transported into the watercourse.

13. Where feasible, tracked vehicles shall be used rather than wheeled vehicles to reduce the impact on soils.

14. For projects within the Municipality of Anchorage, vegetation shall be retained along the shorelines of all waterbodies and ephemeral drainages per AMC 21.45.210. Hand clearing is recommended whenever possible to minimize loss of natural vegetation.

15. Runoff from the site after project completion shall have the same water quality as would have occurred following rainfall under preconstruction conditions.

16. Erosion and sedimentation control devices shall be installed between the construction area and water bodies, watercourses, and wetlands prior to grading, cutting, or filling.

17. Land cleared for development and upon which construction has not commenced shall be protected from erosion by appropriate techniques designed to stabilize soils and revegetate the area.

18. Limit equipment encroachment within the floodplain of any watercourse to that necessary to complete the project.

19. Do not service construction equipment within floodplains or runoff zones.

20. Do not wash equipment in water bodies or in floodplains.

21. Permanent and temporary storage of petroleum products shall be kept a minimum of 100 feet from wetlands or waterbodies. Spill containment and cleanup supplies shall be stored within a 15-minute transport time to spill sites.

22. Permanent and temporary storage of excavated or fill materials must be placed at least 25 feet from wetlands or waterbodies unless otherwise stipulated in the contract.

23. Stream crossings that require channel diversions shall use the culvert "flume" technique as developed by ADF&G, unless otherwise approved by the Engineer. Flumes will be armored at inlet and outlet with rock or sandbags and will include a culvert(s) large enough to pass peak normal flows. Stream channel restoration includes regrading banks, gravel lined channels, and revegetating banks (25 fee per side) with native materials. Erodible materials shall not be exposed to flowing water during construction.

24. Vegetation removal in wetlands, for the purpose of clearing only, should be accomplished by hand clearing rather than hydroaxing.

APPENDIX I

AGENCY AND PUBLIC COMMENTS ON ENVIRONMENTAL ASSESSMENT/DRAFT SECTION 4(F) EVALUATION

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION – DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

May 13, 1992

Re: Glenn Highway, Parks to MP 109
Project No. F-042-2(11)/53009

Mr. Larry Wright
Outdoor Recreation Planner
National Park Service
2525 Gambell, Room 107
Anchorage AK 99501

Dear Mr. Wright:

The Alaska Department of Transportation and Public Facilities (ADOT&PF) has received the Federal Highway Administration's approval to distribute the Glenn Highway, Parks to MP 109, Environmental Assessment to the public and agencies. The document is enclosed for your review and comments. Please provide your written comments by June 15, 1992. For additional information, please contact me at 266-1581 or Laurie Mulcahy, Environmental Analyst, at 266-1760.

Sincerely,

Hank Wilson, P.E.
Project Manager

/LM

Enclosure: as stated

cc: Steven Horn, P.E., Supervisor, PD&E
Laurie Mulcahy, Environmental Analyst, PD&E

745-5014

Mr. Al Meiners
Parks & Outdoor Recreation,
DNR
P.O. Box 107001
Anchorage AK 99510-7001

265-2522

Mr. Herb Rice Bill Swigart
Alaska Railroad Corp.
Box 107500
Anchorage AK 99510-7500

745-3211

Mr. Carl Rye Jerry Ahr
Matanuska Telephone
1740 S. Chugach
Palmer AK 99645

George Carte 745-5271
City of Palmer
231 W. Evergreen Ave.
Palmer AK 99645

267-2294

Mr. Cevin Gilleland
Dept. of Fish & Game
333 Raspberry Rd.
Anchorage AK 99518-1599

762-2625

Ms. Judith Bittner
DNR, SHPO
Box 107001
Anchorage AK 99517

Mr. Dale Tubbs
Eklutna Incorporated
550 W. 7th Ave., Suite 1550
Anchorage AK 99501

Mr. Dan Robison 271-5083
Environmental Protection
Agency
222 W. 7th Ave., #14
Anchorage AK 99513-7588

271-2777

Mr. David McGillivary
U.S. Fish & Wildlife Service
605 W. 4th Ave., Room 62
Anchorage AK 99501

Mr. Brad Smith 271-5006
Nat'l Marine Fisheries
701 C St., Box 43
Anchorage AK 99513

Mr. Don Kohler 753-2712
Corps of Engineers
Box 898
Anchorage AK 99506-0898

561-2121

Ms. Faye Heitz
DGC, OMB
3601 C St., Ste. 370
Anchorage AK 99503

349-7753

Mr. Bill Lamoreaux
Environmental Conservation
3601 C St., Suite 1332
Anchorage AK 99503

Mr. Don Moore 745-4801
Mat-Su Borough
350 E. Dahila Ave.
Palmer AK 99645

Mr. Larry Wright
National Park Service
2525 Gambell, Room 107
Anchorage AK 99501

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION — DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

June 9, 1992

Re: Glenn Highway, MP 35 to 109
Project F-042-02(11)/53009

Mr. John Diason
Director, Office of Environmental Affairs
Department of the Interior
Main Interior Building, MS 2340
1849 C. Street, NW
Washington, D.C. 20240

Dear Mr. Diason:

The Alaska Department of Transportation and Public Facilities (ADOT&PF) has received the Federal Highway Administration's approval to distribute the Glenn Highway, Parks to MP 109, Environmental Assessment to the public and agencies. Seven copies of the document are enclosed for Interior bureau review and comments. Please provide any written comments by July 1, 1992. For additional information, please contact me at 266-1581 or Laurie Mulcahy, Environmental Analyst, at 266-1760.

Sincerely,

Hank Wilson, P.E.
Project Manager

Enclosure: as stated

cc: Steven Horn, P.E., Supervisor, PD&E
Steve Moreno, Field Operations Engineer, FHWA

U.S. Department of Transportation
United States Coast Guard

Commander
Seventeenth
Coast Guard District

P.O. Box 25517
Juneau, AK 99802-5517
Phone: (907)463-2245
Staff Symbol: (oan)

RECE

Prelim. Design & Environmer Section
PD&E Engr.
Project Mgr.
Survey Mgr.
Env. Leader
Staff
Project File
Central File

16518

AUG 12 1992

Glenn, Parks

Mr. Steven R. Horn
Supervisor, PD&E
State of Alaska, DOTPF
~~Central Region~~
P.O. Box 196900
Anchorage, Alaska 99519-6900

Dear Mr. Horn:

This letter is in response to your recent inquiries concerning the possible need for Coast Guard bridge permits involving your proposed bridge structures spanning Moose Creek, Granite Creek, Kings River, Chickaloon River, Purinton Creek, Hicks Creek, and Caribou Creek, all tributaries of the Matanuska River between milepost 35 and 109.5 of the Glenn Highway located northeast of Palmer, Alaska.

The Coast Guard exerts regulatory jurisdiction over navigable waters of the United States pursuant to several Acts pertaining to bridges and causeways including Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. These laws require that any individual or entity that proposes to construct or place a bridge or causeway into a navigable water of the U.S. obtain approval of the location and plans of these structures prior to doing the work (33 U.S.C. 525).

Your proposed structures span waterways that have not been previously examined to determine their navigability status. Exercise of Coast Guard jurisdiction will be held in abeyance until a determination of navigability for purposes of administrating the various Bridge Acts has been made for these waterways.

I have enclosed a Bridge Permit Application Guide (Commandant Publication P16591.3) for your review. In addition, I have enclosed a supplement dated March 12, 1992, to help familiarize you with Coast Guard navigational determinations in Alaska.

Please provide and forward to my office the required information as noted in enclosure 2 of the supplement "Data Required to Determine Navigability of a Waterway". It is my understanding that some of these waterways may be unsuitable for past or present navigation (a steep fall/mile, low discharge volumes, etc.). If this is the case, provide information to demonstrate this. Photos of the proposed sites would be most helpful in ensuring a timely decision.

AUG 12 1992

Thank you for your cooperation. If you have any questions, my point of contact is Mr. James Helfinstine, Seventeenth Coast Guard District Bridge Program Administrator. He can be reached at (907) 463-2248.

Sincerely,

G. A. CAPACCI
Commander, U. S. Coast Guard
Chief, Aids to Navigation & Waterways Management Branch
Seventeenth Coast Guard District
By direction of the District Commander

Encl: (1) Bridge Permit Application Guide
(2) Supplement to the Bridge Permit Application Guide

Copy: Alaska District Corps of Engineers

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 7-9-92 TIME: 9:15 am

TO/FROM: Kevin Morgan PHONE: 753-2712

REPRESENTING: COE - US Army Corps of Engineers LOCATION: Anchorage

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA review

Kevin said that due to there present heavy work load, they would not be commenting on the document.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER 92/556

SEP 10 1992

Mr. Robert E. Ruby
Division Administrator
Federal Highway Administration
709 West 9th Street, Room 851
P. O. Box 21648
Juneau, Alaska 99802-1648

Dear Mr. Ruby:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental Assessment/Section 4(f) Evaluation for **Glenn Highway**, Parks Highway (MP 35) to MP 109, Alaska.

SECTION 4(f) STATEMENT COMMENTS

We concur that there is no feasible and prudent alternative to the proposed use of the Long Lake State Recreation Site, which has received assistance from the Land and Water Conservation Fund, Long Lake Archaeological District and the historic Patten Farm, if project objectives are to be met.

We do not concur at this time that all appropriate measures to minimize harm have been considered and are included in the project plans. We commend the Department of Transportation for its coordination of the project with appropriate agencies to resolve pertinent park and cultural resource issues. The project has the potential to benefit the development and public use of Long Lake State Recreation Site. The Fish and Wildlife Service is willing to meet with you to discuss methods of bird surveys in the project area and to explore mitigation opportunities to protect fish, wildlife, and their habitat. If you have further questions, please contact Sandy Tucker at 907/271-2779.

Final mitigation measures to park and recreation resources should be coordinated with and approved by the Division of Parks and Outdoor Recreation, and evidence to that effect should be documented in the final statement. Please note that the National Park Service can only consider a replacement package under Section 6(f) of the Land and Water Conservation Fund Act, after Section 4(f) approval of this project by the Department of Transportation, and project agreements for measures to minimize harm to park and cultural resources, including Section 6(f) replacement lands, have been finalized.

Impacts to cultural resources and mitigation measures, including compliance with Section 6(f) of the National Historic Preservation Act, should be discussed under Section 4(f).

A copy of a signed MOA with the State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning mitigation measures to cultural resources, should be included in the final statement.

ENVIRONMENTAL ASSESSMENT COMMENTS

Page 32, E. Economic: The environmental assessment does not indicate that the project realignment at Caribou Creek will provide for public access of the Caribou Creek Recreational Mining Area. We recommend that the project include provision for public access to the Caribou Creek Recreational Mining Area. The environmental assessment should be revised accordingly.

Page 37, I. Water Quality Impacts: Additional information should be presented concerning the following statement which appears in the text: "The Matanuska River near Palmer contains a high concentration of sulfate because of leaching from mine tailings." It is our understanding that this sentence is paraphrased from the 1987 Matanuska-Susitna Borough Coastal Zone Management Plan. We recommend that the environmental assessment indicate whether investigations have been or will be undertaken to substantiate the validity of the statement, as there is some question whether the amount of sulfate in the river is high and is attributable to mine tailings.

Page 40-42, Mitigation Alternatives: The potential mitigation of adverse impacts to migratory birds needs to be addressed. Alternatives should consider possible mitigation opportunities and measures to avoid or minimize adverse impacts to birds and their habitat along the proposed highway route. For example, alternatives could include creation of ponds and/or other suitable habitat to replace wildlife habitat values as well as timing restrictions for critical nesting periods. This is particularly important at the location of the 4(f) property (Long Lake State Recreation Area) because it is a National Environmental Policy Act requirement to document measures that minimize harm to 4(f) property.

Page 46, Section R. Historic and Archaeological Preservation: We recommend that the information presented in paragraph two be clarified regarding Section 4(f) applicability. Sentence one states that Section 106 consultation process has determined that the project would have an adverse effect on the Patten Farm. However, the last sentence suggests that Section 4(f) might not be applicable to project use of the property.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

The U.S. Fish and Wildlife Service will provide comments under the Fish and Wildlife Coordination Act on any Federal permits that may be required for the project.

SUMMARY COMMENTS

The Department of the Interior has no objection to Section 4(f) approval of this project, providing the following conditions are met:

1) finalization of an agreement which provides for the acceptable replacement of Section 6(f) lands and other measures to minimize harm for project use of Long Lake State Recreation Site;

2) finalization of a Memorandum of Agreement (as determined by the consultation process required by Section 106 of the National Historic Preservation Act);

3) documentation in the environmental assessment of a survey of bird use in the project area; and,

4) development of a project wildlife mitigation plan which is acceptable to the Fish and Wildlife Service.

Consistent with the Department's continuing interest in the project, we are willing to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment. For matters pertaining to cultural and recreational resources, please contact Larry Wright, Environmental Protection Specialist, National Park Service, Alaska Regional Office, telephone: 907/257-2649. Ms. Sandy Tucker, Fish and Wildlife Biologist, Fish and Wildlife Service, Ecological Services, Anchorage, telephone: 907/271-2779, should be consulted regarding fish and wildlife resources issues.

Please contact Donald Blasko, Chief, Alaska Field Operations Center, Bureau of Mines, telephone: 907/271-2455, about mining issues.

We appreciate the opportunity to provide these comments.

Sincerely,

Jonathan P. Deason
Director
Office of Environmental Affairs

cc: Hank Wilson, P.E.
Preliminary Design and Environmental
Project Manager
Alaska Department of Transportation
and Public Facilities - Central Region
P. O. Box 196900
Anchorage, Alaska 99519-6900

U.S. Department
of Transportation

Federal Highway
Administration

Alaska Division

P.O. Box 21648
Juneau, Alaska 99802-1648

November 10, 1992

HFO-AK

Mr. Jonathan P. Deason
Director, Office of Environmental Affairs
U.S. Department of the Interior
Main Interior Building, MS 2340
1849 C. Street, NW
Washington, D.C. 20240

Dear Mr. Deason:

Project F-042-02(11)
Glenn Highway, MP 35 to 109

Thank you for responding our request for comments on the Draft Environmental Assessment (EA)/Section 4(f) Evaluation for the Glenn Highway, Parks Highway (MP 35) to MP 109, project. Your comments and recommendations have been incorporated within the document and are summarized below:

Final mitigation measures for the Section 4(f)/6(f) property have been agreed to by the Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation. The Memorandum of Agreement (MOA) is included in Appendix D.

Regarding cultural sites, a discussion of the potential impacts to Long Lake SRS archaeological sites and mitigation measures was incorporated into the Section 4(f) Evaluation. As you had recommended, ADOT&PF clarified Section 4(f) applicability to the historic Patten Farm and the archaeological resources in the EA Section R, Historic and Archaeological Preservation. According to 23 CFR 771.135(f), Section 4(f) requirements do not apply to the Patten Farm because the adverse effect was determined to not substantially impair its historic integrity or the integrity of the Matanuska Agricultural Colony District. Section 4(f) requirements do not apply to archaeological resources that are important "chiefly because of what can be learned by data recovery" 23 CFR 771.135(g). A copy of the Section 106 MOA is included in Appendix E.

The Alaska Department of Transportation and Public Facilities (ADF&G) has continued to coordinate with the resource agencies on wetlands and wildlife habitat in the project corridor. For the most part, any potential impacts appear to be outside of the Long Lake State Recreation Site (SRS). This was clarified within the EA Sections K, Wetlands, and M. Wildlife Impacts, and the Final Section 4(f) Evaluation.

A bird survey of the Long Lake area wetlands was conducted by the U.S. Fish and Wildlife Service (USF&WS) and ADOT&PF staff in July of 1992. Approximately 1.25 acres of affected wetlands are within the Long Lake State Recreation Site (SRS). The USF&WS concluded that snipes, a migratory bird that lives chiefly in marshes and having general distribution, probably inhabited the wetlands. No unique bird or mammal species or unusual concentration of other animals were observed during the survey.

Additional wildlife habitat within the park includes a 1962 fire burn around the east side of Long Lake which contains a known concentration of moose. The proposed realignment does not cross this burn. Moose are year-round residents in the Matanuska River Valley area and the Alaska Department of Fish and Game (ADF&G) Habitat Maps (1985) show winter range moose distribution throughout the project corridor. Prior to or during final design, however, ADOT&PF will develop a Reimbursable Services Agreement with the ADF&G for winter moose surveys over a minimum of a two-year period to identify any critical moose crossing zones. Should any be identified, then ADOT&PF would evaluate the need for any special measures to minimize moose-vehicle conflicts. Negotiations are underway to determine if ADF&G will be able to perform the moose survey in the 1992-93 winter season.

Reducing project effects on wetlands and wildlife habitat was accomplished through avoidance and minimization measures. Due to the abundance of similar habitats in the vicinity, compensatory mitigation is not proposed at the current time. The ADF&G and USF&WS could not identify any needed mitigation projects in the project area, but have requested that the project impacts be reassessed prior to final design for each roadway segment to determine the need for any compensatory mitigative measures in the future. The reevaluation would include a field review with State and federal resource agencies. All practicable and appropriate measures to minimize impacts would be incorporated into the project design and construction.

For the Caribou Creek Recreational Mining Area, the Department of Natural Resources is proposing to further develop an existing access at P 106. Graphics within the Final EA were revised to show the access which would be improved as part of this project. The narrative in Section E, Economic, also includes the provision for an improved approach which would be maintained at the recreational site.

You were correct in your understanding that the statement concerning sulfate concentrations in the Matanuska River was paraphrased from the 1987 Matanuska-Susitna Borough Coastal Zone

Management Plan. The sulfates may be naturally occurring rather than leaching from mine tailings and this will be clarified in the final Environmental Assessment. Additional investigations to determine sulfate concentrations are not proposed because storm water drainage from the project will not adversely impact the Matanuska River regardless of the concentration or source of sulfates in the river.

Should you have any questions or need additional information, please contact me at (907) 586-7427.

Sincerely yours,

Robert E. Ruby
Division Administrator

By: John K. Lohrey
Area Engineer

cc: Steven R. Horn, ADOT&PF Supervisor,
Preliminary Design and Environment (MS 2525)

United States Department of the Interior

TAKE PRIDE IN AMERICA

FISH AND WILDLIFE SERVICE
Anchorage Field Office
Ecological Services and Endangered Species
605 West 4th Avenue, Room 62
Anchorage, Alaska 99501

IN REPLY REFER TO:
WAES

RECEIVED

JUN 1_ '92

JUN 10 1992

Prelim. Design & Environmental Section	COPY	ACTION
PC&E Engr.	✓	
Project Mgr.	✓	
Survey Mgr.		
Env. Leader	✓	
Staff	✓	
Project File	✓	
Central File		✓

Hank Wilson, P.E.
Project Manager
Alaska Department of Transportation and Public Facilities
4111 Aviation Avenue
P.O. Box 196900
Anchorage, Alaska 99519-6900

Re: Glenn Highway EA and Draft 4(f) M.P. 35 to 109
#53009

Dear Mr. Wilson:

We have reviewed the Environmental Assessment (EA) and Draft Section 4(f) Evaluation for the Glenn Highway Parks Project, M.P. 35 to M.P. 109, provided to our office and have the following comments to offer at this time.

<u>Specific Comments</u>

There are several sections of the EA which we believe require further documentation and discussion.

<u>Page 42, Section M, Wildlife.</u> This section lacks a discussion of the impacts to the bird populations in the project area. The Alaska Habitat Management Guide (Alaska Department of Fish and Game, 1985) documents a general distribution of ducks, geese, and trumpeter swans in the project area. There is a need for more site-specific documentation of types of birds and bird-use of the immediate area. This could be accomplished through a casual survey of the project area. The survey is essential in areas of the greatest loss of wetland habitat such as the site of the highway relocation at Long Lake State Recreation Area, which is also the Section 4(f) property.

<u>Page 40-42, Mitigation Alternatives.</u> The mitigation of the adverse impacts to bird populations needs to be addressed. The mitigation alternatives should consider possible mitigation opportunities for adverse impacts to birds and their habitat along the proposed highway route, which could include creation of ponds and/or other suitable habitat to replace wildlife habitat values, and timing restrictions for critical nesting periods. This is particularly important in the location of the 4(f) property (Long Lake State Recreation Area) where it is required by the National Environmental Policy Act to document measures to minimize harm to 4(f) property.

Section 4(f) Comments

We have reviewed the document for concurrence with Section 4(f) of the Department of Transportation Act of 1966 and there appears to be no feasible and prudent alternative to the use of the 4(f) property. We do not at this time concur that the project includes all possible measures to minimize harm to 4(f) property because of the lack of documentation of bird-use in the 4(f) property area and of mitigation of the adverse impacts to birds and their habitat.

We are willing to meet with you to discuss methods of bird surveys of the project area and to explore mitigation opportunities to protect fish, wildlife, and their habitat. If you have any further questions please contact Nancy Zapotocki of my staff. She may be reached at 271-2797.

Sincerely,

Sandra S. Tucker

Sandra S. Tucker
Acting Field Supervisor

MEMORANDUM **STATE OF ALASKA**

Department of Transportation and Public Facilities

To: File **Date:** July 22, 1992

File No.: F-042-2(11)

Phone No.: 266-1760

From: Laurie Mulcahy **Subject:** Glenn Highway, MP 35-109
Environmental Analyst Long Lake Field Trip
Preliminary Design & Environmental

On July 13, 1992, Sandy Tucker, U.S. Fish and Wildlife Service, and I drove to Long Lake to look at wetlands along the proposed realignment. Wetlands were initially identified on aerial photography by USF&WS for this project. The field trip was initiated by USF&WS, based on their concern of the need for more site-specific assessment of bird habitat in the project area to determine if there was a need to mitigate any impacts. An invitation was extended to other resource agencies (DNR, ADF&G, EPA, COE, NMFS, DEC), but they were unable to participate.

We hiked along the cleared powerline corridor along the south side of Long Lake until a point north of approximately Sta. 2050 before turning south to the proposed realignment. Two wetlands which would be crossed by the centerline were viewed and photographed. The photographs are on file.

Wetland #1 was identified as PEM1/SS1A and is located between approximately Sta. 2047 and Sta. 2055. Based on the classification, this area is a temporarily flooded, persistent emergent marsh with shrub areas. Viewing the site from the ground, it has interspersed margins containing low bush alders and willow. The dominant vegetation is bluejoint grass, horsetail, and other sedges. Open water was evident through much of the site, but thickly vegetated by the grasses/sedges. No birds were evident within the wetlands. However, from the number of tracks and droppings along the wetland margins, moose frequent the area.

Wetland #2 has two components identified as PEM1C and PSS1B is located between approximately Sta. 2058 and Sta. 2060. Based on these classifications, the first component is a seasonally flooded, persistent emergent marsh and the latter is a saturated broad-leafed deciduous shrub bog. Sandy determined that we did not need to travel to the east side to view the PSS1B. As seen from the ground, open

water comprised a major portion of the PEM1C. Vegetation was dense, comprised mostly with grasses/sedges, including marsh "5-finger" grass. Along the periphery were low bush alders and willow and various plants such as labrador tea, rose, dogwood, and wild sweet pea. The area is well used by moose, tracks were seen throughout the peat along the wetland margins. There were no signs of birds within the wetland.

There is a small open water channel which flows from wetland #2 into wetland #1. This drainage was not identified by USF&WS on the project aerial photography. Based on the adjacent wetlands classifications, water probably flows through this channel only seasonally.

From our observations, it appears that the area does contain moose habitat. Birds were not present at the wetlands (but that does not preclude any use of these sites by bird populations). Sandy thought that snipes may use the area, a migratory bird that lives chiefly in marshes. Chickadees, junkos, and thrushes were seen and/or heard during much of our hiking to and from these areas. An eagle was spotted perched on a tall spruce overlooking the east end of Long Lake.

Sandy recommended that to mitigate potential effects of the proposed action on the wetlands in the Long Lake area and elsewhere within the project corridor, we consider shifting the road alignment to avoid or minimize impacts whenever possible. The valley wetlands along the realignment appear to be hydrologically connected and she emphasized the need to maintain the system's drainage. Some of these wetlands are bisected by our centerline and would be filled.

In route to Long Lake, there were two open water ponds that were noted to contain beaver lodges. Sta. 1256 to Sta. 1270 LT (MP 71.50) and Sta. 1489 to Sta. 1494 LT (MP 76). These wetlands are adjacent to the toe of the highway embankment. Sliver fills are proposed along a portion of the first site.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 10-27-92 TIME: 10:30 am

TO/FROM: Sandy Tucker PHONE: 271-2779

REPRESENTING: USF&WS LOCATION: Anchorage

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Highway, MP 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Mitigation for wetlands/wildlife habitat

I called Sandy Tucker to discuss mitigation measures for the subject project. I told her that Cevin Gilleland, Alaska Department of Fish and Game (ADF&G), had not been able to identify potential mitigation sites along the project corridor. There was concern that conditions may change prior to design because of the length of time involved for this entire project. As a result, Cevin and I had concluded that it might be best to reassess project impacts during final design of each roadway segment.

Sandy agreed that this was the best approach and said that the Department should commit itself within the document. She was satisfied that at this time we propose avoidance and minimization measures (Best Management Practices) for any wetlands/habitat impacts.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION – DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

November 10, 1992

Re: Glenn Highway, MP 35 to 109
Project F-042-02(11)/53009

Ms. Sandy S. Tucker
U.S. Fish and Wildlife Service
605 West 4th Ave., Room 62
Anchorage, Alaska 99501

Dear Ms. Tucker:

Thank you for responding to our request for comments on the Draft Environmental Assessment (EA)/Section 4(f) Evaluation for the Glenn Highway, Parks Highway (MP 35) to MP 109, project. As was noted in your correspondence of June 10, 1992, a bird survey of the Long Lake area wetlands was needed to obtain site-specific documentation of bird types and to develop mitigation to address any adverse impacts to bird and wildlife habitat. You were especially concerned about any potential impacts within the Long Lake State Recreation Site (SRS), a Section 4(f) property. Section 4(f) mitigation for impacts to the Long Lake SRS was developed with the Department of Natural Resources and the Memorandum of Agreement is contained within Appendix G of the Final Environmental Assessment (EA)/Section 4(f) Evaluation.

Within Appendix I of the Final EA, we have included a field trip report by Laurie Mulcahy of this office on the bird/wetlands habitat survey that you both conducted on July 22, 1992 (see enclosed). Results of that survey were incorporated into EA Sections K, Wetlands, and M, Wildlife, as well as the Section 4(f) Evaluation. In addition, we have further identified those wetlands/wildlife habitat along the Long Lake realignment that are contained within the boundaries of the Long Lake SRS. Approximately 1.3 acres of wetlands habitat within the SRS would be impacted by the proposed action. The area of a 1962 fire burn, which contains a known moose concentration area, was identified as being east of Long Lake and is bordered by our realignment.

Based on conversations that Laurie has had with the Alaska Department of Fish and Game and yourself, mitigation projects have not been identified within the project area. As a result, compensatory mitigation is not currently proposed. Mitigation for project effects on wetlands and wildlife habitat would be chiefly through avoidance and minimization measures. The Department will have to reevaluate its approved environmental document due to the passage of time

between document approval and actual design of the various project segments. At that time, project impacts will be reassessed to determine the need for any compensatory mitigative measures. The assessment will include a field review with State and federal resource agencies.

Again, we appreciate your participation in the EA review and the Long Lake area habitat survey. Should you have any questions or need additional information, please contact me at 266-1581, or Laurie Mulcahy, Environmental Analyst, at 266-1760.

Sincerely,

for Hank Wilson, P.E.
Project Manager

/LM

Enclosure

cc: Steven R. Horn, Supervisor, PD&E
Laurie Mulcahy, Environmental Analyst, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E

Received
JUL 09 '92

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.	✓	
Project Mgr. HW	✓	
Survey Mgr.		
Env. Leader		
Staff		
Project File	✓	
Central File		

M E M O R A N D U M

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
MAT-SU DISTRICT OFFICE
P.O. BOX 871064; WASILLA, ALASKA 99687

To: Mr. Hank Wilson, P.E.
Project Manager
DOT/PF

Date: July 7, 1992

Phone: (907) 376-5038

From: Bob Fultz, Env. Specialist
Mat-Su District Office

Subject: Glenn/Parks Hwy.
MP 35-109
F-042-2(11)

This memorandum is in response to your Draft Environmental Assessment report regarding the above referenced project. The document was received in this office on May 15, 1992, with a deadline of July 1, 1992, for comments to be submitted. On July 1, I spoke with Ms. Mulcahy, of your office, requesting an extension of the deadline. She granted an additional week to submit comments. After review of the plans, there are concerns that I need to be addressed.

Due to the involvement of machinery and equipment near wetlands and water courses, potential discharges of oil and hazardous waste contamination to the water and shoreline must be recognized. Therefore, cleanup materials need to be stored near the areas subject to contamination, with means of immediate deployment for any such accidents. If any spills occur, this office needs to be contacted immediately.

Since dredging and filling material will be done during construction, silt fences will need to be used to prevent potential turbidity or settleable solids from entering rivers or wetlands.

Thank you for allowing us to comment on the application. Please feel free to contact me, if there are any further questions or comments.

RAF:jlf
cc: Tim Rumfelt/SCRO

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 7-10-92 TIME: 2:30 pm

TO/FROM: Cevin Gilleland PHONE: 267-2278

REPRESENTING: ADF&G LOCATION: Anchorage

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA review

I called to Cevin Gilleland to ask about the status of his comments on the EA. During an earlier conversation on June 26, he said that some would be forthcoming but would be arriving late. At that time, the document was being reviewed by the Palmer office. Although Cevin is our primary ADF&G contact for this project, the Palmer ADF&G will be providing comments on the EA.

Cevin said that he had just received several pages of draft comments from Palmer. Apparently, John Weslin at the Palmer office will soon be sending a formal response to us. The draft comments included concerns on: raptor nests, sheep spring and winter ranges, moose and car collisions, a golden eagle nest on the north side of Caribou Creek, and the five trailheads of the Chickaloon-Knik-Nelchina Trail system.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

MEMORANDUM

State of Alaska

DEPARTMENT OF FISH & GAME

RECEIVED
AUG 13 '92

TO: Laurie Mulcahy
Environmental Analyst
Division of Design and Construction
Department of Transportation and Public Facilities

DATE: August 12, 1992

FILE NO.:

TELEPHONE NO.: 267-2284

SUBJECT: Glenn Highway Parks to MP 5[illegible]09
Project No.
F-042-2(11)/53009
Environmental Assessment

FROM: Cevin Gilleland
Habitat Biologist
Region II
Habitat Division
Department of Fish and Game

	COPY	ACTION
Preliminary Design & Environmental Section		
PD&E Engr.	✓	
Project Mgr.	✓	
Survey Mgr.		
Env. Leader	✓	✓
[illegible]	✓	
Project File	✓	
Central [illegible]		✓

53009

The Alaska Department of Fish and Game (ADF&G) has reviewed the subject Environmental Assessment (EA) and is concerned that several important fish and wildlife issues have not been adequately addressed. Specifically, potential impacts to wildlife habitat and populations from construction activities, increased vehicle speeds, and ever increasing numbers of vehicles traversing the route. We are also concerned that the EA lacks provisions for adequate trailheads for backcountry access by hunters and other recreational users, and scenic and wildlife viewing pullouts.

Portions of this proposed route (MP 56-81) are immediately adjacent to the Matanuska Valley Moose Range (MVMR). Road segments on either side of this section of the highway will affect wildlife in the MVMR. The MVMR was legislatively created in 1984 "to maintain, improve and enhance moose populations and habitat and other wildlife resources of the area, and to perpetuate public multiple use of the area...". Recommendations for state agency involvement were identified during the development of the MVMR plan. The Alaska Department of Transportation and Public Facilities (ADOT/PF) was specifically tasked to work with the ADF&G during the realignment of the Glenn Highway to minimize environmental impacts, mitigate for loss of habitat, and to reduce conflicts with moose and vehicles; to guarantee that access into the MVMR is continued and scenic turnouts are developed in the appropriate locations; and to guarantee access to specific trailheads and campgrounds. ADF&G staff are available to discuss specific details relative to the MVMR Plan.

Wildlife Habitats and Populations

Very little site-specific wildlife information is available for the proposed alternatives. Additional information on key species is needed before an adequate environmental assessment can be completed. The following is a general discussion of information needs relative to some of the key species.

Moose

Detailed, specific information on population numbers, migration routes, and winter range use and location are not included in the EA. Without this information, the project cannot incorporate plans to mitigate habitat loss, minimize impacts, or to reduce moose-vehicle conflicts as required by the MVMR plan.

Potential moose-vehicle collision prevention measures should be identified in the EA. Current highway speeds and traffic loads killed a minimum of 34, 37, and 25 moose during the winters of 1989/90, 1990/91, and 1991/92 respectively. Increased speeds and more vehicles will inevitably lead to more collisions. A plan for collision prevention measures should include fencing and underpass construction alternatives, right-of-way (ROW) slope design alternatives to increase driver sight distance and minimize vegetation control costs, and preferred species for ROW planting.

The wildlife information necessary to adequately address these concerns is not available. Past moose population surveys were not timed nor were they designed to document movement or winter concentrations. Additional census information is required to provide a reliable estimate of population size. While some moose road kill data are available, they are incomplete. Actual census and movement data when combined with road-kill data should provide the information necessary to optimize road-kill prevention efforts. A brief description and cost estimate of the studies required to obtain this information is provided in Attachment 1.

Eagles and Raptors

There are several known bald and golden eagle nest sites in and adjacent to the proposed ROW. Impacts to these species could include loss of nesting habitat from development of the ROW, and nest abandonment from blasting noise, among others. The department does not have management authority over raptors; however, we have an agreement with the U.S. Fish and Wildlife Service to conduct surveys in the southcentral region. A nest survey should be flown along the ROW to identify raptor nest sites. A cost estimate is provided in Attachment 1.

Trailheads for Backcountry Access

A number of existing access points for off-road vehicle and hiking trails originate from the Glenn Highway. These trails provide important access to public lands in the Talkeetna Mountains and the Nelchina Public Use Area. These trailheads are identified in the Matanuska-Susitna Borough's comprehensive Development Plan: Trails

(Attachment 2). Throughout the summer, and particularly in August and September, hikers and hunters park vehicles and trailers near these trailheads.

These are very popular trails. For example, in August 1989 approximately 50 vehicles plus trailers were parked near the Boulder Creek trailhead. King's River and Pinochle Creek trails are also popular. It is not unusual to see 20-30 vehicles parked at the Pinochle Creek trailhead during the fall caribou, moose, or sheep hunting seasons. Less used trailheads include the Castle Mountain and Hicks Creek trails, and others. Some trailheads, such as Caribou Creek, are publicized in guidebooks such as "Ways to the Wilderness in Southcentral Alaska", and may receive as much use in summer as in fall.

We recommend that the ADOT/PF obtain information about the number of vehicles and trailers parked at all trailheads along the ROW this summer and fall so that adequate parking facilities can be incorporated into the plans. The demand for these trailheads is not likely to abate, and vehicles should be provided a safe place to park other than the shoulder of the road. The ADF&G requests that the ADOT/PF meet with ADF&G, Alaska Department of Natural Resources, and the Matanuska-Susitna Borough to identify alternatives for public use, and to ensure that a plan to manage these areas is established.

Scenic/Wildlife Viewing Pullouts

The ADF&G is currently involved in discussions with ADOT/PF and other state, federal, and local agencies for the development of a Memorandum of Agreement that addresses viewing pullouts in general. Also, the University of Alaska is conducting a study that will provide criteria for selecting scenic/wildlife viewing pullouts. The ADOT/PF and ADF&G will be better able to identify potential pullouts along the Glenn Highway when the results of the study are available. We suggest that the ADOT/PF coordinate with the joint task force in the identification and development of scenic pullouts along the ROW. A field trip by agency and task force representatives should be conducted to determine where scenic and wildlife viewing pullouts should be sited. This effort should be completed soon so that there recommendations can be fully incorporated in the design stages of the project.

In summary, we believe that the EA does not contain adequate information to address impacts to resources and habitats associated with the proposed project. We request that the ADOT/PF include additional resource and public use information in an amended EA. To assist in obtaining that information, we suggest that the ADOT/PF fund surveys, as identified in the attachments to this memorandum. We also suggest that trailhead development for parking

and wildlife/scenic pullouts be identified for future design consideration.

ADF&G staff also had several specific comments on certain sections of the EA. These relate primarily to the general comments provided above. I suggest that we meet to discuss both the general comments, specific suggestions, and the need for additional studies. Thank you for the opportunity to comment. Please contact me to discuss the ADF&G's comments and to arrange for a meeting with ADF&G and ADOT/PF staffs.

Attachments

cc: D. McGillivary, USFWS
H. Griese, ADF&G
J. Westlund, ADF&G
B. Tobey, ADF&G

Attachment 1

Moose

Duplicate fixed-wing censuses of the moose population adjacent to mileposts 62-115 would be conducted prior to winter migration (October- November) and during peak winter concentrations (February-March) to document abundance, migration corridors and potential conflict areas. Repetitive (3) fixed-wing surveys for snow-tracking between mileposts 80-100 conducted during December-February will document moose crossing concentrations as well as movement patterns within the corridor. Each census will require approximately 43 hours of flight time, and each snow-tracking survey will require an estimated 6 hours. Conducting these surveys over 2 years should provide an opportunity for moderate or deep snow winter conditions which would provide enough information to identify critical moose crossing zones.

2 moose censuses @43 flight hours each @ $155/hr. =	$13,330
3 snow track surveys @ 6 flight hours @ $155/hr. =	$ 2,790
	$16,120

Eagles and Raptors

A nest survey would be conducted by helicopter during spring (May) to document active nest sites to assist in establishing routes, mitigation measures, and viewing opportunities.

1 survey @ 5 flight hours @ $525/hr. = $2,625

Dall Sheep

Fixed-wing surveys would be conducted in spring (May) and in summer (July) to determine lambing areas and/or low elevation spring feeding areas and population numbers. The information will be used to identify potential viewing areas and seasonal concentration areas

2 surveys @ 6 hrs. each = 12 hrs. @ $135/hr. = $1,620

Viewing

Ground and aerial surveys should be conducted along the proposed realignment route to identify areas of scenic and wildlife

viewing value. Helicopter use may be necessary to aid in this identification, and should be coordinated with Watchable Wildlife progarm staff. Vehicle surveys along the ROW should be conducted to identify sites.

2 surveys @ 3 hrs. each = 6 hrs. @ $525/ hr. =	$3,150
4 ground surveys @ $0.35/mile x260 miles = $91/survey =	$ 364
	$23,879

MEMORANDUM **STATE OF ALASKA**

Department of Transportation and Public Facilities

To: Cevin Gilleland
Habitat Biologist
Region II, Habitat Div.
Dept. of Fish & Game

Date: August 20, 1992

File No.: F-042-2(11)/53009

Phone No.: 266-1581

From: Hank Wilson, P.E.
Project Manager
Preliminary Design & Environmental
Dept. of Transportation & Public Facilities

Subject: Glenn Highway, MP 35-109
Environmental Assessment

The purpose of this memo is to clarify some points that we need to discuss per your memo of August 12, 1992.

Due to the 70-mile length of the project, phased construction will occur over several years. Project segments would be prioritized according to funding availability, roadway deficiencies, and public need. Only one project of about 3.5 miles is included in the current 6-year capital improvement plan. Prior to design of any segment, the corridor will be remapped. The updated data will be used to refine the design to reduce environmental impacts, costs, and hardships, as some homes and businesses affected by a project phase may not exist today.

As a cooperating agency with the development of the 1986 Matanuska Valley Moose Range (MVMR) Management Plan, it is our intent to work closely with the Alaska Department of Fish and Game (ADF&G), the Alaska Department of Natural Resources (ADNR), and other resource agencies throughout the design of this project. A primary mission of the Department is to design environmentally sound facilities while providing a safe and reliable transportation system. Refer to Map 2: "Glenn Highway Realignment Corridor/Materials Sources" of the MVMR Management Plan. This map shows the realignments discussed in the subject Environmental Assessment (EA). Indeed the MVMR Management Plan shows approximately twice as much realignment as is proposed within the EA. Accordingly, the reconstruction of the Glenn Highway is an integral part of the MVMR Management Plan.

We certainly share a goal of reducing moose-vehicle collision rates. The existing and proposed highway corridors traverse extensive areas of moose habitat. The Department's design criteria for modern highways includes improved sight distances, wider shoulders, and flatter cut-fill slopes than the existing 1940 era roadway provides. These features facilitate crossings of wildlife by making them more visible to traffic. Increasing the driver's ability to see provides additional time to take evasive action and avoid potential conflicts.

It certainly would be helpful to gather data now that will be used in determining final design details such as signing, moose fences, or underpass locations. To minimize moose browse along the roadway corridor, we concur that non-forage vegetation would be used along embankments. We do not want to plant species that attract moose to the roadside.

During earlier agency scoping for this project, eagle nests were not identified. Please supply us with the information you have on project area nests.

As discussed within the EA (Section E. Economic, page 32), the proposed project would improve or relocate existing turnouts for scenic viewing opportunities and provide better access to recreational areas. Note that Figure 4 of the EA is in large part devoted to the recreation trails of the Chickaloon-Knik-Nelchina Trail System. If we have omitted any trailheads or known potential sites, these certainly should be added.

It is our intent to assure sufficient trail access and parking so that recreation users can safely exit and reenter the highway. Opportunities for scenic and wildlife viewing are very important to the people who use the highway facility and we would like to work with you and other interested agencies in selecting sites and developing final site designs. We will be happy to conduct a field trip and drive the corridor with you and your staff to define these areas. However, we do not feel that we should attempt to do final design level siting at this stage of project development.

I am attaching a copy of the ADF&G comments we received on this project during earlier scoping. In as much as fisheries are not addressed in your memo, am I to assume that the scoping comments are valid and complete in regards to fish habitat?

It is essential that we meet to discuss all of the preceding issues. Please contact us within the week to arrange a meeting.

/LM

cc: Steven R. Horn, P.E., Supervisor, PD&E
Laurie Mulcahy, Environmental Analyst, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF FISH AND GAME

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99502

October 24, 1983

Alaska Department of Transportation
and Public Facilities
Pouch 6900
Anchorage, Alaska 99502

Attention: Terry Fleming, Environmental Coordinator, Central Region

Gentlemen:

Re: Glenn Highway Corridor Study - Palmer to Meekins Roadhouse (Mile 109.5)
Project No. F-042-2(11)

The Alaska Department of Fish and Game (ADF&G) has completed a review of the referenced project. Our review comments follow.

1. The project corridor encompasses eight specified anadromous fish streams. Any instream construction activities within these streams will require a Habitat Protection Permit from this Department. These include:

River/Stream Name	Anadromous Catalog #	Species Present
1. Matanuska River	247-50-10220	S,K,CH,CO,P
2. Moose Creek	247-50-10220-2085	K_s,CO_s
3. Wolverine Creek	247-50-10220-2080	CO_s
4. Eska Creek	247-50-10220-2095	CH_s
5. Granite Creek	247-50-10220-2105	K_s,CO_s,CH_s,P
6. Kings River	247-50-10220-2115	K_s,CH_s
7. Chickaloon River	247-50-10220-2171	CH_s

Key: K - Chinook
CO - Coho
S - Sockeye
P - Pink
CH - Chum

$_s$ - known spawning area
$_r$ - known rearing area

In addition to these streams, an additional eleven freshwater streams and ten lake systems which are known to support or may support resident fish species may be affected by the proposed project. These include:

Stream/Lake Name	Fish Species Present
Seventeenmile Lake	Grayling
Little Granite Creek	
Young Creek	
Thirtymile (Ida) Lake	Kokanee
Fish Lake	Kokanee
Drill Lake	

Bonnie Lake	Rainbow trout, Grayling
California Creek	
Long Lake	Grayling, Burbot
Wiener Lake	Rainbow trout, Grayling
Purinton Creek	
Conglomerate Creek	
Cascade Creek	
Winding Creek	
Muddy Creek	
Index Lake	
Hicks Creek	
Bench Lake	
Pinochle Creek	
Hundred Mile Lake	
Dan Creek	

Each of these streams may support resident populations of Dolly Varden. The ADF&G maintains a fish stocking program for Ravine and Wiener Lakes. Currently, there is no recreational fishery access to Thirtymile Lake, which lies entirely on private property.

Recreational trailheads used by both hunters and fisherman occur at both Hicks Creek and Purinton Creek. Increased pull-out and parking areas at these trailheads are necessary. Additional parking area is also needed at Wiener Lake.

The ADF&G has not specified any Critical Winter Moose Habitat within the project corridor; however, moose calving does occur throughout the corridor. A large Dall sheep population utilizes the northeastern corridor area in and around Caribou Creek drainage. The ADF&G recommends against any blasting operations during the moose calving and sheep lambing period (15 May through 15 June).

Thank you for the opportunity to comment during the early planning stages of this study. If you have any further questions please contact Mr. Gary Liepitz of the Habitat Division at 267-2284.

Sincerely,

Dennis Kelso, Deputy Commissioner

Gary J Liepitz

BY: Philip J. Brna
Habitat Biologist
Habitat Division
267-2284

cc: B. Martin, ADEC
M. Hayes, ADNR
R. Bowker, USFWS
L. Engel, ADF&G
J. Didrickson, ADF&G
G. Bos, ADF&G

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

MEETING RECORD

DATE: 9-4-92 TIME: 1:30 pm

PROJECT: Glenn Hwy, MP 35-109 PROJECT NO.: F-042-2(11)/53009

SUBJECT: ADF&G comments on the subject EA

PRESENT: see below

NOTED BY: Laurie Mulcahy

ADF&G: Cevin Gilleland, Herman Griese, and John Weslund.
ADOT&PF: Hank Wilson and Laurie Mulcahy

The purpose of the meeting was to address comments and concerns that the Alaska Department of Fish and Game (ADF&G) had on the subject project Draft Environmental Assessment (EA).

Hank Wilson explained that we were just in the conceptual phase prior to obtaining location approval. Later, during final design of each roadway segment, we would develope specific designs for the facility. At that time we would obtain up to date aerial photography because there would be additional developments since our initial analysis. The only segment that was presently shown in the CIP was the 2-mile long Pinochle Hill realignment, scheduled for 1998.

Primarily, ADF&G's major concerns were on 1) moose and wildlife habitat, 2) continued access to trailheads, and 3) the provision of scenic/wildlife viewing pullouts.

1) Herman Griese was concerned that there was a need for a winter survey to identify major moose crossings and patterns of movement along the project corridor. He felt that the proposed roadway tangents would allow for increased vehicular speed, and was not sure how this could affect the number of moose/vehicle conflicts. John Weslund wondered if there was money for a possible survey under a Reimbursable Services Agreement (RSA). Hank said that he would investigate this.

Cevin Gilleland recommended that we recognize moose/vehicle conflicts within the

document, to identify those areas that may have greater potential. Information from the State Trooper's office will be obtained and incorporated into the EA Section M, Wildlife. It was acknowledged that the Long Lake area does support a concentration of moose.

2) There is an additional trailhead at Caribou Creek which is not shown in the draft EA. Hank said that it was probably part of the Caribou Creek State Recreational Mining Area that has been developed since we first began preparing the document. This will be identified within the appropriate discussion section(s) and graphics.

Hank stressed that we would maintain access to trailheads. In addition to the EA graphics which currently show the major trails, we will also include an appendix with a comprehensive list of the trails within the project corridor, including those identified within the Matanuska Valley Moose Range and the Matanuska-Susitna Borough Trails Inventory.

3) John also had questions on the siting of pullouts. Hank said that we would provide for and identify viewing areas and scenic pullouts during the design phase. He agreed that there was a need for pullouts and rest stop facilities along the corridor. John said that ADF&G would want to participate in the siting and design, including the development of any interpretive sites. (This will be further clarified within the document.)

On conclusion of the meeting, it was determined that Cevin and Laurie Mulcahy would meet subsequently to discuss other comments on the document narrative.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

MEMORANDUM **STATE OF ALASKA**

Department of Transportation and Public Facilities

To: Cevin Gilleland
Habitat Biologist
Region II, Habitat Division
Department of Fish & Game

Date: October 16, 1992

File No.: 53009

Phone No.: 266-1581

From: Hank Wilson, P.E.
Project Manager
Prelim. Design & Environmental

Subject: Glenn Hwy MP35 - MP109
RSA-Moose-Vehicle Conflict
Proj # F-042(11)/53009

The Department of Transportation & Public Facilities (DOT/PF) requests the Alaska Department of Fish & Game (ADF & G) to gather data to define locations where there are or are likely to be accident clusters due to Moose - Vehicle Conflicts.

Data is to be gathered for the entire project length. Initially the data will be used as one of the elements considered in the prioritization of project segments. Then as a segment is designed the data will be used to examine various mitigation measures that would reduce conflicts.

One component of the data to be evaluated might be a timely field investigation of each accident documented by the Department of Public Safety.

I envision that we will develop an RSA to gather data for a minimum of three years. Upon delivery of each years data we would process payment for that portion of the work.

I am available at you convenience to help develop that RSA.

XC - C.M.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 10-19-92 TIME: 2:00 pm

TO/FROM: Cevin Gilleland PHONE: 267-2294

REPRESENTING: ADF&G LOCATION: Anchorage

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Highway, MP 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Mitigation for wetlands/wildlife habitat

I called Cevin Gilleland to see if he and Herman Griese had identified any proposed mitigation sites. Cevin said that they did not have any recommendations but thought that there could be some fisheries enhancement potential for the King's River. The present bridge structure was contributing to some shifts of the streambed which affected fish habitat. I told Cevin that we were proposing to replace the existing structure with a new bridge on a different alignment. Any ADF&G concerns would be incorporated with the design.

I told Cevin the Department will have to reevaluate its approved environmental document due to the passage of time between document approval and actual design of the various project segments. If he felt comfortable with this, the Department would commit itself within the document to reassess project impacts to determine the need for any compensatory mitigative measures. The assessment would include a field review with State and federal resource agencies.

Cevin was satisfied with this approach. He concluded that conditions are likely to change prior to final design because of the timeframe for this project. At this time, mitigation for project effects on wetlands and wildlife habitat would be chiefly through avoidance and minimization measures.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 7-9-92 TIME: 11:10 am

TO/FROM: Al Meiners PHONE: 345-5014

REPRESENTING: DNR LOCATION: Anchorage

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA review

Al Meiners said that he would not be having any formal comments on the draft EA, that it looked good. For the most part, all their concerns were addressed during our coordination for the Long Lake SRS and it has been incorporated into the Section 4(f) Evaluation. He said that Dale Bingham, Mat-Su Area Superintendent, would be our primary contact for this project and that I should contact him. Any additional comments would be forthcoming from the Mat-Su office.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 7-9-92 TIME: 11:30 am

TO/FROM: Dale Bingham PHONE: 745-3975

REPRESENTING: DNR LOCATION: Wasilla

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA review

Dale Bingham concurred that DNR concerns had been addressed through the coordination efforts of the Section 4(f)/Section 6(f) efforts with the Long Lake SRS. He did not have anything to add at this time.

He also confirmed that he would be participating on our fieldtrip with USF&WS next Monday, July 13, to view wetlands along the Long Lake realignment.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 7-9-92 TIME: 11:10 am

TO/FROM: Eileen Murphy PHONE: 561-6131

REPRESENTING: DGC LOCATION: Anchorage

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA review

The DGC will no longer be commenting on environmental documents for ADOT&PF. In the future, their comments will be limited to the actual permitting phase. However, they do want to remain on the distribution list so that they can have these documents in their files should there be a need to refer to them.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500

July 17, 1992

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.		
Project Mgr.		
Survey Mgr.		
Env. Leader		
Staff		
Project File		
Central File		

Mr. Hank Wilson
Project Manager
State of Alaska
Department of Transportation
P.O. Box 196900
Anchorage, Alaska 99519-6900

Re: Glenn Highway
Parks M.P. 35 to M.P. 109
F-042-2(11)

Dear Mr. Wilson:

Laurie Mulcahey from DOT's Environmental Department contacted the ARRC's Engineering Department by telephone asking for comments on the above project.

Matanuska to Palmer

The project parallels the existing ARRC Palmer Branch from the East Matanuska Spur Road to Palmer. The ARRC has title to this 200' right-of-way. The proposed project would impact several crossings. The ARRC is interested in consolidating and upgrading these crossings to the extent feasible. In accordance with the Alaska Policy on Railroad/Highway Crossings, a diagnostic team review would be required.

Palmer to Sutton

The ARR has title to the 200' right-of-way of the railbed extending from Palmer to Sutton, from Moose Creek to Wishbone Hill, and from Sutton to Eska. We would be concerned about any changes in crossings and/or right-of-way encroachments.

The ARR also has title to that portion of U.S. Survey No. 1152, (Moose Townsite) designated as Railroad Reserve in sections 1 and 2, T18N, R2E, S.M. A coal loading terminal to accommodate the conveyance of coal from the Wishbone Hill area to rail cars has been considered for this area. The ARRC would be extended from Palmer along its 200' right-of-way to Moose Creek. Coal could be trucked or conveyed along existing or new alignments to the terminal. We will want to review any plans for a highway re-alignment over Moose Creek.

Sutton to Chickaloon

Also, the Federal Government has quit claim to the ARR its real property from Sutton to Chickaloon (Book 398, Page 266, Palmer Recording District).

If you have any questions on the above comments, please contact me at 265-2456.

Sincerely,

Tom Brooks

Thomas E. Brooks, P.E.
Chief Engineer

cc: Engineering Technician-Lands
Real Estate
Legal
Herb Rice

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION — DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

July 29, 1992

Re: Glenn Highway, MP 35-109
Project No. F-042-02(11)/53009

Mr. Thomas E. Brooks
Chief Engineer
Alaska Railroad Corporation
Box 107500
Anchorage, AK 99510-7500

Dear Mr. Brooks:

Thank you for your letter of July 22, 1992. The Department of Transportation and Public Facilities (ADOT&PF) will coordinate with the Alaska Railroad Corporation during the Design Phase to assure that the goals of both our agencies are achieved in an efficient manner.

Sincerely,

Hank Wilson

Hank Wilson, P.E.
Project Manager

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

Telephone
~~MEETING~~ RECORD

DATE: 7-3-92 TIME: 10:30 am

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA Review

PRESENT: Tim Smith, SHPO

NOTED BY: Laurie Mulcahy

I talked to Tim Smith to ask him if there would be any comments from SHPO on our draft Glenn Highway, MP 35 to 109 EA. Tim said we had extensive Section 106 coordination with their office and that SHPO concerns were satisfied by these efforts. The SHPO will not submit any comments on the document.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION – DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

July 13, 1992

Re: Glenn Highway, MP 35-109
Project No. F-042-02(11)/53009

John Duffy
Planning Director
Matanuska-Susitna Borough
350 E. Dahila Ave.
Palmer, Alaska 99645

Dear Mr. Duffy:

As discussed with Marcy Martin of your staff, transmitted is data generated by our requests for input from agencies and the four public hearings we held along the highway. We are still short comments from the Department of the Interior and Department of Fish & Game. We will send them along when received.

We have talked to quite a few people since the public hearing notices were in the papers. I feel that the reason we have received very few written comments is that most people understand that the existing highway has serious deficiencies, that DOT&PF is responsible for addressing the deficiencies, and that what is proposed is reasonable, sensible and responsible.

I am available at your convenience to meet with staff and/or Planning Commission. Call me at 266-1581 if there is anything I can do to help.

Sincerely,

Hank Wilson, P.E.
Project Manager

cc: Steven R. Horn, P.E., Supervisor, PD&E
Laurie Mulcahy, Environmental Analyst
Jerry Ruehle, Environmental Team Leader

Matanuska-Susitna Borough

350 EAST DAHLIA AVENUE, PALMER, ALASKA 99645
PHONE: 745-4801 • FAX: 745-0886
PLANNING DEPARTMENT

Prelim. Design & Environmental Section	COPY	ACTION
C.S.E. Engr.		
Project Mgr.		
Survey Mgr.		
Env. Leader		
Staff		
Project File		
Central File		

September 2, 1992

State of Alaska
Dept of Transportation
& Public Facilities
P.O. Box 196900
Anchorage, AK 99519-6900

Attn: Mr. Hank Wilson, P.E.

Dear Mr. Wilson:

Re: Glenn Highway, Parks to MP 109, Project F-042-2(11)/53009

The Matanuska-Susitna Borough has reviewed the above referenced state project. The Assembly has adopted Resolution Serial No. 92-098 approving of the project and identifying some additional concerns. A copy of this resolution is enclosed for your information.

In our review process, the Emergency Services Division voiced concerns about continued access for emergency response vehicles during construction. In answer to this concern, we ask that your department contact Kevin Koechlein, Chief of Emergency Services at 373-8800 to discuss the logistics for providing the needed access during construction.

Other concerns identified in the resolution include: consideration of a separated non-motorized path from the Parks Highway intersection north to the existing path in the Sutton area; provision for scenic pullouts and access to existing trailheads; and signage identifying the pullouts and trailheads.

Thank you for the opportunity to review and comment on this project. If you have any questions concerning the action taken by the Assembly, please contact Marcy Martin at 745-9856.

Sincerely,

John Duffy
Planning Director

Enclosure

PLN/MM/92131.LTR

MATANUSKA-SUSITNA BOROUGH
RESOLUTION SERIAL NO. 92-098

A RESOLUTION OF THE ASSEMBLY OF THE MATANUSKA-SUSITNA BOROUGH APPROVING OF THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES PROJECT - GLENN HIGHWAY, PARKS HIGHWAY (MP 35) TO MILEPOST 109 AND IDENTIFYING SOME ADDITIONAL CONCERNS.

WHEREAS, the Alaska Department of Transportation and Public Facilities has submitted the Environmental Assessment and Draft Section 4(f) Evaluation for the Glenn Highway, Parks Highway (MP 35) to Milepost 109; and

WHEREAS, major portions of the Glenn Highway have remained unchanged since the 1940's causing serious safety problems for modern day traffic; and

WHEREAS, the Alaska Department of Transportation and Public Facilities has held four public hearings on the project and has submitted all comments received by them to the Borough for review; and

WHEREAS, the City of Palmer has indicated that they have no concerns or comments on the proposed project; and

WHEREAS, the proposed project complies with the Chickaloon Community Plan as much as possible while still providing a modern, safe, and efficient transportation route; and

WHEREAS, the Matanuska-Susitna Borough Planning Commission has reviewed the project and recommended approval while identifying some additional concerns; and

WHEREAS, the Matanuska-Susitna Borough Emergency Services Division has some concerns about access for emergency vehicles during construction; and

WHEREAS, the project does not currently provide for any separated non-motorized path; and

WHEREAS, there is a need for scenic pullouts and access to existing trailheads along the Glenn Highway as well as adequate signage to identify them.

NOW THEREFORE, BE IT RESOLVED that the Assembly of the Matanuska-Susitna Borough approves of the proposed Alaska Department of Transportation and Public Facilities project, Glenn Highway, Parks Highway (MP 35) to Milepost 109.

BE IT FURTHER RESOLVED that the Assembly of the Matanuska-Susitna Borough requests the Alaska Department of Transportation and Public Facilities contact the Matanuska-Susitna Borough Division of Emergency Services to discuss providing for continued access for emergency response vehicles during construction.

BE IT FURTHER RESOLVED that the Assembly of the Matanuska-Susitna Borough requests a separated non-motorized path be considered from the Parks Highway intersection north to the existing path in the Sutton area as a part of this project.

BE IT FURTHER RESOLVED that the Matanuska-Susitna Borough Assembly requests scenic pullouts and access to existing trailheads be provided along with signage to identify them.

ADOPTED by the Assembly of the Matanuska-Susitna Borough this 1 day of September, 1992.

Ernest W. Brannon, Borough Mayor

ATTEST:

Linda A. Dahl, Borough Clerk

(SEAL)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
CENTRAL REGION - DESIGN & CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SECTION

TELEPHONE RECORD

DATE: 7-10-92 TIME: 3:35 pm

TO/FROM: Kathy Check PHONE: 745-3271

REPRESENTING: City of Palmer LOCATION: Palmer

TO/FROM: Laurie Mulcahy

PROJECT: Glenn Hwy, 35-109 PROJECT NO.: F-042-2(11)

SUBJECT: Draft EA review

Kathy Check called to say that the City does not have any concerns or comments on the document.

cc: Steven R. Horn, P.E., Supervisor, PD&E
Jerry Ruehle, Environmental Team Leader, PD&E
Hank Wilson, P.E., Project Manager, PD&E

HCO 4 Box 9557
Palmer, Alaska 99645

June 28, 1992

RE: Glenn Highway,
Milepost 35-109, Project
No.F-042-02(11)/53009

Mr. Hank Wilson, P.E.
ADOT/PF, Preliminary Design & Environmental
P.O. Box 196900
Anchorage, Alaska 99519-6900

Dear Mr. Wilson:

I am responding to your solicitation for comments on the proposed construction project of up-grading the Glenn Highway between Milepost 35 and 109. I read with enthusiasm the notice of this project, hoping once again that the ADOT\PF would have insight to provide facilities for the non-motorized traffic when providing new and improved facilities for the motorized traffic. Unfortunately, once again you "let us down"; the Environmental Assessment/Draft Section 4(f) hardly addresses the issues of the need for a non-motorized transportation corridor.

Your public notice for this project states "Traffic projections support a four-lane roadway between the Parks Highway and Fishhook Road (MP 49)". If the motorized traffic supports a four-lane highway, how can you consider the shoulders as safe for the surrounding community residents? Your environmental document states "Within this document (the MSB Trails Inventory), separate paths are recommended to provide for safety of pedestrians and bicyclists in Palmer school vicinities". You go on to say "No school facilities exist within the immediate project area...." How close does "immediate area" mean? The schools you mention are not adjacent to the Glenn Highway corridor; however, many people must use the Glenn Highway to get to the schools because the Glenn Highway is the only public access from areas north (and perhaps south) of Palmer. In particular, the Glenn Highway is the only fully public access from the Fishhook communities to downtown Palmer, including the schools! Unless, of course people want to travel several more miles extra to travel Trunk Road which is just as dangerous as the Glenn Highway.

You say "There are no requirements for dedication of pedestrian or non-vehicular access within the MSB 1987 Comprehensive Development Plan for Public Facilities." Well for your information, in the 1970's a "comprehensive" plan for a pathway system within Palmer was adopted by local citizens. Included in this plan is a pathway along the Glenn Highway beginning at W. Arctic Avenue and extending to W. Eagle Avenue. In 1988 and 1989, a paved, separated pathway adjacent to the Glenn Highway between W. Arctic Avenue and Palmer Fishhook Road was endorsed by resolution by both the Mat-Su Trails Committee and the Matanuska-Susitna Borough Assembly. According to Mr. William Ballard, Environmental Analyst, ADOT/PF, such endorsement meets the requirements as inclusion in a local comprehensive plan! Additionally, the Mat-Su Borough Assembly has included this project on the Borough Capitol Improvement listings in 1989 and 1990 as a show of endorsement and support. Early in 1990, a petition supporting a separated pathway adjacent to the Glenn Highway between Palmer Fishhook and W. Arctic

Avenue was signed by 375 local individuals. You have a record of this support in your files on the project Glenn Highway, Milepost 35 to 54, IR-OA1-5(5)/#57841. I will supply copies of the signatures upon request. Since 1988 local legislators have supported a separated, paved pathway adjacent to the Glenn Highway. Partial funding was included in at least the 1990 state budget proposed by the legislature.

You identify that a dirt path existed in the right-of-way in the Palmer area, and a paved pathway exists in Sutton. The current reconstruction of the Glenn Highway has eliminated the dirt pathway! Soon we will enjoy using the highway shoulder with the multitude of trucks -- freight trucks, coal hauling trucks, buses, motor homes, etc. The proposed 6 and 4 foot shoulders will not suffice as a safe haven within a primary highway facility. The Glenn Highway is the primary highway connecting Anchorage with Canada and the "lower" 48 states. Why is it that there is a paved, separated pathway in Sutton, and the residents of Palmer can not enjoy the safety of such a pathway along the Glenn Highway in Palmer where there is definitely more motorized and non-motorized traffic? The entire corridor of the Glenn Highway between W. Arctic Avenue and Palmer-Fishhook Road lies within a <u>residential</u> community. Both sides of the highway!

Why is it that the new (federal) transportation bill mandates pedestrian and bicycle coordinators in all <u>50</u> states? THAT INCLUDES ALASKA! Why is it that in 1991, U.S. Rep. Joseph Kennedy II (D-Mass) introduced what is known as the "Bike Bill" or the "Three Percent Solution" or (Congressional) H.R. 2101. This bill would require states to spend three percent of certain highway funds they receive from the federal government on bicycle and pedestrian projects. Why is it that the Alaska Department of Transportation & Public Facilities continues to ignore the need for non-motorized transportation avenues?

As I previously noted, the state has the option to use federal funds for non-motorized facilities, but chooses to ignore the needs of this segment of the population. Again, please reference your file on Project Glenn Highway, Milepost 35 to 54, IR-OA1-5(5)/#57841. Your current environmental assessment concerning pedestrian and bicycle facilities is as inadequate as that previous project. It totally skirts the issue, and provides <u>no</u> sound basis for the omission of non-motorized avenues within the Glenn Highway corridor.

Respectfully,

Marilyn M. Modafferi

Marilyn M. Modafferi

cc:
Representative Don Young
Senator Frank Murkowski
Senator Ted Stevens
Mr. Chuck Kaucic, MSB

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION – DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

July 13, 1992

Re: Glenn Highway, MP 35-109
Project No. F-042-02(11)/53009

Marilyn M. Modafferi
HC04 Box 9557
Palmer, Alaska 99645

Dear Ms. Modafferi:

Thank you for your letter of June 28, 1992. Since you were unable to attend the public hearing held at Palmer, enclosed is the public hearing handout for your information.

The Intermodal Surface Transportation Efficiency Act of 1991 includes provisions for developing transportation enhancements such as you suggest as stand alone projects. You may wish to contact the Matanuska-Susitna Borough for further information.

Sincerely,

Hank Wilson, P.E.
Project Manager

Enclosure: as stated

AME: Chickaloon General Store & Mile 76.5 Glenn Hwy.
Ser Station
DDRESS: HC 03 Box 8338 Palmer, AK. 99645

COMMENTS

We strongly oppose any alteration to the existing
enn Hiway between Mile 75 to Mile 77. We
e located on the highway and our business
lmost completely depends on highway traffic.
ere the highway to be re-routed, our business
would be adversely and permanently affected. Since
here are only 3 businesses in "downtown"
hickaloon, a re-routing of this section of
the highway would likely put us all out of
business.
We hope you will consider our objection.

Mike & Debbie [signature]
745-4520

NOTE: To mail, fold along dotted lines on the back of this sheet and tape or staple so that the address shows. Comments should be in by

RECEIVED
JUL 01 '92

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.	\	
Project Mgr. HW	\	
Survey Mgr.		
Env. Leader GR	\	
Staff		
Laurie M.	\	
Project File	\	
Central File		\

#53009
Glenn Hwy 35-109

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION — DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

July 13, 1992

Re: Glenn Highway, MP 35-109
Project No. F-042-02(11)/53009

Mike & Debbie Pietrok
Chickaloon General Store
HC03 Box 8338
Palmer, Alaska 99645

Dear Mr. and Mrs. Pietrok:

Thank you for your comments which were received July 1. Since you were unable to attend the public hearing held at Pinnacle Mt. Lodge, enclosed is the public hearing handout for your information.

As we discussed in our July 13, 1992 telecom, the current Six-Year Capital Improvement Plan does not include a project in the MP 75-77 area.

When a project is developed in this area we will use as much of the existing facility as possible but we have to improve the Chickaloon River Road - Glenn Highway intersection and Chickaloon Hill. In any event, the existing Glenn Highway will continue to serve local development and the Chickaloon River Road.

If you need any more information, please call me at 266-1581.

Sincerely,

Hank Wilson, P.E.
Project Manager

Enclosure: as stated

WRITTEN COMMENTS
PUBLIC TESTIMONY

Your input will be an important element in determining the design of this project. To ensure that your views are considered, we have provided this sheet for your convenience. If the space is not sufficient, feel free to include additional sheets.

PUBLIC HEARING

GLENN HIGHWAY

Milepost 35 to Milepost 109

Project No. F-042-02(11)/53009

JUNE 10, 1992

NAME: Sharon Ruckman

ADDRESS: PO Box 1155, Chickaloon, AK 99674

COMMENTS

I am all for revamping the highway. It needs it, because of the tourist trade it has to handle. Too many accidents because of that highway.

Also, it would be nice to know about when it will start.

RECEIVED

JUL 14 '92

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.		
Project Mgr.		✓
Survey Mgr.		
Env. Leader	JR	
Staff	CM	✓
Project File	✓	
Central File	✓	

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(FAX 243-1512)
(907) 266-1508

CENTRAL REGION — DIVISION OF DESIGN AND CONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL

July 15, 1992

Re: Glenn Highway, MP 35-109
Project No. F-042-02(11)/53009

Sharon Ruckman
Box 1155
Chickaloon, Alaska 99674

Dear Ms. Ruckman:

This is in response to your recent letter supporting our efforts to modernize the Glenn Highway.

As to when work will start, the current Six-Year Capital Improvement Plan includes MP 109-118 as an FY alternative candidate, meaning that the project may be built then, if funds are available and Pinocle Hill reconstruction is scheduled for FY97.

If you need any information, please call me at 266-1581.

Sincerely,

Hank Wilson

Hank Wilson, P.E.
Project Manager

MAY 13, 1992

HANK WILSON P.E
ALASKA DEPT OF TRANSPORTATION & P.F
PRELIMINARY DESIGN & ENVIRNMENTAL
PO BOX 196900
ANCHORAGE AK 99519-6900

RE:PROJECT F-042-02 (11) 53009

DEAR MR WILSON,
THIS LETTER IS IN RESPONSE TO DOT'S AD FOR PUBLIC COMMENT ON THE ABOVE PROJECT. AS A BUSINESS OWNER IN THE COPPER RIVER BASIN WE ARE FORCED TO MAKE THE LONG, DANGEROUS, SLOW AND TIRING DRIVE TO ANCHORAGE WITH GREAT REGULARITY.
WE HEARTILY SUPPORT THIS PROJECT IN ALL PHASES DESCRIBED IN THE ADVERTISEMENT. IN ADDITION PLEASE CONSIDER THE CORNER NEAR THE END OF THE PROJECT CALLED "JACKASS CORNER". THIS CORNER CANNOT BE NEGOTIATED WITH A LONG VEHICLE OR RV WITHOUT CROSSING THE CENTER LINE. SINCE IT'S BLIND ON BOTH ENDS IT IS VERY DANGEROUS.

WE FEEL THIS RPOJECT WILL BENEFIT ALASKANS, TOURISTS AND ANYONE WHO DRIVES THIS ROAD.

THANK YOU

George & Susan Winingham

GEORGE AND SUSAN WININGHAM
KENNY LAKE MERCANTILE
HC 60 BOX 230
COPPER CENTER, AK 99567

RECEIVED
MAY 18 '92

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.	✓	
Project Mgr.	✓	
Survey Mgr.		
Env. Leader	✓	
Staff	✓	
Project File	✓	
Central File		✓

HWilson

WRITTEN COMMENTS
PUBLIC TESTIMONY

Your input will be an important element in determining the design of this project. To ensure that your views are considered, we have provided this sheet for your convenience. If the space is not sufficient, feel free to include additional sheets.

RECEIVED
JUL 23 92

PUBLIC HEARING

GLENN HIGHWAY

Milepost 35 to Milepost 109

Project No. F-042-02(11)/53009

JUNE 8, 1992

Prelim. Design & Environmental Section	COPY	ACTION
PD&E Engr.		
Project Mgr.		✓
Survey Mgr.		
Env. Leader		✓
Staff		✓
Project File	✓	
Central File		✓

NAME: Susan Winingham

ADDRESS: HC60 Box 230 Copper Center AK 99573

COMMENTS

Copper Basin Residents heartily endorse this Project. Not only for ALASKANS but to encourage tourism

Did you have a handout at the public hearings with a map of the proposed route? We'd sure like to have one to look at

Thank You

S Winingham

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STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

CENTRAL REGION — DIVISION OF DESIGN AND CONSTRUCTION
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4111 AVIATION AVENUE
P.O. BOX 196900
ANCHORAGE, ALASKA 99519-6900
(FAX 243-1512)
(907) 266-1508

July 13, 1992

Re: Glenn Highway, MP 35-109
Project No. F-042-02(11)/53009

George & Susan Winingham
Kenny Lake Mercantile
HC60 Box 230
Copper Center, Alaska 99567

Dear Mr. and Mrs. Winingham:

Thank you for your May 13, 1992 letter of support for the subject project.

The curve at Jackass Gulch falls in the MP 109-118 project which has advanced to the final design stage. The current Six-Year Capital Improvement Plan lists the MP 109-118 as an FY95 alternative candidate, meaning that the project may be built then, if funds are available.

I am enclosing a copy of the public hearing handout for your information.

Sincerely,

Hank Wilson, P.E.
Project Manager

Enclosure: as stated