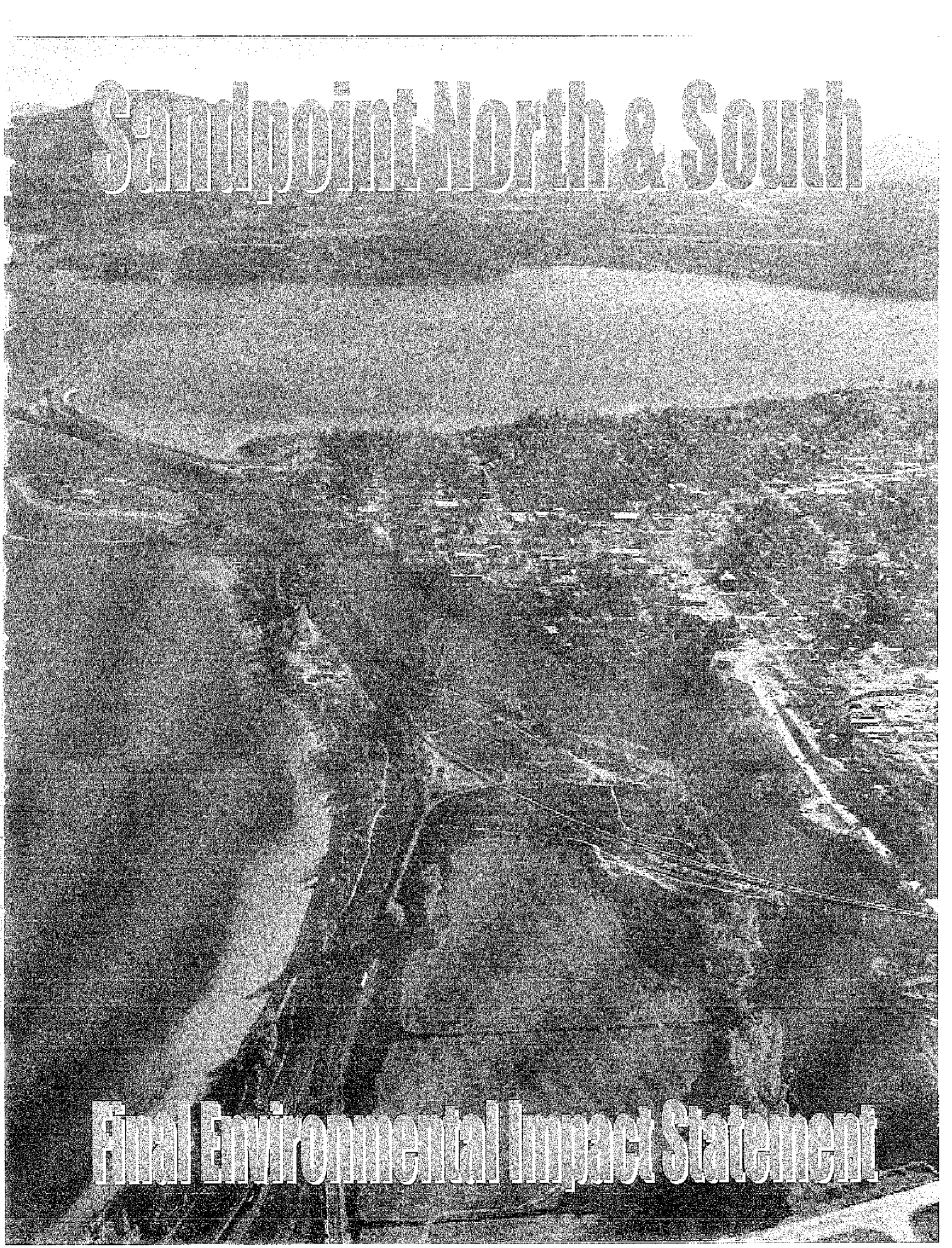
Sandpoint North & South



Final Environmental Impact Statement

ITDAA029392

FHWA-ID-EIS-94-01-F

Comments on this document must be received by the Federal Highway Administration at the address listed below no later than thirty (30) days after the Notice of Availability in the Federal Register.

FINAL ENVIRONMENTAL IMPACT STATEMENT / SECTION 4(f)

FOR

Sandpoint North and South

PROJECT NH-IR-F-CM-5116(068)

US95

(Milepost 466.8 to Milepost 478.6) BONNER COUNTY, IDAHO

Submitted pursuant to 42 U.S.C. 4332(2)(c) & 49 U.S.C.303

BY

U.S. DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

IDAHO TRANSPORTATION DEPARTMENT

COOPERATING AGENCIES

U.S. DEPARTMENT OF TRANSPORTATION

United States Coast Guard

U.S. DEPARTMENT OF THE ARMY

Corps of Engineers

9-8-99
Date of Approval

Dennis Clark
For ITD

9/9/99
Date of Approval

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ABSTRACT: US95 is Idaho's major north-south highway. In the project area traffic is operating at level-of-service 'F' within the City of Sandpoint and Level-of-service 'E' outside the city. The purpose of this project is to improve the level-of-service on US95 and provide a 'Through Non-stop' facility for US95 in the study area Numerous alternatives were considered in efforts to meet the purpose and need for the proposed project; to respond to issues raised through the scoping and public involvement process; and to comply with applicable laws, regulations, policies and standards that govern federally funded highway projects. This Final EIS advances the Sand Creek two lane alternative as the 'Preferred' alternative.

SANDPOINT NORTH & SOUTH
FINAL ENVIRONMENTAL IMPACT STATEMENT
PROJECT NH-IR-F-CM-5116 (068)

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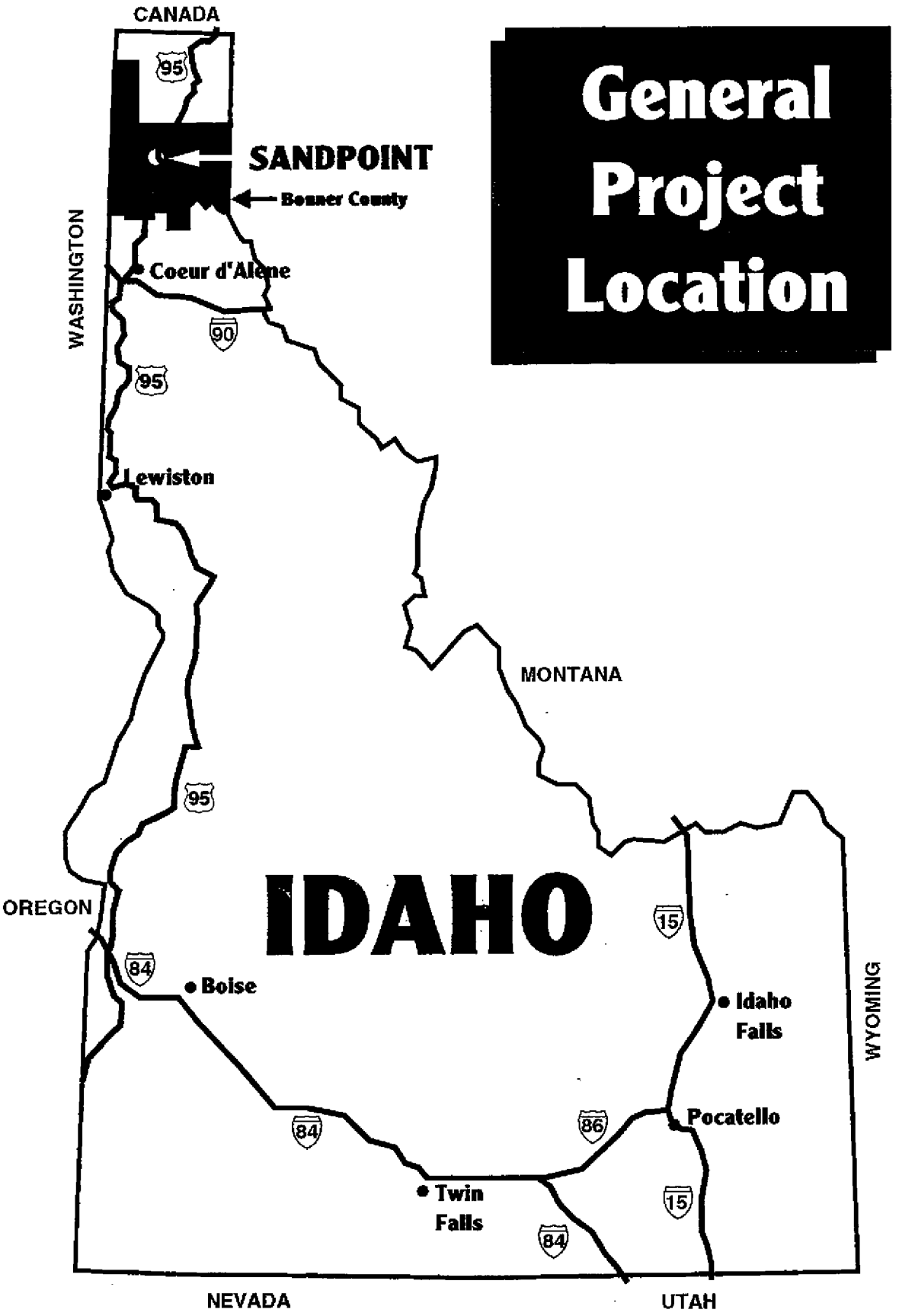


ITDAA029398

EXECUTIVE SUMMARY

US95 is Idaho's major north-south highway and extends from Canada to the Mexican border, near Yuma, Arizona. The proposed project consists of a 12 kilometer (8 mile) long segment of US95 located in Bonner County, Idaho approximately 100 kilometers (62 miles) south of the Canadian border in the vicinity of Sandpoint. Project termini are located near milepost 470 north of Sagle and milepost 477 near Ponderay. In this area traffic is severely congested within the city of Sandpoint. Traffic congestion can largely be attributed to increasing numbers of heavy trucks mixing with an influx of tourists and local traffic on a substandard facility. Principal problem areas are the numerous driveways and intersections, tight 90-degree turns, and poor traffic flow structure within the city. Outside the city, traffic volumes are approaching route capacity. Sandpoint's population has grown approximately 31% from 1990 to 1997. This growth is compounding the local congestion problem during peak use periods.

The project area is bisected by the Pend Oreille Lake/River complex and lies at the foot of the Selkirk Mountains. This area is rich in natural and cultural resources, with historic sites dating from the arrival of the railroad in 1882 and the subsequent development of Sandpoint. Traditionally, population in the study area fluctuated with the degree of activity in the lumber industry. However, diversified outdoor recreational opportunities (available because of the high quality natural resources and pleasing aesthetics) have stimulated both the recreation-tourist industry and the real estate industry in the project area. Second home owners and retirees moving into the area have helped to stabilize the economy and offset population ebbs. The Bonner County economy provided 11,444 full and part time jobs in 1997, and accounted for $224 million in income (does not include self employed). 75 to 80% of the poulation of Bonner County works in the greater Sandpoint area.

The purpose of the proposed project is to improve traffic flow and, preferably, to provide a through non-stop facility for US95 traffic in the Sandpoint area. Twelve objectives were used to provide more specific guidance in the selection of alternatives to accomplish the identified purpose. Numerous alternatives were considered in efforts to meet the purpose and need for the proposed project; to respond to issues raised through the scoping and public involvement process; and to comply with applicable laws, regulations, policies and standards that govern federally funded highway projects. The alternatives not advanced were rejected because of environmental impacts, excessive implementation costs and/or engineering constraints.

ITDAA029399

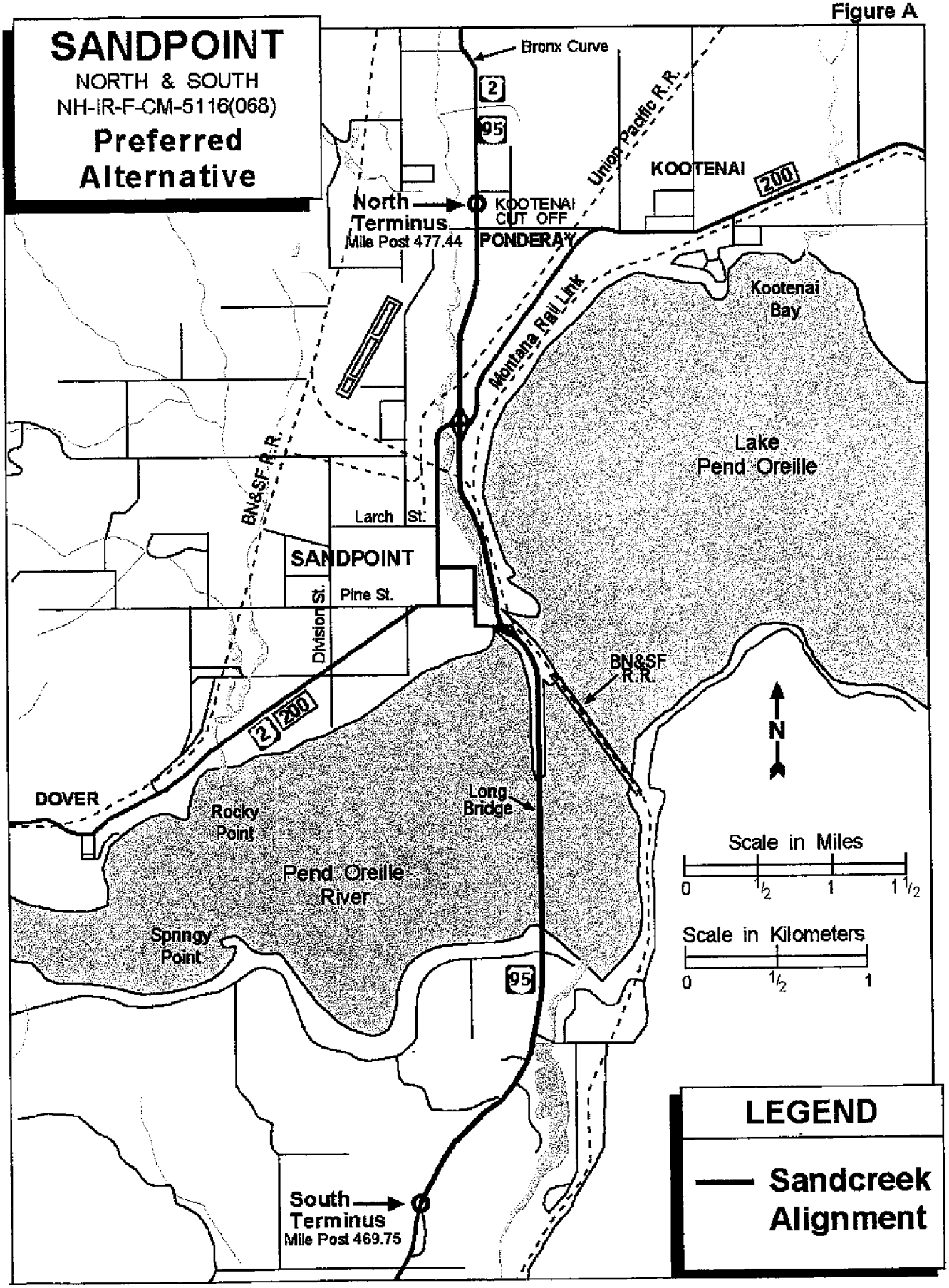
The Draft EIS analyzed a 'No Action' alternative and two 'build' alternatives considered reasonable and feasible (see Figure 'A'). These were:

- The Through Town 'Couplet' alternative, and
- The Sand Creek alternative (2-lane option).

The Sand Creek alternative is now being advanced as the 'Preferred Alternative.' Since release of the Draft EIS, the project has been shortened omitting the segment from Algoma to Sagle on the south and from Kootenai Cutoff to Bronx Curves on the north (see Figure A). These new termini are based on the 'West Alternative' being removed from consideration (it was the reason the termini were at the previous locations) and because of recent safety/pavement improvements completed at the north and south ends of the original project area. The proposed project now extends from milepost 469.75, at Sagle, to milepost 477.44 north of the Kootenai Cutoff road, in Ponderay. The project is divided into four segments which will be funded and constructed as separate phases. These segments are: Sagle to the Long Bridge, Long Bridge widening, new Sand Creek alignment, and SH200 to m.p. 477.44 north of the Kootenai Cutoff road. This Final EIS describes the affected environment, environmental consequences, and proposed mitigation relating to the Preferred Alternative. It identifies changes since release of the Draft EIS, and provides comparisons of the Preferred (Sand Creek) alternative to the Through Town 'Couplet' alternative and 'No Action' alternative presented in the Draft.

ITDAA029400

Figure A



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SAND CREEK 'TWO-LANE' ALTERNATIVE - PREFERRED

Major features of this alternative involve approximately:

- 7.6 kilometers (about 5 miles) of highway reconstruction [i.e., from a 11.6 meter wide (38') 2-lane road to a 19.2 meter wide (63') 4- or 5-lane road, depending on approach requirements];
- 1.8 kilometers (about 1 mile) of bridge reconstruction on the Long Bridge [i.e., from a 12.2 meter wide (40') 2-lane structure--to a 28.8 meter wide (94') 4-lane structure with bicycle/pedestrian path]; and
- 3.2 kilometers (about 2 miles) of new 2-lane alignment, which includes a partial interchange and bridge structure south of the Burlington Northern Railroad depot, and a full-diamond interchange structure with SH200 in Ponderay.

This alternative provides for smooth traffic flow (at about a 50 mph average) through the design year for through non-stop traffic from Sagle through Sandpoint to Ponderay. However, congestion and back-ups will worsen in Sandpoint as local traffic volumes increase over current levels. The primary impacts concern the visual affect of the Sand Creek structure as it passes along the banks of the creek between downtown Sandpoint and the City Beach. The total estimated cost of the Preferred alternative is $52.8 million between termini (four phases of construction, Sandpoint to Kootenai Cutoff, Sand Creek 2-lane, Long Bridge widening, Sagle to the Long Bridge). Cost of the new 2-lane Sand Creek phase is $23.1 million, which includes $1.0 million for right-of-way. This alternative has a benefit/cost ratio calculated at 6.3 and will cause few impacts to Sandpoint's existing economy or to the area's natural environment.

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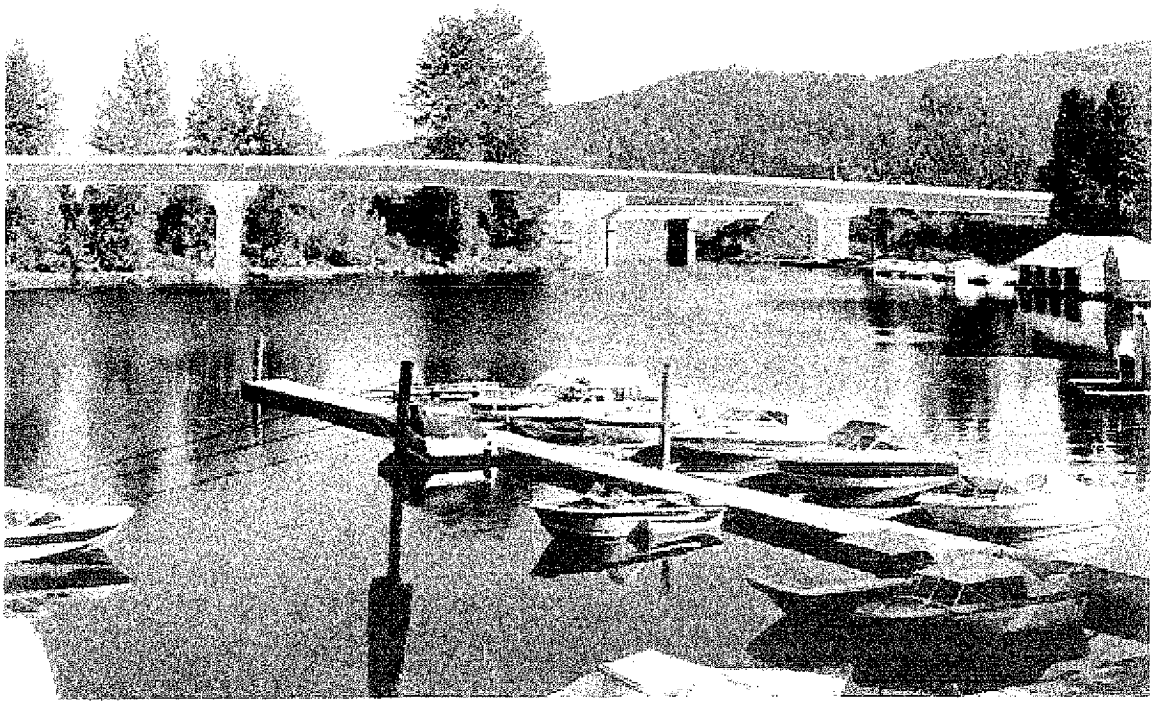
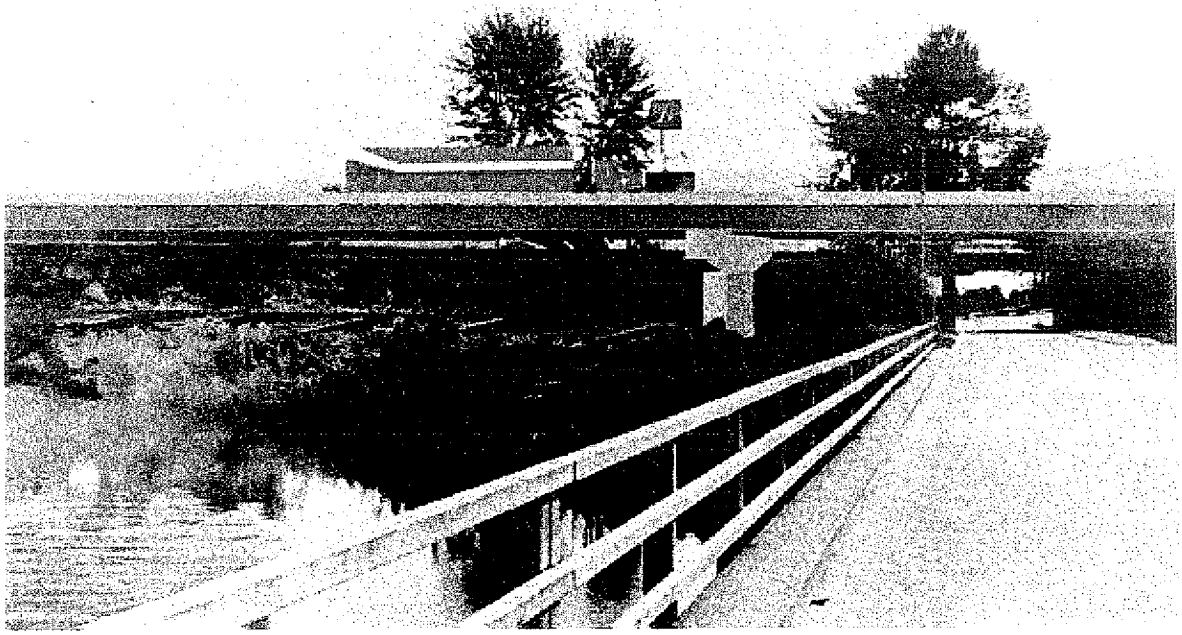


Artist's rendition of US95 2-lane structure over Sand Creek at Marina entrance.



Artist's rendition of US95 2-lane structure at Bridge St. looking east.

ITDAA029403

THROUGH TOWN 'COUPLET' ALTERNATIVE

Major features of this alternative included:

- 9.6 kilometers (about 6 miles) of highway widening (from a 2-lane road to a 4- or 5-lane road, depending on approach requirements);
- 1.8 kilometers (about 1 mile) of bridge reconstruction on the Long Bridge (from a 2-lane structure to a 4-lane structure with bicycle/pedestrian path); and
- 1.6 kilometers (about 1 mile) of street modifications to north & southbound routes in Sandpoint, including intersection reconstruction and signal installation, curve reductions and implementation of a couplet approach for traffic flow improvement. This would be accomplished by moving northbound traffic away from the core area of the Sandpoint central business district (CBD) along 1st and Cedar Streets to 4th and Church Streets.

The Through Town 'Couplet' alternative is not preferred because it only partially satisfies the project purpose. It would have few impacts on Sandpoint's existing economic structure, although it would cause some disruptions to businesses during construction. It had potential impacts on historic resources and hazardous material sites, but few ecological or aesthetic impacts. This alternative would have provided for stable (sometimes delayed) traffic flow through the year 2014. But, would have inadequate traffic capacity beyond this date. It would initially improve traffic flow for the greatest number of vehicles, but would not provide a non-stop facility for through traffic from Sagle to Ponderay. The total estimated cost of the Through Town alternative is $45.3 million between termini. Cost of the 'Couplet' phase is estimated at $7.6 million for construction and $8.0 million for right-of-way.

NO-ACTION ALTERNATIVE

The No Action alternative would maintain a 3-lane road on the one-way grid through Sandpoint and 2-lane road elsewhere on the existing route. It would allow routine maintenance activities, such as repairing potholes, cracks, and seal-coating as well as some signal installation and intersection improvements.

The 'No Action' alternative would likely occur only by default since it would lead to additional congestion at intersections in Sandpoint, as well as jammed conditions outside the city limits. It does not meet the purpose of this project and is not considered a reasonable alternative because it perpetuates and exacerbates the problems the Idaho Transportation Department is trying to resolve with this project.

ITDAA029404

OTHER PUBLIC/AGENCY PROJECTS PROPOSED IN THE STUDY AREA

Highway Projects

There are several highway projects recently completed or now being planned within the study area. In 1995, US95 was widened and repaved between Algoma and Sagle at the south end of the project study area. In 1997, US95/US2 was reconstructed between Kootenai Cutoff and Colburn, north of Sandpoint and Ponderay. Both projects involved widening the existing roadway on essentially the same alignment. Within Sandpoint, new traffic signals have been added at three intersections along US95: 1st Avenue at Pine Street, 5th Avenue at Pine Street, and 5th Avenue at Cedar Street. None of the above projects affect the viability or 'independent utility' of the proposed project, nor have they limited the range of design or location alternatives.

Proposed highway construction in the area includes (1) upgrading SH200 from US95 to Ponderay, (2) widening 5th Avenue in Sandpoint, and (3) reconstructing US2/SH200 from Dover to Sandpoint. The 5th Avenue project is included in the State Transportation Improvement Program for construction in fiscal year 2000. The other projects have not yet been adopted into the Program.

Completion of the Preferred Alternative may affect some design and location details of these identified projects, but will not affect the need for these projects or basic design concepts such as number of lanes, control of access, or general location of intersections. The proposed work on US2/SH200 west of Sandpoint does not link directly to the proposed project, but is compatible in that it will help alleviate traffic problems in Sandpoint. The proposed project will affect the design and location of connections to SH200 and US2 in Ponderay, but will not affect the overall design, location or utility of projects planned for those routes.

Railroads

The Burlington Northern & Santa Fe Railroad is planning to add a second set of tracks parallel to the existing tracks along Sand Creek and south across the lake to the Sagle area. This work will affect the Preferred Alternative because it limits opportunities for future widening to the east side of the proposed bridge and highway at the south end of the Sand Creek peninsula. It will also affect highway design, interchange options, and bicycle/pedestrian facilities in the area between the Long Bridge and the Sand Creek crossing.

ITDAA029405

Local agencies and organizations

The county of Bonner has a comprehensive plan which has been in place since 1978. The city of Sandpoint also has a comprehensive plan (1996). This EIS is consistent with the Transportation goals of the Bonner county and city of Sandpoint Comprehensive Plans.

Bonner County's Transportation Goal: to provide a transportation system that is safe, uncongested, and well maintained.

Sandpoint's Transportation Goal: safe and effective circulation of vehicular traffic, pedestrian and bicycle traffic, and increased parking facilities.

The other local entities do not have a comprehensive plan or any long term planning in place. Most of their planning efforts are for one to two years in the future. The City of Sandpoint has no planned projects that would affect this project. The City of Ponderay has two projects which will tie into US95. One is the reconstruction of Piehl Road, and the other is Tibbets Road. These projects should not affect traffic on US95, but may affect traffic patterns in the vicinity of Bonner Mall and the adjacent light industrial area.

The Bonner County Area Transportation Team (BCATT) was formed in November of 1996. They were formed as a Bonner County transportation planning group. ITD is an active participant in this team and will continue to work with this group on regional transportation issues and the development of long range transportation goals. This team has not written a planning document but they are planning on doing so in the future.

The North Idaho Pathways Organization has a master bicycle/walkway plan for Sandpoint and the surrounding area. This plan involves separated pathways from Sagle to Sandpoint, Dover to Sandpoint, and Kootenai/Ponderay to Sandpoint. The section from Sagle northward to the Long Bridge was completed in 1997 on ITD right-of-way using private funding and labor. A pathway is also being developed on the abandoned railroad right-of-way between Dover and Sandpoint. The group has proposed a separated path from Bridge Street on the east side of Sand Creek in Sandpoint to the old trestle crossing north of the junction of US95,US2 and SH200. This path is to eventually connect to Schweitzer Road to the north and Kootenai Cutoff Road to the east. Accommodations for these paths will be provided wherever feasible in design and construction of the proposed highway projects.

ITDAA029406

Utilities

GTE is planning future expansion of its fiber optic network to include the Sandpoint, Dover, Kootenai and Ponderay areas within two to five years. These expansions will be coordinated with local, state and federal highway projects to the extent possible. However, much of the GTE system will be installed where there are no highway construction projects currently programmed. Northern Lights and Power does not have any current major plans for expansion, but will perform upgrades as needed throughout the study area. They will also coordinate as much of their work as possible with local, state and federal highway construction projects.

ITDAA029407

SUMMARY OF MITIGATION COMMITMENTS

The project design and alignment have been developed to avoid impacts when feasible and minimize adverse impacts on the project area. Specific decisions and measures will be reflected in the project contract and plans. Additional measures for avoiding or minimizing impacts will be implemented through standard highway construction and maintenance practices. Despite these commitments, the project will have certain unavoidable social, economic, and environmental impacts. Mitigation measures and other commitments (to avoid, reduce, or compensate for impacts) are described below:

Air Quality

1. ITD will continue to use winter road maintenance procedures that minimize dust. These measures include the use of special sanding material approved for "PM-10 non-attainment" areas, and when weather conditions warrant, using liquid deicer instead of sanding material to reduce the amount of particulate matter generated by vehicular travel.

2. ITD will coordinate future development of highway projects in the area with local entities to improve traffic flow, reduce stop/start actions, minimize delays and out-of-direction travel.

3. The qualitative conformity determination performed by ITD and the Idaho Division of Environmental Quality will be reevaluated as each phase of the project is placed on the State Transportation Improvement Program. Project plans will incorporate appropriate mitigation measures based on results of the review.

Water Resources and Erosion Control

1. Bonner County will be provided the opportunity to review and comment on the Storm Water Pollution Prevention Plan to insure that it conforms to the local storm water ordinance.

2. Any domestic water supply affected by the project will be replaced in quality and quantity.

3. All fill material introduced into wetlands or surface waters will be quarried shot rock. Piers, pilings, and abutments will be steel or concrete. (Because of their clean nature, these materials reduce the release of pollutants.)

4. Erosion and sediment control best management practices (BMPs) will be used throughout construction of the project. Specific measures will be identified in the Storm Water Pollution Prevention Plan and the construction plans prepared for the project, consistent with all requirements of the NPDES Storm Water Permit for construction activities. These BMPs will include, but are not limited to, the following:

ITDAA029408

(a) Construction will be phased, and perimeter controls (such as silt fence, berms, rock outlet protection, sediment basins, etc.) will be installed before ground disturbing construction work proceeds in each area.

(b) Where bare soils are exposed to erosion, cut and fill slopes will be treated temporarily with either hydraulically applied or roll-out erosion control blanketing within five days. The type of blanketing selected will be based on slope angle, soil matrix, surface roughness, and predicted precipitation or surface runoff.

(c) Retaining walls will be used to avoid placing fill into wetlands or surface waters. These walls will be designed with appropriate controls for drainage and erosion. They are located at station 92 to 94, and at station 115 (for approximately 40 meters).

(d) To protect surface water quality, storm water will not be discharged directly into Sand Creek or Lake Pend Oreille. Storm water will be directed through vegetated swales and/or treatment ponds or basins prior to being discharged to controlled outlets. During construction, storm water will be conveyed by temporary or permanent structures, and ditches, to sediment basins or ponds and then to controlled outlet protection devices such as rock outlets. A 25-year storm design will be used for ditches and culverts. Sediment traps and basins will be based on a 100-year storm design, and with particle size analysis to ensure that the design particle removal efficiency of 80% minimum is attained. These detention facilities will be cleaned out when they fill to 50% capacity.

(e) Vegetation will be preserved or replaced to help protect water quality values and to enhance aesthetics along Sand Creek. In most areas, a buffer zone will be established from surface water (normal pool elevation) to upland areas. Wetland, streambank, and shoreline areas that must be disturbed by construction will be seeded and/or planted to reestablish native vegetation. All other areas disturbed by construction will be revegetated unless they are covered by rock, asphalt or concrete.

5. Chemical pollution will be controlled by limiting the use of fertilizers to specified areas of seeding. A time released fertilizer will be used with all plantings. No fertilizer will be used near the surface waters of Sand Creek or the lake.

6. All controls (BMPs) will be inspected biweekly and during each storm event that produces runoff to ensure that all the controls are functioning as intended and to maintain or correct those that are not. These inspections will be performed by ITD Residency Inspectors who will report problems to the Resident Engineer (ITD construction/project engineer) for resolution. The Resident

ITDAA029409

Engineer will direct the contractor to perform installation, replacement, and/or repairs of BMPs throughout the life of the project.

7. The project contract will include a spill prevention and clean-up plan addressing the use, storage, and disposal of petroleum products during construction.

8. The project plans will include provisions for re-establishing cross-highway drainage patterns that have been severed by previous highway construction projects.

9. ITD's 'Rule of Fives' will be used to control erosion from cut and fill slopes: Soil surface treatment for erosion will occur when 5 meters vertical height has been reached for either a cut or fill section, or if the area has been left untreated for 5 days. The total area of ground disturbance that may be worked at any one time cannot exceed 5 hectares.

Wildlife and Vegetation

1. Project construction will include measures for preventing petroleum products and construction materials from entering any body of water. This will include a requirement that refueling of all mobile construction equipment and vehicles take place only at predetermined stations where adequate protective measures are in place to contain spillage.

2. Construction 'diapers' will be required at active construction areas where deleterious construction materials could enter water bodies.

3. Revegetation and landscaping of disturbed areas (except areas scheduled for paving, concrete, or rock treatments) will provide some replacement habitat for terrestrial wildlife species. See Mitigation Measure # 4 e. under 'Water Resources'.

4. Construction activities will be scheduled to avoid conflicts with winter-resident and nesting bald eagles. A raptor biologist will be employed to assess potentially eagle disturbing work during the months of October through February, or any work near nesting sites from mid-January to mid-July. A Sagle Slough Bald Eagle Nest Management Plan will be coordinated with and approved by the US Fish and Wildlife Service. 15 to 20 Screening trees (conifers) will be planted on the east side of the Sagle bikepath entrance/parking area to limit line-of-site disturbances to the Eagle nest. ITD will monitor these trees for at least five years to ensure their success and will replace dead or dying trees as required. Removal of screening trees on the east side of the highway or bikepath (between the highway/path and the nest) will not be allowed.

ITDAA029410

5. Removal of trees along the west-bank of the Pend Orielle River where the long bridge meets the constructed penninsula (north side) will occur. Removal of these trees will take place prior to the bald eagle wintering time period of 1 November to 1March, and after the nesting season which ends in July. This activity will be partially mitigated by the installation of three artificial roost trees (see example of artificial roost trees shown in the bald eagle biological assessment, Appendix H) along the waters edge from the long bridge north at 100 feet, a 1000 feet, and 2000 feet. ITD will also replant 15 to 20 cottonwoods (12-15 foot- rooted stock) or whatever is sufficient to provide adequately spaced, suitable habitat for foraging along the new embankment on the west side.

6. Construction activities will be scheduled to avoid conflicts with wintering waterfowl, sensitive plant species, and the spawning migration of fish species identified by the Idaho Department of Fish and Game and the U.S. Fish and Wildlife Service. These determinations will be made through 'Merger Process' meetings with the agencies having regulatory responsibility for the species involved. An example is the lower stretch of Sand Creek which could be a cutthroat trout migration corridor for the upper reaches . As such, construction below the mean high water mark between September and December shall be prohibited to protect the migration route for spawning.Field surveys for the Ute Ladies-tresses, a threatened species, have been performed and the US Fish and Wildlife Service has concurred on the findings of the Biological Assessment (see Appendix H). The finding is "May affect, but not likely to adversely affect existing plants or potential habitat. The field surveys were performed by a qualified botanist.

Construction Period Impacts

1. To reduce construction noise impacts on nearby residents, most construction activities in urban areas will be confined to the period between 7:00 a.m. and 7:00 p.m. on weekdays. Construction equipment noise will be controlled by requiring contractors to keep all muffler/s and exhaust systems in proper working order. Pile driving or blasting operations shall be prohibited within 915 meters (3000') of an occupied dwelling unit on Sundays or legal holidays, and between the hours of 7:00 p.m. and 7:00 a.m. on other days, without the written approval of the engineer.

2. The project contract will include a spill prevention and control plan (for materials stored on-site, petroleum products, solvents, etc.) specifying selected control strategies, such as: containment diking with bottom and side-wall liners; curbing; drip pans; collection basins and sumps, and clean-up strategies in the event of a spill. The contractor will then accept and carry out that plan, or propose modifications that meet all applicable state and federal regulations.

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3. The project contract will include a traffic control plan describing detours and measures to maintain traffic flow through Sandpoint until interchange and intersection improvements are completed. The traffic control plan will be coordinated with local community interests and advertised in radio and newspaper announcements.

4. If a hazardous waste spill occurs along the transportation corridor during or after construction, the contractor or ITD inspector will call the Emergency Medical Services to activate the response system. State and federal incident command procedures will be followed from that point. (See the 'Environmental Consequences' chapter of this Final EIS for details.)

5. Water or an approved magnesium chloride solution will be sprayed as needed to control dust during project construction.

Sociology and Economics

1. The completed project will provide approximately 38 parking spaces beneath the Sand Creek structure near Bridge Street.

2. The property acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance & Real Property Acquisition Policies Act of 1970, as amended. All eligible parties will receive assistance and fair compensation as authorized in 49 CFR, Part 24. Owners of property acquired for right-of-way will be paid fair market value for their property and for all reasonable expenses, and may be eligible for other considerations such as moving expenses and supplemental payments for increased interest payments. Relocation assistance is available to all residential and business relocatees without discrimination.

Land Use

1. ITD will endeavor to maintain consistency with local comprehensive plans and community desires when upgrading and locating highway facilities so as to minimize and avoid foreseeable adverse secondary and cumulative impacts.

2. ITD will offer data and recommendations to assist local jurisdictions in their planning efforts and with their responsibility to determine what, if any, land use controls they wish to employ to manage growth.

Recreation

1. Recreational access to the old Long Bridge will be retained. Temporary detours and connections between city streets and the Long Bridge pedestrian/bicycle path will be provided as needed during project construction.

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2. The project will include construction of a separate pedestrian/bicycle path connecting the Long Bridge to the existing city trail, the central business district, and the City Park area, and from the city park area north along Sand Creek to the juncture of SH-200. The bike route will provide access and egress from the central business district of Sandpoint to the long bridge, the City Park, or the north route to the junction of SH-200. This path will be developed in partnership with North Idaho Pathways, the local pedestrian/bicycle group and the city of Sandpoint.

Noise

See Mitigation Measure #1, 'Construction Period Impacts' for measures to control construction noise.

Wetlands

1. All fill introduced into wetlands will be either native crushed or granular material or steel and concrete material (such as piers, pilings, abutments used in structures). All fill material will be analyzed to insure that it is non-polluting and non-hazardous.

2. Filling into wetlands and aquatic habitats will be avoided or minimized during design and construction. Impacts from unavoidable fills in wetlands or aquatic habitats, other than deep-water habitats, will be mitigated on a 1:1 or greater basis for functions and values, as discussed in the 404(b)(1) Analysis section, page 117.

3. The amount of wetland fill will be minimized by steepening the highway side-slopes. This will occur from approximately station 91 to 92 left and right, station 102 to 106 left. However, no slopes will be constructed steeper than what is stable for the soils involved. Where warranted, slopes will be stabilized by engineered walls station 92-94, and 115, or protected by erosion blanketing applied to the exposed earth surfaces. The areas identified for each type of treatment will be shown on the Storm Water Pollution Prevention Plan, which will be a part of the project contract.

4. A wetland mitigation site will be constructed at Sandpoint High School in conjunction/coordination with the Natural Resources Conservation Service, the Army Corps of Engineers, Panhandle Resource Conservation and Development, and Sandpoint High School. Work will include creation, restoration and enhancement of 1.0 hectares (2.5 acres) of existing degraded wetlands. See the Wetland Mitigation Plan in this Final EIS for maps and details.

5. The construction plans will include provisions for maintaining cross-highway wetland hydrologic connections.

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Floodplains

Floodplain Impacts will be minimized through appropriate bridge and materials engineering in the vicinity of the Sand Creek structure, including: (a) use of piers to minimize encroachment, (b) adequate foundation stabilization, with consideration for differential settlement, and (c) use of Best Management Practices to control erosion and sedimentation. See the mitigation measures under 'Water Resources' and 'Soils and Geology' for further details.

Cultural Resources

1. Recovery of cultural materials from the original Sandpoint townsite will be completed before the area is disturbed by any construction activities.

2. The project has been designed and located to avoid adverse impacts on the Burlington Northern Railroad depot. The bridge railings and light standards will be designed with the intent to minimize obstruction of views to and from the depot.

3. If previously unknown cultural resource sites are encountered during construction, all work will cease in the vicinity of the discovery while the required notification, evaluation and (if needed) recovery procedures are implemented.

Hazardous Materials

1. ITD will conduct sampling of soils and water, as required, on all properties to be acquired for right-of-way before purchasing or accepting the property.

2. If previously unknown hazardous materials sites are encountered during construction, all work will cease in the vicinity of the discovery while the required notification, analysis and (if needed) clean-up procedures are implemented.

3. Properties with known hazardous materials contamination will undergo a Detailed Site Investigation before being purchased or accepted by ITD for right-of-way. The cost and responsibility for any required clean-up will be established prior to acquisition of such properties.

Aesthetics and Visual Resources

1. Landscaping and vegetative screening will be incorporated into the project design to minimize adverse visual impacts at the two proposed interchanges and along Sand Creek, particularly between Bridge Street and Cedar Street. Vegetation removed from the banks of Sand Creek will be replaced by plantings of similar native vegetation and/or by landscape plantings acceptable to the City of Sandpoint. Where feasible, vegetation will be established along the new fill slopes and retaining walls to enhance the appearance of the new roadway.

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2. The visual presence of the Sand Creek structure will be softened by: (a) long spans and dark colored piers, (b) railings rather than solid concrete or a combination of the two, and (c) adjusting the spacing of light standards to avoid obstructing views to and from the historic railroad depot.

Bicycle and Pedestrian Facilities

The project will maintain and enhance pedestrian and bicycle transportation as described in the mitigation measures listed under 'Recreation'.

Soils and Geology

1. Retaining structures, walls and buttresses will be designed to withstand differential settlement due to the poor bearing capacity and low relative density of local soils.

2. Soil erosion and sedimentation will be controlled by using Best Management Practices during project construction and maintenance, and by complying with all provisions of the NPDES Storm Water permit required for the project. See the measures listed under 'Water Resources and Erosion Control' for further details.

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TABLE 1*
US95 ALTERNATIVES
ENVIRONMENTAL IMPACT COMPARISONS

ADVERSE IMPACT POTENTIAL

ENVIRONMENTAL CATEGORIES	No Action	Through Town	Sand Creek
Hazardous Materials	Minor	Moderate	Minor
Wetlands	None	Minor	Minor
Aesthetics/Visual	Minor	Minor	Moderate
Floodplains	None	Minor	Minor
Noise	Moderate	Moderate	Minor
Cultural Resources	Minor	Major	Minor
Residential Displacements	None	Minor	None
Business Displacements	None	Minor	Minor
Parking	None	Moderate	None
Traffic Patterns	Major	Moderate	Minor
Air Quality	Moderate	Minor	None
Water Quality	Moderate	Minor	Minor
Threatened & Endangered Species	None	Minor	Minor
Economic	Minor	Minor	Minor
Inconsistent with Local Planning	Moderate	None	None
Vegetation & Farmland	None	Minor	Moderate
Construction	None	Minor	Moderate

Example: If one looks at "Cultural Resources," the table indicates the Through Town alternative would have a Major impact on the cultural resources of the Sandpoint area. This is true because the Through Town alternative would impact more cultural resources (histroric structures and artifacts) than the No Action or Sand Creek alternatives.

*This table is a subjective analysis of the potential impacts of the alternatives. The following degrees of impact were used: None-no impact, Minor- may have a minor impact, Moderate-impact greater than minor but not considered a major impact, Major-greatest impact for this simplified analysis.

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US-95
SANDPOINT NORTH & SOUTH
PROJECT NH-IR-F-CM-5116(068) , KEY #1729

FINAL ENVIRONMENTAL IMPACT STATEMENT 1999

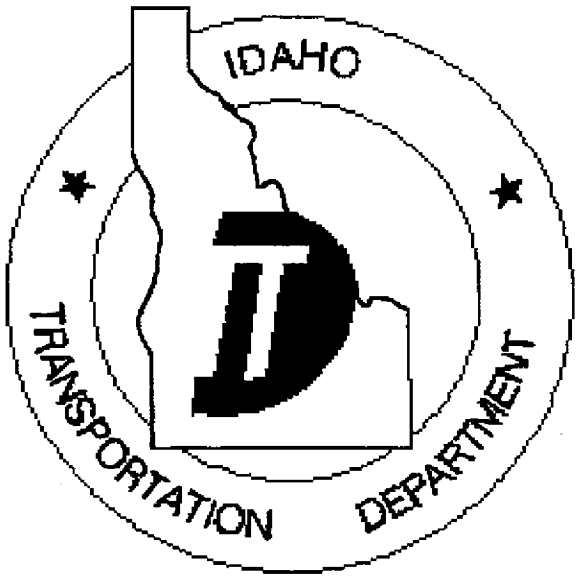
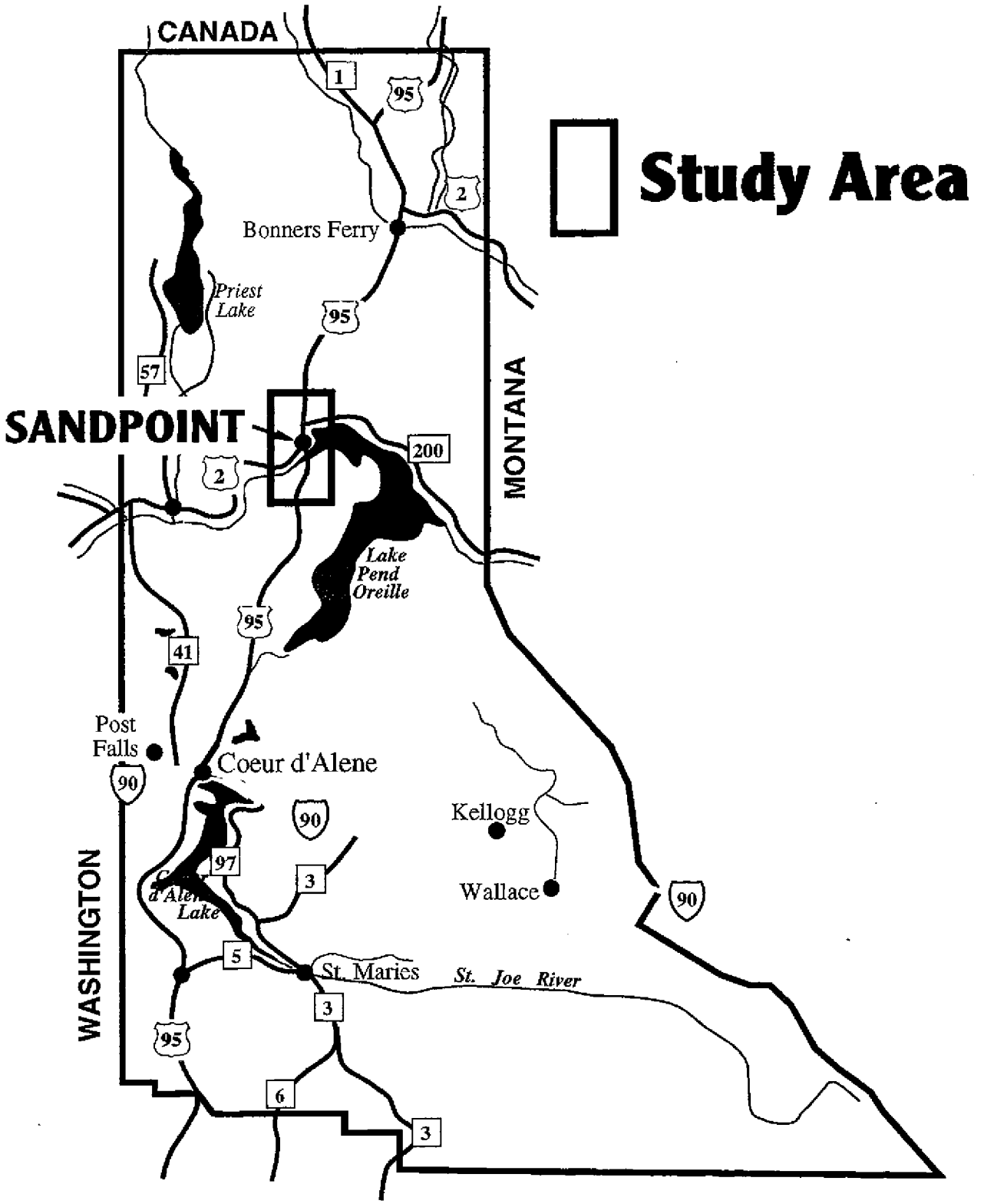


Figure 1

North Idaho Vicinity Map



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PURPOSE AND NEED

BACKGROUND

The proposed project is located on US95 in Bonner County, Idaho. US95 is the only north/south highway between eastern Washington and western Montana, a corridor over 160 kilometers (100 miles) wide. It is also the only highway in the state that ties Northern Idaho to Southern Idaho. The project lies midway between the city of Coeur d'Alene and the Canadian border (Figure 1). Project termini are located at milepost 469.75 near Sagle and milepost 477.4 near Ponderay. Upon crossing the Pend Oreille River, the existing highway enters Sandpoint, Idaho where it ties into US2 and SH200 in the Central Business District. Combined traffic from these routes merges with the internal traffic flow on a one-way grid system through the downtown area, then exits the city to the north on Fifth Avenue. The routes split on the east-side of Sand Creek, with SH200 proceeding eastward through the towns of Ponderay and Kootenai, while US95/US2 continue north to Bonners Ferry.

PURPOSE AND OBJECTIVES

The purpose of this project is to improve traffic flow on US95 within the study area and to provide a 'non-stop' facility between Sagle and Ponderay for through trucks and others not intending to stop in Sandpoint. Primary objectives are:

i. Achieving and maintaining smooth traffic flow for US95 traffic in the project area for the next 20 years (technically: a design year level-of-service 'C', or better. See Appendix A for explanations of level of service).

1. Maintaining access to Sandpoint for 'through-stop' and 'external/local' traffic using US95*.
2. Maintaining easy access to the communities of Ponderay and Kootenai for 'through-stop' and 'external/local' traffic using US95.
3. Providing good connections to US2 and SH200 for US95 traffic.
4. Identifying funding options and construction phases which can reasonably be expected to advance the project through programming, development and construction in a timely manner.
5. Achieving a level of safety for US95 traffic equal to, or better than, the highway accident average for similar type facilities in the State of Idaho.
6. Providing for the aesthetic design of structures and landscaping, as appropriate.
7. Maintaining and enhancing bicycle and pedestrian facilities in the US95 corridor.
8. Avoiding impacts to significant migratory bird habitat areas.
9. Avoiding major impacts concerning traffic noise criteria.
10. Avoiding adverse impacts on air quality.

* 'Through-stop' refers to traffic originating outside the Sandpoint area, which stops in the area but continues on to other destinations. 'External/local' refers to traffic originating in the Sandpoint area with destinations outside the area and traffic originating outside the area but having its destination in Sandpoint.

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In achieving the above objectives, it is intended for this project to maintain consistency with local transportation planning efforts, and with State and Federal environmental regulations. Although the primary objectives concern traffic conditions on US95, project design will also consider both immediate and long term solutions to the area's traffic problems and potential effects on related transportation projects in the area. For example, the recent abandonment of the Union Pacific tracks between the City of Dover and Larch Street in Sandpoint has enabled ITD to purchase the abandoned railroad right-of-way (R/W) and make plans to improve east/west traffic flow in the project area by reconstructing the adjacent highway (US2/SH200) between Dover and Sandpoint. The Preferred Alternative will be designed to accommodate this and other highway projects without limiting design and alignment options.

NEED FOR THE PROJECT

The project is needed to alleviate serious traffic congestion and traffic flow problems in the Sandpoint area. US95 is currently routed through Sandpoint on city streets, using a combination of one-way and two-way travel on 1st Avenue, Cedar Street, 5th Avenue, Pine Street, and Superior Street. Parts of this route carry 'through traffic' from US2 and SH200 in addition to a high volume of local traffic. US95 traffic must now negotiate three right-angle turns to complete northbound or southbound travel through Sandpoint. These tight turns are often difficult for trucks, which causes delays and raises the accident rate at intersections. Delays and congestion are common in Sandpoint, in part because of the five traffic signals and numerous driveways and side streets along the route. The smooth flow of two lane traffic is also impeded by pedestrian crossings and on-street parking in the downtown area. During the summer tourist season, it sometimes takes 45 minutes to drive the three-kilometer distance (two miles) through town.

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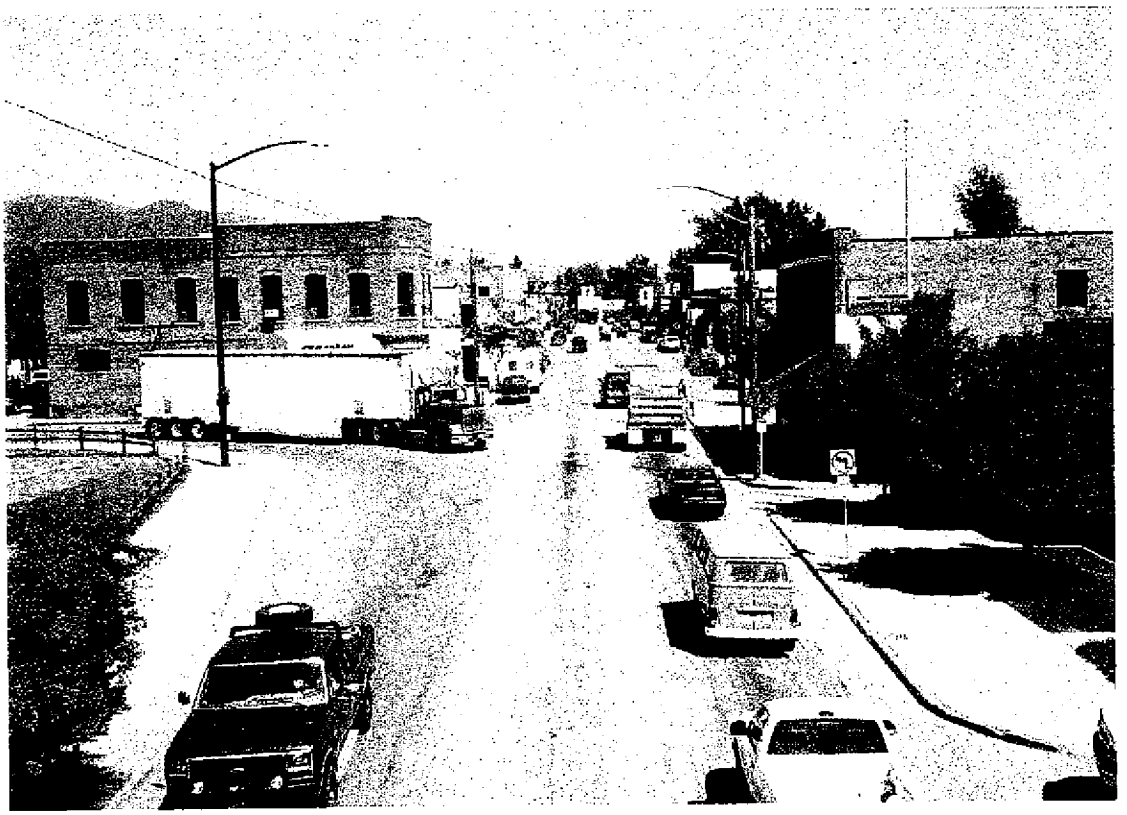

Photo 1 – 1st & Pine, Northbound entrance to Sandpoint's CBD

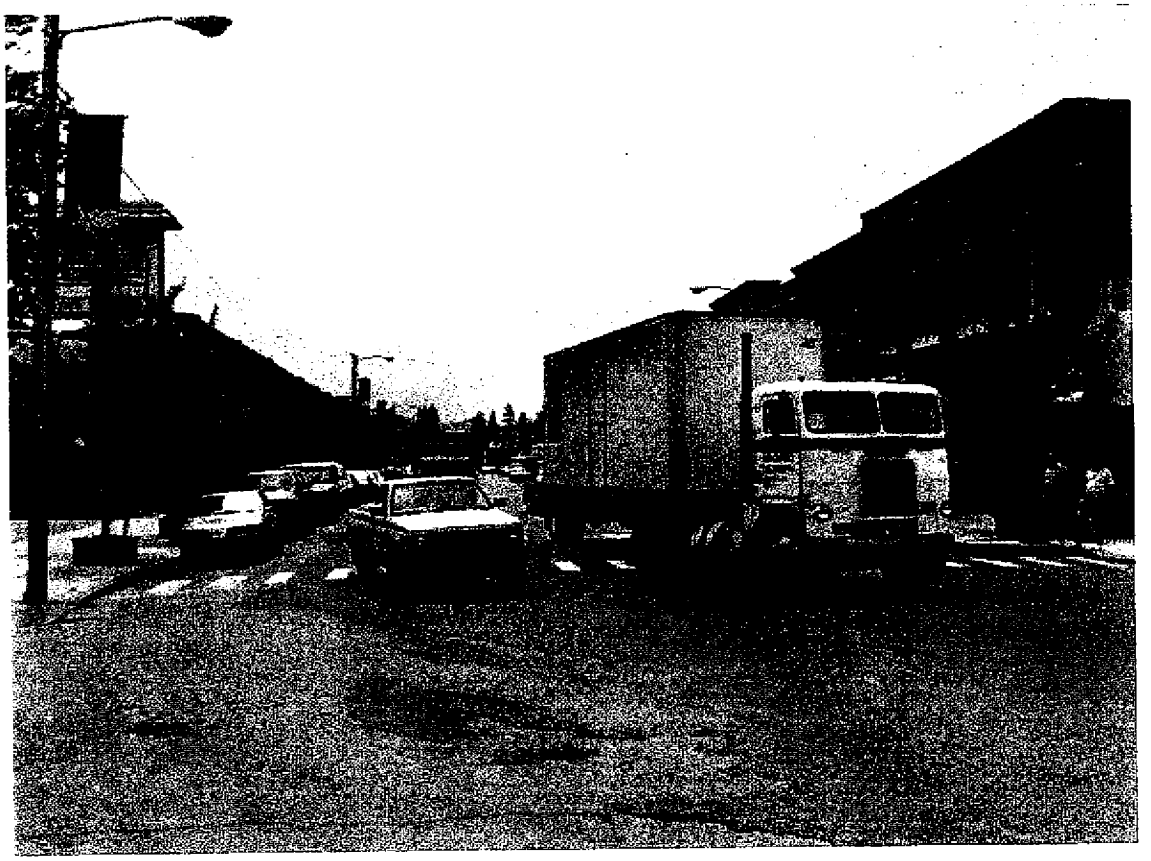

Photo 2 – 1st & Cedar, the 'heart' of Sandpoint's CBD

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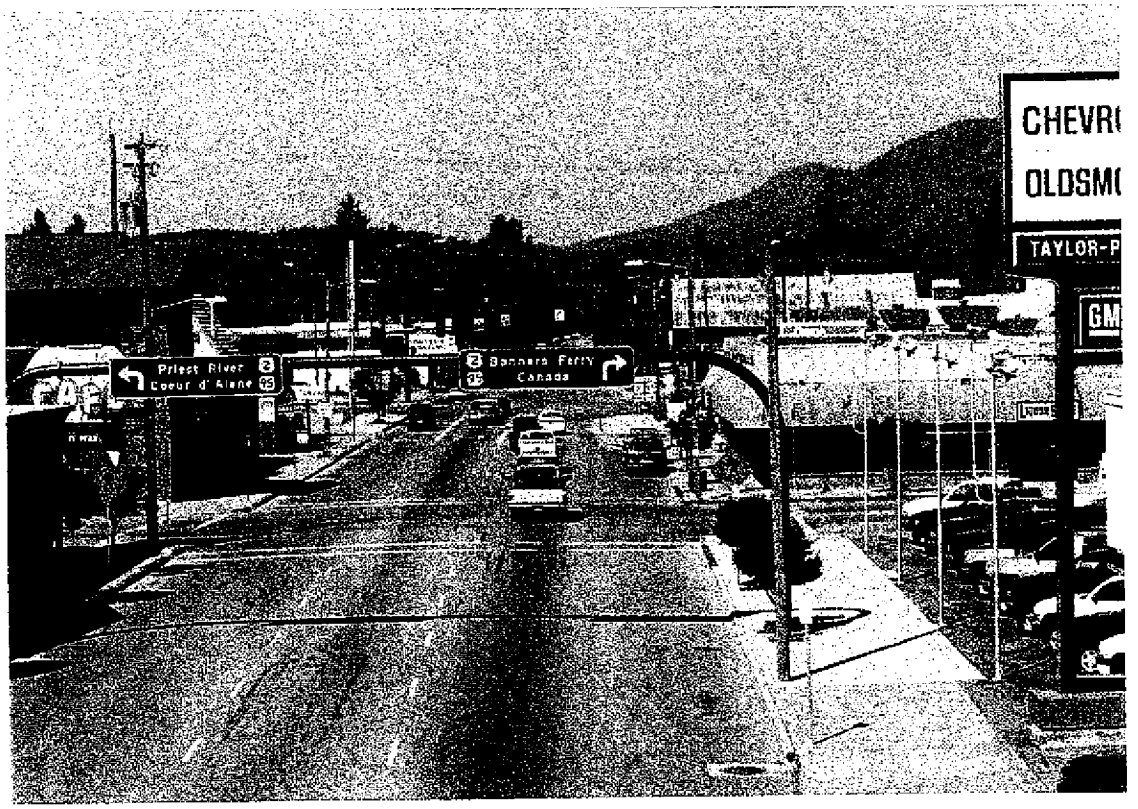

Photo 3 – Northbound traffic approaching 5th & Cedar signalized intersection.

Photo 4 – 5th & Cedar, signalized North bound truck turn lane.

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Photo 5 – 5th & Larch, newly signalized intersection North of 5th & Cedar.

Photo 6 – 5th & Pine, signalized South bound US 95 & East bound US 2

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Outside Sandpoint, the highway is already at capacity between the project termini. With increased traffic and the continued need for access to driveways and businesses, congestion and delays are expected to worsen over the next 20 years.

At current volumes, traffic in the study area is operating at an "unsatisfactory level-of-service" for prolonged periods, especially when traversing the city of Sandpoint. An unsatisfactory level-of-service translates into traffic congestion, lost time, increased operating costs, increased air pollutants, and an adverse impact on the economic vitality of the community and surrounding area. To reach a satisfactory level-of-service, US95 requires added capacity between project termini and a more favorable traffic flow design for 'through' vehicles. Outside Sandpoint, a four lane facility with center turn bays (along sections with heavy access requirements) are required to correct this deficiency.

Within Sandpoint, the system is almost at gridlock during peak hour traffic volumes because of substandard intersection design, left turn maneuvers and conflicts between the various modes of transportation. These impediments and conflicts need to be resolved by improving traffic flow through town and/or by separating the highway traffic--especially through truck traffic--from the local and Sandpoint-bound traffic.

If the through-town route of US95 were retained, the highest priority would be a traffic flow design which minimizes the conflicts between left turns and other traffic maneuvers. Currently, the Sandpoint 'one way' system works somewhat similar to a 'rotary' or 'roundabout', but has none of the advantages because left turns are permitted at nearly all intersections (See Appendix A-Use of Roundabouts). To maximize traffic flow, it would be necessary to limit side street and driveway access to US95, eliminate on-street parking, and construct wider, smoother curves at the corners.

Many residents have indicated they would like to see trucks routed out of town, even though many trucks are not through-nonstop and would still require internal routing accommodations. The Preferred Alternative, by rerouting through-nonstop trucks and other through non-stop traffic away from the central business district, addresses the urgent need to separate highway traffic from local and Sandpoint-bound traffic and will also improve traffic flow in downtown Sandpoint.

ITDAA029424

ALTERNATIVES

Numerous alternatives were initially considered in efforts to meet the purpose and need for the project, to respond to issues that were raised through the scoping and public involvement process and to comply with all applicable laws, regulations, policies and standards that govern federally funded highway projects. All alternatives considered included common termini located near Algoma on the south at highway milepost (m.p.) 466.8 and near the Bronx Curves on the north at highway m.p. 478.6, a distance of 19 kilometers (11.8 miles) on the existing system. Each alternative was broken down into several distinct 'construction' phases. Partial control access (i.e., the regulated limitation of new driveways and roadside developments) would be implemented along all alternatives unless noted otherwise for specific sections.

The Draft EIS advanced two build alternatives considered reasonable and feasible, and a no-action alternative. The two build alternatives were the Through Town 'Couplet' alternative and the Sand Creek alternative. Several of the alternatives considered initially were rejected for various reasons. These are discussed under 'Alternatives Considered & Rejected' beginning on page 21. The stretch of highway from Algoma to Sagle was recently widened and repaved as part of a state-funded project, and is no longer included within the project termini. The stretch from Kootenai Cutoff to Bronx Curves has also been reconstructed and is no longer included in the 'Sandpoint North and South' project. Both of these projects were completed to address urgent safety and traffic flow needs, independent of the need for the proposed project. In both cases, the work involved widening and rebuilding the existing roadway, and did not restrict future options for location, design, or construction of this project.

THE PREFERRED ALTERNATIVE

The Sand Creek alternative has been identified as the preferred alternative for the project. However, all reasonable alternatives are still under consideration. The final decision will be documented in a Record-of-Decision following the Final EIS.

Advancement of the Sand Creek alternative as the Preferred Alternative is based on the determination that it best meets the stated purpose of the project, and can be implemented at reasonable cost with minimal impacts on the socio-economic, physical, and natural environment of Sandpoint. In addition, the Sand Creek alternative received strong support from citizens and local government officials during the public hearing process. Most of the impacts that will occur can be offset through standard construction practices, special contract provisions, and specific mitigation measures, as set forth in the 'Summary of Mitigation and Commitments.'

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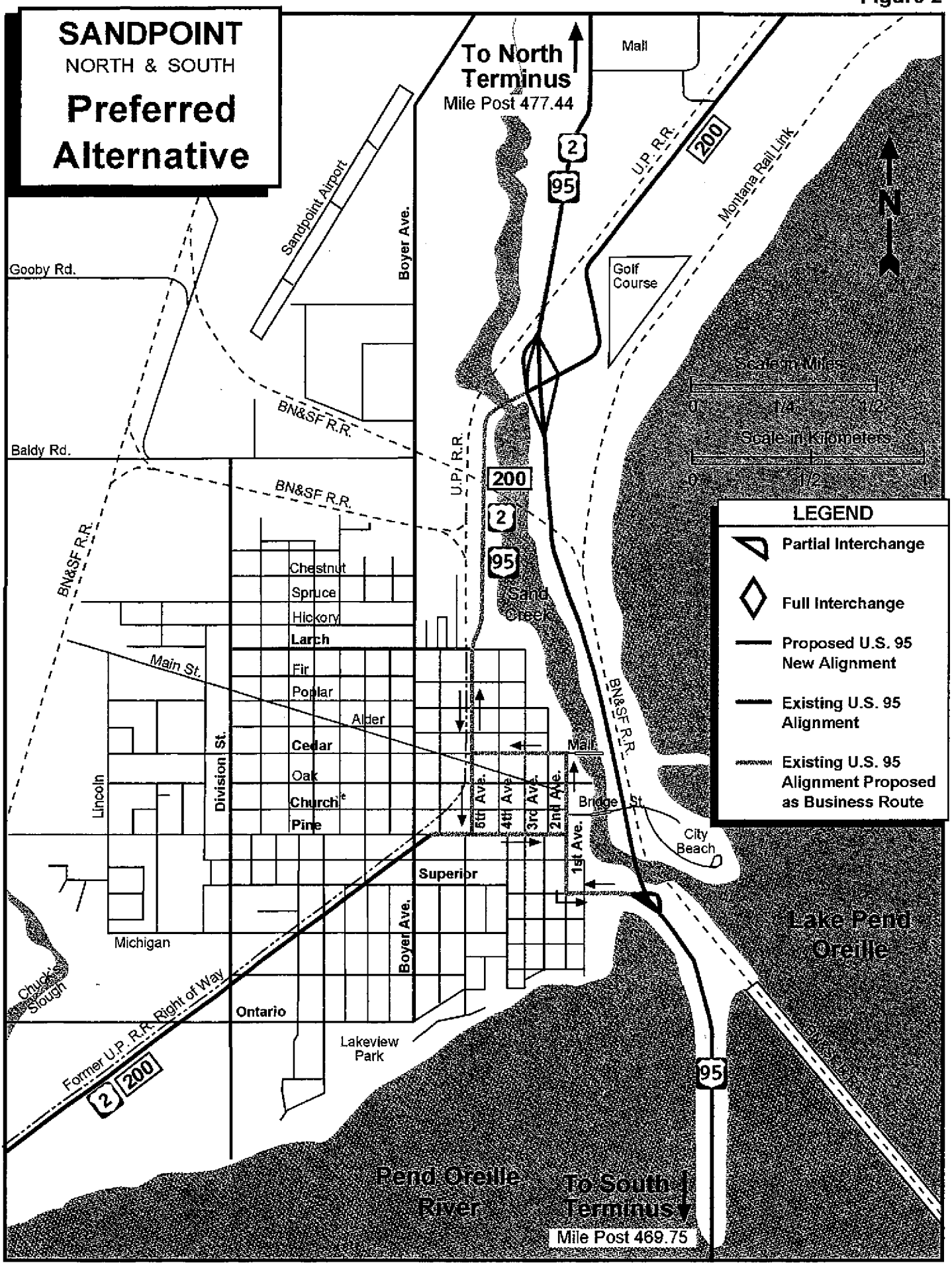
Figure 2



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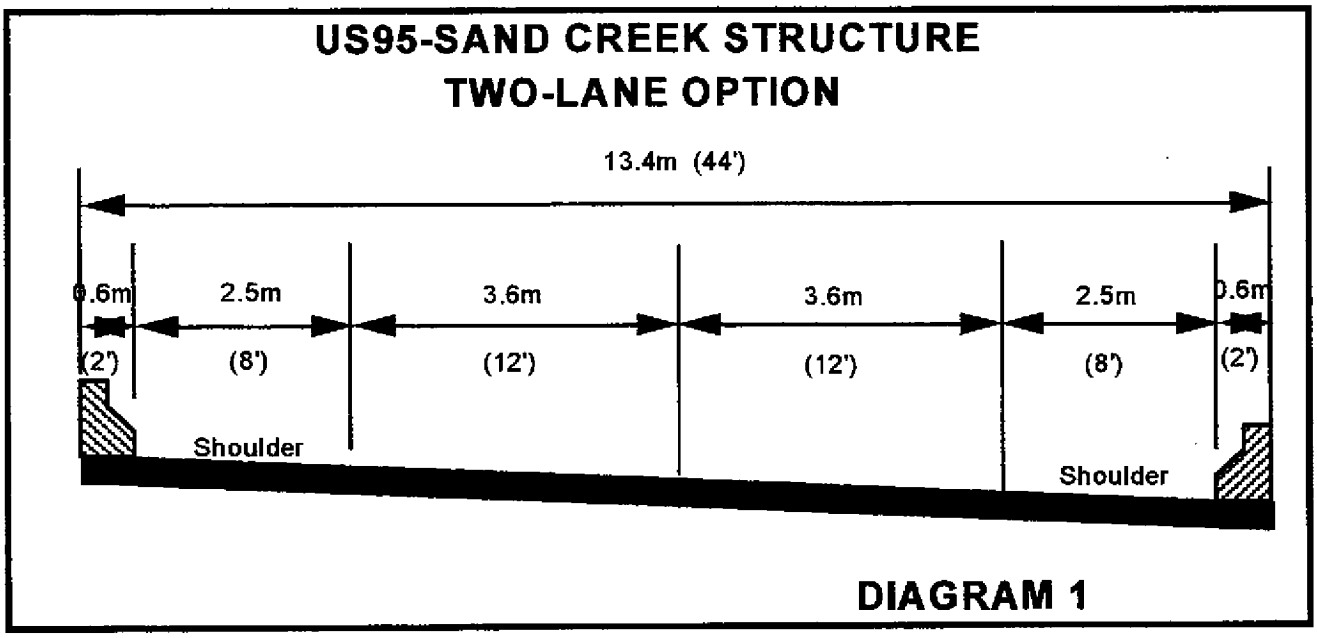
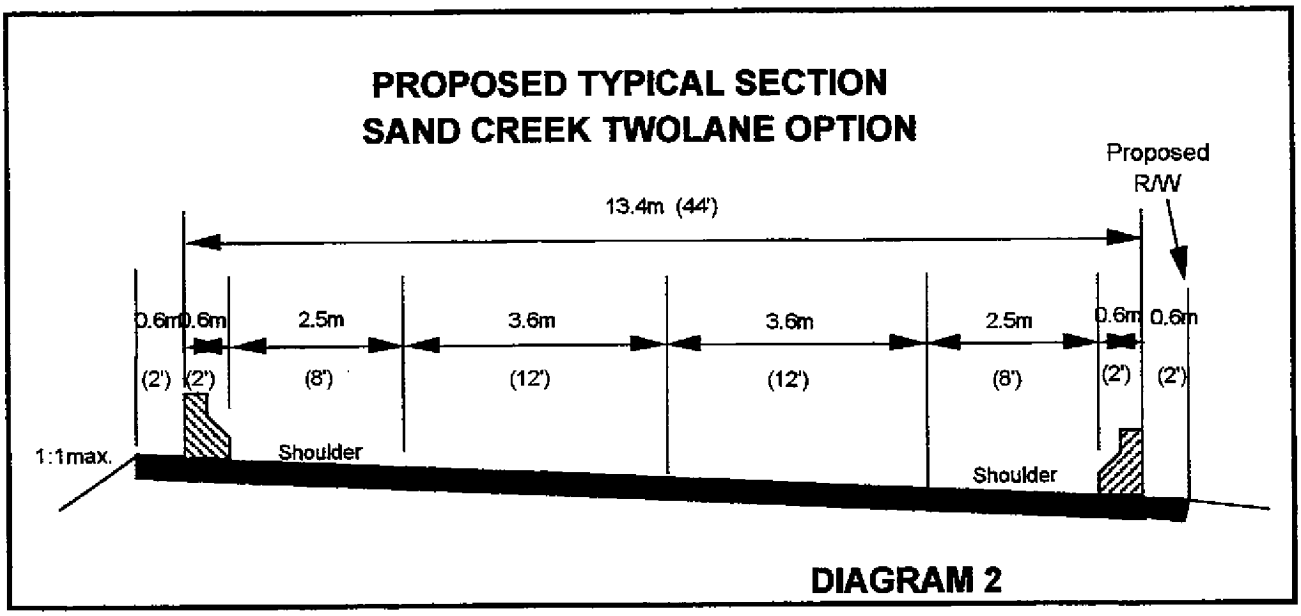
Sand Creek 'Two-Lane' Alternative

This alternative, depicted on Figure 2, involves about 10 kilometers (6 miles) of 4-lane highway on existing alignment, and about 3 kilometers (2 miles) of proposed new 2-lane alignment along the east side of Sand Creek. The project extends from m.p. 469.75, at Sagle, to m.p. 477.44 north of the Kootenai Cutoff road, in Ponderay. The project is divided into four segments which will be funded and constructed as separate phases. These are: Sagle to the Long Bridge, Long Bridge widening, new Sand Creek alignment, and SH200 to m.p. 477.44 north of the Kootenai Cutoff road.





Pavement widths along existing route segments would be as shown on Diagrams 5, 6 and 7. On the new section from the Long Bridge to SH200, a two-lane structure about 900 meters long will be constructed with a cross-section as depicted on Diagram 1. The remaining 2.4 kilometers (7700') of the new roadway would be a two-lane section as noted on Diagram 2.

ITDAA029427

Major features of this alignment include:

- shifting through traffic away from the central business district of Sandpoint
- widening of the Long Bridge over the Pend Oreille River to accommodate 4-lanes and a bicycle/pedestrian facility (Diagram 8, page 17)
- construction of two additional structures
  - a partial interchange/bridge structure over Sand Creek and Bridge Street
  - an elevated full-diamond interchange at the junction of US95/SH200 in Ponderay
- widening of US-95 between the Junction of SH-200 and m.p. 477.44 north of the Kootenai Cutoff road to four lanes
- widening of US-95 between Sagle and the Long Bridge to four lanes

Full access control will not allow at-grade access (driveways or cross streets) between the south end of the Long Bridge and the junction with SH200. This alternative would provide stable traffic flow (level-of-service 'B') south of the Pend Oreille River and north of the proposed new alignment, and stable traffic flow with acceptable delays (level-of-service 'D') through the proposed two-lane alignment for the design year 2022.

A major concern identified during the scoping process involved aesthetics. Many individuals, whether in favor of or opposed to this alternative, considered the structure unsightly and a potential detriment to the tourist trade. The Sand Creek two-lane structure concept will utilize a combination of steel and concrete to provide for longer spans and fewer piers along with design and landscaping features intended to improve aesthetic appeal as determined through public involvement.

Total cost for implementing the Sand Creek 'two-lane' alternative includes the following construction phases and right-of-way estimates:

° Sagle to Long Bridge	$ 2,154,000
° Long Bridge Widening	$17,770,000
° Sand Creek Alignment	$22,098,000
° Jct. SH200 -Kootenai Cutoff	$ 5,385,000
° Right-of-way	$ 5,461,000
TOTAL	$52,868,000

Initial user benefits of this alternative would be realized upon completion of the Sand Creek portion of the new alignment and interchange structures at an estimated cost of $24,098,000. The remainder of the construction phases would follow as appropriations became available.

ITDAA029428

Note: Approximately 35 hectares (86 acres) along Sand Creek adjacent to the Burlington Northern Railroad transportation corridor have been acquired by the ITD through advanced acquisition (1969) to preserve the Sand Creek alternative as a viable alternate for continuing consideration in the development of this project. The present worth of this property (1994) is roughly $430,000. This land acquisition will not bias or influence the alternative selection process because ITD has an approved procedure for the disposition of unneeded pieces of surplus property. In fact, if an alternative other than the 'Sand Creek' alternative is selected and if it is decided to dispose of these properties, the cost of the selected alternative would be reduced by the amount of the sales price the Department received.

Through Town 'Couplet' Alternative

Except for northbound traffic in downtown Sandpoint, the 'Couplet' alternative entails 18.8 kilometers (11.7 miles) of 4-lane highway on existing alignment. The proposed northbound alignment through the Sandpoint business district is depicted on Figure 3. Typical pavement width along Church Street and 4th Avenue (new northbound alignment), and along 5th Avenue (existing southbound alignment) would be about 17meters (56') as noted on Diagram 3. These 3-lane streets would also accommodate US2/SH200 traffic. Figure 3 shows the proposed Through Town 'Couplet' alternative. Signalization on the one-way system would be controlled and programmed using a micro computer supervisory system (closed loop system) to achieve a smooth flow of traffic.

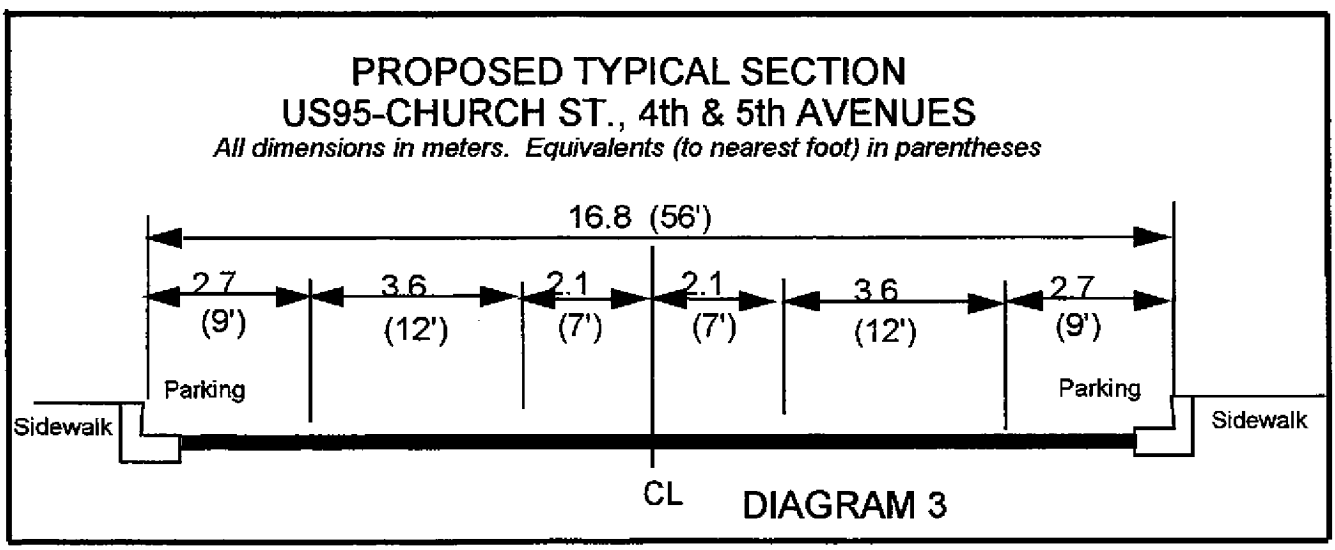


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Figure 3

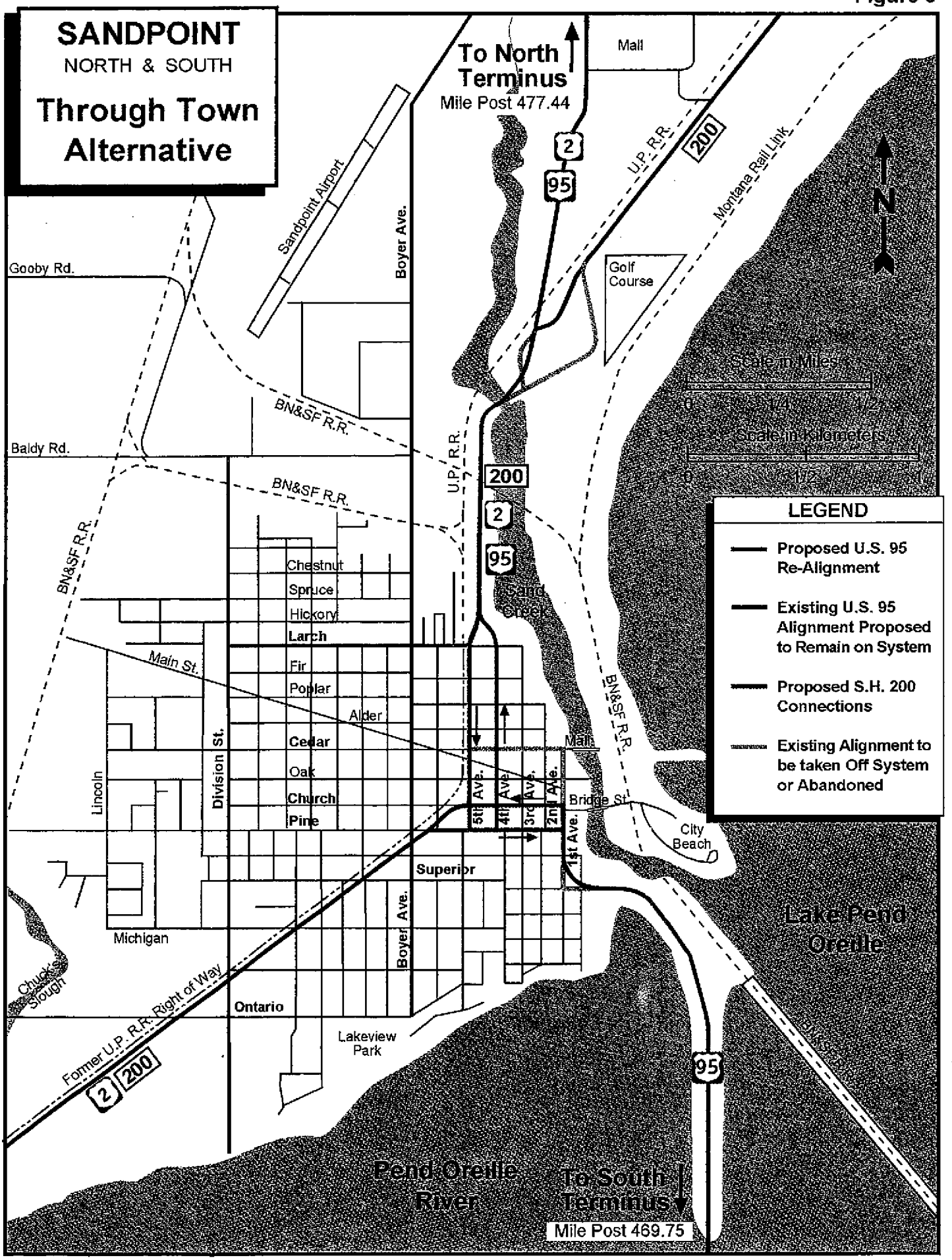

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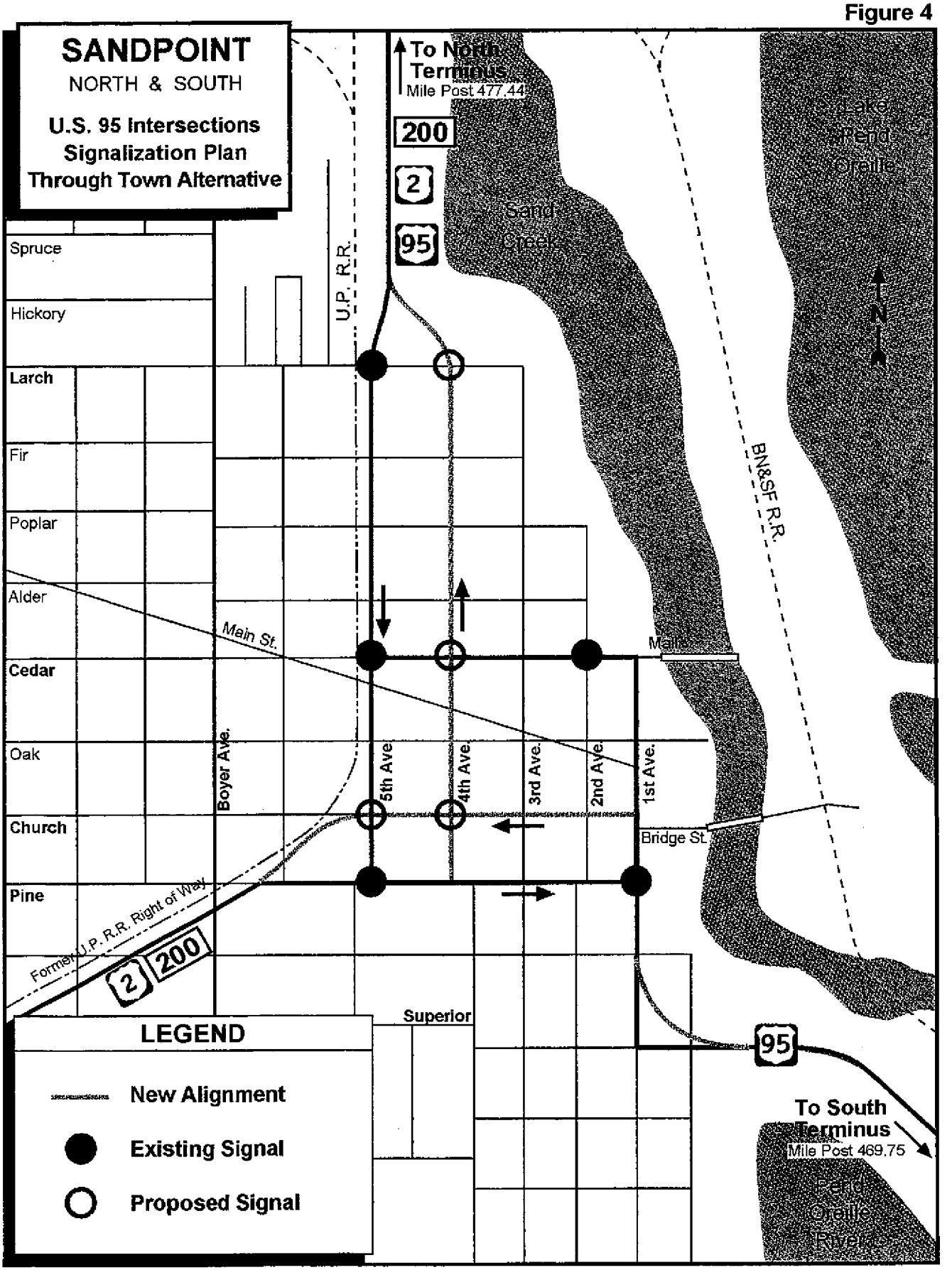
Figure 4



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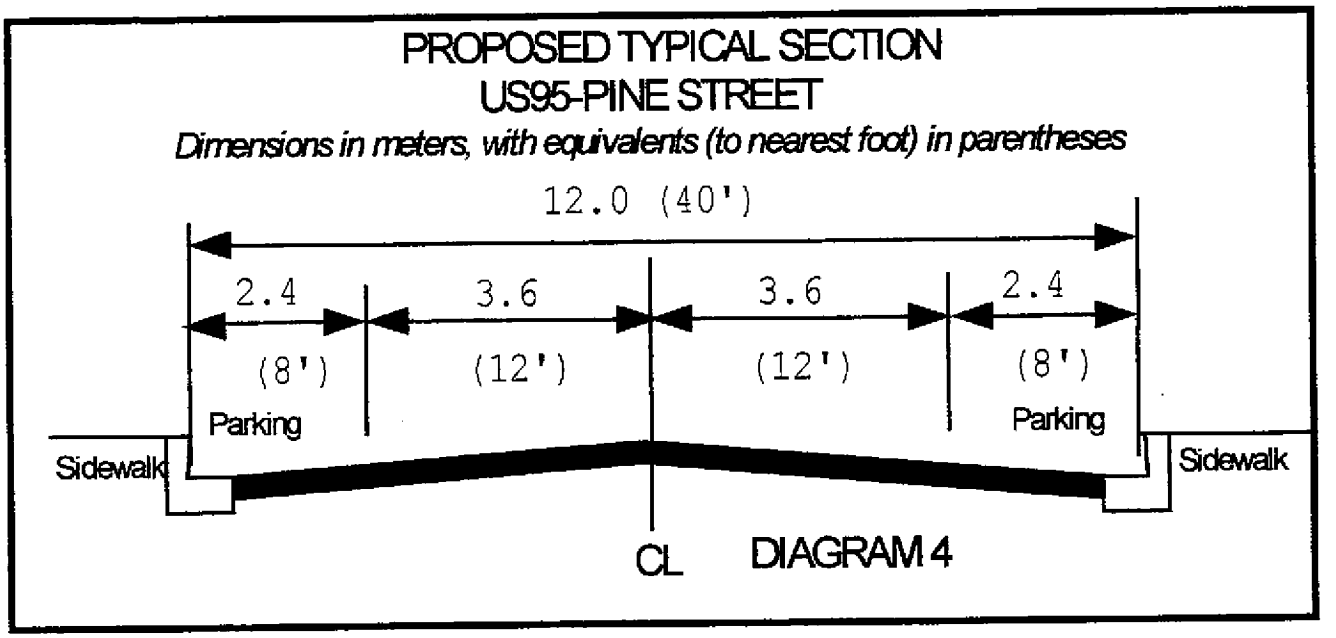
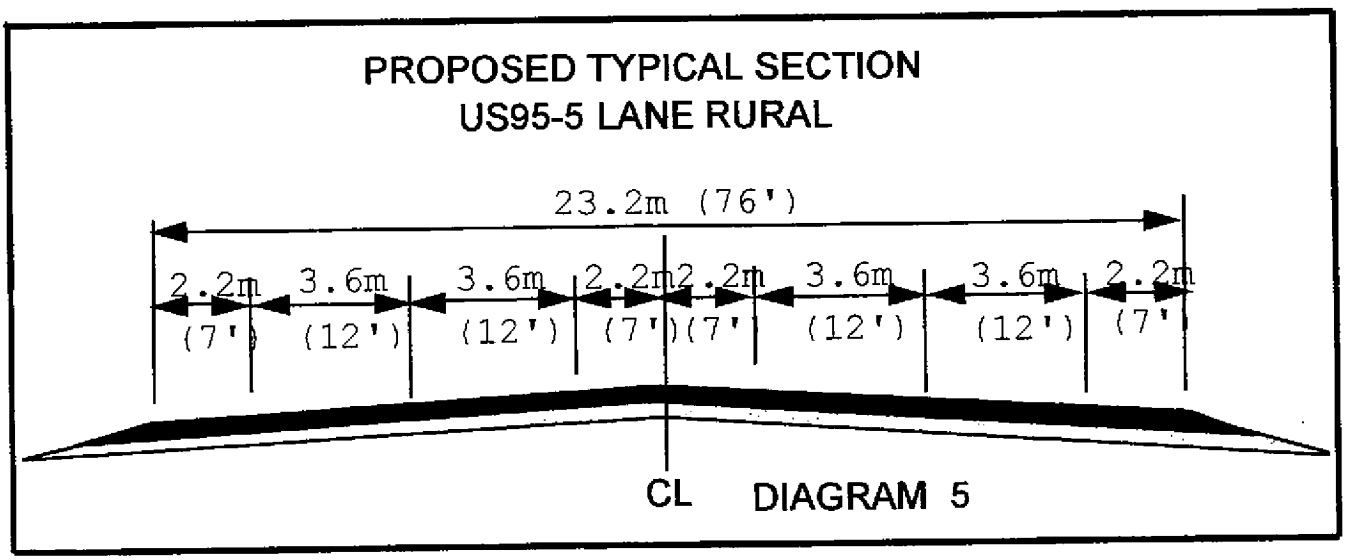
Typical pavement width along Pine Street, which is also included in the existing southbound alignment, would be 12 meters (40') as noted on Diagram 4.



North of Kootenai Cutoff a 5-lane section would be constructed with a subgrade width of 35 meters (116'). Pavement width would be as depicted on Diagram 5.



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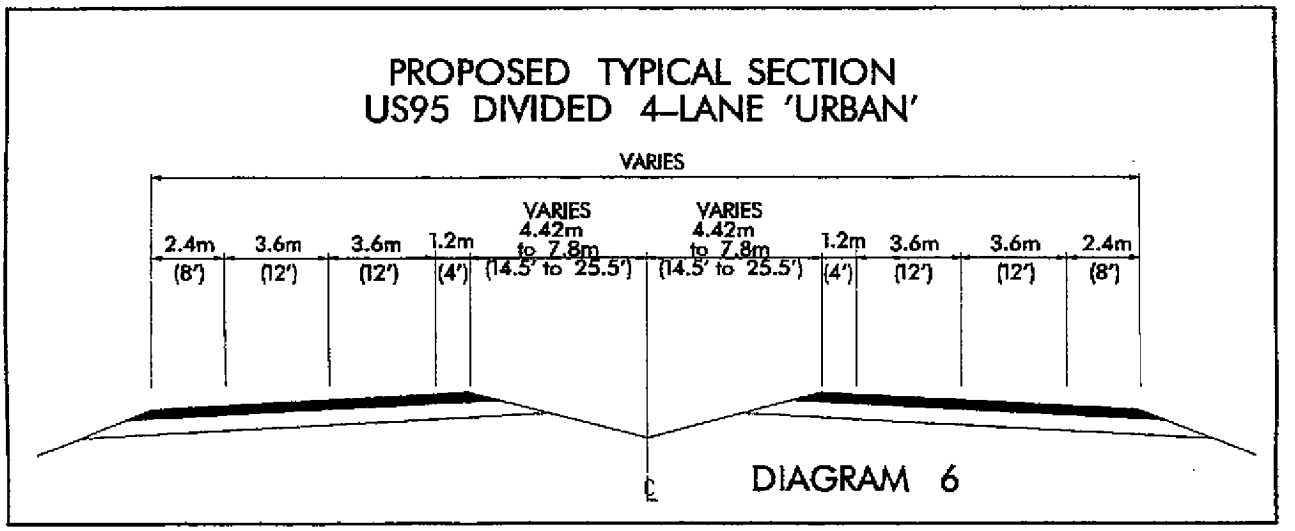
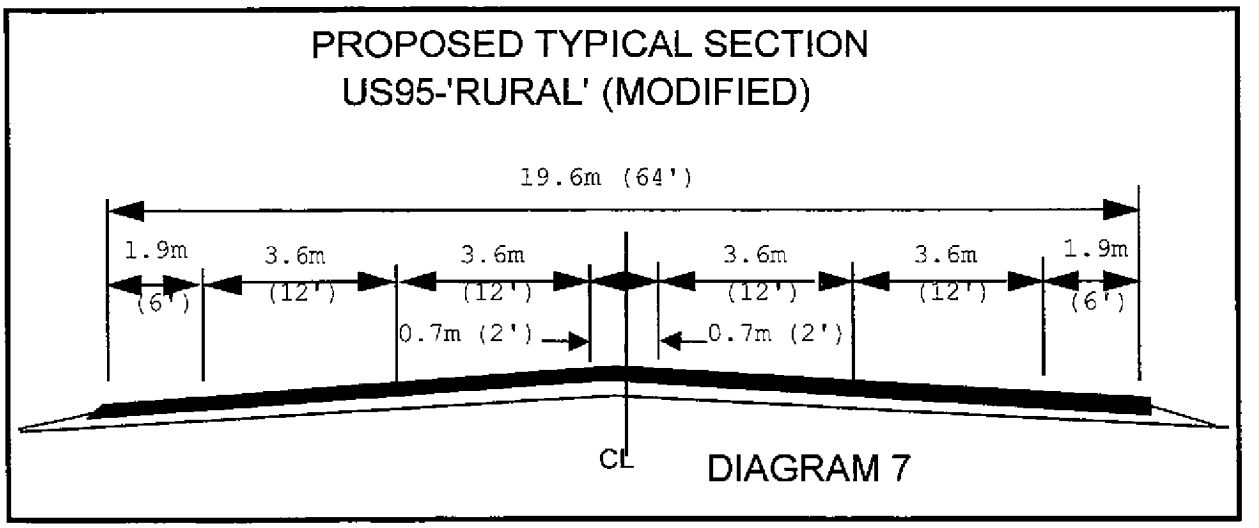
For other sections outside the downtown area of Sandpoint, typical pavement width would be 19.6 meters (64'). Diagram 6 shows the urban section proposed north of Jct. SH200 to the Kootenai Cutoff, while Diagram 7 depicts the rural (modified) cross-section proposed south of the Long Bridge. This section is proposed for planned future conversion to an 'urban section' as displayed on Diagram 6.





The existing 'old' Long Bridge currently used by bicyclists and pedestrians would be reconstructed for northbound traffic and also serve as a bicycle/pedestrian facility. Diagram 8 shows the proposed typical section for the Long Bridge.

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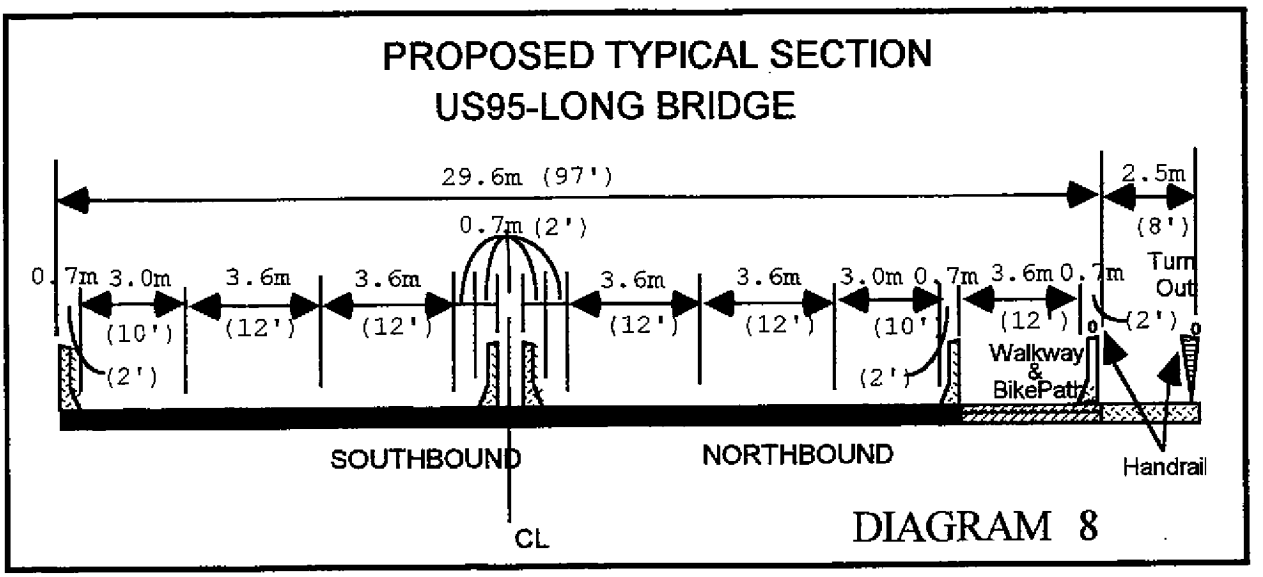

Major features of the Through Town 'Couplet' alternative include:

- Shifting northbound traffic away from the core area of the Sandpoint central business district (1st and Cedar Streets) to 4th and Church Streets.
- New signals at four intersections.
- Widening of the Long Bridge over the Pend Oreille River to accommodate 4-lanes and a bicycle/pedestrian facility.
- Intersection improvements to accommodate truck turning manuvers.
- Benefit to US-2/SH-200 traffic.
- Widening of US-95 between the junction of SH-200 and m.p. 477.44 north of the Kootenai Cutof road.
- Widening of US-95 from Sagle to the Long Bridge.

This alternative would provide stable traffic flow (level-of-service 'B') south of the Pend Oreille River and at level-of –service 'F' through town. It would provide stable traffic flow with acceptable delays (level-of-service 'C') north of Sandpoint.

A major concern with this alternative identified during the scoping process involved a belief by many individuals that it would be a temporary, stop-gap measure which would shift traffic patterns within the city and create other traffic problems. Initially this alternative would improve flow of traffic but if growth continues at the current rate it would be short lived (5 years).

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Total costs for implementing the Through Town 'Couplet' alternative would include the following:

° Sagle to Long Bridge	$ 2,154,000
° Long Bridge Widening	$17,770,000
° Couplet Alignment	$ 7,600,000
° Jct. SH200 -Kootenai Cutoff	$ 5,385,000
° Right-of-way	$12,431,000
TOTAL	$45,340,000

Initial user benefits of the Through Town 'Couplet' alternative would be realized upon completion of the 4th and Church Street modifications and implementation of the synchronized signalization plan at an estimated cost of $6,000,000. The remainder of the construction phase, including curve flattening in the vicinity of the County Courthouse would follow as funding became available.

'No Action' Alternative

The No Action alternative would maintain a 3-lane road on the one-way grid through Sandpoint and 2-lane road elsewhere on the existing route (Figure 5). It would provide for routine maintenance activities, such as repairing potholes, cracks, and seal-coating as well as some signal installation and intersection improvements. Pavement width varies, but is generally 11.6 meters (38 feet) on the 2-lane sections, as depicted in Diagram 9.

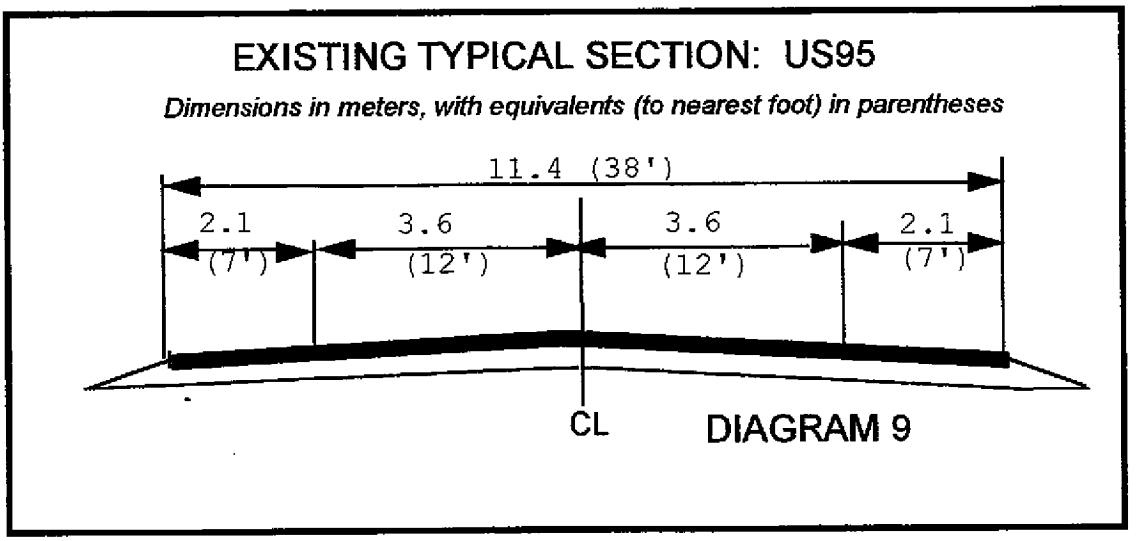

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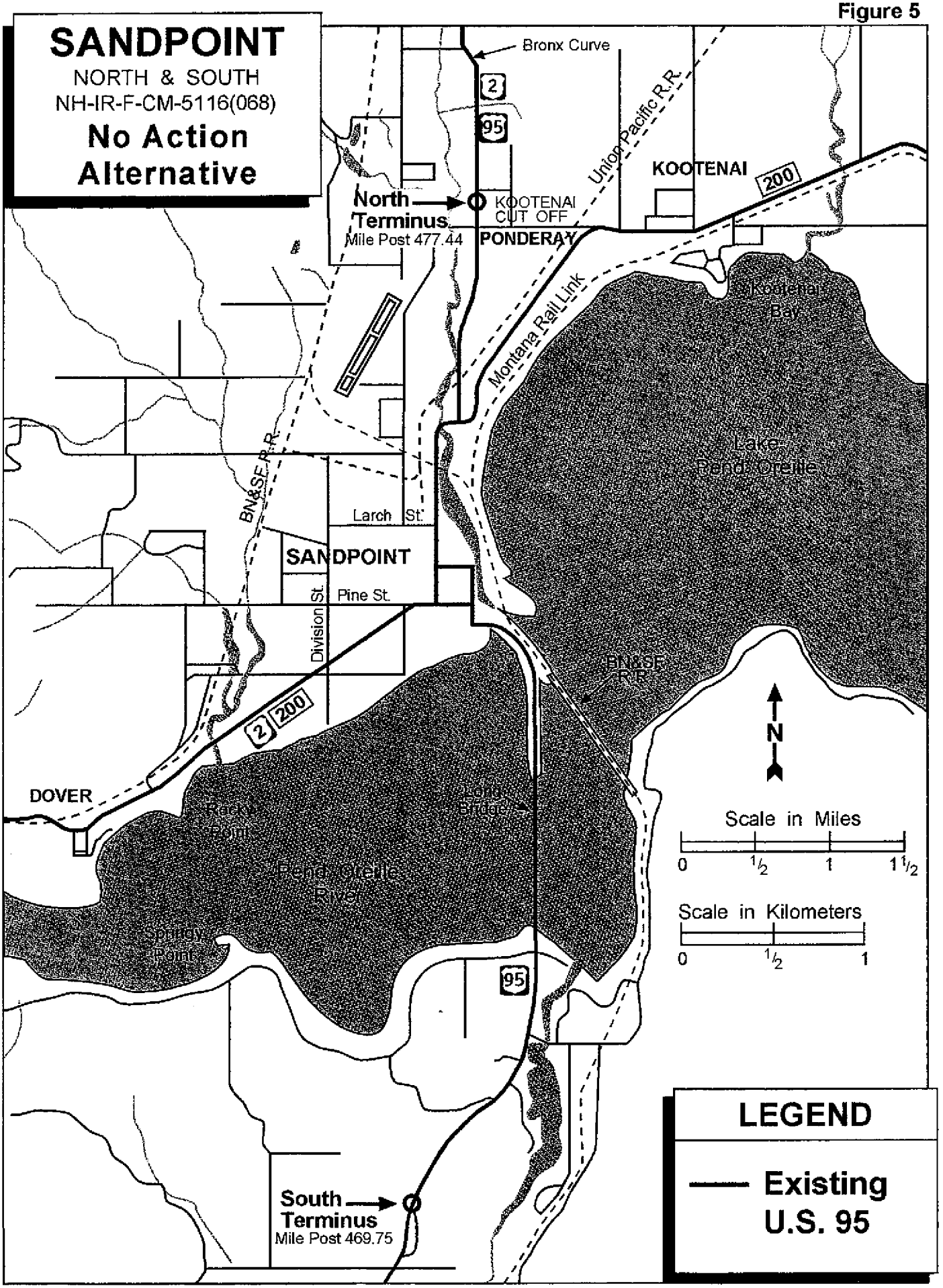
Figure 5



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This alternative would result in jammed traffic conditions (level-of-service 'F') along US95 in the study area during year 2014 design hour traffic volumes. Traffic congestion on US95 in downtown Sandpoint would approach gridlock by the design year, at design hour volumes, as traffic volumes are projected to double from current levels. The 'No Action' alternative would also lead to more off-highway intersections within Sandpoint operating beyond their capacity as motorists try to avoid traffic jams on US95 by looking for routes that are less congested.

The 'No Action' alternative would likely occur only by default. It does not meet the purpose of this project and is not considered a reasonable alternative because it perpetuates and exacerbates the problems the Idaho Transportation Department is trying to solve with this project.

ALTERNATIVE IMPACT COMPARISONS

Both build alternatives presented provide improvement of traffic flow initially. The Through Town Couplet alternative however would not maintain satisfactory level-of-service for very long if constructed. The Sand Creek alternative does provide for a longer period of satisfactory traffic flow for US-95 through non-stop traffic around Sandpoint and a reduction of congestion for local traffic. All traffic flow will experience delays as the year 2022 is approached. This is due to the continued growth of 4% per year that Sandpoint has been experiencing (Traffic circulation within Sandpoint will have to be addressed through separate or interim measures.). Comparative highway user benefits involving time, operating costs and accident reductions (between project implementation and the design year - i.e., 20 years) are noted on Table 2. Environmental impacts are compared on Table 1 in the Executive Summary, based on information noted in the 'Environmental Consequences' section of this Final EIS.

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TABLE 2
US95 ALTERNATIVES - BENEFIT AND COST COMPARISONS *
(Using the 'No Action' Alternative as a base)

	THROUGH TOWN (Couplet)	SAND CREEK (Two-lane)
COSTS:		
Construction	$40.8 million	$49.4 million
Maintenance	2.6 "	3.1 "
ACCIDENT BENEFITS:		
Injury	$60.5 million	$54.9 million
Fatal	3.8 "	.9 "
Property Damage	8.0 "	7.5 "
OPER. COST BENEFITS:		
Fuel	$53.9 million	$32.4 million
Engine Oil	2.6 "	1.5 "
Tires	10.7 "	6.8 "
Veh. Maintenance	52.7 "	32.2 "
Depreciation	51.5 "	29.5 "
TIME BENEFITS:		
Automobiles**	$195.8 million	$145.7 million
Trucks: Single Unit	146.8 "	99.4 "
Multi-Unit	57.4 "	48.6 "
BENEFIT/COST RATIO	10.9	6.3

* Calculated using the Federal Highway Administration 'Highway Investment Analysis Package' computer model
**Isolated benefit, not included with other benefits in calculating B/C ratio.

ALTERNATIVES CONSIDERED & REJECTED

Many other alternatives were examined in arriving at the those considered reasonable and feasible. Following are additional alternatives that were analyzed to various levels before being rejected as not feasible, not reasonable, or less suitable than a similar alternative because of greater environmental consequences (e.g., endangered species, wetland protocol).

'West' Alternative

This alternative was rejected because of excessive costs (not including the cost of mitigation for substantial environmental impacts). It would have required 20.6 kilometers (12.8 miles) of 4-lane highway on new location through heavily vegetated, hilly to mountainous terrain up to 6.4 kilometers (4 miles) west of the current route. The environmental impacts associated with the basic right-of-way (R/W) width of 60 meters (200') for this alternative are considerably more extensive than those identified for the 'build' alternatives in the Draft EIS, which primarily follow the current alignment within existing R/W. Diagram 10 depicts the typical route cross-section considered.

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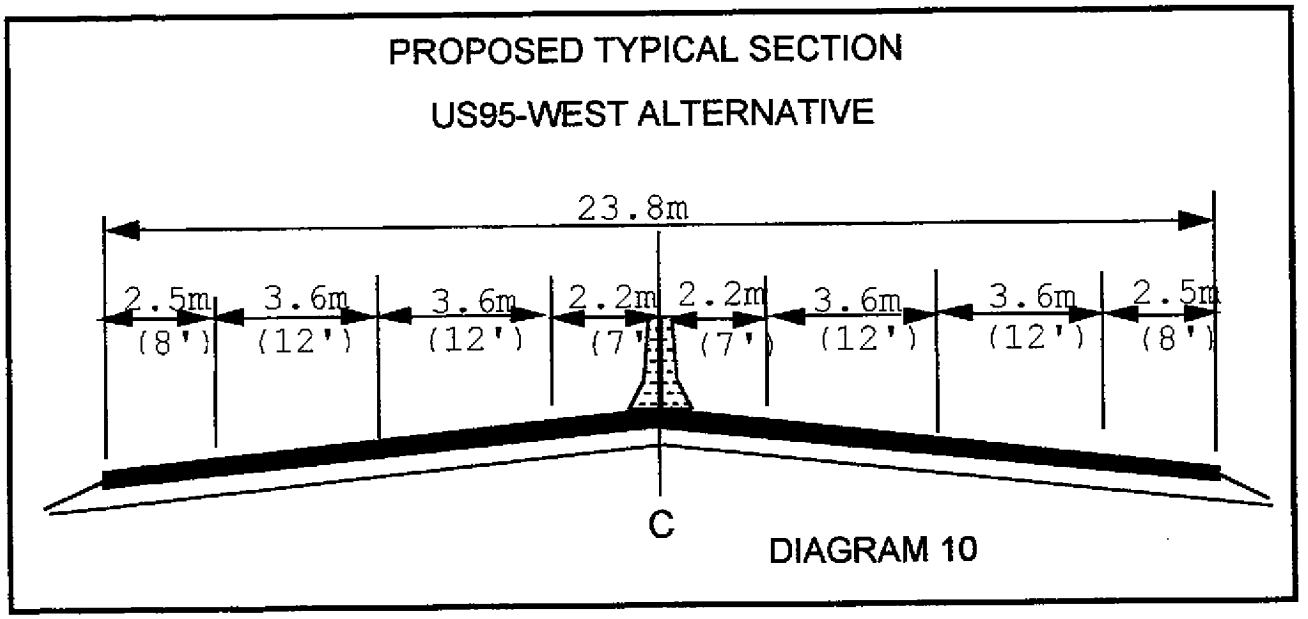

Major features of this alignment included:

- A new 0.8 kilometer (0.5 mile) bridge over the Pend Oreille River west of Dover, and
- Four additional structures;
  - An interchange over US2/SH200 west of Dover with a length of 54 meters (178'),
  - Two railroad overpasses with spans of 70 meters (230') and 88 meters (290'), and
  - A 60 meter (200') long bridge over Sand Creek near the north terminus.
- Partial access control, allowing for eight at-grade county road connections.
- Earthwork quantities calculated at 2 600 000 cubic meters (3,400,000 cu yds), which is 233 000 cubic meters (305,000 cu yds) over a balanced cut and fill alignment.

This alignment required a four-lane facility because of high truck traffic percentages and steep roadway grades of 4% to 5%. This alternative would provide for smooth traffic flow with acceptable delays (level-of-service 'C') south of the Pend Oreille River, and free-flowing traffic (level-of-service 'A') north of the river.

In addition to the features described above, this alternative would have required a new wider railroad overpass at Dover and the concurrent upgrading of US2/SH200 between the proposed Dover interchange and Sandpoint to handle the immediate increase of traffic (an additional 10,500 vehicles according to 1994 projections). To accommodate design year traffic projections at level-of-service 'C', US2/SH200 would require 6-lanes and full control access (no driveways or cross streets). However, it would not be feasible to block access at all intersections along this 7.2 kilometer (4.5 mile) stretch of roadway, especially within the communities of Sandpoint and Dover. Therefore, other designs were considered, including a 5-lane concept with signals placed at the Division, Boyer and 5th Avenue intersections. Access would then be closed at the remaining intersections along the railroad right-of-way between 6th Avenue and Dover. Pavement width would have been 19.2 meters (64') as noted

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previously on Diagram 7 depicting the typical urban cross-section. This route would then operate at level-of-service 'E' (at capacity--frequent backups on approaches) through the year 2014 at design hour traffic volumes.

Initial user benefits of the West alternative would not be realized until completion of all four construction phases, including the River Bridge. Thus, both initial costs (estimated at $66.5 million in the Draft EIS) and total costs were considered unreasonable, given current and foreseeable funding levels. Total cost for implementing the West alternative included the following construction phases and right-of-way estimates:

° Algoma to Pend Oreille River	$15,054,000
° River Bridge	$32,424,000
° River Bridge to Bronx Curve	$24,320,000
° Jct.SH200 - Bronx Curve	$ 5,790,000
° Dover to Sandpoint via US2	$ 4,053,000
° Right-of-way	$ 5,211,000
TOTAL	$86,852,000

Aside from the cost factor, this alternative would involve substantial clearing, grubbing, cut and fill operations directly impacting over 120 hectares (300 acres) of forest, meadow, farmland and wildlife habitat, including at least 7 hectares (18 acres) of wetlands. Other noteworthy impacts would involve the indirect and cumulative effects of locating a major highway on new alignment through relatively undeveloped areas. For example, south of the Pend Oreille River the alignment would create a major intersection/interchange at the south terminus. At this location is a high value wetland complex extending south to Algoma Lake. Although the West alignment would bridge across the wetland area on piers, the interchange area would become a prime location for development - with concurrent adverse impacts on prime wildlife habitat and the likelihood of water quality degradation. Moving north towards the river, the alignment would traverse through 8 kilometers (5 miles) of forested hills and meadows (see Photo 3, page 69), not only reducing wildlife habitat and creating a barrier affecting wildlife movements, but also providing access for new developments which would further impact the resource base. North of the river, there is a rapidly increasing number of rural residential inhabitants. In this area, 'relative' noise increases from traffic on the west alignment would be substantial; increasing 25 to 30 decibels in some cases. Other impacts would include:

- ° Right-of-way requirements for State of Idaho recreation lands [i.e., Section 4(f) land] waterward of elevation 625.3 meters (2,051.5') above mean sea level at the Pend Oreille River crossing,
- ° Farmland parcel splits ,
- ° Floodplain encroachment at the Pend Oreille River crossing, and at the crossing of Sand Creek near the north terminus.

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° Potential navigation impacts at the Pend Oreille River crossing, involving a Coast Guard Section 9 permit, and

° The likelihood of visual scars from cut and fill operations and noise abatement walls.

'Near West' Alternatives

Numerous other western alternatives were examined in an attempt to provide a straighter, shorter route between project termini, that would be more accessible to the local population and assist in 'getting the trucks out of town' as many Sandpoint residents have expressed in the 'scoping' process. Alignments examined included river crossings from Springy Point to Rocky Point on the east side of Dover, as well as crossings through the center of Dover and the 'West Alternative' crossing site, west of Dover. The east side crossings were rejected to avoid some of the best winter waterfowl and bald eagle feeding areas in all of northern Idaho. These crossings were adamantly opposed by Idaho Department of Fish and Game. The central crossing sites would also impact important winter waterfowl and bald eagle feeding areas, although the major feeding area lies to the east. Interchange requirements to connect the central crossing with US2/SH200 would virtually displace the Dover City core area. All of this provided sufficient reason to reject this crossing alternative.

North of the Pend Oreille River, alignments ranged between the Burlington Northern branch line which currently parallels the west boundary of Sandpoint and the hilly area to the west. Those western alignments located closer to Sandpoint all involved environmental impacts which could be avoided or minimized by the West alternative noted above which traversed the more hilly terrain west of Dover. Avoiding wetlands and otherwise minimizing adverse impacts to them, for example, is a major environmental consideration when constructing roads. Also, all west alternative routes examined north of the river would substantially increase existing noise levels for nearby residences and have the potential of displacing numerous households and splitting properties.

South of the Pend Oreille River, alignments in proximity to bald eagle nesting areas or which traversed north-facing slopes (the shade and lower temperatures associated with these slopes contributes to the formation of ice and prolongation of wet, slick, roads) were rejected. Protecting 'threatened and endangered' species, such as bald eagles, is also a very important environmental consideration when locating and constructing roads. Also, wetland impacts were avoided to the extent possible. Cost estimates for the various 'Near West' alternatives were comparable to the 'West' alternative identified above. In the final analysis excessive cost and greater environmental impacts contributed to the deletion of the west alignments from further consideration.

'Abandoned Railroad' Alternative

This alternative was a favorite of many individuals at the scoping meeting held on 18 December 1991. This option involved a modification to the West Alternative, in which the north alignment between the

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Dover interchange and the Bronx Curves is eliminated or postponed and US95 traffic is routed on US2/SH200 through Sandpoint using the 'abandoned' Union Pacific Railroad right-of-way for highway construction purposes. Individuals favoring this alternative generally preferred a depressed section* through town with at-grade local street overpasses.

Achieving acceptable traffic flow would require a 4-lane alignment for combined US95/US2/SH200 traffic. In addition, 2-lane at-grade frontage roads located on each side of the depressed alignment between interchanges at Ontario Street and Cedar Street would have been required to accommodate through-stop, external/local and internal traffic. At best, these frontage roads would only operate at level-of-service 'D' during design hour volumes. Right-of-way width would require up to 150 meters (500') at interchange locations and result in the displacement of many businesses and residences adjacent to the railroad. This alternative would effectively divide the community between east and west.

The depressed section would be 4.6 meters (15'), or more, below the top of the water table and require constant pumping and the development of holding facilities. It would also act as a collection site for storm water discharges requiring detention structures and sedimentation control measures. Also, the constant draining of water would likely create settlement problems affecting adjacent and nearby building foundations and underground utilities. High continuing maintenance costs with no benefits over less costly alternatives, plus the poor level-of-service on frontage roads and large number of business displacements, reinforced the decision to reject this alternative.

An option to this alternative would be to provide an at-grade roadway along the railroad instead of a depressed roadway. At-grade intersections on this option require 8-phase signalization, however, and level-of-service calculations cannot be improved above LOS 'F', regardless of lanes added. Therefore this option has also been rejected.

'Through town' Alternatives

Numerous 'through town' alternatives have been examined in an attempt to provide a means to reduce congestion and improve the level-of-service in Sandpoint. The initial schemes involved upgrading the existing 'rotary' or concentrating directional travel on one street and adding capacity in the form of additional lanes. For example, upgrading 5th and Pine streets to a two-way facility and adding lanes produces a level-of-service 'F', or no improvement over existing conditions. This result was reproduced on all schemes examined, including the more popular scenario of extending 5th Street to Superior and upgrading the alignment to accommodate two-way traffic. Even with the highest diversion alternative in place (Sand Creek 'Four-Lane' option), the congestion problem in downtown Sandpoint was calculated to worsen (and conditions are already at level-of-service 'F') because only

* a roadway constructed below natural or existing ground level.

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25% of the total traffic would be expected to divert, whereas the total traffic increases were projected to double.

An additional 'through town' alternative was then examined involving an elevated 4-lane concept between 1st and Superior Streets aligning with 5th street, swinging across Sand Creek north of Larch, continuing back to grade under the Burlington Northern Railroad trestle designed for an underpass and connecting back to the existing roadway at the junction of SH200 in Ponderay. This alternative would operate at level-of-service 'C', but it displaced over 60 residences and nearly every business along 5th Street. In addition, it formed a barrier through town involving high costs and construction impacts. This alternative was rejected when analysis identified that a 'couplet' concept could be implemented with relatively minimal impacts and costs while achieving satisfactory results. The Through town 'couplet' advanced for consideration as a build alternative has the least environmental impact and is the least expensive of any examined.

'Sand Creek' Alternative (Four-Lane Option)

This four-lane option, rejected because of excessive cost, has been the most popular and controversial alternative presented during the 'scoping' process. This alternative is similar to the Preferred Alternative, except it has two additional lanes on the new alignment between the Long Bridge and the junction of SH200 in Ponderay, and includes a full-diamond interchange at the southern entrance to Sandpoint. A full-diamond at each end of the new alignment would allow substantial amounts of 'internal' and 'external/local' traffic to use the alternate route into and out of Sandpoint. However, the primary purpose of this project, which is to provide a 'non-stop' facility for through trucks and other 'non-stop' vehicles, can be accommodated satisfactorily at a much more reasonable cost on a two-lane facility. In addition, the avoidance of the railroad depot and the railroad's plans to expand their facility by adding an additional track along Sand Creek, add to the viability of the two lane facility.

Total cost for implementing the Sand Creek alternative (four-lane option) includes the following construction phases and right-of-way estimates:

° Algoma to Long Bridge	$ 2,316,000
° Long Bridge Widening	$19,107,000
° Sand Creek Alignment	$48,636,000
° Jct.SH200 - Bronx Curve	$ 5,790,000
° Right-of-way	$ 5,461,000
TOTAL	$81,310,000

Initial user benefits of the Sand Creek alternative (four-lane option) would be realized upon completion of the new alignment and interchange structures at an estimated cost of $50,373,000. Thus, given current and foreseeable funding sources, initial costs were not considered feasible regarding this alternative.

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AFFECTED ENVIRONMENT

SETTING

In the late 1800's logging began throughout the Bonner County area and continues to be very important to the economy of this region. Millions of board feet of lumber are cut annually from ponderosa, lodgepole, and white pine, grand fir, Douglas-fir, larch, red cedar, hemlock and spruce trees. Several forest products plants are sited at Sandpoint, and others are located throughout the area. Boards, poles, posts, shingles and shakes are among the main products of the forest industry, while small logs and chips are used in the pulp industry. Some local timber is also used for veneer.

As large tracts of land were cleared of timber, homesteaders began to establish farms. Farming, along with associated stores and small businesses, became an important industry in the area. However, because of cool temperatures and a short growing season, yields of the major crops which include hay, wheat, oats and barley continue to be low to moderate compared to nearby counties. The average size of farms is about 120 hectares (300 acres), of which about 30 hectares (75 acres) is cropland and the rest is woodland or pastureland. Currently, many of the farms are part-time enterprises supplemented by off-farm employment or by income from the timber industry.

The study area has abundant water resources. Pend Oreille Lake, the largest natural lake in Idaho, dominates the landscape and attracts thousands of tourists who come to enjoy the fishing, boating and beach activities. Wetlands are scattered throughout the area. Overall, water quality in the area is considered to be excellent. Exceptions involve groundwater pollution from wood preserving chemicals in the vicinity of pole yards, and petroleum products leaking from underground storage tanks in the vicinity of service stations.

Numerous plant and wildlife species are located in the mountains, forests and wetlands in the study area. Also, several 'threatened and endangered' (T&E) species inhabit the region. For example, woodland caribou and grizzly bears are known to exist in the Selkirk Mountains, gray wolves may inhabit the Bitterroot Mountains to the east of Lake Pend Oreille, while in the study area itself, gray wolf, bald eagle, bull trout, and ute ladies'-tresses are the species of primary concern. The westslope cutthroat trout is a recent candidate for listing as a T&E species and is found in this area as well.

Sandpoint, the county seat and principal city of Bonner County, is situated on a delta at the northern end of Pend Oreille Lake at the foot of the Selkirk Mountains. Schweitzer Mountain Resort and ski area, located 17.7 kilometers (11 road miles) to the northwest of Sandpoint, has a elevation of 1950 meters (6,400'). The city is located at an elevation of about 640 meters (2100') and following the 1990 census qualified as a small urban area. Sandpoint has a general aviation airport and has the only rail passenger depot in northern Idaho, which is operated by Amtrak. In addition, the area is served by three freight lines, Burlington Northern, Union Pacific and the Montana Rail Link. Roughly 60

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freight trains traverse Sandpoint on a daily basis. Other communities in the study area are Dover, Ponderay, and Kootenai. Traditionally, population of these communities has fluctuated with the degree of activity in the timber industry. However, diversified outdoor recreational opportunities available because of the high quality natural resources and pleasing aesthetics have stimulated both the tourist industry and the real estate industry in the study area. Second-home owners and retirees moving into the area have helped to stabilize the economy and offset population ebbs.

POPULATION AND DEMOGRAPHICS

Bonner County's population increased from 15,560 in 1970 to 24,163 in 1980. There were 26,622 persons as of the 1990 census, evenly split between male and female. Roughly 2 out of every 3 people involved in the population increase over the past 10 years have moved into unincorporated areas. County population density has increased from 5.4 persons per square kilometer in 1980 to 5.9 persons per square kilometer in 1990. Approximately 45% of the County population resides in the study area (11,980). It should be noted that the ten years from 1980 to 1990 the population has increased approximately 10% while in the previous ten years the population increased 36%. This indicates that there was slower population growth in the 80's and no significant changes in demographics of the area.

Figure 6 displays population and housing distribution characteristics within the study area based on 1980 census data. 1990 data is not available in a format suitable for extracting this information as displayed. This figure indicates that within the study area, population is generally distributed as follows:

- 20% - South of the Pend Oreille River
- 5% - Vicinity of Dover & the Pine Street Loop
- 40% - City of Sandpoint
- 20% - Vicinity of Ponderay & Kootenai
- 15% - North and West of Sandpoint

Census data indicate that ethnic minorities, primarily Indians and Hispanics, comprise a small but increasing percentage of the study area population. For example, Figure 6 shows that in 1980 Sandpoint had 74 minority persons residing in the community or 1.7% of the population. By 1990 this figure had increased to 158 minority persons or 3.0% of the population. Minority households in Sandpoint are broken down as follows:

Black	3
Indian	20
Asian	2
Hispanic	21

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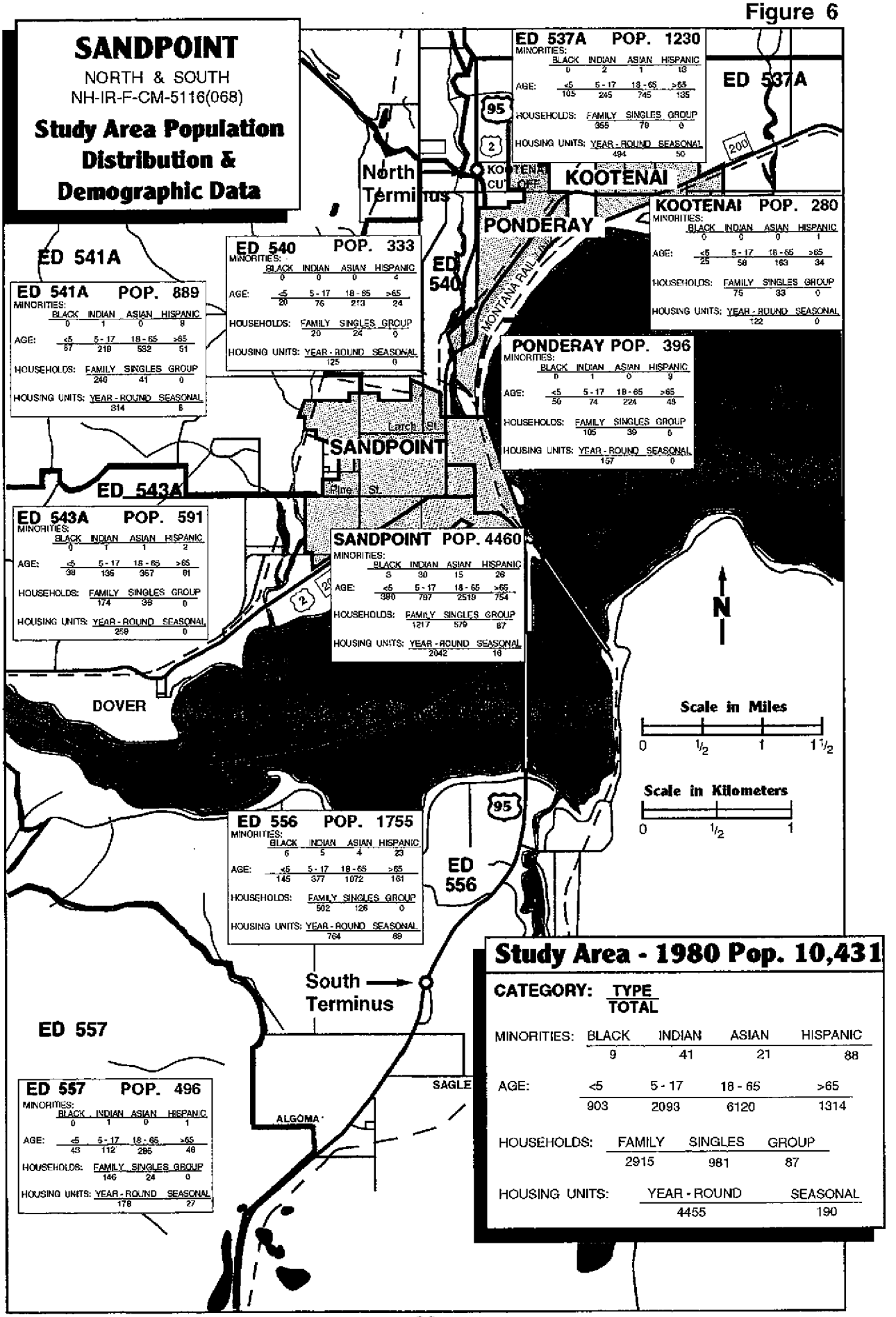
Figure 6



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These 46 households comprise 2.1% of a total 2162 households located in the City of Sandpoint as of the 1990 census. Families make up 62% of the total households in the community and singles the remaining 38%. There are also 170 persons residing in group quarters, many of whom are institutionalized in the county jail/courthouse (Note: This facility, projected to be displaced by the 'Through Town' alternative, is considered outmoded and a bond issue to replace it is currently being debated). Elderly comprise approximately 13% of the study area population. Roughly 60% of these individuals reside in scattered locations throughout Sandpoint. Handicapped individuals concentrate at a special needs work center located in Sandpoint off North Boyer Avenue. Table 3 identifies land area and density of communities in the study area.

TABLE 3

1990 Community Population & Area Data

Community	Land Area (Sq.Kilometer)	Population 1990	# Persons per Sq. Km
Dover	3.4	294	86.5
Kootenai	.8	327	408.8
Ponderay	4.1	425	103.7
Sandpoint	10.1	5203	515.1

In addition to year round residents, thousands of tourists and part-time residents are accommodated by the numerous motels, condominiums, lodges, seasonal homes, trailer and RV parks located in the region and study area. For example, as of the 1990 census there were 15,152 housing units located in Bonner County; 3765 units or 25% of the total were classified vacant for seasonal, recreational or occassional use. Total vacant units equaled 4883 units or approximately 33% of the housing units in the county.

Diagram 11 depicts the growth in both the population and traffic of Sandpoint between 1980 and 1990. This diagram indicates that in addition to traffic increases from normal population growth, the area is experiencing increased regional traffic impacts as a destination resort. Traffic involves a high percentage of recreational and commercial vehicles, and includes logging trucks involved in the regionally important forest products industry. The result is significant traffic congestion in the downtown core, especially when large trucks mix with tourists, shoppers and other pedestrian and bicycle traffic traveling between restaurants, lodges, parked cars, residential areas, shops and the beach.

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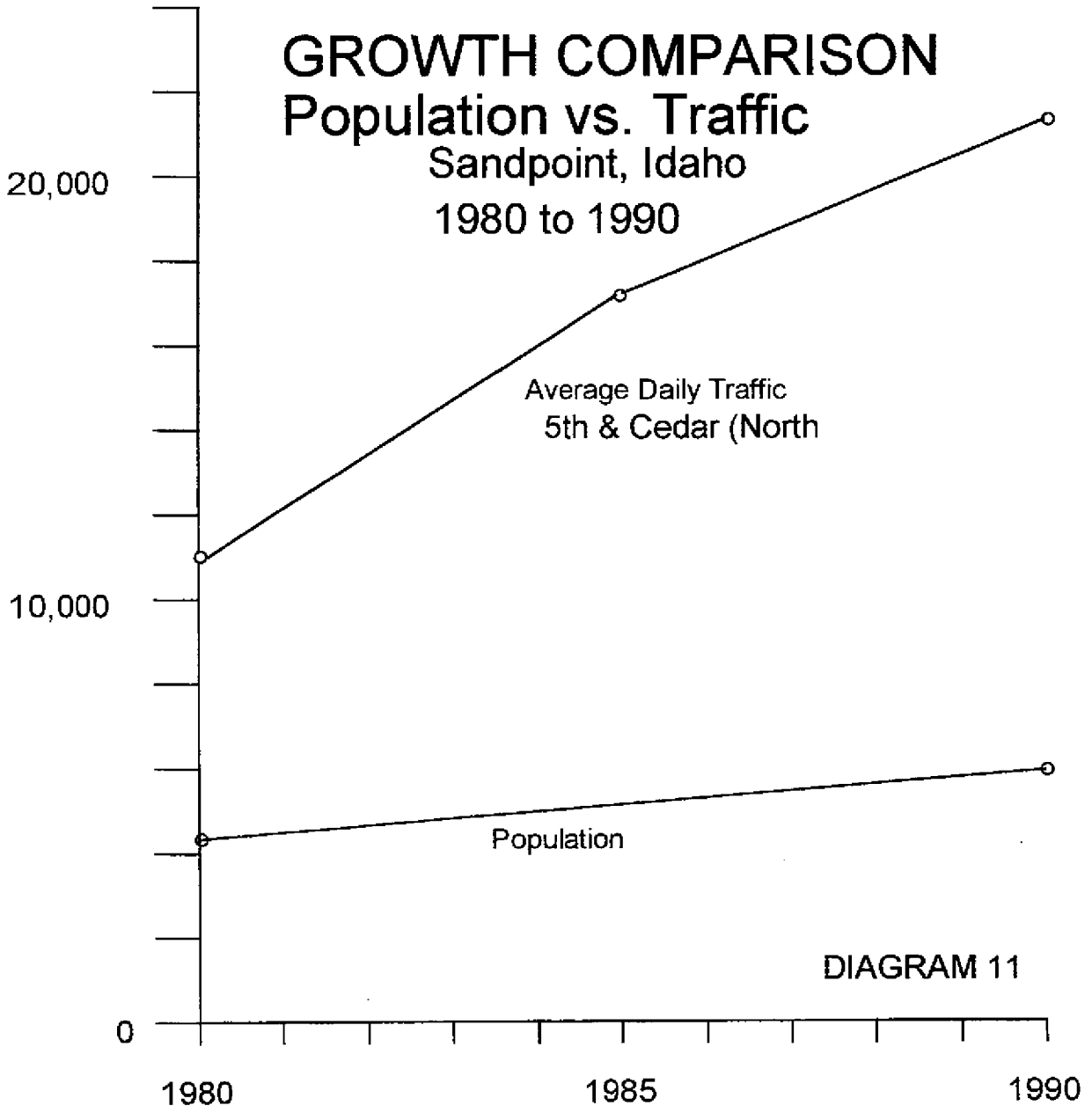

LAND USE

The study area depicted on Figure 7 encompasses about 186 square kilometers (72 sq. miles) within Bonner County, Idaho. The area depicted is bisected by over 28 square kilometers (11 sq. miles) of surface waters from the Lake Pend Oreille/river complex, and includes over 18 square kilometers (7 sq. miles) of incorporated territory as noted in Table 3. The remaining unincorporated lands, including 18 square kilometers (7 sq. miles) of public lands administered by the state and federal governments, is divided into county zoning classifications as shown on Figure 7. The alternatives described in this Final EIS almost exclusively traverse the 'Suburban' zoning classification, although about 0.1 hectare (0.3 acre) of commercial zoning fronts on the existing US95 alignment south of the lake. The County directs all industrial developments to incorporated communities which have the infrastructure to service them.

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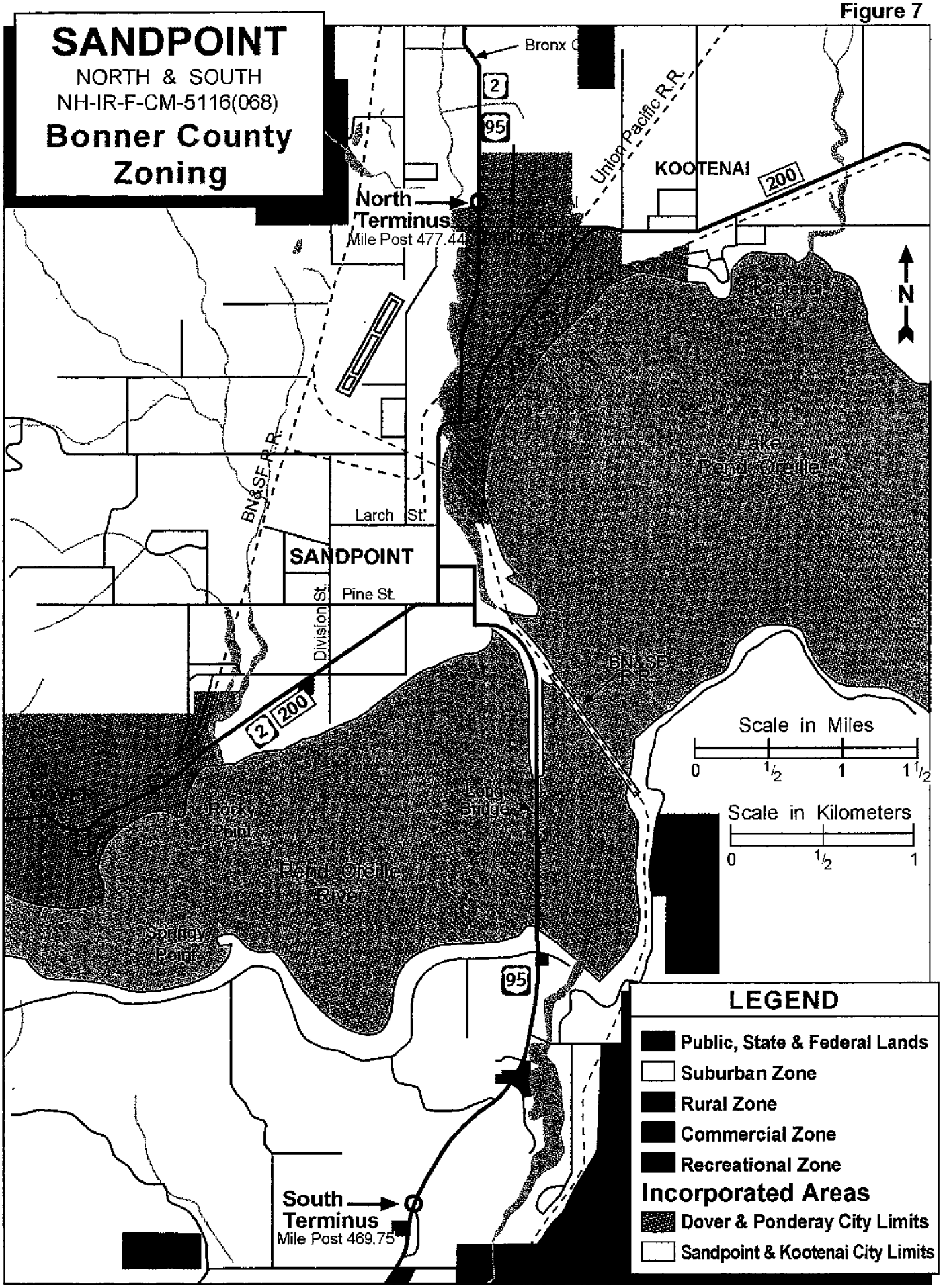
Figure 7



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The Bonner County Comprehensive Plan states that "urban or dense development should take place around existing settlements where the required level of service is better provided for"; and further notes that "development of any area closely follows the major transportation routes". The 'Transportation Goal' of the Plan is to provide a transportation system that is safe, uncongested and well maintained. Objectives include:

- Consideration of safety hazards and congestion in the location and design of future (road) development.

The county plan also notes a demand for subdivided lots which is forcing farmland to be divided up for residential use. This is causing a decline in both the number of farms and the total acreage being farmed. Bonner County natural resource objectives include:

- Consider wetlands and aquifer recharge areas in the location and density of future development.
- Attempt to protect agricultural land.
- Regulate the location and density of new development in floodplains.
- Maintain or enhance present water quality.
- Maintain or enhance our fish and wildlife resource.
- Attempt to protect special archeological and historical sites.

The Sandpoint 'City Land Use Map' showing the location of residential, commercial, recreational, industrial and other land uses is depicted on Figure 8. These uses closely correspond to the Sandpoint zoning classifications displayed on Figure 9, which also includes the community of Ponderay zoning. Land use policies in the Sandpoint Comprehensive Plan state that planning and development for existing vacant land within the city should be given priority over outlying areas, and that public facilities such as street systems should be protected by encouraging growth within a recognized service area (where water and sewer lines, police and fire protection facilities are available). Transportation policies include:

- Maintain and improve transportation systems when necessary.
- Provide adequate circulation patterns.
- Increase parking facilities.

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Figure 8

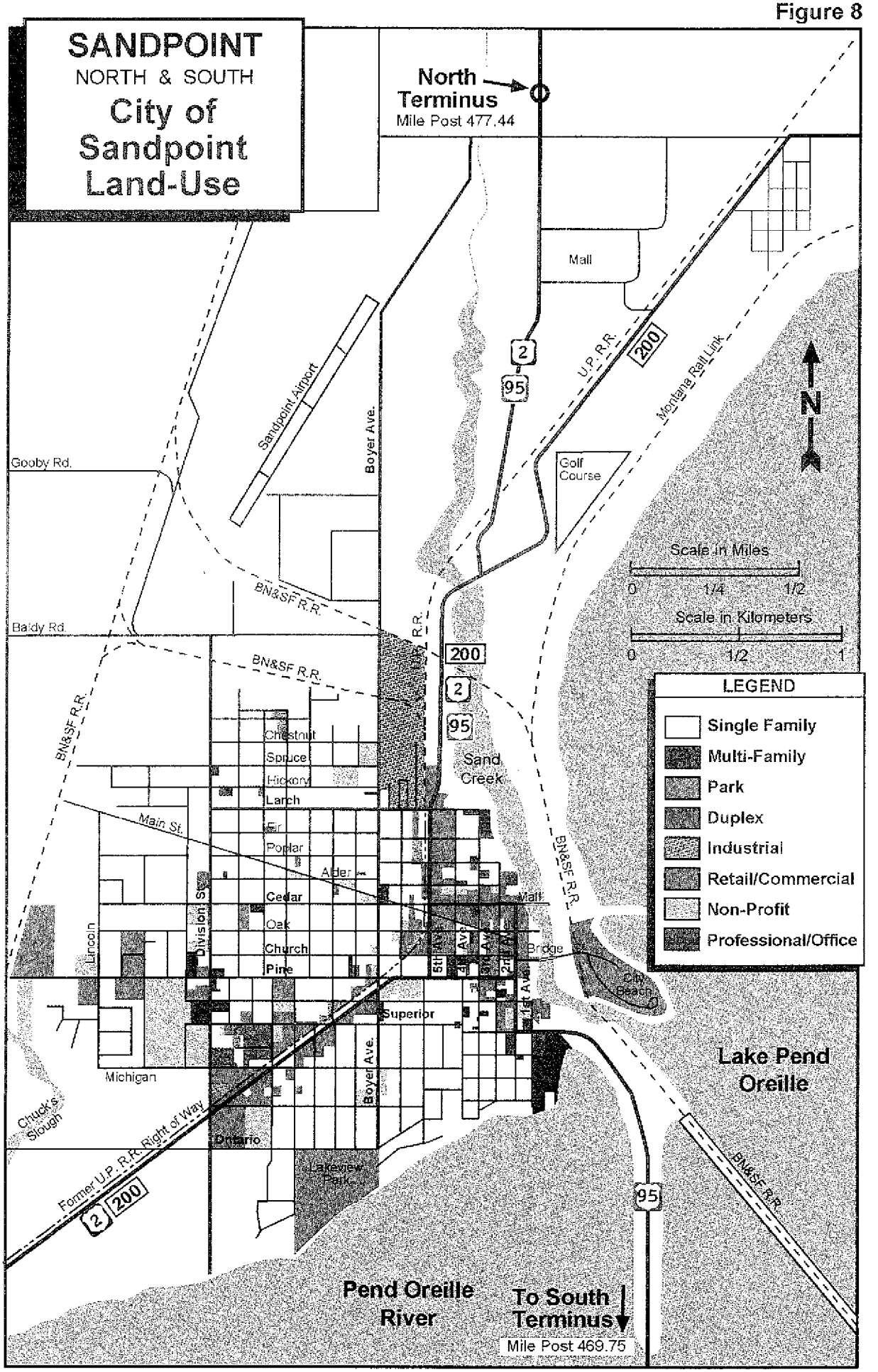

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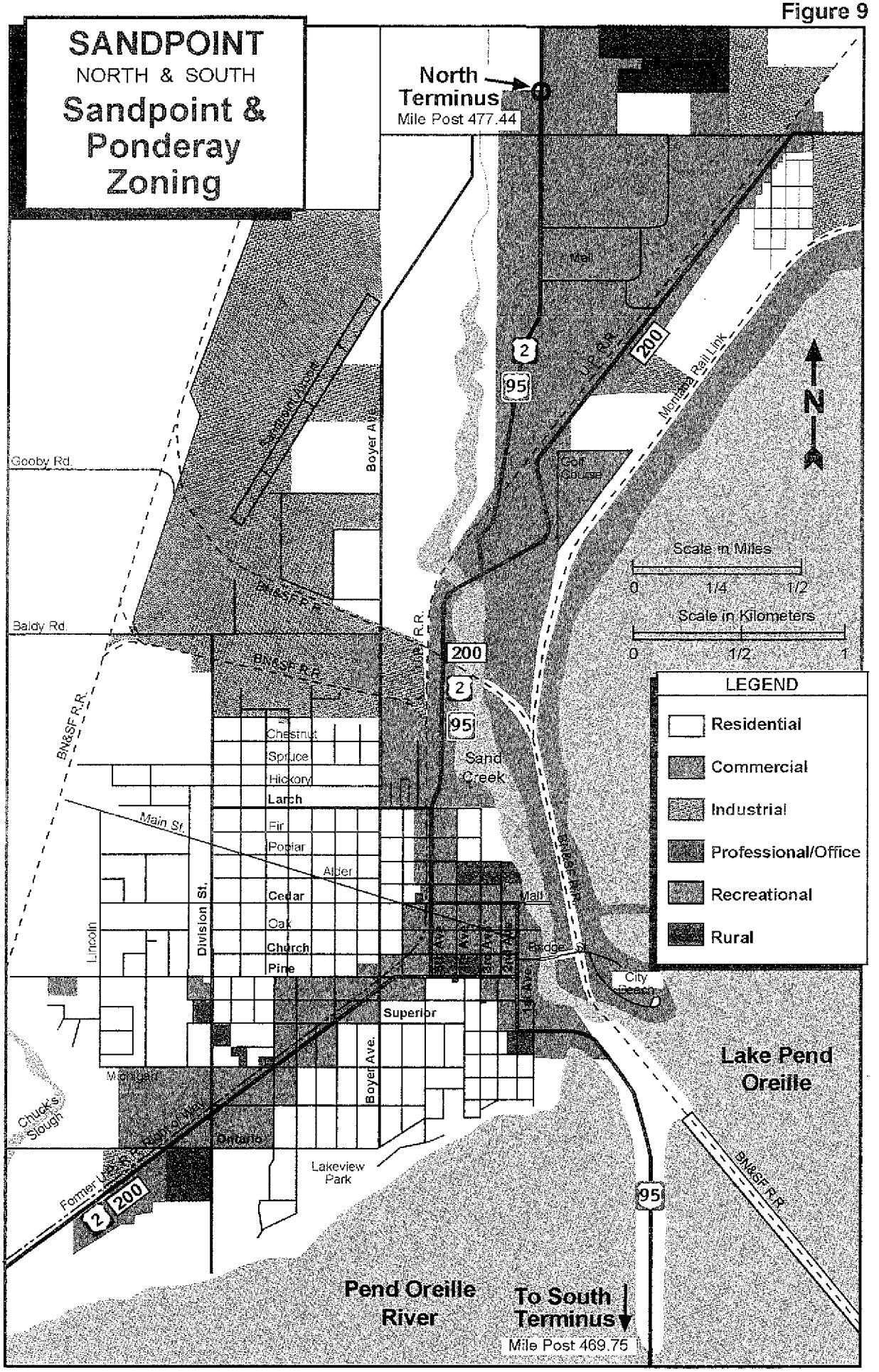
Figure 9



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ECONOMICS

The Sandpoint economy provided 5,295 full and part time wage and salary jobs in 1987, and accounted for $154,100,000 in income. Table 4 displays direct levels of employment and income for twenty-three sectors of the greater Sandpoint economy. Retail trade is the largest employer, accounting for nearly 20% of all Sandpoint jobs in 1987, while Government (federal, state and local) is the largest source of income, accounting for nearly 15%.

TABLE 4

SANDPOINT, IDAHO

1989 DIRECT LEVELS of EMPLOYMENT and INCOME

INDUSTRY	EMPLOYMENT		INCOME	
	Number	Percent	Millions $	Percent
Retail Trade	1058	19.99	22.16	14.38
Federal, State & Local Govt	1051	19.84	23.59	15.31
Logging & Wood Prods.Mfg.	593	11.20	22.72	14.75
Hosp. & Health Services	411	7.76	12.37	8.03
Eating & Drinking	309	5.84	4.38	2.84
Misc. Manufacturing	263	4.96	10.17	6.60
Construction	195	3.68	7.08	4.59
Banking, Fin., Insur. & Real Est.	182	3.44	9.08	5.89
Printing & News	155	2.92	5.45	3.53
Apparel Manufacturing	146	2.76	2.91	1.89
Hotels & Motels	127	2.40	1.78	1.15
Communications	124	2.33	6.25	4.06
Utilities	96	1.82	6.44	4.18
Food Manufacturing	96	1.81	3.51	2.28
Business & Legal Services	93	1.75	3.93	2.55
Consumer Services	86	1.63	2.35	1.53
Transportation	86	1.62	3.84	2.49
Wholesale Trade	72	1.35	2.82	1.83
Social Services	58	1.10	.95	.62
Business & Social Orgs.	29	.56	.62	.40
Amusements	24	.46	.51	.33
Concrete Products	22	.42	.82	.53
Private Schools	19	.35	.35	.23
TOTAL	5295	100.00	$154.10	100.00

Although the above table is informative, it provides an incomplete picture of the Sandpoint economy. An industry's importance depends not only on its level of employment and income, but on the amount of outside income that it brings into the region, and how firms and employees spend this outside income in the regional economy. Table 5 accounts for 'outside' employment and income by displaying the export activity of the twenty-three sectors of the Sandpoint economy shown above, plus outside investment and autonomous consumer spending. This table indicates that the logging and wood

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products sector accounts for about 24% of the income in the greater Sandpoint area. On the other hand, some industries provide a relatively large share of employment and income in the direct sense depicted on Table 4, yet have far less influence on the economic base (depicted on Table 5).

TABLE 5
SANDPOINT, IDAHO
1989 LEVELS of EMPLOYMENT and INCOME
LINKED to EXPORT ACTIVITY/OUTSIDE INCOME

INDUSTRY	% EMPLOYMENT	% INCOME
Retail Trade	14.78	11.99
Federal, State & Local Govt	13.58	11.27
Logging & Wood Prods.Mfg.	20.62	24.00
Hosp. & Health Services	3.67	3.66
Eating & Drinking	5.12	3.15
Misc. Manufacturing	8.48	9.97
Construction	.74	.83
Banking, Fin., Insur. & Real Est.	4.41	5.57
Printing & News	4.25	4.74
Apparel Manufacturing	3.76	2.88
Hotels & Motels	3.12	1.94
Communications	3.44	4.60
Utilities	0.00	0.00
Food Manufacturing	3.78	4.29
Business & Legal Services	1.25	1.52
Consumer Services	.26	.25
Transportation	2.13	2.74
Wholesale Trade	.53	.62
Social Services	.33	.23
Business & Social Orgs.	.51	.36
Amusements	.22	.25
Concrete Products	.12	.13
Private Schools	.16	.12
Autonomous Consumer Spending	3.55	3.47
Outside Investment Spending	1.32	1.46
TOTAL	100.++	100.++

Tourism, or more generally "visitor-serving industry", is a mixture of three otherwise unrelated industries; hotels/motels, and a portion of eating/drinking and retail trade. The role of visitors in Sandpoint's economic base is the sum of the employment and income percentages for these three sectors (see Table 5). Visitor spending is increasingly important to Sandpoint's economic base, accounting for about 23% of all jobs and 17% of all income in 1987. Sandpoint's tourist industry is primarily a destination visitor economy. Destination visitors account for 18% of employment and 14% of income. In contrast, through-stop visitors account for less than 5% of employment and 3.5% of income.

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CULTURAL RESOURCES

The Sandpoint area has a rich and varied history, much of which is evidenced by archaeological and historic sites as testimonials to the past. Prehistoric sites dating over the past several thousand years line the shores of Lake Pend Oreille and its tributaries. Historic sites date primarily to the arrival of the railroad in 1882 and the subsequent development of downtown Sandpoint. Remnants of early homesteading and associated logging and mining activity occur in outlying areas. Figure 10 depicts the known areas of high and medium potential for archaeological sites, as well as areas of historical value.

Generally, the area in the immediate vicinity of Sandpoint contains standing structures or subsurface historic resources associated with downtown commercial and residential development. Figure 10a shows downtown Sandpoint and the recorded historical sites in the area. Appendix B includes a cultural resource overview. A 'Determination of Effect' document has also been prepared and is available upon request. Discussions of existing and eligible National Register of Historic Places sites in proximity to the proposed project alternatives follow:

- National Register Sites
  - Burlington Northern Railroad (BNRR) Depot:

This building was built in 1916 by Northern Pacific Railroad to replace the original frame depot. It was listed in 1973 for both its architecture as the only brick Gothic style structure in Idaho and its association with the development of the town of Sandpoint along the railroad. It is the only building from the original townsite remaining west of the tracks. The depot currently is utilized by the BNRR as a freight depot and by Amtrak as the only ticket counter in northern Idaho.

  - Sandpoint Community Hall, 204 South 1st Avenue:

This single-story log building noted on Figure 10a was constructed in 1936 by the Works Progress Administration (WPA). Classic WPA craftsmanship is apparent in the beach cobble chimney, interior finish work, and tight saddle notches. In 1944 the USO, who was utilizing the hall, added the south wing (Renk and Hudson 1991:14, ref. Appendix B). The structure was listed on the National Register in 1986. It is significant as a WPA and World War II structure, as well as being an unusual example of rustic, rural architecture in an urban setting.

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Figure 10

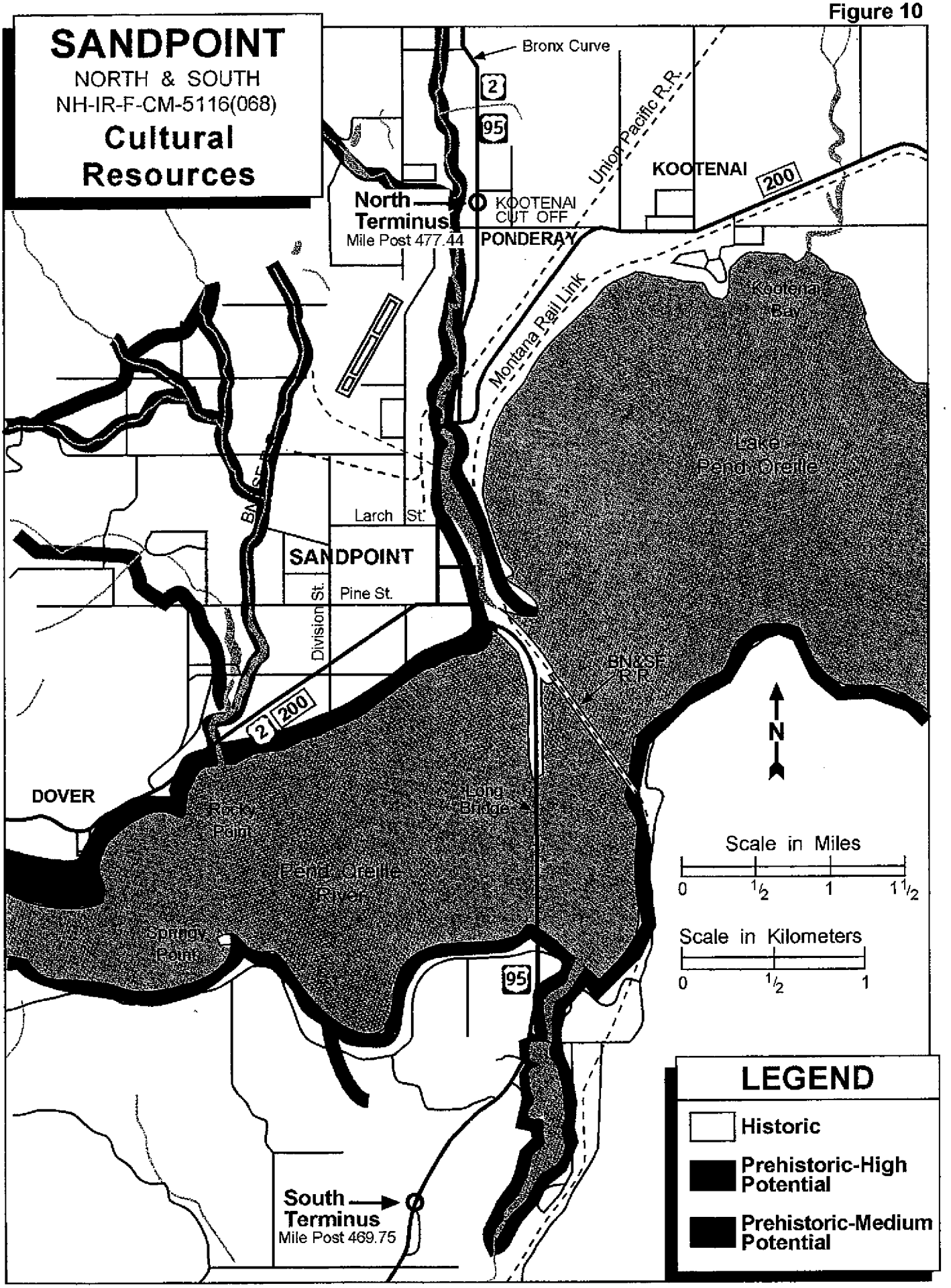

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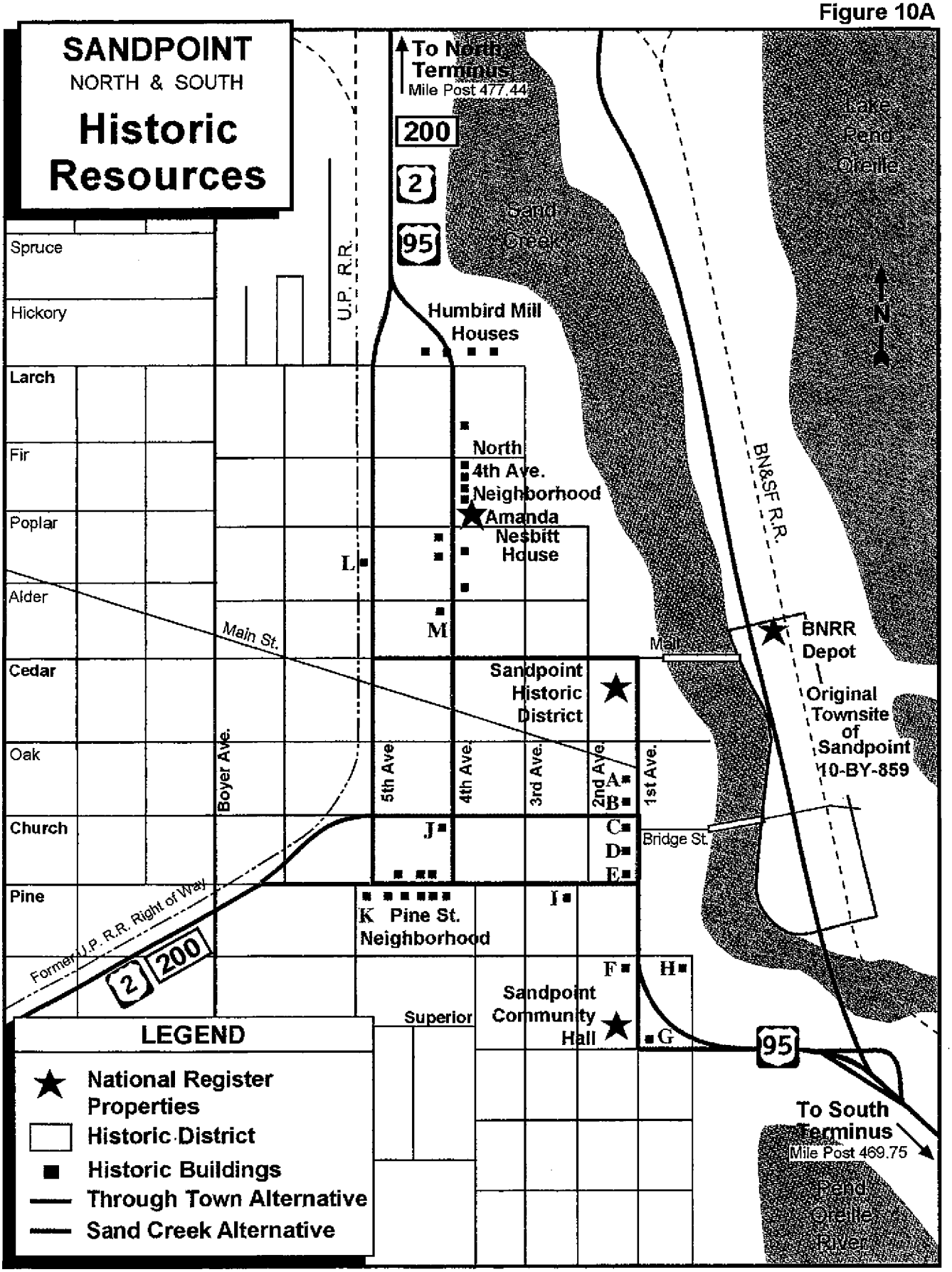
Figure 10A



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° Amanda Nesbitt house, 602 North 4th Avenue:

Located on the corner of No. 4th Ave. and Poplar St., this house was built in 1906 and added to the National Register in 1982 (Figure 10a). It is a traditional two-story, clapboard, Queen Anne style with a wrap-around porch and gable-end gingerbread. The upper story contains a turret plus a dormer with a small porch extending over the first story porch roof. The decorative porch railing has been added but otherwise the house retains it's original Queen Anne flavor.

° Sandpoint Historic District:

The "second" town site, was established by 1898, across Sand Creek from the original railroad town site. It consists of 15 buildings primarily within a single square block of downtown. The structures are commercially oriented and primarily manufactured with brick. An emphasis on brick construction resulted from the devastating fires leveling the original town site. The bulk of the two-story commercial block between Main and Cedar Streets on the west side of 1st Avenue was constructed between 1905 and 1909 (Sanborn Maps, Renk and Hudson 1991, ref. Appendix B). The first brick building in Sandpoint was at the southwest corner of Cedar and 1st Avenue, built in 1904. The district also includes several structures on 2nd Avenue, including the Farmin Building, the Elks and the Knights of Pythias. The Panida Theater on the east side of 1st Avenue is also within the district. The Spanish Colonial Revival-style theater, built in 1927, is significant as the first reinforced concrete structure in Sandpoint. National Register structures in the Historic District include:

° Elks Lodge, 314 North 2nd Avenue;
° Taft's (Bigelow Building), 319 North 1st Avenue;
° Sandpoint Sewing Center, 202 Main Street;
° Sandpoint City Hall, 110 Main Street;
° 320 North 2nd Avenue;
° Farmin Building, Cedar Street and 2nd Avenue;
° Larson's, 327 North 1st Avenue;
° Studio's, shops, offices, 323 North 1st Avenue;
° 313-317 North 1st Avenue;
° W. A. Bernd Building, 307-311 North 1st Avenue;
° Finan McDonald-Clothing Co., 305 North 1st Avenue;
° 301 North 1st Avenue;
° Panida Theatre, 300 North 1st Avenue;
° Sandpoint Bagel Co., 329 North 1st Avenue; and
° Knights of Pythias Hall, 2nd Avenue and Main Street.

• Eligible National Register Properties

A recent historic survey conducted in proximity to project area alternatives identified 33 structures which have been determined eligible to be listed on the National Register of Historic Places by the State Historic Preservation Office (SHPO). The SHPO 'Eligibility Determination' noted that most of these properties are considered eligible as contributory to potential historic districts, although several

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buildings can be considered individually eligible. The Humbird Mill cottage complex is recognized as a potential small historic district. These findings as stated are architectural only and do not address archaeological potential. The following is a list of these eligible places:

A. 223 North 1st Avenue, Sandpoint Realty (Central Pharmacy)

B. 209 North 1st Avenue, Pastime Cafe & Sports Center (1st Larson's Store)

C. 121 North 1st Avenue, Kaniksu Realty (Rowlands Hotel)

D. 119 North 1st Avenue, Antique Arcade (Gus Nelson Market)

E. 101 North 1st Avenue, Panhandle Realty (Bonner Meat Market)

F. 201 South 1st Avenue, Coldwell Banker Realty (Peter Johnson House)

G. 227 South 1st Avenue, McFarland House (Ignatz Weil House)

H. East Lake Street, Sandpoint Marina (Sandpoint Electric Co.(The Old Poerhouse))

I. 104 South 2nd Avenue, Elliot Hotel (Lenox Hotel and Pool Hall)

J. 401 Church Street, Chiropractic Clinic

K. 439 Pine Street, North Idaho College-Head Start (IOOF Hall - Baptist Church)

L. 502 Alder Street, Panhandle Milling (Laswell's Feed)

North 4th Avenue Neighborhood:

- 417 No. 4th Ave. First Presbyterian Church
- 513 No. 4th Ave.
- 521 No. 4th Ave., (George M. Walker House)
- 502 No. 4th Ave., COIT House Bed and Breakfast (Wagner House)
- 518 No. 4th Ave.
- 606 No. 4th Ave.
- 610 No. 4th Ave.
- 614 No. 4th Ave.
- 712 No. 4th Ave.

Humbird Mill Cottages:

- 304 Larch St.
- 306 Larch St.
- 402 Larch St.
- 404 Larch St.

Pine Steet Neighborhood:

- 403 Pine St.
- 411 Pine St.
- 412 Pine St.
- 414 Pine St.
- 417 Pine St.
- 418 Pine St.
- 431 Pine St.
- 433 Pine St.

The original 1882-1898 Sandpoint townsite:

Recorded as a historic archeological site 10-BR-859 (Figure 10a). No structures remain standing, except for a couple of railroad associated houses east of the tracks and the BNRR depot. Cursory subsurface testing has revealed buried archeological deposits associated with the townsite in the bank of Sand Creek. These deposits have been determined significant by the SHPO for the information they

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contain, as opposed to *"in-situ"* preservation. Although the cultural material found along the banks of Sand Creek primarily dates to the turn of the century and earlier, activity continued in the area after the town was relocated. Some of the artifactual material dates to the 1890's and early 1900's. Testing also suggests historic debris was haphazardly discarded over the creek bank and probably into the creek. More recent refuge also appears to both cover and intrude into earlier deposits.

Other historic and prehistoric sites have been recorded in the area, but have either been determined ineligible for the National Register or, as yet, have not been determined eligible, pending further project design details.

HAZARDOUS MATERIALS

There are a number of known or suspected hazardous waste/material sites in the project area as indicated on Figure 11. These sites include:

- Fuel contamination from underground storage tanks or piping/pump systems on the premises of existing and previous service stations, or from above ground fuel distribution stations;
- Paint/thinner, oil, solvents, and 'base' style cleaner contamination at auto body, auto/truck repair, welding and metal fabrication shops;
- Wood preservative and timber treatment sites;
- Polychlorinated Biphenyls (PCB's) at electrical substations, waste sites and intermediate storage areas; and
- Asbestos sources in older buildings that may require removal.

No releases of hazardous materials have been reported from any accident reported on US95/2 in the project area from 1986-1990. During this 5-year period 550 accidents involving 93 trucks (17% of the reported accidents) occurred; 44% of these truck accidents were the fault of the truck driver. It is estimated that 3 to 4% of these trucks carried hazardous materials. Currently the risk of having a hazardous materials release in the study area due to an accident is once every 11 years on US95 outside Sandpoint city limits, and once every 200 years in town. The risk is once every 58 years on US2. The three major hazardous materials released during accidents involving carriers in Idaho are:

- Fuels,
- Fertilizers, and
- Corrosives.

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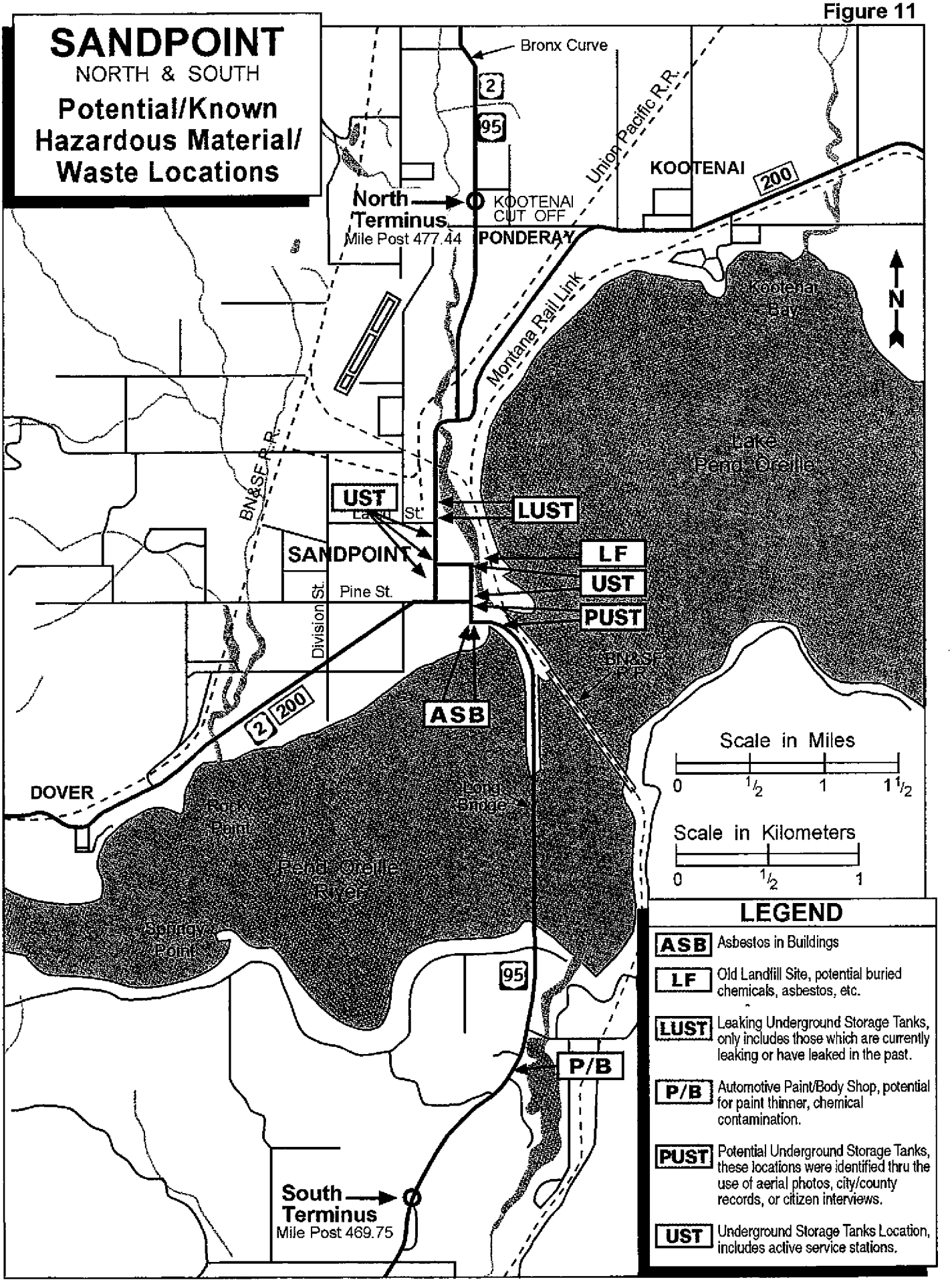
Figure 11



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SOILS AND FARMLANDS

Soils within the project area range from depressional, silty hydric types and well drained, level, gravelly loams at the southern end near Algoma; to deep, unconsolidated and erosive glacial tills along much of the western portion of the study area; to fine textured, poorly drained, glacial lake laid sediments throughout much of the Sandpoint area. All of the proposed routes traverse multiple soil boundaries as depicted on Figure 15. There are no prime farmlands identified by the U.S. Soil Conservation Service in the project area.

AIR QUALITY

This project is partially in an air quality nonattainment area for PM-10 (i.e., Particulate Matter less than 10 micrometers in size) as shown on Figure 13. There are no CO or Ozone issues currently identified by the Division of Environmental Quality or the US EPA. The area has a complex mix of area and point sources and was identified as exceeding standards in 1987. A state implementation plan (SIP) has been developed by the State Division of Environmental Quality to improve air quality in the Sandpoint area. The Sandpoint area Air Quality Improvement Plan was adopted into the State Implementation Plan and was originally submitted to the U.S. EPA in March 1993. After receiving comments back from EPA, the State resubmitted a revised air quality plan to EPA in August 1996. The SIP identifies the sources of high PM-10 levels as residential wood burning, road dust and industrial emissions. Modeling to estimate future PM-10 levels indicate that without further action the exceedences will continue. Winter particulate emissions will need to be reduced by 40%. The proposed strategy to accomplish this reduction involves a comprehensive wood burning public awareness program, wood stove replacements, and changes in winter road maintenance practices such as harder road sanding material and increased use of liquid de-icers instead of road sanding material.

SURFACE WATER RESOURCES

Streams

There are a number of named and un-named perennial and ephemeral streams within the project area as depicted on Figure 14. These streams have a variety of values and functions, including:

- Supplying domestic water needs,
- Providing habitat for fisheries and other water dependant species of wildlife,
- Recharge for groundwater and maintenance of wetlands, and
- Flood water discharge (See Figure 15 regarding Federal Emergency Management Agency 100 year floodplain delineations).

Surface and near-surface flows from the highlands and mountains to the west of Sandpoint, north of the Pend Oreille River, are for the most part intercepted by Chucks Slough and its south flowing

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tributary drainages. Generally water quality is good in these tributaries, as well as most other tributaries in the study area. However, a few tributaries are impacted by rangeland and forest practices and by rural home development. Pollutants reported for some of these streams include sediment, organic enrichment, bacteria, and nutrients. Cold water biota and salmonid spawning are potentially at risk by both pollutants and habitat alteration.

The Pend Oreille River has also been somewhat degraded by agricultural and forest practices, and by on-site wastewater disposal. Nutrients, sediment, bacteria and thermal modification, as well as flow and habitat alteration are reported as the primary concerns. Cold water biota use is reported as partially supported, while salmonid spawning is not supported and domestic water supply is potentially at risk.

The City of Sandpoint's drinking water supply comes from Little Sand Creek, and is therefore a stream segment of concern. Little Sand Creek has been the main source of municipal water since 1903. The City has owned the water rights since 1918. The intake and treatment facility is upstream of all alternatives examined.

Lake Pend Oreille

Lake Pend Oreille is designated as a "Special Resource Water" by the Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ). This designation also applies to all tributaries of the lake that are not specifically named in DEQ standards. Recent studies have confirmed that the overall water quality of the lake appears to be good with problems in the lake's bays and other near shore waters. The near shore waters act as a buffer between the open waters of the lake and the natural changes and human activities in the watershed.

Some of Lake Pend Oreille's tributaries are affected by agricultural and forest practices, and on-site wastewater disposal. Nutrients, sediment, organic enrichment and bacterial pollutants combined with habitat modifications, such as roads and home development, are the causes for water quality declines in the near shore waters.

The City of Sandpoint maintains an intake and treatment facility for water on leased land on Lake Pend Oreille as an alternative water supply. That facility is adjacent to the Edgewater Motel.

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Figure 12

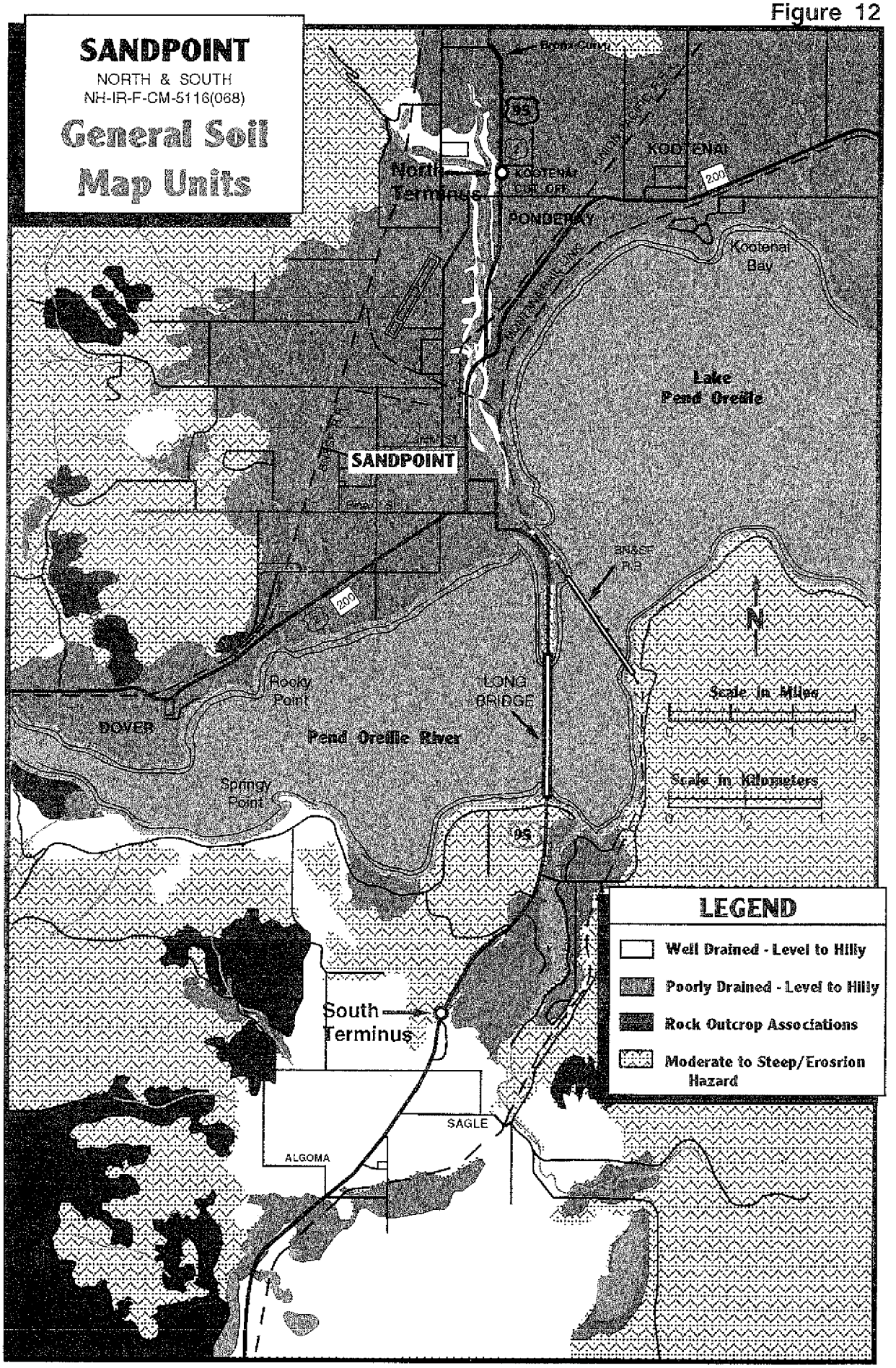

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Figure 13

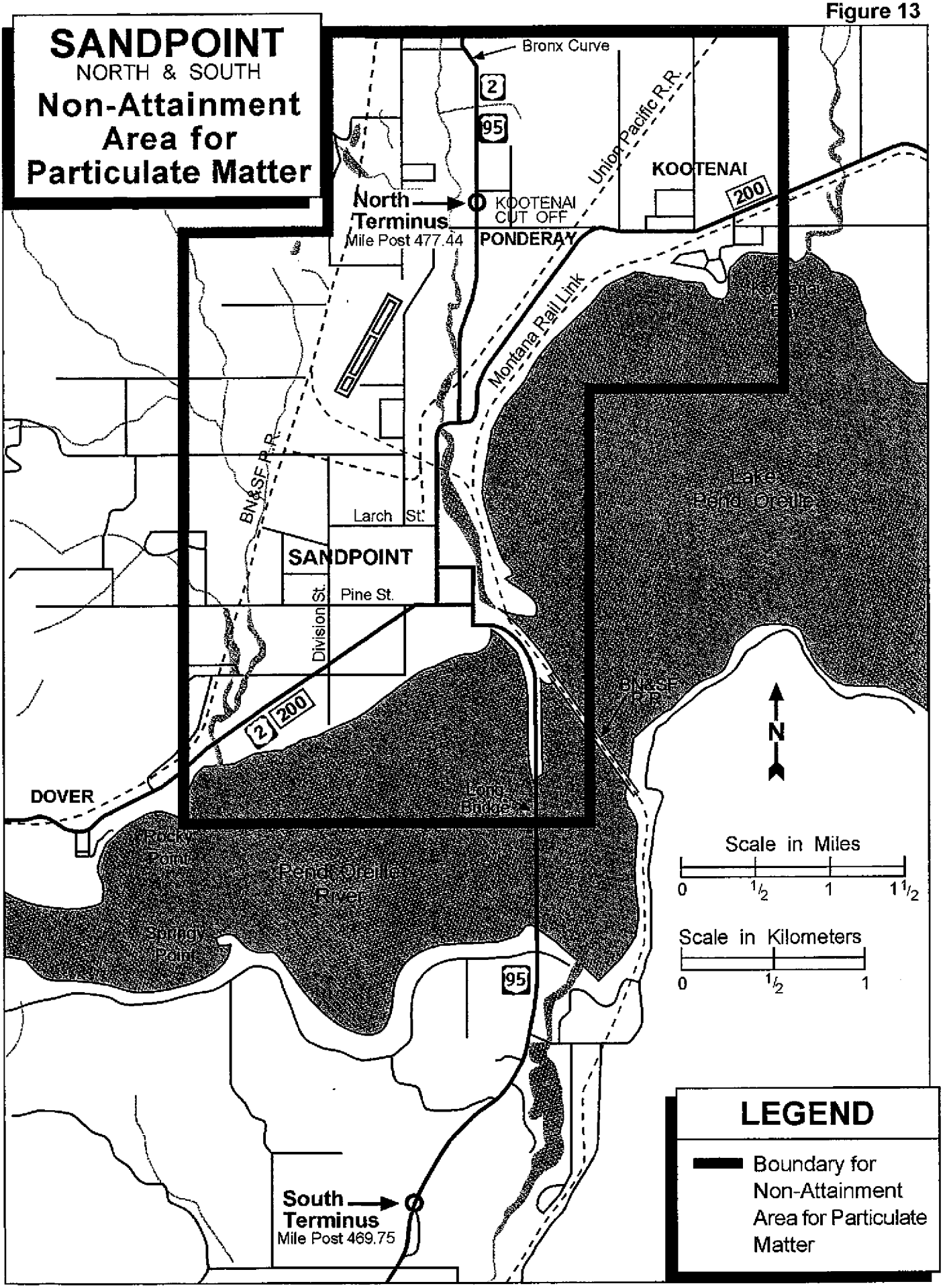

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Figure 14

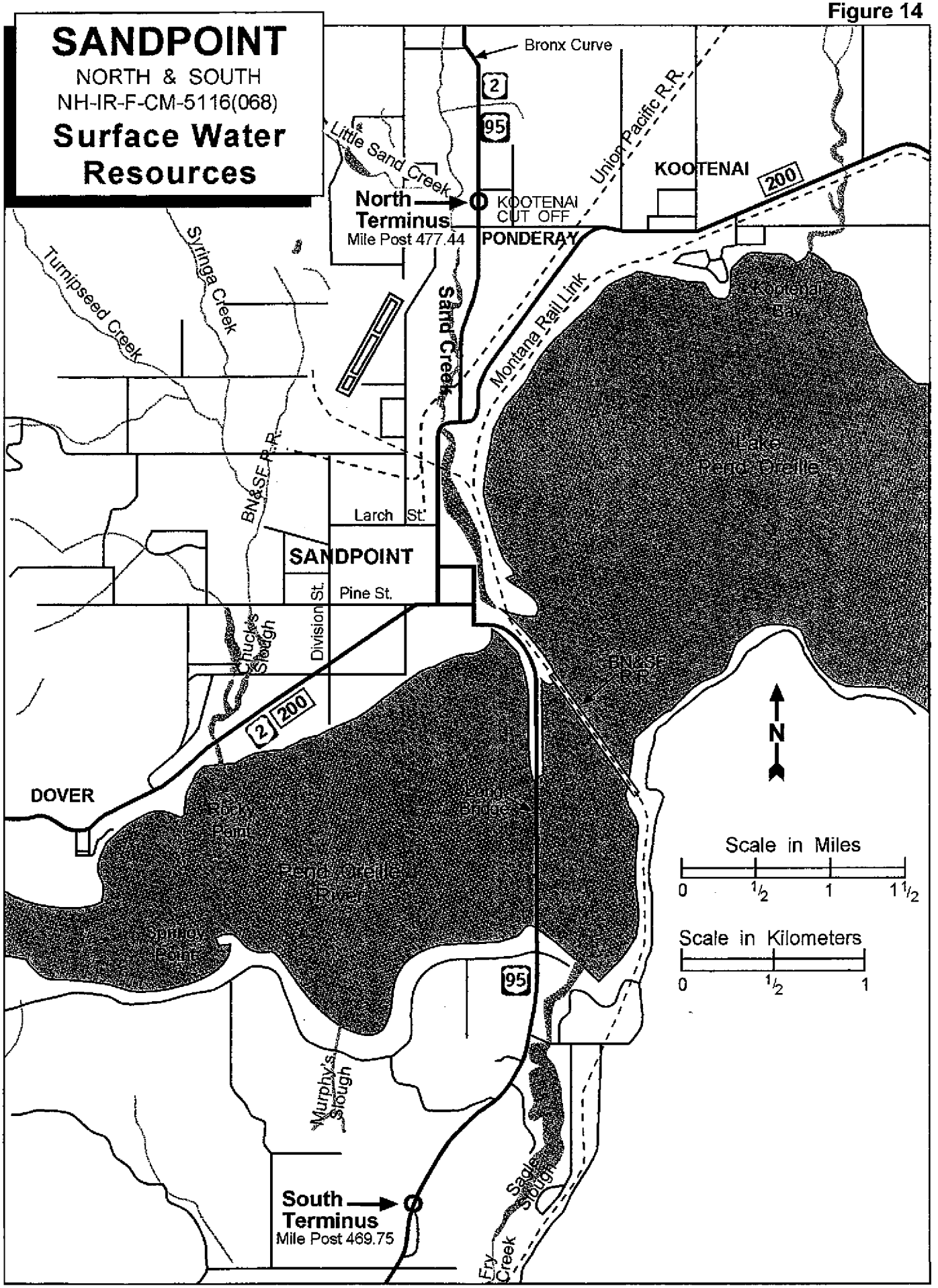

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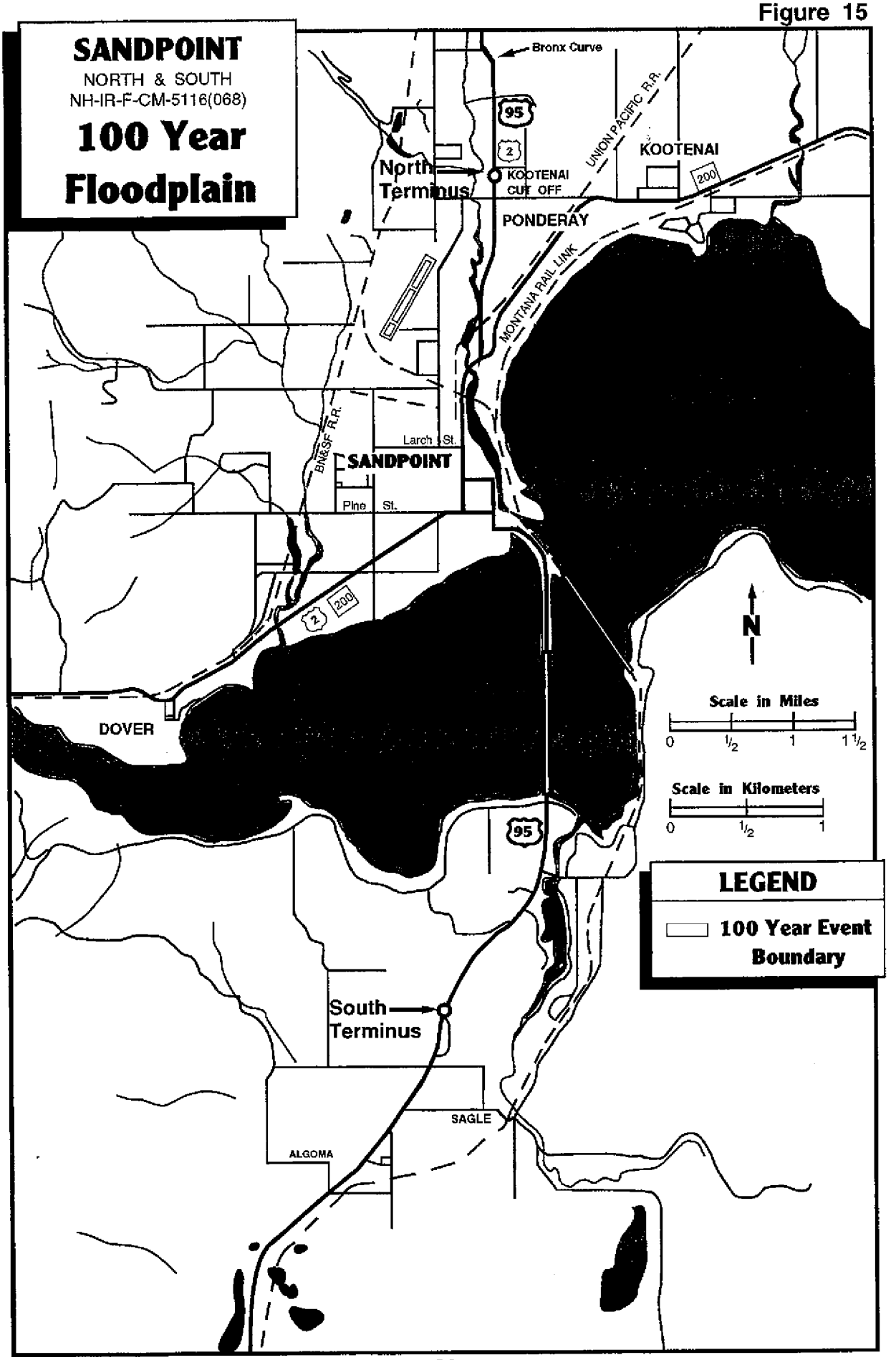
Figure 15



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GROUNDWATER RESOURCES

General

Aquifers in the study area are recharged largely by infiltration of precipitation, seepage from rivers and tributary streams, and leakage from large lakes. The many wet-weather rills that descend mountain slopes and the larger streams draining mountain valleys replenish ground water supplies at the base of the mountains and along stream courses discharging from the mountains. Ground water occurs everywhere in the lowlands underlain by ancient lake beds and bodies of sand and gravel. The water level in most wells in this area represents the surface of the saturated zone. Ground water generally moves away from the margins of the valleys toward lines of drainage where it is discharged as seepage. Many areas of seepage are seen where streams have cut into ancient lake sediments, but there are few springs. The water table rate of movement is thought to be slow at most lowland locations, especially through the lake beds, because of the flat gradient.

There are two water-bearing formations in the Sandpoint valley. They are the ancient lake beds and the shallow sand and gravel along bottomlands. Depth to water in wells in ancient lake beds depends upon topography, but is rarely as much as 9 meters (30'). It is more commonly 6 meters (20') or less. Wells completed in the lake beds generally have yields between 1 and 10 gallons per minute (gpm). Wells completed in sand and gravel are generally shallower, yet produce up to 20 gpm. The valley of the Pend Oreille River is underlain by lake beds and occasional thin layers of sand and gravel, both of which produce small yields with 2 to 7 gpm.

Subsurface soil saturation and a high water table are common and widespread throughout Sandpoint. This condition appears to be the result of seasonal water perched over marginally permeable to impermeable layers. Ground water depth in Sandpoint ranges from 1.2 meters (4') to 4.6 meters (15') below ground surface depending on location and time of year. There are also probable subsurface flows below Sandpoint along gravel lenses and buried drainage-ways. Perched water over the clay subsoils most likely flows laterally towards Sand Creek and the Pend Oreille River.

Southside Aquifer

The Southside Aquifer covers approximately 120 square kilometers (46 sq. miles) in the vicinity of Sagle and Algoma on the south side of the Pend Oreille River (Figure 16). Water of this aquifer flows through a complex system of glacial drift and lake sediments. Average depth to water is 15.5 meters (51'). In general, groundwater movement is to the north towards Sagle with major springs from the aquifer discharging into the Pend Oreille River via Murphy Slough, Sagle Slough and an unnamed slough outside the study area. Currently, water quality of the aquifer is thought to be good. Although this is not a 'sole source' aquifer, there are about 2,000 persons who use the Southside Aquifer for drinking water.

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In general, groundwater in the study area is in sufficient quantity, and is of good to excellent quality in most places to meet population and economic demands. Nitrate concentrations vary from below detection limit to 2.4 mg/L. Alluvial and glacial aquifers are used the most and will probably be subject to the greatest water quality changes in the future.

Domestic Water Supplies

All waters in the study area are of good to excellent quality for domestic use. Total dissolved solids range from 45 to 169 parts per million (ppm). The hardness in most of the waters is low, averaging 84 ppm. Past analysis indicate no concentrations of harmful chemical constituents. Water samples indicate that calcium, magnesium and bicarbonate make up 90% of the constituents determined; the remaining 10% are comprised of sodium, potassium, sulfate and chloride.

In general, waters having the highest concentrations of dissolved solids are from the fine-grained lake beds, and waters having the lowest concentrations are from sand and gravel. Conductivity from some sampled wells ranged from 76 micromhos in a well completed in sand and gravel to 307 micromhos from a well completed in lake beds.

Idaho Department of Water Resources files indicate that there are 201 recorded wells within the project area, as displayed on Figure 17. Four of these wells are dry holes, one of the remaining wells is used for irrigation purposes and six are monitoring wells for a leaking underground fuel storage tank remediation site. In addition, there are 133 water rights filed for within the project area. The majority of these rights are filed on perennial and ephemeral streams depicted on Figure 14.

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Figure 16

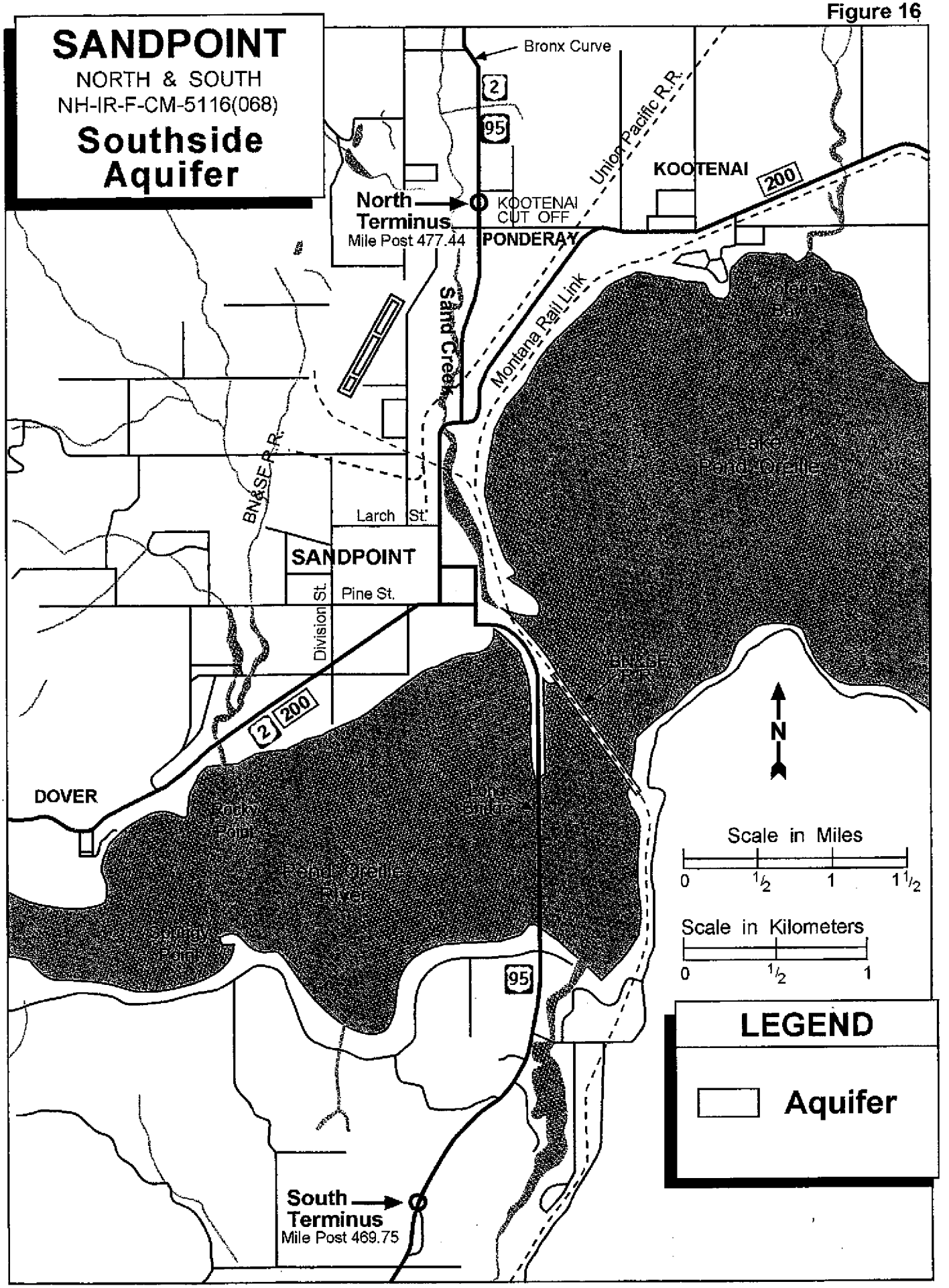

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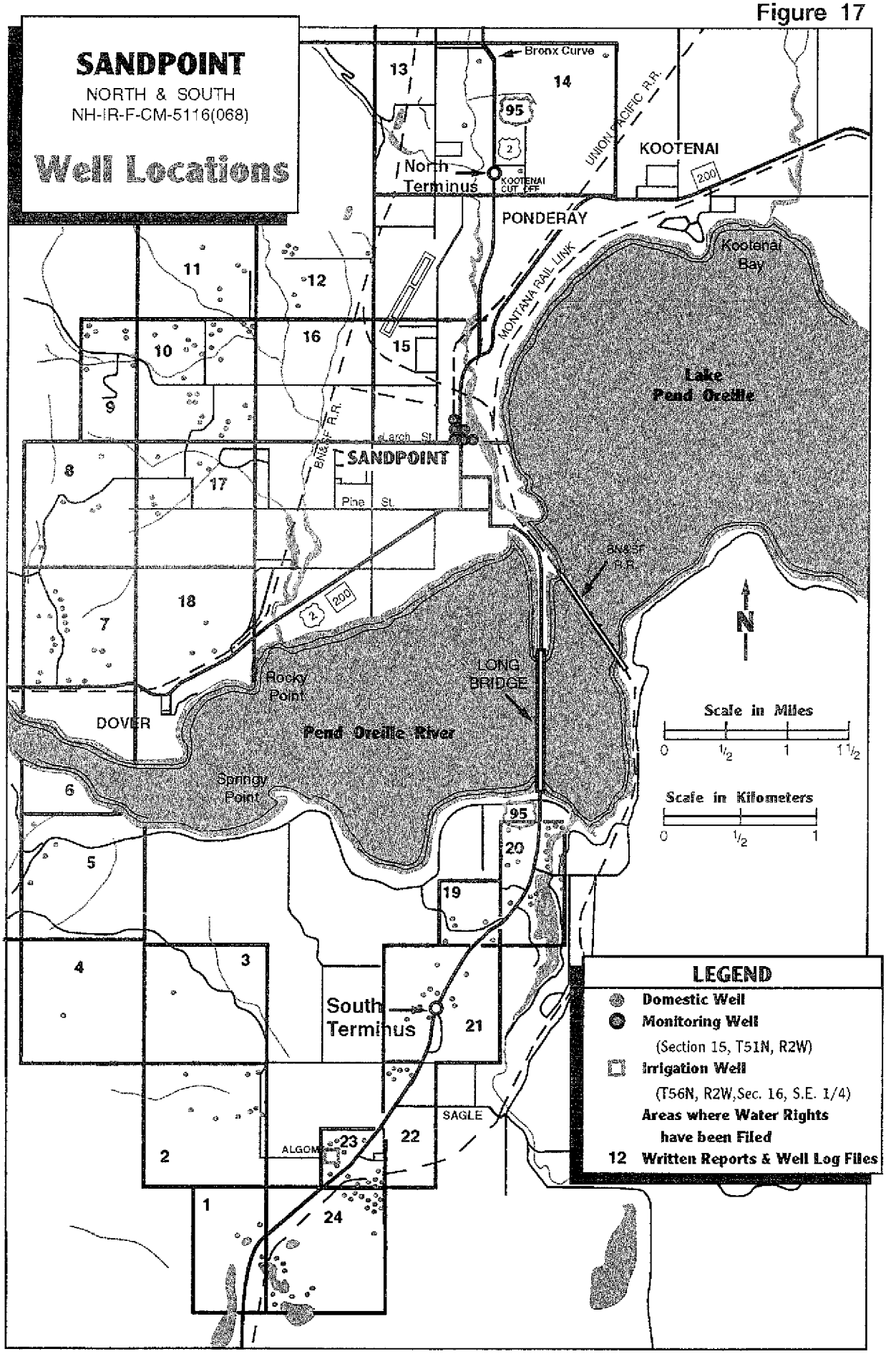
Figure 17



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WETLANDS

Wetlands are found throughout the project area. The larger wetlands are depicted on Figure 18. These wetlands range from open water and aquatic beds to emergent, scrub-shrub and forested types. Some of the larger areas are associated with Sagle Slough, Chucks Slough, Algoma lake and Sand Creek. Other large areas of wetlands occur along the base of the Selkirk Mountains west and northwest of Sandpoint. In addition to the range in wetland types, the wetlands in the project area provide a variety of values and functions, such as:

- Flood control,
- Nutrient retention and removal,
- Ground water recharge and discharge,
- Fish and wildlife habitat,
- Sediment retention,
- Shoreline anchoring,
- Food chain support, and
- Active and passive recreation.

These wetland values and functions are given high priority consideration for protection by resource agencies in conformance with Executive Orders and congressional actions. For a more specific description of wetland functions and values refer to Appendix E.

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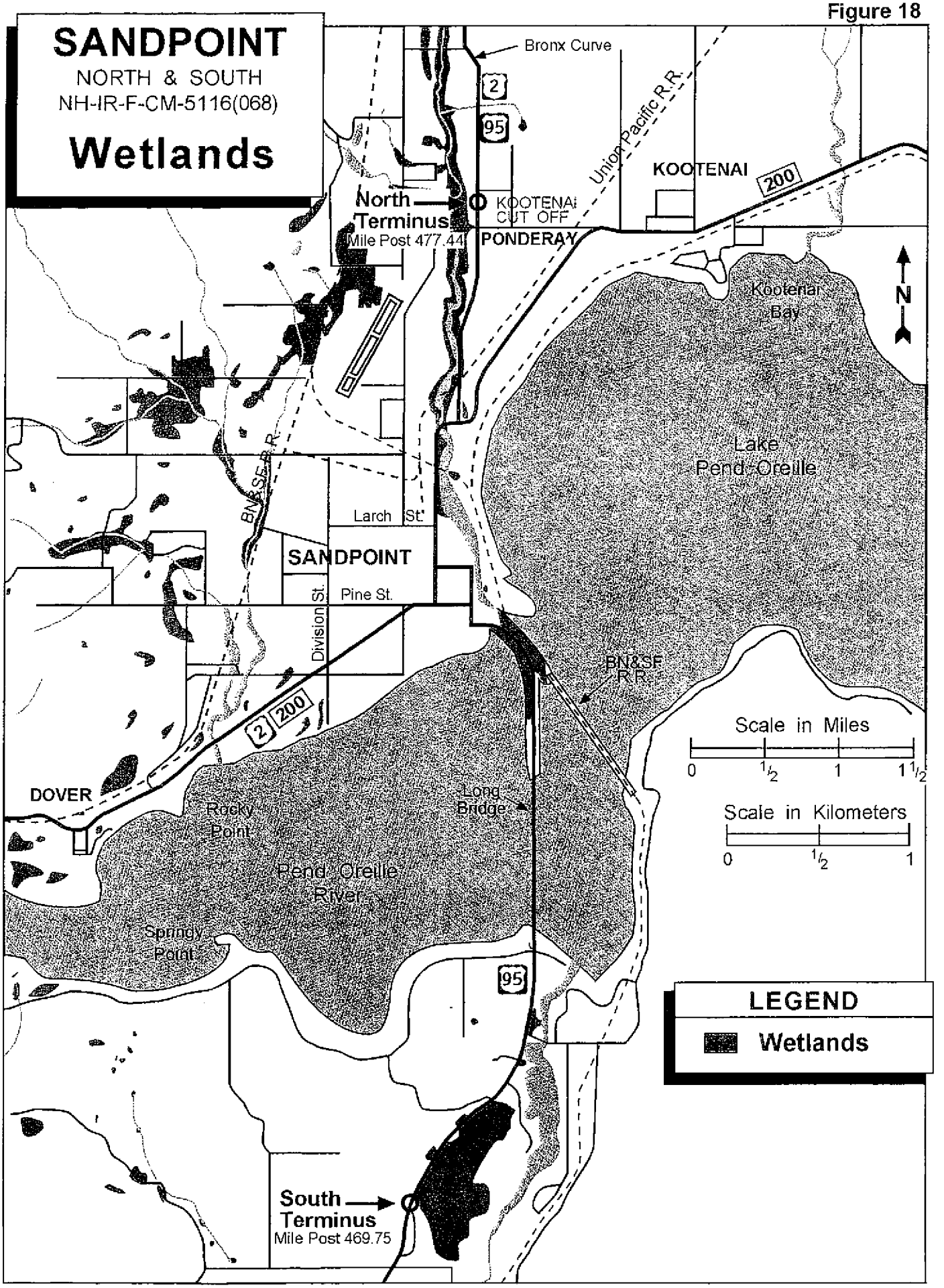
Figure 18



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WILDLIFE

Big Game

The project area contains habitat for a number of large mammal species, including elk, white-tailed deer, mule deer, moose, black bear and mountain lion. No population estimates exist for these species in the study area. White-tailed deer are by far the most numerous big game within the area and are widely distributed. It is not unusual to have deer, bear or moose enter the city limits of Sandpoint.

White-tailed deer use within the study area varies from high density areas to areas of minimal deer use within the city limits of Sandpoint. Figure 19 depicts big game areas containing moderate to high white-tailed densities of 1.5 to 2.7 deer per square kilometer (4-7 per sq. mile). White-tailed use in the remainder of the study area is low to very low, with densities of 0 to 1.5 deer per square kilometer (0-4 per square mile), depending on human population density and degree of hiding cover.

Osprey

The Pend Oreille Lake ecosystem supports a medium to high density of nesting ospreys. Ospreys begin returning to north Idaho from Mexico and Central America in early April just as the last wintering bald eagles leave. Nest sites are usually located close to the water's edge. Egg laying begins in late April-early May and by late June all young have hatched. Osprey feed entirely on fish, primarily perch and non-game fish caught in shallow water areas. Due to the shallow depths, the area to the west of the Burlington Northern Railroad trestle is an important foraging area for ospreys. There are an estimated 10 active osprey nests within the project study area. Osprey young fledge in early August and are on their own after that. The migration period begins in early September and by early October most ospreys have left the area. Osprey use areas are also depicted on Figure 19.

Fisheries

That portion of the Pend Oreille River/Lake within the study area supports a diverse community of both warm water and cold water fish species. Gerrard rainbow trout, westslope cutthroat trout, bull trout, kokanee salmon and lake whitefish are all found within the study area. These species are more abundant west of the Long Bridge from September through June when water temperatures are cooler and currents are more pronounced.

Warm water species include yellow perch, black crappie, largemouth bass, pumpkinseed sunfish and brown bullhead. These species are generally associated with near-shore, relatively shallow littoral areas. Non-game species include northern squawfish, peamouth, redside shiner, largescale sucker and tench.

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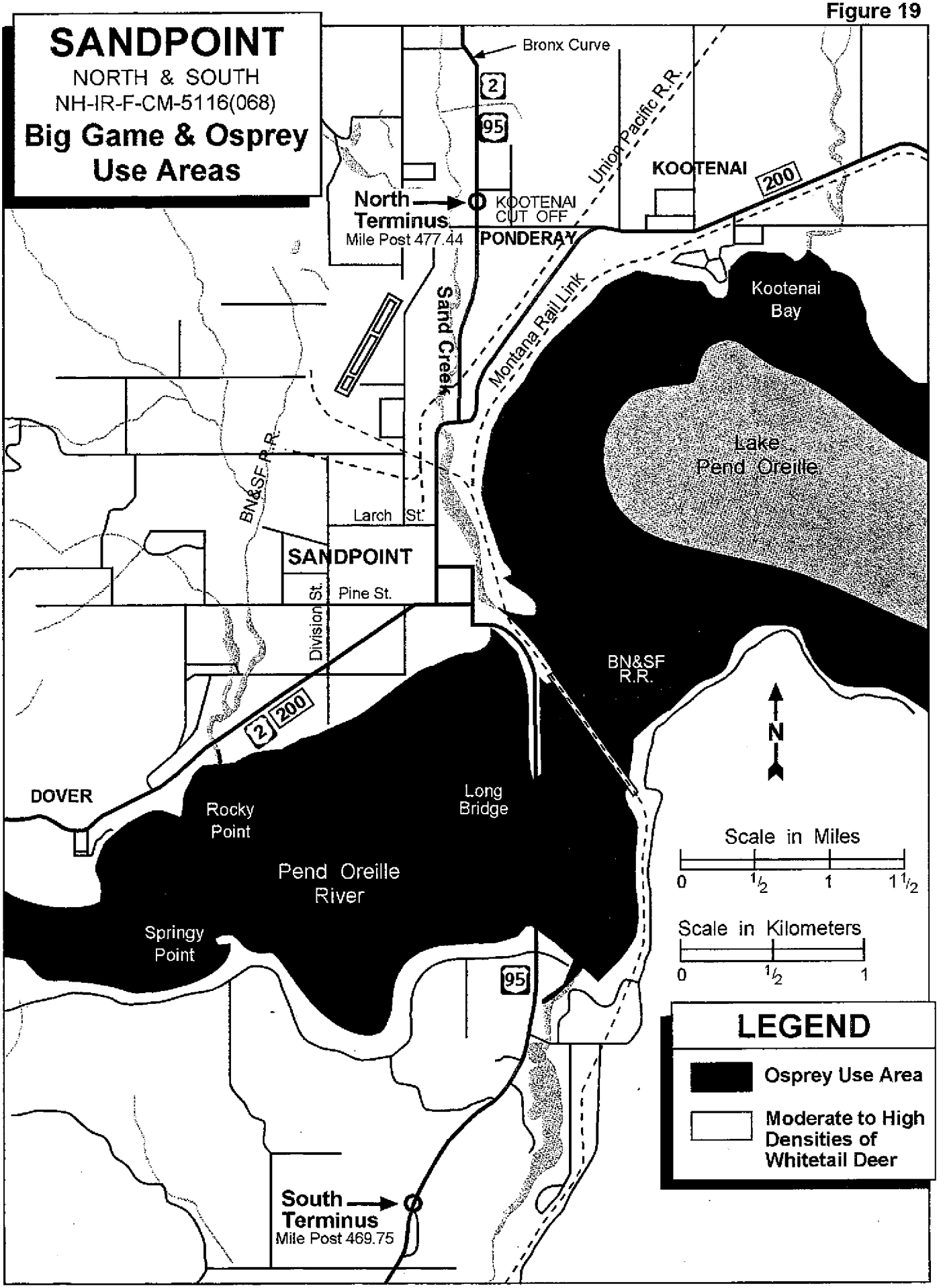
Figure 19



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Fish habitat varies greatly within the study area and is affected to a large degree by the annual lake drawdown [roughly 4.0 meters (13')] by Albeni Falls Dam. Figure 20 depicts those areas which are less than 20 feet deep during winter draw down periods. The large bay immediately west of the Long Bridge is relatively shallow with a silty, sandy bottom. The river channel becomes much deeper near Dover and rock outcroppings are more prevalent. Shoreline areas that are not developed and are stabilized with abundant riparian vegetation generally provide good warm water fish habitat, especially where large trees have fallen in.

Aquatic Mammals

Aquatic mammals found within the study area include muskrat, mink and beaver. Within the study area, most of the sloughs that connect to the Pend Oreille River/Lake are marginal habitat for aquatic mammals due to fluctuating water levels from power production at Albeni Falls Dam. Connecting sloughs become de-watered and turn into mud flats that are poor habitat. Without stable water levels, these areas will never be large producers of aquatic mammals. Sand Creek outside the drawdown zone and the small lowland lakes are the best habitat for aquatic mammals within the study area (Figure 20).

Waterfowl

Lake Pend Oreille is also an important winter waterfowl feeding area, with tens of thousands of migrating mergansers, coots, Canada geese, tundra swans and ducks using the lake from late fall through early spring each year. The primary duck species are divers - principally redheads, scaups, ring-necked ducks and canvasbacks. Due to the drawdown of Pend Oreille Lake from Albeni Falls Dam, the river becomes shallower between Dover and the Burlington Northern Railroad Trestle allowing migrating waterfowl to feed on the lush green-rooted submerged aquatic vegetation. The 'Springy Point' area consistently contains more wintering waterfowl than any other body of water in the ten northern counties of Idaho according to aerial counts conducted by the Department of Fish & Game. More importantly however, is that the Pend Oreille ecosystem provides winter habitat for an average of 50-60% of the entire Pacific Flyway's winter redhead duck population north of Mexico. The redhead is not an abundant duck in the Pacific Flyway and is a declining species throughout the North American continent.

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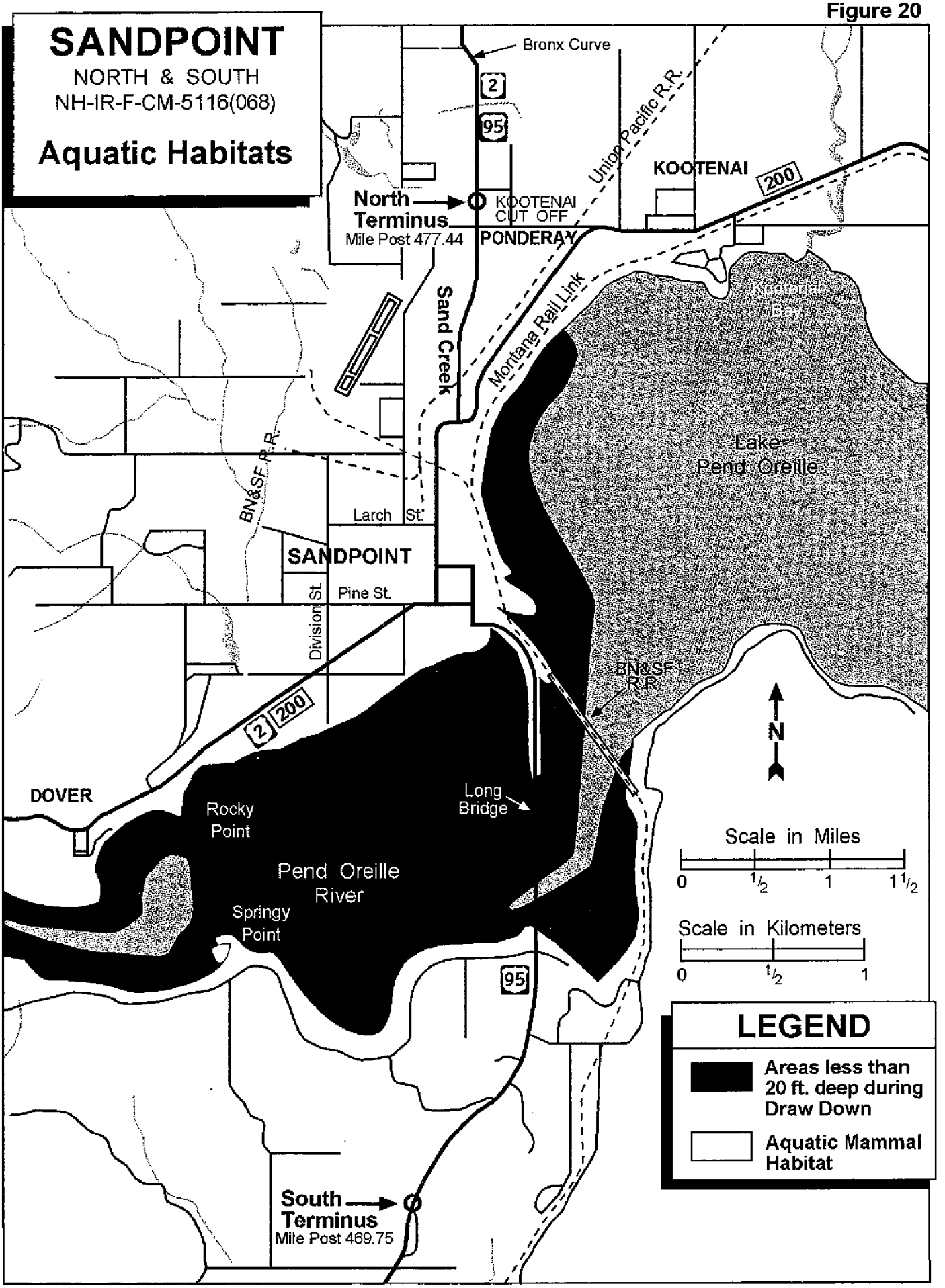
Figure 20



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The study area ranks low to moderate in terms of the degree of waterfowl nesting presently taking place. The production of ducks and geese is scattered and occurs primarily near small lowland lakes and sloughs adjacent to the Pend Oreille River/Lake. Each year broods of mallards, teal, wood ducks and mergansers are observed, however production numbers are unknown. Goose production in the study area is approximately 100 to 120 goslings, representing 20 to 25 nesting pairs. Geese pair up as early as February and begin selecting nest sites. Egg laying starts in late March-early April and by late April-early May hatching is completed. The primary known goose production areas are lower Sand Creek, Fry Creek Slough and the vicinity of Algoma Lake. Figure 21 displays Waterfowl wintering and production areas of concern.

Threatened & Endangered Species

The study area is a major wintering area for bald eagles. The first migrants arrive around the first of October each year, with numerous eagles remaining in the area throughout the year (see Table 6). Populations peak during December when 20 to 30 eagles can be found within the study area. However, a few eagles remain all winter. Usually by the end of March only the nesting pairs remain. There is one nest site in the Sagle area (within ¼ mile of the highway), and the proposed highway corridor intersects two known nest territories (Sagle and Springy Point). The study area provides an abundant food source. The prey base consists primarily of coots, ducks, perch, lake whitefish and spawned out kokanee. Eagles use large trees within 90 meters (100 yards) of the water's edge as perching and hunting sites. Figure 22 shows the important feeding, nesting and wintering sites in the study area. Table 6 displays the results of annual bald eagle surveys in the state of Idaho from 1981 to 1990 and in the Pend Oreille Lake area from 1994 to 1997.

TABLE 6, MID-WINTER BALD EAGLE COUNTS

Year	Pend Oreille Lake	Five Northern Counties	State of Idaho
1981	123	169	756
1982	45	169	668
1983	87	169	644
1984	98	125	542
1985	56	96	No Data
1986	255	303	755
1987	267	389	806
1988	166	234	735
1989	106	155	676
1990	133	215	800
1994	91		
1995	101		
1996	90		
1997	36		

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Wolves may use the area on a migratory basis south of the long bridge to Sagle. At this time there is no known use of the project area by woodland caribou or grizzly bears, although these endangered species are known to exist further north. A wolverine, which is considered a sensitive or category 2 species in Idaho, was reportedly sighted on the west side of Algoma Lake in 1965.

The bull trout, a recently listed threatened species in Idaho, is present in Pend Oreille Lake/River and some tributaries are used as spawning/rearing streams. However, Sand Creek is not known to be used by bull trout; although it is possible that the creek is used as a migration corridor. There are no known bull trout spawning or rearing areas within the project boundaries. See Biological Assessment in Appendix H.

Westslope cutthroat trout are found in Sand Creek and are a candidate species for listing as threatened. The lower portion of Sand Creek however is shallow and warm with a silt-sand bottom (substrate). Timber harvest, agriculture, and urbanization have contributed sediments to the stream and removed much of the riparian vegetation. This has resulted in more sunlight exposure of the water, warmer water temperatures, and a muddy bottom. This is not the type of bottom that westslope cutthroat trout would use for spawning. There are probable spawning areas further upstream above the Elmira road crossing. The lower stretch of Sand Creek would be a migration corridor for the upper reaches. As such, construction below the mean high water mark between September and December shall be prohibited to protect migration for spawning. Revegetation of riparian areas disturbed by the construction of the project shall be given high priority. See the Biological Assessment in Appendix H for more detailed information.

Ute Ladies-tresses (Spiranthes diluvialis) is another listed species that has not been found in north Idaho as of this writing. But, its relative Spiranthes pornifolia has been found throughout the Pacific Northwest. This species was only recently listed for northern Idaho. Since it is endemic to wet meadow and riparian/wetland habitats there is a possibility it may exist in north Idaho. Because of its unique characteristics, and to ascertain if it is within the project corridor, a Biological Assessment was performed and submitted to the U.S. Fish and Wildlife Service for their review and concurrence. No habitat was found in the project corridor and the determination for this action is: "may affect, but not likely to adversely affect" the Ute Ladies-tresses. This determination was concurred upon by the US Fish and Wildlife Service.

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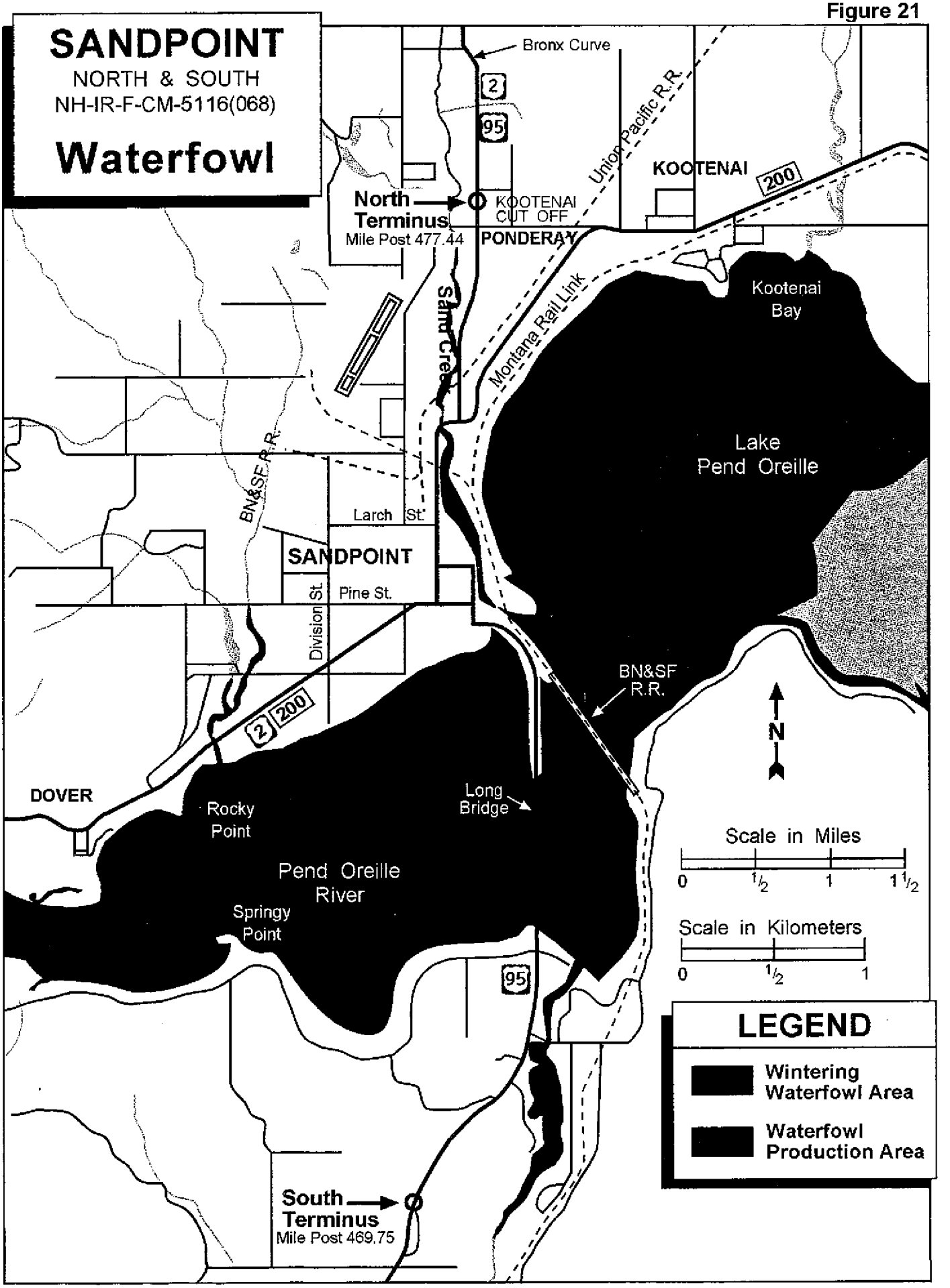
Figure 21



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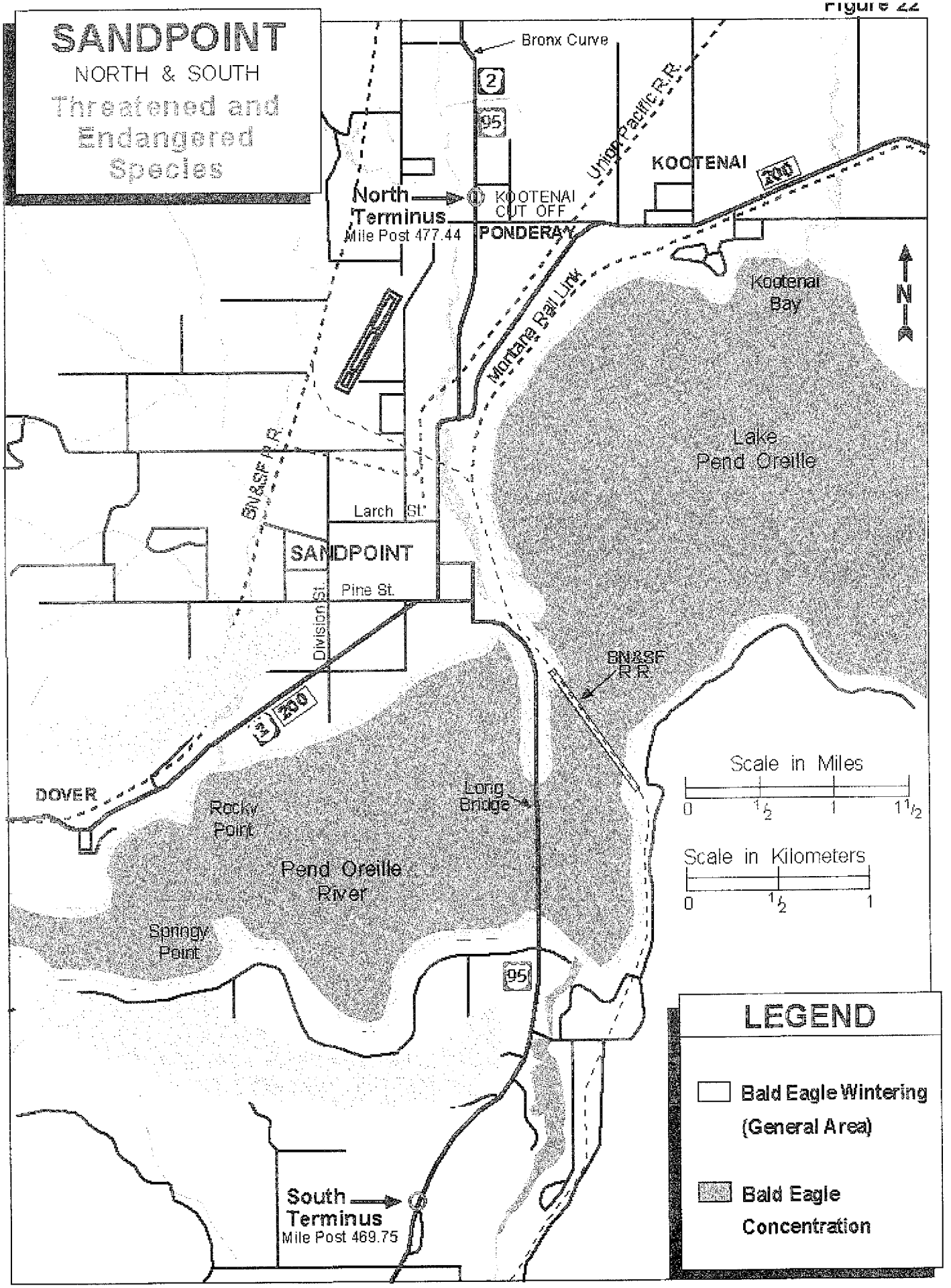

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VEGETATION

Vegetation within the project area is varied and diverse. The upland areas on the west and east margins of the project area are generally forested with the major species being grand fir, Douglas fir, ponderosa pine, western larch, lodgepole pine, western hemlock, western red cedar, and western white pine. The timber stands within the project area have been logged in the past with some stands having been cut twice. Logging has allowed brushy species to invade, and in some areas delays natural tree generation. No stands of old growth have been identified within the project area. There is a possibility that small, isolated stands may occur in remote riparian and rocky areas.

The rolling hilly areas adjacent to highlands have large areas of shrubs mixed with grass and forbs. Common species of shrubs are redstem ceanothus, baldhip rose, snowberry and mountain blueberry. Grass, forb and legume species include fescue, lovegrass, blue wildrye, bromegrass, pine reedgrass, bluebunch wheatgrass, hawkweed, peavine, elk sedge, and geranium. The draws and north facing slopes in these areas often support mixed stands of timber.

Large areas of the lower elevations have been cleared for pasture or farming. These areas have generally been seeded to non-native forage plants such as smooth brome, orchardgrass, tall fescue, timothy, and clover. There are also substantial wetland areas throughout the project area which support mixed communities of wetland plant species such as cattails, smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, willows, dogwood and some tree species. No 'Threatened or Endangered plant species have been identified or reported in the project area.

GEOLOGY

The project area is divided into three main geologic terrains or rock types (Figure 23):

- Belt Series sedimentary rocks and metamorphic equivalents (generally confined to outcrops east of Sagle in the study area);
- Kaniksu intrusive rocks (competent hard outcrops); and
- Glacial deposits (unconsolidated gravel, sand, clay and glaciolacustrian materials--including recent alluvial and lakeshore deposits).

Glacial deposits vary from several hundred feet deep in the Sandpoint area to thin skins and pockets over outcrops. New construction or expansion of US95 along Sand Creek will encounter saturated, soft sediments of the Sand Creek delta and will likely require considerable reinforcement and stabilization.

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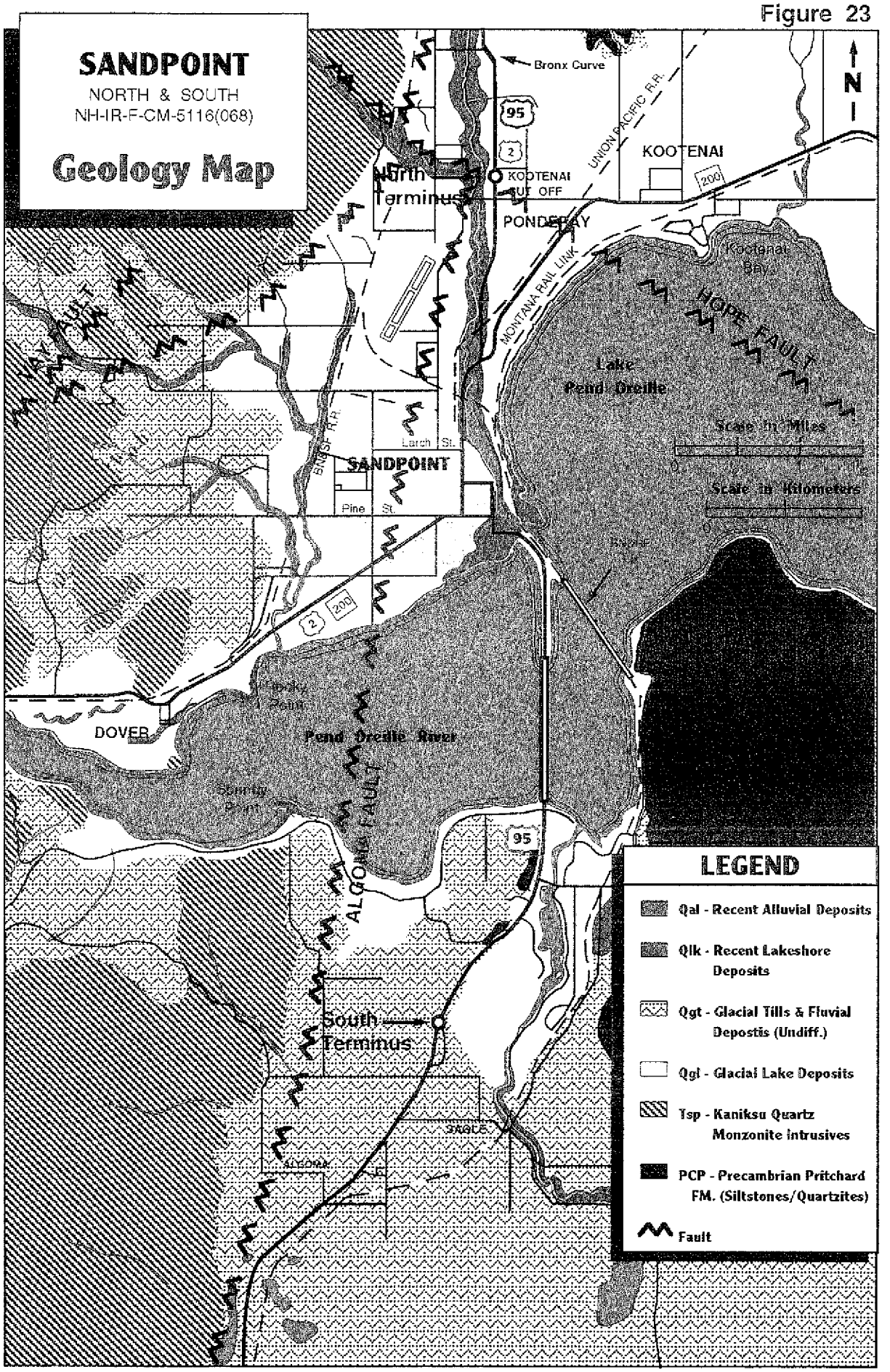
Figure 23



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Structurally, the study area lies in a complex zone dominated by the intersection of the Purcell Trench and the Hope Fault. The Purcell Trench is a late Cretacious topographic depression extending from Coeur d'Alene northwards for about 450 kilometers (280 miles). The trench is bounded by high angle faults that form the steep eastern face of the Selkirk Mountains, and the north-south linear valley through Sagle and Algoma. Just north of Sandpoint, these faults are offset to the east by the Hope Fault, a major northwest trending right lateral fault.

The Hope Fault was intermittently active from the Precambrian through the Eocene periods, but is now dormant, along with other faults noted on Figure 23. The most southerly splay of the Hope Fault bisects the City of Sandpoint. The actual intersection of the Purcell Trench and the Hope Fault is masked by thick glacial debris.

The most recent geologic disturbance on record that affected the study area was the Mount Borah earthquake of 1983 located over 480 kilometers (300 miles) southeast of Sandpoint. The local intensity rating was listed as V (Mercali scale) and resulted in cracked buildings and some swaying. No doubt the effects of the remote seismic event were intensified by the depth of saturated sediments under the city. Earthquakes with local epicenters occurred in 1918 in the Clark Fork area (intensity V), and in 1942 in the Cocolalla area (intensity VI).

VISUAL RESOURCES

There are four landscape components that are characteristic of the project area. They are depicted on the following pages with photographs and include:

- Landform -- The relatively flat valley, with some rolling hills predominates. There are some larger mountains and foothills to the west with generally mountainous background views all around.

- Water -- Lake Pend Oreille and the Pend Oreille River are dominent in the center of the study area. Sand Creek, adjacent to Sandpoint, is also an important feature along with some of the larger sloughs and creeks.

- Vegetation -- Coniferous forest covers the mountains and hills while a mixed deciduous vegetation is prevalent along the waterways. Flats are vegetated in pasture grasses, native grasses and sedges.

- Development -- This component includes rural residential and commercial development, the city of Sandpoint and towns of Dover, Ponderay, Kootenai, Sagle and Algoma, along with the major highways, railroads and bridges.

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Photo 7 -- View of 'Landform' in the study area, looking north from the Algoma region

Photo 8-- View of 'Water' in the vicinity of the Long Bridge

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Photo 9 -- View of 'Vegetation' vicinity of Ponderay

Photo 10 -- View of 'Development' in the City of Sandpoint

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The surrounding mountain ranges and wide expanse of Lake Pend Oreille and the Pend Oreille River are vivid visual resources in the project area, along with the pleasant rolling, forested hills. The highest degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern is in the western part of the project area because of that area's low density of human occupancy. The urban development throughout the rest of the study area tends to encroach on the natural landscape and detract from the compositional harmony between landscape elements.

PUBLIC RECREATIONAL AREAS

Recreation is a major component of the economy and lifestyle in the study area. Lake Pend Oreille is the centerpiece of the recreation industry. Although the shoreline of this lake between the high and low water marks was declared as public recreation lands in Section 67-4305 of the Idaho Code in the 1920's, the area in question was submerged when the Albeni Falls Dam was placed in operation in the 1950's. The land between the current winter pool level elevation of 625.3 meters (2051.5') above sea level and the summer pool level elevation of 628.7 meters (2062.5') above sea level on Lake Pend Oreille does not belong to the State. This strip of land is for the most part under private ownership with a flood easement from the Corps of Engineers. The State of Idaho only claims ownership of submerged land waterward of elevation 625.3 meters (2,051.5') above sea level.

Beaches along the 235 km (145 mile) long shoreline of Lake Pend Oreille are limited in number because of the generally rugged and inaccessible shoreline. Many coves can only be reached by boat. Therefore, the sandy beach at Sandpoint is especially popular with local residents as well as out-of-town visitors. This nine acre Sandpoint City Park is located on the shore of Lake Pend Oreille east of Sand Creek and the Burlington Northern railroad tracks. Present activities include tennis, boating, picnicking, walking/biking, beach use and general recreational use. The public beach offers a bathhouse, tiled wading pool, playground apparatus, lifeguard service and summer Red Cross swim program. Public recreational use of Sand Creek and Chuck's Slough for boat moorage and passage is also common. The City of Sandpoint has been awarded a grant from the Federal Land and Water Conservation Fund, Department of Interior, for improvement purposes.

The current designated walking/bike path extends from the Sandpoint city park to Sagle. It begins in the city park, proceeds west across Bridge Street to 1st Ave., south to Lake St., east through the city offices parking lot, to a path that leads to and then follows along the east side of US-95 to the long bridge, across the long bridge to the North Idaho Pathways trail on the east side of US-95 south to Sagle. This facility can be used for recreation and transportation between Sagle and Sandpoint. The preferred alternative maintains this facility and expands the pathway north as phases of the project are constructed.

Other public recreational areas include (Figure 24): Lakeview Park on the southern edge of the city, Bonner County Fairgrounds, and Community nine hole golf course.

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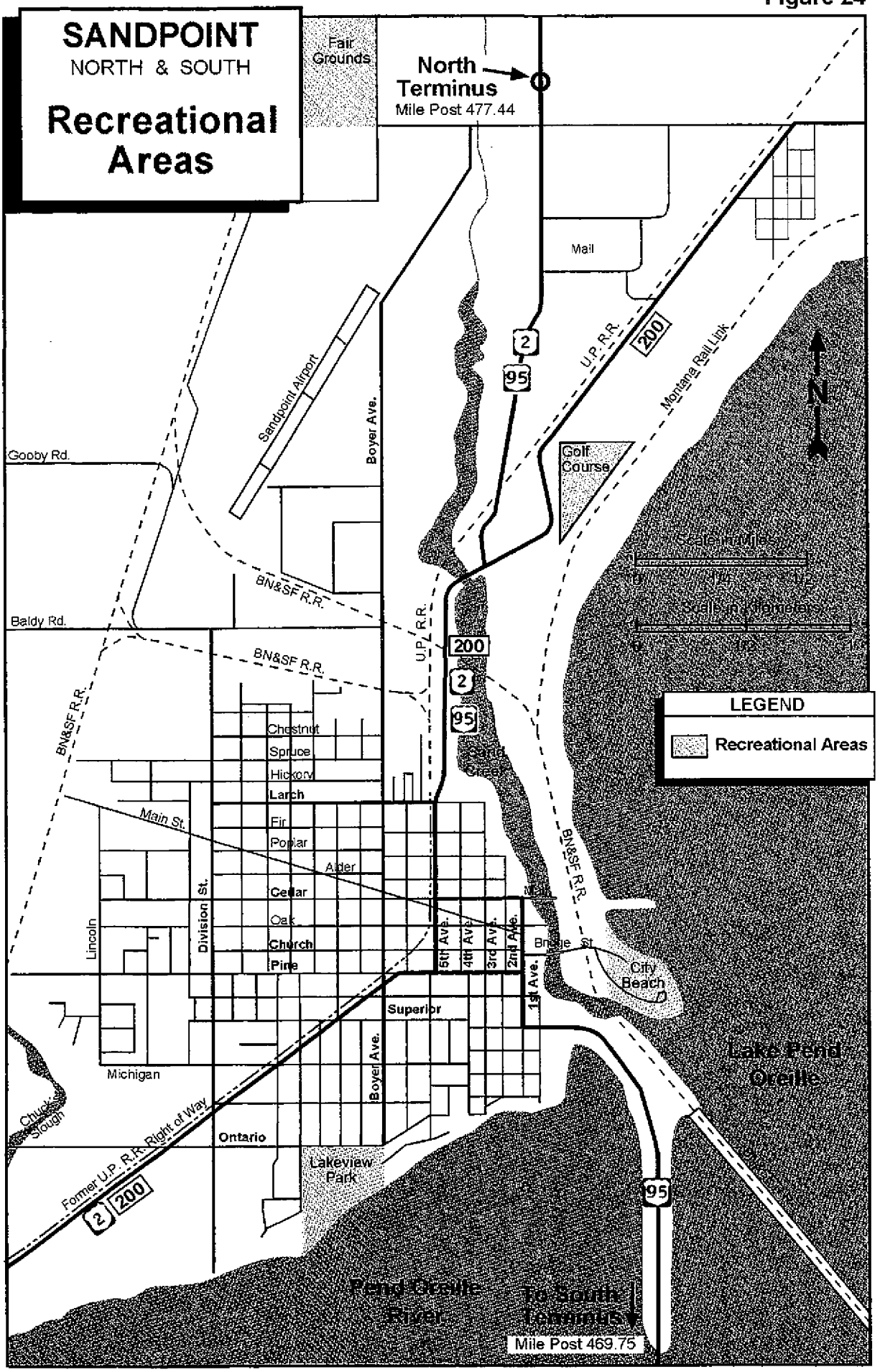
Figure 24



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ENVIRONMENTAL CONSEQUENCES

The intent of this section is to describe the potential effect of the Preferred Alternative on the environmental categories identified previously. It will also identify measures for mitigating negative impacts, and provide comparisons to impacts predicted for the Through Town "Couplet" Alternative. These determinations will be based on general alignment features and design concepts.[1]

The 'No Action' alternative by definition, does not have impacts. However, it does carry consequences, such as increased traffic congestion and travel time, increased operating costs, increased air pollution, and adverse impacts on the social and economic vitality of Sandpoint. When applicable, 'No Action' consequences are addressed below for comparative purposes only.

RESOURCES AND CONCERNS NOT AFFECTED

No impacts are anticipated regarding any of the following areas of concern:

- Indian Reservations,
- Wild or Scenic Rivers,
- Minorities,
- Federal Aviation Administration Airspace Intrusion,
- Wildlife and Waterfowl Refuges,
- Sole Source Aquifers,
- Publicly Owned Public Park or Recreation Area, and
- Navigation.

SHORT-TERM USES VS. LONG-TERM PRODUCTIVITY

The Preferred Alternative would unavoidably affect the natural resources and economics of the project area, and would have social impacts. Some of these effects and impacts would be positive and some would be negative.

The transportation improvements that result from the proposed project are based on a comprehensive state planning process which considers present and future transportation requirements within the context of present and future land use

[1] "Alignment features" concern the social, economic and environmental effects of the highway's location and dimensions. "Design concepts" relate to the shape, color, texture, and other aspects of the construction materials used--for example, the decision to use steel instead of concrete for bridge spans on the Sand Creek structure.

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development. The short-term impacts and the commitment of resources (for the proposed project) are consistent with the maintenance and enhancement of long-term economic productivity for the state and local area.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Implementing the Preferred Alternative involves a commitment of a range of natural, physical, human, and fiscal resources. Land use for construction of the proposed project is considered an irreversible commitment during the time that land is used for a highway facility. If, however, a greater need arises for use of the land, or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials (such as cement, aggregate, and bituminous material) are expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable. They are not, however, in short supply and their use will not have an adverse effect upon continued availability of these resources. Any construction will also require a substantial one-time expenditure of both state and federal funds which are not retrievable.

The commitment of these resources is based on the premise that residents in the immediate area, the state and the region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and reduced highway user operating costs which are anticipated to outweigh the permanent commitment of resources.

INDIRECT AND CUMULATIVE IMPACTS

As long as economic conditions, quality of living standards, the five percent annual growth rate, and transportation services remain satisfactory, these conditions are expected to continue bringing new businesses and roughly two and a half times as many people into the area by the year 2022. If the pattern of growth remains unchanged, two-thirds of this anticipated growth will locate outside built up areas placing stress on the area's biological functions and values. Principal areas of concern are: (1) additional septic systems adversely affecting water quality, and (2) traffic

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increases on the local road system adversely impacting PM-10 and 2.5 airborne particulate levels and traffic noise.

The maintenance and improvement of transportation facilities--as proposed in the Preferred Alternative and other state highway actions identified in the project area involving US2, US95 and SH200--are expected to support the current rate of growth and help to preserve the area's economic vitality by providing reasonable traffic flow in the movement of goods and services for, at least, the next 20 years. It is also anticipated that these proposed state highway actions will cumulatively benefit air quality in the study area as a result of reductions in idle time and increases in travel speed. The project is *not* expected to accelerate growth or to instigate development in presently rural areas.

The Preferred Alternative will minimize the potential for reasonably foreseeable secondary and cumulative environmental impacts. This is because it will upgrade highway facilities along existing routes, established transportation corridors, and urbanized areas, rather than through rural areas on new location. This approach avoids valuable wildlife habitat and other natural resources in the study area. Also, since no new access is provided into undeveloped areas, the project is not expected to promote any noticeable increases in development, induce major land use changes, or contribute to a faster rate of growth. However, it is unavoidable that some indirect and cumulative effects will occur. These impacts are related to two main aspects of the project: the interchanges at Superior Street and SH-200, and the removal of US-95 'through' traffic from downtown Sandpoint.

The design and location of the interchanges will directly affect connections to US-2 and SH-200. In this way, the project will *indirectly* affect plans for future widening or realignment of those routes, which will affect neighborhoods and businesses along those routes. Some properties will benefit from improved access and traffic flow, while others would be adversely affected by the "barrier" of a wider highway and the potential for increased noise. By redirecting US95 traffic around downtown Sandpoint, the project may have an indirect effect on local travel patterns and infrastructure improvements. Without the heavy highway traffic downtown, the City will have more options for addressing local traffic flow problems, and will have a better opportunity to initiate some much-needed infrastructure improvements, such as replacement of the sewer system.

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By contrast, the 'No Action' alternative would lead to continued infrastructure deterioration and a degradation of the quality of life in the project area. Specific concerns are: deterioration of transportation services and air quality, increased traffic congestion, and indirect impacts on water quality in the Sandpoint area.

Mitigation: Aside from highway location and access determinations, ITD has little control over developers and land use development. Local jurisdictions are responsible for directing growth and providing for the health and welfare of their constituents. ITD is committed to making a reasonable effort to comply with local land use and transportation plans and to providing opportunities for public involvement and comment on proposed highway projects. It is noted that project area jurisdictions have adopted generalized comprehensive planning documents containing policy statements, goals and objectives; however, no detailed elements such as a land use or transportation plans are available.

To mitigate anticipated water quality deterioration, the county and city governments will have to cooperate in a planning effort which forces developments to locate in areas where sewer services are available or will be provided. PM-10 impacts from transportation related sources can be minimized or alleviated by requiring developers to pave new developments and provide road surfacing impact fees to the local highway district, or locate in areas where surfaced roads are already available. Traffic noise impacts can be minimized by reduced speed limits, increased setback requirements and/or requiring developers to provide noise barriers when feasible and appropriate. ITD will support these efforts, but cannot directly control them.

To counter adverse project-related impacts (whether direct, indirect or cumulative), Idaho Transportation Department and Federal Highway Administration, along with cooperating agencies such as the Corps of Engineers, implemented a strategy of avoidance-first, minimization-second and mitigation-third. Specific impact mitigation techniques are set forth in this section as they relate to identified environmental considerations, but generally they include coordination with concerned agencies, best management practices (BMPs), and replacement or restoration of any affected resource. In addition, recommendations which address cumulative impact mitigation are presented when appropriate.

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AIR QUALITY

The State of Idaho Transportation Improvement Program (TIP) lists two transportation projects which will take place in the nonattainment area in the next five years. The two projects involve improvements to US95. These projects, which include the proposed project, lend themselves to a simplified qualitative assessment because EPA has determined that this area does not require additional long-term planning efforts and the existing PM-10 standard was replaced in July 1997. The PM-10 standard was used to determine that the area was a nonattainment area originally. The "revised" PM10 standard replaced the "pre-existing" PM10 standard. At the same time PM-2.5 and future monitoring using this standard will determine an 'areas' eligibility status, not the PM-10 standard. The Federal Highway Administration concurred with a previous qualitative determination that this project is not expected to increase PM-10 levels and may slightly reduce such levels (see the "Air Quality Conformity Determination" of 9 October 1991 in Appendix F). An updated conformity determination, completed in May of 1998 is also set forth in Appendix F. The comformity determination is a process to evaluate the proposed impacts of actions (in this case highway construction projects) in relationship to the State Implementation Plan (SIP) for air quality, to ensure the project conforms to the requirements of the SIP and does not increase the levels of PM-10 within the nonattainment area.

The Idaho Division of Environmental Quality, the Idaho Transportation Department, Bonner County, and the cities of Sandpoint, Ponderay, and Kootenai are working cooperatively to ensure that State air quality and transportation goals are met.

Indirect Impacts: Indirect impacts on air quality--if even detectable--are expected to be slightly positive. Any localized improvements in air quality due to the new highway facility are not expected to worsen conditions in other areas. Adjoining highway projects, such as future work on US-2 and SH-200 will have benefits similar to those of the proposed project which contribute to better air quality, improved traffic flow and the use of winter maintenance procedures that minimize dust. These measures include the use of special sanding material and--if conditions allow--using liquid deicer instead of sanding material to reduce the amount of particulate matter generated. For further information, see the discussion of storm water management in the 'Water Resources' section of this chapter.

FARMLAND

The Preferred Alternative would have minimal impact on farming and farmland. It does not involve any new alignment through rural areas or splitting of farm parcels.

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There is minor encroachment which is consistent with the Bonner County Comprehensive Plan. The USDA Soil Conservation Service indicates that there is no prime farmland in the study area.

WATER RESOURCES

One or more domestic wells could be affected by the proposed highway widening south of the Long Bridge. However, there are no anticipated effects on the Southside Aquifer. North of the Pend Oreille River, there is only one domestic well proximate to the route and it will be avoided. Also, there are two segments of Sand Creek north of Sandpoint and two segments of Sagle Slough on which water rights have been filed. These water rights will not be affected by the project.

An area of active groundwater discharge on the west bank of Sand creek north of the 'Gas and Go' on the northeast corner of 5th and Larch would have been affected by a sliver fill for the northbound Through Town 'couplet' route, but is not affected by the Preferred Alternative. Construction of the Superior Street interchange and Sand Creek structure will result in some minor short term impacts to the water quality of Sand Creek and Lake Pend Oreille, primarily from disturbance of the creek's sediments while driving pilings and excavation for pier supports.

Water quality issues related to contamination from known or potential hazardous materials sites are discussed in the 'Hazardous Materials' section of this chapter.

Erosion and Sediment Control: The risk of water pollution problems with the Preferred Alternative is about the same as that predicted for the Through Town Alternative. Although there would be less ground disturbance for construction of the Through Town Alternative, it could present more risk to Sand Creek than the Preferred Alternative because there is less room for temporary sediment control devices such as traps, basins or ponds. In downtown Sandpoint, the majority of the storm drain system is piped underground directly to Sand Creek or Lake Pend Oreille. This situation would make temporary sediment control difficult and expensive due to the need for special fiberglass, concrete or steel sediment traps built to work with the underground storm drain system. Such devices require frequent maintenance to remove trapped sediment so they do not fill up and create flooding problems.

It will be much easier to control erosion and sediment on the Preferred Alternative because of the area available for controls to be applied. The proposed structure over Sand Creek, elevated above the ground on piers, lends itself to the construction of both

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temporary and permanent ditches, drains, sediment traps, and basins. It also allows the permanent features to be landscaped with appropriate riparian and wetland grasses, and woody vegetation to control the erosion and resultant sedimentation.

There are no salmonid spawning beds or gravels within the project area. The local fisheries habitat is already shallow and silt/sand laden. The project plans will include provisions to avoid increasing the silt/sand problem by utilizing both administrative and constructed BMP controls, discussed below under "Mitigation".

Storm Water Management: Bonner County adopted a Storm Water Ordinance in 1994 which is being enforced by the county on all new construction projects. This project will comply with the ordinance and the federal NPDES Storm Water permit requirements. The County will be allowed an opportunity to review the NPDES Storm Water Pollution Prevention Plan prepared by ITD for this project to ensure that it complies with the local ordinance. As directed by the NPDES rules, ITD will comply with whichever requirements are more restrictive.

The increase in snow melt and rain fall runoff from bridge surfaces will be negligible as a result of converting areas from vegetative cover to pavement, curb, gutter and sidewalk. Actual discharge to Sand Creek and Pend Oreille Lake will be treated and controlled through the use of sediment ponds, retention basins, vegetated swales and other drainage systems. There will be no noticeable increase in flood levels and no likely increase in potential property damage claims. No site specific data exist to suggest that highway operations cause any noticeable water quality impacts in the study area. However, the added lanes will increase pollution potential in the long-term due to the greater area of impervious ground. ITD will continue to use sanding material which meets the special specifications for EPA-designated particulate matter (PM10) non-attainment areas. This specification is an administrative best management practice to reduce the amount of particulate material reentrained into the air and discharged by storm water. [2]

ITD uses liquid deicer instead of sanding material when atmospheric and ground conditions allow. This reduces the number of times and the amount of sanding material used, reducing the amount of particulate matter regenerated from road dust.

[2] The Idaho Division of Environmental Quality (DEQ) has performed some limited sampling of Fourth of July Creek, next to I-90 in Kootenai County, during and after winter sanding with the sand/salt mix. The analysis showed no significant change in total chloride levels that could be attributed to roadway sanding. Therefore, sanding and subsequent snow removal operations should not increase chloride related pollutant loads that may affect water quality in Sand Creek or other surface waters adjacent to the project.

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Liquid deicer will be applied in the proposed project area when snow and ice conditions warrant. This is considered a best management practice for the reduction of particulate matter in both the air and storm water.

Although run-off carries potentially harmful pollutant loads to nearby surface waters (deposited on highway surfaces by sanding operations, vehicles, winds, or fallout of air pollutants), several studies indicate that under normal conditions (no hazardous spill accidents) highways do not produce large enough amounts of pollutant constituents during storm runoff events to warrant treatment facilities. The apparent reason for this is that the continual 'sweeping' effect of vehicles produces air currents that remove pollutants from the highway surface. Generally it is recommended that only highways with average daily traffic (ADT) of at least 30,000 vehicles and a nearby sensitive receptor, such as a stream or lake, have a determination of their constituent loads. The 30,000 ADT limit is not reached until the design year of 2022 (at only one location on the new alignment). Storm water treatment facilities are incorporated into the project design to reduce pollutant loading and peak storm water runoff, a comprehensive determination of constituent loading is not warranted at this time.

In an effort to reduce or eliminate the potential pollution from highway runoff, the project design will provide for storm water treatment. The pollutant load from the highway runoff will be controlled by using grassed or vegetated swales, sediment retention ponds, sediment traps and basins, and constructed treatment wetlands to treat the runoff before it enters Sand Creek or other surface waters. The Through Town Alternative would not have the physical space to accommodate controls like these within the project boundaries. To attain the same degree of pollutant reduction, it would have been necessary to use subsurface fiberglass, concrete, or steel treatment traps or basins, or to pipe the storm water drainage to a location where a sediment removal pond or constructed wetland treatment facility could be built. This would require more property to be purchased and would involve higher costs for installation and maintenance than for equivalent facilities on the Preferred Alternative.

Indirect Impacts: While the Preferred Alternative will not introduce new accesses into undeveloped areas, it will improve the level-of-service for US95 traffic and will thus be a factor in maintaining current growth trends and attracting new enterprises to the area. Projections are that population will approximately double by the design year. Some developments related to this projected influx of people will likely impact surface and groundwater resources in the study area, especially those developments the

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County allows to occur outside community service areas. These impacts will most likely result in:

- Minor alterations of near shore water quality in Lake Pend Oreille and other surface waters (streams, lakes and ponds) in the study area.
- Possible minor degradation and/or depletion of groundwater.

The knowledge of relationships necessary to make more definitive findings about such indirect impacts is simply not available and cannot be reasonably determined under our current capabilities.

Mitigation

Short-term construction related impacts will be avoided or minimized by the use of administrative and constructed Best Management Practices (BMPs) for highway construction. Specific mitigation measures will be identified during final design of the project, with development of the Storm Water Pollution Prevention Plan. BMPs for erosion and sediment control will include (but will not be limited to) the following:

1. Construction will be phased and perimeter controls (i.e. silt fence, rock outlet protection, sediment basins, etc.) will be installed before ground disturbing construction work proceeds in each area.

2. Where bare soils are exposed to erosion, cut and fill slopes will be treated temporarily with either hydraulically applied or roll-out erosion control blanketing within five days. The type of blanketing will be based on slope angle, soil matrix, surface roughness, and predicted precipitation or surface runoff.

3. In selected areas (station 115 for 60 meters (Sand Creek phase)), retaining walls will be used to avoid placing fill into wetlands or surface waters. These walls will be designed with appropriate controls for drainage and erosion.

4. During construction, storm water will be conveyed by temporary or permanent structures, and ditches, to sediment basins or ponds and then to controlled outlet protection devices such as rock outlets. The engineering decisions to determine location and size of stabilized outlets, and sediment basins or ponds, will be based on hydraulic analysis of flow volumes/velocities (calculated estimates) from both temporary and permanent structures and ditches. This analysis will use 25-year storm design for ditches and culverts, and 100-year storm design for sediment traps and basins. Sediment traps and basins will also be designed with particle size

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analysis to ensure that the design particle removal efficiency of 80% minimum is attained.

5. Wetland, streambank, and shoreline areas will be seeded and/or planted to reestablish native vegetation, to maintain identified wetland functions and values, and to provide a visually aesthetic appearance for these areas. A buffer zone will be established from the top of the streambank to the upland areas. All other project areas which are disturbed will be revegetated unless they are covered by rock, asphalt or concrete.

6. Fertilizer use will be limited to specified areas of seeding. Pelletized fertilizer will be used with all plantings. No fertilizer will be used near the surface waters of Sand Creek or the lake.

All controls (BMPs) will be inspected weekly and during each storm event that produces runoff to ensure that all the controls are functioning as intended and to maintain or correct those that are not. These inspections will be performed by ITD Residency Inspectors who will report problems to the Resident Engineer (ITD construction/project engineer) for resolution. The Resident Engineer will direct the contractor to perform installation, replacement, and/or repairs of BMPs throughout the project.

The project contract will specify that any domestic water supply affected will be replaced in quality and quantity by the Idaho Transportation Department. Other mitigation measures that will be included are:

- All fill material introduced into wetlands or surface waters will be quarried shot rock; while piers, pilings, and abutments will be steel or concrete. These materials will limit the pollutants from these operations because of their clean nature.

- Erosion and sedimentation controls such as silt fences, barriers, vegetative stabilization and sediment ponds;

- A spill prevention and clean-up plan addressing the use, storage, and disposal of petroleum products during construction;

- Provisions for re-establishing cross-highway drainage patterns severed by previous highway construction projects;

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ZACH

- Protection of the Sand Creek shoreline during construction;

The Preferred Alternative will also require submittal of:

- A COE 'Section 404' Permit;
- A COE 'Section 10' Permit;
- An "IDWR Stream Channel Alteration' Permit;
- An EPA 'NPDES' Permit;
- DEQ 'Water Quality Certification';
- A State Land Board 'Navigable Waters Permit'; and
- An 'IDWR Well Drillers' Permit, if any replacement wells are required.
- A Coast Guard Permit (for the Long Bridge segment)

WILDLIFE

This project will impact bald eagle and osprey foraging areas and waterfowl and aquatic mammal habitat through direct elimination of the habitat due to highway widening. There will also be some temporary impacts to both warm-water and cold-water fisheries during reconstruction of the Long Bridge and Sand Creek structure. However, the project is located within an existing transportation corridor, part of which is in an urban setting where the diversity of wildlife species has already been greatly modified by past human developments and activities. Species that continue to persist in this setting are commonly occurring, have wide geographic distributions, have adjusted to human activities, and tend to take advantage of the edge effects which result from these activities. It is likely that any project-related declines in these species would be short-termed and would not threaten their existence.

Possible indirect wildlife impacts include the loss of additional habitat if displaced property owners choose to rebuild in undeveloped areas. The Preferred Alternative does, however, avoid one such impact that would have occurred with the Through Town Couplet: the relocation of the County Courthouse/Jail to an undeveloped site in the study area. To minimize indirect impacts, ITD will support any efforts by local jurisdictions to adopt land use ordinances which provide for adequate lot sizes and minimum setbacks from lakes, ponds, streams, and wetlands.

Threatened/Endangered Species: The list provided by the U.S. Fish and Wildlife Service names four listed species that may occur in the project area: the bald eagle, the gray wolf, the bull trout and the ute ladies-tresses. It also names one species of concern, the westslope cutthroat trout The required 'Biological Assessments' have

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been prepared for all of the listed species and the one candidate species by the Idaho Transportation Department, with input from the U.S. Fish and Wildlife Service and Idaho Fish and Game Department (see Appendix H). These assessments conclude that the project "is not likely to adversely affect" any of the listed or candidate species.

Mitigation:

1. The avoidance or minimization of fills into aquatic habitats will be a priority during design and construction. Compensation for impacts resulting from unavoidable fills in aquatic habitats, other than deep-water habitats, will be on a 1:1 basis for functions and values, as discussed in the 404(b)(1) Analysis section on page 117.

2. Construction practices that minimize the possibility of petroleum products and construction materials from entering any body of water will be implemented and monitored for compliance. Included in these practices will be the requirement that the refueling of equipment will only take place at predetermined stations for all mobile construction equipment and vehicles.

3. Construction 'diapers' will be required at active construction areas where deleterious construction materials could enter water bodies.

4. Revegetation and landscaping of all disturbed areas not scheduled for paving or curb and gutter will provide some replacement habitat for terrestrial wildlife species. Screening trees will be planted at the Sagle bikeway entrance (east of path) to block possible line-of-site visual affects on nesting eagles.

5. Construction activities will be scheduled to avoid conflicts with bald eagles. Nesting time period is from 15 January to 15 July. During that time period there will be no blasting within one mile of the nest (line of site) and there will be no construction activity within ½ mile of the nest site. If construction activity is to occur during the nesting season, within ½ mile of the nest, formal consultation with the US Fish and Wildlife Service will be undertaken. Verification that the eaglets have fledged and the nest has been abandoned will be accomplished by a raptor biologist.

6. Construction activities will be scheduled to avoid conflicts with sensitive species such as wintering waterfowl and the spawning migration of fish species identified by the Idaho Department of Fish and Game and the U.S. Fish and Wildlife Service.

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Fish passage will be maintained in Sand Creek during the spawning season identified in Appendix H.

VEGETATION

The Preferred Alternative will disturb about 26 hectares (65 acres) of vegetated land. Of the area disturbed, which includes existing highway right-of-way, approximately 10 hectares (25 acres) will be revegetated. The balance will be paved or covered by curb and gutter. No federally-listed threatened or endangered plant species are known to occur along the proposed route. However, the orchid known as Ute's ladies' tresses (*Spiranthes diluvialis*) is a "threatened species" that may occur in the area. Field reconnaissance will be conducted prior to project construction, as noted in the previous threatened and endangered section, to determine if suitable habitat and or populations are found in the project area. If so, appropriate avoidance and/or mitigation measures will be determined in consultation with the U.S. Fish and Wildlife Service and implemented through specific provisions in the project contract and plans.

Noxious or invasive weeds do occur in the project corridor. Revegetation efforts (seed, fertilizer, mulch) will be accomplished in a timely manner to avoid the introduction or spread of noxious or invasive weeds. Areas of ground which are disturbed by grading, excavation, construction activities and not reseeded, fertilized, and mulched within two weeks of final slope disturbance will be protected using hydraulically applied or roll out blanketing.

CONSTRUCTION IMPACTS

Most highway projects will have short-term construction impacts. The types of construction impacts that can be expected with the Preferred Alternative are as follows: additional noise and vibration; additional air pollution and dust; interference with commercial and residential activity; and traffic detours, including detours affecting emergency vehicles. There is also the possibility for accidental spills of petroleum products or other hazardous material within staging areas or along sections of the roadway that are under construction.

Construction noise, air pollution and dust impacts in the project area will vary depending on the type of work being done. The most prevalent construction noise source is equipment powered by internal combustion engines (usually diesel). Noise from equipment likely to be used on this project (tractors, trucks, graders, pile drivers, etc.) will range to about 95 decibels (dBA) when measured from a distance of 15 meters (50'). To reduce the impact of construction noise, most construction activities will be

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confined to the period least disturbing to adjacent and nearby residents, between 7:00 a.m. and 7:00 p.m. on weekdays in urban areas. Construction impacts will also be mitigated by having contractors follow standard contract specifications such as (1) keeping muffler systems in working order; (2) spraying water for dust abatement; (3) prohibiting pile driving or blasting operations within 915 meters (3000') of an occupied dwelling unit on Sundays or legal holidays, and between the hours of 7:00 p.m. and 7:00 a.m. on other days, without the written approval of the engineer.

Several methods or strategies for minimizing exposure of contaminants to groundwater or storm water runoff are available to the contractor in construction stages. They include containment diking with bottom and sidewall liners, curbing, drip pans, collection basins and sumps. The project contract will include a spill prevention and control plan specifying selected control strategies. The successful bidder will then accept and carry out that plan, or propose modifications which meet all applicable state and federal regulations.

Mitigation:

1. Restrictions on the use of noisy construction equipment will be applied as described above in this section.

2. A spill prevention and control plan will be included in the project contract, as explained above in this section.

3. If a hazardous waste spill occurs along the transportation corridor during or after construction (involving either project contractors or non-construction associated carriers), a call to the Emergency Medical Services (EMS) 1-800-632-8000 will activate the response system. Unless radiological materials are present, the Division of Environmental Quality (DEQ) will be the moderator and begin standby notification. If radiological materials are present, the Idaho National Engineering Environmental Laboratory (INEEL) Oversight Program will be the moderator. Once they arrive on site, the Idaho State Police (ISP) will become the Incident Commander (outside the state highway system right-of-way/transportation corridor, the Bonner County sheriffs Department would be notified and be designated the Incident Commander).

4. The project contract will include a traffic control plan describing detours and measures to maintain traffic flow through Sandpoint until interchange and

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intersection improvements are completed. The traffic plan will be coordinated with local community interests and advertised in radio and newspaper announcements.

LAND USE

The Preferred Alternative will tend to maintain urban growth within incorporated community service areas, but may hasten commercial development at interchange areas which are already zoned for such uses. Other than the direct conversion of open space to highway uses on the Sand Creek peninsula, no significant land use impacts or secondary effects are anticipated since the route follows existing transportation corridors for the entire length of the project. The Idaho Transportation Department will maintain full control of access along the new segment of highway between Sand Creek and SH-200.

Overall land use impacts for the Through Town 'Couplet' alternative were similar to those for the Preferred Alternative. However, some shifting of commercial establishments would probably have occurred in the downtown core as businesses relocated to avoid or attract highway traffic.

The Preferred Alternative is consistent with the Bonner County Comprehensive Plan. However, upgrading US95, along with planned work on connecting routes, will incrementally encourage a continuance of current growth trends. This growth will likely create pressure to develop rural areas and to expand or upgrade community services such as police and fire protection, local roads, water and sewer hookups, trash collection, classrooms and school bus service. ITD will endeavor to maintain consistency with local comprehensive plans and community desires when upgrading and locating highway facilities in an effort to minimize and avoid foreseeable adverse secondary and cumulative impacts. ITD will also offer data and recommendations to assist local jurisdictions in their planning efforts and with their responsibility to determine what, if any, land use controls they wish to employ to manage growth.

RECREATION

Overall, the project will maintain or improve public recreation opportunities in Sandpoint. It will not eliminate any existing facilities and will enhance pedestrian/bicycle recreation by connecting the Long Bridge and City Park area to to new paths or bike lanes extending north to the SH200 junction. This new separate

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path along Sand Creek would also add opportunities for fishing, bird watching and other recreational activities along the creek. The new path will be developed with input from the cities of Sandpoint, Kootenai, Ponderay, and a local citizens' group known as North Idaho Pathways. The path development will be consistent with local plans and transportation goals these groups have established

Public use of Sandpoint City Park, the beach and marina will not be affected by the project. Access to the area will be maintained, though minor delays may occur during construction at the Bridge Street crossing. Temporary disruption of recreational boat traffic going to and from docks at the Lakeside Inn may occur during construction of the Sand Creek bridge. Lakeview Park, the Bonner County Fairgrounds, and the golf course will not be affected.

Recreational access to the old Long Bridge will be retained. The current plan is to add lanes to the west side of the current Long Bridge. No impacts on its use or popularity as a "promenade" and bicycle path are anticipated. However, there may be temporary closures during bridge construction activities that could be dangerous to the public. Temporary detours and connections between city streets and the Long Bridge path will be provided as needed during project construction.

SOCIO-ECONOMIC

By widening an existing arterial highway and constructing a new section parallel and adjacent to the mainline of the Burlington Northern Railroad, the Preferred Alternative:

- Will not separate any residences from community facilities,
- Will not isolate any individuals or groups,
- Is not expected to induce any noticeable or adverse changes in property values,
- Will not eliminate any existing on-street parking.

Positive socio-economic impacts include provisions for:

- A separate bicycle/pedestrian pathway on the remodeled Long Bridge and provide new paths or bike lanes north to SH-200.[3]
- Public parking beneath the Sand Creek structure.[4]
- Continued access to the BN&SF Depot ticket counter, via the under structure parking lot from Bridge Street or the Cedar Street Bridge, shall be maintained (The walk from the Cedar Street Bridge will be longer than the current access. But, it

[3] For additional information about the bicycle/pedestrian pathway, see the "Recreation" section on page 87.
[4] See the "Section 4(f) Evaluation" in Appendix B and the "Section 4(f)" section on page 107 for details.

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will provide for easier wheel chair access from the Cedar Street Bridge to the ticket counter by having a pathway from the bridge to the parking area, and the parking area to the Depot.).

The Through Town 'Couplet' alternative would have left Sandpoint with a major highway bisecting its downtown business and shopping district, with noise and traffic detracting from the safety and enjoyment of tourists and local patrons. To optimize traffic flow, it would have been necessary to eliminate on-street parking along the route of US-95 through Sandpoint. However, that would have conflicted with the economic interests of local highway-oriented businesses.

Relocation

The Preferred Alternative will possibly displace three commercial establishments: the Lakeside Inn, a warehouse, and a realty office (see Appendix D-Relocation Study). Depending on final design details, the Lakeside Inn administration office and the Chamber of Commerce Information building may also be affected. If the Lakeside Inn is not displaced ITD will provide mitigation using landscaping (vegetation) and/or other design features to reduce the impacts to the Inn. ITD right-of-way agents will negotiate with the affected land-owners to determine what compensation and relocation assistance is needed. No residential or industrial displacements are anticipated. No known concentrations of minorities, elderly, or handicapped people would be involved.

The Through Town 'Couplet' alternative would have displaced two residences, two businesses, and the county courthouse. As a tax-supported entity, the courthouse is eligible for functional replacement. New courthouse and jail facilities would have to have been provided, and the project would have included costs for contracting construction of comparable facilities at an appropriate location.

Mitigation: The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance & Real Property Acquisition Policies Act of 1970, as amended. All eligible parties involved in relocation would be provided assistance and fairly compensated through appropriate relocation and compensation

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procedures as authorized in 49 CFR, Part 24. Owners of any property located in the proposed right-of-way, for example, would be paid full and fair market value for their property and for all reasonable expenses. Other mitigation measures can include considerations such as moving expenses and supplemental payments for increased interest payments. Relocation resources are available to all residential and business relocatees without discrimination.

Economic

The Preferred Alternative would entail three types of economic impacts:

- Construction impacts,
- Amenity impacts, and
- Project induced changes in traffic patterns which affect the pattern of through-stop spending and thus indirectly affect business viability and employment.

Construction impacts would be positive with respect to the Sandpoint economy. The average annual increase in Sandpoint's income over the five year construction period would be $1.6 million. The average annual number of jobs added to the Sandpoint economy would be forty-nine. The project would have a moderate positive effect on destination spending in downtown Sandpoint due to reduced traffic congestion and fewer trucks in the Central Business District.

Assuming a full relocation scenario for enterprises that depend on through-stop traffic, the Preferred Alternative could cause approximately 130 Sandpoint jobs to be relocated to the SH200 interchange area in Ponderay and the South Sandpoint interchange area at the north end of the Long Bridge. If all businesses that depend on through-stop traffic close permanently, the negative impacts would amount to the loss of approximately 260 jobs with a corresponding impact to Sandpoint's total economy. This is not a likely scenario. ITD has found in past projects that most businesses relocate in the same business area or town. Most likely, there will be no effect on total employment in the greater Sandpoint area. The project will have no impact on through-stop spending in the Algoma/Sagle area.

Comparable figures for the Through Town 'Couplet' alternative were: $1.04 million in increased income during project construction; 31 jobs added to the local economy; and a possible loss of 260 jobs (worst-case scenario). Reducing truck traffic in the business district along 1st and Cedar streets would have had a positive amenity effect on

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destination spending in downtown Sandpoint. However, this positive impact would be partially offset by a corresponding negative impact along Church Street and 4th Avenue, the route that these trucks would then be traveling. However, since destination spending is currently low along those two streets, little economic loss would occur.

Indirect Impacts: The Lakeside Inn may suffer some loss of patrons due to the increased noise and imposing view of the new highway so close to the boat docks and picnic area. Indirect economic impacts may also arise depending on what kind of businesses become established at the two interchange sites. If gas stations, convenience stores, and fast-food restaurants are new to the area rather than relocated from elsewhere in Sandpoint, they may adversely affect the income of existing establishments in town.

ENERGY AND HIGHWAY USER IMPACTS

The highway user benefits from implementation of the Preferred Alternative will result in a benefit/cost ratio of 6.3 compared to the existing route for the 20 year period between 1994 and 2014, assuming a seven percent discount rate. Maintenance costs are estimated at $3.1 million during this period.

The estimated automobile travel time benefit for the period 1994-2014 is $145.7 million. Excluding automobile time savings, the Net Present Worth of the Preferred Alternative is projected to be $261.1 million. Savings projections regarding fuel, engine oil, tires, maintenance and depreciation are noted on Table 7 for automobiles, single-unit trucks and multi-unit trucks, along with truck time saving projections.

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TABLE 7
SAND CREEK (PREFERRED) ALTERNATIVE
PROJECTED HIGHWAY USER ENERGY/OPERATING COST SAVINGS
and
TRUCK TIME SAVINGS
for the Period 1994-2014

	Automobiles	Single-Unit Trucks	Multi-Unit Trucks	TOTAL
Fuel	$10.3 million	$11.8 million	$10.2 million	$32.3million
Engine Oil	.6 million	.5 million	.5 million	1.6 million
Tires	1.9 million	1.4 million	3.5 million	6.8 million
Veh. Maint.	10.3 million	9.5 million	12.4 million	32.2 million
Deprec.	15.1 million	7.9 million	6.4 million	29.4 million
TOTAL	$38.2 million	$31.1 million	$33.0 million	$102.3 million

Truck Time Savings $99.4 million $48.6 million
$148 million

Corresponding estimates for the Through Town 'Couplet' alternative have been revised to:

Benefit/cost ratio:	10.9	20-year maintenance:	$2.6 million
Travel time benefit :	$195.9 million	Net Present Worth:	$404.5 million.
Operating Cost Savings:	$171.4 million	Truck Time Savings:	$204.2 million

NOISE

South of the Long Bridge, the preferred Alternative remains within the existing US95 corridor. Receptor locations adjacent to this corridor currently experience the highest traffic noise readings in the project area. North of the Long Bridge, the proposed alignment is located in an existing railroad corridor dominated by train noise. The number of trains using this corridor is approximately 60 per day. The Burlington Northern Railroad has merged with the Santa Fe Railroad and they are in the process of double tracking this corridor. Upon completion, it is estimated that the current number of trains using this corridor could easily double.

* "Leq" refers to noise levels derived from an equivalent or "average" over a period of time--usually one hour.

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Federal Highway Administration (FHWA) 'absolute' traffic noise abatement criteria is Leq 67.0 dBA for residential units and Leq 72.0 dBA for industrial and most commercial receptors.

Implementation of the preferred Alternative will generally have no noticeable influence (±3 decibals) on traffic noise levels at most locations. South of the Long Bridge, the Country Inn Motel and six residences currently exceed FHWA noise abatement criteria and are projected to do so in the design year with or without project implementation. Noise walls are not feasible for these receptors because of access limitations. Traffic noise, regarding the proposed location of the preferred alternative paralleling the BN/SF railroad tracks adjacent to Sand Creek, is projected to be less than currently produced by train noise. Traffic noise walls are not feasible in this area because of the more dominent source of noise produced by railroad operations. Also, traffic noise impacts at the city beach area resulting from this preferred alternative will be minor, below criteria, and for the most part unnoticeable. Traffic speeds will be maintained at 55 mph, or less, in the project area. No other noise abatement measures are proposed by the Idaho Transportation Department (see Appendix F - Traffic Noise Analysis for detailed analysis and receptor location diagrams).

A 'relative' noise impact occurs when the estimated design year dBA level exceeds the current dBA level by 15 dBA. The noise analysis (Appendix F) indicates that no receptors will experience a 'relative' noise impact with or without project implementation.

Noise abatement measures which are recommended for consideration by the local jurisdiction in the project area and along major traffic routes include:

(1) Requiring acceptable setbacks or buffer zones for new residential units or developments - i.e.; using Tables 1 & 2 (Appendix F) as a guide, 200 to 250' of centerline in rural areas and 70' to 80' in urban areas would generally be a minimum distance to construct residential units adjacent to US95 in order not to approach or exceed FHWA noise abatement criteria.

(2) Maintaining appropriate zoning and land uses adjacent to the route;

(3) Requiring developers to implement suitable noise abatement measures in those cases where adequate setbacks are not maintained (e.g.; berms, sound walls, double pane or triple pane windows and other forms of insulation, etc.).

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WETLANDS

The Preferred Alternative has been aligned to avoid as many wetland areas as possible. However, because of the combination of wetland complexes on either side of existing US95 south of the Long Bridge and the proximity of railroad mainline tracks to the east of the new Sand Creek alignment, the proposed highway widening and construction will result in unavoidable fill into wetlands. The project will impact three wetland types at 9 wetland sites. A total of about 0.89 hectares (2.06 acres) will be filled. Seven of these sites would also have been affected by the Through Town 'Couplet' alternative (which would have affected a ninth site adjacent to Sand Creek, larger than the east bank Sand Creek site on the Preferred Alternative). Table 8 identifies hectares of fill by wetland type. General wetland locations are depicted on Figure 25. For a more detailed description of each wetland site affected--including functions, values and dominant plant species--see Appendix E.

TABLE 8
DIRECT WETLAND IMPACTS
of the SAND CREEK (PREFERRED) ALTERNATIVE
in hectares (ha) and acres

TYPE of WETLAND	ha	acres
PEMIC-(Palustrine, Emergent, Persistent, Seasonally Flooded)	0.43	(1.07)
PSSIA-(Palustrine, Scrub-Shrub, Broad-leaf Deciduous, Temp. Flooded)	0.18	(0.29)
PFOIC-(Palustrine, Forested, Broad-leaf Deciduous, Seasonally Flooded)	0.28	(0.70)
TOTAL	0.89	(2.06)

Indirect Impacts: The project could lead to indirect impacts of wetlands for the same reasons noted in the 'Water Resource' section. Possible effects include: (1) minor fills for access to private properties, (2) additional boat mooring facilities and (3)removal of riparian vegetation for landscaping purposes.

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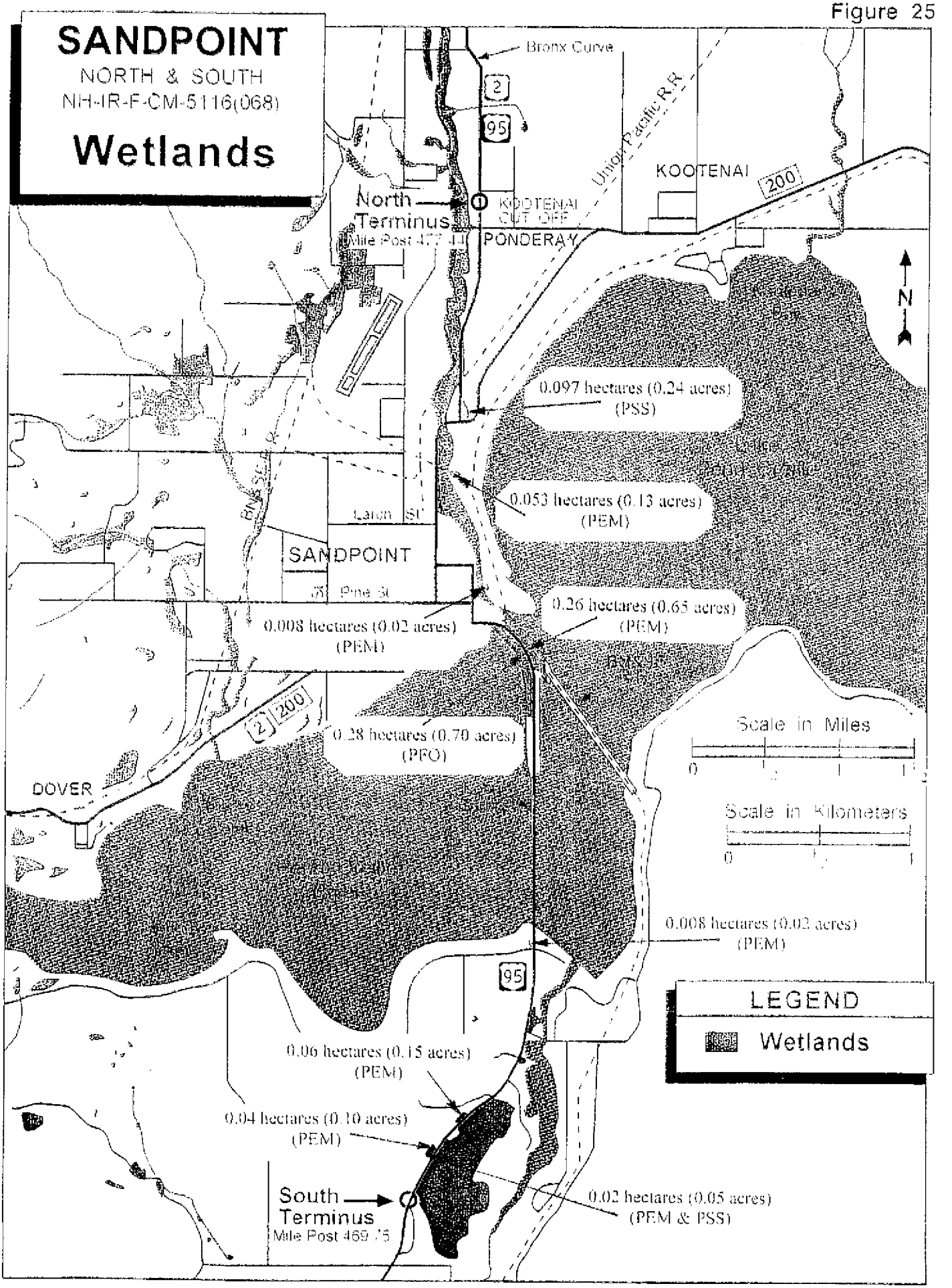
Figure 25



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Mitigation: A complete Wetland Mitigation Plan is included in Appendix E of this Final EIS. This plan meets appropriate laws and regulations that pertain to wetlands, including Executive Order 11990. In summary, the proposed mitigation measures are:

1. All fill introduced into wetlands as part of the proposed project will be either native crushed or granular material or steel and concrete material (such as piers, pilings, abutments used in structures). All fill material will be analyzed to insure that it is non-polluting and non-hazardous.

2. In some areas, the amount of wetland fill will be minimized by steepening the highway side-slopes. ITD will ensure that all steeper side-slopes are designed and constructed in a stable manner to preclude increasing the erosion potential. Where warranted, slopes will be stabilized by engineered walls or protected by erosion blanketing applied to the exposed earth surfaces.[5] The areas identified for each type of treatment will be shown on the Storm Water Pollution Prevention Plan which is part of the project contract.

3. Where filling of wetlands cannot be avoided, mitigation will be provided at a site on the grounds of Sandpoint High School. This work will include restoration and enhancement of 1.09 hectares (2.7 acres) of existing degraded wetlands, which will then be used as a study area by science classes at the high school. For further details, please see the Wetland Mitigation Plan in Appendix E.

4. Other than a minor amount of fill for the new bridge abutments on the north and south side of the Pend Orielle River and the placing of piers adjacent to the old bridge there shall not be any fill placed in the river channel between the north and south ends of the long bridge

5. From the Long Bridge to Sagle the Idaho Transportation Department will re-establish cross-highway wetland hydrologic connections severed by prior highway construction projects.

The Project will also require a COE 'Section 404' Permit for filling in wetlands. The permit application will be submitted in the fall of 1999. The approved permit must be obtained before the project can be approved for construction.

[5] While controlling sedimentation is an important concern, it should be noted that wetlands are created and maintained by sediment deposition and plant decay which provide the nutrients for much of a wetland system. .

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FLOODPLAINS

The Preferred Alternative includes transverse crossings of Federal Emergency Management Agency identified floodplains in two locations and a longitudinal infringement at one location as noted below: (see also Appendix G)

- Pend Oreille River --widening of the Long Bridge, primarily using existing piers.
- Sand Creek -- near its mouth, at the north end of the Long Bridge.
- Sand Creek -- longitudinal structure on piers adjacent to the east bank in the vicinity of the Burlington Northern Railroad depot.

Except for the use of piers, the transverse floodplain crossing structures will not encroach in a regulatory floodway nor will the longitudinal structure. Using piers will minimize the overall encroachment into floodplains. Alternatives to the use of piers include:

- Using fill, which would entail long spans and likely encroachment into the floodway;
- Using gabions or retaining walls which may entail a greater encroachment into the 100 year floodplain and possible encroachment into the floodway;
- Requesting a design exception, which reduces potential safety and/or level-of-service benefits.

No incompatible floodplain development will result from the proposed actions and there are no significant risks involved. Cumulatively, no significant degradation of floodplain values or functions or any increased potential for harm to upstream and downstream activities is anticipated. Mitigation measures to minimize impacts and preserve natural and beneficial floodplain values, involve the use of piers and routine construction procedures; to include:

- A water pollution and erosion control plan, identifying the intended schedule and methods of operations;
- Revegetation of all disturbed areas;
- Foundation stabilization;
- Construction procedures in accordance with 'Best Management Practices'; and
- Coordination with state and federal management agencies such as the U.S. Army Corps of Engineers, Idaho Department of Water Resources, Idaho Department of Fish and Game, and the U.S. Coast Guard.

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Additional documents required for the project include:

- An ITD 'Preliminary Structure & Hydraulic Report'; and
- A COE 'Section 10' Permit.

CULTURAL RESOURCES

Initial investigation of the project corridor resulted in ten historic and four prehistoric sites in the project vicinity (see the Cultural Resource Overview in Appendix B). Most of the sites are beyond the project boundaries and will not be affected. Two sites that will be impacted (10-BR-683 and 10-BR-686) were determined ineligible for the National Register. The two sites requiring further investigation were the Burlington Northern Railroad depot, which is listed on the National Register of Historic Places, and the 1892-1910 original townsite of Sandpoint (eligible but not listed). These sites are adjacent to each other, near Sand Creek, along the west side of the BNRR railroad tracks. The depot will be impacted indirectly by the proximity of the highway structure, while the original townsite will be directly affected since buried cultural material from the site is likely to be unearthed.

The narrow corridor between the railroad tracks and Sand Creek leaves minimal flexibility in avoiding impacts to the historic properties. Original plans called for removal of the depot, but reassessing the feasibility of avoidance options resulted in a route that misses the depot. The proposed highway involves an elevated structure along the eastern bank of Sand Creek, with its northern terminus just past the depot. However, the structure is at ground level in front of the depot. It will be 7 meters (23 feet) from the depot at the nearest point. The safety railing on the structure will extend to a height of about one meter, causing a slight visual intrusion. Thus, the structure will have a minor visual effect on the depot, but this effect is not adverse.

Preliminary testing revealed that the archaeological resources representing the townsite are significant only for the potential information the site contains. Since there are no standing structures from the old townsite, the State Historical Preservation Officer has determined that it is not important for *in-situ* preservation.

Both the Section 106 and Section 4(f) processes have been completed for the two applicable sites. The Section 4(f) evaluation and 'Effect Determination are located starting on page 107 of this Final EIS. The Section 106 'Determination of Eligibility' is available from the ITD Environmental Section (3311 W. State Street, Boise, ID 83703).

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The potential exists for subsurface prehistoric sites to be found during project construction. Since so few prehistoric sites have been tested in this area, any site containing prehistory information is likely to be eligible for the National Register. Recorded archaeological sites do occur near the existing US95 bridge crossing on the south side of the Pend Oreille River. Most of these are near Sagle Slough or lining the lakeshore at the confluence of the slough and Lake Pend Oreille. Ethnographic reports indicate Native American use of the Sand Creek area. Although no sites have been formally recorded at the mouth of Sand Creek, it is conceivable sites may be uncovered. If so, all work will cease in the vicinity of the discovery until the required notification, analysis, and recovery procedures are complete.

Mitigation: Mitigation for impacts to the Sandpoint original town site will consist of recovery and recording of cultural material encountered during excavation. Impacts to the railroad depot have been largely avoided by design and alignment revisions since release of the Draft EIS. These include:

1. Reducing the proposed roadway width from four lanes to two lanes, and aligning this narrower roadway to avoid removing the depot building.

2. Shortening the length of the proposed Sand Creek bridge. (This allowed a reduction in height so that the structure is at ground level next to the depot.)

Additional mitigation to be addressed during bridge design will include:

3. Modifications to the standard bridge railings and luminaires to ensure minimum visual intrusion, and

4. Use of open-faced railings and adjusting the spacing of light standards, (on the structure) or vertical walls with facades, rather than solid concrete, can be accomplished to avoid obstructing views to and from the depot.

HAZARDOUS WASTE/MATERIALS

The Preferred Alternative will affect 3 potential hazardous waste/materials sites (Reference Figure 11).

One site occurs along the proposed new alignment between the Depot interchange and the interchange with SH200 north of Sandpoint. It appears to be a buried dump located about 30 meters (100 feet) west of centerline. This is a historical dump site, not

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a constructed landfill. Preliminary on-site investigation revealed broken bottles, rusted out cans, empty containers, rotting wood debris and concrete pieces. There was nothing to indicate the presence of leachate or hazardous materials such as discarded haz/mat containers, discolored soil, odd odors, or oily sheen on surface waters next to the location or in mud holes throughout the site. The potential for encountering hazardous materials/waste is low.

The remaining two sites are associated with the existing alignment. The sites include one active gas station--with underground storage tanks (UST) and their associated pipe/pump systems--and one vehicle repair/body shop (based on current design the property will be avoided), noted on Table 9. The potential hazards associated with these two sites include fuel, oil, paint/thinner, and solvent contaminated soils and water. The risk is low as the active gas station has had its tanks replaced to comply with recent US EPA rules and construction should not involve removal or alteration of the tanks or piping system. The Idaho Division of Environmental Quality does not have any remedial actions in progress or pending along the preferred alternate route. The vehicle repair/body shop is a small operation with no obvious soil staining adjacent to or near the building. The solvents/thinners used are containerized and the waste recycled. The potential for encountering hazardous materials/waste is low at either of these sites.

The Through Town 'Couplet' alternative would have involved 15 properties with known or suspected hazardous materials. These include active and abandoned gas stations and vehicle repair/body shops mentioned above, plus 11 additional potential sites not associated with the Preferred Alternative. Concerns about contamination and potential clean-up costs along the Through Town 'Couplet' route were a factor in the decision to advance the Sand Creek route as the Preferred Alternative.

TABLE 9
SAND CREEK (PREFERRED) ALTERNATIVE
POTENTIAL HAZARDOUS MATERIALS SITES

TYPE of SITE	NUMBER
Potential UST Sites	1
Potential Asbestos Sites	0
Potential Landfill Sites	1
Other Potential contaminated Sites (auto paint/body shops, etc.)	1

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By widening on the west side of the existing highway south of the river north of Sagle, one site mentioned in the Draft EIS will not be affected. Moving the project terminus to the north side of Sagle also avoided effects on 7 suspected sites south of the new project terminus. At the 2 remaining sites, initial site assessments have been conducted to determine if a contamination problem exists and to provide a rough estimate of the potential cost of remediation. The potential cleanup costs for these sites are estimated at $70,000.00. ITD reevaluated options for avoiding these sites, but concluded that avoidance was not feasible. A preliminary site investigation will therefore be conducted at each site to obtain more specific information about the areal extent of possible contamination and the preferred remediation technology for clean up of soil, and/or water. It is transportation department policy not to purchase property that is contaminated. Right-of-Way agents will negotiate with property owners as the need arises to address cleanup costs.

Although clean-up expenses could alter the benefit/cost ratio of a project and affect its reasonableness, current and/or previous owners are generally responsible for the cost of remediation, especially when contamination is identified and addressed prior to right-of-way acquisition. Clean up results in improved water quality and reduced risk to human health which are beneficial project impacts.

SAFETY

The Preferred Alternative will reduce the volume of traffic in Sandpoint by approximately 15%. Removing 'through' traffic from town, which includes 3% to 4% hazardous waste/materials carriers, will yield a reduction benefit of approximately 37 fewer accidents per year over existing conditions. The risk of a hazardous material/waste release accident on US95 outside the city of Sandpoint is 1 every 21 years, while in town the risk is projected at 1 every 200 years. US2 would remain unchanged at 1 every 58 years. These represent a reduction of risk over current conditions.

Projections show reduced fatalities, injury and property damage claims from accidents with the Preferred Alternative. These projected benefits are depicted on Table 10, based on estimated accident rates without the proposed highway improvements. The appropriate unit costs have been extracted from the 'Idaho Highway Safety Improvement Program Manual' which provides approved urban and rural figures for Department wide use in all accident studies.

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TABLE 10
SAND CREEK (PREFERRED) ALTERNATIVE
PROJECTED HIGHWAY USER ACCIDENT BENEFITS
for the Period 1994-2014

Fatalities	Injuries	Property Damage	TOTAL
$ 1.2 million	$57.0 million	$8.0 million	$66.2 million

Comparable data for the Through Town 'Couplet' alternative indicate a reduction benefit of approximately 34 fewer accidents per year, an estimated 38% reduction in intersection related accidents, or a 17% reduction in the overall number of accidents in the project area. The projected accident rates (per million vehicle miles) are 1.17 for US95 outside Sandpoint, 2.8 for US2, and 4.5 in the downtown area of US95/US2. Corresponding accident reduction benefits are:

Fatalities	Injuries	Property Damage	TOTAL
$ 1.9 million	$63.1 million	$8.8 million	$73.8 million

The risk of a hazardous material/waste release accident on US95 outside the city of Sandpoint is 1 every 14 years, while in town the risk is projected at 1 every 260 years. However, some predicted benefits associated with the Through Town 'Couplet' alternative have been already realized due to signals and intersection improvements completed in Sandpoint since release of the Draft EIS.

AESTHETICS/VISUAL

Approximately 80% of the Preferred Alternative involves improvements to the existing highway corridor. Because of the gentle, accommodating terrain and extent of highway related development and other active land uses which have already occurred along this corridor, very little would be visually disrupted on existing sections and viewer acceptance is anticipated.

Roughly 3 kilometers (2 miles) of the project involves new alignment on the existing transportation corridor between Sand Creek and the Burlington Northern Railroad mainline. Approximately 2.7 kilometers of this new alignment crosses non-critical, low visibility areas with low visual impact potential. However, about 460 meters (1500') of it involves a highly sensitive, visually controversial area along the east bank of Sand Creek, where an elevated highway structure is proposed. This area is adjacent to downtown Sandpoint and has high visibility, extending from the marina site at Lake

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Street northward for four blocks to the Cedar Street Mall. The appearance of an elevated highway structure in this area is the single most important visual impact issue of the project, and has been the subject of much public concern, discussion and comment. This area can be divided into two sections of about equal length.

The first section is across from the marina and northward, between Lake and Bridge Streets. It contains a motel, streambank vegetation and the railroad structure over Sand Creek allowing boat access to Lake Pend Oreille (Photo 11). The proposed highway structure would be located behind the motel for about a third of this section, screened from the creek and townside viewing areas. The remaining areas of this structure, about 150 meters (500'), would be completely visible as it spans Sand Creek adjacent to the railroad structure. Main viewers are the boat users in the marina and others using the parking areas along the west bank. Motel guests would have a direct view of the 'screened' portion of the structure, as would the travelers crossing down Bridge Street for access to Sandpoint's city park on Lake Pend Oreille. This alignment is not visible from the lake and city park area, nor is the lake visible from any city vantage point that could view the roadway alignment.

Photo 11– Marina and railroad structure with access to the lake

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The second section of the Sand Creek corridor involves the northern half of the 460-meter (1500') visibility area, which is that portion between Bridge Street and the Cedar Street Mall. This section is a relatively narrow strip of land between the creek and the railroad, roughly 30 meters wide and 230 meters long (100' wide, 760' long). This area, across from downtown Sandpoint, contains the Burlington Northern Railroad depot and access road. There is also a narrow strip of streambank vegetation--up to 15 meters (50') wide in places--which creates a natural appearance along the east side of Sand Creek (Photo 12). This natural appearance, which is of value to viewers from the main part of town, will be removed by the project (Photo 13).

Photo 12– View of east side of Sand Creek from Bridge Street

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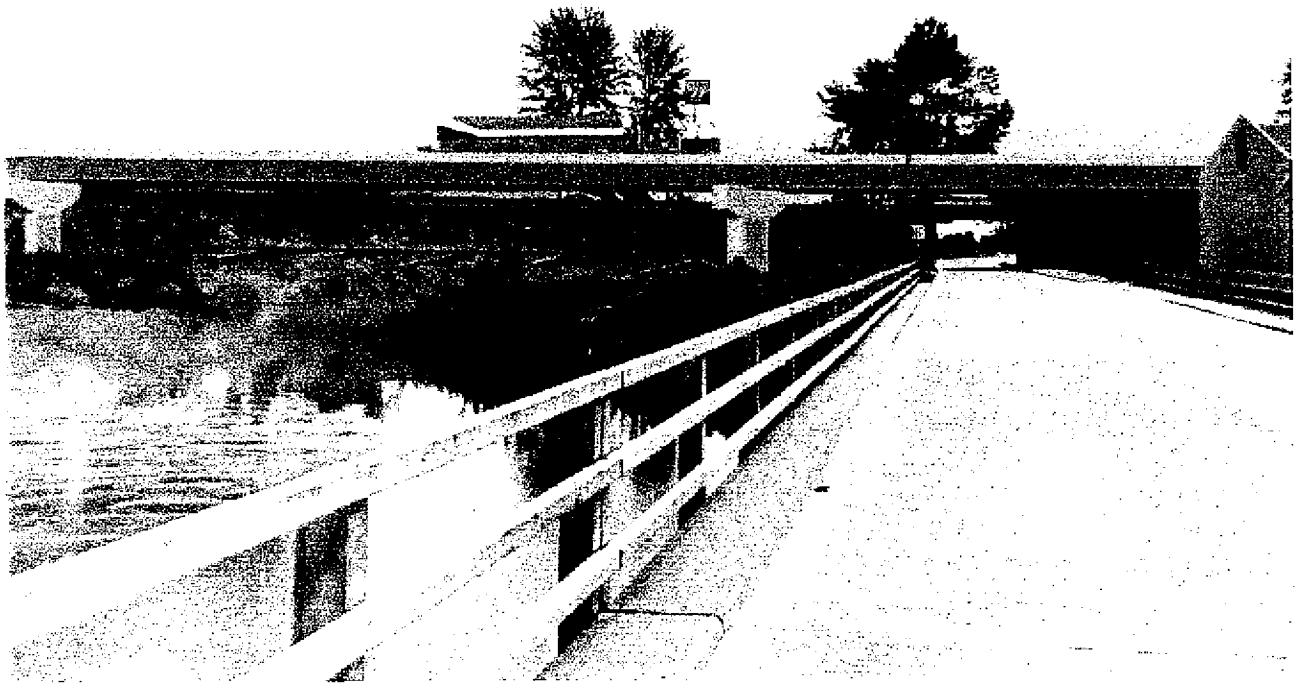

Photo 13– 'Retouch' showing Sand Creek structure from Bridge Street

The primary visual impact of the Through Town 'Couplet' alternative would have been the increased traffic on 4th and Church, and the loss of mature landscaping along the west side of 4th Avenue between Alder and Larch Streets (sixteen street trees would have been removed between Poplar and Larch, with no space for replacement). The increased traffic on 4th and Church streets would not have had a high visual impact because commercial businesses predominate in this area. These businesses are not view-oriented to their immediate environment.

Mitigation: As stated earlier, the Sand Creek alignment is restricted by the railroad on the east side and Sand Creek on the west side. The alignment cannot be shifted further east due to the railroad safety zone (buffer zone in case of a derailment). Vegetation will be reestablished along the fills and walls to enhance the overall visible landscape appearance (Photo 14). However, ITD will not place fill in the creek channel just to create new planting sites.

The proposed length of the Sand Creek structure has been reduced since release of the Draft EIS. Also, the roadway will be at ground level--rather than elevated--in the area across from downtown Sandpoint. These modifications have reduced the potential

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visual impacts. Additional measures for softening the visual presence of the structure will be incorporated as project design progresses. These will include:

- use of long spans and dark-colored piers
- use of railings rather than solid concrete or vertical walls with a facade**
- adjusting the spacing of light standards to avoid obstructing views to and from the depot*

Photo 14– 'Retouch' of Sand Creek structure and landscaping

SOILS AND GEOLOGY

The subsurface soils are typically very fine grained, exhibit poor bearing capacity, and have low relative densities. Any above ground structure will require deep foundations. The great depth to bedrock, estimated at 150 meters to 180 meters (500'-600'), will require that foundation capacity be developed by friction between the soils and the piling or shaft. Deep foundations may rely on both friction and end bearing in sands or gravels. The presence of shallow groundwater could make the use of drilled shafts somewhat difficult. Due to the potential for differential settlement and liquefaction,

* Design must meet NCHRP-350, Test Level 3 for crash worthiness.

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shallow spread footings will probably not be suitable. Retaining structures, walls and buttresses will be designed to withstand differential settlement.

Soil erosion and sedimentation of surface waters will be fairly easy to control with the Preferred Alternative, except for the areas immediately adjacent to Sand Creek and in the creek itself. Mitigation will be in the form of using 'Best Management Practices' (BMPs) published by the Division of Environmental Quality or by ITD. Suitable measures will address stabilization and revegetation of slopes, dissipation and diversion of storm water, containment of sediment, and proper drainage to prevent damage to the road bed and sideslopes. Specific BMPs will be selected when detail design is completed. For further details, see the 'Water Resources' section of this chapter and the 'Wetland Mitigation Plan' in Appendix E.

Conditions and requirements of the National Pollutant Discharge Elimination System (NPDES) general permit for stormwater discharge from construction sites will also be incorporated into the final design. The NPDES permit requires ITD and the Contractor to comply with the following:

1. Prepare a written description of the construction sequence and what BMPs are to be used, including location and timing, during the construction process.

2. Submit a signed Notice of Intent (NOI) which legally binds them to comply with the NPDES rules for construction.

3. Perform periodic inspections as required by the NPDES rules to ensure that the Storm Water Pollution Prevention Plan is being followed and that the BMPs in use are functioning properly for their intended purpose.

4. Comply with storm water rules adopted by the county or municipalities where the construction is to take place. Whenever there is a conflict between federal and local rules, whichever rule is more restrictive will be followed. The local agencies will also be allowed to review the completed NPDES Storm Water Pollution Prevention Plan for the project.

5. Return the construction site to a stabilized condition before NPDES permit coverage can be terminated. This requires successful establishment of 70% vegetative cover (as compared to natural cover in the area) or a constructed hard surface.

There are no known geologic hazards associated with the Preferred Alternative.

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SECTION 4(f) EVALUATION

SANDPOINT NORTH AND SOUTH
NH-IR-F-CM-5116(068)

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. / 303) states that the Federal Highway Administration may not approve the use of land from a significant publicly owned park, recreational area, or wildlife and waterfowl refuge, or any significant historic site (including archaeological resources) unless a determination is made that:

- There is no feasible and prudent alternative to the use of land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use.

PROPOSED ACTION

Two build proposals:

- The Through Town 'Couplet' alternative, and
- The Sand Creek alternative

have been identified and described in the Alternatives Section of this document, along with other alternative actions considered and the reasons rejected (see also Purpose and Need Section). All of the rejected routes were either more costly, provided no improvements in the level of service or had greater socio-economic or environmental impacts than the two remaining alternatives.

SECTION 4(f) PROPERTIES

Cultural resource investigations on the project have yielded numerous historic and some prehistoric sites. The Through Town Alternative has the highest density of historic sites due primarily to the early development of downtown Sandpoint. The Sand Creek Alternative has only one standing historic structure but contains some subsurface historic archaeological deposits from the original Sandpoint townsite. Determinations of Eligibility and Effect have been completed on the sites in accordance with 36 CFR 800. Copies are available on request.

This evaluation examines properties identified as '4(f)' resources, which will be impacted in one of the two build proposals. Mitigation efforts to minimize impacts to this property if unavoidable, involve coordination with affected agencies and jurisdictions and, depending on the situation, can include: highway design enhancements, special highway construction methods, scheduling

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adjustments, resource relocation or replacement, resource recovery operations, *in situ* preservation, or recordation.

No impacts are anticipated regarding the following Section 4(f) areas of concern:

- Publicly owned Public Parks or Recreation Areas, or
- Wildlife and Waterfowl Refuges,

NATIONAL REGISTER PROPERTIES:

Through Town Couplet Alternative

Generally, the Through Town 'Couplet' alternative contains standing structures associated with downtown commercial and residential development. Three National Register of Historic Places (NRHP) listings are in proximity to this alternative. Two of these, the Sandpoint Community Hall and the Sandpoint Historic District, would be impacted beneficially because of diverted traffic and corresponding decreases in road noise and fumes. The third listing, the Amanda Nesbitt house will receive slightly increased noise impacts because of diverted traffic, but will not be directly impacted. Thirteen other properties eligible for listing would also receive slightly increased noise impacts because of diverted traffic, but would not be directly impacted. One eligible property (Humbird Mill House) associated with a small [potential] historic district would be removed. Depending on the final design, two other eligible structures could be directly affected by this alternative. Both of these impacts would result in 4(f) situations. No indirect proximity impacts are so severe that the features, which qualify the remaining, listed and eligible properties for protection under Section 4(f) are substantially impaired.

- Humbird Mill Houses
    - Impacts

One of the four eligible Humbird mill cottages (402 Larch Street) would be removed by the proposed 'Couplet' alignment (see Photo 15). The incorporation of the northbound couplet alignment into this area which has been recognized as a small [potential] historic district will likely hasten the transition of this neighborhood to uses which conform with the existing commercial zoning. The four houses are eligible for listing on the National Register only because of their association with the Humbird Mill, which no longer exists. These structures are under private ownership and provide for residential use with access from Larch Street.

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- Avoidance Alternatives

Avoidance of the mill house at 402 Larch Street would necessitate adjusting the merger of northbound traffic back into US-95 at the north end of the couplet. The proposed alignment takes one of the center houses from mill house row, leaving 404 Larch Street to the west and 306 and 304 Larch Street to the east. Any curve radius adjustment, aside from the existing 90° curve left at 4th Avenue and Larch Street followed by a 90° to 100° curve right at 5th Avenue and Larch Street, would not avoid any of the houses but merely shift which house is taken, while creating a less desirable alignment and level-of-service. Tapering the alignment onto US-95 south of Larch Street would avoid these historic structures, but would disrupt commerce and displace several expensive commercial establishments, including a grocery store. Although this alignment would be feasible, it is not prudent; leaving less useable land remnants and resulting in reduced traffic flow and increased idle time at the Larch Street intersection. Realignment of the northbound traffic to another parallel street such as 3rd Avenue is also an unacceptable option. For instance, numerous potentially eligible historic structures also exist on 3rd Avenue plus the connection to US-95 would require taking at least one mill house and result in less desirable operating conditions.

Photo 15 -- Humbird House at 402 Larch Street

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- Measures to Minimize Harm

Lack of sufficient vacant land in this neighborhood does not permit relocation of the house within the existing mill house row setting. Another alternative would be to relocate the house elsewhere in town. However, although several older residential areas exist, association with the mill (i.e., the feature, which qualifies the structure for eligibility) would be lost once relocated. Recordation will likely be the selected mitigation since the structure cannot be moved within the immediate neighborhood. It is not feasible to avoid removing this structure without potentially impacting other historic structures or compromising the design standards and operating efficiency of the Through Town 'Couplet' alternative.

Sand Creek Alternative

The Sand Creek alternative contains few standing structures. However, this alternative does contain both a listed and an eligible National Register property. Several additional historic and prehistoric sites have been recorded in the area but none have been determined eligible for the register. The Burlington Northern Railroad (BNRR) depot, listed on the national register in 1973, was built in 1916 by Northern Pacific Railroad to replace the original frame depot. It is the only structure within the original townsite area remaining west of the tracks. This structure will be indirectly impacted by the proposed alignment, due to the visual and audible intrusions.

The archaeological deposits associated with the original Sandpoint townsite (10-BR-859) also lie within this corridor between the depot and Bridge Street. This site is eligible for listing on the National Register of Historic Places. The site contains no standing structures so impacts are limited to subsurface excavations for piers and footings of the elevated portion of the structure and some surface excavation and preparation near the depot where the structure will be at the natural ground surface. The area under the structure will likely be developed for parking, which could disturb the surface. Although subject to final design decision detail, the pilings for the piers would likely be driven into the subsurface roughly 1.2 meters (4') apart along the width of the structure, about every 25 meters (80'). Excavations for the footings would be dug to a depth of about 1.5 meters (5'). The site has been determined by the State Historic Preservation Office to be significant for the information it contains, as opposed to its setting and context. Therefore, Section 4(f) will not apply to this site. This historic/archaeological deposit is impossible to avoid with this route, so data recovery prior to construction of the proposed project is the proposed mitigation. This results in an effect, but not an adverse effect, because the data can be recovered and the site is significant only for that data.

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- Burlington Northern Railroad Depot
  - Impacts

The depot has been listed for both its architecture, as the only brick Gothic style railroad structure in Idaho, and for its association with the development of the town of Sandpoint along the railroad. This area is recognized as a transportation corridor. The depot is utilized by Burlington Northern and Santa Fe Railroad (BNSF) as a freight depot and by Amtrak as the only ticket counter in Northern Idaho.

The depot and some Cedar Street Mall users park their vehicles adjacent to the depot and along the depot access road because of limited parking availability in the downtown area of Sandpoint. The parking opportunities for the Cedar Street Mall users would be moved slightly southward beneath the proposed structure adjacent to Bridge Street. Parking for the depot will be determined based upon BNSF's decision on the future use of the depot, because the railroad may move the operational aspects of the depot to a new location. Access from the parking area to the Cedar Street Mall and to the depot would be developed accordingly, as well as pedestrian access from the Mall to the depot. Design operations will accomodate applicable opportunites for improvements in both pedestrian access and parking in this area.

The proposed project will not directly impact the depot but will modify the existing environment by creating a visual and audible affect. The affect is not considered adverse, however, given the similar transportation corridor nature of the present setting. However, this project will introduce another transportation system, *the highway,* on the opposite side of the depot from the tracks. Original highway plans would have required removal of the depot, but reassessment of the feasibility of avoidance options resulted in a route which misses the depot.

The proposed highway consists of an elevated, 13.4 meter (44 ft.) wide structure along the eastern bank of Sand Creek, which has its northern terminus just past the depot. The structure is at grade and not elevated above the existing ground surface in front of the depot (fig. 26). It will be 7 meters (23 ft.) from the depot at the nearest point. The safety railing along the edges of the structure will extend to a height of one meter causing a slight visual intrusion looking back toward town from the depot. Viewing the depot from the town-side of Sand Creek will be altered by the structure, as the elevation of town is moderately lower so that from certain vantages only the upper part of the depot will be visible. The noise from the highway will add an audible affect, but it will not be adverse and will not substantially impair the function and use of the site.

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Figure 26

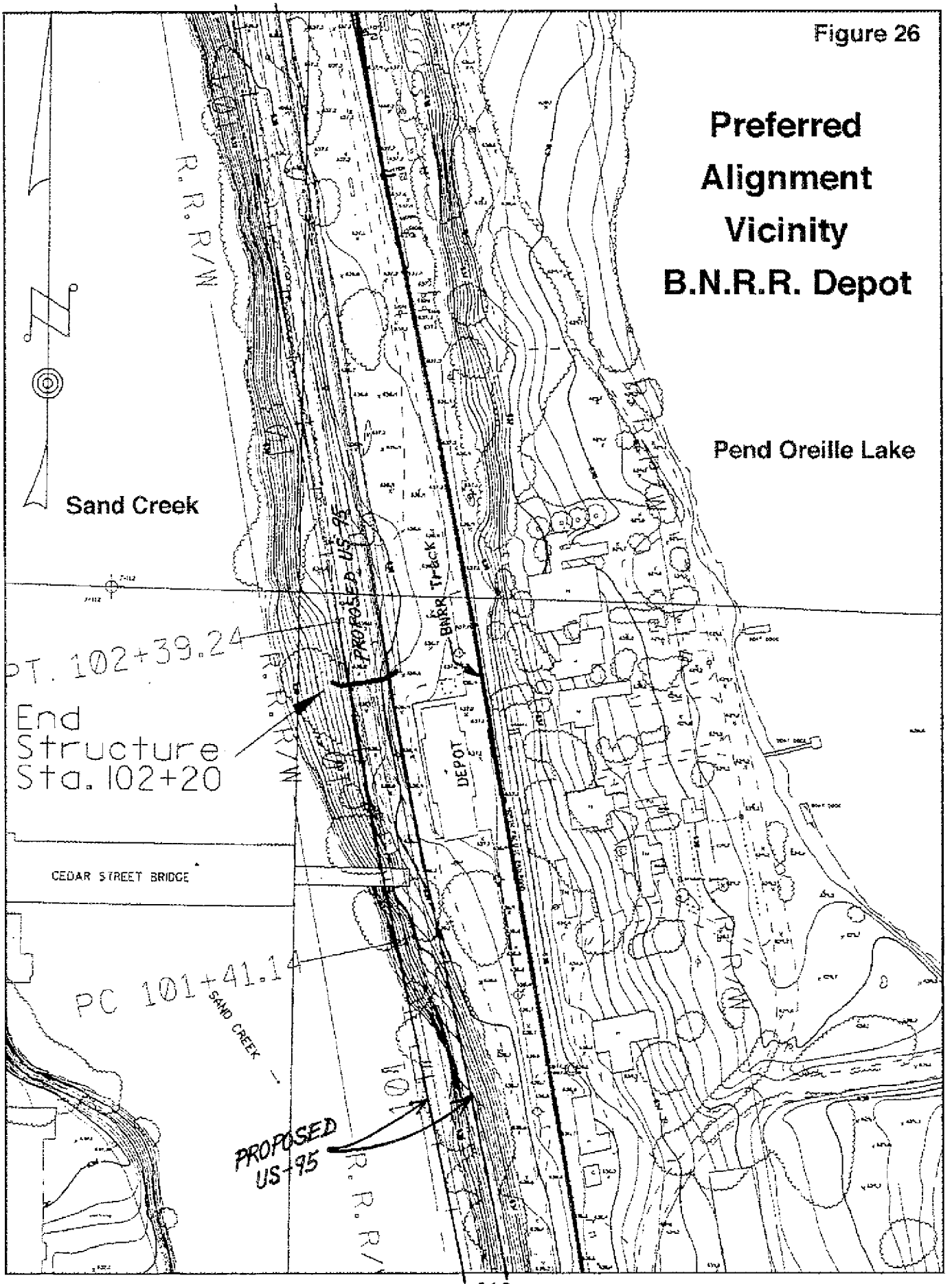

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Photo 16 -- Burlington Northern Railroad Depot

- Avoidance Alternatives

The narrow corridor between the railroad tracks and Sand Creek creates minimal flexibility in avoiding impacts to the historic properties. The following outlines the scenarios considered in the planning process. The original 4-lane highway proposal required a 26 meters (86') wide structure and removal of the entire depot because of the narrow 27 meters (about 90') wide corridor between the railroad track and the Sand Creek floodway delineation. A reduction of the highway to a 12.2 m (40') wide, 2-lane route allows the depot to remain *in-situ*.

Shifting the 2-lane highway to the west of the depot along the east bank of Sand Creek requires a longer structure than a non-avoidance scenario, because of subsurface geological conditions, but is feasible and does not require additional taking of wetlands or filling of Sand Creek. Also, it would be necessary to remove the riparian vegetation along the streambank to provide for the structure and highway alignment.

This narrow peninsula of land crossed by the railroad tracks limits any other alternative alignments through this corridor. Placing the highway on the east side of the tracks would require crossing this major BNSF line which transports an average of 60 trains per day. Safety concerns preclude BNSF granting permission for the proposed highway to intersect the track. The strip of land east of the tracks is also occupied by several dwellings, including a motel. At least five dwellings, some of which are historic and a motel would be directly impacted even if the BNSF granted permission to cross the

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track. This option is not considered feasible and prudent because of safety issues and historic structure involvement.

The only other potential alternative which would keep the depot in place is to raise the grade of the proposed highway over the top of the depot. This would entail an 11-meter (35') high structure to clear the depot. The height would substantially lengthen the structure to the north, and would require a much higher than planned structure south of the depot. Aesthetic impacts to the depot would be substantial and visual impacts from town would be significant. This action would not accomplish anything more than the shifted avoidance alignment and would be an even more significant visual intrusion; therefore it is not considered feasible and prudent.

- Measure to Minimize Harm

All depot mitigation options have evolved as a result of coordination with interest parties and the public; primarily the historic preservation community and the chamber and tourism factions.

The proposed relocation of the alignment and its reduction from a 4-lane to a 2-lane facility are both measures taken to minimize harm to the depot, as the depot will now remain in place rather than being removed as originally proposed. Some aspects of the engineering design have been altered to minimize the visual intrusion of the structure as well. The length of the structure has been shortened which in turn allows for a reduction in the height so that the structure is at ground level. Modifications to the standard bridge railings and luminaries will be addressed during bridge design to ensure minimum visual intrusion.

COORDINATION

ITD coordinated the Section 4(f) and Section 106 processes with the public and applicable agencies, including the State Historic Preservation Office, through various stages of the documentation. Refer to the 'Comments and Coordination' section of this EIS for details. In addition, a group of local historians, merchants and interested people formed the Sandpoint Depot Committee to work with ITD on the impacts of the project on the depot. They have been instrumental in providing guidance on the desires of Sandpoint regarding the depot. ITD will consult with the Committee through the design and construction phases of the project.

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CONCLUSION

Numerous alternatives were examined on this project and evaluated in an effort to avoid impacts to environmental resources, especially those affecting any significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site as stated in Section 4(f) of the Department of Transportation Act of 1996 and 23 CFR 771.135. The two proposed 'build' alternatives were selected in an effort to meet the purpose of the action while providing a facility with minimal socio-economic consequences or adverse effects on the natural environment. The other, rejected alternatives would result in greater cost, socio-economic and/or environmental impacts.

The Through Town Couplet would directly impact at least one National Register eligible structure, a Humbird Mill House. This route also has the only Historic District (Downtown Sandpoint) and the greatest number of historic structures identified. Of the over 30 structures noted, 20 have been deemed eligible for the register. Although final design details were not completed for this alternative, it was likely to have directly impacted two additional eligible structures. Thus this alternative would result in a taking of at least one and potentially three 4(f) properties. In addition, this alternative does not meet the goals of the project, which are to improve the level of service and provide a non-stop US-95 highway through Sandpoint.

The final determination is that based upon the above considerations, there is no feasible and prudent alternative to the use of land from the Humbird Mill houses on the Through Town Couplet alignment. The proposed mitigation will include Historic American Building Survey (HABS) documentation prior to removal and a marketing plan to attempt to relocate the house within an appropriate setting.

The Sand Creek alternative contains the fewest (14) historic properties and does not adversely affect any National Register listed or eligible sites. There will be an effect on two historic properties. The Sandpoint original townsite historical deposit (10-BR-859) will be impacted, as there is no feasible and prudent alternative to avoid it.

However, data recovery is proposed since the site was determined eligible for the National Register on the basis of the information it is likely to yield rather than for it's preservation *in-situ*. Consequently, this site is not included as a 4(f) property. The Sand Creek alignment will have a visual affect on the BNRR railroad depot listed on the National Register. The affect is not considered adverse. The structure will be designed to minimize the effects as much as possible.

Based upon the above considerations, the Federal Highway Administration has concluded that there is no feasible and prudent alternative to the use of land from the BNRR railroad depot 4(f) property involved and that the proposed action includes all possible planning to minimize harm to the BNRR railroad depot 4(f) property resulting from such use.

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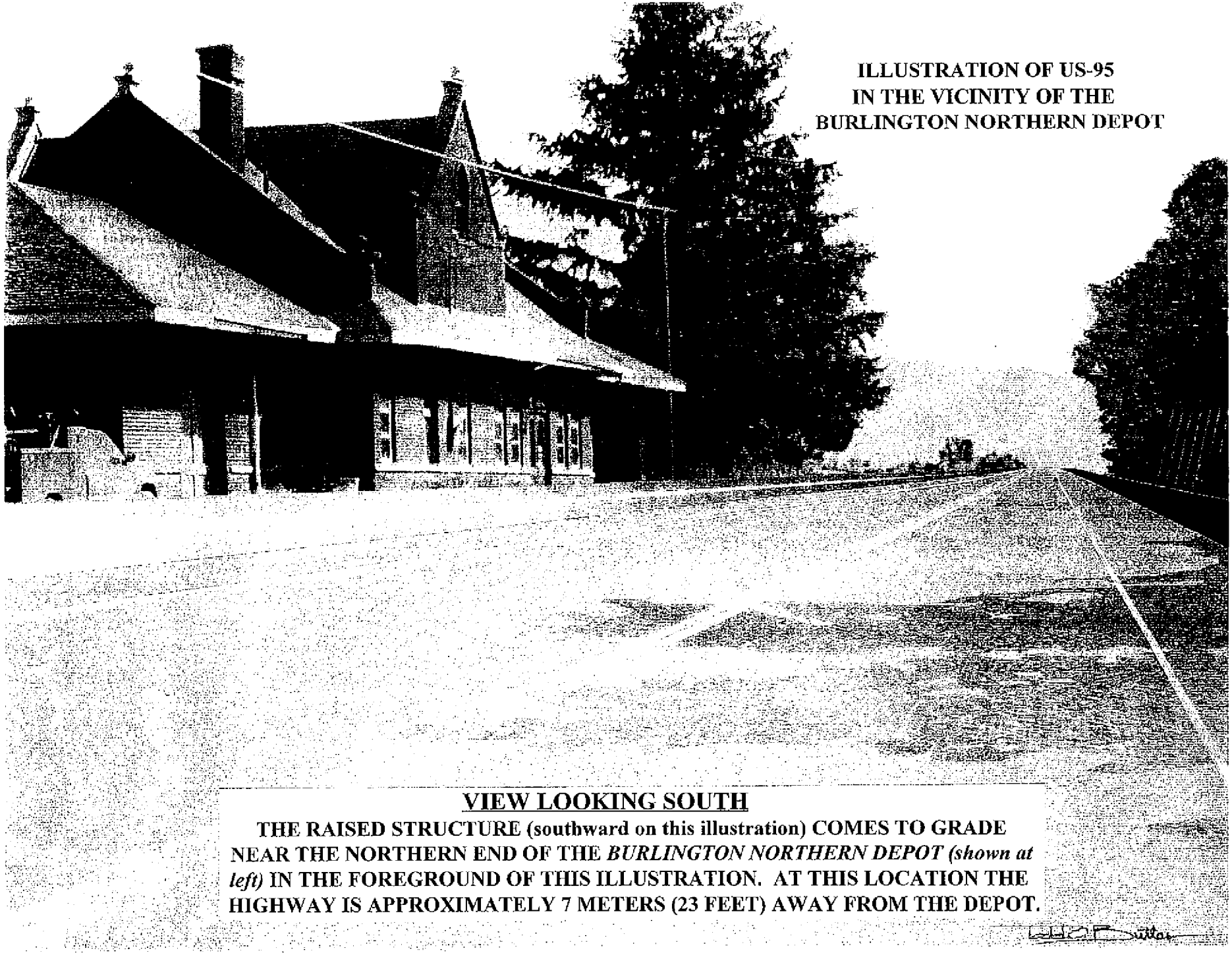
ILLUSTRATION OF US-95
IN THE VICINITY OF THE
BURLINGTON NORTHERN DEPOT



VIEW LOOKING SOUTH

THE RAISED STRUCTURE (southward on this illustration) COMES TO GRADE NEAR THE NORTHERN END OF THE *BURLINGTON NORTHERN DEPOT (shown at left)* IN THE FOREGROUND OF THIS ILLUSTRATION. AT THIS LOCATION THE HIGHWAY IS APPROXIMATELY 7 METERS (23 FEET) AWAY FROM THE DEPOT.

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SECTION 404(b)(1) ANALYSIS
SANDPOINT NORTH AND SOUTH
NH-IR-F-CM-5116(068)

The Federal Highway Administration, the Corps of Engineers and the Idaho Transportation Department signed an 18 point accord on 11 February 1993 regarding coordination and streamlining of the NEPA and 404 permit review process for federal-aid projects requiring an Environmental Assessment or an Environmental Impact Statement. This 404(b)(1) analysis section of the Final EIS is in partial response to that accord and to 1995 modifications requiring concurrence by six other agencies at three stages of project development for any project requiring an individual 404 permit (NEPA 404 Merger Process). This project was brought into the NEPA 404 Merger Process in 1995 about a year and half after the Draft EIS was published. As such the 404(b)(1) analysis is included in this EIS to support the decisions made to that point and the Merger Process initiated after the Draft EIS.

Section 404 of the Clean Water Act of 1977 requires authorization from the Secretary of the Army, acting through the Corps of Engineers (permits 33 CFR 323), for the discharge of dredged or fill material into waters of the United States and wetlands. A permit is required whether the work is permanent or temporary. The impact of the activity on the public interest includes application of the Environmental Protection Agency guidelines (40 CFR 230) as required by Section 404(b)(1) of the Clean Water Act. The purpose of these guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged and fill material; to include incidental discharges associated with excavation activities and the placement of closely spaced pilings. In accordance with these guidelines no discharge of dredged or fill material shall be permitted unless a determination is made that:

- There is no practicable alternative which would have less adverse impact on the aquatic ecosystem.
- The action does not contribute to violations of any State water quality standard; toxic effluent standard; requirement imposed by the Secretary of Commerce to protect any marine sanctuary; nor jeopardizes the continued existence of any species listed as threatened or endangered.
- The action does not cause or contribute to significant degradation of the waters of the United States effecting human health and welfare; aquatic life (including other wildlife dependent on aquatic ecosystems); aquatic ecosystem diversity, productivity, and stability; or recreational, aesthetic, and economic values.
- The action includes appropriate and practical steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

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EVALUATION AND DECISION CONSIDERATIONS

I. PROPOSED PROJECT: The location and description of work are described in the Executive Summary starting on page ii.

II. ENVIRONMENTAL & PUBLIC INTEREST FACTORS

A. Purpose and Need *See page 2*

B. Alternatives 33CFR320.4(a)(2) & 40CFR230.10

(1) No Action *See page 8*

(2) Other Designs *See pages 12 - 26*

(3) Other Available Sites *See page 55*

(4) Other Unavailable Sites *Not Applicable*

C. Physical/Chemical Characteristics and Anticipated Changes

See pages 45 thru 56, 77 regarding characteristics

(1) Substrate *Less than 1.0 hectare (2.06 acres) of wetlands would be filled under either build alternative. Approximately .01 hectare (.03 acres) of the Pend Oreille River substrate would be displaced by an estimated 1,025 40cm (16") diameter bridge pilings that will be used to widen the old Long Bridge. No significant effect would result from this action.*

(2) Currents,Circulation or Drainage Patterns *No effect*

(3) Suspended Particulates; Turbidity *The bridge widening will consist of exposed pile bent construction compatible with the old Long Bridge. No excavation is anticipated and no footings are involved. The Piles are to be driven through the water and pier caps are to be above the water line. These actions are expected to have minimual impact on suspended particulates and turbidity. No significant effect would result from these actions. Storm water best management practices, both temporary and permanent, will be incorporated in design and construction of this project. Sediment retention facilities such as sediment traps, basins and pond will be used to protect discharge water quality.*

(4) Water Quality (temp.salinity patterns and other parameters)*Mininal effect*

(5) Flood Control Functions *No effect*

(6) Storm, wave and Erosion Buffers *No effect*

(7) Erosion and Accretion Patterns *Minimal effect, see (3)*

(8) Aquifer Recharge *No effect*

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(9) Baseflow *No effect*

Additionally, Projects Involving the Discharge of Dredged Material -

(10) Mixing Zones, in light of the depth of water at the disposal site; Current Velocity, direction and variability at the disposal site; Degree of turbulance; Water column stratification; Discharge vessel speed and direction; Rate of discharge; Dredged material characteristics; Number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing. *Not Applicable*

D. Biological Characteristics and Anticipated Changes

(1) Special Aquatic Sites (wetlands, mudflats, pool and riffle areas, vegetated shallows, sanctuaries and refuges re: 40CFR230.40-45)

See pages 45 thru51, 55, 56, 59, 92 & Appendix E

The initial method of mitigation for the two build alternatives is avoidance of wetlands to the extent practicable by modification of alignment, steepening slopes, or construction of retaining walls. However, the Through Town alternative still results in the filling of 1.30 hectares (3.22 acres) of wetlands and the Sand Creek alternative 1.0 hectares (2.2 acres). To compensate for these unavoidable fill areas, restoration of wetlands at the Sandpoint High School is proposed (See Photo's 13 & 14). The restoration site is within the City of Sandpoint and mitigation will be no less than a 1:1 ratio for functions and values of those wetlands impacted by the project. The preliminary plan is to remove approximately 3825 cubic meters (5,000 cu yds) of fill covering the mitigation site and to combine this with existing wetland in the area. The overall site will then be planted with native, wetland species It is noted that this proposal will have little, if any, adverse effect involving the alteration of wetlands:

- *Which serve significant natural biological functions;*
- *Which are set aside for the study of the aquatic environment or as sanctuaries or refuges;*
- *Which would be detrimental to natural drainage characteristics or sedimentation patterns;*
- *Which are significant in shielding other areas from wave action, erosion, or storm drainage;*
- *Which serve as valuable storage areas for storm and flood waters;*
- *Which are prime natural recharge areas; or*
- *Which serve significant and necessary water purification functions.*

The proposal does, however, involve wetland replacement to insure that no cumulative effect occurs that would eventually incur a significant adverse impact involving one or more of the above noted wetland functions.

(2) Habitat for Fish and other Aquatic Organisms *See pages 57 thru 59 & 77*

(3) Wildlife Habitat (breeding, cover, food, travel) *See pages 57 thru 59 & 82*

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(4) Endangered or Threatened Species*See pages 61thru 64, 83 & Appendix H*

(5) Biological Availability of Possible Contaminants in Dredged/Fill Material considering hydrography in relation to known or anticipated sources of contaminents; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land run-off or percolation; spill records for petroleum products or designated hazardous substances (Section 311 of the Clean Water Act); Other public records of significant introduction of contaminents from industries, municipalities or other sources. *See pages 43, 92 & 93 & Appendix C*

E. Human Use Characteristics and Impacts

(1) Existing and potential Water Supplies; Water Conservation *See pages 51 - 54*

(2) Recreational or Commercial Fisheries *No effect*

(3) Other Water Related Recreation *No effect*

(4) Aesthetics of the Aquatic Ecosystem *See pages 67*

(5) Parks, National & Historic Monuments, Wild & Scenic Rivers, Wilderness Areas, Research Sites, etc. *No effect*

(6) Traffic/Transportation Patterns *See pages 2 - 26 & Appendix A*

(7) Energy Consumption or Generation *See pages 89*

(8) Navigation *No effect*

(9) Safety *See pages 99*

(10) Air Quality *See page 45, 48, 76*

(11) Noise *See pages 91 & Appendix F*

(12) Historic Properties *See pages 38 - 43, 107 - 116*

(13) Land Use Classification *See pages 31- 35, 86*

(14) Economics *See pages 36, 37, 87- 89*

(15) Prime and Unique Farmland *See pages 33, 77*

(16) Food and Fiber Production *See page 36*

(17) General Water Quality *See pages 45 - 55,77*

(18) Mineral Needs *Not Applicable*

(19) Private Property *See pages 31- 35, 86 &Appendix D*

(20) Other *No effect*

F. Secondary and Cumulative Effects

Secondary/indirect effects of this proposal are not anticipated to include any effects related to induced changes in the pattern of land use, population density or growth rate, since neither build alternative provides new access into undeveloped areas. This proposal is anticipated to include improved

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opportunities to pre-treat storm water to reduce or eliminate many pollutants before being discharged to Sand Creek or Lake Pend Oreille. Cumulatively, current and programmed highway projects involving US2, US95 & SH200 are anticipated to reduce air pollutant volumes in the study area which are attributable to motorized vehicles because of improved traffic flow and decreased idle time. Also, as noted previously, wetland acreages and functions are anticipated to benefit because mitigation requires improvements to equal or exceed losses. Over time, any new construction, including highway projects which widen pavements and increase impervious areas, change the character and aesthetics of an area from its original natural state to one depicting human requirements and desires. This proposal will likewise increase the human footprint in the study area. The aesthetics of this footprint and how it fits into the character of the area will largely depend on design details.

III. EVALUATIONS

A. Other Authorizations *(To be completed at a later phase- as appropriate)*

(1) Water Quality Certification

Date _____: Issued___ Denied ___ Waived ___

Special Conditions: Yes ___ (attached) No ___

(2) State/Local Authorizations

B. Summary and Consideration of Comments *(To be completed at a later phase- as appropriate)*

(1) Federal Agencies

EPA

USF&W

NMFS

Other: _____

_____

_____

(2) State and Local Agencies

(3) Organizations

(4) Individuals

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C. Evaluation of Compliance with 404(b)(1) re: 40CFR230.10 **(A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.)**:

(1) Alternatives Test

* (a) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into 'waters of the United States' or at other locations within these waters?

___ X_
Yes No

* (b) Based on II B, if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

X_ ___
Yes No

(2) Special Restrictions. Will the discharge:

* (a) Violate state water quality standards?

___ X_
Yes No

* (b) Violate toxic effluent standards (under Section 307 of the Act)?

___ X_
Yes No

* (c) Jeopardize endangered/threatened species or their critical habitat?

___ X_
Yes No

* (d) Violate standards set by the Dept. of Commerce to protect marine sanctuaries?

___ X_
Yes No

(3) Evaluation of the information in II C & D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).

X_ ___
Yes No

( ) Based on the above information, the material is not a carrier of contaminents.

( ) The levels of contaminents are substantially similiar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

(X) Acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site

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and prevent contaminents from being transported beyond the boundaries of the disposal site.

(4) Other Restrictions. Will the discharge contribute to significant degradation of 'waters of the U.S.' through adverse impacts to:

* (a) Human health or welfare, through pollution of municipal water
___ _X_ supplies, fish, shellfish, wildlife and special aquatic sites?
Yes No

* (b) Life stages of aquatic life and other wildlife?
___ _X_
Yes No

* (c) Diversity, productivity and stability of the aquatic ecosystem, such as
___ _X_ loss of fish or wildlife habitat, or loss of the capacity of wetland to
Yes No assimilate nutrients, purify water or reduce wave energy?

* (d) Recreational, aesthetic and economic values?
___ _X_
Yes No

* (5) Actions to minimize potential adverse impact (mitigation). Will appropriate
_X_ ___ and practicable steps be taken to minimize the potential adverse impacts of
Yes No the discharge on the aquatic ecosystem (40CFR230.70-77)?

D. General Evaluation re: 33CFR320.4(a):

(1) The relative extent of the public and private need for the proposed work. *See page 2*

(2) The practicality of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work. *See (3) below*

(3) The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses to which the area is suited. *Both alternatives use existing transportation corridors to the extent possible and should have minimal effect on the public and private uses to which the area is currently suited.*

(4) Significant national issues of overriding importance to state or local issues and why. *Not Applicable*

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IV. DETERMINATIONS

A. Finding of No Significant Impact (FONSI) re: 33CFR325 (EA). *Not Applicable*

B. 404(b)(1) Compliance/Non-compliance re: 40CFR230.12 (EIS). *(To be completed at a later phase- as appropriate)*

( ) The discharge complies with the guidelines.

(X) The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above (III.C.5) to minimize pollution or adverse effects to the affected ecosystem.

( ) The discharge fails to comply with the requirements of these guidelines because:

( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.

( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40CFR230.10(b) or (c).

( ) The discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, namely _____.

( ) There is not sufficient information to make a reasonable judgement re: whether the proposed discharge will comply with the guidelines.

Note: This project was brought into the NEPA 404 Merger Process after the Draft EIS was published and the preferred alternative identified. Written concurrence from the merger partner signatories were received after the fact for the purpose and need, alternatives advanced, and preferred alternative selected. Mitigation measures agreed upon for the project were concurred upon during merger process meetings after the Draft EIS and prior to publication of this Final EIS. The concurrence letters are on file in the ITD District One office.

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Photo 17– Degraded wetland, Sandpoint High School site.

Photo 18 – Sandpoint High School wetland restoration area looking west.

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COMMENTS & COORDINATION

The U.S. Army Corps of Engineers and the U.S. Coast Guard are cooperating agencies with the Idaho Transportation Department and the Federal Highway Administration in preparing this document.

PUBLIC INVOLVEMENT SUMMARY

The public involvement process for this proposed project began with a general project orientation meeting held in Sandpoint, Idaho on 23 February 1989. The last formal scoping meeting was held in Sandpoint on 18 December 1991. A 'Notice of Intent' to prepare an environmental impact statement was published in the Federal Register on 28 November 1989.

Between the first orientation meeting and the last scoping meeting, there have been two additional public scoping meetings and two scoping meetings held for and with state and federal agencies having regulatory responsibilities for various aspects of the project. There have also been five meetings with local governments, as well as meetings with five community groups that expressed an interest in the proposed project. Furthermore, there have been a number of informal discussions between Idaho Transportation Department personnel and groups or individuals in regards to the project. A chronology of all meetings is noted on Table 11.

TABLE 11

SANDPOINT NORTH & SOUTH PROJECT MEETINGS

DATE	GROUP	TYPE	LOCATION	SUBJECT
23 Feb 89	Public	Scoping	Sandpoint	Proj.Orientation
10 Mar 89	Public	Scoping	Bonners Ferry	Proj.Orientation
27 Mar 89	Hwy95	Committee	Sandpoint	Alternatives
4 May 89	Public	Scoping	Sandpoint	Proj.Issues
23 May 89	SandCreek	Coalition	Dist.1 Office	Alternatives
20 Jul 89	Agency	Scoping	Sandpoint	Proj.Issues
30 Nov 89	Co.Planning	Briefing	Sandpoint	General
18 Jan 90	Public	Scoping	Sandpoint	Alternatives
9 Feb 90	SandCreek	Coalition	Dist.1 Office	Alternatives
26 Apr 90	Agency	Scoping	Sandpoint	Alternatives
2 May 90	SandCreek	Coalition	Dist.1 Office	Alternatives
8 Aug 90	DownTown Enhancement	Committee	Sandpoint	Sand Creek LID
19 Sep 90	FHWA/ITD	Lead Agency	Dist.1 Office	Pre-DEIS
1 Nov 90	CityPlanning	Briefing	Sandpoint	General
5 Dec 90	City/Consult.	Coordination	Sandpoint	Sand Creek LID
18 Dec 91	Public	Scoping	Sandpoint	Alternatives
9 Jan 97	Depot	Committee	Sandpoint	Depot Avoidance

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The Idaho Transportation Department has solicited written comments from all who have an interest in the project. The Department has also collected and reviewed 'Letters to the Editor' gleaned from local papers, as well as articles and editorials which address the project. In addition to these efforts to involve the public, the Department has operated an information center at the Bonner Mall in Ponderay for this and other regional highway projects. This information center solicited comments and dispensed information about this and other projects.

As a result of the scoping process, The Idaho Transportation Department has received thousands of individual letters and comment sheets. The Department has also received a number of comments from community and citizen groups, as well as several petitions that contain additional signatures.

KEY ISSUES AND CONCERNS

Key issues and concerns identified during scoping are noted below on Table 12. The order listed does not indicate importance of the issue. Many of the identified issues had subordinate or satellite issues; these second-tier issues are noted below the major categories. The issues and concerns tabulated include those identified by private individuals, organizations and public agencies.

Individual comments are on file at the District 1 office of the Idaho Transportation Department in Coeur d'Alene. These comments include roughly 430 responses from the December 1991 scoping meeting alone. Examination of these responses indicates that slightly over 50% favored the Sand Creek alternative; while nearly 25% favored using the Union Pacific Railroad corridor in conjunction with the south leg of the proposed West alternative. This later modification to the West alternative was evaluated in detail and, as noted in the 'Alternatives' section of the Draft EIS, was rejected because of serious hydrological and socio-economic impacts regarding the depressed option; poor level-of-service, access problems and socio-economic concerns regarding the at-grade option.

In addition to comments, a petition containing nearly 700 signatures was turned in at the December 1991 scoping meeting urging the Idaho Transportation Department (ITD) to use existing roads and available state funds to develop at minimal cost an interim cross-town truck route which would remove heavy traffic from downtown Sandpoint. An advisory ballot vote conducted by the City of Sandpoint from March 1 through March 5, 1993 for Sandpoint residents showed that 70% of the vote cast favored the Sand Creek route. The city council has endorsed the Sand Creek route

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based on that vote. ITD is in the process of coordinating the proposed Sand Creek alignment with the Burlington Northern Railroad.

TABLE 12
ISSUES & CONCERNS
IDENTIFIED DURING SCOPING PROCESS

1. Traffic
   - Trucks Routed Out of Town
   - Congestion
   - Right-of-way Needs
   - Alternatives
   - Sand Creek
   - West
   - Existing Modified
   - Travel Time
   - Downtown Parking
   - East/West Traffic
2. Noise
3. Wetlands
   - Delineate
   - Describe Impacts
   - Describe Mitigation
4. Wildlife and Endangered Species
5. Aesthetics (Visual Impacts)
   - Landscaping
   - Elevated Structures
   - Tourist Trade
   - Scenic Values
6. Cultural Impacts
   - 4(f) and 6(f) Lands
   - Develop Sand Creek Park Site
   - Bike and Pedestrian Facilities
7. Indirect Impacts
8. Cumulative Impacts
9. Safety
10. Social
    - Displacements
    - Access to City Beach
    - Quality of Life
    - Emergency Services
    - Community Access
11. Air Quality
12. Economics
    - Project Costs
    - Impacts to Business
    - Impacts to Farmlands
    - Strip Development Potential
13. Water Quality Impacts
    - Lake Pend Oreille
    - Sand Creek and Chucks Slough
    - Domestic Water Supplies
    - Groundwater and Recharge Areas
    - Road Runoff and Construction
14. Construction Impacts
    - Detours
    - Safety
    - Aesthetics
    - Length of Time
    - Relocation of Utilities
15. Hazardous Wastes/Materials
    - Underground Storage Tanks
    - Spills
    - Site Assessments
    - Types Hauled

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After the Draft EIS was distributed for public and agency review on May 27, 1994, seventeen letters were received. Nine of these were from public agencies or officials, four were from citizen groups or businesses, and four were from individuals. Response by ITD to each public and agency comment letter is noted below.

A public hearing was advertised in five newspapers serving Sandpoint and the surrounding region. The hearing was held at the Bonner Mall in Ponderay, Idaho on August 31, 1994. Oral and written comments were taken at the hearing, and written comments were accepted for ten days following the hearing. More than 400 people attended the public hearing. Of these, 80 gave oral testimony and 219 individuals submitted written testimony. Thirteen groups or businesses also submitted written testimony within the ten day period following the hearing.

Among those giving oral testimony, more than 70% favored the Sand Creek Alternative or supported it as an acceptable alternative. About 10% of the total requested further consideration of a West Side Alternative. The written testimony showed strong support (84%) for the Sand Creek Alternative, while approximately 10% favored a West Route. Table 13 summarizes the public hearing testimony. The totals reflect some overlap as several people who gave oral testimony at the hearing submitted written comments as well. Three individuals who participated in the hearing process also wrote letters of comment on the Draft EIS.

TABLE 13
Summary of Public Hearing Testimony

Alternative	Oral	Written	Total
Through Town	3	7	10
Sand Creek	55	194	249
No Action	5	0	5
Other (West), or No Preference	17	31	48
Total	80	232	312

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The most common reasons for supporting the Sand Creek Alternative were:

- Getting 'through traffic' out of the downtown area will reduce traffic congestion; and
- Diverting trucks around downtown Sandpoint will improve safety and traffic flow.

Several people mentioned air quality, safety improvements, the advantage of having a direct route, and that the Sand Creek route would have fewer effects on existing homes and businesses. Many supporters of the Sand Creek Alternative requested that it include four lanes all the way through and full interchanges at both ends of the bypass segment. Other concerns expressed by at least five people included:

- Off-street parking, either downtown or under the elevated structure;
- The need for bike paths/lanes connecting to existing bicycle routes; and
- The need to avoid adding signals.

Additional coordination will be required as the project proceeds through the design phase. This will include contacts and agreements with the railroad companies, utilities, and with regulatory agencies such as the US Army Corps of Engineers, US Fish and Wildlife Service, and the Idaho Division of Environmental Quality.

RESPONSE TO PUBLIC AND AGENCY COMMENTS ON THE DRAFT EIS

This section presents responses to written comments submitted by individuals, organizations, and public agencies. Many of these comments have been paraphrased here for easier reading. However, a copy of the complete original text of each letter is on file in District One. Passages in the original letters are identified with numbers that match the comment numbers shown below.

The comment period publicized in the Draft EIS extended from May 27 to September 15, 1994. The public hearing and its 10-day comment period fell within this time, making it difficult in some cases to distinguish between comments generated by the Draft EIS and those intended as hearing testimony. Any letters that were not clearly meant as hearing testimony have been treated as comments on the Draft EIS and are addressed below.

Comments by Public Agencies

Jim Stoicheff: State Representative, District No.1

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2a The Department did an excellent job widening the turns for trucks.

Response: Accommodating the movement of truck traffic is one of the primary goals of the project.

2b Remove signal lights at intersections of US-95 at SH-200, 5th at Larch, 5th at Pine, and 1st at Pine. None are needed and all are creating traffic tie-ups which did not exist before.

Response: The signals were needed to provide access to US-95 from cross streets, and to reduce accidents. Unless access from cross streets and driveways is eliminated, the need for traffic signals will increase as the traffic volume in Sandpoint increases.

2c It's ridiculous to spend $35-40 million to bypass a town of 5,000 people. Even if your projections are correct, what would a driver lose--10 minutes?

Response: Delays will increase if no action is taken to improve traffic flow. Delays of 25 to 45 minutes already occur on some days, and will occur more frequently as traffic volumes climb to 45,000 vehicles per day in Sandpoint. With the proposed construction, traffic flow on US-95 is expected to remain stable through the year 2014.

Idaho Department of Fish and Game

3a We are pleased that the other alternatives are no longer being considered. The Sand Creek and Through Town routes would create much less impact to wildlife than other suggested routes.

Response: Wildlife impacts were an important factor in determining which alternatives to advance for consideration in the Draft EIS.

3b If ITD could retain its land on the east side of Sand Creek in an undeveloped state, our preference will continue to be the Through Town route. If the land must be sold, then the Sand Creek route may actually have slightly less impact.

Response: If the Through Town Alternative is selected, ITD will probably sell its land along Sand Creek as surplus property.

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3c Care will be required to protect a bald eagle nest near the highway, south of the Long Bridge. Screening vegetation will need to be retained, and construction disturbance should be timed to minimize impacts during the nesting season. The US Fish and Wildlife Service should be contacted for development of a nest management plan.

Response: When construction funding is allocated for the "Long Bridge Widening" and "Algoma to Long Bridge" phases of this project, ITD will negotiate appropriate timing restrictions and mitigation measures with the US Fish and Wildlife Service and your office, as has been done for other projects around Sandpoint and Bonner County.

3d Give further consideration to timing of construction activities to reduce or prevent direct impacts to other species, such as ospreys.

Response: See the response to Comment 3c, above.

3e Wetland mitigation specifics need to be addressed in the Final EIS.

Response: A "Wetlands Finding" and mitigation plan have been completed for the Sand Creek Alternative. Please see Appendix E of this Final EIS.

3f We hope ITD will work with the county on planning issues because improved transportation in and around Sandpoint will result (perhaps only indirectly) in loss of wildlife habitat due to development.

Response: ITD is working--and will continue to work--with Bonner County on planning issues related to the state highway system. Protecting wildlife habitat from impacts of private development will have to be addressed through the local planning and zoning process.

City of Ponderay (by Nancy B. Piatt, City Clerk)

4a The Ponderay City Council voted to endorse the Sand Creek bypass. This was a unanimous decision. The Planning and Zoning Commission also endorses the Sand Creek bypass.

Response: The Sand Creek Alternative is the preferred route for construction.

Bonner County Board of Commissioners

ITDAA029549

5a Throughout the Draft EIS, traffic projections assume a straight line 4% increase per year There is no indication of the basis for such projections Such straight line projections have been historically very inaccurate in Bonner County.

Response: Traffic volumes in the Sandpoint area have increased at a rate of 5.1% per year since 1987. The projected volumes in the Draft EIS are therefore a little low, but are still valid for the purpose of comparing alternatives.

5b There is no indication in the EIS whether the ADT figures represent the summer peak or the winter low, or an averaging of the two. Seasonal fluctuations are wide, and the types of vehicles in the traffic stream are markedly different between summer and winter, yet these factors also remain unexamined.

Response: ADT, by definition, is a daily average for the year. For Sandpoint, it was found that traffic volumes in August were about the same as in March. The mix of traffic was factored into the capacity analysis (how many lanes are needed). This analysis is based on the "Design Hourly Volume" or DHV, which is the traffic volume during the 30th highest hour of the year.

5c The calculations for the likelihood of a hazardous material spill appear extremely optimistic in light of the spill in the study area within the past week.

Response: Projections are based on statistics showing the location and frequency of accidents, the type of vehicles involved, and the percentage of vehicles that transport hazardous waste or hazardous materials. The recent accident in Sandpoint does not change the statistics and does not change the predicted improvement expected after completion of the Sand Creek Alternative.

5d There are no alternatives presented for the segment from SH-200 north to Bronx Road. The draft EIS does not examine the possibilities for frontage roads nor does it include any signalization, grade separations or other traffic controls at critical intersections (e.g. Bonner Mall, Kootenai Cutoff/Schweitzer Road).

Response: These concerns are being addressed in the "Sandpoint to Kootenai Cutoff" project currently in preliminary design.

5e From SH-200 north to Bronx Road Provisions should be included for emergency vehicles, rather than just commercial access from the highway.

Response: Commercial and emergency access for this section of highway are being addressed in the "Sandpoint to Kootenai Cutoff" project currently in preliminary design.

ITDAA029550

5f The Through Town Route does not remove truck traffic from town. It requires two right-angle turns for traffic in both directions, which is not an improvement over the current routing.

Response: This certainly is part of the reason why the Through Town Route is not the preferred route.

5g The routing for east-west traffic should be clarified and incorporated in the Sand Creek 2-Lane Bypass alternative. The routing of traffic in both directions should remain outside of the downtown and the handling of cross traffic should be specifically addressed. These improvements should be included in determining the cost-benefit ratio.

Response: US-2 traffic will be accommodated by interchanges at the north and south ends of the bypass. Improvements to US-2 itself are beyond the scope of this project but will be addressed in separate projects.

5h The issue of parking in the downtown area should be addressed. If public parking will be allowed under the elevated structure, specify the number, type and location of the parking spaces and the cost of such improvements.

Response: Parking in the downtown area is determined by city officials. Public parking for about 30 passenger vehicles will be provided. The exact number and location of parking spaces will be determined during the "final design" phase of the project. The cost of constructing the parking area will be approximately $20,000.

5i The draft EIS contains no alternatives for Algoma to Long Bridge. There is no discussion of the type of structure planned for the Long Bridge, nor of the impacts of such construction on the traffic flow or the waters of the lake.

Response: The "Algoma to Long Bridge" and "Long Bridge Widening" segments were included in the draft EIS to ensure adequate consideration of "cumulative impacts" within the study area. For these segments, the route location and general scope of work have been decided at this time. Environmental impacts and mitigation have been identified and agreed upon by the Agencies. Design details will not be developed until funding is allocated.

5j The Draft EIS does not contain justification for doubling the bridge capacity when the bottleneck for traffic flow is within the city itself. Traffic projections for the segment south of the bridge presuppose a doubling between 1991 and 2014. There is no justification for such a projection.

Response: The proposed widening of the bridge and the segment south to Algoma is based on traffic projections for these sections of roadway, which indicate the need for two travel lanes in each direction. At the 4% growth rate used in the Draft EIS, traffic volume will double within 18 years. The growth rate has recently been closer to 5%, which means traffic volumes may double in about 14 years.

ITDAA029551

5k From Long Bridge to Algoma, there is no alternative presented other than a four-lane urban conversion. This construction would have many and severe impacts which have not been addressed in the Draft EIS. Consider an alternative similar to the treatment of US-95 south of the study area, with passing lanes constructed where impacts can be minimized.

Response: This segment was included in the EIS to ensure adequate consideration of "cumulative impacts" within the study area--only the route location and general scope of work are being decided at this time. Design details will not be developed until funding is allocated. However, traffic studies show that four lanes are needed to accommodate the projected volume of traffic.

5l The statement that the alternatives are in line with local planning efforts is not justified. The 4-lane plan for the Long Bridge and south presents conflicts with the current comprehensive plan.

Response: The widening of the exising bridge and highway may create additional pressure for development. However, it is the responsibility of the County to restrict development in areas it considers unsuitable (congested areas, wetlands, aquifer recharge areas, etc.) Project planning has addressed safety hazards, congestion, and protection of water quality and therefore appears to be in compliance with relevant provisions of the county's comprehensive plan.

5m There is no recognition of the land use patterns, existing and future, along and served by the segment south of the Long Bridge.

Response: Figure 10 shows the prevailing land use, not specific details or non-conforming uses. It would be difficult to show such detail on a map of this scale. Land use trends and projections are discussed in the text (pages 86 and 99-100). When funding is allocated for the "Algoma to Long Bridge" segment, ITD will publish a "Reevaluation" describing current conditions, design details, and specific environmental impacts along that segment.

5n It is strongly suggested that Segment 3 (Long Bridge south to Algoma) be dropped from the project entirely and that ITD work with Bonner County on the long range transportation planning needs for that area.

Response: The Algoma to Long Bridge segment is only in a conceptual stage at this time. It will be constructed under a separate contract when sufficient funding is allocated. In the mean time, ITD will work with Bonner County and other local agencies on long-range planning for transportation facilities in the area.

ITDAA029552

Idaho Division of Environmental Quality

6a The discussion of construction BMP's is misleading. More illustrative would be an example of sediment, which is mobile, and can have water quality impacts...

Response: Page 81 of the Draft EIS has been revised to include discussion of erosion and sediment control during project construction--see pages 80-86 of this Final EIS. Pages 82 and 83 of the Draft EIS identified the need for a Storm Water Pollution Prevention Plan and NPDES permit.

6b The build alternatives are different in risk to an aquatic environment. A discussion of the difference in risk between the alternatives is appropriate.

Response: With the Sand Creek Alternative, there will be a reduction in sediment, not an increase. The Sand Creek Alternative has the physical space to allow for erosion and sediment control structures (sediment retention ponds, traps, and vegetated buffer strips) that will reduce the sediment in the storm water below the natural levels occurring now. The Through Town Alternative does not have the physical space to provide these types of BMP's during construction.

6c The discussion of indirect water quality effects presents an overly simplistic view of the problem The discussion should focus on past use of ordinance and planning tools, and a realistic discussion of the likelihood of indirect water quality impacts for each build alternative.

Response: Page 81 of the Draft EIS has been revised to include a statement comparing the extent of indirect water quality impacts under the two alternatives. The Draft EIS recognized the role of local authorities in managing urban growth and development. Any discussion beyond that would be mere speculation.

6d The discussion of snow melt runoff and de-icing compounds would be better if specific information is presented. There is a wealth of national data on impacts of highway runoff and de-icing or traction compounds.

Response: ITD now uses liquid de-icing compound instead of sanding materials when conditions allow, and otherwise uses "hardened" sanding material within Bonner County to help reduce the amount of reentrained road dust generated by vehicular traffic on sanded roadways.

ITDAA029553

6dx Suggest that storm water pollutant loads be estimated for better comparison of environmental impact of each alternative.

Response: While agreeing with the intent of the comment, ITD does not agree that the available literature provides a relevant, quantifiable way of predicting pollution from highway runoff. To the contrary, after reviewing the literature on the subject, study after study indicates that each study area is unique, with factors influencing the pollutants in the storm water discharge that in many cases are unpredictable. We agree that vehicles contribute pollutants to highway runoff. But, it has been demonstrated in many studies that the factors affecting the concentration and quantity of pollutants vary greatly. Factors such as dry days before a storm, vehicles traveling during a storm, highway maintenance frequencies, local atmospheric conditions and sources, physical and chemical loads contained in the precipitation, adjacent land use, and a myriad of other factors that may influence the quantity of pollution in highway runoff. The simplified methodology in DEQís letter is an inaccurate method for the Sandpoint area and would mislead all who may read the EIS. Therefore, we will not include that methodology in the EIS. The current research has not refined the art of prediction to the point where it is a meaningful tool. If an adequate methodology does become available to accurately predict pollutant loads from highway runoff, ITD will explore using it.

6f Filling portions of the waterway to create planting areas is, at best, a dubious trade-off. We recommend that this proposed mitigation be discarded. We suggest realignment to allow room for plantings or incorporation of existing riparian vegetation to accommodate visual screening.

Response: ITD will not fill waterways to create planting areas. See the Wetlands Mitigation Plan for the Sand Creek Alternative, provided in Appendix E. It identifies the mitigation areas along Sand Creek, at Sandpoint High School, and some minor sites for replacement and enhancement of wetlands. Vegetative screening will be provided, where indicated, to protect or restore "functional values" such as wildlife habitat.

6g Provide an expanded and more specific discussion of how NPDES permit requirements would be incorporated...

Response: Page 82 of the Draft EIS has been revised to include this information--see page 80 of this Final EIS.

6h An expanded discussion of the tank remediation requirement differences between alternatives is warranted in the Final EIS.

Response: The text of the Draft EIS has been revised to discuss the costs for tank remediation. See the "Additions and Changes" section of this Final EIS.

ITDAA029554

6i Expand discussion of this proposed fill at Sand Creek Gas-n-Go and the relationship with the ongoing remediation effort...

Response: The Gas 'n' Go will not be affected by the Sand Creek Alternative. If the Through Town Alternative had been selected, the status of the contamination and remediation would have been thoroughly evaluated during design devolopment and right-of-way negotiations.

6ix LUST site remediation effort...

Response: Detailed information on DEQ's risk based standards process for leaking underground storage tank cleanups are not within the function of the EIS and will not be discussed.

6j The conformity statement should provide documentation that supports the statements concerning elevated PM10 emissions.

Response: A conformity statement will be prepared when the project is advanced to the Highway Development Program and assigned construction funding. All documentation required to satisfy state and federal air quality regulations will be compiled and submitted for approval at that time.

6k A better description of the area that the stated risk factor applies to is needed.

Response: Risk factors were calculated for the current route and proposed routes of US-95 (a) within the city limits of Sandpoint and (b) outside the city limits but within the project termini.

6l The number of sites listed in Figure 14 does not equal the sum of sites in Table 2 or Figure 28. It is not clear which sites are being included in which discussion.

Response: Figure 14 shows sites for the entire project area--some affected by the Through Town Alternative, some affected by the Sand Creek Alternative, and some affected by both. The 22 sites affected by the Through Town Alternative (Table 9) include the 13 sites shown in Figure 28 and nine additional sites, outside the city limits, which are shown in Figure 14 and identified in paragraph 3 of page 95.

6m Potential hazardous materials associated with the landfill should be discussed, even though the site itself will be avoided. Construction may change the route or rate of the leachate.

Response: This is a historical dump site for woody debris, glass, and metal. The likelihood of leachate is remote.

6n (Page 106, 4th paragraph): All the sites are noted on Table 13, not just the four vehicle repair sites...

Response: The text of the Draft EIS has been revised to clarify this point. See the "Additions and Changes" section of this Final EIS.

ITDAA029555

6o Solvents should be included in the list of potential hazards associated with the industrial sites...

Response: Page 106 of the Draft EIS has been revised to include solvents in the list of potential hazards. See the "Additions and Changes" section of this Final EIS.

Idaho State Historical Society

7a The Draft EIS accurately reflects State Historic Preservation Office involvement in the project.

Response: Comment noted.

U.S. Department of Interior

8a *Section 4(f) Evaluation:* The Sand Creek Alternative is unacceptable. The Burlington Railroad depot, which would be destroyed is perhaps the most significant historic building in Sandpoint.

Response: The Sand Creek Alternative was realigned to avoid physical impacts to the BNRR depot and are discussed in the Section 4(f) Evaluation (see page 111 of this Final EIS). For additional details, please see Appendix B of this Final EIS.

8b *Section 4(f) Evaluation:* A copy of the signed MOA addressing cultural resources should be included in the final statement.

Response: The MOA is included as Appendix B of this Final EIS.

8c The U.S. Fish and Wildlife Service (FWS) concurs with eliminating the "west" Alternative from consideration. Implementation would have far greater adverse effects to fish and wildlife than the other alternatives being considered.

Response: Wildlife impacts were an important factor in eliminating the West Alternative from further consideration.

8d The BA should include the new information on the "Sagle Slough" bald eagle nest.

Response: A revised Biological Assessment is included in this Final EIS. See Appendix H.

ITDAA029556

8e Prepare a management plan for the "Sagle Slough" bald eagle nest. The Plan should be evaluated in the final environmental statement.

Response: To ensure that the nest management plan is relevant at the time of construction, it will not be prepared until construction funding is allocated for the "Long Bridge Widening" and "Algoma to Long Bridge" phases of this project.

8f The final statement should provide for timing restrictions on construction to avoid impacts to nesting migratory birds...

Response: When construction funding is allocated for the "Long Bridge Widening" and "Algoma to Long Bridge" phases of this project, ITD will negotiate appropriate timing restrictions and mitigation measures with the Idaho Department of Fish and Game and your office, as has been done for other projects around Sandpoint and Bonner County.

8g The bull trout should be addressed in the Final EIS. It is now a Category 1 candidate for listing as an endangered or threatened species...

Response: The EIS has been revised to include reference to the bull trout (See page 59) and a Biological Assessment has been performed and concurred upon by the US Fish and Wildlife Service.

U.S. Environmental Protection Agency

9a The final EIS should explain how it is possible to "reroute through-nonstop trucks away from the community"

Response: Any truck driver having a destination beyond Sandpoint and no need to stop in Sandpoint will take the Sand Creek "bypass" rather than driving through the central business district.

9b Page 17 shows a proposed section for US-95--Long Bridge. However, the figures in the draft EIS do not identify a Long Bridge. What is the purpose of the 8-foot turnout?

Response: Long Bridge is the highway bridge extending from the south end of Sandpoint, across the Pend Oreille River. Several "turnouts" will be provided along the bridge so that pedestrians and bicylists can stop outside the pedestrian/bicycle lane for rest breaks or viewing the scenery.

9c The EIS should discuss what kind of development would occur on surplus property for alternatives other than Sand Creek Alternative.

Response: The Through Town Alternative will not leave any surplus property or remnant parcels large enough to support economic development.

ITDAA029557

9d The basis for hazardous waste risks should be disclosed.

Response: The risk projections are derived from analysis of traffic accident statisics for the project corridor and the percentage of vehicles that transport hazardous waste or hazardous materials.

9e Questions remain on the Sand Creek Alternative regarding localized indirect effects. It is not clear what type of access would be available from the strip of land between Sand Creek and Lake Pend Oreille.

Response: To maintain the "bypass" as a through/nonstop route, there will be no access (driveways or cross streets) allowed between the south end of the Long Bridge and the junction with SH-200.

9f The Section 4(f) evaluation does not discuss indirect effects to the city beach.

Response: The Sand Creek Alternative will not significantly affect use of or access to the beach. The character of the site will not be notably affected, as it is already close to a busy urban area, and subject to noise from the railroad line located between the preferred Sand Creek Alternative and the City Beach.

ITDAA029558

Kaniksu Bioregional Council

10a Although you claim a preferred alternative has not been selected, the Draft EIS gave me the impression that the Sand Creek was a distinct favorite. This puts the objectivity of the entire document in question.

Response: The Sand Creek and Through Town alternatives were both considered feasible alternatives which would satisfy the stated highway improvement goals. The intent of the Draft EIS was to present the benefits and impacts of each alternative in an objective, consistent manner.

10b Much of your data and references are quite dated which leads me to question the validity of your assumptions and projections.

Response: The Draft EIS incorporates the most recent data and forecasting methods available at the time the studies and technical reports were prepared. Although some of the projected values in the Draft EIS do not match current conditions, they do provide for valid comparisons between alternatives.

10c The straw ballot conducted by the Sandpoint City Council lacks credibility since it represents only 25% of the registered voters. A more representative vote would be one conducted on a county-wide basis.

Response: The straw ballot was helpful in gauging the opinion of Sandpoint residents, but was not the entire basis for selecting Sand Creek as the preferred alternative. US-95 is a highway of statewide and regional importance. A survey of Bonner County residents would, likewise, be helpful but not conclusive in selecting an alternative for construction..

10d The No Action alternative seems the wisest choice until the EIS can be updated, a study of recent traffic improvements, and a county-wide survey of Bonner County citizens regarding this project.

Response: The No Action Alternative does not fulfill the stated purpose and goals for the project. Traffic projections were updated for the Final EIS. Bonner County citizens have had several opportunities to testify and submit comments on this project.

ITDAA029559

Burlington Northern Railroad

11a The Draft EIS concentrates on highway matters and all but ignores the proposed project's severe impacts on railroad safety and facilities.

Response: Coordination with the railroad is ongoing in conjunction with additional engineering and safety considerations that are being developed by a consulting engineering firm. Any railroad safety or facility issues that need to be addressed will be incorporated during the "final design" phase.

11b Because railroads are a system, damaging a portion of the main line damages the whole. The Final EIS must include analysis of the impact on BN's facilities and those of other railroads, including feasible alternatives to protect future expansion capacity.

Response: Project planning has involved close coordination with the affected railroad companies. Potential expansion and consolidation of rail lines has been considered in the development of highway alignment alternatives for US-95 as well as US-2 and SH-200.

11c The project will involve significant environmental impacts caused not only by the highway itself, but by the replacement facilities required by the railroads. The Draft EIS fails to ascertain community and environmental impacts arising from the need to replace yards, sidings, and trackage at other locations. The proposed use of BN right-of-way along Sand Creek requires further study.

Response: ITD will acquire a narrow strip of railroad right-of-way, as negotiated with Burlington Northern Railroad. The Sand Creek Alternative will not require relocation of any railroad yards, tracks, or sidings. This is also true of the Through Town Couplet, as proposed in the Draft EIS. The use of the Sand Creek right-of-way (by railroads and as a potential highway corridor) has been the focus of several studies over the years. Current transportation planning policies support the development of a "shared corridor" such as the railroad/highway corridor proposed for Sand Creek.

11d The analysis of the Sand Creek Alternative does not evaluate the increased accident probabilities inherent in having the highway adjacent to BN's highly used mainline track. No crash barriers, elevation differences, or other safety measures are discussed in the Draft EIS.

Response: The highway alignment and elevation meets the safety requirements presented by the railroad. Barriers and other design details will be evaluated during the "final design" phase of the project, to ensure compliance with safety standards concerning highways adjacent to railroads. The accident rate for interactions between trains and highway users is lower than that for downtown traffic, as with the "No Action" or "Through Town" alternatives.

ITDAA029560

11e Various ways of moving the railroads to avoid highway and city conflicts should be explored with all affected railways. The Draft EIS does not consider them.

Response: Multi-modal planning such as you suggest is being addressed by ITD Transportation Planners. However, it is a long-term process that is beyond the scope of the Draft EIS.

11f The Draft EIS totally ignores the taking of wetlands and other impacts necessary to replace lost railroad capacity and address safety concerns.

Response: The proposed construction will not displace any tracks or other facilities, nor will it reduce capacity or safety along the current track system. The highway alignment meets the minimum setback and other safety standards. Wetlands have been addressed and mitigated.

11g The Environmental Consequences—Safety section must include an evaluation of the potential consequences of a train derailment (or highway accident spilling onto the railroad) and the potential cost of such an accident.

Response: Page 107 of the Draft EIS has been revised to state the low probability of a highway accident affecting the railroad--see page 112 of this Final EIS. The likelihood of train derailments, and the associated costs, depend on the maintenance and operation of the railroad.

11h The BN Depot is presently listed in the National Register of Historic Places, however your preliminary determination that there are no feasible and prudent alternatives does not consider relocating the railroad facility, moving the highway easterly to leave the depot in place, or other possibilities. Merely moving the building across the tracks is no solution.

Response: It has now been determined that moving the depot is not a practical solution. For details on this determination, please see the Section 4(f) Evaluation on page 110 of this Final EIS and the "Memorandum of Agreement" in Appendix B. Since the depot can be avoided, ITD will design the structure to minimize visual and proximity impacts.

ITDAA029561

Sand Creek Coalition (by Charlton Mills of Jensen & Mills)

12a The range of alternatives considered is inadequate. The Draft EIS lacks serious consideration of a West Side alternative, the now-signed trackage agreement between Union Pacific and Burlington Northern railroads, and has not allowed for adequate public input.

Response: ITD initially considered a wide range of alternatives, including several variations of the West Alternative (see pages 23 to 29 of the Draft EIS). Coordination with the railroad companies has been ongoing throughout the project development process. Use of the Union Pacific railroad right-of-way would do little to improve north-south traffic on US-95, but will be examined in future development of US-2.

Since 1989, ITD has provided numerous opportunities for public input. These included five public meetings, a public hearing, and several meetings with groups of concerned citizens. In addition, ITD operated an information center at Bonner Mall for several years, and reviewed project-related articles, editorials, and "Letters to the Editor" published in local newspapers.

12b The proposal has been improperly segmented from other projects. An alternative must be developed that addresses all foreseeable and connected traffic issues regarding the interrelationship of US-2, US-95 and SH-200 through and around Sandpoint.

Response: Systems planning as you suggest is being addressed by ITD Transportation Planners. The Draft EIS has been revised to address other construction projects in and around the project area. Please see page vi of this Final EIS.

12c Neither action alternative satisfies even the narrow purpose defined in the Draft EIS. They do not have an independent utility and significance and will restrict consideration of other reasonable foreseeable transportation needs.

Response: The project—independently and in conjuction with other projects--will improve traffic conditions along US-95 and in downtown Sandpoint. The design allows for connections to US-2 and SH-200 and does not preclude consideration of reasonable options for expanding capacity along these routes.

ITDAA029562

12d The air quality analysis is deficient. The basis is not given for either of two critical conclusions: (a) that air quality will not worsen under either of the action alternatives, and (b) that the alternatives are equal in terms of air quality effects.

Response: The methodology used in the air quality analysis is given on pages 78 and 80 of the Draft EIS. Air quality effects for the Through Town and Sand Creek alternatives are similar because the two proposals offer similar scenarios for improving traffic flow and controlling dust along US-95. Quantitative data on PM-10 emissions will be obtained through modeling when the project is advanced to the Highway Development Program and assigned construction funding.

12e No public hearings have been held, only information settings. ITD and FHWA must hold a public hearing in Sandpoint before this process can go forward.

Response: A public hearing was held on August 31, 1994. Because the traditional auditorium-style hearing is intimidating to many people, ITD now emphasizes one-to-one "testimonial" in its hearings, as was done in Sandpoint..

12f In that there is a feasible alternative in the West Side route (and even the Through-town couplet) and, further, in that all possible planning has not been implemented, at least the Sand Creek Alternative must fail as unacceptable.

Response: The West Alternative is not a feasible option at this time, and has been dropped from consideration. The Through Town Alternative is not an "avoidance alternative" because it also displaces a historic building. Since impacts to the BNRR depot were minimized, by realigning the roadway to avoid the depot, it is the preferred alternative. For details, please see the Section 4(f) Evaluation on page 110 of this Final EIS and the "Memorandum of Agreement" in Appendix B.

Montana Rail Link

13a The Highway 95 project should be reviewed again with the thought of putting together a master plan that would benefit the traveling public, the citizens of Sandpoint, and the three railroad companies.

Response: Systems planning as you suggest is being addressed by ITD Transportation Planners. However, it is a long-term process that is beyond the scope of the Draft EIS.

ITDAA029563

Karl W. Fuge, P.E.

14a Neither of the bypass routes addressed in the Draft EIS does anything to alleviate the present air quality concerns, the growing US-2 traffic, nor the core area traffic itself.

Response: The Sand Creek bypass will result in a 15 percent reduction of traffic in downtown Sandpoint. US-2 traffic will be accommodated by interchanges at both ends of the bypass and by separate projects along US-2 itself. Present air quality problems in Sandpoint are primarily due to wood smoke and dust from a variety of sources. Air quality improvement is not a stated goal of this highway project, but the project is not expected to increase the PM-10 level (particulate matter), and may slightly reduce it.

14b The "Great Northern" route has not been studied, even though ITD indicated it would. It seems to have minimal environmental impact and little grade differential and less property damage than the "Western Route." It could also be built for a fraction of the cost of the two alternatives up for discussion...

Response: The Great Northern Route would have greater environmental and construction problems than other alternatives considered and was therefore dropped from further consideration.

Leon Lewis

15a The EIS has been very thorough in analyzing the past but not what is really taking place in Sandpoint and Bonner County. Your traffic counts have outstripped earlier projections. They are all based on archaic studies which are not the reality of NOW.

Response: Traffic volumes in the Sandpoint area have increased at a rate of 5.1% per year since 1987. The Draft EIS used a projected growth rate of 4% per year for the 20-year project design time frame. The projected volumes are therefore a little low, but still valid for the purpose of comparing alternatives.

15b It is obvious that you are merely staging the highway construction as money is available. Any of your choices will stay behind our growth and will be outdated at every stage.

Response: Construction must be completed in stages because of the limited funds available to the State. However, ITD projects are designed to meet predicted traffic demands through the "design year" which is usually twenty years beyond the date of construction.

ITDAA029564

15c Give us a permanent alignment to the West, not another half baked short term alignment.

Response: The West Alternative, and several variations of it, were considered but rejected because of environmental concerns and construction requirements exceeding those of the two Build alternatives evaluated in the Draft EIS. Please see pages 23 to 29 of the Draft EIS.

15d Your report considers our core area to be two small streets (parts of Cedar and parts of 1st Avenue. Our core areas are about a 30 square block area in Sandpoint, giant areas around the airport, large areas of Ponderay and parts of Kootenai. Future commercial and industrial growth in these areas will be constricted by your short term thinking.

Response: The purpose of this project is to improve traffic flow on US-95. Transportation planning to accommodate local traffic and commercial development is the responsibility of the city or county governments.

15e Any of your choices without 4 lanes all the way through would only keep our nightmare going into the future. The Sand Creek choice then becomes the most expensive.

Response: Traffic projections indicate that two lanes will adequately accommodate US-95 traffic for through the design life of the project, and will reduce north-south traffic through Sandpoint by about 15 percent.

15f You should have addressed our present needs on SH-200 and US-2 and prepared for the future needs with the Northside right-of-way acquisition. If you don't do this now, you will be behind the curve for 20 to 30 years, and we will all suffer economic chaos both short term and long term.

Response: US-2 and SH-200 are being addressed in separate construction projects now being developed.

Edward C. Bittner

16a Neither the Through Town couplet nor the Sand Creek Alternative meet the objective of a through non-stop facility. The West Alternative could meet this objective and is actually the most economical in the long run.

Response: The Sand Creek Alternative does not require any stops for US-95 traffic. The West Alternative would add 20 km (12 miles) to the highway system, resulting in maintenance and road user costs far exceeding those of other alternatives considered.

ITDAA029565

16b The purpose of the project is too narrowly defined. The two alternatives do nothing to improve east-west traffic.

Response: ITD recognizes that east-west traffic is an important consideration in Sandpoint. However, it is extremely complicated and expensive to address competing needs in a single construction project. East-west traffic from US-2 will be accommodated by interchanges at the north and south ends of the Sand Creek bypass. Improvements to US-2 itself will be addressed in separate projects.

16c The north-south alternatives recommended by the Draft EIS would limit funding and restrict consideration of alternatives for improving east-west traffic on US-2 and SH-200.

Response: The construction of any given project necessarily limits funding for other competing needs. The "Sandpoint North and South" project does provide for connections to US-2 and SH-200. Improvement of east-west traffic flow on those routes is being addressed in separate projects currently being developed.

16d The Draft EIS downplays the disadvantages of the recommended build routes. There is no way increased traffic projected through either of these routes will improve air quality but the West Alternative would draw considerable traffic away from the non-attainment area of Sandpoint.

Response: Present air quality problems are with particulate matter (PM-10), primarily due to wood smoke and dust from a variety of sources. Dust-reduction measures are already in effect for winter maintenance of the state highways in Sandpoint. Shifting traffic away from downtown Sandpoint will not significantly affect PM-10 levels in the non-attainment area.

16e The Draft EIS makes no distinction between deleterious truck traffic and economically beneficial passenger traffic.

Response: The Draft EIS does not make this distinction because both sources--trucks and passenger vehicles--generate economic benefits for Sandpoint and also contribute to the present traffic problems.

16f The West Alternative cost is inflated by assuming the need for a four-lane highway and bridge. With through traffic projected at only 6000 vehicles daily by the year 2014, a two-lane highway and bridge should be sufficient for the indefinite future.

Response: The requirement for four travel lanes was based on the highway alignment more than on the traffic volumes. The slower pace of trucks and motorhomes traveling through a hilly area creates the need for a second travel lane in each direction. A two-lane road for the West Alternative would operate at Level of Service F: congested flow with operating speeds less than 50 km/h (30 mph).

ITDAA029566

16g The Draft EIS does not consider the benefits of having another highway bridge.

Response: The cost of such a bridge is prohibitive. Widening the existing bridge is a more feasible option for accommodating traffic flow on US-95..

Joseph Henry Wythe

17a The West Alternative is most certainly a reasonable alternative. A west-side bypass will have to be built some day even if the Sand Creek Bypass is constructed.

Response: The West Alternative was considered but rejected as unworkable due to extreme environmental impacts and high costs for both construction and maintenance.

17b The tremendous escalation of traffic in and through the area renders the traffic volume projections suspect.

Response: With a recent growth rate of 5.1% instead of 4%, the projected traffic volumes are a little low, but still valid.

17c Cost projections for the proposed alternatives are comparatively low, but when added to the costs involved to ultimately solve the traffic problems they are no bargain when compared to a West Alternative.

Response: The projections address costs for improving traffic flow on US-95 between the identified termini. Of all alternatives initially evaluated, the Sand Creek Alternative and the Through Town Alternative were the most reasonable in terms of cost and impacts. Construction costs and maintenance costs would be higher for the West Alternative, especially considering winter maintenance requirements for the mountain pass. Road user costs would also be higher.

17d There are serious problems of air quality that have not been addressed in the Draft EIS.

Response: Air quality problems are addressed on pages 76 to 80 of the Draft EIS. However, the current problems stem primarily from sources other than state highways. ITD now uses liquid de-icing compound instead of sanding materials when conditions allow, and otherwise uses "hardened" sanding material within Bonner County to help reduce the amount of dust generated by winter road maintenance.

17e The impact of noise due to a Sand Creek Alternative is far greater than is acceptable. The Draft EIS mentions only "minor increases in noise levels..."

Response: The Draft EIS (page 102) predicts minor increases in noise levels except for two locations: the Lakeside Inn and the Cedar Street Mall. However, under current federal criteria, the resulting noise levels and the magnitude of the increase are not high enough to require mitigation.

ITDAA029567

17f The Draft EIS presents a brief study of a West Alternative but then rejects such an alternative. The study is heavily slanted to make the West Alternative a very poor choice.

Response: The West Alternative was rejected as unworkable due to extreme environmental impacts and high costs for both construction and maintenance. The cost analysis is based on the Highway Investment Analysis Package (HIAP) which is the same document used in developing cost projections for the other alternatives.

17g No maps or other data is given to justify the statement that "...US-2/SH-200 would require 6 lanes..." and that "...it would not be feasible to block access..."

Response: The need for six lanes and unimpeded access on US-2/US-200 is based on traffic volume projections, using the same methodology employed for other road segments and intersections evaluated.

17h The West Alternative is certainly the least expensive so get on with it while the right-of-way acquisition costs are relatively low.

Response: Considering costs for right-of-way acquisition, interchange construction, and environmental mitigation, the total cost of the West Alternative would be much higher than for the two alternatives advanced in the Draft EIS.

17i The Sand Creek Coalition requests that a thorough and unbiased investigation be made of the Great Northern route and that the Route be included as an alternative.

Response: The route was considered on an equal basis with other alternatives, but was ruled out due to high costs and severe environmental impacts.

17j The Draft EIS states that the Through Town Alternative is not a stop-gap measure. Good for twenty years? Nonsense!

Response: The Through Town Alternative has not been selected.

17k The Through Town Alternative fails to take into account the possible use the Union Pacific right-of-way when the tracks through Sandpoint are removed.

Response: Use of the Union Pacific right-of-way would benefit east-west traffic. ITD has acquired this right-of-way from the railroad. It is projected that the land will be used for future projects to improve US-2 west of Sandpoint.

ITDAA029568

17l The Sand Creek Alternative will not solve the traffic problems in the project area and will, in fact, create new problems that can only be resolved by construction of a west side bypass.

Response: The Sand Creek Alternative will improve traffic conditions along US-95 through Sandpoint. Traffic flow on the state highway system will also be improved through proposed construction projects on US-2 and US-200. Other traffic concerns in Sandpoint will have to be resolved through appropriate planning, controls, and construction initiated at the local level.

17m The project is defined in such narrow terms as to include only US-95 without any reference to impacts on other portions of the transportation system (US-2 and local traffic).

Response: ITD recognizes that east-west traffic is an important consideration in Sandpoint. However, it is extremely complicated and expensive to address competing needs in a single construction project. East-west traffic from US-2 will be accommodated by interchanges at the north and south ends of the Sand Creek bypass. Improvements to US-2 itself will be addressed in separate projects. The Sand Creek bypass will result in a 15 percent reduction of traffic in downtown Sandpoint.

17n How does the Sand Creek Alternative deal with the connection with US-2 West? The Draft EIS is completely silent on the matter.

Response: US-2 traffic will be accommodated by interchanges at the north and south ends of the bypass. Please see Figure 7 and page 21 of the Draft EIS.

17o The volume of traffic now may well be approaching or exceeding the projections for the year 2014.

Response: With a recent growth rate of 5.1% instead of 4%, the projected traffic volumes are a little low, but still valid. If the current growth rate continues, the traffic projections for the year 2014 may be reached a few years sooner. Current traffic, however, is well below these projected volumes.

17p While the Draft EIS makes reference to the aesthetic/visual and noise impacts created by the Sand Creek Alternative, there is hardly passing reference to the resulting economic impacts on Sandpoint.

Response: Details concerning direct and indirect economic impacts are included in the economic study report prepared for the project. A 25-page "summary of findings" is available by writing to ITD District One at 600 W Prairie Avenue, Coeur d'Alene, ID 83814.

17q The Draft EIS mentions the cost of traffic accidents for only the build alternatives, but nothing is said about such matters for the West Alternative.

Response: The West Alternative was considered initially, but was not proposed for construction. It is therefore not addressed in detail in this Draft EIS.

ITDAA029569

17r The Draft EIS sheds little light on air quality, which is of growing importance to the community. No mention is made of the fact that Sandpoint has been declared an air pollution "non-attainment" area, thus making the area ineligible for federal funding of highway construction until compliance is achieved.

Response: Air quality problems and the non-attainment area are identified on pages 76 to 80 of the Draft EIS. Federal construction funding depends on compliance with the State Implementation Plan (SIP) and inclusion in an approved Transportation Plan (TIP)--not on the status of the non-attainment area as a whole. When the project is advanced to the Highway Development Program and assigned construction funding, a "conformity determination" on air quality will be completed .

17s The Draft EIS indicated only minor adverse impact on water quality for the Sand Creek Alternative. Additional lanes on the Long Bridge four lanes up Sand Creek and the later extension to the North Terminus will most certainly be a significant increase in the pollutant load washing into the waterways.

Response: The pollutant load generated by applying sanding meterial to the additional lanes and new segment of roadway will be controlled by effective design and maintenance of ditches, basins, and inlets. Vegetative filter strips will be planted and maintained wherever feasible. ITD uses special "hardened" sanding material within Bonner County to help reduce pollution created by vehicular traffic which may produce particles of dust and soil. Bridge structures in the Sand Creek area will discharge through piped systems to stabilized outlets on land, where silt and sediment can be removed by sediment traps, ponds, and vegetative filter strips.

17t Why do they assume only minor adverse impact potential on wetlands along Sand Creek, especially in light of the probability that the highway would be extended along the creek all the way to the North Terminus?

Response: The analysis of wetlands impacts was based on the type and "function" of the wetlands involved, the condition and use of these areas, the size and proximity of wetland areas affected, and the availability of potential mitigation sites. At 1.5 to 1.6 hectares, the wetlands impacts of either the Through Town Alternative or the Sand Creek Alternative are minor compared to those of other "Build" alternatives considered. The segment north of US-2/200 would affect only one small wetland area (Site #11 on Figure 29 in the Draft EIS).

ITDAA029570

17u The Draft EIS indicates only minor noise impact for either of the build alternatives. The special character and needs of the community demand more restrictive noise standards. Furthermore, the Bonner General Hospital is across the creek from the Sand Creek Alternative.

Response: The Draft EIS (page 102) predicts minor increases in noise levels except for two locations: the Lakeside Inn and the Cedar Street Mall. Noise levels at the hospital will remain within federal criteria. ITD does not have the authority to alter the federal noise abatement criteria. Noise restrictions enacted by local governments are considered during design and location of highways in those jurisdictions.

ITDAA029571

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Traffic Flow	ii,iv,1,7,13,28,77
Traffic Volume	ii,iv-vii,5-7,13,29,107
Trucks	ii,1,3,7,9,18,22,26,27,34,47,77,86-89,101
Vegetation/Revegetation	31,62,63,66,70,75,81,82,84,90,98,102-105,111,120
Vehicle Trips	3,5
Wastewater/Stormwater	49,53,54,85
Water Quality	23,31,37,49,53-56,76,77,81,96,122,133,137,138

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Wetlands	23,24,27,31,37,49,56,58,81,84,90-92,102-104,122-124,133,139,141-143
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APPENDIX A

- TRAFFIC DATA
- LEVEL-OF-SERVICE DEFINITIONS
- EXISTING & PROJECTED AVERAGE DAILY TRAFFIC
- INTERSECTION ANALYSIS
- ROTARIES/ROUNDABOUTS

TRAFFIC DATA

An Origin-Destination study was conducted in 1987 and updated with new traffic data in 1997 to help establish where traffic is coming from and going to in the Sandpoint area. Data collected included three types of vehicle trips:

External/Local Trips*- This classification represents vehicle trips originating between interview stations (Figure 2) and destined to points beyond, or vice versa. A trip originating in Bonners Ferry that passed through interview station #18 destined for Sandpoint, for example, would be classified as an external/local trip. External/local trips accounted for approximately 72% of the traffic in the Sandpoint O-D study.

Through Stop Trips*– Vehicle trips originating beyond the interview stations which stop between the stations (i.e., within the local area) and then continue on to points beyond. For example, a delivery truck originating in Coeur d'Alene, which unloads merchandise in Sandpoint and continues on to Bonners Ferry would be classified as a through-stop vehicle. Through stop trips accounted for approximately 11% of the traffic in the Sandpoint O-D study.

Through non-stop*- These are vehicle trips originating beyond the interview stations which pass between the stations without stopping and are destined for points beyond. For instance, if the delivery truck in the previous example had continued through the local area without stopping in Sandpoint it would be classified as a through non-stop trip. Through non-stop trips accounted for approximately 17% of the traffic in the Sandpoint O-D study.

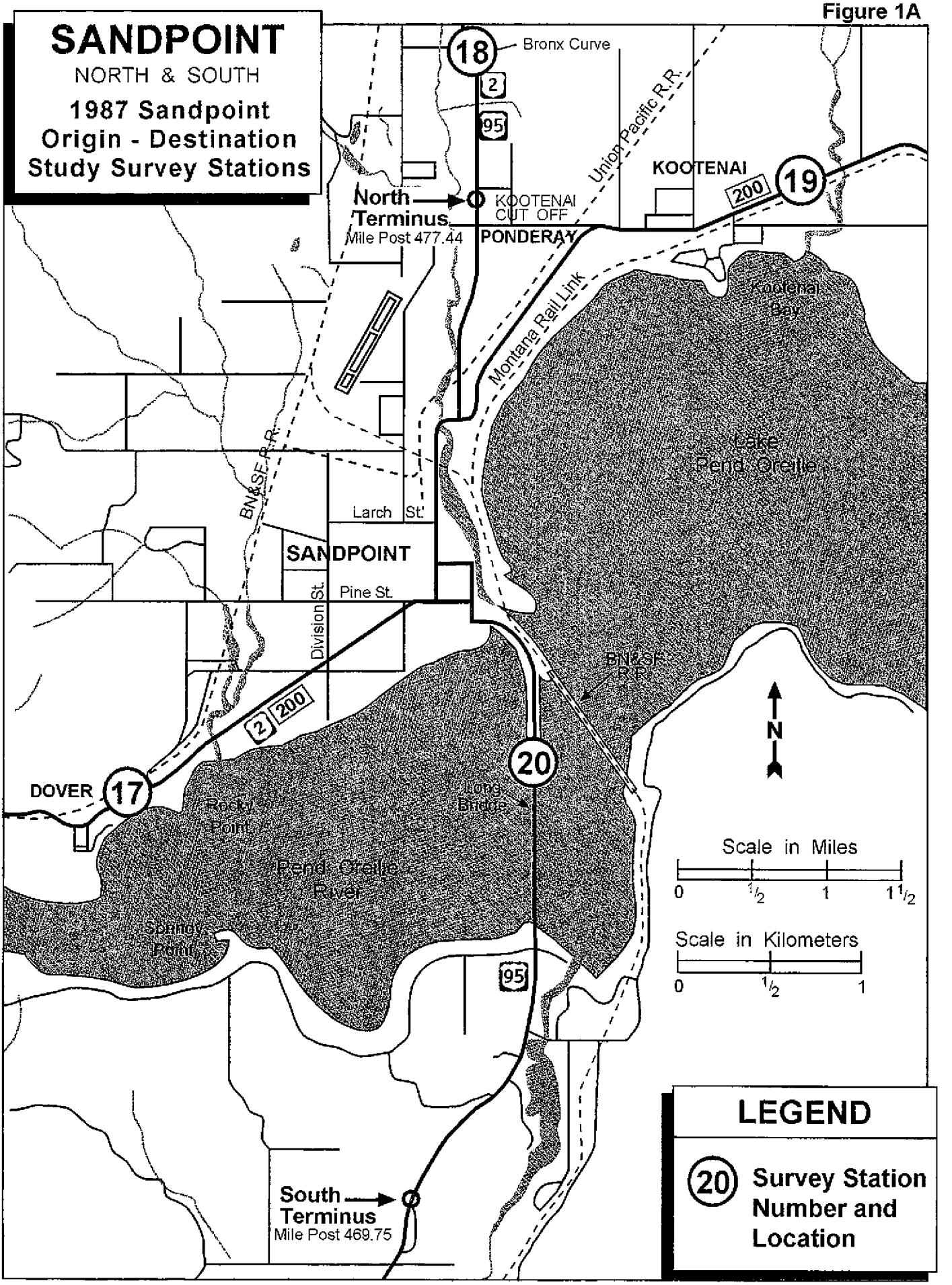
A fourth type of vehicle trip is classified as Internal:

Internal Trips*- This classification represents vehicle trips originating between interview stations and remaining within the local area. Because these trips involve local origins and destinations, they escape interview during O-D studies. A trip originating in Ponderay and destined for Sandpoint would not pass through an interview station depicted on Figure 1. Internal trips account for roughly 50% of the traffic volume on US95 within Sandpoint. Internal traffic estimates are obtained by subtracting external/local trips and through trips from volumes obtained using automatic traffic recorders. Diagram 1 graphically displays 1996 ADT* updated from 1987 data (O-D study year) and projected year 2022 (design year**) traffic volumes at the junction of SH-200 (south leg), with internal trips factored into the total.

*ADT - Average Daily Traffic: the average volume of vehicles on a highway over one year time-period.
**Design Year - generally 20 to 22 years beyond the year in which a project is programmed by the Idaho Transportation Department. Design year traffic projections are used to establish project geometric requirements.

ITDAA029586

Figure 1A



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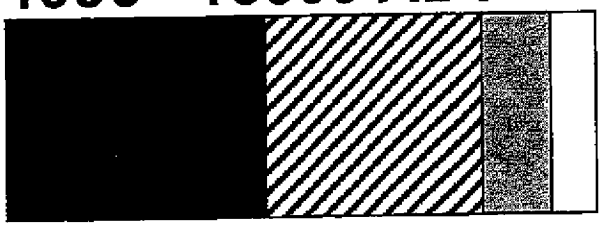
US95 Traffic Volumes & Trip Types

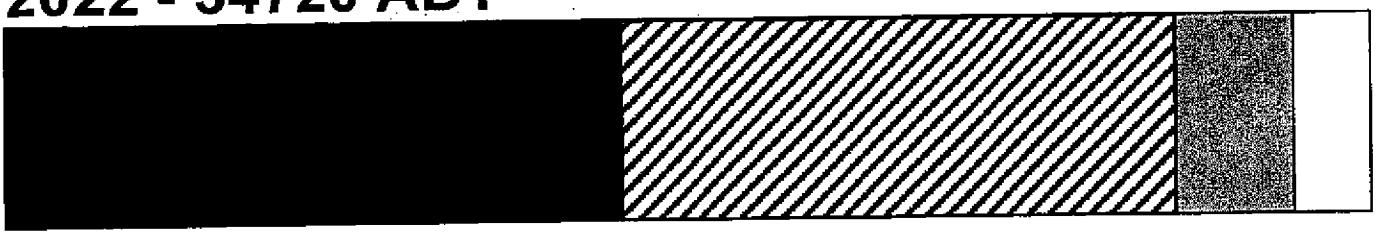
DIAGRAM 1

(South Leg of SH200 Jct. with US2/95)

1996 - 16000 ADT



2022 - 34720 ADT



Legend : Traffic Types & % of Total

- Internal Traffic @ 45.5%
- External/Local @ 39.0%
- Through Non-Stop @ 9.5%
- Through Stop @ 6.0%

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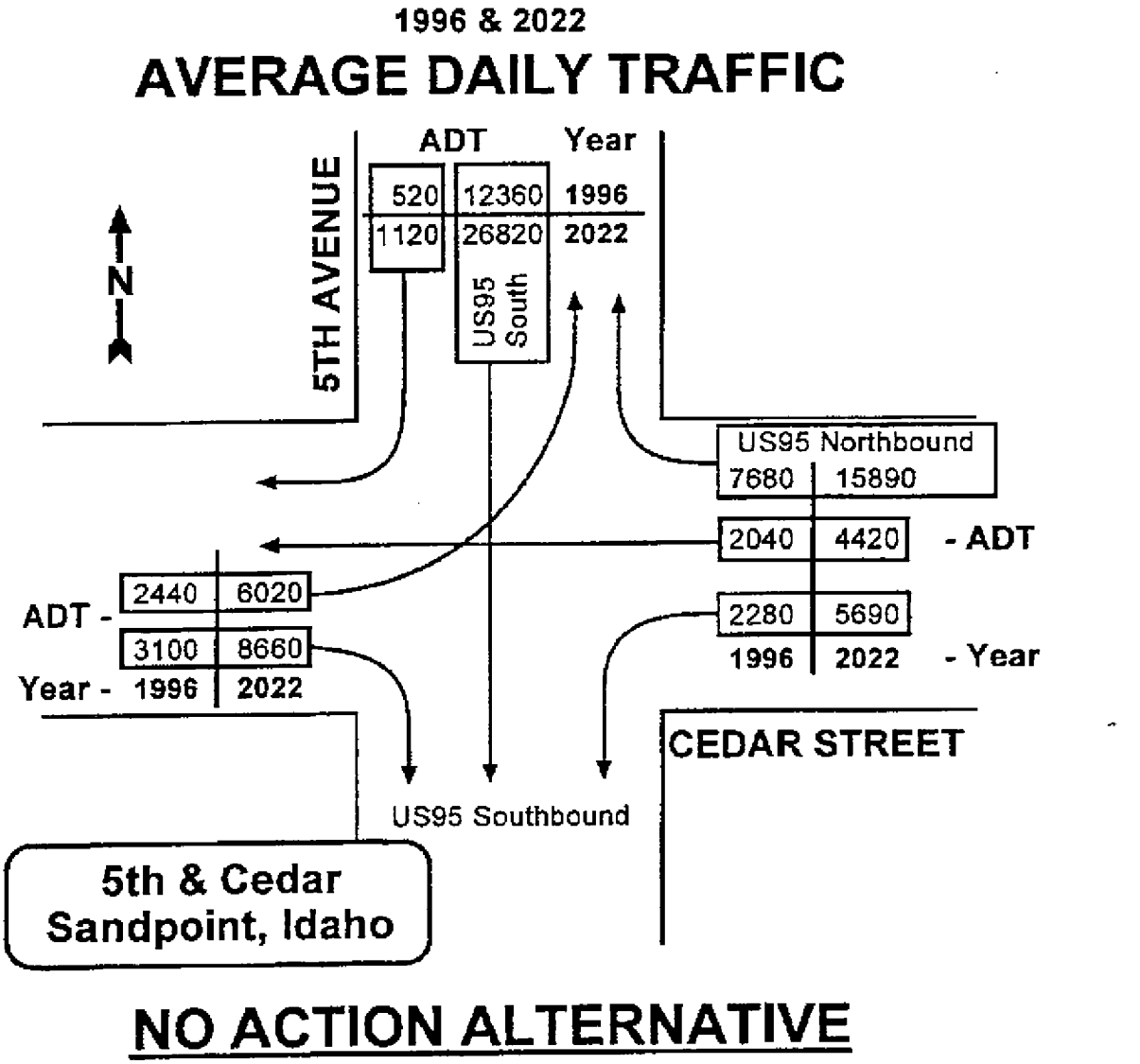
Average daily traffic volumes, ADT, are projected to increase at a rate of 5% a year through the year 2022. Diagram 2 depicts turning movements at one of the busiest intersections in Sandpoint, 5th and Cedar Streets, during the Years 1996 and 2022 with a No Action scenario. Current congestion problems can be expected to continue to deteriorate with time as traffic volumes more than double by the design year.

DIAGRAM 2



NO ACTION ALTERNATIVE

ITDAA029589

NEEDS AND DEFICIENCIES

At current volumes, traffic in the study area is operating at a low level-of-service for prolonged periods, especially when traversing the City of Sandpoint. A low level-of-service translates into traffic congestion, lost time, increased operating costs, increased air pollutants, and an adverse impact on the socio-economic vitality of the community and surrounding area. To operate at a desirable level-of-service, US-95 requires added capacity between project termini and a more favorable traffic flow design for 'though-stop' and 'though-nonstop' vehicles. Outside Sandpoint, design hour traffic is currently operating at LOS E between project termini. This is projected to decrease to LOS F by the design year. A four-lane facility is required to correct this deficiency outside Sandpoint, as well as an additional two-way left turn lane along sections with heavy access requirements.

Within the city limits a traffic flow design which minimizes turning movement conflicts and congestion of traffic is needed. Turning maneuvers account for over 40% and rear-end 42% of the reported accidents during the period from July 1, 1994 to June 30, 1997 at major US-95 intersections in Sandpoint since the "Sandpoint Improvement Project" was completed in June of 1994. Accident data at selected key intersections indicates that the accident rate ranges are below the statewide average for comparable facilities except for US-2/Division and 2nd Ave./Cedar St. (see Appendix A). Currently, the Sandpoint one way system works somewhat similar to a rotary or roundabout, but has none of the advantages because left turns are permitted at nearly all intersections (See Appendix A-Use of Roundabouts). This system is currently operating from LOS B to E at the intersections during peak hour traffic volumes because of lane capacity saturation and left turn conflicts between vehicles. Additional conflicts occur in downtown Sandpoint between pedestrians, bicyclists, automobiles and commercial trucks. Many residents have indicated they would like to see trucks routed out of town. Although many trucks are not through nonstop and would still require internal routing accommodations, it is possible to reroute through-nonstop trucks away from the central business district.

US-95 intersections current operating levels-of-service (Figure 2):

- Fifth & Larch, a skewed signalized intersection adjacent to the railroad right of way, which involves heavy truck maneuvers on the west, north, and south approaches, restricted turning radii and an insufficient number of lanes. This intersection needs to be upgraded to urban arterial standards with accommodations for trucks. It is operating at a LOS D at present and will fall to

ITDAA029590

LOS F by 2002; two northbound lanes will be needed by that time. The year 2022 ADT projection is 57,370 vehicles.

- First & Cedar, 90-degree curve on the one-way system that involves weaving and off tracking maneuvers for heavy trucks trying to negotiate a left-turn. The intersection has a short turning radius and high pedestrian movement. It would be desirable to redirect trucks and through traffic away from this high pedestrian use area. The year 2022 ADT projection is 19,180 vehicles and LOS E, while the current LOS is B.

- Fifth & Cedar, This intersection requires traffic to make a 90-degree turn and has insufficient lanes and restricted truck-turning radii. This signalized intersection needs improved design features, such as dual lefts on Cedar, an addition northbound lane and other accommodations for trucks. The current LOS is C and will be F by 2002. The year 2022 ADT projection is 68,620 vehicles, as depicted on Diagram 2.

- First & Pine, a signalized T-intersection on the one-way system that requires northbound and southbound traffic to a make a 90-degree turn, and contains substantial conflicts between pedestrians/bicyclists and vehicular traffic. This intersection is operating at LOS B and will be at LOS D by 2022. The year 2022 ADT projection is 69,500 vehicles.

- First & Superior, an offset intersection (i.e., crossroads legs do not align) involving a 90-degree turn with short turning radii for mainline traffic, not enough pavement width, and has two stop signs located on adjacent corners rather than on opposite corners which creates an unexpected and confusing situation for drivers unfamiliar with the area. This intersection needs realignment better accommodations for trucks and the western and southern approaches restricted right turn only. The LOS at present is E and will fall to F by 2002. The year 2022 ADT projection is 57,510 vehicles.

- Fifth & Pine, a signalized T-intersection on the one-way system that involves 90-degree turn with weaving conflicts between southbound US-95 traffic and eastbound US-2 traffic. This intersection is operating at LOS D and without geometric changes will fall to LOS F by 2002. The year 2022 ADT projection is 53,040 vehicles.

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- Division & Boyer/US-2, although they are not on the US-95/US-2 one-way couplet, these signals have significant impact on its traffic volume from the west. These signals are under construction at present and should be in operation by the summer of 1997. They should operate at a LOS B and fall to LOS E by the design year 2022. The ADT is projected to be 10,500 at Division/US-2 and 21,000 vehicles at Boyer/US-2 by 2022.

- 2nd & Cedar, a signalized intersection is currently at a LOS of B and will fall to LOS D by 2022. The projected ADT for 2022 is 22,290 vehicles.

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Figure 2A

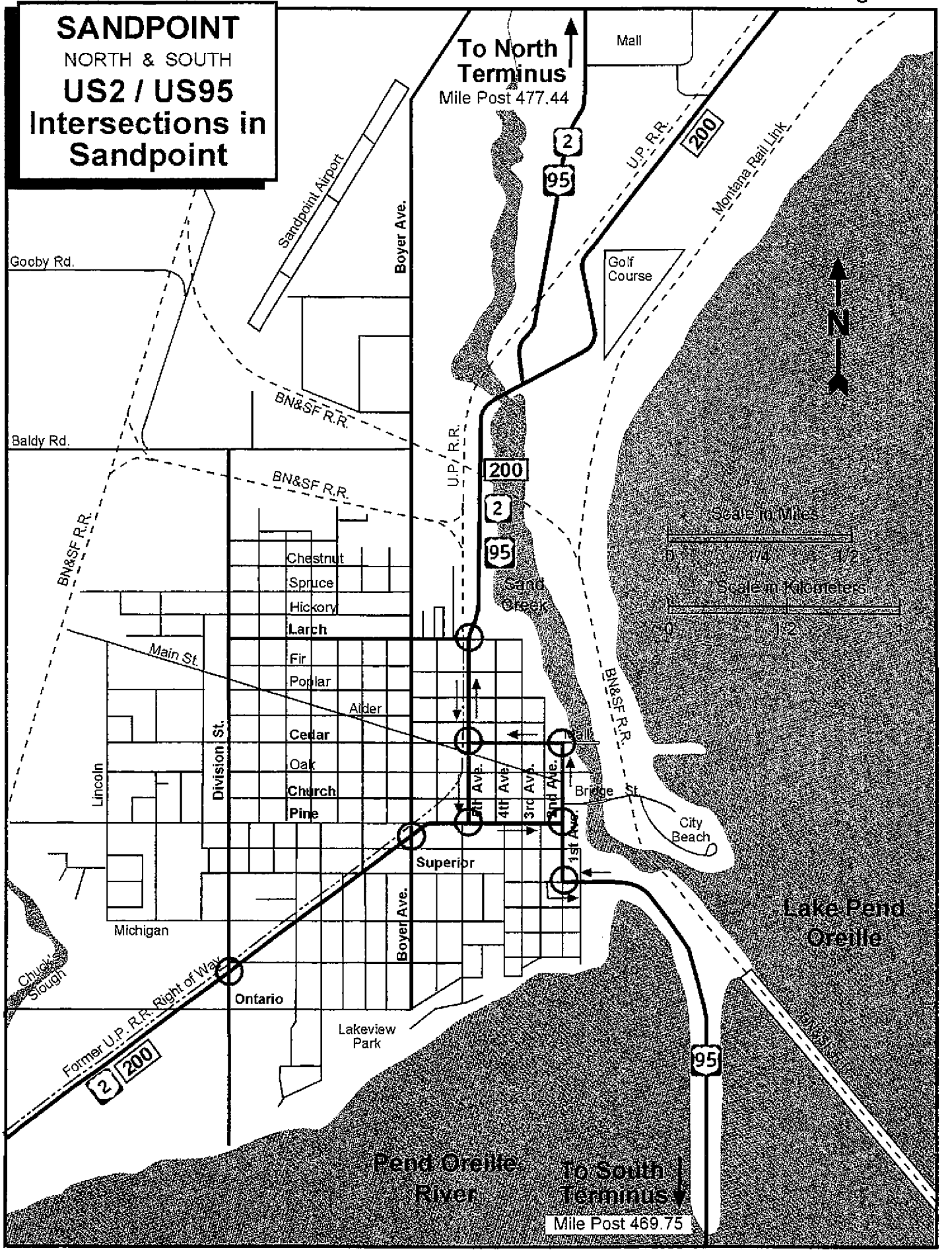

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Figure 3A

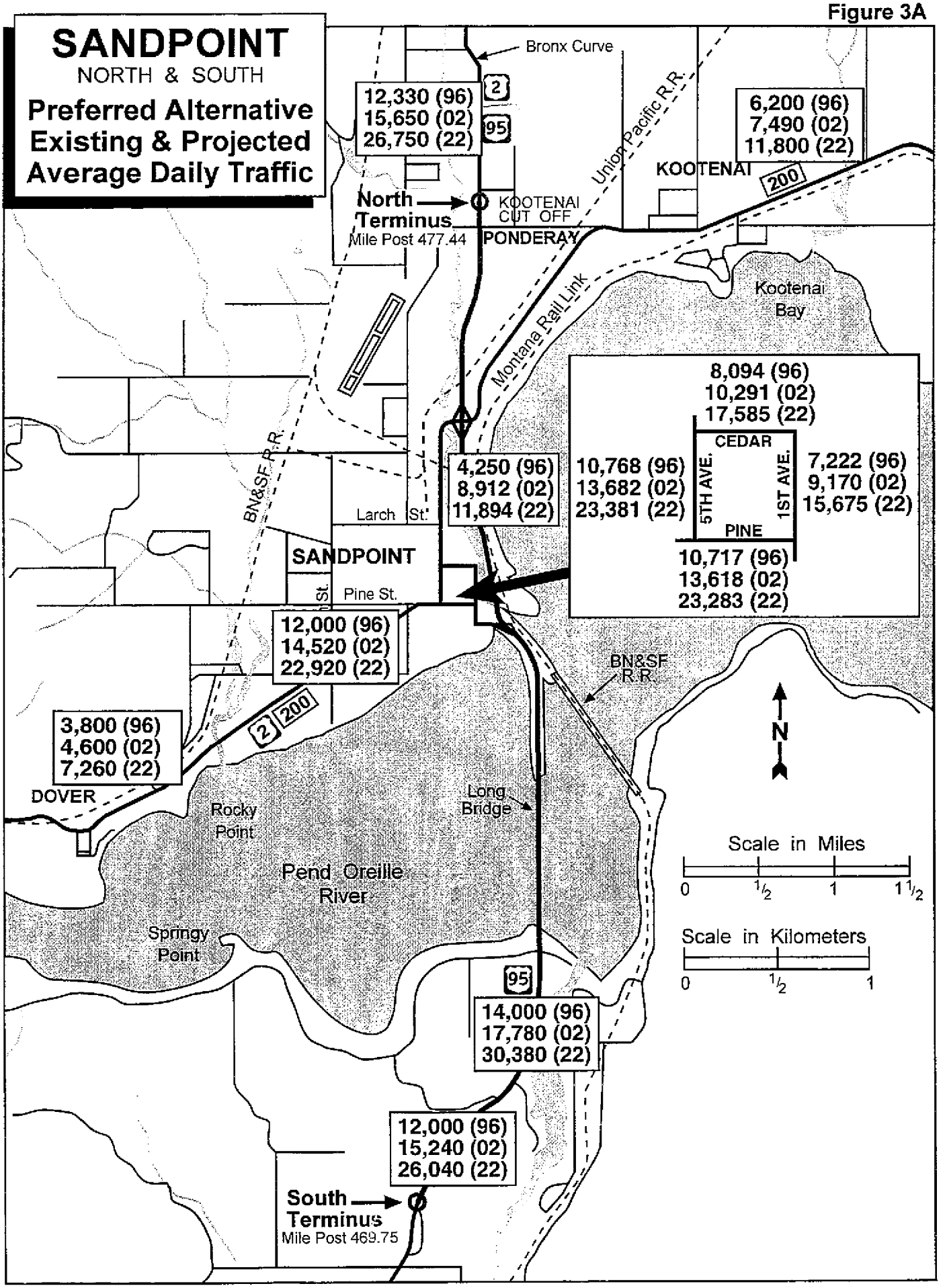

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Figure 4A

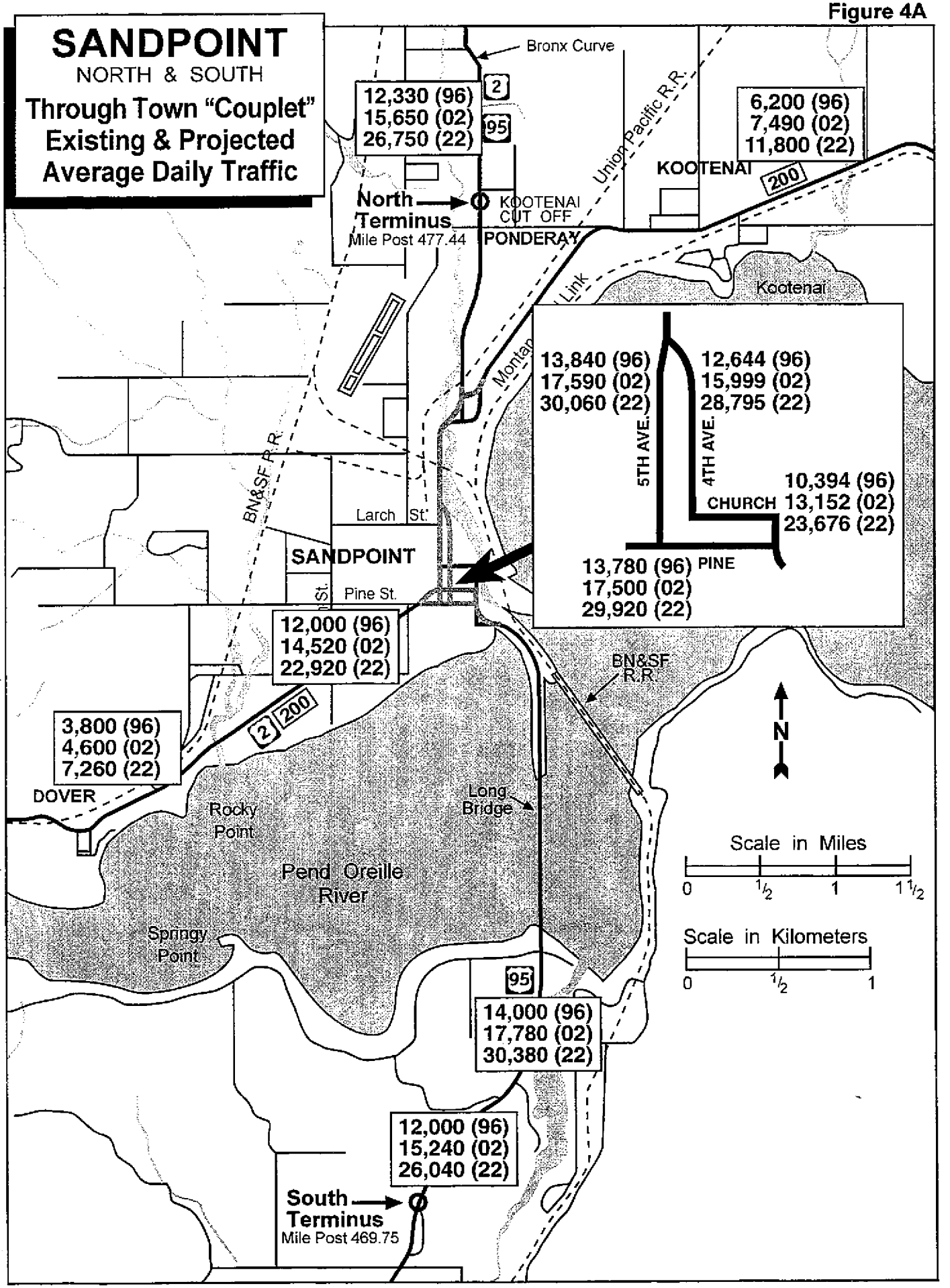

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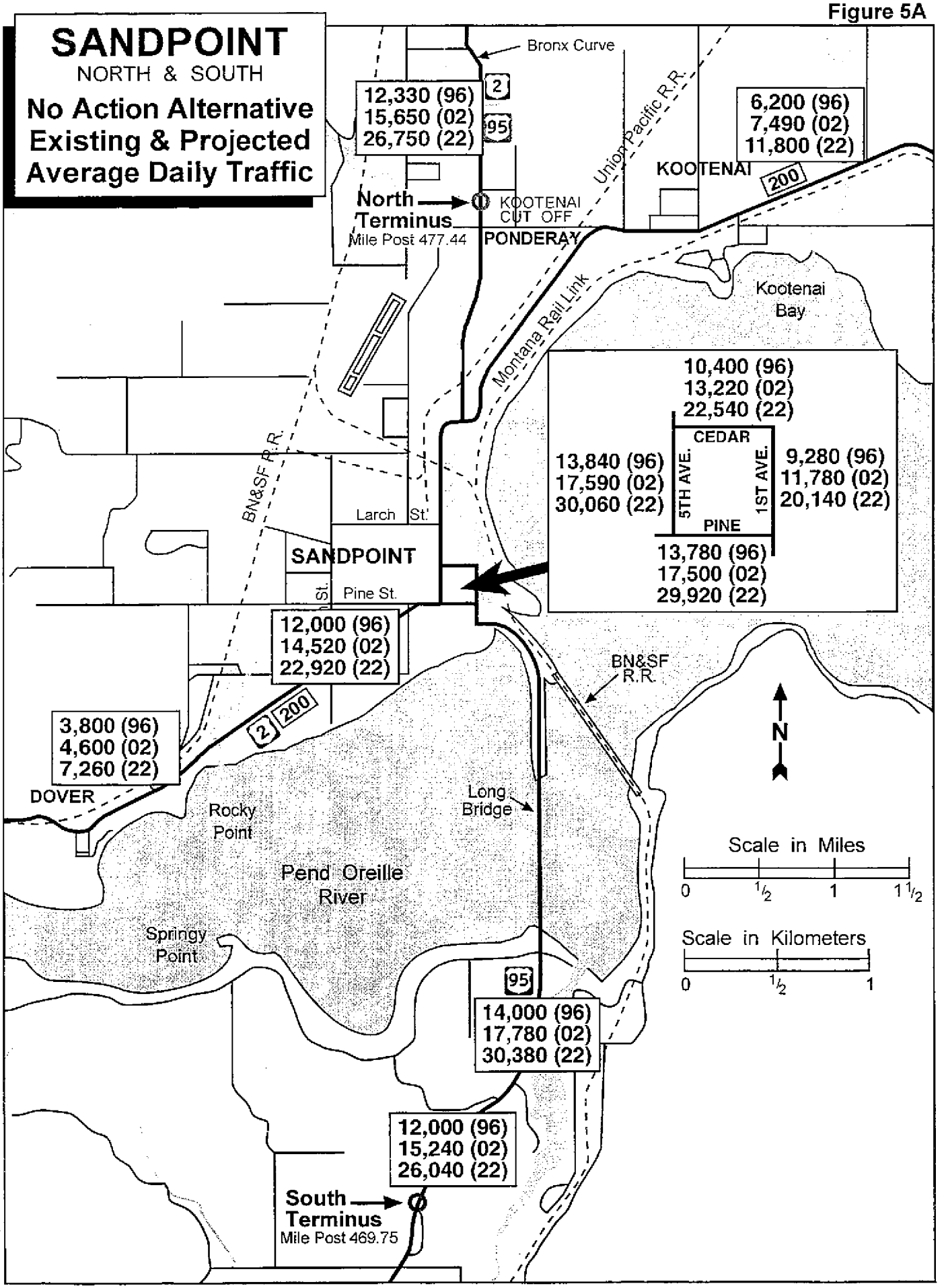
Figure 5A



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Level-of-service characteristics by highway type

Level of Service	Controlled Access Highways	Multilane Rural without Access Control	Two Lanes	Urban and Suburban Arterials
A	Free flow. Operating speeds at or greater than 60 mph. Service volume of 1,400 passenger cars per hour on two lanes, one direction. Each additional lane serves volume of 1,000-vph lane.	Operating speed 60 mph or greater. Under ideal conditions, volume is limited to 600 passenger cars per lane per hour or 30 percent of capacity. Average speeds are likely to be influenced by speed limits.	Operating speeds of 60 mph or higher. 75 percent of passing maneuvers can be made with little or no delay. Under ideal conditions, a service volume of 400 passenger vph, total two-way, can be achieved.	Average overall travel speed of 30 mph or more. Free flowing with volume/capacity ratio of 0.60. Load factor at intersections near the limit of the 0.0 range. Peak-hour factor at about 0.70.
B	Higher speed range of stable flow. Operating speed at greater than 55 mph. Service volume on two lanes in one direction not greater than 2,000 passenger vph. Each additional lane above two in one direction can serve 1,500 vph.	Beginning of stable flow area. Volume at which actions of preceding vehicle will have some influence on following vehicles. Volume will not exceed 50 percent of capacity of 1,000 passenger vehicles per lane per hour at a 55 mph operating speed under ideal conditions.	Operating speeds of 50 mph or higher. Volumes may reach 45 percent of capacity with continuous passing sight distance. Volumes of 900 passenger cars per hour, total two-way, can be carried under ideal conditions.	Average overall speeds drop due to intersection delay and inter-vehicular conflicts, but remain at 25 mph or above. Delay is not unreasonable. Volumes at 70 percent of capacity and peak-hour factor approximately 0.80. Load factor at intersections approximately 0.1.
C	Operation still stable, but becoming more critical. Operating speed of 50 mph. Service flow on two lanes in one direction at 75 percent of capacity or not more than 5-min flow rate of 3,000 passenger cars per hour. Under ideal conditions each additional lane above two in one direction would serve 1,800 vph.	Stable flow to a volume not exceeding 75 percent of capacity or 1,500 passenger cars per lane per hour, under ideal conditions, maintaining at least a 45-mph operating speed.	Flow still stable. Operating speeds of 40 mph or above with total volume under ideal conditions equal to 70 percent of capacity with continuous passing sight distance, or 1,400 passenger vph total two-way.	Service volumes about 0.80 of capacity. Average overall travel speeds of 20 mph. Operating conditions at most intersections approximate load factor of 0.3. Peak-hour factor approximately 0.85. Traffic flow still stable with acceptable delays.
D	Lower speed range of stable flow. Operation approaches instability and is susceptible to changing conditions. Operating speeds approx. 40 mph. Service flow rates at 90 percent of capacity. Peak 5-min flow under ideal conditions cannot exceed 3,600 vph for two-lanes, one direction; 1,800 vph for each added lane.	Approaching unstable flow at volume up to 90 percent of capacity or 1,800 passenger cars per hour at an operating speed of about 35 mph under ideal conditions.	Approaching unstable flow. Operating speeds approximately 35 mph. Volumes, two-direction, at 85 percent of capacity with continuous passing opportunity, or 1,700 passenger cars per hour total two-way under ideal conditions.	Beginning to tax capabilities of street section. Approaching unstable flow. Service volumes approach 90 percent of capacity. Average overall speeds down to 15 mph. Delays at intersections may become extensive with some cars waiting two or more cycles. Peak-hour factor approximately 0.90; load factor of 0.7.
E	Unstable flow. Overall operating speeds of 30-35 mph. Volumes at capacity or 2,000 vph lane under ideal conditions. Traffic flow metered by design constructions and bottlenecks, but long backups do not normally develop upstream.	Flow at 100 percent of capacity or 2,000 passenger cars per lane per hour under ideal conditions. Operating speeds of about 30 mph or less.	Operating speeds in neighborhood of 30 mph but may vary considerably. Volumes under ideal conditions, total two-way, equal to 2,000 passenger vph. Level E may never be attained. Operation may go directly from Level D to Level F.	Service volumes at capacity. Average overall traffic variable, but in area of 15 mph. Unstable flow. Continuous backup on approaches to intersections. Load factor at intersections in range between 0.7 and 1.0. Peak-hour factor likely to be 0.95.
F	Forced flow. Freeway acts as a storage for vehicles backed up from downstream bottleneck. Operating speeds range from near 30 mph to stop-and-go operation.	Forced flow, congested condition with widely varying volume characteristics. Operating speeds of less than 30 mph.	Forced, congested flow with unpredictable characteristics. Operating speeds less than 30 mph. Volumes under 2,000 passenger cars per hour, total two-way.	Forced flow. Average overall traffic speed below 15 mph. All intersections handling traffic in excess of capacity with storage distributed throughout the section. Vehicular backups extend back from signalized intersections, through unsignalized intersections.

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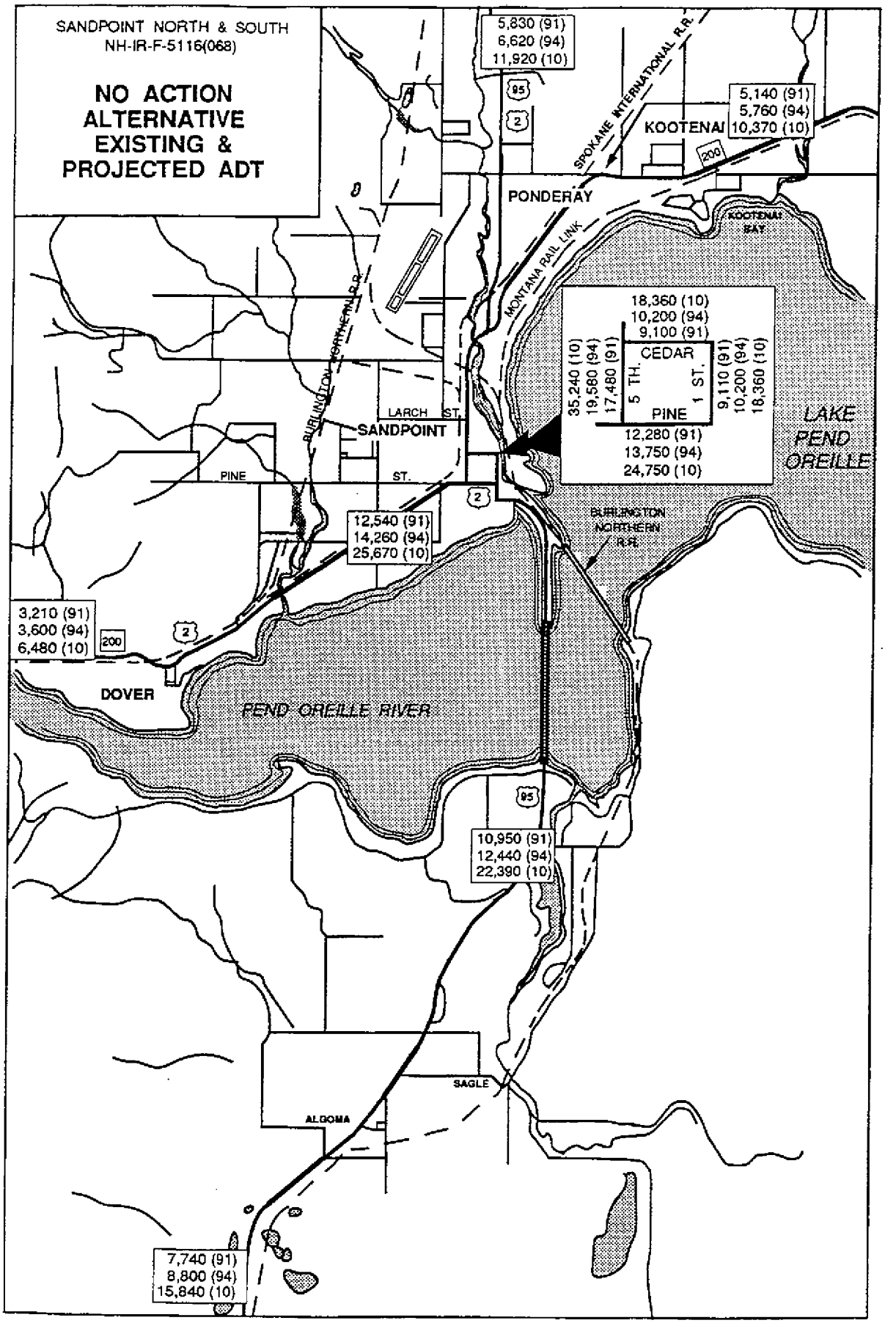

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Illustration 3-5. Level-of-service A.

Illustration 3-8. Level-of-service D.

Illustration 3-6. Level-of-service B.

Illustration 3-9. Level-of-service E.

Illustration 3-7. Level-of-service C.

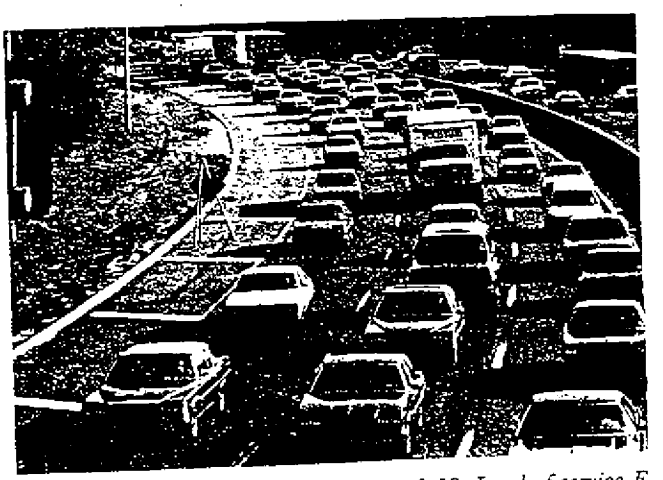
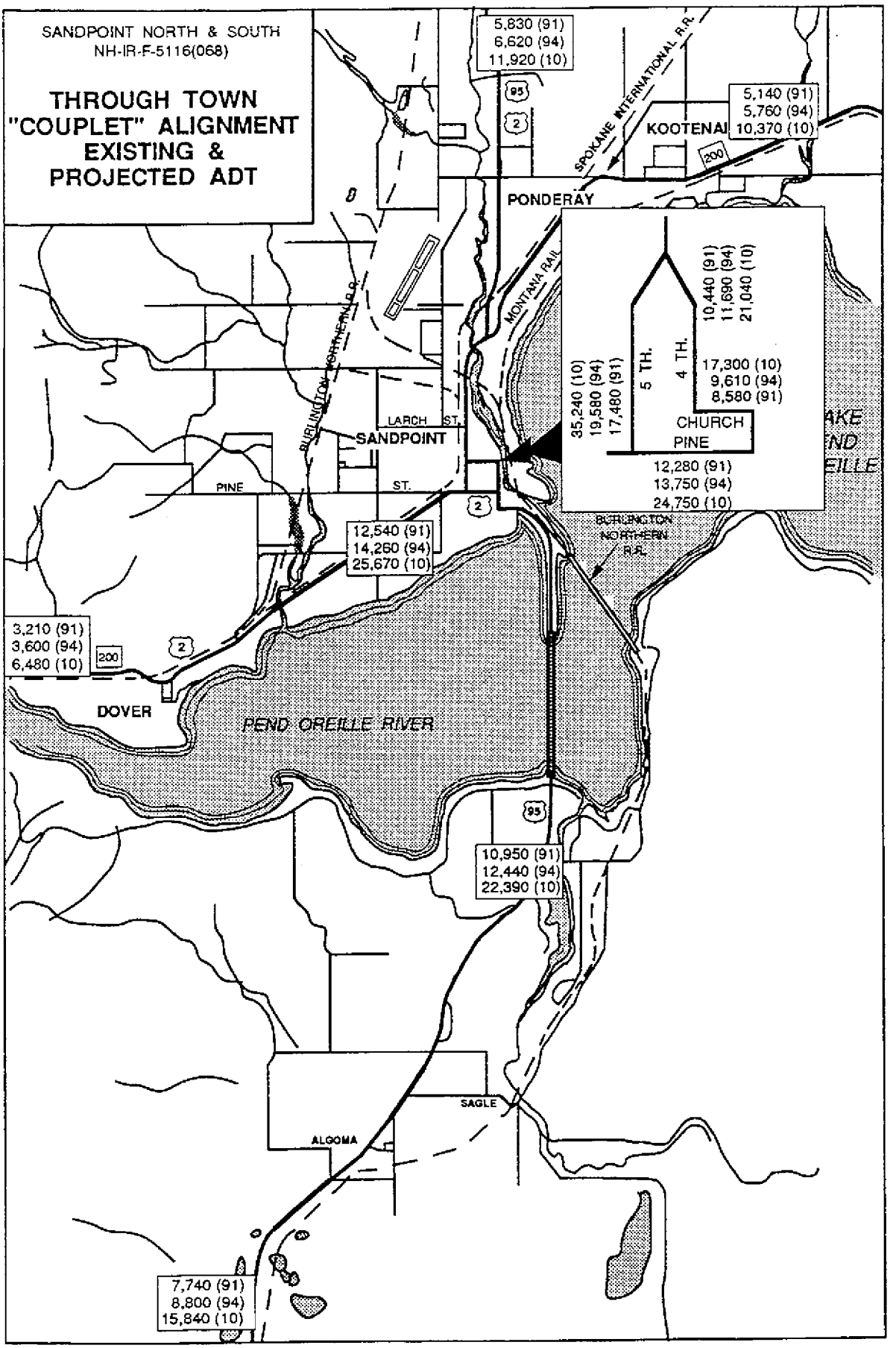


Illustration 3-10. Level-of-service F.

ITDAA029599



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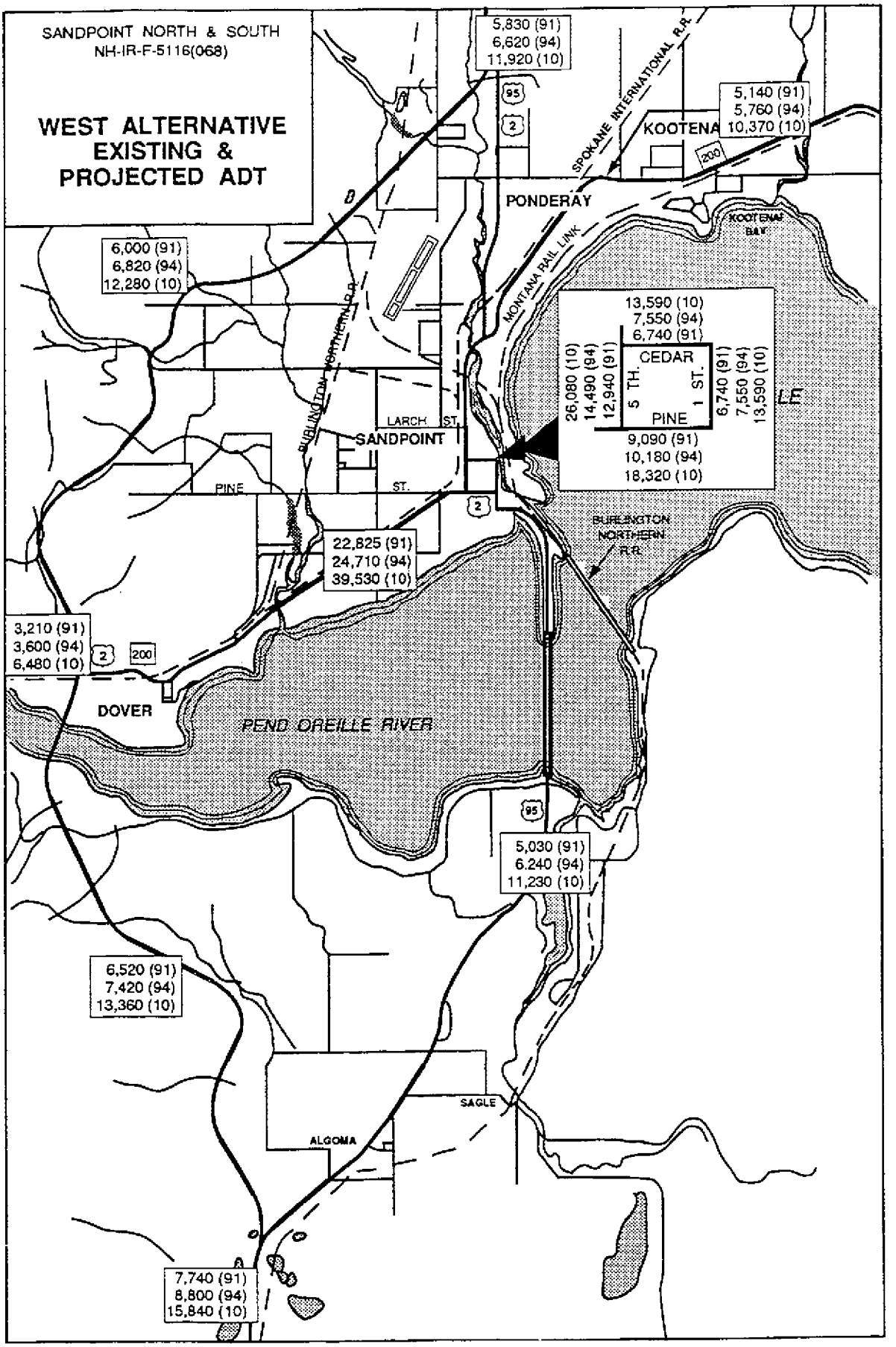

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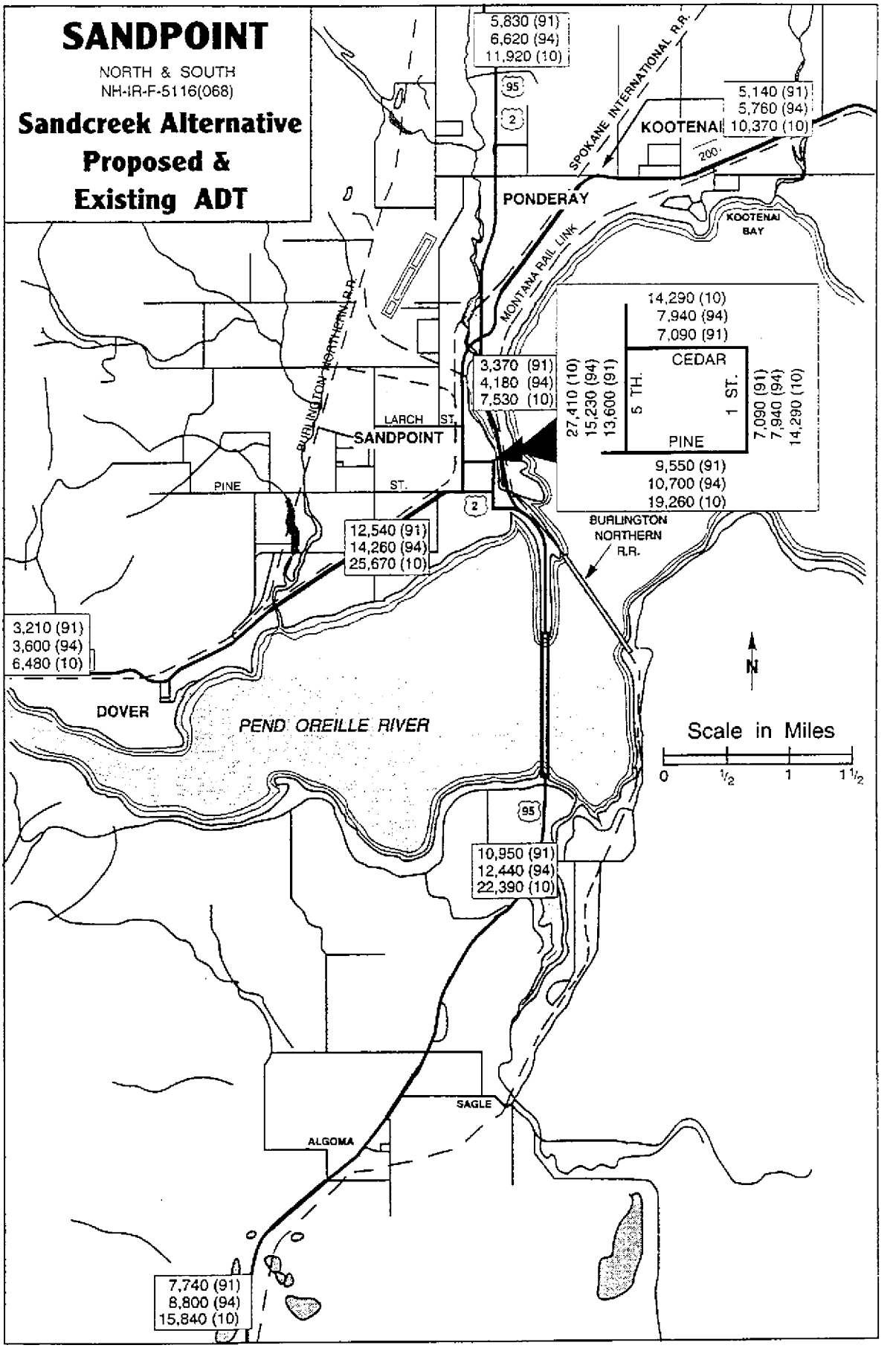

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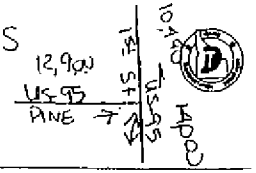
M.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY* _____

DISTRICT* _____

KEY* _____ WA* _____ PROJECT* # 5

PROJECT NAME S 1st & Pine St (US-95) ROAD TYPE 27(6)1 = .52

SEG. CODE 001540 001591 FROM M.P. 474.242 .250 TO M.P. _____ LENGTH _____

TYPE OF WORK _____

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD: 3 YRS 1988-1990	ADT 19,900 MVM 7.26				ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	BEFORE PDO	INJ	FAT	TOTAL RATE	AFTER PDO	INJ	FAT	TOTAL RATE
REAR END	I	III						
SIDESWIPE PASSING								
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE								
TURNING	II							
HIT GUARD RAIL								
HIT FIXED OBJECT								
HIT PEDESTRIAN		I						
HIT PEDALCYCLIST								
HIT PARKED CAR								
BACKED INTO								
OTHER								
TOTAL	3	4	—	32				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

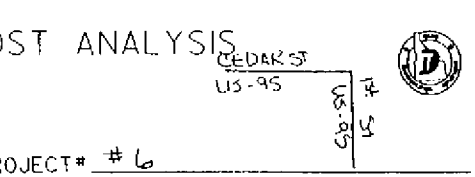
COMPUTED BY J. Newbold DATE 8/8/91 _____

CHECKED BY _____ DATE _____ _____

A7

M.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY* _____

DISTRICT* _____

KEY* _____ WA* _____ PROJECT* # 6

PROJECT NAME US-95 & Cedar St ROAD TYPE 27 = .71

SEG. CODE 001540 FROM M.P. 474.452 TO M.P. _____ LENGTH _____

TYPE OF WORK _____

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD: 3 YRS 1988-1990	ADT 8900 MVM 3.07				ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	BEFORE PDO	INJ	FAT	TOTAL RATE	AFTER PDO	INJ	FAT	TOTAL RATE
REAR END								
SIDESWIPE PASSING	II							
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE								
TURNING	II	I						
HIT GUARD RAIL	I							
HIT FIXED OBJECT								
HIT PEDESTRIAN								
HIT PEDALCYCLIST								
HIT PARKED CAR	II							
BACKED INTO								
OTHER								
TOTAL	7	1	—	.87				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

COMPUTED BY J. Newbold DATE 8/8/91 _____

CHECKED BY _____ DATE _____ _____

ITDAA029603

I.T.D.-5249 3/86

BENEFIT/COST ANALYSIS

STUDY* _____

DISTRICT* _____

KEY* _____ WA* _____ PROJECT* # 7 (US-2)

PROJECT NAME CEDAR ST + 5th Ave (US 95A) ROAD TYPE 6(2,7) = .71

SEG. CODE 001540 (001595, 26.725) FROM M.P. 474.716 TO M.P. _____ LENGTH _____

TYPE OF WORK _____

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD: 3 YRS 1988 - 1990

	BEFORE: ADT 21,600 MVM 7.88				AFTER: ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	PDO	INJ	FAT	TOTAL RATE	PDO	INJ	FAT	TOTAL RATE
REAR END		III						
SIDESWIPE PASSING								
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE	I							
TURNING	IIII II	I						
HIT GUARD RAIL								
HIT FIXED OBJECT								
HIT PEDESTRIAN		I						
HIT PEDALCYCLIST								
HIT PARKED CAR								
BACKED INTO	III							
OTHER								
TOTAL	11	5	—	.68				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

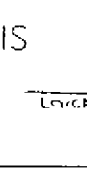
COMPUTED BY J. Newbold DATE 8/8/91 _____

CHECKED BY _____ DATE _____ _____

A8

I.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY* _____

DISTRICT* _____

KEY* _____ WA* _____ PROJECT* # 8

PROJECT NAME US-95 + Larch St ROAD TYPE 6(9) = .57

SEG. CODE 001540 (003850) FROM M.P. 475.00 TO M.P. _____ LENGTH 4.30

TYPE OF WORK _____

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CONST. COST $ _____ STUDY PERIOD: 3 YRS 1988 - 1990

	BEFORE: ADT 19,100 MVM 6.96				AFTER: ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	PDO	INJ	FAT	TOTAL RATE	PDO	INJ	FAT	TOTAL RATE
REAR END								
SIDESWIPE PASSING								
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE	I							
TURNING	III							
HIT GUARD RAIL								
HIT FIXED OBJECT								
HIT PEDESTRIAN								
HIT PEDALCYCLIST								
HIT PARKED CAR								
BACKED INTO								
OTHER								
TOTAL	4	—	—	.19				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

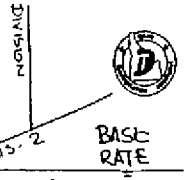
COMPUTED BY J. Newbold DATE 8/8/91 _____

CHECKED BY _____ DATE _____ _____

ITDAA029604

W.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY# _____

DISTRICT# 1

KEY# _____ WA# _____ PROJECT# #1

PROJECT NAME US-2 & Division St ROAD TYPE 6 = .52

SEG. CODE CD1590 FROM M.P. 27.711 TO M.P. _____ LENGTH _____
CD3560 .00

TYPE OF WORK _____

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD:	BEFORE ADT 5520 MVM 2.01 3 YRS 1988 - 1990				AFTER ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	PDO	INJ	FAT	TOTAL RATE	PDO	INJ	FAT	TOTAL RATE
REAR END	II							
SIDESWIPE PASSING								
HEAD ON								
SIDESWIPE MEETING	I							
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE								
TURNING	I							
HIT GUARD RAIL								
HIT FIXED OBJECT								
HIT PEDESTRIAN								
HIT PEDALCYCLIST								
HIT PARKED CAR								
BACKED INTO								
OTHER								
TOTAL	4	—	—	.66				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

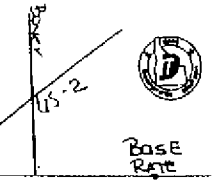
COMPUTED BY J. Newbold DATE 8/8/91 _____

CHECKED BY _____ DATE _____ _____

A9

W.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY# _____

DISTRICT# 1

KEY# _____ WA# _____ PROJECT# #2

PROJECT NAME US-2 & BOYER ROAD TYPE 9 = .57

SEG. CODE CD1590 FROM M.P. 28.332 TO M.P. _____ LENGTH _____

TYPE OF WORK _____

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD:	BEFORE ADT 9540 MVM 3.48 3 YRS 1988-1990				AFTER ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	PDO	INJ	FAT	TOTAL RATE	PDO	INJ	FAT	TOTAL RATE
REAR END	I	III						
SIDESWIPE PASSING								
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE	III							
TURNING	I							
HIT GUARD RAIL								
HIT FIXED OBJECT								
HIT PEDESTRIAN								
HIT PEDALCYCLIST		I						
HIT PARKED CAR								
BACKED INTO								
OTHER								
TOTAL	5	4	—	86				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

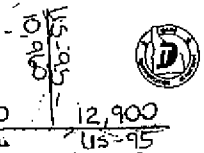
COMPUTED BY J. Newbold DATE 8/8/91 _____

CHECKED BY _____ DATE _____ _____

ITDAA029605

I.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY* _____

DISTRICT* 1

KEY* _____ WA* _____ PROJECT* #3

PROJECT NAME US-2 & 5th (US-95) ROAD TYPE (27) * 9 = .71

SEG. CODE 001590 001591 FROM M.P. 28,515 .00 TO M.P. _____ LENGTH _____

TYPE OF WORK ADT N leg + ½ of W leg

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD:	ADT 16,000 MVM 5.85 3 YRS 1988 - 1990				ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	BEFORE PDO	BEFORE INJ	BEFORE FAT	TOTAL RATE	AFTER PDO	AFTER INJ	AFTER FAT	TOTAL RATE
REAR END	1	11						
SIDESWIPE PASSING	1							
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE								
TURNING	IIII							
HIT GUARD RAIL	1							
HIT FIXED OBJECT		1						
HIT PEDESTRIAN								
HIT PEDALCYCLIST								
HIT PARKED CAR								
BACKED INTO								
OTHER								
TOTAL	11	3	–	.80				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

COMPUTED BY J. Newbold DATE 8/8/91

CHECKED BY _____ DATE _____

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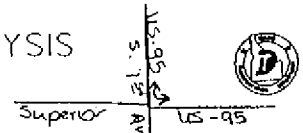
I.T.D.-5249 3/86

BENEFIT/COST ANALYSIS



STUDY* _____

DISTRICT* _____

KEY* _____ WA* _____ PROJECT* #4

PROJECT NAME US-95 S. 1st & Superior ROAD TYPE 6 = .52

SEG. CODE 001540 FROM M.P. 474.090 TO M.P. _____ LENGTH _____

TYPE OF WORK _____

PDO COST $ _____ INJ.&FAT. COST $ _____ EST. PROJ. LIFE _____

CONST. COST $ _____ STUDY PERIOD:	ADT 10,650 MVM 3.89 3 YRS 1986 - 1990				ADT _____ MVM _____ YRS _____			
FIRST HARMFUL EVENT	BEFORE PDO	BEFORE INJ	BEFORE FAT	TOTAL RATE	AFTER PDO	AFTER INJ	AFTER FAT	TOTAL RATE
REAR END		1						
SIDESWIPE PASSING								
HEAD ON								
SIDESWIPE MEETING								
RUN OFF ROAD								
OVERTURN ON ROADWAY								
ANGLE								
TURNING	IIII	1						
HIT GUARD RAIL								
HIT FIXED OBJECT	II							
HIT PEDESTRIAN								
HIT PEDALCYCLIST								
HIT PARKED CAR								
BACKED INTO								
OTHER								
TOTAL	6	2	–	.69				

ECONOMIC LOSS/MILE/YEAR $ _____ $ _____

ECONOMIC SAVINGS/MILE/YEAR $ _____

PROJECT COST PER YEAR $ _____ PER MILE $ _____

BENEFIT/COST RATIO _____ RATE DIFFERENCE _____

OTHER CONSTRUCTION _____

COMPUTED BY J. Newbold DATE 8/8/91

CHECKED BY _____ DATE _____

ITDAA029606

Use of Roundabouts

BY ITE TECHNICAL COUNCIL COMMITTEE 5B-17

The roundabout (rotary or traffic circle) is a channelized intersection where traffic moves around a central island, clockwise for left-side driving as in Britain and Australia and counterclockwise for right-side driving as in America and most of Europe. The illustrations shown in this summary report correspond to the British/Australian clockwise movement in the roundabout. The central island is normally circular, with a diameter of anywhere from 2 meters (m) to well over 100 m. Roundabouts are installed in a wide range of intersection situations including:

- Freeway terminals and interchanges,
- Arterial roads in urban and rural areas, and
- Local and collector streets in urban areas.

ITE Technical Council Committee 5B-17 was formed to examine current practices in the use of roundabouts for distributing conflicting traffic movements at junctions. The committee's findings are covered in a report[1] available from ITE Headquarters and are summarized here. The complete report summarizes the state of the art in terms of capacity, delay, safety, and geometric design of roundabouts and includes the results of a survey of operating traffic agencies that summarizes, in both qualitative and quantitative terms, roundabout operating parameters and measures of performance, as well as general opinions on roundabouts.

Background

Roundabouts have been used for traffic control in numerous countries for more than half a century. They were originally designed for merging and weaving maneuvers at relatively high speeds and thus required a large radius.

In the mid-1960s, Britain adopted the offside priority rule at roundabouts, requiring entering drivers to give way to those on the roundabout. This rule prevented traffic from locking and allowed free-flow movement on the circulatory roadway. It changed the driver's task of merging and weaving at high speed to the task of accepting a gap in traffic circulating at low speed.

Safe and efficient operation of the roundabout is therefore dependent on the effectiveness of measures to reduce vehicle speed. Slower traffic movement means a large radius is no longer needed, and thus the use of much smaller roundabouts has become feasible. The practice of offside priority to control traffic at roundabouts has spread to other countries, including Australia, France, Norway, Sweden, and Switzerland.

There are four basic types of roundabouts (Figure 1):

- Conventional roundabouts, which are constructed with a circular or asymmetric center island at least 25 m (82 feet) in diameter and with converging roads being connected by weaving sections around the center island,
- Small roundabouts, which have a center island of 4 to 25 m (13 to 82 ft) in diameter and are usually fitted with flared approaches to allow multiple vehicle entry,
- Mini-roundabouts, which have a flush or slightly raised center island of up to 4 m (13 ft) in diameter, with or without flared entries,
- Double roundabouts, which are made up of two small or mini-roundabouts in a contiguous configuration or with a short link between the two roundabouts.

For the purpose of capacity calculations, the United Kingdom design guide[2] no longer differentiates between conventional and small roundabouts. Both are now called "normal" roundabouts, as distinguished from mini-roundabouts and double roundabouts.

There are several variations of normal, mini-roundabouts, and double roundabouts (see Figure 2):

- Grade-separated roundabouts;
- Ring junctions, in which the one-way circulation around a large island is replaced by two-way circulation with three-arm mini-roundabouts and/or traffic signals for each approach;
- Oval roundabouts.

Some roundabouts have traffic signals installed at one or more of the approaches.

Summary of Questionnaire Responses

To develop a database of information about roundabout design, quality of operation, operating parameters, and conversions to and from other means of traffic control, Technical Council Committee 5B-17 distributed questionnaires to traffic control agencies throughout the world. The respondents were asked to provide information about the extent of use of a given roundabout, priority rules, recent history of conversion to or from other means of traffic control, and their feelings about roundabout performance.

Many of the responses to the questionnaire included such attachments as reports, specifications, and other miscellaneous documents. This information is synthesized in the tables in the report.

The global distribution of responses is listed in Table 1. Although the majority of responses came from North America, most of the roundabouts represented in the response data were in England and Europe.

Of 152 responses to the questionnaires, 79 answered specific questions and provided quantitative information as well. Table 2 summarizes those responses. Another 37 agencies provided qualitative information in their responses to the questionnaire. Comments received are listed in the appendix to the full report. The frequency of comments is summarized in Table 3; the weighted frequency assumes that the comment applies to all roundabout locations evaluated by the person/agency that volunteered the comment.

The positive comments included:

- Free flow of traffic;

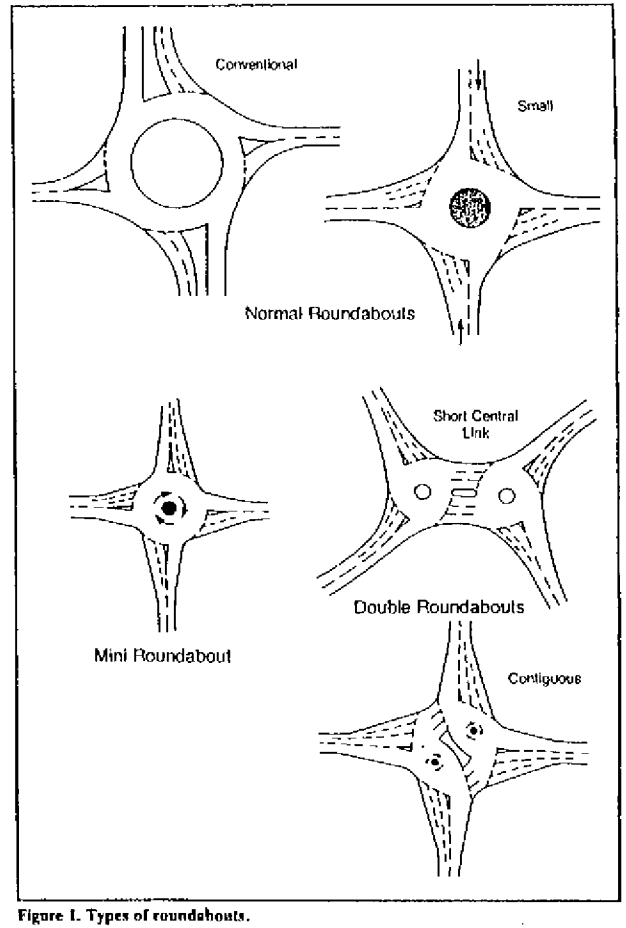


Figure 1. Types of roundabouts.

[1] This is a summary of an informational report of the Institute of Transportation Engineers. This information has been obtained from experiences of transportation engineering professionals and from research. ITE informational reports are prepared for informational purposes only and do not include Institute recommendations on the best course of action or the predicted application of data. Copies of the full report are available from the ITE Technical Programs Department.

Members of Technical Council Committee 5B-17 were Dr. Sam Yagar, P.Eng. (PE), University of Waterloo, Ontario, Canada (chairperson); Howard H. Bissell, P.E. (FL), U.S. DOT—Federal Highway Administration, Washington, D.C.; Marlis Glaser-Egloff, P.E. (M), Glaser, Saxer & Partners, Bottmingen, Switzerland; Mike Grimmer, Transport and Road Research Laboratory, Crowthorne, England; Andrew P. O'Brien, P.E. (M), Andrew O'Brien and Associates, Camberwell, Victoria, Australia; and Leif Ourston, P.E. (M), Leif Ourston and Associates, Santa Barbara, California.

Members of the Department 5 Standing Committee at the time of approval of this report were Richard L. Peterson, P.E. (M) (chairperson); Marsha D. Anderson (M) (assistant chairperson); Paul C. Box, P.E. (FL); and Robert D. McMillen, P.E. (FL). Alan T. Gonseth, P.E. (F) was the chairperson of Technical Council; Dr. Eugene M. Wilson, P.E. (M) was the vice chairperson of Technical Council.

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ITDAA029607

- Suitable in residential areas, have aesthetic purpose, and slow traffic on through streets;
- Function well for low to moderate volumes, slow approach speeds, and low property values;
- Safe and reduce delays; and
- Good at low-volume, high speeds.

The negative comments included:

- High accident rate;
- Can be confusing for drivers unfamiliar with roundabouts;
- Consume large amounts of space;
- High delays; and
- Limited capacity.

None of the negative comments came from England.

The full report provides data for locations that were converted from one type of traffic control to a roundabout, and vice versa, and from one type of roundabout to another. Before-and-after data are also included to allow for meaningful comparisons and estimates of the conversion effects.

Conclusions

Based on the comments of different operating agencies, it appears that roundabouts have worked well in some places, including England, Australia, and Europe, but have failed in others, especially North America. The comments could also be read as judgments by engineers in different parts of the world as to how well their particular style of roundabout works.

Local conditions, such as driver familiarity and acceptance, may be more important determinants of roundabout success than design features. But if it is the design features that have caused the British-style roundabout to work well in other countries, such as Australia, then it would be worthwhile to understand these features in traffic flow theory terms.

While this study has attempted to compile information on current practices in the use of roundabouts, it has only scratched the surface in terms of understanding their use. Although we could avoid the misuse of roundabouts by not using them at all, doing so might mean we would be missing out on an important tool in traffic flow management. There must be an explanation why roundabouts operate well in Britain and Australia, but not in North America.

It is recommended that transportation engineers, especially in North America, develop a better understanding of the operation of roundabouts, particularly with regard to driver interaction and traffic flow. This should be combined with state-of-the-art designs, such as those that are already operating successfully in Great Britain and Australia, so that roundabouts can be implemented where appropriate.

Sam Yagar, P.Eng. (F), is professor of civil engineering at the University of Waterloo, Waterloo, Ontario, Canada, and chairperson of Technical Council Committee 5B-17.

Table 1. Source of Questionnaire Responses

Source	Number of Responses
US Federal Government	2
US Counties	14
US Cities	41
US States	35
United Kingdom	31
Canada	14
Other	15
Total	152

Table 2. Summary of Questionnaire Responses

1. Total number of roundabouts represented by the responses received in the survey: 4,885
   - England: 4,036
   - US: 340
   - Other: 505
2. (a) Driver already in the roundabout has priority: 55 responses, representing 1,453 roundabouts
   (b) Driver entering the roundabout has priority: 11 responses, representing 38 roundabouts
3. Total number of intersection conversions reported:
   (a) To roundabouts: 337
   - England: 303
   - US: 0
   - Other: 34

   (b) From one type of roundabout to another: 22
   - England: 20
   - US: 2
   - Other: 0

   (c) From roundabout to other type of control: 64
   - England: 9
   - US: 5
   - Other: 50
4. Costs reported for 33 conversions (U.S. dollars):
   - Minimum: $1,700
   - Maximum: $20 million
   - Median: $255,900
5. Radius of roundabouts (in feet):

	Minimum	Maximum	Median
Island	3	459	54
Inscribed circle	25	984	88

6. Number of roundabout access points:

	Minimum	Maximum	Median
Entrance	3	9	4
Exit	3	7	4

7. Total volume entering roundabout/junction on all approaches combined:

	Minimum	Maximum	Median
Average Annual Daily Traffic	1,300	66,000	16,100
Peak-Hour Volume	200	6,800	1,800

8. Total capacity of junction (vehicles per hour):

Minimum	Maximum	Median
800	7,900	3,000

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References

1. ITE Technical Council Committee 5B-17. "The Use of Roundabouts." An ITE Informational Report. 1988.
2. Department of Transport. *The Geometric Design of Roundabouts.* Departmental Advice Note TA 42/84 and Departmental Standard TD 16/84. London: DpT, 1984.

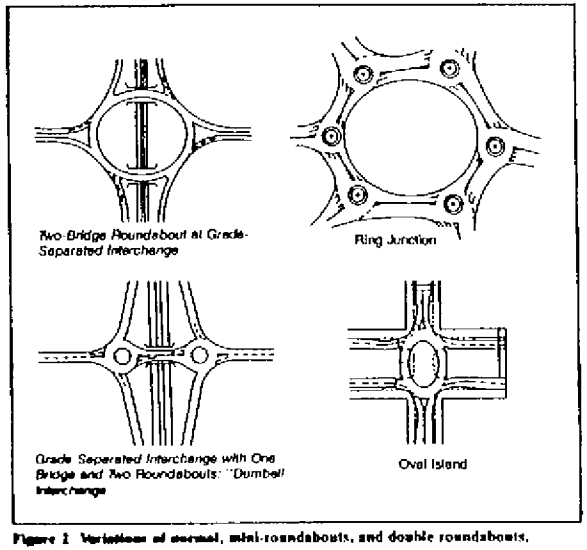

Figure 2 Variations of normal, mini-roundabouts, and double roundabouts.

Table 3 Questionnaire Comments

Comments	Frequency	Weighted Frequency
Positive Comments		
Roundabouts are suitable for intersections with		
a) low to moderate volumes	22	49
b) low approach speeds	6	9
c) low property values	2	2
d) suburban, residential, and rural areas	10	154
e) large urban areas where drivers are sophisticated	2	2
f) large radii	3	3
g) high turning movements	1	1
h) odd geometrics	3	3
Roundabouts avoid unnecessary stops in traffic flow	6	15
Roundabouts slow traffic on through streets	3	3
Roundabouts cause less delay than alternative controls	6	506
Roundabouts are safe	8	436
Roundabouts have high capacity	2	4
Roundabouts are a desirable alternative	6	547
Negative Comments		
Roundabouts lack capacity	14	53
Roundabouts require large amounts of land	8	28
Roundabouts have high accident rates	14	54
Roundabouts are confusing to drivers	13	20
Roundabouts cause delays	2	2
Roundabouts are an undesirable alternative	27	52

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ITE

ITDAA029608

TABLE 1
US95 TRAFFIC PROJECTIONS
EXISTING ALIGNMENT
SANDPOINT NORTH & SOUTH
PROJECT # NH-IR-F-5116(068)

LOCATION	MILEPOSTS	AVERAGE DAILY TRAFFIC		
		1996	2002	2022
1. So. End of Project	469.75-471.65	12000	15240	26040
2. Long Bridge	471.65-471.74	14000	17780	30380
3. 1st & Superior	474.02-474.09	17000	21600	36920
4. "	474.09-474.18	23000	29220	49950
5. 1st & Pine	474.18-474.24	19000	24140	41270
6. "	474.24-474.29	12000	15240	26040
7. 1st & Church	474.29-474.31	8300	10540	18030
8. "	474.31-474.36	8300	10540	18030
9. 1st & Cedar	474.36-474.45	8600	10930	18670
10. "	474.45-474.51	9900	12580	21510
11. 5th & Larch	474.92-475.00	21000	26670	45570
12 "	475.00-475.11	16000	20320	34720
13. 5th & Cedar	474.72-474.78	23000	29210	49910
14. "	28.70-28.73	16000	20340	34800
15. 5th & Church	28.52-28.58	13000	16510	28210
16. "	28.58-28.65	13000	16510	28210
17. 5th & Pine	28.52-28.58	13000	16510	28210
18. "	0.00-0.07	14000	17780	30380
19. US95/US2/SH200	474.71-475.73	17630	22390	38260
20. US95-Kootenai Cutoff	477.00-477.10	12330	15650	26750
21. US2-Pine St. Loop	024.72-24.81	3800	4600	7260
22. SH-200-Kootenai Cutoff	31.45-31.48	6200	7490	11800
23. 4th & Church	Off System	3100	3500	4500
24. 4th & Cedar	"	2900	3200	4200
25. 4th & Larch	"	5200	5760	7500

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TABLE 2

US95 TRAFFIC PROJECTIONS

"THROUGH TOWN COUPLET" ALIGNMENT

SANDPOINT NORTH & SOUTH

PROJECT #NH-IR-F-5116(068)

LOCATION	MILEPOSTS	AVERAGE DAILY TRAFFIC		
		1996	2002	2022
1. So. End of Project	469.75-471.65	12000	15240	26040
2. Long Bridge	471.65-471.74	14000	17780	30380
3. 1st & Superior	474.02-474.09	17000	21600	36920
4. "	474.09-474.18	23000	29220	49950
5. 1st & Pine	474.18-474.24	19000	24140	41270
6. "	474.24-474.29	12000	15240	26040
7. 1st & Church	474.29-474.31	2490	3505	5989
8. "	474.31-474.36	2490	3505	5989
9. 1st & Cedar	474.36-474.45	2557	3279	5603
10. "	474.45-474.51	2557	3279	5603
11. 5th & Larch	474.92-475.00	10500	13335	22785
12. "	475.00-475.11	10500	13335	22785
13. 5th & Cedar	474.72-474.78	16000	20340	34800
14. "	28.70-28.73	16000	20340	34800
15. 5th & Church	28.52-28.58	13000	16510	28210
16. "	28.58-28.65	13000	16510	28210
17. 5th & Pine	28.52-28.58	13000	16510	28210
18. "	0.00-0.07	14000	17780	30380
19. US95/US2/SH200	474.71-475.73	17630	22390	38260
20. US95-Kootenai Cutoff	477.00-477.10	12330	15650	26750
21. US2-Pine St. Loop	24.72-24.81	3800	4600	7260
22. SH200-Kootenai Cutoff	31.45-31.81	6200	7490	11800
23. 4th & Church	On System	10394	13152	23676
24. 4th & Cedar	"	12644	15999	28795
25. 4th & Larch	"	11010	13932	25072

NOTE:
Estimated that 100% of through non-stop, 50% of through stop and 70% of external-local would shift from 1st Avenue.

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ITDAA029610

TABLE 3
US95 TRAFFIC PROJECTIONS
SAND CREEK "TWO-LANE" ALIGNMENT
SANPOINT NORTH & SOUTH
PROJECT # NH-IR-F-5116(068)

LOCATION	MILEPOSTS	AVERAGE DAILY TRAFFIC		
		1996	2002	2022
1. So. End of Project	469.75-471.65	12000	15240	26040
2. Long Bridge	471.65-471.74	14000	17780	30380
3. 1st & Superior	474.02-474.09	12750	14688	25106
4. "	474.09-474.18	16703	20363	34796
5. 1st & Pine	474.18-474.24	14440	17622	30127
6. "	474.24-474.29	7800	9449	16149
7. 1st & Church	474.29-474.31	4889	5740	9812
8. "	474.31-474.36	4889	5740	9812
9. 1st & Cedar	474.36-474.45	5418	6451	11015
10. "	474.45-474.51	6237	7422	12691
11. 5th & Larch	474.92-475.00	17107	21192	36202
12. "	475.00-475.11	13034	16146	27583
13. 5TH & Cedar	474.72-474.78	19440	24196	41345
14. "	28.70-28.73	12915	15998	27364
15. 5th & Church	28.52-28.58	9064	10975	18786
16. "	28.58-28.65	9529	11626	19857
17. 5th & Pine	28.52-28.58	9064	10975	18786
18. "	0.00-0.07	10158	12315	21137
19. US95/US2/SH200	474.71-475.73	17630	22390	38260
20. US95-Kootenai Cutoff	477.00-477.10	12330	15650	26750
21. US2-Pine St. Loop	24.72-24.81	3800	4600	7260
22. SH200-Kootenai Cutoff	31.45-31.48	6200	7490	11800
23. 4th & Church	Off System	3100	3500	4500
24. 4th & Cedar	"	2900	3200	4200
25. 4th & Larch	"	5200	5750	7500
26. Sand Creek Alignment	On System	4250	6912	11814

~~P8~~
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ITDAA029611

TABLE 5
%DHV & % COMMERCIAL
REGARDING
PROJECT TRAFFIC PROJECTIONS
SANDPOINT North & SOUTH
PROJECT #NH-IR-F-5116(068)

LOCATION	MILEPOSTS	%DHV	%COMMERCIAL
1. So. End of Project	469.75-471.65	11.0%	9.2%
2. Long Bridge	471.65-471.74	10.0%	6.4%
3. 1ST & Superior	474.02-474.09	10.0%	5.2%
4. "	474.09-474.18	10.0%	4.2%
5. 1st & Pine	474.18-474.24	10.0%	4.3%
6. "	474.24-474.29	10.0%	5.2%
7. 1st & Church	474.29-474.31	10.0%	6.7%
8. "	474.31-474.36	10.0%	6.7%
9. 1st & Cedar	474.36-474.45	10.0%	6.4%
10. "	474.45-474.51	10.0%	5.9%
11. 5th & Larch	474.92-475.00	11.1%	7.6%
12. "	475.00-475.11	11.1%	18.1%
13. 5TH & Cedar	474.72-474.78	10.0%	8.3%
14. "	28.70-28.73	10.0%	6.0%
15. 5th & Church	28.52-28.58	10.0%	5.7%
16. "	28.58-28.65	10.0%	5.7%
17. 5th & Pine	28.52-28.58	10.0%	5.7%
18. "	0.00-0.07	10.0%	6.0%
19. US95/US2/SH200	477.00-477.10	11.1%	8.0%
20. US2-Pine St. Loop	24.72-24.81	11.4%	20.3%
21. SH200-Kooteani Cutoff	31.45-31.48	11.2%	4.2%
22. 4th & Church	Off System	10.0%	2.0%
"	On System		(Couplet 9.4%)
23. 4th & Cedar	Off System	10.0%	2.0%
"	On System		(Couplet 9.1%)
24. 4th & Larch	Off System	10.0%	2.0%
"	On System		(Couplet 8.4%
25. Sand Creek Alignment	On System	10.0%	7.0%

~~P9~~
A16

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APPENDIX B

- CULTURAL RESOURCE OVERVIEW
- DETERMINATION OF EFFECT

PREPARED 1991

SANDPOINT NORTH/SOUTH

CULTURAL RESOURCE OVERVIEW

METHODOLOGY

The cultural resource documentation for this environmental document is based primarily on background research, rather than fieldwork. Previous archeological investigations, including reports and surveys documented at the SHPO, have been reviewed. Archeologists familiar with the area have been questioned as well.

Historical documents such as General Land Office (GLO), USFS, and Sanborn fire insurance maps have been checked. References on North Idaho history and newspaper accounts were also used.

Several interviews were conducted with local residents and Bonner County Historical Society staff knowledgeable of Sandpoint history. Photographic records and unpublished manuscripts housed at the Bonner County Historical Museum provided invaluable resources.

Limited field examination was undertaken on the Sand Creek and Existing Improved Alternatives. Much of the area is either disturbed, has vegetational or structural cover, or is inaccessible. However, standing structures were inventoried. The West Alternative received the most field attention, primarily because it is the least developed and consequently the least known in terms of cultural resources. At least one pedestrian transect has been undertaken through the West Alternative corridor.

CULTURAL HISTORY

The Sandpoint region is transitional between the Plateau culture area to the west and the Plains to the east. It falls within the aboriginal territory of the Kalispel cultural group, which some researchers have referred to as the Northern Rocky Mountain region. This convenient geographical position and significant interior riverine and lacustrine system no doubt played an important role in the development of the material culture. However, drawing exact ethnographic boundaries between cultural entities is an exercise in futility. This is due to the intermingling of adjacent groups such as the Pend Oreille and Kutenai, as well as the rather late ethnographic studies of these groups (Teit 1930; Ray 1936, 1939). Swanton (1973:3) lumps the Lower Pend Oreille and Lower Kalispel together, indicating they were the same group inhabiting the Lake Pend Oreille area. Others suggest the Pend Oreille inhabited the Flathead Lake area in Montana.

The Kalispel, called "camas eaters" by Teit (1930:299), are differentiated into the Lower Kalispel, who centered around Cusick, Washington, and the Upper Kalispel ranging between Albeni Falls on the Pend Oreille River near the Idaho-Washington border and Cabinet Gorge near the Idaho-Montana border. The Priest River drainage north into Canada was also home to the Kalispel. It is also likely that the Pack River may also have been utilized by the Kalispel. A Kalispel village was noted at the mouth of Pack River on Pend Oreille Lake in the 1890s. The Upper Kalispel reportedly had winter villages along the Pend Oreille River near Laclede, on Priest Lake, on Lake Pend Oreille near Bayview and the mouth of

B1

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Trestle Creek, on the Thompson River at the confluence of Prospect Creek, and at Paradise, Montana (Ray 1936; Chalfant 1974). Numerous fishing stations and camps have been noted along the Pend Oreille River and Lake Pend Oreille as well (Choquette & Holstine 1982; Hudson et al. 1981).

No doubt various groups shared the tremendous riparian and wetland resources, with considerable territorial overlap to be expected. Canoes would have granted easy travel around Lake Pend Oreille and its subsidiary drainages, facilitating interaction. Given the nature of such centrally based wandering communities (Beardsley 1955), "Upper" Kalispel folks who happened to be in Cusick for the camas harvest would be counted as "Lower" Kalispel. Early ethnographers were prone to pigeonholing. Boundaries were in the eye of the beholder.

B2

The Kalispel can best be described as foragers who followed a seasonal round of harvesting the available resources. Large game such as deer and elk were hunted in the fall by organized drives or by trapping them in winter in deep snow. Both anadromous and nonanadromous fish were taken in weirs and nets, mainly in the spring and summer. Waterfowl were taken in the spring and fall. Vegetal resources consisted of roots, shoots, berries, tree moss, and cambium. Camas was the critical root crop, with bitterroot and wild onion also being collected. Just west of the Idaho border, in Cusick, Washington, was a major camas harvesting area. The Kalispel often shared these grounds with their Kutenai neighbors (Choquette and Holstine 1980:30).

Berries were the most important factor influencing the Kutenai seasonal round (ibid.). No doubt berries also played a role in the fall activities for the Kalispel. An abundance of berries grow in the region, with serviceberries, chokecherries, and huckleberries being the most significant. Constant processing of these staples was necessary for storage over the long, harsh winters, necessitating residential mobility.

Settlement patterns of the Kalispel revolved around base camps during most of the seasonal round. Temporary camps were task-oriented, often annually reestablished at favored fishing, berry-picking, or root-gathering locales. Fishing stations, usually in strategic locales along the rivers, were noted by early Euroamerican explorers. Salmon were taken at Kettle Falls and at the mouths of the Clark Fork and Pend Oreille rivers. Other fishing camps were established on the Pend Oreille River at Albeni Falls and the mouth of Tacoma Creek (near Cusick) (Ray 1936).

Extended families and tribal groups returned to village sites in the winter, sharing semipermanent lodging, cache pits, and preserved food staples. Typically such villages were located in riverine and lacustrine valleys where the climate was less severe than the surrounding mountains. Winter camps have been noted at Priest Lake, on the Pend Oreille River near the mouth of Priest River, and at Laclede and Sandpoint (ibid.).

By historic time at least, areas of Lake Pend Oreille appear to have been occupied year-round (Landreth 1985:193). Near Laclede, where sites exist on both sides of the river, habitation appears

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to have been permanent. This would be a strategically located habitation site, convenient for canoe, foot, and horse travel, as well as access to the diverse subsistence and tool material resources. Explorers' journals record camps around the lake during all seasons. By 1897, homesteaders witnessed the local Indians still following aboriginal subsistence patterns of fishing and drying huckleberries (Johnson P.C.)

The introduction of the horse in the early 1800s brought major changes to the Kallspel lifestyle. Canoe and foot travel were expanded by the horse. Suddenly the available territory was increased and more accessible. A significant outcome was travel to Montana to join Plains groups in buffalo hunting. In addition, this brought increased interaction between tribes, facilitating trade, intermarriage, and other intergroup relationships.

Horses traversed the Pend Oreille Trail, following the north side of the Pend Oreille River and lake, then up the Clark Fork River into Montana. The route became a thoroughfare between groups in the Plateau and Columbia River areas to the North Plains. The trail has also been referred to as the Kalispel or Buffalo Trail (Landreth et al. 1985:184). It also connected with the north-south route, the Wild Horse Trail, which follows the Purcell Trench into Canada (Cultural Resource Consultants 1981:17). Later the trail system was utilized by fur trappers and early missionaries. Miners' feet beat down the trail in the 1860s' and 1870s' gold fever. Gold fields in both British Columbia and Montana were the major draw.

B3

PREVIOUS ARCHEOLOGICAL INVESTIGATION

Little archeological investigation was done in the region until the Smithsonian River Basin Survey program of the 1950s. This survey concentrated on inventorying the major drainages and recording obvious campsites. Not until the 1970s were more extensive inventories undertaken. Federal regulations require agencies to review projects for cultural resources. As a result, surveys were performed on corridors containing gas, electrical, water, and sewer lines. Dams, reservoirs, timber sales, and highway construction were also affected. However, minimal subsurface excavation was undertaken in conjunction.

By the late 1970s and into the 1980s, test excavations provided some insight into the prehistory of the region. Extensive survey and excavation were undertaken in association with the BPA's Libby Dam project. Although the majority of the sites investigated were in northwestern Montana, the cultural traits are applicable to northern Idaho. Only eight sites were noted in Idaho, primarily around McArthur Lake (Gough 1984:17). This research established the only cultural chronology in the region, since occupation appears to span the last 10,000+ years up to historic contact (ibid.:1984). The sites are primarily temporary camps established within riparian and lacustrine ecosystems.

The chronological divisions based on settlement, lithic material use, and technological aspects outlined by the research include:

Goatfell	11,000-7,500 (5,000?) BP
Bristow	7,500-5,000 BP

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Inissimi	3,500-2,000 BP
Akiyinek	1,000- 550 BP
Akahonek	550-Historic Period

As indicated, there is a short hiatus of 1,000 years between the Akiyinek and Inissimi, as well as a 1,500-year break between the Inissimi and the Bristow. This may represent a sampling bias or transitional period. Further investigations may fill the gap or elucidate reasons for a lack of occupation.

Near the Montana-Idaho border, investigations were conducted at Cabinet Gorge on the Clark Fork River in the mid-1980s (Landreth et al. 1985). Occupation dates from historic time to about 8,000 BP.

B4

A small site was excavated west of Sandpoint on the Pend Oreille River at Riley Creek by the University of Idaho in 1978 (Knudsen et al. 1979). The site yielded a carbon-14 date of 1,238 BP and was a temporary camp. Tools ranged from projectile points to flake tools. Of special interest was the use of obsidian from quarries in Yellowstone National Park, suggesting contact or trade networks.

A year later, test excavations were conducted at the confluence of Priest River with the Pend Oreille River by Cultural Resource Consultants (Hudson et al. 1980). The occupation dates from about 1,230 BP AD (based on radiocarbon dating) to 7,000 BP (according to point morphology and stratigraphic position of artifacts below Mazama ash). Again, trade is assumed because of the types of

nonlocal material sources such as Yellowstone obsidian and artifact styles from the Plateau.

Closer to Sandpoint, a site was tested at Rocky Point by an archeological field school from North Idaho College in Coeur d'Alene. No report has been written, but the assemblage is dominated by flake and cobble tools and projectile points.

Miss (1990a) noted five new sites (10-BR-790-794) on the north shore of the Pend Oreille River along US-2, west of Sandpoint. Sites were located primarily along sloughs and tributary drainages (ibid.:12). The three prehistoric sites consist of limited fire-modified rock (FMR) clusters, while the historic sites are remnants of a reservoir and associated outbuildings and a possible barn foundation. Although two of the prehistoric sites were tested, the lack of significant finds deemed the sites ineligible for the National Register.

The regional framework for land use and site distribution is strongly linked to the postglacial climatic and physiographic factors. As a result, human adaptation and population size fluctuated as the topography, vegetation, and water resources changed. Shortly after the glaciers retreated, the region was cooler and moister than today. Emerging ridges and terraces would have been rocky, with little soil development. Many 8-10,000-year-old sites are on south-facing terraces, often some distance from permanent water (Thoms and Burtchard 1987:105).

By 7,600 BP a warming trend was underway, which led to a long period of moderating climate when it was warmer and drier than the

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present. Land surfaces stabilized and animal and plant resources expanded, providing diversity for human exploitation of the evolving ecosystem. Landreth (1985:202) notes greater residential mobility during this period, with occupation of lower- and middle-level terraces.

In their study of prehistoric land use, Thoms and Burtchard (1987:496) found that sites in the middle Kootenai River area tended to fall on the upper-valley terraces around 4,500-2,000 BP. Hunting of large game (deer and elk) was the predominant activity.

Valley bottoms were initially utilized in the winter. Over time, there appears to have been adaptation to valley resources, with greater emphasis on root crops and fishing. Larger, more permanent camps and greater population bases are a postulated outcome. By the late period, there may have been year-round occupation of the valley floor around Lake Pend Oreille. However, artifacts from both private collections and limited excavations on the Pend Oreille River suggest earlier use of the valley. Settlement may extend back 10,000 years (Miss and Hudson 1987).

The bulk of the sites recorded in the Sandpoint vicinity are affiliated with the Lake Pend Oreille drainage system. As previously indicated, a sampling bias, based on cultural resource management contracts and surveys oriented towards the water resources, skews the site distribution data. Over 400 sites are known around Lake Pend Oreille and its tributary streams (Salo 1988:5-17). Generally, the sites are located at the confluence of tributary streams and sloughs around the lake. Terraces and

benches somewhat above the waterways provide prime occupation areas. The northern side of Lake Pend Oreille (including the river portion) has more recorded sites than the south side (Miss and Hudson 1986:37). Again, this may reflect a sampling discrepancy rather than actual distributional data. However, it is notable that the north side has more continuous streams entering the Pend Oreille River than the south side.

Shallow deposits, limited artifacts, and abundant, thermally altered rock features characterize most of the sites around Lake Pend Oreille. Extensive disturbance due to dam construction and associated reservoir fluctuations and collector activity is another aspect of the area. Artifacts from both private collections and archeological investigations suggest at least a 7,000-year range. However, most of the radiocarbon dates are from rock features dating to the last 3,500 years (Thoms and Burtchard 1987:497).

The abundance of these features dating primarily to the late period may support the theory of intensified occupation of the valley and the incorporation of vegetal crops (especially roots) in the diet (ibid.:496,497). Ground and pecked stone, cobble tools, and tabular knives found in conjunction with rock clusters may also imply plant harvesting and processing.

After 3,000 BP, a climatic shift to a cooler, more moist regime was underway. Open grasslands which provided readily accessible game returned to densely vegetated forests. The upland sites may have been less desirable at the time than the valley areas.

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facilitating the focus on the lower, riverine terraces (ibid.). Tool material selection also exhibits an abrupt change from utilization of the local siltstone and argillite to more imported material such as obsidian from Yellowstone National Park and cryptocrystalline from Canada and Montana. Projectile-point styles also resemble late-period types from these more distant regions. These factors hint at increased mobility, trade interaction, and possibly larger, more socially structured populations.

An ambitious study is underway by the Corps of Engineers to inventory and evaluate sites within its jurisdiction along the Pend Oreille river and lake. The study is intended to provide information for a cultural resource management plan.

Miss (1990b) suggests that the settlement and subsistence strategies noted for the Kootenai River area by Thoms and Burtchard (1987) are applicable to the Pend Oreille valley. By 5,000 BP, subsistence efforts focused more on root collecting than game hunting, although not to the exclusion of hunting and fishing activities. Settlement shifted accordingly, with greater use of valley environs, more permanent habitation sites, and increased population (Miss 1990b:49).

The sites fall primarily into processing, habitation, and location activities. The latter designation refers specifically to minor exposures of FMR or isolated artifacts (ibid.:13). Again, the study is biased by design toward riverine and lacustrine environments. Upland sites have not been addressed in the literature. Given the resource base available in upland settings, it is

inconceivable that no sites exist. Land ownership, plus access and surface visibility difficulties, have hindered research in these habitats.

HISTORICAL BACKGROUND

Fur trappers and traders became the region's first non-Indian occupants in the first part of the 19th century. They followed the Pend Oreille and Wild Horse Trails utilized by the Native Americans. In 1809 David Thompson established a trading post at Kullyspel (Kalispell) House east of Sandpoint on the eastern shore of Lake Pend Oreille. It was abandoned shortly thereafter. Most of the trading took place at the Hudson's Bay Company headquarters at Fort Colville near Kettle Falls. The same trail later provided access for miners seeking their pot of gold in the 1860s. Routes split prospectors into Canada as well as Montana from the Sandpoint area.

SANDPOINT HISTORIC OVERVIEW

The Euroamerican settlement of the Sandpoint area began in the 1880s with logging, mining, and agriculture as the major ventures (Hawley 1920:792). The boom to the development of the city came in 1882 with the establishment of the Northern Pacific Railroad along Sand Creek. Businesses sprung up along the tracks hoping for major economic growth. However, this was not realized until 1892 when railroad magnate James Hill expanded his Great Northern Railroad line to the west coast. Thus, Sandpoint became the crossroads of two significant railways (Roubicek and Boswell 1975:3).

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The town site, originally called Pend d'Oreille, was platted in 1893 adjacent to the railroad depot by Farmin, the local agent (ibid.:793). The land was part of the railroad right-of-way so it was only leased to businesses. This lack of property ownership coupled with several disastrous fires in the 1890s prompted the layout of a new town site across the creek in 1898.

The early influence of brick as a fire-proof construction material is also apparent along First Avenue in the present town. No doubt a symbiotic relationship existed between the city fathers and the newly conceived Sandpoint Brick Company established in 1900 (Hawley 1920:795). Although construction began in the new location after the turn of the century, businesses still existed along the tracks until about the teens. Food and lodging establishments remained as the railroad provided captive clientele. The railway brought people from around the country to the booming town. Invitations such as "there is no more desirable location in the Northwest for the businessman, the professional man, the home builder, or the capitalist than Sandpoint, Idaho" lured many (ibid.:796).

The lumber industry flourished with the expansive timber reserves, ease of transportation via the lake and railroad, and the demand for construction material. Sandpoint was the pole capital of the world, shipping tons of cedar telegraph and electrical line poles annually (Hawley 1920:795). As a result, the Humbird Lumber Company started its mill operation along the beach between Lake Pend Oreille and Sand Creek in 1899. The mill was the largest in the region and a major employer of the local workforce. An

informal "company town" developed at the north end of Sand Creek with 80 mill houses and a company store. The mill also installed an electric light plant for the mill and town (Sandpoint, high school history class n.d.:39). The mill continued to operate, expanding and absorbing other small mills, into the 1930s when it was closed.

Several dwellings, including the railroad station masters quarters, were also constructed along the tracks. Some large structures were boarding houses and others were family dwellings (Coons P.C.). Some of these houses still exist on the lake side of the tracks. Near Bridge Street, toward the south end of Sand Creek, was the Chinese area of town. Several shanties, cafes, and a laundry were occupied by Chinese (Sanborn, Coons P.C.). Illegal opium smoking by both Chinese and whites caused much consternation in Sandpoint in the early 1900s (Pend Oreille Review, 1906, 1907).

Spokane visitors were also unimpressed by Sandpoint. "Sandpoint is made up of between three and four dozen rude shacks and perhaps a dozen tents. Sixty-five percent of the buildings are used for saloon and gambling purposes, with a few brothels . . . ." (Spokesman-Review 1892). Early homesteading occurred in the rural areas beyond Sandpoint in conjunction with the development of logging and transportation syatems. Farmers, dairymen, and livestock ranchers established 160-acre farms under the Homestead Act. A farm-to-market food industry was thus created to supply the townsfolk.

B7

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The earliest homesteading in the Sandpoint vicinity occurred in the 1890s. Claims were filed and patented primarily west of Sandpoint initially. After the turn of the century, homesteading increased to the south side of the lake toward Sagle. This was facilitated by the construction of the first bridge across Lake Pend Oreille in 1909. It was a two-mile long wooden structure which at the time was the longest in the world. It was rebuilt in 1934 and renovated in 1956 (Sandpoint High School n.d.:73, 77). Most of the homesteads served as self-sufficient family farms, possibly raising stock or crops for sale or trade.

PREVIOUS HISTORICAL INVESTIGATION

Initial historical architectural survey in the vicinity was undertaken by a number of historians in the area under the direction of the Bonner County Historical Society (Roubicek and Boswell 1975). The survey was precipitated by an earlier ITD proposal to study the feasibility of redirecting traffic flow on US-95. Various agencies, the SHPO, and the local historical community agreed that an inventory of historical sites was imperative, given potential development. However, the survey focused primarily on standing structures, mainly in the downtown commercial district. The Downtown Historic District was listed in the National Register as a result.

Prior to that time, the only historic resource noted for Sandpoint was the Northern Pacific (Burlington Northern) Railroad Depot. The depot was nominated to the National Register in 1973 by Arthur Hart, then director of the Idaho State Historical Museum. Built

in 1916, it is the only Gothic-style brick depot in the state. Again, this effort was influenced by a pending proposal to expand the transportation corridor along Sand Creek.

In the 1970s and '80s, historians primarily affiliated with the Idaho State Historical Society inventoried several individual structures around Sandpoint. Surveys of specific outlying areas were also conducted by local historian Nancy Renk (Renk 1983). No additional National Register listings have resulted from these surveys.

These are the only documented historic surveys undertaken in the area. A few additional research documents have been produced which shed some light on historical sites. However, none of these involved field investigation, but rather are manuscripts or oral history tapes.

In addition, little correlation of potential historical structures to recorded historical archeological sites has been undertaken. A notable exception is Hudson's work at Seneacquoteen, the early settlement which arose around the Pend Oreille River crossing at Laclede. The research was designed to substantiate the oral tradition of a still standing, hand-hewn log structure as part of a Hudson's Bay Company post. Archeological testing coupled with historic research failed to provide any evidence of a Hudson's Bay post (Hudson P.C.). The log structure dates to the 1880s-1890s. It served as a store and was part of a homestead which burned down by the 1930s. The domestic material located suggests the site was

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occupied by a family between the 1880s and the late 1920s, rather than fur trappers and traders in the early 1880s.

CULTURAL RESOURCES WITHIN THE PROJECT AREA

After a review of the regional cultural history, ITD staff conducted a cursory field investigation to determine if sites occurred within the project area. The field examination focused on the West Alternative as it is the least known and least disturbed of the three alternatives. It also contains several recorded prehistoric sites. The Sand Creek route received some attention since it contains known historic sites. The Existing Improved Route was not evaluated for prehistoric resources due to extensive disturbance from previous downtown development and the obvious lack of ground exposure. Potential exists for buried sites in the area; however, field survey, given the present obscured surface conditions, would be futile. However, the existing route was examined to locate previously recorded historic structures as well as inventory potential historic buildings within the proposed route.

WEST ALTERNATIVE

Few prehistoric sites have been recorded in the West Alternative corridor. Previous surveys of the gas and power lines in the vicinity failed to locate sites. Although our field review noted a number of historic resources (see historic section), no prehistoric resources were found. However, one difficulty encountered on this alternative is the density of vegetation obscuring much of the ground. The ten known sites along the West Alternative tend

to cluster on both sides of the Pend Oreille River and along tributary streams. The north side near Dover has the greatest concentration. Dover is essentially one large site. Miss (P.C.) indicates these sites contain significant prehistoric deposits. Site 10-BR-523, 524, 525, 526, and 527 as well as Site 10-BR-14 at the mouth of Hornby Creek all contain extensive fire-modified rock (FMR) clusters. Site 10-BR-523, as the mouth of Hornby Creek, is the most extensive site with scattered cobble and flake tools suggesting a campsite and processing station. Site 10-BR-527 is another large site with both prehistoric and historic artifacts. About a mile north of 10-BR-14, is 10-BR-51 an upland site collected by the landowner.

On the south side of the Pend Oreille River near Springy Slough, across from the sites at Dover, is 10-BR-425, a campsite with FMR, plus cobble and flake tools. In addition, the west side of the high knob has several other sites along the shore. All of the sites, 10-BR-426-428, contain FMR which has eroded from the banks during highwater. Other tools have also been noted, especially at 10-BR-426.

The connecting improvements on US-2/SR-200 have not been specifically surveyed or addressed. Several sites have been recorded in the vicinity of this route (Miss 1990a). These sites will be evaluated in terms of National Register and impacts if this route is selected.

Obvious historic resources along the West Alternative consist of settlement sites, some with only surface features or subsurface

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remains, others with collapsed or standing structure, plus occupied farmsteads. It is also plausible that other historic sites associated with logging, mining, and transportation may exist. Old roads, logging remains, and historic trash scatters have been noted in the area.

The General Land Office plat maps indicate homesteading activity on the south side of Lake Pend Oreille began in the 1890s, but increased dramatically between 1904 and 1915. This generally corresponds to the build up of downtown Sandpoint and its associated neighborhoods. On the north side of the lake, the earlier homesteads tended to be to the east of this proposed alignment, closer to town. Within the West Alternative most of the observed homesteads, many of which are still occupied, post date 1900.

B10

IMPACTS

Specific impacts to each of these sites is unknown until a precise route is selected. Presently, it appears that most of the sites can be avoided. However, 10-BR-14 at the mouth of Hornby Creek could be impacted depending on the design of the proposed structure crossing the river. If this alternative is selected, further survey and potentially subsurface testing will be required to determine if other resources exist. Significance evaluations according to National Register criteria will also be made. Since little major excavation has been done in the area and 10-BR-14 fits criteria d. -- is likely to yield information important to prehistory -- it is likely to be eligible for the National Register. This site has been identified in a Corps of Engineers study

as one which should be protected or potentially excavated due to possible early stratified deposits (Miss P.C.). If it cannot be avoided, data recovery excavations could be a proposed mitigation. If such excavations are carried out, Section 4f of the Department of Transportation Act will not be invoked.

Some potential also exists for additional prehistoric resources to be located, especially on the terraces and along streams on the north bank of the Pend Oreille River, as well as the area of Sand Creek on the extreme north end of this route. If this route is selected, subsurface testing is recommended to check for buried sites.

The current proposed route could impact existing historic homesteads as well as collapsed structures or buried historic deposits. None of these sites have been evaluated for National Register significance, but potential exists for some of these to be historically important. If this route is selected, further survey of these structures will be necessary to determine their significance and potential impact from the proposed project. Depending on circumstances, avoidance may be a mitigation option.

SAND CREEK ALTERNATIVE

Extensive and highly significant historic and prehistoric resources are known along this route. The extent of these sites is unknown since little investigation has occurred along Sand Creek. The sites recorded in the Sand Creek vicinity include 10-BR-538, 10-BR-115, and 10-BR-683-686. Only one of these sites, 10-BR-538, has a prehistoric component, while the remainder are historic

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sites. Site 10-BR-538 near the mouth of Sand Creek consists of a scatter of thermally altered rock with a mantle of turn-of-the-century glass fragments. It is not uncommon to find broken glass within many of the Sand Creek sites due to the original town site being along this sand spit. The 1900 Humbird Lumber Mill is site 10-BR-115. A study in process by the Corps of Engineers identifies this site as worthy of additional investigation (Miss P.C.). Foundation fragments are the only structural remains of this business, which was prominent in the development of Sandpoint. The remaining sites, 10-BR-683-686, contain wooden structural remains, possibly pilings representing transportation corridors.

Site 10-BR-683 contains rows of large wooden pilings, probably the remnants of an old railroad bridge. Site 10-BR-686 is a collapsed wooden structure with cribbing of milled beams and boards, plus pilings. This site may also be related to the railroad as it is near the present crossing.

B11

In addition, the present Burlington Northern Railroad Depot is listed on the National Register of Historic Places (Figure 1:1). This 1916 depot was built by the Northern Pacific Railroad to replace the original frame depot. This unusual Gothic-style, brick structure is the only depot of its kind in the state.

The most significant resource along Sand Creek is the original 1882-1898 town site, which has no recorded site number (Figure 1:1a). Sandpoint originally developed along the Northern Pacific Railroad tracks, which traversed the narrow sand spit. Growth and a series of devastating fires resulted in relocation of the town

across the creek to its present location. A few original houses remain on the east side of the railroad, but there are no standing structures on the creek side.

The 1904 Sanborn fire map indicates that the majority of the businesses were east of the railroad tracks. Businesses ranged from banks to barbers, to hotels and saloons. Several dwellings are also shown. Structures are less numerous on the west side of the railroad and tent to be more storage and warehouse type buildings. Also of interest are the female boarding houses and a Chinese laundry.

Many of the structures along the west side of the tracks were built on the east bank of Sand Creek, often with stilts and pilings supporting the backside. No doubt much debris was thrown into Sand Creek out these back doors. Between the numerous fires in the 1890s and abandonment of this original town site, no surface structure remains. However, the area west of the railroad tracks and the banks and channel of Sand Creek are likely to yield extensive subsurface and submerged historic resources.

The south side of Pend Oreille Lake also contains several recorded prehistoric sites in the vicinity of existing US-95, along the lake shore as well as Sagle Slough. In 1894, a town known as Ventnor was located near the south end of the present US-95 bridge (Miss 1990b:29). The 1892 Northern Pacific railroad also preceded the highway through this corridor. Old railroad bridge pilings have been recorded as 10-BR-689 and 10-BR-691 along the grade near Sagle Slough. At least two 1890s homesteads are noted in the area

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as well. Further evaluation will be necessary if this route is selected.

The Sand Creek route has received a cursory field review but no complete survey or subsurface testing has been performed. If this route is selected, a thorough investigation will be undertaken. It is likely that additional historic and prehistoric resources could be located during this investigation.

IMPACTS

The proposed Sand Creek alignment would severely impact cultural resources. The narrow corridor eliminates avoidance as a mitigation option. The Burlington Northern Depot, which is on the National Register, would be removed. It is possible that the depot could be relocated as partial mitigation. However, the National Register status would require compliance with Section 4f.

In addition, the original town site encompasses much of the southern end of this alternative. The proposed route would disturb major subsurface deposits. Given the high potential for intact, buried remnants of the early town and the significant nature of this data, the site area is likely to be eligible for the National Register. Whether the area is important as an intact *in situ* town site or primarily for the data it could yield is unknown. If data recovery is considered an appropriate mitigation, compliance with Section 106 of the NHPA would be required. If, however, the site remains in place, compliance with Section 4f would be necessary.

Sites 10-BR-683 and 686 could also be impacted by this alignment, although they could be avoided depending on the final alignment location. The sites have not yet been evaluated in terms of National Register significance, but they have relatively less importance than the depot and town site.

Additional prehistoric sites may also be found in subsurface testing, since ethnographic accounts indicate at least historic use of Sand Creek. Again, the significance of such resources is an unknown, but since so few sites have been tested, any information is likely to be important to prehistory, rendering the sites National Register eligible.

THROUGH TOWN ALTERNATIVE

The downtown area consists of an already built environment of both commercial and residential structures. Naturally, construction episodes range from the turn of the century to the present, with the florescence between 1905 and 1930. This "second" downtown was established by 1898 but the remaining commercial structures mainly postdate 1905. There are two main residential segments, the 4th Avenue and the Pine Street neighborhood, which also fall within the Through Town corridor. These areas have houses dating from primarily the early 1900s into the teens, with a few erected in the 1920s and 1930s (Figure 1:19, 36)

Downtown the structures are commercially oriented and manufactured with brick. An emphasis on brick construction resulted from the devastating fires leveling the original town site. The bulk of the two-story commercial block between Main and Cedar Streets on

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the west side of 1st Avenue was constructed between 1905 and 1909 (Sanborn, Renk and Hudson 1991). The first brick building in Sandpoint was the southwest corner of Cedar and 1st Avenue, built in 1904.

The west side of 1st Avenue is part of a downtown Sandpoint Historic District, listed on the National Register (Figure 1:2). The district also includes several structures on 2nd Avenue, including the Farmin Building, the Elks and the Knights of Pythias. The Panida Theater on the east side of 1st Avenue is also within the district. The Spanish Colonial Revival-style theater, built in 1927, is significant as the first reinforced concrete structure in Sandpoint.

Although the historic district is limited to a relatively contiguous square block of downtown, several additional historic structures have been inventoried along 1st Avenue. The majority of these were constructed on the west side of the street, facing Sand Creek. The historic structures map of Sandpoint (Figure 1) and the corresponding listing of properties locates these buildings. The 200 block of North 1st Avenue and Main Street has buildings at 209, 219, and 223 dating between 1910 and the late 1930s (Renk and Hudson 1991). Store facades have been altered but some historic integrity has been maintained in the body of the structures (Figure 1:3-5).

Between Church and Pine Streets in the 100 block of North 1st are three important brick buildings. At 101 North 1st is the 1909 Bonner Meat Market (Figure 1:9), now housing a realty office. Two

B13

adjacent brick buildings are located at 119 and 121 North 1st Avenue near Church Street. The Rowlands Hotel (Figure 1:6), on the corner of Church Street, was built in 1921 and remained in use until the 1970s. By 1927 a small, brick neighborhood market was added next door at 119 North 1st Avenue (Figure 1:7). It was operated by Gus Nelson until the 1940s (ibid.:10).

South 1st Avenue contains a diversity of historic structures. Two residential structures, potentially eligible for the National Register, remain along this stretch of 1st Avenue. The Bertha and Peter Johnson home was constructed between 1905 and 1909 at 202 South 1st Avenue at the intersection with Lake Street (Figure 1:12). This large, salt box-style architecture is unusual in this region. The house retains its authenticity and is affiliated with one of Sandpoint's early attorneys, Peter Johnson.

At the corner of South 1st Avenue and Superior Street is the imposing McFarland Mansion, now a bed and breakfast (Figure 1:15). Erected in 1909 for Ignatz and Irene Weil, it was billed as "the finest house in town." This three-story clapboard home with wrap-around porch, shingled columns, and beaded glass windows, provides an excellent example of turn-of-the-century wealth in Sandpoint. By the 1929 stock market crash, the wealth diminished, at which point McFarland purchased the Weil place.

This entrance to town is also interspersed with commercial buildings. At 105 South 1st Avenue is the two-story Fidelity Trust Building (Figure 1:10). Built in 1909, it resembles many of the downtown commercial brick structures. Major modifications have

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rendered the original structure barely discernible. The building would thus be ineligible for listing on the National Register (Renk P.C.). The two-story brick county courthouse at 210 South 1st Avenue was built in 1907 (Figure 1:14). Remodeling and additions in the 1930s and 1970s have altered much of the original structure. So little remains of the 1907 building that the courthouse no longer qualifies for the National Register.

Across 1st Avenue from the courthouse is the Sandpoint Community Hall, a single-story, log building constructed by the Works Progress Administration (WPA) in 1936 (Figure 1:13). Classic WPA craftsmanship is apparent in the beach cobble chimney, interior finish work, and tight saddle notches. In 1944 the USO, who was utilizing the hall, added the south wing (Renk and Hudson 1991:14). The structure was listed on the National Register in 1986. It is significant as a WPA and World War II structure, as well as being an unusual example of rustic, rural architecture in an urban setting.

B14

Behind the courthouse on the west bank of Sand Creek is the present marina which was the original Sandpoint Electric Company (Figure 1:16). The 1904 frame structure was replaced with brick by 1909. The plant was powered by steam generated from wood and sawdust from the mill.

The Sunshine Goldmine jewelry store at 110 South 1st Avenue is an early frame structure which was relocated from near the library to its present location (Figure 1:11). Although the building has experienced only minor exterior additions, removal from its

historic context renders this structure ineligible for the National Register.

The earlier houses tend to congregate within the proposed North 4th Avenue Route, possibly due to the influence of Humbird Mill and its associated housing. Four mill houses, 304, 306, 402 and 404 Larch Street (Figure 1:38), remain of the 80 or so originally constructed. All but one of these 1901-1903 era houses were construction for mill managers and foremen. The structure at 304 Larch was the first house of the mill owner. Other than interior updates, the houses are essentially intact. This mill house complex is potentially eligible for the National Register. This route also includes the only National Register of Historic Places house in the project. The Amanda Nesbitt house on the corner of North 4th and Poplar, built in 1906, was added to the register in 1982 (Figure 1:35). It is a traditional two-story, clapboard, Queen Anne style with a wrap-around porch and gable-end gingerbread.

Many of the residences along North 4th Avenue, especially the east side, between Fir and Alder Streets, date from 1904-1915. Several have excellent integrity with little exterior modification. Much of the historic landscape (originally planted trees and shrubs) also remains.

Two outstanding examples of the architectural styles from this era are located on other prominent corners of 4th Avenue. On the southwest corner of North 4th and Poplar, kitty-corner from the Amanda Nesbitt house, is the George M. Walker house (Figure 1:32).

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The 1905 house is identified in the 1975 historic survey of Sandpoint as well as the Historic Sandpoint Walking Tour (Roubicek and Boswell 1975, Renk and Hudson 1991). It is a two-story brick structure constructed with bricks from Sandpoint's first brickyard. Although downtown structures are predominantly brick, few homes were constructed with brick.

The other end of the block, at 4th and Alder, houses the Wagner home, also identified in both the survey and tour (Figure 1:33). The two-story, clapboard structure with a wrap-around porch and Victorian-style gingerbread was constructed in 1906 (Roubicek 1975). The house has been adapted for use as a naturopathic clinic but the exterior retains its original character. The original carriage house remains on Alder Street but has been altered on the interior.

B15

Two other notable nonresidential historic structures are located at the intersection of North 4th and Alder (Figure 1:29, 30). On the southeast corner is the former GAR hall (ibid.) (Figure 1:29). This frame structure was built in 1910 but has had several exterior changes, including being resided at various times. Across the street at 417 North 4th is the Gothic-style First Presbyterian Church (Figure 1:30). The 1906 brick church is original but has a new addition on the south side.

On 5th and Alder, lining the railroad tracks, is Panhandle Milling (Figure 1:28). Originally known as Laswell's Feed, the grain elevator and warehouse structure is a monument to agricultural processing. It provides one of the only intact examples of industrial architecture from the initial development of Sandpoint.

The remainder of North 4th to the south has been altered, primarily by commercial development. One exception is the 1904 house which stands at 323 Oak with the yard and garage facing 4th Street. Although there have been exterior changes with the removal of the porch and the addition of composition siding, the site is basically unaltered.

The Pine and Church Street residential area dates from 1904-1930, with the bulk of the construction falling in the first half of the period. Pine Street between 4th and 5th Avenues is the least disturbed segment. Other segments of both Pine and Church Street exhibit both alternation of existing houses, as offices and businesses, or removal of original structures for commercial development.

The historic survey lists two churches in the proposed project area. The First Baptist Church in Sandpoint was located at 439 Pine at the intersection of Pine and Euclid in 1906 (Figure 1:27). It later became the IOOF Hall. The clapboard and decorative shingle exterior, complete with tower, is basically intact. The Nazarene Church was built on the northwest corner of 4th Avenue and Church Street about 1950 (Figure 1:21). The frame and concrete block architecture of this structure is nondescript. It may have undergone exterior modification for its present use as a community center. It does not appear to be eligible for the National Register (Renk P.C.).

Between 4th and 5th Avenues the Pine Street neighborhood is an excellent example of 1-, 1 1/2-, and 2-story bungalow-style houses

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(Figure 1:19). The majority were constructed between 1909-1915 (Sanborn), and have been well maintained with minor alternations. In addition, the original large black walnut and maple trees still line Pine Street in front of the homes. This block constitutes the most pristine historic neighborhood in the proposed project area.

To the west on Pine, between 5th and 6th Avenues, is a remnant of this same neighborhood. However, the houses are small, plain cottages only in fair condition. Many have been converted to shops. Much of the historic setting has also been destroyed by removal of many of the trees. The house at 534 Pine, on the corner of 6th and Pine, has been retained as a residence with few alterations (Figure 1:26).

B16

Between 1st and 4th, Pine Street is a mixture of commercial and residential structures. The commercial structures are between 1st and 3rd, peripheral to downtown. The Sandpoint walking tour notes an historic hotel at 102 South 2nd Avenue on the corner of South 2nd and Pine. The two-story brick Elliot Hotel (Figure 1:17) was initially the Lenox Hotel and Pool Hall in 1909 when it was built. Except for a few facade alterations and new businesses, the building is original. Across Pine Street from the hotel is an early cast stone garage which appears to be unaltered from its original construction and use. A couple of other early commercial buildings appear in this block but are too modified for discussion.

A conglomeration of early (1909 era) and late (1930 era) houses characterize Pine between 3rd and 4th Avenues. Houses have also

been modernized or converted to office space. They do not reflect the historic integrity of the adjacent block to the west.

Church Street was named for the First Methodist Church which was moved from the downtown area to Church and 3rd Streets between 1909 and 1915. The church is gone and a different house now occupies this site on Church Street. Commercial infiltration has replaced and altered original residences. However, the 400 and 500 blocks on the south side of Church contain several fine examples of early 1900 residential architecture.

The best maintained structure, again strategically located on a prominant corner at 4th and Church, is a large 1 1/2-story bungalow built in 1915. Although basically an intact residence, the structure now houses offices (Figure 1:20). Between 5th and 6th Avenues are three additional houses of historic merit (Figure 1:23-25). The 1915 era house at the corner of Church and 5th has been remodeled into a paint store. The houses at 512 and 515 Church are in poor condition but appear to be earlier and have had no exterior changes.

IMPACTS

This route naturally contains the greatest number of historic structures and the fewest prehistoric sites. Although no prehistoric resources have been recorded along the existing routes, chances are good that buried sites exist. Development of downtown long ago obscured any surface remnants of Indian habitation. This will have to be taken into account if the Through Town

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Alternative is chosen. Provisions for subsurface testing to locate potential sites will be necessary.

Historic structures are located throughout downtown and adjacent neighborhoods. The Sandpoint Historic District and several additional structures along North 1st Avenue would benefit from the project. Traffic should be reduced by rerouting to the one-way couplet. The properties on the south end of 1st Avenue could potentially be impacted depending on the exact alignment. Given the present proposal, the courthouse, the Johnson house, and the Sunshine Goldmine Jewelry store could be affected. According to historian Nancy Renk (P.C.), modifications to the jewelry store and courthouse render them ineligible for the National Register. The Johnson house is, however, potentially eligible. The National Register listed community hall, plus the McFarland house, and the marina (potentially eligible) would not be directly impacted. Increased traffic and noise would be indirect effects.

B17

In addition, the widening of the couplet at the intersections of Church and Pine Streets with 1st Avenue could affect historic structures. At Church Street, the Rowlands Hotel could be impacted, while the Pine Street corner could impact the original Bonner Meat Market. Both structures are potentially eligible for the National Register.

The remaining historic structures cluster around Pine Street between 4th and 5th Avenues and North 4th Avenue to Larch Street. The Pine Street neighborhood may be eligible as an historic 1909-1915 residential district. The majority of the area would not

receive direct impacts. However, those houses located at the intersections of the couplets may be affected by roadway widening. Also, the connection from Church and Pine to SH-200/US-2 could affect the historic houses between 5th and 6th Avenues on these streets, depending on the alignment.

The indirect impacts could range from increased traffic noise, fumes and dust to removal of trees and landscaping. The alteration of the historic setting will be taken into account as it affects the historic structures.

The third major concentration of historic structures occurs along North 4th Avenue from Alder to Larch Streets. This area is less historically cohesive as a result of house remodeling, removal and infiltration of commercial activity. The two intact 1900-1915 era residential strips within the North 4th Avenue neighborhood are the mill houses on Larch and the houses on the east side of 4th between Fir and Poplar. Within the latter is the only site listed on the National Register in this area, the Amanda Nesbitt house on the northeast corner of 4th and Poplar.

Both of these strips have potential historic significance in terms of National Register criteria. The mill houses are especially significant as the only remnants of the houses associated with the Humbird Mill. The houses along 4th Avenue adjacent to the Nesbitt house reflect period architecture and have retained their historic setting.

Direct impacts on Larch Street would be unavoidable with the 4th Avenue couplet. At least one or two of the mill houses (402 and

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404) would be removed. Both the Section 4f and 106 process would be applicable, since the structures are potentially eligible for the National Register. Mitigation options could include relocation of the mill houses to a compatible historic setting.

SUMMARY

The Sandpoint area has a rich and varied history, much of which is evidenced by archeological and historic sites as testimonials to the past. All of the proposed alternatives could potentially involve some of these resources.

Figure 2 illustrates these cultural resources according to Alternatives. The chart proposes approximate numbers of sites as well as some of the possible impacts of route selection. The numerical values are not weighted as to significance and should be used with caution. For example, the original town site of Sandpoint constitutes one site but represents numerous original buildings no longer standing. Thus, the Sand Creek alignment only lists 10 historic sites, while the Through Town has at least 30 since individual buildings are counted.

Generally, the Sand Creek Alternative and the Through Town Alternative contain standing structures or subsurface historic resources associated with downtown commercial and residential development. A National Register of Historic Places site exists within each of the Through Town and Sand Creek Alternatives. The Sandpoint Historic District is peripheral to the Through Town route but should not be affected. It is also conceivable

that additional significant sites could be found within these routes.

Most of the standing structures have been inventoried for the project. After selection of an alternative, each site will be evaluated for National Register significance in accordance with Section 106 and the State Historic Preservation Office. Section 4f may be applicable in some cases. This, information coupled with final design, will determine which sites will be impacted, compliance with the appropriate legislation and potential mitigation options. These processes cannot be completed until an alignment is selected and design details provided.

Based on the present preliminary alignment, at least three sites would be adversely affected in the narrow Sand Creek corridor as impacts are unavoidable. The sites include the Burlington Northern Railroad Depot, listed on the National Register; the original Sandpoint town site, potentially eligible for the National Register; and prehistoric site 10-BR-538, which is unevaluated.

The Through Town alignment would have the greatest impact on cultural sites since it follows the most developed corridor. Although right-of-way requirements are not finalized, it appears that at least ten historic structures could be adversely affected by selection of this route. Along 1st Avenue, the courthouse, the Johnson house, the community hall, the Fidelity Trust Building, the Bonner Meat Market and the Rowlands Hotel could be impacted. Two of these structures, the courthouse and the Fidelity Trust

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Building, have lost their historic integrity and are probably ineligible for the National Register.

The other structures possibly affected sit at various couplet intersections. Included are two mill houses on Larch Street, a house at 401 Church and either 431 and/or 433 Pine Street. None of these latter structures have been evaluated but several are considered potentially eligible for the National Register.

The West Alternative tends to transect the homesteading and logging country. Extensive Indian sites are also known in the area. Standing structures are more isolated (e.g., farmsteads) with surface and subsurface features potentially numerous.

B19

The West Alternative would adversely impact at least one archeological site which is potentially eligible for the National Register. The river crossing area near Dover contains several prehistoric sites, none of which have been tested. An expansive site, 10-BR-14, on the north shore would be difficult to avoid. On the south shore, two sites (10-BR-425 and 426) could also be impacted depending on the exact alignment. It is unknown if these sites are important to preserve in place or whether they should be excavated for the data they contain. Since this route has greater flexibility in final alignment than the other two, the precise adverse impacts are unknown. The historic homesteads which dot the route have not been evaluated in terms of National Register significance. Presumably, the alignment could be adjusted to avoid any significant historic sites.

In conclusion, cultural resources are a primary concern on this project. It would be impossible to select any alternative without impacting cultural sites. Since the level of previous research, preliminary survey, and engineering detail varies by alternative, precise comparisons of the cultural resources to be impacted by alternative is difficult.

The compliance process, to be undertaken in accordance with 36 CFR 800, will be extensive with any alternative. When an alternative is selected, the cultural resources will be identified and evaluated. Project design details will determine the effect the project could have on these cultural sites. Consultation with the public and appropriate agencies will determine applicable mitigation options.

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SANDPOINT HISTORIC STRUCTURES

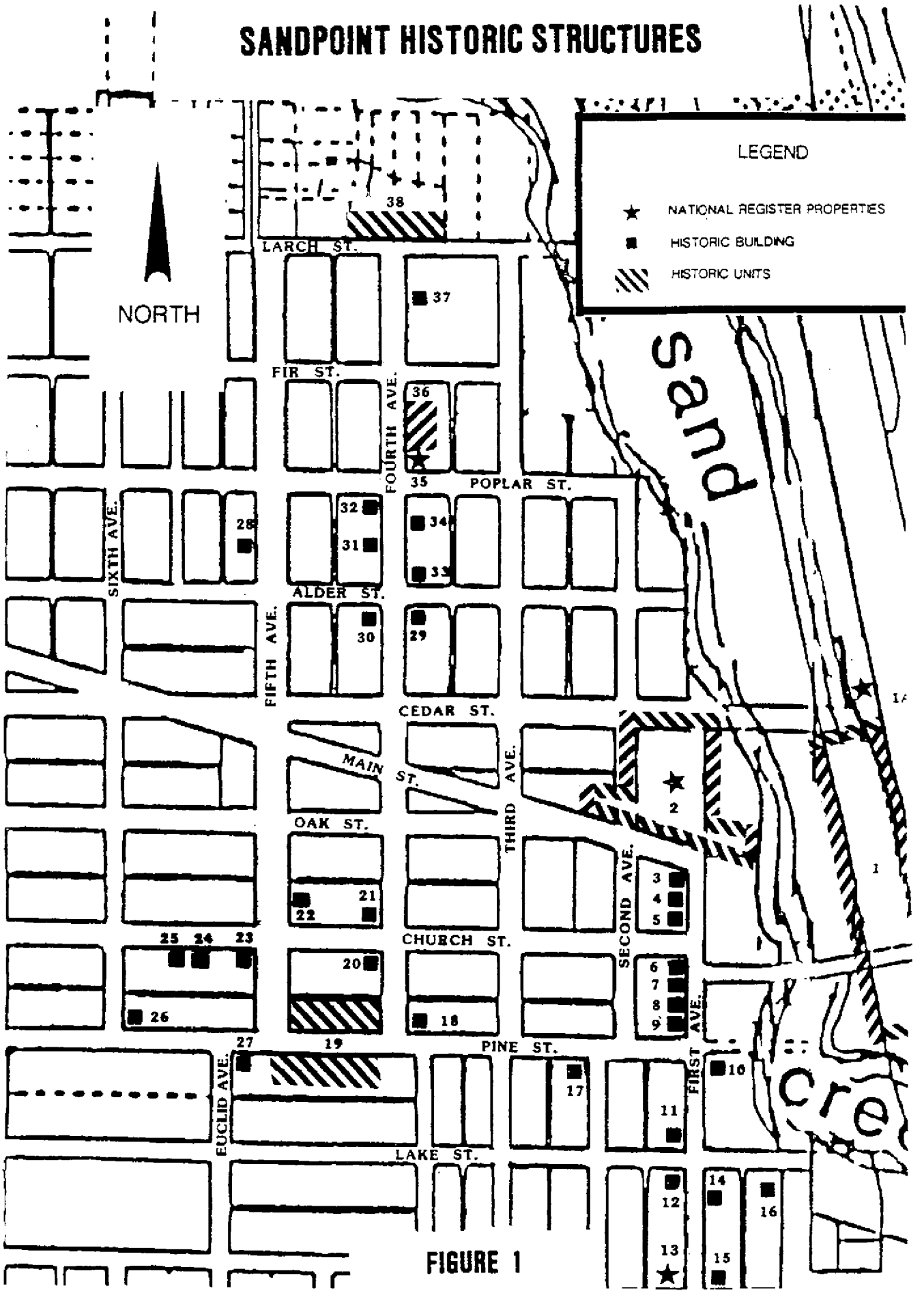

FIGURE 1

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HISTORIC STRUCTURES IN SANDPOINT

The listings include the present business name and the historic name in parentheses, if known. National Register listings are shown in italics.

1. Original Town Site of Sandpoint.

1A. *Railroad Avenue, Burlington Northern Railroad Depot.*

2. *Sandpoint Historic District.* This National Register District is composed of 14 properties. Properties include the following: Elks Lodge, 314 North 2nd Avenue; Taft's (Bigelow Building), 319 North 1st; Sandpoint Sewing Center, 202 Main Street; Sandpoint City Hall, 110 Main Street; 320 North 2nd Avenue; Farmin Building, Cedar Street and 2nd Avenue; Larson's, 327 North 1st Avenue; Charlie Browns "Kids Store," 323 North 1st Avenue; 313-317 North 1st Avenue; W. A. Bernd Building, 307-311 North 1st; Fashion Crossroads, 305 North 1st Avenue; 301 North 1st Avenue; Panida Theatre, 300 North 1st Avenue; Rexall Drug, 329 North 1st Avenue; and Knights of Pythias Hall, 2nd Avenue and Main Street.

3. 223 North 1st Avenue, Crystal Butterfly (Central Pharmacy).

4. 219 North 1st Avenue, 219 Club (Diamond Tavern).

5. 209 North 1st Avenue, Pastime Cafe (1st Larson's Store).

6. 121 North 1st Avenue, Kaniksu Realty (Rowlands Hotel).

7. 119 North 1st Avenue, Frontier Ceramics (Gus Nelson Market).

8. 109 North 1st Avenue, Mr. Sam's Beauty Salon. This property is ineligible for the National Register.

9. 101 North 1st Avenue, Panhandle Realty (Bonner Meat Company).

10. 105 South 1st Avenue, Bugatti's Tavern (Fidelity Trust Building). This property is ineligible for the National Register.

11. 110 South 1st Avenue, Sunshine Goldmine Jewelry (Moose Lodge). This property is ineligible for the National Register.

12. 201 South 1st, Resort Realty (Bertha Johnson house).

13. *204 South 1st Avenue, Community Hall.*

14. 210 South 1st Avenue, Bonner County Courthouse. This property is ineligible for the National Register.

15. 227 South 1st Avenue, McFarland house (Weil house).

Figure 1a

16. East Lake Street, Sandpoint Marina (Sandpoint Electric Company).

17. 104 South 2nd Avenue, Hotel Elliot (Lenox Hotel).

18. 318 Pine Street, Dr. Webers Clinic.

19. Pine Street neighborhood. 403, 411, 412, 414, 417, 418, 431 and 433 Pine Street.

20. 401 Church Street, Weight Control and Chiropractic Clinic.

21. 400 Church Street, Gardenia Center (Nazarine Church). This property is ineligible for the National Register.

22. 218 North 5th Avenue, North Idaho Lock and Key.

23. 501 Church Street, Columbia Paint Store.

24. 512 Church Street.

25. 515 Church Street.

26. 534 Pine Street.

27. 439 Pine Street, IOOF Hall (Baptist Church).

28. 502 Alder Street, Panhandle Milling (Laswells Milling).

29. 422 North 4th Avenue, International Woodworkers Union (G.A.R. Hall).

30. 417 North 4th Avenue, First Presbyterian Church.

31. 513 North 4th Avenue, Michael Stewart, Attorney at Law.

32. 521 North 4th Avenue, Pasta House (George Walker house).

33. 502 North 4th Avenue, Naturopathic Clinic (Wagner house).

34. 518 North 4th Avenue.

35. *602 North 4th Avenue (Amanda Nesbitt house).*

36. North 4th Avenue neighborhood. This area includes homes at 606, 610 and 614 North 4th Avenue.

37. 712 North 4th Avenue.

38. Humbird Mill Cottages, 304, 306, 402 and 404 Larch Street.

Figure 1b

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MANAGEMENT SUMMARY OF THE EFFECT DETERMINATION
SANDPOINT NORTH/SOUTH, PROJECT NO. 5116(068)

The proposed project consists of improving US-95 through the town of Sandpoint. A corridor several miles wide contains three potential alternatives which vary from 11.8 - 12.8 miles in length. The proportion of new alignment also varies by route. The Through Town Alternative involves establishing a one-way couplet system on existing downtown streets. The Sand Creek Alternative follows some existing portion of US-95 as well as new alignment along Sand Creek. The West Alternative is primarily on new alignment, including a new bridge over the Pend Oreille River, west of town.

The project area contains numerous historic and prehistoric resources. Predictably, more prehistoric sites are known within the West Alternative, with the greatest density of historic sites in Sandpoint.

The Through Town Alternative would not impact the three sites listed on the National Register of historic places located near this alignment. A total of 49 properties were evaluated for historic significance surrounding the Through Town Alternative. Of these, 32 were determined eligible for the National Register by the State Historic Preservation Office. Only two of these structures (306 and 402 Larch Street) will be impacted with the Through Town Alternative. Relocation of these structures would be a possible mitigation measure. Indirect impacts are not anticipated as this alternative follows existing city streets, resulting in minor alterations.

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The Sand Creek Alternative contains a major historic archeological site - the original Sandpoint town site. It is likely to be eligible for the National Register. Avoidance of the site is impossible so data recovery would be the proposnd mitigation. However, the National Register listed Burlington Northern Railroad Depot will be impacted if the Sand Creek Alternative is selected. Relocation or reconstruction would be potential mitigation alternatives.

The West Alternative will require additional investigation if selected. Both historic and prehistoric sites are known but significant evaluations have not been undertaken. Given the additional flexibility with this route, avoidance would be the preferred mitigation.

Since the DEIS is written at the location phase, specific design details will be forthcoming after the selection of a preferred route. An MOA discussing mitigation will be prepared at that time.

NOTE:
The West Alternative has been deleted from further consideration by the ITD Board because of excessive construction cost and environmental impacts.

PROJECT IMPACTS/CRITERIA OF EFFECT

The Sandpoint area has a rich and varied history, much of which is evidenced by archeological and historic sites as testimonials to the past. All of the proposed alternatives could potentially involve some of these resources.

The following section addresses the impacts of the proposed project on the cultural resources in the area. Each alternative is addressed separately in accordance with Section 800.9(a,b) of 36 CFR 800. Since the project is in the location stage, precise design details and exact impacts vary by alternative. The Through Town Alternative is discussed most thoroughly due to the availability of cultural data and proposed route limitations. Avoidance of the resources is most feasible with the West Alternative. Design details may be altered to mitigate some impacts on the Through Town Alternative, but certain structural impacts are unavoidable due to the early development of Sandpoint. The Sand Creek alignment follows a narrow corridor between the railroad and Sand Creek, making avoidance of resources difficult.

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CRITERIA OF EFFECT AND ADVERSE EFFECT EVALUATION FOR THE *THROUGH TOWN* ALTERNATIVE, SECTION 800.9(a,b)

This route naturally contains the greatest number of known historic structures and the fewest prehistoric sites. Although no prehistoric resources have been recorded along the existing routes, chances are good that buried sites exist. Development of downtown, long ago obscured any surface remnants of Indian habitation. This will have to be taken into account if this alternative is chosen. Provisions for subsurface testing to locate potential sites will be necessary.

The downtown area consists of an already built environment of both commercial and residential structures, many of which are historic. There are three residential segments; the 4th Avenue and the Pine Street neighborhoods, and the Humbird Mill houses on Larch Street which also fall within the Through Town corridor.

Both beneficial and adverse, plus direct and indirect, impacts are anticipated if this route is selected. The Sandpoint Historic District and several additional eligible structures along North 1st Avenue would benefit from the project. Traffic would be reduced by rerouting to the one-way couplet. None of the listed National Register sites will be adversely affected.

Although the bulk of the couplet system utilizes existing streets, certain intersections, and connecting routes will directly impact a few National Register eligible structures. The indirect impacts could range from increased traffic noise, fumes, and dust to

removal of trees and landscaping. The alternation of the historic setting will be taken into account as design details emerge.

A. Criteria of Effect

Condition Under Which an Effect Occurs

When any condition of the undertaking may cause change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural characteristics that qualify the property to meet the criteria of the National Register.

If the Through Town Alternative is selected, it will affect the qualities of two National Register-eligible properties (see Criteria of Adverse Effect).

B. Criteria of Adverse Effect

Condition Under Which an Adverse Effect Occurs

1. *Destruction or alteration of all or part of a property.*

The couplet system would necessitate the alteration of two National Register-eligible structures. The curve at the intersection of 4th Avenue and Larch Street requires removal of two (306 and 402 Larch Street) of the four National Register-eligible Humbird Mill houses. Relocation of the structures is a possible mitigation alternative.

NOTE:
The 'couplet' system would require the removal of only one National Register eligile structure (402 Larch Street).

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2. *Isolation from or alteration of surrounding environment when it contributes to the property's National Register qualifications.*

The proposed project alters the structures on Larch Street, but has little affect on the surrounding environment of the Johnson house or the Rowlands Hotel. Both experience through-town traffic along the existing city streets. Removal of the two center contiguous mill houses isolates the remaining houses, leaving one on each side of the proposed route as it transitions from 4th to 5th Avenue. This essentially destroys the only remaining intact mill houses complex in Sandpoint.

The Johnson house has stood alone as the only original residence in a sea of commercialism for some time. In fact, the Johnson house has been converted to a commercial use some time ago. Thus, the surrounding environment has already been altered. The project would not change the existing alterations. It is presently a realty office.

The Rowlands Hotel is integral to an extension of the downtown historic district. Even if the district is extended, the project would not isolate the structure from the district. Existing traffic patterns would vary only slightly with the proposed couplet.

3. *Introduction of visual, audible, or atmospheric elements that are out of character with the properties or their settings.*

Existing city streets have already introduced these elements to many of the properties. Both the 4th Avenue and Pine Street neighborhoods will retain their same basic roadway prism, with little new right-of-way. Lane width, parking, and sidewalks may be altered but will minimally change already existing conditions. By adjusting the parking, existing trees which contribute to the historic setting will be retained.

4. *Neglect of properties resulting in their deterioration or destruction.*

Not applicable. The ITD plans to purchase only the property needed to complete the project. All structures will be removed. Structures outside of the project would be retained by the current owner.

5. *Transfer, lease, or sale of an owned property without adequate conditions or restriction regarding preservation, maintenance, or use.*
Not applicable.

After applying the conditions for effect and adverse effect, it has been found that the proposed project will have an adverse effect on the historical and architectural characteristics that qualify the two Humbird Mill houses at 306 and 402 Larch Street for eligibility on the National Register of Historic Places.

B26

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CRITERIA OF EFFECT AND ADVERSE EFFECT EVALUATION FOR THE *SAND CREEK* ALTERNATIVE, SECTION 800.9(a,b)

The proposed Sand Creek alignment would be the only impact to a listed National Register site in the proposed project. The narrow corridor between the railroad and creek eliminates alignment shifting. The Burlington Northern depot, which is on the National Register, would be removed. In addition, the original town site encompasses much of the southern end of Sand Creek along the railroad track. The proposed route would disturb major subsurface historic deposits. Although no archeological testing has been done, the site is considered potentially eligible for the register. There is also potential for buried prehistoric resources.

A. Criteria of Effect

Condition Under Which an Effect Occurs

When any condition of the undertaking may cause change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural characteristics that qualify the property to meet the criteria of the National Register.

The proposed Sand Creek Alternative will affect the National Register qualities of the Burlington Northern depot as well as the historic archeological resources of the original town site of Sandpoint (see Criteria of Adverse Effect).

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B. Criteria of Adverse Effect

Condition Under Which an Adverse Effect Occurs

1. *Destruction or alteration of all or part of a property.*

Prior to constructing this alignment, the existing Burlington Northern depot would be removed. However, since it is an operating Amtrak depot, a new depot would be necessary prior to demolition of the existing structure. Subsurface excavation for structural pilings, base materials, and so on would disturb and destroy historic archeological material associated with the original Sandpoint town site.

Mitigation options such as relocation of the existing depot to a railroad setting outside the project may be feasible but are difficult at best. Preliminary analysis of moving the depot down the track suggests only the main portion of the depot can be moved as the remainder has no structural support as it was added later. In addition, transporting the structure along an existing mainline track causes major logistical problems since nearly 70 trains per day pass this point. Cost estimates reach nearly a half million dollars just to relocate the structure.

The archeological deposits representing the Sandpoint town site are expected to yield significant information about Sandpoint at the turn of the century. It has not

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been determined if the deposits are also significant for their setting and should remain *in situ*. If the site is only significant for the information it can yield, data recovery would be the appropriate mitigation which would constitute only an effect, not an adverse effect.

2. *Isolation from or alteration of surrounding environment when it contributes to the property's National Register qualifications.*

   Removal of the depot causes considerable alteration of the surrounding environment. The historic depot is the focal point of this segment of the main line of the Burlington Northern Railroad. Removal of the depot and construction of a four-lane structure between Sand Creek and the tracks alters the historical context for the Sandpoint town site as well. The depot is the only town site structure remaining, although a couple of early railroad staff houses remain outside the project. Depot removal would alter the context of the latter considerably.

3. *Introduction of visual, audible, or atmospheric elements that are out of character with the properties or their settings.*

   If the depot is removed, no standing structures remain so the introduction of new elements to the existing setting is irrelevant. The setting has already been modified for the town site since the surface features

and structures have disappeared. Channel alteration resulting from fluctuations in water level due to the dam on the Pend Oreille River, a city park and motel construction have all modified the original town site setting.

4. *Neglect of properties resulting in their deterioration or destruction.*

   Not applicable. The ITD plans to purchase only the property needed to complete the project. All structures will be removed. Structures outside of the project would be retained by the current owner.

5. *Transfer, lease, or sale of an owned property without adequate conditions or restriction regarding preservation, maintenance, or use.*

   Not applicable.

After applying the conditions for effect and adverse effect, it has been found that the proposed project will have an adverse effect on the depot's historical characteristics, including its architecture and association with the development of Sandpoint, which make it eligibile for the National Register of Historic Places. In addition, if the historic archeological resources of Sandpoint town site, 10-BR-859, are significant for *in-situ* preservation, there will be an adverse effect.

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CRITERIA OF EFFECT AND ADVERSE EFFECT EVALUATION FOR THE *WEST* ALTERNATIVE, SECTION 800.9(a,b)

The West Alternative tends to transect the homesteading and logging country. Extensive prehistoric sites are also known in this area, particularly in the riverine environment along the Pend Oreille River. Standing structures are more isolated (e.g., abandoned homesteads) with surface and subsurface features potentially numerous. Occupied farmsteads which may fall within the project area are unevaluated for National Register significance but are potentially eligible.

A. Criteria of Effect

Condition Under Which an Effect Occurs

When any condition of the undertaking may cause change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural characteristics that qualify the property to meet the criteria of the National Register.

The West Alternative would impact at least one archeological site which is potentially eligible for the National Register. The river crossing area near Dover contains several prehistoric sites, none of which have been tested or evaluated. An expansive site, 10-BR-14, on the north shore would be difficult to avoid. On the south shore, two sites (10-BR-425 and 426) could also be impacted depending on the exact alignment. It is unknown if these sites are important to preserve in place or whether they should be excavated for the data they contain. Since this route has greater flexibility in final alignment than the other two, the precise adverse impacts are unknown. Presumably, the alignment could be adjusted to avoid any significant historic sites such as the historic homesteads (see Criteria of Adverse Effect).

B. Criteria of Adverse Effect

Condition Under Which an Adverse Effect Occurs

1. *Destruction or alteration of all or part of a property.*

If this alternative is selected, further survey and potentially subsurface testing will be required to determine if other resources exist. Significance evaluations according to National Register criteria will also be made. Specific impacts to each of these sites is unknown until a precise route is selected. If this alternative is selected, additional Section 106 effect determinations will be provided.

If the sites affected are archeological in nature and are important for the information they contain, as opposed to their locational significance, data recovery will be proposed. Data recovery would constitute an effect but not an adverse effect.

NOTE:
The West Alternative has been deleted from further consideration by the ITD Board because of excessive construction cost and environmental impacts.

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Presently, it appears that most of the sites can be avoided. However, 10-BR-14 at the mouth of Hornby Creek could be impacted depending on the design of the proposed structure crossing the river.

Kenneth W. Swanson — 7/27/92

Idaho State Historic Preservation Officer — Date

[signature] — 7-21-92

Idaho Transportation Department — Date

B30

REFERENCES CITED

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1991 Historic Sandpoint: a Walking Tour. Idaho Humanities Council Centennial Publication.

Roubicek, Dennis and S. Boswell
1975 An inventory of historic structures, Sandpoint. Unpublished manuscript on file, Bonner County Historical Society, Sandpoint.

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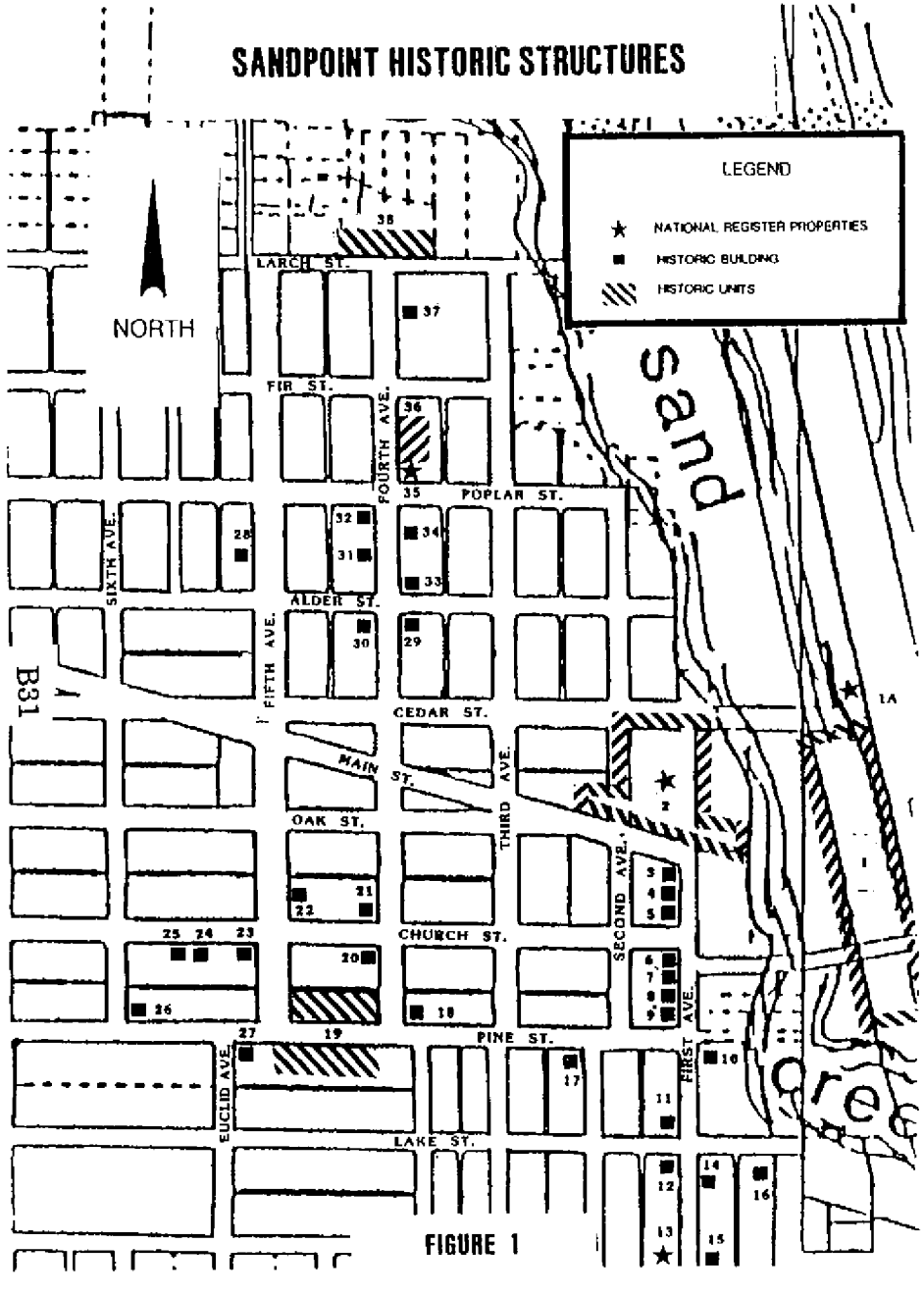

FIGURE 1

HISTORIC STRUCTURES IN SANDPOINT

The listings include the present business name and the historic name in parentheses, if known. National Register listings are shown in italics. Structures which have been determined ineligible are shown with an asterisk (*).

1. Original Town Site of Sandpoint.

1A. *Railroad Avenue, Burlington Northern Railroad Depot.*

2. *Sandpoint Historic District.* This National Register District is composed of 14 properties. Properties include the following: Elks Lodge, 314 North 2nd Avenue; Taft's (Bigelow Building), 319 North 1st; Sandpoint Sewing Center, 202 Main Street; Sandpoint City Hall, 110 Main Street; 320 North 2nd Avenue; Farmin Building, Cedar Street and 2nd Avenue; Larson's, 327 North 1st Avenue; Charlie Browns "Kids Store," 323 North 1st Avenue; 313-317 North 1st Avenue; W. A. Bernd Building, 307-311 North 1st; Fashion Crossroads, 305 North 1st Avenue; 301 North 1st Avenue; Panida Theatre, 300 North 1st Avenue; Rexall Drug, 329 North 1st Avenue; and Knights of Pythias Hall, 2nd Avenue and Main Street.

3. 223 North 1st Avenue, Crystal Butterfly (Central Pharmacy).

*4. 219 North 1st Avenue (219 Club).

5. 209 North 1st Avenue, Pastime Cafe (1st Larson's Store).

6. 121 North 1st Avenue, Kaniksu Realty (Rowlands Hotel).

7. 119 North 1st Avenue, Frontier Ceramics (Gus Nelson Market).

*8. 109 North 1st Avenue, Mr. Sam's Beauty Salon.

9. 101 North 1st Avenue, Panhandle Realty (Bonner Meat Company).

*10. 105 South 1st Avenue, Bugatti's Tavern (Fidelity Trust Building).

*11. 110 South 1st Avenue, Sunshine Goldmine Jewelry (Moose Lodge).

12. 201 South 1st, Coldwell Banker Realty (Bertha Johnson house).

13. *204 South 1st Avenue, Community Hall.*

*14. 210 South 1st Avenue, Bonner County Courthouse.

15. 227 South 1st Avenue, McFarland house (Weil house).

Figure 12a

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16. East Lake Street, Sandpoint Marina (Sandpoint Electric Company).

17. 104 South 2nd Avenue, Hotel Elliot (Lenox Hotel).

*18. 318 Pine Street, Dr. Webers Clinic.

19. Pine Street neighborhood. 403, 411, 412, 414, 417, 418, 431 and 433 Pine Street.

20. 401 Church Street, Weight Control and Chiropractic Clinic.

*21. 400 Church Street, Gardenia Center (Nazarine Church).

*22. 218 North 5th Avenue, North Idaho Lock and Key.

*23. 501 Church Street, Columbia Paint Store.

*24. 512 Church Street.

*25. 515 Church Street.

*26. 534 Pine Street.

27. 439 Pine Street, IOOF Hall (Baptist Church).

28. 502 Alder Street, Panhandle Milling (Laswells Milling).

*29. 422 North 4th Avenue, International Woodworkers Union (G.A.R. Hall).

30. 417 North 4th Avenue, First Presbyterian Church.

31. 513 North 4th Avenue, Michael Stewart Office.

32. 521 North 4th Avenue, Pasta House (George Walker house).

33. 502 North 4th Avenue, Naturopathic Clinic (Wagner house).

34. 518 North 4th Avenue.

35. *602 North 4th Avenue (Amanda Nesbitt house).*

36. North 4th Avenue neighborhood. This area includes homes at 606, 610 and 614 North 4th Avenue.

37. 712 North 4th Avenue.

38. Humbird Mill Cottages, 304, 306, 402 and 404 Larch Street.

Figure 32a

ITDAA029645

APPENDIX C

- REPORT of HAZARDOUS MATERIAL/WASTE FIELD ASSESSMENT
- RISK ASSOC. with TRANSPORTATION of HAZARDOUS MATERIALS

ITD-500 2-88

STATE OF IDAHO
TRANSPORTATION DEPARTMENT

Intra-Department
Correspondence

DATE: MARCH 3, 1992

PROJECT No.: F-5116(068)
KEY No.: 1729
SANDPOINT NORTH & SOUTH

TO: MARV HOYT
DISTRICT 6 ENVIRONMENTAL PLANNER

FROM: FRED KOETHKE
HAZARDOUS WASTE PROGRAM ANALYST

SUBJECT: SANDPOINT ALTERNATES, POTENTIAL HAZARDOUS MATERIAL/ WASTE SITES

If previously identified hazardous material/waste sites cannot be avoided by route alterations, the following investigation/ remediation process will be followed.

Each site will have a Preliminary Site Investigation (PSI) performed to verify that there is a contamination problem. The PSI will also provide a rough estimate of the extent of contamination and propose methods and costs for remediation. If the PSI verifies contamination, a determination must be made to continue with this routing, or to change it (site avoidance). If the decision is made to use that routing, further investigation will probably be required in the form of a Detailed Site Investigation (DSI).

From the PSI, a methodology for a DSI will be determined. This investigation (DSI) will result in detailed information about the areal extent of contamination and the preferred remediation technology for clean up of soil, water, or other medium. It will also result in a time frame for clean up (months to years) and a more accurate costing over that time frame.

The following listing gives the number of sites, of a particular type, by alternate route.

Westt Alternate (including US-2 Dover to Sandpoint)	Number of Sites
Potential UST Sites	6
Potential Asbestos Sites	1
Potential Contaminated Soil/Water Sites (Sources such as auto repair shops, machine shops ,etc.)	6
Potential PCB Sites	1
Potential Landfill Sites	0

CONTINUED

Existing Modified Alternate (US-95 Milepost 467 thru town to M.P. 478.422)

Potential UST Sites (15 in town, 5 out of town)	20
Potential Asbestos Sites	2
Potential Contaminated Soil/Water Sites	3
Potential PCB Sites	1
Potential Landfill Sites	0

Sand Creek Alternate (US-95 Milepost 467 to 473.6 and 475.73 to 478.422)

Potential UST Sites	5
Potential Asbestos Sites	1
Potential Contaminated Soil/Water Sites	3
Potential PCB Sites	1
Potential Landfill Sites	1

From prior experience, the costs of remediating a particular type of site are listed below.

Probable Cost/Site	Possible Cost Range/Site
UST Removal/Remediation $10,000 to 30,000	$10,000 to 80,000
UST/Ground Water Involvement $100,000	$100,000 to 500,000/year
Asbestos Removal/Remediation $10,000 to 50,000	$10,000 to 100,000
Contaminated Soil Sites $10,000 to 50,000	$10,000 to 100,000
PCB Contamination $5,000 to 20,000	$5,000 to 50,000

Attached are the narrative descriptions of site locations for each alternate.

FK:dd^endpointn&s
Attachment

cc: CHO
D&E
DE-1
DP-1

ITDAA029647

ITD-500 2-88

STATE OF IDAHO
TRANSPORTATION DEPARTMENT

Intra-Department
Correspondence

DATE: AUGUST 8, 1991

PROJECT No.: F-5116(68)
KEY No.: 1729
SANDPOINT ALTERNATIVE

TO: DISTRICT 1 ENGINEER, RIGHT OF WAY - 1, AND PLANNER - 1

FROM: FRED KOETHKE, HAZARDOUS MATERIALS PROGRAM ANALYST
ENVIRONMENTAL UNIT, ROADWAY DESIGN SECTION

SUBJECT: REPORT OF HAZARDOUS MATERIAL/WASTE FIELD ASSESSMENT

Attached are comments from field observations made during the period of July 22 - 24, 1991, while walking the three alternatives for US-95 routing in the Sandpoint area. My main objective was to evaluate these routes for potential hazardous materials/waste sites so they could be included in the Draft Environmental Impact Statement (DEIS). Wetlands are mentioned in several locations as a preliminary evaluation. ITD's Wildlife and Wetlands scientist, Rob Tiedemann, will be evaluating wetlands in more detail.

Based on the field observations, it is suggested that the following language be included in the Draft Environmental Impact Statement (DEIS).

C2 Potential locations of hazardous material/waste problems for each alternative are as follows:

WEST ALTERNATE:

Power substation - Section 30, T.57N.R.2W., B.M., southeast corner of the southwest quadrant.

EXISTING MODIFIED ALTERNATE:

Potential leaking, underground fuel storage sites:

- US 95 (south entrance) next to bank
- Northwest corner of Lake Street and 1st Avenue
- 116 North 1st Avenue
- South corner of Pine Street and 1st Avenue
- South corner of Bridge Street and 1st Avenue
- 120 Cedar Street
- 220 Cedar Street
- 300 Cedar Street
- Southeast corner of Cedar Street and 5th Avenue
- Northeast corner of Cedar Street and 5th Avenue

CONTINUED

- Northwest corner of 5th Avenue and Pine Street
- Northeast corner of 5th Avenue and Alder
- Southeast corner of 5th Avenue and Poplar
- North of Larch Street on US 95, east side (Gas & Go)
- North of Larch Street on US 95, west side (motel parking lot)

Potential asbestos remediation in buildings:

- First Interstate Bank
- Bonner County Courthouse

SAND CREEK ALTERNATE:

One potential dump site was discovered 100 ft west of centerline between stations 341 and 343.

Depending on the selected alternative, project cost could increase and project delays could occur. The Existing Modified Alternate presents the most potential for project cost increases due to known contaminated sites and potential contaminated sites. The least potential for encountering hazardous material/waste is the West Alternate.

POTENTIAL IMPACTS:

Potential Impacts	Remediation Project Cost*	Project Delay*
West Alternate	Low	Low
Existing Modified	High	Medium
Sand Creek	Low	Low

* When comparing the three alternatives.

A risk analysis for transportation of hazardous materials/waste through the three alternatives is being done and will be forthcoming.

FK:lsc
Attachments

cc: CHO
RD
CF

ITDAA029648

ALTERNATE ONE
WEST ALTERNATE-DOVER NORTH (7-22-91, MAP)

The west alternate from the proposed interchange south of Algoma to the Pend Oreille River and from the Pend Oreille River at Dover north then northeast to 95 north to Colburn was walked in an effort to explore and discover potential hazardous waste sites or other related problems with this alternate.

Starting at the interchange in section 20, T.56N. R.2W., B.M., and moving northeasterly into section 20 and then northerly through the western quadrants of section 21 and 16 it became apparent that the alternate would be splitting cultivated plots. If the alignment was moved to the west along the western border of sections 21 and 16, where the current dirt roadway is, the splitting of cultivated plots could be avoided. Moving through the southwest corner of section 9, and then proceeding in a northwest direction through section 8, and then through the southwest quadrant of section 5, wetlands are encountered in the northwest quadrant of section 8, and the southwest quadrant of section 5. These wetlands could be avoided if the alignment were moved 150-200 feet to the east in section 8 and 5. Moving through section 6 and proceeding north through section 31, T.57N. R.2W., B.M. there are wetlands where the route intersects the river.

Moving north across the river there are wetlands from the rivers edge to the boundary of section 31. Moving northerly into section 30 there is a transformer substation at the southeast corner of the southwest quadrant. Wetland areas start again about 1/2 mile from the boundary of section 30 and extend along the alternate route into section 19. North into section 19 and

C3

northeast along the alignment there are some wetland areas as you go through the pass and then turn northeasterly into the south east corner of the south east quadrant of section 18. Following the route through sections 17, 8, and 9 the route involves quite a few residences and summer homes. Continuing through section 4 the alignment encounters wetlands in the southwest and northeast quadrants. This is the end of this alignment.

No potential hazardous waste problems were encountered on this route. The power substation is a slight concern due to PCB's but this station was supposed to have been cleaned up and currently there is spill response supplies housed in a building within the fenced area. It should not be a problem. The new routing of the alternate, north of the river, avoids an area which has been used as a dump site. The previous alignment did not avoid this dump site.

EXISTING MODIFIED ALTERNATE THROUGH TOWN

Starting at the north end of the bridge (US-95) over Pend Orielle Lake at the south east end of Sandpoint the alignment makes a shallow S turn onto 1st Avenue. The last half of this S turn would involve an old service station site (tank status unknown), the removal of a Bank and the County Courthouse. The buildings (Bank and County Courthouse) may contain asbestos materials which will require removal prior to demolition. The service station may require soil remediation and possible tank removal if the property is purchased. Locations of concern on 1st Avenue are the service stations which were once located on the corners of 1st and Lake Street, and 1st and Pine Street, the latter is a known contaminated UST site.

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There is also an old service station on the corner of 1st and Bridge Street. Status of the UST's at this location are unknown.

The west route along Church Street and the east route on Pine Street appear to be clear of possible hazardous waste/material problems.

The northerly route on 4th Avenue does not encounter any obvious problems until it reaches the present Gas and Go located north of Larch on the east side of US-95. This site is currently under long term (5-year) remediation by DEQ, and the extent of contamination involves both soil and water. Raw product (Diesel/Gas) is currently flowing out the west bank of Sand Creek into the creek east of the station.

DEQ (List Prochnow, Steve Tanner) were contacted on the project on July 24, 1991. Excavation of the area where the current alignment is shown on the map is not desirable to DEQ due to a feared increase of flow out of the soil which would increase contamination of soil and water. A retaining wall and fill was suggested by DEQ if the roadway is to be built as is shown on the plans. Another possible option is to put in a piered highway over this area to avoid excavation/disturbance. If ITD decides to proceed in disturbing the soil, or moving extraction/monitoring wells which are already in place, it would create additional project costs. DEQ (Rob Howarth) estimates the remediation costs at this site to go as high as $500,000 over a five year period. ITD would end up with additional costs in the $100,000 to $150,000 range to put the roadway on the ground as planned. This additional cost would be due to removal and remediation of contaminated soil, and relocation of sampling/extraction wells.

Heading south on 5th Avenue from Larch there are old service stations at the corners of 5th and Poplar Street, southeast side, 5th and Alder Street, northeast and southeast side, 5th and Cedar Street, northeast and southeast side. These locations have not been evaluated for contaminated soil or leaking tanks. But, considering the age of some of them, 25 years plus, it is reasonable to assure that one or more of the locations are contaminated.

US-95 north from Sandpoint and the interchange with state highway 200--no potential hazardous waste/material problems were identified.

SAND CREEK ALTERNATE

The only potential hazardous waste/material problem identified was what appears to be a burial site (dump) located between station 341 and 343, 100 feet to the west of centerline.

This routing does have wetland impacts which will be evaluated in detail by Rob Tiedemann.

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ITDAA029650

HAZARDOUS MATERIALS/WASTE ASSESSMENT
US-2 FROM SANDPOINT SUBSTATION EAST THROUGH DOVER TO PINE STREET IN SANDPOINT

Starting at the Sandpoint Substation on US-2 and heading east toward Sandpoint, the first location of concern is the Dover Post Office. This is an old gas station and the underground storage tanks (UST) and piping systems are still in place. There is potential for contaminated soil and water in this area. Continuing eastward, there is an Auto Body Shop on the south side of the highway at approximately milepost location 25.0. There is the potential for paint/thinner waste contamination of the soil at this location. There are no other locations eastward until entering Sandpoint. At the corner of Division Street and US-2 on the northeast side, there is an automotive repair shop (Euroasian Motors) and a metal fabrication and welding shop (Mountain Metal Works). There is potential here for oil, solvent and "base" style cleaner contamination. Further east, about 500' from Division Street, and on the northside of US-2, is North Idaho Transmission. The potential here is for solvent and oil contamination of soil. Going east again, there is an active gas station (regular, unleaded, and no diesel) at the corner of US-2 (south side) and Michigan Street. There are UST's at this location with the potential for leakage. Approximately one block further up US-2, on the north side is an auto body repair shop (Quality Auto Body, Ella Avenue) with the potential for paint and thinner contamination of soil. Proceeding east to the corner of US-2/Superior/Florence there is an old gas station on the south east corner of this intersection. There is potential for UST's and piping systems at this location. In the next block eastward, on the south side, there are three sites. The first is Pend Orielle Auto Supply (paint supply and auto parts store), the second is the Chevron Gas Station, and the third is an aboveground fuel distribution station. The potential problems associated with these sites are, paint related waste materials and solvent, UST's and associated piping/pump systems, and fuel contaminated soils respectively. The last site going east on US-2 is the old gas station at Pine Street and St. Clair, northwest corner, which is now a muffler shop (Melody Muffler).

ON-SITE ASSESSMENT FIELD OBSERVATIONS FOR HAZARDOUS MATERIAL/WASTE

An on-site initial assessment of US-95 from milepost 467.0 to milepost 473.9 and then from US-95/State 200 intersection at milepost 475.73 to milepost 478.422.

Starting at milepost 467.0 and heading north on US-95 the first location of concern was at milepost 467.65 (approx.) on the west side, Clydes Truck Repair. This site is heavily contaminated with oil around the building and parking lot area. This site should be avoided as it is suspect for oil, solvent, and diesel contamination. Continuing north, at milepost 468.1 (approx.) on the east side there is an operating gas station with UST's. Potential for contaminated soil/water. From this location going north to milepost 468.8 (the Sagle turn off) there are three potential problem sites. The first is on the right side, south of the intersection (approximately 250'), it is an old gas station site. The buildings have been removed, but the pump island is still there and is being used as a base for a power/light pole. Potential for UST's and contaminated soil/water is high. The next site is the Sagle Store and gas station east of US-95 and on the north side of Sagle Road. Potential for UST's and contaminated soil. The third site is the current Exxon Gas Station on the west side of US-95, northwest of the Sagle/US-95 intersection. Potential for UST's and contaminated soil exists but being a newer facility probability of contamination is lower. Continuing north there is an Auto Repair/Painting facility (Pend Orielle Auto Repair) at milepost 469.2 westside. There is a potential at this site for oil, solvent and paint waste contamination of the soil. At milepost 470.8 there is an unnamed auto paint shop on the eastside. Potential exists for solvent/paint waste contamination. There are no other obvious sites of concern from here (milepost 470.8) to Sandpoint at milepost 473.9.

From the US-95/State 200 intersection north there is only one site of real concern, the Conoco Truck Stop. It is located at milepost 477.0, westside, and has the potential for fuel contaminated soil. The parking area surfaces have been oiled. There is a power substation at milepost 478.422 eastside but it should not present a problem as they are monitored by the power company for spillage and cleanup.

ITDAA029651

RISK ASSCOIATED WITH THE TRANSPORTATION OF HAZARDOUS MATERIALS/WASTE FOR THE SANDPOINT ALTERNATES

The risk of an accident occuring involving hazardous material/waste can be related to the probability of an accident occuring involving a vehicle capable of carrying those materials or waste.

A study of ITD's historical accident database for a five year period was accomplished in an effort to characterize the accident history within the project boundaries. This data is summarized in the following sections for each alternate.

A national database,the U.S. DOT's, Hazardous Material Information System, was used to determine Idaho's hazardous material/waste release accident rate and annual average number of release accidents. The following is a summary of pertinent general information from this database.

NATIONAL DATABASE INFORMATION

The average number of accidents per year in Idaho is 13, and the computed truck accident rate, where a release into the environment of hazardous material/waste occurs, is 0.024/Million Vehicle Miles(MVM).

The average cost of an accident is $ 6,350.00.

The largest release of a hazardous material from a highway accident was 3800 gallons of fuel(gasoline and fuel oil).

The largest release of a hazardous waste from a highway accident was 100 lbs.

Reviewing all the release accidents in the database for a three year period indicates the top three materials released were.

1. Fuels (20,000 gallons)
2. Fertilizers (25,000 lbs.)
3. Corrosives (400 gallons)

There were no fatalities listed in the database and only one minor injury.

BOISE STATE UNIVERSITY INFORMATION

A third document generated by Boise State University, "Hazardous Material Transportation Monitoring and Capability Study for the Purpose of Assessing Risk to the Public"(1988) was used as an information source for the types of material carried over Idaho's highways and the percentage of the total truck fleet actually hauling hazardous materials/waste. The following is a summary of the data from this document.

IDAHO DATABASE INFORMATION

The percentage of hazardous material/waste shipments in Idaho is 3.5% of all trucks on the highway.

The leading quantity (number of shipments) and frequency of hazardous materials is fuel
(gasoline, diesel, and heating oil).

The leading quantity (number of shipments) of hazardous waste is contaminated soil.

GENERAL ACCIDENT INFORMATION

The present routing of US2, US95 to, from , and through Sandpoint yielded 550 accidents (1986 thru 1990) within the project boundaries. Of these, 93 (17%) involved trucks, some(3-4%) of which carried hazardous materials/waste. No releases of hazardous materials/waste were reported from any accident. From the accidents involving trucks 44% were the fault of the truck driver. There were 5 fatalities for this five year period, none involving trucks, and all were on US95. Residency data indicates a high percentage of local resident involvement with 68% of all accidents involving county residents, 30% state residents, and 2% are out of state residents. Accident rates are higher within the city of Sandpoint(up to 8.2/MVM) than the rates on US2(3.1/MVM) and US95(1.8/MVM) outside the city.

EXISTING MODIFIED ALTERNATE

The completion of the Existing Modified Alternate should result in accident rates of 1.17/MVM for US95, 2.8/MVM for US2, and 4.5/MVM in the downtown areas of US2/95. While this alternate will not reduce the traffic volume in Sandpoint it should reduce the numbers of accidents through routing changes, one way grids, and improved intersections with signalization. Figure 1 shows the comparison of all vehicle

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accidents with truck accidents for the routes used for this alternate. Figure 2 shows the comparison of accident rates before and after the improvements.

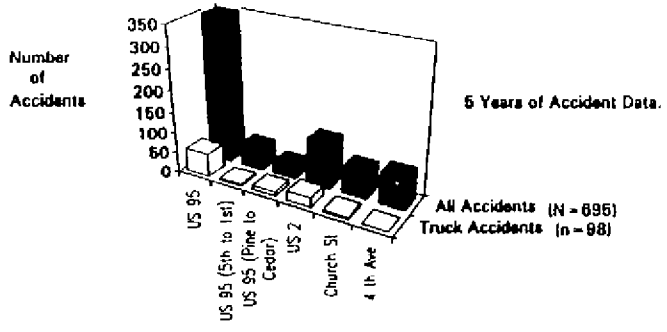

Figure 1. Comparison of all accidents to truck accidents.

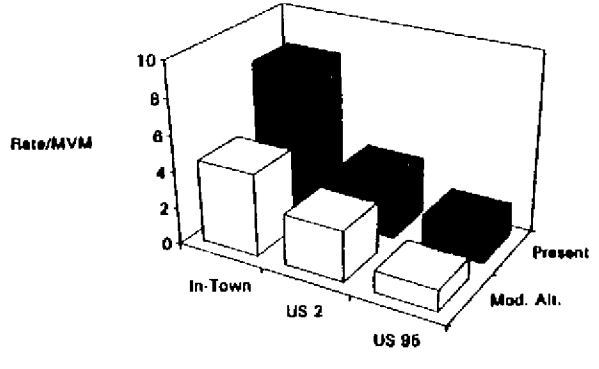

Figure 2. Comparison of accident rates Existing Modified Alternate.

Intersection and intersection related accidents accounted for 231 of the 550 accident total. Therefore, 45% of the accidents on the routes through Sandpoint were related to intersections. An analysis of the reduction in numbers of accidents due to roadway improvements yields a 38% reduction in intersection related accidents. This analysis was accomplished using ITD's Safety Evaluation reduction factors for the various improvements at each intersection. This is an emperical system based on historical accident reduction after highway improvement projects. The intersection improvements should result in a 17% reduction in the overall number of accidents in the project boundaries.

While this alternate does not remove the through(non-stop) traffic, including 3-4% hazardous material/waste carriers, it does yield an accident reduction benefit of approximately 3¢ per year. At present the risk of having a hazardous material/waste release due to an accident is once every 58 years for US2, once every 11 years for US95, and once every 200 years for US2/95 in-town. After the improvements are made the risk on US95 will be one in 14 years, in the in-town area it will be one every 260 years, and US2 will not change. This is graphically illustrated in Figure 3.

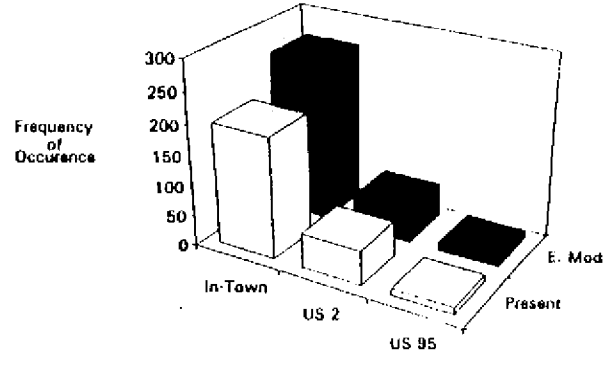

Figure 3. Comparison of release accident probability.

WEST ALTERNATE

The West Alternate as proposed should have an accident rate of 1.04. This alternate would reduce the traffic volume through Sandpoint by approximately 15% due to the elimination of the through(non-stop) traffic from within town. On the surface an equal reduction of accidents should occur but it will not as 68% of the accidents involve local

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residents from local traffic. A calculated accident reduction of 5% is more realistic. The major thing this alternate would do is to take the through(non-stop) traffic out of the city including a portion of the 3-4% hazardous material/waste carriers. It would not however eliminate the hazardous material/waste carriers which service Sandpoint with fuel and hazardous materials for its daily operations nor would it eliminate those carriers removing hazardous waste from Sandpoint. The improvements to US2 from the West Alternate route to Sandpoint should increase the traffic volume on US2 by 5.25 times. The US2 accident rate should be lowered to 2.73/MVM from the current rate of 3.1/MVM. Even with these improvements calculations indicate an increase of accidents by 28 per year. This increase essentially offsets the reduction of accidents from the removal of through(non-stop) traffic. Therefore the probability of a hazardous material/waste release accident remains the same within the city at one every 200 years, US2 would increase to one every 50 years, and US95 would be one every 16 years (see Figure 4.).

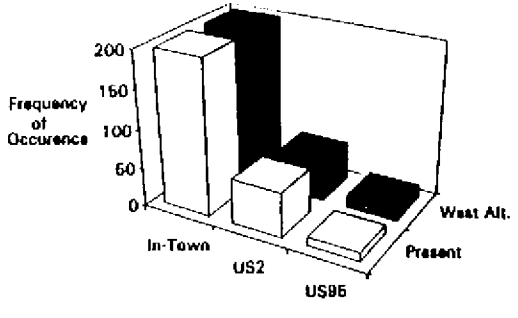

Figure 4. Comparison of release accident probability.

SAND CREEK ALTERNATE

The Sand Creek Alternate should result in an accident rate of 0.74/MVM for that route. This alternate would reduce the traffic volume through town by approximately 14-15% from the removal of th US95 through(non-stop) traffic including the 3-4% hazardous material/waste carriers. The reduction in the number of accidents in town will likely fall by 5% to 7%. The accidents on US95(Sand Creek) within the project boundaries should be reduced by 37 per year. The probability of a hazardous material/waste release accident on US95 should be one every 21 years, on US2 one every 58 years, and one every 200 years in-town (see Figure 5.).

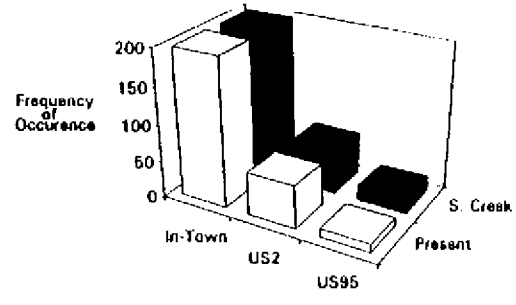

Figure 5. Comparison of release accident probability.

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1987 Safety Evaluation Instruction Manual, Idaho Transportation Dept., Boise, Idaho.

Rhyne, William R.
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ITDAA029655

APPENDIX D

RELOCATION STUDY
and
RIGHT-OF-WAY INFORMATION

RIGHT OF WAY INFORMATION

NH-IR-F-CM-5116(068) Key No. 1729
By David A. Asper District Right of Way Supervisor

I Preferred Alternate M.P. 466.8 to M.P. 478.6

This alternate will impact a total of 12 residences and 20 businesses as shown below:

A. Sagle to Long bridge Segment

1- Business estimated value $200,000
4- Residences estimated value $300,000
One business and four residences will be impacted to the point that relocation is recommended.

Sub Total $500,000

B. North of the Long bridge to Jct. US-95 and SH-200 Segment

1 Business estimated value $695,000
20 acres of land estimated value $300,000
One business will be impacted to the point that relocation is recommended.

Sub Total $995,000

C. Jct. US-95 and SH-200 to North of Kootenai Cut-off Segment

18 Businesses estimated value $2,846,000
8 Residences estimated value $ 1,120,000
Three businesses and two residences will be impacted to the point that relocation is recommended.

Sub Total $3,966,000

Total for Preferred Alternate:
Estimated cost for Right of Way including land, improvements, damages to the remainders, and costs to relocate .....Total $5,461,000

This Alternate has a minimum of minority involvement however several single women owners are identified.

ITDAA029657

II. Through Town Couplet Alternate M.P. 466.8 to M.P. 478.6

This alternate will impact 20 residences, 40 businesses, 1 public building and 1 church as shown below.

A. Sagle to Long bridge Segment

1 business estimated value $200,000
4 Residences estimated value $300,000
One business and four residences will be impacted to the point that relocation is recommended

Sub Total $500,000

B. North of Long Bridge through town to Jct. US-95 & SH-200 Segment

21 businesses estimated value $1,845,000
8 Residences estimated value $ 500,000
1 County Court House estimated value $5,500,000
1 Church estimated value $ 120,000
Two businesses four residences and 1 public building will be impacted to the point that relocation is recommended.

Sub Total $7,965,000

C. Jct. US-95 & SH200 to North of Kootenai Cut-Off Segment

18 Businesses estimated value $2,846,000
8 Residences estimated value $1,120,000
Three businesses and two residences will be impacted to the point that relocation is recommended.

Sub Total $3,966,000

Total for Through Town Couplet:
Estimated cost for Right of way including land, improvements, damages to the remainders, and cost to relocate..... Total $12,431,000

This Alternate has minimum minority involvement however several single women owners are identified.

Information complied April 30, 1999

ITDAA029658

APPENDIX E

- LAKE PEND OREILLE NOTES
- WETLAND NOTES
- WETLAND DELINEATION
- WETLAND FUNCTIONS & VALUES

LAKE PEND OREILLE NOTES

Water temperatures in the lake range from 0.9°C to 22.5°C, depending on time of year and depth of reading. Not suprisingly, the warmest temperatures occur at shallower stations in August, while the coolest temperatures occur between January and March at all stations.

Secchi-disk readings indicate that suspended sediment from the Clark Fork River and wind-induced resuspension of sediment from the lake bottom and littoral areas in the shallow northern part of the lake have the greatest adverse affect on water clarity. The Clark Fork River is the source for about 84% of the annual amount of water discharged from the lake with a corresponding influence on the distribution of suspended sediment throughout the lake. The shallowest secchi-disk readings for all stations have been taken during the spring snowmelt in April, May and June. The data collected in the most recent studies appears to be consistent with data collected by earlier researchers.

The most recent study indicates that mean specific conductance values during 1989 and 1990 declined from the southern to the northern parts of the lake. The overall range in specific conductance was 151 to 197 microsiemens per centimeter (us/cm) during 1989, and 154 to 204 us/cm during 1990. The range in pH during 1989 and 1990 was 7.3 to 8.6 with the higher readings normally taken from the euphotic zone (upper layers of the lake) and were probably attributable to photosynthetic uptake of carbon dioxide. Alkalinity as calcium carbonate ranged lakewide from 65 to 83 milligrams per liter (mg/L) in 1989 and 1990. Typically alkalinity was lowest in the spring during snowmelt. This data is also consistent with earlier studies.

Percent saturation of dissolved-oxygen during 1989 and 1990 ranged from 80% to 137% with all stations showing supersaturation (over 100%) during part of each year. Supersaturation was attributed to reaeration from the atmosphere and/or photosynthesis exceeding oxygen demands. Minimum saturation readings of about 80% were attributed to decomposition of organic matter and respiration.

Mean nutrient concentrations in Lake Pend Oreille in 1989 were greater than in 1990, with a noted south to north increase in total phosphorus attributable in part to the Clark Fork River's input of suspended solids. In contrast, total nitrogen concentrations show little spatial variation. Data available from the mid-1970's indicate mean concentrations for total phosphorus, dissolved orthophosphorus and

total organic nitrogen were higher, and mean dissolved inorganic nitrogen concentrations were lower than in the 1989/1990 study.

WETLAND MITIGATION PLAN

To accommodate this project's wetland mitigation needs, the Idaho Transportation Department consulted with the regional Corps of Engineers regulatory office and the Sandpoint area USDA Natural Resources Conservation Service. The availability of a good mitigation site was very limited within the actual project corridor and their assistance was invaluable in locating an effective and acceptable alternate mitigation area.

The consensus recommendation was an exceptional wetland mitigation opportunity on a portion of Sandpoint's High School property, not within the project boundaries but nearby on the western side of Sandpoint. Following additional coordination with the COE and NRCS, along with the Bonner County School District, a $130,000.00 construction contract, paid for with ITD funds, was awarded in the fall of 1998 to clean-up and restore sections of degraded wetland on the property, and to further excavate and shape adjoining segments of additional land, for an overall total of 2.7 acres of wetland mitigation.

During construction, careful attention was given to the proper depths of excavtion needed for water retention in that area, to providing reasonable four-to-one side slopes for effective revegetation, and to the incorporation of some deeper pool sections and irregular bottoms for habitat diversity. In order to enable successful management of the needed wetland hydrology, particularly during the dry summer months, the entire mitigation site was divided into three sections separated by two levees equipped with water level control devices. These are now in place and have already demonstrated their effectiveness.

A key component of the negotiations and agreement with the school district included provisions for wetland seed and plant material to be added to the site following earthwork activities. Instead of the hiring of a landscape subcontractor, however, it is the unique feature of this mitigation plan that all seeding and planting will be done by Sandpoint High School students as activities incorporated into their science classes. This is being coordinated with the high school science staff and ITD District One environmental personnel. With the exception of the contractor hydroseeding/mulching of the side slopes above the wetland in the fall of 1998, and some early seeding and slope repair work already done by the students, most of the wetland seedings/plantings will be done in 1999. A more than ordinary variety of plant material will be used on this mitigation site.

A point to note in the unusual but special arrangements for wetland seedings and plantings to be done by the local area's high school science class students is that the site will receive special attention over the years as an ongoing "outdoor wetland laboratory", be integrated into science classes as such, and provide an outstanding, positive wetland awareness and educational opportunity for today's youth.

This wetland mitigation site is highly regarded by the local natural resource agencies and its successful completion, along with its "educational" role, will provide a significant and lasting benefit from the US-95 Sandpoint North and South highway project.

WETLAND MITIGATION PLAN
SANDPOINT HIGH SCHOOL WETLAND SITE

This project will impact 1.07 acres of *Palustrine, Emergent, Persistent, Seasonally Flooded* wetlands dominated by reed canary grass, 0.70 acres of *Palustrine, Forested, Broad-leaf Deciduous, Seasonally Flooded* wetlands dominated by black cottonwood trees, and 0.29 acres of *Palustrine, Scrub-Shrub, Broad-leaf Deciduous, Temporarily Flooded* (less so than seasonally) wetlands dominated by red alder and douglas spirea. **Total project wetland impact will be 2.07 acres.**

All of these plant communities and habitat types will be reproduced at the Sandpoint High School Wetland Mitigation Site and will be further supplemented and enhanced by the additional planting/seeding of a much more diverse variety of wetland vegetation (as listed below). **Total wetland mitigation site is 2.7 acres.**

All of the functions and values of the impacted wetlands will be similarly reproduced at the Sandpoint High School Wetland Mitigation Site. They include *Ground Water Recharge and Discharge, Floodflow Alteration, Sediment Stabilization, Sediment and Toxicant Retention, Nutrient Removal and Transformation, Food Production and Export, and Wildlife Habitat, Diversity and Abundance*. These are all discussed in the wetland appendix. In addition, the mitigation site will provide *Storm Water Storage and Conveyance* for its surrounding urbanized area, *Water Quality Improvement* factors as its overall drainage flows southwestward towards the Pend Oreille River, and the unique-to-this-project added value of a *Scientific Study Area* attributable to its location on the Sandpoint High School grounds and arrangements with the Bonner County School District for its use and perpetuation as an outdoor "living laboratory" classroom for the area's students. An agreement has reached (signed/implemented) between the Idaho Transportation Department and the Bonner County School District to this effect and will assure that the wetland mitigation site will remain so indefinitely.

The overall mitigation site is essentially a general drainage swale west of Division Street and south of Pine Street on Sandpoint's west side. It flows southwestward as a narrow, meandering channel toward Chuck's Slough and the Pend Oreille River, within the north side of the school grounds and through an adjacent residential area. The hydraulic design of the mitigation site is based on observable water levels within sections of the channel and associated wetland vegetation, and includes artificial control devices to maintain these levels as desired at different seasons. The site was segmented into three water level sections for flexibility and versatility in managing the wetland. To assure adequate hydrology, all of the adjacent athletic fields, parking lots and school site drainages have also been routed to the wetland.

Most of the mitigation site is surrounded by the overall, large buffer area of the high school atletic fields. A parking lot lies adjacent to a small portion of it, and a commercial building parallels a short section on its northeast side. Immediately adjacent to the wetland itself, on the upper side slopes of the excavated areas, a vegetative buffer strip of tree and shrub plantings will serve as a visual demarcation of the mitigation site.

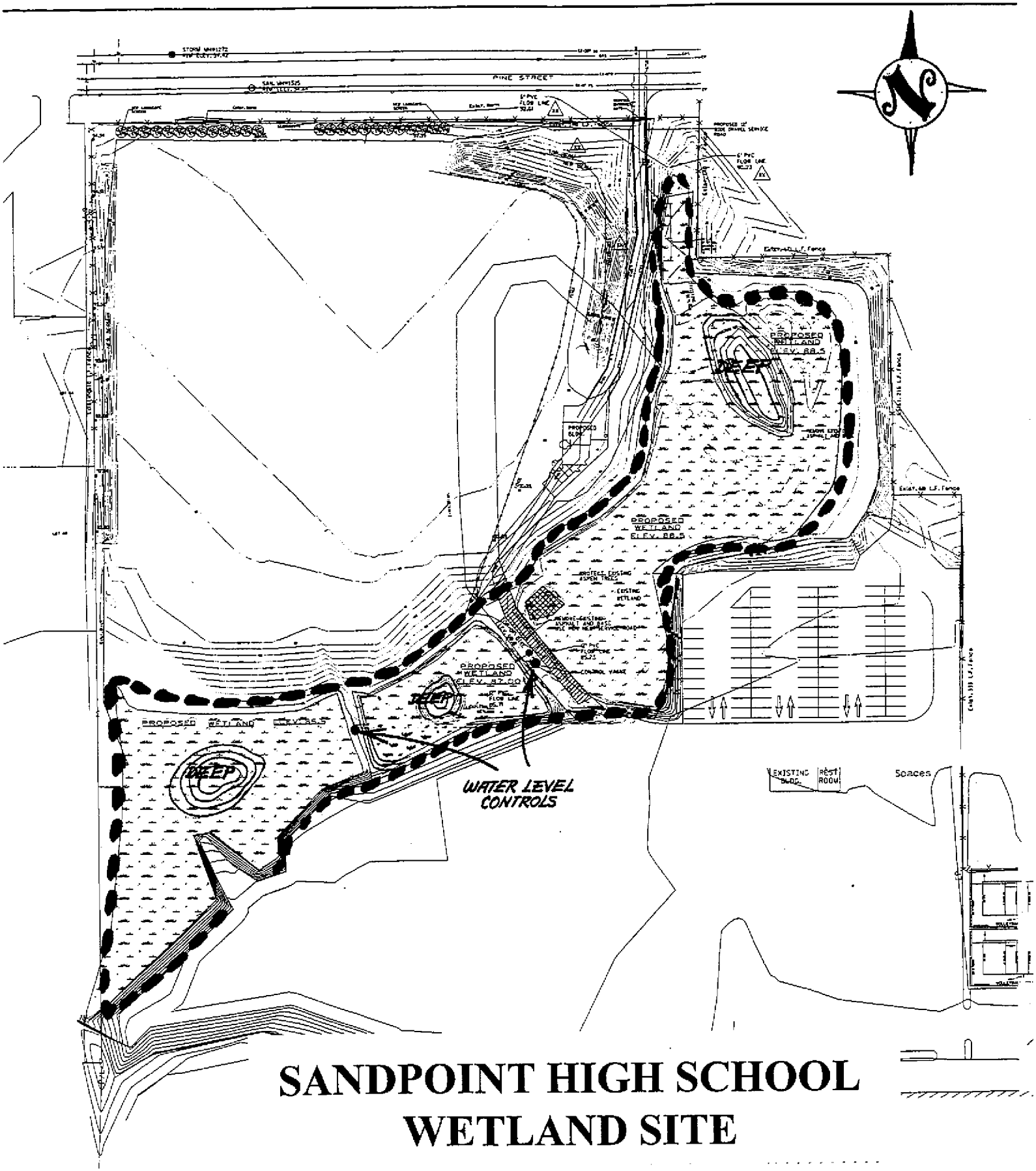
Plantings are designed for variety and adaptability and will be used as subject matter and topics in school science classes. They will include at least four types of shrub/small tree willows, and the larger golden willow tree, mountain and red alders, water, paper and bog birch, quaking aspen, douglas hawthorne, douglas spirea, rocky mountain and vine maple, green ash, chokecherry, mockorange, and other suitable trees/shrubs that become available through various ongoing science class programs. Some plantings will be experimental for educational purposes.

Seedings will include a *wet zone* seed mix of birdsfoot trefoil, beaked sedge, bebbs sedge, small fruited bulrush, western mannagrass, american sloughgrass, alkali bulrush and a rush species mixture. A *transition zone* seed mix includes birdsfoot trefoil, redtop, meadow foxtail, creeping foxtail, tufted hairgrass, blue wildrye and creeping red fescue. Some of these, in addition to being seeded, will be planted individually as "plugs".

The initial cost to construct the wetland, including a significant amount of excavation, grading and installation of the water level control devices, was $130,000.00 and has already been funded by the Idaho Transportation Department. The wetland is now in place, has been partially seeded, and remains to be planted/seeded in the spring and/or fall of 1999. Additional plantings will continue to occur, however, throughout the years as part of ongoing school science classes. Cost estimates are a minimum of approximately five to ten thousand dollars for purchase of the plant material needed for the initial plantings, with varying additional amounts provided through future school programs.

Mitigation success criteria for this wetland site, in conformance with the Corps of Engineers regional requirements, will be an eighty percent survival/establishment rate for hydrophytic vegetation on the site. This will be documented for five years following the completion of initial planting/seeding and be recorded photographically and through corresponding plant counts. ITD will be ultimately responsible for the monitoring, in accordance with Corps of Engineers permit requirements, but will be assisted in the procurement of data by related high school science class programs.

This wetland mitigation site is looked upon with high expectations by the Idaho Transportation Department, the Federal Highway Administration, the Corps of Engineers, the Bonner County School District, and related State and Federal resource agencies. As such, it will receive much more than ordinary attention due to its dual project mitigation and educational role. Its success is assured by the involvement and concern of all of us and, to be noted, well ahead of the project construction impacts it is mitigating for. An atypical but distinctly desirable project advantage.



SANDPOINT HIGH SCHOOL
WETLAND SITE

REVISIONS	DESIGNED	SCALES SHOWN ARE FOR 279 x 432 mm PRINTS ONLY SCALES OF DRAWING IS	IDAHO TRANSPORTATION DEPARTMENT	FEDERAL A
DESCRIPTION	DESIGN CHECKED			
	DETAILED	CADD FILE NAME		
	DRAWING CHECKED	DRAWING DATE:	DISTRICT ONE, PROJECT DEVELOPMENT SECTION	REGION 10

ITDAA029665

AN ASSESSMENT OF WETLAND FUNCTIONS AND VALUES, AND A DESCRIPTION OF MITIGATION REQUIREMENTS FOR PROJECT #NH-IR-F-5116(068) US-95 SANDPOINT NORTH SOUTH KEY #1729

Prepared by:
Ecological Design, Inc.
Boise, Idaho
Robert B. Tiedemann, CPWS, CWD, CFS, CWB

Prepared for:
Idaho Transportation Department
District 1 - Coeur d'Alene, Idaho

July 23, 1998

ITDAA029666

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District 1 - Coeur d'Alene, Idaho

July 23, 1998

INTRODUCTION

The Idaho Transportation Department proposes to reconstruct a portion of highway US-95 from north of the city of Sagle to the south limit of the long bridge over the Pend Oreille River. And, to re-align the roadway around the City of Sandpoint from the north limit of the long bridge to the intersection of US-95 and SH-200. The project corridor is marked by mile post 469.75 to the south and mile post 477.44 to the north.

Reconstruction of the existing two lane US-95 includes the addition of travel lanes, passing lanes, and turn-outs largely within existing right-of-way. Additional right-of-way that has been formally identified and delineated as wetland may be required for minor realignments to improve roadway geometrics, sight distance, and safety. Construction of the roadway prism may require grading of earth fill into these areas.

Re-alignment of the roadway around the City of Sandpoint is within new roadway right-of-way which parallels that for the Burlington Northern / Santa Fe Railroad and includes the construction of two travel lanes between Sand Creek and the railroad, a partial interchange at Bridge Street, and a reconfigured intersection of US-95 and SH-200. Grading of earth fill into a portion of Sand Creek and placement of concrete piers to support a structure may be the only appropriate and practicable means of accomplishing the project purpose.

The Idaho Transportation Department (ITD) has contracted with Ecological Design, Inc. to formally delineate the mean high water lines (MHWL) of the Pend Oreille River and Sand Creek and to identify, classify, and delineate the boundaries of wetlands within the project corridor. This effort is document in the report titled *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project #NH-IR-F-5116(068), US-95 Sandpoint North South.* The delineation has not yet been verified by the US Army Corps of Engineers.

Placement of fill in waters of the United States including lakes, rivers, streams, and wetlands is regulated by §404 of the Clean Water Act as administered by the US Army Corps of Engineers (COE). Modifications to perennial rivers and streams below their mean high water line is regulated by the Idaho Stream Channel Protection Act as administered by the Idaho Department of Water Resources (IDWR). Permits are likely required from both agencies for the proposed project.

ITDAA029667

US Army Corps of Engineers and US Environmental Protection Agency mitigation policy requires those who apply for a §404 permit to demonstrate potential wetland and aquatic impacts have been avoided to the maximum extent practicable. Remaining unavoidable impacts will be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts and by compensation.

Wetland compensation will likely be evaluated by Federal and State of Idaho, resource and regulatory agencies by the following criteria:

1. Probability of obtaining a legal interest in land to ensure its protection and preservation in perpetuity.
2. Probability of obtaining a legal interest in water to ensure its availability in perpetuity.
3. Frequency and duration of water available to support the hydrology of restored, enhanced, and created wetlands.
4. Ability of wetland compensation to replace impacted wetland functions and values.
5. Ability of wetland compensation to compensate for the temporal loss of wetland functions and values.
6. The appropriateness and practicability of wetland compensation. Appropriate is *consistent with the scope and degree of environmental impacts of a project* (adapted from FR Vol. 5, No. 48). Practicable is *available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes* (40 CFR §230.3).

This report documents and describes an assessment of wetland functions and values observed within the project corridor. The assessment is made using best professional judgment and is supported by references to the literature and field studies. Informartion contained in this report will allow ITD to develop mitigation and compensation measures that best comply with the mitigation sequence prescribed by the US Army COE and the US Environmental Protection Agency.

DESCRIPTION OF THE PROJECT CORRIDOR

The project corridor south of the Pend Oreille River is within rolling terrain on the edge of a broad glacial valley that drains to the Sagle Slough. Adjacent land uses include residential and commercial developments, pasture land that is both harvested and grazed, second growth timber lands, and intersecting roadways and their right-of-ways. The terrain generally grades upward from east to west. No intermittent or perennial streams with defined bed and banks cross or run parallel to the existing US-95 roadway right-of-way or immediately adjacent to it.

The project corridor north of the Pend Oreille River is within a narrow peninsula of land that separates Sand Creek from Lake Pend Oreille. The ground has been previously modified to provide the width and grade to accommodate the roadbed of several railroad tracks and vehicular access to them and for the foot print of the Burlington Northern depot. The terrain is flat across much of the width of the project corridor, but abruptly drops to the edge of Sand Creek and more gradually grades to the edge of Lake Pend Oreille. Adjacent land uses include the railroad and related industrial buildings, a water treatment plant, disturbed ground that is dominated by herbaceous weeds, and some second growth timber. Water elevations within the reach of Sand Creek adjacent to the project corridor are regulated by Albeni Dam on the Pend Oreille River and vary between the summer pool elevation which is 2062.5 feet (628.7 meters) and the winter pool elevation which is 2055.0 feet (626.5 meters).

ITDAA029668

REVIEW OF THE LITERATURE, OBSERVATIONS, AND FIELD STUDIES OF THE PROJECT CORRIDOR

Examination of data from the following sources suggest wetlands within the project corridor have recognized functions and values (see Figures 1 – 3):

1. US Geologic Survey (USGS) Sagle, Idaho and Sandpoint, Idaho quadrangle maps (7.5 minute series).
2. US Fish and Wildlife Service (US FWS), National Wetlands Inventory Sagle, Idaho and Sandpoint, Idaho orthophoto quadrangle maps (7.5 minute series).
3. Soil Survey of the Bonner County Area, Idaho, US Department of Agriculture - Soil Conservation Service (SCS).
4. Aerial photography provided by the Idaho Transportation Department (ITD).
5. Field studies conducted by Ecological Design, Inc. and documented in the report titled *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project # NH-IR-F-5116(068), US-95 Sandpoint North South.*

The USGS quadrangle maps identify the Pend Oreille River and Sand Creek as the only surface water features within or immediately adjacent to the project corridor.

The US FWS National Wetlands Inventory maps identify five wetland types, both vegetated and unvegetated, within or immediately adjacent to the project corridor. Unvegetated wetlands recognized by the US FWS are not defined as wetlands by the US Army COE. The US Army COE criteria for delineation of wetlands requires the presence of all three indicators, namely wetland hydrology, hydric soils, and hydrophytic vegetation. The US FWS criteria requires only one of the indicators. However, vegetated wetlands and the bed and banks of the Pend Oreille River and Sand Creek below the MHWL within the project corridor are both within the jurisdiction of the US Army COE.

The shallow, unvegetated wetlands associated with the Pend Oreille River and Sand Creek are influenced by the variable hydrology provided by the summer and winter pool elevations established by the Albeni Dam. Annual grasses and forbs grow below the MHWL at some locations within the project corridor. The vegetated wetlands throughout the remainder of the project corridor are supported by ground water at or near the ground surface that varies in elevation with season.

South of the Pend Oreille River and east of US-95 the identification and location of wetlands shown on the US FWS National Wetlands Inventory maps and classified by the US FWS National Wetlands Inventory as palustrine, emergent, persistent, seasonally flooded (PEM1C), palustrine, scrub shrub, broad-leaved deciduous, temporarily flooded (PSS1A), and palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1C) wetlands were confirmed by the formal identification and delineation of wetlands.

Palustrine, emergent wetlands appear on the ground as grazed and harvested pastures dominated by reed canary grass (Phalaris arundinacea) with lesser amounts of baltic rush (Juncus balticus), Watson's willow herb (Epilobium watsonii), and wooly sedge (Carex lanuginosa) present. Adjacent uplands are also dominated by reed canary grass, but associated species are red clover (Trifolium pratense), common dandelion (Taraxacum officinale), and mouse-ear chickweed (Cerastium arvense).

Palustrine, scrub-shrub wetlands appear on the ground as remnants of pre-settlement or secondary growth and are dominated by red alder (Alnus rubra) and a herbaceous understory which includes Douglas spiraea (Spiraea douglasii), starry false Solomon's seal (Smilacina stellata), and four-line honeysuckle (Lonicera involucrata).

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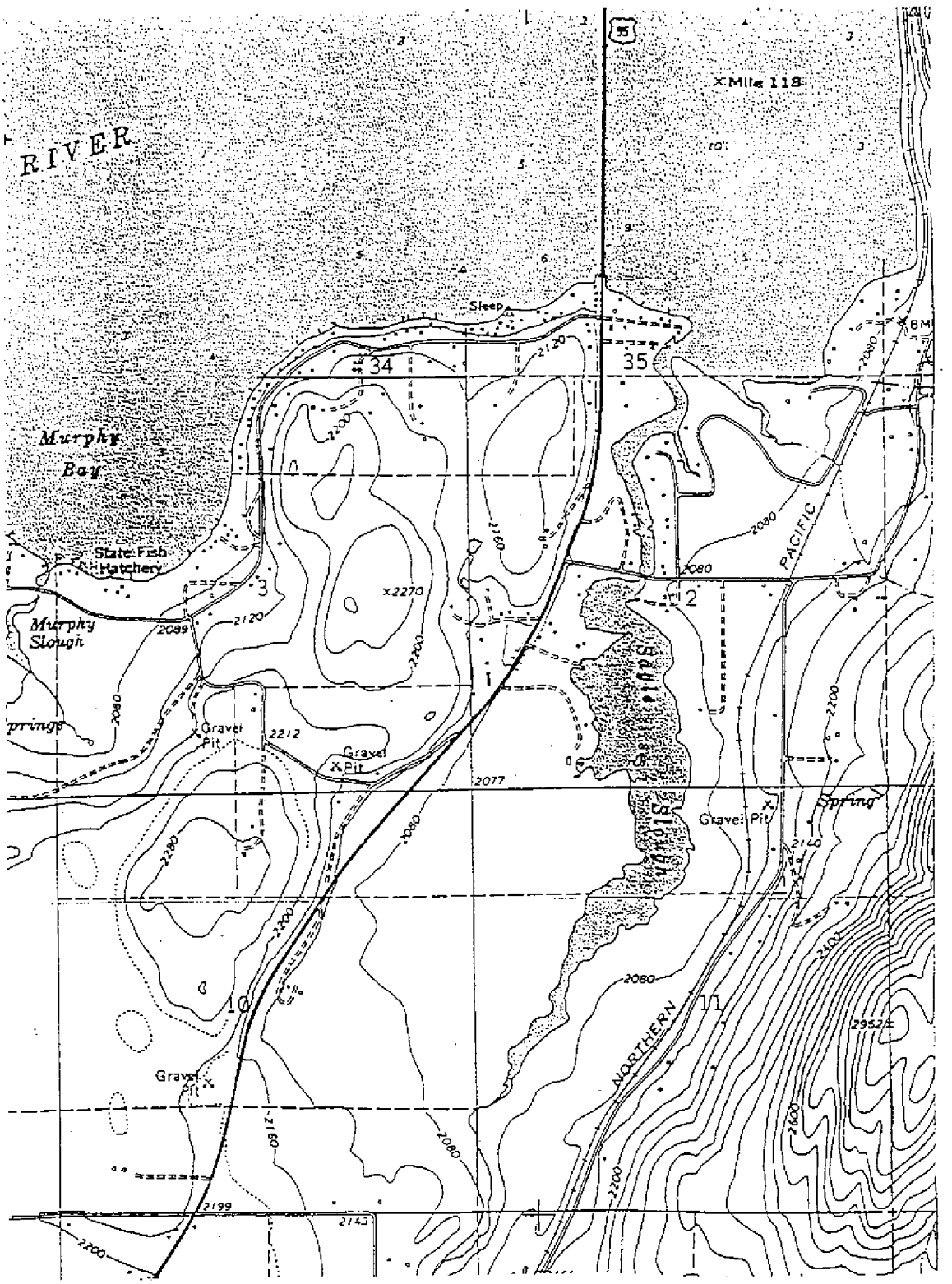

Figure 1 - US Geologic Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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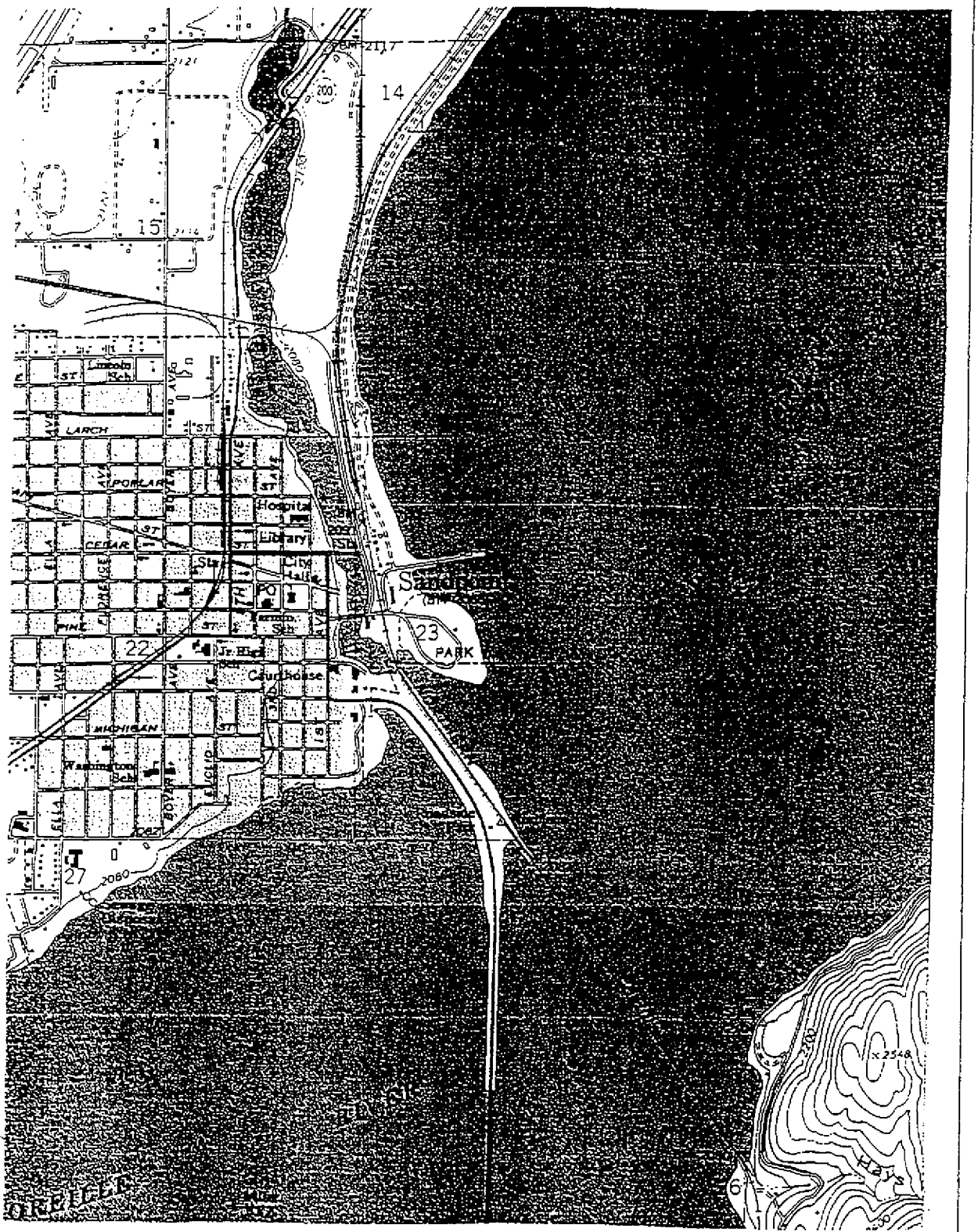
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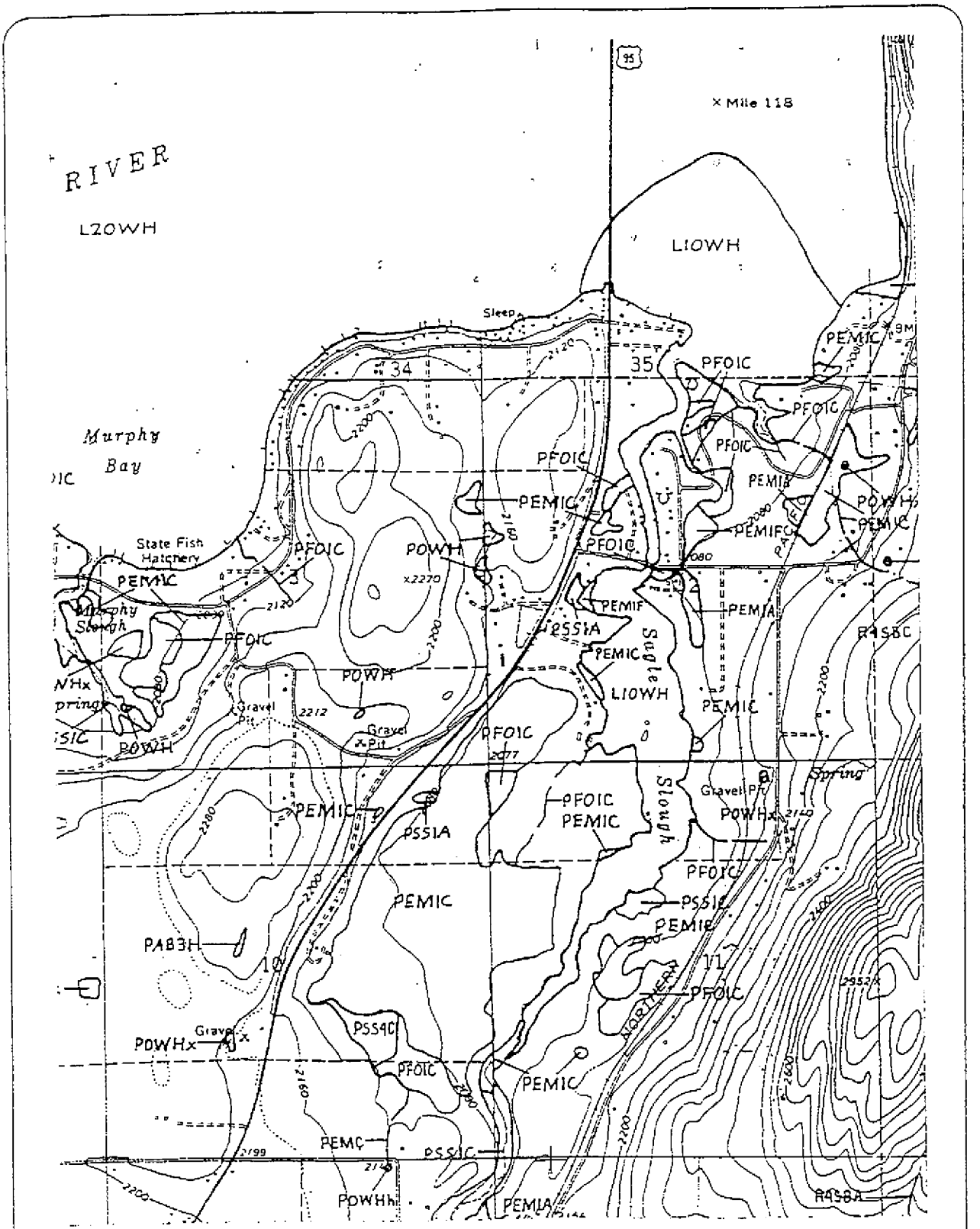

Figure 2 - US FWS National Wetlands Inventory Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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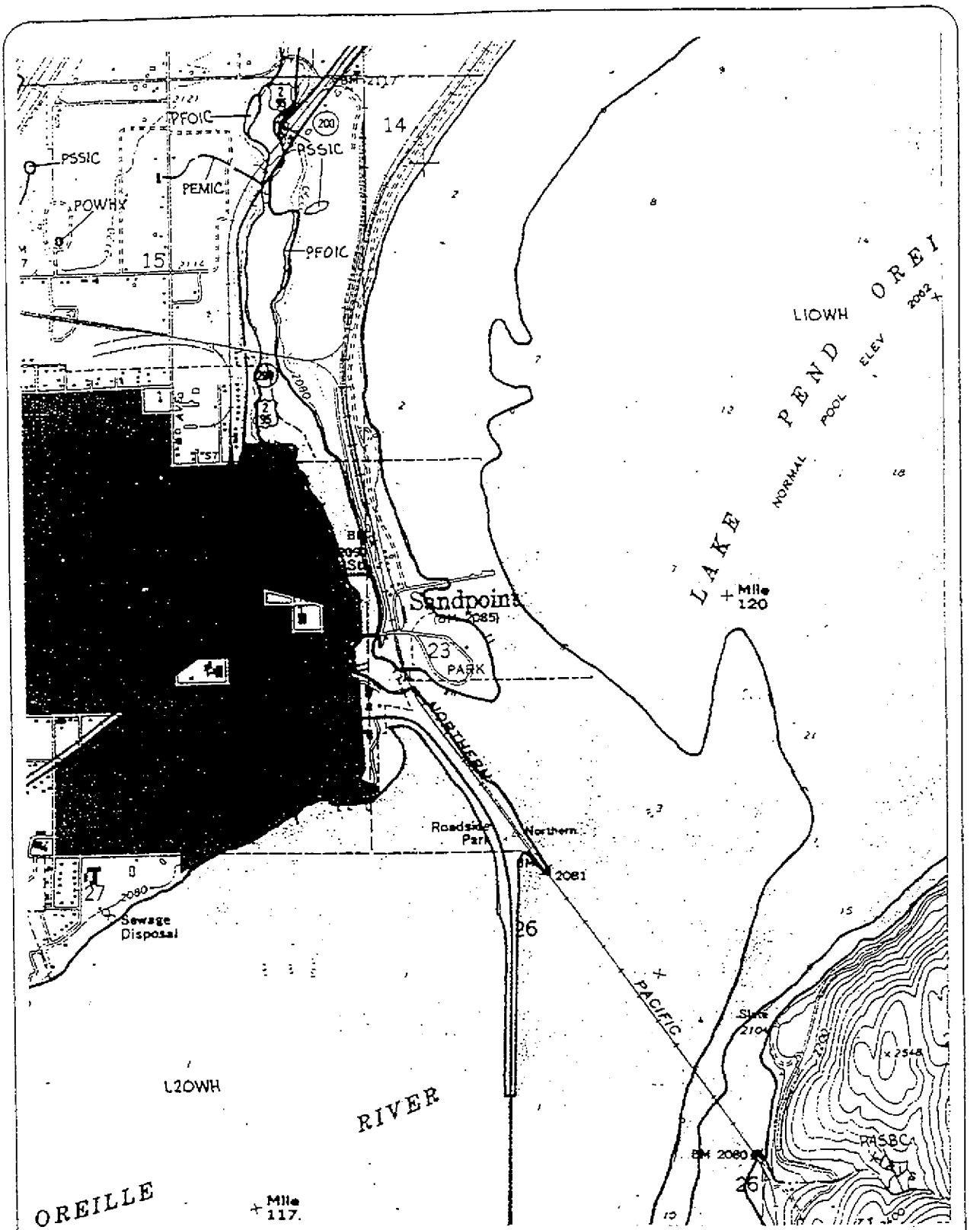

Figure 2 - US FWS National Wetlands Inventory Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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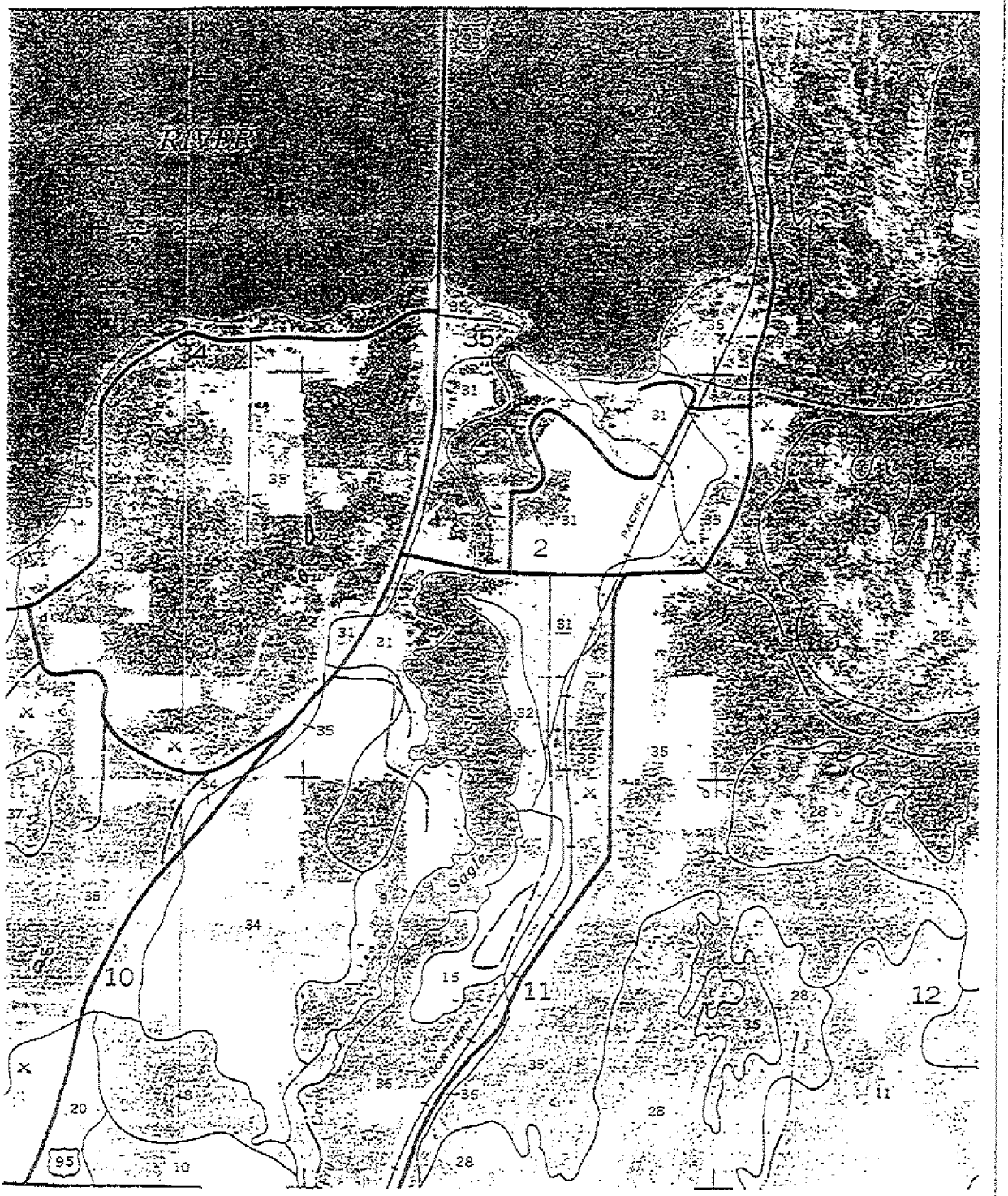

Figure 3 - USDA Soil Conservation Service Soil Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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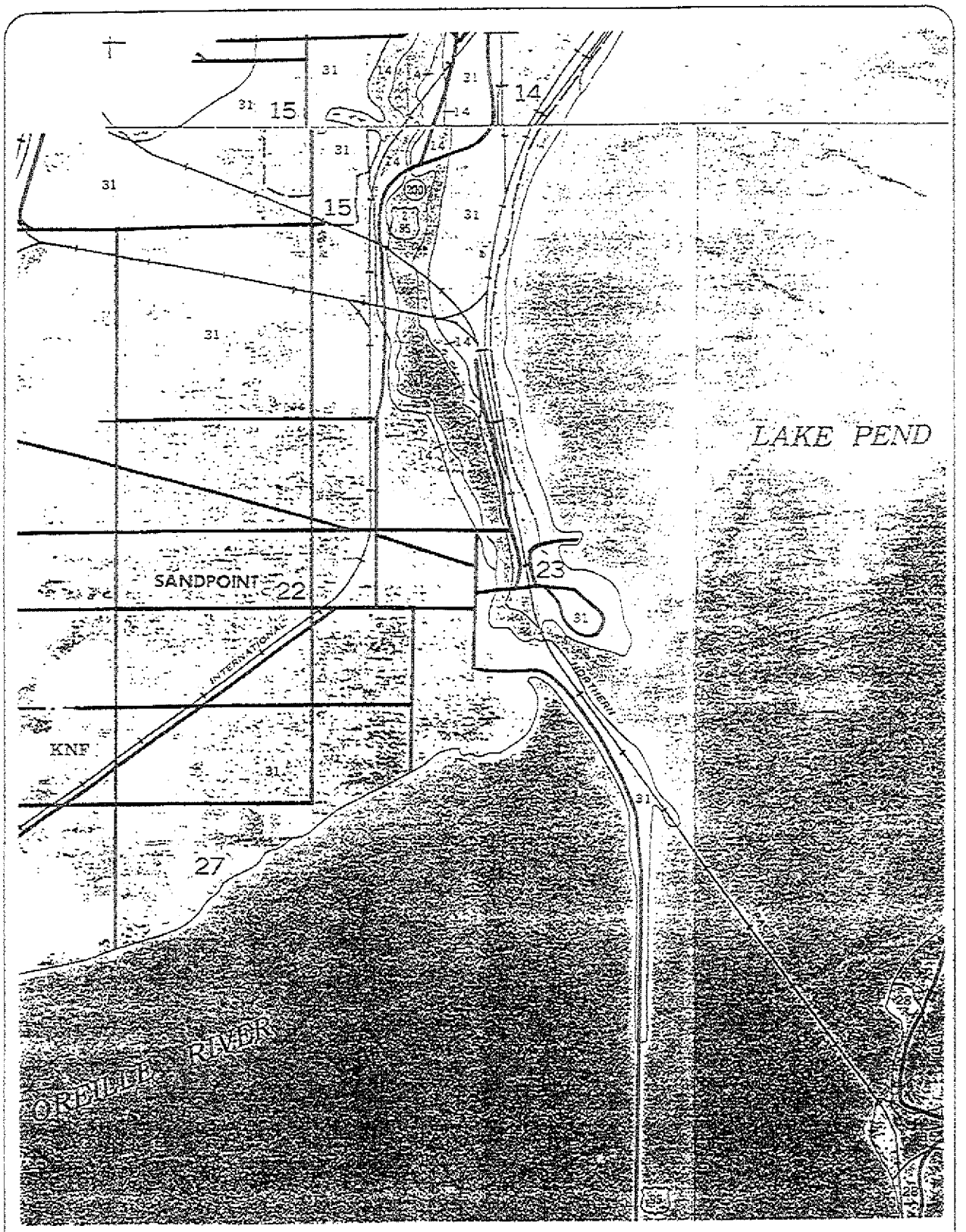

Figure 3 - USDA Soil Conservation Service Soil Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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Not to Scale

Palustrine, forested wetlands also appear in the ground as remnants of pre-settlement or secondary growth and are dominated by black cottonwood (Populus trichocarpa) and an understory which includes red alder, Douglas spiraea, and four-line honey suckle.

South of the Pend Oreille River and west of US-95 the identification and location of wetlands shown on the map and classified by the US FWS National Wetlands Inventory as palustrine, emergent, persistent, seasonally flooded (PEM1C) wetlands were confirmed and additional PEM1C wetlands found by the formal identification and delineation of wetlands. They appear on the ground as disturbed ground that has been disked, mowed, or tilled and are dominated by reed canary grass and Kentucky bluegrass (Poa pratense).

The Pend Oreille River and Sand Creek below the mean high water line are classified by the US FWS National Wetlands Inventory as lacustrine, littoral, open water, permanently flooded (L2OWH) wetland. They are unvegetated river and stream beds that are largely composed of silty sand and with surface water that varies in elevation with season. A narrow fringe of palustrine, scrub-shrub and palustrine, forested wetlands appear on the ground at or near the mean high water line, but are not shown on the maps. The scrub-shrub wetland plant community is dominated by reed canary grass, four line honeysuckle, and red alder, and the forested wetland plant community is dominated by these species and black cottonwood. Also north of the Pend Oreille River between Sand Creek and the railroad near the north limit of the project corridor an isolated area of palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded (PSS1C) wetland is shown on the map. This wetland was not observed during field studies.

Additional palustrine, emergent, persistent, seasonally flooded (PEM1C), palustrine, scrub shrub, broad-leaved deciduous, temporarily flooded (PSS1A), palustrine, scrub shrub, broad-leaved deciduous, seasonally flooded (PSS1C), and palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1C) wetlands north of the Pend Oreille River were identified, delineated, and documented by the formal identification and delineation of wetlands, but are not shown on the map. They are fully described in the report titled *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project #NH-IR-F-5116(068), US-95 Sandpoint North South.*

The USDA - SCS Soil Survey of the Bonner County Area, Idaho (1982) identifies and describes soils within the project corridor (see Table 1). They are generally characterized south of the Pend Oreille River as very deep, level to hilly, well drained soils on terraces and north of the Pend Oreille River as very deep, level to moderately steep, poorly drained to moderately well drained soils on terraces.

The publication *Hydric Soils of the State of Idaho 1985* (USDA-SCS 1985) identifies the Odenson soil series as hydric. High water table is described as being within 0.5 to 2.0 feet of the ground surface, most often in the months of February to June, and frequency of flooding is described as none.

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Table 1 - Soils Within the Project Corridor and their Characteristics

Symbol	Soil Map Unit Name	Soil Description	Depth to Seasonal High Water Table
14	Haploxeralfs and Xerochrepts, 30 to 55% slopes	well drained to moderately well drained, permeability is slow to moderately rapid	not available
31	Mission silt loam, 0 to 2% slopes	somewhat poorly drained, permeability is very slow	0.5 to 1.5 feet from February to May
34	Odenson silt loam, 0 to 2% slopes	poorly drained, permeability is slow	0.5 to 2.0 feet from February to June
35	Pend Oreille silt loam, 5 to 45% slopes	Well drained, permeability is moderate	>6.0 feet

WETLAND FUNCTIONS AND VALUES OBSERVED WITHIN THE PROJECT CORRIDOR

Groundwater Recharge and Discharge

Wetlands and other lands within the floodplain in the upper reaches of a drainage may be positioned to recharge groundwater aquifers. Those in the lower reaches of a drainage may be positioned to discharge groundwater to the surface. Aquifers associated with these areas may contribute base flow to streams and offer potable water supplies to individuals and municipalities (Adamus and Stockwell 1983). Modification to these areas may affect groundwater quantity and quality.

Groundwater recharge within the project corridor occurs throughout the year from rain or snowmelt within the broad glacial valley that drains to Sagle Slough and occasionally during high flow events on the floodplains of Sagle Slough and Sand Creek.

Presence of the proposed project will not likely reduce ground water recharge by a measurable amount. The footprint of piers and fill on the floodplain of Sand Creek and fill on the the area between US-95 and Sagle Slough is small compared to the total ground water recharge area.

Operation of the proposed project may adversely affect ground water quality during and immediately following rain or snow melt events. The anticipated volume of traffic carried by the bridge may contribute a measurable load of pollutants to the roadway including oil, grease, other petroleum products, and antifreeze falling from moving vehicles, rubber from tires, metals from exhaust, and asbestos from brake linings (Spooner 1992). The greatest load of pollutants will be carried into the roadway drainage facilities during the waxing portion of a rain or snow melt event and dissipate thereafter. The longer the period between rain or snow melt events, the greater the load of pollutants.

Roadway runoff may be passively treated in constructed, passive facilities such as detention basins and grassy swales and then safely discharged to the ground water system. Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

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Floodflow Alteration

The process of delaying the downstream movement of flood flows and staggering the peak discharge from numerous basins within a watershed is aided by wetlands and uplands within the floodplain. Dense vegetation that is not deeply submerged will create frictional drag and retard floodwaters (Adamus and Stockwell 1983). Modifications to drainage areas (e.g. vegetation removal, placement of impervious paved surfaces) which contribute runoff to wetlands and uplands within the floodplain, and modifications to the size, shape, and vegetation structure of wetlands and uplands within the floodplain will affect their ability to store flood flows and retard peak runoff.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely create some frictional drag and retard flood flows. Some may be removed as part of the proposed project. However, the footprint of piers and fill on the floodplain of Sand Creek is small compared to the total vegetated area. Other disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable frictional drag. They include coyote willow (Salix exigua), yellow willow (Salix lasiandra), Pacific willow (Salix lutea), and red-osier dogwood (Cornus stolonifera). A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

Engineering studies, including a HEC-2 analysis of water surface profiles during the 100 year flood flow event, may demonstrate the presence of the proposed project will not reduce the ability of the Sand Creek channel and floodplain to convey flood flows. The volume of piers and fill is small compared to the total volume of the channel and floodplain. Model results may show there is no increase in water surface elevation in the floodway during the 100 year flood event.

Sediment Stabilization

The stabilization of soil during sheet runoff and channel flow is in large part provided by vegetation in wetlands and other lands within the floodplain. Fibrous roots may allow for accretion of sediments and propagation of wetland areas from open waters. Erosive energy associated with currents, ice, water level fluctuations, or groundwater flow is dissipated by above ground and below ground vegetation structures (Adamus and Stockwell 1983). Modifications to drainage areas (e.g. vegetation removal, channelization) which contribute runoff to wetlands and uplands within the floodplain, and modifications to the size, shape, and vegetation structure of wetlands and uplands within the floodplain will affect their ability to dissipate erosive energy.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. South of the Pend Oreille River a moderately dense understory of grasses and/or shrubs also grow as remnants of pre-settlement or secondary growth, as grazed or harvested pastures, or as disturbed ground that has been disked, mowed, or tilled. They likely stabilize the soil and accrete sediments. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to stabilize soil and accrete sediments. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

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Protection may also be accomplished by use of temporary erosion control measures including mulch, tackifiers, erosion control blankets, and bonded fiber matrix. Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Sediment and Toxicant Retention

Inorganic particulate matter is deposited and retained in wetlands and uplands within the floodplain where water current velocity is reduced. The process is often facilitated by vegetation. Wetlands and uplands within the floodplain may accrete sediments for long periods of time. Few export more sediment than they import (Adamus and Stockwell 1983). Metals and organic compounds often reside on particulates and may be removed from running waters by deposition in wetlands and other lands within the floodplain. Modifications to the size, shape, and vegetation structure of wetlands and uplands within the floodplain, and the introduction of excessive loads of sediments to wetlands and uplands within the floodplain may decrease their ability to perform this function.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. South of the Pend Oreille River a moderately dense understory of grasses and/or shrubs also grow as remnants of pre-settlement or secondary growth, as grazed or harvested pastures, or as disturbed ground that has been disked, mowed, or tilled. They likely accrete sediments allowing deposition and retention of inorganic and organic compounds. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to accrete sediments allowing deposition and retention of inorganic and organic compounds. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Appropriate and practicable compensation for adverse impacts attributable to the footprint of piers and fill on the floodplain of Sand Creek and fill on the the area between US-95 and Sagle Slough can be located within the project corridor.

Nutrient Removal and Transformation

Nutrients of greatest concern to water managers are nitrogen and phosphorous. Both are constituents of fertilizers and may enter wetlands and other lands within the floodplain with rain, snowmelt, and irrigation water. Nutrients enter and leave wetlands and uplands within the floodplain by three mechanisms: associated with particulates, dissolved in water, and as gases (Kadlec 1987). Nutrients are retained by soils and vegetation.

The storage of nutrients, particularly nitrogen and phosphorous, and their potential removal is aided by vegetation. Long term retention may remove nutrients from the aquatic system. Short term retention may hold nutrients throughout the growing season - when downstream vascular plants and algae are nutrient limited - and prevent blooms and weedy growth in open water systems (Adamus and Stockwell 1983). Modification of soils or vegetation, and the introduction of excessive loads of nutrients may decrease the ability of wetlands and other lands within the floodplain to perform this function.

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Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. South of the Pend Oreille River a moderately dense understory of grasses and/or shrubs also grow as remnants of pre-settlement or secondary growth, as grazed or harvested pastures, or as disturbed ground that has been disked, mowed, or tilled. They likely store nutrients during and immediately after flood flow events and retain them until subsequent high flows carry leaf fall and woody debris to the river. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to store and retain nutrients. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Appropriate and practicable compensation for adverse impacts attributable to the footprint of piers and fill on the floodplain of Sand Creek and fill on the the area between US-95 and Sagle Slough can be located within the project corridor.

Food Production and Export

The organic mat formed by decaying vegetation associated with wetlands and other lands within the floodplain supports a diverse community of insects and other invertebrates that provide food for fish and wildlife. Herbivores may graze actively growing wetland plants. Some wetlands and other lands within the floodplain have been shown to produce food in excess of that required to support the wildlife community within their bounds. Excess food may be exported to support adjacent ecosystems (Adamus and Stockwell 1983).

Direct modification of wetlands and other lands within the floodplain by filling, and indirect modification by altering hydrology and water quality will likely affect their productivity and ability to support aquatic and terrestrial organisms.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. South of the Pend Oreille River a moderately dense understory of grasses and/or shrubs also grow as remnants of pre-settlement or secondary growth, as grazed or harvested pastures, or as disturbed ground that has been disked, mowed, or tilled. They likely provide the organic matter to support the wildlife community within their bounds and export excess. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to store and retain nutrients. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Appropriate and practicable compensation for adverse impacts attributable to the footprint of piers and fill on the floodplain of Sand Creek and fill on the the area between US-95 and Sagle Slough can be located within the project corridor.

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Wildlife Habitat, Diversity, and Abundance

Vegetation associated with wetlands and other lands within the floodplain provides structure to terrestrial and aquatic habitats. Economically important species of fur bearers, waterfowl, and other wildlife are dependent on emergent and scrub-shrub vegetation, and rooted vascular aquatic beds for cover, protection from predators, and nesting habitat (Kentula 1986, Adamus and Stockwell 1983).

Wildlife is adapted to the structural features of wetlands including vegetation and water depth (Golet 1978). Josselyn and Buchholz (1984) describe structure of vegetation as the most important wetland attribute for wildlife.

Direct modification of wetlands and other lands within the floodplain by filling, and indirect modification by altering hydrology and water quality will likely affect their structure and ability to support aquatic and terrestrial organisms.

Resident Fish

Fish species known to occur in the Bonner County area of Idaho in habitat provided by the Pend Oreille River and Sand Creek are listed in Table 2.

Table 2 - Species of Fish Known to Occur in the Bonner County Area of Idaho in Habitat Provided by the Pend Oreille River and Sand Creek

1. mountain whitefish (Prosopium williamsoni)
2. rainbow trout (Oncorhynchus mykiss)
3. cutthroat trout (Salmo clarki)
4. brook trout (Salvelinus fontinalis)
5. bull trout (Salvelinus confluentus)
6. chiselmouth (Acrocheilus alutaceus)
7. northern squawfish (Ptychocheilus oregonensis)
8. longnose dace (Rhinichthys cataractae)
19. leopard dace (Rhinichthys falcatus)
10. redside shiner (Richardsonius balteatus)
11. largescale sucker (Catostomus macrocheilus)
12. mountain sucker (Catostomus platyrhynchus)
13. brown bullhead (Ictalurus nebulosus)
14. tadpole madtom (Noturus gyrinus)
15. flathead catfish (Pylodictis olivaris)
16. largemouth bass (Micropterus salmoides)
17. mottled sculpin (Cottus bairdi)
18. slimy sculpin (Cottus cognatus)

(Source: Groves and Marks 1985)

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Game and Non-Game Wildlife Species

Game and non-game wildlife species known to occur in the Bonner County area of Idaho in habitat provided by wetlands and other lands within the floodplain are listed in Table 3.

Table 3 - Species of Reptiles, Amphibians, and Mammals Known to Occur in the Bonner County Area of Idaho in Habitat Provided by Wetlands and Other Lands Within the Floodplain

Reptiles:

1. western skink (Eumeces skiltonianus)
2. western terrestrial garter snake (Thamnophis elegans)
3. common garter snake (Thamnophis sirtalis)

Amphibians:

1. western toad (Bufo boreas)
2. Woodhouse's toad (Bufo woodhousei)
3. Pacific tree frog (Hyla regilla)
4. striped chorus frog (Hyla triseriata)
5. tailed frog (Ascaphus truei)
6. bullfrog (Rana catesbeiana)
7. northern leopard frog (Rana pipiens)
8. spotted frog (Rana pretiosa)

Mammals:

1. masked shrew (Sorex cinereus)
2. vagrant shrew (Sorex vagrans)
3. silver-haired bat (Lasionycteris noctivagans)
4. nutall's cottontail (Sylvilagus nutallii)
5. beaver (Castor canadensis)
6. deer mouse (Peromyscus maniculatus)
7. water vole (Microtus richardsoni)
8. muskrat (Ondatra zibethica)
9. western jumping mouse (Zapus princeps)
10. porcupine (Erethizon dorsatum)
11. raccoon (Procyon lotor)
12. ermine (Mustela erminea)
13. mink (Mustela vison)
14. striped skunk (Mephitis mephitis)
15. mule deer (Odocoileus hemionus)
16. white tail deer (Odocoileus virginianus)
17. elk (Cervus elaphus)
18. black bear (Ursus americanus)
19. moose (Alces alces)

(Source: Groves and Marks 1985)

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Threatened and Endangered Species, and Species of Special Concern
Proposed and listed, threatened and endangered species which may be present in the project corridor are listed in Table 4.

Table 4 - Threatened and Endangered Species Which May be Present Within the Project Corridor

1. bald eagle (Haliaeetus leucecephalus)
2. gray wolf (Canis lupus)
3. bull trout (Salvelinus confluentus)
4. Ute lady's tresses (Spiranthes diluvialis)

A current list of threatened and endangered species known to occur in the project corridor is available from the Idaho Department of Fish and Game - Conservation Data Center and the US Fish and Wildlife Service and may be required prior to construction. If additional threatened or endangered species are found to be present, informal consultation should be initiated with the US FWS as prescribed by Section 7 of the Endangered Species Act.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. South of the Pend Oreille River a moderately dense understory of grasses and/or shrubs also grow as remnants of pre-settlement or secondary growth, as grazed or harvested pastures, or as disturbed ground that has been disked, mowed, or tilled. They likely provide habitat and support the diversity and abundance of wildlife. Some will be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to store and retain nutrients. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Appropriate and practicable compensation for adverse impacts attributable to the footprint of piers and fill on the floodplain of Sand Creek and fill on the the area between US-95 and Sagle Slough can be located within the project corridor.

Active Recreation
The diverse habitat provided by wetlands and other lands and waters within the floodplain support an abundance of fish and wildlife of interest to anglers and hunters (Adamus and Stockwell 1983). Fur bearers, waterfowl, and other commercially important wildlife make full or part time use of these areas. Many species more commonly found in uplands require wetlands and other lands within the floodplain during a part of their life cycle.

Hunting game is prohibited from rail and roadways and therefore not affected by the proposed project. However, anglers fish the reach of the Pend Oreill River within the project corridor and Sand Creek throughout the year.

No adverse impacts to active recreators due to significant loss of fish and wildlife habitat, loss of access, or disturbance are likely to occur south of the Pend Oreille River. Reconstruction of existing US-95 is largely within existing right-of-way and the proposed project will not generate

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additional traffic volumes or changes in the proportions of cars, light trucks, or heavy trucks. North of the Pend Oreille River land uses including the railroad and related industrial buildings, a water treatment plant, and disturbed ground that is dominated by herbaceous weeds are largely not compatable with active recreation activities. Angler access and use of Sand Creek is possible but not desirable because of more aesthetic and productive sites are available elsewhere on the Pend Oreille River and Lake Pend Oreille.

Passive Recreation
Uniqueness and Heritage Value
Aesthetic enjoyment, nature study, and other passive uses of open spaces that are wetlands or other lands and waters within the floodplains of rivers and streams are valued by the public. Rare, restricted, endemic, and relict populations of plants and animals, those at or near their geographic range, and those of unusually high visual quality may be unique and have high heritage value. Preservation of communities of flora and fauna provide opportunities for education, scientific research, protection of rare and endemic species, and maintenance of the genetic diversity of populations (Adamus and Stockwell 1983).

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. South of the Pend Oreille River a moderately dense understory of grasses and/or shrubs also grow as remnants of pre-settlement or secondary growth, as grazed or harvested pastures, or as disturbed ground that has been disked, mowed, or tilled. The community of vegetation in the project corridor is not unique. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which contribute to the diversity of the plant community. They include coyote willow, yellow willow, Pacific willow, red-osier dogwood, and occasional and rare species identified by floristic survey of the area. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992) (Appendix 1).

Also, South of the Pend Oreille River a paved recreation path exists or is being constructed where residents and visitors walk, run, bicycle, and ride horses. No adverse impacts to passive recreators due to displacements or disturbance are likely to occur. Reconstruction of existing US-95 is largely within existing right-of-way and the proposed project will not generate additional traffic volumes or changes in the proportions of cars, light trucks, or heavy trucks.

North of the Pend Oreille River land uses including the railroad and related industrial buildings, a water treatment plant, and disturbed ground that is dominated by herbaceous weeds are largely not compatable with passive recreation activities. Use by dirt bikers is evident throughout the area and further limits use by passive recreators.

ITDAA029684

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33 CFR §328.3 (a)

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Appendix 1

Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor

Note: This document has been modified to best apply to environments occurring in north Idaho. The original document is available upon request.

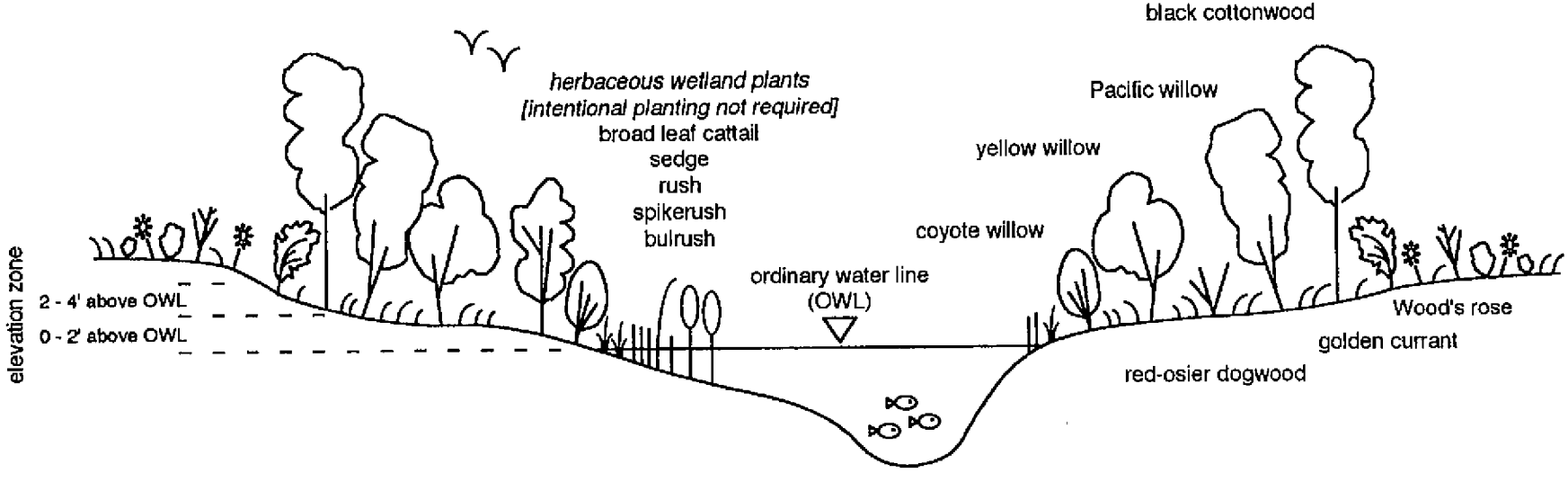
ITDAA029688

Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor (Modified for North Idaho)

Designed by: Ecological Design, Inc.
Robert B. Tiedemann, CFS, CWB
January 1992, Revised December 1998

Typical Section of a Revegetated Stream Corridor

Principal tree and shrub species are drawn and labeled on this typical section. Principal and occasional tree and shrub species are listed in the plant species list on page 2 of this document .



Note: Not to Scale

The typical section, plant species list, planting rates, and planting methods prescribed by this document are the Idaho Department of Fish and Game - Region 3 minimum standard for revegetation of stream corridors in southwest Idaho. Compliance with this standard will satisfy the requirements of Idaho Department of Fish and Game - Region 3, but not necessarily those of other resource and regulatory agencies. The standard is generally applicable to most situations, however restoration and replication of some stream corridors may require analysis of the site and development of a site specific plan by professionals.

Most plant species prescribed by this standard are native to southwest Idaho. They are best adapted to the environment, provide habitat for both game and nongame fish and wildlife, and complement adjacent naturally occurring landscapes. All species are commercially available from regional vendors. A partial list of regional vendors is provided. A complete, current list is available from the publication *Hortus Northwest - A Pacific Northwest Native Plant Directory and Journal*, PO Box 955, Canby OR 97013, 503 260-7968.

The minimum standard requires planting within the stream corridor all tree and shrub species identified as principal species in the plant species list on page 2 of this document. They are also drawn and labeled on the typical section. All other listed tree and shrub species are occasional species. Athough not required, they may be planted to further enhance fish and wildlife habitat, and provide a greater diversity of visually attractive plants. Occasional species may also be selected for their suitability to mountain, high desert, or valley floor environments. Professionals can provide further guidance.

The minimum standard also requires planting within the stream corridor 3 grass species and 2 wildflower species identified in the plant species list on page 2 of this document. The list includes grasses well adapted to alkali and sandy soils.

The minimum standard does not require intentional planting of herbaceous wetland plants. However, desirable species which naturally colonize a site should be retained and protected.

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ITDAA029689

Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor (Modified for North Idaho)

Designed by: Ecological Design, Inc.
Robert B. Tiedemann, CFS, CWB
Janaury 1992, Revised December 1998

Plant Species List and Planting Rates

Riparian Trees (planted OWL to 2' above OWL)
•Pacific willow (aka whiplash willow) - Salix lasiandra var. caudata
water birch - Betula occidentalis

Riparian Trees (planted 2' - 4' above OWL)
•black cottonwood - Populus trichocarpa
quaking aspen - Populus tremuloides

Riparian Shrubs (planted OWL to 2' above OWL)
•coyote willow (aka sandbar willow) - Salix exigua var. exigua
•yellow willow - Salix lutea
•red-osier dogwood - Cornus stolonifera (aka Cornus sericia)
geyer willow - Salix geyeriana

Riparian Shrubs (planted 2' - 4' above OWL)
•golden currant - Ribes aureum
shrubby cinquefoil - Potentilla fruticosa
Rocky Mountain maple - Acer glabrum
syringa - Philadelphus lewisii
common snowberry - Symphoricarpos albus
saskatoon serviceberry - Amelanchier alnifolia
chokecherry - Prunus virginiana
Douglas hawthorne - Crataegus douglasii
blue elderberry - Sambucus cerulea

Upland Shrubs (planted > 4' above OWL)
•Wood's rose - Rosa woodsii
mountain lover - Pachistima myrsinites
kinnikinnick - Arctostaphylos uva-ursi
redstem ceanothus - Ceanothus sanguineus
creeping Oregon grape - Mahonia repens (aka Berberis repens)

	Planting rate (pounds pure live seed / acre)
Grasses (planted above OWL) - select 3 species.	
western wheatgrass - Agropyron smithii	5
"Whitmar" bluebunch wheatgrass - Agropyron spicatum	5
"Magnar" basin wildrye - Elymus cinereus	5
"Covar" sheep fescue - Festuca ovina	3
needle and thread - Stipa comata	2
"Canbar" Canby bluegrass - Poa canbi	2
"Garrison" creeping foxtail - Alopecurus arundinaceus	5
Species adapted to sandy soils:	
sand dropseed - Sporobolus cryptandrus	1/2
"Nezpar" Indian ricegrass - Oryzopsis hymenoides	3
Species adapted to alkali soils:	
"Alkar " tall wheatgrass - Agropyron elongatum	5
alkali sacaton - Sporobolus airoides	1/2
Wildflowers (planted > 2' above OWL) - select 2 species.	
"Appar" Lewis flax - Linum lewisii	4
common yarrow - Achillea millefolium	1/2
goldenrod - Solidago occidentalis	1
Rocky Mountain penstemon - Penstemon strictus	1
Hooker's evening primrose - Oenothera hookeri	2
lupine - Lupinus spp.	-
columbine - Aquilegia spp.	-
camas - Camassia spp.	-

Herbaceous Wetland Plants (below OWL)
The following herbaceous wetland plant species will often naturally colonize a disturbed site. Intentional planting is not required by the Idaho Department of Fish and Game - Region 3 minimum standard, but may be accomplished by planting bare root plants, runners, stolons, tubers and seed. Some are commercially available.

broad leaf cattail - Typha latifolia
sedge - Carex spp.
rush - Juncus spp.
spikerush - Eleocharis spp.
bulrush - Scirpus spp.
iris - Iris spp.

Note: All plants shall be true to genus and species. Substitutions are not acceptable. Common names may differ between vendors and may not be the plants in this list.

• Indicates principal tree and shrub species. They *must* be planted. All other listed tree and shrub species are occasional species and *may* be planted.

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Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor (Modified for North Idaho)

Designed by: Ecological Design, Inc.
Robert B. Tiedemann, CFS, CWB
January 1992, Revised December 1998

Planting Rates (continued) and Methods

Tree and shrub species are planted at the elevations above the ordinary water line (OWL) shown by the typical section. Principal species are planted at a maximum distance of 5' on-center, occasional species are planted at a density determined by the project proponent and professionals. Principal and occasional species are planted either in a random pattern, with individuals of each species distributed throughout the elevation zone, or in single species blocks distributed throughout the elevation zone.

All trees and shrubs are planted as tubelings or other rooted stock, except prarie sage (*Artemesia ludoviciana*) which is presently available only as seed. Tubelings and other rooted stock are planted between May 1 and June 15, seed is planted between October 1 and November 15.

Tubelings and other rooted stock are planted by pushing a hole in the soil using a dibble or other device. The hole is at least equal in depth and diameter to the below ground portion of the plant. A slow release fertilizer tablet is placed at the bottom of each hole before planting. The tubeling or rooted stock is carefully positioned in the hole without bending the roots and the surrounding soil firmly compacted by hand around each plant.

Grass and wildflower species are planted at the elevations above the OWL shown by the typical section. All grasses and wildflowers are planted as seed, between October 1 and November 15. Seed is drilled at the indicated rate, or broadcast and mechanically raked to insure good contact with the soil. Grass seed is planted at a depth of 1/4" in clayey soils, 1/2" in loamy soils, and 3/4" in sandy soils. Wildflower seed is planted no deeper than 1/4". Wildflowers should be planted separately from grasses to avoid competition. Drilled wildflower and grass seed should be planted in separate rows. Broadcast wildflower and grass seed should be planted in separate blocks.

Topsoil may be placed on the planting bed, but is not normally required. Topsoil may encourage the growth of weedy plant species. Weeds should be physically pulled and removed, rather than treated with herbicides, to best protect fish and desirable plant species. Temporary irrigation water may be required during the period of plant establishment. Permanent irrigation water is required to grow riparian plant species greater than 4' above the OWL. Treatment of the soil surface with fertilizer may encourage the growth of weedy plant species, both on the ground and in the water. It should be avoided.

Partial List of Regional Plant Vendors

Balance Restoration Nursery
PO Box 587
Scottsburg, OR 97473
503 587-4261

Bitterroot Native Growers, Inc.
445 Quast Lane
Corvallis, MT 59828
406 961-4991

Cliffy View Nursery
Route 1
Box 509
Bonners Ferry, ID 83805
208 267-7129

Granite Seed
1697 West 2100 North
Lehi, UT 84043
801 768-4422

Native Seed Foundation
Star Route
Moyie Springs, ID 83845
208 267-7938

Northplan Seed Producers
PO Box 9107
Moscow, ID 83843
208 882-8040

Plants of the Wild
PO Box 866
Tekoa, WA 99033
509 284-2848

Porter Lane Wholesale Nursery
PO Box 609
Centerville, UT 84014
801 298-2613
1 800 533-8498

Note: Idaho Department of Fish and Game - Region 3 and Ecological Design, Inc. do not endorse or assure performance of any plant vendor. This list is partial. A complete, current list is available from the publication *Hortus Northwest - A Pacific Northwest Native Plant Directory and Journal*, PO Box 955, Canby OR 97013, 503 260-7968.

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ITDAA029691

A DELINEATION OF THE MEAN HIGH WATER LINES FOR SURFACE WATERS AND AN IDENTIFICATION, CLASSIFICATION, AND DELINEATION OF WETLANDS FOR PROJECT #NH-IR-F-5116(068) US-95 SANDPOINT NORTH SOUTH KEY #1729

Prepared by:
Ecological Design, Inc.
Boise, Idaho
Robert B. Tiedemann, CPWS, CWD, CFS, CWB

Prepared for:
Idaho Transportation Department
District 1 - Coeur d'Alene, Idaho

July 23, 1998

ITDAA029692

A DELINEATION OF THE MEAN HIGH WATER LINES FOR SURFACE WATERS AND AN IDENTIFICATION, CLASSIFICATION, AND DELINEATION OF WETLANDS FOR PROJECT #NH-IR-F-5116(068) US-95 SANDPOINT NORTH SOUTH KEY #1729

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District 1 - Coeur d'Alene, Idaho

July 23, 1998

INTRODUCTION

The Idaho Transportation Department proposes to reconstruct a portion of highway US-95 from north of the city of Sagle to the south limit of the long bridge over the Pend Oreille River. And, to re-align the roadway around the City of Sandpoint from the north limit of the long bridge to the intersection of US-95 and SH-200. The project corridor is marked by mile post 469.75 to the south and mile post 477.44 to the north.

Reconstruction of the existing two lane US-95 includes the addition of travel lanes, passing lanes, and turn-outs largely within existing right-of-way. Additional right-of-way that has been tentatively identified as wetland may be required for minor realignments to improve roadway geometrics, sight distance, and safety. Construction of the roadway prism may require grading of earth fill into these areas.

Re-alignment of the roadway around the City of Sandpoint is within new roadway right-of-way which parallels that for the Burlington Northern / Santa Fe Railroad and includes the construction of two travel lanes between Sand Creek and the railroad, a partial interchange at Bridge Street, and a reconfigured intersection of US-95 and SH-200. Grading of earth fill into a portion of Sand Creek and placement of concrete piers to support a structure may be the only appropriate and practicable means of accomplishing the project purpose.

Placement of fill in waters of the United States including lakes, rivers, streams, and wetlands is regulated by §404 of the Clean Water Act as administered by the US Army Corps of Engineers (COE). Modifications to perennial rivers and streams below their mean high water line is regulated by the Idaho Stream Channel Protection Act as administered by the Idaho Department of Water Resources (IDWR). Permits are likely required from both agencies for the proposed project. The Idaho Transportation Department (ITD) has contracted with Ecological Design, Inc. to formally delineate the mean high water lines of the Pend Oreille River and Sand Creek and to identify, classify, and delineate the boundaries of wetlands within the project corridor. This effort will allow ITD to best comply with the rules and regulations of these agencies.

The available literature and field studies documented in this report accomplish these tasks.

ITDAA029693

DESCRIPTION OF THE PROJECT CORRIDOR

The project corridor south of the Pend Oreille River is within rolling terrain on the edge of a broad glacial valley that drains to the Sagle Slough. Adjacent land uses include residential and commercial developments, pasture land that is both harvested and grazed, second growth timber lands, and intersecting roadways and their right-of-ways. The terrain generally grades upward from east to west. No intermittent or perennial streams with defined bed and banks cross or run parallel to the existing US-95 roadway right-of-way or immediately adjacent to it.

The project corridor north of the Pend Oreille River is within a narrow peninsula of land that separates Sand Creek from Lake Pend Oreille. The ground has been previously modified to provide the width and grade to accommodate the roadbed of several railroad tracks and vehicular access to them and for the foot print of the Burlington Northern depot. The terrain is flat across much of the width of the project corridor, but abruptly drops to the edge of Sand Creek and more gradually grades to the edge of Lake Pend Oreille. Adjacent land uses include the railroad and related industrial buildings, a water treatment plant, disturbed ground that is dominated by herbaceous weeds, and some second growth timber. Water elevations within the reach of Sand Creek adjacent to the project corridor are regulated by Albeni Dam on the Pend Oreille River and vary between the summer pool elevation which is 2062.5 feet (628.7 meters) and the winter pool elevation which is 2055.0 feet (626.5 meters).

METHODS OF STUDY

Establishment of the Mean High Water Line

The operational definition of mean high water line (MHWL) recognized by Idaho State law is the point at which "soil is deprived of vegetation." Systematic observations were made throughout the project corridor to determine this point and each referenced to the project plans provided by ITD which show ground topography and water surface elevations.

Formal Delineation of Wetlands

Wetlands were identified and delineated by use of the routine onsite inspection method prescribed by the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), and classified by the system described in Classification of Wetlands and Deepwater Habitats (Cowardin et al. 1979).

The routine onsite inspection method is qualitative and appropriate in most situations except those that are complex or require rigorous documentation. The method requires: (1) a determination of whether normal circumstances, an atypical situation, or problem areas are present, (2) selection of representative observation points, and (3) a determination of the presence of indicators of wetlands at representative observation points. Wetland indicators are: (1) a predominance of vegetation typically adapted for life in saturated soil conditions, (2) hydric soils, and (3) inundation of the area or soil saturated to the ground surface during all or a portion of the growing season. Hydrophytic vegetation, hydric soils, and wetland hydrology are the criteria which determine if a site is a wetland. The 1987 Manual normally requires positive indicators for all three criteria for an area to be considered a wetland and the US Army COE to claim jurisdiction over a site.

Vegetation, soils, and hydrology data generated by the use of the routine onsite inspection method were used to classify wetlands by system, class, subclass, and water regime according to methods accepted by the US Fish and Wildlife Service (US FWS).

The project corridor was casually observed and field data systematically generated by Ecological Design, Inc. during the period April 7 to April 10, 1998. The entire project corridor was walked and visually inspected. Data were generated and interpreted by methods prescribed by the 1987 Manual to identify representative observation points as either wetland or upland.

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Wetlands were identified and boundaries delineated at representative observation points within the project corridor by paired test holes, one hole to either side of a suspected wetland boundary. All representative observation points identified as wetlands met the three parameter criteria. Namely a predominance of hydrophytic vegetation, the presence of hydric soils, and the presence of primary or secondary indicators of wetland hydrology. Boundaries were delineated beyond test holes by visual inspection for changes in the species composition of plant communities and ground elevations. Wetlands were identified and boundaries delineated at other locations within the project corridor where a plant community similar in composition to that at a representative observation point was present and composed predominantly of hydrophytic vegetation.

All test holes and wetland boundaries were identified within the project corridor by steel pins, which were then located by formal survey methods by others. Points of beginning for each wetland were painted on the roadway pavement.

Three measurements were made at each representative observation point:

1. **An identification of the dominant plant species within each vegetation stratum.** Herbs were sampled within a one meter quadrat (3.28 feet) centered on the test hole. Saplings, shrubs, and woody vines were sampled within a three meter (9.84 feet) distance, and trees within a nine meter (29.52 feet) distance, both up and down gradient of the test hole and within a single plant community. This modification to the prescribed method was made to allow objective sampling within the narrow, linear community of hydrophytes observed along most western wetland systems.

   Dominance for herbs was determined by areal cover, saplings and shrubs by height, woody vines by number of stems, and trees by basal area. A predominance of vegetation from all strata typically adapted for life in saturated soil conditions is indicative of hydrophytic vegetation.

   The 1987 Manual describes predominance as >50% of the dominant species present (Environmental Laboratory 1987).

2. **An identification of soil chroma** at the 10 inch depth, or the point immediately below the A-horizon, whichever is shallower.

   A chroma of 1 or less for unmottled non-sandy soils, and 2 or less for most mottled non-sandy soils - as determined by comparison to a Munsell soil color chart - is indicative of hydric soils.

   The presence of a spodic horizon, organic streaking, and high organic content in the surface horizon in sandy soils is also indicative of hydric soils (Environmental Laboratory 1987).

3. **An identification of field indicators of wetland hydrology.** Field indicators described by the 1987 Manual include the presence of standing water, or saturated soil at the ground surface as indicated by a ground water table within 1.0 foot of the surface during all or a portion of the growing season.

   Other indicators of wetland hydrology include watermarks on woody vegetation, drift lines, sediment deposits, drainage patterns, and oxidized rhizospheres associated with living roots.

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> Areas continuously inundated or saturated at the surface for a period >12.5% of the growing season exhibit wetland hydrology. Areas continuously inundated or saturated at the surface for a period ≥5% and ≤12.5% of the growing season may not exhibit wetland hydrology (Environmental Laboratory 1987 and Memorandum for SEE Distribution - Clarification and Interpretation of the 1987 Manual 1992).

The Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) defines growing season as "... the portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biological zero (5° C). October 7, 1991 guidance from the US Army Corps of Engineers states, "The growing season, based on air temperature in the county soil surveys, can be approximated as the period of time between the average date of the first killing frost to average date of the last killing frost, which sometimes does not accurately reflect the period of time when the soil temperatures are higher than biological zero."

The March 6, 1992 memorandum from the US Army Corps of Engineers provides clarification and interpretation of the 1987 Manual, including the wetland hydrology parameter. It states, "Areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days for more than 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas wet between 5 percent and 12.5 percent of the growing season in most years may or may not be wetlands. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands."

The USDA-SCS Soil Survey of the Bonner County Area, Idaho identifies growing season recorded at Sandpoint, Idaho for the period 1951 to 1978. Growing season begins May 2 and ends September 24 for a total of 157 days. Areas inundated and/or saturated less than 8 days a year within the project corridor are non-wetlands. Areas inundated and/or saturated between 8 and 20 days a year within the project corridor may be wetlands provided the soil and vegetation parameters are met.

The indicator status of plant species within the project corridor are identified in the National List of Plant Species that Occur in Wetlands: Idaho (1988) and modification to that list made by Informational Public Notice, 1993 Supplement to National List of Plant Species that Occur in Wetlands: Northwest (Region 9) (1993). Species with an obligate wetland (OBL) indicator status are estimated to occur under natural conditions in wetland with a probability of >99%, facultative wetland (FACW) species with a probability of 67% - 99%, facultative (FAC) species with a probability of 34% - 66%, facultative upland (FACU) species with a probability of 1% - 33%, and obligate upland (UPL) species with a probability of <1%. Species with an indicator status which ranges from facultative (FAC) to obligate wetland (OBL) are considered hydrophytes and contribute to a "predominance of hydrophytic vegetation" a criterion of the 1987 Manual.

REVIEW OF THE LITERATURE AND OBSERVATIONS WITHIN THE PROJECT CORRIDOR

Examination of data from the following sources suggest portions of the project corridor have wetland characteristics (see Figures 1 – 3 and Appendix 1):

1. US Geologic Survey (USGS) Sagle, Idaho and Sandpoint, Idaho quadrangle maps (7.5 minute series).
2. US Fish and Wildlife Service (US FWS), National Wetlands Inventory Sagle, Idaho and Sandpoint, Idaho orthophoto quadrangle maps (7.5 minute series).
3. Soil Survey of the Bonner County Area, Idaho, US Department of Agriculture - Soil Conservation Service (SCS).
4. Aerial photography provided by the Idaho Transportation Department (ITD).

ITDAA029696

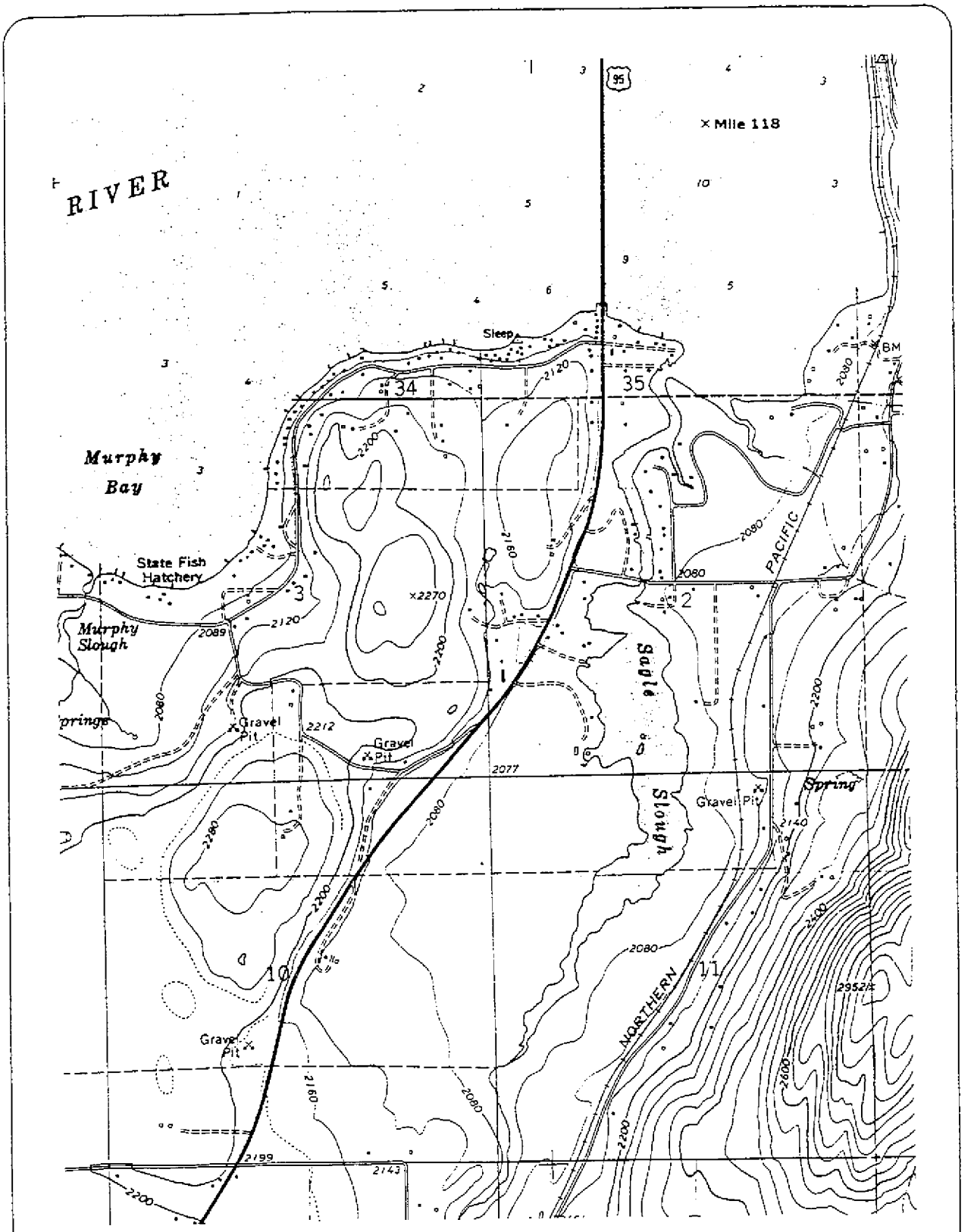

Figure 1 - US Geologic Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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Not to Scale

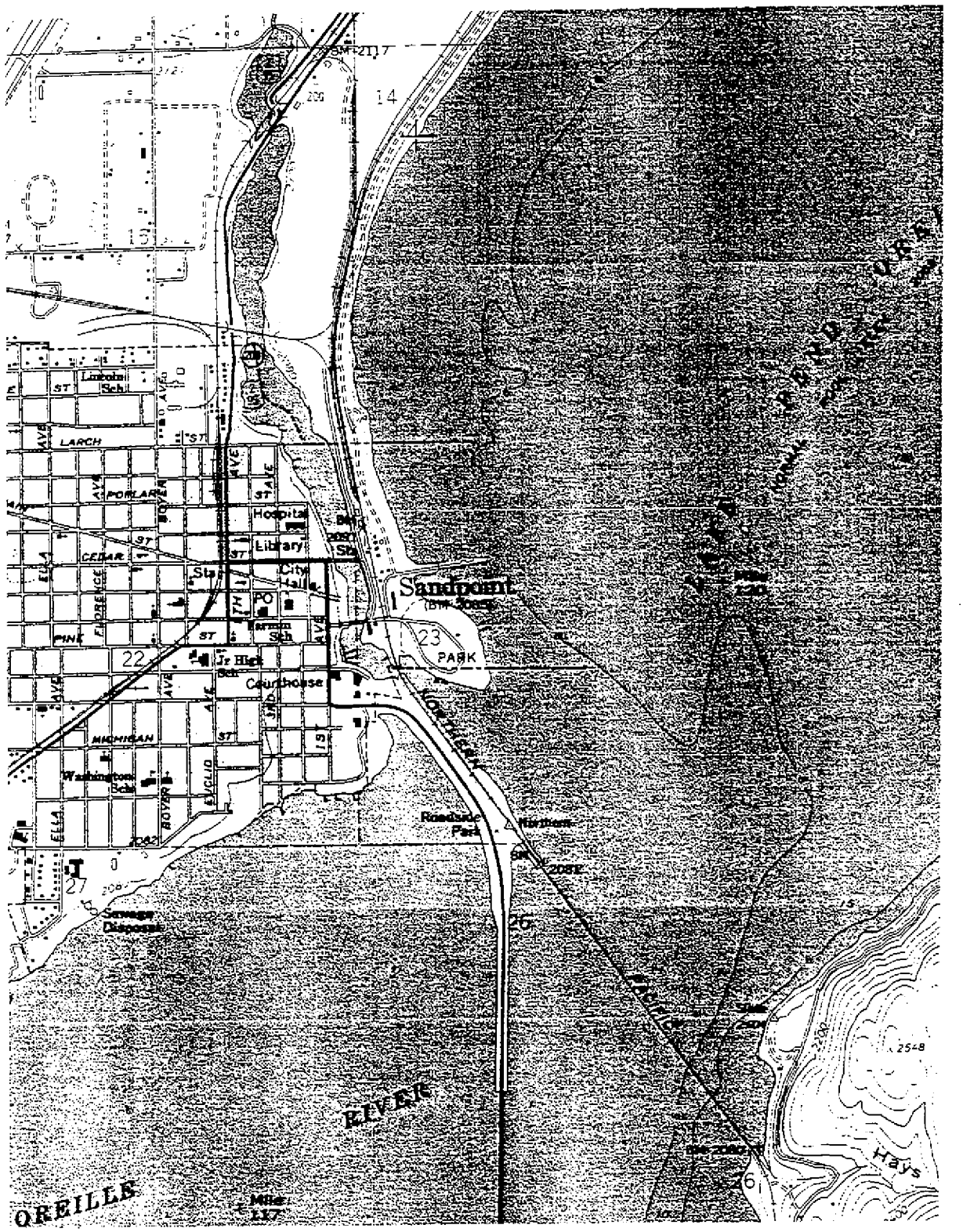

Figure 1 - US Geologic Survey Map

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US-95 Sandpoint North & South

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May 15, 1998

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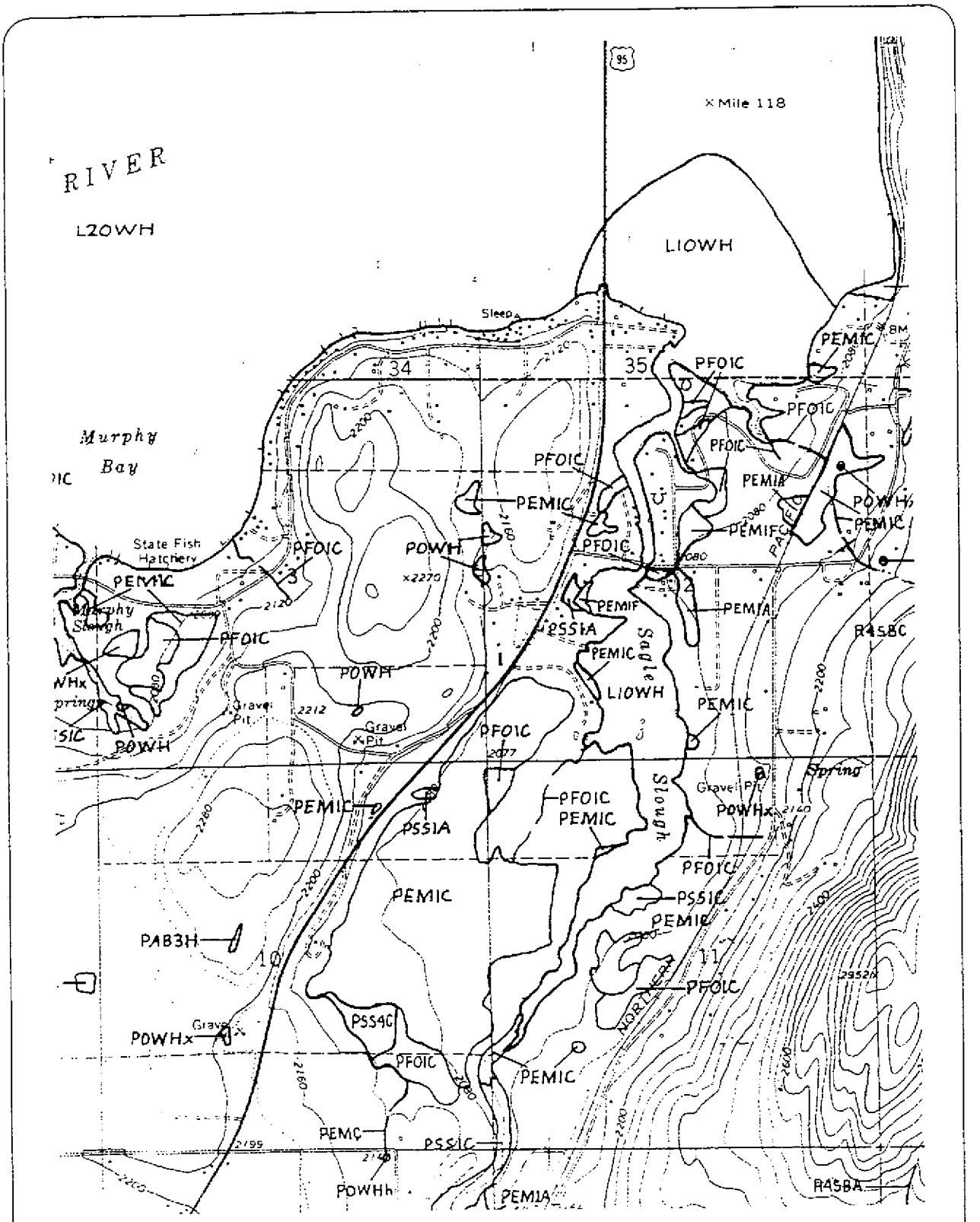

Figure 2 - US FWS National Wetlands Inventory Map

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US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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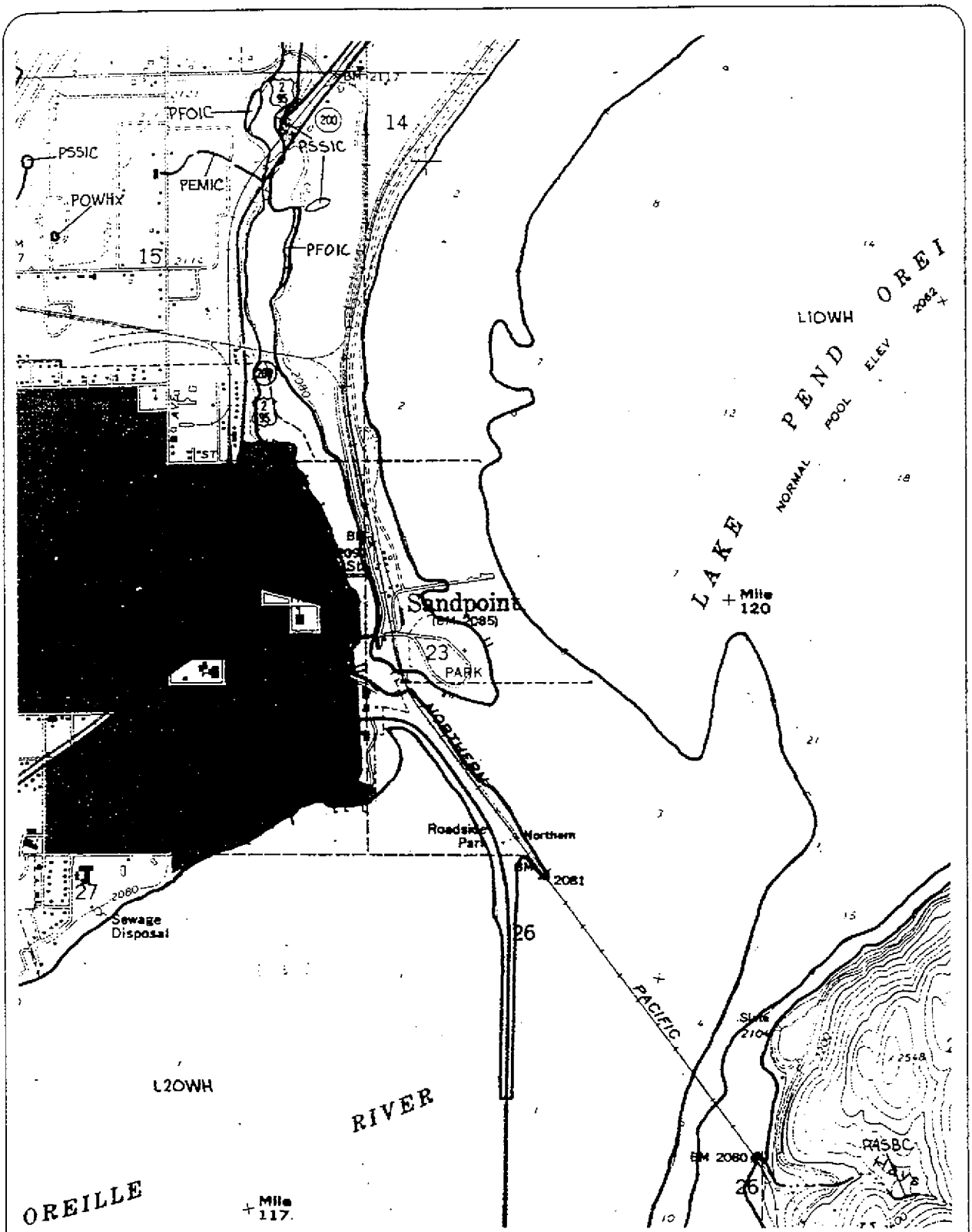

Figure 2 - US FWS National Wetlands Inventory Map

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US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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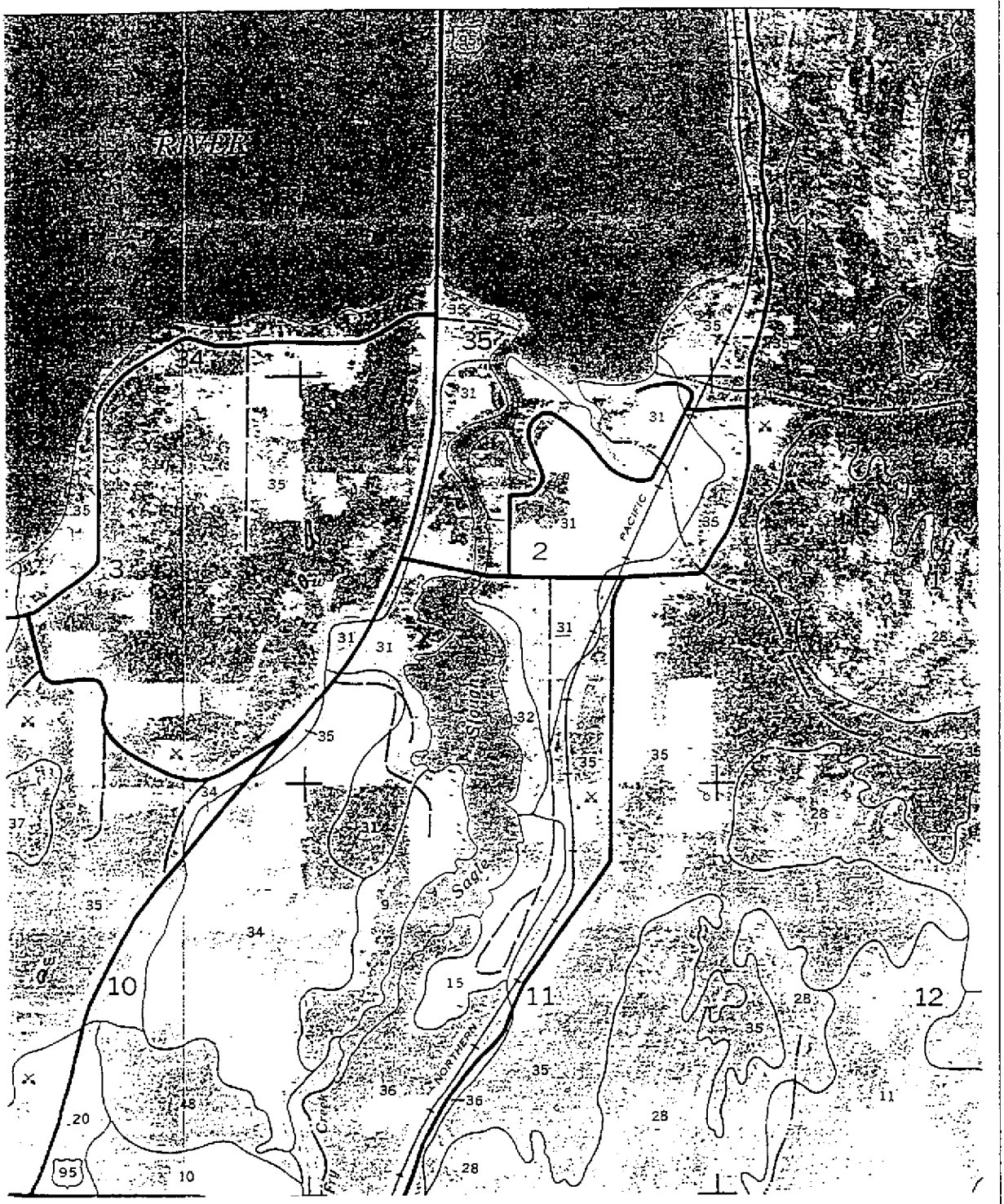

Figure 3 - USDA Soil Conservation Service Soil Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

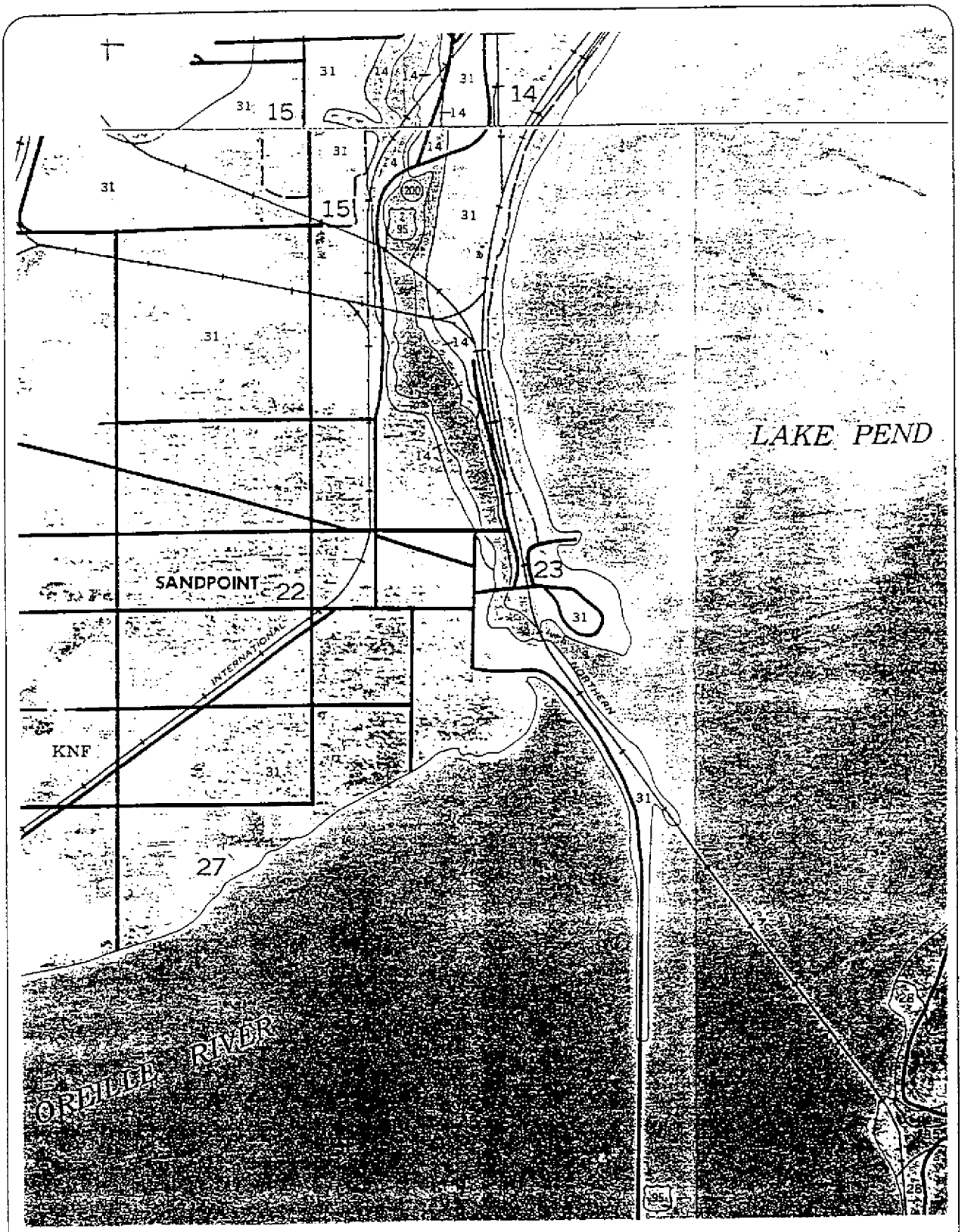

Figure 3 - USDA Soil Conservation Service Soil Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

The USGS quadrangle maps identify the Pend Oreille River and Sand Creek as the only surface water features within or immediately adjacent to the project corridor.

The US FWS National Wetlands Inventory maps identify five wetland types, both vegetated and unvegetated, within or immediately adjacent to the project corridor. Unvegetated wetlands recognized by the US FWS are not defined as wetlands by the US Army COE. The US Army COE criteria for delineation of wetlands requires the presence of all three indicators, namely wetland hydrology, hydric soils, and hydrophytic vegetation. The US FWS criteria requires only one of the indicators. However, vegetated wetlands and the bed and banks of the Pend Oreille River and Sand Creek below the MHWL within the project corridor are both within the jurisdiction of the US Army COE.

The shallow, unvegetated wetlands associated with the Pend Oreille River and Sand Creek are influenced by the variable hydrology provided by the summer and winter pool elevations established by the Albeni Dam. Annual grasses and forbs grow below the MHWL at some locations within the project corridor. The vegetated wetlands throughout the remainder of the project corridor are supported by ground water at or near the ground surface that varies in elevation with season.

South of the Pend Oreille River and east of US-95 wetlands are shown on the map and classified by the US FWS National Wetlands Inventory as palustrine, emergent, persistent, seasonally flooded (PEM1C), palustrine, scrub shrub, broad-leaved deciduous, temporarily flooded (PSS1A), and palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1C) wetlands.

Palustrine, emergent wetlands appear on the ground as grazed and harvested pastures dominated by reed canary grass (Phalaris arundinacea) with lesser amounts of baltic rush (Juncus balticus), Watson's willow herb (Epilobium watsonii), and wooly sedge (Carex lanuginosa) present. Indicator status for these species ranges from facultative wetland (FACW) to obligate wetland (OBL). Adjacent uplands are also dominated by reed canary grass, but associated species are red clover (Trifolium pratense), common dandelion (Taraxacum officinale), and mouse-ear chickweed (Cerastium arvense) and all have a facultative upland (FACU) indicator status.

Palustrine, scrub-shrub wetlands appear on the ground as remnants of pre-settlement or secondary growth and are dominated by red alder (Alnus rubra) and a herbaceous understory which includes Douglas spiraea (Spiraea douglasii), starry false Solomon's seal (Smilacina stellata), and four-line honeysuckle (Lonicera involucrata). Their indicator status ranges from facultative minus (FAC-) to facultative wetland (FACW).

Palustrine, forested wetlands also appear in the ground as remnants of pre-settlement or secondary growth and are dominated by black cottonwood (Populus trichocarpa) and an understory which includes red alder, Douglas spiraea, and four-line honey suckle. Their indicator status ranges from facultative (FAC) to facultative wetland (FACW). Adjacent uplands are instead dominated by lodgepole pine (Pinus contorta) with a facultative (FAC) indicator status, and white pine (Pinus alba) and Douglas fir (Pseudotsuga menziesii) which are not listed in the National List of Plant Species that Occur in Wetlands: Idaho (1988) and are presumed to be species characteristic of upland environments.

South of the Pend Oreille River and west of US-95 wetlands are shown on the map and classified by the US FWS National Wetlands Inventory as palustrine, emergent, persistent, seasonally flooded (PEM1C) wetlands. They appear on the ground as disturbed ground that has been disked, mowed, or tilled and are dominated by reed canary grass with a facultative wetland (FACW) indicator status and Kentucky bluegrass (Poa pratense) with a facultative (FAC) indicator status.

ITDAA029703

The Pend Oreille River and Sand Creek below the mean high water line are classified by the US FWS National Wetlands Inventory as lacustrine, littoral, open water, permanently flooded (L2OWH) wetland. They are unvegetated river and stream beds that are largely composed of silty sand and with surface water that varies in elevation with season. A narrow fringe of palustrine, scrub-shrub and palustrine, forested wetlands appear on the ground at or near the mean high water line, but are not shown on the maps. The scrub-shrub wetland plant community is dominated by reed canary grass (Phalaris arundinacea), four line honeysuckle (Lonicera involucrata), and red alder (Alnus rubra), and the forested wetland plant community is dominated by these species and black cottonwood (Populus trichocarpa). Also north of the Pend Oreille River between Sand Creek and the railroad near the north limit of the project corridor an isolated area of palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded (PSS1C) wetland is shown on the map. This wetland was not observed during casual observation.

The USDA - SCS Soil Survey of the Bonner County Area, Idaho (1982) identifies and describes soils within the project corridor (see Table 1). They are generally characterized south of the Pend Oreille River as very deep, level to hilly, well drained soils on terraces and north of the Pend Oreille River as very deep, level to moderately steep, poorly drained to moderately well drained soils on terraces.

The publication *Hydric Soils of the State of Idaho 1985* (USDA-SCS 1985) identifies the Odenson soil series as hydric. High water table is described as being within 0.5 to 2.0 feet of the ground surface, most often in the months of February to June, and frequency of flooding is described as none.

Table 1 - Soils Within the Project Corridor and their Characteristics

Symbol	Soil Map Unit Name	Soil Description	Depth to Seasonal High Water Table
14	Haploxeralfs and Xerochrepts, 30 to 55% slopes	well drained to moderately well drained, permeability is slow to moderately rapid	not available
31	Mission silt loam, 0 to 2% slopes	somewhat poorly drained, permeability is very slow	0.5 to 1.5 feet from February to May
34	Odenson silt loam, 0 to 2% slopes	poorly drained, permeability is slow	0.5 to 2.0 feet from February to June
35	Pend Oreille silt loam, 5 to 45% slopes	Well drained, permeability is moderate	>6.0 feet

RESULTS OF FIELD STUDIES

Establishment of the Mean High Water Line

The summer pool elevation of the Pend Oreille River and Lake Pend Oreille is recognized by the US Army COE as the MHWL of these water bodies. Communication with Mike Dougherty (March 13, 1998), US Army COE field representative Coeur d'Alene field office, confirms the agency will assert summer pool elevation is the MHWL of the reach of Sand Creek adjacent to the project corridor. Observations made by Ecological Design, Inc. on April 9 and 10, 1998 confirm summer pool elevation is the approximate location at which "the soil is deprived of vegetation", the operational definition of MHWL recognized by Idaho State law. Annual grasses and forbs grow below the MHWL at some locations within the project area and are jurisdictional wetlands.

ITDAA029704

Formal Delineation of Wetlands

South of the Pend Oreille River and east of US-95 the identification and location of wetlands shown on the map and classified by the US FWS National Wetlands Inventory as palustrine, emergent, persistent, seasonally flooded (PEM1C), palustrine, scrub shrub, broad-leaved deciduous, temporarily flooded (PSS1A), and palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1C) wetlands are confirmed by the results of field study. However, boundaries are farther west than shown on the map and extend into proposed right-of-way for the proposed project. Approximately 15% upland inclusions within these wetlands were observed near the Wollsy Road approach to US-95 and an unnamed approach approximately 500 feet to the north.

South of the Pend Oreille River and west of US-95 the identification and location of wetlands shown on the map and classified by the US FWS National Wetlands Inventory as palustrine, emergent, persistent, seasonally flooded (PEM1C) wetlands in the vicinity of the Sandpoint Baptist Church are confirmed by field study. However, additional PEM1C wetlands north of Brisboys Road to both sides of the existing motel and adjacent to Swan's Landing Restaurant are not shown on the map. They were identified, delineated, and documented by the results of field study.

North of the Pend Oreille River the identification and location of *unvegetated* wetlands shown on the map and classified by the US FWS National Wetlands Inventory as lacustrine, littoral, open water, permanently flooded (L2OWH) wetland below the mean high water line of the Pend Oreille River and Sand Creek are confirmed by the results of field study.

Additional wetlands north of the Pend Oreille River were identified, delineated, and documented by the results of field study, but are not shown on the map. These wetlands are: (1) a narrow fringe of palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1C) wetland west of the approach to the long bridge, from the breakwater to the summer pool elevation, (2) palustrine, emergent, persistent, seasonally flooded (PEM1C) wetland east of the approach to the long bridge, from the paved recreational path to the railroad embankment, (3) palustrine, scrub shrub, broad-leaved deciduous, seasonally flooded (PSS1C) wetland at the north shore of the Pend Oreille River, between the approach to the long bridge and the railroad embankment, (4) palustrine, emergent, persistent, seasonally flooded (PEM1C) wetland near the Lakeside Inn south of Bridge Street, (5) a narrow fringe of palustrine, scrub shrub, broad-leaved deciduous, seasonally flooded (PSS1C) wetland on the east shore of Sand Creek at the summer pool elevation, (6) an area below the Burlington Northern / Santa Fe Railroad crossing of Sand Creek from the abutment of the structure to the summer pool elevation of Sand Creek (this area is defined as a problem area by the 1987 Manual because it is sparsely vegetated due to use by dirt bikers), and (7) palustrine, scrub shrub, broad-leaved deciduous, temporarily flooded (PSS1A) wetland that parallels US-95 from its intersection with SH-200 to a point south of the Burlington Northern / Santa Fe Railroad crossing of US-95.

North of the Pend Oreille River between Sand Creek and the railroad near the north limit of the project corridor an isolated area of palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded (PSS1C) wetland is shown on the map. This wetland was not observed during field studies.

Field data documenting the results of the study are presented in Appendix 2.

The locations of test holes and wetland boundaries are shown on the map presented in Appendix 3. It should be understood the accuracy of the map is limited by its scale, line width, and other factors. Numeric results of the formal survey are available from the Idaho Transportation Department.

The identification, classification, and delineation of wetlands documented by this report, identified on the ground, and located on the attached map must be confirmed by the US Army Corps COE and the State of Idaho prior to any proposed activity in wetlands.

ITDAA029705

This identification, classification, and delineation of wetlands will normally remain valid for a period of three years from the date of confirmation by the US Army COE, unless new information warrants revision of the delineation (US Army COE 1990).

Many activities in wetlands and waters of the United States require a §404 permit from the US Army COE and / or permit(s) from the State of Idaho, county, and local governments.

Confirmed wetland boundaries should be reestablished on the ground by a qualified professional prior to construction to best avoid unauthorized encroachments.

ITDAA029706

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ITDAA029708

APPENDIX 1

AERIAL PHOTOGRAPHY OF THE PROJECT AREA

ITDAA029709

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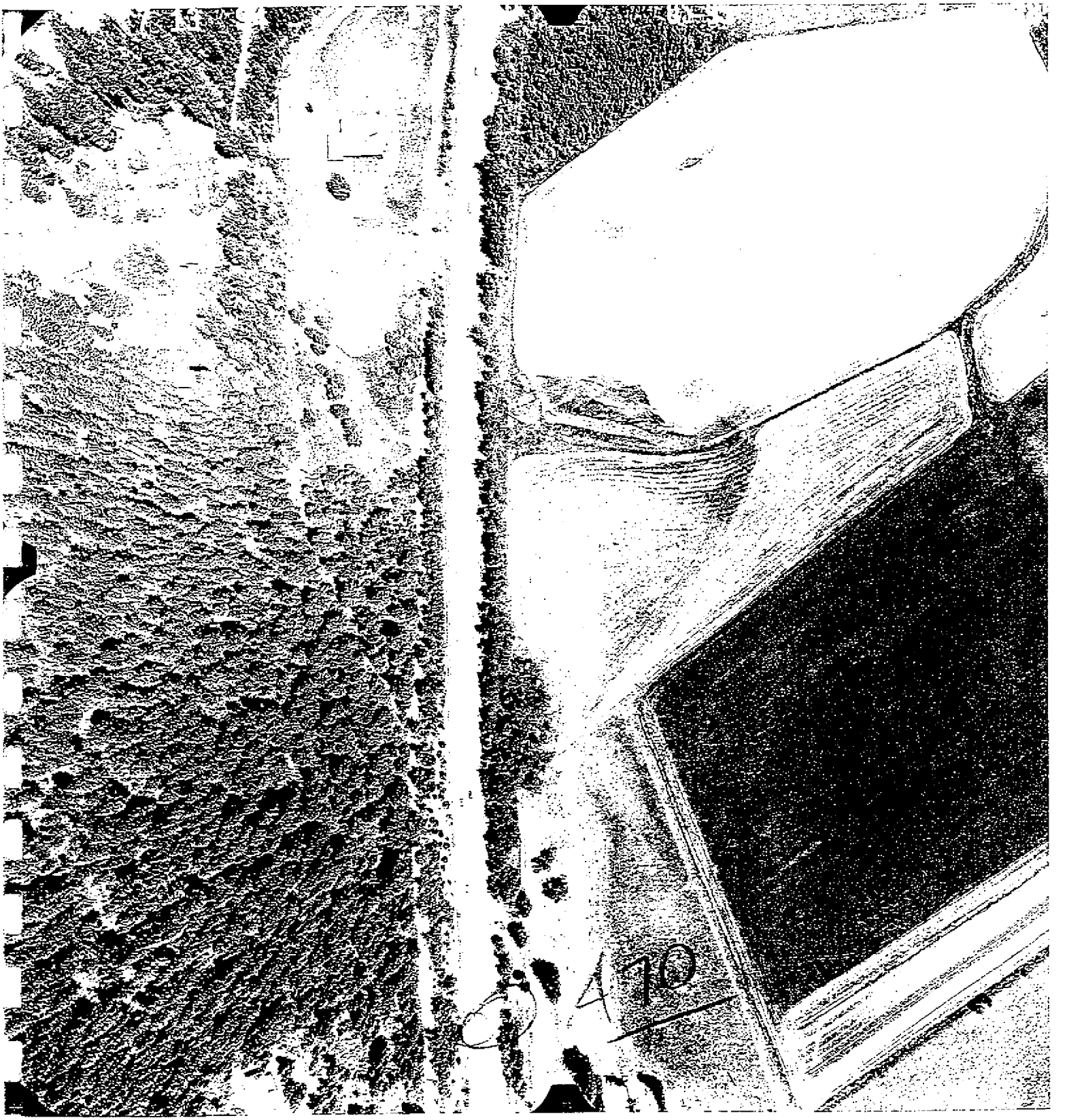
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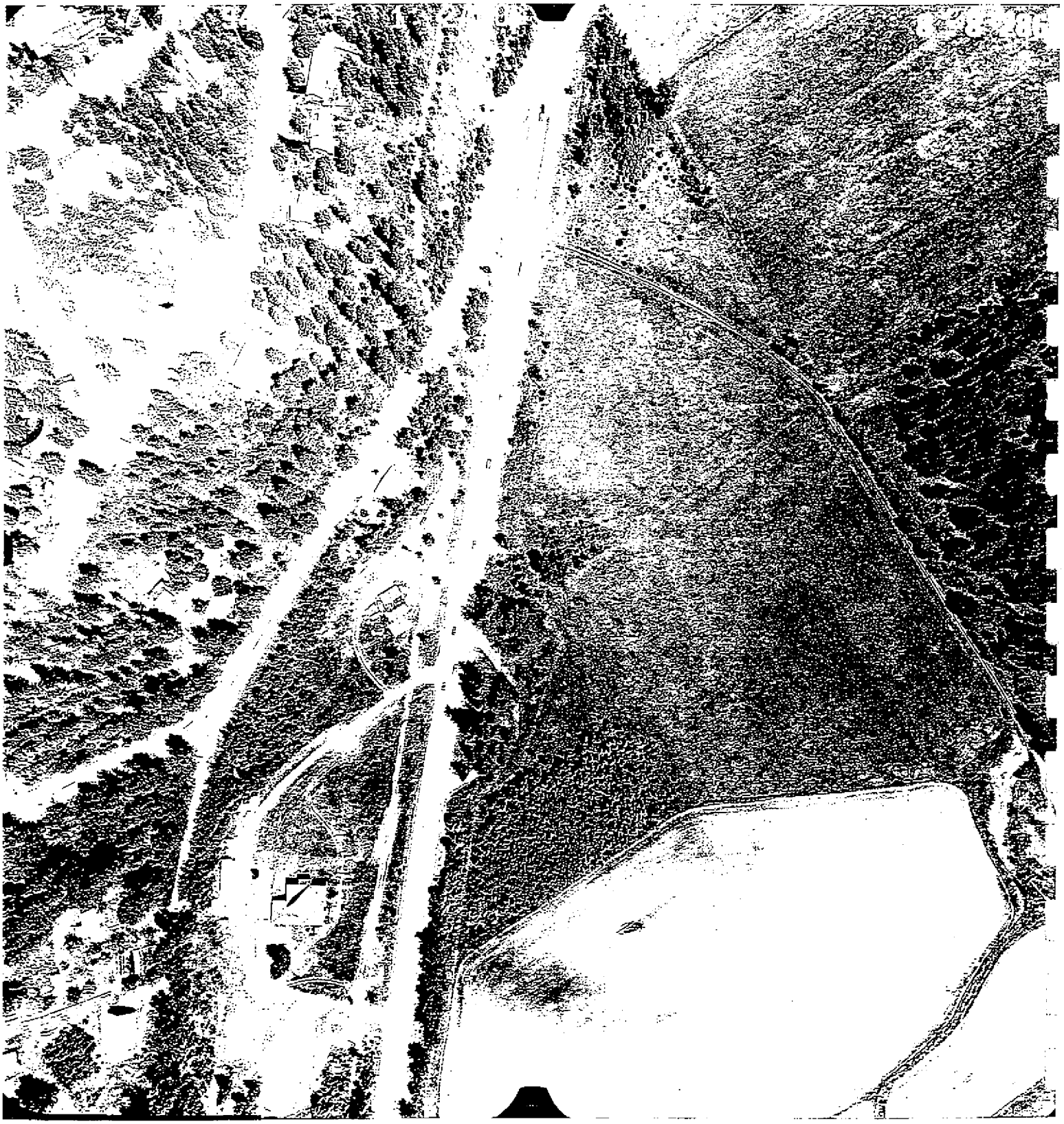

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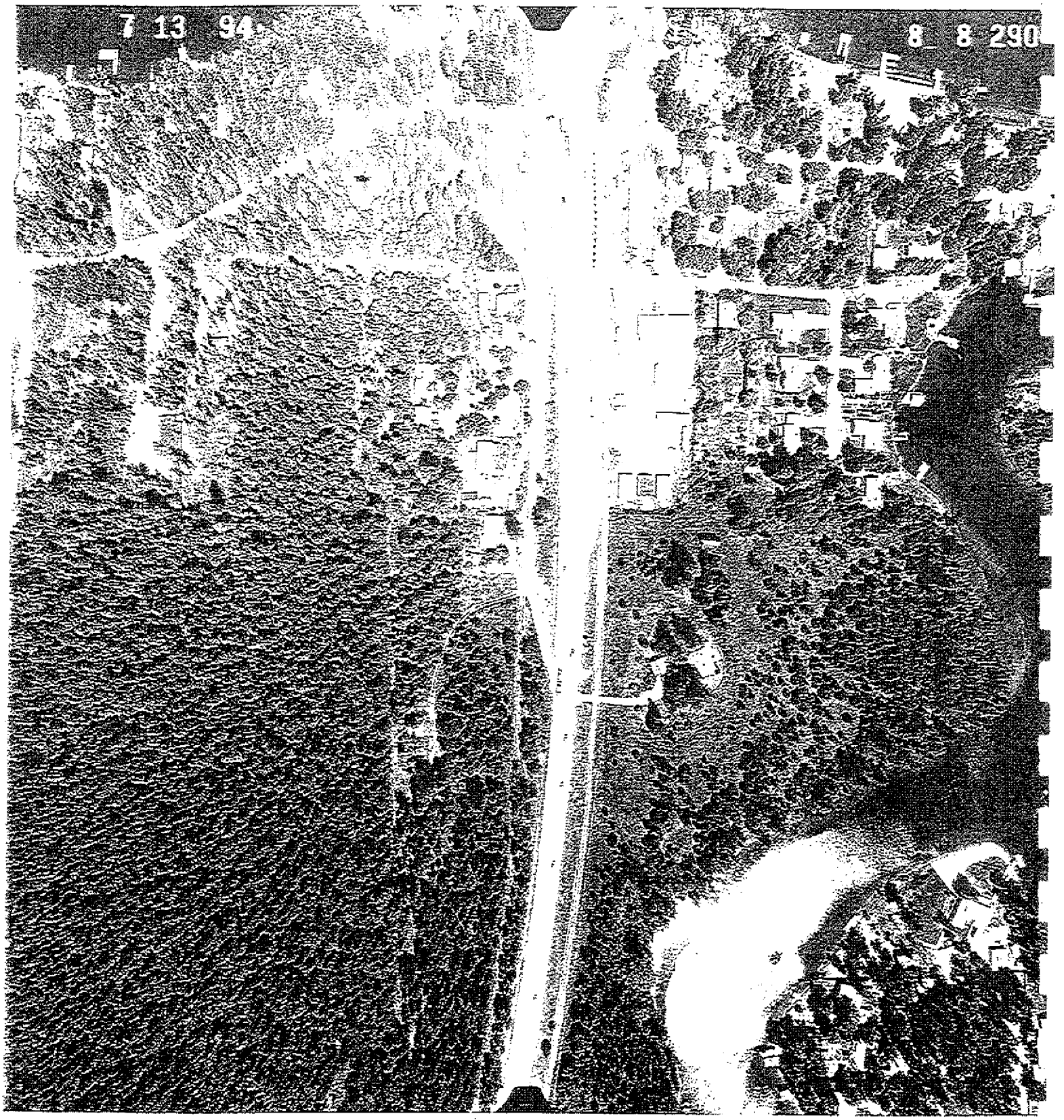
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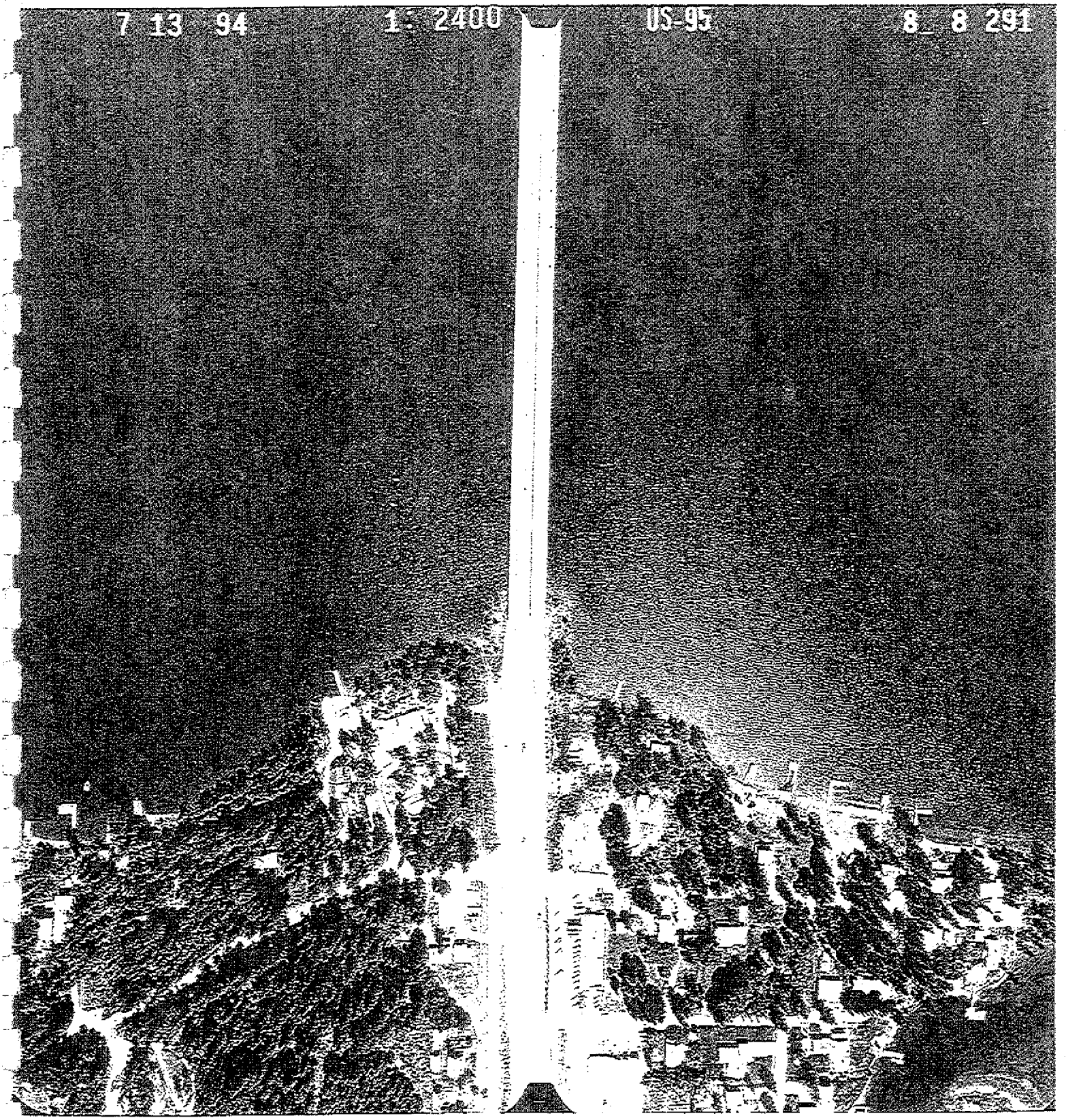
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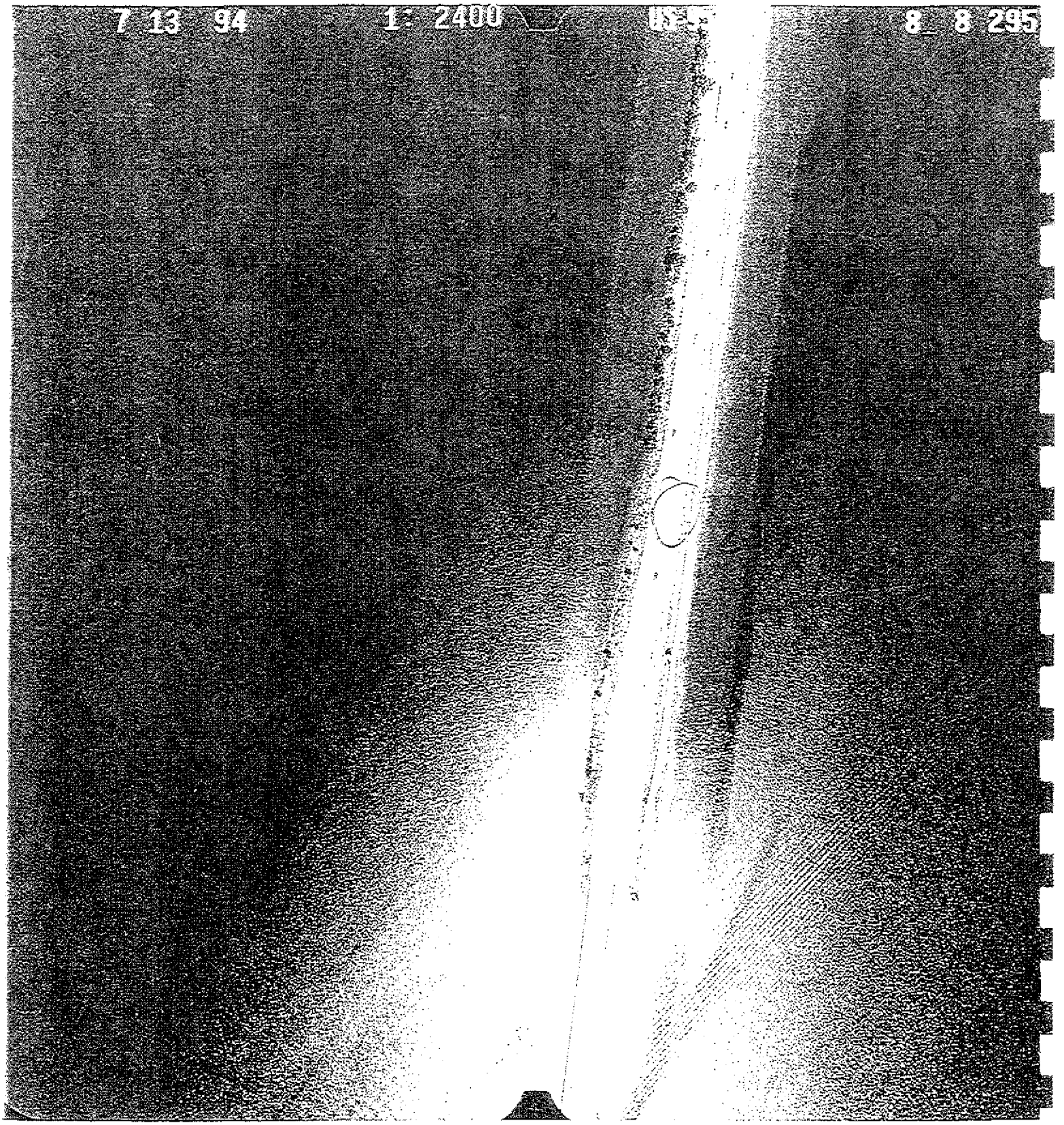

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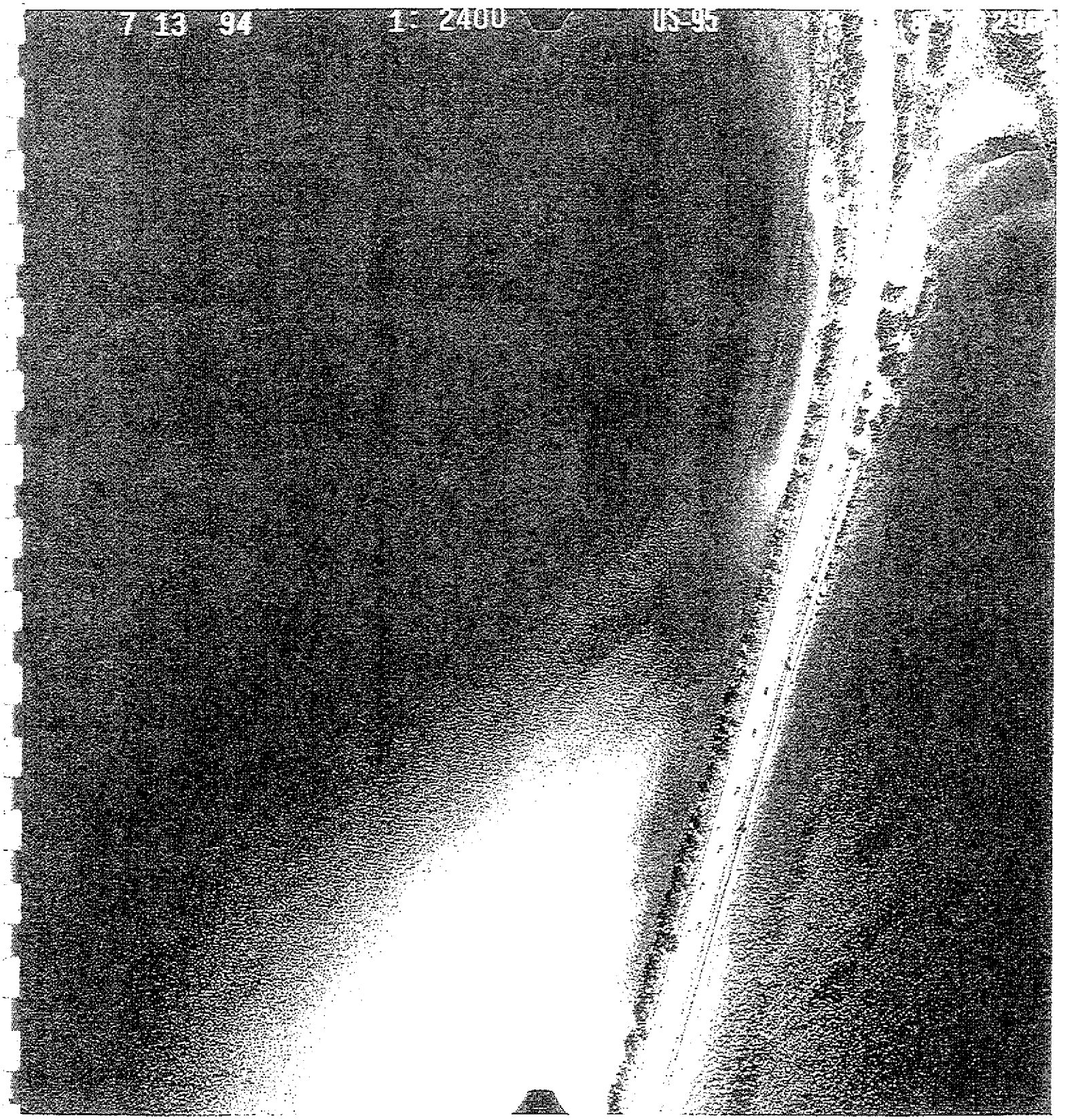
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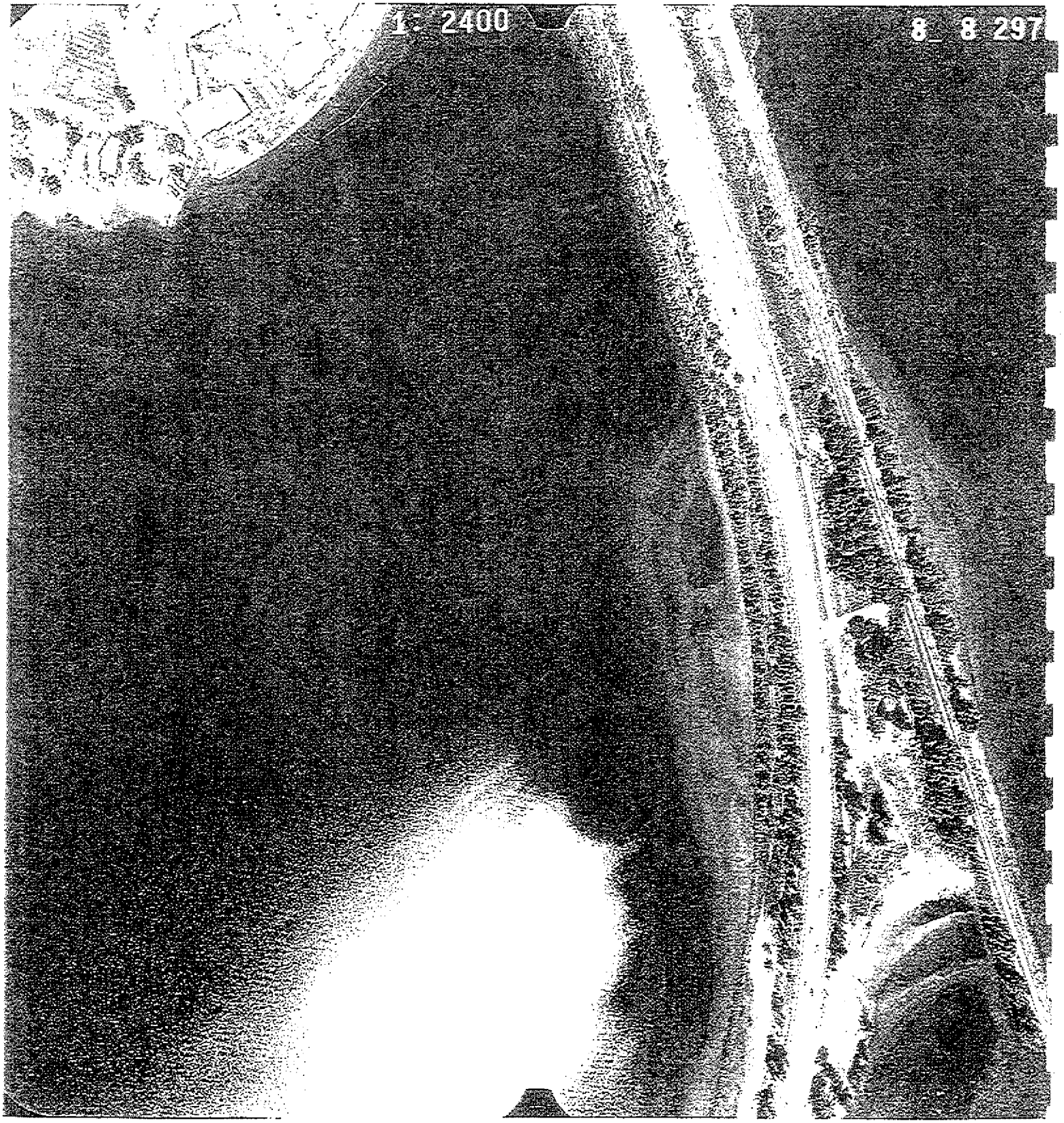
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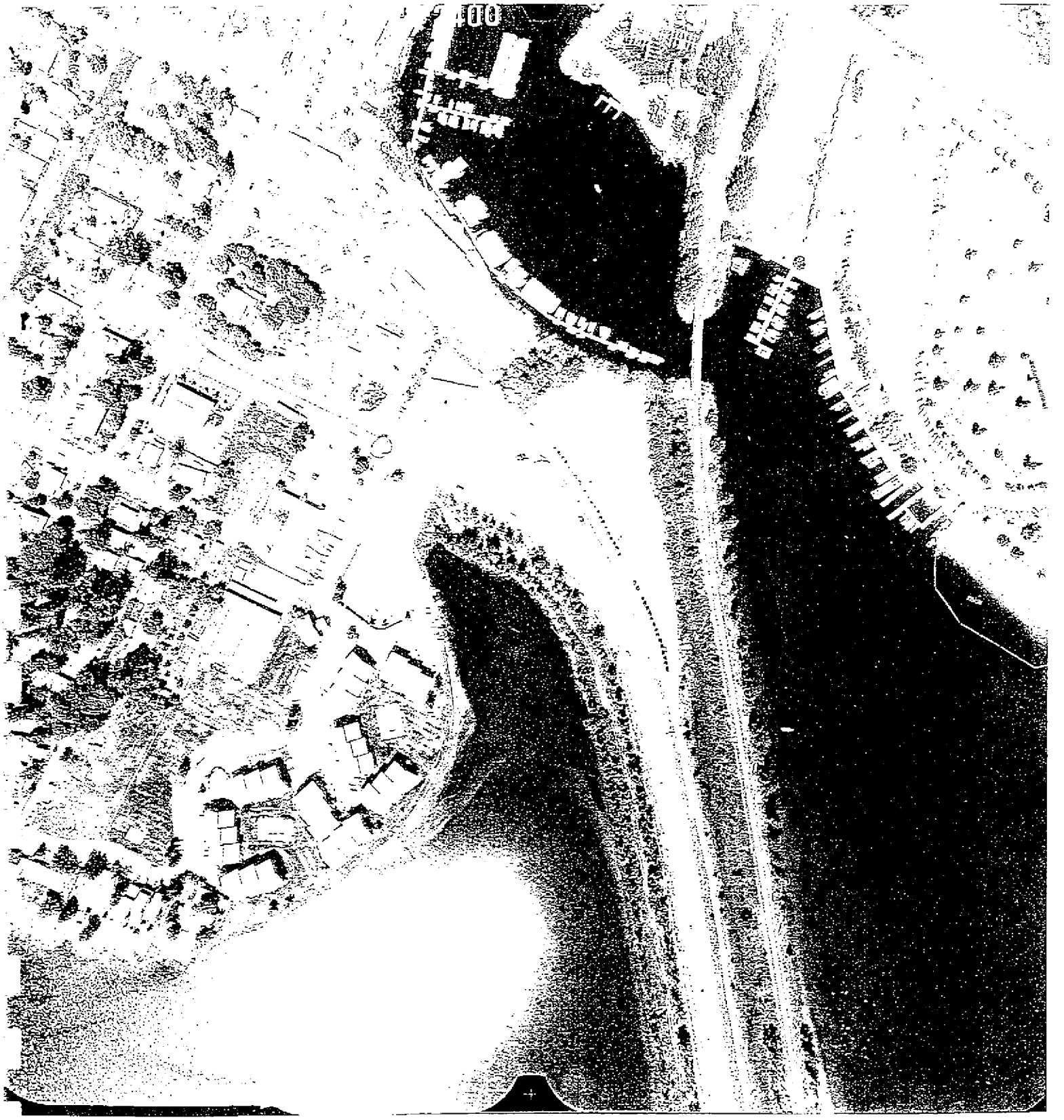

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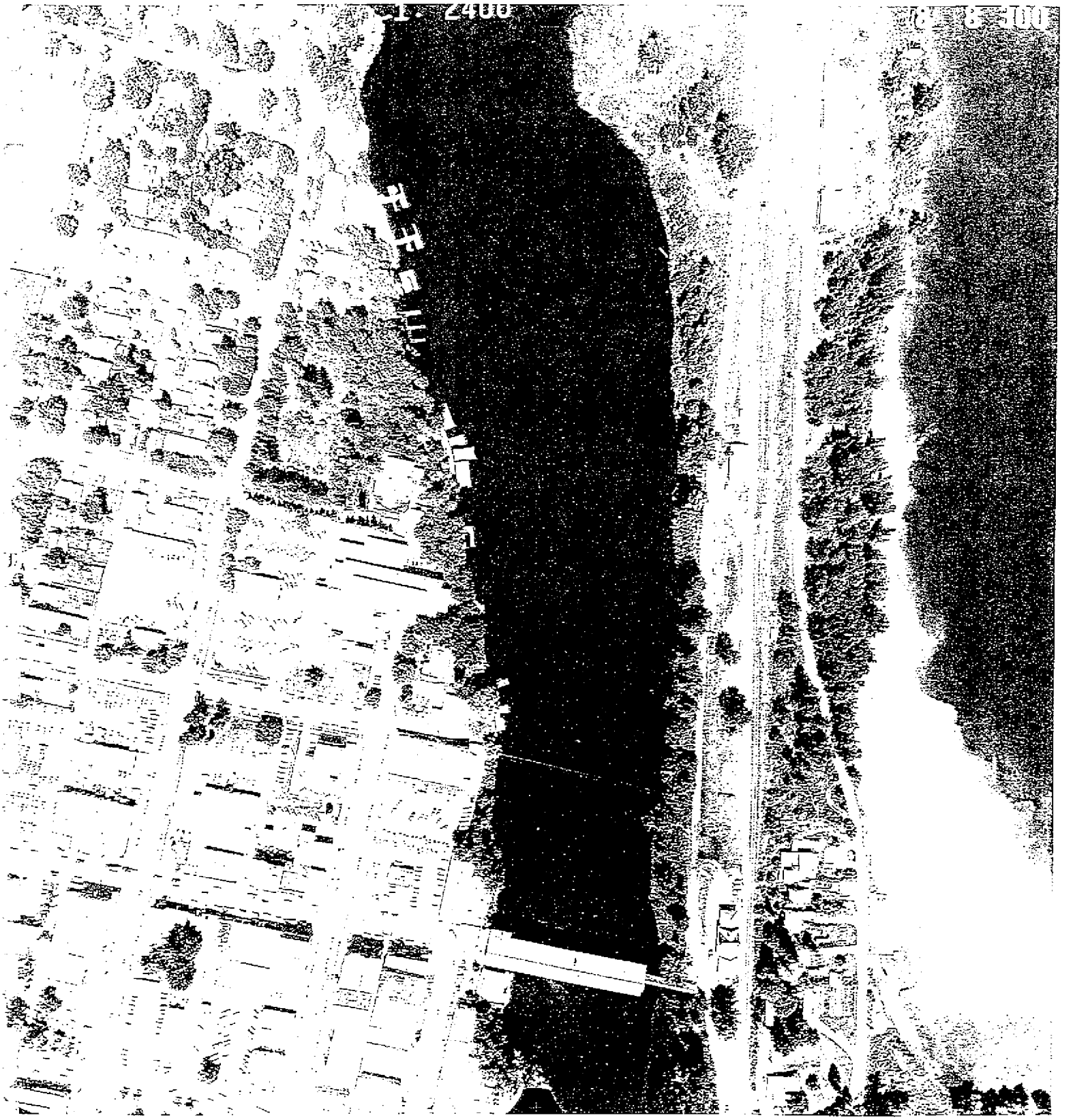

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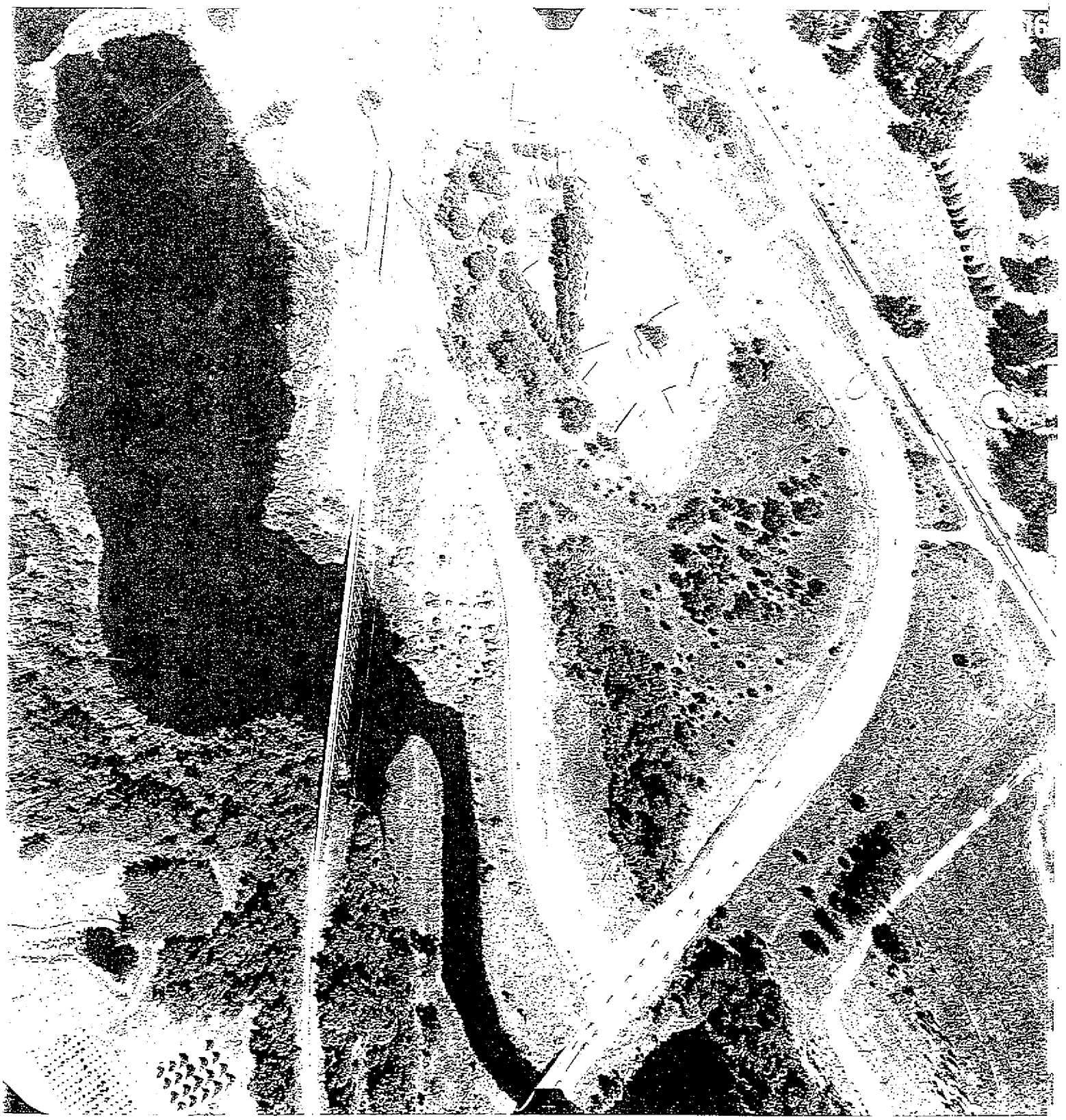

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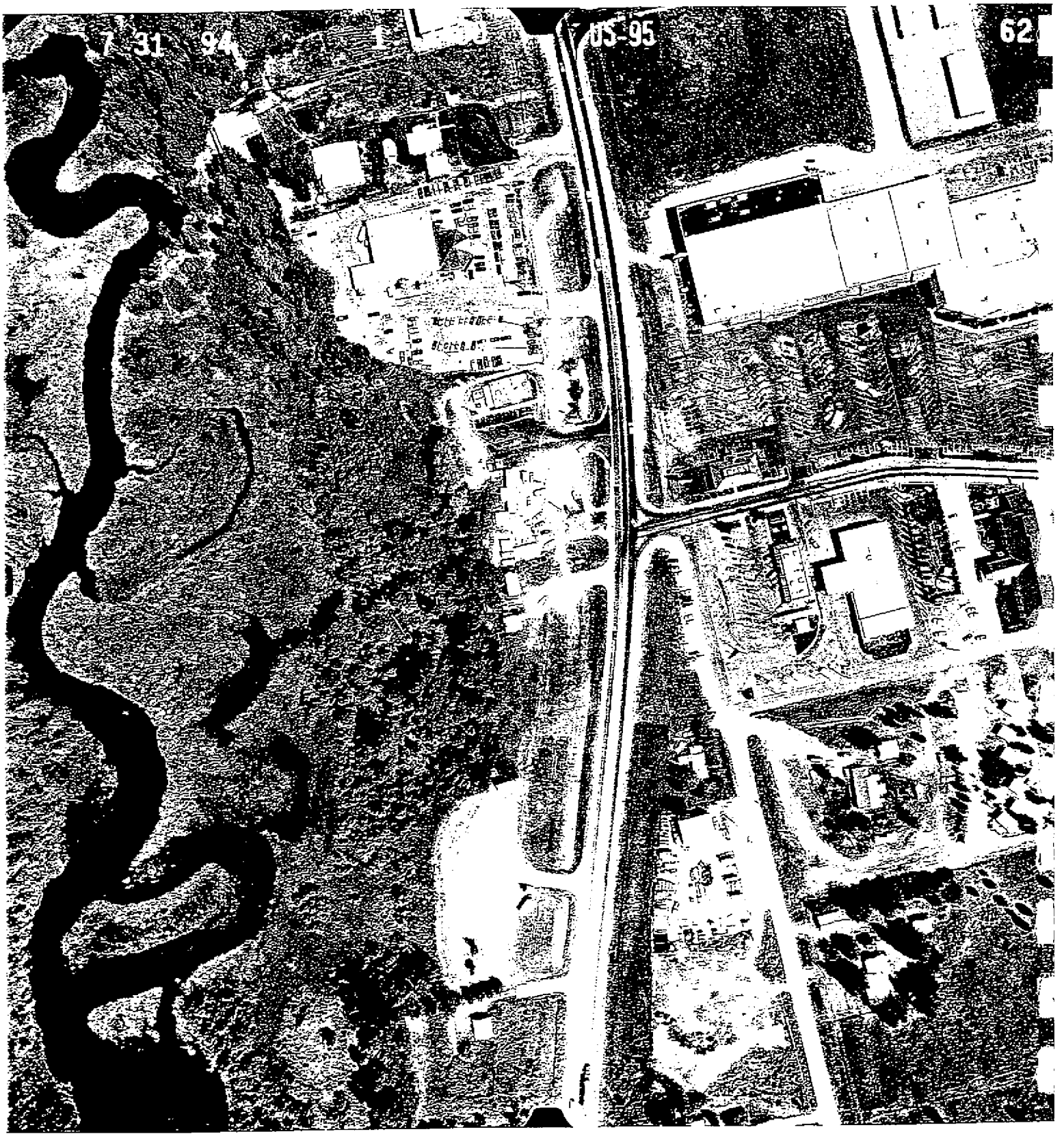
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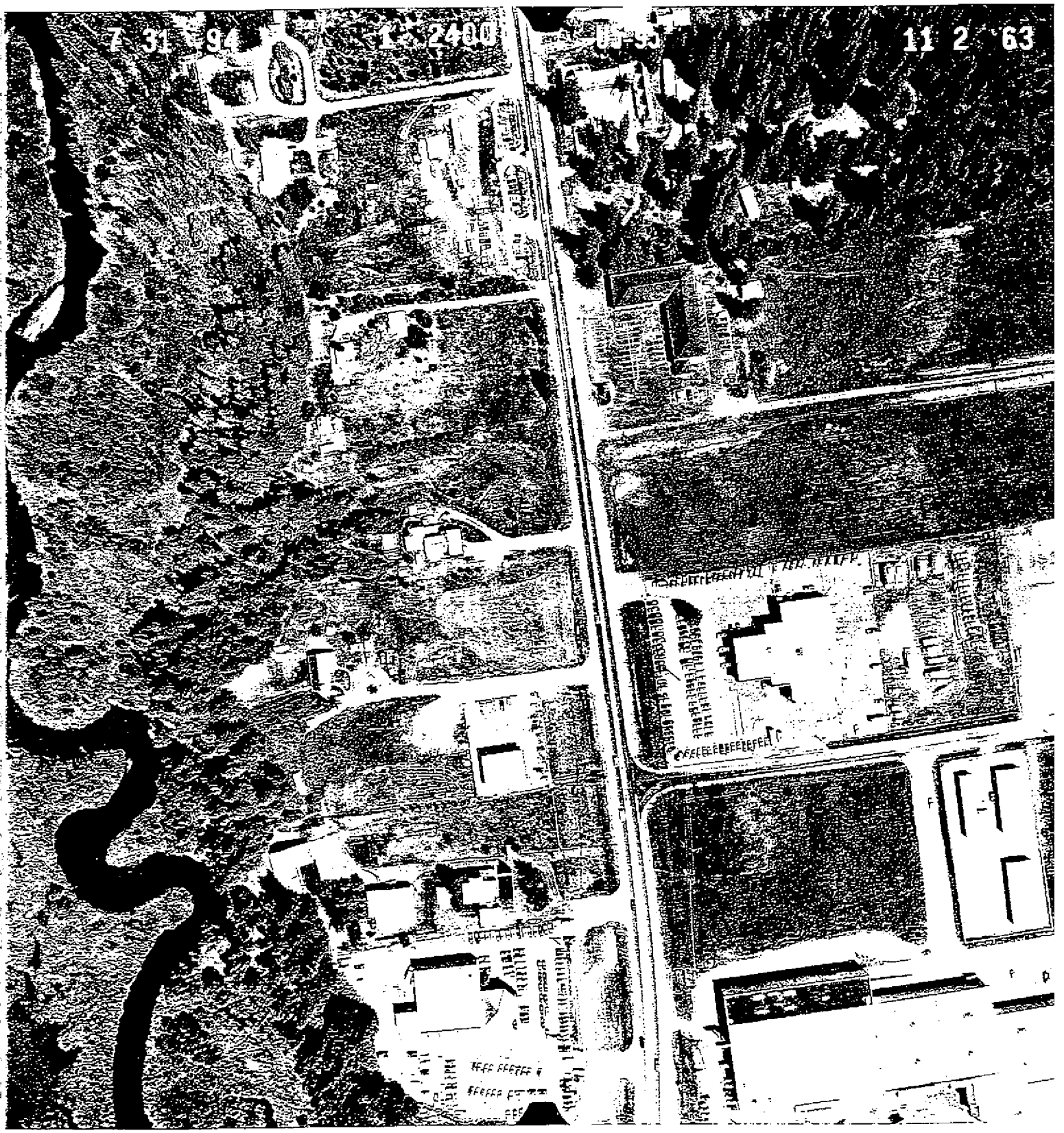
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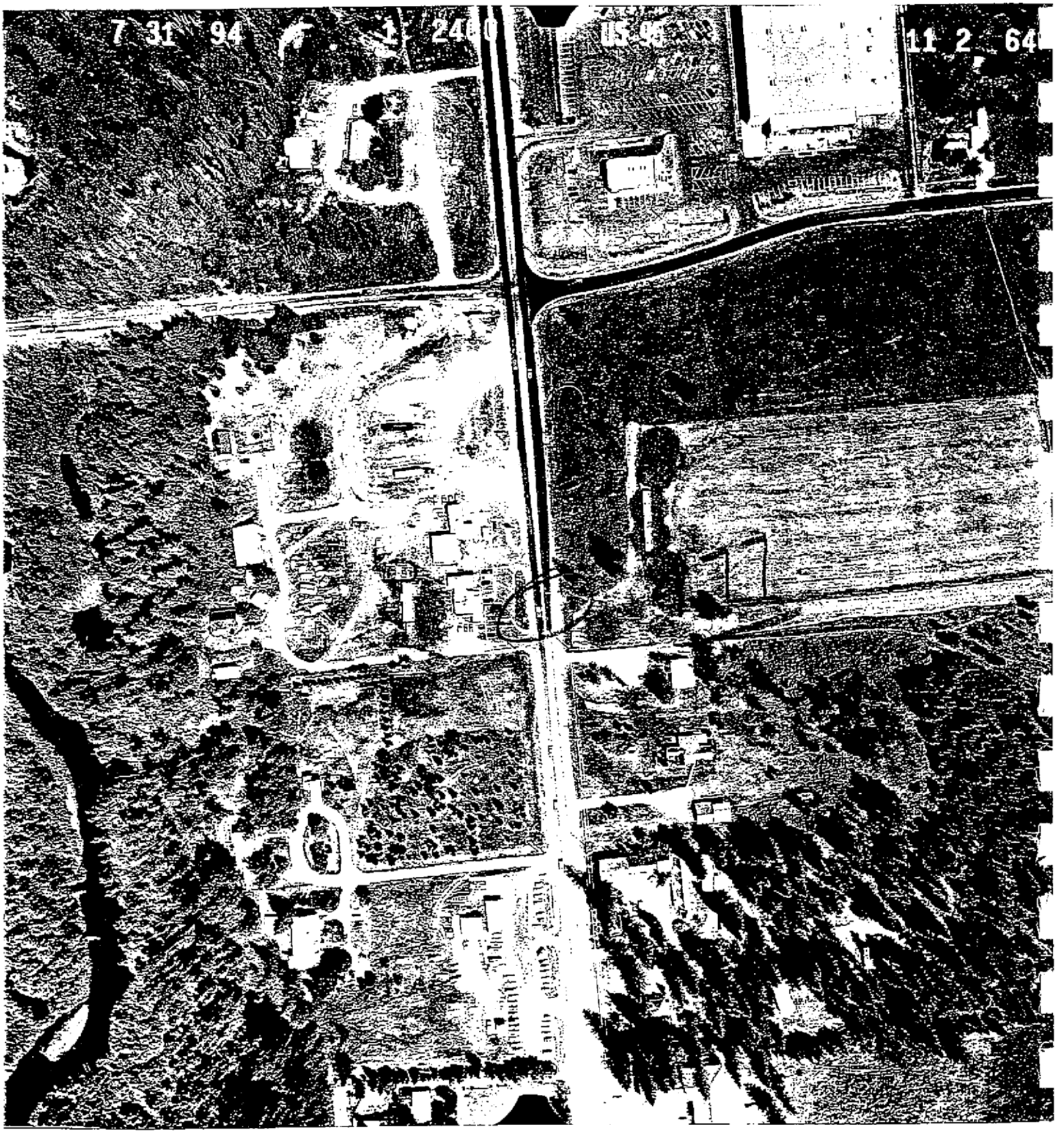
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APPENDIX 2

FIELD DATA DOCUMENTING THE RESULTS OF THE FORMAL WETLAND DELINEATION

TRANSECT #1 OBSERVATION POINT (OP) #1 DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineation Manual)

SANDPOINT BAPTIST CHAPEL

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: IDAHO TRANSPORTATION DEPARTMENT (ITD)
Investigator: RB TIEDEMANN

Date: 4/8/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? * (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

* AREA MOWED AND GROUND MAY HAVE BEEN LEVELED

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. PHALARIS ARUNDINACEA	HERB	FACW
2. POA PRATENSIS	HERB	FAC
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

√ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.

Depth to Free Water in Pit: > 1.1 (in.)

Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- √ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: ALTHOUGH SOIL IS SATURATED @ SURFACE IT IS NOT "INDICATED BY WATER TABLE WITHIN 1 FOOT OF SURFACE".

SOILS

Map Unit Name (Series and Phase): PEND ORIELLE SILT LOAM, 5-45% SLOPE Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches) FT.	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.4	A	10YR 3/3	—	—	LOAM
0.4-1.1	B	10YR 3/3	—	—	LOAM
>1.1	B	10YR 5/1	10YR 4/4	ABUNDANT/PROMINANT	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

			(Circle)
Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

TRANSECT #1 OP #2

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

SANDPOINT BAPTIST CHAPEL

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB TIEDEMANN

Date: 4/8/93
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. PHALARIS ARUNDINACEA	HERB	FACW
2. JUNCUS BALTICUS	"	FACW+
3. RUBUS DISCOLOR	SHRUB	FACW-
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

(✓) Recorded Data (Describe in Remarks):
- ( ) Stream, Lake, or Tide Gauge
- (✓) Aerial Photographs
- ( ) Other

( ) No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.

Depth to Free Water in Pit: 11 (in.)

Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ( ) Inundated
- (✓) Saturated in Upper 12 Inches
- ( ) Water Marks
- ( ) Drift Lines
- ( ) Sediment Deposits
- (✓) Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- (✓) Oxidized Root Channels in Upper 12 Inches
- ( ) Water-Stained Leaves
- ( ) Local Soil Survey Data
- ( ) FAC-Neutral Test
- ( ) Other (Explain in Remarks)

Remarks: MOTTLED SOIL TO SURFACE SUGGESTS FLUCTUATING WATER TABLE AT SOME TIME DURING GROWING SEASON TO GROUND SURFACE.

SOILS

Map Unit Name (Series and Phase): PEND ORIELLE SILT LOAM, 5-45% SLOPE

Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth FT. (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.4	A	10YR 3/2	10YR 5/8	ABUNDANT/PROMINANT	LOAM
0.4-1.6	B	10YR 3/2	10YR 5/8	"	LOAM
>1.6	B	10YR 5/1	10YR 4/4	"	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

TRANSECT #2 OP #3

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E. OF US95, S. OF BAPTIST CHAPEL

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB HEDEMANN

Date: 4/8/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? Yes / No
Is the site significantly disturbed (Atypical Situation)? * Yes / No
Is the area a potential Problem Area? Yes / No
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

* AREA PREVIOUSLY CULTIVATED AND NOW FALLOW

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. PHALARIS ARUNDINACEA	HERB	FACW
2. CALAMAGROSTIS CANADENSIS ?	(	FACW+
3. TARAXACUM OFFICINALE	≀	FACU
4. CERASTIUM ARVENSE	≀	FACU
5. TRIFOLIUM PRATENSE	↓	FACU
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 40%

Remarks: SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE. IDENTIFICATION OF C. CANADENSIS IS TENTATIVE DUE TO IMMATURITY OF SAMPLE.

HYDROLOGY

- [x] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [x] Aerial Photographs
  - [ ] Other
- [ ] No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.
Depth to Free Water in Pit: 11 (in.)
Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: MOTTLED SOIL TO 0.9 FEET SUGGEST FLUCTUATING WATER TABLE AT SOME TIME DURING GROWING SEASON TO WITHIN 1 FOOT OF SURFACE.

SOILS

Map Unit Name (Series and Phase): PEND ORIELLE SILT LOAM, 5-45% SLOPE Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.3	A	10YR 3/3	—		LOAM
0.3-0.9	B	10YR 3/3	—		"
0.9-1.3	B	10YR 3/3	10YR 4/4	ABUNDANT/PROMINANT	"
>1.3	B	10YR 5/1	10YR 4/4	" "	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

Approved by HQUSACE 3/92

TRANSECT #2 OP #4

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E. OF US95, S. OF BAPTIST CHAPEL

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB HEDEMANN

Date: 4/8/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. PHALARIS ARUNDINACEA	HERB	FACW
2. JUNCUS BALTICUS	"	FACW+
3. EPILOBIUM WATSONII	"	FACW-
4. CAREX LANUGINOSA	"	OBL
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

- ✓ Recorded Data (Describe in Remarks):
  - Stream, Lake, or Tide Gauge
  - ✓ Aerial Photographs
  - Other
- No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.
Depth to Free Water in Pit: 0.2 (in.)
Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- ✓ Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): PEND ORIELLE SILT LOAM, 5-45% SLOPE Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches) FT.	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.5	A	10YR 2/1	—		LOAM
0.5-0.6	B	10YR 3/2	10YR 4/4	ABUNDANT/PROMINANT	"
0.6-1.4	B	5GY 6/1	10YR 4/4	"	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ✓ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

TRANSECT #3 OP#5

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E. OF US 95, N. OF JONES RD.

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB TIEDEMANN

Date: 4/8/93
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? * (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

* AREA PREVIOUSLY DISTURBED TO INSTALL SEWER AS SHOWN BY CLEARED VEGETATION AND PRESENCE OF MAN HOLE COVER

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. TANACETUM VULGARE	HERB	NI
2. RANUNCULUS REPENS	"	FACW
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.) FT.

Depth to Free Water in Pit: 0.7 (in.)

Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- ✓ Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): PEND ORIELLE SILT LOAM, 5-45% SLOPES Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.2	A	10YR 3/3	—		LOAM
0.2-0.9	B	10YR 3/3	—		LOAM
0.9-1.4	B	10YR 5/1	10YR 4/4	ABUNDANT/PROMINANT	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks: METHODS FOR ATYPICAL SITUATION (1987 MANUAL) JUSTIFIED DUE TO CLEARING AND GRUBBING OF VEGETATION AND GROUND DISTURBANCE ATTRIBUTABLE TO INSTALLATION OF SEWER LINE. ADJACENT AREA DEMONSTRATES PREDOMINANCE OF HYDROPHYTIC VEGETATION. SOIL AT DEPTH GREATER THAN "IMMEDIATELY BELOW A-HORIZON" AT THIS AREA SHOWS HYDRIC CHARACTERISTICS

Approved by HQUSACE 3/92

TRANSECT #3 OP #6

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E. OF US 95, N. OF JONES RD.

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB TIEDEMANN

Date: 4/8/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. TANACETUM VULGARE	HERB	NI
2. LONICERA INVOLUCRATA	SHRUB	FAC+
3. EPILOBIUM WATSONII	HERB	FACW-
4. PSEUDOTSUGA MENZIESII	TREE	NL
5. PINUS CONTORTA	TREE	FAC
6. PINUS ALBICAULIS	TREE	NL
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.
Depth to Free Water in Pit: 0.7 (in.)
Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): PEND ORIELLE SILT LOAM, 5-45% SLOPES Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.3	A	10YR 3/3	—	—	LOAM
0.3-0.7	B	10YR 3/3	—	—	LOAM
0.7-1.4	B	10YR 5/2	10YR 4/4	ABUNDANT/PROMINENT	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

TRANSECT # 4 OP #7

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E. SHORE SAND CREEK BETWEEN BRIDGE & CEDAR ST.

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB TIEDEMANN

Date: 4/8/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. LONICERA INVOLUCRATA	HERB	FAC+
2. ALNUS RUBRA	SHRUB	FAC
3. POPULUS TRICHOCARPA	TREE	FAC
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

√ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.
Depth to Free Water in Pit: >1.3 (in.)
Depth to Saturated Soil: >1.3 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: * OBSERVATION POINT IS ABOVE SUMMER POOL ELEVATION AS INDICATED BY UNDERCUT BANK

SOILS

Map Unit Name (Series and Phase): MISSION SILT LOAM, 0-2% SLOPES Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.4	A	10YR 3/2			LOAM
0.4-1.3	B	10YR 5/4	—	—	LOAMY SAND

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

			(Circle)
Hydrophytic Vegetation Present?	(Yes)	No	
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	
Is this Sampling Point Within a Wetland?	Yes	(No)	

Remarks:

Approved by HQUSACE 3/92

TRANSECT # 4 OP #8

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E. SHORE SAND CREEK BETWEEN BRIDGE & CEDAR ST.

Project/Site: US-95 SANDPOINT N & S
Applicant/Owner: ITD
Investigator: RB HEDEMANN

Date: 4/9/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. PHALARIS ARUNDINACEA	HERB	FACW
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: NO ADDITIONAL SPECIES OBSERVED.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: - (in.) FT.
Depth to Free Water in Pit: >1.5 (in.)
Depth to Saturated Soil: >1.5 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ✓ Water Marks *
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: * OBSERVATION POINT IS BELOW SUMMER POOL ELEVATION AS INDICATED BY UNDERCUT BANK

SOILS

Map Unit Name (Series and Phase): MISSION SILT LOAM, 0-2% SLOPES Drainage Class: SOMEWHAT POORLY DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches) FT.	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.3	A	10YR 3/3	—		LOAM
0.3-1.2	B	10YR 5/4	10YR 4/6	ABUNDANT/PROMINANT	LOAMY SAND
1.2-1.5	B	10YR 5/3	10YR 4/6	"	LOAMY SAND

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ✓ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

Approved by HQUSACE 3/92

TRANSECT #5 OF #9

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

NE CORNER OF INTERSECTION OF US95 & 200

Project/Site: US-95 SANDPOINT N&S
Applicant/Owner: LTD
Investigator: RB TIEDEMANN

Date: 4/9/98
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. ALNUS RUBRA	TREE	FAC
2. POPULUS TRICHOCARPA	TREE	FAC
3. XANTHIUM STRUMARIUM	HERB	FAC
4. TANACETUM VULGAIRE	(	NI
5. PHALARIS ARUNDINACEA		FACW
6. TARAXACUM OFFICINALE	V	FACU
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks:

HYDROLOGY

√ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- √ Aerial Photographs
- Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.
Depth to Free Water in Pit: >1.5' (in.)
Depth to Saturated Soil: >1.5' (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): HAPLOXERALFS AND XEROCHREPTS, 30-55% SLOPES Drainage Class: WELL DRAINED TO MODERATELY WELL DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 0.3	A	10YR 3/2			
0.3 - 1.2	B	10YR 3/2	—		LOAM
1.2 - 1.5	B	10YR 7/2	—		SANDY CLAY

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)		(Circle)
Wetland Hydrology Present?	Yes	(No)			
Hydric Soils Present?	Yes	(No)		Is this Sampling Point Within a Wetland?	Yes (No)

Remarks:

Approved by HQUSACE 3/92

TRANSECT #5 OF #10

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

NE CORNER OF INTERSECTION OF US95 & 200

Project/Site: US95, SANDPOINT N&S
Applicant/Owner: ITD
Investigator: RB TIEDEMANN

Date: 4/9/93
County: BONNER
State: IDAHO

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. ULNUS RUBRA	TREE	FAC
2. POPULUS TRICHOCARPA	TREE	FAC
3. CORNUS STOLONIFERA	SHRUB	FACW
4. POA PRATENSIS	HERB	FAC
5. XANTHIUM STRUMARIUM	〃	FAC
6. TARAXACUM OFFICINALE	〃	FACU
7. MALLONA REPENS	SHRUB	NL
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 71%

Remarks: NO ADDITIONAL SPECIES OBSERVED. SPECIES LISTED IN DECREASING ORDER OF ABUNDANCE.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.) FT.
Depth to Free Water in Pit: >1.2 (in.)
Depth to Saturated Soil: @ SURFACE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): HAPLOXERALFS AND XEROCHREPTS, 30-55% SLOPES Drainage Class: WELL DRAINED TO MODERATELY WELL DRAINED

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches) FT.	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-0.3	A	10YR 3/2			LOAM
0.3-1.2	B	10YR 7/1	10YR 4/6	ABUNDANT/PROMINENT	SANDY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- √ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks:

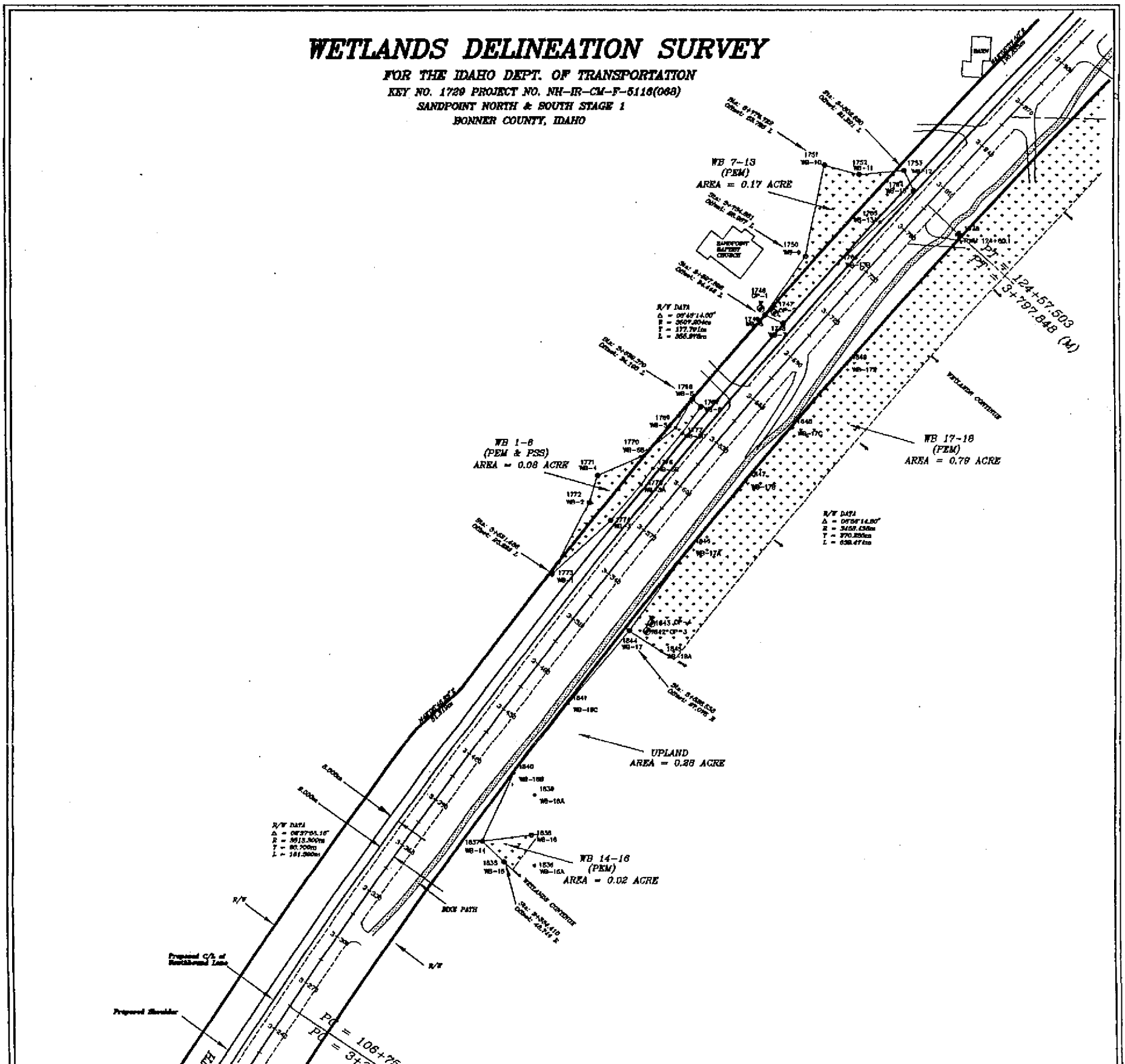
Approved by HQUSACE 3/92

APPENDIX 3

MAP SHOWING THE LOCATION OF THE DELINEATED WETLAND BOUNDARY

WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION
KEY NO. 1729 PROJECT NO. NH-IR-CM-F-5116(068)
SANDPOINT NORTH & SOUTH STAGE 1
BONNER COUNTY, IDAHO



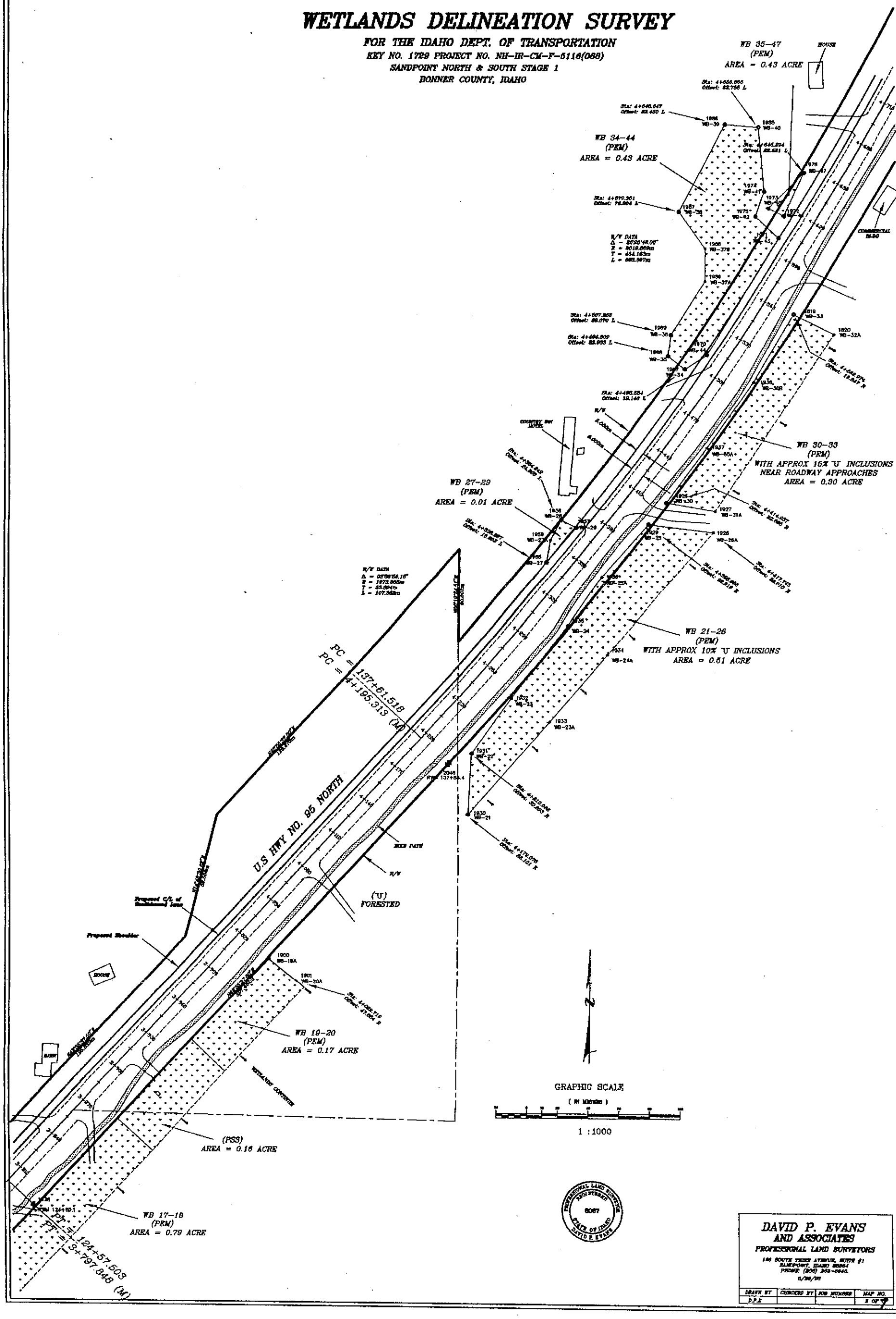
DAVID P. EVANS
AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS
123 SOUTH THIRD AVENUE, STATE #1
SANDPOINT, IDAHO 83864
PHONE (208) 263-6940.

DRAWN BY	CHECKED BY	JOB NUMBER	MAP NO.
D.P.E			1 OF 3

ITDAA029756

WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION
KEY NO. 1729 PROJECT NO. NH-IR-CM-F-5116(068)
SANDPOINT NORTH & SOUTH STAGE 1
BONNER COUNTY, IDAHO



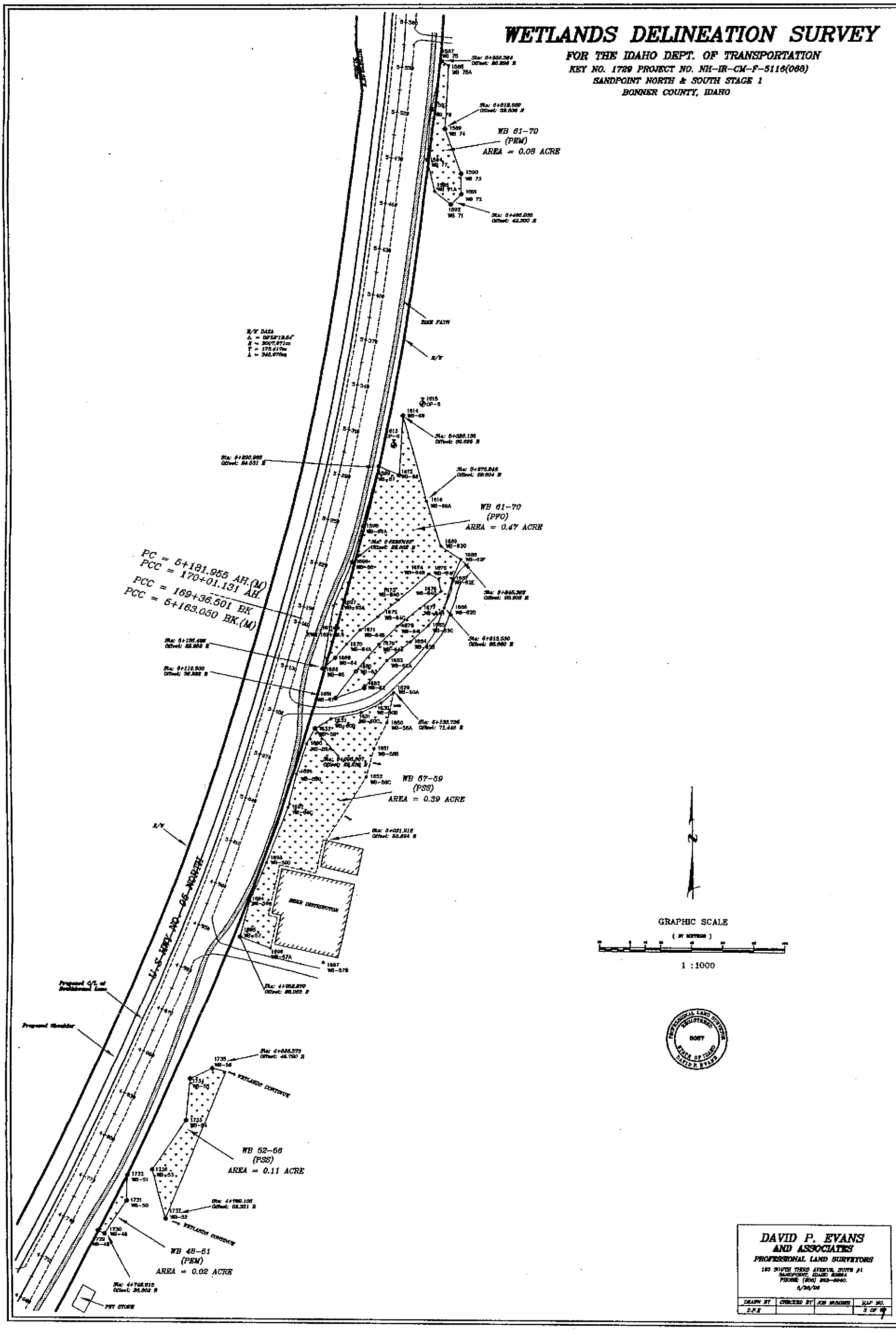
DAVID P. EVANS AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS
186 SOUTH TEXAS AVENUE, SUITE #1
SANDPOINT, IDAHO 83864
PHONE: (208) 263-6840.

DRAWN BY	CHECKED BY	JOB NUMBER	MAP NO.
D.P.E.			5 OF 5

ITDAA029757

WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION
KEY NO. 1729 PROJECT NO. NH-IR-CM-F-5116(068)
SANDPOINT NORTH & SOUTH STAGE 1
BONNER COUNTY, IDAHO



PROFESSIONAL LAND SURVEYOR REGISTERED 5067 STATE OF IDAHO DAVID P. EVANS

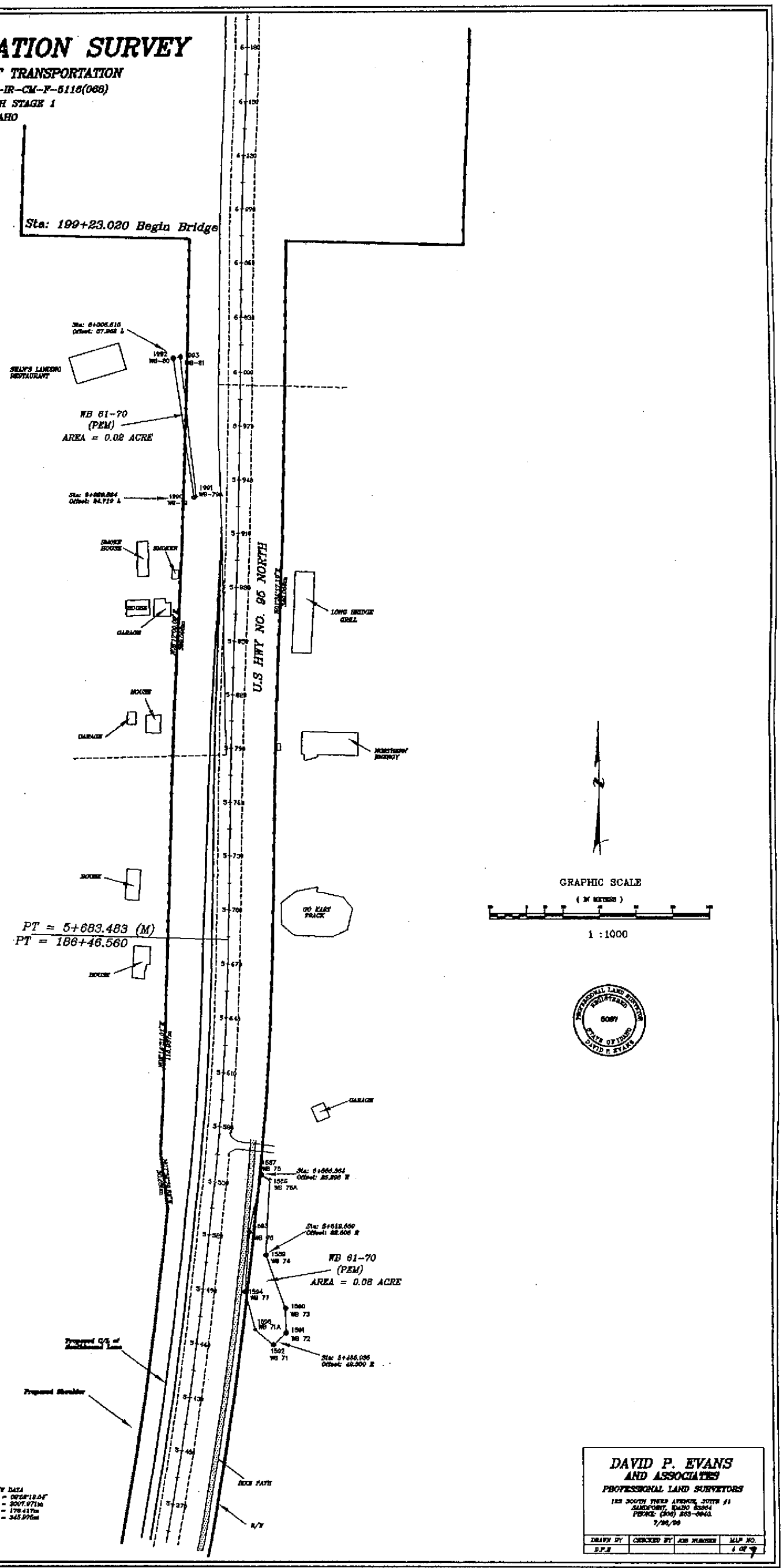
DAVID P. EVANS AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS
103 SOUTH THIRD AVENUE, SUITE #1
SANDPOINT, IDAHO 83864
PHONE: (208) 263-6040.
6/20/08

DRAWN BY	CHECKED BY	JOB NUMBER	MAP NO.
D.P.E			3 OF 8

ITDAA029758

WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION
KEY NO. 1729 PROJECT NO. NH-IR-CM-F-5116(066)
SANDPOINT NORTH & SOUTH STAGE 1
BONNER COUNTY, IDAHO



GRAPHIC SCALE
(IN METERS)
1 :1000

PROFESSIONAL LAND SURVEYOR REGISTERED 6089 STATE OF IDAHO DAVID P. EVANS

DAVID P. EVANS AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS
123 SOUTH THIRD AVENUE, SUITE #1
SANDPOINT, IDAHO 83864
PHONE (208) 263-6440
7/98/99

DRAWN BY	CHECKED BY	JOB NUMBER	MAP NO.
D.P.E			4 OF 7

ITDAA029759

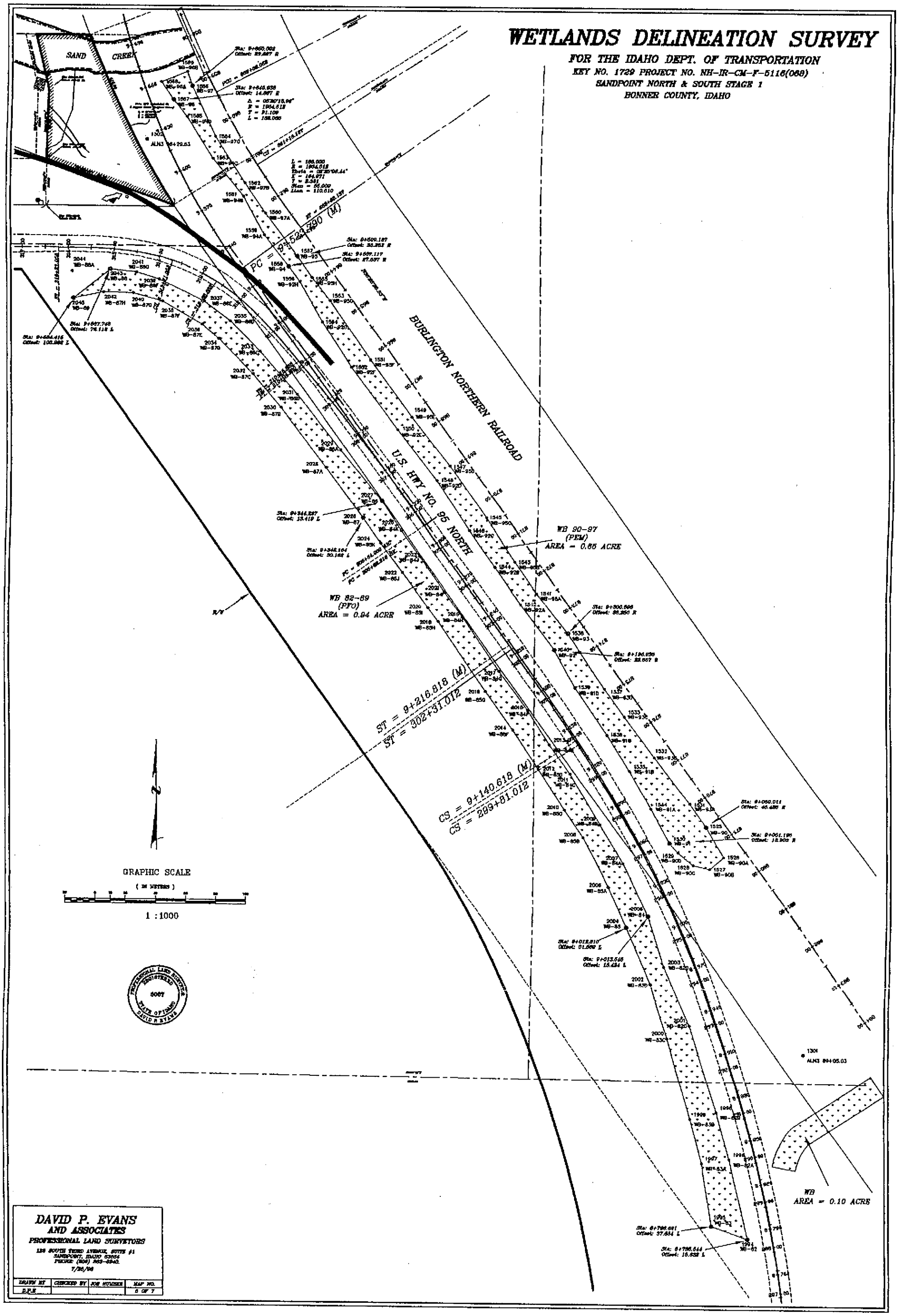
WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION

KEY NO. 1729 PROJECT NO. NH-IR-CM-F-5116(068)

SANDPOINT NORTH & SOUTH STAGE 1

BONNER COUNTY, IDAHO



PROFESSIONAL LAND SURVEYOR
5007
STATE OF IDAHO
DAVID P EVANS

DAVID P. EVANS
AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS

130 SOUTH THIRD AVENUE, SUITE #1
SANDPOINT, IDAHO 83864
PHONE (208) 263-6940

7/26/96

DRAWN BY	CHECKED BY	JOB NUMBER	MAP NO.
D.P.E.			6 OF 7

ITDAA029760

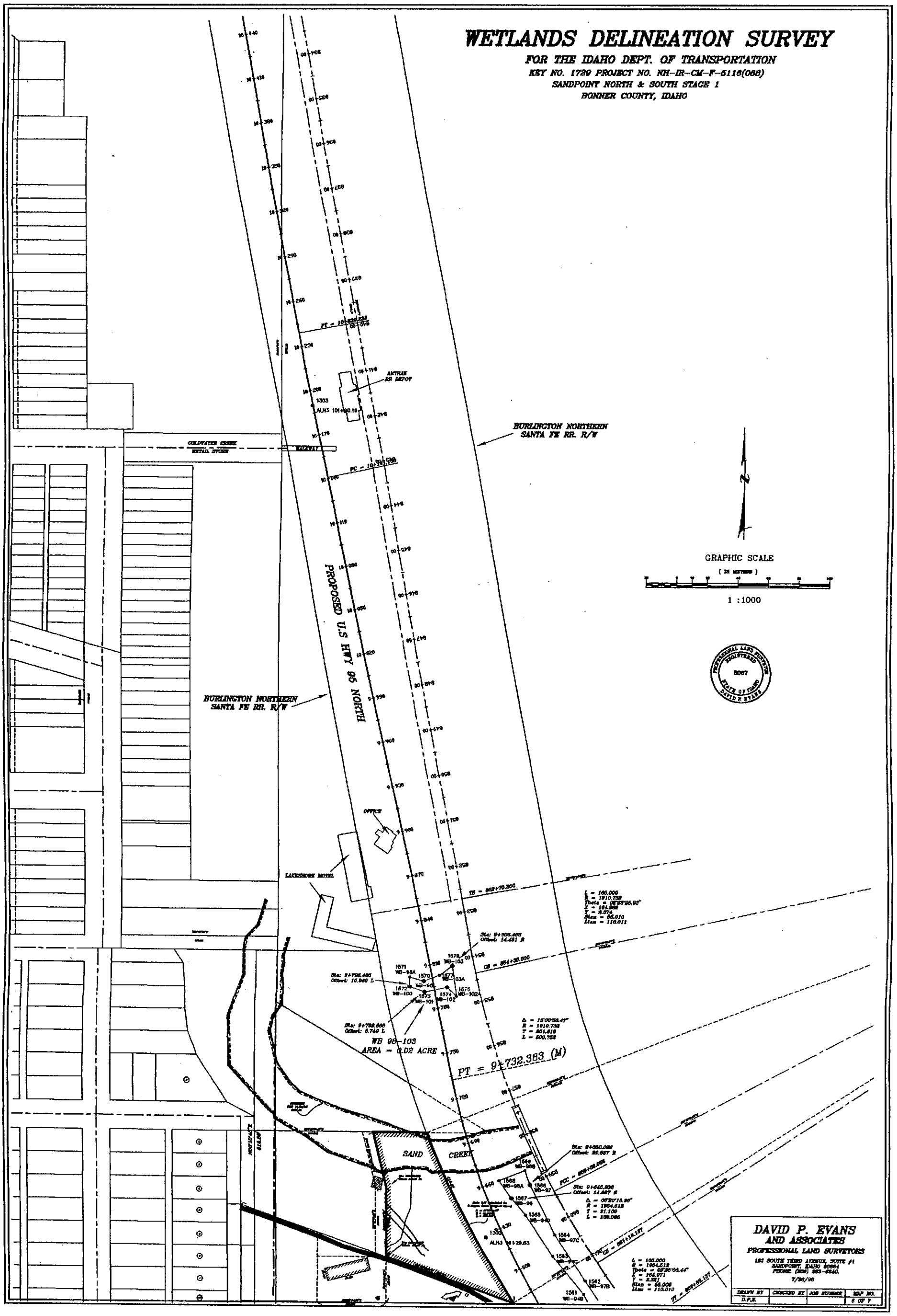
WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION

KEY NO. 1720 PROJECT NO. NH-IR-CM-F-5116(068)

SANDPOINT NORTH & SOUTH STAGE 1

BONNER COUNTY, IDAHO



ITDAA029761

WETLANDS DELINEATION SURVEY

FOR THE IDAHO DEPT. OF TRANSPORTATION

KN NO. 1789 PROJECT NO. NH-IR-CM-3-5116(068)

SANDPOINT NORTH & SOUTH STAGE 1

BONNER COUNTY, IDAHO

S.I. RAILROAD

HWY NO. 95 NORTH (OLD ALIGN)

HWY NO. 200

WB 109-120
(PSS)
AREA = 0.24 ACRE

HWY 95 NORTH
PROPOSED ALIGNMENT

HWY 95 NORTH
PROPOSED ALIGNMENT

WB 104-107
(PEM)
AREA = 0.13 ACRE

U.S. HWY NO. 95 NORTH

BURLINGTON NORTHERN RAILROAD

GRAPHIC SCALE
(IN METERS)
1 :1000

DAVID P. EVANS
AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS
100 SOUTH THIRD AVENUE, SUITE #1
SANDPOINT, IDAHO 83864
PHONE (208) 263-0540
9/26/06

DRAWN BY	CHECKED BY	JOB NUMBER	MAP NO.
D.P.E			7 OF 7

ITDAA029762

APPENDIX F

- NOISE ANALYSIS
- AIR QUALITY CONFORMITY DETERMINATION

ANALYSIS OF NOISE IMPACTS

"SANDPOINT NORTH AND SOUTH"
Project NH-IR-F-CM-5116(068)

Bonner County
Sandpoint and Ponderay

STAMINA 2.0 NOISE ANALYSIS June 18, 1998 update / R. Jost, Env. Planner

The project area is within the jurisdiction of the Communities of Sandpoint and Ponderay for a distance of about 2.0 miles north of the Pend Oreille River; the remainder of the 9 mile long project area is primarily under the jurisdiction of Bonner County, Idaho. Community lands adjacent to US-95 have been primarily zoned for commercial activities, although some adjacent residential activities are present. County lands adjacent to the proposed project have been primarily zoned 'suburban', with some commercial zoning adjacent to US-95 in the Sagle/Algoma areas. Current land uses within the project area include agricultural, residential, industrial and commercial activities. The ambient reading at 70' of centerline off 4th Street was Leq 56.2 dBA; at 60' of centerline off Pine Street the Leq was 65.2 dBA; at 60' of centerline off Church Street the Leq was 61.1 dBA; and at 80' of centerline off 5th Street the Leq was 65.6 dBA. Train noise at 100' of the Burlington Northern/Santa Fe tracks in the vicinity of the depot registered between Leq 72.7 and 75.6 dBA (Figures 1-2). Ambient Leq was measured with a CEL-493/2 precision integrating impulse sound level meter on June 11-12, 1997, during afternoon and morning peak traffic movements. The Baptist church (150' of centerline) in the Sagle area registered a Leq of 66.9 dBA at 2:30pm on May 12, 1998.

The general location of noise transect and receptor sites, along with the results of the Stamina 2.0 noise analysis, are noted on Table 1. These results indicate that the No Action alternative would result in noise level increases of 2.5 decibles (dBA) over current levels at most locations. US-95 locations adjacent to 5th Avenue and to the south of Sandpoint currently experience the highest traffic noise readings in the project area. No Category "C" receptor outside the railroad corridor is projected to 'approach' (means within 1 dBA) FHWA commercial traffic noise criteria by the year 2022 (design year) with project implementation. The primary noise source within the railroad corridor is the actual train noise itself. The number of trains using this corridor is approximately 60 per day. The Burlington Northern has merged with the Santa Fe Railroad, however, and they are in the process of double tracking this corridor. Upon completion, with this additional capacity, it is estimated that the

Figure 1

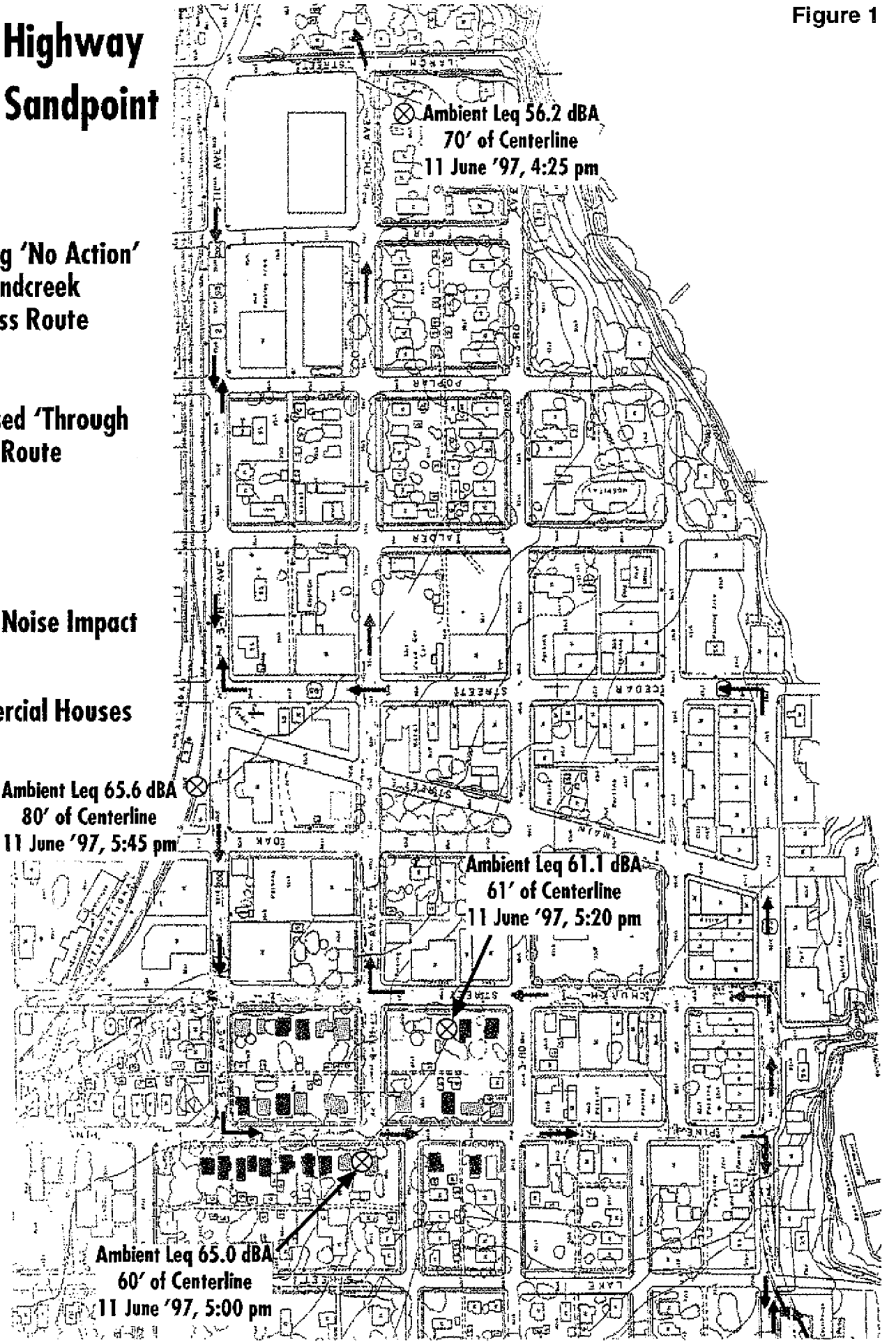
US95 Highway Within Sandpoint

Existing 'No Action' and Sandcreek Business Route

Proposed 'Through Town' Route

Traffic Noise Impact

Commercial Houses



ITDAA029765

BNSF Railroad Corridor

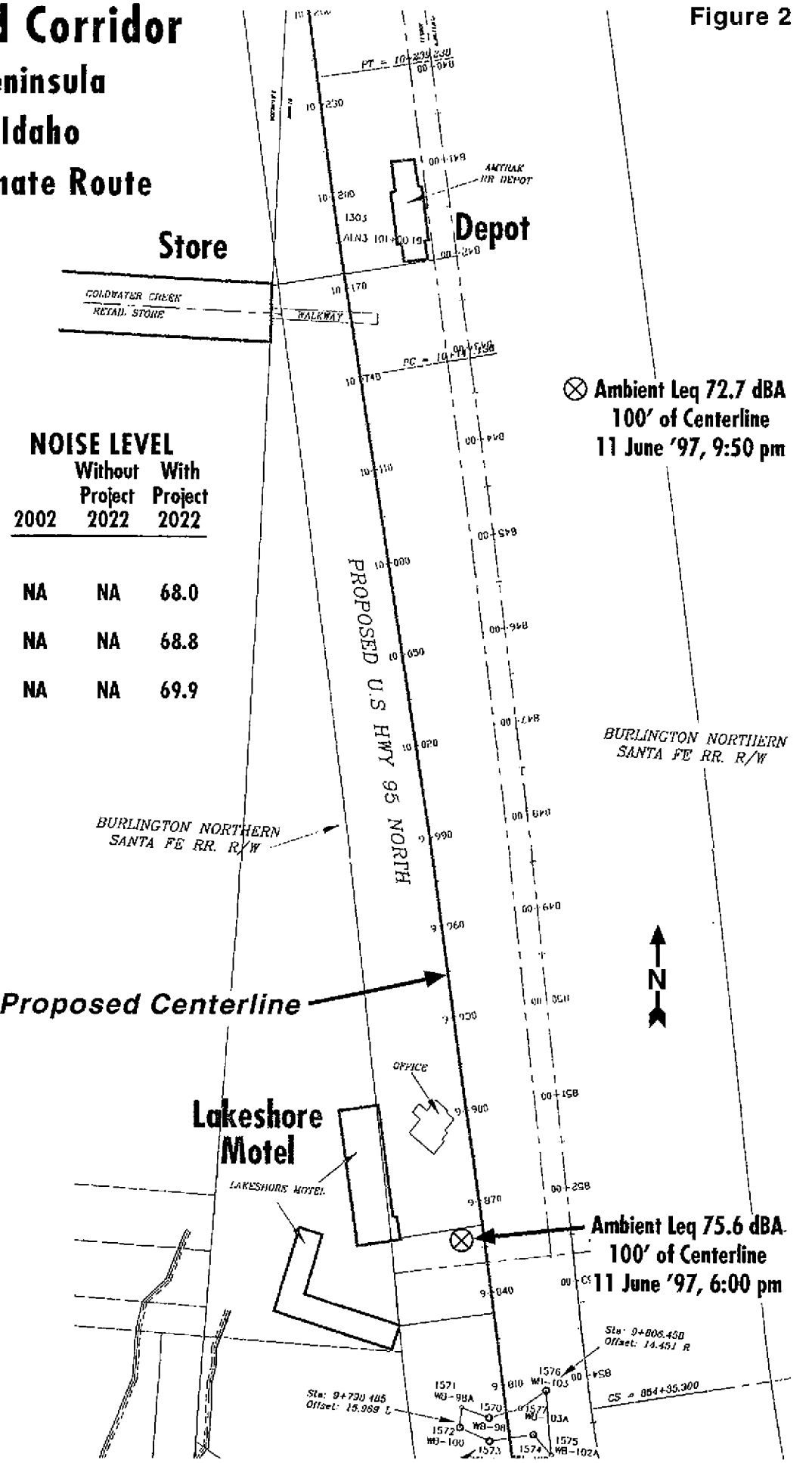
Sandcreek Peninsula

Sandpoint, Idaho

Sandcreek Alternate Route

Figure 2

Site	DISTANCE from Centerline Existing	Proposed	NOISE LEVEL 2002	Without Project 2022	With Project 2022
Lakeshore Motel	NA	92′	NA	NA	68.0
Store	NA	79′	NA	NA	68.8
Depot	NA	67′	NA	NA	69.9



current number of trains using this corridor could easily double. Federal Highway Administration (FHWA) 'absolute' traffic noise abatement criteria is Leq 67.0 dBA for residential units and Leq 72.0 dBA for industrial and most commercial receptors.

Table 1
PROJECTED Leq NOISE LEVELS (dBA)
@
TRANSECT & RECEPTOR LOCATIONS
SANDPOINT NORTH & SOUTH

		2002	2022		
		EXISTING	EXISTING	COUPLET	SAND-CREEK
ROUTE TRANSECTS:					
A. US95 So.Terminus Area	-150' of C_L	66.6	69.0	69.0	69.0
B. US95 Sagle/Long Bridge	-150' "	66.1	68.4	68.4	68.4
C. US95 Peninsular Area	- 60' "	68.2	70.5	70.5	69.1
D. 1st, Superior-Pine	- 60' "	63.5	65.8	65.8	64.6
E. 1st, Pine-Church	- 60' "	63.4	65.7	66.2	63.9
F. 1st, Church-Cedar	- 60' "	62.4	64.7	61.4	62.7
G. Cedar, 1st-5th	- 60' "	62.8	65.1	61.4	63.0
I. 5th, Cedar-Pine	- 60' "	64.8	67.1	67.5	66.0
J. Pine, 1st-5th	- 60' "	64.2	66.5	67.0	65.0
	- 75' "	63.3	65.6	66.1	64.1
K. Church, 1st-4th	- 60' "	59.1	61.0	67.2	60.0
	- 75' "	58.7	60.7	66.3	59.6
L. 4th, Church-Cedar	- 60' "	59.3	61.2	67.8	60.2
	- 75' "	58.9	60.9	67.0	59.9
M. 4th, Cedar-Larch	- 60' "	57.8	59.5	65.4	59.1
	- 75' "	57.0	58.7	64.1	58.3
N. 5th, Cedar-Larch	- 60' "	65.6	67.9	66.5	67.1
O. US95 Larch-SH200 Jct.	-150' "	66.1	68.4	68.4	68.4
P. US95 Ponderay Area	-150' "	64.6	66.8	66.8	66.8
X. Sandcreek Alt.	-100' "	na	na	na	67.4
	Train Noise	73.3	73.3	73.3	73.3
RECEPTORS:					
1. Hospital		53.3	55.6	56.3	58.4
2. W. Creek Shore No. of Bridge St.		58.0	60.2	60.2	61.0
3. City Beach at Shelter		52.6	54.9	55.2	55.7
4. Cedar Creek Mall (outsde picnic area)		56.5	58.8	56.7	62.2
5. Lakeview Motel (within railroad corridor)		70.3	73.3	73.3	74.3
6. Baptist Church (Sagle Area)		66.4	68.8	69.3	69.3

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA),HAS ESTABLISHED NOISE ABATEMENT CRITERIA FOR SEVERAL CATAGORIES OF LAND USE ACTIVITIES; WHICH INCLUDE THE FOLLOWING Leq NOISE LEVELS:

CATAGORY A	Leq = 57dBA	Lands on which "serenity and quiet are of extraordinary significance and serve an important public need....".
CATAGORY B	Leq = 67dBA	Picnic areas, recreation areas, parks, residences, motels, schools, churches, libraries, and hospitals.
CATAGORY C	Leq = 72dBA	Properties/activities which are not included in catagory A or B (eg. most commercial and industrial activities).

ITDAA029767

Project implementation will generally have no noticeable influence (±3 decibals) on traffic noise levels at most alternative locations. Minor to moderate exceptions would result with implementation of the Through Town 'couplet' alternative. For instance, design year increases of up to 8.5 dBA over current noise levels would occur along 4th Avenue and Church Street at 60' from centerline; while noise levels along 1st Avenue and Cedar Street would fall below current levels. South of the Long Bridge, the Country Inn Motel and six residences currently exceed FHWA noise abatement criteria and are projected to do so in the design year with or without project implementation regarding both the 'Couplet' and 'Sand Creek' alternatives (Figures 3-5). The Sand Creek alternative will result in noise levels equal to or less than those projected for the No Action alternative at all locations north of the Long Bridge. Even on new location along the railroad, the Sand Creek alternative traffic noise is projected to be less than currently produced by train noise. Also, traffic noise impacts at the city beach area resulting from this alternative will be minor and for the most part unnoticeable.

A 'relative' noise impact occurs when the estimated design year dBA level exceeds the current dBA level by 15 dBA. Table 1 indicates that no receptors will experience a 'relative' noise impact with or without project implementation. No alternative is projected to exceed traffic noise criteria at any commercial location. The proposed new alignment along Sand Creek is located in an existing transportation corridor dominated by train noise. Thirteen residential units along Pine Street (between 3rd and 5th Avenues) are projected to exceed 'absolute' noise abatement criteria by the design year, with or without project implementation of the 'Build' Alternatives. In addition, four residences on Church Street are projected to approach or exceed 'absolute' noise abatement criteria by the design year, with implementation of the Through Town 'Couplet' Alternative.

Federal noise abatement criteria, as set forth in 23 CFR 772, require that if a noise impact is identified (i.e.; a receptor approaches or exceeds FHWA noise abatement criteria), abatement measures must be considered. Considerations are to include:

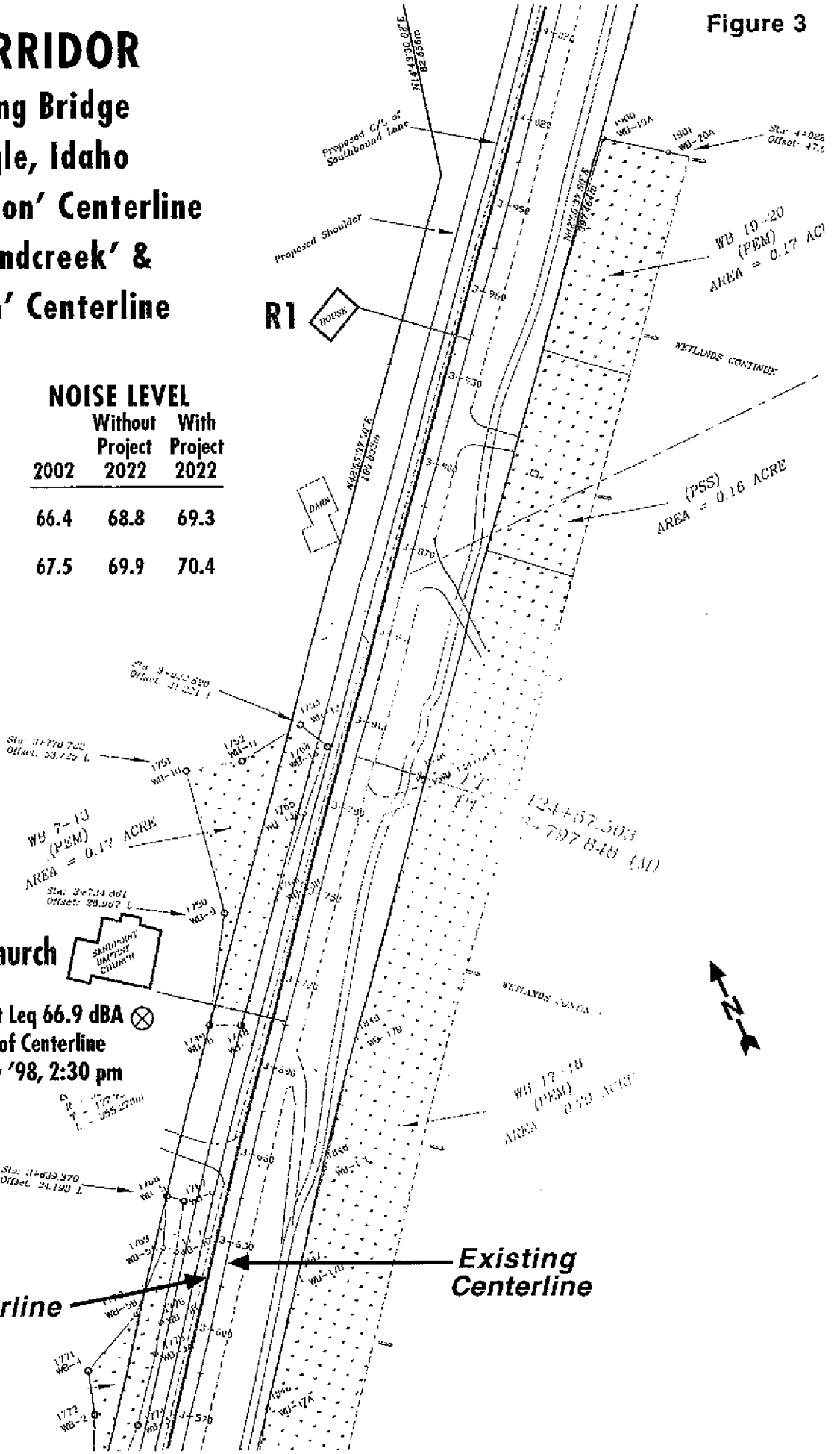
- Traffic management measures, e.g.
  - traffic control devices
  - signing for prohibition of certain vehicle types
  - time-use restrictions for certain vehicle types
  - modified speed limits
  - exclusive land designations

Figure 3

US95 CORRIDOR

South of Long Bridge
Vicinity Sagle, Idaho
Existing 'No Action' Centerline
Proposed 'Sandcreek' & 'Through Town' Centerline

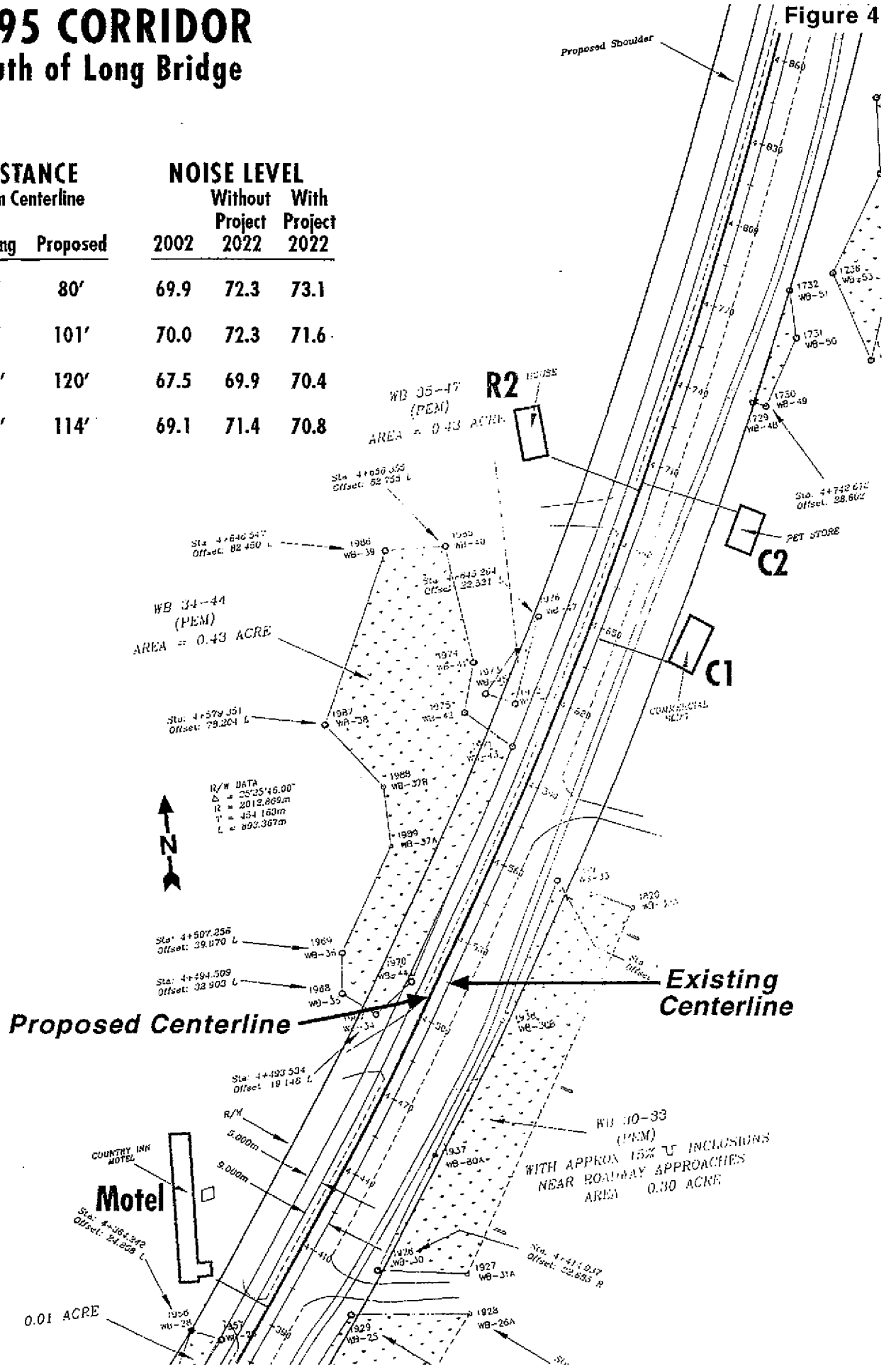
Site	DISTANCE from Centerline Existing	Proposed	NOISE LEVEL 2002	Without Project 2022	With Project 2022
Church	155′	144′	66.4	68.8	69.3
R1	131′	120′	67.5	69.9	70.4



US95 CORRIDOR
South of Long Bridge

Figure 4

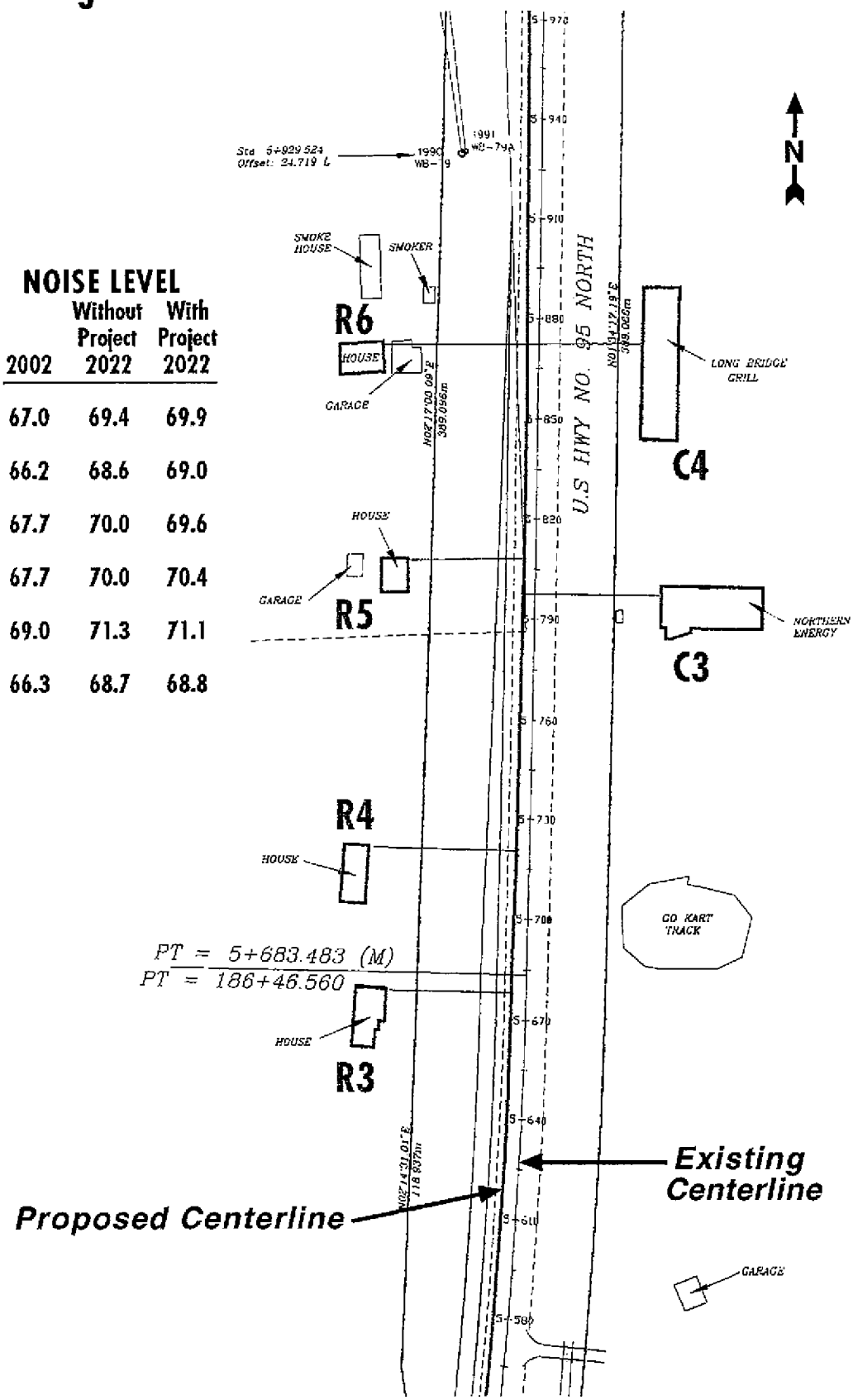
Site	DISTANCE from Centerline Existing	Proposed	NOISE LEVEL 2002	Without Project 2022	With Project 2022
Motel	91′	80′	69.9	72.3	73.1
C1	90′	101′	70.0	72.3	71.6
R2	131′	120′	67.5	69.9	70.4
C2	103′	114′	69.1	71.4	70.8



US95 CORRIDOR
South of Long Bridge

Figure 5

Site	DISTANCE from Centerline Existing	Proposed	NOISE LEVEL 2002	Without Project 2022	With Project 2022
R3	141′	130′	67.0	69.4	69.9
R4	160′	150′	66.2	68.6	69.0
C3	128′	136′	67.7	70.0	69.6
R5	128′	120′	67.7	70.0	70.4
C4	105′	108′	69.0	71.3	71.1
R6	157′	154′	66.3	68.7	68.8



ITDAA029771

- Alteration of horizontal and vertical alignments,
- Acquisition of property rights for construction of noise barriers,
- Construction of noise barriers,
  - includes landscaping for aesthetic purposes (in or out of R/W)
- Acquisition of real property or interests therein for buffer zones, and
- Noise insulation of public use or non-profit institutional structures.

Those considerations which are determined to be both reasonable and feasible are to be incorporated into the project.

Modifications to existing traffic management measures regarding the prohibition or time use restriction of certain types of vehicles would be contrary to the purpose and benefits of this project as well as the function of this State highway. Other than synchronized signalization proposed for the Through Town 'couplet' alternative, no additional traffic control devices are warranted. Exclusive land designations are generally satisfactory as currently zoned. The currently posted speed limits will be maintained and not increased.

Alteration of the horizontal and vertical alignment for noise abatement purposes is not considered reasonable on this project north of the Long Bridge because of socio-economic considerations, such as cost and access. For instance, raising or lowering the grade to where it would noticeably reduce noise impacts would substantially increase construction costs and create significant access impacts on adjacent businesses. Horizontal alteration of the alignment, besides increased right-of-way costs, would create displacements of local businesses and increase noise for residences on one side of the road or the other. South of the Long Bridge any alignment alteration that would noticeably abate traffic noise would substantially increase wet land impacts and construction costs and is not recommended.

Acquisition of property rights for construction of noise barriers may be warranted on this project south of the Long Bridge, if the District determines that noise walls are feasible and reasonable at impacted receptors where access does not render walls ineffective and outdoor activities are an important consideration.

Noise barriers along right-of-ways are not recommended when access to adjacent properties would render them ineffective. An effective noise barrier (berm, fence, wall

etc.) requires emplacement of a solid, acoustically opaque material of sufficient length and height to shield residences from roadway noise. Gaps created by crossroads and private driveways render noise barriers ineffective. Therefore, sound walls adjacent to Pine and/or Church Streets in the City of Sandpoint to abate projected residential noise impacts, with or without project implementation, is not feasible. Noise walls along the railroad corridor is not recommended for traffic noise abatement since traffic is not projected to be the primary source of noise. South of the Long Bridge the District

Acquisition of real property or interests therein for a buffer zone is not considered practicable on this project since a buffer will not expand the distance between any existing noise receptor and the highway traffic, and any future receptor will be required to adhere to setback regulations determined appropriate by the local jurisdiction. In addition, future developers have other options of insuring reduced noise impacts at their disposal, if they desire, including increased setbacks, insulation, and noise barriers.

Noise insulation of public use or non-profit institutional structures is not warranted on this project since no such structures are identified as being impacted by project related traffic noise.

Table 2

General Data for future development Concerns adjacent to US95
Regarding Projected L_{eq} Noise Levels (dBA)
Bonner County, Idaho

Transect:		**Design Year (2022)**			
		(RURAL)	(URBAN)		(SAND CREEK)
			one-way	two-way	
T1.	40' of centerline	-	69.0	70.4	73.1
T2.	50' of "	-	68.1	69.0	71.7
T3.	60' of "	-	67.4	67.8	70.5
T4.	70' of "	-	65.5	66.8	69.5
T5.	80' of "	-	64.9	65.9	68.7
T6.	90' of "	-	64.4	65.2	67.9
T7.	100' of " - (Rural R/W)	71.6	64.1	64.5	67.2
T8.	150' of "	69.0	-	-	64.6
T9.	175' of "	68.0	-	-	63.6
T10.	200' of "	67.1	-	-	62.8
T11.	250' of "	65.6	-	-	61.4
T12.	300' of "	64.4	-	-	59.9

Noise abatement measures which are recommended for consideration by the local jurisdiction in the project area and along major traffic routes include:

(1) Requiring acceptable setbacks or buffer zones for new residential units or developments - i.e.; using Tables 1 & 2 as a guide, 200 to 250' of centerline in rural areas and 70' to 80' in urban areas would generally be a minimum distance to construct residential units adjacent to US95 in order not to approach or exceed FHWA noise abatement criteria.

(2) Maintaining appropriate zoning and land uses adjacent to the route;

(3) Requiring developers to implement suitable noise abatement measures in those cases where adequate setbacks are not maintained (e.g.; berms, sound walls, double pane or triple pane windows and other forms of insulation, etc.);

(4) Maintaining or lowering the current posted speed limits through residential zones.

Traffic volumes used in this analysis were provided by the District 1 Traffic Section of the Idaho Transportation Department. All traffic volumes are included as an appendix to this report. Travel speed was estimated at 25 mph on the one-way grid through Sandpoint, at 35-45 mph at community outskirts, and at 55 mph in rural areas and on the Sandcreek bypass. This report has been prepared in accordance with 23 CFR Part 772.

STATE OF IDAHO
DIVISION OF
ENVIRONMENTAL QUALITY

2110 Ironwood Parkway, Coeur d' Alene, ID 83814-2648, (208) 769-1422 Philip E. Batt, Governor

May 29, 1998

Fred Koethke
Environmental Planner, ITD Region 1
600 W. Prairie Avenue
Coeur d'Alene, ID 83814

RE: Sandpoint North & South Project - Conformity Evaluation for the Sandpoint PM_{10} Nonattainment Area

Dear Fred:

Following our discussions at the regional and state level on this subject, a qualitative evaluation of conformity to the Sandpoint PM_{10} SIP was performed on the various alternatives proposed for the Sandpoint North & South Project (mileposts 469.75 to 477.44). The qualitative evaluation used ADT and VMT data from various sources. The attached table summarizes the some of the calculations and comparisons. From this information, some key points with regards to demonstrating project level conformity are listed below.

1. The data used by ITD in the EIS process correlates very well with the VMT projections that DEQ incorporated into the Sandpoint PM_{10} SIP. Area-wide highway VMT estimates from the ITD projections were calculated at 126,530 for 1996. This compares with an estimate of 127,188 highway VMT (interpolated from 1994 and 1997 projections) that DEQ used in the emission calculations for transportation sources. DEQ only projected emissions out to 1997 in the SIP document submitted to EPA. At that time, it was anticipated that future planning measures were needed for the Sandpoint area that would extend out to 2015. However, due to recent changes in the PM_{10} standard, EPA has determined that no additional long-term planning efforts, i.e. maintenance plan, are required at this time for the Sandpoint PM_{10} nonattainment area. See the attached map for the boundaries of the Sandpoint nonattainment area.

2. Based on our current knowledge of the project, the construction of the Sandcreek Alternative will have a insignificant air quality effect on the area-wide transportation emissions of PM_{10}. However, this alternative will have a measurable impact on relocating or shifting some of the vehicle emissions out of the downtown area, and redistribute those emissions into areas with lower ambient concentrations. The reduction in highway VMT in the downtown area is estimated at 28% for this alternative.

3. If the Sandcreek Alternative is chosen, in the short-term, it will reduce the level of VMT on roadways in the downtown corridor. This is the area with the highest PM_{10} concentrations, both by measurement and modeling. This alternative action will shift VMT from the downtown area to a higher speed, non-stop roadway. This will reduce the amount of vehicle related PM_{10} emissions because of the lower emission factors associated with high volume/high speed roads.

4. The Through Town "Couplet" Alignment is more difficult to evaluate with this qualitative approach due to the redesign of the roadways in the downtown area. It appears that two opposing influences would take place under this option; an increase in ADT in the downtown corridor (greater than the No Action option) combined with a higher speed roadway. This option appears to bring more traffic into the downtown area where PM_{10} concentrations are greatest.

5. In the long-term analysis of the Sandcreek Alternative, the projected annual growth in ADT over the next 20 years, throughout the project area, will counter the reductions achieved earlier in the downtown area. Therefore, the Sandcreek Alternative will lessen the effect of the projected growth versus the no action or through town "couplet" alternatives. As shown in the attached table, projected annual growth in highway ADT ranged from 2.5% to 3%.

6. The projected growth in ADT throughout the nonattainment area, with or without the proposed "by-pass", reinforces the importance of maintaining the existing emission reduction programs already implemented for transportation sources of PM_{10}. ITD and the local highway district have begun a phased implementation of liquid chemical de-icers to minimize and replace wintertime sanding. These and other transportation related control measures were adopted into the State Implementation Plan for the Sandpoint area. Substantial reductions in fugitive road dust emissions from the reintrainment of sanding material have been monitored to date. Continued implementation of these control measures will result in the most effective and cost efficient means of achieving long-term PM_{10} emission reductions for the area.

In summary, this level of conformity analysis should provide sufficient information for transportation projects in PM_{10} nonattainment areas where EPA has determined that no additional long-term planning efforts are required. This qualitative approach is further reinforced by the fact that the existing PM_{10} standard, which triggered the nonattainment designations, will be revoked in the near future.

If you have any questions about the information presented above, please give me a call at 769-1422.

Sincerely,

Dan Redline
Air Quality Analyst

cc: Charlie Rountree, ITD
Matthew Moore, DEQ

Enclosures

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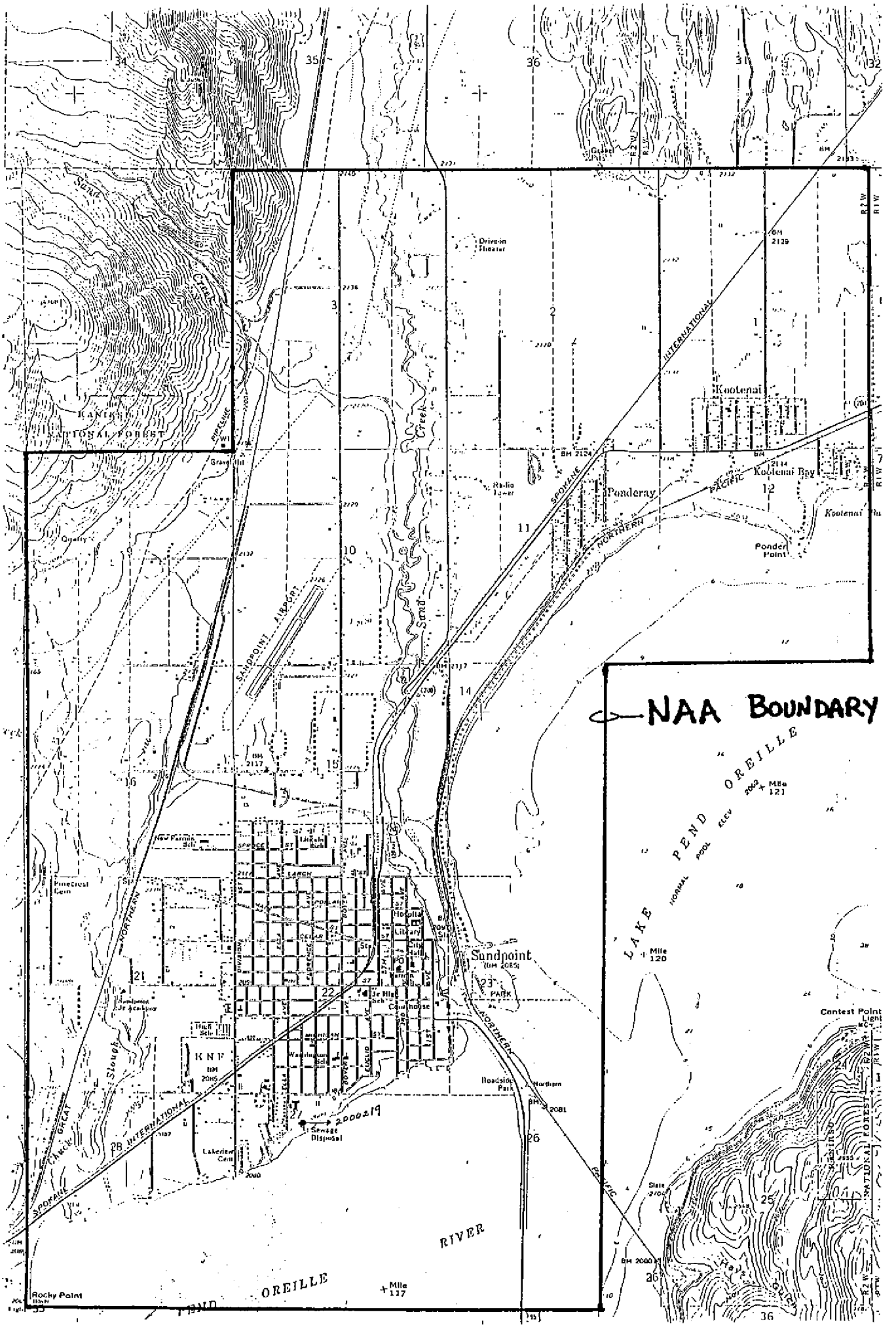

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SANDPOINT CONFORMITY EVALUATION

Traffic Counts Outside of the Downtown Corridor

	Length miles	1996 ADT	1996 VMT	2002 ADT	2002 VMT	2022 ADT	2022 VMT	Annual ADT Growth Rate 1996 to 2022
Hwy 95 North	5.98	12,330	73,733	15,650	93,587	26,750	159,965	3.02%
Hwy 200 North	3.06	6,200	18,972	7,490	22,919	11,800	36,108	2.51%
Hwy 95 Long Bridge	0.36	14,000	5,040	17,780	6,401	30,380	10,937	3.02%
Hwy 2 Southwest	1.5	12,000	18,000	14,520	21,780	22,920	34,380	2.52%
TOTAL	10.9		115,745		144,687		241,390	

Traffic Counts Within the Downtown Corridor

NO ACTION ALTERNATIVE	Length miles	1996 ADT	1996 VMT	2002 ADT	2002 VMT	2022 ADT	2022 VMT	Annual ADT Growth Rate 1996 to 2022
Cedar	0.25	10,400	2,600	13,220	3,305	22,590	5,648	3.03%
1st	0.205	9,280	1,902	11,780	2,415	20,140	4,129	3.03%
Pine	0.25	13,780	3,445	17,500	4,375	29,920	7,480	3.03%
5th	0.205	13,840	2,837	17,590	3,606	30,060	6,162	3.03%
TOTAL	0.91		10,785		13,701		23,419	

SAND CREEK ALTERNATIVE	Length miles	1996 ADT	1996 VMT	2002 ADT	2002 VMT	2022 ADT	2022 VMT	Annual ADT Growth Rate 1996 to 2022
Cedar	0.25	8,094	2,024	10,291	2,573	17,585	4,396	3.03%
1st	0.205	7,222	1,481	9,170	1,880	15,675	3,213	3.03%
Pine	0.25	10,717	2,679	13,618	3,405	23,283	5,821	3.03%
5th	0.205	10,768	2,207	13,682	2,805	23,381	4,793	3.03%
TOTAL	0.91		8,391		10,662		18,223	

Total VMT for Nonattainment Area	1996 VMT	2002 VMT	2022 VMT	Annual VMT Growth Rate 1996 to 2002	Annual VMT Growth Rate 2002 to 2022	Annual VMT Growth Rate 1996 to 2022
No Action	126,530	158,388	264,808	3.81%	2.60%	2.88%
IMD Study (Snpt SIP)	127,188	150,796	265,995			
Sand Creek Build	124,136	155,349	259,613	3.81%	2.60%	2.88%

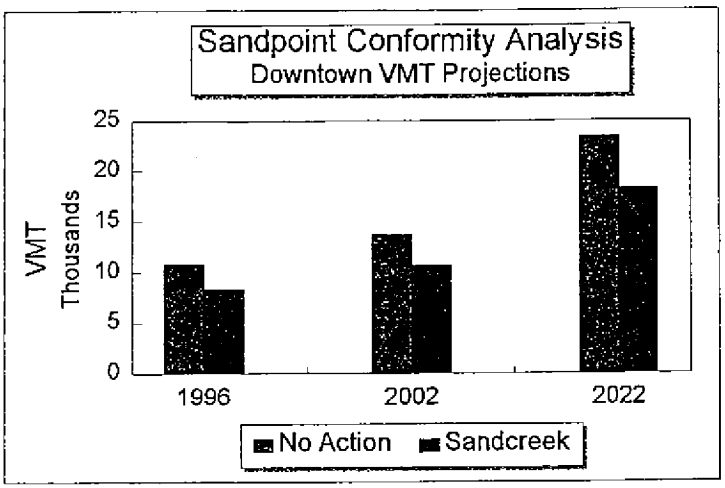
Note: Data from the IMD Study was used as the basis for VMT projections in the Sandpoint SIP. The IMD study projected VMT for 1994 and 1997. VMT was interpolated from this data for 1996 to compare to ITD data (see annual growth table). Also, the IMD study used 11.8 miles for the calculation of the highway VMT for the nonattainment area. This value was used with the ITD traffic counts to determine VMT for the area of concern.

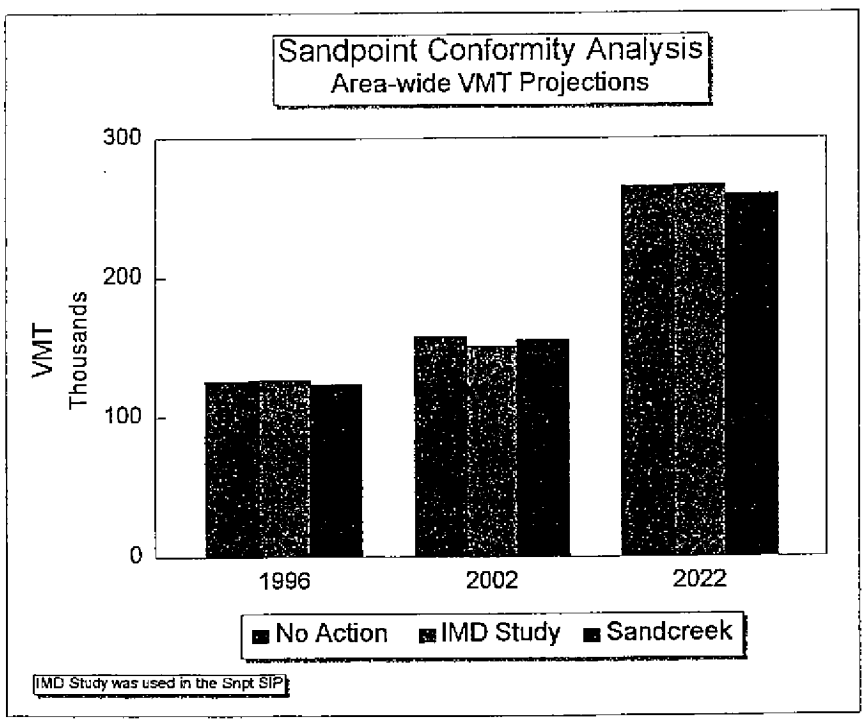
Compound VMT Growth Table			
Year	Highway VMT Growth		Annual Growth Rate
1994	120,170	(IMD 1994 projection)	
1995	123,629		2.88%
1996	**127,188**		2.88%
1997	130,848		2.88%
1998	134,615		2.88%
1999	138,490		2.88%
2000	142,476		2.88%
2001	146,577		2.88%
2002	**150,796**		2.88%
2003	155,136		2.88%
2004	159,602		2.88%
2005	164,196		2.88%
2006	168,922		2.88%
2007	173,784		2.88%
2008	178,786		2.88%
2009	183,933		2.88%
2010	189,227		2.88%
2011	194,674		2.88%
2012	200,277		2.88%
2013	206,042		2.88%
2014	211,973		2.88%
2015	218,074		2.88%
2016	224,351		2.88%
2017	230,809		2.88%
2018	237,452		2.88%
2019	244,287		2.88%
2020	251,319		2.88%
2021	258,553		2.88%
2022	**265,995**		2.88%

Note: The annual growth rate for this table was calculated from the ITD projections. IMD estimated annual growth between 2.5% to 3.5% for highway VMT.

ITDAA029779

Projected VMT Growth in the Sandpoint Area





cc: M McGrew 9/7

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

RECEIVED
AUG 19 1997
DIV. OF ENVIRONMENTAL QUALITY
AIR & HAZARDOUS WASTE

AUG 14 1997

Reply To
Attn Of: OAQ-107

Orville Green, Assistant Administrator
Air and Hazardous Waste Division
Idaho Division of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706-1290

Dear Mr. Green:

This letter concerns the future air quality planning requirements for particulate matter (PM) for Sandpoint and Kootenai County. On July 18, 1997, EPA promulgated new National Ambient Air Quality Standards (NAAQS) for ozone and PM. That rule created two new PM standards which include the PM-2.5 standard and the revised standard for PM-10. It also retained the old PM-10 standard, thus, effectively creating three standards for PM. The old PM-10 standard will be revoked when certain criteria are met.

The criteria to revoke the old PM-10 standard are based on two scenarios depending on whether the area attains, based on measured air quality, the old PM-10 NAAQS. Areas that attain the old PM-10 NAAQS as of September 16, 1997, have reduced planning obligations. The first criterion for the area is State submittal, and EPA approval, of the control measures that were adopted and implemented that brought about clean air quality data. The second criterion is State submittal, and EPA approval, of the Section 110 (attainment area planning requirements) State Implementation Plan (SIP) implementing the new PM standards.

We believe that Sandpoint has attained the old PM-10 NAAQS. We also believe that the State can make an adequate showing that Kootenai County has attained the old standard. Thus, the SIP submittals that the State has already provided EPA (the Sandpoint Particulate Matter Air Quality Improvement Plan and the Kootenai County Interim Particulate Matter Air Quality Improvement Plan), which include the control measures that were adopted by the State and were implemented to bring about the clean air quality, are adequate, upon EPA approval, to meet the first criterion. Additional planning efforts for the old PM-10 are not now needed. The Kootenai County Memorandum of Understanding should be revised (or terminated) to reflect this change in direction from attaining the old PM-10 NAAQS to one of monitoring for PM-10 and PM-2.5 under the revised monitoring regulations.

Sincerely,

Gil Haselberger, Manager
Idaho-Oregon Air Unit

Printed on Recycled Paper

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
IDAHO DIVISION
3050 LAKEHARBOR LANE, SUITE 126
BOISE, IDAHO 83703-6217

RECEIVED

October 9, 1991

REPLY TO: HFO-ID.1/723.1

Mr. Kermit V. Kiebert
Director
Idaho Transportation Department
P. O. Box 7129
Boise, Idaho 83707

Dear Mr. Kiebert:

Project No. IR-F-5116(68)
Sandpoint North and South
Air Quality Conformity Determination

We have reviewed your September 19, 1991 letter comprising the conformity determination for the subject project which is located in the Sandpoint non-attainment area for air quality, PM-10.

We concur in your qualitative determination that the PM-10 levels are not expected to increase and may be slightly reduced by the transportation improvement proposed. Further, we have conferred with the Urban Mass Transportation Administration whose Staff indicate no UMTA projects are involved. Therefore, this constitutes our positive Conformity Determination for this project.

Sincerely yours,

for John T. Hepmann
Jack T. Coe
Division Administrator

cc: UMTA Seattle, Ebersole w/9-19-91 ltr.
EPA Seattle, Lidgard w/9-19-91 ltr.

PJH/JJH/kdj
wp: jh041.110

TRANSPORTATION DEPARTMENT
PO BOX 7129 • BOISE, ID • 83707-1129 • 208/334-8000

September 19, 1991

Mr. Jack T. Coe
Division Administrator
Federal Highway Administration
3050 Lakeharbor Lane, Suite 126
Boise, ID 83703

RE: Project No. IR-F-5116(068), Sandpoint North and South, Air Quality Conformany Determination, Key No. 1729

Dear Mr. Coe:

Attached is a qualitative conformancy determination for the subject project. Please have your staff review this document and make the appropriate determination.

Sincerely,

R. K. SORENSEN, P.E.
Design and Environmental Engineer

RKS:CMR:lsc
Attachment

cc: Helen Rigg, Idaho Department of Health & Welfare, w/att.

bcc: CHO
PDE-1
PLANNER-1
DESIGN TSEA-1
D&E (JOST) w/att.
D&E
CF

ITDAA029782

ITDAA029783

QUALITATIVE CONFORMANCY DETERMINATION
SANDPOINT PM-10 NONATTAINMENT AREA
SANDPOINT ALTERNATE ROUTE

Background:

The Sandpoint area presently exceeds the PM-10 24-hour standard. Elevated levels primarily are confined to the February period. A SIP/FIP is presently being developed by the State Division of Environmental Quality with the Environmental Protection Agency. The final SIP/FIP is expected to be completed by fall of 1992.

The Sandpoint area poses a unique challenge. The area has a complex mix of area and point sources and was only recently clearly identified as exceeding standards. The development of the plan has been a topic of discussion between the State and EPA with EPA originally proposing to take the lead on plan development due to inadequate staff and financial resources at the State level. No significant work has been completed to date. Presently the State and EPA are revisiting the agreement, with the State proposing to take the lead for expenditious plan submittal.

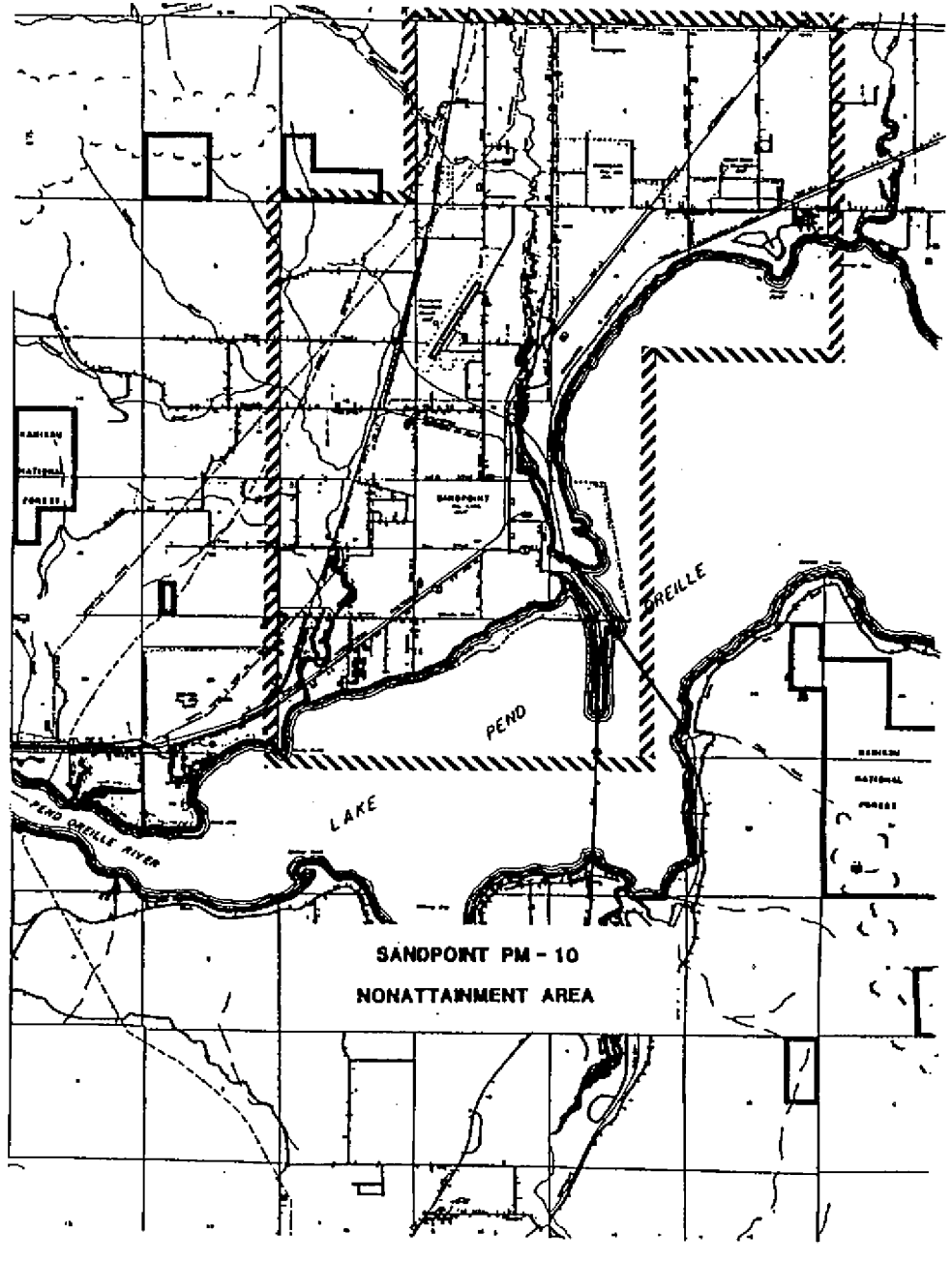
Project Description:

The purpose of the Sandpoint project is to improve the level of service on US-95 for through traffic and reduce congestion in downtown Sandpoint. The project will involve upgrading US-95 to current standards on one or more of the following alternate routes:

1. Switching to a couplet system through town and reconstructing several critical intersections; and/or
2. Constructing US-95 on new location parallel to the Burlington Northern Railroad along the east side of Sandcreek for a distance of approximately 7,000 feet; or
3. Constructing US-95 on new location about 3 miles to the west of Sandpoint roughly paralleling the Pacific Gas Transmission Company pipeline for a distance of approximately 12 miles.

Qualitative Conformancy Determination:

No quantitative assessment of the air quality impacts of the proposed project is possible until the Sandpoint area SIP/FIP is adopted. However, the proposed project lends itself to a simplified qualitative assessment. Road dust is suspected to be a measurable contributor to the Sandpoint area PM-10 levels. Chemical analysis will be conducted to confirm the relative source contribution. The project will reroute bypassable traffic around Sandpoint or on a new Sandpoint location which avoids the central core of the business district. None of the alternatives should result in increased PM-10 emissions from transportation sources. All alternatives would smooth traffic flow, divert traffic from the core area of the central business district, and would upgrade existing paving, and facility quality. Qualitatively PM-10 levels should remain unchanged or be slightly reduced by the proposed project. The Idaho Division of Environmental Quality and the Transportation Department are working cooperatively on the Sandpoint area SIP/FIP and the proposed project to ensure that State air quality and transportation goals are met.



APPENDIX G

- FLOODPLAIN ENCROACHMENT ANALYSIS

ITD-868 4-88

SAND CREEK ALTERNATIVE
SUMMARY OF FLOOD PLAIN ENCROACHMENT

Project No. NH-IR-F-5116 (068) Station Limits 317+00 - 321 + 00

Project Title SANDPOINT NORTH AND SOUTH County BONNER

Roadway Identification US-2, US-95 & SH-200 SAND CREEK ALTERNATIVE VICINITY OF MOUTH OF SAND CREEK NEAR B.N.R.R. STRUCTURE ☐ Adjacent to ☒ Creek ☐ River ☒ Crossing SAND

		Yes	No
1.	Is the proposed action a longitudinal encroachment of the base floodplain? If yes, then evaluate alternatives to the encroachment.	☐	☒
2.	Are the risks associated with the implementation of the proposed action significant?	☐	☒
3.	Will the proposed action support probable incompatible floodplain development? If yes, what development will occur?	☐	☒
4.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	☐	☒
5.	Does the proposed action constitute a significant floodplain encroachment as defined in the FHPM 6-7-3-2 or ITD Design Manual ? If yes, an Environmental Impact Statement and Flood Plain Finding are required.	☐	☒
6.	Are Concept Hydraulic Studies that document the above answers on file in agency office? If not, explain.	☒	☐
7.	Is this project an encroachment in a regulatory floodway?	☒	☐
	If yes, a. Is the encroachment consistent with the regulatory floodway?	☒	☐
	b. If 7(a) is yes, attach certification by a registered professional engineer demonstrating that the encroachments shall not result in any increase in flood levels during the 100 year flood.		
	c. Does the encroachment require revision of the regulatory floodway? If revision is required, coordinate with FEMA and discuss in the Environmental Document. Use ITD–2665.	☐	☒
8.	Does the project require a commitment to a particular structure size or type? If yes, include an evaluation and discussion in the Environmental Document.	☐	☒

APPROVED BY:

Signature — Local Agency — Date 7/16/92

Signature — *F.E.M.A. — Date 9/9/92

FEMA RX

*F.E.M.A. approval required only for encroachment in a regulatory floodway

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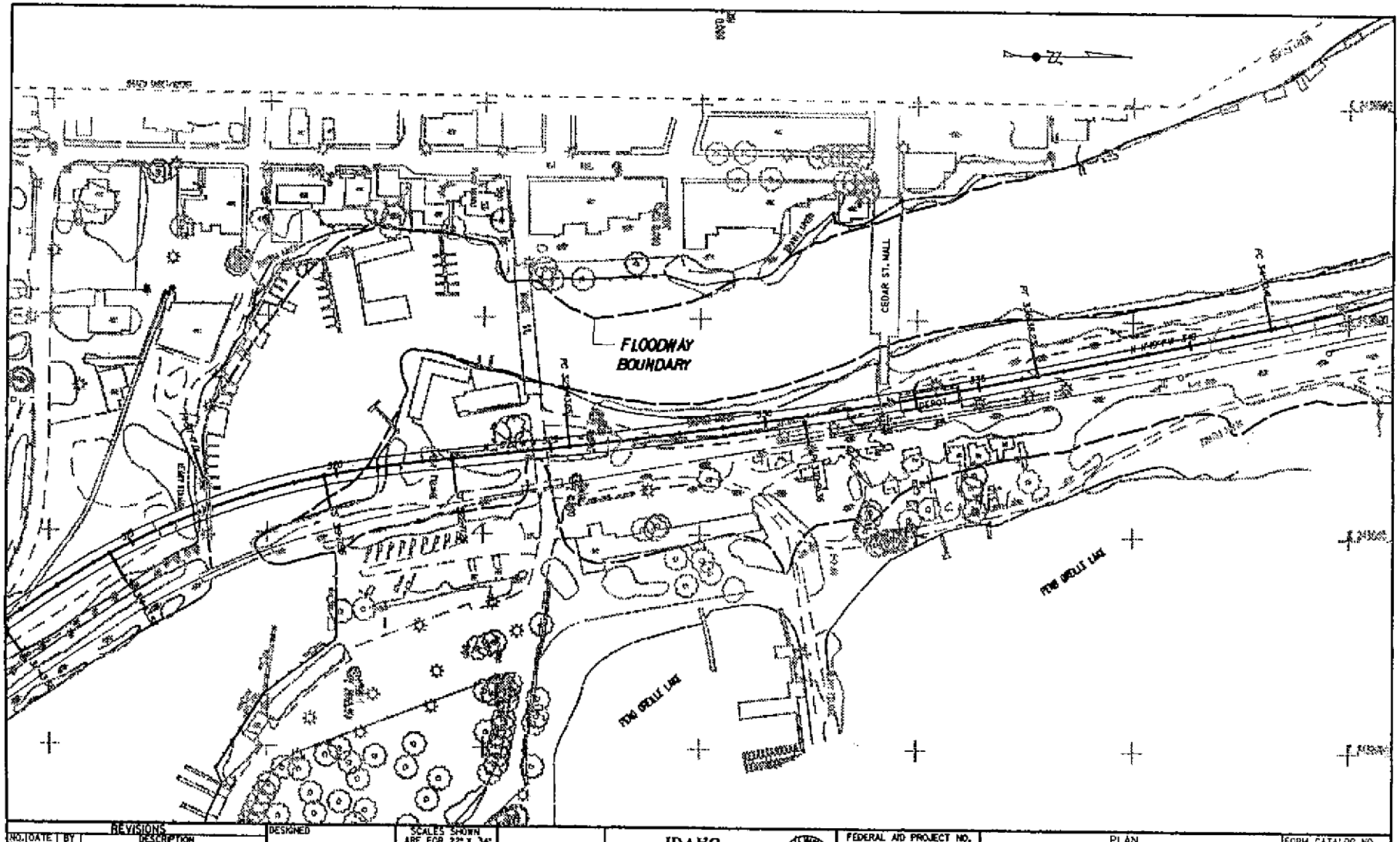


REVISIONS				DESIGNED	SCALES SHOWN ARE FOR 22" X 34" PRINTS ONLY	IDAHO TRANSPORTATION DEPARTMENT	FEDERAL AID PROJECT NO.	PLAN	FORM CATALOG NO. 26-8182100
NO.	DATE	BY	DESCRIPTION	DESIGN CHECKED	CADD FILE NO. 172930.DGN	BOISE, IDAHO	NH-IR-F-5116(068)	SANDPOINT NORTH & SOUTH SAND CREEK FLOODWAY BOUNDARY	COUNTY BONNER
△				DETAILED JCM 2/94	DRAWING DATE: 2/94		REGION 10 IDAHO		KEY NUMBER 1729
△				DWG. CHECKED					SHEET OF
△									
△									

G2

ITDAA029786

ITD-2665 4-88

SAND CREEK ALTERNATIVE

FLOODWAY REVISION REQUIREMENT

Project No. NH-IR-F-5116 (068) Station Limits 317+00 - 321 + 00

Project Title SANDPOINT NORTH AND SOUTH County BONNER

Roadway Identification US-95 - SAND CR. ALT. ☐ Adjacent to SAND ☒ Creek ☒ Crossing AT MOUTH ☐ River

(IN THE VICINITY OF SAND CREEK NEAR THE B.N.R.R. STRUCTURE)

Floodplain Description

Preferred Alternative

Describe consistency of action with regulatory floodway

FLOODWAY ELEVATION IS ESTABLISHED BY ELEVATION OF LAKE PEND OREILLE, ALBENI FALLS DAM DOWNSTREAM REGULATES THE ELEVATION OF LAKE PEND OREILLE. THE PROPOSED PIERS IN THE WATER ACROSS THE INLET WILL NOT IMPACT THE FLOODWAY ELEVATION.

	Yes	No
The enclosed analysis complies with Part 65.7, 44 CFR, Floodway Revisions. (National Flood Insurance Program Regulations)	☒	☐
If no, The enclosed analysis complies with "Procedures for Coordinating Highway Encroachments of Flood Plains with FEMA."	☐	☐

Cost of revision is estimated at $

Revision of regulatory floodway is acceptable to the following agencies.

Dwight L. Duffus Signature	Mayor - City of Sandpoint Local Agency	7/16/92 Date
Laurie Davis Signature	FEMA RX F.E.M.A.	8/9/92 Date

ITDAA029787

ITD-868 4-88

SUMMARY OF FLOOD PLAIN ENCROACHMENT

Project No. NH-IR-F-5116 (068) ~~Station Limits~~ Milepost 475.10±

Project Title SANDPOINT NORTH AND SOUTH County BONNER

Roadway Identification U.S. 95 [X] Adjacent to [ ] Crossing [X] Creek [ ] River

Fill encroachment into Sand Creek near the Gas & Go

		Yes	No
1.	Is the proposed action a longitudinal encroachment of the base floodplain? If yes, then evaluate alternatives to the encroachment.	[ ]	[X]
2.	Are the risks associated with the implementation of the proposed action significant?	[ ]	[X]
3.	Will the proposed action support probable incompatible floodplain development? If yes, what development will occur?	[ ]	[X]
4.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	[ ]	[X]
5.	Does the proposed action constitute a significant floodplain encroachment as defined in the FHPM 6-7-3-2 or ITD Design Manual ? If yes, an Environmental Impact Statement and Flood Plain Finding are required.	[ ]	[X]
6.	Are Concept Hydraulic Studies that document the above answers on file in agency office? If not, explain.	[X]	[ ]
7.	Is this project an encroachment in a regulatory floodway?	[X]	[ ]
	If yes, a. Is the encroachment consistent with the regulatory floodway?	[X]	[ ]
	b. If 7(a) is yes, attach certification by a registered professional engineer demonstrating that the encroachments shall not result in any increase in flood levels during the 100 year flood.		
	c. Does the encroachment require revision of the regulatory floodway? If revision is required, coordinate with FEMA and discuss in the Environmental Document. Use ITD–2665.	[ ]	[X]
8.	Does the project require a commitment to a particular structure size or type? If yes, include an evaluation and discussion in the Environmental Document.	[ ]	[X]

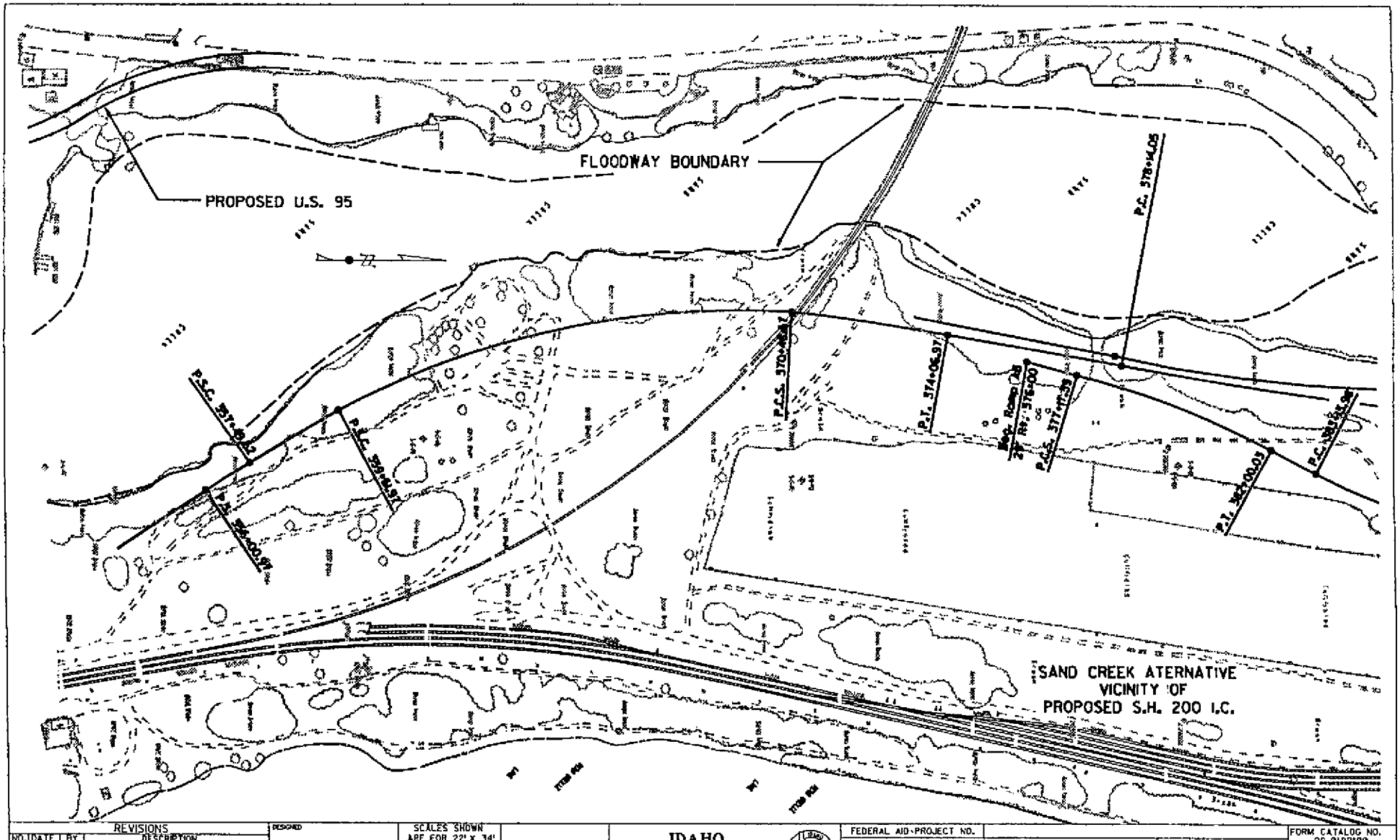
APPROVED BY:

Signature — Mayor-City of Sandpoint (Local Agency) — 11/16/92 (Date)

Signature — FEMA R X (*F.E.M.A.) — 8/9/92 (Date)

*F.E.M.A. approval required only for encroachment in a regulatory floodway

ITDAA029788



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REVISIONS							
NO.	DATE	BY	DESCRIPTION	DESIGNED	SCALES SHOWN ARE FOR 22" x 34" PRINTS ONLY	IDAHO TRANSPORTATION DEPARTMENT	FEDERAL AID PROJECT NO.
△				DESIGN CHECKED	CADD FILE NO. 0716PLANI.DGN	BOISE, IDAHO	NH-IR-F-5166(068)
△				DETAILED			REGION 10 IDAHO
△				CHK. CHECKED	DRAWING DATE:		
△							

SANDPOINT NORTH & SOUTH
SAND CREEK
FLOODWAY BOUNDARY

FORM CATALOG NO. 26-0182(00)
COUNTY BONNER
KEY NUMBER 1729
SHEET 1 OF 2

ITDAA029789

ITD-2665 4-88

THROUGH TOWN
FLOODWAY REVISION REQUIREMENT

Project No. NH-IR-F-5116 (068) ~~Station Limits~~ Milepost 475.10±

Project Title SANDPOINT NORTH AND SOUTH County BONNER

Roadway Identification U.S. 95 [X] Adjacent to [ ] Crossing SAND [X] Creek [ ] River

Floodplain Description FILL ENCROACHMENT INTO SAND CREEK NEAR GAS AND GO

Preferred Alternative

Describe consistency of action with regulatory floodway
FLOODWAY ELEVATION IS ESTABLISHED BY ELEVATION OF LAKE PEND OREILLE. THIS FILL ENCROACHMENT WOULD BE A LONGITUDINAL SLIVER FILL AND PLACEMENT OF MATERIAL WOULD BE A MINOR ENCROACHMENT WHICH WILL NOT IMPACT THE WATER SURFACE ELEVATION.

	Yes	No
The enclosed analysis complies with Part 65.7, 44 CFR, Floodway Revisions. (National Flood Insurance Program Regulations)	[X]	[ ]
If no, The enclosed analysis complies with "Procedures for Coordinating Highway Encroachments of Flood Plains with FEMA."	[ ]	[ ]

Cost of revision is estimated at $

Revision of regulatory floodway is acceptable to the following agencies.

Signature	Local Agency	Date 7/16/92
Signature	F.E.M.A.	Date 8/9/92

ITDAA029790

ITD-868 4-88

SAND CREEK & S.H. 200 I.C.

SUMMARY OF FLOOD PLAIN ENCROACHMENT

Project No. NH-IR-F-5116(068) Station Limits 380+00 - 385+00

Project Title SANDPOINT NORTH AND SOUTH County Bonner

Roadway Identification US-2, US-95, & SH-200 Sand Creek Alternative Vicinity of Proposed SH-200 I.C.

[X] Adjacent to [XX] Creek [ ] Crossing Sand [ ] River

		Yes	No
1.	Is the proposed action a longitudinal encroachment of the base floodplain? If yes, then evaluate alternatives to the encroachment.	[X]	[ ]
2.	Are the risks associated with the implementation of the proposed action significant?	[ ]	[X]
3.	Will the proposed action support probable incompatible floodplain development? If yes, what development will occur?	[ ]	[X]
4.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	[XX]	[ ]
5.	Does the proposed action constitute a significant floodplain encroachment as defined in the FHPM 6-7-3-2 or ITD Design Manual ? If yes, an Environmental Impact Statement and Flood Plain Finding are required.	[ ]	[X]
6.	Are Concept Hydraulic Studies that document the above answers on file in agency office? If not, explain.	[X]	[ ]
7.	Is this project an encroachment in a regulatory floodway?	[X]	[ ]
	If yes, a. Is the encroachment consistent with the regulatory floodway?	[X]	[ ]
	b. If 7(a) is yes, attach certification by a registered professional engineer demonstrating that the encroachments shall not result in any increase in flood levels during the 100 year flood.		
	c. Does the encroachment require revision of the regulatory floodway? If revision is required, coordinate with FEMA and discuss in the Environmental Document. Use ITD–2665.	[ ]	[X]
8.	Does the project require a commitment to a particular structure size or type? If yes, include an evaluation and discussion in the Environmental Document.	[ ]	[ ]

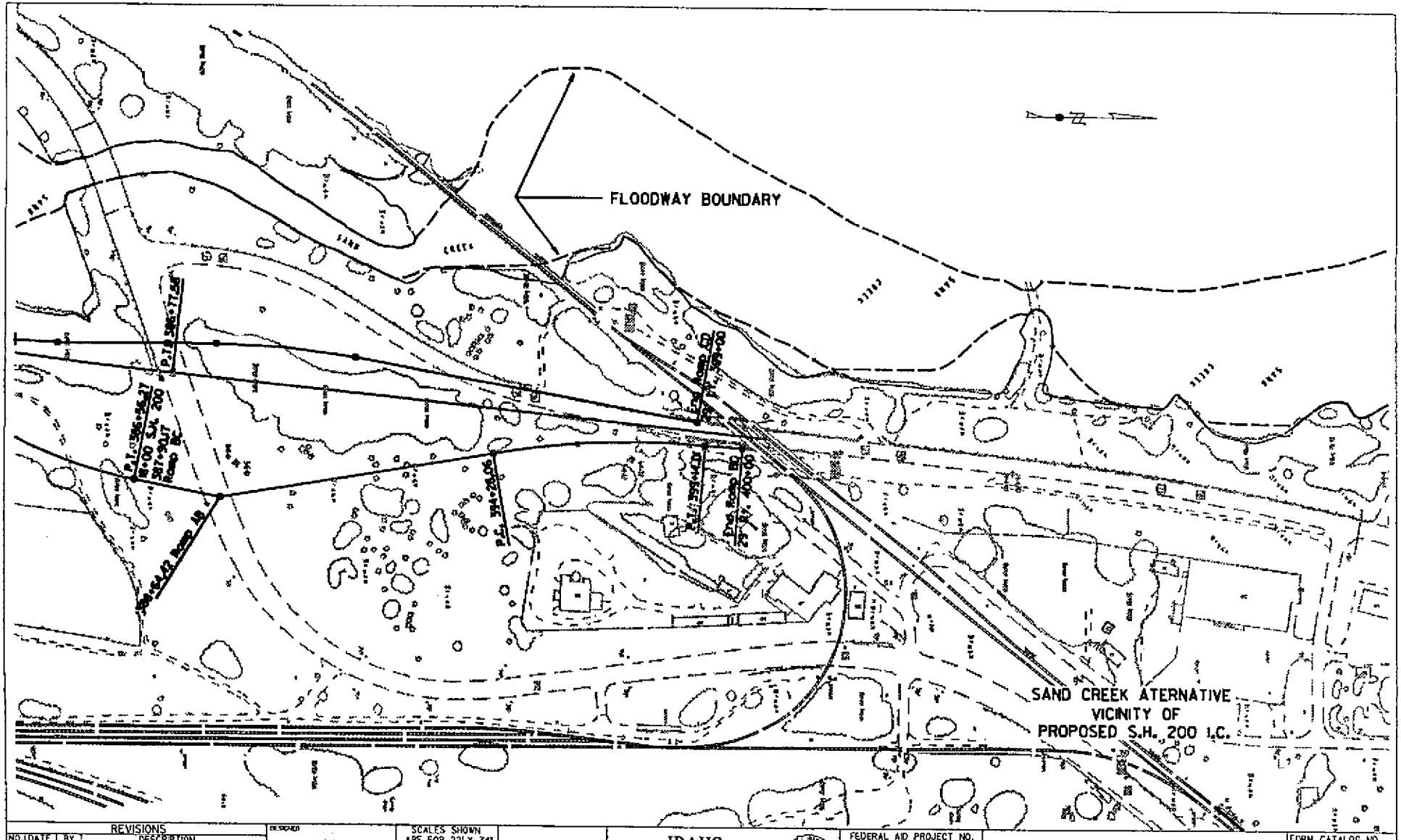
APPROVED BY:

James E. Hunt — Signature — City of Pandosay — Local Agency — 6/10/92 — Date

Yvonne Ball — Signature — FEMA R-X — *F.E.M.A. — 8/9/92 — Date

*F.E.M.A. approval required only for encroachment in a regulatory floodway

ITDAA029791



REVISIONS NO.	DATE	BY	DESCRIPTION
△			
△			
△			
△			

DESIGNED
DESIGN CHECKED
DETAILED
DWG. CHECKED

SCALES SHOWN ARE FOR 22" X 34" PRINTS ONLY
CADD FILE NO. 07I6PLAN2.DGN
DRAWING DATE:

IDAHO TRANSPORTATION DEPARTMENT
BOISE, IDAHO

FEDERAL AID PROJECT NO. NH-IR-F-5I6(068)
REGION 10 IDAHO

SANDPOINT NORTH & SOUTH
SAND CREEK
FLOODWAY BOUNDARY

FORM CATALOG NO. 26-0162108
COUNTY BONNER
KEY NUMBER 1729
SHEET 2 OF 2

G8

ITDAA029792

ITD-2665 4-88

SAND CREEK & SH-200 I.C.

FLOODWAY REVISION REQUIREMENT

Project No. NH-IR-F-5116(068) Station Limits 380+00 - 385+00

Project Title SANDPOINT NORTH AND SOUTH County Bonner

Roadway Identification US-95 US-2/SH-200 Sand Creek Alternative ☒ Adjacent to ☐ Crossing Sand ☒ Creek ☐ River

Floodplain Description Vicinity of proposed SH-200 I.C. adjacent to Pend Oreille Lake

Preferred Alternative

Describe consistency of action with regulatory floodway
Floodway elevation is established by elevation of Lake Pend Oreille. Placement of a fill in the water would be a very minor encroachment which will not impact the water surface elevation.

	Yes	No
The enclosed analysis complies with Part 65.7, 44 CFR, Floodway Revisions. (National Flood Insurance Program Regulations)	☐	☐
If no, The enclosed analysis complies with "Procedures for Coordinating Highway Encroachments of Flood Plains with FEMA."	☐	☐

Cost of revision is estimated at $

Revision of regulatory floodway is acceptable to the following agencies.

James E. Hunt Signature	City of Ponderay Local Agency	6/10/92 Date
Yvonne Bond Signature	FEMA Rx F.E.M.A.	8/9/92 Date

ITDAA029793

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Sand Creek								
A	0	399/199[2]	2,083	1.4	2,069.8	2,061.2[3]	2,061.5[3]	0.3
B	610	639/314[2]	3,574	0.8	2,069.8	2,061.3[3]	2,061.5[3]	0.2
C	1,290	188/98[2]	1,138	2.5	2,069.8	2,061.5[3]	2,061.7[3]	0.2
D	1,910	301/91[2]	1,811	1.6	2,069.8	2,061.8[3]	2,062.1[3]	0.3
E	2,489	416/290[2]	2,418	1.2	2,069.8	2,061.9[3]	2,062.2[3]	0.3
F	3,099	471/280[2]	2,568	1.1	2,069.8	2,062.1[3]	2,062.4[3]	0.3
G	3,821	103	535	5.3	2,069.8	2,063.9[3]	2,063.9[3]	0.0
H	4,176	99	416	6.8	2,069.8	2,064.9[3]	2,064.9[3]	0.0
I	4,591	285	2,449	1.2	2,069.8	2,066.1[3]	2,066.4[3]	0.3
J	5,401	330	2,608	1.1	2,069.8	2,066.1[3]	2,066.4[3]	0.3
K	6,071	288	2,282	1.2	2,069.8	2,066.3[3]	2,066.6[3]	0.3
L	6,425	265	2,500	1.1	2,069.8	2,067.8[3]	2,068.0[3]	0.2
M	7,355	380	3,348	0.8	2,069.8	2,067.9[3]	2,068.1[3]	0.2
N	8,120	361	2,891	1.0	2,069.8	2,068.0[3]	2,068.2[3]	0.2
O	8,785	381	2,907	1.0	2,069.8	2,068.0[3]	2,068.2[3]	0.2
P	11,025	229	1,460	1.9	2,069.8	2,068.7[3]	2,069.1[3]	0.4
Q	11,920	209	1,204	2.3	2,069.8	2,069.3[3]	2,069.8[3]	0.5
R	12,465	189	736	3.8	2,070.7	2,070.7	2,071.3	0.6
S	12,730	377	2,516	1.1	2,073.3	2,073.3	2,073.6	0.3
T	13,485	248	1,158	2.4	2,074.0	2,074.0	2,074.5	0.5
U	14,760	141	479	3.7	2,078.1	2,078.1	2,078.7	0.6
V	15,620	104	481	3.7	2,081.3	2,081.3	2,081.7	0.4
W	16,385	188	1,133	1.6	2,082.6	2,082.6	2,083.1	0.5
X	17,785	155	1,232	1.4	2,083.6	2,083.6	2,084.3	0.7
Y	18,315	114	975	1.8	2,083.9	2,083.9	2,084.6	0.7
Z	18,730	86	689	2.6	2,084.1	2,084.1	2,084.9	0.8

[1]Feet Above Cross Section A of Backwater From Lake Pend Oreille [2]Width/Width Within County Limits [3]Elevation Computed Without Consideration

TABLE 3

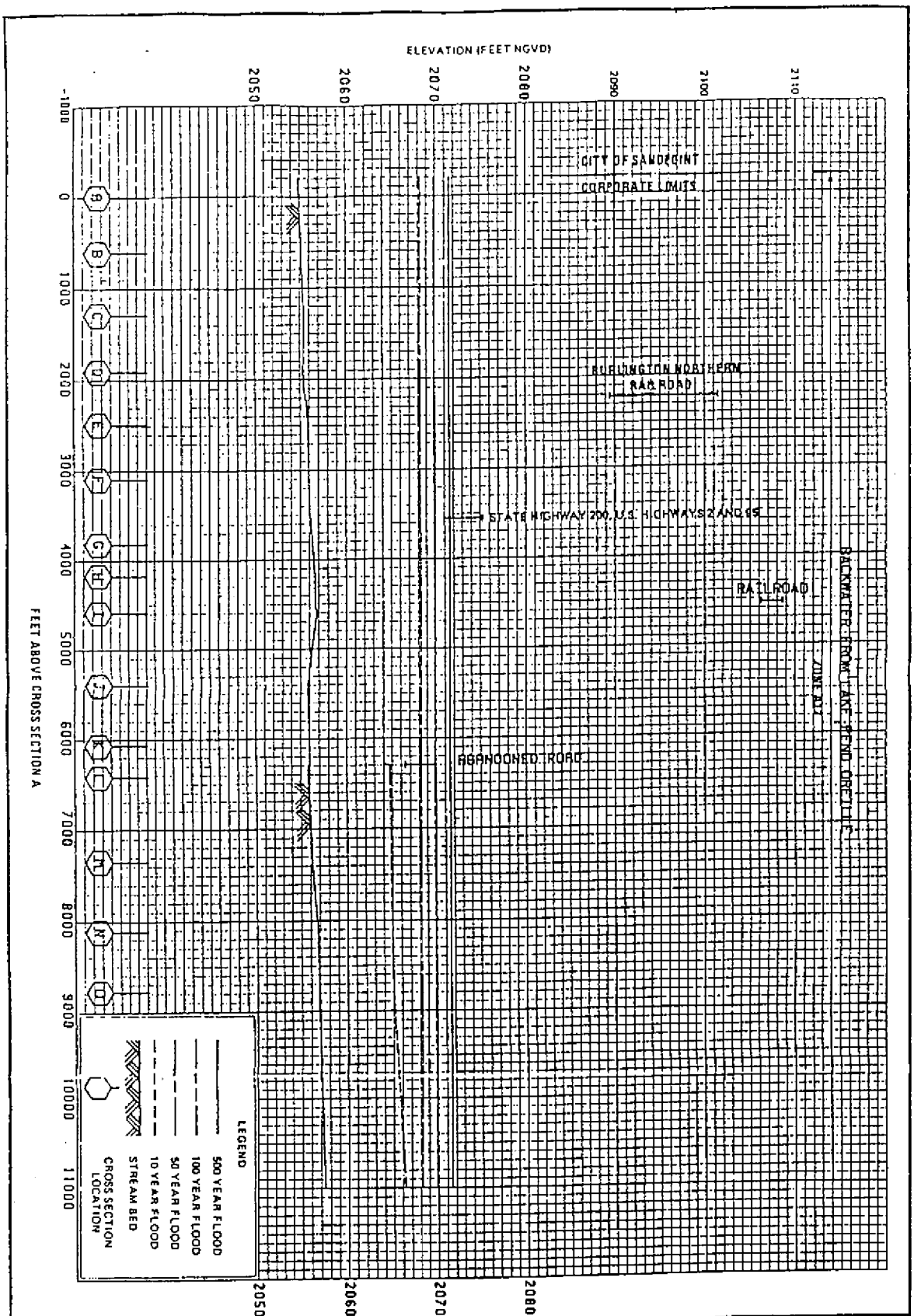
FEDERAL EMERGENCY MANAGEMENT AGENCY

BONNER COUNTY, ID
(UNINCORPORATED AREAS)

FLOODWAY DATA

SAND CREEK

ITDAA029794



45P	FEDERAL EMERGENCY MANAGEMENT AGENCY BONNER COUNTY, ID (UNINCORPORATED AREAS)	FLOOD PROFILES SAND CREEK

ITDAA029795

APPENDIX H

- BIOLOGICAL ASSESSMENTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Upper Columbia River Basin Field Office
11103 E. Montgomery Drive, Suite 2
Spokane, WA 99206

February 11, 1999

Mr. G. Fred Koethke
Senior Environmental Planner
Idaho Transportation Department, District 1
600 W. Prairie
Coeur d'Alene, ID 83815-8764

Subject: ITD; US 95-Sandpoint bypass, Biological Assessment (912.0230/1-9-99-I-71)

Dear Mr. Koethke:

We have reviewed your January 20, 1999 Biological Assessment (BA) addressing anticipated effects to the federally listed endangered gray wolf (*Canis lupus*) and threatened bald eagle (*Haliaeetus leucocephalus*), and the July 23, 1998 and August 10, 1998 Biological Assessments addressing effects to the threatened bull trout (*Salvelinus confluentus*) and westslope cutthroat trout (*Oncorhynchus clarki lewisi*), a species of concern, associated with the federally funded (Federal Highway Administration) U.S. 95 Sandpoint North and South highway project in Bonner County Idaho.

We concur with your determination that the proposed action is "not likely to affect" the federally listed endangered gray wolf, and the threatened bald eagle and bull trout. We previously concurred on your determination of effect for the federally listed threatened Ute ladies' tresses (*Spiranthes diluvialis*) in our December 30, 1998 letter. Westslope cutthroat trout is presently not listed or proposed for listing under the Endangered Species Act, and thus our concurrence on the effects of the action on that species is not required at this time.

Our concurrence on your determination for bald eagles is based on the implementation of the conservation measures described in your Biological Assessment. The conservation measure requiring a qualified biologist monitor any work occurring between October 15 and March 1 each season (when wintering bald eagles are likely to be present), is only a contingency plan, and should only be necessary in case construction activities coincide with the wintering season for a short duration only. In other words, this contingency plan is not intended to allow work of lengthy duration to occur during the time when bald eagles may be wintering in the project area. If work does occur during this time frame, and the on-site biologist observes that the work is disturbing bald eagles, then the Fish and Wildlife Service should be contacted immediately.

This concludes informal consultation for the listed species addressed in your Biological Assessments, pursuant to section 7(a)(2) of the Endangered Species Act. Thank you for your efforts to minimize impacts to fish and wildlife resources during construction. If you have any questions, please contact Rick Donaldson at 509-891-6839.

Sincerely,

Philip Laumeyer
Field Supervisor

cc:
CE-Regulatory, CdA (Doherty)
IDFG-Panhandle, CdA (Corsi)

BIOLOGICAL ASSESSMENT

SANDPOINT NORTH AND SOUTH, US-95
PROJECT NUMBER NH-IR-F-CM-5116(068)
KEY NUMBER 1729

Species potentially affected:
Bald eagle (Haliaeetus leucocephalus)
Gray wolf (Canis lupus)
Bull trout (Salvelinus confluentus)*
Ute Ladies'-tresses (Spiranthes diluvialis)
Westslope cutthroat trout (Oncorhynchus clarki lewisii)*

This document will address the bald eagle, and gray wolf.

Description of the Proposed Action:
The Preferred Alternative is the Sand Creek Alternative. This project involves the future widening of US-95 beginning at milepost 469.75, the construction of new alignment along Sand creek to the current junction of US-2, SH-200, US-95, and the widening from this junction to milepost 477.4 near Ponderay. This project involves approximately 7.7 miles of highway construction in four phases: Sagle to the Long Bridge (4-lane), the long bridge widening (4-lane), the Sand creek structure to the junction of US-2, US-95, SH-200 (2-lane), and from the junction to milepost 477.4 (4-lane), just past the Kootenai cutoff road. Two new interchanges will be constructed. One at the junction of US-2, US-95, SH-200 and the other at the north end of the long bridge where the Sand creek structure will intersect with the current US-95 route.

Construction Aspects:
The widening of the highway during the Sagle to Long Bridge phase will involve adding two lanes along the west side of the current alignment. This will involve earthwork with heavy equipment and possibly some rock blasting along the north end where rock outcrops are present. Moving the alignment to the west minimizes the impact to the Sagle bald eagle nest site by limiting the line of sight visual affects. This will be accomplished because the existing screening trees on the east side of the highway will be

*The bull trout and cutthroat trout biological assessments were prepared by consultant (Ecological Design, Inc., Rob Tiedemann), the Ute Ladies Tresses biological assessment was prepared by Shapiro and Associates, Inc., for the Idaho Transportation Department. Those reports are enclosed with this document.

left in place. ITD is also committed to planting 15 to 20 large screening trees (12-15 foot conifers or other suitable native vegetation) at the bike path entrance at Sagle to eliminate the line of sight view from this area and US 95 from the bald eagle nest.

The Long bridge widening will involve pile driving and bridge construction along the west side of the current long bridge. Bridge abutments will be required at both the north and south ends. This abutment work will involve some minor shoreline earthwork to install the abutments. The new long bridge structure will require the addition of two more lanes north of the bridge. The additional two lanes will be built on the west side of the current US-95 alignment. This will require the removal of 18 to 20 large mature trees (linear distance of approximately 2000 feet parallel to US-95) along the west side of the current highway north of the long bridge. This will be required to add two lanes along the current route of US-95 making it a four lane highway. The removal of these trees is not considered significant. The reason the removal of these trees are not considered significant is; that they are next to the current US 95 highway, and are separated from the river by an unimproved dirt road and an outer band of mature cottonwoods along the waters edge. The trees along the waters edge (west side shoreline) will not be removed. This will allow migrating and wintering eagles continued use of the shoreline perch trees. ITD will thin some of the smaller trees in the area along the shoreline and plant 20 new trees (12-15 foot) along the new westside embankment as part of the landscaping and revegetation portion of the project.

The Sand creek structure will be approximately 2,850 feet long and will run north over Sand creek parallel to the Burlington Northern and Santa Fe Railroad on the Sand creek peninsula. The structure will end just north of the BN&SF Railroad Depot where it will then be a two lane highway running north to the junction of US-2, US-95, SH-200. Along this area on the east side to Pend Orielle Lake there is a buffer of approximately 1000 feet between the construction activities (proposed highway) and the lake shoreline. Interchanges will be constructed at the south (entrance to Sandpoint) and north (junction US-2, US-95, SH-200) ends of this project phase. The use of a structure and some walls at points along Sand creek are an effort to limit the impacts to Sand creek from fill. There will be tree removal (66 to 70 large trees) on the west side of the peninsula where the

bridge structure and the highway go north along the upland portion on the west side of the peninsula.

The northern most phase of this alternative will begin at the junction (US-2,US-95, SH-200) and go north to the ending milepost 477.75 just north of the Kootenai cutoff road. It will be a four lane highway constructed over the current alignment.

BALD EAGLE
(Haliaeetus leucocephalus)

HABITAT:
Bald Eagle: There are two habitat concerns with these birds. The first is the wintering habitat and the second is the nesting habitat.

WINTERING HABITAT:
The current wintering habitat is concentrated mainly around the shoreline areas of Pend Orielle Lake and River, and the adjacent hillsides where there are an abundance of perch trees that can be used to forage for food and roost. Their primary food sources during this period are fish, waterfowl, and carrion. The current proposed alternative does not involve undisturbed natural shoreline areas except for a small linear area along the west bank of the Sand Creek peninsula. The west bank area of Sand Creek is occasionally used by the eagles. But, the close proximity to downtown Sandpoint, human activity, vehicle and train traffic, noise, etc., usually results in short term activity. Bald eagles have been occasionally observed along the shoreline areas on the east of the Sand Creek peninsula along Pend Oreille Lake. The prime bald eagle wintering habitat is in the undisturbed less populated shoreline areas around the lake and river. The primary bald eagle foraging locations are; Bottle Bay, Clark Fork River Delta, Denton Slough, Lightening Creek, Garfield Bay, Granite Creek, Pack River Delta, Pend Oreille River (primarily west of Sandpoint), and Smith Creek (John Crenshaw 1987). See attached map indicating the primary wintering use areas. *"The eagles exhibited considerable daily movement throughout the study area,"* quote from final report by John Crenshaw (1987) on wintering bald eagles in the lower Clark Fork River and Lake Pend Oreille.

NESTING HABITAT:

The highway corridor transects two bald eagle nesting territories; Sagle and Springy Point. The Springy Point nest is about 2.5 miles from the nearest point on the highway right-of-way. However, the major concern is with the Sagle nest site because it is within ¼ mile of the current US-95 highway. This nest has been active for the last five years (1994-98). It is assumed that it will continue to be active into the foreseeable future. The area south of the long bridge to Sagle is within rolling terrain on the edge of a glacial valley that drains to Sagle Slough and Fry creek. Land uses are mostly agricultural (pasture land) with increasing residential and commercial developments along the highway corridor.

Nest site primary use area is usually within ½ mile of the nest, with foraging reaching out about 4 Km (2.25 miles). The Sagle nesting pair use the Sagle Slough and Fry Creek area for their main foraging area (D. Roberts, USFS, 1997). Occasionally they venture out onto Pend Orielle Lake. Their prey consists of ducks and other waterfowl, fish, small mammals, and carrion.

Inventories and surveys:

Data has been collected in Idaho on wintering bald eagles and is shown below. As one can see from the chart the number of eagles varies over time. This is probably due to changes in foraging opportunities, as the eagles will move to the area that provides the greatest opportunity for food.

TABLE 6, MID-WINTER BALD EAGLE COUNTS

Year	Pend Oreille Lake	Five Northern Counties	State of Idaho
1981	123	169	756
1982	45	169	668
1983	87	169	644
1984	98	125	542
1985	56	96	No Data
1986	255	303	755
1987	267	389	806
1988	166	234	735
1989	106	155	676
1990	133	215	800
1994	91		
1995	101		
1996	90		
1997	36		

The Sagle nest site has been occupied for the last five years and is monitored by the US Fish and Wildlife Service and the Idaho Department of Fish and Game.

Effects of the Action:
Wintering bald eagles are not likely to be adversely affected by the proposed activity. The project areas where wintering bald eagles have been occasionally observed are; north approach to the long bridge from Sandpoint, lake shoreline areas, shoreline areas adjacent to the long bridge, and along shoreline areas of Sand Creek. Construction activity at or adjacent to these areas will not be allowed during the wintering time period of November 1 to March 1.

There will be some temporary loss of potential perch trees along the west bank, north from the long bridge and along the west side of the Sand Creek penninsula. Removal will start approximately 100 feet north of the bridge and continue for approximately 3000 feet. Tree removal must take place to construct the highway fill for road widening. The tree removal activity will not be allowed during the eagle wintering period (November 1 to March 1). Artificial perch trees and tree plantings will be used along the shoreline, just north of the long bridge on the west side, to replace the trees that are removed due to construction of the highway embankment and bridge abutments.

Nesting bald eagles could be adversely affected by construction activities, if work is conducted within ½ mile of the nest during nesting season (where line of sight occurs from the nest). Blasting to remove rock during highway construction could also adversely affect nesting bald eagles if conducted within one mile of the nest (line-of-sight).

See conservation measures for specific requirements on construction restrictions, artificial perch trees, and vegetation replacement and raptor biologist utilization.

Required Conservation Measures to minimize effects of the action:

- Construction activities will be limited to minor work within line-of-site or ¼ mile of the nest (survey staking, minor excavations, etc.) during the nesting season (approximately January 15 to July 15) or until the eaglets

fledge (or the nest was unsuccessful). This shall be verified by a qualified raptor biologist and/or verified by the FWS. No mechanical construction equipment can be operated within ¼ mile of the nest site when bald eagles are present.

- Artificial roost trees will be installed prior to the bald eagle wintering period (November 1 to March 1). The installation of the artificial roost trees shall be coordinated to occur in conjunction with the removal of the live trees along the west side of the US-95 roadway fill north of the Long Bridge.

- The removal of trees, north of the long bridge, is required to allow embankment construction for the new roadway. Removal of the live trees shall occur between August 1 - October 31 to avoid both the nesting and wintering time periods when eagles may be present.

- Blasting will not be allowed during the nesting season within one mile of the nest site.

- ITD will retain a qualified raptor biologist to monitor and observe the bald eagles during the nesting season to ensure that there is no disturbance affecting nesting activities. If the nesting bald eagles appear to react to construction related activities, the disturbance will be suspended and formal consultation with the US Fish and Wildlife Service will be initiated immediately. A qualified raptor biologist is a biologist with a masters degree in raptor biology or a biologist who has three years of field experience with raptor avian species. The qualifications can be demonstrated by producing documentation that verifies the education and/or experience in raptor biology.

- ITD will plant 15 to 20 native conifers (12-15 foot-rooted stock) and other native plant species which mimic the existing plant community shall be planted to adequately screen the Sagle bike path entrance parking area from the bald eagle nest. The trees and other planted vegetation shall monitored by ITD for at least 5 years to ensure success of the re-vegetation effort.

- ITD will replant 15 to 20 cottonwoods (12-15 foot – rooted stock) and other native plant species to provide adequately spaced, suitable habitat

which mimics the existing plant community for foraging along the new embankment on the west side of the fill north of the new longbridge section. The trees and other planted vegetation shall be monitored by ITD for at least 5 years to ensure success of the re-vegetation effort. ITD shall also install three artificial roost trees (see attachment) on the west side along the waters edge from the long bridge north at 100feet, 1000, and 2000 feet to address temporal perch tree losses until the revegetation plantings reestablish adequate height perch trees in the embankment area.

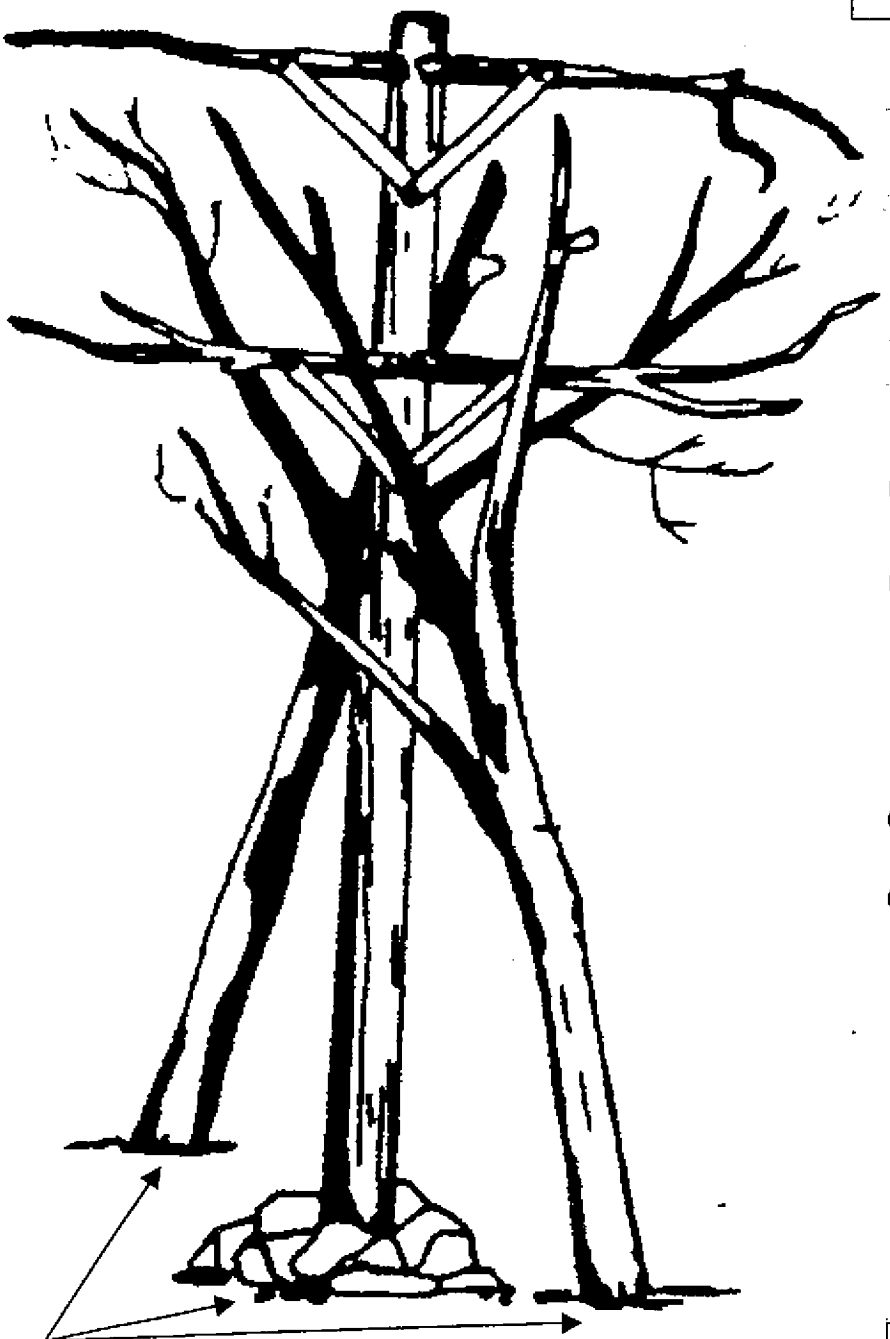
- ITD will plant a variety of trees (12-15 foot-rooted stock) which mimic the existing plant community along the sand creek structure north to the junction of US-2, US-95, SH-200. A minimum of 80 trees will be planted along with a variety of shrub species as part of the landscaping and revegetation effort for this phase of the project.

- As a contingency plan, if work occurs after October 15, due to unforeseen circumstance, along the area north of the long bridge on any given year, the site shall be monitored by a qualified raptor biologist until March 1 to observe for the presence of bald eagles. The raptor biologist shall have the authority to cease construction to preclude disturbance of the bald eagles.

- All of the disturbed soil areas will be re-seeded, fertilized, and mulched. A variety of compatible grasses, forbs, and shrub species will be used. This conservation measure addresses water quality, wetland and riparian restoration, and weed control which affects the cover and food resources of bald eagle prey species.

Conclusion:
The proposed action may affect but is not likely to adversely affect either wintering or nesting bald eagles. This determination is based on the listed conservation measures, work restricted time windows, and the on-site eagle monitor (raptor biologist - who will be incorporated into the project contracts by a contract Special Provision).

Artificial Bald Eagle Roost Tree

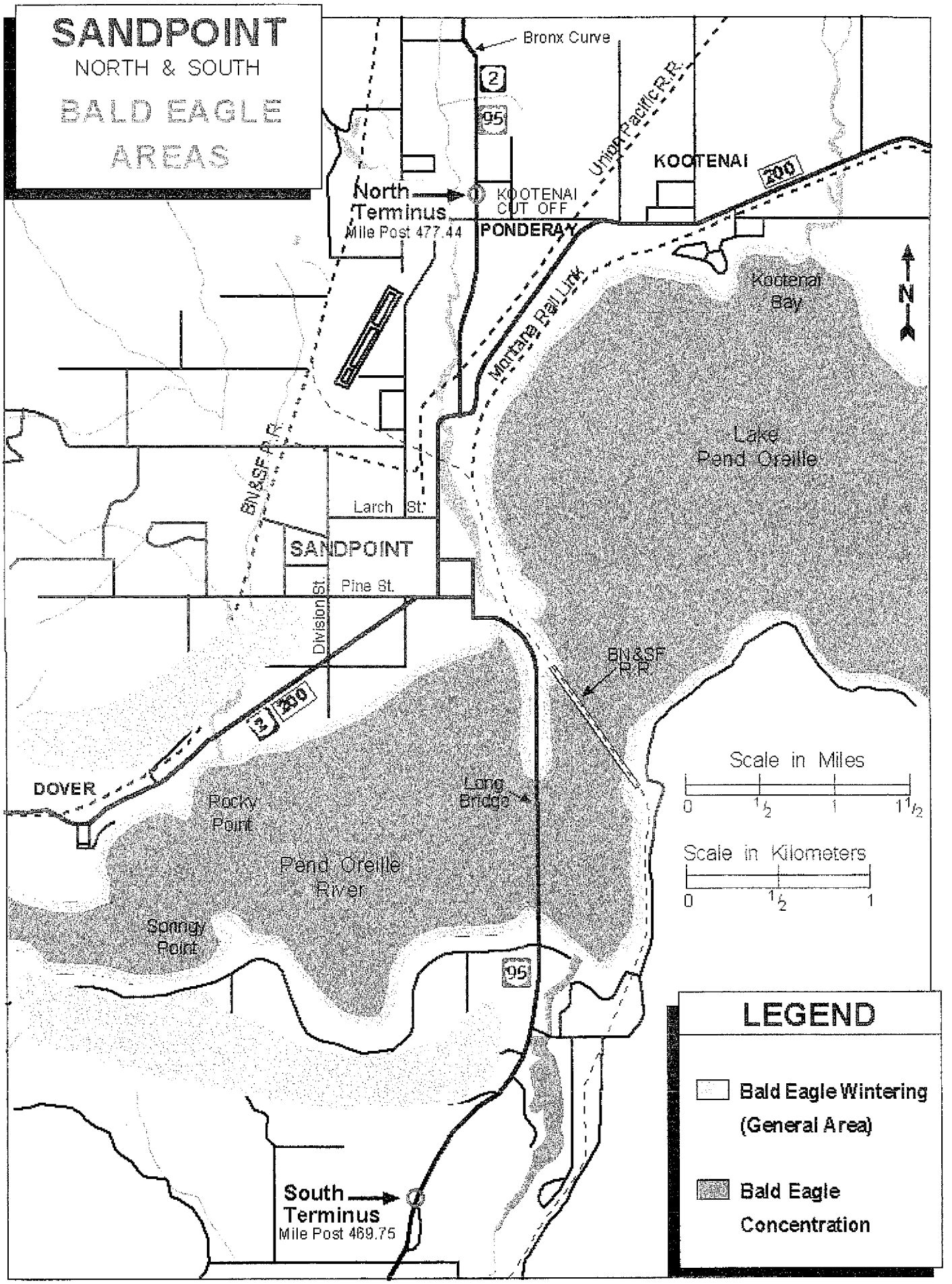


Top of Roost Tree

60 feet

Ground Level

Woody vegetation may be planted around the base of the artificial tree to soften the appearance and provide more wildlife habitat.



ITDAA029806

Gray Wolf
(Canis lupus)

The gray wolf was placed on the endangered species list in 1987. In Idaho, the area south of I-90 is managed as a nonessential experimental population while the area north of I-90 is given full protection under the Endangered Species Act. The gray wolf may exist north of I-90 in northern Idaho. There may be denning, breeding, and pack activities occurring but documentation of these is limited. The area of the proposed project is not in an area where wolves are denning or rearing pups and there are no known denning or rendezvous sites within the project corridor. Migration/transitory use may occur in any area other than downtown Sandpoint. The widening of the highway in the area will not increase the likelihood of human wolf interactions or wolf vehicle interactions resulting in wolf mortality. There have not been any sitings of wolves in the project corridor. There have been rare sitings (unverified) in adjacent area surrounding the project corridor. There have been verified sitings in the Selkirk and the Bitterroot Mountains.

Inventories and surveys:
There have not been any scientific inventories or surveys in the project area or the surrounding area. There are no documented breeding, denning, rendezvous site/s or pack activity in north Idaho, north of I-90.

Effects of the Action:
The proposed project is not likely to adversely affect the gray wolf because the alignment will follow the current alignment south of the Sandpoint and the widening should not increase possible wolf human or wolf vehicle interactions.

Conservation Measures:
No conservation measures are planned because the location of the proposed highway alignment (mostly along the old alignment or within urbanized or light industrial areas) will minimize any potential impacts to habitat.

Conclusion:
This proposed action may affect but is not likely to adversely affect the continued existence of the gray wolf or its habitat. This is due primarily to the fact that the proposed project follows the current alignment south of Sandpoint and the rest of the alignment is in commercial/light industrial areas.

REFERENCES:
The following individuals and reports have provided the basic information and guidelines for the recommendations and conclusions discussed in this report.

Effects of the Cabinet Gorge Kokanee Hatchery on Wintering Bald Eagles in the Lower Clark Fork River and Lake Pend Oreille, Idaho, John G. Crenshaw, 1987.

Habitat Management Guide for Bald Eagles in Northwestern Montana, USFWS Publication, 1992

Donaldson, R. Numerous personal communications between July 22 and December 11, 1998, . U.S. Fish and Wildlife Service.

Corsi, C. Personal communications, November 23 & December 10, 1998

Cole, P. Personal communication, March 14, 1997 and July 30, 1998 Idaho Fish and Game Department.

Roberts, D. Personal communication, March 17, 1997. U.S. Forest Service.

Spicer, D. Personal communication, March 17, 1997. Idaho Fish and Game Department.

Hayden, J. Personal communication, May 13, 1997. Idaho Fish and Game Department.

Audet, S. Personal communication, July 21, 1998, U.S. Fish and Wildlife Service.

Mid-winter bald eagle survey for 1997. Idaho Fish and Game Department.

Threatened and Endangered Species List, August 3, 1998, U.S. Fish & Wildlife Service.

A BIOLOGICAL ASSESSMENT TO FULFILL THE REQUIREMENTS OF SECTION 7(C) OF THE ENDANGERED SPECIES ACT FOR THE PROPOSED THREATENED SPECIES BULL TROUT (SALVELINUS CONFLUENTUS)

PROJECT #NH-IR-F-5116(068)
US-95 SANDPOINT NORTH SOUTH
KEY #1729

Prepared by:
Ecological Design, Inc.
Boise, Idaho
Robert B. Tiedemann, CPWS, CWD, CFS, CWB

Prepared for:
Idaho Transportation Department
District 1 - Coeur d'Alene, Idaho

July 23, 1998

ITDAA029810

A BIOLOGICAL ASSESSMENT TO FULFILL THE REQUIREMENTS OF SECTION 7(C) OF THE ENDANGERED SPECIES ACT FOR THE PROPOSED THREATENED SPECIES BULL TROUT (SALVELINUS CONFLUENTUS)

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INTRODUCTION

The Idaho Transportation Department proposes to reconstruct a portion of highway US-95 from north of the city of Sagle to the south limit of the long bridge over the Pend Oreille River. And, to re-align the roadway around the City of Sandpoint from the north limit of the long bridge to the intersection of US-95 and SH-200. The project corridor is marked by mile post 469.75 to the south and mile post 477.44 to the north.

Reconstruction of the existing two lane US-95 includes the addition of travel lanes, passing lanes, and turn-outs largely within existing right-of-way. Additional right-of-way may be required for minor realignments to improve roadway geometrics, sight distance, and safety. Construction of the roadway prism may require grading of earth fill into these areas.

Re-alignment of the roadway around the City of Sandpoint is within new roadway right-of-way which parallels that for the Burlington Northern / Santa Fe Railroad and includes the construction of two travel lanes between Sand Creek and the railroad, a partial interchange at Bridge Street, and a reconfigured intersection of US-95 and SH-200. Grading of earth fill into a portion of Sand Creek and placement of concrete piers to support a structure may be the only appropriate and practicable means of accomplishing the project purpose.

The Idaho Transportation Department (ITD) has contracted with Ecological Design, Inc. to prepare a biological assessment to fulfill the requirements of Section 7(c) of the Endangered Species Act for the proposed threatened species bull trout (Salvelinus confluentus). Other studies which support this effort are described in the documents titled: (1) *Draft Environmental Impact Statement for Sandpoint North and South, Project #NH-IR-F-CM-5116 (068)*, (2) *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project #NH-IR-F-5116 (068), US-95 Sandpoint North South*, and (3) *An Assessment of Wetland Functions and Values, and a Description of Mitigation Requirements for Project #NH-IR-F-5116 (068), US-95 Sandpoint North South.*

Other proposed or listed, threatened or endangered species which may be present within the project area include bald eagle (Haliaeetus leucocephalus), gray wolf (Canis lupus), and Ute ladies' tresses (Spirantes diluvialis) (Donaldson pers. comm. 1998).

ITDAA029811

REQUIREMENTS OF SECTION 7(C) OF THE ENDANGERED SPECIES ACT

A list of Federally proposed or listed, threatened or endangered plant and animal species which may be present in the project corridor was requested from the US Fish and Wildlife Service (US FWS) and provided to ITD (date to be provided by ITD-District 1) (Appendix 1). US FWS policy requires a biological assessment be initiated within 90 days of receipt of this list. After this time the accuracy of the list should be informally verified. The biological assessment will be completed within 180 days of receipt of the list, or other mutually agreeable time (US FWS 1994).

US FWS policy suggests the following information be included in a biological assessment:

1. An on site inspection of the area to be affected by the proposal. The inspection may include a detailed survey of the area to determine if the species are present.

2. A review of: (1) the literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (2) interviews with experts (including those within the US FWS, state conservation departments, universities and others who may have data not yet published in the scientific literature); (3) an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; and (4) an analysis of alternative actions considered (US FWS 1994).

Each of these actions has been completed by Ecological Design, Inc. for ITD - District 1 and the Federal Highway Administration.

DESCRIPTION OF THE PROJECT CORRIDOR

The project corridor south of the Pend Oreille River is within rolling terrain on the edge of a broad glacial valley that drains to the Sagle Slough. Adjacent land uses include residential and commercial developments, pasture land that is both harvested and grazed, second growth timber lands, and intersecting roadways and their right-of-ways. The terrain generally grades upward from east to west. No intermittent or perennial streams with defined bed and banks cross or run parallel to the existing US-95 roadway right-of-way or immediately adjacent to it.

The project corridor north of the Pend Oreille River is within a narrow peninsula of land that separates Sand Creek from Lake Pend Oreille. The ground has been previously modified to provide the width and grade to accommodate the roadbed of several railroad tracks and vehicular access to them and for the foot print of the Burlington Northern depot. The terrain is flat across much of the width of the project corridor, but abruptly drops to the edge of Sand Creek and more gradually grades to the edge of Lake Pend Oreille. Adjacent land uses include the railroad and related industrial buildings, a water treatment plant, disturbed ground that is dominated by herbaceous weeds, and some second growth timber. Water elevations within the reach of Sand Creek adjacent to the project corridor are regulated by Albeni Dam on the Pend Oreille River and vary between the summer pool elevation which is 2062.5 feet (628.7 meters) and the winter pool elevation which is 2055.0 feet (626.5 meters).

ITDAA029812

ON-SITE INSPECTION AND FIELD STUDIES OF THE PROJECT CORRIDOR

Examination of data from the following sources suggest waterways within the project corridor provide habitat for bull trout or serve as a migratory corridor to habitat in headwater streams (see Figures 1 - 2):

1. US Geologic Survey (USGS) Sagle, Idaho and Sandpoint, Idaho quadrangle maps (7.5 minute series).
2. US Fish and Wildlife Service (US FWS), National Wetlands Inventory Sagle, Idaho and Sandpoint, Idaho orthophoto quadrangle maps (7.5 minute series).
3. Aerial photography provided by the Idaho Transportation Department (ITD).
4. Field studies conducted by Ecological Design, Inc. and documented in the report titled *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project #NH-IR-F-5116(068), US-95 Sandpoint North South.*

The USGS quadrangle maps identify the Pend Oreille River and Sand Creek as the only surface water features within or immediately adjacent to the project corridor.

The Pend Oreille River and Sand Creek below the mean high water line are classified by the US FWS National Wetlands Inventory as lacustrine, littoral, open water, permanently flooded (L2OWH) wetland. They are unvegetated river and stream beds that are largely composed of silty sand and with surface water that varies in elevation with season. A narrow fringe of palustrine, scrub-shrub and palustrine, forested wetlands appear on the ground at or near the mean high water line, but are not shown on the maps. The scrub-shrub wetland plant community is dominated by reed canary grass (Phalaris arundinacea), four-line honeysuckle (Lonicera involucrata), and red alder (Alnus rubra), and the forested wetland plant community is dominated by these species and black cottonwood (Populus trichocarpa).

REVIEW OF THE LITERATURE

In 1989 the American Fisheries Society published a list of rare fishes of North America which included bull trout as a species of special concern (Williams et al. 1989).

On June 13, 1997 the US Fish and Wildlife Service proposed to list the Columbia River population segment of bull trout as a threatened species. The proposal states in part, "The Columbia River population segment, comprised of 386 bull trout populations in Idaho, Montana, Oregon, and Washington with additional populations in British Columbia, is threatened by habitat degradation, passage restrictions at dams, and competition from non-native lake and brook trout. The special rule allows for take of bull trout within applicable State fish and wildlife conservation laws and regulations (Federal Register June 13, 1997, Volume 62, Number 114)."

Bull trout are a highly desirable game fish because they can grow to trophy size in Idaho's cold, unproductive waters. They are aggressive and easily take bait, lures, and artificial flies; resilient and able to be recycled in catch and release fisheries; and rare and interesting to tourists (Elle 1995).

The Idaho Department of Fish and Game bull trout management plan (1993) states in part, " . . . the following goals for the management of bull trout in Idaho (include) 2. Preserve options for the future by maintaining bull trout populations and habitat. Identify existing critical habitat for preservation or enhancement of impacted populations." "Bull trout habitat has been greatly altered or reduced in Idaho. Areas lost to bull trout production include most of low elevation zones affected by agriculture, grazing, and human encroachment. Irrigation and hydroelectric dams have fragmented populations. Road building and timber harvest have also affected bull trout habitat by increasing sedimentation in streams and by increasing temperatures with open canopies" (IDFG 1993).

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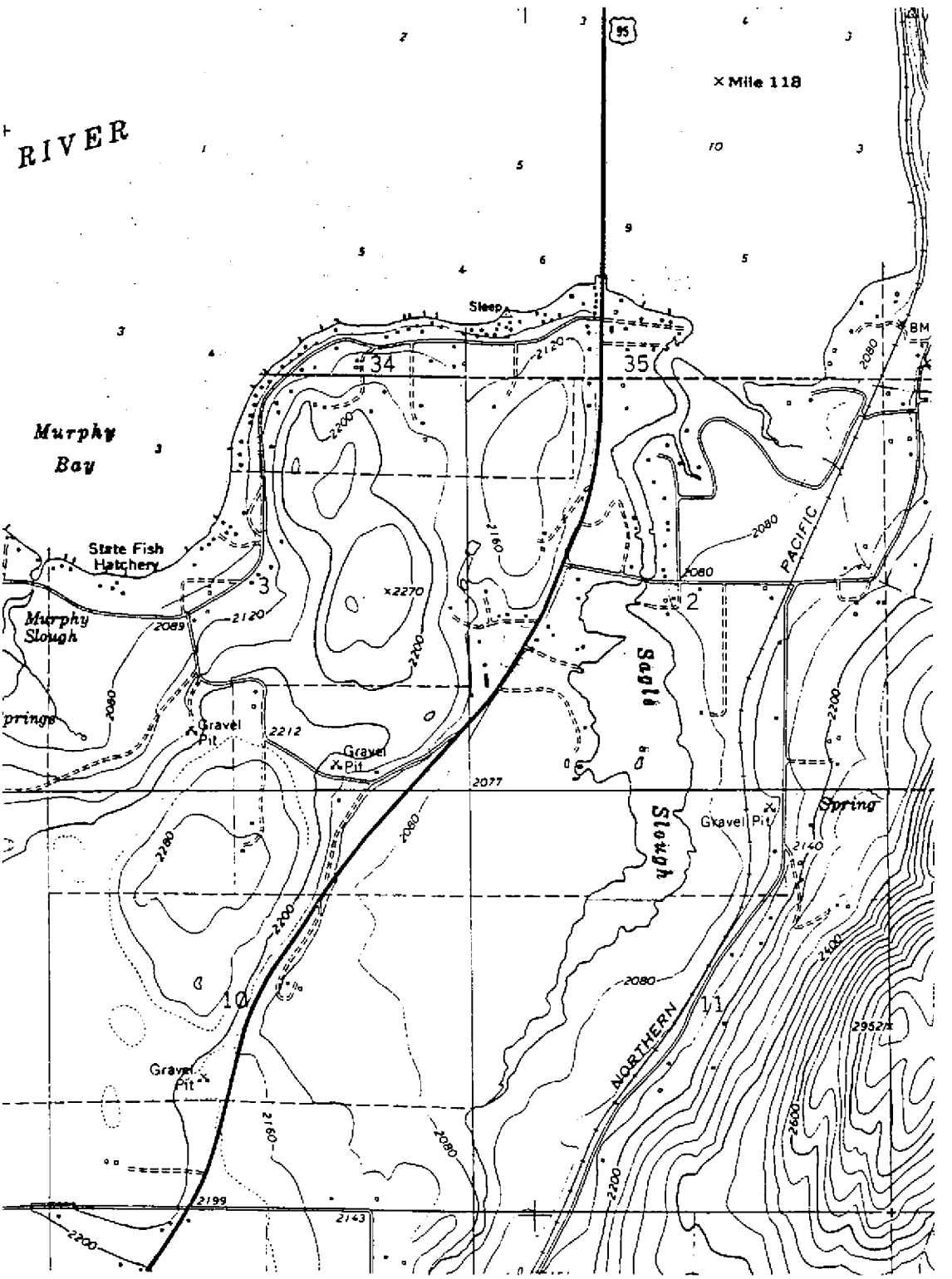

Figure 1 - US Geologic Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

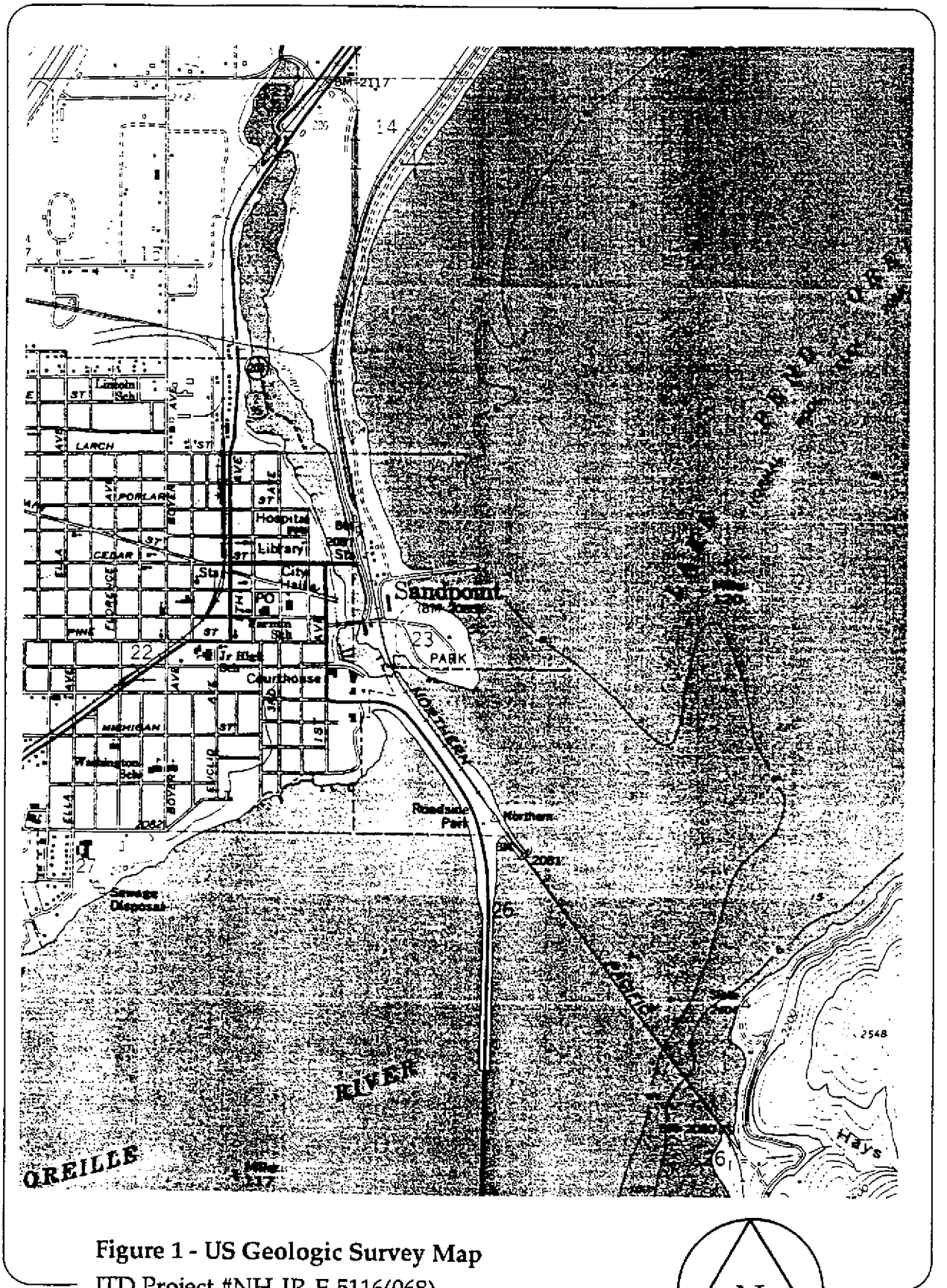

Figure 1 - US Geologic Survey Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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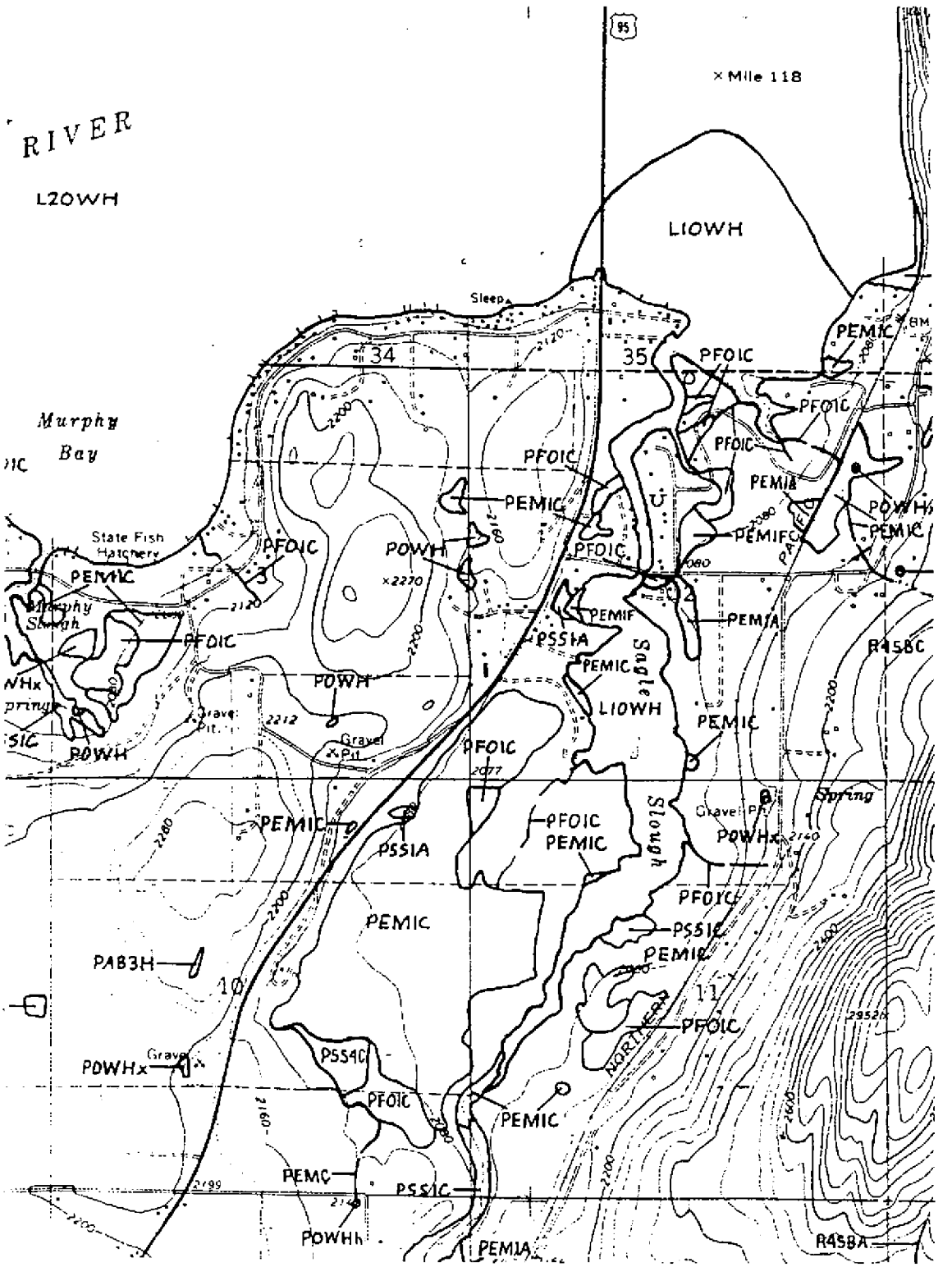

Figure 2 - US FWS National Wetlands Inventory Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

N
Not to Scale

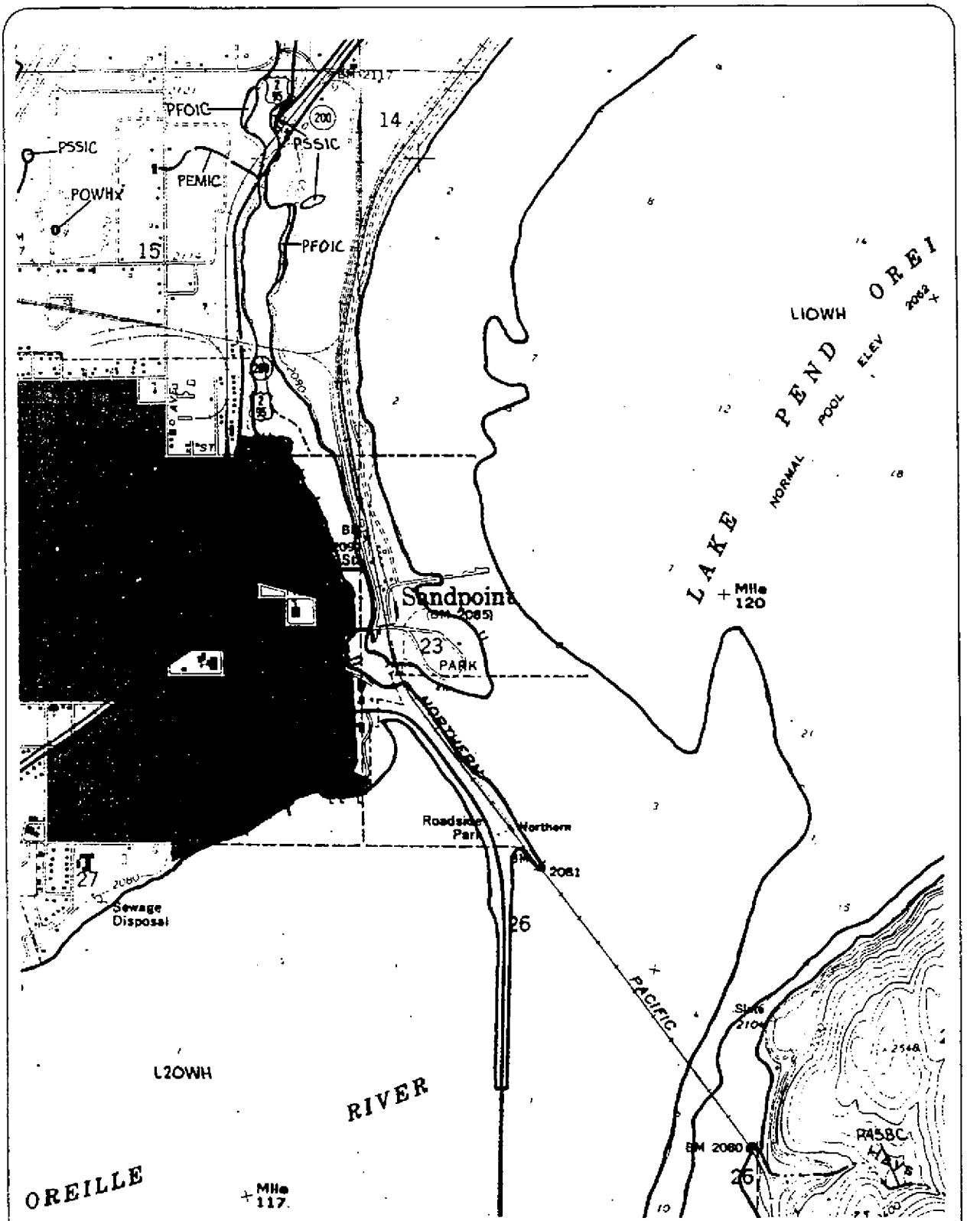

Figure 2 - US FWS National Wetlands Inventory Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

Life History

Bull trout populations have multiple life histories, age structures, behaviors, and schedules for maturation. Resident and migratory fish exist throughout the range. Resident populations are found in headwater streams where they spent their entire lives (Goetz 1989; Mullan and others 1992; Thurow 1987). Migratory populations live in tributary streams for several years before migrating downstream into a larger river (fluvial form) or lake (adfluvial form) (Bjornn 1957; Shepard and others 1984b).

Resident fish range from 150 to 300 millimeters in length (Goetz 1989; Mullan and others 1992) while migratory fish commonly exceed 600 millimeters (Goetz 1989; Pratt 1985; Shepard and others 1984b). While resident and migratory fish differ little in size during their first year of growth in headwater streams, migratory fish grow at a greater rate when they enter large rivers and lakes where forage is more available (Rieman and McIntyre 1993).

Bull trout mature between age 5 and 7 years of age (Brown 1992; Fraley and Shepard 1989; Goetz 1989; Leathe and Enk 1985; McPhail and Murray 1979; Mullan and others 1992) and spawn from August through November (Armstrong and Morrow 1980; Brown 1992; McPhail and Murray 1979; Shepard and others 1984b). Spawning is associated with falling temperatures between 5 and 9° C (Shepard and others 1984b). Embryos incubate over winter (Weaver and White 1985) and alevins feed and grow for an extended time after they absorb the yolk within the gravel (McPhail and Murray 1979). Young bull trout emerge after peak stream discharge for a short period (Weaver and White 1985) from early April through May (Needham and Vaughan 1952; Pratt 1992; Ratliff 1992; Shepard and others 1984b)

Approximately half of the bull trout in Flathead Lake began a 88-250 km spawning migration from May to July and entered tributaries to the North and Middle Forks of the Flathead River when water temperatures were below 12° C. They spawned in stream reaches influenced by groundwater and with low gradient, loosely compacted gravel, and cover from late August through early October when water temperatures were below 9° C (Fraley and Shepard 1989).

Resident and migratory bull trout may live together (Jakober 1992). It is unknown if they are a single or separate populations (Rieman and McIntyre 1993).

Populations are an important source of the genetic variability critical to the long term persistence of a population (Scudder 1989)

Diverse life history strategies are important to the stability and persistence of populations of all species. It may stabilize populations in highly variable environments and refound those that are extirpated from a portion of their range (Balon 1984; Gross 1991; Mullan and others 1992; Poff and Ward 1990; Titus and Mosegaard 1992; Warren and Chesson 1985). The variability in time of out migration of juveniles from tributary streams and time of spawning by adults are important forms of behavioral diversity in bull trout (Rieman and McIntyre 1993).

Species Distribution

Number of bull trout redds counted from 1983 to 1992 in 21 streams that are tributaries to Lake Pend Oreille, Idaho varied from 412 to 930 with a mean value of 675 (Pratt 1985 and Hoelscher and Bjornn 1989).

Number of bull trout redds counted from 1983 to 1992 in 6 index streams that are tributaries to Lake Pend Oreille, Idaho varied from 290 to 671 with a mean value of 485 (Pratt 1985 and Hoelscher and Bjornn 1989).

ITDAA029818

Fish distribution and relative abundance (fish/100 m2) data collected September 6, 1983 in Sand Creek, August 24, 1998 in Spring Jack Creek, and September 6, 1983 in Schweitzer and Little Sand Creeks, all tributaries to Sand Creek show no bull trout present. Water temperatures were 15.0, 15.0, 10.0, and 11.0° C respectively (Pratt 1985).

Habitat Needs

Washington Department of Wildlife (undated) management recommendations for bull trout includes, "The maintenance of riparian vegetation is essential for controlling stream temperature, providing cover, and protecting against lateral erosion. Buffer zones along stream banks should be at least the width of the height of the tallest tree or 15.2 (50 ft), whichever is wider. The vegetative buffer will provide erosion control, and maintain natural stream temperatures and diversities of aquatic invertebrates. In Washington, this can range up to 60 m (200 ft). This zone of influence should be maintained along stream banks which provide bull trout and Dolly Varden habitat, and any other stream which directly or indirectly influences bull trout. Road construction and maintenance activities should be avoided adjacent to streams with bull trout and Dolly Varden. In-stream structures such as bridges, piers, boat ramps, or culverts must not impede the natural movements of bull trout and Dolly Varden."

INTERVIEWS WITH EXPERTS

Interviews with experts from the region show no bull trout have been collected during systematic sampling of Sand Creek and occasional catches have not been reported. Also, the silty sand bottom substrate of Sand Creek within the project corridor is not appropriate spawning habitat for bull trout and summer water temperatures in Sand Creek exceed those preferred for rearing and living.

March 3, 1998 Interview with Ned Horner, Fisheries Biologist (IDFG-Panhandle Region)

Systematic sampling of fish in Sand Creek on September 6, 1983 shows the following number of fish per 100 square meters: (1) unidentified Salmo spp. 4.4, (2) rainbow trout (Oncorhynchus mykiss), 4.4, (3) cutthroat trout (Salmo clarki) 2.9, (4) brown trout (Salmo trutta) 0.0, (5) unidentified Salvelinus spp. 0.0, (6) bull trout 0.0, (7) brook trout (Salvelinus fontinalis) 23.3, and (8) mountain whitefish (Prosopium williamsoni) and northern squawfish (Ptychocheilus oregonensis) 19.0. Water temperature was measured at 15.0° C (Pratt 1985).

March 4, 1998 Interview with Chip Korse, Fisheries Biologist (IDFG-Panhandle Region)

Fish species commonly observed in Sand Creek are brook, rainbow, and cutthroat trout. The naturally occurring low gradient and slow moving water of the lower reach of Sand Creek does not provide appropriate habitat for bull trout. Further, the watershed is heavily impacted by timber harvest, agriculture, and urbanization that has contributed sediments to the stream and removed riparian vegetation resulting in greater exposure to sun light and elevated water temperatures. Although some bull trout habitat may be found high in the watershed, diversion dams and migration blocks inhibit its use.

Bull trout are more common to the north and east shorelines of Lake Pend Oreille where adults stage before entering tributaries to spawn. Living space for adults is in the cold water near the thermocline of the lake.

Although the lower reach of Sand Creek is shallow and warm, some adults may attempt to migrate to upper reaches. The most appropriate measure to avoid impacts to these fish is to prohibit construction below the mean high water line from September through December when migration is most likely to occur.

ITDAA029819

ANALYSIS OF EFFECTS OF THE PROPOSED PROJECT

Individuals and Populations

Water Quality

Short term, adverse impacts to water quality attributable to the proposed project may occur due to placement of barriers to dewater work areas and construction of work pads in Sand Creek to allow for construction of piers. Prohibiting construction below the mean high water line from September through December and best management practices prescribed by the Idaho Transportation Department (1996) may be used to avoid and minimize these impacts.

No long term, adverse impacts to water quality or fish habitat are anticipated if disturbed portions of Sand Creek are restored.

Operation of the proposed project may adversely affect water quality water quality during and immediately following rain or snow melt events. The anticipated volume of traffic carried by the bridge may contribute a measurable load of pollutants to the roadway including oil, grease, other petroleum products, and antifreeze falling from moving vehicles, rubber from tires, metals from exhaust, and asbestos from brake linings (Spooner 1992). The greatest load of pollutants will be carried into the roadway drainage facilities during the waxing portion of a rain or snow melt event and dissipate thereafter. The longer the period between rain or snow melt events, the greater the load of pollutants.

Roadway runoff may be passively treated in constructed, passive facilities such as detention basins and grassy swales and then safely discharged to the ground water system. Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Floodflow Alteration

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely create some frictional drag and retard flood flows. Some may be removed as part of the proposed project. However, the footprint of piers and fill on the floodplain of Sand Creek is small compared to the total vegetated area. Other disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable frictional drag. They include coyote willow (Salix exigua), yellow willow (Salix lasiandra), Pacific willow (Salix lutea), and red-osier dogwood (Comus stolonifera). A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992).

Sediment Stabilization

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely stabilize the soil and accrete sediments. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to stabilize soil and accrete sediments. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992).

Protection may also be accomplished by use of temporary erosion control measures including mulch, tackifiers, erosion control blankets, and bonded fiber matrix. Best management practices such as

ITDAA029820

those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Food Production and Export
Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely provide insects and other invertebrates that provide food for fish and wildlife. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees which provide comparable abilities to store and retain nutrients. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992).

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Habitat Diversity and Abundance
Direct modification of waterways, wetlands, and other lands within the floodplain by filling and indirect modification by altering hydrology and water quality will likely affect their structure and ability to support aquatic and terrestrial organisms.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. The silty sand bottom substrate of Sand Creek within the project corridor is not appropriate spawning habitat for bull trout and summer water temperatures in Sand Creek exceed those preferred for rearing and living. Although the lower reach of Sand Creek is shallow and warm, some adults may attempt to migrate to upper reaches. The most appropriate measure to avoid impacts to these fish is to prohibit construction below the mean high water line from September through December when migration is most likely to occur.

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Cumulative Effects
Existing and future Federal, State of Idaho, local government, and private actions that are in progress or reasonably certain to occur within the project corridor are listed in Table 1.

Table 1 - Existing and Future Actions Within the Project Corridor

Status	Action
Under construction	Construction of a second track and sidings for the Burlington Northern / Santa Fe Railroad from north of Sagle to Hays Gulch at Lake Pend Oreille.
In operation	Continued operation of residential and commercial land uses within the existing US-95 corridor, south of the Pend Oreille River.
In operation	Continued operation of the Burlington Northern / Santa Fe Railroad mainline and sidings.
In operation	Continued operation of commercial land uses within the City of Sandpoint.
Preliminary planning	Refurbish the existing two lane bridge that parallels the existing long bridge over the Pend Oreille River.

ITDAA029821

The National Environmental Policy Act (CEQ 1976) states a cumulative impact ". . . results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." Cairns' et al. (1978) described the vulnerability of an ecosystem to impacts as being dependent on its ability to resist the perturbation, and its resiliency or ability to recover from the perturbation. Johnson's (1994) review of the literature describes some of the conceptual and methodological tools needed for cumulative impact assessments.

The results of an assessment of cumulative impacts to bull trout depend on whether the focus of the assessment is the species or its habitat, and on the geographic scope of the assessment. The following questions are particularly pertinent.

1. What is being assessed? Possibilities include individual fish, the population in the Pend Oreille Lake watershed, or habitat.

2. What is the geographic area for which cumulative impacts are being assessed? Scale may range from an individual component of habitat, to the Pend Oreille Lake watershed, to the State of Idaho, to the continental United States.

Beanlands et al. (1986) classify cumulative impacts according to their type. They are described below.

1. *Time Crowded Perturbations* - Disturbances or losses of habitat which occur so close in time the system cannot recover between events. An example is repeated disturbance of headwater streams rendering them unusable to the population.

2. *Space Crowded Perturbations* - Disturbances or losses of habitat which occur so close in space the effects on the system are not dissipated in the space between them. An example is locating numerous disturbances along a short reach of a headwater stream.

3. *Synergisms* - The interaction of disturbances or losses of habitat causing effects that are qualitatively and quantitatively different from those of individual disturbances. An example is the combined effects of loss of habitat and concurrent harvest that exceeds the ability of a population to maintain its numbers.

4. *Nibbling* - Repeated disturbances or losses of habitat that result in incremental change to the system. An example is repeated loss of spawning habitat to the point of complete loss.

5. *Indirect Effects* - Disturbances or losses of habitat which have effects remote in time or space from their source. An example is a change in water quality in the Pend Oreille watershed that adversely affects the resident fishery in the lake.

Measures of cumulative impacts include loss of area, loss of function, and changes in the spatial distribution of habitat (Johnson 1994). Within the study area, habitat area has been diminished due to historic alterations in the Lake Pend Oreille watershed. They include urbanization, clearing of vegetation for agriculture, timber harvest, and altered flow regimes resulting from the operation of Albeni Dam.

ITDAA029822

The limited quality and quantity of habitat adjacent to the project corridor in Sand Creek suggests the construction and operation of the proposed project will not have a significant cumulative impact to bull trout.

Alternative Actions

Project alternatives identified and analyzed by ITD are discussed in the document titled *Draft Environmental Impact Statement for Sandpoint North and South, Project #NH-IR-F-CM-5116 (068).* They are: (1) no action alternative, (2) construction of a couplet through the City of Sandpoint, and (3) the preferred alternative which is described earlier in this report. The no action alternative does not address the need for the project and does not accomplish the project purpose. Construction of the couplet is complicated by disruptions to existing businesses, impacts to historic structures, and involvement with hazardous materials sites. Further, it only partially accomplishes the project purpose because it does not provide a non-stop facility for through traffic.

CONCLUSIONS AND DETERMINATION OF EFFECTS

The results of this biological assessment provide the Federal Highway Administration with the information required to reasonably conclude that the proposed project is "not likely to adversely effect" bull trout.

This determination is based on the following factual information: (1) the only portion of the proposed project in close proximity to surface waters and therefore with opportunity to directly or indirectly adversely affect bull trout habitat is that north of the Pend Oreille River between Sand Creek and the Burlington Northern / Santa Fe Railroad right-of-way, (2) a review of the literature, interviews with experts, on-site inspection, and field studies indicate the silty sand bottom substrate of Sand Creek within the project corridor is not appropriate spawning habitat for bull trout and summer water temperatures in Sand Creek exceed those preferred for rearing and living, and (3) restriction of construction activities below the mean high water line to the period when bull trout are unlikely to migrate through the reach of Sand Creek within the project corridor, restoration of the bed of Sand Creek disturbed by construction, implementation of best management practices such as those prescribed by ITD (1994), and implementation of other measures described in this document to mitigate potential adverse impacts to water quality attributable to construction and operation of the facility will protect migratory bull trout.

ITDAA029823

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ITDAA029826

Appendix 1

List of Federally Proposed or Listed, Threatened or Endangered
Plant and Animal Species which may be Present in the Project Corridor

Enclosure A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES, THAT MAY OCCUR WITHIN THE AREA OF THE HIGHWAY 95 REALIGNMENT (SANDPOINT NORTH AND SOUTH) PROJECT
FWS-1-9-98-SP-199

LISTED SPECIES	COMMENTS
Gray Wolf (LE) (Canis lupus)	
Bald Eagle (LT) (Haliaeetus leucocephalus)	Nest within 2 miles; wintering area.
Bull Trout (Salvelinus confluentus)	
Ute Ladies'-tresses (LT) (Spiranthes diluvialis)	
PROPOSED SPECIES	
None	
CANDIDATE SPECIES	
Westslope Cutthroat Trout (Oncorhynchus clarki lewisi)	

A BIOLOGICAL ASSESSMENT TO FULFILL THE REQUIREMENTS OF SECTION 7(C) OF THE ENDANGERED SPECIES ACT FOR WESTSLOPE CUTTHROAT TROUT (ONCORHYNCHUS CLARKI LEWISII), PETITIONED FOR THREATENED STATUS

PROJECT #NH-IR-F-5116(068)
US-95 SANDPOINT NORTH SOUTH
KEY #1729

Prepared by:
Ecological Design, Inc.
Boise, Idaho
Robert B. Tiedemann, CPWS, CWD, CFS, CWB

Prepared for:
Idaho Transportation Department
District 1 - Coeur d'Alene, Idaho

August 10, 1998

ITDAA029829

A BIOLOGICAL ASSESSMENT TO FULFILL THE REQUIREMENTS OF SECTION 7(C) OF THE ENDANGERED SPECIES ACT FOR WESTSLOPE CUTTHROAT TROUT (ONCORHYNCHUS CLARKI LEWISI), PETITIONED FOR THREATENED SPECIES STATUS

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August 10, 1998

INTRODUCTION

The Idaho Transportation Department proposes to reconstruct a portion of highway US-95 from north of the city of Sagle to the south limit of the long bridge over the Pend Oreille River. And, to re-align the roadway around the City of Sandpoint from the north limit of the long bridge to the intersection of US-95 and SH-200. The project corridor is marked by mile post 469.75 to the south and mile post 477.44 to the north.

Reconstruction of the existing two lane US-95 includes the addition of travel lanes, passing lanes, and turn-outs largely within existing right-of-way. Additional right-of-way may be required for minor realignments to improve roadway geometrics, sight distance, and safety. Construction of the roadway prism may require grading of earth fill into these areas.

Re-alignment of the roadway around the City of Sandpoint is within new roadway right-of-way which parallels that for the Burlington Northern / Santa Fe Railroad and includes the construction of two travel lanes between Sand Creek and the railroad, a partial interchange at Bridge Street, and a reconfigured intersection of US-95 and SH-200. Grading of earth fill into a portion of Sand Creek and placement of concrete piers to support a structure may be the only appropriate and practicable means of accomplishing the project purpose.

The Idaho Transportation Department (ITD) has contracted with Ecological Design, Inc. to prepare a biological assessment to fulfill the requirements of Section 7(c) of the Endangered Species Act for westslope cutthroat trout (Oncorhynchus clarki lewisi) petitioned for threatened species status. Other studies which support this effort are described in the documents titled: (1) *Draft Environmental Impact Statement for Sandpoint North and South, Project #NH-IR-F-CM-5116 (068)*, (2) *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project #NH-IR-F-5116 (068), US-95 Sandpoint North South*, and (3) *An Assessment of Wetland Functions and Values, and a Description of Mitigation Requirements for Project #NH-IR-F-5116 (068), US-95 Sandpoint North South.*

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Other proposed or listed, threatened or endangered species which may be present within the project area include bald eagle (Haliaeetus leucocephalus), gray wolf (Canis lupus), bull trout (Salvelinus confluentus), and Ute ladies' tresses (Spirantes diluvialis) (Donaldson pers. comm. 1998).

REQUIREMENTS OF SECTION 7(C) OF THE ENDANGERED SPECIES ACT

A list of Federally proposed or listed, threatened or endangered plant and animal species which may be present in the project corridor was requested from the US Fish and Wildlife Service (US FWS) and provided to ITD (date to be provided by ITD-District 1) (Appendix 1). US FWS policy requires a biological assessment be initiated within 90 days of receipt of this list. After this time the accuracy of the list should be informally verified. The biological assessment will be completed within 180 days of receipt of the list, or other mutually agreeable time (US FWS 1994).

US FWS policy suggests the following information be included in a biological assessment:

1. An on site inspection of the area to be affected by the proposal. The inspection may include a detailed survey of the area to determine if the species are present.

2. A review of: (1) the literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (2) interviews with experts (including those within the US FWS, state conservation departments, universities and others who may have data not yet published in the scientific literature); (3) an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; and (4) an analysis of alternative actions considered (US FWS 1994).

Each of these actions has been completed by Ecological Design, Inc. for ITD - District 1 and the Federal Highway Administration.

DESCRIPTION OF THE PROJECT CORRIDOR

The project corridor south of the Pend Oreille River is within rolling terrain on the edge of a broad glacial valley that drains to the Sagle Slough. Adjacent land uses include residential and commercial developments, pasture land that is both harvested and grazed, second growth timber lands, and intersecting roadways and their right-of-ways. The terrain generally grades upward from east to west. No intermittent or perennial streams with defined bed and banks cross or run parallel to the existing US-95 roadway right-of-way or immediately adjacent to it.

The project corridor north of the Pend Oreille River is within a narrow peninsula of land that separates Sand Creek from Lake Pend Oreille. The ground has been previously modified to provide the width and grade to accommodate the roadbed of several railroad tracks and vehicular access to them and for the foot print of the Burlington Northern depot. The terrain is flat across much of the width of the project corridor, but abruptly drops to the edge of Sand Creek and more gradually grades to the edge of Lake Pend Oreille. Adjacent land uses include the railroad and related industrial buildings, a water treatment plant, disturbed ground that is dominated by herbaceous weeds, and some second growth timber. Water elevations within the reach of Sand Creek adjacent to the project corridor are regulated by Albeni Dam on the Pend Oreille River and vary between the summer pool elevation which is 2062.5 feet (628.7 meters) and the winter pool elevation which is 2055.0 feet (626.5 meters).

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ON-SITE INSPECTION AND FIELD STUDIES OF THE PROJECT CORRIDOR

The project corridor was casually observed and field data systematically generated by Ecological Design, Inc. during the period April 7 to April 10, 1998. The entire project corridor was walked and visually inspected.

Examination of data from the on-site inspection and the following sources suggest waterways within the project corridor provide habitat for cutthroat trout or serve as a migratory corridor to habitat in headwater streams (see Figures 1 - 2):

1. US Geologic Survey (USGS) Sagle, Idaho and Sandpoint, Idaho quadrangle maps (7.5 minute series).
2. US Fish and Wildlife Service (US FWS), National Wetlands Inventory Sagle, Idaho and Sandpoint, Idaho orthophoto quadrangle maps (7.5 minute series).
3. Aerial photography provided by the Idaho Transportation Department (ITD).
4. Field studies conducted by Ecological Design, Inc. and documented in the report titled *A Delineation of the Mean High Water Lines for Surface Waters and an Identification, Classification, and Delineation of Wetlands for Project #NH-IR-F-5116(068), US-95 Sandpoint North South.*

The USGS quadrangle maps identify the Pend Oreille River and Sand Creek as the only surface water features within or immediately adjacent to the project corridor.

The Pend Oreille River and Sand Creek below the mean high water line are classified by the US FWS National Wetlands Inventory as lacustrine, littoral, open water, permanently flooded (L2OWH) wetland. They are unvegetated river and stream beds that are largely composed of silty sand and with surface water that varies in elevation with season. A narrow fringe of palustrine, scrub-shrub and palustrine, forested wetlands appear on the ground at or near the mean high water line, but are not shown on the maps. The scrub-shrub wetland plant community is dominated by reed canary grass (Phalaris arundinacea), four-line honeysuckle (Lonicera involucrata), and red alder (Alnus rubra), and the forested wetland plant community is dominated by these species and black cottonwood (Populus trichocarpa).

REVIEW OF THE LITERATURE

Background

The westslope cutthroat trout is a species of special concern in Idaho and Montana (Moore undated) and has been petitioned for consideration as a proposed threatened species by the US FWS.

Cutthroat trout entered Idaho waters approximately one million years ago and evolved into three subspecies. Yellowstone cutthroat (Oncorhyncus clarki bouvieri) trout now occupy the upper Snake River drainage, Bonneville (Oncorhyncus clarki bonneville) the Bear River drainage, and westslope (Oncorhynchus clarki lewisi) most lakes and streams north of and including the Salmon river and its tributaries. Eight subspecies are recognized in the literature. Cutthroat trout historically occupied 10,000 miles or 40% but today are present in less than 5,000 miles or 20% of rivers and streams in Idaho (Rieman 1989). Both strong and genetically pure populations of westslope cutthroat trout occur in less than 4% of their historic range in Idaho. Strong populations only occur in 11%, and viable populations in 36% of their historic range (Rieman and Apperson 1989a). Most remaining strong populations are found within designated wilderness or undeveloped forests (Rieman 1989).

Westslope cutthroat trout were the first para-Salmo to move inland from the Pacific Ocean before steelhead rainbow trout (Oncorhyncus mykiss) and chinook salmon (Oncorhyncus tshawytscha). They likely evolved in coexistence with bull trout, mountain whitefish (Prosopium williamsoni), northern squawfish (Ptychocheilus oregonensis) and several species of cyprinids and sculpin (Cottus spp.) (Rieman and Apperson 1989a).

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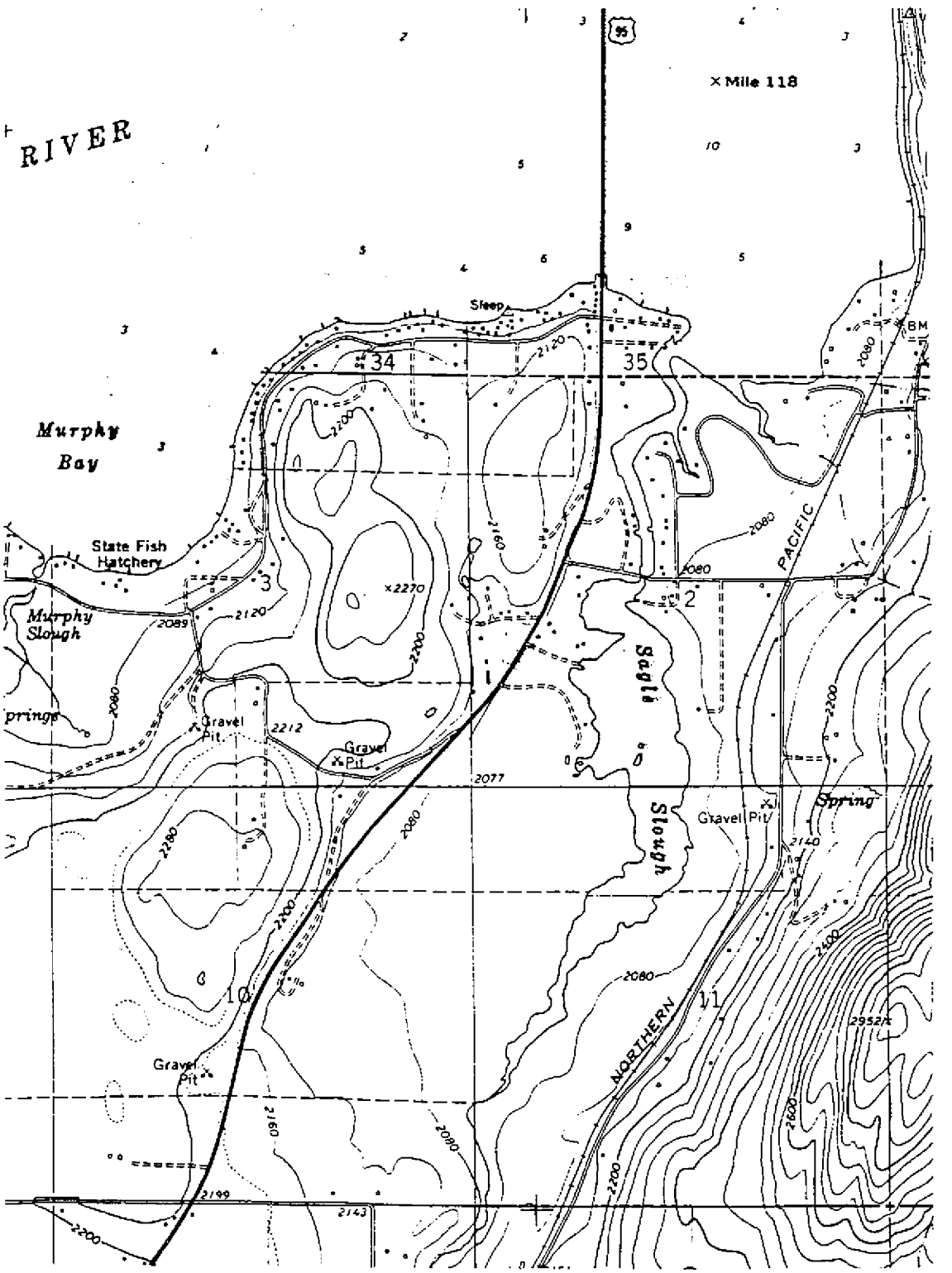

Figure 1 - US Geologic Survey Map
ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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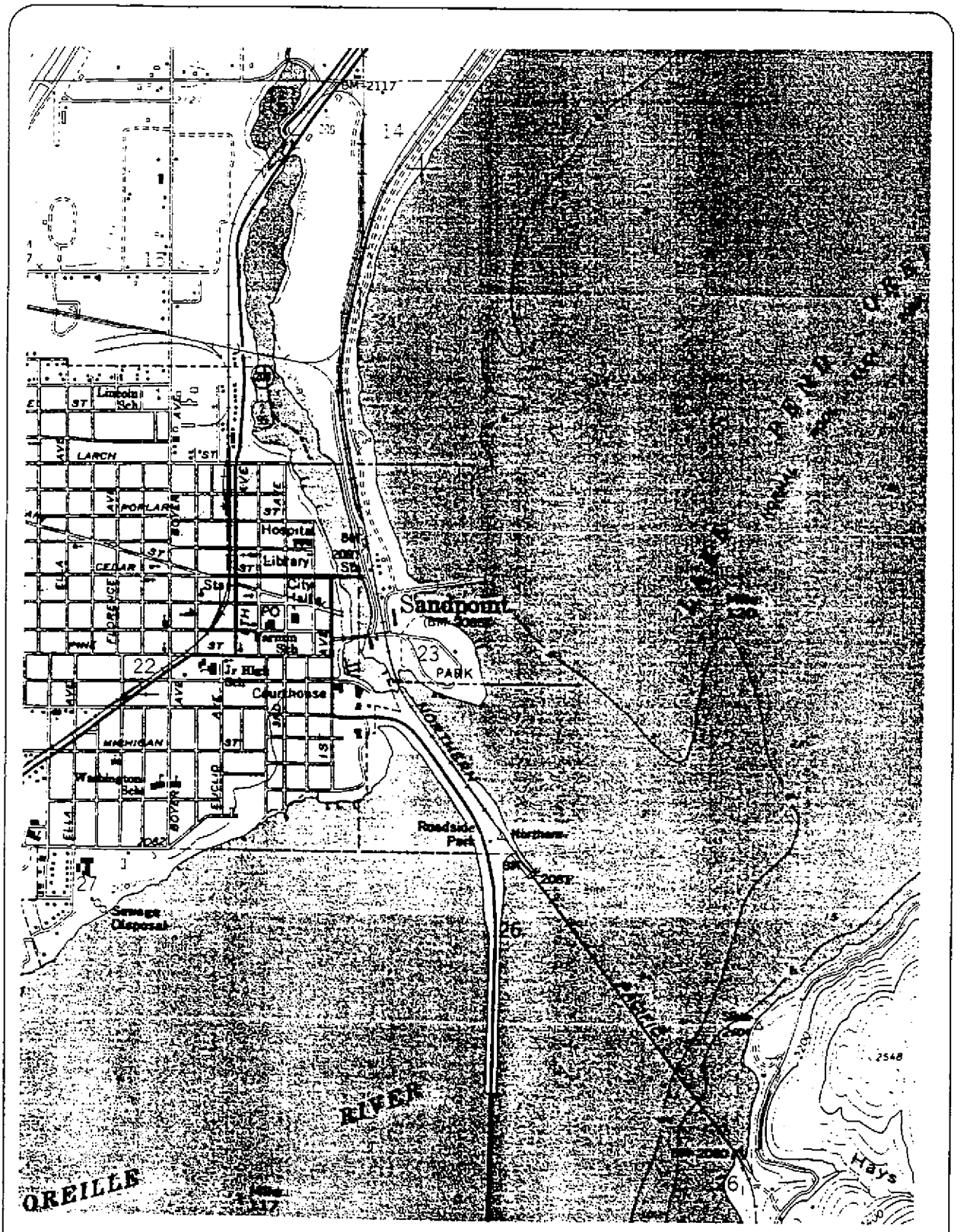

Figure 1 - US Geologic Survey Map
ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

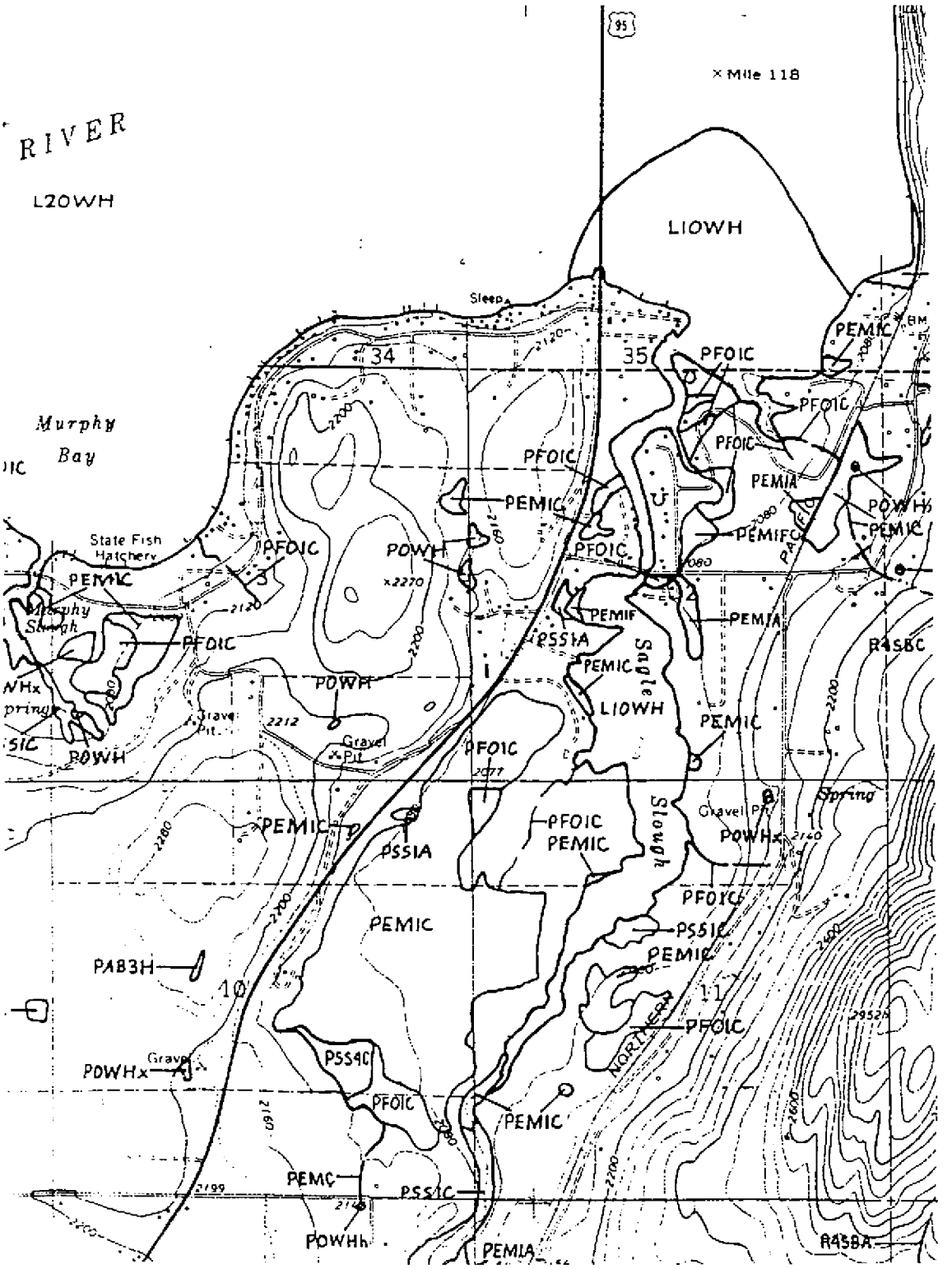

Figure 2 - US FWS National Wetlands Inventory Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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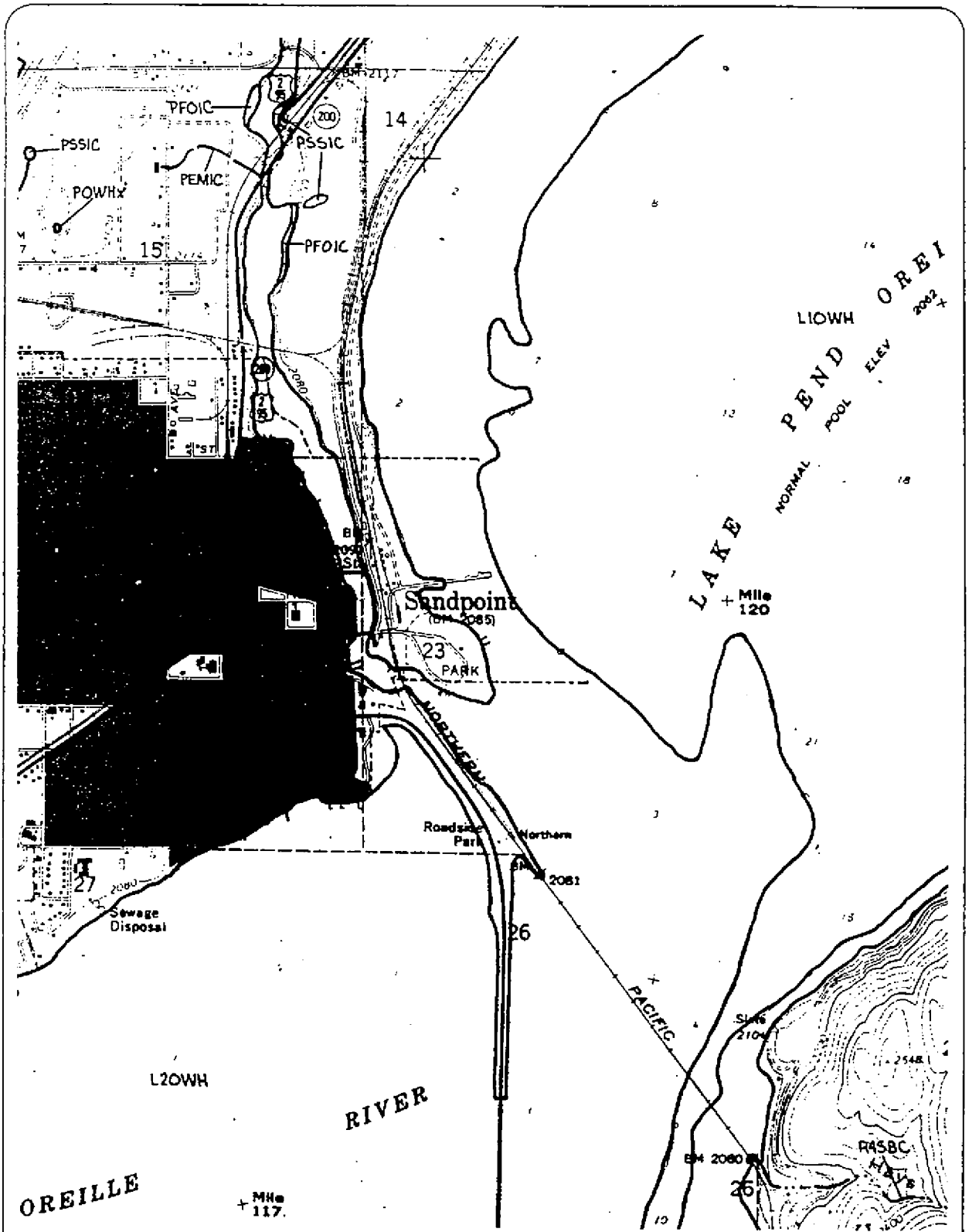

Figure 2 - US FWS National Wetlands Inventory Map

ITD Project #NH-IR-F-5116(068)
US-95 Sandpoint North & South

Ecological Design, Inc.
May 15, 1998

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Not to Scale

The fish is most vulnerable to angling and can be caught and released several times. Angling pressure of no more than 50 hours per acre per year will overexploit the fish in a stream (Unknown author undated). Cutthroat trout are an irreplaceable sport fishery because they are aggressive feeders, easy to catch, and occupy unproductive waters of the state where rainbow and brook trout are not well adapted (Rieman 1989).

Cutthroat trout are vulnerable to changes in habitat. Road building, logging, and channelization contribute sediments to streams and adversely affect spawning, rearing, and holding habitat (Rieman 1989).

The cutthroat trout most widely stocked in Idaho is yellowstone cutthroat trout from Henry's Lake that have slightly hybridized with rainbow trout. Millions of Henry's Lake cutthroat have been stocked for many years in the traditional range of westlope cutthroat. As a result few populations of westslope cutthroat have not been exposed to hybridization (Unknown author undated).

Genetic diversity is greater among populations than within a population. Maintenance of genetic diversity will require maintenance of many discreet populations (Rieman and Apperson 1989a).

Genetic introgression, habitat loss, and over-fishing are the most significant reasons for decline of westslope cutthroat trout populations (Rieman and Apperson 1989a).

A summary of the evolution and life history of westslope cutthroat trout is provided by Roscoe (1974).

Life History

Westslope cutthroat trout in Idaho display three life histories: resident fish inhabit small headwater streams and do not migrate, fluvial fish migrate migrate between headwaters streams in summer to deep pools in lower reaches of a stream and to large rivers in winter, and adfluvial fish migrate between tributary streams and lakes. North Idaho lakes including Lake Pend Oreille, Priest, Coeur d'Alene, and Kootenai are habitat for westslope cutthroat trout (Rieman and Apperson 1989a).

Migratory fish commonly swim 40-80 km (25-50 miles) to spawn in tributary streams from April to July depending on elevation and spring runoff (Moore undated). Westslope cutthroat trout generally migrate upstream in spring when stream flows are greatest (Lukens 1978). Juveniles of migratory fish reside 2 to 3 years in tributary streams, grow to 15-20 cm (6-8 inches) in length, and then emigrate to a large river or lake. There they grow to sexual maturing in 4-6 years and reach 35-40 cm (14-16 inches) in length. Few fish reach 7 years and 51 cm (20 inches) (Moore undated).

Resident fish remain in small streams throughout their life and commonly grow to 20-25 cm (8-10 inches) in length. The importance of resident populations to the migratory population is not known (Moore undated).

Westslope cutthroat trout feed primarily on aquatic and terrestrial insects in streams and, although less preferred, zooplankton in lakes (Moore undated). They are specialized as invertebrate feeders to avoid competition with the other prominent native species, bull trout (Salvelinus confluentis) and Columbian squawfish (Ptychocheilus oregonesis) both of which are agressive piscavores (Unknown author undated).

Kokanee salmon (Oncorhynchus nerka) were introduced to Lake Pend Oreille and have flourished to the point of abundance. They compete with native westslope cutthroat trout as shown by the smaller than expected size of cutthroat (Unknown author undated).

ITDAA029837

Conservation needs include maintaining many populations throughout the range of the species to conserve genetic diversity. Management requires harvest restrictions or catch and release regulations to avoid over harvest (Moore undated).

A summary of the evolution and life history of westslope cutthroat trout is provided in Roscoe (1974).

Habitat Needs

The westslope cutthroat trout is well suited to cold and sterile streams common to much of north and central Idaho and occupies all four components of stream habitat - namely pool, run, riffle, and pocket water. Stream velocities of 0.3 to 0.4 m/second and gravel diameters of 2 to 75 mm were measured in spawning habitat. Rearing habitat for juveniles tends to include instream cover including rubble and woody debris such as root wads and downed logs. Gravel substrate is particularly important to over wintering juveniles who take cover between the rocks during the day and move into open water at night (Rieman and Apperson 1989a).

Use of small headwater streams for spawning and rearing may be an adaptation that provides protection from high flows and moving bedload (Rieman and Apperson 1989a).

Habitat has been degraded by activities, including road building, that introduce fine sediment to streams. Deposition of particles less than 10 mm in diameter have been shown to reduce survival of embryos. Sediment fills spaces between gravels where juveniles seek cover and degrades habitat for the community of aquatic macroinvertebrates that fish feed on (Rieman and Apperson 1989a).

Management recommendations for streams with cutthroat habitat include maintaining riparian vegetation to control stream temperature and provide cover, and preventing erosion and sedimentation. Buffer zones along streams should be at least the width of the tallest tree or 15.2 m (50 feet) whichever is larger (Washington Department of Wildlife undated).

Species Distribution

Westslope cutthroat trout, bull trout, and mountain whitefish are native to Lake Pend Oreille. Rainbow trout were first introduced in 1942 (Pratt 1985). Hybridization between cutthroat and rainbow trout has been demonstrated by study of their genetic composition (Pratt 1985).

Streams that are tributary to Lake Pend Oreille were inventoried by Pratt (1984) by snorkel surveys. Rearing habitat was identified by the presence of fish and possible spawning habitat by the coexistence of fry and appropriate bottom substrate.

Rainbow and cutthroat trout were the most widely distributed species throughout the Lake Pend Oreille drainage. Cutthroat trout were observed in 32 (84%) of the 38 streams studied. Rainbow trout were observed in 27 (71%) of the 38 streams studied. Stream reaches where cutthroat but not rainbow trout were present were most often headwaters. Stream reaches where rainbow but not cutthroat trout were present were most often lower in the drainage (Pratt 1984).

Sampled cutthroat trout were between 1 and 5 years old and grew approximately 8 cm (3 inches) each year. They migrated to Lake Pend Oreille as one and two years olds (Pratt 1984).

Rainbow, cutthroat, and brook trout were observed in Sand Creek, rainbow and cutthroat in Little Sand Creek, cutthroat and bull trout in Schweitzer Creek, and no fish in Spring Jack Creek (Pratt 1984).

A waterfall judged to be a fish barrier by Pratt (1984) was observed approximately 4 km from the mouth of Little Sand Creek.

ITDAA029838

Based on the obsrvation of fry and appropriate substrate, cutthroat trout probably spawn in Sand Creek upstream from the Elmirs road crossing (Pratt 1984).

Pratt (1984) described the status of the species as, "The low densities of juvenile cutthroat in accessible streams in 1983 and the declining cutthroat trout harvest in the Pend Oreille drainage points toward a declining cutthroat trout population."

The westslope cutthroat trout data base constructed by IDFG describes the status of two reaches of Sand Creek, the first from Lake Pend Oreille to Schweitzer Creek and the second from Schweitzer Creek to the headwaters. Both are shown as supporting strong populations within the historic range for the species. Their genetic integrity has likely been changed by introduction of other trout. The population is at risk due to loss of habitat, over harvest, and competition with other fish. The potential for improvement of habitat is described as unknown (Rieman and Apperson 1989b).

INTERVIEWS WITH EXPERTS

Interviews with experts from the region show westslope cutthroat trout have been collected during systematic sampling of Sand Creek and are commonly caught by anglers. However, the silty sand bottom substrate of Sand Creek within the project corridor is not appropriate spawning habitat for westslope cutthroat trout and summer water temperatures in Sand Creek frequently exceed those preferred for rearing and living.

September 15, 1992 Interview between Idaho Conservation Data Center and Ned Horner (IDFG - Panhandle Region)

Wild westlope cutthroat trout, hatchery stock, and hybrids of the two are present in Lake Pend Oreille along with hybrids of westslope cutthroat and rainbow trout. Hatchery fish were first introduced in the 1940's and are thought to be 98% pure westslope cutthroat trout from Priest Lake.

Future management plans call for stocking the lake with pure westslope cutthroat trout with a variety of life histories from Montana streams.

March 3, 1998 and August 7, 1998 Interviews with Ned Horner, Fisheries Biologist (IDFG-Panhandle Region)

Systematic sampling of fish in Sand Creek on September 6, 1983 shows the following number of fish per 100 square meters: (1) unidentified Salmo spp. 4.4, (2) rainbow trout 4.4, (3) cutthroat trout 2.9, (4) brown trout (Salmo trutta) 0.0, (5) unidentified Salvelinus spp. 0.0, (6) bull trout 0.0, (7) brook trout (Salvelinus fontinalis) 23.3, and (8) mountain whitefish and northern squawfish 19.0. Water temperature was measured at 15.0° C (Pratt 1985).

Resident and adfluvial westlsope cutthroat trout are present in the Sand Creek drainage. Naturally occurring and human caused migration blocks separate the two populations. Resident fish are most often found high in the drainage above the migration blocks. Adfluvial fish make use of the middle and lower reaches of the drainage and migrate from the lake to these areas from late March through June.

Use of westslope cutthroat trout stock from Montana has not been successful because these fish spawn very late in the season and are not well adapted to lower elevation streams like those in the Pend Oreille drainage.

The lower reach of Sand Creek within the project area also serves as habitat for a warm water fishery, but is limited by seasonal draw down of the lake.

Mitigation measures required to prevent harm to adfluvial westslope cutthroat trout in the Sand Creek drainage include maintaining fish passage and water quality, both during and after construction of the project.

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March 4, 1998 and July 30, 1998 Interviews with Chip Korse, Fisheries Biologist (IDFG-Panhandle Region)

Fish species commonly observed in Sand Creek are brook, rainbow, and cutthroat trout. The lower reach of Sand Creek within the project area is a migratory corridor for cutthroat trout. The naturally occurring low gradient and slow moving water of the lower reach of Sand Creek does not provide appropriate spawning habitat. Further, the watershed is heavily impacted by timber harvest, agriculture, ski resort development, and urbanization that has contributed sediments to the stream and removed riparian vegetation resulting in greater exposure to sun light and elevated water temperatures. Cutthroat trout spawning habitat may be found high in the watershed however, diversion dams and naturally occurring migration blocks prevent its use by adfluvial fish.

Although the lower reach of Sand Creek is shallow and warm, adults may rear within this area and stage prior to their migration to upper reaches. The most appropriate measure to avoid impacts to these fish is to prohibit construction below the mean high water line from late March through June when migration is most likely to occur.

ANALYSIS OF EFFECTS OF THE PROPOSED PROJECT

Individuals and Populations

Water Quality

Short term, adverse impacts to water quality attributable to the proposed project may occur due to placement of barriers to dewater work areas and construction of work pads in Sand Creek to allow for construction of piers. Prohibiting construction below the mean high water line from late March through June and best management practices prescribed by the Idaho Transportation Department (1996) may be used to avoid and minimize these impacts.

No long term, adverse impacts to water quality or fish habitat are anticipated if disturbed portions of Sand Creek are restored.

Operation of the proposed project may adversely affect water quality water quality during and immediately following rain or snow melt events. The anticipated volume of traffic carried by the bridge may contribute a measurable load of pollutants to the roadway including oil, grease, other petroleum products, and antifreeze falling from moving vehicles, rubber from tires, metals from exhaust, and asbestos from brake linings (Spooner 1992). The greatest load of pollutants will be carried into the roadway drainage facilities during the waxing portion of a rain or snow melt event and dissipate thereafter. The longer the period between rain or snow melt events, the greater the load of pollutants.

Roadway runoff may be passively treated in constructed, passive facilities such as detention basins and grassy swales and then safely discharged to the ground water system. Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Floodflow Alteration

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely create some frictional drag and retard flood flows. Some may be removed as part of the proposed project. However, the footprint of piers and fill on the floodplain of Sand Creek is small compared to the total vegetated area. Other disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees that provide comparable frictional drag. They include coyote willow (Salix exigua), yellow willow (Salix lasiandra), Pacific willow (Salix lutea), and red-osier dogwood (Cornus stolonifera). A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992).

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Sediment Stabilization
Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely stabilize the soil and accrete sediments. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees that provide comparable abilities to stabilize soil and accrete sediments. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992).

Protection may also be accomplished by use of temporary erosion control measures including mulch, tackifiers, erosion control blankets, and bonded fiber matrix. Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Food Production and Export
Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. They likely provide insects and other invertebrates that provide food for fish and wildlife. Some may be removed as part of the proposed project. However, all disturbed areas may be quickly revegetated with native species of grass, shrubs, and trees that provide comparable abilities to store and retain nutrients. They include coyote willow, yellow willow, Pacific willow, and red-osier dogwood. A more complete list of appropriate species, planting methods, and sources of plant materials are described in the document titled *Idaho Department of Fish and Game - Region 3 Prescription for Revegetation of Wetlands, Riparian Areas, and Uplands Within a Typical Southwest Idaho Stream Corridor* (Tiedemann 1992).

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Habitat Diversity and Abundance
Direct modification of waterways, wetlands, and other lands within the floodplain by filling and indirect modification by altering hydrology and water quality will likely affect their structure and ability to support aquatic and terrestrial organisms.

Within the project corridor, a moderately dense understory of shrubs and grasses grow below a sparse canopy of black cottonwood trees adjacent to the mean high water line of Sand Creek. The silty sand bottom substrate of Sand Creek within the project corridor is not appropriate spawning habitat for westslope cutthrout trout and summer water temperatures in Sand Creek exceed those preferred for rearing and living. Although the lower reach of Sand Creek is shallow and warm, some adults may attempt to migrate to upper reaches. The most appropriate measure to avoid impacts to these fish is to prohibit construction below the mean high water line from late March through June when migration is most likely to occur.

Best management practices such as those prescribed by the Idaho Transportation Department (1996) may be used to further avoid and minimize potential adverse impacts.

Cumulative Effects
Existing and future Federal, State of Idaho, local government, and private actions that are in progress or reasonably certain to occur within the project corridor are listed in Table 1.

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Table 1 - Existing and Future Actions Within the Project Corridor

Status	Action
Under construction	Construction of a second track and sidings for the Burlington Northern / Santa Fe Railroad from north of Sagle to Hays Gulch at Lake Pend Oreille.
In operation	Continued operation of residential and commercial land uses within the existing US-95 corridor, south of the Pend Oreille River.
In operation	Continued operation of the Burlington Northern / Santa Fe Railroad mainline and sidings.
In operation	Continued operation of commercial land uses within the City of Sandpoint.
Preliminary planning	Refurbish the existing two lane bridge that parallels the existing long bridge over the Pend Oreille River.

The National Environmental Policy Act (CEQ 1976) states a cumulative impact ". . . results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." Cairns' et al. (1978) described the vulnerability of an ecosystem to impacts as being dependent on its ability to resist the perturbation, and its resiliency or ability to recover from the perturbation. Johnson's (1994) review of the literature describes some of the conceptual and methodological tools needed for cumulative impact assessments.

The results of an assessment of cumulative impacts to bull trout depend on whether the focus of the assessment is the species or its habitat, and on the geographic scope of the assessment. The following questions are particularly pertinent.

1. What is being assessed? Possibilities include individual fish, the population in the Pend Oreille Lake watershed, or habitat.

2. What is the geographic area for which cumulative impacts are being assessed? Scale may range from an individual component of habitat, to the Pend Oreille Lake watershed, to the State of Idaho, to the continental United States.

Beanlands et al. (1986) classify cumulative impacts according to their type. They are described below.

1. *Time Crowded Perturbations* - Disturbances or losses of habitat which occur so close in time the system cannot recover between events. An example is repeated disturbance of headwater streams rendering them unusable to the population.

2. *Space Crowded Perturbations* - Disturbances or losses of habitat which occur so close in space the effects on the system are not dissipated in the space between them. An example is locating numerous disturbances along a short reach of a headwater stream.

3. *Synergisms* - The interaction of disturbances or losses of habitat causing effects that are qualitatively and quantitatively different from those of individual disturbances. An example is the combined effects of loss of habitat and concurrent harvest that exceeds the ability of a population to maintain its numbers.

4. *Nibbling* - Repeated disturbances or losses of habitat that result in incremental change to the system. An example is repeated loss of spawning habitat to the point of complete loss.

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5. *Indirect Effects* - Disturbances or losses of habitat which have effects remote in time or space from their source. An example is a change in water quality in the Pend Oreille watershed that adversely affects the resident fishery in the lake.

Measures of cumulative impacts include loss of area, loss of function, and changes in the spatial distribution of habitat (Johnson 1994). Westslope cutthroat trout habitat has been diminished in the Lake Pend Oreille watershed due to historic alterations of stream channels and adjacent riparian areas. They include urbanization, clearing of vegetation for agriculture, timber harvest, and altered flow regimes and lake elevations resulting from the operation of Albeni Dam.

The limited quality and quantity of habitat adjacent to the project corridor in Sand Creek suggests the construction and operation of the proposed project will not have a significant cumulative impact to westslope cutthroat trout.

Alternative Actions

Project alternatives identified and analyzed by ITD are discussed in the document titled *Draft Environmental Impact Statement for Sandpoint North and South, Project #NH-IR-F-CM-5116 (068).* They are: (1) no action alternative, (2) construction of a couplet through the City of Sandpoint, and (3) the preferred alternative which is described earlier in this report. The no action alternative does not address the need for the project and does not accomplish the project purpose. Construction of the couplet is complicated by disruptions to existing businesses, impacts to historic structures, and involvement with hazardous materials sites. Further, it only partially accomplishes the project purpose because it does not provide a non-stop facility for through traffic.

CONCLUSIONS AND DETERMINATION OF EFFECTS

The results of this biological assessment provide the Federal Highway Administration with the information required to reasonably conclude that the proposed project is "not likely to adversely effect" westslope cutthroat trout.

This determination is based on the following factual information: (1) the only portion of the proposed project in close proximity to surface waters and therefore with opportunity to directly or indirectly adversely affect westslope cutthroat trout habitat is that north of the Pend Oreille River between Sand Creek and the Burlington Northern / Santa Fe Railroad right-of-way, (2) a review of the literature, interviews with experts, on-site inspection, and field studies indicate the silty sand bottom substrate of Sand Creek within the project corridor is not appropriate spawning habitat for westslope cutthroat trout and summer water temperatures in Sand Creek exceed those preferred for rearing and living, and (3) restriction of construction activities below the mean high water line to the period when westslope cutthroat trout are unlikely to migrate through the reach of Sand Creek within the project corridor, restoration of the bed of Sand Creek disturbed by construction, implementation of best management practices such as those prescribed by ITD (1996), and implementation of other measures described in this document to mitigate potential adverse impacts to water quality attributable to construction and operation of the facility will protect migratory westslope cutthroat trout.

ITDAA029843

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Appendix 1

List of Federally Proposed or Listed, Threatened or Endangered
Plant and Animal Species which may be Present in the Project Corridor

Enclosure A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CANDIDATE SPECIES, THAT MAY OCCUR WITHIN THE AREA OF THE HIGHWAY 95 REALIGNMENT (SANDPOINT NORTH AND SOUTH) PROJECT
FWS-1-9-98-SP-199

LISTED SPECIES	COMMENTS
Gray Wolf (LE) (Canis lupus)	
Bald Eagle (LT) (Haliaeetus leucocephalus)	Nest within 2 miles; wintering area.
Bull Trout (Salvelinus confluentus)	
Ute Ladies'-tresses (LT) (Spiranthes diluvialis)	

PROPOSED SPECIES

None

CANDIDATE SPECIES

Westslope Cutthroat Trout (Oncorhynchus clarki lewisi)

ENCLOSURE B

FEDERAL AGENCIES' RESPONSIBILITY UNDER SECTIONS 7(a) AND (c)
OF THE ENDANGERED SPECIES ACT

SECTION 7(a) - Consultation/Conference

Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;.

2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species; or result in destruction or adverse modification of critical habitat. The process is initiated by the Federal agency after determining the action may affect a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7(c) - Biological Assessment for Major Construction Activities [1/]

Requires Federal agencies or their designees to prepare Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action[2/] on listed and proposed species. The process begins with a Federal agency in requesting from FWS a list of proposed and listed threatened and endangered species (list attached). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

We recommend the following for inclusion in the BA; an onsite inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if the species are present; a review of literature and scientific data to determine species' distribution, habitat needs, and other biological requirements; interviews with experts, including those within FWS, State conservation departments, universities and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; an analysis of alternative actions considered. The BA should document the results, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not a listed or proposed species will be affected. Upon completion, the BA should be forwarded to our office.

[1/] A major construction activity is a construction project (or other undertaking having similar physical impacts) which is a major action significantly affecting the quality of human environment as referred to in the NEPA (42 U.S.C. 4332 (2)(c).

[2/] "Effects of the action" refers to the direct and indirect effects on an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.

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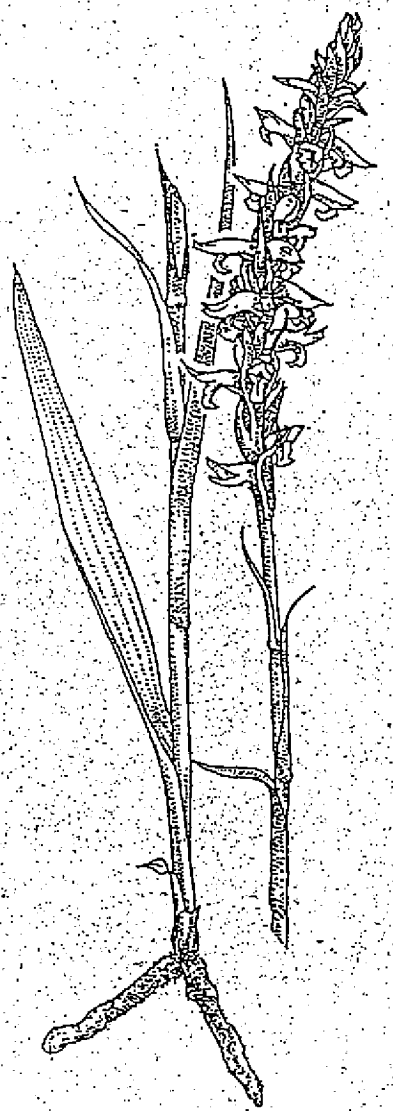
Biological Assessment of Ute Ladies' Tresses (*Spiranthes diluvialis*) for the US-2, Wrencoe Loop to Dover (No. F-5121 [019], Key No. 717), US-95, Sandpoint North and South (NH-IR-F-CM-5116 [068]), SH-200, East of Clark Fork (No. ER-5120 [103], Key No. 7089), and SH-57, North of Priest River (ER-5778 [100] Key #7088) Projects



Spiranthes diluvialis

Prepared for

Idaho Transportation Department
District 1

Prepared by

Shapiro & Associates, Inc.

November 6, 1998

ITDAA029850

Biological Assessment of Ute Ladies' Tresses (*Spiranthes diluvialis*) for the US-2, Wrencoe Loop to Dover (No. F-5121 [019], Key No. 717), US-95, Sandpoint North and South (NH-IR-F-CM-5116 [068]), SH-200, East of Clark Fork (No. ER-5120 [103], Key No. 7089), and SH-57, North of Priest River (ER-5778 [100] Key #7088) Projects

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Appendix A

Photographs

1.0 INTRODUCTION

1.1 General Overview of Projects and Locations

The Idaho Transportation Department (ITD) is proposing to upgrade or repair four highway sections in District 1. These sections are:

- US-2, Wrencoe Loop to Dover Bridge;
- US-95, Sandpoint North and South;
- SH-200, east of Clark Fork; and
- SH-57, north of the town of Priest River.

The US-2, Wrencoe Loop to Dover Bridge project (T57N, R2W, Section 30 and R3W, Sections 25, 26, 27, and 34; T56N, R3W, Section 4) proposes to align and widen 8.5 km (5.3 miles) of US 2, from milepost 19.8 to 25.1 (Dover to Smith Creek). At the project site, US-2 runs parallel and adjacent to the Pend Oreille River. The US-95, Sandpoint North and South Project (T56N, R2W, Sections 1 and 2; T57N, R2W, Sections 10, 11, 15, 22, 23, 26, and 35) proposes to realign US-95 through Sandpoint, Idaho and improve bridge entrances crossing Lake Pend Oreille. The SH-200, east of Clark Fork project (T55N, R35W, Sections 20, 27, 28, and 29) proposes to realign the highway adjacent to the Clark Fork River, from milepost 60.3 to 61.2, to prevent settling of the roadbed and reduce maintenance. The SH-57, north of Priest River project (T56N, R5W, Sections 1, 11, 12, and 14; T57N, R5W, Sections 22, 23, 26, 35, and 36) proposes to reconstruct six sites of the highway (between mileposts 1.8 and 7.2), running along the Priest and the Lower West Branch Priest Rivers.

1.2 Reasons for Proposed Projects

The four proposed projects covered under this Biological Assessment (BA) are required to realign, widen, improve, or reconstruct highway sections that have become safety problems because of traffic flow and congestion, continual maintenance problems, or damage from major slides.

The general area covered by these four projects is the Sandpoint/Priest River area bordering Lake Pend Oreille and the Clark Fork River. This area lies at the foot of the Selkirk Mountains. The area is rich in natural and cultural resources, with historic sites dating from the arrival of the railroad in 1882 and the subsequent development of Sandpoint. Traditionally, population in the study area fluctuated with the degree of activity in the lumber industry; however, diversified outdoor recreational opportunities (available because of the high quality natural resources and pleasing aesthetics) have stimulated both the recreation-tourist industry and the real estate industry in the project area. Second home owners and retirees moving into the area have helped stabilize the economy and offset population ebbs. The Bonner County economy provided 11,444 full-

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and part-time jobs in 1997, and accounted for $224 million in income (does not include self-employed workers). Most of the population of Bonner County works in the greater Sandpoint area (75 to 80%).

1.3 Species of Concern

Ute ladies' tresses *(Spiranthes diluvialis)* was listed as "Threatened" by the U.S. Fish and Wildlife Service (USFWS) in January 1992 because of a variety of factors, including habitat loss, habitat modification, and hydrological changes to existing habitat.

Please note, this BA addresses only Ute ladies' tresses for each of the transportation projects. The animals, fish, and other plants that are considered under the Endangered Species Act have been evaluated under separate documentation.

2.0 DESCRIPTION OF IMPACT AREAS

2.1 Description of Ute ladies' tresses

2.1.1 Life History

Sheviak (1984) was the first to describe Ute ladies' tresses. Ute ladies' tresses is a perennial, terrestrial orchid with stems 20 to 50 centimeters (8 to 20 inches) tall, arising from thick, tuberous roots (Sipes and Tepedino, 1995). The plant is characterized by whitish, stout, ringent (gaping at the mouth) flowers (Figure 1). Ute ladies' tresses is normally positively identified when it is flowering. In Idaho, this orchid generally blooms from early August through mid-September, depending on microsite and climatic conditions; however, it may bloom as early as July or as late as early October. These orchids may exhibit prolonged dormancy, persisting underground for several years before leaf emergence (USFWS, 1995).

2.1.2 Distribution

Ute ladies' tresses is found in Colorado, Idaho, Montana, Nebraska, Utah, Washington, and Wyoming. In Idaho, this orchid has been found at 20 sites in the eastern part of the state, along the South Fork of the Snake River between Swan Valley and the confluence with Henry's Fork (Moseley, 1997). These occurrences range in size from one plant to a few hundred. Most sites are small (less than 4,047 m^2 or one acre). One Ute ladies' tresses population recently was found in north-central Washington, in Okanogan County (USFWS, 1998).

The plant is endemic to mesic or wet meadows and riparian/wetland habitats near springs, seeps, lakes, or perennial streams. Soils may be inundated early in the growing season, normally becoming drier but retaining subsurface moisture through the season. Elevations of known orchid occurrences range from 457 to 2,134 meters (1,500 to 7,000 feet). The orchid occurs in relatively open areas (e.g., grass and forb dominated sites), but some populations occur in riparian woodlands (e.g., cottonwoods and willow

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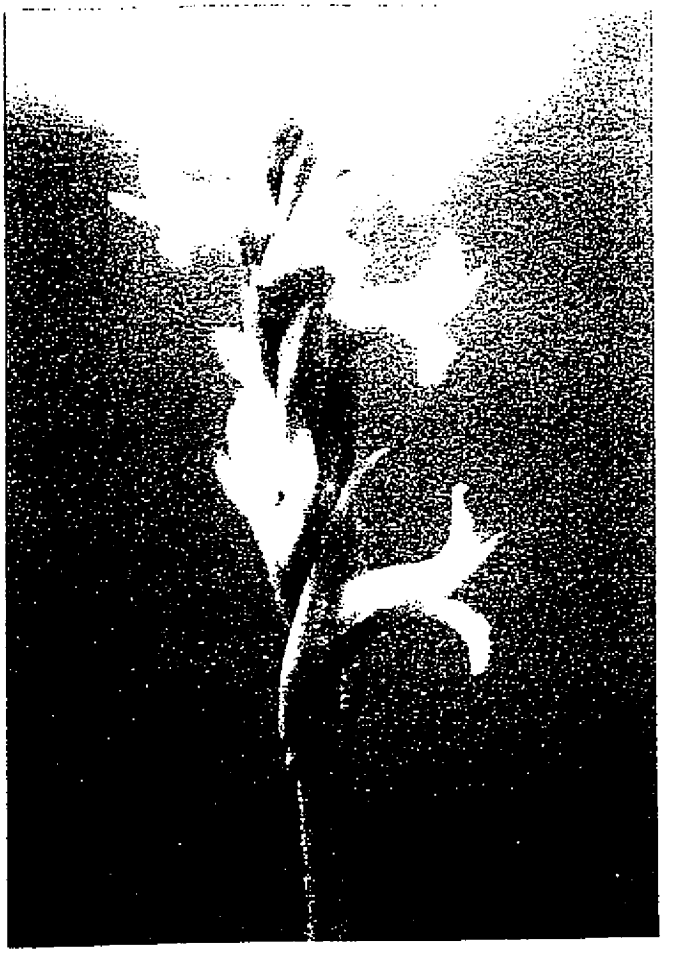

Top two photos:

Spiranthes diluvialis
Ute Ladies'-Tresses

Flowers face directly away from the stalk, neither ascending or nodding. Appressed or free lateral sepals. Flowers late July through September, depending on elevation and climate.

(Status - Listed as Threatened)

Bottom photo:

Spiranthes romanzoffiana
Hooded Ladies' Tresses

Tight helix of inflated ascending flowers around the spike and lateral appressed sepals.

(Status - Nana; common)

FIGUR
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thickets). Soils range from fine silt/sand to gravel and cobbles, and sometimes highly organic or peaty soils. These orchids survive in areas where streams are in near natural condition. Associated species found with Ute ladies' tresses may include: bentgrass (*Agrostis stolonifera*); wooly sedge (*Carex lanuginosa*); beaked spikerush (*Eleocharis rostellata*); silverberry (*Eleagnus commutata*); bog orchid (*Habenaria dilatata*); Baltic rush (*Juncus balticus*); horsetails (*Equisetum* spp.); sandbar willow (*Salix exigua*); yellow willow (*S. lutea*); and narrowleaf cottonwood (*Populus angustifolia*; Moseley, 1997). It is also possible that the distribution of Ute ladies' tresses may overlap with the more common hooded ladies' tresses (*S. romanzoffiana)*, especially above 1,524 meters (5,000 feet).

2.2 Description of Current Habitat Conditions at Project Sites

2.2.1 Botanical Survey Methods

All suitable habitat for Ute ladies' tresses was inventoried on August 24 and 25, 1998 (during the flowering period for Ute ladies' tresses) in the vicinity of the project sites. Surveys were conducted within the project impact areas that contain wetlands or open water, stream crossings or riparian corridors, or wet pasturelands. Lands eliminated from the detailed survey were developed lands, barren ground, rocky areas, and dry scraped areas. These areas were mainly dry forest and shrub land, and dry pastureland. Non-suitable habitat for Ute ladies' tresses initially was defined and identified for all project survey areas. Table 1 describes the characteristics of habitat that would be considered "non-suitable" for Ute ladies' tresses.

To ensure a high likelihood of finding Ute ladies' tresses within the areas surveyed, botanical surveys differed slightly among projects; however, all projects used an intuitive controlled survey methodology. This methodology uses meander transects (a survey line) determined by each botanist while in the field based on site conditions and their experience and judgement. The location of each transect was influenced by the terrain and quality of potential habitat.

Table 1. Characteristics of "Non-suitable Habitat" for Ute Ladies' Tresses

Habitat types	Characteristics
Soil	Heavy clay, extremely saline or alkaline
Topography	Steep slopes >30%
Hydrology	Dry
Light	Dense shade
Associated Plants	Invasive weeds

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Where accessible, areas containing "high" quality habitat for Ute ladies' tresses that occurred adjacent to the project impact area also were investigated. Although few plants have been found in Idaho, Ute ladies' tresses tend to occur in very specific conditions. Characteristics of suitable habitat for Ute ladies' tresses in Idaho are shown in Tables 2 and 3. The term "medium quality habitat" is used to illustrate that these areas are judged to have the potential to support the orchid, but no orchids have been found there in the surveys conducted to date (Shapiro & Associates, Inc., 1998; Moseley, 1997; USDI, 1997).

Table 2. Characteristics of Medium Quality Habitat for Ute Ladies' Tresses

Habitat types	Characteristics
Soils/Substrate	Saturated - Gravel and cobble; organic or peaty
Topography	Rolling, with slopes 5 to 20%
Hydrology	Human-made water conveyances that mimic natural waters
Light	Partial shade
Associated Plants	Any wetland plants with an obligate indicator status

Table 3. Characteristics of High Quality Habitat for Ute Ladies' Tresses

Habitat types	Characteristics
Soils/Substrate	Saturated - Fine silt/sand; gravel and cobble
Topography	Flat
Hydrology	Near springs, lakes, or perennial streams
Elevation	4,000 to 7,000 feet above mean sea level (msl)
Light	Open canopy
Associated Plants	*Agrostis stolonifera; Eleocharis rostellata; Eleagnus commutata; Salix lutea; Populus angustifolia*

2.2.2 Site and Vegetative Descriptions (Condition/Trend)

US-2, Wrencoe Loop to Dover Bridge Project

Site Description

U.S. Route 2, from Dover downstream to the Wrencoe Loop Road, is aligned along the northern and western banks of the Pend Oreille River (Figure 2). In addition, the road closely parallels the Great Northern and Spokane International Railroad right-of-way (ROW). In some places, the roadbed is slightly higher in elevation (630 meters, or 2,067 feet) than the normal pool elevation of Lake Pend Oreille (628 meters, or 2,062 feet). US-2 generally meanders back and forth and up and down, nearly approaching the Pend

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be human-made, and may have been used to drain the adjacent field. The Dover mitigation site does not provide suitable Ute ladies' tresses habitat because of the lack of proper hydrology and the dense mat of reed canarygrass and other seeded pasture grasses.

US-95, Sandpoint North and South Project

Site Description

The project includes areas north and south of US-95 Long Bridge over Pend Oreille Lake and new alignment portions through the town of Sand Point (Figure 3). Surveys on US-95 were conducted from milepost 469.75 north of the town of Sagle to milepost 477.44 just north of the Kootenai cut-off road.

Vegetation Description

Most of the US-95, Sandpoint North and South project occurs in "non-suitable habitat" for Ute ladies' tresses. No Ute ladies' tresses plants were found in surveyed areas. All surveyed areas met the minimum habitat requirement for Ute ladies' tresses of having saturated soils. Redtop, a useful indicator of potential Ute ladies' tresses habitat elsewhere in Idaho (Moseley, 1997), was not found within the survey areas. The US-95 project elevation is about 636 meters (2,085 feet), well below the existing known elevation (>4,000 feet above msl) of Ute ladies' tresses in Idaho. Wetlands within the project area occur as wet pasture, scrub/shrub, open water, and narrow riparian areas of streams and lakes.

Open water and wetland areas in the US-95 Sandpoint North and South area are the result of Albeni Falls Dam impounding the Pend Oreille River. Yearly water levels in Pend Oreille River and Lake Pend Oreille are not natural, with highest levels during the summer months (June to September) and lowest levels during the winter and early spring months (Loren Eby, U.S. Army Corps of Engineers, personal communication). These reversed (unnatural) lake levels are not in sequence with Ute ladies' tresses life cycle. Because of this, areas that provide potential habitat based on topography and soils may be inundated during Ute ladies' tresses growth and flowering period.

South of Long Bridge

Vegetation in the surveyed areas was a mixture of upland and wetland plant species (Table 5). South of Long Bridge and east of the existing US-95 alignment are several broad, relatively flat wet pasturelands that support areas of emergent wetlands (Appendix A, Photograph J). No standing water or saturated soils were present during the August surveys, that is, the typical flowering period for Ute ladies' tresses. Reed canarygrass and Canada and Kentucky bluegrass dominate the vegetation. The reed canarygrass forms dense mats, preventing the establishment of other vegetation. Douglas spirea, red-osier dogwood, willows, and black cottonwood dominate vegetation in the few

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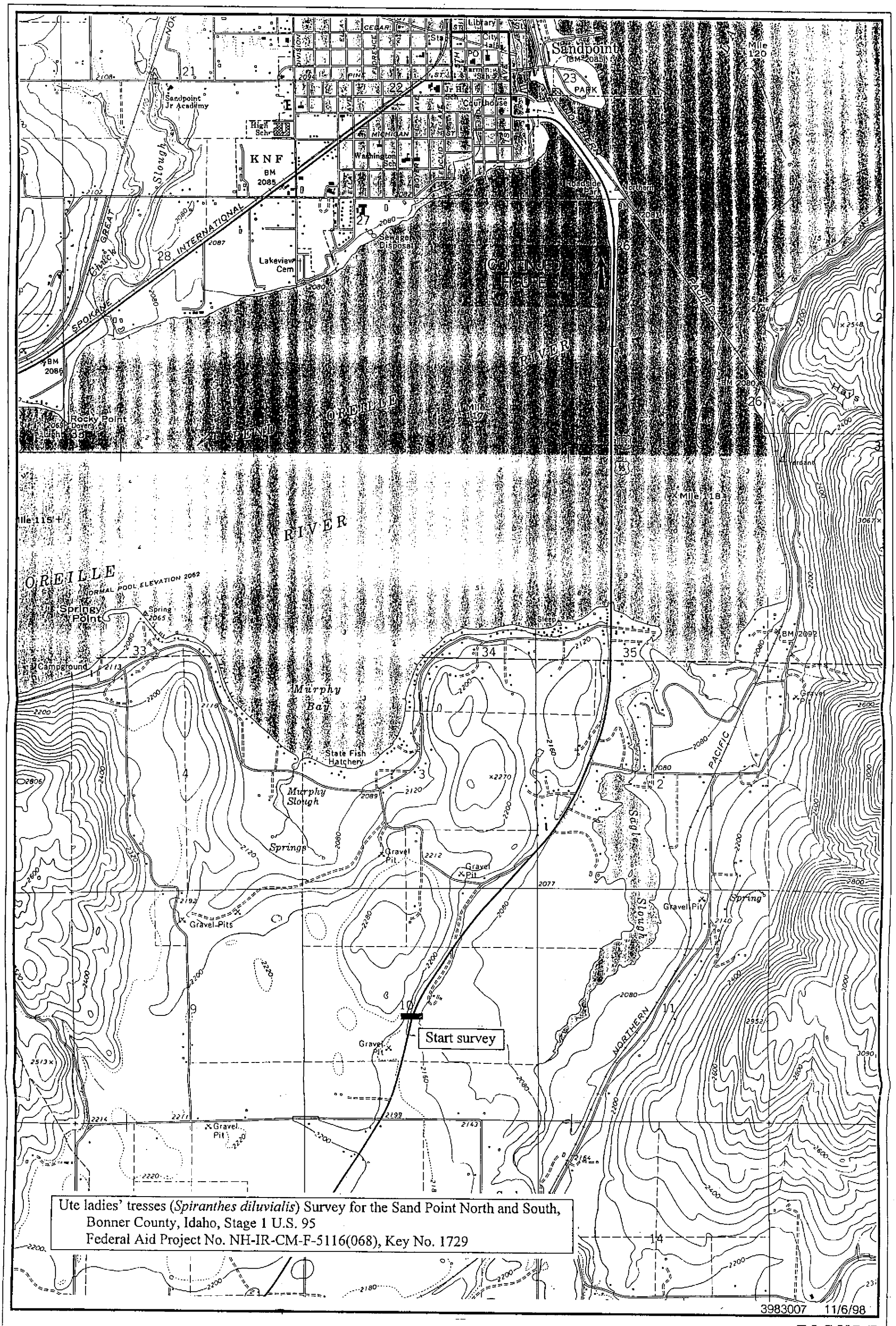


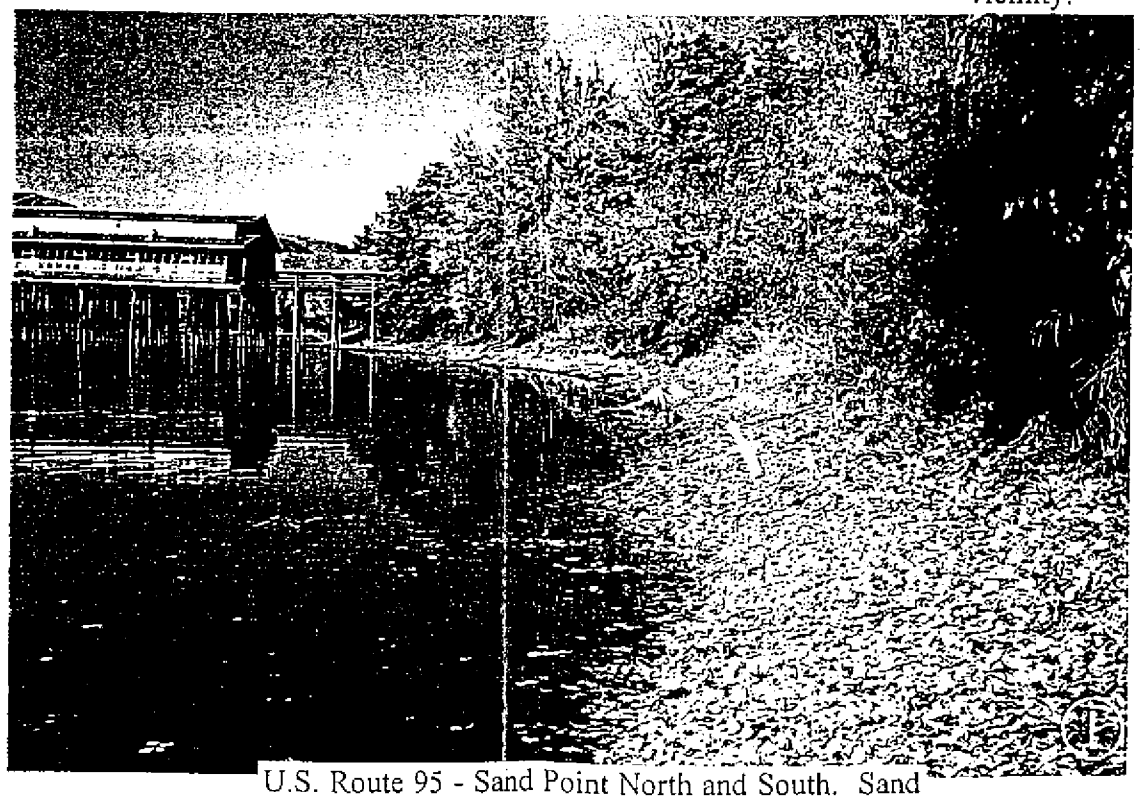
Location and generalized topography of Federal Aid Project No. NH-IR-CM-F-5116(068), Key No. 1729 in Bonner County, Idaho (U.S.G.S. . Sandpoint, and Sagle, Idaho, 7.5-minute quadrangles, 1:24000, 1968.)

FIGURE 3a

SHAPIRO & ASSOCIATES, INC.

U.S. Route 95.- Sand Point North and South. Lake Pend Oreille shoreline habitat within the project vicinity.

U.S. Route 95 - Sand Point North and South. Lake Pend Oreille shoreline habitat within the project vicinity.



U.S. Route 95 - Sand Point North and South. Sand Creek shoreline habitat within the project vicinity.

Photographs taken October 27, 1998 in Bonner County, Idaho.

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U.S. Route 95 - Sand Point North and South.
Wetland area south of the long bridge.

U.S. Route 95 - Sand Point North and South.
Wetland area underneath the Burlington Northern railroad bridge.

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Photographs taken August 25, 1998 in Bonner County, Idaho.

APPENDIX
A

SHAPIRO
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Ute ladies' tresses (*Spiranthes diluvialis*) Survey for the Sand Point North and South, Bonner County, Idaho, Stage 1 U.S. 95
Federal Aid Project No. NH-IR-CM-F-5116(068), Key No. 1729.

End survey

(CONTINUED ON FIGURE 3a)

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Location and generalized topography of Federal Aid Project No. NH-IR-CM-F-5116(068), Key No. 1729 in Bonner County, Idaho (U.S.G.S. . Sandpoint, and Sagle, Idaho, 7.5-minute quadrangles, 1:24000, 1968.)

FIGURE 3b

SHAPIRO & ASSOCIATES, INC.

scrub/shrub wetland areas. Wet pasturelands do not provide Ute ladies' tresses habitat, because of inappropriate hydrology and the dense mat of reed canarygrass and other plant species preventing establishment.

North of Long Bridge

Open water, wetlands, and riparian areas associated with Pend Oreille Lake and Sand Creek occur north of Long Bridge in the town of Sand Point. At the northern end of Long Bridge, the existing highway is located on fill material placed in the lake and lined with riprap to prevent wave erosion. Shorelines are steep, with the wetted edge only a few feet in width and water depth increasing quickly off shore (Appendix A, Photographs G, H, and I). Reed canarygrass, black cottonwood, and Sitka alder dominate vegetation along the shoreline.

The riparian zone along Sand Creek, in the town of Sand Point, has a narrow (2 to 3 feet in width), linear wetland. Stream banks are steep, with a narrow wetted perimeter and water depths dropping off quickly into the creek. Reed canarygrass, black cottonwood, Sitka alder, ponderosa pine, and Douglas-fir dominate stream bank vegetation.

Wetlands north of Long Bridge do not provide Ute ladies' tresses habitat. The dense mat of reed canarygrass, steep shorelines, and an altered flood regime from the impoundment and management of Lake Pend Oreille likely would prevent the establishment of Ute ladies' tresses.

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Table 5. Dominant Plants Occurring in the US-95, Sand Point North and South Surveyed Areas

Scientific Name	Common Name
Trees	
Pinus contorta	Lodge-pole pine
Pinus monticola	Western white pine
Pinus ponderosa	Ponderosa pine
Populus trichocarpa	Black cottonwood
Pseudotsuga menziesii	Douglas-fir
Shrubs	
Alnus sinuata	Sitka alder
Cornus stolonifera	Red-osier dogwood
Salix spp.	Willows
Spiraea douglasii	Douglas spirea
Graminoids	
Glyceria grandis	Reed mannagrass
Carex spp.	Sedges
Juncus spp.	Rushes
Phalaris arundinacea	Reed canarygrass
Poa compressa	Canada bluegrass
Poa pratensis	Kentucky bluegrass
Forbs	
Centaurea maculosa	Spotted knapweed
Chrysanthemun leucanthemum	Oxeye daisy
Tanacetum vulgare	Tansy

Burlington Northern Railroad Bridge

A spring that flows north into Sand Creek is located underneath the Burlington Northern railroad bridge. The construction of the railroad bridge has altered the area surrounding the spring substantially. The spring flows through a narrow channel over relatively flat ground before dropping off steeply into Sand Creek. The spring and outflow channel have been degraded by railroad bridge footing in the channel and off-road vehicles (Appendix A, Photograph K). Vegetation is sparse, but includes sedges, rushes, and reed canarygrass. A narrow stand of sapling willow occurs along the spring's outfall channel. The spring and its outfall channel do not provide Ute ladies' tresses habitat, because the site is highly and continually disturbed.

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North of SH-200

An intermittent drainage at the northern end of the project area (north of SH-200) appears to transport stormwater to Sand Creek. Stream banks in this drainage are steep and support a dense stand of red alder and black cottonwood. The dense, closed canopy of red alder and black cottonwood prevents the establishment of Ute ladies' tresses.

No Ute ladies' tresses plants were found in this survey area. Although wetlands occur within the project area, they do not meet the habitat requirements of Ute ladies' tresses. Existing vegetation (dense growth of reed canarygrass or trees and shrubs) and wetland disturbances in the project area prevent the establishment of Ute ladies' tresses.

SH-200, East of Clark Fork Project

Site Description

SH-200 in the project area closely parallels the northern bank of the Clark Fork River (Figure 4). The existing roadbed is located on a relatively flat bench above the river. About 100 meters (328 feet) north of the existing roadbed is a steep canyon wall that extends 30 meters (100 feet) above the elevation of the river. There are seven wetlands (delineated and labeled A through G) located north of the existing highway alignment, between the highway and the canyon wall (Figure 5). The wetlands total about 6,137 m^2 (66,034 ft^2) in area, with 2,708m^2 (29,138 ft^2) affected by realignment of SH-200. The surveyed portion of SH-200 mainly passes through areas of upland conifer forest. The elevation of the wetlands is about 640 meters (2,100 feet).

Vegetation Description

Most of the SH-200, East of Clark Fork project occurs in "non-suitable habitat" for Ute ladies' tresses. No "high quality habitat" for Ute ladies' tresses was found in surveyed areas; however, all surveyed areas met the minimum habitat requirement of having saturated soils. Wetlands within the project area occur as shallow, seasonally ponded basins. Some of these wetlands contained standing water at the time of the survey; however, most were dry, supporting only moist soil conditions.

Vegetation in the surveyed areas consists of a mixture of upland and wetland plants (Table 6). Lodge-pole pine, western white pine, ponderosa pine, Douglas-fir, and western red cedar dominated upland conifer forests.

Douglas spirea, red-osier dogwood, and willows dominate wetland vegetation. Black cottonwood and Sitka alder occur along the outside edge of several of the wetlands. All wetlands, except G, were 100% vegetated with shrub and tree species. Wetland G, a small bowl, is void of vascular plants because it dries out in late summer and has a heavy growth of algae in early summer (Appendix A, Photograph L). Redtop, a useful indicator of potential Ute ladies' tresses habitat elsewhere in Idaho (Moseley, 1997), was not found

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Priest and Lower West Branch Priest River riparian vegetation is characterized by a dense thicket of shrubs and small trees, including Douglas spirea, hawthorn species, red-osier dogwood, willow, and Sitka alder. This dense thicket of riparian vegetation provides low quality habitat and likely prevents the establishment of Ute ladies' tresses. Only a small area of potential habitat exists in the wetted channels and lower banks of these streams. River substrate consists of bedrock, gravel, cobble and fine silt.

Table 7. Dominant Plants Occuring in the SH-57, North of Priest River Project Surveyed Areas

Scientific Name	Common Name
Trees	
Pinus contorta	Lodge-pole pine
Pinus monticola	Western white pine
Pinus ponderosa	Ponderosa pine
Populus trichocarpa	Black cottonwood
Pseudotsuga menziesii	Douglas-fir
Thuja plicata	Western red cedar
Shrubs	
Alnus sinuata	Sitka alder
Cornus stolonifera	Red-osier dogwood
Salix spp.	Willows
Spiraea douglasii	Douglas spirea
Graminoids	
Carex spp.	Sedges
Phalaris arundinacea	Reed canarygrass
Poa compressa	Canada bluegrass
Forbs	
Centaurea maculosa	Spotted knapweed
Chrysanthemun leucanthemum	Oxeye daisy
Tanacetum vulgare	Tansy

The impact area does not provide habitat for Ute ladies' tresses, even though wetlands in the project area meet the habitat requirements. Generally, wetlands in the project area are narrow, linear, and contained in the wetted channel of entrenched stream channels or along the bank of the Priest and Lower West Branch Priest Rivers. Riparian area vegetation, characterized by a dense thicket of shrubs and small trees, prevents the establishment of Ute ladies' tresses.

3.0 DESCRIPTION OF PROPOSED ACTIVITIES

Construction activities associated with the US-2 (Wrencoe Loop to Dover), SH-200 (East of Clark Fork), and SH-57 (North of Priest River) highway projects are scheduled for the 1999 construction season. The US-95 (Sandpoint North and South) project is scheduled

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for 2003. Any work within high water marks will be in accordance with an approved Idaho Department of Water Resources (IDWR) Stream Alteration and U.S Army Corps of Engineers (COE) 404 permits. Erosion and sediment control practices for soil stabilization, storm runoff, and pollutant discharge will follow the permits and Best Management Practices (BMPs).

3.1 US-2, Wrencoe Loop to Dover Bridge

3.1.1 Purpose, Need, Site of Actions

The US-2, Wrencoe Loop Road and Dover Bridge project proposes to realign and widen 5.3 miles of U.S. Route 2 (milepost 19.8 to milepost 25.1). The purpose of this project is to alleviate traffic congestion and safety problems with the existing road, including providing sight distance relief in tight turns.

3.1.2 Description of Site-Specific Activities

The US-2, Wrencoe Loop to Dover project proposes to construct a highway of a uniform 12.2-meter (40-foot) width, including two 3.7-meter (12-foot) travel lanes, 1.8-meter (6-foot) shoulders, and 0.6-meter (2-foot) paved foreslopes. Some traffic delays are expected for this 3-year project. During summer and fall construction months, one-laned controlled traffic may occur during daylight hours, with 10 to 15 minute delays expected. About two months of blasting is anticipated, during which traffic may be delayed up to two hours between 7:00 p.m. and 12:00 P.M. US-2 will be opened to two-way, two-lane traffic at night when no blasting occurs. During winter months, US-2 will be opened to two-way, two-lane traffic on paved surfaces. Construction is expected to begin the summer of 1999, with major activities occurring during the 2000 construction season, and final sealcoat laid in 2001.

3.2 US-95, Sandpoint North and South

3.2.1 Purpose, Need, Site of Actions

US-95 is Idaho's major north-south highway, extending from Canada to the Mexican border near Yuma, Arizona. The proposed project consists of a 19-kilometer (12-mile) long segment of US-95 located in Bonner County, Idaho approximately 100 kilometers (62 miles) south of the Canadian border in the vicinity of Sandpoint. US-95 within the city of Sandpoint has severely congested traffic. Traffic congestion can be attributed largely to increasing numbers of heavy trucks mixing with an influx of tourists and local traffic on a substandard facility. Principal problem areas are the numerous driveways and intersections, tight 90-degree turns, and poor traffic flow structure within the city. Outside the city, traffic volumes are approaching route capacity. Sandpoint's population grew approximately 31% from 1990 to 1997. This growth is compounding the local congestion problem during peak use periods.

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The purpose of the proposed project is to improve traffic flow and, preferably, to provide a bypass facility for US-95 traffic in the study area. In the selection of alternatives to accomplish the project, twelve objectives were identified to provide more specific guidance. The high number of alternatives considered was the result of an effort to meet the purpose and need for the proposed project; respond to issues raised through the scoping and public involvement process; and comply with applicable laws, regulations, policies, and standards that govern federally funded highway projects. The alternatives not advanced were rejected because of environmental impacts, excessive implementation costs, and/or engineering constraints.

The Draft EIS analyzed a 'No Action' alternative and two 'build' alternatives that were considered reasonable and feasible. These 'build' alternatives were:

- The through town 'couplet' alternative, and
- The Sand Creek alternative (2-lane option).

The Sand Creek alternative is the 'Preferred Alternative.' Since release of the Draft EIS, the project has been shortened, omitting the segment from Algoma to Sagle in the south and from Kootenai Cutoff to Bronx Curves in the north. These new termini are based on the 'West Alternative' being removed from consideration and recently completed safety/pavement improvements at the northern and southern ends of the original project area. The Final EIS describes the affected environment, environmental consequences, and proposed mitigation relating to the Preferred Alternative. It identifies changes since release of the Draft EIS, and provides comparisons of the Preferred (Sand Creek) Alternative to the through town 'couplet' alternative and 'No Action' alternative presented in the Draft.

3.2.2 Description of Site-Specific Activities

Major activities of the two-lane alternative include: 7.6 kilometers (five miles) of mostly two-lane highway construction that will be 11.6 meters (38 feet) wide and 19.2 meters (63 feet) wide for the four- or five-lane road on approaches; 1.8 kilometers (one mile) of bridge reconstruction on Long Bridge, widening the current two-lane structure from 12.2 meters (40 feet) to 28.8 meters (94 feet) to accommodate a bicycle/pedestrian path; and 3.2 kilometers (two miles) of a new two-lane alignment, which includes an interchange and bridge structure south of the Burlington Northern Railroad depot and a fill-diamond interchange structure with SH-200 in Ponderay.

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3.3 SH-200, East of Clark Fork

3.3.1 Purpose, Need, Site of Actions

The SH-200 project proposes to realign a segment of the highway east of the town of Clark Fork in Bonner, County, Idaho. The main purpose of the realignment is to avoid an unstable, rotational slide area. A 1.8-kilometer (1.1-mile) section of road adjacent to the Clark Fork River will be relocated 30 to 50 meters (98 to 164 feet) to the north, away from the river and slide.

Realignment of this road section is necessary because of long-term problems. Specifically, the river level adjacent to the roadway fluctuates, leaving saturated, unstable road embankments that have caused the roadbed to settle over the years. The area north of the road is currently undeveloped. For 80 meters (262 feet) north of the existing roadbed, the terrain is fairly flat. Beyond 80 meters (262 feet), the terrain slopes sharply upward. Wetlands are present in the flat area north of the existing roadway.

Three alternatives were evaluated to improve the current maintenance and road settling problems on SH-200:

Alternative 1 - No Action Alternative
Alternative 2 - Offsetting the highway 30 meters to the north
Alternative 3 – Offsetting the highway 50 meters to the north

The highway will be widened to meet current ITD standards, and horizontal and vertical curves will meet American Association State Highway Transportation Organization (AASHTO) standards. A Wetland Mitigation Plan will be implemented to offset negative impacts on existing wetlands. Additional ROW will be acquired.

3.3.2 Description of Site-Specific Activities

The SH-200 East of Clark Fork project proposes to construct a new highway 1,800 meters (5,774 feet) long, with a uniform 12.2-meter (40-foot) width, including two 3.7-meter (12-foot) travel lanes, 1.8-meter (6-foot) shoulders, and 0.6-meter (2-foot) paved foreslopes.

3.4 SH-57, North of Priest River

3.4.1 Purpose, Need, and Site of Actions

The SH-57 project proposes to rebuild slopes and embankments at six failure sites, resulting in the elimination of slides in these areas. The work involves excavating 4,630 m^3 (6,055 yd^3) of material and repaving 7,527 m^2 (1.86 acres) of road surface.

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3.4.2 Description of Site-Specific Activities

The SH-57 North of Priest River project proposes to reconstruct the highway at six sites meters in length, with a uniform 12.2-meter (40-foot) width, including two 3.7-meter (12-foot) travel lanes, 1.8-meter (6-foot) shoulders and 0.6-meter (2-foot) paved foreslopes.

4.0 ANALYSIS OF POTENTIAL EFFECTS

4.1 Direct, Indirect, and Cumulative Effects (compared to baseline conditions)

The following sections discuss the potential direct, indirect, and cumulative impacts the four projects may have on Ute ladies' tresses and its habitat. This analysis uses the best available scientific information, site-specific information, and professional judgement to determine potential effects. This analysis has determined that there is no risk of any adverse effects on Ute ladies' tresses and its suitable habitat.

4.1.1 Direct Effects

The four projects covered in this BA will have no direct effect on Ute ladies' tresses, since no plants were found in the project areas and no suitable habitat will be affected by project activities.

4.1.2 Indirect Effects

The only indirect effects of the projects would be the elimination of low quality habitat that meets the minimum requirements for the establishment of Ute ladies' tresses. Currently, only marginal "suitable habitat" and no Ute ladies' tresses plants were observed in project activity areas.

4.1.3 Cumulative Effects

Cumulative effects (50 CFR 402.02) are effects of future state or private activities that are reasonably certain to occur in the project areas where the action occurs. Cumulatively, roads, forest management activities, livestock grazing, and residential development in the project areas might increase impacts on suitable habitat for Ute ladies' tresses. Because these projects have the potential to affect only low quality, marginal habitat for Ute ladies' tresses, they are not expected to exacerbate impacts from future activities in these areas.

4.2 Interrelated and Interdependent Actions

They are no interrelated and interdependent actions resulting from the proposed projects.

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4.3 Combined Effects

These projects, small in scope and outside suitable habitat for Ute ladies' tresses, will have no overall risk of adverse effects on Ute ladies' tresses and its suitable habitat.

5.0 MONITORING AND EVALUATION

Since no Ute ladies' tresses or suitable habitat will be affected by the projects, monitoring will not be conducted for any of the four projects.

6.0 DETERMINATION OF EFFECT

The finding of effect is the conclusion reached on the project's likelihood of affecting Ute ladies' tresses or its critical habitat. The actual finding of effect may be made only by the federal agency responsible for funding or permitting the action (in this case the FHWA). The conclusions presented in this report are recommendations to which the federal agency must give concurrence. Determination of effect for each of these four projects is either "No Affect, May Affect, Not Likely to Adversely Affect, or May Affect, Likely to Adversely Affect" Ute ladies' tresses.

6.1 Determination

The only effect of these four projects would be the elimination of low quality habitat that meets the minimum requirements for the establishment of Ute ladies' tresses. Currently, only marginal "suitable habitat" and no Ute ladies' tresses plants were observed in project activity areas. Because of elimination of potential low quality habitat, the effect determination for implementation of the US 2, Wrencoe loop to Dover Bridge, US-95 Sandpoint North and South, and SH-200 East of Clark Fork projects is "May Affect, Not likely to Adversely Affect" on the Ute ladies' tresses. However, implementation of this project is not expected to affect continued existence of Ute ladies' tresses. This determination is based on the probability that these projects will not kill existing plants or eliminate suitable habitat. Because no potential habitat will be affected, the determination for implementation of the SH-57 project is "No Effect."

6.2 Rationale for Determination

The determination for potential effects of all four projects on Ute ladies' tresses and its suitable habitat considered the following items:

- existing quality of habitat;
- importance of affected habitat to the plant; and
- degree of predicted effects of project activities.

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6.3 Importance of Affected Habitat

There are many reasons why the importance of affected habitat for all four projects is very low. First, the US-2 Wrencoe to Dover Bridge and SH-57 North of Priest River projects will have no effect on suitable habitat. The US-95 Sandpoint North and South and SH-200 East of Clark Fork contain marginal, low quality habitat (and potential habitat), but the likelihood these projects will affect the establishment of Ute ladies' tresses is very low. The following is a list of factors that would prevent the establishment of Ute ladies' tresses at project sites: (1) all projects are well below the known elevations of existing plants; (2) existing wetlands are only seasonally ponded, and some are highly disturbed; (3) the high and low levels of Lake Pend Oreille and the Pend Oreille River are managed in reverse of natural regimes; (4) low quality wetland habitat is presently covered with dense mats of reed canarygrass and sedges; and (5) existing marginally suitable wetlands have a dense overstory of cottonwood and red alder.

6.4 Improvement over Base Period Condition

Implementation of all four projects will not negatively affect base period conditions for Ute ladies' tresses, as no individual plants were found in any of the project impact areas. The wetland mitigation sites for the projects have potentially suitable habitat. Base period conditions of altered flood regime, dense cover of grasses or shrubs, and/or poor substrate inhibits the establishment of the Ute ladies' tresses.

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7.0 REFERENCES

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Sheviak, C.J. 1984. *Spiranthes diluvialis* (Ochidaceae), a new species from the western United States. Brittonia 36(1): 8-14.

Sipes, S.E.; V.J. Tepedino. 1995. Reproductive biology of the rare orchid *Spiranthes diluvialis*: breeding system, pollination, and implications for conservation. Conservation Biology 9: 929-938.

U.S. Fish and Wildlife Service (USFWS). 1995. Ute ladies' tresses orchid (*Spiranthes diluvialis*) agency review draft recovery plan. Prepared by the Ute ladies' tresses recovery team for Region 6, USFWS, Denver, CO. 46 p.

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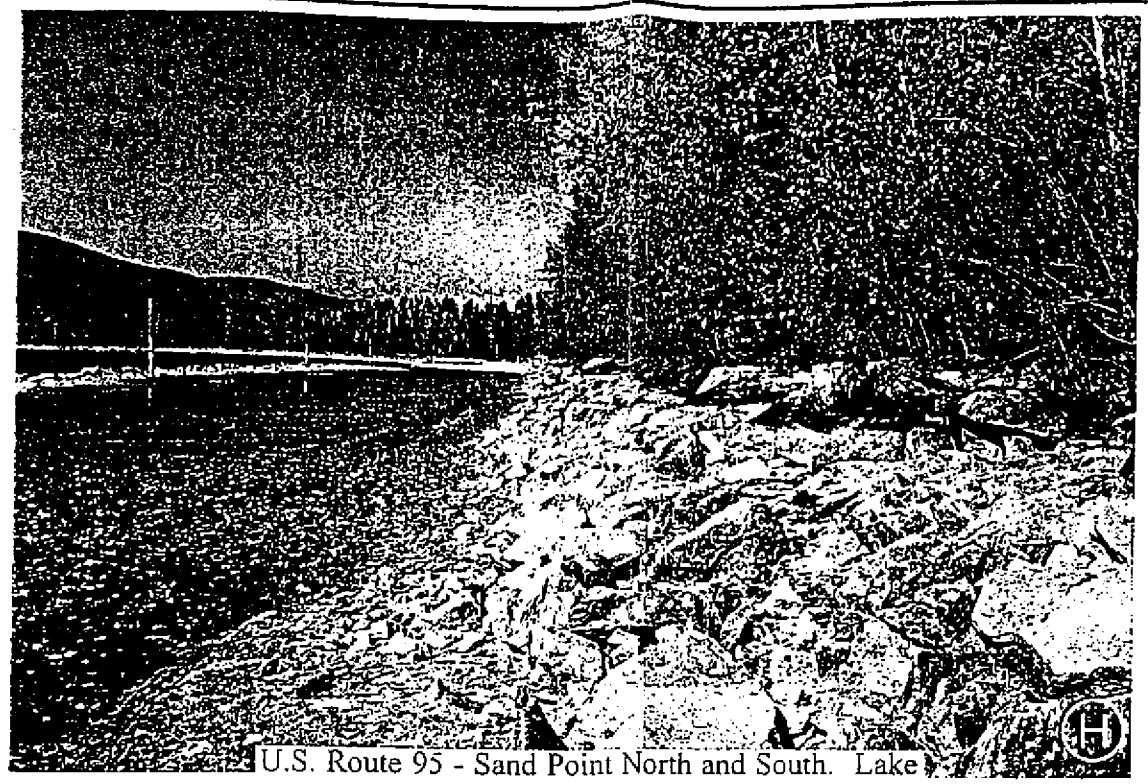
Appendix A

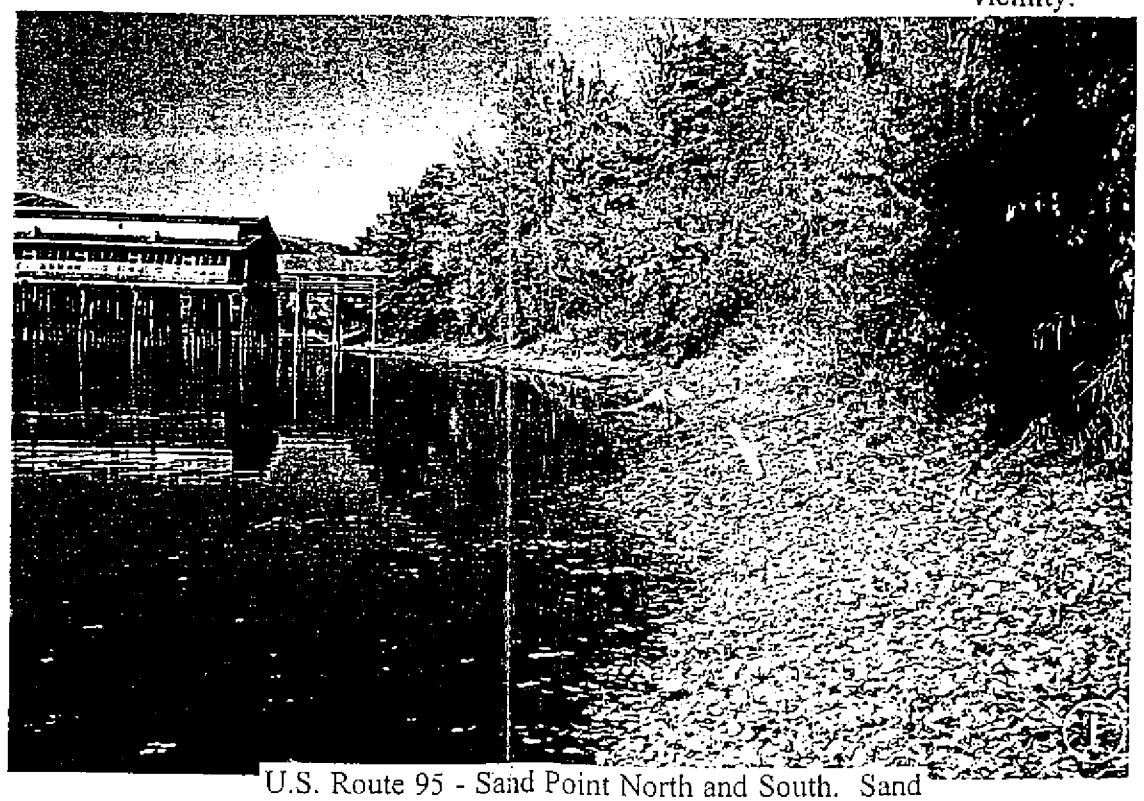
Photographs

ITDAA029875

U.S. Route 95.- Sand Point North and South. Lake Pend Oreille shoreline habitat within the project vicinity.



U.S. Route 95 - Sand Point North and South. Lake Pend Oreille shoreline habitat within the project vicinity.



U.S. Route 95 - Sand Point North and South. Sand Creek shoreline habitat within the project vicinity.

Photographs taken October 27, 1998 in Bonner County, Idaho.

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APPENDIX

A

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U.S. Route 95 - Sand Point North and South.
Wetland area south of the long bridge.

U.S. Route 95 - Sand Point North and South.
Wetland area underneath the Burlington Northern railroad bridge.

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Photographs taken August 25, 1998 in Bonner County, Idaho.

APPENDIX
A

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