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STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF LAND

To: John Bennett 451-5411

DRAFT

MINIMUM MAPPING REQUIREMENTS
for
RS - 2477 TRAIL LOCATION MAPS
Authority 11 AAC 53

The following general survey and mapping guidelines are for the purpose of confirming the location of existing pioneer access roads and trails (RS2477). Trail maps produced under these guidelines are only a graphical representation of the location of an existing trail or road at the time of survey and do not create any easement or right-of-way attaching to the trail. These guidelines define the minimum data collection and mapping criteria for preparation of trail location maps. These guidelines provide the procedures for field location of the trail and the adjoining real property.

1. GENERAL FIELD LOCATION STANDARDS

All survey work shall be accomplished under the supervision of a professional land surveyor licensed under AS 08.48 to practice in the State of Alaska. All maps, drawings, diagrams and legal descriptions shall be submitted under the seal of a registered land surveyor.

Before any field survey is initiated, the surveyor shall schedule a conference with the Statewide Platting Supervisor to discuss specific details of the project. The purpose of this meeting is to inform the department of the precise name and location of the particular trail being surveyed and to identify any specific survey procedures or requirements that may be necessary to accomplish the purposes of the survey.

Trail centerline surveys shall be accomplished with equipment and procedures sufficient to insure the centerline is located to within a horizontal accuracy of ±10 meters of it's true location. This can be accomplished by either conventional survey methods, controlled aerial mapping or by differentially corrected and constrained global positioning system (GPS) techniques.

Surveys within protracted/unsurveyed townships will be constrained to the National Geodetic Reference System (NGRS) network. This can be achieved by either direct ties to National Geodetic Survey (NGS) control stations or by use of NGS's continuously operating reference stations (CORS) network. Use of the CORS system theoretically makes it possible to position any trail in Alaska within the required precision without actually occupying an existing control monument or base station. This of course depends on the type of equipment used and any multipath errors caused be tree cover or terrain. Privately operated "CORS" stations or the

U.S. Coast Guard's DGPS Navigation Service broadcasting the RTCM SC-104 message may also be used when appropriate and available.

The horizontal mapping datum shall be the North America Datum of 1927 (NAD 27). U.S. Geological Survey "Quad." maps are published in the (NAD 27) datum though some of the more current maps show (NAD 83) grid ticks. Both the State of Alaska "Land Status Plat" and the Bureau of Land Management "Master Title Plat" use the 1927 North American Datum. The official BLM "Protraction Diagrams" used to compute section lines within unsurveyed townships are also in the (NAD 27) datum.

Survey ties shall be made to existing monumentation wherever the trail crosses a surveyed boundary line such as a section, township or range line or the boundary of a U.S. Special Survey or the boundary of a legislated reservation such as a State or Federal Park or subdivision boundary. The tie shall be made along the property boundary (section line, township line, etc.) line, from the trail centerline to the closest monumented corner on one side of the trail.

All locations along the trail with unique features should be field tied or be an additional GPS data collection point. These would include such features as other trails, river crossings, bridges, buildings and structures, and any feature that may have a reference on another map.

2. GENERAL MAPPING STANDARDS

The map shall be constructed of good quality paper or other media and be one of two standard sizes: 8 1/2" x 11" letter size or 8 1/2" x 14" legal size. Each map or drawing should include the following:

a. DNR standard title block, vicinity map, legend, notes, north arrow and the sheet number and total number of sheets.

b. Map scale should be in an appropriate engineering-type scale of one inch representing a multiple of 100 feet. Maximum map scale should not exceed 1" : 1 Mile.

c. All line work and lettering on the drawing must be in black drafting ink and must be accomplished with mechanical lettering equipment.

d. The graphics of the drawing shall be oriented so that north is as close as possible to the top of the sheet.

e. All property boundaries of record shall be shown with a narrow solid line. All non-boundary lines such as tie lines and easement limits shall be dashed lines. The standard centerline symbol shall be used for all right-of-way and easement