

# **CONTRACTOR FURNISHED SERVICES**

## **ITEM G-100 MOBILIZATION AND DEMOBILIZATION**

### **DESCRIPTION**

**100-1.1** This item consists of preparatory work and operations, including but not limited to operations necessary to move personnel, equipment, and supplies to the project site; to establish offices, buildings and other facilities, except as provided under Section G-130; to perform all other work and operations, including costs incurred, before beginning work on the project; and to complete similar demobilization activities, including submittals such as as-builts, certificates, payrolls, civil rights reports, equipment warranties, etc.

### **METHOD OF MEASUREMENT**

**100-4.1** Payment for mobilization and demobilization will be made in partial payments as follows:

- a.** When equipment and supplies are landed in serviceable condition at the project site and other necessary preparation have been completed so that work can commence on other pay items, 60% of the pay item.
- b.** When 25% or more of the original contract is earned, an additional 20%.
- c.** With Final Payment, the remaining 20%.

The Department reserves the right to require submittal of invoices, receipted bills, payrolls, and other appropriate documents to justify any or all payments under this item.

### **BASIS OF PAYMENT**

**100-5.1** Payment will be made at the contract lump sum price for mobilization and demobilization. This price and payment shall be full compensation for all costs associated with this item.

Payment will be made under:

Item G100.010.0000 Mobilization and Demobilization – per lump sum

## **ITEM G-115 WORKER MEALS AND LODGING, OR PER DIEM**

### **DESCRIPTION**

**115-1.1** This item consists of complying with the Alaska Department of Labor and Workforce Development (DOLWD) requirements for Worker Meals and Lodging, or Per Diem; as described in the Laborers' and Mechanics' Minimum Rates of Pay (Pamphlet 600), current issue.

Ensure subcontractors comply with the DOLWD requirements. The direct internet address is <http://www.labor.state.ak.us/lss/pamp600.htm>.

Ensure facilities meet the Alaska Administrative Code 8 AAC 61.1010 and 8 AAC 61.1040 Occupational Safety and Health Standards, 18 AAC 31 Alaska Food Code, and U. S. Code of Federal Regulations 29 CFR Section 1910.142 Temporary Labor Camps.

Do not consider the cost of Meals and Lodging or Per Diem in setting wages for the worker or in meeting wage requirements under AS 23.10.065 or AS 36.05.

### **METHOD OF MEASUREMENT**

**115-4.1** Progress payments for Worker Meals and Lodging, or Per Diem will be computed as equivalent to the percentage, rounded to the nearest whole percent, of the original contract amount earned.

### **BASIS OF PAYMENT**

**115-5.1** Payment will be made at the contract lump sum price for Worker Meals and Lodging, or Per Diem. This price and payment shall be full compensation for all costs associated with this item.

Payment will be made under:

Item G115.010.0000 Worker Meals and Lodging, or Per Diem – per lump sum

**ITEM G-120 DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM  
(RESERVED)**

## ITEM G-130 SERVICES TO BE FURNISHED BY THE CONTRACTOR

### DESCRIPTION

**130-1.1** Furnish and maintain facilities and services specified in the Contract for the Department's project administrative personnel to use during the project. Services include heat, electrical power (NEC compliant), water and any others required to operate the facilities. All furnished facilities remain the property of the contractor when the work is completed.

The Engineer may delete any G-130 Items, by Directive within five working days after the Preconstruction Conference. If any G-130 Items are deleted within the specified period, Subsection 90-09, Eliminated Items, shall not apply to the deleted G-130 Items.

### REQUIREMENTS

**130-2.1 FIELD OFFICE.** Furnish and maintain a suitable office for the Engineer to use during construction. Make the Field Office available for occupancy two weeks before commencing work on the project through two weeks after Project Completion

- a. Submit office proposal to the Engineer prior to procurement or transporting office to the project. The Engineer will approve the office general condition, location, access, features, and physical layout prior to beginning any office setup work. If this office is part of your building, completely partition it from the rest of the structure and provide a separate outside door equipped with a lock.
- b. Provide at least the following minimum requirements, or as approved by the Engineer:
  - (1) Floor space of at least 500 ft<sup>2</sup>
  - (2) Window area of at least 60 ft<sup>2</sup>
  - (3) Lockable outside door(s)
  - (4) 6 each plastic folding tables, 8 ft long
  - (5) Shelf space of at least 24 linear feet
  - (6) Adequate heating and cooling devices, and fuel or power to run the devices, to maintain an office temperature between 65°F and 75°F
  - (7) Adequate ventilation
  - (8) Continuous supply of drinking water from an approved source or commercial supplier
  - (9) Toilet and Sanitary facilities including adequate hand soap, hand sanitizer, toilet paper, and paper towels
  - (10) Janitorial services at least weekly
  - (11) In addition to any power required for adequate heating and cooling devices, provide electrical service and facilities as referenced in 130-2.8 a
  - (12) Internet service and phone as referenced in 130-2.7.
  - (13) One multifunction Color Printer/Scanner/Copier meeting the following requirements:
    - New or like-new condition
    - Printing/copying at least 32 pages per minute (ppm )
    - Scan speed of 40 ppm at 400 dots per inch (DPI) in color, at a minimum

Print/Scan/Copy 8.5 inches by 11 inches and 11 inches by 17 inches in color, at a minimum  
Supports network scanning (FTP and SMB Support)  
Supports network printing (PCL and Postscript)  
Network card included  
Automatic Document Feeder  
Furnish ink and toner and perform repairs and maintenance as necessary.  
The Printer/Scanner/Copier remains property of the Contractor upon completion of the contract.

- (14) Make the field office accessible according to the requirements of 2006 U.S. DOT ADA Standards for Transportation Facilities. Provide at least one designated handicap parking space.
  - (15) One AED (Automated External Defibrillator), with carrying case and properly marked wall cabinet. Provide training on how to use the AED.
  - (16) One combination Smoke and Carbon Monoxide Detector minimum. Provide combination Smoke and Carbon Monoxide Detectors in any location requested by the Engineer.
  - (17) One 25 Person Trauma First Aid Kit.
  - (18) 2 mobile hotspots with month-to-month data plans. Include car charger and 5 gigabytes of data usage per month.
- c. Provide electrical power to the Department's portable concrete compressive strength lab, as identified in 130-2.8 i, if there are any bridge items in the bid schedule.
  - d. Provide electrical power to the Department's portable nuclear storage trailer as identified in 130-2.8, h.
  - e. Provide the following to the Department's portable asphalt lab if there are any asphaltic materials in the bid schedule and item 130-2.2 Field Laboratory does not appear in the bid schedule.
    - (1) Electrical service as identified in 130-2.8 d Asphalt Laboratory.
    - (2) Internet service as specified for the Field Laboratory.

All long distance calls made by State personnel will be paid by the State. Installation and maintenance fees, local calls, connection fees and internet service provider fees, and all other fees shall be paid by the Contractor. Paper used by the copier/scanner/printer will be paid by the State.

**130-2.2 FIELD LABORATORY.** Furnish and maintain a field laboratory for the Engineer to use exclusively throughout the contract. Provide a completely functional installation two weeks before commencing construction work through two weeks after Project Completion.

- a. **Site.** Grade and compact a site for the lab acceptable to the Engineer. Locate and level the structure on this site. If subsequent ground movement causes an unlevel or unstable condition, re-level or re-locate the facility as directed.
- b. **Main Lab.** Provide a weatherproof structure suitable to field test construction materials, with the following minimum functional requirements:
  - (1) Floor space of 300 ft<sup>2</sup>
  - (2) Two 10-ft<sup>2</sup> windows that open and lock
  - (3) Lockable door(s)

- (4) Work bench(es), 2-1/2 feet wide 16 feet long, 3 feet tall
- (5) Shelf space, 1 foot by 16 feet
- (6) One 18-inch deep sink with attached industrial faucet with hand sprayer attachment and approved drain
- (7) A gravity-fed 250-gallon tank or pressurized constant water supply of acceptable quality.
- (8) Electrical service as indicated in 130-2.8 b Field Laboratory
- (9) Heating equipment suitable to maintain a uniform room temperature of 65 F to 75 F
- (10) Storage cabinet, 3 feet wide by 3 feet tall by 3 feet deep, lockable, securely fixed to an inside wall with a hinged door opening outward
- (11) Office desk and 2 chairs
- (12) One combination Smoke and Carbon Monoxide Detector minimum. Provide Combination Smoke and Carbon Monoxide Detectors at any location requested by the engineer.
- (13) One 25 person Trauma First Aid Kit.
- (14) Continuous supply of drinking water from an approved source or commercial supplier
- (15) Toilet and Sanitary Facilities including adequate hand soap, hand sanitizer, toilet paper, and paper towels
- (16) Internet service and phone as referenced in 130-2.7.

If the lab is a mobile unit mounted on axles and wheels, block the structure under the frame so that the wheels do not touch the ground and the blocking rests firmly on the prepared site.

- c. **Auxiliary Lab.** Provide a separate weatherproof shed within 20 feet of the main lab structure with the following minimum functional requirements:

- (1) Floor 8 feet by 12 feet, ceiling height 8 feet
- (2) Door 4 feet wide and window 5 ft<sup>2</sup> that opens and locks
- (3) Electrical service as identified in 130-2.8 c, Field Laboratory Out Building
- (4) Work table 1-1/2 feet wide, 3 feet long, 3 feet tall, capable of supporting 250 pounds and affixed to an inside wall as directed
- (5) Concrete-slab floor, 8 feet by 8 feet and 4 inches thick, cast-in-place or pre-cast. Install anchor bolts in the floor to accommodate the mounting pattern of the Gilson sieving machine at a location as directed.
  - (a) Comply with 1. above for slab foundation requirements.
  - (b) Found the slab directly on the prepared site.

- d. **Access.** For all types of installations, if the entryway is located higher than a single 7-inch rise, provide the following:

- (1) Stairway, 3 feet wide with 11-inch tread and 7-inch rise
- (2) Landing, 4 feet by 4 feet centered on the entryway

(3) Handrail(s) firmly affixed to the stairway

e. **Lab Equipment and Services.** Provide the following lab equipment and services:

(1) Propane necessary for the lab operation, including two 100-pound tanks, regulators, hoses, fittings, and incidentals for a functional system

(2) Specialized sampling equipment such as belt templates or belt sampling devices as required

(3) Fuel and power necessary to continuously operate the facilities

f. Provide the following to the Department's portable asphalt lab if there are any asphaltic materials in the bid schedule.

(1) Electrical service as identified in 130-2.8 d Asphalt Laboratory.

(2) Internet service as specified for the Field Laboratory.

**130-2.3 CURING SHED.** Furnish and maintain a suitable weather tight shed for curing concrete test cylinders, with a suitable tank(s) for curing concrete test cylinders.

Provide a tank(s) large enough to contain at least 6 test cylinders, each 4 inches by 8 inches, from each pour that you propose to make during any 28-day period. Use a tank(s) at least 18 inches high, insulated, and constructed of heavy duty plastic or non-corrosive metal. Construct a lid to provide access to the tank(s).

Provide suitable heating to maintain the temperature in the tank between 70 and 77°F at all times when curing the test cylinders. In addition, provide suitable thermometers in the shed and tank(s) to check the temperature.

Provide a supply of calcium hydroxide (high-calcium hydrated lime) sufficient to maintain a fully saturated water bath in the tank(s). Provide a source of potable water.

Provide one combination smoke alarm and carbon monoxide detector.

Provide electrical service as identified in 130-2.8 e Curing Shed.

**130-2.4 CAMP FACILITIES.** Furnish and maintain suitable camp facilities for Department employees and other authorized personnel. The Special Provisions will list an estimated number of employees.

Provide the following camp facilities:

- a. Lodging (Bunkhouse and Bedding)
- b. Meals (Mess Hall and Kitchen)
- c. Sanitary and Other Facilities

Provide all camp facilities according to the applicable chapters of the State of Alaska Department of Labor, *Occupational and Industrial Structures Code*, and the State of Alaska Department of Environmental Conservation, *Food Service Regulations*.

Camp facilities for your employees, that meet these requirements, may also be used for State employees.

These Specifications do not exclude the use of roadhouses or lodges located near the project that are available for your use. The Engineer may approve a roadhouse, lodge, or camp, providing the accommodations conform with contract requirements.

Provide camp facilities for use by State employees and other authorized personnel while you are engaged in work at the project site, or in material sources used to supply materials to this project.

Department employees and other authorized personnel must sign a meal and/or lodging sheet after each meal and each night's lodging.

When you use camp facilities, completely remove and dispose of all garbage and/or trash piles, cesspools, septic tanks and leach fields as required by applicable laws and regulations and as directed.

**130-2.5 NUCLEAR TESTING EQUIPMENT STORAGE SHED.** Design, furnish and maintain a weatherproof, heated, and ventilated nuclear densometer/testing equipment storage shed for the Engineer to use exclusively throughout the contract. Install the building at least 15-feet from an occupied area at a location approved by the Engineer. Install the shed at least one week before the commencement of construction activities and maintain it until one week after Project Completion. Provide sufficient floor area for the nuclear testing equipment and a portable electric heater to maintain a minimum room temperature of 50°F. Design the building with enough floor area to provide sufficient clearance between the equipment, heater, and combustibles. Provide a commercial grade metal-clad exterior entrance door of 3 feet width minimum width by 6-feet and 8 inches height with dead-bolt lockset. Hang the door so that hinge pins are not accessible from the exterior. Provide the Engineer with 2 keys to control access. Provide a 5/16-inch by 10 feet long welded steel security chain securely attached inside the structure with tamperproof hardware for the Engineer to secure the testing equipment. Provide electrical service as identified in 130-2.8 g Nuclear Testing Equipment Storage Shed. Secure the structure to the ground with tamperproof anchors to resist wind loads and prevent unauthorized movement of the building. The Nuclear Testing Equipment Storage Shed remains the property of the Contractor. Remove the shed from the site following project completion. The Nuclear Testing Equipment Storage Shed must be windowless.

**130-2.6 STORAGE CONTAINER.** Furnish, transport and maintain a weathertight, lockable, steel enclosed 20 feet long by 8 feet wide by 8 feet high wooden floored container for the storage of the Department's materials, supplies and testing equipment (but not nuclear equipment). Provide twenty equally spaced fastening points on the interior walls that are capable of securing the Department's contents. Door opening dimensions of the storage container shall be greater than 60 square feet. Supply necessary equipment to lift and move container with minimal disturbance to the Department's contents. The container shall not be moved by skidding or hook lift. The Contractor shall be listed as the shipper on all documents listing and acknowledging receipt of the Department's goods for shipment.

Deliver an empty and clean container to the Regional Materials Laboratory, or location acceptable to the Engineer, three weeks prior to transporting to the project site. Allow 7 days for the Department to load the container. Transport the loaded container to the project site. Set up container at a location approved by the Engineer prior to commencing construction work.

**130-2.7 FIELD COMMUNICATIONS.** Furnish and maintain a satellite communications system that includes internet and phone for the Engineer to use exclusively throughout the contract. Provide a completely functional installation 2 weeks before commencing construction work through one month after Project Completion.

Two weeks prior to procuring the field office and field laboratory, submit to the Engineer the proposed communications system consisting of phone and internet service. Obtain the Engineer's approval of the communications system prior to procuring the system.

Furnish and install high speed internet service and telephone service, with all necessary ancillary equipment. Provide internet and phone jacks in the field office and field laboratories in locations identified by the Engineer. Furnish one mobile satellite phone in addition to the phone system in the field office.

The internet system shall have a send and receive capability supporting 1.0 Megabytes per second (Mbps) download speed or higher and 0.5 Mbps or higher upload speed at all times. The internet system shall have a minimum monthly data usage of 10 Gigabytes (GB). Include a wireless router and an appropriately sized battery backup for the internet system. The system shall be separate from the internet system of the contractor for exclusive use of the Department.

The telephone system shall consist of commercially available telephones with the necessary equipment for each line. Provide one telephone that includes a built in digital answering machine.

Internet and telephone service shall be supplied and operational no more than two weeks after the field laboratory has been set up on site. Service plans shall be provided and remain in effect for the duration of the use of the field laboratory and field laboratory

**130-2.8 ELECTRICAL POWER.** Furnish and maintain a constant source of power to the facilities specified in the contract for the Department's use during the project. Provide a completely functional installation 2 weeks before commencing construction work through 2 weeks after Project Completion.

**a. Field Office.** Provide electrical services as follows:

- (1) Heating/Cooling adequate to maintain temperatures between 65°F to 75°F
- (2) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
- (3) Wiring system to support a 40 Ampere user load demand with two 20-Amp circuits
- (4) Outlets spaced every six feet on the interior wall, consistent with local codes
- (5) Eight 100 Watt incandescent or sixteen 40 Watt florescent, or equivalent LED fixtures

**b. Field Laboratory.** Provide electrical services as follows:

- (1) Heating/Cooling adequate to maintain temperatures between 65°F to 75°F
- (2) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
- (3) Wiring system to support a 60 Ampere user load demand with two 20-Amp circuits, GFI Protected
- (4) Outlets spaced every six feet on the interior wall, consistent with local codes
- (5) Four 100 Watt incandescent or eight 40 Watt florescent, or equivalent LED fixtures
- (6) Exhaust fan: minimum airflow capacity of 5 cubic feet per second (cfs)

**c. Field Laboratory Out Building.** Provide electrical services as follows:

- (1) Heating/Cooling adequate to maintain temperatures between 65°F to 75°F
- (2) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
- (3) Wiring system to support a 20 Ampere user load demand, GFI Protected
- (4) Three conveniently spaced outlets on the interior wall, consistent with local codes
- (5) Two 100 Watt incandescent or four 40 Watt fluorescent, or equivalent LED fixtures
- (6) Exhaust fan: minimum airflow capacity of 5 cubic feet per second (cfs)
- (7) 1-30 amp 110 volt circuit ( asphalt cut off saw)

**d. Asphalt Laboratory** Provide electrical services as follows:

- (1) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
- (2) 100 Ampere service

- (3) At least one 15 Amp lighting circuit,
  - (4) Outlets, six duplex outlets conveniently spaced around the lab, consistent with local codes.
  - (5) Lights, switch by door and either four 100 Watt incandescent or eight 40 Watt fluorescent, or equivalent LED fixtures.
  - (6) Exhaust fan, minimum airflow capacity of 5 cubic feet per second (cfs).
  - (7) 1-240 volt -50 Ampere circuit (Asphalt Burn off oven)
  - (8) 2 240 volt 20 Amp circuit for each (of two) aggregate ovens. (If a large oven is used power required depending on oven demands)
- e. **Curing Shed.** Provide electrical services as follows:
- (1) Heating/Cooling adequate to maintain temperatures between 70°F to 77°F
  - (2) Two 100 Watt incandescent or four 40 Watt fluorescent, or equivalent LED fixtures
- f. **Storage Container.** Provide electrical services as follows:
- (1) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
  - (2) Wiring system to support a 20 Ampere user load demand, GFI Protected
  - (3) Two conveniently spaced outlets on the interior wall, consistent with local codes
  - (4) Four 100 Watt incandescent or eight 40 Watt fluorescent, or equivalent LED fixtures
- g. **Nuclear Testing Equipment Storage Shed.** Provide electrical services as follows:
- (1) Heating/Cooling adequate to maintain minimum temperatures of 50°F
  - (2) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
  - (3) Two 100 Watt incandescent or four 40 Watt fluorescent, or equivalent LED fixtures
  - (4) Wiring system to support a 20 Ampere user load demand
- h. **Nuclear Testing Equipment Storage Shed (State Provided).** Provide electrical services as follows:
- (1) Electrical current, 120/240 VAC, 60-cycle on 24-hour basis
  - (2) Wiring system to support a 20 Ampere user load demand
- i. **Portable Concrete Compressive Laboratory.** Provide electrical services as follows:
- (1) Electrical current: 120/240 VAC, 60 cycle on 24 hour basis
  - (2) Wiring system to support a 20 Ampere user load demand

If Nuclear Testing Equipment Storage Shed is deleted the electrical power requirement are still required per 130-2.8 h.

If the contract contains bridge items that require concrete or grout provide electrical power to the Department's Portable Concrete Compressive Laboratory per 130-2.8 i.

## METHOD OF MEASUREMENT

**130-4.1 MEAL.** By each meal served to authorized personnel, based on signed meal sheets.

**130-4.2 LODGING.** By each night's lodging received by authorized personnel based on signed lodging sheets.

**130-4.3 NUCLEAR TESTING EQUIPMENT STORAGE SHED.** By the number of storage sheds specified, to include all components, installed and accepted as completed units and ready for equipment storage.

**130-4.4 STORAGE CONTAINER.** By the number of storage containers specified, to include all components, installed and accepted as completed units and ready for materials and equipment storage.

## BASIS OF PAYMENT

**130-5.1 LUMP SUM ITEMS.** Payment for Items G-130a, G-130b and G-130c will be made as follows:

- a. A percentage of the lump sum amount, to be determined by the Engineer, will be paid as full compensation for furnishing the facility at the site.
- b. The balance of the lump sum amount will be prorated over the anticipated active construction period with a portion included as part of each interim payment, for maintenance, repairs, providing all utilities, and for removing it from the site. If anticipated construction period changes, the final increment will be held until final payment.

Item G-130a Field Office, includes initial telephone and Internet service costs to provide operational connections.

When Item G-130i, Field Communications appears in the bid schedule, internet and telephone service will be measured and paid under G-130i, and are not subsidiary to G-130a and G-130b.

**130-5.2 MEAL.** Includes all labor, materials, tools, equipment and supplies required to provide meals to all authorized personnel assigned to, or associated with, the project.

**130-5.3 LODGING.** Includes all labor, materials, tools, equipment and supplies required to provide lodging for all authorized personnel assigned to, or associated with, the project.

**130-5.4 NUCLEAR TESTING EQUIPMENT STORAGE SHED.** At the contract unit price to include all labor, materials, tools, equipment and supplies required to furnish and install the shed before commencement of construction, to maintain it for the duration of the project and to remove the shed and electrical service after project completion. Electrical service and utility costs are subsidiary to this item.

**130-5.5 STORAGE CONTAINER.** At the contract unit price to include all labor, materials, tools, equipment and supplies required to deliver the storage shed to the regional office for loading, to deliver it to the project office, to install it before commencement of construction, to maintain it for the duration of the project, to remove the shed and electrical service after project completion, to deliver it to the regional office for unloading, and to remove the storage shed. Electrical service and utility costs are subsidiary to this item.

### 130-5.6 (RESERVED)

**130-5.7 ENGINEERING COMMUNICATIONS.** Installation and maintenance of equipment and monthly invoice costs will be paid for by Contingent sum under Item G-130i, Field Communications. Provide invoices from vendor for installation, maintenance, and monthly subscription costs.

Payment will be made under:

Item G130.010.0000	Field Office – per lump sum
Item G130.020.0000	Field Laboratory – per lump sum

Item G130.030.0000 Curing Shed – per lump sum  
Item G130.040.0000 Meal – per each

## ITEM G-131 ENGINEERING TRANSPORTATION

### DESCRIPTION

**131-1.1** Furnish and maintain vehicles for the exclusive use of the Engineer and their staff throughout the duration of the project.

### REQUIREMENT

**131-2.1** Provide the specified number of the following vehicle types:

- a. Truck.** Full-size four wheel drive pickup or sport utility vehicle. Less than 3 model years old, in good condition and with less than 36,000 miles on the odometer. Equip vehicles with mud/snow tires, strobe beacons (Whelen 360 or equivalent) and two-way radios set on the airport CTAF (Common Traffic Advisory Frequency).
- b. ATV.** All-terrain vehicle, fully enclosed cab, 4x4, 300 cc minimum, with a 500-lb capacity trailer. Less than 3 model years old, in good condition. Equip with securely attached two-way radio set on the airport CTAF (Common Traffic Advisory Frequency). Equip with a rotating beacon or strobe light.
- c. Snowmachine.** A snowmachine with 440 cc minimum engine size, and with a 500-lb capacity sled. Less than 3 model years old, in good condition.
- d. Boat.** An aluminum boat 20 foot long, and rated to carry a minimum of 1000 pounds. A motor capable of moving the loaded boat at 20 mph. Less than 3 model years old, in good condition.

The Contractor shall furnish all fuels and maintenance. The Contractor is responsible for normal wear and tear, and any other incidental damage, including broken windshields, that might arise during the Departments operation and use.

The Department is responsible for physical damage to any vehicle provided under this section if proximately caused by its negligent operation. The Department will provide non-owned auto liability insurance providing third party liability coverage for any accident during the Department's operation and use.

Obtain the Engineer's approval of vehicles prior to their shipment to the site. Vehicles remain the property of the Contractor and shall be removed from the site following the completion of the work.

### METHOD OF MEASUREMENT

**131-4.1** Lump sum items will not be measured for payment.

The quantity of per each items will be the number of vehicles provided and maintained for use for the duration of the project at the contract unit price.

### BASIS OF PAYMENT

**131-5.1** Payment will be made as follows:

- a.** A percentage of the contract unit price, to be determined by the Engineer, will be paid as full compensation for furnishing the vehicles at the site.
- b.** The balance of the contract unit price will be prorated over the anticipated active construction period, with a portion included as part of each interim payment, for maintenance, fuel and repairs, and for removing vehicles from the site. If the anticipated construction period changes, the final increment will be held until final payment.

Payment will be made under:

Item G131.010.0000 Engineering Transportation (Truck) – per each  
Item G131.020.0000 Engineering Transportation (ATV) – per each  
Item G131.030.0000 Engineering Transportation (Snowmobile) – per each  
Item G131.040.0000 Engineering Transportation (Boat) – per each

## ITEM G-135 CONSTRUCTION SURVEYING AND MONUMENTS

### DESCRIPTION

**135-1.1 GENERAL.** Perform surveying and staking essential for the completion of the project and perform the necessary calculations required to accomplish the work in conformance with the Plans and specifications and standard survey and engineering practices.

The Contractor shall provide all survey work including, but not limited to: project layout, cross sections, slope stakes, grade stakes, as-built measurements, and quantity measurements. Immediately upon completion of initial cross sections, the Contractor shall furnish reduced and checked survey notes to the Engineer. From time to time throughout the work, as requested by the Engineer, the Contractor shall take appropriate sections and shall provide the Engineer with reduced and checked notes from which quantity calculations for progress payment purposes can be accomplished. Notes shall be kept in a neat, orderly, and legible form according to professional surveying practices.

Upon completion of each phase of the work, the Contractor shall furnish the Engineer with all necessary measurements for completion of the as-built drawings. The Contractor shall include identification and location of project features where actual locations differ from locations shown on the Plans. All original survey notes and field books shall become the property of the Department and shall be delivered to the Engineer as a condition to final payment on this contract.

Furnish and install survey monuments and monument cases in conformance with the Plans or as directed.

### 135-1.2 DEFINITIONS.

- a. **Monument:** A fixed physical object marking a point on the surface of the earth; used to commence or control a survey; mark the boundaries of a parcel of land; or the centerline of a right-of-way corridor. Monuments will be Primary or Secondary, as shown on the Plans.
- b. **Point:** An identified spot located on the surface of the earth. For purposes of this definition, a point can be a PK nail, wooden hub, rebar, large nail or other structure capable of being utilized as a marker.
- c. **Witness Corner:** A material mark or point usually placed on a property or survey line, at a known distance from a property corner or other survey point. A witness corner is employed to witness the location of a corner/point that cannot be monumented at its true location.
- d. **Reference Monument:** A material mark or point placed at a known distance and direction from a property corner or other survey point, usually not on a property or survey line. A reference monument is employed to perpetuate a corner/point that cannot be monumented at its true location or where the corner monument is subject to destruction.
- e. **Surveyor:** The Contractor's Professional Land Surveyor, currently registered in the State of Alaska.

### MATERIALS

**135-2.1 MONUMENT CASES.** Castings shall conform to AASHTO M 105, Class 30A. Castings shall be coated with a bituminous damp-proof coating. Bolting tops shall be used.

**135-2.2 PRIMARY MONUMENT.** A minimum 2-inch diameter nonferrous pipe at least 30 inches long, with a minimum 4-inch flange at the bottom and having magnets attached at the top and bottom. A minimum 2-1/4-inch diameter nonferrous metal cap must be permanently attached to the top. Mark the cap around the outside edge with the words "STATE OF ALASKA DOT&PF". Permanently stamp every monument with the Surveyor's registration number, the year set, and the point/corner identification. Orient cap so that the data may be read facing up-station.

**135-2.3 SECONDARY MONUMENT.** A minimum 5/8-inch by 30-inch rebar with a 2-inch aluminum cap attached to the top. Permanently stamp every secondary monument with the Surveyor's registration number and the year set.

### **CONSTRUCTION REQUIREMENTS**

**135-3.1 GENERAL.** Use competent, qualified personnel and suitable equipment for the layout work required and furnish traffic control, stakes, templates, straight-edges and other devices necessary for establishing, checking and maintaining the required points, lines and grades.

Furnish computer services to accomplish the work. Check data received from the computer for completeness and accuracy. As soon as practical after completion of the work, and in no case later than acceptance of the project, deliver field books, computer forms and computer output data to the Engineer. This data becomes the property of the Department.

Supervise construction surveying personnel. Correct errors resulting from the operations of said personnel at Contractor expense. The Contractor is responsible for the accuracy of the work.

Work classified as Land Surveying under AS 08.48, and work involving the location, control, and monumentation of construction centerline and right-of-way, shall be performed by or under the responsible charge of a Professional Land Surveyor.

Follow the Department's Construction Surveying Requirements.

The Department will provide sufficient centerline or reference thereto, and at least one benchmark to enable the establishment of planned elevations and centerline.

Keep field notes in standard hardbound notebooks in a clear, orderly, and neat manner consistent with Departmental procedures, including titles, numbering, and indexing. Make field books available for inspection by the Engineer's project personnel at any time. Legible copies of the reduced field notes shall be made daily. Store the field books in the Engineer's Project Office during periods of non-use. Copies of the field books shall be kept in a separate secure location.

Perform the following:

- a. Staking necessary to delineate clearing and/or grubbing limits.
- b. Cross sections necessary for determination of excavation and embankment quantities, including intermediate and/or remeasure cross sections as needed. Take cross sections after clearing and grubbing has been completed.
- c. Slope staking.
- d. Staking of signs, culverts, minor drainage structures and other appurtenances, including the necessary checking to establish the proper location and grade to best fit the conditions on site.
- e. Bridge staking.
- f. Setting finishing stakes.
- g. Measurement of pay quantities that require measurement.
- h. Staking of right-of-way and material source limits.
- i. Staking, referencing and other actions required to preserve or restore land monuments and property corners.

- j. As-built surveying as required under Section 50-08 Survey Control. Tie as-built measurements and locations to project horizontal and vertical survey control.
- k. Staking and hubbing of bottom of excavation and the top of each layer in the pavement structure.
- l. Provide interim calculations for measured items to the Engineer prior to progress payments for each specific item. Ensure that the calculations are completed, checked, and signed by the person in responsible charge of the work.
- m. Other surveying and staking necessary to complete the project.

Notify the Engineer immediately if a Department-established reference point is discovered to be in error or a reset point is not in relationship to the adjacent centerline points.

Furnish a notekeeper to record field survey notes, including documentation for quantity computations for payment. Ensure that the notekeeper is thoroughly familiar with generally accepted standards of good survey notekeeping practice and the Department's Construction Surveying Requirements.

The Engineer may randomly spot check the Contractor's surveys, staking, and computations. After the survey or staking has been completed, provide the Engineer with a minimum of 72 hours notice before performing work, and furnish the appropriate data, to allow for random spot checking. The Department assumes no responsibility for the accuracy of the work.

Measure, compute, and plot all field-measured pay item quantities, including but not limited to excavation and disposal of asphalt cement concrete (AC), Portland cement concrete (PCC) pavement, and classified/unclassified excavation volumes. Stake for measurement and calculation of excavation quantities after AC and PCC pavement removal. Submit a proposed method of measuring and computing volumes to the Engineer in writing for approval before performing any field work under this item.

Provide item quantities, including computations and plots to the Engineer prior to payment for each specific item. The Department will review and accept or modify the quantities provided.

Digital terrain modeling (DTM) may be used in determining earthwork quantities as an alternative to before and after cross sections by average end area if the Engineer has agreed in writing to the DTM method prior to commencement of any field work. If DTM is approved and used, provide plotted cross-sections on 50-foot stations with elevations, offsets and computed end areas in square feet for each section prior to earthwork payments for each item. Provide these cross-sections and associated data for the entire area of earthwork computations along with the terrain model.

Accomplish staking in accordance with the following:

- n. Perform the topographic survey by grid or cross section method of surveying 25 feet beyond the project match lines. Take elevation shots at 25-foot intervals, at all terrain breaks, and at topographic features.
- o. Record and locate all baselines and connect them to the project's centerline, both horizontally and vertically.
- p. Upon completion of the before and after survey, provide the Engineer a grid layout sheet showing the baseline, stations and all spot elevations.
- q. Provide the Engineer a contour map of the original ground and an identical size map showing the final elevations with 0.5 foot contour intervals. Provide the Engineer with plotted cross-sections for each station grid with elevations and offsets shown.

At the end of each day's work, the surveyor shall email a copy of the downloaded raw data from the data collector, in its original format, to the Engineer. If editing is deemed necessary, send a separate email with the amended electronic data and a change log annotating the changes.

Provide in above products to the Engineer before payment will be made for that work. Provide as-builts and electronic data to the Engineer prior to final inspection.

**135-3.2 CROSS-SECTION SURVEYS.** When required, obtain right-angle cross sections to the construction centerline at the interval detailed in the Department's Construction Surveying Requirements.

The following will be supplied by the Department:

- a. Construction Plans and specifications.
- b. Design Cross Sections, if any.
- c. State of Alaska Land Survey Monument Record forms.
- d. Department's Construction Surveying Requirements. One copy.
- e. Design centerline grades.

The following shall be required of the Contractor:

- a. Field Books (Level, Cross-Section, Slope Stake, etc.). Use "Rite-in-the-Rain" or similar weather resistant hardbound field books. Field books become the property of the Department upon completion of the work.
- b. Label the books and number the pages. Make a heading in the appropriate book (date, weather, names and duties of crew members) at the beginning of each day's work.
- c. Update the index of the appropriate book at the end of each day's work.
- d. Reduce, check, and adjust level notes.
- e. The notekeeper shall compute the cross-section level notes and slope stake catches and a different crew member shall check the computation on a continual basis in the field.
- f. Enter the grade data, shoulder width and/or ditch distance, stationing, slope, etc., in the slope stake books.
- g. Maintain the position and identifying marks of slope stakes and reference points until used for their intended purpose.
- h. Correct errors by drawing a line through them and writing the correct entry directly above. Erasures will not be allowed.
- i. Return field books and copies of the field books to the Project office at the end of each work day or as directed.
- j. Provide copies of grade sheets and temporary bench mark elevations to the Engineer 48 hours before beginning work on unclassified excavation or embankment.
- k. The Contractor's survey crews shall comply with approved traffic control plans. Coordinate crew activities with the Worksite Traffic Supervisor.
- l. Keep a survey Party Chief diary, and give a copy of the diary to the Engineer each day. The diary shall contain the following information:
  - (1) Date.
  - (2) Weather.

- (3) Crew members' names and duties.
  - (4) Type and location of work performed.
  - (5) Hours worked.
  - (6) Type of equipment used (brand) and date equipment was double centered or "peg" test was performed.
  - (7) Signature of person in responsible charge.
- m. Submit the survey field notes, for the specific area, relating to monument referencing, before beginning clearing, grubbing or excavation.
- n. Draw cross-sections and complete quantity calculations for all earthwork quantities.

**135-3.3 MONUMENTS.** Install primary and secondary monuments, as called for in the Plans, at the positions established by the Department. Prior to the start of construction, reference monuments, to include property markers/corners and accessories, that may be disturbed or buried during construction. In addition, reference monuments designated for referencing on the Plans. Prepare and record Monument Record Forms in the appropriate Recorder's Office before disturbing monuments. Monument Record Forms may be obtained from the Engineer. Re-establish monuments in their original position before completion of the project. Prepare and file a Monument Record Form for each reestablished monument.

Keep records and report to the Engineer evidence that a monument has been disturbed and is no longer reliable or cannot be located and is presumed to be missing. Establish a minimum of two in-line reference points, or three swing-tie reference points in situations where in-line referencing is not desirable. Set reference points outside of the construction limits. Measure distances from the monument to the nearest 0.01 foot. Record referencing of monuments in a separate field book stamped by the Surveyor.

Replace existing monuments disturbed by construction with Primary or Secondary Monuments meeting the requirements of subsections 135-2.1 through 3. When it is impractical to establish a monument in its original position, install a witness corner (WC). Place the WC to a property corner on the property line when the other property corner that defines said line is existing or there has been sufficient retracement to define said line. In other cases, place a reference monument (RM) perpendicular to the centerline at the station of the original position and at a distance from the original position measured in whole feet.

Those monuments found that are not shown on the Plans will be recognized by the Engineer when the following is provided by the Surveyor: Field notes identifying type and location of the monument, and a description of the point the monument marks, with the reason to preserve its location. Monuments not shown on the Plans will be considered additional work and paid by Item G135.020.0000, Extra Three Person Survey Party.

The Surveyor shall complete a State of Alaska Land Survey Monument Record form for each primary and secondary monument referenced, removed, installed, relocated or replaced. Provide the required survey information on the form according to statutory requirements, including section, township and range. Meet requirements for recording at the District Recorder's Office in which the project is located for each monument record. Deliver conforming copies of the recorded forms to the Engineer before monument removal or disturbance, and after setting any final monuments requiring monument records.

Set each monument and monument case accurately to lines established at the required location and in a manner as to ensure being held firmly in place. Set existing monuments and monument cases to be adjusted to new elevations in the manner and at the elevations directed.

Primary Airport Control (PAC) and Secondary Airport Control (SAC) monuments are present in the project area as shown on the Plans. This control is important and if disturbed, must be reestablished by the Contracting Agency. For this reason, the Contractor is required to employ all reasonable measures to preserve the existing control monuments in an undisturbed condition. If a PAC or SAC is disturbed by the

Contractor's actions, the Contractor shall reimburse the State of Alaska for the cost of replacing monuments, performing geodetic surveys and related data processing, and filing the completed survey with the National Geodetic Surveys office. The estimated cost for reestablishing a disturbed monument is approximately \$50,000, but costs will vary depending on location, season, availability of staff, and other factors.

**135-3.4 CONTRACTOR FURNISHED ENGINEERING TOOLS.** Furnish and maintain Engineering Tools as directed by the Engineer for the exclusive use of the Engineer throughout the duration of the project. The Contractor shall furnish all equipment specifications to the Engineer for approval prior to furnishing equipment. The equipment shall be in good working condition not more than 1 model year old. The Contractor shall insure and indemnify the Department against normal wear and tear, damage, theft, and all other events that may cause a loss of function of the furnished tools. The equipment shall be returned to the Contractor upon completion of the project, or when services are terminated by the Engineer. Furnish training for the Engineer's staff, as directed by the Engineer.

**a. Global Positioning System (GPS) Rover Unit.** All components shall be fully compatible to provide a stand-alone GPS Rover Unit. The Rover Unit shall be an "all on the pole" system equipped with the following:

**(1) Receiver**

- (a)** Bluetooth compatible.
- (b)** Meet waterproof specification IPX7.
- (c)** Shockproof for a drop onto a hard surface from a height of 4 feet.
- (d)** Dual frequency receiver capable of tracking at least twelve 12 satellites simultaneously on parallel channels.
- (e)** Capable of Real-Time Kinematic (RTK), Static, and Fast Static occupations.
- (f)** Capable of receiving L1, L2, and Global Navigation Satellite System (GNSS) frequencies.
- (g)** Antenna model shall have undergone antenna calibration by the National Geodetic Survey (NGS).
- (h)** Ensure the receiver contains the manufacturer's latest firmware upgrades.
- (i)** Provide the manufacturer's user guide.

**(2) Controller**

- (a)** Bluetooth compatible.
- (b)** Equipped with onboard software allowing for the configuration of RTK, Post Processed Kinematic (PPK), or Static rover modes.
- (c)** Meet waterproof specification IPX7.
- (d)** Shockproof for a drop onto a hard surface from a height of 4 feet.
- (e)** Full QWERTY keyboard with numeric keypad, and/or equivalent touch screen interface.
- (f)** Capable of collecting data in WGS84 and displaying local project coordinates.
- (g)** Equipped with onboard software that allows automatic point logging.
- (h)** Capable of creating and storing line-work in DFX or DWG format.

- (i) Equipped with onboard software to allow the user to stake-out points, 3D lines, and DTM surfaces. Software shall allow the user to read cut/fill elevations relative to a Digital Terrain Model (DTM) surface.
  - (j) Capable of importing, exporting, and storing point, line, and DTM data.
  - (k) Capable of showing satellite, radio, and battery status.
  - (l) Equipped with onboard software that allow the user to create and manage survey jobs, point data, coordinate systems, and alignments.
  - (m) Equipped with a removable memory storage device with a minimum capacity of 512 megabytes (MB).
  - (n) Capable of storing custom configuration settings for the GPS Rover Unit.
  - (o) Ensure the controller contains the manufacturer's latest firmware upgrades.
  - (p) Provide the manufacturer's user guide.
- (3) Radio System**
- (a) Meet waterproof specification IPX7.
  - (b) Support a frequency compatible with the Reference Station.
  - (c) Capable of storing multiple radio frequencies.
  - (d) Compatible with the Reference Station's broadcasting format and protocol.
  - (e) Power and programming cables.
  - (f) Provide the manufacturer's user guide.
- (4) Batteries**
- (a) Provide all batteries required to fully power and operate the GPS Rover Unit.
  - (b) Batteries shall be capable of powering their respective equipment continuously, for not less than 6 hours under normal operating conditions.
  - (c) Each battery shall be rechargeable and commercially available.
  - (d) Provide an identical replacement backup battery for each primary battery required.
  - (e) Provide all power connectors necessary to connect the batteries to the equipment.
  - (f) Provide battery chargers to allow all onboard batteries to be charged simultaneously, and that safeguard against overcharging.
- (5) Rod**
- (a) Fixed height (non-adjustable).
  - (b) Mounting hardware for GPS controller and radio.
  - (c) Pole grip with bubble level.
  - (d) Detachable bipod.

- (e) Interchangeable flat and pointed footings.
  - (f) Quick release adapter for the GPS receiver.
- (6) Carrying Case
- (a) Hard Shell.
  - (b) Shockproof.
  - (c) Waterproof.
  - (d) Capacity to hold all components of the GPS rover, minus the rod.
- b. **GPS Base/Repeater Station.** All components shall be fully compatible to provide a stand-alone GPS Base/Repeater Station setup. The setup shall include the following:
- (1) Receiver
- (a) Meet waterproof specification IPX7.
  - (b) Shockproof for a drop onto a hard surface from a height of 4 feet.
  - (c) Dual frequency receiver capable of tracking at least 12 satellites simultaneously on parallel channels.
  - (d) Antenna model shall have undergone antenna calibration by the NGS.
  - (e) Ensure the receiver contains the manufacturer's latest firmware upgrades.
  - (f) Carrying case.
  - (g) Tribrach with optical plummet and height rod.
  - (h) Provide the manufacturer's user guide.
- (2) Controller
- (a) Equipped with onboard software allowing for configuration as a GPS reference station in RTK, PPK, Static, and Fast Static modes.
  - (b) Capable of logging raw observations for post processing.
  - (c) Capable of showing satellite, radio, and battery status.
  - (d) Meet waterproof specification IPX7.
  - (e) Shockproof for a drop onto a hard surface from a height of 4 feet.
  - (f) Full QWERTY keyboard with numeric keypad, and/or equivalent touch screen interface.
  - (g) Equipped with a removable memory storage device with a minimum capacity of 512 MB.
  - (h) Equipped with 1 primary and 1 secondary power input port.
  - (i) Ensure the controller contains the manufacturer's latest firmware upgrades.
  - (j) Provide the manufacturer's user guide.
- (3) Radio

- (a) Transmission power, 25 Watts minimum.
  - (b) Meet waterproof specification IPX7.
  - (c) Shockproof for a drop onto a hard surface from a height of 4 feet.
  - (d) Support a frequency compatible with the Reference Station.
  - (e) Capable of storing multiple radio frequencies.
  - (f) Compatible with the CORS broadcasting format and protocol.
  - (g) Ensure the radio has a current license to broadcast in accordance with FCC requirements.
  - (h) Ensure the radio broadcast frequency doesn't conflict with other nearby broadcasting sources.
  - (i) Equipped with onboard software/firmware allowing for configuration as either a Reference Station or a Repeater Station.
  - (j) Carrying case.
  - (k) Antenna.
  - (l) Antenna/pole mounting adapter.
  - (m) Provide the manufacturer's user guide.
- (4) Tripods – Provide one of each:
- (a) Conventional tripod with extendible range pole. Include carrying case.
  - (b) Conventional wood tripod.
- (5) Batteries
- (a) Provide all batteries required to fully power and operate the GPS Base/Repeater Station.
  - (b) Batteries shall be capable powering their respective equipment continuously, for not less than 6 hours under normal operating conditions.
  - (c) Each battery shall be rechargeable and commercially available.
  - (d) Provide an identical replacement backup battery for each primary battery required.
  - (e) Provide all power connectors necessary to connect the batteries to the equipment.
  - (f) Provide battery chargers to allow all batteries to be properly charged, and that safeguard against overcharging.

**135-3.5 OFFICE ENGINEERING.** Calculate finish grades for the embankments as specified according to Plans and/or specifications. Use information available in the field, on as-builts, or as provided by the Engineer. This work shall be performed by or under the responsible charge of a Professional Land Surveyor or a Professional Engineer currently registered in the State of Alaska.

**135-3.6 FINAL TRAVERSE.** Within 30 days after the Engineer receives a letter stating that construction activities that may disturb the monuments have ceased, the Surveyor shall run a final closed traverse to verify the positional accuracy of installed survey monuments. Tie into the traverse the primary and secondary monuments placed or replaced and undisturbed Department-provided control points. Meet the requirements

of a secondary monument for traverse points established during this work. The Surveyor shall sign and stamp a letter that lists each monument and its coordinates. The letter shall certify that the monuments are each located within 0.1-foot of their proposed position based on the project survey control points provided by the Department. Deliver the certification letter and field notes for this work to the Engineer.

**135-3.7 EXTRA THREE PERSON SURVEY PARTY.** This pay item is for extra, additional, or unanticipated work made necessary by changes in the project. Work performed under pay item G135.020.0000 may include field work, office engineering, or any work described under the construction requirements of item G-135.

#### **METHOD OF MEASUREMENT**

**135-4.1** The work will be measured according to GCP Section 90, as directed by the Engineer, and as follows:

- a. Lump Sum. No measurement of quantities will be made.
- b. Hour. By the number of hours, as directed by the Engineer and as recorded by certified payrolls.
- c. Contingent Sum. As specified by the Engineer in the Directive authorizing the work.

#### **BASIS OF PAYMENT**

**135-5.1** Pay Items include all necessary personnel, equipment, transportation, and supplies to accomplish the work described in the Contract, or as directed by the Engineer.

Pay Item G135.010.0000 Construction Surveying by the Contractor, includes all Contractor surveying work described in the Contract.

Pay Item G135.020.0000 Extra Three Person Survey Party, includes payment by the hour for extra, additional or unanticipated work made necessary by changes in the project. Adjustment according to GCP Subsection 90-04 is not allowed for this pay item. Work accomplished by a three person survey party will be paid at 100% of the contract unit price, by a two person survey party at 75% of the contract unit price, or by a one person survey party at 32% of the contract unit price, for Pay Item G135.020.0000.

Pay Item G135.030.0000 Monuments by the Contractor, includes all monument work described in the Contract.

Pay Item G135.040.0000 Extra Surveying by the Contractor, includes payment according to a Directive from the Engineer authorizing the work. This pay item is for extra, additional, or unanticipated work made necessary by changes in the project.

Payment will be made under:

Item G135.010.0000	Construction Surveying by the Contractor – per lump sum
Item G135.020.0000	Extra Three Person Survey Party – per hour
Item G135.030.0000	Monuments by the Contractor – per lump sum
Item G135.040.0000	Extra Surveying by the Contractor – per contingent sum

## ITEM G-150 EQUIPMENT RENTAL

### DESCRIPTION

**150-1.1** This item consists of furnishing construction equipment, operated, fueled and maintained, on a rental basis for use in construction of the proposed improvements and in performing work incidental to construction at the direction of the Engineer as such work is generally defined in these Plans and Specifications. Construction equipment is defined as that equipment actually used for performing the items of work specified and shall not include support equipment such as, but not limited to, hand tools, power tools, electric power generators, welders, small air compressors and other shop equipment needed for maintenance of the construction equipment.

### REQUIREMENTS

**150-2.1 EQUIPMENT FURNISHED.** The construction equipment to be provided under this contract shall be that shown in the Special Provisions or the bid schedule supplemented by such non-rental maintenance equipment and support equipment as the Contractor elects to provide. The equipment shall be of modern design and in good working condition and shall be maintained in good working condition throughout the life of the project. All equipment to be used in the construction of this project as noted in the Bid Schedule shall be made available for inspection by the Engineer prior to its shipment to the project site. Each item of equipment shall have company numbers clearly displayed for ready identification. The Engineer shall have the authority to prohibit the use of rental payment for any equipment which is not maintained in good working condition or which has a production capacity below construction industry standards.

**150-2.2 EQUIPMENT OPERATORS.** Equipment operators shall be competent and experienced and shall be capable of operating the equipment to its capacity. The Contractor shall replace those operators who, in the opinion of the Engineer, misconduct themselves, either on the job or in the community, or are incompetent or negligent in the operation of the equipment.

**150-2.3 HOURS OF OPERATION AND TIMEKEEPING.** The Engineer shall begin recording time for payment each shift when the equipment begins work on the project. Time during which the equipment is being serviced or repaired shall not be included. The stated equipment rental rates shall apply only to that time during which the equipment is actively engaged in construction, as directed by the Engineer. No standby payment will be made for any piece of equipment prior to, during the life of, or after the project has been completed. "Stuck Time" payment shall be made for each piece of equipment that becomes stuck while actively engaged in construction work on the airport and shall be limited to 1 hour per shift for each piece of equipment that becomes stuck.

**150-2.4 CONSTRUCTION METHODS.** The work shall be constructed according to the Plans, Special Provisions and as directed by the Engineer.

### METHOD OF MEASUREMENT

**150-4.1** The serial number and brief description of each item of equipment listed in the bid schedule will be recorded by the Engineer, and they will record the number of hours, or fractions thereof to the nearest one-quarter hour, during which the equipment is actively engaged in construction of the project. The furnishing and operating of equipment of heavier type, larger capacity, or higher horsepower than specified will not entitle the Contractor to any extra compensation over their applicable contract unit price. Each day's activity will be recorded on a separate sheet or sheets, which shall be verified and signed by the Contractor's representative at the end of each shift, and a copy will be provided to the Contractor's representative. No idle time will be recorded unless authorized by the Engineer.

### BASIS OF PAYMENT

**150-5.1** Payment will be made at the contract unit price bid for equipment rental per hour. This payment shall be full compensation for all fuel, operator's and mechanic's wages, parts, tools, maintenance items, shop equipment, camp, camp personnel wages, and all other incidentals necessary to keep the equipment in good

condition and available for work on the project. No payment for equipment standby time resulting from unfavorable weather, or any other reason, is implied or intended and no payment therefore will be made by the Department. No payment will be made separately or directly for embankments.

Payment will be made under:

- Item G150.010.0070 Equipment Rental, Dozer 70-hp Minimum – per hour
- Item G150.010.0075 Equipment Rental, Dozer 75-hp Minimum – per hour
- Item G150.020.0070 Equipment Rental, Dozer 70-hp Minimum – per contingent sum
- Item G150.020.0075 Equipment Rental, Dozer 75-hp Minimum – per contingent sum

## **ITEM G-200 CONTRACTOR QUALITY CONTROL PROGRAM**

### **DESCRIPTION**

**200-1.1** Perform work as described in Section 100 Contractor Quality Control Program (CQCP).

### **REQUIREMENTS**

**200-2.1** The requirements for this work are described in Section 100 Contractor Quality Control Program (CQCP).

### **METHODS OF MEASUREMENT**

**200-4.1** This item will not be measured for payment. The Engineers acceptance of the work constitutes measurement of this item.

### **BASIS OF PAYMENT**

**200-5.1** Propose a schedule percentage of payment of the lump sum based upon your implementation of the quality control program. In this schedule of payment provide a detailed list of items to be completed prior to payment of each scheduled payment. The Engineer may modify in part or reject in its entirety the proposed schedule of payment by the Contractor. In any case, the Engineer will be the final authority in determining the schedule of payment and the acceptance of the work.

Payment will be made under:

Item G200.010.0000	Contractor Quality Control Program - per lump sum
Item G200.020.0000	QC Program Administrator – per lump sum
Item G200.030.0000	QC Technician – per each

## ITEM G-300 CRITICAL PATH METHOD SCHEDULING

### DESCRIPTION

**300-1.1** Provide and maintain a Critical Path Method (CPM) progress schedule for the project. Use the schedule in coordinating and monitoring of all work under the Contract including activity of subcontractors, manufacturers, suppliers, and utility companies, and reviews by the Department. Update the CPM schedule, as required.

Provide work plans.

**300-2.1 SUBMITTAL OF SCHEDULE.** Submit a detailed initial CPM Schedule at the pre-construction conference for the Engineer's acceptance as set forth below.

The construction schedule, for the entire project, may not exceed the specified contract time.

Allow the Engineer 14 days to review the initial CPM Schedule. If revisions are required, make them promptly. The finalized CPM Schedule must be completed and accepted prior to commencement of any work on the project.

### 300-3.1 REQUIREMENTS AND USE OF SCHEDULE

**a. Schedule Requirements.** Prepare the CPM schedule as a Precedence Diagram Network developed in the activity-on-node format which includes:

- (1) Activity description
- (2) Activity duration
- (3) Resources required for each of the project activities, including:
  - (a) Labor (showing work days per week, holidays, shifts per day, and hours per shift)
  - (b) Equipment (including the number of units of each type of equipment)
  - (c) Materials.

Show on the activity-on-node diagram the sequence and interdependence of all activities required for complete performance of all items of work under this Contract, including shop drawing submittals and reviews and fabrication and delivery activities.

The Engineer reserves the right to limit the number of activities on the schedule. No activity duration may be longer than 15 work days without the Engineer's approval.

Consider that schedule float time is shared equally with the Department.

The contract completion time will be adjusted only for causes specified in this Contract.

**b. Schedule Updates.** Hold job site progress meetings with the Engineer for the purpose of updating the CPM Schedule. Meet with the Engineer monthly, or as deemed necessary by the Engineer. Review progress and verify finish dates of completed activities, remaining duration of uncompleted activities, and any proposed logic and/or time estimate revisions. Submit a revised CPM schedule within 5 working days after this meeting showing the finish dates of completed activities and updated times for the remaining work, including any addition, deletion, or revision of activities required by Contract modification.

**c. Work Plans.** In addition to the CPM schedule, submit a work plan every 2 weeks during construction, detailing your proposed operations for the forthcoming two weeks. Include:

- (1) Work activities
- (2) Manpower involved by trade
- (3) Work hours
- (4) Equipment involved
- (5) Location of the work to be performed

#### **METHOD OF MEASUREMENT**

**300-4.1** CPM Scheduling will not be measured for payment. Refer to GCP Section 90 for requirements regarding lump and contingent sum items.

#### **BASIS OF PAYMENT**

**300-5.1** At the lump sum price for CPM Scheduling.

Payment will be made under:

Item G300.010.0000	CPM Scheduling – per lump sum
Item G300.020.0000	Schedule Price Adjustment – per contingent sum

## ITEM G-310 PUBLIC UPDATES

### DESCRIPTION

**310-1.1** This item consists of providing updated construction information via email and advertisements throughout the project and administering weekly meetings with stakeholders and the public during active work. It also consists of a separate weekly meeting with the Engineer and his invitees (who may attend via teleconference) to discuss progress and scheduling. Provide meeting locations and teleconference services for all meetings, prepare and transmit weekly email updates with informational graphics, and place radio and newspaper advertisements as specified.

### SUBMITTAL SCHEDULE

**310-2.1** Submit draft advertisements and weekly email layout at the preconstruction conference for Engineer review and acceptance. Allow two weeks for initial review. Make any required revisions promptly. Ensure that the advance notice deadlines specified in section 310-3.1 are met by allowing sufficient time for both initial review and any resubmittal reviews.

### REQUIREMENTS

**310-3.1 LOCAL ADVERTISEMENT.** Place advertisements in the local newspaper and on local radio. Place advertisements to publish or broadcast 60, 30, and 15 days prior to beginning construction activity for each season and 30 and 15 days prior to closing an entire runway.

The advertisement in the local newspaper shall be minimum 5 inches by 6 inches in size. It shall include the date that construction is expected to begin, and list and describe milestones for the season and anticipated impacts to the traveling public. Include the Department's and Contractor's point-of-contact names and telephone numbers for additional information and requests to be added to the weekly email update address list. Transmit the newspaper advertisement graphic in .pdf format to all persons listed in section 310-3.2 and on the current stakeholders list.

The advertisement to be broadcast on [designer to insert number] local radio stations, shall state the date that construction will begin and list and describe milestones for the season and anticipated impacts to the traveling public. Have the advertisement broadcast at least once for each station between noon and 1:00pm on the required days.

If the stated dates, milestones or impacts change or are expected to change as the season progresses, the Contractor shall place additional advertisements with updated information to keep the public informed. Submit to the Engineer for acceptance prior to placing any additional advertisement and allow a minimum of 3 business days for review.

**310-3.2 WEEKLY EMAILS.** Transmit weekly email updates and invitations to attend the weekly public meeting to representatives of the following, with a carbon copy (cc) to the Engineer:

- DOT&PF Airport Manager
- DOT&PF Airport Management
- DOT&PF Airport Rescue and Firefighting (ARFF)
- DOT&PF Regional Maintenance and Operations, Director
- DOT&PF Regional Airports Maintenance
- Designer(s) of Record
- DOT&PF Regional Public Information Officer
- FAA local maintenance and operations
- FAA Flight Service Station (FSS)
- All parties listed in the CSPP document
- Any party from the airport stakeholder list provided by the Engineer that expresses interest or that requests to be added to the list during the project

Each email update shall include a graphic (attached in .pdf format) that shows the active work area(s) including active haul routes, the parts of the airport that are currently closed, area(s) where work is intended during the next week, including the intended haul route and the resultant impacts that the intended work is expected to have upon airport operations, tenants, users and Air Carriers including movement routes for aircraft and ground traffic. Include the location, time and toll-free teleconference call-in number (and any required instructions) for the weekly public meeting. Include the Department's and Contractor's point-of-contact information. The Contractor shall ensure that each email size does not exceed 500 KB.

The email update shall be transmitted one weekday before the weekly meetings. Weekly email updates shall only be transmitted during the active construction season.

**310-3.3 WEEKLY MEETINGS.** The Contractor shall provide locations with toll-free teleconference services (so that people may attend telephonically) for the purpose of holding two separate weekly meetings as follows:

Weekly Progress Meetings with the Engineer. Meet with the Engineer and his invitees (who may attend via teleconference) at the time(s) and location(s) acceptable to the Engineer. Keep airport safety, security and short term construction schedules as a standing agenda item for each weekly progress meeting. The Contractor shall be prepared to discuss questions, any items the Contractor needs clarification on and the upcoming coordination through the Engineer efforts, especially if coordination is required through the Engineer with a stakeholder(s). Any concerns or possible construction changes shall also be discussed. Weekly progress meetings with the Engineer are only required during the construction season.

Weekly Public Meetings with Stakeholders and the Public. Administer and hold meetings with stakeholders and the public at the time and place agreed to at the preconstruction conference. Keep all stakeholders informed of the next week's status of airport operational areas in relation to aircraft and ground traffic. Provide hardcopies of the detail graphics provided with that week's email update. Provide updated detail graphics as required. Reserve meeting topics with the Engineer in advance. The Contractor shall only share or discuss information that is pertinent to stakeholders and the travelling public attending or teleconferencing the weekly public meetings.

### **METHOD OF MEASUREMENT**

**310-4.1** This item will not be measured for payment.

### **BASIS OF PAYMENT**

**310-5.1** Payment will be made at the contract lump sum price as follows:

- a. A percentage of the lump sum amount, to be determined by the Engineer, will be paid as full compensation for providing accepted meeting locations and facilities with functional toll-free teleconferencing.
- b. The balance of the lump sum amount will be prorated over the anticipated active construction period for performance of the work as required. If anticipated construction period changes, the final increment will be held until final payment.

The lump sum amount shall be full compensation for all advertising and all necessary personnel, equipment, transportation, facilities and supplies required to perform the work as required. There shall be no additional compensation for additional advertisements or weekly meetings made necessary by Contractor's schedule changes.

Payment will be made under:

Item G310.010.0000      Public Updates – per lump sum

## ITEM G-700 TRAFFIC CONTROL FOR AIRPORTS

### DESCRIPTION

**700-1.1** Provide suitably equipped airport flagger(s) with no other assigned duties to monitor and control the Contractor's personnel and equipment crossing or occupying any portion of the Air Operations Area of the airport, as required under Section 80-04 Limitation of Operations. The airport flagger shall have no other assigned duties.

### REQUIREMENTS

**700-2.1** Furnish airport flaggers and all necessary equipment. Equip each airport flagger assigned to an aircraft operations area with a two-way radio that broadcasts and receives on the designated Common Traffic Advisory Frequency (CTAF) for the project airport as found in the Alaska Supplement of the United States Government Flight Information Publication. Provide each airport flagger with a two-way radio to contact construction equipment and other airport flaggers on the project. Equip each airport flagger for vehicular traffic control with a flagging paddle that conforms to the requirements of the Alaska Traffic Manual.

Locate each airport flagger at a position as shown on the Plans or as described in the Safety Plan, or at an alternate location as directed by the Engineer. Ensure that each airport flagger maintains their assigned post at all times. Airport flagger positions will be adjusted as conditions warrant.

### METHOD OF MEASUREMENT

**700-4.1** Airport flagger will be measured by the hour for the actual number of hours that each airport flagger performed as directed by the Engineer.

### BASIS OF PAYMENT

**700-5.1** Payment will be made at the contract unit price for each Airport Flagger per hour. The hourly rate for Airport Flagger is set at [\$\_.] per hour for this contract. The Engineer does not require a change order/directive for this pay item.

Payment will be made under:

Item G700.010.0000	Airport Flagger – per contingent sum
Item G700.020.0000	Airport Pilot Car – per hour
Item G700.030.0000	Airport Traffic Maintenance – per lump sum
Item G700.040.0000	Traffic Control for Airports – per contingent sum

## ITEM G-705 WATERING FOR DUST CONTROL

### DESCRIPTION

**705-1.1** Furnish all equipment and labor necessary to supply watering for dust control as required by the approved traffic control plans or as directed by the Engineer. This item is for dust control outside of the construction work area. Dust control within the work area is incidental to the contract and no separate payment will be made.

### REQUIREMENTS

**705-2.1 WATERING.** Furnish, haul, and place water for dust control as directed. Use water trucks capable of adjusting the rate of water flow from the operator's position. Distribute a light-water spray pumped from a tanker in a uniform spray pattern to cover a minimum 30 foot width in one pass and without causing erosion. Gravity flow will not be allowed. The Engineer will control water application.

If you take water from a lake, stream, or other natural water body, first obtain a water removal permit from the Alaska Department of Natural Resources (DNR). Comply with the Alaska Department of Fish and Game and/or DNR Office of Habitat Management and Permitting screening requirements for all water removal operations.

### METHOD OF MEASUREMENT

**705-4.1** By the 1,000 gallons (M-gallon) of water applied. The water will be measured by means of calibrated tanks or distributors, accurate water meters, or by weighing. If by weight, convert to gallons at 8.34 pounds per gallon. If by volume, convert to gallons at 7.48 gallons per cubic foot.

### BASIS OF PAYMENT

**705-5.1** The contract price includes all resources required to provide watering, as directed.

Payment will be made under:

Item G705.010.0000      Watering for Dust Control – per Mgal

## ITEM G-710 TRAFFIC CONTROL FOR ROADS, STREETS, AND HIGHWAYS

**710-1.1 DESCRIPTION.** Protect and control traffic during the contract. Furnish, erect, maintain, replace, clean, move and remove the highway traffic control devices required to ensure the public's safety. Perform all administrative responsibilities necessary to implement this work.

Maintain all public corridors affected by the work in a smooth and passable condition. Construct and maintain approaches, crossings, intersections, and other necessary features throughout the project for the life of the contract.

### 710-1.2 ACRONYMS AND DEFINITIONS.

**ATM.** When used in this section, ATM stands for the *Alaska Traffic Manual*, which is the MUTCD with the *Alaska Traffic Manual Supplement*.

**HIGHWAY.** A main direct road. Used throughout this section for the sake of brevity, the word "highway" also applies to roads and streets.

**HIGHWAY TRAFFIC CONTROL ZONE.** A portion of a construction project, haul route, utility work, or similar operation that affects traffic and requires highway traffic control to safely guide and protect motorists, pedestrians, bicyclists, or workers, outside of the AOA.

**HIGHWAY TRAFFIC CONTROL PLAN (TCP).** A drawing or drawings indicating the method or scheme for safety guiding and protecting motorists, pedestrians, bicyclists, and workers in a highway traffic control zone. The TCP depicts the highway traffic control devices and their placement and times of use.

**TRAFFIC.** The movement of vehicles, ATV's, equipment, pedestrians, and bicyclists through public corridors, construction areas, utility work, or similar operations.

**710-1.3 HIGHWAY TRAFFIC CONTROL PLAN.** Design and implement an approved TCP before beginning work within a highway traffic control zone.

The TCP includes, but is not limited to, signs, barricades, traffic cones, plastic safety fence, sequential arrow panels, portable changeable message board signs, special signs, warning lights, portable concrete barriers, crash cushions, highway flaggers, pilot cars, interim pavement markings, temporary lighting, temporary roadways and all other items required to direct traffic through or around the highway traffic control zone according to these Specifications and the ATM. Address in the TCPs, placement of highway traffic control devices, including location, spacing, size, mounting height and type. Include code designation, size, and legend per the ATM and the ASDS. Include longitudinal buffer space for the posted speed limit, according to Table 6C-2 of the ATM unless project conditions or geometric features prohibit including all or a portion of the buffer length.

When a TCP is included in the Plans, use it, modify it, or design an alternative TCP. All TCPs must include the following information:

- a. Project name and number.
- b. A designated TCP number and name on each page.
- c. For TCPs more than one page, each page must be numbered.
- d. The posted speed limit for each roadway.
- e. Existing striping width, lane width, and road surfacing.
- f. Construction lane widths, striping layout, and temporary pavement marker layout.
- g. Provisions for Pedestrian, Bicycle, and ADA travel through the work zone.

- h. Dates and times the TCP will be in effect and why it is being used.
- i. The Worksite Traffic Supervisor's signature certifying that all TCPs conform with the ATM and the Contract.
- j. The Project Superintendent's signature confirming the TCP is compatible with the work plan.
- k. The name(s) of the Worksite Traffic Supervisor, his/her alternate and their 24 hour telephone number(s).
- l. Signs to be used and the ASDS designation number and size.
- m. Location and spacing of all devices and signs.
- n. A plan to address any possible slopes, drop offs, paving joints, or similar temporary features that may occur during use of the TCP.
- o. For TCPs proposed to be used at night, note how the requirements will be met for the required lighting and retroreflective material.

TCPs submitted for approval without all the required information will be rejected. Allow 7 days for review of each TCP submittal. All required modifications to a TCP require a new submission and an additional 7 days for review.

A minor revision to a previously approved TCP during construction requires 48 hours for review and approval by the Engineer.

The TCPs, Plans, and Alaska Standard Plans show the minimum required number of highway traffic control devices. If unsafe conditions occur, the Engineer may require additional highway traffic control devices.

Use of oversize and overweight equipment in a highway traffic control zone must conform to an approved TCP, including all highway traffic control devices these operations require.

**710-1.4 WORKSITE TRAFFIC SUPERVISOR.** Provide a Worksite Traffic Supervisor responsible for maintaining 24-hour traffic operations.

- a. **Qualifications.** The Worksite Traffic Supervisor shall be knowledgeable and experienced regarding the requirements of the ATM and the implementation of those requirements. The Worksite Traffic Supervisor shall be familiar with the Plans, the Specifications, proposed operations, and is certified as one of the following:
  - (1) Traffic Control Supervisor, American Traffic Safety Services Association (ATSSA).
  - (2) Work Zone Temporary Traffic Control Technician, or Work Zone Safety Specialist, International Municipal Signal Association (IMSA).

Certify according to Form 25D-124 that the Worksite Traffic Supervisor has a minimum 4,000 hours of temporary traffic control work experience, is competent and capable, and has the authority to perform the duties and responsibilities in accordance with this section.

- Temporary traffic control work experience shall demonstrate an understanding of concepts, techniques, and practices in the installation and maintenance of traffic control devices, and skill in reading, interpreting, implementing, and modifying TCPs.
- Temporary traffic control work experience includes: flagging; installing traffic control devices in accordance with TCPs; monitoring traffic control devices and TCPs for correction.

- Temporary traffic control work experience is gained while serving as a Worksite Traffic Supervisor-in-training, temporary traffic control support personnel, and Flagger.
- Four thousand (4,000) hours of experience serving solely as a flagger does not satisfy these requirements.

Worksite Traffic Supervisors shall maintain current certification and be able to show their certification anytime they are on the project.

**b. Duties.**

- (1) Prepare the TCPs and public notices and coordinate highway traffic control operations between the Project Superintendent and the Engineer.
- (2) Physically inspect the condition and position of all highway traffic control devices used on the project at least twice each day and at approximately 12 hour intervals. Ensure that highway traffic control devices work properly, are clean and visible, and conform to the approved TCP. Complete and sign a detailed written report of each inspection within 24 hours. Use Traffic Control Daily Review Form 25D-104.
- (3) Supervise the repair or replacement of damaged or missing highway traffic control devices.
- (4) Review and anticipate highway traffic control needs. Make available proper highway traffic control devices necessary for safe and efficient traffic movement.
- (5) Review work areas, equipment storage, and traffic-safety material handling and storage.
- (6) Hold traffic safety meetings with superintendents, foremen, subcontractors, and others as appropriate before beginning construction, prior to implementing a new TCP, and as directed. Invite the Engineer to these meetings. Conduct monthly open house public meetings to discuss the TCP and construction phasing.
- (7) Supervise all highway traffic control workers, highway flaggers, and pilot car drivers.
- (8) Certify that all highway flaggers are certified as required by subsection 710-3.4d. Submit a copy of all highway flagger certifications to the Engineer.

- c. Authority.** The Worksite Traffic Supervisor shall have the Contractor's authority to stop work and implement immediate corrective action to unsafe traffic control, in locations where unsafe traffic control is present.

**MATERIALS**

**710-2.1** Provide highway traffic control devices meeting the following requirements:

- a. Signs.** Use signs, including sign supports that conform to Section P-661, the ATM, the ASDS, and ASTM D4956. Use Type VIII or Type IX fluorescent orange reflective background sheeting at any time.
- (1) **Construction Signs:** Regulatory, guide, or construction warning signs designated in the ASDS.
  - (2) **Permanent Construction Signs:** As designated on the Plans or an approved TCP.
  - (3) **Special Construction Signs:** All other signs are Special Construction Signs. Neatly mark the size of each sign on its back in 3-inch black numerals.

- b. **Portable Sign Supports.** Use wind-resistant sign supports with no external ballasting. Use sign supports that can vertically support a 48 X 48 inch highway traffic control sign at the height above the adjacent roadway surface required by the ATM.
- c. **Barricades and Vertical Panels.** Use barricades and vertical panel supports that conform to the ATM. Use Type III Barricades at least 8 feet long. Use retroreflective sheeting that meets ASTM D4956 Type II or III.
- d. **Portable Concrete Barriers.** Use portable concrete barriers that conform to the Contract. For each direction of highway traffic, equip each 12.5-foot section of barrier with at least two side-mounted retroreflective tabs placed approximately 6 to 8 feet apart, or a continuous 4-inch wide horizontal retroreflective stripe mounted 6 inches below the top of the barrier. Use yellow tabs or stripe when barriers are placed at centerline. Use white tabs or stripe when barriers are placed on the roadway shoulder. Use retroreflective sheeting that meets ASTM D4956 Type III, IV or V.
- e. **Warning Lights.** Use Type A (low intensity flashing), Type B (high intensity flashing) or Type C (steady burn) warning lights that conform to the ATM.
- f. **Drums.** Use plastic drums that conform to the requirements of the ATM. Use reflective sheeting that meets ASTM D4956 Type II or III.
- g. **Traffic Cones and Tubular Markers.** Use reflectorized traffic cones and tubular markers that conform to the requirements of the ATM. Use traffic cones and tubular markers at least 28 inches high. Use reflective sheeting that meets ASTM D4956 Type II or III.
- h. **Plastic Safety Fence.** Use 4 foot high construction orange fence manufactured by one of the following companies, or an approved equal:
  - (1) "Safety Fence" by Services and Materials Company, Inc., 2200 South "J" Street, Elwood, Indiana, 46036. Phone (800) 428-8185.
  - (2) "Flexible Safety Fencing" by Carsonite, 1301 Hot Springs Road, Carson City, Nevada, 89706. Phone (800) 648-7974.
  - (3) "Warning Barrier Fence" by Plastic Safety Systems, Inc. P.O. Box 20140, Cleveland, Ohio, 44120. Phone (800) 662-6338.
- i. **Flagger Paddles.** Use flagger paddles with 24 inches wide by 24 inches high sign panels, 8 inch Series C lettering (see ASDS for definition of Series C), and otherwise conform to the ATM. Use reflective sheeting that meets ASTM D4956 Type VIII or IX. Use background colors of fluorescent orange on one side and red on the other side.

**710-2.2 CRASHWORTHINESS.** Submit documentation that all highway traffic control devices conform to the requirements of National Cooperative Highway Research Program (NCHRP) Report 350 (Test Level 3) or Manual for Assessing Safety Hardware MASH 2016 (Test Level 3).

Temporary work zone devices manufactured after December 31, 2019 must have been successfully tested to the 2016 edition of MASH. Such devices manufactured on or before this date, and successfully tested to NCHRP 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives.

## **CONSTRUCTION METHODS**

**710-3.1 GENERAL CONSTRUCTION REQUIREMENTS.** Keep the work, and portions of the project affected by the work, in good condition to accommodate traffic safely. Provide and maintain highway traffic control devices and services inside and outside the project limits, day and night, to guide traffic safely.

Unless otherwise provided in this Section, keep all roadways, business accesses, and pedestrian facilities within the project limits open to traffic. Obtain the Engineer's approval before temporarily closing residential, commercial, or street approaches. Provide access through the project for emergency vehicles and school and transit buses. Properly sign and/or flag all locations where the traveling public must be redirected or stopped. Organize construction operations so the total of all construction related stoppages experienced by a vehicle traveling through the project does not exceed 20 minutes except when indicated otherwise in the Contract.

Stop equipment at all points of intersection with the traveling public unless an approved TCP shows otherwise.

Operate flood lighting at night according to the ATM. Adjust flood lighting so that it does not shine into oncoming traffic.

Provide and maintain safe routes for pedestrians and bicyclists through or around highway traffic control zones at all times, except when regulations prohibit pedestrians or bicyclists.

Immediately notify the Engineer of any traffic related accident that occurs within the project limits as soon as an employee, or a subcontractor becomes aware of the accident.

**710-3.2 ROADWAY CHARACTERISTICS DURING CONSTRUCTION.** Obtain an approved TCP before starting construction. Maintain a clear area with at least 2 feet between the edge of traveled way and the work area. Use barricades, traffic cones, or drums to delineate this area. Place highway traffic control devices on the work side of the clear area. Space them according to the ATM.

If maintaining traffic on an unpaved surface, provide a smooth and even surface that public traffic can use at all times. Properly crown the roadbed surface for drainage. Before beginning other grading operations, place sufficient fill at culverts and bridges to permit traffic to cross smoothly and unimpeded. Use part-width construction techniques when routing traffic through roadway cuts or over embankments under construction. Excavate the material or place it in layers. Alternate construction activities from one side to the other. Route traffic over the side opposite the one under construction.

Detour traffic when the Plans or an approved TCP allows it. Maintain detour routes so that traffic can proceed safely. When detours are no longer required, obliterate the detour. Topsoil and seed appropriate areas.

If two-way traffic can't be maintained on the existing roadway or detour, use half-width construction or a road closure if it is shown on an approved TCP. Make sure the TCP indicates closure duration and conditions. Schedule roadway closures to avoid delay school buses and peak-hour traffic. For road closures, post closure-start and road-reopen times at the closure site, within view of waiting traffic.

**710-3.3 PUBLIC NOTICE.** Give notice of major changes, delays, lane restrictions, or road closures to local officials and transportation organizations, including but not necessarily limited to:

- a. Alaska Trucking Association
- b. Alaska State Troopers
- c. Division of Measurement Standards
- d. Local Police Department
- e. Local Fire Department
- f. Local Government Traffic Engineer
- g. School and Transit Authorities

- h. Local Emergency Medical Services
- i. Local Media (newspapers, radio, television)
- j. Railroads (where applicable)
- k. U.S. Postal Service
- l. Major Tour Operators

**710-3.4 HIGHWAY TRAFFIC CONTROL DEVICES.** Before starting construction, erect permanent and temporary highway traffic control devices required by the approved TCPs. The Engineer will determine advisory speeds when necessary.

For lane closures on multilane roadways, use sequential arrow panels. During hours of darkness when required by the approved TCP use flashing warning lights to mark obstructions or hazards and steady-burn lights for channelization.

Use only one type of highway traffic control device in a continuous line of delineating devices, unless otherwise noted on an approved TCP. Use drums or Type II barricades for lane drop tapers.

During non-working hours and after completing a particular construction operation, remove all unnecessary highway traffic control devices. Store all unused highway traffic control devices in a designated storage area, which does not present a nuisance or visual distraction to traffic. If sign panels are post mounted and cannot be readily removed, cover them entirely with either metal or plywood sheeting. Completely cover signal heads with durable material that fully blocks the view of signal head and will not be damaged or removed by weather.

Keep signs, drums, barricades, and other devices clean at all times.

Use only highway traffic control devices that meet the requirements of the "Acceptable" category in ATSSA "Quality Guidelines for Temporary Traffic Control Devices" and meet crashworthiness requirements per Section 710-2.2.

Immediately replace any devices provided under this Section that are lost, stolen, destroyed, inoperable or deemed unacceptable while used on the project. Stock repair parts for each Temporary Crash Cushion used on the project. Repair damaged crash cushions within 24 hours.

Maintain pre-existing roadside safety hardware at an equivalent or better level than existed prior to project implementation until the progress of construction necessitates removing the hardware. All existing hazards that are currently protected with roadside safety hardware or new hazards which result from project improvements shall be protected or delineated as required in the plans, specifications, and approved TCPs until permanent roadside safety hardware is installed.

All items paid under this Section remain the property of the contractor, unless noted otherwise in the contract. Remove them after completing the project.

- a. **Embankments.** Install portable concrete or steel barrier, plastic drums, barricades, tubular markers, plastic safety fence, and cones as specified on the Plans or TCPs to delineate open trenches, ditches, other excavations and hazardous areas when they exist along the roadway for more than one continuous work shift.
- b. **Adjacent Travel Lane Paving.** When paving lifts are 2 inches or greater and adjacent travel lanes or paved shoulders are not paved to the same elevation before the end of the shift, install W8-11 (Uneven Lanes), W8-9 (Low Shoulder), W8-17 (Shoulder Drop-Off), W14-3 (No Passing Zone), R4-1 (Do Not Pass), R4-2 (Pass with Care), and W8-1 (Bump) signs as appropriate. Place additional signs every 1500 feet if the section is longer than ½ mile.

- c. **Fixed Objects and Construction Vehicles and Equipment Working On Or Next to the Traveled Way.** Do not park equipment in medians. Locate fixed objects at least 30 feet from the edge of traveled way. Fixed objects that exist prior to construction activity are not subject to this requirement unless the proposed temporary traffic routing moves the edge of traveled way closer to the pre-existing fixed object. Vehicles and other objects within parking lots in urban environments are considered preexisting fixed objects regardless of whether they are or are not present continuously throughout the day.

When worksite restrictions, land features, right of way limitations, environmental restrictions, construction phasing, or other construction conditions allow no practicable location meeting the preceding requirements, the Engineer may approve alternate locations for fixed objects. Alternate locations shall be as far as practicable from the edge of traveled way, the Engineer may verbally approve the alternate location. When the alternate location provides less than 15 feet separation, written approval is required.

When the Engineer determines a fixed object or fixed objects present unacceptable hazard, use drums or Type II barricades with flashing warning lights, or use portable concrete or steel barriers, or temporary crash cushion to delineate or shield the hazard, as approved by the Engineer.

- d. **Flagging.** Furnish trained and competent highway flaggers and all necessary equipment, including lighting of the highway flagger position during nighttime operations, to control traffic through the highway traffic control zone. The Engineer will approve each highway flagging operation before it begins and direct adjustments as conditions change.

Flaggers must be certified by one of the following:

- (1) Flagging Level I Certification by IMSA
- (2) Flagger Certification by ATSSA
- (3) Traffic Control Supervisor, ATSSA
- (4) Work Zone Safety Specialist, IMSA
- (5) ATSSA Flagging Instructor

Flaggers shall maintain current flagger certification. Flaggers must be able to show their flagger certification anytime they are on the project.

Highway flaggers must maintain their assigned flagging location at all times, unless another qualified highway flagger relieves them, or the approved TCP terminates the flagging requirements. Remove, fully cover, or lay down flagger signs when no highway flagger is present. Keep the highway flaggers' area free of encumbrances. Keep the flagger's vehicle well off the roadway and away from the flagging location so the flagger can be easily seen.

Provide approved equipment for two-way radio communications between highway flaggers when they are not in plain, unobstructed view of each other.

Obtain the Engineer's written approval before flagging signalized intersections. When flagging a signalized intersection, either turn off and cover the traffic signal or place it in the All-Red Flash mode. Coordinate changing traffic signal modes and turning off or turning on traffic signals with the agency responsible for signal maintenance and operation and the Engineer. Get their written approval in advance. Only uniformed police officers are permitted to direct traffic in an intersection with an operating traffic signal.

- e. **Watering.** Furnish, haul, and place water for dust control and pavement flushing, as directed. Use water trucks that can provide a high pressure water stream to flush the pavement and a light-

water spray to control dust. If the flushing operations contaminate or fill adjacent catch basins, clean and restore them to their original condition. This requirement includes sections of roadway off the project where flushing is required. The Engineer will control water application.

When taking water from a lake, stream, or other natural water body, first obtain a water removal permit from the Alaska Department of Natural Resources. Comply with the Alaska Department of Fish and Game screening requirements for all water removal operations.

**710-3.5 AUTHORITY OF THE ENGINEER.** The Engineer will provide written notice when conditions may adversely affect the traveling public's safety and/or convenience. The notice will state the defect(s), the corrective action(s) required, and the time required to complete such action(s). If corrective action(s) are not taken within the specified time, the Engineer will immediately close down the offending operations until the defect(s) are corrected. The Engineer may require outside forces to correct unsafe conditions. The cost of work by outside forces will be deducted from any monies due under the terms of this Contract.

**710-3.6 HIGHWAY TRAFFIC PRICE ADJUSTMENT.** A Highway Traffic Price Adjustment, under Item G-710c, will be assessed for unauthorized lane closures or reductions. Unauthorized lane reductions will be assessed as one full lane closure for each lane reduced without authorization.

Authorized lane closures and/or lane reductions are those shown in the Contract, an approved TCP, or authorized in writing.

Unauthorized lane reductions include unacceptable roadway, pedestrian walkway or route, and bicycle route or pathway surfaces, such as severe bumps, ruts, washboarding, potholes, excessive dust or mud, and non-conforming, or out of place highway traffic control devices. Failure to install temporary crash cushions or barriers, when required according to the contract or TCP, is also considered an unauthorized lane reduction. The Engineer will make the sole determination as to whether unauthorized lane reductions or closures are present.

Adjustment Rates are listed in Table 710-1. These rates are liquidated damages which represent highway user costs, based on Average Daily Traffic (ADT). The Engineer will use the rate shown for the current ADT for this project, as published in the Regional Traffic Volume Report prepared by the Department's Planning Section. Adjustment rates for unauthorized reduction or closure of each lane of pedestrian walkways or route, and bicycle route or pathway, are the same as for one full lane closure.

**TABLE 710-1  
ADJUSTMENT RATES**

<b>Published ADT</b>	<b>Dollars/Minute of Unauthorized Lane Reduction or Closure</b>
Less than 1,000	\$2.00
1,000 – 4,999	\$10.00
5,000 – 9,999	\$30.00
10,000+	\$40.00

**710-3.7 MAINTENANCE OF TRAFFIC DURING SUSPENSION OF WORK.** Approximately one month before work is suspended for the season, schedule a preliminary meeting with the Engineer and Maintenance and Operations to outline the work expected to be completed before shutdown. Schedule a field review with the Department for winter maintenance acceptance. At the field review the Engineer will prepare a punch list for implementation before acceptance.

To be relieved of winter maintenance responsibility, leave all roads with a smooth and even surface for public use at all times. Properly crown the roadbed surface for drainage and install adequate safety facilities. Make sure illumination and signals, including vehicle detectors, are in good working order.

After the project is accepted for winter maintenance and until ordered to resume construction operations, the Department is responsible for maintaining the facility. The Department will accept maintenance responsibility only for portions of the work that are open to the public, as determined by the Engineer. The Department will not accept maintenance responsibility for incomplete work adjacent to accepted roads. The contractor is responsible for maintaining all other portions of the work. The Engineer will issue a letter of "Acceptance for Winter Maintenance" that lists all portions of the work that the Department will maintain during a seasonal work suspension. The Contractor retains all contractually required maintenance responsibilities until receipt of this letter.

If the contractor suspends work due to unfavorable weather (other than seasonal) or due to failure to correct unsafe conditions, carry out Contract provisions, or carry out the Engineer's orders. All costs for highway traffic maintenance during the suspended period will be borne by the contractor.

When work is resumed, replace or renew any work or materials lost or damaged during temporary use. If the Department caused damage during winter suspension, payment will be made for repairs by unit pay item or in accord with GCP Subsection 90-05, Compensation for Extra Work. When the Engineer directs, remove any work or materials used in the temporary maintenance. Complete the project as though work has been continuous.

**710-3.8 CONSTRUCTION SEQUENCING.** The construction sequencing is detailed in these provisions, the Special Provisions, and the Plans. You may propose alternative construction sequencing.

Throughout the project, maintain the existing roadway configuration (such as the number of lanes and their respective widths) except for restrictions to traffic allowed in the Special Provisions or on the Plans, and addressed through approved TCPs. A restriction to traffic is any roadway surface condition, work operation, or highway traffic control that reduces the number of lanes or impedes traffic. Obtain an approved TCP before restricting traffic.

Obtain the local school bus schedule and coordinate your work to ensure the school buses are not delayed through the highway traffic control zone. Submit this plan, as a TCP, to the Engineer for approval before implementation.

**710-3.9 INTERIM PAVEMENT MARKINGS – RESERVED.**

**710-3.10 LIGHTING OF NIGHT WORK – RESERVED.**

**710-3.11 HIGH VISIBILITY GARMENTS.** Ensure all workers within project limits wear outer garments that are highly visible and comply with the following requirements:

- a. **Standards.** Use high visibility garments conforming to the requirements of ANSI/ISEA 107-2004, Class 2 for tops or Class E for bottoms, and Level 2 retroreflective material.
- b. **Labeling.** Use garments labeled in conformance with Section 11.2 of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010.
- c. **Tops.** Wear high visibility vests, jackets, or coverall tops at all times.
- d. **Bottoms.** Wear high visibility pants or coverall bottoms during nighttime work (sunset to sunrise). Worksite Traffic Supervisors, employees assigned to highway traffic control duties, and flaggers wear high visibility pants or coverall bottom at all times.
- e. **Outer Raingear.** Wear raingear tops and bottoms conforming to the requirements of this Subsection 710-3.11.
- f. **Exceptions.** When workers are inside an enclosed compartment of a vehicle, they are not required to wear high visibility garments.

- g. Condition.** Furnish and maintain all vests, jackets, coveralls, rain gear, hard hats, and other apparel in a neat, clean, and presentable condition. Maintain retroreflective material to Level 2 standards.
- h. Subsidiary.** Payment for high visibility garments for workers is subsidiary to other highway traffic contract items.

**710-3.12 OVERSIZE AND OVERWEIGHT VEHICLES.** Comply with the legal size and weight regulations of 17 AAC 25 and all restrictions of the *Administrative Permit Manual*, except when the Department waives the requirements.

The Engineer may waive the permit requirements of regulation 17 AAC 25 regarding oversize and overweight vehicles within the project limits when the contractor submits and follows an approved Highway TCP.

Permits shall be obtained from the Department's Division of Measurement Standards & Commercial Vehicle Enforcement, for movements of oversize and overweight equipment outside of the project limits, except when the Department waives the permit requirements outside of the project limits. Retain this permit for your records and submit a copy to the Engineer.

Submit a highway TCP for hauling operations from the material site(s) to the project. Include all the highway traffic control devices required for these operations in the highway TCP. Indicate the type, number and frequency of oversize and overweight hauling equipment.

The following items are required of oversize or overweight vehicles or equipment:

- a.** Truck and equipment headlights must be on at all times during vehicle use;
- b.** A roof mounted flashing or rotating amber beacon, visible from 360 degrees, must be on during vehicle use;
- c.** For overweight street legal vehicles, mount clearly visible oversize signs on front and rear of vehicle; and
- d.** For oversize equipment and/or overweight non-street legal equipment, mount 16" X 16" clean red/orange flags on the outboard points, in addition to clearly visible oversize signs on front and rear of equipment.

When oversize or overweight vehicles are used, add the following to the highway TCP:

- a.** Install and maintain orange plastic safety fence that separates the haul route from any adjacent school, business, residence, community center or public gathering place;
- b.** Furnish highway flaggers as specified by the highway TCP, and at additional locations where necessary, to control the haul route during all hauling operations. Coordinate their placement with the Engineer. Haul route highway flaggers will be in addition to airport flaggers required by FAA Advisory Circular 150/5370-2, and the CSPP;
- c.** Limit haul unit speed to 10 mph when passing through any developed area or significant hazard. The Engineer is sole judge of what constitutes a developed area or significant hazard;
- d.** Obey bridge load restrictions and all height restrictions on haul route;
- e.** Maintain the haul route in a smooth and dust free condition. Remove all haul debris from the roadway and the surroundings;

- f. When overweight loads are hauled over existing pavement, remove the existing pavement and replace with new pavement of similar material and equal thickness to old pavement, as a subsidiary cost, after the haul is finished;
- g. Hauler is responsible for the costs of repair for damage to the highway structures, including but not limited to the bridge railings, guardrail, light poles, signs, signal, highway traffic control devices, utilities, and mailboxes on the roadways;
- h. Immediately reinstall all signs, signals, guardrail and other safety features that were removed for the haul; and
- i. If mailboxes were removed for the haul, reinstall mailboxes by the next day after the haul.
- j. Maintain a minimum 12 foot lateral separation between the nonstreet legal vehicles and the motoring public. Specify the highway traffic control devices required for these operations in the highway TCP.

### METHOD OF MEASUREMENT

**710-4.1** See Section 90 and as follows. Quantities will not be measured during winter suspension of work.

- a. **Highway Traffic Control Device Items.** By the number of units in the Highway Traffic Control Rate Schedule, under item G-710d Highway Traffic Control that are installed, accepted, and operational. Incomplete or unsatisfactory devices will not be measured. Special Construction Signs are measured by the total area of legend-bearing sign panel, as determined under subsection P-661-4.1. Items measured by the day are for each item per 24-hour period.
- b. **Highway Flagger.** By the number of approved hours, supported by certified payroll.
- c. **Watering.** By the 1,000 gallons (M-Gallon) of water applied. The Engineer may specify measurement by weight or volume. If by weight, convert to gallons at 8.34 pounds per gallon. If by volume, convert to gallons at 7.48 gallons per cubic foot.
- d. **Highway Traffic Price Adjustment.** By each minute of unauthorized lane closure or lane reduction, per lane, measured to the nearest minute. The Engineer will determine whether the roadway is opened to full unimpeded use by the traveling public.
- e. **Highway Traffic Control.** By the units specified.
- f. **Plastic Safety Fence.** By the linear foot, as placed, to protect or channelize pedestrian traffic as shown on an approved TCP. Any adjustments in configuration of the fence at the same location that does not result in an increased amount of fence is not measured. Opening and closing the fence to gain access to and from the worksite is not measured.
- g. **Temporary Guardrail.** By the linear foot, including end treatments, as shown on an approved TCP.

### BASIS OF PAYMENT

**710-5.1** Use the following table for unit rates of pay for Contingent Sum:

#### HIGHWAY TRAFFIC CONTROL RATE SCHEDULE

Traffic Control Rate Schedule (03/2019)	Pay Unit	Unit Rate
Construction Signs	Each/Day	\$6.50
Special Construction Signs	Sq Ft.	\$28.00

<b>Traffic Control Rate Schedule (03/2019)</b>	<b>Pay Unit</b>	<b>Unit Rate</b>
Type II Barricade	Each/Day	\$3.30
Type III Barricade	Each/Day	\$11.00
Traffic Cone or Tubular Marker	Each/Day	\$1.10
Drums	Each/Day	\$3.30
Temporary Guardrail	Lineal Foot	\$25.00
Portable Concrete or Steel F Shape Barrier (12.5 foot standard length or \$8/foot)	Each	\$100.00
Temporary Crash Cushion / non-redirective gated water barrier (all required per end)	Each	\$2,500.00
Temporary Crash Cushion / Water filled Barrels (all required per end)	Each	\$3,285.00
Temporary Crash Cushion / Sand filled Barrels or Barrier (all required per end)	Each	\$4,325.00
Temporary Crash Cushion / Redirective	Each	\$9,230.00
Plastic Safety Fence	Foot	\$1.00
Temporary Sidewalk Surfacing	Sq Ft	\$2.00
Flexible Markers (Flat Whip, Reflective)	Each	\$60.00
<b>Electronic Boards, Panels, and Signals</b>		
Sequential Arrow Panel	Each/Day	\$36.00
Portable Changeable Message Board Sign	Calendar Day	\$130.00
Portable Traffic Signals (two)	Each /Day	361.00
<b>Cars and Trucks w/driver</b>		
Pilot Car (4x2 ½ ton truck, or any car)	Hour	\$72.00
Watering – up to 4900 gallon	M-Gallon	\$28.00
Watering Truck - more than 4900 gallon	M-Gallon	\$21.00
Street Sweeping (Regenerative Sweeper, Vacuum Sweeper, Mechanical or Power Broom with vacuum)	Hour	\$214.00
40,000 GVW Truck with Crash Attenuator	Hour	\$162.00
<b>Interim Pavement Markings</b>		
Painted Markings	Lineal Foot	\$0.30
Preformed Pavement Marking Tape (removable or non-removable)	Lineal Foot	\$1.75
Temporary Raised Pavement Markings	Each	\$1.00
Word or Symbol Markings	Each	\$40.00
Temporary Cover Markings	Lineal Foot	\$4.00
Removal of Pavement Markings	Lineal Foot	1.25

- a. **Highway Traffic Maintenance.** The contract price includes all resources required to provide the Worksite Traffic Supervisor, all required TCPs and public notices, monthly open house meetings, the CSPP, and the maintenance of all roadways, approaches, crossings, intersections and pedestrian and bicycle facilities, as required. This item also includes any Highway Traffic Control Devices required but not shown on the bid schedule.

Items required by the Contract that are not listed on the bid schedule or not included in other items are subsidiary to Item G-710a Highway Traffic Maintenance, except Highway Traffic Price Adjustment.

- b. **Highway Traffic Control Device Items.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to provide, install, maintain, move, and remove the specified devices. Warning lights, vertical panels, and sign supports required for highway traffic control devices are subsidiary.
- c. **Highway Flagger.** The contract price includes all required labor, radios, flagger paddles, and transportation to and from the worksite. The Engineer will pay for item G-710b Highway Flagger at the contract unit price for each Highway Flagger per hour. The hourly rate for Highway Flagger is set at \$\_\_\_\_ per hour for this contract. The Engineer does not require a change order/directive for this pay item.
- d. **Watering.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to provide watering, as directed.
- e. **Highway Traffic Price Adjustment.** If Item G-710c, Highway Traffic Price Adjustment, is shown on the bid schedule, the total value of this contract will be adjusted, for unauthorized lane closures or lane reductions at the rate stated as a pay deduction.
- f. **Highway Traffic Control.** Payment for Item G-710d Highway Traffic Control will be made at the unit rate value contained in the Highway Traffic Control Rate Schedule for the accepted units of highway traffic control devices. The Engineer does not require a change order/directive for this pay item.
- g. **Plastic Safety Fence.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to install, maintain, and remove the fence.
- h. **Temporary Sidewalk Surfacing.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to construct, maintain, and remove the surfacing.
- i. **Temporary Guardrail.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to construct, maintain, and remove the guardrail.

Payment will be made under:

Item G710.010.0000	Highway Traffic Maintenance – per lump sum
Item G710.020.0000	Highway Flagger – per contingent sum
Item G710.030.0000	Highway Traffic Price Adjustment – per contingent sum
Item G710.040.0000	Highway Traffic Control – per contingent sum

## **ITEM G-715 WILDLIFE MONITORING**

### **DESCRIPTION**

**715-1.1** Comply with the Bald Eagle Protection Act in accordance with U.S. Fish and Wildlife Service (USF&WS) requirements. Engage a professional services contractor to provide a basic survey of active eagle nests within the project vicinity. If active eagle nests are discovered in the project vicinity, monitor eagle activity at nests during construction in accordance with this section and GCP Section 80. At the preconstruction conference, provide the names and qualifications of the professional services contract manager and the on-site eagle surveyor and monitor.

### **REQUIREMENTS**

**715-2.1** An eagle surveyor will conduct an eagle survey to scan for eagle nests in the project area and determine if the nests are active. If active nests are found, provide a monitor to conduct eagle monitoring with a video camera equipped with a minimum 10 power optical zoom lens to record nest activity.

Provide an on-site eagle surveyor and monitor that are employed by and report directly to the professional services contract manager. The surveyor and the monitor are trained by the professional services contract manager (or another representative with the same qualifications) in the techniques of surveying, monitoring and observing eagles. The professional services contract manager will prepare an eagle monitoring plan in conjunction with the contractors work plan when the eagle monitoring plan restricts work areas or work periods.

Provide a professional services contract manager with the following qualifications:

- a. Bachelor of Science degree in biology, environmental science or ecology and presently working in that profession.
- b. Two years experience surveying eagle nests, monitoring and observing eagles or other birds of prey or studying their habitat.

### **METHOD OF MEASUREMENT**

**715-4.1** Subsection 90-05 and in the manner specified in the directive authorizing the work.

### **BASIS OF PAYMENT**

**715-5.1** Subsection 90-05 and paid for as specified in the directive authorizing the work.

Payment will be made under:

Item G715.010.0000	Eagle Survey – per contingent sum
Item G715.020.0000	Eagle Monitoring – per contingent sum
Item G715.030.0000	Wildlife Monitoring – per contingent sum