STANDARD MODIFICATION **3/15/06**
E 29

SECTION 643

TRAFFIC MAINTENANCE

643-2.01 MATERIALS. *Under Item 16. Flagger Paddles, delete last sentence and replace with:* Use reflective sheeting that meets AASHTO M 268 Type VIII or IX. Use background colors of fluorescent orange on one side and red on the other side.

643-3.01 GENERAL CONSTRUCTION REQUIREMENTS. *Add the following:*
Immediately notify the Engineer of any traffic related accident that occurs within the project limits as soon as you, an employee, or a subcontractor becomes aware of the accident.

643-3.04 TRAFFIC CONTROL DEVICES. *In the sixth paragraph and also in Item 4.b., delete:* "ATTSA" *and replace with:* ATSSA (American Traffic Safety Services Association)

Add the following new Subsection:
643-3.11 HIGH VISIBILITY GARMENTS. Ensure all workers within project limits wear outer garments that are highly visible and comply with the following requirements:

1. Tops.
   Wear fluorescent orange-red vests, jackets, or coverall tops at all times. Furnish each vest, jacket, and coverall top with at least one 360-degree horizontal retroreflective band around the torso; and with two vertical retroreflective bands that begin at the horizontal band or lower in front, reach over the shoulder, and end at the horizontal band or lower in back. Furnish each jacket and coverall top with two horizontal retroreflective bands on each sleeve; one above and one below the elbow.

2. Bottoms.
   Wear fluorescent orange-red pants or coverall bottom during night work (sunset to sunrise). Worksite traffic supervisors, employees assigned to traffic control duties, and flaggers wear fluorescent orange-red pants or coverall bottom at all times. Furnish each pants or coverall bottom with two horizontal retroreflective bands on each leg.

3. Raingear.
   Raingear tops and bottoms, when worn as the outer visible garment, conform to the requirements listed in this Subsection 643-3.11.

4. Exceptions.
   When workers are inside an enclosed compartment of a vehicle, they are not required to wear high visibility garments.

5. Standards.
   All high visibility garments conform to the requirements of ANSI/ISEA 107-2004, Class 2 for tops or Class E for bottoms, and Level 2 retroreflective material.

   Retroreflective bands are made of material conforming to either:
   a. A two inch wide strip, fluorescent yellow-green color, made of retroreflective microprisms; or
   b. A two inch wide strip, silver color, made of retroreflective lenses bonded to a durable cloth backing; and on two long edges apply one inch wide strips, fluorescent yellow-green color, made of durable cloth material. Total width of band is 4 inches.

6. Labeling.
   Garments are labeled in conformance with Section 11.2 of ANSI/ISEA 107-2004; except you may use garments labeled in conformance with ANSI/ISEA 107-1999 until 1/1/08.

7. 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.

643-4.01 Method of Measurement. *Add the following:*
Payment for high visibility garments for workers is subsidiary to other items.

STANDARD MODIFICATION **3/15/06**
E 30

SECTION 701

HYDRAULIC CEMENT

701-2.03 GROUT. *Add to end of last sentence:* from specimens made in accordance with ATM 507.

STANDARD MODIFICATION **3/15/06**
E 31

SECTION 710

FENCE AND GUARDRAIL

710-2.03 CHAIN LINK FABRIC. *Add to parentheses in first sentence:* (Class C or D coating)

SPECIAL PROVISION **3/15/06**
ES 14

SECTION 643

TRAFFIC MAINTENANCE

643-1.01 DESCRIPTION. *Add the following as a third paragraph:*
Illuminate construction activities listed in Table 643-2 during hours of night work on roads open to the public within project limits.

643-1.02 DEFINITIONS. *Add the following paragraphs after paragraph titled "Construction Phasing Plan":*

Balloon Light: Light surrounding by a balloon-like enclosure kept inflated by pressurized air or helium, and producing uniform light through 360 horizontal degrees. The top half of the balloon enclosure shall be constructed of an opaque material.

Night Work: Work occurring between sunset and sunrise on all days except the "No Lighting Required" period shown in the table below:

Latitude (degrees)	No Lighting Required		Nearby Cities
	Start	End	
< 61	Lighting Required All Year		Everything South of Hope
61	June 11	July 1	Anchorage, Valdez, Girdwood
62	June 2	July 13	Wasilla, Palmer, Glennallen, Talkeetna
63	May 27	July 17	Cantwell, Paxson, McGrath
64	May 22	July 21	Tok, Delta, Nome
65	May 18	July 25	Fairbanks
66	May 14	July 29	Circle City
67	May 10	August 2	Coldfoot, Kotzebue
68	May 7	August 6	Galbraith Lake
69	May 3	August 9	Happy Valley
70	April 30	August 12	Deadhorse
71	April 27	August 15	Barrow
72	April 24	August 19	

643-1.04 WORKSITE TRAFFIC SUPERVISOR. *Add the following to Item 2. Duties:*
i. Supervise lighting of Night Work.

Add the following new Subsection:
643-3.10 LIGHTING OF NIGHT WORK
Illuminate the night work areas specified in Table 643-2 to the light levels specified.

Table 643-2 does not provide a comprehensive list of operations that require lighting. Provide lighting for other operations when necessary.

Table 643-2 Night Work Illumination Level and Area of Coverage	
Type of Work or Equipment	**Lighting Configuration**
Paving, Milling, Striping, Pavement Marking Removal, Rumble Strip Installation	At least 2 machine-mounted balloon lights with a cumulative wattage of at least 4000 watts. Provide additional lights or wattage if necessary to provide complete coverage.
Rolling, pavement sweeping	At least 4 sealed beam halogen lamps in the front and four in the back. Each should be at least 55 watts.
Flagging	Two balloon lights of at least 2000 watts each located within 30 feet of the normal flagger location. Locate one on the right side of the road beyond the flagger and the other on the left side of the road in front of the flagger.
Truck Crossings (meaning where haul vehicles cross or enter a road): 1) with roads with ADTs over 10,000 or 2) that are controlled by portable traffic signals or flaggers	Two balloon lights of at least 2000 watts each, located on the main road, one on the far right side of the intersection, the other on the near left. Locate lights within 30 feet of the edges of the side street. If there is a flagger at the crossing, locate the lights to also meet the requirements for flagging.

Use balloon lighting as the main light sources. Do not use floodlights without prior approval by the Engineer. When approved, install floodlighting in a manner that minimizes glare for motorists, workers, and residents living along the roadway. Locate, aim, louver, and/or shield light sources to achieve this goal.

The Engineer shall be the sole judge of when glare is unacceptable, either for traffic or for adjoining residences. When notified of unacceptable glare, modify the lighting system to eliminate it.

If the Contractor fails to provide required lighting equipment or provides lighting that creates unacceptable glare at any time, the Contractor shall cease the operation that requires illumination until the condition is corrected.

Lighting equipment shall be in good operating condition and in compliance with applicable OSHA, NEC, and NEMA codes.

Provide suitable brackets and hardware to mount lighting fixtures and generators on machines and equipment. Design mountings so lights can be aimed and positioned as necessary to reduce glare. Locate mounting brackets and fixtures so they don't interfere with the equipment operator or overhead structures. Connect fixtures securely in a manner that minimizes vibration.

Ensure ground, trailer, and equipment-mounted light towers or poles are sturdy and freestanding without the aid of guy wires. Towers shall be capable of being moved as necessary to keep pace with the construction operation. Position ground and trailer-mounted towers and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment.

Raise trailer or equipment mounted lights to maximum height, except do not exceed the clearance required for overhead objects such as overhead signals, overhead signs, trees, aerial utilities, or bridges. Aim and adjust lights to provide the required light levels. Provide uniform illumination on the hopper, auger, and screed areas of pavers. Illuminate the operator's controls on all machines uniformly.

Furnish each side of non-street legal equipment with a minimum of 75 square inches high intensity retroreflective sheeting in each corner, so at least 150 square inches of sheeting is visible from each direction. Provide red sheeting on the rear of the equipment and yellow sheeting elsewhere.

Existing street and highway lighting and conventional vehicle headlights do not eliminate the need for the Contractor to provide lighting meeting the requirements of Table 643-2.

Provide sufficient fuel, spare lamps, spare generators, and qualified personnel to ensure that all required lights operate continuously during nighttime operations. Ensure generators have fuel tanks of sufficient capacity to permit operation of the lighting system for a minimum of 12 hours. In the event of any failure of the lighting system, discontinue the operation that requires illumination until the required level and quality of illumination is restored.

Maintain a supply of at least twenty emergency flares for use in the event of emergency or unanticipated situations. Comply with local noise ordinances.

Install all post-mounted electroliers located within the clear zone, on NCHRP 350-compliant breakaway bases.

643-5.01 BASIS OF PAYMENT. *Add the following:*

16. Work Zone Illumination. Payment for work zone illumination and any required adjustments to work zone illumination is subsidiary to other items.