

**DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01110 GENERAL REQUIREMENTS**

PART 1: GENERAL

1.1 LOCATION AND PLANS

The location of the work is the Chehalis-Centralia Airport. A location map is shown on the cover sheet of the contract plans. The contract plans for this project consist of five (5) sheets entitled 2010 Runway Re-Striping Project.

1.2 AIRPORT SECURITY

During the course of the contract, the contractor shall be responsible for maintaining security against unauthorized access to the airport.

The contractor shall be fully responsible for compliance by himself and all of his employees with the airport security program and following regulations and orders of the airport management. These regulations may affect identification of employees, movement around the airport, parking, entry, and other circumstances affecting the safety or protection of persons or property.

For the purpose and intent of these regulations, air operations area is constructed to mean any area used or intended to be used for take-offs, landing, or surface maneuvering of aircraft, and all other areas restricted to public access on the field. Work boundaries within the air operations area shall be established as shown on the drawings. Only contractor's employees are permitted in the work sites.

The contractor must enter and exit the air operations area only through the haul routes shown on the Construction Site & Safety Plan. Deliveries to work sites will be controlled by the contractor.

Within the air operations area, all equipment, vehicle, and personnel travel shall be restricted to designated work sites.

Only vehicles used for construction purposes shall enter the air operations area. Contractor personnel shall park their personal vehicles within a designated staging area.

All trucks and construction equipment shall be equipped with FAA approved flags or an amber flashing light.

In the event of an emergency, men and equipment shall move immediately to the staging area.

1.3 LAYOUT OF THE WORK

The contractor is responsible for construction surveying other than listed in Section 01406. The contractor should refer to Section 01406 for specific requirements. All staking and surveying not specifically listed in this Section 01406 will be the responsibility of the contractor. All grade checking and transferring of lines and grades from the engineer's stakes will be the contractor's responsibility.

1.4 COMPLETION TIME

All items of contract work shall be substantially complete within four working days.

1.5 ENVIRONMENTAL CODES AND REGULATIONS

The contractor shall comply with provisions of Federal, State and local statutes, ordinances and regulations dealing with the prevention of environmental pollution and the preservation of natural resources that affect the project.

If the contractor must undertake additional work due the enactment of new or the amendment of existing statutes, ordinances and regulations dealing with the prevention of the successful bid, the owner will issue a supplemental agreement setting forth the additional work that must be undertaken. The supplemental agreement shall not invalidate the contract and there shall be, in addition to a reasonable extension of contract time, if necessary, a reasonable adjustment in the contract price to compensate the successful bidder for all costs and expenses incurred, including overhead and profits, as a result of the additional work.

1.6 INSPECTION AND TESTING

All tests called for in the specifications or deemed necessary by the engineer will be performed by the engineer except when indicated otherwise in the specifications. The engineer will perform quality assurance testing when, in the opinion of the contractor, the work area to be tested is prepared and will meet the required specifications. Contractor shall schedule testing at least 24 hours in advance of when he is ready for the test. In the event test results do not meet the specifications, any cost for re-testing as may be required by the engineer shall be at the contractor's expense, charged at the rate established in the engineer's standard fee schedule.

1.7 CONTRACTOR'S STAGING AREA AND PLANT SITE

An area will be set aside on the airport property for the contractor's use as a staging area for men, equipment, and materials. The contractor shall obtain all necessary building permits and operating licenses from local governmental agencies. The engineer will define the actual location in the field. The contractor may install his own security fence. The area shall be restored to its original condition at the conclusion of the work.

1.8 DISPOSAL OF WASTE MATERIAL

Waste asphaltic concrete, aggregate, and earthen material shall be wasted off-airport at the contractor's expense unless designated otherwise. Disposal of waste materials shall be in accordance with governing agency safety and health requirements. Disposal sites shall be smooth graded and drain properly at the completion of the contractor's operations.

1.9 SITE INVESTIGATION AND REPRESENTATION

The contractor acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this contract.

The contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site.

The contractor warrants that as a result of his examination and investigation of all the aforesaid data that he can perform the work in a good and workmanlike manner and to the satisfaction of the owner. The owner assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this contract, unless (1) such representations are expressly stated in the contract, and (2) the contract expressly provides that the responsibility therefore is assumed by the owner. Representations for which liability is not expressly assumed by the owner in the contract shall be deemed only for the information of the contractor.

1.10 INFORMATION ON SITE CONDITIONS

All information obtained by the owner regarding site conditions, subsurface information, ground water elevations, existing construction of site facilities as applicable, and similar data will be available for inspection at the airport office upon request. Such information is offered as supplementary information only. The owner does not assume any responsibility for the completeness or interpretation of such supplementary information.

1.11 SUBSURFACE AND SITE INFORMATION

Information derived from inspection of test results, of topographic maps, or from plans showing location of utilities and structures will not in any way relieve the contractor from any risk, or from properly examining the site and making such additional investigations as he may elect, or from properly fulfilling all the terms of the contract documents.

The submission of a proposal shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished, and as to the requirements of the contract documents.

1.12 UNDERGROUND UTILITIES

Known utilities and structures expected to be adjacent to or encountered in the work are shown on the plans. It is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the contractor only, and no responsibility is assumed by the owner for their accuracy or completeness.

1.13 FIRE PREVENTION AND PROTECTION

The contractor shall perform all work in a fire-safe manner. The contractor shall comply with applicable local and State fire prevention regulations.

1.14 TEMPORARY WATER

No potable water supply is immediately available at the designated contractor's staging area and plant site. The contractor shall make his own arrangements for obtaining water and pay all costs for same.

1.15 TEMPORARY ELECTRIC POWER

No electric power is immediately available at the designated contractor's staging area and plant site. The contractor shall make arrangements for electric power for use during the construction period until final acceptance by the owner, and pay all costs for same.

1.16 SANITARY FACILITIES

The contractor shall provide and maintain sanitary facilities for his employees and his subcontractor's employees that will comply with the regulations of the local and State departments of health and as directed by the engineer.

PART 2: EXECUTION

2.1 SITE RESTORATION AND CLEAN UP

Upon completion of the project, all areas used by the contractor in connection with the work shall be properly cleared of all temporary structures, rubbish, and waste materials and properly graded to drain and blend in with the abutting property. Any grass areas disturbed are to be graded flat, raked of rocks greater than ¾" diameter, and hydroseeded.

2.2 HAUL ROUTES AND MAINTENANCE

The contractor shall abide by prevailing legal load limit regulations when hauling over city, state or county roads. The contractor shall perform all necessary maintenance of haul routes during construction and shall perform all work as necessary to restore the routes used by his equipment to their original condition at the conclusion of construction. New construction haul roads shall be obliterated and original vegetation re-established. Existing roadways, runways, and taxiways shall be patched or overlaid as necessary to restore them. The contractor shall vary their haul routes across airfield pavements to protect them from damage caused by over use.

Unsurfaced haul roads shall be sprinkled with water as necessary to prevent dust diffusion during the course of the work. All maintenance and restoration work shall be completed to the engineer's satisfaction before final payment is awarded. No direct payment will be made for this work.

2.3 RESPONSIBILITY FOR DAMAGE TO EXISTING STRUCTURES

Where any existing structures or facilities which are intended to remain are damaged by the contractor during demolition or construction, the contractor shall promptly repair or replace the damaged portion or facility at no additional cost to the Owner.

2.4 STORAGE OF MATERIALS

Materials shall be so stored as to insure the preservation of their quality and fitness of the work. When considered necessary, they shall be placed on wooden platforms or other hard, clean surfaces, and not on the ground, and/or they shall be placed under cover. Stored materials shall be located so as to facilitate prompt inspection. Private property shall not be used for storage purposes without the written permission of the owner or lessees.

2.5 CLEAN UP

The contractor shall at all times during the work keep the premises clean and orderly. He shall promptly remove all waste materials and rubbish. All directions from the engineer and other authorized public officials having jurisdiction over health and safety shall be obeyed. Areas to be opened up to aircraft operations shall be swept thoroughly clean with power broom equipment. Any debris resisting sweeping shall be removed by hand labor or other suitable means.

Upon completion of the work, all materials, equipment, and appurtenances not required, as a part of, or appurtenant to, the completed structure or facility shall be completely removed from the owner's property.

2.6 WORK PROGRESS SCHEDULE

- A. Scope: The work specified in this subsection includes planning, scheduling, and reporting that is required to be performed by the contractor.
- B. Method: A critical path or bar graph type schedule shall be submitted to the engineer for review and approval by the apparent low bidder within five (5) calendar days after Notice of Award. When the schedule has been approved, the contractor shall submit five (5) copies of it, one of which shall be approved and signed by the engineer and returned to the contractor.
- C. Schedule Requirements: Distinct items of contract work shall be defined and separated on the schedule. As a minimum, the work items shall include each contract pay item, mobilization, de-mobilization, and cleanup. Pay items that are partially subcontracted shall be split up to distinctly show the subcontracted work. These items of work shall be plotted on a graph with calendar days duration as a horizontal reference. Anticipated start and finish dates for each work stage and

for each of the work items within a stage, shall be shown. The project name, the contractor's name, and the date of the schedule submittal shall be clearly shown on the submittal.

END OF SECTION 01110

DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01115 CONSTRUCTION OPERATION PLAN

PART 1: GENERAL

1.1 SCOPE

This specification outlines safety procedures and regulations to be followed by the Contractor during the course of this work. Construction operations plans are provided in the contract plans as the "Construction Site and Safety Plan" and/or "Construction Phasing Plan". The work item "Temporary Flagging, Marking and Signing" shall consist of furnishing, installing, and removing temporary marking, signing, lighting, and barricades required during the course of this work. It shall also include furnishing sufficient flaggers for traffic control. All work shall be in conformance with F.A.A. AC 150/5370-2E "Operational Safety on Airports During Construction," the "Manual of Uniform Traffic Control," and WSDOT Standard Specifications for road, bridge, and municipal construction.

The construction operations plan has been developed to mitigate the adverse impacts of construction on aeronautical operations on the airport. Strict adherence to the provisions of the construction operations plan by all personnel assigned to or visiting the construction site is mandatory for all construction projects. In the event contractor activities are not in conformance with the provisions of the construction operations plan, the contractor shall immediately cease those operations involved in the violation of the provisions of the construction operations plan and conduct a safety meeting. The owner may direct the contractor, in writing to immediately cease those operations involved in the violation of the provisions of the construction operations plan. The contractor shall not resume construction operations until an appropriate action is taken as determined by the Owner.

In the event that construction activities are found to not be in conformance with the provisions of the Construction Operations Plan, the resident engineer will direct the Contractor to take the appropriate action. The goal is to prevent accidents. The plans shall be continually reviewed and adjusted at the weekly safety meetings with input from various users during the course of the project. Changes to the Contract shall be accomplished by a change order. All changes are to be coordinated with the FAA Airport District Office.

1.2 GENERAL SAFETY REQUIREMENTS

During performance of this contract, the airport runways, taxiways, and aircraft parking aprons shall remain in use by aircraft to the maximum extent possible, CONSISTENT WITH CONTINUAL SAFETY. Aircraft use of areas near the Contractors work will be controlled to minimize disturbance to the Contractor's operation. The Contractor shall not allow employees, subcontractors, suppliers, or any other unauthorized person to enter or remain in any airport area, which would be hazardous to persons or to aircraft operations.

1.3 CONTRACTOR'S RESPONSIBILITY FOR CONSTRUCTION AND FACILITIES MAINTENANCE

- A. Be aware of the types of hazards and marginal conditions identified in F.A.A. AC 150/5370-2E "Operational Safety on Airports During Construction."
- B. Be aware of and conduct activities so as not to violate any safety standard in F.A.A. AC 150/5370-2E "Operational Safety on Airports During Construction."
- C. Inspect all Contractor work, construction, and storage areas as often as necessary to be aware of conditions, and
- D. Promptly take all steps needed to prevent/remedy any unsafe or potentially unsafe conditions/activities discovered.

- E. Before commencement of construction/maintenance activity, Contractor shall coordinate with the Engineer to give notice (using the Notice to Airmen {NOTAM} system) of completion of construction/maintenance.
- F. Upon completion of work and return of all such areas to standard conditions, Contractor shall coordinate with the Engineer to issue notice (using the NOTAM system) of completion of construction/maintenance.

PART 2: PRODUCTS

2.1 VEHICLE AND EQUIPMENT MARKINGS

All trucks and construction equipment shall be equipped with FAA approved flags or an amber flashing light. Contractor shall be responsible for providing these items

PART 3: EXECUTION

3.1 CONSTRUCTION AND MAINTENANCE

A. GENERAL

Construction/maintenance activity may not commence prior to issuance of a NOTAM. The Contractor shall advise the Engineer two (2) days in advance of the planned commencement of construction/maintenance activity so a NOTAM can be issued and shall not commence such activity until advised by the Engineer. Upon completion of work to the satisfaction of the Engineer, the NOTAM will be canceled. No further work in affected areas will be permitted.

B. RUNWAY SIDES

If an appropriate NOTAM has been issued, construction (using equipment under 10 feet tall) is permissible as close as the following distances from the centerline of runway indicated:

SEE CONSTRUCTION OPERATION PLAN DRAWING C3

C. RUNWAY ENDS

If appropriate NOTAM has been issued, construction activity is permissible off the ends of the runway indicated below provided at least the indicated minimum safety area and indicated unobstructed approach slope are maintained:

<u>Runway End Number</u>	<u>Minimum Safety Area Behind Threshold</u>	<u>Minimum Unobstructed Approach Slope</u>
34	300 Feet	20:1 to 200' behind threshold
16	300 Feet	20:1 to 200' behind threshold

Construction activities which reduce the available behind-threshold safety area below 200 feet, or which would penetrate or be above the indicated minimum unobstructed approach slope are prohibited unless temporarily relocated threshold markings are placed and the activities have been approved by the Engineer.

D. TAXIWAYS AND APRONS This section deleted.

E. EXCAVATION AND TRENCHES This section deleted.

F. **STOCKPILED MATERIAL** This section deleted.

G. **ADDITIONAL CONSTRUCTION LIMITATIONS**

Open flame welding or torch-cutting operations should be prohibited unless adequate fire and safety precautions are provided and have been approved by the airport operator.

Open trenches, excavation, and stockpiled material at the construction site should be prominently marked with orange flags and lighted with flashing red light units (acceptable to the airport operator and the F.A.A.) during hours of restricted visibility and/or darkness. Under no circumstances are flare pots to be near aircraft turning areas.

3.2 BARRICADES AND CLOSURES

A. Permanently Closed Runways and Taxiways: This section deleted.

B. Temporarily Closed Runways and Taxiways: Temporarily closed runways are treated in the same manner as permanently closed runways, except runway markings are not obliterated. Rather, crosses are usually of the temporary type (constructed of material such as fabric or plywood) and they are required only at runway ends. The crosses should be located on top of the runway numerals. For temporary marking, the dimensions of the crosses may be reduced to permit use of standards sheets of 4 by 8 foot (1.22 by 2.44m) plywood. Temporarily closed taxiways should be treated as an unusable area and indicated in the same manner as hazardous areas (see paragraph D, below).

C. Closed Airports: When all runways are closed temporarily, the runways are marked as in paragraph B (above), and the airport beacon and runway lighting are turned off.

D. Hazardous Areas: Hazardous areas, in which no part of an aircraft may enter, are indicated by use of barricades with alternate orange and white markings. The barricades are supplemented with orange flags at least 20 by 20 inches (50 by 50 cm) square and made and installed so that they are always in the extended position and properly oriented. For nighttime use, the barricades are supplemented with flashing red lights. The intensity of the lights and spacing for barricades, flags, and lights must be such to delineate adequately the hazardous area.

E. Stabilized Areas: This section deleted.

F. Runway Shoulder Marking: This section deleted.

G. Barricades, flagging, and flashers shall be installed around all work areas. Hazard markings and lighting shall be located as shown on the plans.

H. The contractor is required to have someone on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades.

3.3 TEMPORARY RUNWAY THRESHOLD DISPLACEMENTS This section deleted.

3.4 VEHICLE IDENTIFICATION AND PARKING

A. Contractor vehicles and equipment shall be identified by painted or magnetic signing identifying the Contractor's company. Each vehicle operating on the airport operations area (AOA) shall have either an omni-directional amber

flashing light or an FAA-approved orange and white checkered flag. The flag shall be at least three-foot square having a checkered pattern of international orange and white squares at least one foot on each side.

- B. Employee parking shall be confined to the Contractor's staging area shown on the plans.

3.5 CONSTRUCTION SITE ACCESS AND HAUL ROADS

Access to the job site shall be as shown on the plans.

3.6 RADIO COMMUNICATIONS

It is required that the Contractor monitor the Unicom frequency while working on the airfield. The Unicom frequency at Chehalis-Centralia Airport is 122.8.Mhz

3.7 CONSTRUCTION PHASING REQUIREMENTS

See Construction Site and Safety Plan.

PART 4: MEASUREMENT AND PAYMENT

4.1 TEMPORARY FLAGGING, MARKING AND SIGNING

Temporary flagging, marking and signing will be paid for at the contract lump sum price stated in the proposal. This price shall be full compensation for furnishing flaggers, barricades, lights, relocated threshold markings, pavement marking and lighting and other temporary markings and for maintenance of those items during the work, any necessary relocations, and for all labor, equipment, tools and incidentals necessary to complete the item.

END OF SECTION 01115

**DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01340 SUBMITTALS**

PART 1: GENERAL

1.1 SCOPE

In addition to requirements in each Section of this Specification, comply with the following listed herein.

1.2 SHOP DRAWINGS

Provide in accordance with General Conditions. In addition, comply with the following requirements specified hereinafter.

Submit shop drawings to the engineer sufficiently in advance in accord with prearranged schedule to cause no delay in the contractor's own work or in that of any other subcontractor and to afford ample time for consideration, checking, correcting and re-checking. Show complete details of construction and methods of installation including sizes, dimensions, setting numbers, types of materials, provisions for hardware, accessory items, built-ins opening sizes, cut-outs, joints, required blocking, welds, anchorage to other construction and other pertinent items. Verify dimensions on job and correlate work with adjoining work.

All shop drawings must be submitted on the same size sheets as engineer's drawings or on 8-1/2" x 11" or 11" x 17" size sheets. (Shop drawings on any other size sheet will not be accepted). Three (3) copies of approved shop drawings will be required for engineer's use unless otherwise indicated. Contractor shall determine the number of and furnish such additional copies as may be needed.

NO SHOP DRAWINGS SHALL BE DISTRIBUTED FOR FIELD USE WITHOUT APPROPRIATE ENGINEER'S AND CONTRACTOR'S STAMP.

1.3 SUBMITTALS

Submit for work in the following specification sections:

Section 01110	2.6c	Construction Schedule
Section P-620	2.2	Paint
	2.3	Reflective Media

END OF SECTION 01340

**DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01710 PROJECT CLOSEOUT**

PART 1: GENERAL

1.1 SCOPE

Engineer shall prepare a punch list when notified by the contractor that work is completed. Engineer will conduct one final inspection only. All further inspections or punch lists as required will be made at \$500.00 per trip, at contractor's expense. (Note: Failure of engineer to include any item on punch list does not alter responsibility of contractor to complete work in accordance with Contract Documents). Deliver all items called for herein and under various specifications sections to engineer at completion of work.

1.2 PROJECT RECORD/AS-BUILT DRAWINGS

As job progresses, contractor shall keep at project site, an accurately marked job set of contract documents showing all changes and deviations from original drawings. These shall be available to engineer. (Note: Above requirements shall not be construed as authorization to make changes in work or layout without definite instructions in each case). Upon completion of project and before final payment, contractor shall forward to engineer two complete new sets of contract documents covering all work including his changes under this contract, showing all above information, changes and deviations from the original drawings.

1.3 CLEANUP

Upon completion of the project and prior to final payment, the contractor shall restore the work area to a satisfactory condition as determined by the engineer. All materials, equipment, and appurtenances not required as a part of, or appurtenant to the completed project shall be removed from the project site and legally disposed of. All slopover from construction operations and the scattering of unused aggregate or waste material shall be removed. The work site shall be graded smooth to establish grade or if no grade is established, to a neat uniform condition as determined by the engineer.

1.4 CLOSEOUT

The contractor shall furnish the following items required for acceptance and final payment before final payment will be released.

- A. Submit the Owner a signed affidavit, satisfactory to the Owner, stating that so far as he has knowledge or information, all accounts for materials, labor, and incidentals in connection with the work have been paid in full.
- B. Submit State "Certificate of Payment of State Excise Taxes by Public Works Contractor."
- C. Furnish to the Owner an "Affidavit of Wages Paid" according to the provisions of RCW 60.28.010.
- D. Notify the Engineer, in writing, that he has completed his part of the contract and request final payment.
- E. Submit a summary of project DBE expenditures and DBE expenditures as a percentage of total construction cost.

The Owner shall, within thirty (30) days, pay to the Contractor all monies due him under the conditions of the contract upon the following:

- A. The Owner's acceptance of the Engineer's final estimate.
- B. The Owner's approval of the affidavit of the release of liens.
- C. Inspection and approval by the Federal Aviation Administration as required for Airport Improvement program.

The acceptance by the Contractor of the final payment shall release the Owner and the Engineer as agent of the Owner from all claims and all liability to the Contractor for all things done or furnished in connection with the work, and every act of the Owner and others relating to or arising out of the work. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from obligations under this contract and the "Performance and Payment Bond", as herein provided.

END OF SECTION 01710

DIVISION 2 – SITE WORK

ITEM P-620 RUNWAY AND TAXIWAY PAINTING

PART 1: DESCRIPTION

1.1 This item shall consist of the painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Engineer.

PART 2: MATERIALS

2.1 MATERIALS ACCEPTANCE

The Contractor shall furnish manufacturer's certified test reports for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. The reports can be used for material acceptance or the Engineer may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the Engineer upon arrival of a shipment of materials to the site.

2.2 PAINT

Paint shall be **Waterborne** in accordance with the requirements of paragraph 620-2.2. Paint shall be furnished in **White – 37925** in accordance with Federal Standard No. 595.

- a. WATERBORNE.** Paint shall meet the requirements of Federal Specification TT-P-1952E, **Type II**.

2.3 REFLECTIVE MEDIA

Glass beads shall meet the requirements for Federal Specification. TT-B-1325D, Type III. Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

PART 3: CONSTRUCTION METHODS

3.1 WEATHER LIMITATIONS

The painting shall be performed only when the surface is dry and when the surface temperature is at least 45°F (7°C) and rising and the pavement surface temperature is at least 5°F (2.7°C) above the dew point. Markings shall not be applied when the pavement temperature is greater than 120°F (49°C).

3.2 EQUIPMENT

Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless-type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray.

3.3 PREPARATION OF SURFACE

Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material that would reduce the bond between the paint and the pavement. The area to be painted shall be cleaned by high-pressure water blasting to remove all dirt, laitance, and loose materials without damage to the pavement surface. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the Engineer.

3.4 LAYOUT OF MARKINGS

The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

3.5 APPLICATION

Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the Engineer. The edges of the markings shall not vary from a straight line more than 1/2 inch (12 mm) in 50 feet (15 m) and marking dimensions and spacings shall be within the following tolerances:

Dimension and Spacing	Tolerance
36 inches (910 mm) or less	±1/2 inch (12 mm)
greater than 36 inches to 6 feet (910 mm to 1.85 m)	± 1 inch (25 mm)
greater than 6 feet to 60 feet (1.85 m to 18.3 m)	± 2 inches (51 mm)
greater than 60 feet (18.3 m)	± 3 inches (76 mm)

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate(s) shown in Table 1. The addition of thinner will not be permitted. A period of **7 days** shall elapse between placement of a bituminous surface course or seal coat and application of the paint.

TABLE 1. APPLICATION RATES FOR PAINT AND GLASS BEADS

Paint Type	Paint Square feet per gallon, ft ² /gal.	Glass Beads, Type III Pounds per gallon of paint—lb./gal.
Waterborne	115 ft²/gal. maximum	10 lb./gal. minimum

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate(s) shown in Table 1. Glass beads shall not be applied to black paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made.

All emptied containers shall be returned to the paint storage area for checking by the Engineer. The containers shall not be removed from the airport or destroyed until authorized by the Engineer.

3.6 PROTECTION AND CLEANUP

After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose or unadhered reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the Engineer. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and Federal environmental statutes and regulations.

3.7 PAINT MARKING REMOVAL

Paint marking removal shall be accomplished by water blasting or sand blasting. Any method used shall not cause major damage to the pavement. The contractor will be responsible for disposing all waste offsite and keeping pavement surface clean to the satisfaction of the Engineer.

PART4: METHOD OF MEASUREMENT

4.1 The quantity of runway and taxiway markings to be paid for shall performed in accordance with the specifications and accepted by the Engineer.

4.2 The quantity of paint removal to be paid for shall be the number of square feet of paint removal performed in accordance with the specification and accepted by the Engineer.

PART 5: BASIS OF PAYMENT

5.1 Payment shall be made at the respective contract price per square foot for runway and taxiway painting and paint removal. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-620.1	Runway and Taxiway Painting - per square foot
Item P-620.2	Surface Preparation – per square foot

TESTING REQUIREMENTS

ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 146	Chemical Analysis of Glass Sand
ASTM C 371	Wire-Cloth Sieve Analysis of Nonplastic Ceramic Powders
ASTM D 711	No-Pick-Up Time of Traffic Paint
ASTM D 1213-54(1975)	Test Method for Crushing Resistance of Glass Spheres
Federal Test Method	Paint, Varnish, Lacquer and Related Materials; Methods of Inspection,
Standard No. 141D/GEN	Sampling and Testing

MATERIAL REQUIREMENTS

ASTM D 476	Specifications for Dry Pigmentary Titanium Dioxide Pigments Products
Code of Federal Regulations	40 CFR Part 60, Appendix A – Definition of Traverse Point Number and Location
Code of Federal Regulations	29 CFR Part 1910.1200 – Hazard Communications
FED SPEC TT-B-1325D	Beads (Glass Spheres) Retroreflective
AASHTO M 247	Glass Beads Used in Traffic Paints
FED SPEC TT-P-1952E	Paint, Traffic and Airfield Marking, Waterborne
Commercial Item	
FED STD 595	Colors used in Government Procurement

END OF ITEM P-620
