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DIVISION 32 - EXTERIOR IMPROVEMENTS

SECTION 32 01 18.71

GROOVING OF AIRFIELD PAVING

05/17

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UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021

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SECTION 32 01 18.71

GROOVING OF AIRFIELD PAVING
05/17

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NOTE: This guide specification covers the requirements for providing grooves in airfield pavements to increase the safe performance of aircraft.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

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PART 1 GENERAL

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NOTE: If an active runway is to be grooved, allowances such as Contractor reaction time, minimum distance equipment must be removed from the runway, and an estimated cost to the Contractor for each interruption must be addressed.

If unit prices are used, the following are designer options:

The unit of measurement for grooving the [runway] [taxiway] surface will be the lump sum. The unit of measurement for aircraft traffic interruptions will be each.

A lump sum price will be paid for grooving and cleaning the pavement. The minimum payment for each interruption will be one hour.

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1.1 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a “G” to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment; G[, [_____]]
Procedures; G[, [_____]]

1.2 EQUIPMENT, TOOLS, AND MACHINES

1.2.1 Grooving Machine

Provide a grooving machine that is power driven, self-propelled, specifically designed and manufactured for pavement grooving, and has a self contained and integrated continuous slurry vacuum system as the primary method for removing waste slurry. Equip the grooving machine with diamond-saw cutting blades capable of making at least 457 mm 18 inches in width of multiple parallel grooves in one pass of the machine. Use cutting blades capable of making the required width and depth of grooves in one pass of the machine. A mixture of new and worn blades or blades of unequal wear or diameter are not permitted in the cutting head. Match the blade type and configuration with the hardness of the existing airfield pavement. Use wheels on the grooving machine that will not scar or spall the pavement. Provide the machine with devices to control depth of groove and alignment within the specified tolerances.

Submit a list of proposed equipment to be used in performance of this work, including descriptive data and safety precautions required for the equipment operation.

1.3 ENVIRONMENTAL REQUIREMENTS

Grooving operations will not be permitted when freezing conditions prevent the immediate removal of debris and/or drainage of water from the grooved area. The Contractor is responsible for discharge and disposal of waste slurry. Waste slurry discharge pits may be constructed along side the pavement to be grooved, as directed by the Contracting Officer. Provide and maintain temporary storm drainage, pollution control, and erosion control features at each discharge pit in accordance with base environmental regulations. Excavate and dispose of hardened waste slurry [off base] [in accordance with the base waste disposal requirements] after it has been dewatered. Regrade and restore to original condition all disposal pit areas.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PREPARATION

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NOTE: Limits of the grooved area should be as described in UFC 3-260-02. Grooves will be continuous for the entire length of the usable runway and will be perpendicular to the runway centerline. Grooves should terminate within 1.5 to 3 meters 5 to 10 feet of the pavement edge to allow for the operation of grooving equipment. Grooves will also be terminated within 75 to 230 mm 3 to 9 inches of the runway centerline joint, transverse joints, in-runway lighting fixtures (or similar items). Joint seals (compression or field molded) shall be installed such that they will have proper

relief below the bottom of the groove cuts. The following areas should not be grooved: overruns, UAS only runways, rotary-wing runways, 3m 10 feet of runway ends, and 3m 10 feet either side of an arresting barrier cable that requires hook engagement for operation. Figures 2-10 and 2-11 of -FAAAC 150/5320-12A- show examples of saw-cut step patterns at the intersection of secondary runways and exit taxiways to primary runways, respectively. Characteristics of the existing pavement will be described in sufficient detail to allow the Contractor to select the most economical and effective cutting blades for grooving the pavement. Pavements should not be grooved until they are at least 30 days old.

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3.1.1 Existing Pavements

Do not groove bumps, depressed areas, bad or faulted joints, and badly cracked and/or spalled areas in the pavement until such areas are adequately repaired or replaced.

3.1.2 New Pavements

Allow new asphalt concrete pavements to cure for a minimum of 30 days before grooving, to allow the material to become stable enough to prevent closing of the grooves under normal use. Permit new portland cement concrete pavements to cure for a minimum of 28 days before grooving.

3.2 WATER SUPPLY

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NOTE: If transportation of the water by surface laid pipe is permitted, routing of the pipe should be shown. Identify the available source location on the drawings.

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[Provide water for the grooving operation] [The Government will provide water for the grooving operation].

3.3 GROOVING

3.3.1 Procedures

Submit grooving sequence and method of placing guide lines to control grooving operation. Cut grooves in the [asphalt] [portland cement] areas as indicated on the drawings. Begin the grooving at one side of the usable [runway] [taxiway] and continue for the full width of the area. Take all reasonable precautions to prevent damage to or roughening of the pavement between grooves. Spalling along or tearing or raveling of the groove edges will not be allowed. Cut grooves that are 6 mm, plus 2 mm, minus 0 mm 1/4 inch, plus 1/16 inch, minus 0 inch wide by 6 mm, plus or minus 2 mm 1/4 inch, plus or minus 1/16 inch deep and 38 mm, plus 0 mm, minus 3 mm 1-1/2 inches, plus 0 inches, minus 1/8 inch center to center spacing. Cut grooves that are [_____] meters feet plus or minus 75 mm 3 inches long and normal to the longitudinal axis of the centerline of the

[runway] [taxiway]. The transverse alignment of the grooves must not vary more than 75 mm 3 inches plus or minus on a 23 m 75 foot length of grooving. Do not groove within 150 mm plus or minus 75 mm 6 inches plus or minus 3 inches of the runway centerline. Do not groove within 150 mm 6 inches of transverse joints or working cracks, through compression seals, in-runway lighting fixtures or similar items, the first 3 m 10 feet either side of an arresting barrier cable or the first and last 3 m 10 feet of the runway.

3.3.2 Clean-Up

Continously clean-up debris from the grooving operation. Flush debris produced by the equipment to the edge of the grooved area or pick it up before it dries and hardens. Flush the remaining dust coating to the edge of the area if the resultant accumulation is not detrimental to the vegetation or storm drainage system. Accomplish all flushing operations in a manner to prevent erosion on the shoulders, damage to vegetation, or plugging of storm drainage.

3.3.3 Repair of Damaged Pavement

Repair at the Contractor's expense, [as specified in Section [_____],] any damage, which in the opinion of the Contracting Officer will be detrimental to aircraft operations and/or pavement performance, occurring to the pavement as a result of the grooving operations.

3.4 CONTRACTOR QUALITY CONTROL

3.4.1 Test Section

Groove a test section [_____] m feet long by two lanes wide in an area of the pavement outside of the trafficked area, as approved by the Contracting Officer. Demonstrate the setup and alignment process, the grooving operation, and the waste slurry disposal.

3.4.2 Inspections

At the beginning of each work shift, furnish a full complement of grooving blades with each saw that are capable of cutting grooves of the specified width, depth, and spacing. If during the work, a single grooving blade on a machine becomes incapable of cutting a groove, continue work for the remainder of the work shift. The Contractor is not required to cut the groove omitted because of the failed blade. Should two or more grooving blades on a machine become incapable of cutting grooves, cease operating the machine until it is repaired.

-- End of Section --