DIVISION 2 – SITE WORK

SECTION 02101 - PREPARATION/REMOVAL OF EXISTING PAVEMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The General Provision of the contract, including the General Provisions for Construction Projects (2016), Special Provisions, and General Requirements of the Specifications, apply to the work specified in this section.

B. This Section shall be in accordance with FAA Specification Item P-101 - Preparation/Removal of Existing Pavements, as included as an attachment to this Section.

1.2 SUMMARY

This Section includes the requirements for Preparation/Removal of Existing Pavements, including but not necessarily limited to, demolition and removal of all existing improvements in the work area to prepare the area to receive the improvements described for this project, and hauling and disposing of demolition rubble and debris. This specification shall also include the delivery of such items which are identified to be salvaged and the disposal of all other items which are identified for demolition and removal.

1.3 REFERENCES

A. FAA Specification Item P-101 – Preparation/Removal of Existing Pavements as modified herein.

B. Section 01560, Environmental Controls

C. Section 02152, Excavation, Subgrade, and Embankment

1.4 SUBMITTALS

A. Pavement Milling Plan

B. Asphalt crack sealing filler product information.

1.5 GENERAL REQUIREMENTS

The Contractor shall clear and demolish areas as shown on the Plans and as necessary to complete the Work. This demolition work shall be done at a distance that is sufficiently in advance of the following construction operations. In addition,

the Contractor shall do the following when performing any General Construction Demolition Work:

A. Survey existing conditions and correlate the conditions and boundaries with the work required so to determine the extent of selective demolition.

   1. Identify and distinguish all structures to remain and to be removed.

B. Show the demolition Work schedule on all progress schedules.

C. Notify the Engineer of the commencement of the demolition work, allowing sufficient time for the HDOTA and the HDOTA's tenants to clear the area as required.

D. Verify that benchmarks, field survey markings, and all measurements are accurate and sufficiently precise. Verify that said benchmarks and markings are not located in an area that may be impacted by the Demolition Work, and report benchmarks and markings that conflict with the Work to the Engineer.

E. Protect all survey monuments at the Site during the course of all Work.

F. Report in writing to the Engineer temporary or intermittent prevailing conditions that will adversely affect satisfactory execution of the work of this Section. Do not proceed with work until unsatisfactory conditions either are corrected or have changed to the satisfaction of the Engineer.

G. Note all subsurface existing conditions as described in the Contract Documents and referenced studies, and notify the Engineer of all changed conditions.

H. Identify all utilities to remain and verify that utilities to be removed have been disconnected and capped.

I. Continuously survey the work as it progresses to detect hazards resulting from selective demolition activities.

J. Perform demolition to permit orderly progress of work and shown on the Plans.

K. Whenever a utility is encountered and must be removed or relocated, schedule the removal and coordinate with the Engineer and utility owner sufficiently in advance of the removal so that services to existing facilities are not disrupted.

L. Conduct demolition operations and remove debris to ensure minimum interference with adjacent occupied and in-use facilities.

M. Erect temporary protection, such as, fences, where required. All such temporary protection must meet OSHA standards.

N. Comply with the Dust and Air Pollution Management Plan, Section 01560, Environmental Controls and all other regulations and requirements.

O. Repair demolition performed in excess of that required at no cost to the HDOTA.

P. After demolition, verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive work.

Q. Immediately report to the Engineer any soil or water that is visibly stained, discolored, shiny, oily, has evidence of burn activities, has a noticeable solvent-like or hydrocarbon odor, or appears to be slag.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

3.1 DEMOLISH AND REMOVE MISCELLANEOUS ITEMS

As shown on the Plan, the Contractor shall:

A. Demolish and remove existing structures, pavements, utilities, abandoned foundations, bollards and associated foundations, and other materials within the limit of demolition.

B. Remove improvements, and obstructions interfering with installation of work as indicated on the Plans.

C. Mitigate the impact of the demolition operations on adjacent occupied or in-use facilities.

3.2 REMOVE AND RE-INSTALL MISCELLANEOUS EQUIPMENT

As shown on the Plans, the Contractor shall:

A. Remove, store items in Contractor's yard, and re-install items after work is completed as shown on plan including but not limited to:

1. Wildlife cages and traps

2. Stop signs

3.3 PAVEMENT REMOVAL

When removing asphalt concrete pavement as shown on the Plans, the Contractor shall:

A. Sawcut pavement sections designated for removal as shown on the Plans or as required by the HDOTA.

1. Sawcut the matching edge of all existing pavements designated to remain in a straight and true line as shown on the Plans.

2. Protect sawcut edges from damage until the finished surface has been completed.

3. Re-sawcut damaged edges the entire length of the matching joint prior to placing the finished surface, at no additional cost to the HDOTA.

4. Take care not to over-cut so that the cuts do not run past the corners.

5. Dispose of all saw cutting water in accordance with the approved SWPPP.

B. Use equipment that is capable of removing the pavement without excessively disturbing or removing underlying or adjacent materials. Breaking pavements by means of a ball breaker or gravity hammer will not be permitted.

C. Completely remove the pavement surface and all base and subbase courses to the top of the natural subgrade unless otherwise shown on the Plans or directed in the Project Manual.

D. Separate pavement, base and subbase materials and transport clean materials to the MMS.

3.4 COLDMILL AND CRACK SEALING OF PAVEMENTS

A. When coldmilling pavement, the Contractor's grinding equipment shall:

1. Have a minimum width of 10 feet.

2. Be equipped with electronic grade control devices on both sides that will cut the surface to the grade and tolerances specified.

3. Cut vertical edges.

4. Include a positive method of dust control.

5. All joints and cracks observed after the coldmilling operation shall be cleaned and filled as per FAA Specification Item P-101, Section 101-3.2.

6. Be capable of discharging the millings in a truck or leaving them in a defined windrow.

3.5 PIPES AND CONDUIT REMOVAL

When removing pipes and conduits (pipes) as part of the General Demolition Work, the Contractor shall:

A. Except for transite pipes, for pipes to partially remain in place, cut with straight and smooth edges on a plane perpendicular to the centerline of the pipe at the boundary of the removal. As shown on the Plans, provide a watertight seal appropriate for dead-ending the pipe, or abandon the remaining pipe as per Section 3.07 of this Section.

B. Handle transite and asbestos pipes in accordance with Section 01562 Management of Contaminated Medias. Remove existing transite water pipes without cutting, to the nearest joint or coupling. Plug remaining pipe as per Section 3.6 of this Section.

3.6 UNDERGROUND STRUCTURE AND OBSTRUCTION REMOVAL

When removing structures or obstructions, the Contractor shall:

A. As indicated on the Plans, remove all structures, obstructions, and miscellaneous concrete, including all or portions drainage structures and other abandoned utility structures.

B. Where new concrete is to join existing concrete, sawcut the existing concrete to a true line with straight vertical edges free from irregularities.

C. Perform underground removal without damage to any portion of any structure that is to remain in place.

D. Transport all uncontaminated concrete pipe and manhole structures from airport property, with the rubble reduced to less than 24" maximum in any dimension.

E. Coordinate with the owners of the utilities to be removed to determine the termination, plugging or capping requirements for cutting and removal of the utility. All utility piping and conduits shall be completely removed prior to the construction of the new improvements unless noted otherwise on the plans or in the specifications or unless directed otherwise by the Engineer.

F. The Contractor shall accurately locate and protect the utilities where performing the Work.

3.7 SOIL MATERIAL EXCAVATION AND REMOVAL

The Contractor shall stockpile soil on Site as allowed on the Plans and as per Section 02152, Excavation, Subgrade, and Embankment.

3.8 EXISTING UTILITIES ABANDONMENT

The Contractor shall abandon existing utilities as noted on the Plans and seal the ends of abandoned utilities as per details shown on the plans.

PART 4 MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

A. Method of measurement and payment shall be in accordance with FAA Specification Item P-101, paragraph 101-4.1.

4.2 BASIS OF PAYMENT

A. Basis for payment shall be in accordance with FAA Specification Item P-101, paragraph 101-5.1.

PART 5 ATTACHMENTS

5.1 FAA SPECIFICATIONS

A. P-101, Preparation/Removal of Existing Pavements

END OF SECTION 02101

ITEM P-101 PREPARATION/REMOVAL OF EXISTING PAVEMENTS

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

a. Concrete pavement removal. Full depth saw cuts shall be made perpendicular to the slab surface. The Contractor shall saw through the full depth of the slab including any dowels at the joint, removing the pavement and installing new dowels as shown on the plans and per the specifications. Where the perimeter of the removal limits is not located on the joint and there are no dowels present, the perimeter shall be saw cut the full depth of the pavement. The pavement inside the saw cut shall be removed by methods which will not cause distress in the pavement which is to remain in place. The material shall be removed and disposed off airport property. Concrete slabs that are damaged by under breaking shall be repaired or removed and replaced as directed by the RPR.

The edge of existing concrete pavement against which new pavement abuts shall be protected from damage at all times. Spall and underbreak repair shall be in accordance with the plans. Any underlaying material that is to remain in place, shall be recompacted and/or replaced as shown on the plans. Adjacent areas damaged during repair shall be repaired or replaced at the Contractor's expense.

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. The material shall be removed and disposed off airport property.

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. Remove all vegetation and debris from cracks to a minimum depth of 1 inch (25 mm). If extensive vegetation exists, treat the specific area with a concentrated solution of a water-based herbicide approved by the RPR. Fill all cracks greater than 1/4 inch (6 mm) wide) with a crack sealant per ASTM D6690. The crack sealant, preparation, and application shall be compatible with the surface treatment/overlay to be used. To minimize contamination of the asphalt with the crack sealant, underfill the crack sealant a minimum of 1/8 inch (3 mm), not to exceed ¼ inch (6 mm). Any excess joint or crack sealer shall be removed from the pavement surface.

Wider cracks (over 1-1/2 inch wide (38 mm)), along with soft or sunken spots, indicate that the pavement or the pavement base should be repaired or replaced as stated below.

Cracks and joints may be filled with a mixture of emulsified asphalt and aggregate. The aggregate shall consist of limestone, volcanic ash, sand, or other material that will cure to form a hard substance. The combined gradation shall be as shown in the following table.

Gradation

Sieve Size	Percent Passing
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	90-100
No. 16 (1.18 mm)	65-90
No. 30 (600 µm)	40-60
No. 50 (300 µm)	25-42
No. 100 (150 µm)	15-30
No. 200 (75 µm)	10-20

Up to 3% cement can be added to accelerate the set time. The mixture shall not contain more than 20% natural sand without approval in writing from the RPR.

The proportions of asphalt emulsion and aggregate shall be determined in the field and may be varied to facilitate construction requirements. Normally, these proportions will be approximately one part asphalt emulsion to five parts aggregate by volume. The material shall be poured or placed into the joints or cracks and compacted to form a voidless mass. The joint or crack shall be filled to within +0 to -1/8 inches (+0 to -3 mm) of the surface. Any material spilled outside the width of the joint shall be removed from the pavement surface prior to constructing the overlay. Where concrete overlays are to be constructed, only the excess joint material on the pavement surface and vegetation in the joints need to be removed**.**

101-3.3 Removal of Foreign Substances/contaminates prior to overlay and remarking. Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the RPR in the field during construction.

High-pressure water may be used. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing pavement over 1/8 inch (3 mm) deep. If it is deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method

to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the RPR.

Removal of foreign substances shall not proceed until approved by the RPR. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be deposited on the pavement shoulders. All wastes shall be disposed off airport property.

101-3.4 Concrete spall or failed asphaltic concrete pavement repair.

a. Repair of concrete spalls in areas to be overlaid with asphalt. The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The perimeter of the repair shall be saw cut a minimum of 2 inches (50 mm) outside the affected area and 2 inches (50 mm) deep. The deteriorated material shall be removed to a depth where the existing material is firm or cannot be easily removed with a geologist pick. The removed area shall be filled with asphalt mixture with aggregate sized appropriately for the depth of the patch. The material shall be compacted with equipment approved by the RPR until the material is dense and no movement or marks are visible. The material shall not be placed in lifts over 4 inches (100 mm) in depth. This method of repair applies only to pavement to be overlaid.

b. Asphalt pavement repair. The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The failed areas shall be removed as specified in paragraph 101-3.1b. All failed material including surface, base course, subbase course, and subgrade shall be removed. Materials and methods of construction shall comply with the applicable sections of these specifications.

101-3.5 Cold milling. Milling shall be performed with a power-operated milling machine or grinder, capable of producing a uniform finished surface. The milling machine or grinder shall operate without tearing or gouging the underlaying surface. The milling machine or grinder shall be equipped with grade and slope controls, and a positive means of dust control. All millings shall be removed and disposed off Airport property. If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material removed with new material at the Contractor’s Expense.

a. Patching. The milling machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the remaining pavement and it shall have a positive method of controlling the depth of cut. The RPR shall layout the area to be milled with a straightedge in increments of 1-foot (30 cm) widths. The area to be milled shall cover only the failed area. Any excessive area that is milled because the Contractor doesn’t have the appropriate milling machine, or areas that are damaged because of his negligence, shall be repaired by the Contractor at the Contractor’s Expense.

b. Profiling, grade correction, or surface correction. The milling machine shall have a minimum width of 7 feet and it shall be equipped with electronic grade control devices that will cut the surface to the grade specified. The tolerances shall be maintained within +0 inch and -1/4 inch (+0 mm and -6mm) of the specified grade. The machine must cut vertical edges and have a positive method of dust control. The machine must have the ability to remove the millings or cuttings from the pavement and load them into a truck. All millings shall be removed and disposed of off the airport.

c. Clean-up. The Contractor shall sweep the milled surface daily and immediately after the milling until all residual materials are removed from the pavement surface. Prior to paving, the Contractor shall wet down the milled pavement and thoroughly sweep and/or blow the surface to remove loose residual material. Waste materials shall be collected and removed from the

pavement surface and adjacent areas by sweeping or vacuuming. Waste materials shall be removed and disposed off Airport property.

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Existing asphalt pavements to be treated with a surface treatment shall be prepared as follows:

a. Patch asphalt pavement surfaces that have been softened by petroleum derivatives or have failed due to any other cause. Remove damaged pavement to the full depth of the damage and replace with new asphalt pavement similar to that of the existing pavement in accordance with paragraph 101-3.4b.

b. Repair joints and cracks in accordance with paragraph 101-3.2.

c. Remove oil or grease that has not penetrated the asphalt pavement by scrubbing with a detergent and washing thoroughly with clean water. After cleaning, treat these areas with an oil spot primer.

d. Clean pavement surface immediately prior to placing the surface treatment so that it is free of dust, dirt, grease, vegetation, oil or any type of objectionable surface film.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Not Used.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the cracks and does not damage the pavement.

101-3.9.1 Preparation of Crack. Widen crack with router by removing a minimum of 1/16 inch (2 mm) from each side of crack. Immediately before sealing, cracks will be blown out with a hot air lance combined with oil and water-free compressed air.

101-3.9.2 Removal of Existing Crack Sealant. Existing sealants will be removed by routing . Following routing any remaining debris will be removed by use of a hot lance combined with oil and water-free compressed air.

101-3.9.3 Crack Sealant. Crack sealant material and installation will be in accordance with Item P-605.

101-3.9.4 Removal of Pipe and other Buried Structures.

a. Removal of Existing Pipe Material. Remove the types of pipe as indicated on the plans. The pipe material shall be legally disposed of off-site in a timely manner following removal. Trenches shall be backfilled with material equal to or better in quality than adjacent embankment. Trenches under paved areas must be compacted to 95% of ASTM D1557**.**

b. Removal of Inlets/Manholes. Where indicated on the plans or as directed by the RPR, inlets and/or manholes shall be removed and legally disposed of off-site in a timely fashion after removal. Excavations after removal shall be backfilled with material equal or better in quality than adjacent embankment. When under paved areas must be compacted to 95% of ASTM D1557, when outside of paved areas must be compacted to 90% of ASTM D1557**.**

METHOD OF MEASUREMENT

101-4.1 All work under this section will not be measured for payment.

BASIS OF PAYMENT

101-5.1 Items covered by this section will be paid by lump sum. The contract price paid shall be for full compensation for furnishing and placing all materials and all labor, equipment, tools, and incidentals necessary for each of the construction phases.

Payment will be made under:

Item No.	Description	Unit
02101.1A	Preparation/Removal of Existing Pavements (Phases 0 through 3)	Lump Sum
02101.1B	Preparation/Removal of Existing Pavements (Phase 4)	Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6	Guidelines and Procedures for Maintenance of Airport Pavements.

ASTM International (ASTM)

ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

END OF SECTION 02101