**CONTRACT FOR DESIGN CONSULTANT SERVICES**

**AIRPORT NAME (airport name)**

**BOA PROJECT NUMBER (project#)**

**AIP/STATE AID NUMBER** **(project#)**

Between the

**OWNER**: (owner), Wisconsin

Represented by: SECRETARY OF TRANSPORTATION, agent for the owner

and

**CONSULTANT**: (consultant)

(consultant address)

This contract made and entered into by and between the (airport owner), Wisconsin represented by its duly authorized agent, WISCONSIN DEPARTMENT OF TRANSPORTATION SECRETARY, Bureau of Aeronautics (BOA), in accordance with Wis. Stat. §114.32(1) (1993), hereinafter called the owner and (consultant), hereinafter referred to as the consultant.

The owner proposes to: (description)

ALL SERVICES

The consultant represents it is in compliance with the laws and regulations relating to the profession of engineering and is willing and able to do the consultant services required in the proposed work in accordance with this contract.

It is expressly understood and agreed that the lump sum amount totals $(total), the actual costs shall not exceed $      and in no event will the total compensation and reimbursement paid hereunder exceed the maximum combined sum of $(sum) for all of the services required under this contract except by amendment to this contract.

The consultant representative is (consultant rep) whose telephone is (rep phone number)

The owner representative is (BOA project manager) whose telephone number is (project manager phone number).

The Disadvantaged Business Enterprise goal on this contract is (DBE goal)%.

Attached and made part of this design contract are the “General Provisions” and “Special Provisions.” This contract incorporates and the parties agree to all of the **CONSULTANT SERVICES GENERAL PROVISIONS DATED** July 10, 2014.

This contract has been agreed to and signed on the dates shown. Effective date of the contract is the latter of the two dates.

AS AGENT FOR OWNER CONSULTANT

By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

David M. Greene, Director Signature

Bureau of Aeronautics

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SS#/FEIN: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Airport: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CONSULTANT BILLING ADDRESS:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SPECIAL PROVISIONS FOR DESIGN CONTRACT**

Part I. Payment/Scope of Services

Section A. Payment

1. Lump Sum
2. Actual Costs

Section B. Scope of Services

1. Phase I (Preliminary Design)
2. Phase II (Final Design)

3. Plan and Profile of Approaches

4. Plan Sheets

Part II. Other Provisions

Section A. Computer Aided Design and Drafting

Section B. Engineer’s Report

Part III. Special Attachments (As Required)

Examples

Soils and Subsurface Investigation

Property Surveys (Work Scope)

**Part I. Payment/Scope of Services**

Attached to and made a part of the Consultant Design Services Contract:

Airport Name: (Name)

BOA Project Number: (Project #)

AIP/STATE AID Project Number: (Project #)

**Section A. Payments**

1. **Lump Sum** - The owner agrees to pay the consultant as compensation for professional services furnished under Section B and in accordance with the “General Provisions,” a lump sum for each unit of work performed in Phases I and II as follows:

a. **Phase I (Preliminary Design)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item No.** | **Description** | **Completion Time in Calendar Days or Date are Specified Herein Below** | **Fee** |
| a. | Design Surveys |  | $ |
| b. | Geotechnical Investigation and Report |  | $ |
| c. | Obstruction Surveys |  | $ |
| d. | Meetings |  | $ |
| e. | Coordination |  | $ |
| f. | Preliminary Cost Estimate |  | $ |
| g. | Preliminary Engineer’s Report |  | $ |
| h. | FAA Pavement Design Forms |  | $ |
| i. | Obtain Environmental Permits |  | $ |
| j. | Prepare wetland mitigation plan |  | $ |

**Phase I Total $** **(phase 1 total)**

**b. Phase II (Final Design)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item No.** | **Description** | **Completion Time in Calendar Days or Date are Specified Herein Below** | **Fee** |
| a. | Final Engineer’s Report |  | $ |
| b. | Construction Plans |  | $ |
| c. | Bid Proposal Packet |  | $ |
| d. | Pre-Bid Meeting |  | $ |
| e. | Construction Cost Estimate |  | $ |
| f. | Construction Safety & Phasing Plan (CSPP) |  | $ |
| g. | Furnishing of Plans & Specifications |  | $ |
|  | (i) 2 sets of Preliminary Plans for Review  \_\_\_\_\_\_\_\_\_\_% complete  2 sets of Preliminary Plans for Review  \_\_\_\_\_\_\_\_\_\_% complete  (Scoping, 20-30, and 80-90) |  | $ |
|  | (ii) 2 sets of Draft Final Plans and  Specifications (including all bid  documents) for review |  | $ |
|  | (iii) 3 sets of Draft Final Plans and  Specifications. Additional sets if  requested by Owner  $\_\_\_\_\_\_\_\_\_\_ per set |  | $ |
|  | (iv) Up to 20 sets of “D” size Plans and  Specifications for Bidding |  | $ |
| h. | Assistance in Securing Bids |  | $ |

**Phase II Total $** **(phase 2 total)**

**TOTAL LUMP SUM AMOUNT (Phases I & II) $** **(lump sum amount)**

1. **Actual Costs**

The owner agrees to pay the consultant for the following services a reimbursement rate based on actual costs, including overhead and profit. For services of the consultant’s staff engaged directly on the following portion of the project, the compensation will be an amount equal to the consultant’s direct labor cost times a multiplier\*, plus reimbursable expenses not included in the consultant’s overhead rate.

\* multiplier = (1 + overhead rate) x (profit % + 1)

a. Meeting costs will be paid for only on an occurrence basis if ordered by the owner and if the meetings are actually held. If the consultant requires more than one (1) person at a meeting, approval prior to the meeting for more than one (1) must be obtained from BOA project manager, or charges for more than one (1) may be disallowed. Meetings pre-determined for review of preliminary plans in Phase II. g(i) are not to be considered as extra meetings.

b. “D” size plans and specifications provided for the bidding process in excess of the 20 sets in the lump sum amount will be compensated at $ (lump sum) per set.

**Total Actual Cost Amount (a & b) - $ (total a & b)**

**Maximum Combine Amount (Lump Sum and Actual Costs) - $ (Lump sum & actual costs total)**

**Section B. Scope of Services.**

The consultant agrees to perform the following services and/or prepare items of plans, specifications, surveys, sketches, reports, etc., as stated in Phases I and II which are required for the execution of the work in this contract.

1. **Phase I (Preliminary Design)** - Consultant to prepare and provide services for:

1. Design surveys necessary for the preparation of the plans and specifications in accordance with attached pages entitled “Plan Sheets.”
2. Geotechnical investigation will include soil and/or pavement sampling with transmittal to testing labs.
3. Obstruction surveys for runway being developed or improved and secondary runway(s) if required in accordance with attached pages titled “Plan and Profile of Approaches.”
4. Attend meetings on project matters for coordination with bureau personnel and others as required or necessary.
5. Coordinate proposed work with other agencies and utility companies or others as required or necessary. Whenever there are other agencies and utility companies with facilities within the construction area, they should be invited to participate in the review of the preliminary plans.
6. Preliminary construction cost estimates.
7. Preliminary engineers report. Prepare and provide two copies in accordance with attached pages entitled “Engineer’s Report.”
8. Prepare Exhibit “A” Map delineating property interests for the airport. Final size to be - 8½” x 11”. All words and numbers on reproduction to be clearly legible without need for magnification.
9. Prepare FAA “Pavement Design” forms along with any necessary support date, boring logs and lab test reports.
10. Obtain necessary federal and state environmental permits (Corps of Engineers Wetland Filling permit, etc.).
11. Prepare final wetland mitigation plan.

2. **Phase II (Final Design)** - Consultant to prepare and provide services for:

1. Prepare and provide to the owner the final engineering report in two copies in accordance with attached pages entitled “Engineer’s Report.”
2. Plans for construction including data and sheets prepared under Phase I. See Section E attached pages entitled “Plan Sheets” to be provided for this project.
3. Bid proposal packet for project including: title, proposal sheet, ad for bids, special notice to bidders, request/current workload, “Safety Plan Compliance” document (SPCD), Erosion Control Implementation Plan, table of contents, state and/or federal contract requirements, special provisions, supplemental specifications, wage rates, and schedule of prices in format as required or approved by the owner.
4. Attend pre-bid meeting on project and provide plans and specifications, charts and other information needed, or as required by the owner, to answer questions and present information on the project.
5. Prepare an estimated cost of construction for the project in accordance with bid items and quantities. To be supplied with the plans and specifications.
6. Furnish the required preliminary sets of a construction safety phasing plan and seven sets of a final plan. The plan should consider requirements of FAA AC 150/5370-2F or subsequent revisions and other related requirements. The plan should show construction sequencing, haul roads, runway and taxiway closures, management of construction activities, etc.
7. Furnish plans and specifications in accordance with the following (Required plan sheets as identified in attached pages entitled “Plan Sheets” and shall be “D size” unless approved otherwise by owner.):

(i) Two preliminary plan sets (partially complete) for review by owner. If additional are required, consultant will furnish. Preliminary plan sets will be provided at various percentage completed states as listed in “Payment Section,” Phase II.

(ii) Two sets of draft final plans and specifications for review and comments by the owner and others.

(iii) Three sets of owner and consultant approved final plans and specification (2 “D” size).

(iv) The consultant will supply up to twenty “D” size sets of approved plans and specifications for securing bids on the work.

h. Assist the owner in securing bids for the project as deemed necessary by the owner.

This may include contacting contractors prior to the bidding date and may include preparation of addendums.

3. **Plan and Profile of Approaches**

Plan view and profile view of the approaches for the runway being developed are needed. This is needed **early** in the plan preparation stages so that the full extent of land acquisition can be determined.

a. Plan View:

1. Show enough detail of runway end to orient plan along with runway end number/s and North arrow and scales. Scale will depend on size of approach surface. Generally, a separate sheet for each approach will be needed. Show man-made and natural features laterally from runway centerline to a distance where 50’ ground clearance is obtained in the 7:1 transverse slope.
2. Do the same within the approach slope outline to the outer limit of the approach surface as a minimum. Depending on circumstances, it may be necessary to show additional information.
3. Pay particular attention to roads and railroads, and show the critical clearances over same. Also give the centerline station of the runway at the intersection of the centerline of the road or railroad.
4. Show obstructions to be removed and key number each obstruction.
5. Include a legend when needed to keep plan from becoming cluttered.
6. Show property lines both existing and proposed for acquisition.
7. Show contours to the limits of the plan view information outlined above. Contour interval desired is 2 ft., however, in some cases 5 ft. or 10 ft. intervals will suffice. As noted above, scale will depend on size of clear zone, however, a scale of 1” = 100’ or 1” = 200’ will be best.

b. In Profile View:

(1) Profile view is to be directly below plan view, stationing to coincide vertically.

(2) Show existing ground profile to limits of the plan view. Show all objects from the ground up which have a height to within 5 feet below the approach surface or the 7:1 transition slopes. Also show all objects which penetrate higher than the above minimum.

(3) Depict as closely as possible the object being shown, i.e., show a house shape for a house, a tree shape for a tree, if space permits, show a deciduous tree different from a coniferous tree. The highest point of structure should be shown, i.e., the chimney or TV antenna on a house. If an antenna is the highest, and it is an obstruction and the structure isn’t, then that information is needed, and if the structure is also an obstruction, it needs to be so defined.

(4) If there are so many objects which need to be shown that the profile view becomes cluttered and unreadable, then show only vertical lines to the correct height with the number above it.

(5) Number each obstruction in the profile view as was done in the plan view to coincide with the “Schedule of Obstructions”. Do not number objects if they aren’t obstructions or below 5’ of applicable slopes.

(6) When an object penetrates the 7:1 slope or comes within 5 feet below it, show the point in the profile where the 7:1 slope is for that object.

(7) Show all roads and railroads in the profile.

1. Vertical scale preferred is 1” = 5’ or 1” = 10’

4. **Plan Sheets**

The sheets as checked shall be prepared as part of this contract and included into the plans.

|  |  |  |
| --- | --- | --- |
| **Plan Sheets** |  |  |
| Title Sheet, Project Des., Index, Location Drawing | Yes | No |
| Quantity Sheet (If part of Title Sheet) | Yes | No |
| Quantity Sheet(s) (Separate Sheet) | Yes | No |
| Construction Operation Plan Sheet(s) | Yes | No |
| Property Sheet(s) | Yes | No |
| Obstruction Survey Sheet(s) | Yes | No |
| Contours required:  Yes  No |  |  |
| Interval required:  2’;  5’;  10’ |  |  |
| Approaches Required: Rwy \_\_\_, Rwy \_\_\_, Rwy \_\_\_, Rwy \_\_\_ |  |  |
| Clearing of Obstructions Sheet(s) | Yes | No |
| Obstruction Marking and/or Lighting Sheet(s) | Yes | No |
| Details Sheet(s) | Yes | No |
| Examples:  (Fencing, Erosion Controls, Tie Downs, Wind Indicators, VASI, REILs, Paving Joints, Drainage, Rwy. & Twy. Lights, Beacons, Controls, etc.) |  |  |
| Typical Sections (Cross Sections of grading & paving, Structures, etc.) | Yes | No |
| Soil Boring Logs in Plan & Profile & Charted Information | Yes | No |
| Drainage Plan Sheet(s)  (Show drainage calculations for contributing areas in chart form) | Yes | No |
| Erosion Control and Storm Water Management Sheets (If complex grading projects - DOT guidelines on erosion control may be found in Hwy’s Facilities Development Manual, Chapter 10) | Yes | No |
| Original Contour Sheet(s)  (Max. contour intervals required: | Yes | No |
| Grade & drain, check one or more: 1’;2’;4’;5’; 10’ |  |  |
| Pavements  1’;  2’ |  |  |
| Pavement intersections  0.1’ |  |  |
| Final Contour Sheet(s) | Yes | No |
| Max. contour intervals required: |  |  |
| Grade & drain, check one or more: 1’;2’;4’;5’; 10’ |  |  |
| Pavements  1’;  2’ |  |  |
| Pavement intersections  0.1’ |  |  |
| Plan and Profile Sheet(s) | Yes | No |
| Grading and Paving Sheet(s) | Yes | No |
| Lighting Layout Sheet(s) | Yes | No |
| Marking Plan Sheet(s) | Yes | No |
| Cross Sections | Yes | No |
| Others (Specify) | Yes | No |

**PART II. OTHER PROVISIONS**

**Section A. Computer Aided Design & Drafting (CADD)**

This procedure describes the requirements for preparation and recording of maps and plans utilizing Computer Aided Design and Drafting systems (CADD).

**1. General**

All maps and plans shall be developed using as a guide the Bureau of Aeronautics Airport Layout Plan Development Check List (ALPDCL Manual) as appropriate. When CADD systems are utilized to develop maps and plans and the contract is completed or terminated, a DVD copy (compatible with the DOT MICRO STATION CADD system) of the maps, plans and files shall be delivered to and become the property of BOA. Final drawings for Airport Layout Plans will be 22" x 34" unless otherwise directed. Provide electronic drawing files for Airport Layout Plans and other projects when included in the contract.

**2. Plan Development**

Plan document requirements and standards are the same as for manually prepared documents except as follows:

1. Lines and Art Work. Line weights and symbols for CADD development will conform to the ALPDCL Manual.
2. Lettering. Lettering size is based on the final product. Minimum size lettering desired on the final product is to be equal to a 100 Leroy on a 22" x 34" drawing, whenever possible, lettering shall be vertical gothic. Font type shall be Type 1 (MICRO STATION).

**3. CADD** **Files**

1. Files - All files must end with the suffix .DGN (example sheet 2, airport layout plan for Dane County is DANEALP.DGN).
2. Reference Files - DO NOT DETACH any reference file(s) used in the creation of any design file, even if copied to the active design file.

NOTE: This does not apply to files that make up the stereo plotted area. When creating a stereo plotted file it may be necessary to use a number of reference files in its creation. These reference files should be merged, copied, or detached as appropriate from the active stereo plot design file. When all the files of the stereo plotted area have been completed, the Bureau prefers to merge all these files into one large file and therefore only the final product is used as a reference file for the airport layout plans.

1. Design File Levels - Level assignment will conform to the ALPDCL manual. Any levels that are not assigned in the active design file can be used for information not previously incorporated and should be brought to the attention of the bureau.
2. Design Files - Any personal computer based format such as DVD or Internet based such as e-mail or FTP can be used. Design file working units shall be 1:1000:1. Global origin (0,0) of design files shall be the lower left corner of the design plane.

**4. State Plane Coordinate System**

Property lines and centerlines shall be tied into the "State Plane Coordinate System?"

Yes  No

Property lines and centerlines shall be tied into the “County Coordinate System?”

Yes  No

**Section B. Engineer’s Report**

The engineer’s report prepared by the consultant and submitted prior to the plans and specifications will be paid in accordance with “Special Provisions” Part I, Section A.

1. **General** – An engineer’s report setting forth the general analysis and explanation of reasons for design choices by the consultant must be submitted with the plans and specifications.

1. **Purpose** – The engineer’s report is a part of the permanent files which are subject to display on request, and must be submitted with the plans and specifications.

3. **Responsibility for Design** – The consultant is primarily responsible for the project design that must conform to FAA design and construction standards. FAA has recommended specifications and design standards for construction; the actual design selections and decisions on specifications within required standards are made by the consultant.

The engineer should consider all local factors including the owner’s preference in design, availability and cost of local materials, and equivalent local specification when deciding on the proposed design. Once design decisions are made, the consultant should request the owner’s concurrence of the proposed design. The owner, recognizing the engineer’s prerogative of design, will review the proposed design for conformity to standards and may require or recommend changes for the consideration of the consultant.

4. **Report Topics** – Variations in the projects prevent the listing of every topic to be discussed in this report; however, the following general guide may be used with explanations of reasons for selection of specific federal and state standards as well as variations from them:

a. General – The report should explain unusual factors in overall planning, scope of probable ultimate development, reasons for omissions of desirable work, and other topics of a general nature which require additional explanation.

Supporting computations and references should be included for all design features.

b. Pre-Design Minutes – The report should include minutes from prior pre-design conferences if such a meeting was held. Discussion items and conclusions should be included in the completed report.

c. Operational Safety – The report should address issues related to the impact that the proposed project will have on normal airport operations. Concerns regarding phasing and sequencing of work should be addressed. Possible runway shutdowns and threshold displacement should be identified.

d. Site Preparation – The report should discuss factors affecting drainage, such as runoff considerations, formulas, etc. (detailed calculations need not be included unless specifically requested). It should discuss grading factors peculiar to the site, such as soil data, climatic conditions, compaction requirements, variations from usual transverse or longitudinal slopes, selective grading, etc.

e. Geometric Design – The report should discuss design concerns regarding geometric requirements for the proposed work. Standard design values (as listed in AS 150/5300-13) based on the design aircraft shall be identified in this report. Examples of these standards include runway/taxiway dimensions, taxiways fillets, separation requirements and etc.

f. Paving – The report should include a copy of FAA Form 5100-1, “Airport

Pavement Design”, as well as a discussion of soil characteristics, design loadings, paving materials, paving thickness, choice of alternate designs allowed by federal and state standard specifications, reasons for variance from design criteria, and reasons for use of other standards.

The paving design (FAA Form 5100-1) shall conform to Advisory Circular (AC) 150-5320-6, Airport Pavement Design and Evaluation. Owner approval of the pavement design shall be obtained prior to preparation of plans and specifications. One signed copy shall be submitted for approval. Computerized analysis and reports may be submitted as supporting documentation for completion of FAA Form 5100-1.

g. Lighting – The report should discuss lighting design criteria and reasons for choice of particular type of equipment within approved standards of the specific lighting equipment. Unique spacing considerations should be addressed.

h. Pavement Marking – The report should discuss marking requirements as outlined in AC 150/5340-1g and the current “Signs and Marking Supplement (SAM).” The category of runway approach should be identified which in turn establishes the minimum marking elements.

i. Buildings – The report should discuss general architectural features, design factors on heating, air-conditioning, lighting, ventilation, loading, structural design, utilities, sanitation, and materials. If required letters of approval of plans by health authorities are not submitted with the plans, the report should explain the reasons.

j. Miscellaneous Work – The report should discuss miscellaneous factors affecting minor work in the project, such as choice of a specific grass and fertilizer after consultation with county farm agent or other authority. It should include discussion of obstructions, fencing, utilities, access roads, staging areas, etc. An evaluation of the proposed project activities affecting FAA facilities shall be included in the engineer’s report.

k. Non-AIP Work – The report should discuss work to be done without federal aid.

1. Cost Estimate – The cost estimate should include a detailed estimate of costs for the proposed work and a summary of the project costs. Items in the detailed cost estimate should coincide with the proposal form in the bid specifications. The “preliminary” engineering report shall include an estimate of costs for each item of work.
2. Modification to Standards – Any work items which are proposed to be done contrary to FAA standards shall require FAA approval. A consultant’s request for modification to standards may be made within the engineer’s report or under separate cover, but should not be incorporated with the plans and specifications. As a minimum, the request shall contain the following:
3. A list of standards requiring modification.
4. Description of the proposed modification.
5. Reason current standards cannot be met.
6. Discussion of viable alternatives for accommodating the unique conditions.
7. Assurance the modification will provide a product that meets FAA standards for acceptance and that the finished product will perform for its design life, based on historical data.
8. Assurance the modification will provide an acceptable level of safety.