



POLICIES AND PROCEDURES GOVERNING DESIGN CONSULTANT CONTRACTS

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DIVISION OF PUBLIC WORKS
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

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CHAPTER I

PURPOSE

- A. This manual is to supplement and become a part of the Consultant Services Contract between the Consultant and the Department of Accounting and General Services, State of Hawaii. It describes in more detail the requirements and procedures outlined in that Agreement.
- B. This manual establishes the procedures and standards which will be followed in all projects of the Division of Public Works, Department of Accounting and General Services. Any deviation deemed advisable by the Consultant should receive prior approval of the Division of Public Works. Specific detailed information regarding the project for which the Consultant is employed will be found in the BUILDING PROGRAM, EDUCATIONAL PROGRAM SPECIFICATIONS, or as discussed at the FIRST CONFERENCE.
- C. This manual is not intended to be all inclusive nor does it represent instructions to the Consultant in all areas where instruction may ultimately be deemed necessary. It will be supplemented from time to time during the life of the Agreement by issuance of standards and procedures covering details of construction, materials, workmanship and program.
- D. The objective of the Department of Accounting and General Services in its building program is to increase the level of its performance and of the performances of those associated with the building process, so that the User Agency and the people they serve are provided with the best project possible in the shortest time possible and at least cost. It is the intent of the Department of Accounting and General Services to encourage the parties involved in the building process to approach the building program with suggestions and contributions for improvements in areas such as Design techniques, Communication systems, operation and maintenance and existing standards.

CHAPTER II

GENERAL REQUIREMENTS

A. GENERAL

Since this Manual serves as a supplement to the Consultant Services Contract between the Consultant and the Department of Accounting and General Services, State of Hawaii, this Chapter outlines the general requirements that govern all such Consultant Services Contracts.

B. DEFINITION OF TERMS

Whenever the following terms or their pronouns are used in these requirements or in any documents or instruments which these requirements govern, the following definitions of the terms shall apply, unless a different meaning is clearly apparent from the context:

1. COMPTROLLER - The Comptroller, State of Hawaii, the legally appointed head of the Department of Accounting and General Services, or his representative, designated in writing.
2. CONSULTANT - Any individual, partnership, corporation, firm, or joint-venture commissioned to provide professional architectural, engineering, or planning services for the Department under the terms of a written agreement with the STATE.
3. CONTRACT - The written agreement between the CONSULTANT and the STATE, including these General Requirements and any amendments thereto setting forth the obligations of the parties.
4. DEPARTMENT - The Department of Accounting and General Services, State of Hawaii.
5. ENGINEER - The State Public Works Engineer, acting for the Comptroller, either directly or through an assistant or representative.

6. PRINCIPAL - The Owner, Proprietor, Partner, Corporate Officer or Director who has binding authority and one who is licensed to practice architecture or engineering in the State of Hawaii with respect to this PROJECT.
7. STATE - The State of Hawaii.
8. SUB-CONSULTANT - Any person, firm or organization providing civil, structural, mechanical and/or electrical engineering services directly to the CONSULTANT.
9. SPECIAL DESIGN CONSULTANTS - Any person, firm or organization providing design or construction services directly to the CONSULTANT for landscaping, acoustics, food service, or other services as may be approved by the STATE.
10. USER AGENCY - The particular agency of government for whom the Department is undertaking the PROJECT.

C. AUTHORITY OF THE COMPTROLLER. The Comptroller shall decide all questions which may arise as to the manner of performance and progress of the work; all questions as to the acceptable fulfillment of the Contract and all questions as to compensation. His decision shall be final. Should the resolution of any dispute between the Contracting Parties be sought in a court-of-law, the CONSULTANT shall, pending a final decision of the dispute, proceed diligently with the performance of the Contract and in accordance with the Comptroller's decision.

D. RESPONSIBILITY OF THE CONSULTANT. To the extent required by reasonable professional standards, the CONSULTANT shall be responsible for the professional and technical accuracy and the coordination of all design, drawings, specifications and other services required under the Contract. Neither the STATE's review, approval or acceptance of, nor payment for any of the services required under the Contract shall relieve the CONSULTANT from such responsibility, and CONSULTANT shall be held liable for any damages sustained by the STATE as a result of any breach of such responsibility or any negligence in carrying out such responsibility.

The STATE will hold the CONSULTANT responsible for the services of all SUB-CONSULTANTS and/or SPECIAL DESIGN CONSULTANTS and shall deal only with the CONSULTANT in all matters pertaining to the services rendered by such SUB-CONSULTANTS or SPECIAL DESIGN CONSULTANTS.

- E. **RELATIONSHIP OF PARTIES.** It is expressly understood and agreed that the CONSULTANT is an independent contractor, with the authority to control and direct the performance and details of the work and services herein contemplated; however, the STATE retains the general right of inspection by a designated representative in order to judge, whether in the Comptroller's opinion, such work is being performed by the CONSULTANT in accordance with the terms of the Contract.
- F. **LAWS TO BE OBSERVED.** The CONSULTANT shall familiarize himself with and shall at all times to the best of his knowledge, comply with and observe all applicable governmental laws, ordinances, codes, rules and regulations, and design standards which in any manner affect the performance of this contract, including the State and County General plans, all applicable State and County approved development plans, setback limitations and rights of way, provided that all such requirements are published and in effect when the CONSULTANT commences such services. Should CONSULTANT'S design be in conflict with any of the above, the CONSULTANT shall be responsible to provide the STATE with all necessary documents and data required to clear and to resolve the conflict. If any discrepancy or inconsistency is discovered in any such laws, ordinances, codes, rules and regulations, design standards, and criteria insofar as it pertains to the PROJECT Scope of Work, the CONSULTANT shall immediately report the same in writing to the Engineer.
- G. **PROGRESS OF THE WORK.** The CONSULTANT shall begin work on the PROJECT immediately upon receipt of a fully executed copy of the Contract document or a written Notice to Proceed. The CONSULTANT shall be available during the STATE'S normal office hours to discuss the progress of the work being performed. All questions arising during the course of the work requiring resolution by the STATE shall be promptly brought to the attention of the Engineer. Upon request by the Engineer, the CONSULTANT shall submit a

narrative progress report of the major phases of services being performed, the approximate percentages by phases and the overall percentage of service completed.

- H. ALTERATIONS OR REVISIONS TO THE CONTRACT. The STATE reserves the right to alter the scope of the services to be performed by the CONSULTANT at any time by notifying the CONSULTANT in writing. In such an event, the STATE and the CONSULTANT shall mutually agree in writing on an equitable adjustment in the CONSULTANT'S compensation for change in scope of the CONSULTANT'S services.
- I. ADDITIONAL SERVICES. Additional services shall be provided by the CONSULTANT when so requested in writing by the STATE. Such services shall be performed in accordance with the Engineer's order, and the CONSULTANT will be compensated therefor as provided in Chapter V. The STATE shall not be liable for the payment of any additional services without prior written order.
- J. SUSPENSION OR TERMINATION OF THE CONTRACT. The STATE reserves the right at any time, and for any reason, to suspend for a reasonable period or completely terminate the Contract upon written notice to the CONSULTANT. Upon receipt of said written notice, the CONSULTANT shall immediately comply with said notice and suspend or terminate all work under the Contract.

In the event the Contract is terminated by the STATE without any fault on the part of the CONSULTANT, the CONSULTANT shall be paid for the work performed or services rendered up to the date of termination. The CONSULTANT shall not be compensated for profit on services not performed.

In the event the Contract is terminated by the STATE for breach by the CONSULTANT of any terms, conditions and covenants herein, as determined by the Comptroller, the STATE shall have the right to complete the work either by its own staff or by entering into a new contract with any CONSULTANT. In such case the CONSULTANT will be held liable for any additional cost required to complete the work.

Upon termination of the Contract, the CONSULTANT shall, within two (2) weeks of the effective date of such termination, compile and submit in an orderly manner to the STATE all work performed up to the effective date of termination.

- K. **TIME OF COMPLETION.** The time of completion of the Contract shall be as specified in the contract documents. Time is considered to be of the essence, and the CONSULTANT shall prosecute the work to completion within the specified time with due efficiency and diligence.

If the CONSULTANT'S services are delayed, the CONSULTANT shall notify the Engineer within five (5) calendar days of the delay with his reasons for such delay.

In the event of delays due to unforeseeable causes beyond the control and without fault or negligence of the CONSULTANT such as acts of God, or a public enemy, fire, strikes, flood and the like, no claim for damages shall be made by either party. If, however, delays result by reason of the acts of the Department or the User Agency which are beyond the control of the CONSULTANT, the CONSULTANT may be reimbursed for actual money expended towards the PROJECT during the period of delay. The CONSULTANT may submit a claim for such compensation, provided he notifies the Engineer in writing within ten (10) consecutive calendar days after the event occasioning such delay and within five (5) calendar days prior to incurring any expense therefor. The Comptroller shall be the sole judge as to the equitability of any claim and his decision shall be final.

- L. **ASSIGNMENT OF CONTRACT AND CLAIMS.** The CONSULTANT shall not transfer any interest in the Contract, including claims for money due (whether by assignment or novation), except in strict accordance with Section 40-58, Hawaii Revised Statutes.

- M. **INDEMNIFICATION.** The Comptroller and any of his duly authorized representatives and subordinates, in carrying out the provisions of the Contract or in exercising any power or authority granted herein, shall not be held personally liable in any way, it being understood that in such matters they act as agents and representatives of the STATE.

- N. OWNERSHIP OF DESIGNS AND PLANS. Upon termination of the Contract or final acceptance of the CONSULTANT'S services by the STATE, the original of all PROJECT documents prepared by the CONSULTANT under the Contract shall become the sole property of the STATE. If the documents are used for purposes other than originally intended, the STATE will indemnify the CONSULTANT and hold him harmless for any claims or losses which may result from such actions.
- O. RELEASE OF PROJECT INFORMATION. The CONSULTANT shall not release any information regarding the PROJECT without the prior approval of the Comptroller.

CHAPTER III

ADMINISTRATION

A. GENERAL

For the purposes of this manual, the terms "Comptroller," "Consultant," "State," "Department," "User Agency," etc. are as defined in paragraph B of Chapter II.

B. THE DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES AND ITS DIVISION OF PUBLIC WORKS

1. The Department of Accounting and General Services, headed by the State Comptroller, is, by law, charged with providing centralized engineering services to the various departments of the State, with the exception of the Departments of Transportation, Land and Natural Resources, Hawaiian Home Lands and the Hawaii Housing Authority. The responsibility for providing these engineering services rests with the Division of Public Works of the Department of Accounting and General Services, headed by the State Public Works Engineer. (Hereinafter referred to as DPW.)
2. The DPW will provide the Consultant with:
 - a. PROJECT MANAGEMENT and coordination between governmental agencies involved in the project.
 - b. MANUAL OF POLICIES AND PROCEDURES GOVERNING DESIGN CONSULTANT CONTRACTS.
 - c. BUILDING PROGRAM OR EDUCATIONAL PROGRAM SPECIFICATIONS consisting of the following items of specific project information:
 - (1) Specifications for space, staffing, and operational requirements.
 - (2) Site designation (plot plan).
 - (3) Schematic concept data (if applicable).

- (4) Construction budget for project.
- (5) Project time schedule.
- d. TOPOGRAPHIC SURVEY upon receiving two (2) ozalid prints of the plot plan delineating the area to be surveyed and all the specific requirements desired of the survey.
- e. BORINGS AND SUB-SURFACE INVESTIGATION REPORT upon receiving a sepia print and two (2) ozalid prints indicating location, number and depth of desired borings.

C. THE CONSULTANT

- 1. The Consultant is completely responsible for the:
 - a. PREPARATION of plans, specifications, cost estimates and other documents required by and in conformance with the specific requirements of the Consultant Services Contract and this manual, which is made a part of such Contract by reference.
 - b. ACCURACY AND COMPLETENESS of all required documents. Review of these documents by the DPW staff does not relieve him from the responsibilities of any errors or omissions that may occur.
 - c. CONFORMANCE with all applicable codes, rules, regulations and ordinances and shall be responsible for CONTACTING the proper enforcing agencies for any clarifications or interpretations that may be required.
- 2. The Consultant shall WORK WITH DPW's Project Coordinator. All contacts concerning the project shall be conducted through the Project Coordinator.
- 3. WRITTEN APPROVAL shall be obtained from DPW for each phase of the project. Each written approval shall include any authorized deviations from the approved budget, program, or schedule.

4. **PROGRESS REPORTS** of the Consultant's work shall be submitted whenever work is not progressing on schedule with an explanation of the cause of the delay.
5. **SIGNATURES** of those members of the Consultant's firm who are authorized to sign for the firm shall be furnished to DPW in a statement over the signature of a general partner or principle of the firm.

D. SEQUENCE OF EVENTS

1. **LETTER OF SELECTION:** The Consultant will be informed of his selection to perform certain consultant services by a Letter of Selection signed by the State Comptroller. No action need be taken by the Consultant until he hears from the Division of Public Works (within 2 weeks).
2. **FIRST CONFERENCE:** A conference will be set up with the Consultant, User Agency and DPW staff for the purpose of discussing procedures (for new Consultants), scope of work, time schedules, funding and other pertinent topics necessary to get the project on its way. If the **FIRST CONFERENCE** is successful, the Consultant will be authorized in writing to proceed with the work.
3. **FEE NEGOTIATION:** The various methods employed in negotiating fees for DPW projects are covered in detail in Chapter V.
4. **COMMISSION LETTER:** After the scope and fee are established, a formal Commission Letter signed by the State Comptroller will be sent to the Consultant.

- E. **MEETINGS** will generally be scheduled by DPW. When parties involved in the project find it necessary to schedule meetings among themselves, such meetings must be cleared by DPW. The party calling the meeting will be responsible for distributing an agenda at least one day in advance of the meeting. The Consultant will be responsible for taking the minutes of all meetings which he attends. The minutes shall be distributed to all persons at the meeting and parties designated by DPW within five (5) working days after the date of the meeting. Minutes should list all decisions reached and request that comments and/or corrections be made.

F. INFORMATION

Requests for information not previously submitted to the Consultant shall be made to DPW in writing. The DPW will then furnish such information as it deems appropriate.

CHAPTER IV

SCOPE OF CONSULTANT SERVICES

A. GENERAL

The total evolution of a physical facility for a Division of Public Works project from the conceptual stage to occupancy may require the following stages:

1. Preparation of a Project Development Report.
2. Development of a Complex Development Report.
3. Design (Basic Services).

B. SCOPE FOR VARIOUS STAGES

1. PROJECT DEVELOPMENT REPORT (PDR) STAGE

- a. Project Development Reports are prepared to give inputs to Consultants for 1) Designing a building or 2) Preparing a Complex Development Report (CDR).
- b. The SCOPE of a PDR may vary; however, it will generally include one or more of the following items:
 - (1) Brief justification of the Project in terms of the present and future operation.
 - (2) Space requirements and design criteria required as input for a Consultant in designing a building or developing a CDR.
 - (3) Project Cost Estimate.

2. COMPLEX DEVELOPMENT REPORT (CDR) STAGE

- a. Complex Development Reports (CDR) are prepared to develop a functional and aesthetically acceptable ultimate site plan for a group of buildings located within a specified geographical boundary (Complex).

- b. The SCOPE of a CDR requires several alternative Ultimate Site Plans based on siting criteria of buildings. The CDR will also include the following:
 - (1) Ultimate grading, water, sewer, drainage, electrical and communication plans for the complex.
 - (2) Incremental development plans.
 - (3) Cost Estimates for budgeting purposes.

3. DESIGN (BASIC SERVICES) STAGE

- a. The complete scope of services to be rendered by the Consultant under the DESIGN STAGE shall include the design of the building(s) and/or other structures and improvements including utilities and other related work within the designated project site which meets the FUNCTIONAL REQUIREMENTS of the User Agency and shall also include in addition to the detailed scope, the following:
 - (1) Reducing FIRST COST without sacrificing long term MAINTENANCE COST.
 - (2) Application of the latest techniques in ENERGY CONSERVATION.
 - (3) Providing for the accessibility and utilization of the facility by the HANDICAPPED.
 - (4) Consideration for and respecting the surrounding ENVIRONMENT.
- b. The DESIGN STAGE shall consist of the following five (5) phases:
 - (1) PHASE I - Schematic Design Phase
 - (2) PHASE II - Preliminary Design Phase
 - (3) PHASE III - Final Design Phase
 - (4) PHASE IV - Bidding Phase
 - (5) PHASE V - Construction Phase

C. DETAILED SCOPE FOR DESIGN STAGE

1. PHASE I - SCHEMATICS DESIGN PHASE (Schematics)

a. After executing the Consultant Services Contract or upon receipt of written Notice to Proceed, the Consultant shall develop the schematic concept data presented in the Building Program or Educational Program Specifications.

b. OBJECTIVES

(1) To provide a diagrammatic statement of the building program illustrating the program requirements such as number and size of rooms and their functional relationships.

(2) To investigate possible solutions at minimum design expense. 1/

c. PRESENTATION REQUIREMENTS (in writing, drawings, or models as applicable) must include:

(1) Functional justification of design.

- o Relationship diagrams showing the relationship of major program areas and site elements and relationship of spaces within the major program areas.
- o Circulation diagrams showing the movement and activities of visitors and staff including the physically handicapped; the movement systems of material and supplies, and vehicular circulation.

(2) Site Plan at a scale of 1" = 40'-0" showing:

1/ The Consultant may prepare "pre-schematic" plans consisting of single line free-hand sketches.

- o Existing contours, landscaping features, roads, sidewalks, drainage patterns, utility lines, together with proposed roads, sidewalks, parking areas, etc.
 - o Relationship and distances of proposed buildings to existing buildings and adjacent property lines, easement lines and set-back lines.
- (3) Floor Plans of each building at minimum scale of $1/8" = 1'-0"$, showing all required programmed areas of proper sizes in proper relationship to each other including all lanais, stairs, toilets with toilet stalls.
 - (4) Exterior Elevations of each building at minimum scale of $1/8" = 1'-0"$. Indicate finish materials. Show finish and existing grade lines.
 - (5) Typical Cross Sections at minimum scale of $1/8" = 1'-0"$ showing structural framing method. Show height to the bottom of beams and ceilings and all other critical dimensions.
 - (6) Tabulate gross floor area of each room and show comparison with area called out in the program. (Gross floor area includes exterior walls). Area criteria shall not be exceeded under any circumstances, unless otherwise authorized in writing.
 - (7) Sketches and description which will indicate the structural, air-conditioning, lighting, energy consumption level, hot water heating systems which will indicate the special characteristics of the selected systems together with an economic analysis which determined the choice of such system.

(8) Preliminary statement of probable construction costs computed on the basis of unit square foot cost and type of area.

d. PRESENTATION MEETING

The DPW will schedule a meeting at the end of the Schematic Design Phase at which the Consultant will personally present his report.

e. SUBMITTALS

7 sets of prints of all drawings.

4 sets cost estimates based on unit square foot cost.

2 sets or copies of other required documents.

All previously marked-up check drawings.

f. APPROVALS

The Consultant shall not proceed into the Preliminary Design Stage without written approval of the Schematic Design solution.

2. PHASE II - PRELIMINARY DESIGN PHASE (Preliminary Plans, Specifications & Estimates)

- a. After the approval of the Schematic Design Stage, the Consultant shall complete the Preliminary Design Stage by further refinement of the concept, the selected building systems, the circulation patterns, site relationships and building program areas.
- b. OBJECTIVE: To fix and illustrate the size and character of the entire project in all its essentials.
- c. PRESENTATION REQUIREMENT shall include:
 - (1) Site plan (scale 1" = 40'-0"). Show location of bench mark and its elevation, show each building by dimension, existing and finished contours, ground floor elevations, location and extent of roads, walks, parking areas, utilities (existing, new and relocated), site construction and limits of the contract. (DPW must be advised of proposed interruptions to services, roads, etc., caused by new construction.)

The site plan shall also show the storm drainage system, all property lines, street and utility easements and all azimuths and distances delineating these easements.

- (2) Landscape plan (1" = 40'-0"). Show general type and location of landscape elements and all above-grade site construction including retaining walls, steps, lighting, walks, roads, flag-poles and building signs and all necessary details. This plan shall also show all existing trees.
- (3) Floor plans of each building drawn with double lines to indicate thickness of wall at minimum scale of 1/8" = 1'-0". (1/4" = 1'-0" if it fits within the single sheet) shall show the following:

- o Complete roof finish schedule.
 - o All fixed and movable casework, equipment, fixtures as well as the location of mechanical equipment and electric panelboards.
 - o Floor drains, hose bibbs in toilets and kitchens as well as all exterior bibbs and all downspouts.
 - o Tabulation of gross floor areas reflecting the latest revisions.
 - o For Federal-Aid projects, a summary of gross floor areas of each building broken down to assignable and non-assignable areas shall be shown on each floor plan sheet. The gross floor areas shall not exceed those approved by the Federal government.
- (4) Detail Room Layouts of each typical room and all special rooms at scale of 1/4" = 1'-0" showing all movable casework, equipment, fixtures, and all furnitures. These floor plans are not required if the floor plans under (3) are ready at 1/4" = 1'-0". (N.I.C. furniture shall be shown with dotted lines.)
- (5) Exterior Elevations at minimum scale of 1/8" = 1'-0". Indicate construction materials, finish and existing grade lines.
- (6) Longitudinal and Transverse Sections at a scale of 1/8" = 1'-0". Indicate structural members including foundations, materials, general dimensions; general dimensions including floor heights, finish materials and existing and finish grade lines.
- (7) Outline specifications:
- Finishes on exterior and interior
 - Fenestrations

- Construction materials
 - Structural, mechanical and electrical systems and design data
 - Signal, communications and auxiliary systems
 - Other items as appropriate and directed
- (8) Single line diagrams of mechanical and electrical distribution systems. Use explanatory sections and cutaway sketches as required. Indicate location of A/C zones and thermostats.
 - (9) Economic analysis of the use of alternate energy sources such as solar heating for hot water, heat recovery, etc.
 - (10) The most economical offsite utility service connection requirements shall be established. Location and size of transformer vault and switch room requirements shall also be established if applicable.
 - (11) Tabulation of lighting intensity for all rooms and task areas and location of switches.
 - (12) Indicate areas where special acoustical treatment will be required to reduce noise level transmission.
 - (13) Construction cost estimate in approved format. (See Chapter II.)
 - (14) Energy budget calculations where required.
 - (15) Furniture list shall be prepared by the Consultant showing position and non-position related furniture for each room. In addition a summary tabulation by each individual type and size of furniture shall also be prepared.

d. PRESENTATION MEETING

The DPW will schedule a meeting in which the Consultant will make his Preliminary Design Phase Presentation Report and explanation in person. (NOT MANDATORY FOR ALL PROJECTS.)

e. SUBMITTALS

5 sets of prints of all drawings
5 sets of Outline Specifications
5 sets of Preliminary Cost Estimates
5 sets of Furniture List
All previously marked-up check prints

f. APPROVALS

The Consultant shall not proceed into the Final Design Phase without approval in writing from the DPW of his Preliminary Design Phase.

3. PHASE III - FINAL DESIGN PHASE (Final Plans, Specifications and Estimates)

- a. GENERAL REQUIREMENTS: After the approval of the Preliminary Design Phase, the Consultant shall prepare his Final Design documents based on these approved preliminary drawings in a form suitable for public bidding.
- b. OBJECTIVES: In preparing the Final Bid Documents (plans, specifications and estimate), the Consultant shall take proper care to assure the following:
- (1) That all phases of the construction work is fully shown and/or described so that the intent is understood by all concerned, thereby eliminating change orders during construction.
 - (2) The use of sound construction practices utilizing methods, equipment and materials of proper dependability and durability with economy in operation and maintenance.
- c. FINAL CONTRACT DOCUMENTS: For detailed minimum requirements for the Final plans, specifications and estimate, see Chapter VI.
- d. APPROVAL SIGNATURES: Signatures of approval shall be obtained on the appropriate tracings as required prior to final review, except for those on the Title Sheet which shall be obtained prior to the final submittal.
- e. SUBMITTALS FOR FINAL REVIEW:
- 9 sets of prints of all drawings
 - 8 sets of typewritten specifications
 - 4 sets of final cost estimates
 - 2 sets each of the following engineer calculations:
 - (1) Civil (water, sewer and storm drain)
 - (2) Structural

(3) Electrical (show calculations on electrical plan)

(4) Fire hose cabinet, wet stand pipe and fire hydrant (show calculations on electrical plans)

f. **FINAL SUBMITTAL:** The final submittal shall be made only after all comments on the final review have been incorporated in the final tracings and specification originals.

All tracings of drawings with all required approval signatures.

All originals for specifications.

1 set of prints of all drawings incorporating all revisions

1 set of specifications incorporating all revisions

1 set of final cost estimates

1 set of all calculations

All previously marked-up documents

4. PHASE IV - BIDDING PHASE

- a. **REQUIRED SERVICES** - The Consultant shall be responsible for and provide the following services under this Stage:
- (1) Perform all work necessary for obtaining the building permit prior to bid opening.
 - (2) Make his own arrangements to pick up bidding plans and specifications for his use, as well as for his sub-consultants.
 - (3) Review and make recommendations as to acceptability and conformance to specifications for all requests for material substitution.
 - o Pick up and return substitution request to appropriate DPW office.
 - o All disapprovals shall be accompanied with specific reasons for such disapprovals.
 - (4) Prepare all addenda, including all drawings and specifications that may be required due to omissions, clarifications and revisions.
 - o Addenda shall be prepared on acceptable bond paper ready for printing.
 - o Specification originals and tracings for addenda shall be submitted to DPW no later than ten (10) calendar days before the bid opening date.
 - o No Tradenames of products shall be used in any addenda for the purpose of adding new products.
 - o Include ALL APPROVED SUBSTITUTIONS on the last addendum.
 - (5) Analysis of bids when all bid exceed project budget.

b. **SERVICES NOT INCLUDED** - The following work will be the responsibility of the Division of Public Works:

- (1) **Reproduction and distribution of bidding documents and addenda.**
- (2) **Calling for/receiving/and opening of sealed bids.**
- (3) **Awarding of bids to successful bidder.**

5. PHASE V - CONSTRUCTION PHASE

- a. **GENERAL:** The actual field inspection of the construction of a project will be administered by staff Inspectors and Engineers of the Division of Public Works.

The Consultant's services shall not include any continuous personal inspection of the actual construction.

- b. **CONSULTANT'S SERVICE TO BE PERFORMED:**

Consultation and advisory services to be performed by the Consultant shall include the following:

- (1) Proper interpretation of plans and specifications.
- (2) Provide color schemes and surface finishes for all interior and exterior surfaces of buildings and structures.
- (3) Review and provide recommendations for rejection or acceptance of all shop drawings, samples, brochures and other submittals during construction.
 - o Make own arrangements to pick up and return all shop drawings, samples, etc. from DPW.
- (4) Provide clarification or detail drawings of any special complicated features of construction that are not adequately shown on the plans.
 - o Drawings shall be prepared on mylar or tracing cloth 24" x 36".
- (5) Provide Post Contract Drawings and detail cost estimates whenever required to correct conflicts, omissions, errors or field changes.
 - o Drawings shall be prepared on mylar or tracing cloth 24" x 36".

- (6) Analyze contractor's cost proposals for changes.
- (7) All services (1) through (6) above shall be performed expeditiously to prevent costly construction delays; in any case, all required actions shall be performed within 10 working days.
- (8) Visit the actual project site whenever such visitation is necessary to adequately perform the consultation and advisory services required under this stage.
- (9) Participate in pre-construction conference.
- (10) Attend pre-final and final inspections called by DPW and prepare punch list of all defects, etc.

CHAPTER V

CONSULTANT FEES

A. GENERAL

Fees for Design Consultant Services are computed on a Lump Sum Fixed Fee or Multiple of Direct Personal Expense basis depending on the scope of services desired.

B. COMPUTING FEES

1. Lump Sum Fixed Fee - Most DPW Consultant contracts are based on a Lump Sum Fixed Fee. Either one of the following methods or combination of methods are employed in arriving at a Lump Sum Fee.

- a. Percentage of Estimated Construction Cost:

Under this method, the basic Consultant fee is computed by applying a certain percentage (from a table or curve) to the estimate of the project construction cost. This method is used by DPW whenever the scope of the project is clearly defined.

- b. Negotiation Based on Detailed Analysis:

Under this method, the Consultant is required to estimate the man-hour requirements and type of services or personnel required for each task or phase of the services required. The Consultants actual hourly rates are then applied to the estimated number of man-hours to arrive at the total direct salary cost. To this, the Consultant is to apply his allowances for Overhead and Profit and applicable taxes to arrive at the total estimated fee, which is then used as a basis for negotiation with the Division of Public Works. This method is usually employed by DPW to negotiate fees for development of Complex Development Reports (CDR) and the preparation of Project Development Reports (PDR).

2. Multiple of Direct Personal Expense (Direct salary cost times multiplier factor):

- a. The Direct Personal Expense is obtained by applying the actual hourly rates being paid for the professional, technical and clerical employees actually engaged on the project to the actual man-hours expended by these personnel.
- b. The fee is then computed by multiplying the above Direct Personal Expense with a multiplier factor ranging from a minimum of 2.5 to a maximum of 3.0.
- c. A multiplier factor greater than 2.5 is allowed only if supported by current data (prepared within past 12 months) by a CPA.
- d. The Consultant must also submit with his request for payment, a copy of the office time card for each employee working on this project.

C. COMPUTING FEES FOR ADDITIONAL SERVICES

1. During the course of performing the services required under the original lump sum fee, additional services may be required by DPW such as preparing post contract drawings for changes and/or additions required by DPW, etc.
2. In such cases, the fee will be based either on the Multiple of Direct Personal Expense Method or on additional lump sum fee.
3. In the event the services of sub-consultants (mech., elect., structural, etc.) are required, payment will be made on the actual amount billed to the Consultant plus fifteen (15) percent of such amount for coordination.

D. SPECIAL CONSIDERATION FOR OFF ISLAND ASSIGNMENTS

1. For projects located on islands other than which the Consultant resides, the Consultant will encounter certain costs that are normally not incurred. More specifically, these costs are:

- a. Air transportation
 - b. Ground transportation
 - c. Long distance phone calls
 - d. Hotel and food (if overnight stay is required)
 - e. Lost time due to air travel
 - f. Postage
2. These additional costs will be paid for as reimbursable expenses based on a lump sum amount for each trip.
 3. This lump sum amount will be determined by DPW for each island and will be updated from time to time.
 4. Depending on the type of contract, this off island additional cost may be included as part of the lump sum fee rather than a reimbursable expense.

E. REIMBURSABLE EXPENSES

1. Reimbursable Expenses are those costs that are incurred for services, or other items not covered in the scope of the original lump sum fee.
2. Examples of Reimbursable Expenses (when not covered in the lump sum fee) are:
 - a. Overtime expenses
 - b. Expense of special display documents and/or graphics and scale models
 - c. Expense for processing building permit application
 - d. Inter-island travel (see D. above)
 - e. Any other services authorized by the State.
3. In order to qualify as a reimbursable expense, the Consultant must obtain the prior written approval of the State before incurring such expense.

F. METHOD OF PAYMENT

1. For Lump Sum Fixed Fees:

- a. For contracts where the scope of work can be separated into distinct tasks such as in the preparation of CDRs and PDRs, the Consultant shall submit for approval of DPW, a schedule of payments which shall indicate that portion of the agreed upon lump sum fee which will be assigned to each specific task. Once approved, this schedule will be used as the basis for monthly payments.
- b. For Basic Services (Design Stage), the Consultant's total fee will be divided in the following percentages for the various phases:

Schematic Design Phase	15%
Preliminary Design Phase ...	20%
Final Design Phase	50%
Bidding Phase	5%
Construction Phase	<u>10%</u>
TOTAL	100%

Compensation for services rendered will be paid monthly so that the compensation at the completion of each phase will be the above percentage of the total fee.

2. For Multiple of Direct Personal Expense:

Monthly billing will be for actual cost expended up to the time of billing times the multiplier factor including all authorized reimbursable expenses.

G. REQUEST FOR PAYMENT

The Consultant may request monthly partial payments providing the following conditions are observed:

- 1. One original and three copies of invoices shall be submitted to the DPW, specifying in detail the services for which expenditures were incurred and the percentage of completion of the particular service.

2. The monthly invoices must be supported by accompanying documentation of all expenditures incurred, and a signed certified statement, that the work for which payment is being requested has been performed in conformance with the contract and that the Consultant is entitled to receive the amount requisitioned under the terms of the contract.
3. In order to insure full and satisfactory completion of contracts, other than DESIGN STAGE contracts, ten percent (10%) of the amounts certified as expended shall be retained by DPW until the Notice of Acceptance of all work to be performed under the contract is issued by DPW.
4. For Design Stage (Basic Services) contracts, the full amount for each phase will be paid upon satisfactory completion of such phase.

H. ACCEPTANCE AND FINAL PAYMENT

Final payment for formal contracts will only be made after issuance of the notice of acceptance by the Comptroller, and submission by the Consultant of a tax clearance from the Director of Taxation showing that all delinquent taxes levied or accrued under State statutes have been paid in accordance with Section 103-53, Hawaii Revised Statutes.

ATTACHMENT NO. 1

DIRECT SALARY RATES - MAXIMUM HOURLY RATES

A. ARCHITECTURAL POSITIONS:

	7/1/89- 6/30/91	7/1/91- 6/30/92	7/1/92 6/30/92	7/1/93- 6/30/94	7/1/94- 6/30/95
Clerical	\$ 7.50	\$10.00	\$10.50	\$11.00	\$11.50
Junior Drafting Technician	8.00	11.00	11.50	12.00	12.50
Senior Drafting Technician	12.00	16.00	17.00	18.00	19.00
Architect I	10.00	12.50	13.00	13.50	14.50
Architect II	10.00	16.50	17.00	18.00	19.00
Architect III	12.00	17.50	18.50	19.50	20.50
Registered Architect	14.00	19.00	19.50	21.00	22.00
Senior Architect	17.00	23.00	24.00	25.50	26.50
Associate Architect	19.00	27.00	28.00	29.50	31.50
Principal Architect	23.00	35.00	36.50	38.50	40.50
Principal Architect in Charge	27.00	41.00	42.50	45.20	47.50

B. ENGINEERING POSITIONS:

	7/1/89- 6/30/90	7/1/90- 6/30/91	7/1/91- 6/30/92	7/1/92- 6/30/93	7/1/93- 6/30/94	7/1/94- 6/30/95
Clerical	\$ 9.00	\$ 9.50	\$10.00	\$10.50	\$11.00	\$11.50
Junior Drafting Technician	9.00	9.50	10.00	10.50	11.00	11.50
Senior Drafting Technician	15.00	16.00	17.00	18.00	19.00	20.00
Engineer I	10.50	11.00	11.50	12.00	12.50	13.00
Engineer II	13.00	14.00	15.00	16.00	17.00	18.00
Engineer III	14.50	15.00	16.00	17.00	18.00	19.00
Engineer IV (Registered)	16.50	17.50	18.50	19.50	20.50	21.50
Engineer V (Registered)	19.00	20.00	21.00	22.00	23.00	24.00
Engineer VI (Registered)	22.00	23.00	24.00	25.00	26.00	27.00
Engineer VII (Registered)	25.50	27.00	28.50	30.00	31.50	33.00
Engineer VIII (Registered)	30.00	31.50	33.00	34.50	36.50	38.50
Engineer IX (Registered)	33.00	34.50	36.00	38.00	40.00	42.00

NOTE:

1. The rates shown are the MAXIMUM rates that will be allowed by the Division of Public Works.
2. Invoices shall be based on the actual rates paid by each respective firm (up to the maximum).
3. Overhead Multiplier Factor shall be a standard 3.0 factor plus taxes.
4. Travel - Per Diem shall be governed by the Rules, Regulations, etc. governing Unit 13 employees.

CHAPTER VI

PLANNING AND DESIGN POLICIES

A. GENERAL

1. This chapter attempts to consolidate in one place as many of the mandatory departmental policies, codes, regulations, ordinances and other statutory requirements applicable to all Division of Public Works projects.
2. The Consultant is cautioned that the list is only provided as a checklist for the major requirements and that the CONSULTANT IS STILL RESPONSIBLE FOR CONFORMING TO ALL APPLICABLE CODES, ORDINANCES, LAWS, RULES AND REGULATIONS.

B. D.A.G.S. DEPARTMENTAL POLICIES

1. ENGINEERING AND OTHER CONSULTANTS

All engineering and other Consultants retained by the Architect shall be registered with the Hawaii Board of Registration for Professional Engineers, Architects and Land Surveyors and shall be in full-time business for themselves. (No "moonlighters" are allowed.)

2. ENGINEERING AND ARCHITECTURAL DESIGN

All contract documents (plans and specs) prepared for D.A.G.S.' projects shall be completely engineered and appropriate construction details and specifications prepared for the entire project. No design responsibility no matter how minor shall be delegated to the general contractor or sub-contractors.

3. REQUIREMENTS AND FORMAT FOR DRAWINGS, COST ESTIMATES AND SPECIFICATIONS

The specific policies and guidelines applicable to all D.A.G.S. projects are contained in the following Appendixes at the end of this Chapter.

- a. REQUIREMENTS FOR FINAL WORKING DRAWING
-- APPENDIX I.
- b. POLICIES COVERING PROJECT SPECIFICATIONS
-- APPENDIX II.
- c. FORMAT AND POLICIES COVERING PROJECT COST
ESTIMATES -- APPENDIX III.

4. CONSULTANT'S STAMP

All drawings shall be stamped by the respective Consultant preparing the drawings.

5. EARTHQUAKE FORCES

Regardless of the requirements of the respective County Building Codes, all structures shall be designed to resist lateral seismic forces based on ZONE III.

6. ENERGY CONSERVING DESIGN FEATURES

In addition to the energy conservation requirements of each respective County's ordinances, codes, etc., the Consultant will be responsible for considering the latest techniques of energy conservation in the design of the facility and to include such feature where it is deemed feasible from a cost standpoint. Design features that shall be considered, but not be limited to, are solar energy for water heating and air-conditioning, waste heat recovery for water heating and passive design to reduce or eliminate energy consumption.

7. WEATHER CONDITIONS

The Consultant shall familiarize himself with the prevailing weather conditions (wind, rain, temperature, humidity, closeness to sea breeze, etc.) of the area in which the project is located and shall be responsible for taking into consideration such condition in his design and material selection so as not to create any problems with the maintenance or the use of the facility.

C. STATE REQUIREMENTS

1. State Public Health Regulations.
2. State Occupational Safety and Health Law.
3. Section 103-44, HRS, relating to Architectural Barriers to the Physically Handicapped. (Use latest edition of ANSI 117.1.)
4. Chapter 321, HRS, relating to Safety Glazing of Glass.
5. Department of Labor and Industrial Relations' Elevator, Escalator, Dumbwaiter Installation requirements.
6. Department of Labor and Industrial Relations' Boiler Code.

D. COUNTY REQUIREMENTS (The following list is based on the C & C of Honolulu requirements; however, similar ordinances, etc. of other Counties shall be adhered to)

1. County's building, plumbing and electrical codes.
2. Grading and soil erosion and sedimentation control ordinances.
3. Comprehensive Zoning Code.
4. Fire Department's rules and regulations.
5. Department of Public Works' policies and criteria.
6. Division of Sewers' industrial waste requirements.
7. Board of Water Supply's backflow protection requirements.
8. Energy Conservation in Building Code, Ord. No. 78-40.
9. Shoreline Management requirements.

E. FEDERAL REQUIREMENTS

DPW will inform Consultant as to what Federal requirements will be applicable for projects funded by Federal funds.

APPENDIX I

FINAL WORKING DRAWINGS (CONTRACT PLANS)

This Appendix was developed by the Division of Public Works in order to standardize and facilitate the coordination of the various projects under its jurisdiction.

STANDARD SHEET SIZE

The standard sheet size for all projects of the Division of Public Works shall be 24" x 36" (outside dimensions) unless otherwise directed or approved.

QUALITY OF SHEETS

The minimum quality of acceptable material shall be:

- (a) mylar with minimum thickness of .004 inches, or
- (b) linen with water resistant quality.

SHEET LAYOUT

For binding purposes, the left side border shall be 1-1/2" and the borders on the other three sides shall be 1/2". The layout of each sheet shall be from left to right and from top to bottom.

CROSS REFERENCE	}	Use current acceptable Standards of Architectural and Engineering Profession.
LEGENDS		
SCHEDULES		

DECALS

Decals or paste-on letters will not be acceptable on Final Tracings.

TITLE BLOCK

The Standard Division of Public Works title block shall appear on the lower right corner of all sheets, including the title or cover sheet. (See sample of title block in this Appendix.)

REVISION NO.	SYM.	DESCRIPTION	SHT. _____ OF _____	DATE	APPROVED: STATE PUBLIC WORKS ENGINEER
		DEPT. OF ACCOUNTING & GENERAL SERVICES			
		DIVISION OF PUBLIC WORKS			
		STATE OF HAWAII			
				BAGS JOB NO.	DRAWING NO.
		DESIGNED BY:	CHECKED BY:		
		DRAWN BY:	APPROVED BY:	DATE	SHEET
SCALE:			OF _____ SHEETS		

FILE _____ DRAWER _____ FOLDER _____

**STANDARD DIVISION OF PUBLIC WORKS
TITLE BLOCK**

FINAL WORKING DRAWINGS (REQUIREMENTS)

At the very minimum, the Final Working Drawings shall include (but not limited to) the following:

1. TITLE SHEET

- a. Standard Title Block.
- b. Name of project, tax key, "for the User Agency (DOE, U.H., etc.) by the Department of Accounting and General Services".
- c. Names of Architect and Consultants with space allowance for their respective registration stamps.
- d. Index to drawings.
- e. Vicinity map at a scale large enough to show approaches to project.
- f. Space for signatures of approvals. (Obtain details from project coordinator.)

2. CIVIL DRAWINGS

- a. Site Plan, minimum scale 1" = 40'-0". Show all features as listed in the preliminary phase but expanded further to show the following:
 - (1) Boring locations and boring log.
 - (2) Limits of new grassing.
 - (3) "Contract Zone Limit."
 - (4) Clear delineation of any demolition or relocation work.
 - (5) Building location and dimensions tied to adjacent property lines and adjacent buildings.
 - (6) Survey ties and description of property pins.
 - (7) Show existing adjacent utilities as required.

b. Grading Plan, (may be combined with "Site Plan" on a simple project) minimum scale: 1" = 40'-0". Show the following:

- (1) Existing contours and bench mark.
- (2) New finish contours and finish grades.
- (3) Finish elevations of buildings, roads, sidewalks, etc.
- (4) Sufficient cross sections of site to compute amounts of cut and fill.
- (5) Storm drainage system with profiles of lines complete with catch basins.
- (6) Road cross sections (horiz. scale 1" = 10'; vertical scale suitable to show detail) and road profile (1" = 40').

c. Utility Site Plan:

The purpose of this sheet is to show all exterior lines on one sheet, essentially to show relationship of the different lines and their sizes and where they may interfere or cross each other. Minimum scale of 1" = 40'-0". (This sheet may be combined with the "Site Plan" on a simple project.) Show the following:

- (1) Sewer lines and manholes.
- (2) Waterlines and valves.
- (3) Gas lines and valves.
- (4) Storm drain lines and catch basins.
- (5) Electric lines and manholes or handholes.
- (6) Communication lines, handholes or poles.
- (7) Field lighting and parking lot lighting lines.
- (8) Show also existing, new and future (if known) buildings, sidewalks, roads and walls, etc. Do not show contours or any construction details of these lines on this sheet.

- d. Landscape Plans, minimum scale: 1" = 40'-0".
Show number, size and kinds of plants.

3. ARCHITECTURAL DRAWINGS

- a. Floor plans of each building at minimum scale of 1/8" = 1'-0". (1/4" = 1'-0" if it fits within the standard size sheet.) Show all features as listed in the preliminary phase but expanded further to show the following:
- (1) Tabulation of gross floor areas, stairs and lanais of each building and covered walkways.
 - (2) Room finish schedule.
 - (3) Finish floor elevation.
 - (4) Complete dimensions, locating all walls, columns, partitions, openings, casework, equipment, fixtures, etc.
 - (5) Room names and room numbers (make these numbers coincide with the metal room number plates).
 - (6) Door and window reference numbers.
 - (7) Indicate reference to large scale details.
 - (8) Indicate location and direction of "Section" cuts.
 - (9) Plumbing vent riser locations, or roof drains.
 - (10) For Type I construction, indicate on floor plan for future reference, "TYPE I CONSTRUCTION."
- b. Detail Floor Plans of each typical room, toilets and other rooms at scale of 1/4" = 1'-0". These are blow-ups of the interior floor plans and need not be drawn if the above floor plan is already at 1/4" = 1'-0".

- c. Roof plans of each building, minimum scale of $1/16" = 1'-0"$, showing the following:
- (1) Ridge, valleys, roof crickets.
 - (2) Arrows, indicating direction of roof slope.
 - (3) Roof scuttle, skylights, roof vents and fans.
 - (4) Parapets and roof overflow scuppers or drains.
 - (5) Gutters, flashings, gravel stops, downspouts and roof drains.
 - (6) Other roof features such as air conditioning equipment, etc.
 - (7) References to complete details.
- d. Reflected Ceiling Plan (where necessary), minimum scale of $1/8" = 1'-0"$. Acoustical tile layout must be shown and indicate different grades of tile used.
- e. Exterior Elevations, minimum scale of $1/8" = 1'-0"$, expand and complete "exterior elevations" of the preliminary phase showing additional information such as:
- (1) "Section" cuts.
 - (2) References to details.
 - (3) Profile of foundation.
- f. Interior Elevations, minimum scale of $1/4" = 1'-0"$. Elevations of every room shall be shown. Show the following:
- (1) Finish materials, casework, equipment, fixtures, chalkboard and tackboard.
 - (2) N.I.C. equipment are to be shown with dotted lines.
 - (3) "Section" cuts.

- (4) References to details.
 - (5) Panic hardware, exit lights, speakers, signs, fire extinguishers, clocks and other such items.
- g. Sections, minimum scale of $1/4" = 1'-0"$.
Cut as many complete sections through building as required, including typical longitudinal and transverse sections. Expand and complete "Sections" of the preliminary phase showing additional information such as:
- (1) Mechanical duct work, plumbing lines, lighting fixtures, etc. to show interference with each other and with the structural beams. (See paragraph 5c (12) for requirement of a single floor plan showing combined delineation of mechanical duct work, plumbing lines, light fixtures, etc.)
 - (2) Reference to details.
 - (3) Foundation.
- h. Typical Wall Sections, minimum scale of $3/4" = 1'-0"$. Cut as many wall sections to show typical as well as special conditions. Dimension complete.
- i. Section through stairs, minimum scale $1/2" = 1'-0"$.
- (1) Complete dimensions.
 - (2) Handrails.
- j. Details shall be drawn and dimensioned completely to show materials and method of construction and to the minimum scales indicated below:

Flashing, gravel stops,
gutters, curbs, etc. $1-1/2" = 1'-0"$

Casework $1-1/2" = 1'-0"$

Windows and doors $3" = 1'-0"$

Others at appropriate
large scale

k. Door and Window Schedules (see standard schedule format). Elevations shall be drawn at minimum scale of $1/4" = 1'-0"$. Show the following:

- (1) Reference to schedule.
- (2) Reference to large scale details.
- (3) Dimensions as required.
- (4) Type of doors.
- (5) Type of windows.

l. Combined Plan of mechanical duct work, plumbing lines, lighting fixtures, structural beams, etc. shall be shown. Although these systems are shown in their respective floor plans, this combined floor plan is required, so that all interferences can be shown clearly and resolved. Cut as many sections as required to resolve these interferences, such as duct work interfering with recessed lighting, plumbing lines interfering with suspended ceiling, duct work and/or lighting fixtures interfering with beams, etc.

4. STRUCTURAL DRAWINGS

a. Foundation Plans, minimum scale of $1/8" = 1'-0"$, shall be oriented the same way as the architectural plans showing the following:

- (1) Foundation walls.
- (2) Footings, bottom elevations and sizes.
- (3) Major dimensions locating structural elements.
- (4) Pile locations (if applicable).
- (5) References to details and "Section" cuts.
- (6) Depressed slabs, raised slabs and concrete curbs.
- (7) Location of construction joints on floor slabs.
- (8) Foundation details, minimum scale $1/2" = 1'-0"$ showing dimensions and reinforcing.

b. Floor plans above the first floor and roof plans, minimum scale $1/8" = 1'-0"$. Show the following:

- (1) Structural members and reinforcing steel.
- (2) Access and vent openings.
- (3) Steps.
- (4) Indicate design assumptions (for future reference, i.e. Live Load, etc.).

c. Structural Sections, minimum scale $1/4" = 1'-0"$. (Sections through stairs shall be minimum scale of $1/2" = 1'-0"$.) Cut as many complete sections through the building as required to show size of structural members and dimensions, especially the height from finish floor to a reference point or line.

d. Structural Details, minimum scale $3/4" = 1'-0"$ shall be drawn and dimensioned completely to cover typical as well as special methods of construction. Show the following:

- (1) Size of structural members.
- (2) Reinforcing.
- (3) Size and spacing of bolts.
- (4) Size of welds (unless covered by notes).
- (5) All structural details shall be drawn on structural sheets.

5. MECHANICAL DRAWINGS

a. Plumbing Site Plan, minimum scale $1" = 40'-0"$. (Note: A "Utility Site Plan" showing combined exterior utilities on one civil sheet is required in addition to this "Plumbing Site Plan".) Show the following:

- (1) Water service connection and distribution system. Water pressure at meter shall be shown on the drawing.

a. Construction Water Source (OFF-SITE):
Indicate location of connection for
contractor's construction water-meter
connection.

- (2) Sewer system complete with manholes and profile.
- (3) Gas system (including gas tanks).
- (4) Details of plumbing site work (at appropriate large scale) such as for manholes, pressure regulator, grease interceptor, cesspools, valve boxes, etc.

b. Air Conditioning System

The air conditioning layout shall not be
combined with the plumbing layout.

- (1) Floor plan of duct layout, minimum scale $1/8" = 1'-0"$.
Floor plan of equipment layout, minimum scale $1/4" = 1'-0"$
- (2) Sections and elevations, minimum scale $1/4" = 1'-0"$.
- (3) Details, minimum scale $3/4" = 1'-0"$.
- (4) Show refrigerant piping diagram.
- (5) Show schematic electric control diagram complete. (Note: Time switch is required.)
- (6) Show complete air-conditioning control diagram, including thermostat location.

c. Interior Plumbing System

- (1) Floor Plan, minimum scale $1/8" = 1'-0"$, showing all fixtures, hot and cold water-lines, gas lines, compressed air, sewer, waste and vent lines including floor drains and cleanouts. Drawing shall show (where applicable) calculations of water pressure for the furthestmost fire hose valve.

- (2) Riser diagrams shall be shown for hot and cold waterlines, gas lines, compressed air, sewer, waste and vent lines. Also steam lines and any other lines, if any. Acid-resistant waste and vent lines shall be clearly identified.
- (3) Details, minimum scale $3/4" = 1'-0"$, as necessary to give complete picture of work required.

d. Hot Water Heating System

- (1) Floor Plan, minimum scale $1/4" = 1'-0"$.
- (2) Elevations and Sections, minimum scale $1/4" = 1'-0"$.
- (3) Details, minimum scale $3/4" = 1'-0"$.
- (4) Show schematic piping diagram of hot water plant (also to dishwasher).
- (5) Show flue system up through roof and cap.

e. Ventilation System

- (1) Floor plan of duct layout, minimum scale $1/8" = 1'-0"$.
Floor plan of equipment layout, minimum scale $1/4" = 1'-0"$.
- (2) Sections and elevations, minimum scale $1/4" = 1'-0"$.
- (3) Details, minimum scale $3/4" = 1'-0"$.
- (4) Show ventilation hoods and fans, duct work and roof caps.

f. Refrigeration System

- (1) Floor Plan, minimum scale $1/4" = 1'-0"$.
- (2) Elevations and Sections, minimum scale $1/4" = 1'-0"$.
- (3) Details, minimum scale $3/4" = 1'-0"$.
- (4) Show refrigeration piping diagram.

6. ELECTRICAL DRAWINGS

a. Electrical Site Plan, minimum scale
 $1" = 40'-0"$. Show the following:

- (1) Electrical service and distribution system.
- (2) Telephone service and distribution system.
- (3) Parking light and field lighting systems.
- (4) Duct sections (at appropriate large scale).
- (5) Details of electrical site work (at appropriate large scale) such as for transformer pad, manholes, handholes, pull boxes, flag pole grounding, lighting standards, etc.

b. Floor Plans, minimum scale $1/8" = 1'-0"$.
(Plans for transformer vault and main switch rooms shall be at a minimum scale of $3/8" = 1'-0"$. Plans for kitchens and shops shall be at a minimum scale of $1/4" = 1'-0"$.)
Show the following:

- (1) Lighting layout and convenience outlets.
- (2) Program bell and clock system.
- (3) Fire alarm system and riser diagram.
- (4) Public address system and riser diagram.
- (5) Telephone system.
- (6) Power system, panels and outlets.
- (7) Schematic refrigeration temperature alarm system.
- (8) One line distribution diagram showing all connected loads.
- (9) One line diagram of equipment controls such as for air conditioning.

- (10) Panel board circuit schedules.
- (11) Luminaire schedule.
- (12) Equipment schedule.
- (13) Night lighting time switch schematic.
- (14) Electric symbols.
- (15) Plans shall include calculations for:
 - a. Feeder sizes.
 - b. Classroom illumination for each typical size and use.
- c. Elevations and Sections, minimum scale $1/4" = 1'-0"$. Show the following:
 - (1) Elevation of main distribution board and panel boards.
 - (2) Elevation of equipment controls such as for dishwasher, etc.
 - (3) Typical cross section showing mounting heights.
- d. Details of interior electrical work, minimum scale $3/4" = 1'-0"$. Show the following:
 - (1) Method of mounting fixtures.
 - (2) Method of installing floor risers.
 - (3) "Fire Alarm Station Inside" sign.

APPENDIX II

PROJECT SPECIFICATIONS

This appendix on specifications was developed to ensure that project specifications for all Division of Public Works projects are prepared, consistent with DPW policies and procedures, as well as State statutes.

D.P.W. POLICIES AND PROCEDURES

1. **FORMAT:** The specification format for DPW projects shall be as shown in the DPW booklet titled "Guide Specifications". Since this booklet is subject to change from time to time, the A & E shall return their copy to the Project Coordinator for possible updating at the start of the Final Design Phase.
2. **GUIDE SPECIFICATIONS:** DPW's Guide Specifications on certain items were developed for the primary purpose of standardizing, wherever possible, the specifications for DPW projects. The use of this Guide Specs is not mandatory; however, the A & E is required to inform the State of any deviation from the Guide Specs and the reason for such deviation.
3. **PERFORMANCE SPECIFICATIONS:** Should be used wherever possible.
4. **STANDARD SPECIFICATIONS:** Accepted standards such as ASTM, Commercial Standard (CS), Product Standards (PS), etc. shall be used whenever possible.
5. **FEDERAL SPECIFICATION:** Do not use Federal Specifications.
6. **BRAND NAMES:** Brand names followed by the phrase "or approved equal" may be used in lieu of standards or performance specs; however, the A & E shall make every effort to list other equivalent and acceptable 'brands' or 'makes'. In order to evaluate other products as equals on an equitable basis, the A & E shall list

key features (materials or finish, etc.) or fabrication methods (riveted, welded, etc.) desired which are common to the brand names specified.

7. **PROPRIETARY ITEMS:** Proprietary items may be specified for DPW projects only when the Consultant can demonstrate a compelling reason for doing so. Proprietary items and the justification therefor shall be submitted to DPW for review and approval prior to inclusion in the specifications.
8. **PREFERENCE FOR HAWAII PRODUCTS:** In compliance with Section 103-42 of the Hawaii Revised Statutes, the State has established a so-called "Hawaii Products List" for the purpose of giving preference to materials & products manufactured in the State of Hawaii. Section 103-43 of the HRS further mandates that in any expenditure of public funds, if a project specifications call for a non-Hawaii material or product that has a material or product listed on the "Hawaii Products List" AND such product or material meets the minimum project specification requirement, it shall be specified in the Project Specifications. (For more background, discuss this with the Project Coordinator.)
9. **UNION JURISDICTIONAL CONFLICTS:** In order to avoid these problems, the A & E shall familiarize himself with the local union trade practices and wherever possible, specify work and materials in the appropriate section of the specifications.
10. **SPECIFICATION ORIGINALS AND INSTRUCTIONS FOR TYPING SPECIFICATIONS:** See sample page of specifications with required margins and other instructions at the end of this Appendix.
11. **COVER SHEET:** See sample of cover sheet with required information noted thereon at the end of this Appendix.

↑ 1" ↓

INSTRUCTIONS FOR TYPING SPECIFICATIONS

- Do not use erasable bond or any bond that has an oily surface.
- Do not use onionskin.
- Use carbon film (polyethylene) ribbon.
- Do not use various weights of paper for originals. Be consistent throughout the specifications.

1 1/4" →

← 1 1/4"

Last line of body

TRIPLE SPACE →

TITLE
Section-Page

Job No. _____

↑ 1/2" ↓

S P E C I F I C A T I O N S

FOR

FURNISHING LABOR AND MATERIALS

REQUIRED TO CONSTRUCT IN PLACE COMPLETE

(Project

Title)

TAX MAP KEY:

(Location) _____, HAWAII

FOR THE

(User

Agency)

STATE OF HAWAII

BY THE

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

DIVISION OF PUBLIC WORKS

STATE OF HAWAII

D.A.G.S. JOB NO. _____

ARCHITECT: (Names of Consultants)

STRUCTURAL ENGINEER: _____

ELECTRICAL ENGINEER: _____

MECHANICAL ENGINEER: _____

(Month & year of first
advertising date)

(Reduced Size)

SPECIFICATIONS COVER SHEET

(8 1/2" x 11)

APPENDIX III

PREPARING CONSTRUCTION COST ESTIMATES

This Appendix was developed to standardize and facilitate the review of cost estimates submitted by Consultants.

FORM FOR SUBMITTING COST ESTIMATES

All Final Construction Cost Estimates shall be prepared in the format shown below:

Project Title: _____
Job Number: _____
Architect: _____ Date: _____
Estimator: _____ Sheet ____ of ____

Item/Description	Quan.	Unit	Material Cost		Labor Cost		Total Cost	
			Unit	Total	Unit	Total	Unit	Total

BREAKDOWN OF COST ELEMENTS

The cost estimate shall be broken down into clearly defined work items wherever possible to facilitate checking of cost. As a minimum, the following breakdown shall be used:

1. BUILDING

a. General and Special Conditions

- (1) Include costs for the general and special condition items described in the contract documents. The general contractor's costs for overhead and profit as well as his fee on sub-contract work should also be included

b. Foundations

- (1) Earthwork.
- (2) Special foundations, piles, etc.
- (3) Shoring, sheeting, underpinning.
- (4) Dewatering.
- (5) Concrete footings and piers.
- (6) Foundation walls.
- (7) Slabs on grade.
- (8) Pits, trenches, etc.
- (9) Waterproofing and dampproofing for above.
- (10) Concrete finish.

c. Structural Systems

- (1) Columns and beams.
- (2) Supported floor and roof structures.
- (3) Metal decks including concrete fill.
- (4) Concrete finishes.
- (5) Stairs.
- (6) Fireproofing.

d. Exterior Wall Construction

- (1) Complete exterior wall including masonry, frames, glazing, panels, flashings, fascias, caulking, painting, back-up materials and associated anchors, etc. Interior architectural finishes such as plaster, etc. are not to be included.

e. Roofing and Components

- (1) Roofing and associated sheet metal work.
- (2) Hatches, scuttles, skylights.
- (3) Insulation.

f. Interior Construction and Finishes

- (1) Partitions and partition finishes, including interior finish of exterior walls.
- (2) Doors, frames and hardware.
- (3) Ceiling finishes.
- (4) Floor coverings.
- (5) Miscellaneous insulation.
- (6) Toilet partitions and accessories.
- (7) Painting.
- (8) Vertical transportation.
- (9) Miscellaneous and ornamental metals.
- (10) Built-in millwork items, such as cabinets, counters, wardrobes, etc.

g. Plumbing and Fire Protection

- (1) All work within a 5'-0" line around perimeter of building.

h. Ventilating and Air Conditioning

- (1) All work within a 5'-0" line around perimeter of building.

i. Electrical

- (1) All work within a 5'-0" line around perimeter of building.

2. SITEWORK

- a. All site improvements and utilities beyond 5'-0" building line and within contract limit lines.

3. EQUIPMENT

- a. Contractor furnished and installed (c/c).
- b. Installation cost only for owner furnished equipment (o/c).

4. DEMOLITION

- a. Include cost for all demolition and disposal of debris. For removing basement walls as called for in specs including puncturing of basement floors for drainage and all required fill to bring it up to finish grade.

SUMMARY SHEET

The Summary Sheet (P.W. Form 1201) shown at the end of this Appendix must accompany the A & E's cost estimates at each stage of design.

