Exhibit B

SOLID
WASTE
DISPOSAL

SPOKANE REGIONAL WASTE TO ENERGY PROJECT

Request For Proposals

Final Issue

December 17, 1986

Spokane Regional Solid Waste Disposal Project
Post Place, Suite 201
West 720 Boone
Spokane, Washington 99201

SPOKANE REGIONAL WASTE TO ENERGY PROJECT

REQUEST FOR PROPOSALS

TABLE OF CONTENTS

	Page No.
GLOSSARY	i
ACRONYMS AND ABBREVIATIONS	vii
PART ONE - INTRODUCTION	
1.0 Purpose	1-1
2.0 General	1-1
3.0 The RFP	1-2
4.0 The Parties	1-4
5.0 The Agreements	1-4
6.0 Procurement Structure and Schedule	1-5
6.1 Structure	1-5
6.2 Schedule	1-5
7.0 General Requirements	1-6
7.1 Submission Deadline and Address	1-6
7.2 Number of Copies	1-6
7.3 Proposal Security	1-6
7.4 Signature and Authority	1-6
7.5 Communications	1-7
7.6 Errors and Omissions	1-8
7.7 Disclosure of Proposal Information	1-8
7.8 Labor and Procurement Requirements	1-9
7.9 Project's Rights and Liabilities	1-9
7.10 Location and Frequency of Negotiations	1-10
7.11 Commitment to Negotiations	1-10
7.12 Cost to be Borne by Proposers	1-10
7.13 Addenda to the RFP	1-11
7.14 Omissions and Errors by Project	1-11
7.15 Withdrawal from the Procurement Process	1-11
7.16 Late Proposals	1-11
7.17 Procedure in the Event of the Receipt of Only One Proposal	1-11
7.18 Conditional Proposals	1-12
7.19 Acknowledgement of Facility Site Investigation	1-12
7.20 Preselection Investigation	1-12
7.21 Nondiscrimination in Selection of Subcontractors	1-13

Page No.

PART TWO - BACKGROUND

1.0 Local Solid Waste History..... 2-1

2.0 Solid Waste Stream..... 2-1

2.1 Present Collection and Disposal Practices..... 2-1
2.2 Waste Generation..... 2-2
2.3 Waste Characteristics..... 2-3
2.4 Waste Stream Control..... 2-5

3.0 Facility Site Information..... 2-5

4.0 Status of Project Activities..... 2-5

5.0 Energy Markets..... 2-5

6.0 Environmental Regulations..... 2-7

6.1 Summary of Physical Elements..... 2-7

7.0 Ash and Emergency Landfill..... 2-12

PART THREE - QUALIFICATIONS OF THE PROPOSERS

PART FOUR - FACILITY REQUIREMENTS

1.0 General..... 4-1

2.0 Utilities and Services..... 4-1

3.0 Residue and Landfill Responsibilities..... 4-2

4.0 General Facility Criteria..... 4-2

5.0 Performance Guarantees..... 4-6

6.0 Aesthetic and Architectural Concepts..... 4-7

7.0 Technical Data to be Submitted..... 4-7

7.1 Drawings Required..... 4-7
7.2 Specifications Required..... 4-8
7.3 Schedules and Submittals..... 4-8
7.4 Staffing Requirements..... 4-8
7.5 Mass and Energy Balance..... 4-8
7.6 Heat Balances..... 4-8

Page No.

PART FIVE - FINANCING

1.0 Introduction..... 5-1

2.0 Financing Structure..... 5-1

3.0 Cooperation with Financing..... 5-2

4.0 Construction Guarantee..... 5-2

5.0 Operating Guarantees..... 5-3

PART SIX - CONTRACTUAL CONDITIONS

1.0 General..... 6-1

2.0 Participants' Responsibilities..... 6-1

3.0 The Agreements..... 6-4

3.1 Construction Agreement..... 6-4
3.2 Operations and Maintenance Agreement..... 6-5

4.0 Project's Position on Construction Agreement Provisions..... 6-7

4.1 Price and Payment..... 6-7
4.2 Guaranteed Construction Period..... 6-8
4.3 Liquidated Damages..... 6-8
4.4 Performance Bonus..... 6-8
4.5 Bonds..... 6-9
4.6 Environmental Guarantees..... 6-9
4.7 Interim Operations..... 6-9
4.8 Performance Guarantees and Acceptance Testing..... 6-10
4.9 Insurance..... 6-10
4.10 Local Procurement Requirements..... 6-11

5.0 Project's Position on Operations and Maintenance Agreement..... 6-11

5.1 Shutdowns and Reductions in Capacity..... 6-11
5.2 Company Compensation..... 6-12
5.3 Operation Fee and Pass-through Costs..... 6-13
5.4 Waste Delivery..... 6-14
5.5 Alterations and Additions..... 6-14
5.6 Insurance..... 6-14
5.7 Guarantees..... 6-16
5.8 Energy Revenue Credit..... 6-16
5.9 Materials Recovery..... 6-16
5.10 Disposal of Ash, Bypassed and Unacceptable Waste..... 6-16

6.0 Summary of Risk and Responsibility Allocation..... 6-16

Page No.

PART SEVEN - EVALUATION AND SELECTION PROCESS

1.0 General..... 7-1

2.0 Completeness of Proposals..... 7-2

3.0 Qualifications of Proposers..... 7-2

4.0 Technical Evaluation..... 7-2

5.0 Economic Evaluation..... 7-2

5.1 Annual Debt Service..... 7-3
5.2 Annual Operating Cost..... 7-4
5.3 Energy Revenues..... 7-4
5.4 Net Annual Cost..... 7-5

6.0 Evaluation Results..... 7-5

7.0 Negotiation..... 7-6

PART EIGHT - PROPOSAL FORMS

1.0 General..... 8-1

2.0 Form 1: Capital Construction Cost..... 8-1

3.0 Form 2: Itemized Capital Construction Cost..... 8-1

4.0 Form 3: Operating Fee..... 8-1

5.0 Form 4: Itemized Operating Fee 8-2

6.0 Form 5: Progress Payment Schedule..... 8-2

7.0 Form 6: Guaranteed Maximum Utility Utilization..... 8-2

8.0 Form 7: Performance Guarantees..... 8-2

8.1 General..... 8-2
8.2 Guaranteed Construction Period..... 8-2
8.3 Guaranteed Throughput Capacity..... 8-2
8.4 Output Guarantees..... 8-3
8.5 Environmental Guarantees..... 8-3

9.0 Form 8: Alternate Revenue Credit Proposal..... 8-3

10.0 Form 9: Detailed Facility and Equipment Data..... 8-3

11.0 Form 10: Detailed Use of Local Firms, Business, etc..... 8-3

12.0 Miscellaneous Forms..... 8-4

Page No.

Proposal Form

1	Capital Construction Cost.....	8-5
2	Itemized Capital Construction Cost.....	8-6
3	Operating Fee	8-8
4	Itemized Base Operating Fee.....	8-9
5	Progress Payment Schedule.....	8-10
6	Guaranteed Maximum Utility Utilization.....	8-11
7	Performance Guarantees.....	8-12
8	Alternate Revenue Credit Proposal.....	8-14
9	Detailed Facility and Equipment Data.....	8-15
10	Detailed Use of Local Firms, Businesses, etc.....	8-39
11	Noncollusion Certification.....	8-40
12	Nondiscrimination.....	8-41
13	Indemnification Agreement.....	8-42
14	Disclosure.....	8-43
15	Letter of Intent.....	8-44
16	Exceptions to RFP.....	8-46

APPENDICES

A. Drawings: Site, Drawing List

B. Technical Requirements

C Acceptance Testing

D. Facility Site Data

E. Utility Information

F. Summary of Regulatory Review Required

G. Master Plan Report, Spokane - Airport Business Park

H. Airport Site Queuing Analysis

I. Proposed Department of Ecology Rules

J. WWP Interconnection Requirements

GLOSSARY

The following are terms mentioned in this Request for Proposals (RFP). Their meanings, as used in this RFP, shall be as expressly indicated below unless the content of this RFP requires otherwise.

Acceptable Waste means Solid Waste such as, but not limited to: garbage, trash, rubbish, refuse, and offal; occasional beds, mattresses, sofas, bicycles, and baby carriages; automobile or small vehicle tires, to the extent that air emission criteria are not violated by their combustion; commercial and industrial waste; trees no greater than six feet long and one foot in diameter, branches, leaves, twigs, grass, and plant cuttings; specifically excepting Unacceptable Waste as defined in this RFP.

Acceptance means approval of the Facility by the Project once all tests have been verified to have been passed in accordance with the Acceptance Testing procedures as outlined in this RFP and described in the Construction Agreement and the Project concurs with the test results.

Acceptance Date means the business day next following the date on which all tests have been passed in accordance with the Acceptance Testing procedures as described in this RFP and in the Construction Agreement. The date the tests have been passed will not be known until after the tests have been verified. Upon verification, the Facility will have been deemed to have passed the tests the day the testing was completed.

Acceptance Testing and Acceptance Test means the testing to be performed to prove or show that all Performance Guarantees have been met, done in accordance with the procedures as described in this RFP and in the Construction Agreement.

Agreements means the two agreements, the Construction Agreement and the Operation and Maintenance Agreement, between the Project and the Company for the design, construction, Acceptance Testing and operation of the Facility for 20 years after the Acceptance Date or such other time as may be required by the Project based upon financing arrangements.

Ash means the material remaining after incineration including ash siftings, bottom ash, and fly ash including scrubber residue and unspent lime.

Base Operating Fee means the price in $/ton of waste for which the Company proposes to operate and maintain the Facility up to the Guaranteed Annual Tonnage.

Bonds means tax-exempt Governmental Purpose Bonds (GPBs), Private Activity Bonds (PABs) or other debt instrument, the proceeds of which will be used to finance a portion of the design, construction, start-up and Acceptance Testing of the Facility.

Boundary Limits of the Facility Site means the Facility Site limits as shown in Appendix A of this RFP.

Buydown Amount means a payment made by the Company to redeem a portion of the Bonds and pay back a portion of the Referendum 39 Grant in the event the Facility does not completely satisfy Acceptance Tests.

Bypassed Waste means Acceptable Waste delivered to the Facility but not Processed due to Company fault, or Acceptable Waste diverted from the Facility at the Company's direction unless rejected by the Company as permitted by the Agreement.

Capital Construction Cost means the proposed fixed cost to design, construct, start-up and Acceptance Test the Facility in accordance with the requirements of this RFP.

City means the City of Spokane, Washington.

Company means the firm designated to enter into negotiations with the Project for an Agreement to design, construct, Acceptance Test and operate the Facility.

Construction Agreement means the Agreement between the Project and the Company for design, construction and Acceptance Testing of the Facility.

Construction Guarantee means the guarantee to be made by the Project Guarantor that the Facility will be designed, constructed and equipped in accordance with the Construction Agreement and will pass the Acceptance Tests on or before the Scheduled Acceptance Date.

County means the County of Spokane, a political subdivision of the State of Washington.

Debt Service means the amount required to pay the sum of interest on, and the principal of and any sinking fund installments for, outstanding Bonds or other financing mechanism during each fiscal year.

Electricity Sales Agreement means a long-term agreement under which the Project will sell electricity and electrical capacity.

Energy Credits means that portion of the revenues derived from the sale of electricity and/or steam, which is transferred to the Company as a credit in the Service Fee determination.

Energy Sales Agreement means any contract between the Project and an energy market.

Excess Operating Fee means the price in $/ton of waste for which the Company proposes to operate and maintain the Facility for quantities of waste exceeding the Guaranteed Annual Tonnage.

Facility means all elements of the proposed Spokane Regional Waste to Energy Facility, including the buildings, equipment, machinery, and other real and personal property located within the Facility Site.

Facility Site means the real property located in the County as shown in Appendix A and described in Appendix D of this RFP.

Guaranteed Annual Tonnage means the minimum annual tonnage of Acceptable Waste to be guaranteed by the Project to be delivered to the Facility.

Guaranteed Construction Period means the time period to be guaranteed by the Company, for design, construction, start-up and Acceptance Testing of the Facility.

Guaranteed Maximum Utility Utilization means the maximum utility usages to be provided on Proposal Form 6 the costs of which will be Pass-through Costs.

Guaranteed Throughput Capacity means the annual Acceptable Waste throughput capacity of the Facility to be guaranteed by the Company.

Hazardous Waste has the meaning as defined by the Resource Conservation and Recovery Act 42 USC 6903(5) as may be revised from time to time and the definitions promulgated by the State of Washington for Dangerous Waste and Extremely Hazardous Waste and shall include any Hazardous, Dangerous, or Extremely Hazardous Wastes generated by small quantity generators as defined in WAC 173-303-070 as may be revised from time to time.

Holiday means New Years Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Day and Easter.

Issuer means the entity created or empowered to issue Bonds or otherwise incur debt for the development of the Waste to Energy Facility.

Local Firms, Businesses, Suppliers having main office or business within 50 miles of the City of Spokane. Production or service majorly accomplished within Spokane County. Principle ownership and staff permanently located in Spokane County.

Local Labor residing in Spokane County.

Mass Burn means the technology whereby unprocessed Solid Waste is burned in a plant designed to achieve a substantially complete burnout of the Solid Waste.

Net Electric Output means the quantity of electricity available for sale which is the difference between the actual electric generation of the Facility and in-plant electric usage, expressed as kilowatt-hours per ton of Acceptable Waste processed at the Facility, to be guaranteed by the Company.

Net Energy Revenues means those revenues realized from the sale of electricity less any penalties or damages imposed against the Project for failure to fulfill the terms of the Electricity Sales Agreement.

Notice to Proceed means the written authorization given by the Trustee to the Company to commence the activities identified in the Construction Agreement.

Off-Site Facilities means roads, water lines, wastewater lines, electrical supply, electrical transmission system, storm drainage system, natural gas supply system and other facilities identified in this RFP which are located outside the Boundary Limits of the Facility Site.

Operating Guarantee means the guarantee to be made by the Project Guarantor that the Facility will continue to meet the Performance Guarantees over the term of the Operations and Maintenance Agreement.

Operations and Maintenance Agreement means the Agreement between the Project and the Company for operation and maintenance of the Facility for 20 years after the Acceptance Date or such time as may be required based upon financing arrangements.

Parent Company means either that corporate member of a proposer consolidated group qualifying under the financial criteria which is considered to be the parent entity of the group, or in a joint venture or partnership arrangement, any one of the joint venture or partnership entities.

Pass-through Cost means those items specified in the Agreement including utility costs up to the Guaranteed Maximum Utility Utilization and the landfill disposal fees incurred by the Facility for disposal of Process Residues, which is included as an element of the Service Fee determination.

Performance Guarantees means those construction and operating guarantees made by the Company on Proposal Form 7 and throughout this RFP, in accordance with the requirements of this RFP.

Processing means the acceptance and incineration of all Acceptable Waste.

Project means the entity created by interlocal agreement between the City of Spokane, Washington and Spokane County, Washington empowered to enter into contractual agreements necessary for the permitting, construction and operation of the Spokane Regional Waste to Energy Facility.

Project Guarantor means the person, partnership, or corporation that meets the financial qualifications set forth in Part Three of this RFP and executes the Construction Guarantee, the Operating Guarantee or any other guarantee required by this RFP.

Proposal means a submission made by a firm, which presents required information as detailed in this RFP, for design, construction, Acceptance Testing and operation of the Facility.

Proposer means either the corporation, partnership or joint venture organized to enter into the contractual arrangements described in this RFP, or where the context requires, the group of corporate or other entities which are consolidated with the nominal company for financial accounting purposes.

Recovered Materials means all materials, including ferrous metals, which are recovered from Ash for subsequent sale.

Reference Waste means Acceptable Waste having the heating value characteristics as provided in Table 2.3 of this RFP, considered typical of the Acceptable Waste to be delivered to the Facility.

Scheduled Acceptance Date means the date on which the Company guarantees that the Facility will have passed all of the Performance Guarantees during Acceptance Testing, obtained by adding the Guaranteed Construction Period to the date of the Notice to Proceed.

Service Fee means the fee paid to the Company by the Project in consideration for processing of Acceptable Waste, to be calculated as set forth in the Operations and Maintenance Agreement.

Solid Waste means all materials or substances discarded or rejected as being spent, useless, worthless, or in excess to the owners at the time of such discard or rejection, including, but not limited to, garbage; refuse; industrial and commercial waste; sludges from air or water pollution control facilities or water supply treatment facilities; rubbish; ashes; contained gaseous material; incinerator residue; demolition and construction debris; offal, but not including sewage and other highly diluted, water-carried materials or substances and those in gaseous form; special nuclear or by-product material within the meaning of the Atomic Energy Act of 1954, as amended; and Hazardous Waste.

Unacceptable Waste means Solid Waste such as, but not limited to: explosives; pathological and biological wastes; radioactive materials; ashes; foundry sand; sanitary sewage and other highly diluted, water-carried materials or substances; sewage sludge and septic and cesspool pumpouts; human remains; refrigerators, washing machines and other white goods; motor vehicles, including such major motor vehicle parts as transmissions, rear ends, springs, and fenders; agricultural and farm machinery and equipment; liquid wastes; nonburnable construction material and/or demolition debris; and Hazardous Waste of any kind or nature, such as cleaning fluids, crank case oils, cutting oils, paints, acids, caustics, poisons, drugs, or other materials that would be likely to pose a threat to health or public safety, or cause injury to or adversely affect the operation of the Facility.

Uncontrollable Circumstance means (1) any event or condition whether affecting the Facility, the Project or the Company, that has, or may reasonably be expected to have, a material adverse effect on the Agreement or on the Facility or the Facility Site or the design, construction, Acceptance Testing, operation, or possession of either or both of them, if such event or condition is beyond the reasonable control, and not the result of willful or negligent action or a lack of reasonable diligence, of the party relying thereon as justification for not performing any obligation or complying with any condition required of such party hereunder, for delaying such performance or compliance or for an adjustment to the Capital Construction Cost or the Service Fee, and (2) one or more of the following, but only if the events are described as follows:

- an act of God, storm, flood or similar occurrence (except for weather conditions normal for the area) landslide, earthquake, fire or other casualty, an act of the public enemy, war blockade, insurrection, riot, general arrest or restraint of government and people, civil disturbance or similar occurrence;

- the order of judgment of any federal, state, or local court, administrative agency or governmental officer or body, excepting decisions of federal courts interpreting the federal tax laws and decisions of state courts interpreting state tax laws, if it is not also the result of willful or negligent action or a lack of reasonable diligence of the party relying thereon, and the party does not control the administrative agency or governmental officer or body, provided that the diligent contest in good faith of any such order or judgment shall not constitute or be construed as a willful or negligent action or a lack of reasonable diligence of such party;

- the adoption, promulgation, issuance, material modification or change in interpretation, after the date of the Agreement, of any federal, state or local law, regulation, rule, requirement or ordinance, excepting changes in federal or state tax laws; a law, regulation, rule, requirement or ordinance is deemed to be duly adopted, promulgated, issued or otherwise officially modified or changed in interpretation, when it is in provisional, interim or final form and effective or to become effective without any further action by any federal, state or local governmental body, administrative agency or governmental official having jurisdiction;

- the failure of the jurisdiction in which the Facility or any landfill is situated or the appropriate federal or state agencies or public utilities having operational jurisdiction in the area of location of the Facility or any landfill to provide and maintain and assure the maintenance of all utilities, services, sewage and water lines to the Facility or such landfill for operation of the Facility or such landfill, provided they are essential to the Facility;

The term "reasonable control" includes investigation or planning that is required by sound management or industry practices.

Waste to Energy Facility means a facility used to convert Acceptable Waste to energy through incineration.

ACRONYMS AND ABBREVIATIONS

AC	alternating current
acf	actual cubic feet
acfm	actual cubic feet per minute
amp	ampere
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British Thermal Units
Btuh	British Thermal Units per hour
BWG	Birmingham Wire Gauge
cc/L	cubic centimeter per liter
cfm	cubic feet per minute
cm	centimeters
CMAA	Crane Manufacturers Association of America
CP	Control point
dB	decibel
DC	direct current
DOE	Washington Department of Ecology
DPW	Department of Public Works
dscf	dry standard cubic feet
EER	Energy Efficiency Ratio
ESP	Electrostatic Precipitator
F	Fahrenheit
FAA	Federal Aviation Administration

FD	forced draft
ft	feet
GEP	Good Engineering Practices
GL	guaranteed load
gm	gram
gpd	gallons per day
gpm	gallons per minute
gr/dscf	grains per dry standard cubic foot
H	height
HEI	Heat Exchanger Institute
HHV	higher heating value
hp	horsepower
hr	hour
HRD	High rate discharge
HVAC	Heating, ventilating and air conditioning
Hz	hertz
ID	induced draft
in	inch
in Hg abs	inches of mercury absolute
kV	kilovolt
kVA	kilovolt-amp
kW	kilowatt
kWh	kilowatt-hour

L	length
LAER	Lowest Achievable Emission Rate
lb	pound
M	thousand
MCR	maximum continuous rating
MGD	million gallons per day
min	minute
MSW	municipal solid waste
MW	megawatt
NAAQS	National Ambient Air Quality Standards
PDT	Pacific Daylight Time
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
RFP	Request for Proposals
RFQ	Request for Qualifications
PST	Pacific Standard Time
rpm	revolutions per minute
s (or sec)	second
SA	secondary air
SCADA	supervisory control and data acquisition

SCAPCA	Spokane County Air Pollution Control Authority
SEC	Securities and Exchange Commission
TEFC	Totally enclosed fan cooled
TPD	tons per day
TPW	tons per week
TPY	tons per year
VWO	valves wide open
W	width
WGR	waste generation rate
WUTC	Washington Utilities and Transportation Commission
WWP	The Washington Water Power Company
yd	yard
yr	year
ug/m^3	micrograms per cubic meter

PART ONE
INTRODUCTION

1.0 PURPOSE

This Request for Proposals (RFP) for the Spokane Regional Waste to Energy Project is being issued by the City and County of Spokane, Washington. The City of Spokane and the County of Spokane entered into an interlocal cooperation agreement, which establishes an organizational structure or entity for the City and County to jointly implement a waste-to-energy project. This entity thus created is referred to throughout this document as the "Project". The Project intends to develop a Mass Burn facility (the Facility) capable of processing 800 tons per day (TPD) of Acceptable Waste. The proposer selected in this public procurement process will design, construct, Acceptance Test, operate and maintain the Facility either directly or through a subsidiary or limited or general partnership (the Company). The Project will operate and maintain the recycling area and scalehouse. The recycling area will be constructed and operated by a third party or parties and should not be included in the Proposal. The tipping floor and receiving pit will be operated and maintained by the Company. This RFP references the Project's qualification requirements under the previously issued RFQ which proposers must continue to meet to be considered for development of the Facility. In addition, the RFP includes the minimum technical design and operating requirements for the Facility, construction and operational performance guarantees, the anticipated business arrangement and financing plans, contractual conditions, evaluation procedures and Proposal forms.

The Project intends to select that Proposal which, in the judgment of the Project, is the most advantageous to the Project and the region considering capital costs, operating costs, anticipated revenues, technology, experience, aesthetics, and risk allocations. This selection will be made in accordance with the evaluation and selection process described in Part Seven.

2.0 GENERAL

The City and County of Spokane, shown in Figure 1-1, is located in the state of Washington. The County's population in 1986 was estimated to be 358,447.

Approximately 282,000 tons per year (TPY) of Solid Waste are currently generated in the County. Nearly all waste collected within the City of Spokane is collected by the City Department of Public Works. Outside the City, seven private collectors collect waste under franchises issued by the Washington Utilities and Transportation Commission. Outside the City, collection is not mandatory, and a number of waste generators, both individuals and companies, transport their own wastes to the landfill.

The Washington counties surrounding Spokane County, as well as Kootenai County in Idaho are experiencing limitations on disposal capacity. Lincoln County generates approximately 4,000 to 6,000 tons of waste per year while Kootenai County generates approximately 55,000 tons of waste per year.

Smaller quantities are generated by other nearby counties. An estimated 248,300 TPY of Acceptable Waste will be available from the City and County of Spokane in 1990 with some additional waste coming from outlying areas.

Kootenai County is not joining the Project at this time; however, the Project wishes to preserve the capability to expand the Facility should waste from Kootenai County or other source(s) become available.

The Project will provide a landfill for disposal of ash and bypassed waste from the Facility. The Project will soon initiate siting of a new landfill. The Company will provide for transportation of ash from the Facility to the landfill and payment of the disposal fees; however, disposal fees will be considered a pass-through cost. Transportation costs for distances traveled over 15 miles (one way to landfill) shall be pass-through costs.

The Facility Site is located on mostly vacant land owned by the City/County of Spokane at the Spokane International Airport. The site is south of Park Drive and northwest of Geiger Boulevard. Approximately 60 acres of airport property are potentially available for siting in this area. The site is approximately 1.3 miles west of the city limits, via Geiger and Sunset Highway.

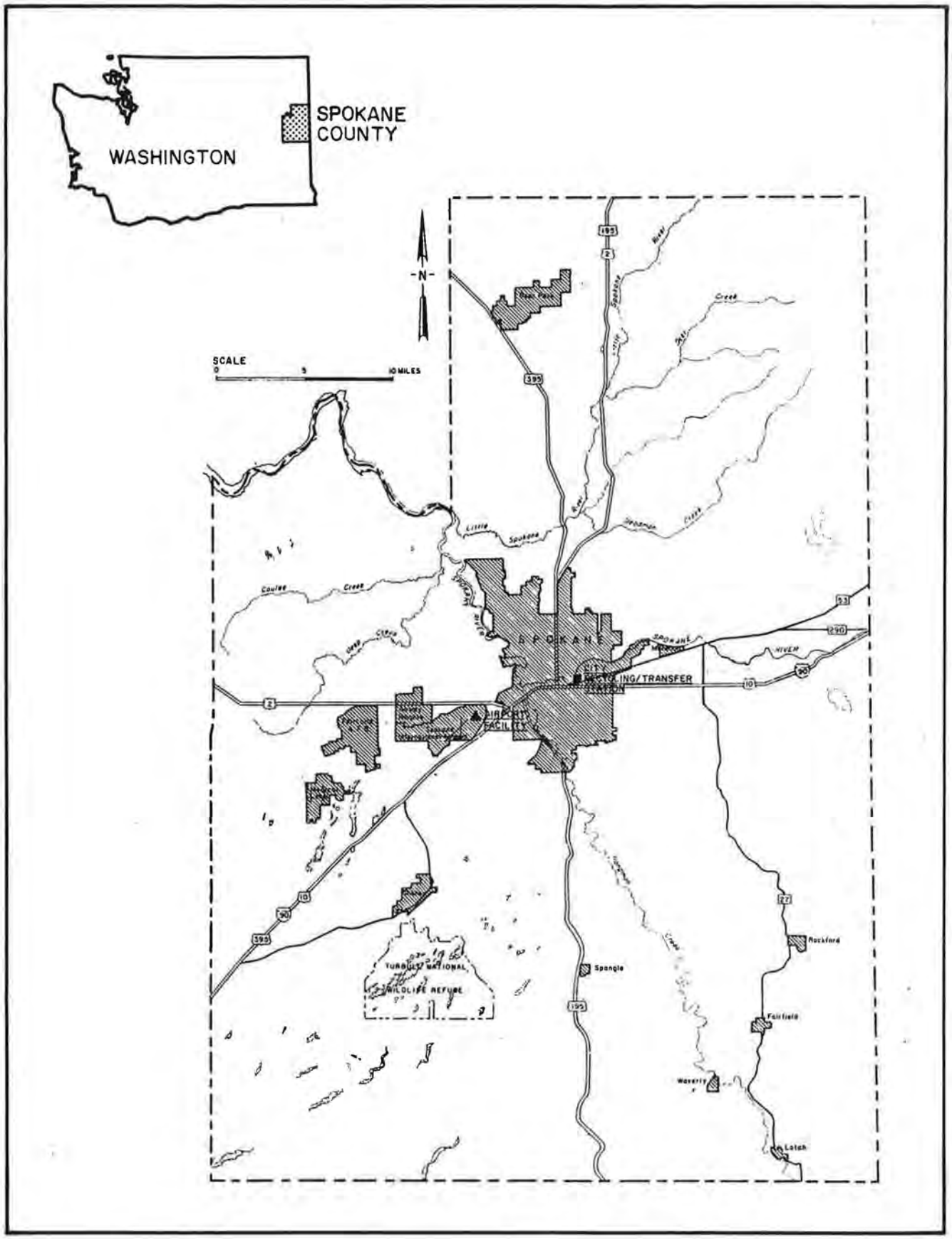
The Project will enter into an Electricity Sales Agreement. This RFP assumes only electricity will be sold.

The recovery of any recyclable materials will be at the proposer's option and is encouraged by the Project.

3.0 THE RFP

This RFP is organized into eight major parts as follows:

- Part One (this part) describes the basic purpose and structure of the RFP, the responsibilities of the various parties, the schedule, and general requirements of the procurement process.
- Part Two contains background information about the Project, Solid Waste information, a description of the Facility Site, identification of energy markets, and environmental requirements.
- Part Three lists the prequalified Proposers who are being asked to respond to this RFP.
- Part Four defines the general Facility requirements including technical design and operational criteria, landfill and residue responsibilities, and Facility design, construction and operations guarantees.
- Part Five outlines the anticipated financing plan and business arrangements.



REGIONAL LOCATION MAP

FIGURE 1-1

- Part Six describes the anticipated contractual conditions during the Facility construction and operation.

- Part Seven summarizes the evaluation process which will be used to review Proposals.

- Part Eight contains Proposal forms, which are to be completed and submitted with each Proposal. These forms will become an integral part of each Proposal.

This RFP also includes a number of appendices to clarify certain information, data and issues described in the text.

4.0 THE PARTIES

The Agreements to be negotiated as a result of responses to this RFP will be between the Project and the Company. In order to expedite Facility implementation, the Project has initiated discussions with the potential energy markets. The City and County of Spokane presently own the Facility Site which will be leased to the Project.

The Project will guarantee 220,000 TPY of Acceptable Waste to be delivered to the Facility. A portion of the Acceptable Waste is assumed to be provided by areas outside the County. Out of County Acceptable Waste will be provided through a service contract(s) to be negotiated by the Project and outlying County(ies).

The Energy Sales Agreement will be negotiated by the Project. Any materials recovery agreements will be negotiated by the Company and will be between the Company and the market with approval of the Project. The Company will construct and operate the Facility in accordance with the technical description and Performance Guarantees of its Proposal, and the Agreements to be negotiated.

The Environmental Impact Statement (EIS) has been completed with the City of Spokane acting as the lead agency. Since the new site is adjacent to the parcel of land examined in the EIS, an addendum will be added to the EIS. The Company will be required to supply data to finalize environmental permits. All construction permits shall be obtained by the Company.

5.0 THE AGREEMENTS

The Company will design, construct, acceptance test, equip and start-up the Facility and maintain and operate the Facility for 20 years. Under a long-term service agreement (the Operations and Maintenance Agreement), the Project will agree to deliver specified quantities of Acceptable Waste (220,000 TPY, the Guaranteed Annual Tonnage) to the Facility for disposal and pay specified disposal fees (the Service Fee). The Project may enter into one or more contracts with other entities for the delivery of waste. However, those contracts will be constructed to reflect the Project's obligations under the Operations and Maintenance Agreement. The Project will make available landfill capacity for ash and bypassed waste. The Project will lease the Facility Site from the City and County and will make the Facility Site available to the Company. The Project will enter into a

long-term contract (the Electricity Sales Agreement) for the sale of electricity and capacity. The obligations of the Company under the Agreements will be guaranteed by the Project Guarantor to the extent provided in the Proposal. The Project will enter into Financing Agreements described in Part Five of the RFP.

6.0 PROCUREMENT STRUCTURE AND SCHEDULE

6.1 Structure

The Project currently anticipates that it would select only one proposer from among those submitting Proposals and conduct negotiations only with such selected proposer. If under this procedure the Project determines in its sole judgement that it is unable to negotiate a contract with the selected proposer on terms that it determines to be fair and reasonable and in the best interest of the Project, then the Project may terminate negotiations with such proposer and initiate negotiations with the next best proposer.

6.2 Schedule

The Project has established the following schedule for the procurement process:

Events	Date
Select Most Qualified Companies	October 17, 1986
Issue Draft RFP	October 28, 1986
Preproposal Conference	November 13, 1986
Issue Final RFP	December 17, 1986
Receive Proposals	February 27, 1987
Select Company	Approximately March 13, 1987
Complete Negotiations	Approximately May 15, 1987
Notice to Proceed	Approximately July 1, 1987

There will be a preproposal conference on November 14, 1986 at 10:00 AM (place to be announced), at which time the representatives of the Project will be available to answer questions. However, all verbal answers to such questions will be nonbinding, and only answers which are confirmed in writing to all prospective proposers will be binding and will automatically become a part of this RFP.

Following the conference, there will be a tour of the Facility Site.

7.0 GENERAL REQUIREMENTS

7.1 Submission Deadline and Address

Sealed Proposals will be received no later than 3:00 p.m., PST on February 27, 1987, at the following address:

David W. Birks, Executive Director
Spokane Regional Solid Waste Disposal Project
West 720 Boone, Suite 201
Spokane, Washington 99201
(509) 328-1805

7.2 Number of Copies

The proposers shall submit a minimum of 30 copies of the Proposal in its entirety including appendices, engineering drawings, exhibits, and other requirements as specified herein. Each copy shall be assigned a number, 1 through 30, by the proposer, for distribution control.

7.3 Proposal Security

Each Proposal must be accompanied by a proposal bond from a corporate surety company licensed to do business in the State of Washington and acceptable to the Project, postal money order, cash, cashier's check, or certified check in the amount of $500,000, valid for a period of at least 365 days from the scheduled Proposal submittal date. No Proposal may be withdrawn within 365 days after submission of Proposals. Any Proposal received without the required proposed security will be considered non-responsive and will not be accepted. No proposer's security shall be released until the proposer's Proposal has been completely rejected or otherwise released by the Project in writing. Each proposer's security will be released upon termination of the 365-day period following the submission of Proposals, unless the proposer agrees to extend such period. Each proposer's security will be released after the signing of the Agreements between the Project and the selected Company.

If the proposer withdraws its Proposal prior to release by the Project, fails to negotiate in good faith with the Project, or if, after the Project and the Company agree on the terms of the Agreements, the proposer fails to sign the Agreements or any of the agreements contemplated by this RFP, the amount of the proposer's security will be forfeited and retained by the Project as liquidated damages. By submitting a Proposal each proposer and the Project agrees that $500,000 constitutes a reasonable measure of the damages suffered by the Project as a result of such event.

7.4 Signature and Authority

If the Proposal is made by a partnership, the name and post office address of the partnership, a list of the partners, and the signature of at least one of the general partners must be provided. If made by a corporation, the Proposal must indicate the name and the state under which the corporation is incorporated and the name and post office address of the corporation. If the Proposal is made by a corporation, the Proposal shall include a certi-

fied copy of the appropriate section of the bylaws or resolution of the board of directors of the corporation showing the authority of the officer signing the Proposal to execute contracts on behalf of the corporation, and a list of directors/shareholders with more than a 10% interest in the corporation. In addition to either of the above, the Proposal must also be signed by the chief financial officer of the Project Guarantor.

7.5 Communications

The following are the general operation policies immediately in effect for communications between companies responding to the Spokane Regional Waste to Energy Facility RFP or any party acting on their behalf (hereinafter referred to as "the proposer"), and Project staff and consultants. For purposes of this document Project staff includes, but is not limited to, elected and appointed officials and officers, and employees.

These guidelines shall remain in effect until such time that the Project enters an Agreement with a proposer unless otherwise indicated. Violation by any proposer of these policies may result in disqualification of that proposer's Proposal from further consideration by the Project.

Additional and/or amended guidelines and limitation for communication between Project staff and the proposers during the Proposal period may be communicated as an addendum to this RFP.

- Communications Initiated by Proposers

  (a) Informal Contacts/Visits: Informal visits or telephone discussions with Project staff are discouraged. As a practical matter, however, it may be necessary to meet or discuss legitimate problems or questions of a minor technical, informational or administrative nature. These visits or discussion should be minimized in frequency and be brief in duration, and shall be directed to the contractual and technical contact personnel as specified in this RFP.

  (b) Requests for Information/Meetings: All requests for information, meetings, or discussion not covered in Part One, 7.5(a) above, shall be addressed in writing to the Executive Director. Such documents shall be for public inspection. Requestor and participants shall waive their rights of confidentiality, and may be requested to submit a documented record of such a meeting.

  (c) Discussions with or questions of the Project's Consultants: Direct contact and discussion of this RFP and Project with any consultant retained by the Project regarding the Spokane Regional Waste to Energy Facility is expressly prohibited, without prior consent of the Executive Director.

- Communications Initiated by Project Staff

From time to time during the Proposal period it may be necessary for the Project to communicate with proposers in order to discuss questions of a technical, informational or administrative nature. Such communication will be conducted only by either the contractual or technical contact personnel as specified in this RFP. Any correspondence of a substantive nature (to be determined by the Executive Director) concerning this RFP or the Spokane Regional Waste-to-Energy Facility between the Project and proposers will be made available to all other proposers by the Project in a timely fashion.

Access to Documents

(a) Mailing List: The Project shall maintain a mailing list of all proposers. This list will be used as a basis for public notifications and for sending of public documents related to this RFP. This list will be made available for public inspection.

(b) Examination of Public Documents: The Executive Director shall maintain a public document reading file which shall be open to public inspection on a scheduled or first come, first served basis. This reading file will be composed of this document and any correspondence or list referred to in Section 7.5. This reading file will not initially contain copies of Proposals submitted by the proposers or negotiation documents.

7.6 Errors and Omissions

Following the submission of the Proposals, no proposer may, without consent of the Project, modify or amend its Proposal in any respect, except to correct an obvious arithmetic error which can be confirmed based on the detailed cost breakdowns provided with the Proposal. Any alterations, erasures, or interlineations made on the proposal forms shall only be considered valid if initialed by the proposal signer(s).

7.7 Disclosure of Proposal Information

All Proposals will be subject to public review and copying as a public record pursuant to RCW 42.17.270. In the event a Company determines to include within its Proposal confidential and proprietary technical or financial information that would otherwise not be publicly disclosed and which it believes is exempt from such disclosure under RCW 42.17.310 or other provisions of state law, then such information shall be submitted with the Proposal in a separate, sealed envelope entitled: "Spokane Regional Waste To Energy Project: Confidential Information For Project Review Of Proposal Only." Such information shall be treated as confidential by the Project and used for purposes of evaluation of the Proposal and negotiation of the Agreements contemplated by this RFP subject to the following guidelines:

In the event of a written request for disclosure pursuant to Chapter 42.17 RCW, the Project shall review the confidential information and advise the requesting party and the Company in writing of the Project's determination as to disclosure. If the Project determines to disclose the information, the Project shall allow the Company no more than five (5) days from receipt of such notice to take such legal action to enjoin disclosure as may be deemed necessary by the Company to protect the confidentiality of the information as provided by RCW 42.17.330. Regardless of whether confidential information is submitted with the Proposal as provided above, the Proposal forms shall be fully complete and the technical and financial data submitted in support of the Proposal as required herein, and not subject to the Company's confidentiality restriction, shall disclose the essential nature and type of the facility offered including information and data sufficient to allow evaluation as outlined in Part Seven of this document.

7.8 Labor and Procurement Requirements

The Project and all subcontractors of the Project shall conform to the labor laws of the State of Washington and all other laws, ordinances, and legal requirements affecting the work in Spokane County, Washington. The Company shall use local firms, labor and purchase materials, supplies and equipment from business located within the City and County whenever possible, and practicable.

7.9 Project's Rights and Liabilities

The Project reserves and holds the following rights and options which may be exercised in the sole discretion of the Project with respect to this competitive procurement process:

- To select and enter into an agreement with the proposer who, according to the evaluation factors provided in the RFP, best satisfies the requirements of the Facility, the goals and objectives of the Facility, the interests of the Project, and the public interest in general.
- To terminate the procurement process by written notice to the proposers for any reason whatsoever.
- To reject any Proposal by written notice to such proposers.
- To supplement, amend or otherwise modify this RFP in writing.
- To amend or otherwise alter or modify the proposed Agreements as contemplated in this RFP.
- Not to enter into the Agreements as contemplated by this RFP.
- To amend the scope of services after selection for negotiation of one or more proposers to include services not currently contemplated herein.

- To make the initial award to the most responsible and responsive proposer, as evidenced during the procurement process, who meets the requirements and evaluation factors as set forth in the RFP and not necessarily to the proposer presenting the lowest Capital Construction Cost or Operating Fee in its Proposal.

- To designate another body, agency, group, person, or authority to act on behalf of the Project during the negotiation process or to assist it in the negotiation process.

- To designate another body, agency, group, person, or authority to act at any time during the period of the Agreements on behalf of the Project in contract administration and auditing.

- To establish minimum qualifications for subcontractors and suppliers and to disapprove proposed subcontractors and suppliers other than those originally included in the team presented in a Proposal.

Furthermore, each proposer by submitting its Proposal agrees to hold the Project harmless and free from all liability, loss, injury, and/or cost and expense which might be incurred by any proposer in responding or as a consequence of its response to this RFP. In order to be deemed a valid Proposal, proposers will be required to execute the indemnification agreement given on Proposal Form 13.

7.10 Location and Frequency of Negotiations

Negotiation sessions will be held at times designated by the Project. It is expected that the process of negotiation will generally entail weekly closed meetings between the proposer and the Project for face-to-face discussion of the issues with the Project and the exchange of written materials when the Project deems it appropriate.

The negotiating sessions will be held at the offices of the Project or places to be designated by the Project.

7.11 Commitment to Negotiations

Proposers shall commit a duly empowered and appropriate team to the negotiation meetings. The proposer's representatives must also be knowledgeable and familiar with the subjects under discussion.

Proposers shall make every reasonable effort to adhere to the Project's negotiation schedule as it develops over time. The Project, at its sole discretion, may exclude a proposer from further participation in the procurement process if it determines that the proposer is not making a reasonable effort to adhere to the negotiation schedule.

7.12 Cost to be Borne by Proposers

The proposers shall participate in this procurement process and negotiations, and prepare the required materials and submittals and any subsequent materials and submittals at their own expense, and with the express under-

standing that there may be no claims whatsoever for reimbursement from the Project or any other member of the Project's negotiating team for any cost or expense associated with this process.

7.13 Addenda to the RFP

The Project reserves the right to amend or clarify the RFP by addenda or letters of clarification, issued at any time prior to the date for receipt of proposals. If such revisions or clarifications are of such a magnitude as to warrant, in the opinion of the Project, the postponement of the date for the receipt of proposals, written notification will be issued to the proposers announcing the revised date. Addenda and letters of clarification will be mailed to all proposers with return receipt required. All addenda and letters of clarification issued to this RFP shall become part of the RFP document.

7.14 Omissions and Errors by Project

It is expressly understood by the proposer that the Project provides the information contained herein regarding the background of the Facility and the condition of the Facility Site as a matter of courtesy to the proposers. It is further understood that the Project is not liable for omissions or errors contained in this RFP.

7.15 Withdrawal from the Procurement Process

Any Proposal may be modified or withdrawn by written notice received by the Project before the time and date set for the Proposal's submission. If a proposer withdraws its Proposal, the withdrawal shall be in writing, signed by an authorized individual, and received by the Project at the address set forth herein. All material made available to the Project up to the date of withdrawal shall become the sole and exclusive property of the Project.

7.16 Late Proposals

The Project will not accept, and will return any Proposal received at the place designated in this RFP after the time and date set for receipt of Proposals or any request for withdrawal or request for modification received after the time and date set for submission of Proposals at the place designated.

Exceptions may be made when a late Proposal, modification, or withdrawal is received, and the submittal of Proposal, modification, or withdrawal of that Proposal would have been timely but for the action or inaction of Project personnel directing this procurement activity or their employees.

7.17 Procedure in the Event of the Receipt of Only One Proposal

If only one responsive Proposal is received in response to the RFP, an award may be made to the responsive proposer or further negotiations conducted if permitted by law or the Proposal may be rejected. If the Proposal is rejected, new proposals may be solicited. If the proposal is not rejected, further negotiations may be conducted under the following conditions:

- The need for the procurement continues.
- The price of the one Proposal is not fair and reasonable.
- There is not sufficient time for resolicitation or resolicitation would likely be futile.

7.18 Conditional Proposals

Any Proposal which is conditioned upon receiving an award of both the present Agreements and another Project contract other than the current one, or other contract that is not related to the development of the Facility, shall be deemed nonresponsive and rejected.

7.19 Acknowledgement of Facility Site Investigation

In the Proposal, each proposer must acknowledge that it has investigated and satisfied itself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather or similar physical conditions at the Facility Site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The proposer must further acknowledge that it is satisfied as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the Facility Site and related available documents, as well as from information presented by the drawings and specifications made a part of the Agreements to be entered into by the Project and the Company. Any failure by the proposer to become acquainted with the available information may not relieve it from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Project assumes no responsibility for any conclusions or interpretations made by the proposer on the basis of the information made available by the Project. In no event will a failure to inspect adequately the Facility Site and to review available data constitute grounds for a claim after signing of the Agreements.

7.20 Preselection Investigation

The Project reserves the right to conduct a preselection investigation of any firm under consideration to confirm any part of the information furnished by the proposer or potential subcontractor or to require evidence of managerial, financial, technical, and other operating capabilities which the Project deems necessary for the successful performance of the Agreements.

The Project may interview proposers during the Proposal evaluation period. During these interviews, clarifications will be sought where determined necessary in the Project's opinion.

7.21 Nondiscrimination in Selection of Subcontractors

The proposer must not discriminate on the basis of race, color, or national origin in the selection and retention of subcontractors including the procurement of materials and leases of equipment. In all solicitations either by competitive bidding or negotiation made by the proposer for work to be performed pursuant to the procurement, each potential subcontractor or supplier shall be notified by the proposer of its obligations under this RFP selection and law relative to its nondiscrimination practices.

PART TWO
BACKGROUND

1.0 LOCAL SOLID WASTE HISTORY

The City and the County of Spokane have been aware of the problems associated with landfilling for several years. Subsequently, the feasibility of a waste management system consisting of recycling/transfer stations, a waste-to-energy facility and a residue landfill has been studied. In 1982 and 1983, the City, County and The Washington Water Power Company jointly sponsored a feasibility study which was done by Morrison-Knudsen (M-K). This study, completed in mid-1983, recommended a scenario using a 750 ton per day cogeneration facility. This concept evolved into a 1000 ton per day Facility for the RFQ process and now into an 800 TPD electrical generating facility since no formal agreement has been signed with Kootenai County.

The Spokane County Solid Waste Comprehensive Plan, 1984 update, submitted to the Washington State Department of Ecology, recommended that the preferred disposal system contain a waste-to-energy facility. The City of Spokane requested and was awarded a Department of Ecology Referendum 39 Grant to proceed with the implementation of a waste-to-energy facility.

The City and County jointly have contracted with HDR Techserv, Inc. to perform further services culminating in implementation of a waste-to-energy project.

The project team also includes the following subcontractors: Century West Engineering Corporation, Shapiro and Associates, and Arai/Jackson Architects. Bond Counsel is Preston, Thorgrimson, Ellis and Holman, the Financial Advisor is Seattle Northwest Securities, and the underwriter is Shearson Lehman Brothers, Inc.

The City of Spokane and the County of Spokane entered into an interlocal cooperation agreement, which establishes an organizational structure or entity for the City and County to jointly implement a waste-to-energy project. This entity thus created is referred to throughout this document as the "Project."

Environmental problems with siting and the lack of a committed steam purchaser resulted in the choosing of a Facility generating electricity only but with the potential for future steam sales. Because of the possibility of attracting additional waste from Kootenai County or other area(s), the Project will require the Facility to have expansion capabilities for an additional unit.

2.0 SOLID WASTE STREAM

2.1 Present Collection and Disposal Practices

Approximately 282,000 TPY (1986) of mixed municipal solid waste (MSW and Commercial and Residential Waste) are generated and landfilled within Spokane County. An additional 70,000 TPY are generated and recycled. The City of Spokane, Department of Solid Waste Management, collects nearly all of the waste generated within the City. Outside the City, collection is not

190 TPD

mandatory and a number of waste generators, both companies and individuals, transport their own wastes. In addition, seven private haulers collect waste under franchises issued by The Washington Utilities and Transportation Commission (WUTC). Solid waste generated in the County that is not recycled or processed is disposed of at four area landfills: the City of Spokane's North Landfill and South Landfill; Spokane County's Mica Landfill; and the privately operated Marshall Landfill. Without resource recovery these facilities are expected to reach capacity in the mid 1990s.

The Spokane area has an unusually high rate of recycling activity. The current recycling rate is estimated to be 15 to 20 percent of the waste stream. Current recycling is done through source separation and delivery to private recycling centers. Recycled wastes include newsprint, corrugated and high-grade papers, glass, aluminum, ferrous, and non-ferrous.

2.2 Waste Generation

Solid waste generation is a function of the residential and business activity in a community. Waste generation rates have been estimated from waste disposal records from the five landfills located in Spokane County; including the recently closed Colbert Landfill.

Volumetric waste quantity records have been maintained at the County's landfills and at the City's South Landfill while the City's North Landfill has scales for weighing waste received.

Previous feasibility analyses for this Project included a sample weighing program at the Mica Landfill to determine typical densities of various waste categories; these densities then were applied to County volume records to calculate the tons of waste disposed. Additionally, during 1982, the City instituted a weighing program at the North Landfill, whereby one week each month the South Landfill was closed and all waste collected by the City, as well as all waste delivered to the North Landfill by others, was weighed.

The Spokane County Comprehensive Solid Waste Management Plan Update, 1984, (The Comprehensive Plan) used volumetric waste data from the Mica, Colbert and Marshall landfills; the waste density factors from the previous feasibility analyses; and the results of the City's 1982 weighing program to estimate the tonnages of waste landfilled in Spokane County, as shown in Table 2.1.

While Table 2.1 shows total waste quantities, a certain amount of the waste generated is not processible through a waste to energy facility. The previous analyses estimated that 85 percent of the total waste currently disposed is processible. When applying this factor to the landfilled waste in Table 2.1, a processible unit waste factor of 3.6 pounds per capita per day is calculated. This unit waste factor is reasonable when compared with those determined in other locations with similar climate and demographics when considering the amount of waste recycled. The Comprehensive Plan then projected future total waste quantities based on population growth. Table 2.2 shows the resultant waste projections.

2.3 Waste Characteristics

The higher heating value (HHV) of the Solid Waste is assumed to range between 3,800 to 5,500 Btu/lb and be 4,700 Btu/lb for Net Electric Output Guarantees as shown in Table 2.3. The higher heating value includes the latent heat of vaporization of any water vapor in the products of combustion. Proposers can refer a typical ultimate analysis in Appendix B for use during Proposal preparation in making Performance Guarantees. However, no ultimate analysis has been performed on Spokane waste and these values could vary on a daily and seasonal basis.

TABLE 2.1

Spokane County
Estimated Landfilled Waste per Day Data
(tons per day)

	Mica[a] (TPD)	Colbert[a] (TPD)	Marshall[b] (TPD)	City[b,c] (TPD)	Total (TPD)
January	189	27	58	287	561
February	197	27	60	321	605
March	238	32	73	415	758
April	271	40	84	501	896
May	254	37	78	501	870
June	263	35	80	472	850
July	242	34	75	429	780
August	245	35	76	418	774
September	218	31	67	446	762
October	223	32	69	416	740
November	202	31	63	355	651
December	180	22	54	301	557
Average Daily	227	32	70	405	734
Total Yearly (TPY)	82,879	11,656	25,497	147,825	267,857

Notes:

a. January through June are 1983 data
b. 1982 data
c. Includes waste from Northside and Southside Landfills

TABLE 2.2

Spokane County Projected Waste Stream

Year	Population[1]	Total Tons/Year[1]	Processible Tons/Year[2]
1982	346,886	267,857	227,700
1983	349,607	275,835	234,500
1984	352,350	277,858	234,200
1985	355,251	279,998	238,000
1986	358,447	282,355	240,000
1987	361,732	284,777	242,100
1988	365,017	287,200	244,100
1989	368,332	289,645	246,200
1990	371,677	292,112	248,300
1991	375,644	295,038	250,800
1992	379,654	297,995	253,300
1993	383,706	300,983	255,800
1994	387,802	304,004	258,400
1995	391,941	307,057	261,000
1996	395,862	309,948	263,500
1997	399,823	312,870	265,900
1998	403,823	315,820	268,400
1999	407,863	318,799	271,000
2000	411,943	321,808	273,500
2001	415,727	324,599	275,900
2002	419,546	327,415	278,300
2003	423,400	330,258	280,700
2004	427,290	333,126	283,200
2005	431,215	336,021	285,600

Notes:

1. Spokane County Comprehensive Solid Waste Management Plan Update, 1984.
2. Eighty-five percent of total waste.

TABLE 2.3

Spokane Regional Solid Waste Disposal Project
Reference Waste

Higher Heating Value:

Value for Net Electric Output Guarantee	4,700 Btu/lb
Range for Guaranteed Throughput Capacity	3,800 to 5,500 Btu/lb

Ferrous Content:

Range for Ferrous Recovery Guarantee	2 to 6% by weight

During the operation of the Facility, the Project and/or the Company may test the composition of the Acceptable Waste and request adjustments in the guarantees and Service Fee payments. The Annual Throughput guarantee may be adjusted if the HHV of the Acceptable Waste exceeds the range of 3,800 to 5,500 Btu/lb. The ferrous recovery guarantee, if any, may be adjusted if the ferrous content of the Acceptable Waste is outside the range of 2 to 6% by weight.

2.4 Waste Stream Control

The City of Spokane collects all MSW within the city limits and will provide MSW to the Facility. The County has an ordinance that assures government control of the disposal of all MSW collected within the County boundaries, except MSW collected within incorporated cities and towns. However, Marshall Landfill has been exempted from the requirements of this ordinance. The Project intends to negotiate interlocal agreements to assure delivery of MSW from these cities and towns and possibly neighboring counties to the Facility. The Project estimates that approximately 240,000 TPY of MSW will be available for delivery to the Facility.

3.0 FACILITY SITE INFORMATION

The site (Airport Business Park Site) is located near Spokane International Airport, within the Spokane International Airport Business Park. The site, shown in Figure 2-1, is bounded generally on the north by Park Drive, on the east by Geiger Boulevard, on the south by Air Force housing, and on the west approximately 450 feet east of Spotted Road. The approximately 60-acre site is owned by the City of Spokane and Spokane County, and will be leased to the Project. The site is immediately south of the Airport Site which was evaluated in the Environmental Impact Statement completed in July, 1986.

The Facility shall be arranged in such a manner that the stack is located on the southeast portion of the site to facilitate air traffic concerns. Also, the Facility must have buffer areas between it and the military housing and Geiger Boulevard. See drawing SK-2 in Appendix A for a Conceptual Site Plan.

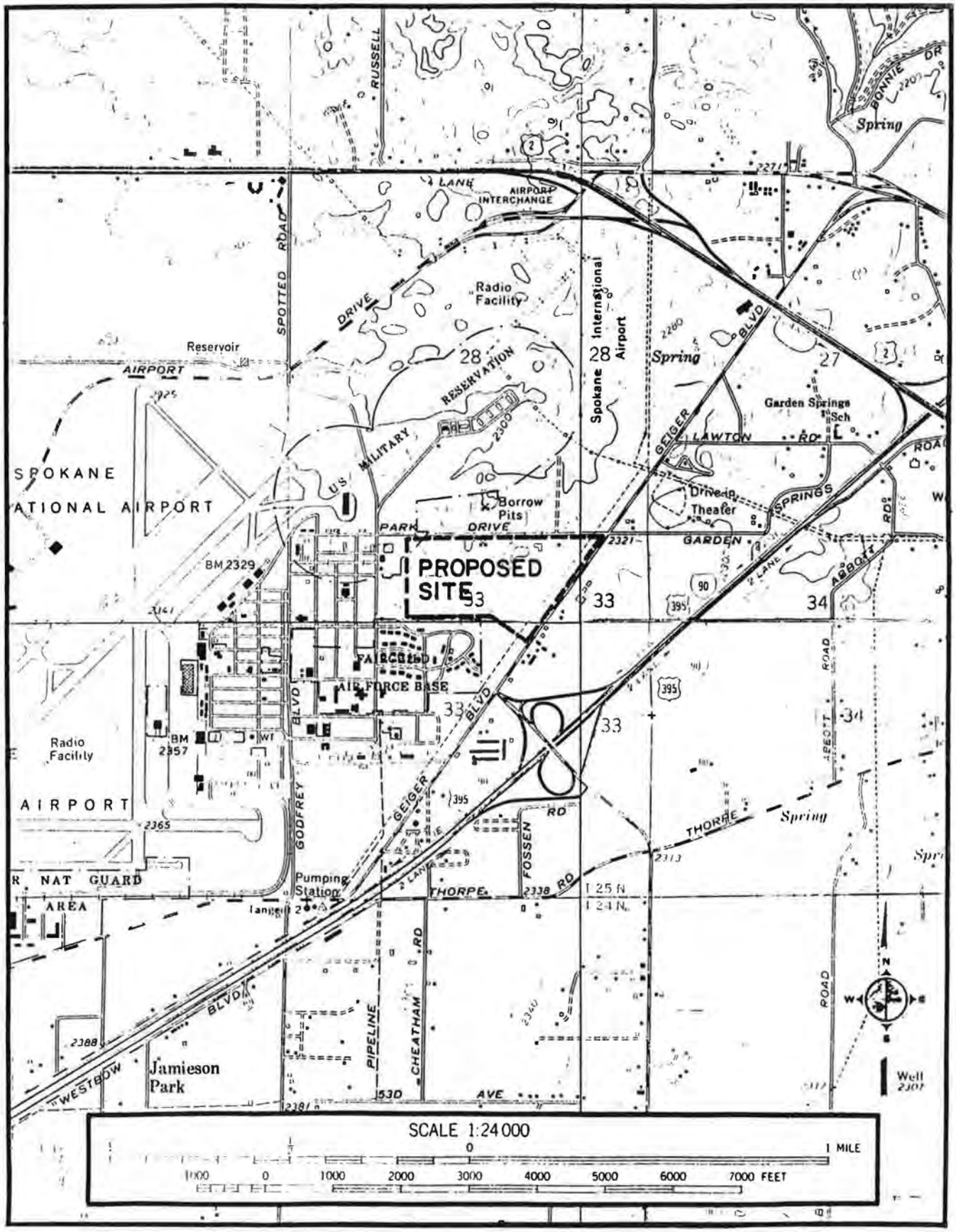
The dominant land use in the area is the airport to the west of the site. The site is vacant, except for an asphalt batching plant on the northern portion, which will be relocated by the Project.

4.0 STATUS OF PROJECT ACTIVITIES

An Environmental Impact Statement (EIS) has been completed for the Facility, but an addendum will be required since the Facility site is adjacent to the site evaluated in the EIS. An ambient air quality monitoring program is underway. The Project is negotiating a contract for sale of electricity, and will develop a site lease.

5.0 ENERGY MARKETS

Electricity produced at the Facility will be primarily for outside sale and for use at the Facility. The power will be sold to or transmitted by The



FACILITY SITE

FIGURE 2-1

Washington Water Power Company which has a transmission line in the vicinity of the site.

Although only electric generation will be considered in Proposal evaluations, steam sales may be considered in the future. The turbine design shall permit the extraction of steam for plant use and also for sale to customers. It is possible a potential steam market can be identified or established.

6.0 ENVIRONMENTAL REGULATIONS

There are a variety of programs and requirements administered by various levels of government (i.e., local, state, and federal) that are designed to ensure the proper and environmentally sound construction and operation of the Facility. Regulatory review and permitting programs have been established to protect the public health, air, water, land resources, and wildlife and to ensure consistent development without adverse encroachment on sensitive areas or regions with specific land use and planning objectives. The proposer will be expected to be thoroughly familiar with all regulatory requirements and how they apply to the proposed Facility. A list of some of the various statutes, regulations, and permits which may be applicable is included in Appendix F of this RFP, with the party responsible for obtaining the required approvals identified.

The Company will be required to obtain and pay for all necessary construction permits. The Project will obtain all necessary environmental permits identified in Appendix F.

An Environmental Impact Statement (EIS) describing environmental effects anticipated to occur during construction and operation of the proposed Facility has been completed. The EIS describes existing conditions at the previously selected Facility Site, which is adjacent to the current Facility Site, and the surrounding area; analyzes the impacts and benefits of the Facility to the environment; and recommends mitigative measures to minimize or eliminate negative impacts. Present and expected physical, biological, and socioeconomic conditions were addressed.

The proposer is expected to acquaint itself with the issues and evaluations presented in the EIS.

6.1 Summary of Physical Elements

- Topography, Geology and Soils.

  Geologic conditions at the previous selected Airport Business Park site adjacent to the current Facility Site consist of basalt bedrock outcrops and a small, enclosed basin containing relatively thin deposits of silty sand overlying the basalt bedrock. A localized, perched, groundwater table was encountered at an approximate depth of 13 feet. This information is provided for informational purposes only. The Project makes no representation to its applicability. A complete geotechnical investigation must be performed by the Company to assure adequate structural design.

- Landfill.

  The Project will provide a landfill for disposal of ash and bypassed waste from the Facility. The Project will soon initiate siting of a new landfill. The Company will provide for transportation of ash to the landfill and payment of the disposal fees; however, disposal fees will be considered a pass-through cost. Transportation costs for distances traveled over 15 miles (one way to landfill) will also be considered pass-through costs.

- Hydrology/Water Quality.

  Runoff from the Facility Site will be diverted to the area north of Park Drive. No stormwater will be allowed to come into contact with Solid Waste or ash.

- Air Quality.

  The Facility Site is located in an area that is, at present, in attainment of the National Ambient Air Quality Standards (NAAQS) for all regulated pollutants: total suspended particulates (TSP), nitrogen dioxide (NO_2), lead (Pb), carbon monoxide (CO), sulfur dioxide (SO_2), and ozone (O_3). To limit pollutants from major new sources that are located in areas of attainment of NAAQS, the new source must use the Best Available Control Technology (BACT). BACT is required for pollutants: (i) regulated by the PSD air quality program established by the U.S. EPA; (ii) in attainment of NAAQS; and (iii) emitted in quantities exceeding the significant emission rates established by the U.S. EPA.

  Emission factors for the Facility have been estimated based on stack testing data for modern resource recovery facilities. The emission factors relate the amount of pollutant emitted from the stack to the quantity of Solid Waste processed or heat released.

  Table 2.4 lists the estimated controlled emission rates used for analysis of impacts in the EIS for the Facility with ESPs alone and with a dry scrubber system as well as PSD Significance Thresholds and Proposed Control Technologies.

  Proposers must provide estimated emissions for the proposed Facility in Proposal Form 9. Where the proposer estimated emissions exceed the estimates provided in this RFP the proposer must provide an explanation as to why the estimated emissions will be exceeded. Performance requirements specified in the RFP are required to be guaranteed for certain pollutants. Performance guarantees do not necessarily equal emissions data set out in Table 2.4.

TABLE 2.4

Spokane Regional Waste-to-Energy Project

EMISSION ESTIMATES[1]
AND PSD SIGNIFICANCE THRESHOLDS[2]

Pollutant	Uncontrolled Emissions (TPY)	Expected Controlled Emissions with ESP (TPY)[5]	Expected Controlled Emissions w/Dry Scrubber (TPY)	PSD Significance Thresholds (TPY)
Carbon Monoxide	328.5	328.5	328.5	100
Nitrogen Oxides	730	730	730	40
Particulates	7,300	365	365	25
Sulfur Dioxide[3]	730	730	219	40
Total Hydrocarbons	91	91	91	40
Lead	50	2.5	1.6	0.6
Asbestos	Negligible	Negligible	Negligible	0.007
Beryllium	.009	.00045	.00028	0.004
Mercury[4]	0.31	0.31	0.31	0.1
Vinyl Chloride	Negligible	Negligible	Negligible	1.0
Fluorides	9.5	9.5	4.75	3.0
Sulfuric Acid Mist	5.29	5.29	2.64	7
Hydrogen Sulfide	Negligible	Negligible	Negligible	10
Reduced Sulfur	Negligible	Negligible	Negligible	10
Chlorides (HCl)	1,131.5	1,131.5	226.3	NA

1 Based on annual throughput of 365,000 TPY.
2 40 CFR 52.21 (b)(23)(i), 1984.
3 Based on an annual emission rate of 4 lb/ton.
4 Based on 100% vapor phase.
5 95% collection efficiency assumed where appropriate.

The combustion control measures to be used to minimize the formation and emission of hydrocarbons, carbon monoxide, volatile organics, and nitrogen oxides shall include but not be limited to:

(a) The use of proven "state-of-the-art" grate and furnace designs.

(b) Using auxiliary burners when necessary to ensure temperatures within the furnace which are adequate to maximize combustion. The auxiliary burners will be used primarily during start-up and shutdown of an individual unit. This use maintains adequate temperatures to protect furnace, boiler, and air pollution control components while providing a good combustion environment. As necessary, the auxiliary burners will also be used to maintain adequate temperatures within the secondary fire zone (above the grates). Monitors will be used to indicate the need to fire the burners as described in Appendix B.

(c) Continuously monitoring the flue gases to ensure that combustion is maximized. Concentration of oxygen, carbon dioxide, and carbon monoxide in the flue gases are useful indicators of combustion efficiency. Monitoring these parameters in the flue gases can provide a good measure of the combustion conditions within the furnace environment.

(d) Opacity will be continuously monitored as an indicator of particulate content in the flue gases and thereby general particulate control device operational efficiency.

The air emissions from the Facility will be monitored and tested in accordance with permit requirements. Continuous monitoring of oxygen, carbon monoxide, carbon dioxide, HCl, SO_2, opacity and temperature of the flue gases will be conducted at the Facility by the Company. The Company shall submit quarterly reports to the Project. These quarterly reports shall contain the high and low readings for all items monitored for that quarter plus summaries of emissions monitoring results for pollutants and averaging periods required pursuant to facility permits. In addition, the Project will, at a minimum, conduct or arrange for an annual comprehensive testing program at its own expense upon reasonable notice to the Company. The Company shall provide the Project with access to the Facility for purposes of testing. If the Facility fails to meet its performance guarantees, the Company shall bear the costs of retesting after appropriate repairs and modifications.

Vendors should review the materials included in the EIS relative to environmental impacts and assumptions used in modeling.

Odors and dust shall be controlled during operation of the Facility by drawing combustion air from the enclosed tipping floor. In addition, the ash shall be kept damp to prevent blowing of particles during transport to the landfill.

The Spokane Airport experiences significant fogging conditions typically in December and January. To minimize the potential for any cumulative effect on local fogging, a plume abatement type cooling tower will be required and will be sited and oriented to take advantage of prevailing southerly winds during the summer. This technology will limit any roadway icing potential.

- Noise.

A noise assessment was performed to estimate noise impacts to the environment from operation of the Facility. Noise levels during construction may exceed the limits established for the surrounding areas under Washington State Regulations. This is not anticipated to be a problem, however, as noise from temporary construction activities are exempted from regulation except as they affect, between 10 p.m. and 7 a.m., lands where human beings reside and sleep. It is not expected that noise generated from normal plant operation will contribute to noise levels in excess of applicable noise standards.

- Traffic.

On-site roadway layouts should segregate vehicles entering and leaving the tipping floor from other vehicles. A Facility bypass roadway, multiple weighing stations, separate employee and visitor parking lots should be used to minimize on-site traffic problems during operation of the Facility. During construction, the Company should try to limit construction-related traffic such as materials deliveries to nonpeak traffic-flow times to limit delays and obstructions on public highways in the area. Fugitive emissions from vehicle traffic during construction shall be controlled using a SCAPCA - approved dust suppressant. Refer to Appendix H for anticipated traffic volume data.

- Utilities.

Utility requirements for the waste-to-energy Facility will consist of water, sanitary sewer, storm drainage, electrical power, and natural gas. All necessary utility lines except electrical lines and storm drainage will be extended to the site boundary by the Project with the Company being responsible for all on-site utility construction. Water will be delivered to the plant from the existing City of Spokane 24-inch main at Spotted Road west of the Facility Site. Sanitary sewer service will be provided by way of a service line provided along Geiger Blvd.

Storm drainage will be directed to the area north of Park Drive and all structures required shall be provided by the Company. Power generated by the Facility will be fed to The Washington Water Power Company's 115 kV Devils Gap-Sunset transmission line which is located north of the Facility Site. A substation will be constructed on-site and the Company will be responsible for connecting to the low side of the substation transformers. Natural gas will be provided by a 4-inch service line from an existing 8" high pressure main on the north side of Park Drive. Further information regarding the Facility's utility lines is provided in Appendix G.

- Archaeological and Historic Resources.

  None of the candidate sites or adjacent lands include any properties listed in the National Register of Historic Places (November 12, 1985). There is, however, a remote possibility that during construction, unknown resources of archaeological and historic significance could be encountered and unintentionally damaged. The Washington State Office of Archaeology and Historic Preservation (November 12, 1985) recommends that, in the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity should be discontinued and the office notified. If any historical resources are uncovered on-site, the Project will retain the services of a qualified archaeologist or historian to examine the site and determine the significance of the resource.

7.0 ASH AND EMERGENCY LANDFILL

Presently, no sanitary landfill is available for bypassed waste or ash. The Project will, however, provide a landfill for these wastes.

PART THREE

QUALIFICATIONS OF PROPOSERS

The Project is requesting proposals from only those companies who have been short-listed based on the minimum technical and financial qualifications presented in the RFQ issued by the Project on May 12, 1986 and amended June 15, 1986. Based on the evaluation of the RFQ responses received, the following companies were authorized to submit proposals to design, construct, Acceptance Test, and operate for a period of 20 years the waste-to-energy Facility.

Babcock & Wilcox/Signal Environmental Systems

Combustion Engineering, Inc.

Fluor Engineers, Inc.

MK - Ferguson Company

Ogden Martin Systems, Inc.

Since the companies have already been judged to be qualified, no further submittal of detailed qualifications requested in the RFQ will be required. However, supplemental or updated information relating to the Proposer's qualifications or the qualifications of subconsultants may be submitted at the Proposer's discretion. Proposers shall certify in the proposal that there has been no material change in financial position or company organization since the submittal of responses to the RFQ. If there have been any material changes in financial position or company organization, they must be submitted with the proposal and described in detail. As part of this certification, Proposers shall submit copies of the most recent Form 10-K and 10-Q filed with the United States Securities and Exchange Commission.

Proposers shall also submit a description of all current major financial commitments presently entered into which may bear on the Proposer's ability to guarantee the performance and other requirements of the Facility. Specifically, this description shall include a listing of all waste-to-energy projects which are under construction but have not passed final acceptance tests or for which the Proposer has submitted proposals which have not been formally rejected. Proposers must utilize the basic technology and criteria which was used to qualify the Proposer. Deviations will be permitted only to the extent of updating the technology.

PART FOUR

FACILITY REQUIREMENTS

1.0 GENERAL

The Facility requirements establish minimum performance characteristics, sizes and configurations of major components of the Facility. The following sections discuss the utilities, ash and landfill responsibilities, general Facility criteria, aesthetic and architectural concepts, and technical data to be submitted by the proposer.

2.0 UTILITIES AND SERVICES

The Project will provide the site with all necessary off-site roads and utilities with the exception of any storm drainage structures necessitated by the Company's design. The Company shall be responsible for construction of all on-site roads and utilities which are required for construction and operation of the Facility. The costs of electricity, water, natural gas, and sewer service required during construction, start-up, and Acceptance Testing will be borne by the Company and shall be included in the Capital Construction Cost. The costs of these utilities during commercial operation of the Facility will be considered Pass-through Costs, up to the values for the Guaranteed Maximum Utility Utilization of the Facility stated in Proposal Form 6.

The Capital Construction Cost will include the following:

- Roads and road improvements within Boundary Limits of the Facility Site.
- Water service, wastewater line and all required facilities within the Boundary Limits of the Facility Site.
- Electric service connection required for Facility construction and for Facility operation.
- Stormwater drainage structures both within and outside the Boundary Limits of the Facility Site.

During all construction activities the Company must provide for continuous use of the affected roadways. The Company shall be responsible for maintenance of only those roadways within the Boundary Limits of the Facility Site.

The City of Spokane Wastewater Management Department will maintain all off-site wastewater facilities. The City of Spokane Water and Hydroelectric Service Department is responsible for water lines and service to the Boundary Limits of the Facility Site and The Washington Water Power Company shall maintain all off-site electric facilities. However, the Company will be responsible for maintaining any on or off-site storm drainage structures constructed by the Company.

The City of Spokane Water and Hydroelectric Service Department will supply all the Facility's water requirements.

The Facility will be served by the City of Spokane Wastewater Management Department sanitary sewer system. The Company shall be responsible for the construction of all facilities to handle storm water runoff, and shall include this cost in the Capital Construction Cost.

Electric power during construction will provided by The Washington Water Power Company. The cost of electric power will be based on WWP's Schedule 11. See Appendix E for further information.

Natural gas is available to the Facility Site through The Washington Water Power Company.

3.0 RESIDUE AND LANDFILL RESPONSIBILITIES

The Project will provide a landfill for disposal of Unacceptable Waste, Ash and Bypassed Waste. Should the material to be landfilled be of a type not acceptable at the landfill, the Project will identify an alternate disposal location. The Company shall include in its Operating Fee the cost of transportation of Ash which meets the quality guarantee identified in this RFP. Transportation costs for distances traveled over 15 miles (one way to landfill) shall be pass-through costs. The disposal fee for such Ash will be treated as a Pass-through Cost in the calculation of the Service Fee.

If the Company accepts Acceptable Waste but cannot process it through the Facility, the Company shall pay for the transportation to the landfill and the disposal costs for such Acceptable Waste. Should the Facility fail to meet its throughput and Acceptable Waste acceptance guarantees, the Company shall pay the cost of transportation and the disposal fee for such bypassed waste up to the Company's throughput guarantee amount.

4.0 GENERAL FACILITY CRITERIA

General technical requirements including Performance Guarantees, codes and other requirements concerning the design of the Facility, are set forth in Appendix B of this RFP. Proposals must be in conformance with the requirements of Appendix B and this RFP to be deemed a responsive Proposal. The following is a general outline of the minimum criteria for the Facility:

(1) An 800 TPD (minimum of 240,000 TPY when accounting for maintenance requirements) mass burn waste-to-energy facility shall be provided with expansion capabilities for a future additional unit. The proposer shall offer equipment of a design, size, and type which meets the experience requirements identified in the RFQ and which meets the proposer's Performance Guarantees.

(2) The Facility shall receive Acceptable Waste from 7:00 a.m. to 5:00 p.m. seven days per week, except holidays. An automated scale system consisting of two scalehouses, each with two scales, shall be provided. The record keeping system hardware and software will be furnished and installed by the Project.

The vehicles, including packers and transfer-trailers, which deliver to the Facility shall be weighed inbound, and outbound if tare weights have not been previously recorded on scales located on the Facility Site. All refuse vehicles shall be discharged in a totally enclosed tipping area into a refuse storage pit. Smaller refuse vehicles such as pickup trucks belonging to County or City residents, shall be discharged into a shallower receiving pit adjacent to the storage pit. Refer to Appendix H for anticipated traffic volume data. A bulldozer shall transfer waste from the receiving pit to the storage pit. Overhead bridge cranes shall transfer the Acceptable Waste from the refuse storage pit to the combustion units. Heat from the combustion of the Acceptable Waste shall be used to generate steam at the proposed conditions. The steam shall be used to drive a turbine generator to generate elecricity for sale.

(3) The maneuvering and tipping area, receiving pit, refuse storage pit or tipping floor, control room, maintenance building, turbine generator and heater bay, boilers, air pollution control equipment, ash handling systems, administration building and offices, scale houses and water treatment and pumping stations shall all be enclosed in separate or integrated Facility buildings. Buildings shall be provided complete with HVAC equipment, lighting and power, interiors, and appurtenances. The refuse storage pit and Ash loadout area structures shall be designed to accommodate the space requirements for the expanded Facility operation.

(4) The Facility shall be furnished with systems for removal and storage of Ash for disposal; transmission of electricity for sale; maintenance of equipment, vehicles, and structures within the Boundary Limits of the Facility Site; and operation of all equipment and all other activities required for a complete, operational Facility.

(5) A nonreheat, regenerative feedwater cycle shall be provided for Facility design. The proposer shall determine the details of the cycle design configuration and equipment arrangement within RFP requirements based on the proposer's standard design.

(6) The circulating water system shall consist of a minimum of circulating water pumps, one surface condenser for the turbine generator, one dump (bypass) condenser, one plume abatement cooling tower, and required accessories.

(7) A minimum of two refuse cranes each of a capacity of 1200 TPD shall be provided complete with grapples, controls, and remote crane control pulpits(s). A refuse pit shall be provided which shall have a minimum of four days' storage of Acceptable Waste at an expanded 1200 TPD capacity. There shall be the capability of removing Unacceptable Waste from the tipping floor and pit.

(8) Complete systems of firing equipment shall be provided to burn Acceptable Waste. The refuse feeding and firing systems shall be comprised of refuse charging hoppers, cut-off gates at the top of the feed chutes, feed chutes, feeders, refuse stokers with grates, siftings hoppers, and accessory equipment for a complete system.

(9) Drum-type boilers with successfully demonstrated grates and balanced draft refuse-fired water-wall furnaces, superheaters complete with spray attemperators, and economizers shall be provided.

(10) A pollution control system for each combustion unit shall be provided and shall consist of dry scrubbers for acid gas (HCl, SO_2, HF) removal and either electrostatic precipitators (ESPs) or baghouses for particulate removal. The system shall comply with the requirements of Appendix B.

The ESP shall consist of all accessory equipment required for a complete system to treat the flue gases for the removal of particulate matter. The dry scrubber shall consist of all accessory equipment required for a complete system for the removal of acid gases. The baghouse shall include all accessory equipment required for the complete system to treat the flue gases for the removal of particulate matter in a manner at least as efficient as the ESP.

(11) One concrete stack shall be provided, complete with individual, acid brick flues for each combustion unit and an additional flue for a future unit complete with full-height ladder, equipment hoist, lightning protection, platforms, lights per FAA requirements, test ports, and access doors. The stack height shall be 170 ft.

(12) An ash handling system sized for the expanded Facility, capable of handling bottom ash and flyash shall be provided and shall include hydraulic ash dischargers for each furnace, an ash loadout area with three days storage at the expanded Facility capacity, fly ash conveyors, vibrating and/or belt conveyors, splitters, fly ash conditioners, if required, drives, couplings, supports, all necessary controls and an ash loadout building. Ferrous separation equipment including magnets, screens, and accessories may also be provided.

(13) Complete potable and service water systems shall be provided to serve the entire Facility in accordance with local codes and standards. One (1) fire protection system, complete in all respects, shall be furnished and shall be in compliance with the local, state, and federal codes and approved by the local fire official.

(14) A water treatment and chemical feed system shall be provided and shall include a minimum of two (2) demineralizer trains with regeneration unit; one (1) boiler water chemical feed system;

one (1) cooling tower chemical feed unit; caustic and acid storage tanks; and instrumentation and controls.

(15) One (1) nonreheat uncontrolled extraction, steam turbine generator unit shall be provided complete with condensers, lube oil system, gland steam system, steam jet air ejector system or vacuum pumps, instrumentation, and controls.

(16) A complete wastewater system shall be furnished to provide equipment and area drainage throughout the Facility. It shall include neutralization and wastewater sumps, sump pumps, treatment equipment, oil separation, grease and grit traps, instrumentation, and controls.The discharge wastewater shall be treated as required, and normal water quality from Facility operation shall not exceed the values specified by the City of Spokane Wastewater Management Department and DOE, as referenced in Appendix E.

(17) Equipment and services required to provide forced or gravity mains to the Boundary Limits of the Facility Site, and a liftstation (if required), shall be provided, including the installation of basins, pumps, flow metering, instrumentation, controls, and accessories for the forced or gravity main sewer line, and to provide sanitary sewer service to the Facility. The Company shall provide the forced or gravity sewer main to the Boundary Limits of the Facility Site.

(18) Furnish and install all electrical equipment and systems required for the Facility. These shall include but not be limited to power and control cables, motor drives, lighting, transformers, metal clad switchgear, nonsegregated bus duct, motor control centers, metering, protective devices, and communications, including all auxiliary equipment, panelboards, grounding, ducts, conduit, and cable tray.

(19) The Company shall provide for a complete interconnection of the Facility's electric service conductors on the secondary transformer terminals of the associated step-up substation and shall provide all in-plant protective relaying, controls, and instrumentation required by WWP. All work provided by the Company within the step-up substation must be performed by WWP personnel or provided in accordance with WWP approvals. More information is provided in Appendix J, Interconnection Requirements.

(20) All instrumentation and controls required for a complete and operational Facility shall be provided.

(21) Provide all piping, valves, insulation, and mechanical specialties, including but not be limited to insulation and lagging, pipe supports and hangers, expansion joints, safety valves, traps, strainers, sample coolers, silencers and flash tanks, and other devices and equipment provided with or between major equipment components, required for the Facility to be complete and operational.

(22) All site preparation work shall be provided. The Company shall provide all on-site paving, retaining walls, and related work required as well as all grading, earthwork, and other work required on the Facility Site. The Company shall be required to control all fugitive dust emissions during this activity. The Company shall provide all on and off-site storm water drainage structures. Off-site grading and seeding may be proposed, subject to approval by the Project, to minimize retaining walls and slopes.

(23) Provide all other systems and equipment required for a complete and operational Facility, including but not limited to, hydraulic equipment, heating, ventilation, and air conditioning equipment, auxiliary natural gas system, plant and instrument air systems, heat exchangers, and scales.

5.0 PERFORMANCE GUARANTEES

Under the Agreements, the Company shall make guarantees to the Project concerning Facility design, construction and operations. These guarantees shall include the following Performance Guarantees plus completion of the Facility in a manner which meets other requirements identified in this RFP and the Agreements:

The Company shall guarantee the Construction Period from the Notice to Proceed to the Scheduled Acceptance Date.

The Company shall guarantee a Facility throughput capacity of 800 TPD and the Guaranteed Throughput Capacity (TPY) specified in the Company's Proposal when firing Acceptable Waste with a higher heating value range of 3800 to 5500 Btu/lb.

The Company shall guarantee the Net Electric Output specified in the Company's Proposal in Kwh/ton when firing 800 TPD of Acceptable Waste with a HHV of 4700 Btu/lb. The Net Electric Output Guarantee shall be based on the units operating in accordance with parameters defined in Appendix B, Section 3.0, Design and Operating Conditions.

The Company shall guarantee compliance with the environmental requirements of this RFP and any other Federal, state, or local requirements in effect at the time of proposal as well as the proposed rules in Appendix I. The Company shall investigate and learn all requirements applicable to the Facility. This RFP provides only summary information concerning such requirements.

The Company shall guarantee the emission and performance requirements specified listed in Appendix B, Paragraph 3.1, Performance Requirements; Paragraph 8.4, Emission Factors; and Paragraph 8.5, Environmental Monitoring and Auxiliary Burners.

The Company shall guarantee that the unburned combustible content in the ash shall not exceed 5% by weight on a dry basis and that the putrescible content in the ash shall not exceed 0.2% by weight on a dry basis when firing

Acceptable Waste with the range of HHV specified in Appendix B, Paragraph 3.3, Fuel Analysis.

The Company shall guarantee maximum annual Facility utility utilization rates for water, wastewater, and electricity.

The Company shall guarantee that the quality of the wastewater discharged from the site shall meet the criteria established by the City of Spokane Wastewater Management Department.

6.0 AESTHETIC AND ARCHITECTURAL CONCEPTS

The architectural treatment of the structures within the Facility shall be designed in accordance with applicable state and local codes, including building codes, fire codes, and life safety codes. The Facility shall be designed to be functionally efficient as well as aesthetically pleasing. The appearance of the Facility shall present an image compatible with other buildings in the area. The aesthetic theme of the Facility will be an important factor in its success. The exterior and interior design shall be approved by the Project before and during final design.

All areas and equipment, as previously described, shall be enclosed for visual and acoustical control.

Interior finished spaces shall be provided as required for operation of the Facility and for use by visitors to the Facility. Adequate personnel facilities shall be supplied for the employees of the Facility with separate restroom facilities for visitors and/or office personnel. The proposer should refer to Appendix B, Section 7.0; the Master Plan Report in Appendix G; and the drawings in Appendix A for further guidance in the aesthetic treatment of the Facility.

The proposed layout of the operation and support spaces shall be approved by the Project. The Company shall provide general arrangement drawings, an artist's rendering and other materials required to adequately describe the Facility's architectural treatment with the Proposal.

7.0 TECHNICAL DATA TO BE SUBMITTED

The technical evaluation shall be based on the information provided in Proposal Form 9. The fundamental purpose of the technical evaluation is to assure that the Facility will be in compliance with the general performance requirements and technical requirements described in Appendix B. The information provided by the proposer shall be used to determine if the Proposal conforms to the technical requirements of this RFP. Proposals from qualified proposers shall be evaluated with respect to the completeness of the data provided, the support for the performance claims made, and the design approach taken. The technical information shall also be used to evaluate environmental compliance, safety standards, and energy recovery efficiency.

7.1 Drawings Required

The proposer shall provide a description of the proposed Facility components, and systems with a minimum number and title of drawings as listed in

Appendix A. All drawings shall be of the quality and detail sufficient to completely define the proposer's proposed equipment, systems, and dimensions of the Facility. All drawings shall be 11 inches by 17 inches or larger. Architectural renderings of the proposed Facility and a description of the architectural materials used shall be provided with the Proposal.

7.2 Specifications Required

Preliminary specifications and equipment performance data for all major equipment items, including turbine performance curves, shall be provided as part of the Proposal package. As a minimum, the data requested in Proposal Form 9 shall be included.

7.3 Schedules and Submittals

The Proposer shall submit, as part of his Proposal, a construction schedule showing procurement and installation schedules for major system components and Acceptance Testing of the Facility. Safety design features and plans shall be submitted with the Proposals to demonstrate adequate personnel, system, and Facility protection.

The Company shall also submit, prior to entering into the Agreements, receiving, processing, and all other operating schedules of the Facility illustrating how scheduled maintenance would be performed so as to minimize bypassing of Acceptable Waste.

During the term of the Operations and Maintenance Agreement, the Company shall work with the Project in establishing a major maintenance schedule which is mutually agreeable to both parties, and reflects seasonal variations in Solid Waste supply and energy market demand.

7.4 Staffing Requirements

In addition to data submitted on Proposal From 4, the proposer shall submit with its Proposal data outlining the staffing requirements of the Facility by job classification (including management functions). Also included in the Proposal should be an organizational chart showing the plan for management of the operation.

7.5 Mass and Energy Balance

Mass and energy balance diagrams with narrative explanations shall be provided with the Proposal. Balances shall be based on the proposer's process and operation, the Guaranteed Throughput Capacity, and the Reference Waste. Calculations used in preparation of the mass and energy balances shall be made available to the Project upon request. The mass and energy balance shall include flows of all major systems.

7.6 Heat Balances

Cycle heat balances, as defined in Appendix B, Paragraph 8.17, shall be provided. The heat balances shall indicate flow, temperature, pressure, and enthalpy of streams associated with the turbine generator and the feedwater heating cycle.

PART FIVE

FINANCING

1. Introduction

It is anticipated that the cost of designing, constructing, equipping, testing, and starting up the Facility will be funded approximately 50 percent by a Washington Department of Ecology Referendum 39 Grant with the remainder being funded from the proceeds of the Bonds or with other funds available to the Project. Proceeds from the Referendum 39 Grant, the Bonds, other sources of funds, and earnings thereon are planned to be used (1) to fund capitalized interest due on the Bonds during the Guaranteed Construction Period, (2) to fund a Debt Service reserve fund in an amount equal to the maximum annual Debt Service on the Bonds, (3) to pay costs of issuance of the Bonds, and (4) to pay the estimated costs of the Facility.

The City of Spokane in 1984 sold $50 million of 5-year, short-term notes secured by the City Refuse Utility to secure a volume cap allocation and to finance interim Facility activities. Upon issuance of the Bonds the notes are planned to be retired.

2. Financing Structure

It is anticipated that the cost of designing, constructing, equipping, testing and starting up the Facility will be financed approximately 50 percent by a Washington Department of Ecology Referendum 39 Grant with the remainder being funded from the proceeds of the Bonds or with the other funds available to the Project. The Bonds will be secured by a pledge of gross receipts of Facility revenues from tipping fees and sale of recovered energy.

% Completion Payments for Constr

Construction funds will be released to the Company in accordance with its proposed payment schedule, provided that the Company has met the milestones of its construction schedule

During operations, the Project will make payments to the Company consisting of a Service Fee including certain pass-through costs and a share of energy revenues. The Service Fee shall consist of a payment for each ton of solid waste accepted for processing. A payment of 10% of net energy revenues is proposed to be paid to the Company. Proposers shall submit Base Proposals with this distribution of energy revenues. Alternate Proposals may be submitted with other allocations of energy revenues. Ninety (90) percent of the revenues from the sale of ferrous metal, aluminum, and other recovered materials shall accrue to the Company to maximize incentives for recycling. The Project shall receive a ten (10) percent share of all revenues realized from the sale of recovered materials.

3. Cooperation with Financing

The Company must cooperate with the Project in the timely financing of the Facility and provide the Project with any information that it may reasonably request in order to effect the financing of the Facility. The Company must consent to make available information that is reasonably necessary for a public offering of the Bonds. In addition, each member of the proposer group, the underwriters, their counsel, bond counsel, the rating agencies, independent engineers or feasibility consultants, credit facility providers and other financing institutions or parties involved in the financing process must make available to the Project any information that may be reasonably requested in connection with the financing. The Company and other members of the proposer group must be prepared to enter into any necessary agreements, and provide certification of, and indemnities for, information that they make available in connection with the financing that is customarily provided in connection with issuance of bonds and the financing of a waste to energy facility. The Company must make available information reasonably requested by bond counsel or underwriters' counsel so that they can render opinions about the tax-exempt status of the Bonds. Any restrictions that any proposer may have on the availability of information in connection with a financing must be set forth in the Proposal.

Failure of a proposer to cooperate or provide necessary information is grounds for disqualification or termination of negotiations. The Project has selected Shearson Lehman Brothers, Inc. as the underwriters for the financing of the Facility. No Proposal may require the Project to utilize a different underwriting team.

4. Construction Guarantee

Each Proposal must provide that a Facility Guarantor will unconditionally, and without limitation as to amount, guarantee that the Facility will be designed, constructed, and equipped in accordance with the Agreement and will pass the Acceptance Test on or before the Scheduled Acceptance Date (the Construction Guarantee). This Construction Guarantee must remain in effect until the Facility has passed the Acceptance Test. The Construction Guarantee must provide for payment of the Debt Service or buydown of the Debt Service on the Bonds and the Referendum 39 Grant if the Acceptance Date has not occurred by the end of the Guaranteed Construction Period. Each Proposal must contain a description of the Construction Guarantee to be provided and identify the Project Guarantor, qualified under the terms identified in the RFQ, that will execute the Construction Guarantee.

A Proposal that does not have a Construction Guarantee meeting the requirements set forth in this paragraph will be non-responsive.

5. Operating Guarantee

The Project desires that a Facility Guarantor enter into a guarantee of the operation of the Facility for the term of the Agreement without limitation as to amounts. Each Proposal must contain a description of the terms and conditions of any Operating Guarantee and identify any entities that will execute or provide the Operating Guarantee. The strength of the Operating Guarantee is of significant importance to the Project and will receive substantial emphasis in the evaluation process.

PART SIX
CONTRACTUAL CONDITIONS

1.0 GENERAL

The goal of this procurement process is for the Project to enter into two agreements with the Company:

- The Construction Agreement will set forth the obligations, terms, and conditions for the design, construction, and Acceptance Testing of the Facility.

- The Operations and Maintenance Agreement will set forth the obligations, terms, and conditions for operating and maintaining the Facility, and will be executed simultaneously with the Construction Agreement. The Operations and Maintenance Agreement will become effective on the Acceptance Date, and will provide for the operation and maintenance of the Facility for a period of 20 years from the Acceptance Date or as required by financing documents.

The following pages contain a brief statement of the anticipated allocation of Facility risks and responsibilities, and a brief summary of certain terms of the proposed agreements, as well as a statement of the Project's position on these terms. These positions will be used as the basis for negotiations with the Company. If the proposer takes exception to accepting any of the terms of the proposed Agreements, the proposer must make a statement to that effect in the Proposal, identifying which risks or responsibilities it would not be willing to accept and proposing alternative allocation. The information provided in this Part Six is not intended to be all-encompassing but will provide a basis for the negotiation of the Agreements.

2.0 PARTICIPANTS' RESPONSIBILITIES

This section outlines the anticipated contractual responsibilities of the participating organizations:

The Project's responsibilities will include:

1. Arrange financing of the capital cost of the Facility.

2. Provide the site for construction of the Facility.

3. Compensate the Company for construction of the Facility.

4. Review drawings and other submittals provided by the Company during the design and construction of the Facility for conformance to the terms of the Agreement and the RFP.

5. Monitor the construction and Acceptance Testing of the Facility.

6. Provide the site with all necessary off-site roads and utilities with the exception of any storm drainage structures to be constructed by the Company.

7. Negotiate the Electricity Sales Agreement whereby the Project will sell electrical capacity and electricity generated by the Facility.

8. Obtain all necessary permits, save for typical construction permits such as the building permits.

9. Provide for the delivery of Acceptable Waste during startup, interim operations, Acceptance Testing, and commercial operation of the Facility.

10. Guarantee the delivery of 220,000 TPY of Acceptable Waste to the Facility. The Project will compensate the Company for the base operating fee in the event of the delivery of less than 220,000 TPY of Acceptable Waste to the Facility.

11. Arrange for a licensed, approved landfill for disposal of ash, bypassed solid waste, and Unacceptable Waste during start-up, interim operations, Acceptance Testing, and commercial operation of the Facility.

12. Operate the weigh scales and scale house.

13. Operate the recycling station.

14. Collect tipping fees charged at the Facility.

15. Reimburse the Company for the cost of operating the Facility and Pass Through Costs.

16. Pay additional transportation for residue in excess of 15 miles.

The Company's responsibilities shall include:

1. Design and construct the Facility in accordance with the Facility definition and specified criteria.

2. Submit invoices and documentation to support payment of design, construction and acceptance testing activities in accordance with the progress payment schedule as submitted by the Company with its proposal (Proposal Form 5).

3. Guarantee to the Project that the Facility will comply with specified criteria within each of the following areas:

- Construction and Acceptance Test successfully completed on or before the scheduled Acceptance Date, subject to any adjustments as provided for in the Construction Agreement.

- Minimum daily and annual throughput.

- Guaranteed net electric output.

- Residue quality.

- Environmental criteria determined by the responsible regulatory agencies and as defined in the Facility permits and the Construction Agreement.

4. Post a performance bond and labor and material bond as detailed in the Construction Agreement.

5. Pay performance liquidated damages for failure to satisfy any one or all of the Performance Guarantees, and delay liquidated damages for failure to have the Facility accepted by the scheduled Acceptance Date.

6. Provide all data or information which may be necessary for the preparation of environmental permit applications and other submissions to federal, state, and local agencies.

7. Obtain any permits other than those which are a Project responsibility and which must be acquired for construction and operation of the Facility.

8. Provide all necessary personnel, labor, equipment and materials necessary for the operation and maintenance of the Facility for a 20-year period after the Acceptance Date, or as required by financing documents.

9. Arrange for the sale or reuse of ferrous metals and other recovered materials.

10. Operate the Facility in accordance with good engineering and operating practices so as to continuously meet the specified Performance Guarantees relating to Guaranteed Annual Throughput, Net Electric Output, steam generation, residue quality, and environmental standards as required by the appropriate regulatory agencies and cooperate to maximize throughput and energy output.

11. Pay the cost of transportation and disposal of bypassed solid waste diverted from the Facility as a result of the failure of the Facility to process Acceptable Waste due to the fault of the Company.

12. Provide for the transportation of ash to the landfill designated by the Project. Transportation costs resulting from distances traveled in excess of 15 miles (one way to landfill) shall be pass-through costs.

3.0 THE AGREEMENTS

3.1 Construction Agreement

The Construction Agreement will describe the major obligations of both the Project and the Company during design, construction and Acceptance Testing of the Facility, and will terminate on the actual Acceptance Date. Once the provisions of the Construction Agreement have been satisfied, the Operations and Maintenance Agreement will immediately become effective. There will be no time lapse between these Agreements.

The Construction Agreement will address the following items:

- Definitions.
- Scope of work.
- Description of the site and obligations regarding access and liabilities pertinent to the site.
- Specifications, drawings, and plans for the Facility.
- Price of the Facility, adjustments, and method of payment during construction.
- Rights to plans, specification manuals, drawings and technology.
- Protection of persons and property.
- Guaranteed construction period, including early completion bonus.
- Guarantees and Acceptance Testing procedures to demonstrate fulfillment of the guarantees.
- Complete definition and description of Acceptance Testing procedure and tests to be performed.
- Limitations on liability and subsequent damages.
- Performance bond, and labor and material bond.
- Defaults or events of defaults.
- Termination.
- Insurance and indemnification.
- Liquidated damages in relation to the Company's performance of its guarantees and to the Acceptance of the Facility.
- Conditions to be satisfied as of the Acceptance Date.

- Electric energy specifications.

- Facilities and services to be provided by the Project.

- Payment for solid waste processed during Acceptance Testing and during interim operations.

- Any subsequent guarantees made by the Project Guarantor if its wholly-owned or controlled subsidiary signs the contract.

- Uncontrollable Circumstances.

- Covenant of assurance by Company's technology, licensor, or suppliers.

- Allocation of risks including:

  (1) Delays in Facility completion;
  (2) Construction cost overruns and change orders;
  (3) Failure to achieve the required operating performance;
  (4) Changes necessitated by revisions in laws, rules, or regulations.

3.2 Operations and Maintenance Agreement

The obligations for both the Project and the Company during the contract term of operation of the Facility will be specified in the Operations and Maintenance Agreement. This agreement will commence on the Acceptance Date of the Facility and will terminate 20 years thereafter, or as required by financing documents.

The Operations and Maintenance Agreement will address, among others, the following items:

- Definitions similar to the Construction Agreement, where applicable.

- Receipt and conversion of Acceptable Waste into energy and saleable materials by the Company.

- Responsibility of operation and maintenance: receiving hours; repair and maintenance; Facility access; Facility inspection; weighing deliveries; refusal of deliveries; and removal of ash, Unacceptable Waste, and Bypassed Waste.

- Shutdown and reduction in capacity of the Facility.

- Compensation for operation of the Facility, including a share of revenues from the sale of recovered energy, and the sale of recovered materials.

- Electric energy specifications.

- Alterations and additions to the Facility during the operating period.
- Limitations of liability and consequential damages.
- Events of default and termination.
- Insurance.
- Guarantees of specified performance results.
- Retesting of the Facility.
- Material specifications.
- Maximum utility utilization.
- Services to be provided by the Project.
- Liquidated damages.
- Unconditional corporate guarantees if a subsidiary signs the contract.
- Allocation of the risks of operating and maintaining a waste-to-energy facility, such risks to include:

  (1) Excess downtime or technical failure;

  (2) Changes in operating procedure necessitated by revisions in laws, rules or regulations;

  (3) Changes in the amount or composition of the solid waste delivered for acceptance;

  (4) Failure to maintain required operating performance.
- Allocation of the risks associated with circumstances beyond the control of any party to the Agreement.
- Allocation of the revenues from the sale of energy or ferrous metals and other recovered materials for reuse.
- The periodic preparation of an operating performance report and an audited balance statement of the Facility which shall be submitted to the Trustee.
- The intervals at which the Agreement shall be renegotiated after the initial Agreement period.

- Employment of current employees whose positions will be affected by the terms of the Agreement.

- The formulas to be used to determine the Service Fee.

4.0 PROJECT'S POSITION ON CONSTRUCTION AGREEMENT PROVISIONS

Provided below are brief summaries of the Project's position regarding certain terms in the Construction Agreement.

4.1 Price and Payment

The Project will pay the Company the Capital Construction Cost shown on Form 1 for the design, construction and Acceptance Testing of the Facility. The Capital Construction Cost shall include all costs of the Company relating to the performance of its obligations prior to the Acceptance Date. This price shall be expressed as of the date of proposal submittal and shall be fixed. Should negotiations extend beyond one year, the Capital Construction Cost shall be adjusted for escalation beginning one year from the date of proposal submittal and ending on the date of the Notice to Proceed. The adjustment for escalation shall not be retroactive. Payment will be made in accordance with the progress payment schedule shown on Form 3, with each progress payment escalated should negotiations extend more than one year. All escalation will be calculated using the change in the Chemical Engineering Plant Cost Index (CEPCI) or another index as the basis for escalation mutually agreed-on during negotiations.

During construction, the Company shall prepare and submit to the Project monthly reports containing a certificate in affidavit form certifying that construction has proceeded as per the agreed-upon construction schedule documenting that the milestone schedule has been met, and showing the amount due to the Company for work completed during that month. Based on this certification and inspection of the construction in progress by the Project and/or its designated representative, payment will be made to the Company.

In the event the Project orders a work change or an uncontrollable circumstance necessitates a work change to the Facility, there will be negotiated adjustment to the price and to the corresponding progress payment and scheduled Acceptance Date if appropriate. There will also be a negotiated modification of the guarantees, if appropriate.

Should the Company proceed to construct the Facility ahead of the proposed schedule, the progress payment schedule may be advanced to reflect increased progress, subject to the availability of funds invested in time deposits. Should the reverse occur, there will be a corresponding reduction in the payment listed in the progress payment schedule. However, there will be no extension of the guaranteed Construction Period (as provided in the proposal) unless the Project orders a change which causes a delay or uncontrollable circumstances necessitate an extension.

4.2 Guaranteed Construction Period

The guaranteed construction period will be from the date of the Notice To Proceed to the scheduled Acceptance Date, which will include Acceptance Testing of the Facility. The guaranteed construction period shall be as stated by the Company in its proposal. Should the Company fail to deliver the Facility by the scheduled Acceptance Date, per the Construction Agreement, the Company will be liable to the Project for delay liquidated damages.

4.3 Liquidated Damages

Liquidated damages will take either or both of two forms of lump sum payments. One is the delay liquidated damages equal to Debt Service payments on the Bonds, paid to the Project for reimbursement for the impact of the Facility not being delivered by the scheduled Acceptance Date. The other is the performance liquidated damages which are paid to the Project for reimbursement for damages incurred due to accepting a Facility which does not meet the performance guarantees stated in the Construction Agreement.

It is the Project's intent to have the Facility designed, constructed, and Acceptance Tested, meeting each and all of the design specifications and the performance and environmental guarantees for which the Project has contracted. The Project expects to receive compliance within the guaranteed construction period specified by the Company in its proposal. Failure by the Company to meet each and all of such criteria within the guaranteed construction period with applicable extensions including extensions for delays caused by uncontrollable circumstances will result in the Company being required to pay liquidated damages.

The Construction Agreement may allow the Company to cause the Acceptance Date to occur even if the Facility has not completely satisfied the Acceptance Tests by making a payment (the Buydown Amount) that is sufficient to redeem the Bonds (thereby reducing Debt Service) and the Referendum 39 Grant in an amount equal to the percentage shortfall in the Guaranteed Facility Capacity plus the shortfall in Guaranteed Net Electric Output. A Buydown Amount of 100% will be required if the Facility cannot process at least 85% of the minimum Guaranteed Capacity for Acceptance Test of 5600 TPW or if the Facility can not comply with all applicable environmental laws, regulations and permits. The Buydown Amount must be guaranteed under the Construction Agreement and must be paid within a period of time (not to exceed 24 months) after the Scheduled Acceptance Date subject to any adjustments as provided for in the Construction Agreement. If a 100% Buydown is required the Facility shall become the property of the Company and the Operating and Maintenance Agreement shall be renegotiated. The Proposal should describe provisions relating to the Buydown Amount.

4.4 Performance Bonus

If the Company completes the Facility in accordance with the design specifications and the performance and environmental guarantees of the Construction Agreement prior to the scheduled Acceptance Date, the Company may be

entitled to an early completion bonus. The amount of this bonus will be determined during the contract negotiations but will not exceed benefits accrued by the Project for early completion.

4.5 Bonds

The Company will, at its own cost and expense, be required to provide: 1) a performance bond from an A or A+ rated surety company acceptable to the Project, in an amount equal to the Company's total maximum liability under the Construction Agreement, based on the total Capital Construction Cost as maybe adjusted for any negotiated increases due to inflation or scope of work change; and 2) a labor and material bond from an A or A+ rated surety company acceptable to the Project, in an amount of not less than 100% of the Capital Construction Cost as maybe adjusted for negotiated increases. Both bonds shall create third-party beneficiaries' rights so that the surety may be sued independently and directly. The Surety company used shall be listed on the United States Treasury List of acceptable surety companies at an amount equal to or greater than the amount of the bond requirement hereunder.

4.6 Environmental Guarantees

The Company will be obligated to meet, as a minimum, performance and environmental guarantees enumerated in Proposal Form 9. Satisfaction of these guarantees will be through Acceptance Testing procedures provided in the Construction Agreement. Additional environmental requirements may be imposed by the various regulatory agencies. The Company will be expected to comply with these additional requirements. Any additional costs incurred as a result of such additional requirements will result in an adjustment of the Capital Construction Cost. Final environmental permit conditions will be determined prior to signing of the Construction Agreement.

4.7 Interim Operations

Subject to reasonable notice, the Project will deliver or cause to be delivered Acceptable Waste in amounts requested by the Company for purposes of start-up and Acceptance Testing of the Facility. The Project will designate a landfill for disposal of ash, bypassed solid waste, and Unacceptable Waste during interim operations. The landfill disposal fees during start-up and Acceptance Testing will be Pass-Through Costs. In no event shall the amount of Pass-Through Costs exceed the amount of actual out-of-pocket expenses incurred by the Company for these items. All costs incurred by the Company for utilities during construction and interim operations shall be borne by the Company, and shall be included in the Capital Construction Cost.

During the period of start-up and prior to the successful completion of the Acceptance Test, the Project will retain all energy revenues from waste processed. The Project's obligation to pay Service Fees does not arise until the Acceptance Date has occurred. During interim operations, the Facility must comply all environmental permit conditions.

4.8 Performance Guarantees and Acceptance Testing

Each proposal must contain the following Performance Guarantees (Proposal Form 7): Guaranteed Construction Period, Guaranteed Throughput Capacity, Guaranteed Net Electric Output, Guaranteed Residue Quality, Guaranteed Materials Recovery, Guaranteed Environmental Compliance, and Guaranteed Wastewater Quality. Explicit Acceptance Testing procedures will be provided in the Construction Agreement to determine whether the Company has satisfied its Performance Guarantees. The Acceptance Test will be performed by the Company in the presence of the Project and/or its designated representatives. The Acceptance Date will not occur until the Facility has passed the Acceptance Tests.

4.9 Insurance

The Company will include, as part of its Capital Construction Cost, the following insurance coverage with companies licensed in the State of Washington acceptable to the Project and rated A or A+ by Bests:

- All Risk Installation and Builder's Risk Floater, including comprehensive Boiler and Machinery Insurance - limits not less than the full replacement value of the Facility. Deductibles not to exceed $10,000.

- Workman's Compensation Insurance - including employer liability coverage (stopgap), for all employees of not less than $500,000 per occurrence - all to be in compliance with the requirements of the State of Washington.

- Comprehensive General Liability Insurance - limit not less than $10,000,000 per occurrence for bodily injury and property damage combined. Deductible not to exceed $50,000. Said coverage to include Broad from CGL endorsement, XCU coverages as appropriate.

- Excess Umbrella Liability Insurance - limit not less than $50,000,000 per occurrence; coverage will be following form unless otherwise noted, and will also be excess over the automobile coverage shown below.

- Comprehensive Automobile Liability-coverage with a limit of not less than $1,000,000 per occurrence for bodily injury and $1,000,000 per occurrence limit for property damage. ($2,000,000 combined single limit is acceptable). Included in this coverage will be hired and non-owned automobile coverage.

- If private aircraft will be used for project business, aircraft liability insurance will be provided with a limit of not less than $10,000,000 per occurrence; coverage shall apply to all owned and non-owned aircraft.

- Architect and Engineers Errors and Omissions coverage in the amount of $60,000,000; coverage to remain in effect for five (5) years from the completion of the project, or an extended

reporting endorsement may be purchased, alternatively, if coverage is on a claims-made form.

- Business Interruption and Extra Expense Insurance; the amount to be not less than $15,000,000 adjusted annually in accordance with agreed upon indicies. This insurance is to be written on Boiler and Machinery coverage as well as Facility Physical Damage Insurance.

The Project, the City of Spokane and Spokane County shall be included in all insurance policies as additional insureds. The insurance coverage form should be written on an occurrence basis. If a claims made form is used, coverage must remain in effect for at least five (5) years after the completion of the facility, or an extended reporting endorsement be purchased to assure no gaps in coverage. The Project may require other levels of insurance (with appropriate adjustments of the capital construction cost) or accept deductible levels other then presented above if the proposer can demonstrate the financial ability to fund the deductible. Sixty (60) days prior notice of policy cancellation is required.

Company will agree to provide copies of all insurance policies as issued to the Project office. All coverages carried by the Company will be primary and not contributing with or excess to other insurance coverage that may be carried by the Project. The policies should include a breach of warranty clause in favor of the Project, the City of Spokane and Spokane County.

4.10 Local Procurement Requirements

It is the intent of the Project to stimulate local business and industry through this project. Therefore, the Company shall use local labor and purchase materials, supplies, and equipment from businesses located within the City and the County whenever possible and practicable. Proposers are to define how local firms, business, labor, and material suppliers will be utilized and in what segment of the project. The projected expenditure of project funds to accomplish the intent of this paragraph shall be presented in detail.

5.0 PROJECT'S POSITION ON OPERATIONS AND MAINTENANCE AGREEMENT PROVISIONS

Provided below are brief summaries of the Project's position regarding certain terms in the Operations and Maintenance Agreement.

5.1 Shutdowns and Reductions in Capacity

The Operations and Maintenance Agreement will address three classifications of shutdowns or reductions in capacity:

- Shutdowns or reductions in capacity caused by the Company.
- Shutdowns or reductions in capacity caused by uncontrollable circumstances.
- Shutdowns or reductions in capacity caused by the Project.

The Company will receive no compensation during shutdowns caused by the Company, and reduced compensation during reductions in capacity. The Company will also be obligated to pay performance liquidated damages to the Project as reimbursement for the impact of the Facility not being capable of meeting the Performance Guarantees in the form of lost energy revenues and reduction in service fee for rejected tonnage. During shutdowns or reductions in capacity caused by uncontrollable circumstances, the Project will be obligated to pay the Company service fees for a limited period of time, but this compensation will not include the Company's share of energy revenues lost. Compensation paid by the Project will be subject to termination and default provisions in the Operations and Maintenance Agreement. The Project will consider reasonable uncontrollable circumstances provisions during negotiations. During shutdowns or reductions in capacity caused by the Project, the Project will be obligated to pay the Company for service fees and lost energy revenues up to the Guaranteed Annual Tonnage. The lost energy revenues will be based on actual price that would have been paid if the circumstances had not occurred.

5.2 Company Compensation

Beginning on the Acceptance Date, the Project will be obligated to deliver the Guaranteed Annual Tonnage each year and to compensate the Company for disposal of the Guaranteed Annual Tonnage accepted by the Company. The compensation to the Company for services performed will consist of the following elements:

- Operating fees for solid waste processed.
- A ten (10) percent share of the Project's net energy revenues from the sale of electric energy or a percentage as negotiated.
- Revenues received by the Company from the sale of ferrous metals and other recovered materials. The Company will be entitled to a ninety (90) percent share of the revenues received from the sale of ferrous metals and recovered materials or a percentage as negotiated.

The Service Fee which will be set at the Facility will consist of a base tonnage charge (Base Operating Fee) and an excess tonnage charge (Excess Operating Fee). The Base Operating Fee will apply to the tonnage of solid waste processed up to the Project's Guaranteed Annual Tonnage in one calendar year. The Excess Operating Fee will apply to the tonnage processed in excess of the Guaranteed Annual Tonnage. The processing of excess tonnage above the Guaranteed Throughput Capacity is at the Company's option subject to available excess capacity and good engineering, operating and maintenance practices.

Service Fee payments will be made each month after the Acceptance Date based on an annual estimate of the Service Fee. There will be a year-end adjustment mechanism to determine and correct any overpayments or underpayments resulting from the annual estimate. No Service Fee will be payable for waste that is not accepted by the Company. The aggregate Service Fee for the Guaranteed Annual Tonnage is:

$$SF = (OC \times OCE) + PTC + (ERC \times (AWP \times NEO \times EP)) - (MRC \times MR) + SFA$$

where:

SF means the Service Fee due and payable to the Company for the current billing year.

OC means the annual Operating Charge, based on the Company's proposed Base Operating Fee, Excess Operating Fee and annual throughput.

OCE means the Operating Charge Escalator which is the escalation that will be applied to adjust the Company's proposed Operating Charge to the current year. Escalation will be based on a mutually agreed index such as the Consumer Price Index.

PTC means the projected Pass-through Costs which shall be subject to adjustment at the end of the billing year for actual costs.

ERC means the Company's Energy Revenue Credit, of ten (10) percent expressed as a decimal value, to be multiplied by the EP, NEO and AWP to determine the share of total energy revenues to be credited for purposes of determining the SF.

AWP means the estimated annual tonnage throughput based on available waste for the previous year up to Guaranteed Throughput Capacity. The AWP shall be subject to adjustment at the end of the billing year for actual tons of waste processed.

NEO means the Net Electric Output (in kWh per ton) as proposed by the Company. The NEO shall be adjusted at the end of the billing year to equal actual energy Kwh sales per accepted ton if the actual total varies from the guaranteed amount as determined by dividing the total energy units sold by the total tons of Acceptable Waste processed.

EP means the projected Energy Price (in dollars per kWh). The EP shall be subject to adjustment at the end of the billing year for actual net price payable under the Electricity Sales Agreement.

MRC means the Projects Material Revenue Credit of ten (10) percent expressed as a decimal value, multiplied by MR to determine the share of total materials revenues to be credited to the Project and subtracted.

MR means the projected Materials Revenues. The MR shall be subject to adjustment at the end of the billing year for actual price paid.

SFA means any Service Fee Adjustments payable to or from the Company for estimate revisions, liquidated damages, insurance adjustments, etc.

5.3 Operation Fee and Pass-through Costs

Each Proposal shall contain a bid for a Base Operating Fee and Excess Operating Fee (Proposal Form 3), and the Guaranteed Maximum Utility

Utilization (Proposal Form 6). These amounts will be utilized in the Service Fee calculation.

The Operating Fees shall include all amounts payable by the Company for the operation and annual maintenance and periodic major maintenance and repair of the Facility except the items included as Pass-through Costs. The Company's proposed Operating Fee shall include the cost for workman's compensation insurance in compliance with the requirements of the State of Washington in a limit not less than $500,000 per occurrence. The Service Fee will not be adjusted for any increases in the Company's actual expenses of operating or maintaining the Facility except through (1) Pass-through Costs or (2) provisions for changes in operating expenses due to negotiated adjustments of Project requested changes or Uncontrollable Circumstances as described in this RFP.

Pass-through Costs include the following items: (1) Amounts actually incurred by the Company for electricity, water, natural gas, and sewer service in amounts not to exceed the Guaranteed Maximum Utility Utilization; (2) costs of disposing of not more than the quantities of Process Residue that would be generated assuming that the Guaranteed Residue Quality is maintained at the residue landfill designated by the Project; and (3) premiums for operating insurance coverage. In no event shall the amount of Pass-through Costs exceed the amount of the actual out-of-pocket expenses incurred by the Company for these items.

5.4 Waste Delivery

The Project shall be responsible for operating the scalehouse and recycling station. The Company shall be responsible for operating the tipping floor and receiving pit. The Project shall use best efforts to monitor all incoming waste and divert Unacceptable Waste. Any costs incurred by the Company for handling Hazardous Waste shall be pass-through costs.

The inadvertent delivery and acceptance hazardous waste or Unacceptable Waste such as explosive items that may cause damage to the Facility shall be monitored by the Company using best efforts to remove these wastes from the Facility. The cost of damage done by inadvertent processing of Hazardous or Unacceptable Waste shall be the Project's responsibility.

5.5 Alterations and Additions

A mechanism will be provided in the Operations and Maintenance Agreement to facilitate the implementation of changes in the Facility which might be ordered by the Project or are found to be necessary due to Uncontrollable Circumstances. Those alterations and additions which are required to be made by the Company to satisfy its obligations under the Operations and Maintenance Agreement will be done at the Company's cost and expense.

5.6 Insurance

The Company shall pay the deductible portion for all operating insurance claims made unless the claim is a result of Project action or inaction and this cost shall be included in the Company's proposed Operating Charge.

Premiums for all operating insurance required shall be pass-through costs. The Company will include the following insurance coverage and requirements:

- Comprehensive General Liability Insurance including Broad from CGL endorsement and XCU coverage as appropriate - limit not less than $10,000,000 for each occurrence of bodily injury and property damage combined. Deductible not to exceed $50,000.

- Comprehensive Automobile Liability Coverage - limit not less than $1,000,000 for each occurrence for bodily injury and $1,000,000 per occurrence for property damage ($2,000,000 combined single limit is acceptable). Included in this coverage will be hired and non-owned automobile coverage.

- Excess Umbrella Liability Insurance over both general liability and automobile exposures - limit not less than $20,000,000 to be reviewed every five years to reflect inflation and other appropriate factors. Coverage to be following form unless otherwise noted.

- Facility Physical Damage Insurance, equal at all times to the full replacement value of the facility to include coverage on all-risk basis including sprinkler leakage. Deductible to be $10,000. A DIC form is acceptable.

- Boiler and Machinery Insurance limit equal to the value of the boiler building plus its contents. Coverage to be on a Comprehensive or Broad form and Replacement Cost basis.

- Business Interruption and Extra Expense Insurance - the amount not less than $15,000,000 adjusted annually in accordance with agreed upon indices. To be written on Boiler and Machinery policy as well as Facility Physical Damage policy.

- If private aircraft will be used for project business, aircraft liability insurance, with a limit of not less than $10,000,000 per occurrence. Coverage shall apply to all owned and nonowned aircraft.

The Project shall be included in all insurance policies as additional insureds. The insurance coverage form should be written on an occurrence basis. If a claims made form is used, coverage must remain in effect for at least five (5) years after the completion of the Facility, or an extended reporting endorsement may be purchased to assure no gaps in coverage. The Project may require other levels of insurance (with appropriate adjustments of the capital construction cost) or accept deductible levels other than presented above if the proposer can demonstrate the financial ability to fund the deductible.

Company will agree to provide copies of all insurance policies as proposed and as issued to the project office. All coverages carried by the Company will be primary and not contributing with or excess to other insurance coverage that may be carried by the Project. The policies should include a breach of warranty clause in favor of the Project.

5.7 Guarantees

All performance and environmental guarantees contained in the Construction Agreement and demonstrated by successful completion of the Acceptance Test will become part of the Operations and Maintenance Agreement. Failure to maintain these guarantees, due to other than Uncontrollable Circumstances or Project-caused circumstances, will result in readjustment of the Company's service fee to account for reduced throughput tip fees and lost energy revenues. At any time during the term of the Operations and Maintenance Agreement, the Project may, at its own expense, request recertification of the original Acceptance Test criteria to determine if any or all of the Performance Guarantees are still being met.

5.8 Energy Revenue Credit

The Company shall receive a Net Energy Revenue Credit included in the Service Fee equal to ten (10) percent of all electricity revenues less any penalties or damages imposed against the Project for failure to fulfill terms of the Electricity Sales Agreement. Proposers may submit alternate Proposals with other allocations of energy revenues.

5.9 Materials Recovery

It will be the Company's obligation to market all ferrous metal and other materials recovered. The Company shall receive ninety (90) percent of the revenues from the sale of ferrous metals and other recovered metals. The Project shall be entitled to a ten (10) percent share of all revenues realized from the sale of recovered materials.

5.10 Disposal of Ash, Bypassed and Unacceptable Waste

The Project will designate a licensed, approved landfill for disposal of Ash, bypassed waste, and Unacceptable Waste.

The landfill disposal fees for Ash will be a Pass-Through Cost in Service Fee calculations and the transportation costs must be included in the Company's proposed Operating Charge. Transportation costs resulting from distances traveled over 15 miles (one way to landfill) shall be Pass Through Costs. Should the residue not meet the quality guarantee, the Company shall pay both transportation and disposal costs. Should the Facility fail to meet its throughput and Acceptable Waste acceptance guarantees, the Company shall pay the disposal fee for bypassed waste up to the Company's Guaranteed Annual Throughput.

6.0 SUMMARY OF RISK AND RESPONSIBILITY ALLOCATIONS

Tables 6-1 and 6-2 summarize the Project's expectation of risk and responsibility allocation. If the proposer takes exception to any of the allocations of risk or responsibility, the proposer must make a statement to that effect in the Proposal, identifying which risks or responsibilities he would not be willing to accept and proposing alternative allocation.

The Project reserves the right to revise the risk and responsibility allocations delineated in Tables 6-1 and 6-2.

TABLE 6-1

ALLOCATION OF PROJECT RESPONSIBILITIES

ITEM		RESPONSIBLE PARTY
A.	Financing/Revenues	
1.	Energy Market Negotiations	Project
2.	Recovered Material Market Negotiations	Company
3.	Provide Project Funding	Project
4.	Payment of Disposal Fees at Landfill	Project
5.	Hauler Tipping Fee Adjustments	Project
6.	Transportation Costs	Company
7.	Utility Costs during operations	Project(1)
8.	Operating Costs	Company
9.	Operating Fee Adjustments	Project
10.	Maintenance of Company Financial Qualifications	Company
11.	Payment of Debt Service in Event of Shutdown or Reduced Operation	Company/ Project(2)
12.	Payment of Liens Against Facility Site	Project
13.	Insurance Requirements	Company
B.	Design/Construction/Testing	
1.	Permit Acquisition	Project(3)
2.	Project Funding Availability	Project
3.	Provide Site with Necessary Off-Site Roads and Utilities save for storm drainage structures	Project
4.	Provide On-Site Roads and Utilities	Company

(1)-Up to guaranteed maximum utility usage
(2)-Responsibility rests with party at fault
(3)-Except for typical construction permits such as building permit.

TABLE 6-1 (Continued)

ALLOCATION OF PROJECT RESPONSIBILITIES

ITEM		RESPONSIBLE PARTY
B.	Design/Construction/Testing (Continued)	
5.	Removal of Existing On-Site Buildings/ Utilities, etc.	Company
6.	Provide Waste for Acceptance Testing	Project
7.	Provide Ash Disposal Facilities for Acceptance Testing	Project
8.	Facility Designed, Constructed and Acceptance Tested in Accordance with Construction Agreement	Company
9.	The Facility meets all applicable environmental criteria and permit conditions	Company
10.	Guaranteed Scheduled Acceptance Date	Company
11.	Fixed Price Construction Cost	Company
12.	Performance Guarantees Met	Company
13.	Performance and Labor and Material Bonds	Company
14.	Provide Electric Transmission Facilities	Project
15.	Prevention of Patent Infringement	Company
C.	Operation and Maintenance	
1.	Scale Operation at Point of Receiving	Project(4)
2.	Residual/Bypass Landfill	Project
3.	Hazardous Waste Disposal	Project(5)

(4)-With Company access at all times.
(5)-Only for hazardous wastes inadvertently delivered to the Facility that are not processed.

TABLE 6-1 (Continued)

ALLOCATION OF PROJECT RESPONSIBILITIES

ITEM	RESPONSIBLE PARTY
C. Operation and Maintenance (Continued)	
4. Hazardous Waste Identification/ Handling/Control/Disposal	Project
5. Waste Rejection at Facility:	
a. Acceptable	Project
b. Unacceptable	Project
6. Alterations and Modifications to the Facility	Project/ Company(6)
7. Recycling/Transfer Station Operation	Project
8. Transportation to Facility from Recycling/Transfer Station	Project
9. Transportation to Landfills	Company(8)
10. Landfill Fees	Project
11. Normal replacement of Facility Equipment	Company(7)
12. Recovered Material Handling	Company
13. Waste Control:	
a. who may use	Project
b. tipping fees	Project
14. Meet Utility Utilization Guarantees	Company
15. Provide Guaranteed Annual Tonnage of Processible Waste	Project

(6)-Party requesting change, Project if due to a change in law or change in environmental requirements.
(7)-Unless requested by Project or required due to a change in law or environmental requirements.
(8)-Unless distance exceeds 15 miles one way.

TABLE 6-1 (Continued)

ALLOCATION OF PROJECT RESPONSIBILITIES

ITEM	RESPONSIBLE PARTY
C. Operation and Maintenance (Continued)	
16. Hours of Operation/Receiving Hours Determination	Project
17. Provide qualified personnel to properly operate and maintain Facility	Company

TABLE 6-2

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
A. Financing/Energy Revenues		
1. Failure to Make Debt Service Payments due to:		
a. higher than anticipated operating expense	Company	Under normal operating conditions
b. insufficient revenues	Project/Company	Project unless loss of revenues fault of Company
c. bankruptcy/insolvency/walkway	Project/Project Guarantor	
d. changes in interest rates	Project	Project responsible for financing debt service payment
e. improper cash flow/mismanagement	Project/Company	Project unless event due to fault of Company
f. Facility shutdown or limited operation	Project/Company	Project unless event due to fault of Company
2. Insufficient Revenues from Energy Sales because:		
a. The energy is in a form not usable by the market due to:		
1. improper design	Company	Guaranteed
2. improper operation	Company	Guaranteed
3. change in energy market requirements	Project/Company	Shared risk, based on agreed to splitting of the energy revenues
b. The energy market is unable to accept all or a portion of the energy projected due to:		
1. market shutdown	Project/Company	Shared risk, based on splitting of the energy revenues
2. market energy demand reduction	Project/Company	Shared risk, based on splitting of the energy revenues
3. failure of energy transportation mechanism	Project/Company	Shared risk, unless failure due to element of the project which is the responsibility of the Company
4. change in law	Project/Company	Shared risk, unless failure due to element of the project which is the responsibility of the Company
5. breach of contract by either party	Project/Company	Breaching Party, if Project or Company; shared risk if market is breaching party
6. uncontrollable circumstances	Project/Company	Shared risk.

TABLE 6-2 (Continued)

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
A. Financing/Energy Revenues (Continued)		
7. market walkaway/bankruptcy/insolvency	Project/Company	Shared risk.
c. The energy revenues are lower due to:		
1. lower than anticipated unit energy prices	Project/Company	Shared risk.
2. variation in energy content of the waste stream	Project	If variation is outside design range
3. Facility nonperformance	Company	Guaranteed
4. insufficient waste supply	Project	Guaranteed
B. Design/Construction/Testing		
1. Construction Behind Schedule due to Delays Caused by:		
a. labor strike	Company	For strikes of employees under control of the Company
b. uncontrollable circumstances	Project	
c. unforeseen site conditions	Project	
d. Company mismanagement	Company	
e. failure to secure construction permits	Company	
f. suspension of work by the Project	Project	
g. failure to receive equipment on schedule	Company	
2. Construction Cost Overruns Caused by:		
a. higher than anticipated inflation - Fixed Price Escal. Price	Company Project	
b. construction delays	Company	
c. change in law requiring additional equipment or design changes	Project	

TABLE 6-2 (Continued)

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
B. Design/Construction/Testing (Continued)		
d. Company error in design and/or construction	Company	
e. Project initiated changes	Project	
f. Uncontrollable Circumstances	Project	
3. The Facility cannot demonstrate anticipated performance levels during acceptance testing due to:		
a. defective technology which will not meet guarantees	Company	
b. errors in design	Company	
c. improper construction	Company	
d. insufficient waste supply	Project	
4. The Facility cannot meet environmental regulations due to:		
a. failure of Facility to perform as anticipated	Company	
b. change in law	Project	
5. The Facility is not completed due to:		
a. cost overruns with insufficient additional funds available for completion	Project/Company	Party responsible for cost overrun.
b. Project/walkway/bankruptcy/insolvency	Project	
c. Company/walkway/bankruptcy/insolvency	Company	
d. defective technology which will not meet guarantees	Company	

TABLE 6-2 (Continued)

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
C. Operation and Maintenance		
1. Equipment Failure Caused by:		
a. defective equipment which cannot meet guarantees	Company	
b. legal/court injunction	Project/Company	Party causing the injunction.
c. revocation of permits	Project	Project unless due to action or inaction of Company
d. design errors and omissions	Company	
e. poor construction	Company	
f. improper operation and/or maintenance	Company	
g. damage caused by waste stream characteristics or components	Company	Company responsible for identification of unacceptable waste
h. uncontrollable circumstances	Project	
2. Excessive Downtime Caused by:		
a. equipment failure	Company	
b. uncontrollable circumstances	Project	
c. labor strikes	Company	For strikes of Employees under the control of the Company
d. improper operation and/or management	Company	
e. insufficient waste supply	Project	
3. Operation and Maintenance Costs are higher than anticipated due to:		
a. equipment failure	Company	
b. uncontrollable circumstances	Project	
c. poor labor productivity	Company	
d. change in law other than tax law	Project	

TABLE 6-2 (Continued)

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
C. Operation and Maintenance		
1. Equipment Failure Caused by:		
a. defective equipment which cannot meet guarantees	Company	
b. legal/court injunction	Project/Company	Party causing the injunction.
c. revocation of permits	Project	Project unless due to action or inaction of Company
d. design errors and omissions	Company	
e. poor construction	Company	
f. improper operation and/or maintenance	Company	
g. damage caused by waste stream characteristics or components	Company	Company responsible for identification of unacceptable waste
h. uncontrollable circumstances	Project	
2. Excessive Downtime Caused by:		
a. equipment failure	Company	
b. uncontrollable circumstances	Project	
c. labor strikes	Company	For strikes of Employees under the control of the Company
d. improper operation and/or management	Company	
e. insufficient waste supply	Project	
3. Operation and Maintenance Costs are higher than anticipated due to:		
a. equipment failure	Company	
b. uncontrollable circumstances	Project	
c. poor labor productivity	Company	
d. change in law other than tax law	Project	

TABLE 6-2 (Continued)

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
C. Operation and Maintenance (Continued)		
e. estimating error	Company	
f. higher residue disposal costs	Project	
g. higher insurance costs	Project	Company will bear risk of high insurance cost resulting from their performance or failure to perform
h. higher inflation rate	Project	
4. Facility Cannot Meet Environmental Regulations Due to:		
a. equipment failure	Company	
b. change in law/permit requirements	Project	
5. Permanent Facility Shutdown Caused by:		
a. inability to pay operating expenses	Project/Company	Depending on reason for inability.
b. revocation of operating permit	Project/Company	Depending on reason for revocation.
c. Project/walkaway/bankruptcy/insolvency	Project	
d. Company/Walkaway/bankruptcy/insolvency	Project Guarantor	
e. no waste is delivered to the Facility	Project	
f. technology failure/obsolescence	Company	
g. change in law	Project	
h. uncontrollable circumstances	Project	
6. Insufficient Waste Delivery to the Facility Due to:		
a. error in estimating waste quantities available	Project	
b. economic conditions in the community	Project	
c. change in law affecting packaging, source separation, recycling, etc.	Project	

TABLE 6-2 (Continued)

ALLOCATION OF PROJECT RISKS

ITEM	PARTY BEARING RISK	DISCUSSION
C. Operation and Maintenance (Continued)		
d. failure of Project to deliver/direct waste to the Facility	Project	
e. competitive alternative disposal sites	Project	
f. waste collection hauler strike	Project	
g. ash collection hauler strike	Company	
h. court injunction	Project	
7. The waste composition varies from the assumed design criteria due to:		
a. error in estimating composition	Project	
b. change in law	Project	
c. increased recycling	Project	
d. ineffective screening of hazardous or nonprocessible waste	Project	
e. adverse weather conditions	Project	
f. packaging changes	Project	

PART SEVEN
EVALUATION AND SELECTION PROCESS

1.0 GENERAL

The objective of this RFP process is to select the Company whose Proposal is judged to be the overall best when evaluated based upon the following areas of evaluation: i) completeness of Proposal; ii) financial and technical qualifications; iii) evaluation of the technology and the technical aspects of the Proposal; iv) comparison of prices and guarantees; and v) economic evaluation.

Chronologically, the evaluation will be as follows:

1. Proposals will be evaluated for completeness. Any proposals which do not include the required information will be rejected.

2. In the event that any Proposer does not certify that there has been no material change in financial position or Company organization since the submittal of responses to the RFQ, the Financial Advisor will review changes and determine if the Proposer still meets the minimum financial qualifications tests of the RFQ. The Financial Advisor will also review information on the Proposer's obligations for other waste to energy projects which may bear on the Proposer's ability to guarantee the performance or other requirements of the Facility.

3. A preliminary technical evaluation, as described below, will be performed to assess whether the Proposal is in conformance with the required performance standards. During this evaluation, a list of questions will be developed and submitted to the Proposer for clarification of the proposal. Concurrently, a preliminary base case economic analysis of the proposal will be developed and supplied to the Proposer.

4. Responses to the above questions will be received from each Proposer.

5. Interviews will be held with each Proposer to receive a presentation of the proposal, discuss questions, and review the preliminary economic analysis with the Proposer.

6. After review with the Proposer, the preliminary base case economic analysis will be finalized. The base case analysis of each proposal which has been a) judged complete, b) continues to meet the minimum financial qualifications, and c) meets the required performance standards will be compared. All proposals showing a present worth within 20 percent of the lowest present worth proposal will be further evaluated based on the categories discussed in Section 6.0 below. Sensitivity analysis will be performed on the base case economics to evaluate the sensitivity to variables in financing assumptions, unit energy revenues,

inflation rates, and waste quantities. Based on these evaluations, the proposals will be ranked and recommended to the Policy Committee in order for negotiations.

The following sections provide the selection and evaluation criteria that will be used in determining the best Proposal.

2.0 COMPLETENESS OF PROPOSALS

The Proposals will first be reviewed to determine completeness. Items which must be supplied for a Proposal to receive further evaluation include, but are not limited to:

- Proposal Security.
- Completed Proposal Forms (Part Eight).
- Financial and Technical Qualification Information (Part Three).
- Required Technical Data (Part Four).

3.0 QUALIFICATIONS OF PROPOSERS

As a result of the RFQ issued May 14, 1986, each Proposer's qualifications have been evaluated to determine the best qualified Proposers. Only the Proposers considered best qualified by the Project are receiving this RFP. Proposers shall certify that there has been no change in their financial and technical qualifications which would render the evaluation of their RFQ responses invalid.

4.0 TECHNICAL EVALUATION

The purpose of the technical evaluation is to assure that the Facility will meet the performance specifications and engineering criteria of this RFP. Proposals must utilize the basic technology which was used to prequalify the Proposer to receive this RFP. Minor design changes to incorporate current state of the art technology will be permitted, but must be supported by new experience data.

The information provided by the Proposer will be evaluated to determine if minimum performance standards and engineering criteria have been met. This information will also be reviewed to determine if the claimed operating results are reasonably achievable or if there are major inconsistencies in the data presented. All proposals will be evaluated for design features which could result in a potential operational problem or adverse economic impact on the project, even though they may not be addressed specifically in the economic analysis.

Only proposals which meet the performance standards and engineering criteria will undergo economic analysis.

5.0 ECONOMIC EVALUATION

The economic evaluation is to provide an equitable basis of comparison among proposals. All cost information and guarantees will be used as stated in the proposal. The data will be reviewed to verify that the estimates are consistent with the type of equipment, maintenance, and personnel offered in

the proposal and examined in the technical evaluation. The objective of this review is identification of major omissions and inconsistencies. Resolution of inconsistencies will be allowed only to the extent of conforming inconsistent data with other data in the proposal. Modification of proposals or introduction of new data will not be permitted.

The economic analysis will be performed under "base case" conditions. The first step is the estimation of the annual debt service under specific uniform financing assumptions. The second step is calculation of the total projected annual operating costs and revenues for the term of the Bonds based on proposal cost data. Finally, net annual costs will be calculated and then reduced to current costs on a present-worth basis in order to determine the net present value cost of the Facility.

5.1 Annual Debt Service

The following procedure will be used in determining the annual debt service under the base conditions:

- The bid capital construction cost will be a fixed sum drawn in accordance with the Proposer's progress payment schedule, Proposal Form 3, and will be used to calculate a cash flow profile, assuming a Notice to Proceed on July 1, 1987.

- The estimated cost of all items, such as utilities and road construction outside the boundary of the site, and other adjunct capital cost items furnished by the Project, will be added to the bid construction cost. The same cost for these items will be added to each proposal unless specific design elements in the proposed layout would be expected to increase or decrease those costs.

- The Referendum 39 Grant funds will be applied in compliance with the Grant contract to reduce the capital costs to be financed from the Bonds.

- A bond interest rate of 8% will be used for evaluation purposes to determine the annual debt service. A one-year debt service reserve will be established from bond proceeds. All proceeds will be reinvested at a reinvestment rate equal to the bond interest rate. All other factors involved in the sizing of the bond issue and estimating annual debt service will be applied uniformly to the base capital construction cost and the progress payment schedule in evaluating each proposal.

- For determining the size of the bond issue, it will be assumed that interest will be capitalized for the length of the Guaranteed Construction Period.

- Cost of issuance will be assumed to be 3-1/2% of the total amount of bonds issued.

5.2 Annual Operating Cost

Annual operating costs throughout the term of the Bonds will be calculated as the sum of the service fee and Project cost estimates for residue disposal, pass through costs and other expenses.

The proposed operating charge, as of February 27, 1987, will be escalated to the proposed first year of full operation based on a construction schedule as guaranteed in the proposals. An inflation rate of 4% per year will be used. The minimum guaranteed annual throughput of 240,000 tons of Acceptable Waste will be used for the Base Case with alternate "what if" analysis based on Guaranteed Annual Throughput subject to current estimates of future availability of Acceptable Waste.

Pass-Through Costs during operation, as appropriate, will be calculated using the following assumed values:

- Water, sewer, and standby electricity rates will be as given in Appendix E. Quantities will be the Guaranteed Maximum Utility Utilization provided on Proposal Form 6.

- Landfill disposal of ash, and rejects will be assumed to cost $30.00 per ton as of the Proposal date. The quantity of wet ash and rejects will be calculated according to the following:

  Ash = (.30x Guaranteed Annual Tonnage) - recovered materials

  Rejects = .03 x Guaranteed Annual Tonnage.

5.3 Energy Revenues

The energy revenues will be determined as follows:

- The guaranteed net electric output per ton of Acceptable Waste processed will be applied to the minimum guaranteed annual throughput of 240,000 tons for the base case. The following annual electric rates in mils per kWh will be used in the evaluation process, unless revised values are provided not less than 30 days prior to the Proposal due date.

Year	Mils/kWh	Year	Mils/kWh
1990	15.7	2000	72.7
1991	16.4	2001	73.3
1992	17.0	2002	73.9
1993	17.7	2003	74.5
1994	18.4	2004	75.2
1995	70.0	2005	75.9
1996	70.5	2006	76.7
1997	71.0	2007	77.4
1998	71.5	2008	78.2
1999	72.1	2009	79.0

The Company's share of energy revenues will be 10% for the base case with an alternate analysis using the percentage proposed on Proposal Form 6.

- Revenues for the recovery of ferrous metals and other materials will not be included in the base case economic analysis. During alternate analysis revenues from guaranteed recovered materials will be evaluated. The Company's share of these revenues will be 90% with 10% as the Project's share.

- For purposes of proposal evaluation, energy revenues from potential steam markets can not be included.

5.4 Net Annual Cost

The net annual cost will be determined yearly, by adding the annual debt service requirements to the total annual operating costs and deducting annual electric energy and recovered materials revenues. The net annual cost for each year will be discounted over the term of the Bonds on a present-worth basis, using an 8% discount rate to present-worth all costs to 1987 dollars over the 20 year analysis period of the Facility commencing on the scheduled acceptance date.

6.0 EVALUATION RESULTS

For all proposals which are within 20 percent of the least present-worth cost proposal, a further rating evaluation will be made to select the ranking for possible negotiations. The rating of the proposals will be based on the following three categories and their respective subcategories.

1. Depth of experience and proposal with regards to:

   - Design
   - Technology
   - Construction
   - Previous facilities meeting operating guarantees of proposal.
   - Years of previous operation of a facility and number of similar sized completed facilities.

2. Financial and Agreement Response Strength:

   - Level in which the Company will take risks as outlined in his proposal.
   - Level the Contractor accepts the Contract parameters outlined in the RFP.

3. Facility Parameters.

- Aesthetic and architectural appearance
- Redundancy of equipment
- Environmental impacts
- Excess capacity

7.0 NEGOTIATION

Evaluation of proposals is expected to be completed within 45 days of the date of proposal submittal. Following evaluation of all proposals, it is the intent of the Project to select one company for contract negotiations. Negotiations will begin immediately upon selection. If contracts are not signed within one hundred fifty (150) days of the date of proposal submittal, the Project may exercise one of the following options:

- Extend the negotiation period, if the Project feels the negotiating process is achieving worthwhile progress; or
- Enter into negotiations with the Company whose proposal is considered next best.

This negotiation process will continue until such time as the contracts have been signed or until all proposals have been rejected by the Project.

During the course of negotiations, if the Project feels that the Company is not negotiating its good faith or acting in the best interest of the Project or the City and County or if the negotiations are not progressing satisfactorily, the Project may, at its option, enter into negotiations with the Company whose proposal is second most advantageous to the Project.

PART EIGHT
PROPOSAL FORMS

1.0 GENERAL

The following Proposal Forms shall be used to present the cost and Performance Guarantees required in this RFP. Data from the Proposal Forms will be used in the Proposal evaluations. Fill out all Proposal Forms completely. Use "N/A" to specify items not applicable. The Company shall provide data in units which are consistent with the units requested (e.g., lb/hr., ft/sec., etc.). To provide additional information, use separate sheets following the Proposal Form format. In addition, these data will be incorporated into the Agreement which will be negotiated between the Project and the Company. In cases where a written price and a numeric price are provided, the written price will govern. Forms 1 and 3 will take precedence over Forms 2 and 4 if a discrepancy exists.

2.0 FORM 1: CAPITAL CONSTRUCTION COST

The Capital Construction Cost requested in Form 1 is the fixed price, stated in United States dollars, to design, construct, start-up and Acceptance Test the Facility in accordance with the RFP requirements and the specifications (see the Appendices). Since one of the economic factors for determining the Bond size is the Capital Construction Cost, the County requires a guaranteed Capital Construction Cost, which will remain fixed. Should Notice to Proceed not be given within one year, the Capital Construction Cost will be escalated only from one year after the Proposal date to the Notice to Proceed based on a percentage of a mutually agreeable index. The Proposer shall submit the index or indices it would propose to use along with a description of the index and publication frequency and location. If multiple indices are suggested a weighting formula should be submitted. This cost shall include all taxes, labor, materials, equipment, insurance, and services required for the design, construction, start-up and Acceptance Testing of the Facility.

3.0 FORM 2: ITEMIZED CAPITAL CONSTRUCTION COST

The Capital Construction Cost shall be broken down by the general categories listed in Form 2.

4.0 FORM 3: OPERATING FEE

The Operating Fees to be quoted in Form 3 will be paid to the Company for processing delivered Acceptable Waste by the Facility. The Operating Fees should be quoted in terms of Proposal date United States dollars and will be escalated according to agreed-upon economic indices. For Proposal evaluation a 4% per year escalation factor will be used. The Operating Fees are to be based on the Facility meeting Performance Guarantees and will be subject to adjustment should the Facility operate at reduced levels.

5.0 FORM 4: ITEMIZED OPERATING CHARGE

The proposer will complete Form 4 with the requested details of the breakdown of annual operating and maintenance costs given on Form 3 which comprise the Base Operating Fee.

6.0 FORM 5: PROGRESS PAYMENT SCHEDULE

The proposer shall distribute the Capital Construction Cost in accordance with its Guaranteed Construction Period. The proposed Capital Construction Cost distribution shall be provided on Form 5.

The progress payment schedule will be incorporated into the Agreement, and will also be used as the basis for estimating Debt Service in the evaluation of the Proposals.

When submitting invoices for progress payments, the Company shall be responsible for breaking down costs in a manner which corresponds to the DOE Grant Contract breakdown.

7.0 FORM 6: GUARANTEED MAXIMUM UTILITY UTILIZATION

Since service and potable water, sewer and electric utility costs are treated as Pass-through Costs during operation, utility utilization must be known. Therefore, the proposer is required to complete Form 6 with the Guaranteed Maximum Utility Utilization. During construction, start-up and Acceptance Testing, the Company shall be responsible for temporary hookups and all utility costs which shall be included in the Capital Construction Cost. Volume and surge data must be provided to permit planning of off-site utility systems.

8.0 FORM 7: PERFORMANCE GUARANTEES

8.1 General

The proposer shall undertake certain Performance Guarantees. These guarantees are specified on Form 7 and will be incorporated into the Agreement. Satisfaction of all of the environmental requirements specified herein is an additional guarantee which will be required of the Company.

8.2 Guaranteed Construction Period

The proposer shall guarantee the time of performance for Facility design, start-up, construction and Acceptance Testing from the Notice to Proceed through Acceptance. This period of performance will be subject to extensions only as provided in the Construction Agreement.

8.3 Guaranteed Throughput Capacity

The proposer shall guarantee the overall throughput capacity of the Facility on an annual basis. The throughput guarantee shall be a minimum of 240,000 TPY which may be increased due to a greater annual Facility availability and is to be based on Acceptable Waste with a HHV in the range of

3,800 to 5,500 Btu/lb. A throughput capacity of 800 TPD or 5,600 TPW shall be guaranteed as a minimum for Acceptance Testing purposes.

8.4 Output Guarantees

The proposer shall guarantee the energy production rate of the Facility assuming Reference Waste with an HHV of 4,700 Btu/lb at a throughput capacity of 800 TPD. The proposer may propose to guarantee removal of materials.

8.5 Environmental Guarantees

The Proposer shall guarantee environmental compliance and wastewater discharges in accordance to the requirements of the RFP and any federal, state and local requirements in effect as of the date of the Proposal.

9.0 FORM 8: ALTERNATE REVENUE CREDIT PROPOSAL

The Project will consider alternate proposals which the proposer may suggest for sharing revenues obtained from the sale of electricity, ferrous metal, and other materials proposed to be recovered. For the base case, energy revenue shares shall be assumed to be 90% to the Project and 10% to the Company with recovered materials revenues being split 10% to the Project and 90% to the Company.

10.0 FORM 9: DETAILED FACILITY AND EQUIPMENT DATA

The proposer shall complete Proposal Form 9 with the appropriate information. This information will be used to determine overall compliance with the performance requirements. The proposal narrative shall include a detailed description of all equipment and systems.

11.0 FORM 10: DETAILED USE OF LOCAL FIRMS, BUSINESSES, ETC.

The proposer shall complete Form 10 listing all local firms, businesses, and suppliers that have been made a part of the proposal. The proposer shall also designate what role, service, or supplies will be furnished and the anticipated expenditure to be made in each instance. The above information shall also be given for areas of local involvement wherein no specific agreement has been reached in advance of the submittal of this proposal. Examples of local firms include:

- Attorneys
- Banks
- Engineers/Architects
- Public Relations
- Medical
- Construction Contractors
- Suppliers
- Others

12.0 MISCELLANEOUS FORMS

Form 11: Noncollusion Certification

Form 12: Nondiscrimination

Form 13: Indemnification Agreement

Form 14: Disclosure

Form 15: Letter of Intent

The proposer shall submit to the County a letter of intent similar to the sample given on Form 15, typed on the proposer's letterhead. The information provided shall be similar to that given on Form 15. The letter must accompany the Proposal and must be signed by an authorized officer of the proposer as described in Part One, Section 7D, the chief financial officer of the proposer, and the chief executive officer of the Project Guarantor.

Form 16: Exceptions to RFP

PROPOSAL FORM 1
CAPITAL CONSTRUCTION COST

Proposed Capital Construction Cost:_____
_____ Dollars ($_____).
Write the proposed Capital Construction Cost in words; use numbers to state the same price within the parenthesis.

This price is the Capital Construction Cost, in United States dollars, for all work, including all associated sales and use taxes, required for the design, construction, start-up, and Acceptance Testing of the Facility. This Capital Construction Cost shall be fixed and be escalated only from one year after the Proposal Date to the Notice to Proceed based upon mutually agreeable indices.

_____
Name of Proposer

_____
Signature

_____
Title

PROPOSAL FORM 2
ITEMIZED CAPITAL CONSTRUCTION COST

1. Design, Permits, and Construction Management: Subtotal $_____

2. Site Work, including but not limited to: demolition, excavation and fill; parking area and on-site roadways; sanitary sewer, water supply, natural gas supply, storm sewer, and utility installation within the Boundary Limits of the Facility Site.
Subtotal $_____

3. Off-Site Work, (assumed prices for evaluation) including but not limited to: Storm drain, silt basin with all required facilities Subtotal $_____

4. Landscaping, including but not limited to: fences, gates, lighting, grading, seeding, and planting. Subtotal $_____

5. Combustion Plant Equipment, including but not limited to: furnace, grates, boiler, superheater, economizer and/or air preheater, fuel handling equipment, ash collection equipment, process control equipment, fans, feedwater treatment facility, feedwater heaters, and ash removal system. Subtotal $_____

6. Buildings and Associated Structures, including but not limited to:

a) excavation and fill; foundations, buildings, and structures for combustion plant, administrative and maintenance requirements; acceptable waste storage; scale and scale facility; and all related facilities. Subtotal: $_____

b) excavation and fill; foundations, buildings, and structures for power plant; and all related facilities. Subtotal: $_____

7. Power Plant, including but not limited to: turbine generators, switchgear, transformers, and turbine condenser Subtotal: $_____

8. Cooling System, Cooling Tower, and Ancillary Equipment Subtotal: $_____

9. Air Pollution Control, may include but not be limited to:

Stack $_____

Mechanical Particulate Collector $_____

Buildings $_____

Electrostatic Precipitator $_____

Dry Scrubber System $_____

Baghouse $_____

Miscellaneous Equipment $_____ Subtotal: $_____

10. Wastewater Treatment Subtotal: $_____

11. Miscellaneous Mobile Equipment Subtotal: $_____

12. Facility Start-up and Acceptance Testing Subtotal: $_____

13. Performance Bond and Labor & Material Bond Subtotal: $_____

14. Other (not included above; specify on attachment) Subtotal: $_____

15. Insurance During Construction

a. Workman's Compensation $_____
b. Comprehensive General Liability $_____
c. Excess Umbrella Liability $_____
d. All Risk and Builders Risk $_____
e. Comprehensive Automobile Liability $_____
f. Aircraft Liability $_____ Subtotal: $_____

16. Sales and Use Taxes Subtotal: $_____

TOTAL CAPITAL CONSTRUCTION COST $_____

PROPOSAL FORM 3
OPERATING FEE

1. Base Operating Fee

Base Operating fee per ton of Acceptable Waste processed:

_____dollars

$_____

Write the Base Operating Fee in words on the first line. Use numbers to state the same fee on the second line.

The Base Operating Fee shall be quoted in United States dollars as of the Proposal date. This Base Operating Fee will be escalated in accordance with a mutually agreed on escalator specified in the Operations and Maintenance Agreement. The base fee will be applied to the tons of Acceptable Waste processed which result from the acceptance of the Guaranteed Annual Tonnage.

2. Excess Operating Fee

Excess Operating fee per ton of Acceptable Waste processed:

_____dollars

$_____

Write the Excess Operating Fee in words on the first line. Use numbers to state the same fee on the second line.

The Excess Operating Fee is to be applied to the tons of Acceptable Waste processed at the Facility in excess of the Guaranteed Annual Tonnage.

The Excess Operating Fee shall be quoted as of the date of proposal submittal subject to agreed on escalation in the Operations and Maintenance Agreement.

_____
Name of Proposal

_____
Signature

_____
Title

PROPOSAL FORM 4
ITEMIZED BASE OPERATING FEE

		Number	Annual Cost ($/yr)
1.	Labor		
	a. Operating Personnel	_____	_____
	b. Maintenance Personnel	_____	_____
	c. Supervisory/Management	_____	_____
	d. Office/Clerical Personnel	_____	_____
	e. Clean-up Personnel	_____	_____
	f. Other	_____	_____
	Subtotal	_____	_____
2.	Maintenance - Materials		
	a. Supplies		_____
	b. Spare Parts		_____
	c. Other (detail on separate sheet)		_____
	Subtotal		_____
3.	Haul Cost (Ash and Rejects up to 15 miles from the Facility) $_____/ton-mile (one-way mile) haul cost in excess of 15 miles		_____
4.	Contracted Services		
	(detail on separate sheet)		_____
5.	Insurance		_____
6.	Other (detail on separate sheet)		_____

TOTAL ANNUAL GROSS OPERATING AND MAINTENANCE COST $_____

BASE OPERATING FEE = $\frac{\text{TOTAL ANNUAL GROSS OPERATING AND MAINTENANCE COST}}{\text{220,000 TPY (Acceptable Waste)}}$ = $_____/ton

PROPOSAL FORM 5
CAPITAL CONSTRUCTION COST PROGRESS PAYMENT SCHEDULE

Guaranteed Construction Period _____ months

Month(1)	Date	Percent of Total Payment	Payment (Dollars)(2)
TOTAL		100%	$ (3)

Notes: (1) Number of months shall agree with guaranteed construction period.

(2) Fixed cost as of the date of proposal submittal except if Notice to Proceed is not executed within one year of Proposal submittal.

(3) Total construction cost shall agree with Proposal Form 1.

PROPOSAL FORM 6
GUARANTEED MAXIMUM UTILITY UTILIZATION

A. Construction, Start-up and Acceptance Testing

1. Electricity:

   a) Usage (kWh) _____
   b) Demand (kW) _____

2. Water Usage (gallons) _____

3. Sewer Usage (gallons) _____

4. Natural Gas Usage (MCF) _____

B. Operations

1. Electricity Usage:

   a) Usage (kWh/yr) _____
   b) Demand (kW) _____

2. Water Usage (gal/yr) _____

3. Sewer Usage (gal/yr) _____

4. Natural Gas Usage (MCF/yr) _____

PROPOSAL FORM 7
PERFORMANCE GUARANTEES

1.	Guaranteed Construction Period Length of Time for Design, Construction, Start-up and Acceptance Testing	_____months
2.	Facility Capacity	
	Guaranteed Annual Throughput (based on waste higher heating value within the range of 3800 to 5500 Btu/lb)	_____TPY
	Guaranteed Capacity for Acceptance Test (based on waste higher heating value within the range of 3800 to 5500 Btu/lb)	_____ TPW
		_____ TPD
3.	Steam Generation Rate (based on waste higher heating value of 4700 Btu/lb)	_____lb/ton
		_____lb/hr
	Throttle Conditions Proposed	_____psig
		_____F
4.	Net Electric Output (based on waste higher heating value of 4700 Btu/lb)	
	At Guaranteed Annual Throughput (at Zero Extraction for Sale) (2)	_____kWh/ton
	Maximum Inhouse Electrical Consumption at Guaranteed Annual Throughput	_____kWh/ton
5.	Ash Generation putrescible matter	_____%, dry wt.
	unburned combustible	_____%, dry wt.
6.	Guaranteed recovery and marketing of other materials - specify material: (1)	
	a _____	_____TPY
	b _____	_____TPY
7.	Guaranteed Environmental Compliance (based on the requirement of this RFP and any federal, state or local requirement in effect as of the date of the Proposal)	_____(yes/no)

8. The Facility wastewater shall meet the criteria established by the City of Spokane Wastewater Management Department _____(yes/no)

Notes

(1) All materials guarantees based upon Acceptable Waste and reference waste composition, as specified herein.

(2) The Proposer shall provide turbine performance curves for units proposed. The Proposer shall also provide electric output data for various anticipated operating levels reflecting unit downtime (attach on separate sheet).

PROPOSAL FORM 8
ALTERNATE REVENUE CREDIT PROPOSAL

The proposer must indicate its Alternate Revenue Credit Proposal in this or similar Proposal form:

1. Electric Revenues:

   a. Project share of revenues _____ %

   b. Company share of revenues _____ %

2. Ferrous Revenues:

   a. Project share of revenues _____ %

   b. Company share of revenues _____ %

3. Other Materials Revenues:

   Specify Material _____

   a. Project share of revenues _____ %

   b. Company share of revenues _____ %

   Specify Material _____

   a. Project share of revenues _____ %

   b. Company share of revenues _____ %

PROPOSAL FORM 9

DETAILED FACILITY AND EQUIPMENT DATA

PROPOSAL FORM 9
DETAILED FACILITY AND EQUIPMENT DATA

PART A - GENERAL

1. Drawings. Note drawing requirements identified in Appendices A and B. See attached Drawing Nos. _____ (State location in Proposal).

2. Mass and Energy Balance Diagrams
See attached Drawings Nos. _____ (State location in Proposal).

3. Cycle Heat Balance Diagram

   A. Maximum Continuous Rating (Turbine VWO 5% OP) See attached Drawing No. _____ (State location in Proposal).
   B. Guaranteed Load (GL). See attached Drawing No. _____ (State location in Proposal).
   C. Temperature Control Point (CP). See attached Drawing No. _____ (State location in Proposal).

4. Boiler Operating Firing Diagram, See attached Drawing No. _____ (State location in Proposal).

5. Temperature Profile Diagrams (As defined in Paragraph 3.1 of Appendix B).

   A. Guaranteed Load (GL). See attached Drawing No. _____ (State location in Proposal).

   B. Maximum Continuous Rating (MCR). See attached Drawing No._____ (State location in Proposal).

6. Electrical

   A. One Line Diagram complete with protective relays and metering. See attached Drawing No. _____ (State location in Proposal).

7. The Proposer shall acknowledge and certify below that all civil/structural requirements specified in Section 6.0 of Appendix B, TECHNICAL REQUIREMENTS, are included in it's Proposal. Facility design and construction (conforms) (does not conform) to Paragraph 6.0 of Appendix B. The Proposer shall provide an itemized description of all exceptions taken, if any, to Paragraph 6.0 of Appendix B.

8. Building Data

   The Proposer shall provide a brief description of the type of structure and materials of construction, along with approximate building size, for each building or enclosure proposed in the space below.

9. Storage and Tipping Area

A. Tipping area dimensions (length x width x clearance) Length shall be measured from the front edge of the storage pit to the opposite edge of the tipping area. ___ x ___ x ___

B. Number of vehicle unloading positions _____

C. Refuse Storage Pit

Elevation of Tipping Floor, ft-in. _____

Elevation of Top of Charging Hopper ft-in. _____

Elevation of Bottom of Storage Pit, ft-in. _____

Length of Storage Pit, ft-in. _____

Width of Storage Pit, ft-in. (Measured from inside of front wall to inside of back wall) _____

Design Storage Capacity, yd^3 _____

Design Storage Capacity, tons _____

Design refuse density used in calculating storage capacity, lb/yd, below tipping floor/above tipping floor _____/_____

D. Receiving Pit

Length of Receiving Pit, ft-in. _____

Width of Receiving Pit, ft-in. _____

Depth of Receiving Pit at Emergency Loadout Area, ft-in. _____

Depth of Receiving Pit at Storage Pit Interface, ft-in. _____

10. Architectural Treatment

A description of the materials proposed for the architectural treatment of all structures and a description of the landscaping proposed is included as attached sheets _____. (Rendering shall be provided).

PART B - COMBUSTION PLANT EQUIPMENT

1. Steam Generating Units

A. Manufacturer _____
B. Number of Units _____
C. Furnace Volume, ft^3 _____
(As defined in Paragraph 3.1 of Appendix B)

D. Design gross furnace heat release per furnace volume $Btuh/ft^3$ _____

E. Plan area of grate as defined in Paragraph 3.1 of Appendix B. _____

F. Gross heat release per plan area of grate, $Btuh/ft^2$ _____

	GL	MCR
G. Steam and Water Flows, lb/hr		
Superheater outlet steam flow	_____	_____
Boiler blowdown water flow	_____	_____
Economizer inlet feedwater flow	_____	_____
H. Steam and Water Pressures, psig		
Superheater outlet steam pressure	_____	_____
Steam drum pressure	_____	_____
Economizer inlet pressure	_____	_____
Pressure drop from steam drum to superheater outlet	_____	_____
I. Steam and Water Temperatures, F		
Superheater outlet temperature	_____	_____
Economizer inlet feedwater temperature	_____	_____
J. Steam Purity		
Average solids content in steam leaving boiler, ppm	_____	_____

K.	Flue Gas Flows, lb/h Leaving economizer	_____	_____
L.	Average Flue Gas Temperatures, F		
	Superheater (inlet)	_____	_____
	Economizer exit	_____	_____
	Dry scrubber exit	_____	_____
	Precipitator/baghouse outlet	_____	_____
	Stack exit	_____	_____
M.	Average Flue Gas Velocities, ft/sec		
	Through furnace pass	_____	_____
	Through superheater section	_____	_____
	Through Boiler section	_____	_____
	Through economizer	_____	_____
	Through precipitator/baghouse	_____	_____
	Stack exit	_____	_____
N.	Air Flows, lb/h		
	Secondary air to furnace	_____	_____
	Primary air to furnace	_____	_____
	Excess air for fan sizing, %	100	100
O.	Air Pressures, in. H_2O		
	FD fan outlet	_____	_____
	Pressure drop through grate without refuse load	_____	_____
	Secondary fan outlet	_____	_____
P.	Air Temperatures, F		
	Design ambient, min.	_____	_____
	Air temperature to forced draft fan and secondary air fan, F (for boiler performance evaluation)	80	80

	Design humidity, % RH	60	60
	Primary air heater inlet, F	80	80
	Primary air heater outlet, F		
Q.	Heat Balance, %		
	Excess air leaving economizer (for boiler performance evaluation)	100	100
	Dry gas loss		
	Loss due to H_2 and H_2O in fuel		
	Loss due to H_2O in air		
	Loss due to unburned combustibles		
	Radiation loss		
	Unaccounted for and manufacturer's margin		
	Total losses		
	Efficiency		
R.	Ash Deposition		
	Fraction of ash leaving boiler with flue gas including ash collected in boiler fly ash hoppers, %		
	Fraction of ash leaving boiler as bottom ash and siftings, %		
	Total quantity of ash (including bottom ash, siftings, and flyash), lb/hr		
	Typical size of particulate in flue gas, %		
	0-5 microns		
	5-10 microns		
	10-20 microns		
	larger than 20 microns		

S. Emission Factors in lb/ton of Acceptable Waste

The Company shall guarantee for the following pollutants emission rates at or below the rates listed in Appendix B. Anticipated emission rates for criteria pollutants shall be listed below:

	Average	Max(1)
Particulate Matter (solid and condesible)	_____	0.02 gr/dscf
Sulfur Dioxide	_____	50 ppm
Nitrogen Dioxide	_____	300 ppm
Carbon Monoxide (4-day average)	_____	100 ppm
Carbon Monoxide (8-hour average)	_____	400 ppm
Total Hydrocarbons as CH_4	_____	3 ppm
Lead	_____	0.001 gr/dscf
Opacity of Stack	_____	10%(3)
Chlorides	_____	50 ppm
Tetra-hepta chlorinated isomers	_____	200 ng/dscm

1. At dry standard conditions and 7% O_2.

The following elements and compounds have been detected in emissions from resource recovery facilities. The Company shall provide information on emissions of such substances from the proposed Facility based on Acceptable Waste and the best information available.

Arsenic	_____	_____
Asbestos	_____	_____
Beryllium	_____	_____
Cadmium	_____	_____
Chromium	_____	_____
Copper	_____	_____
Manganese	_____	_____
Nickel	_____	_____
Selenium	_____	_____

Sulfuric Acid Mist _____ _____

Reduced Sulfur _____ _____

Tin _____ _____

Vanadium _____ _____

Vinyl Chloride _____ _____

Zinc _____ _____

PAH _____ _____

PCB _____ _____

T. Ash/Residue

Bottom ash and residue, lb/hr (dry) _____ _____

Fly ash, lb/hr (dry) _____ _____

Percent moisture of bottom ash to landfill _____ _____

U. Boiler Data

Inside diameter of Steam/Mud drum, in. _____/_____

Boiler section heat transfer surface area, ft^2 _____

Boiler tube diam/wall thickness, in. _____/_____

Boiler tube clear side spacing, in. _____

Waterwall tube diam/wall thickness, in. _____/_____

Total Furnace water surface (inside furance volume as defined in Paragraph 3.1 of Appendix) including screen sections in furnace passes _____

Steam drum design pressure, (psig) _____

V. Superheater Data

Design pressure, psig _____

Total superheater surface, ft^2 _____

Superheater tube diam/wall thickness, in. _____ / _____

Superheater tube clear side spacing, in. _____

Superheater pressure drop at VWO and over pressure flow, psi _____

Superheater arranged for parallel flow (yes/no) _____

W. Economizer Data

Type of economizer _____

Design pressure, psig _____

Effective heating surface, ft^2 _____

Tube diam/wall thickness, in. _____ / _____

Economizer tube clear side spacing, in. _____

X. Main steam line pressure drop at VWO and over pressure flow, psi (excluding boiler stop check valve) _____

Y. Boiler stop check valve pressure drop at VWO and over pressure flow, psi _____

2. Refuse Handling Cranes

A. Manufacturer _____

B. Quantity _____

C. Crane Capacity (Tons) _____

D. Grapple Size, yd^3 _____

E. Crane design handling rate, TPH _____

F. Speeds at full load

1. Hoist, ft/min _____

2. Bridge travel, ft/min _____

3. Trolley travel, ft/min _____

4. Maximum hoist lift, ft _____

5. Controls, type _____

G. CMAA Rating _____

3. Refuse Hoppers and Feed Chutes

A. Manufacturer _____

B. Hopper Capacity, tons _____

C. Feed Chute _____ x _____

Size of largest item which will pass through chute, LxWxH, ft _____ x _____ x _____

Chute cooling system _____

4. Refuse Feeders

A. Manufacturer, Type _____

B. Capacity, Tons/hr, Maximum _____

5. Stokers and Grates

A. Type and Manufacturer _____

B. Grate Material (ASTM) _____ ASTM _____

6. Fans

	FD	SA	ID
A. Manufacturer			
B. Type of blades			
C. Net Operation Requirements:			
Capacity, lb/hr, cfm			
Gas/Air temperature, F			
Static pressure, in H_2O			
Efficiency, %			
Power to fan coupling, hp			
D. Test Block Requirements:			
Capacity, lb/hr, (cfm)			
Gas/Air temperature, F			

	Static Pressure, in H_2O			
	Efficiency, %			
	Power to fan coupling, hp			
E.	Motor Data:			
	Manufacturer			
	Motor size, hp			
	Enclosure Type			
	Service Factor			
	Volts/phase/Hz			
F.	Bearing Arrangement	Outboard	Outboard	Outboard
G.	Operating speed, rpm			

7. Air Preheaters

A. Manufacturer _____

B. Duty, Btu/Hr _____

C. Design Conditions

Inlet air temperature, F 80

Outlet air temperature, F _____

8. Electrostatic Precipitator

A. Manufacturer: _____

B. Flue Gas Data (Per Unit):

1. Maximum Flow, ACFM _____
2. Maximum Velocity, FPS _____
3. Maximum Temperature, F _____

C. Particulate Emissions at Stack Exit

	Removal Efficiency	Inlet Loading @ 7% O_2	Outlet Loading @ 7% O_2
With Reference Waste:	_____ %	_____ GR/DSCF	_____ GR/DSCF

D. Aspect Ratio (Effective length divided by effective height) _____

E. Number of Fields

F. Gas treatment time, sec. _____

G. Specific Collection Area (SCA), ft^2/1000 acfm _____

H. Insulation

1. Materials _____

2. Thickness, in _____

3. Cladding _____

9. Baghouses

A. Type (Pulse jet or Reverse Air) _____

B. Manufacturer _____

C. Flue Gas Data (Per Unit)

1. Maximum Flow, ACFM _____

2. Maximum Temperature, F _____

3. Air-to-Cloth Ratio
   net-net _____
   gross _____

4. Number of Compartments _____

D. Particulates Removal Efficiency

1. Efficiency, % _____

2. Inlet loading at 7% O_2, GR/DSCF _____

3. Outlet Loading at 7% O_2, GR/DSCF _____

E. Bag Material _____

F. Insulation

1. Materials _____

2. Thickness, in _____

3. Cladding _____

10. Dry Acid Gas Scrubbing Equipment

A. Number of Units _____

B. Manufacturer _____

C. Flue Gas Data (per unit)

1. Maximum Flow, ACFM _____

2. Maximum Temperature, F _____

3. Maximum Outlet Temperature, F _____

4. Minimum Outlet Temperature, F _____

5. Average Outlet Temperature, F _____

D. Removal Efficiencies

1. HCl _____

a. Efficiency, % _____

b. Inlet Concentration at 7% O_2 PPMDV _____

c. Outlet Concentration at 7% O2 PPMDV _____

2. SO_2

a. Efficiency, % _____

b. Inlet Concentration at 7% O_2 PPMDV _____

c. Outlet Concentration at 7% O_2 PPMDV _____

E. Chemical Used for Neutralization _____

_____

F. Average Neutralization Chemical Use (per unit), lbs/hr _____

G. Average Water Use (per unit), GPM _____

H. Atomization System
1. Type _____
2. Manufacturer _____

I. Control and Instrumentation

1. HCl _____

2. SO_2 _____

3. Outlet Temperature _____

11. Ash Handling System

A. Bottom Ash System

1. Manufacturer _____

2. Type _____

3. Capacity, tons/hr _____

4. Ash Storage Dimensions, (LxWxD from bottom ash inlet point) _____ x _____ x _____

5. Design density of ash for storage/structural design, lb/ft^3 _____ / _____

6. Size of largest item passable through system, LxWxH, ft _____ x _____ x _____

B. Fly Ash System

1. Manufacturer _____

2. Type _____

3. Capacity, tons/hr _____

12. Stack

A. Manufacturer _____

B. Dia. of Flues _____

C. Flue Material _____ / _____

D. Height, ft _____

13. Soot Removal System

A. Manufacturer _____

B. Type _____

PART C - BALANCE OF PLANT SYSTEMS

1. Turbine-Generator

   A. Manufacturer, Model _____

   B. Heat Balances

      MCR steam flow VWO 5% op, 2.0 in HgA exhaust — HB No. _____

      GL steam flow, normal throttle pressure and temperature, 2 in HgA exhaust — HB No. _____

      CP steam flow, normal throttle pressure and temperature, 2 in HgA exhaust — HB No. _____

   C. Nameplate Capacity, Mw _____

   D. Throttle Flow at Nameplate Capacity, lbs/hr _____

   E. VWO and Over Pressure Flow, lb/hr _____

   F. Throttle Steam Pressure, psig _____

   G. Maximum Throttle Steam Pressure, psig _____

   H. Throttle Steam Temperature, F _____

   I. Turbine Exhaust Pressure at 64F WB ambient, in. Hg abs _____

   J. Governing System Type _____

   K. Turbine Speed, RPM _____

2. Condenser

   A. Manufacturer _____

   B. Operating pressure at 64F WB ambient, in. Hg abs _____

   C. Design steam flow, lb/hr _____

   D. Design cooling water flow, gpm _____

   E. Design duty, MBtu/hr _____

F. Design cooling water inlet temperature, F _____

G. Design cooling water outlet temperature, F _____

H. Cooling water velocity, ft/s _____

I. Tube material _____

3. Dump Condenser

A. Manufacturer _____

B. Operating pressure, psia _____

C. Design steam flow, lb/hr _____

D. Design cooling water flow, gpm _____

E. Design duty, MBtu/hr _____

F. Design cooling water inlet temperature, F _____

G. Design cooling water outlet temperature, F _____

H. Cooling water velocity, ft/s _____

I. Tube material _____

4. Boiler Feed Pumps

A. Manufacturer _____

B. Quantity _____

C. Design capacity, gpm _____

D. Design total dynamic head, ft _____

E. Drive horsepower, hp _____

F. NPSHR _____

5. Condensate Pumps

A. Manufacturer _____

B. Quantity _____

C. Design capacity, gpm _____

D. Design total dynamic head, ft _____

E. Motor horsepower, hp _____

6. Circulating Water Pumps

A. Manufacturer _____

B. Quantity _____

C. Design capacity, gpm _____

D. Design total dynamic head, ft _____

E. Motor horsepower, hp _____

7. Auxiliary Cooling Water Pumps (Bearing Cooling Water Pumps)

A. Manufacturer _____

B. Quantity _____

C. Design capacity, gpm _____

D. Design total dynamic head, ft _____

E. Motor horsepower, hp _____

8. Miscellaneous Pumps

A. Service _____ _____ _____

B. Manufacturer, Model _____ _____ _____

C. Quantity _____ _____ _____

D. Design capacity, gpm _____ _____ _____

E. Design total dynamic head, ft _____ _____ _____

F. Motor horsepower, hp _____ _____ _____

9. Air Compressors

A. Manufacturer type _____

B. Quantity _____

C. Operating/design pressure, psig _____

D. Air Dryer, Manufacturer, Model _____

E. Receiver, pressure/capacity _____psig/_____ft^3

F. System air flow requirements, SCFM _____

G. Air Compressor design airflow, SCFM _____

10. Heat Exchangers

A. Manufacturer _____ _____

B. Service _____ _____

C. Type, Tube Mat'l _____ _____

11. Makeup Water Treatment/Demineralizer

A. Manufacturer _____

B. Type _____

C. Design flow rate, gpm/gpd _____/_____

12. Deaerating Feedwater Heater and Storage Tank

A. Manufacturer _____

B. Tray material (if used) _____

C. Storage tank capacity, gallons _____

D. Outlet capacity, lbs/hr _____

E. Oxygen content of water, cc/L _____

F. Operating pressure, psig _____

13. Feedwater Heaters

A. Manufacturer _____

B. Quantity _____

C. Heater terminal temperature difference, F _____

D. Heater drain cooler approach, F _____

E. Tube material/type/no. passes _____/_____/_____

14. Cooling Tower

A. Manufacturer _____

B. Quantity, no. cells each _____

C. Cooling water flow, gpm _____

D. Design ambient wet bulb temperature, F _____

E. Design range, F _____

F. Design approach, F _____

G. Drift loss, % _____

H. Materials of construction

Sidewalls _____

Fill/mist eliminators _____

K. Describe method of plume abatement and associated control system.

_____

_____

_____

15. Tanks, Demineralized Water and Condensate Storage

A. Manufacturer _____ _____

B. Service _____ _____

C. Size, gal _____ _____

D. Material _____ _____

16. Tanks, Other

A. Manufacturer, Type _____ _____

B. Service _____ _____

C. Design pressure, temperature _____ _____

D. Size, gallons _____ _____

E. Material _____ _____

17. Vehicle Scales

A. Manufacturer _____

B. Quantity _____

C. Length of each scale, ft _____

D. Capacity, tons _____

18. Turbine Room Crane

A. Hoist ratings

Main hoist rating, tons _____

Auxiliary hoist rating, tons _____

B. Maximum hoist lift, ft _____

C. Controls, type _____

D. CMAA rating _____

19. Miscellaneous Hoists and Cranes

A. Manufacturer _____ _____ _____

B. Location _____ _____ _____

C. Type and function _____ _____ _____

D. Capacity, tons _____ _____ _____

20. Elevator(s)

A. Manufacturer, Model _____ _____ _____

B. Location _____ _____ _____

C. Type and function _____ _____ _____

D. Capacities, tons _____ _____ _____

21. Fire Protection

A. Subcontractor _____

B. Building/Area Type/Description

_____ _____

_____ _____

_____ _____

_____ _____

22. Heating and Ventilation

Building/Area	Capacity, Cfm/MBtu/hr	Description

23. Mobile Equipment

Mfr/Model	No./Type	Description/Function

PART D - ELECTRICAL AND INSTRUMENTATION AND CONTROL DATA

1. Generator

A. Manufacturer, Model _____

B. Capacity, Mw _____

C. Power Factor _____

D. Voltage _____

E. Speed, RPM _____

F. Frequency/Short Circuit Ratio _____

G. Insulation Class _____

H. Overspeed Limitation _____

I. No. Terminal Leads _____

J. Type Fire Protection _____

K. Exciter Type, Voltage Controls,

Describe _____

_____

L. Generator Protective Relays (Type, Manufacturer, and Model) _____

_____

_____

_____

2. Transformers

		5 kV	480 V
A.	Service		
B.	Manufacturer		
C.	Type, KVA Rating		
D.	Voltage, No. Phases		
E.	Taps		
F.	Impedance		

G. Protective Relays (Type, Manufacturer, Model) _____

_____

_____

_____

3. Metal-Clad Switchgear

		15 kV	5 kV	480 V
A.	Manufacturer			
B.	Service			
C.	Voltage			
D.	Materials of Construction			
E.	Description			

4. DC System

   A. Battery Charger (Type, Manufacturer, Model) _____

   B. Batteries (Type, Manufacturer, Model) _____

   C. Description _____

5. Essential AC System

   A. Inverter (Type, Manufacturer, Model) _____

   B. Description _____

6. Power Factor Correction

   Description, Type _____

   _____

7. Lighting

   Description of Outdoor and Indoor Systems _____

   _____

   _____

8. Instrumentation and Controls

   A. Control Room Facilities

      1. Manufacturer _____

      2. Description. Refer to the attached sheets _____

   B. Panel and Local Instrumentation and Controls Description (manufacturers, types, logic) _____

   _____

   _____.

   C. Description (control logic, auto/manual controls, main and remote control stations, primary instrumentation and metering) _____

   _____

   _____

   _____

PART E - MISCELLANEOUS INFORMATION

1. Spare Parts and Tools

   Itemize the spare parts required and/or recommended for operation of the Facility. Each item must show Quantity, Size, Model, Output, Rating, etc., and other pertinent information necessary for procurement. See Attached Sheets _____

2. Additional Equipment

   Furnish an additional list of Plant Equipment not previously included in the Proposal Form. Provide manufacturer, size data and description information.

3. Additional Information

   Furnish additional information for items requested where adequate space was not provided in the Proposal Form. Reference these sheets in the Proposal Form.

PROPOSAL FORM 10
DETAILED USE OF LOCAL FIRMS, BUSINESSES, ETC.

Firm	Task or Work Scope	Dollar Participation

(add additional pages as required)

_____
Name of Proposer

PROPOSAL FORM 11
NONCOLLUSION CERTIFICATION

By submission of this Proposal, the proposer hereby certifies, under penalty of perjury, that to the best of his knowledge and belief:

1. The prices in this Proposal have been arrived at as the result of an independent business judgment without collusion, consultation, communication, agreement or otherwise, for the purpose of restricting competition as to any matter relating to such prices with any other person, partnership or corporation;

2. Unless otherwise required by law, the prices which have been quoted in this Proposal have not directly or indirectly been knowingly disclosed by the proposer prior to "opening" to any other person, partnership or corporation; and

3. No attempt has been made, or will be made, by the proposer to induce any other person, partnership or corporation to submit, or not to submit, a Proposal for the purpose of restricting competition.

_____
Name of Proposer

_____
Signature

_____
Title

PROPOSAL FORM 12
NONDISCRIMINATION

During the performance of the Agreement, the proposer agrees as follows:

1. The proposer will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the proposer. The proposer agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this NONDISCRIMINATION clause.

2. The proposer, in all solicitations or advertisements for employees placed by or on behalf of the proposer, will state that such proposer is an equal opportunity employer.

3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this provision.

4. The proposer will include the provisions of paragraphs (1), (2), and (3), above, in every subcontract or purchase order over $10,000 so that the provisions will be binding upon every subcontractor or vendor.

_____
Name of Proposer

_____
Signature

_____
Title

PROPOSAL FORM 13
INDEMNIFICATION AGREEMENT

To the fullest extent permitted by law, the proposer agrees to indemnify, hold harmless, and defend the Project and all its elected officials, agents, and employees from and against all claims, loss, damage, costs and expense, including reasonable attorneys' fees, arising from personal or bodily injury or to sickness, illness, or death of persons or damage to or destruction of property including, without limitation, property and employees of the Project, occurring in whole or in part as the result of work done or omitted to be done by, or contracted to be done but not done by the proposer, or his subcontractors, employees, or agents, or by anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder, except claims, loss, damage, costs, or expenses resulting from risks required to be insured by the Project.

_____
Name of Proposer

_____
Signature

_____
Title

PROPOSAL FORM 14
DISCLOSURE (1)

We hereby certify that, to the best of our knowledge, no Spokane Regional Solid Waste Disposal Project official or employee having official responsibility for this transaction, or member of his or her immediate family, has received or will receive any financial benefit of more than nominal or minimal value relating to the anticipated Agreement.

_____
Name of Proposer

_____
Signature

_____
Title

Notes

(1) If such a benefit has been received or will be received, this fact shall be disclosed with the Proposal, or as soon thereafter as it appears that such a benefit will be received. Failure to disclose the information prescribed above may result in suspension or debarment, or rescission of the Agreement made, or could affect payment pursuant to the terms of the Agreement.

PROPOSAL FORM 15
SAMPLE LETTER OF INTENT
(To be Typed on Proposer's Letterhead)

(Date)

David W. Birks, Executive Director
Spokane Regional Solid Waste Disposal Project
Post Place, Suite 201
West 720 Boone
Spokane, Washington 99201

Dear Mr. Birks:

We have reviewed the Request for Proposals for the Spokane Regional Waste-to-Energy Project and, based on our review, we hereby enclose our Proposal. We represent to the Project that we intend to enter into good-faith negotiations for agreements to design, construct, Acceptance Test, and operate the Facility and we agree to supply supplemental data as necessary to implement the Facility, if selected to do so by the Project.

We represent to the Project that we have the technical experience and/or hold the patent rights, licenses, or franchises; or have made the requisite contractual agreements for the technology and/or equipment we plan to use.

We acknowledge receipt of all addenda and additional information supplied by the County during the RFP response period.

Further, to the best of our knowledge, the representations made in our proposal are truthful and accurate. This proposal is valid for three hundred sixty-five (365) days.

AUTHORIZED OFFICER OF THE PROPOSER

Name_____

Signature_____

Title_____

CHIEF FINANCIAL OFFICER OFPROPOSER

Name_____

Signature_____

Title_____

CHIEF EXECUTIVE OFFICER OF PROJECT GUARANTOR

Name_____

Signature_____

Title_____

(ACKNOWLEDGMENT OF EASH SIGNEE, IF A CORPORATION)

State of _____)
) ss:
County of _____)

On this _____ day of _____, 19___, before me personally came and appeared _____, to me known, who, being by me duly sworn, did depose and say that he resides at _____, that he is the _____ of _____, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the impressions affixed to said instrument is an impression of such seal; that it was so affixed by order of the directors of said corporation; and that he signed his name thereto by like order.

_____
(SEAL)

My Commission Expires _____

(ACKNOWLEDGMENT OF EACH SIGNEE, IF A PARTNERSHIP)

State of _____)
) ss:
County of _____)

On this _____ day of _____, 19___, before me personally came and appeared _____, to me known, and known to me to be one of the members of the firm of _____, described in and who executed the foregoing instrument, and he acknowledged to me that he executed the same as and for the act and deed of said firm.

_____
(SEAL)

My Commission Expires _____

(ACKNOWLEDGMENT OF EACH SIGNEE, IF A SOLE PROPRIETORSHIP)

State of _____)
) ss:
County of _____)

On this _____ day of _____, 19___, before me personally came and appeared _____, to me known, and known to me to be the person described in and who executed the foregoing instrument and acknowledged that he executed same.

_____
(SEAL)

My Commission Expires _____

PROPOSAL FORM 16
EXCEPTIONS TO RFP

The Company shall list its exceptions to the requirements of the RFP. Exception shall be listed in the following order:

1. Exceptions to the Risk Position of Part 6.

2. Exceptions to Guarantees of Proposal Form 7.

3. Exceptions to Other Proposal Forms.

4. Exceptions to Appendix B.

5. Any other exceptions.

APPENDIX A

DRAWINGS

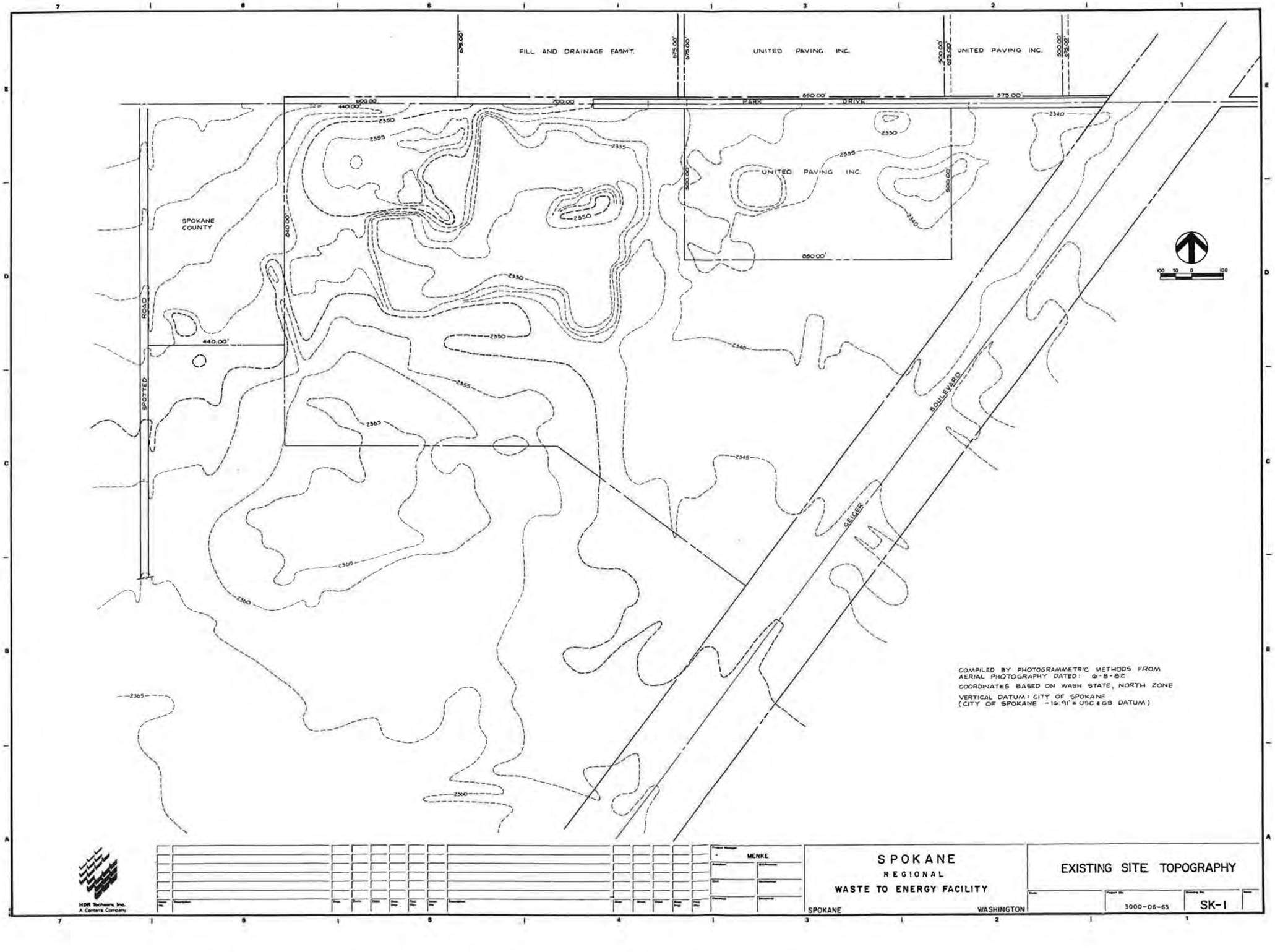
APPENDIX A
DRAWINGS

Following is a list of the minimum number and title of drawings which shall be included in Company's Proposal and shall be of the quality required to show sufficient detail to define the Company's proposed equipment, system, Facility layout and dimensions of the Facility. All drawings shall be 11X17 inches or larger. Mass and Energy Balances shall include flows of all major systems. The cycle heat balances shall include flow, temperature, pressure, and enthalpy of streams associated with the turbine generator and the feedwater heating cycle. The heat balances shall not include blowdown and make-up flows although the mass and energy balances shall.

DRAWING NO.	TITLE
C-001	Site Plan
C-002	Existing Topography, Utilities, and Property Boundaries
C-003	Site Grading Plan
M-001 through M-003	Mass and Energy Balance at Max Calc (MCR with VWO), Guaranteed Load (GL), and Temperature Control Point (CP)
M-004	Process Flow Diagram-Main, Extraction, and Auxiliary Steam
M-005	Process Flow Diagram-Condensate and Feedwater Systems
M-006	Process Flow Diagram-Circulating Water System
M-007	Refuse Steam Generator, Air Pollution Control Equipment, and Ash Handling System
M-008	Boiler Operating Firing Diagram
M-009 and M-010	Temperature Profile Diagrams
E-001	Electrical One-Line Diagram
A-001	Colored Rendering
A-002	Front Elevation
A-003	Side Elevation
GA-001 through GA-004	General Arrangements for Various Elevations

GA-005 through GA-008	A Minimum of Two Sections Each Way.
HB-001 through HB-003	Cycle Heat Balance Diagrams at MCR, GL, and CP
L-01	Landscape Plan

The attached Existing Site Topography, Conceptual Site Plan, Perspective, Elevations, and Boiler Operating Firing Diagram are for reference only and are included as an example to show site constraints as well as major concepts concerning architectural treatment, flow separation, and general arrangement of Facility components. The Company's site layout will be evaluated as part of the technical review for compliance with the architectural treatment and technical requirements as well as for efficiency of operation.



HDR Technems, Inc.
A Centerra Company

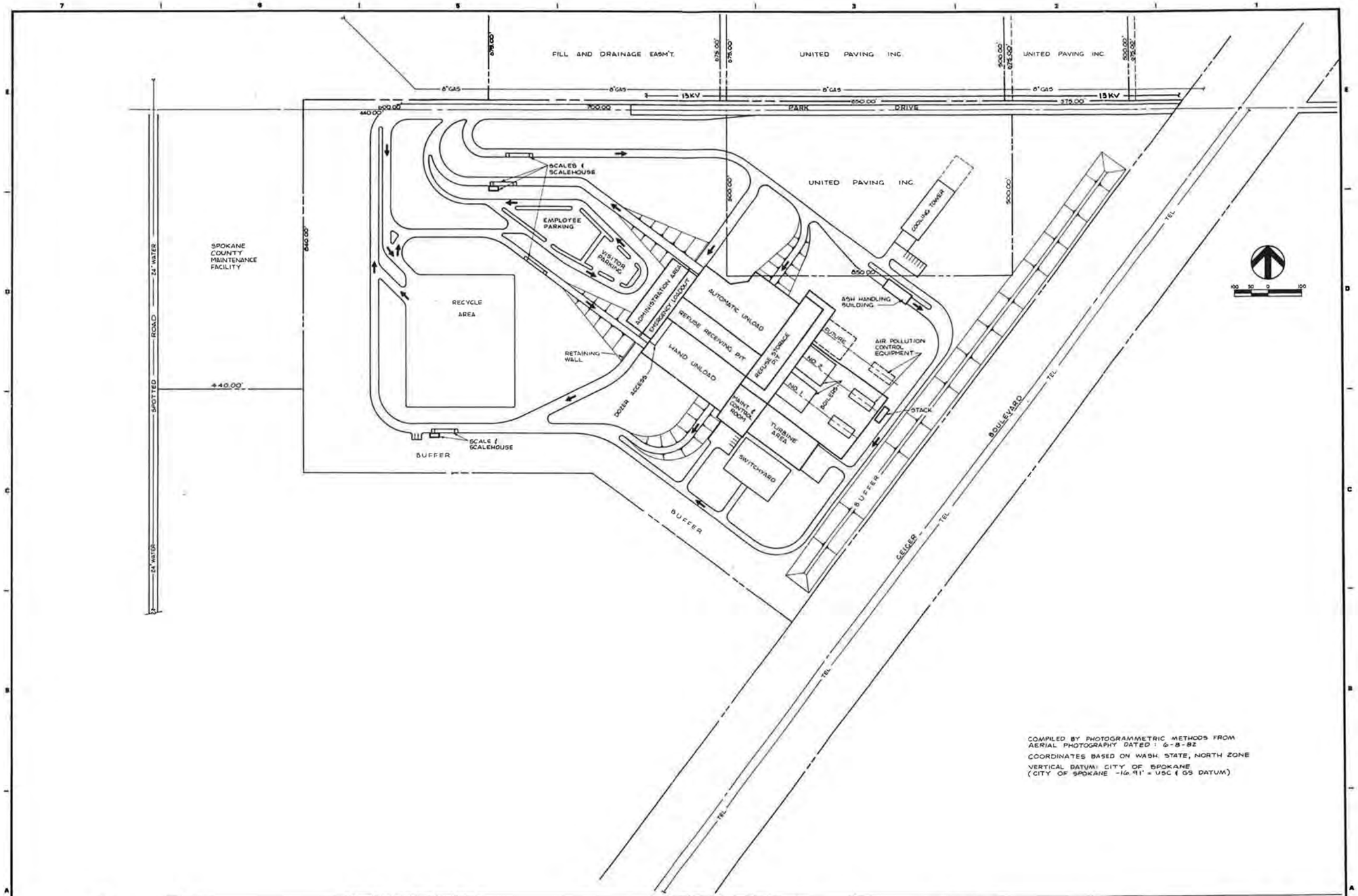
MENKE

SPOKANE
REGIONAL
WASTE TO ENERGY FACILITY
SPOKANE WASHINGTON

EXISTING SITE TOPOGRAPHY

3000-06-63

SK-1



COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED : 6-8-82

COORDINATES BASED ON WASH. STATE, NORTH ZONE

VERTICAL DATUM: CITY OF SPOKANE
(CITY OF SPOKANE -16.91' = USC & GS DATUM)

HDR Battelle, Inc.
A Centerra Company

MENKE

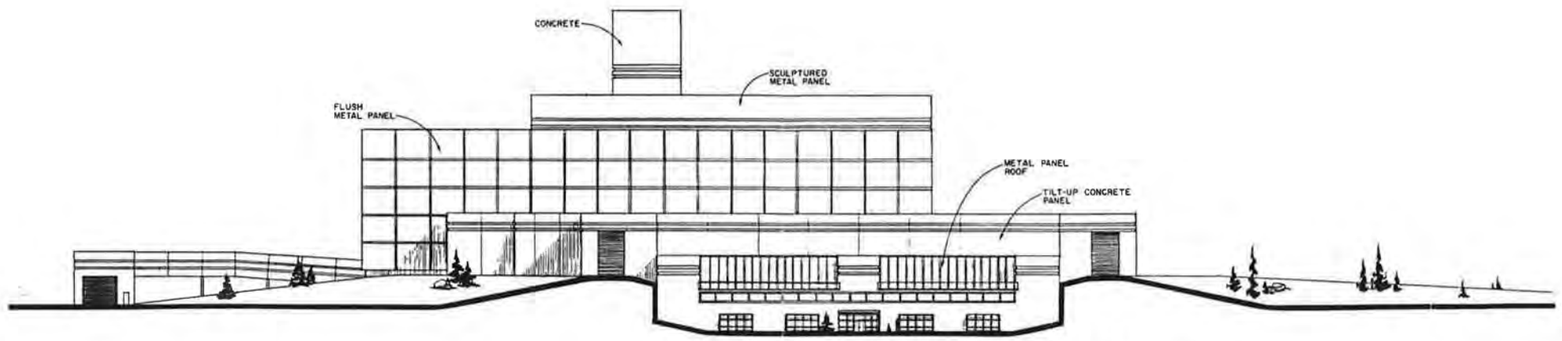
SPOKANE
REGIONAL
WASTE TO ENERGY FACILITY

SPOKANE WASHINGTON

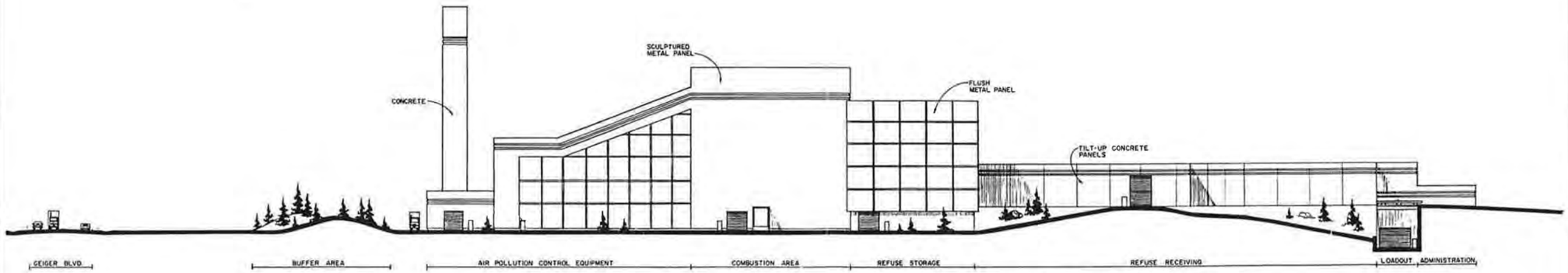
CONCEPTUAL SITE PLAN

3000-06-63

SK-2



NORTHWEST ELEVATION

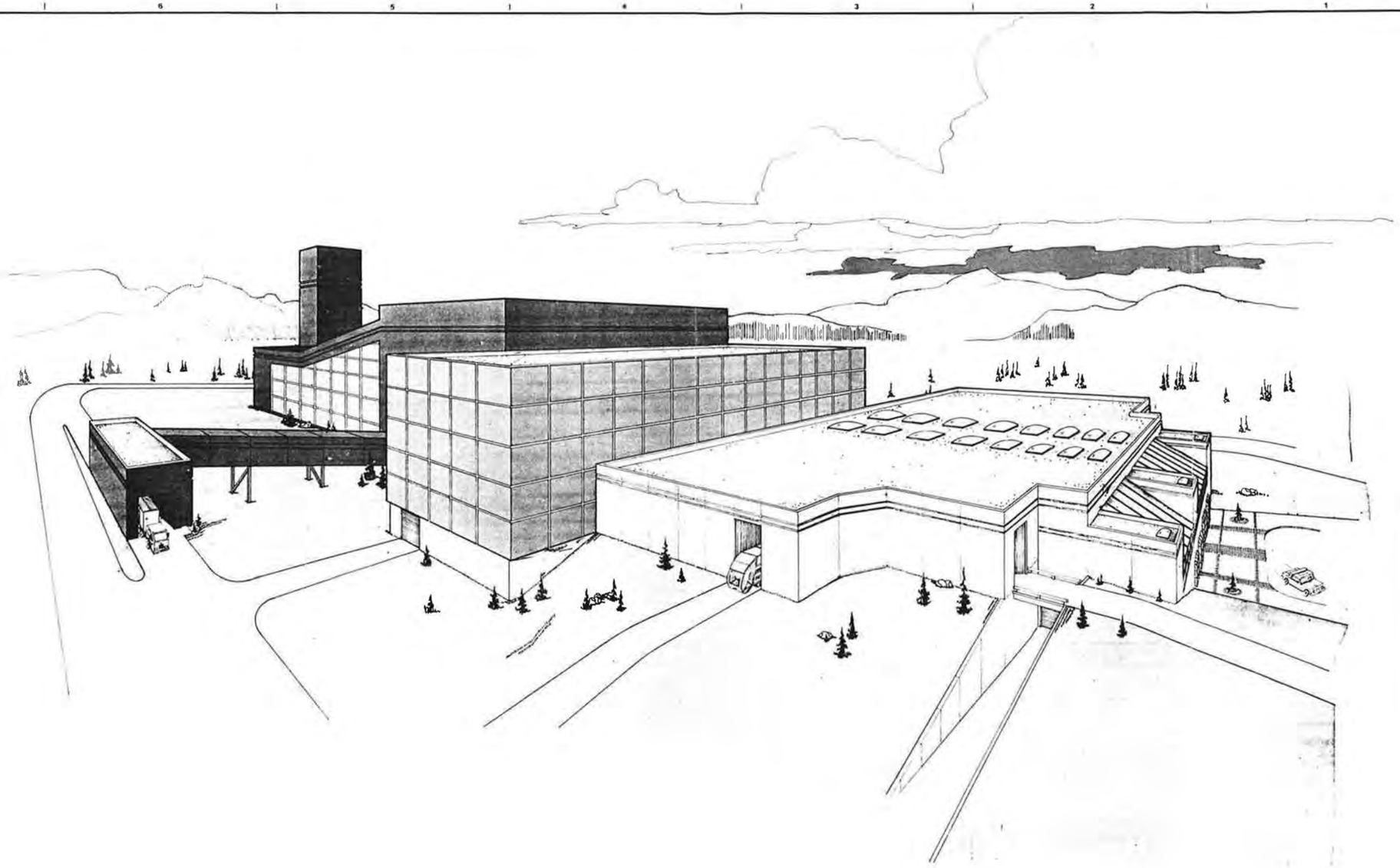


NORTHEAST ELEVATION

HDR Technecon, Inc.
A Centerra Company

SPOKANE
REGIONAL
WASTE TO ENERGY FACILITY
SPOKANE WASHINGTON

CONCEPTUAL ELEVATIONS

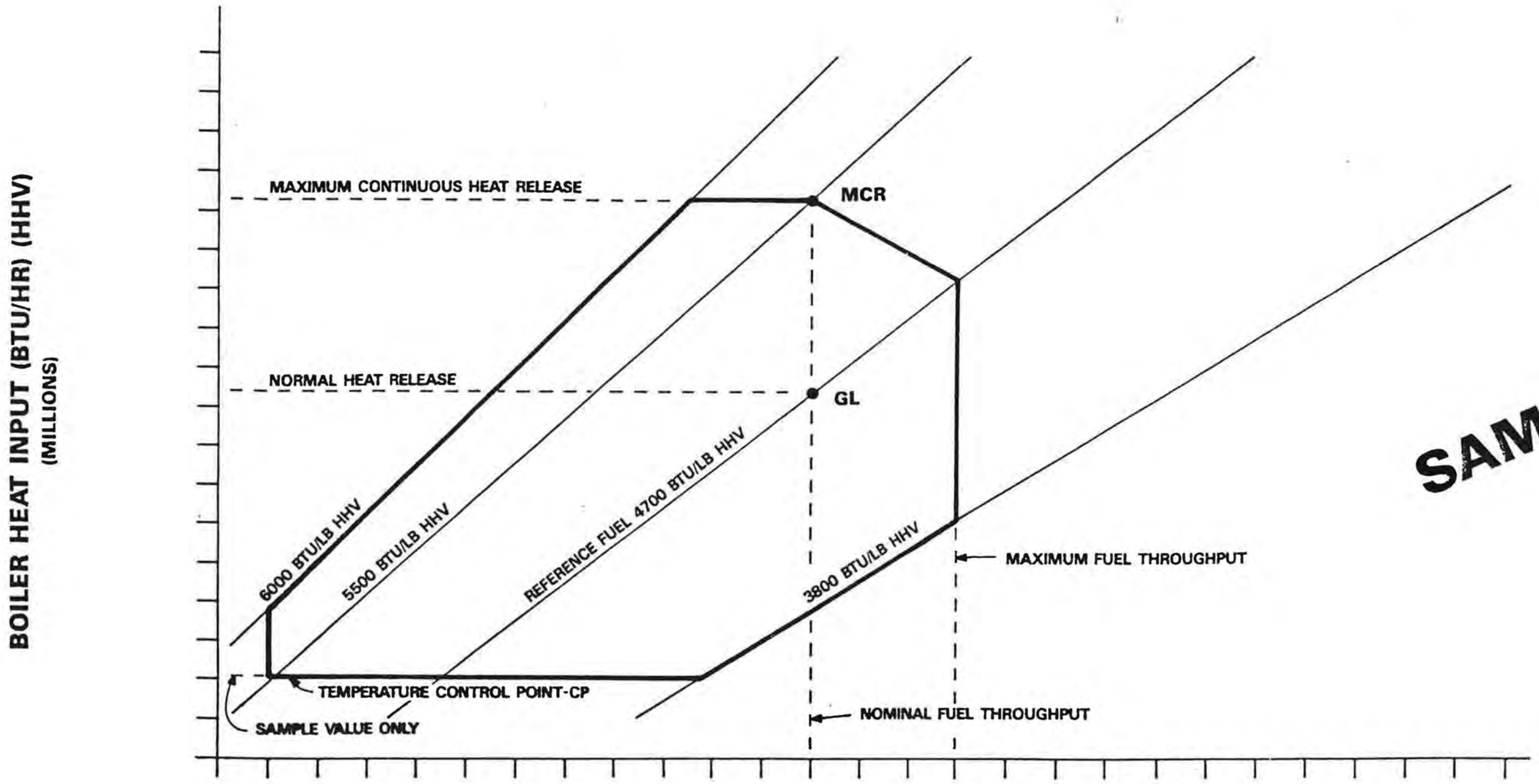


HDR Techserv, Inc.
A Criteria Company

SPOKANE
REGIONAL
WASTE TO ENERGY FACILITY

SPOKANE WASHINGTON

PERSPECTIVE



SAMPLE

HHV = HIGHER HEATING VALUE
MCR = TONS/DAY, 5500 BTU/LB
GL = TONS/DAY, 4700 BTU/LB

HDR Technery, Inc.
A Centerra Company

SPOKANE REGIONAL
WASTE TO ENERGY PROJECT
BOILER OPERATING FIRING DIAGRAM

Date

Sheet
M-008

APPENDIX B

TECHNICAL REQUIREMENTS

APPENDIX B
TECHNICAL REQUIREMENTS

Table of Contents

Paragraph No.	Title	Page No.
1.0	SCOPE	B-1-1
2.0	FACILITY DESCRIPTION	B-2-1
2.1	Site Information	B-2-1
2.2	Facility Description	B-2-1
2.3	Acceptable Equipment Manufacturers	B-2-1
2.4	Start-up and Operation	B-2-1
2.5	Testing	B-2-2
2.6	Facility Expansion	B-2-2
3.0	DESIGN AND OPERATING CONDITIONS	B-3-1
3.1	Combustion Performance Requirements	B-3-1
3.2	Site Design Conditions	B-3-3
3.3	Fuel Analysis	B-3-3
4.0	PERFORMANCE GUARANTEES	B-4-1
5.0	CODES AND STANDARDS	B-5-1
6.0	STRUCTURAL/CIVIL	B-6-1
6.1	Facility Site	B-6-1
6.2	Site Layout	B-6-1
6.3	Types of Structures	B-6-2
6.4	Improvements to the Site	B-6-4
6.5	Geotechnical Investigation	B-6-4
6.6	Survey	B-6-5
6.7	Clearing and Grubbing	B-6-5
6.8	Excavation, Filling, and Backfilling	B-6-5
6.9	Foundations	B-6-6
6.10	Paving, Curb and Gutter, Sidewalk and Surfacing	B-6-6
6.11	Utilities	B-6-6
6.12	Finished Grading and Topsoiling	B-6-7
6.13	Fencing	B-6-7
6.14	Concrete	B-6-7
6.15	Structural Steel	B-6-8
6.16	Basis for Design	B-6-9

Table of Contents (Continued)

7.0	ARCHITECTURAL	B-7-1
7.1	General	B-7-1
7.2	Materials	B-7-1
7.3	Signage	B-7-3
7.4	Landscaping	B-7-4
7.5	Exterior Lighting	B-7-4
7.6	Personnel Facilities	B-7-4
7.7	Administration Building Requirements	B-7-4
7.8	Scale Operations Facility	B-7-5
7.9	Maintenance Facility	B-7-5
8.0	MECHANICAL	B-8-1
8.1	Equipment Installation	B-8-1
8.2	Furnace and Boiler Requirements	B-8-2
8.3	Superheater and Economizer Requirements	B-8-3
8.4	Emission Factors	B-8-5
8.5	Environmental Monitoring and Auxiliary Burners	B-8-6
8.6	Refuse Cranes	B-8-7
8.7	Refuse Stokers and Grates	B-8-8
8.8	Refuse Feed System	B-8-9
8.9	Boiler Fans	B-8-10
8.10	Air Heaters	B-8-11
8.11	Air Pollution Control Systems	B-8-11
8.12	Ash Handling System	B-8-14
8.13	Ferrous Recovery System	B-8-15
8.14	Stack	B-8-15
8.15	Combustion Air and Flue Gas Ducts, Dampers, and Expansion Joints	B-8-16
8.16	Soot Blowers and Furnace Probes	B-8-17
8.17	Turbine-Generator and Condenser	B-8-18
8.18	Boiler Feed Pumps	B-8-23
8.19	Condensate Pumps	B-8-24
8.20	Circulating Water Pumps	B-8-24
8.21	Miscellaneous Pumps	B-8-24
8.22	Air Compressors, Air Dryer and Accessories	B-8-25
8.23	Deaerating Feedwater Heater	B-8-25
8.24	Closed Feedwater Heaters	B-8-26
8.25	Cooling Tower	B-8-27
8.26	Miscellaneous Heat Exchangers	B-8-28
8.27	Water Treatment Equipment	B-8-28
8.28	Wastewater Treatment Equipment	B-8-30
8.29	Tanks	B-8-30
8.30	Scales	B-8-30
8.31	Miscellaneous Hoists and Cranes	B-8-31
8.32	Piping	B-8-31
8.33	Valves	B-8-32
8.34	Refractories, Insulation and Lagging for Piping, Ducts and Equipment	B-8-32
8.35	Miscellaneous Mechanical Specialties	B-8-33

Table of Contents (Continued)

8.36	Fire Protection System	B-8-33
8.37	HVAC	B-8-34
8.38	Plumbing	B-8-35
8.39	Vehicles	B-8-35
9.0	ELECTRICAL	B-9-1
9.1	General	B-9-1
9.2	Electrical System Configuration	B-9-2
9.3	Electric Generator	B-9-3
9.4	Station Auxiliaries Transformer	B-9-3
9.5	Medium Voltage 5 and 15 kV Metal-Clad Switchgear	B-9-4
9.6	Low Voltage 480 Volt Metal Enclosed Switchgear	B-9-4
9.7	Motor Control Centers	B-9-4
9.8	Electric Motors	B-9-4
9.9	Emergency and DC Power Systems	B-9-5
9.10	Lighting	B-9-5
10.0	INSTRUMENTATION AND CONTROLS	B-10-1
11.0	TESTING	B-11-1
11.1	Hydrostatic Tests	B-11-1
11.2	Air Tests	B-11-1
11.3	Acceptance Tests	B-11-1
12.0	SPARE PARTS AND SPECIAL TOOLS	B-12-1

APPENDIX B
TECHNICAL REQUIREMENTS

1.0 SCOPE

This section covers the design, construction, start-up, and testing of a nominal 800-ton per day (TPD) mass burn waste-to-energy Facility with specific expansion capabilities as indicated herein.

The Company shall design, construct, start up, test, and operate the Facility in accordance with these specifications and the Agreement. The Facility shall include all equipment, accessories, structures, items, and appurtenances necessary for a complete and operational Facility.

The Company shall offer equipment of a design, size, type, and arrangement which meets the experience requirements specified in the Request for Qualifications and this RFP and which are adequate to meet the Company's performance guarantees.

2.0 FACILITY DESCRIPTION

2.1 Site Information

Refer to Parts One, Two and Appendix D of this RFP for background information on the Facility Site and Part Four for general Facility requirements.

2.2 Facility Description

The Facility shall conform to the following general description as well as the more detailed requirements in the following sections. The Facility shall include a totally enclosed tipping floor, a receiving pit, a refuse pit sized for four days' storage at the expanded facility capacity, and two refuse handling cranes. A bulldozer shall push the refuse from the receiving pit into the storage pit. An emergency loadout chute shall be provided at the end of the receiving pit opposite the storage pit. The emergency loadout chute shall deposit refuse into transfer trailers passing beneath the tipping floor level when filled by the bulldozer. The emergency loadout chute shall be designed to allow the Facility to operate as a transfer station if the boilers are out of service. The refuse cranes will supply refuse to the charging hoppers. The refuse will be fed to the furnace by hydraulically driven ram feeders or feeder grates. The furnace and boiler shall be designed for burning unprocessed refuse. Combustion air shall be drawn from the tipping floor area to control odor. The steam produced by the boiler shall be used to drive a turbine generator in a nonreheat, regenerative feedwater cycle to generate electricity for sale to the local utility. The flue gas treatment equipment shall include dry scrubbers for acid gas removal and either electrostatic precipitators or baghouses for particulate removal. The boilers and air pollution control equipment shall be enclosed in buildings.

Alternative designs of the tipping area, transfer area, and refuse storage area will be considered provided the arrangement meets the Project's requirements. The clearances of the tipping floor and the dimensions of the refuse storage pit shall not be less than indicated in Paragraph 6.3.

2.3 Acceptable Equipment Manufacturers

Where a manufacturer is specified in this RFP, it is implied that "or approved equal" shall be included in the specification. Multiple manufacturers may be submitted if final selection by proposer is to be made later.

2.4 Start-up and Operation

The combustion units will normally be operated at full load; however, they shall be capable of operating from 80% to 100% of GL (guaranteed load) for extended periods without supplemental fuel firing.

2.5 Testing

All hydrostatic tests of piping and boilers and air tests of boilers and ductwork shall be performed as specified herein.

The Facility shall be tested in accordance with the Acceptance Testing procedures as specified in Appendix C of this RFP.

2.6 Facility Expansion

The tipping, receiving, and storage building shall be sized and designed to accommodate refuse storage and the future installation of a steam generating unit of equal capacity to those being installed. The Facility expansion is anticipated to include the steam generating unit, a turbine generator, and accessory equipment and systems.

In addition to the above, the following systems shall be sized and designed as indicated.

a. All utilities shall be sized for the anticipated expanded Facility demand.

b. Residue and flyash removal and storage systems shall be sized for the expanded Facility.

c. The refuse receiving, storage, and feed system shall be sized for the expanded Facility as herein specified.

d. The stack shall include an additional flue.

e. The circulating water system shall include piping sized for 150% of initial Facility flow, 3-50% initial Facility capacity circulating water pumps, and a cooling tower sized for the initial Facility but capable of accommodating the expanded Facility heat rejection by the addition of cells.

f. The fire protection system shall be sized for the expanded Facility.

g. The HVAC systems shall be sized for the expanded Facility.

h. The plumbing shall be sized for the expanded Facility.

i. The water treatment systems shall be sized for the expanded Facility with the exception of the demineralizers which shall each be sized for a minimum make-up rate of 15% of the total initial Facility feedwater flow.

j. The auxilliary cooling water system shall be sized for the expanded Facility.

k. The nitrogen supply system, plant air system, and instrument air system shall be sized for the expanded Facility.

l. Piping for all systems which will serve the future unit shall be sized for the expanded Facility and shall include capped stub-outs for connection of the future unit and accessories. The piping layout shall include space for future piping. The piping for the dump condenser shall include connections for dumping of steam from the future unit and return of condensate to the future condensate-feedwater system while the dump condenser is isolated from the initial feedwater system.

m. Space shall be provided for installation of condensate return pumps, condensate polishing, and condensate storage for return of 20,000 lb/hr of condensate in the event of future steam sales.

n. Other systems shall be sized as indicated in this Appendix B.

3.0 DESIGN AND OPERATING CONDITIONS

3.1 Combustion Performance Requirements

The following performance requirements have been set based on operating experience of mass burn facilities and shall be complied with.

Each combustion unit shall be designed for the following conditions:

		Guaranteed Load (GL)	Maximum Continuous Rating (MCR)
a.	Fuel feed rate, lb/hr, over total range of fuel composition (minimum)	By Company	By Company
b.	Superheater outlet Steam Flow, lb/hr. Steam pressure, psig* (Nominal)	By Company 650	By Company 650
	Steam temperature, F* (Nominal)	750	750
c.	Feedwater temperature at economizer inlet, F (minimum)	280	300
d.	Average solids content in steam leaving boiler, ppm (maximum)	1.0	1.0
e.	Gross furnace heat release per furnace volume, Btuh/ft^3, (maximum)		8,000
f.	Gross heat release per plan area of grate, Btuh/ft^2, (maximum)		300,000
g.	Average gas temperature at superheater inlet, F, max., (as measured by high velocity thermocouple)		1,250
h.	Average economizer exit gas temperature F, minimum (as measured by high velocity thermocouple)	450	
i.	Average flue gas velocity through furnace pass, ft/sec., (maximum)		18
j.	Average flue gas velocity through superheater section, ft/sec., (maximum)		20
k.	Average flue gas velocity through boiler section, ft/sec., (maximum)		30

l.	Air temperature to forced draft fan and secondary air fan, F (for boiler guarantee evaluation)		80
m.	Air relative humidity to forced draft fan and secondary air fan, % (for boiler guarantee evaluation)	60	60
n.	Excess air, % (for boiler guarantee evaluation and fan sizing)	100	
o.	Opacity at stack exit, percent (maximum)	10	10
p.	Particulate emission at stack exit, gr/DSCF corrected to 7% O_2, (maximum)	0.02	0.02
q.	Average flue gas velocity at stack exit ft/sec (maximum)		60
r.	SO_2 and HCl emissions at stack exit (maximum)	**	**

* Higher steam pressures and temperatures will be considered acceptable if the Company meets the experience requirements in the RFQ.

** As required by Section 8.11 of this Appendix B.

Gross heat release equals the maximum higher heating value of the fuel (5500 Btu/lb) times the Company guaranteed hourly fuel throughput plus the heat added by any anticipated preheated combustion air.

Gross furnace heat liberation rate, volume basis, equals the gross heat release divided by the furnace volume as defined below.

Furnace volume is defined as volume from grate surface to furnace exit, including any empty passes, excluding feed chute and ash discharge chute volumes. The furnace exit is defined as the vertical plane extending upward from the apex of the boiler nose before entering convection sections or as a vertical plane extending upward or downward from the rear wall of the last water-cooled open pass of the furnace prior to entering convection sections. Open passes which contain water surface prior to entering any convection pass shall be considered in furnace volume.

Plan area of grate is defined as the area of the inclined or horizontal plane of the grate excluding feed ram, feed table, or feed grate sections.

Gross heat release per plan area of grate equals the gross heat release divided by the plan area of the grate.

Average gas temperature at the superheater inlet is defined as the average gas temperature across the plan that makes up the entrance of the first superheater section.

Refer to the emission factors assumed for permitting which are listed in Paragraph 8.4.

Guaranteed Load (GL) is defined as the boiler load achieved when firing the unit at the unit hourly throughput and with 4,700 Btu/lb Acceptable Waste. The units shall also be designed for a high load point defined as Maximum Continuous Rating (MCR). MCR is defined as the boiler load achieved when firing the unit at the unit hourly throughput and with the maximum fuel higher heating value of 5,500 Btu/lb. Temperature Control Point (CP) is defined as the lowest load expressed as a percentage of GL at which the design steam temperature can be maintained. The CP shall be a maximum of 80%.

The turbine generator shall be designed to accept all steam produced at MCR boiler conditions. Under this load condition, the units shall be capable of operating at VWO and 5% over pressure.

The combustion air temperature, relative humidity, and excess air values specified "for boiler guarantee evaluation" shall be used when the Company establishes their boiler performance guarantees for the combustion units. All guarantees shall be stated based on the values specified herein.

In addition to the specified flue gas velocities and temperatures, the Company shall provide with their Proposal a Temperature Profile Diagram indicating, as a minimum, isotherms for 2000 F, 1800 F, 1500 F, and 1200 F. The diagram shall also indicate the flue gas residence time above 2000 F; between 2000 F and 1800 F; between 1800 F and 1500 F; and between 1500 F and 1200 F. The Company shall provide one Temperature Profile Diagram for guaranteed load (GL) and one for Maximum Continuous Rating (MCR).

3.2 Site Design Conditions

Ambient design conditions are the following:

Maximum relative humidity, %	100
Maximum outdoor ambient temperature, F	105
Minimum outdoor ambient temperature, F	-20
Altitude above MSL, ft.	2330
Design wet bulb temperature, F	64

3.3 Fuel Analysis

The refuse supply "as received" will be Acceptable Waste from the Project. A typical analysis of Acceptable Waste is given below. Values provided are for information only. The steam generating units shall be designed to operate satisfactorily at Guaranteed

Throughput Capacity when firing any Acceptable Waste having a higher heating value in the range from 3800 to 5500 Btu/lb.

The steam generating units shall be designed to deliver steam at rated conditions on a continuous basis without excessive maintenance, slagging, fouling, or other operating difficulties when firing solid waste having, typically, the following properties. Company's steam generator design shall be based on its experience with burning refuse with these and similar properties and it shall be the Company's responsibility to satisfy himself that the properties listed are sufficient to fix his design.

Ultimate Analysis	Acceptable Waste As Received	Range As Received
Carbon. % by wt.	27.13	21.0 to 32.0
Hydrogen, % by wt.	3.57	2.9 to 4.5
Oxygen, % by wt.	25.30	18.0 to 29.0
Nitrogen, % by wt.	0.60	0.2 to 0.7
Sulfur, % by wt.	0.20	0.1 to 0.2
Chlorine, % by wt.	0.70	0.1 to 0.8
Moisture, % by wt.	22.5	18.0 to 40.0
Residue, % by wt.	20.0	17.0 to 30.0
Higher Heating Value, But/lb*	4700	3800 to 5500

* Calculated from the above analysis using Von Drasek formula.

4.0 PERFORMANCE GUARANTEES

Refer to Part Four of this RFP for required guarantees. Guarantees covering design, workmanship, and materials shall be in accordance with the requirements of the Construction Agreement, industry standards, and good engineering judgement. Company is responsible for design, workmanship, and materials of initial construction and all additional charges required in maintaining the facility over the 20 year operating period.

5.0 CODES AND STANDARDS

Although all applicable Codes and Standards may not be specifically shown or specified herein, the Company shall be responsible for determining applicable codes, acquiring copies at his sole expense, and complying with the applicable requirements of Codes and Standards.

Equipment, material, design, fabrication, erection, inspection, start-up, and tests provided by the Company shall be in strict conformance with all applicable OSHA, Federal, state, local and industry codes, standards, specifications, regulations, tests, procedures, and definitions unless otherwise stated in this RFP. The Facility's design, construction, and operation shall comply with Building and Electrical Codes adopted by the City and County of Spokane and the State of Washington. All items furnished under this specification shall be designed and constructed accordingly.

The latest edition of code or standard in effect on the date of the Proposal shall apply. Adoption of any subsequent issues or case rulings will be in accordance with provisions of the Construction Agreement.

Company or his boiler subcontractor shall possess the requisite ASME Boiler Code symbol stamp and have a valid certificate of authorization from ASME.

Where the requirements of this RFP differ from the requirements of the codes and standards or their proposed revisions referenced herein, then the more stringent requirements shall apply as determined by the Project.

6.0 STRUCTURAL/CIVIL

6.1 Facility Site

Refer to Parts 1 and 2 and Appendix D of this RFP for a description of the Facility Site.

The Company shall be responsible for preliminary site investigative work as required for submitting his Proposal and after the Agreement shall perform detailed site investigation. Data which the Project has concerning the site will be made available to the Company for review. Any information for the Facility Site provided by the Project shall not be considered all inclusive and is not guaranteed in any way, whether expressly or implied, to show archaeological finds or actual subsurface conditions. Additional information shall be acquired by the Company prior to proposal submittal and design as required. Access to the site will be made available to Company by appointment during the Proposal process. Companies wishing to gather data from the site or to visit the site should contact the Project.

6.2 Site Layout

The Company shall submit a site layout with his Proposal. The layout shall incorporate space requirements consistent with required building and equipment sizes, and shall incorporate proper engineering practices for safety, accessibility, maneuverability, maintenance and good housekeeping. The Facility shall include a recycling dropoff area as shown on a conceptual Site Layout included in Appendix A of this RFP. The tipping area shall be arranged on the site such that the trucks enter the tipping area and are required to back while the driver looks over his left shoulder. Safe and suitably sized areas shall be provided for the queuing of incoming trucks and to prevent traffic backup from interfering with off-site traffic. The layout shall be dimensionally defined.

Traffic patterns and turning radii shall be designed to accommodate municipal collection vehicles, private packer trucks, and transfer tractor/trailer vehicles. Minimum outside turning radius for packer trucks and transfer vehicles shall be 50 feet. Inside radii shall be in accordance with AASHTO "Geometric Design of Highways and Streets." Inside turning radii shall conform to geometric standards of an SU design vehicle for packer trucks and a WB-50 design vehicle for transfer vehicles.

As described in Part 4 of this RFP, the construction of all utilities within the site boundaries including but not limited to potable and raw water, storm sewer, sanitary sewer, natural gas, electricity and telephone services shall be sized for the expanded facility and provided by the Company. Permanent utility service off-site excluding stormwater drainage will be provided by the Project. The Company shall provide all utility tie-ins to utilities required for Facility construction.

6.3 Types of Structures

The refuse receiving, maneuvering, and tipping area structure, storage structure, boiler structure, maintenance building, control room, turbine building, ash building, pumphouses, water treatment, lime handling building, and administration building shall be structural steel and/or reinforced concrete framed structures. The refuse receiving, maneuvering, tipping, and storage areas and the service area which includes the control rooms, maintenance, and personnel areas shall be combined into a common or contiguous structure sized for the expanded facility.

The refuse tipping and maneuvering area shall be completely enclosed. The clear distance from the front edge of the refuse storage pit to the opposite edge of the tipping area shall be a minimum of 120'-0". The minimum clearance from tipping floor to top of entrance/exit doors and any overhead obstructions (e.g., building structure, lights, or sprinkler systems) shall be 26'-0". The tipping floor shall be arranged as shown on the site layout plan in Appendix A.

The refuse storage pit shall be designed for a minimum of four days' storage at 1200 tpd. For calculation purposes, the storage capacity shall include, as a maximum, 100% of the volume of the pit below the tipping floor and 50% of the volume above the tipping floor to the level of the charging hoppers. The length of the storage pit used for calculation shall be reduced by the width of the receiving pit (i.e., no storage will be assumed between the receiving pit and the back wall of the storage pit). The maximum density of refuse below the tipping floor level shall be assumed to be 600 lb/yd^3 and the maximum density above the tipping floor level shall be assumed to be 500 lb/yd^3. The refuse storage pit dimensions shall not be less than the following:

a.	minimum depth from the tipping floor elevation to the elevation of the bottom of the pit	40'-0"
b.	minimum width from the inside of the front wall to the inside of the back wall	50'-0"
c.	minimum effective length from inside of side wall to inside of opposite side wall not including the width of the receiving pit	142'-0"

The receiving pit dimensions shall not be less than the following:

a.	minimum depth from tipping floor elevation	
	at storage pit	15'
	at emergency loadout entrance	5'

b. minimum width 40'

c. minimum length 240'

The refuse pit charging elevation (charging hopper and crane maintenance areas) shall be designed to provide sufficient space for the additional charging hopper and all crane maintenance activities for the cranes specified in Paragraph 8.6, Refuse Cranes. The Company shall provide an individual space for each crane supplied. The crane maintenance areas shall be arranged one on each end of the pit. Utilizing space between charging hoppers (proposed or future) or behind the pit as crane maintenance area will not be acceptable.

The ash storage area shall be designed to provide three days' storage at guaranteed load of the expanded facility and adequate space for crane maintenance if a crane is provided. The ash quantity shall be calculated on the basis of guaranteed load and the maximum percentage of ash in the refuse. The density of the ash shall be assumed to be 50 lb/ft^3 for volumetric sizing and 100 lb/ft^3 for structural design. The ash loadout building walls shall be constructed of reinforced concrete up to a minimum of six (6) feet above grade and shall be equipped with roll-up doors to allow vehicle drive through.

The boilers and the air pollution control equipment shall be enclosed.

Floor construction shall, as a minimum, be as follows:

a. Receiving pit floor and automatic and hand unloading floor areas which will be subject to waste storage shall be topped with a heavy duty metallic aggregate topping.

b. Refuse storage building floors including charging level floor - reinforced concrete

c. Administration, pumphouse, and maintenance building floors - reinforced concrete

d. Turbine building floors - reinforced concrete at operating and grade levels

e. Boiler area basement and ground floors - reinforced concrete

f. Boiler area elevated floors - bar grating except where necessary for equipment support reinforced concrete shall be provided

g. Floor under pollution control area and ash building shall be a reinforced concrete slab

The turbine generator shall be supported on a separate reinforced concrete pedestal and foundation system to isolate it from the building and associated foundations and shall be designed in accordance with the manufacturer's recommendations.

6.4 Improvements to the Site

The site in the general area of the Facility requires full development and landscaping in accordance with the requirements of the local authority and Appendix G of this RFP. A site coordinate system shall be established by the Company along with permanent bench marks for project reference and future development.

The site shall be provided with positive drainage by sloped paving and grading as required. The parking areas and plant proper shall be drained by surface grading and routed to the Air Park on the other side of Park Drive. The Company shall be responsible for proper drainage, soil erosion, and sedment control of site storm-water discharged to the Air Park.

Work and services required for storm drainage systems shall be furnished in compliance with local, state, and Federal codes. Local rainfall data along with stormwater management and drainage codes shall be used to design the site drainage. Design shall be based on the minimum standards of the local stormwater management agency and local codes. The Company shall be responsible for proper drainage and soil erosion and sediment control during construction in areas affected by work activity. A soil erosion and sedimentation plan shall be submitted prior to construction for approval by the Project. All sediment traps, stone filter perimeter swales, straw bales, perimeter dikes, interceptor dikes and other items required for soil erosion and sediment control shall be provided.

Retaining walls shall be constructed of reinforced concrete.

The effects of adjacent property which may drain onto the Facility site shall be included in the design. Any off-site grading and seeding to minimize retaining walls and slopes will be permitted subject to Project approval.

6.5 Geotechnical Investigation

The Proposer shall determine all information and data necessary to complete the design and construction of the Facility prior to this Construction Agreement. Any information for the Facility site available from the Project shall not be considered all inclusive and is not guaranteed in any way, whether expressly or implied, to show archaeological finds or actual subsurface conditions. The Company at its sole expense shall retain the services of a qualified geotechnical consultant to obtain final geotechnical information sufficient to identify existing site conditions for the design of all structures of the Company's specific layout and load conditions and the extent of any archaeological finds which

may be encountered in the performance of the Agreement. This effort in obtaining sufficient geotechnical information shall be consistent with generally accepted engineering investigative practices.

If, during the process of executing the Construction Agreement, archaeological finds or subsurface conditions are encountered that the Company had not foreseen because generally accepted practices of obtaining geotechnical information were not followed by the Company, then the Capital Construction Cost and Guaranteed Construction Period will not be adjusted and the Company shall absorb all costs and expenses of any change affecting the plans, specifications, and the construction of the Facility.

6.6 Survey

Current survey information may be obtained from the Project. All work and services necessary for or incidental to the performance and completion of survey work necessary for the construction of site work, buildings, new utilities, and other new facilities and establishment and maintenance of bench marks, measurement to verify location of completed construction, and survey alignment to existing property boundaries shall be provided. Existing bench marks or property line monuments shall not be disturbed. The surveyor shall be certified by the State of Washington.

6.7 Clearing and Grubbing

The Company shall perform work and services necessary for the completion of site clearing, grubbing, removal and disposing of brush, fences, debris, existing structures and substructures, and any demolition within the Boundary Limits of the Facility Site at his sole expense. Materials shall be removed from site and disposed of at a location secured by the Company.

No open burning will be allowed on the Facility Site.

6.8 Excavation, Filling, and Backfilling

The Company shall perform all operations in connection with excavation of materials including unsuitable materials as required, regardless of character of material, and obtain fill and backfill materials approved by Company's geotechnical consultant to produce final grade lines. Arrangements for obtaining necessary fill material and topsoil from off-site borrow areas shall be the responsibility of the Company.

Earthwork, including excavation, fill, backfilling, dewatering, subgrade preparation and stabilization, shoring, drainage, and frost protection shall comply with the geotechnical consultant's recommendations, applicable ASTM standards and provisions of local codes. The grading of embankments and ditches shall have a minimum of three horizontal to one vertical slope.

The geotechnical consultant shall be retained throughout the construction period to perform necessary evaluation and testing to assure compliance with design recommendations.

6.9 Foundations

All work and services necessary for the furnishing, installation, and any required testing of foundations shall be provided. Foundations shall be designed and constructed on the basis of Company's geotechnical information. If piling or drilled pier foundations are utilized, the Company shall employ a subcontractor who is thoroughly experienced with such work. The Company shall provide for the services of an independent testing laboratory to perform material evaluation tests, and perform pile load tests and any other material and/or geotechnical tests required.

6.10 Paving, Curb and Gutter, Sidewalk, and Surfacing

The Company shall furnish and install all pavements as required for construction of site roadways, parking areas, and unloading areas complete with curbing, sidewalks, steps, and other features. Pavements shall be constructed of required thicknesses of concrete or asphalt to final lines and grades. Pavement sections shall be crowned or sloped to provide positive stormwater or washdown drainage. Base, subbase, and stabilized subbase as required shall be included in the work.

On-site roadways used by refuse vehicles shall be at least 12 feet wide, per lane, with four-foot shoulders on each side except that one-way roadways for truck traffic shall be a minimum of 15 feet wide with four-foot shoulders each side. Pavements to be used by trucks shall be designed for axle loads of at least 20% above Washington legal axle load limits. Pavement design and construction shall be in accordance with Company's geotechnical consultant's recommendations as well as state and local requirements.

6.11 Utilities

All on-site above-ground and underground utilities required for service of natural gas, service water, potable water, sanitary sewers, electrical, telephone, storm drains, and any other type of utility required for Facility operation shall be furnished and installed by the Company. The utilities shall be sized for the expanded Facility. The Company shall coordinate with local utilities for temporary connection of utilities during construction. The Project will provide permanent utility service to the Boundary Limits of the Facility Site.

Sanitary sewers sized for the expanded Facility shall include all services on site required to provide sanitary drainage and collection and on-site drainage of all wastewaters.

The design of the stormwater facilities will be in conformance with state and local requirements. Plans are to be reviewed and approved by the Project. The general intent of the site stormwater grading and drainage plan shall be to channel and direct runoff from building roofs and pavement surfaces to the Air Park on the other side of Park Drive.

Installation of electrical utilities, service water, potable water, gas, storm and sanitary sewers, shall comply with applicable provisions of civil, mechanical and electrical requirements of these specifications and local, state, Federal and utility company's codes, standards, and specifications.

The Company shall provide a potable water supply and electrical power service to a point on the site for the Company's use during construction. The Company shall also provide connection and piping to natural gas supply. The Company shall be responsible for safe and adequate distribution of water, gas, and electricity over the construction site as required including fittings, piping, valves, cable, and transformers. Cost of utilities used during construction, start-up and testing shall be at the Company's expense.

6.12 Finished Grading and Topsoiling

All work and services necessary for or incidental to the topsoiling and finished grading of all areas within the limits of grading and for all areas outside the limits of grading disturbed in the course of work shall be furnished. Work shall consist of but is not limited to correction, adjustment, and/or repair of the rough grading, preparation of the subgrade, and spreading of topsoil in areas to be seeded and sodded.

6.13 Fencing

Fences, horizontal opening electrically operated and controlled entrance and exit gates with locks, gates, posts, braces, and supplementary or miscellaneous items, appurtenances, and devices for a sound, secure installation shall be furnished and installed. A spare set of keys shall be provided to the Project and fire department for all locks. The entire site shall be fenced with an 8-foot chain link security fence with 2-inch galvanized chain link mesh and galvanized steel posts. In addition to fencing the entire site, the Company may fence the Facility area.

The Company shall provide work in accordance with provisions of American Society for Testing and Materials (ASTM), Procedures and Standards of Chain Link Manufacturers Institute, and Industrial Steel Specifications.

6.14 Concrete

All labor, materials, tools, equipment, and all work and services for furnishing and installing all concrete shall be provided. The

Company shall furnish and install all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation. All work shall be in conformance to American Concrete Institute (ACI) Standard 301 (latest edition).

All work and services necessary for concrete testing shall be provided by an approved independent testing agency retained by the Company.

a. Required testing services shall be performed by a qualified testing agency and meeting requirements of ASTM standards.

b. Testing shall include review and approval of proposed materials for mix design, mix-design, securing production samples of materials at plants for compliance with ACI and ASTM standards, conduct compressive strength tests, slump tests, air content, unit weight, and the Company shall submit to testing laboratory copies of mill test reports for all shipments of cement, reinforcing steel, and prestressing tendons.

6.15 Structural Steel

The Company shall furnish labor, materials, welding, tools, equipment, and supervision for the supply, detailing, fabricating, galvanizing, painting, delivering, and installing of structural steel. All work shall be in conformance with the American Institute of Steel Construction (AISC) "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" (Latest Edition).

All connection bolts shall be constructed of material conforming to ASTM A325.

Minimum thickness of structural steel member sections shall be 3/16 inch.

All labor, tools, materials, equipment, and supervision for the supply, detailing, fabricating, galvanizing, painting, delivering, and installing of miscellaneous steel and accessories shall be provided.

Grating work shall conform to the National Association of Architectural Metals Manufacturers' requirements and shall include banded cutouts and clearance openings for all penetrations consisting of columns, pipes, ducts, conduits, and all other installations passing through the grating work. Grating sections shall be banded on ends. All grating shall be galvanized bar grating. Provide serrated grating for exterior platforms, stairs, and sloping walkways.

6.16 Basis for Design

Company's design for the Facility shall be documented showing minimum design loads and shall conform to all applicable state and local building codes and Company's insurance carrier requirements.

Equipment loads shall be per equipment manufacturer's recommendations and shall be incorporated in the basic design. Structural design of equipment foundations and support shall limit deflections and vibrations to within manufacturer's specified tolerances and local, state and federal code requirements.

Structural steel design shall conform to AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings."

Reinforced concrete design shall conform to ACI "Building Code Requirements for Reinforced Concrete" (ACI 318).

7.0 ARCHITECTURAL

7.1 General

The architectural treatment of the structures within the Facility shall be designed in accordance with the requirements of this section and Appendix G as well as applicable codes. The Facility shall be designed to be functionally efficient as well as aesthetically pleasing. The appearance of the Facility shall present an image compatible with the information provided herein. The aesthetic theme of the Facility will be an important factor in its public acceptance.

The aesthetic theme and basic materials shall be compatible to those shown in Appendix A. Although some changes may be required to accept specific equipment, the aesthetic theme shall be maintained as a base cost. If so desired, the Company may submit an additional aesthetic scheme as an alternate. The Company shall submit drawings and costs for review by the Project.

A color rendering shall be provided with each Proposal and shall reflect the actual proposed architectural treatment of the Facility and the landscaping (including buffer treatment with earth berms, trees, and shrubs) on the proposed site. Existing site and off-site landmarks shall be shown where possible. An additional rendering shall be submitted if the contractor elects to provide an alternate architectural scheme. Final color selections shall be approved by the Project. A description of material types and finishes shall be included with each proposal.

The on-site structures shall consist of the refuse tipping, maneuvering, receiving and storage area, turbine building, administration building, ash building, air pollution control building, pumphouses, cooling tower, scale operations area, boiler building, maintenance building, control room, and other related process structures required for the proper construction, operation, and maintenance of the Facility.

The Facility shall be designed to meet applicable state, local, OSHA, and Federal codes and standards in addition to all building, fire, and safety codes. The Company is responsible for contacting the proper authorities to determining code requirements. Applicable handicapped access requirements as determined by the building officials shall be incorporated into the design of structures and site.

7.2 Materials

The materials of construction shall be selected to provide durability and ease of maintenance. Materials shall be of a quality suitable to the functions performed at the Facility.

The structural framework of the Facility shall be of concrete and structural steel. The enclosure shall be of a durable and low

maintenance material designed to express the aesthetic intent. Metals shall have a protective coating that minimizes maintenance. All structural steel shall receive prime and finish paint coats. Metal panel siding shall be finished with premium baked on synthetic coatings.

All structures shall be analyzed to determine the ideal insulation system for the structure with its associated activities. The insulation shall meet or exceed code requirements and shall be designed for human comfort, freeze protection, wet or dry cleanup and maintenance, and to meet process requirements as described elsewhere in this document.

All structures shall be constructed with roofs which meet U.L. Class A requirements.

Exterior doors, with the exception of special entrances, shall be painted, galvanized steel, insulated hollow metal in grouted hollow metal frames. Interior doors shall be hollow metal or wood in hollow metal frames. Overhead doors shall be painted galvanized steel. Where safety concerns are evident, glazed doorlites shall be provided.

Exterior window units shall be provided with minimum double thickness insulated glass in aluminum frames. Safety glazing shall be provided where required by NFPA and OSHA. All glass shall be capable of withstanding wind loads, solar loads, mechanical stresses and interior heat. Heat strengthened glass is required where compliance with safety code is not required. Tempered or laminated glass shall be used to comply with codes. Certificates shall be provided during construction attesting that materials meet all tests and specified requirements.

Floors and ceilings in boiler building, ash building, turbine building, pumphouses, maintenance building, and other process structures shall generally be exposed structure. Administration building, scale buildings, control rooms, and office areas shall receive interior finish materials as appropriate for each area. A discussion of these finishes shall be included with the Proposal. Exposed structure ceilings shall be painted for corrosion resistance in areas of exposure to moisture or other corrosive materials. Floor finish materials shall be selected with personnel safety as a primary concern. Administration building shall have finishes which are typical for office areas and shall complement the exterior architectural requirements of the Facility.

All work shall be protected against weather when work is not in progress. All masonry walls shall be laid out in advance for accurate and uniform bond patterns and joints and to assure proper location of openings, movement-type joints, returns and offsets. Use of less than half-size masonry units shall be avoided.

All fabrications including stairs and handrails shall be provided in compliance with all regulatory agencies and applicable codes including handicapped requirements.

The Company shall work with the Project to provide a color scheme of finish materials to be developed during the schematic phase for later transformation into a final color schedule. The Project will review and approve this schedule. All items requiring a color selection such as carpeting, wall coverings, etc., shall have samples submitted for the Project's review and approval.

Waterproofing and other protective coatings shall be provided to protect building materials and equipment from ash, dust, water infiltration, and deterioration caused by reactive agents.

All areas shall, as a minimum, be accessible vertically by stairs. Stairs shall meet applicable codes. Stairs shall be enclosed where required by code. Stairs shall have solid treads in areas where office personnel and visitors will be present. Open grating treads and platforms may be used in equipment access areas. Elevators shall be provided for access by the physically handicapped to areas above the ground floor if access would be required by local codes.

7.3 Signage

Signs and graphic designs for identification and directions shall be provided. Signage such as Exits, Fire Escape diagrams, building labels, door labels for room use and pipe labels shall be employed for safety, ease of operation and direction. The signage system utilized shall provide simple and direct indications using graphics, color, and/or text. Signage systems shall comply with OSHA regulations.

Identification signs, directional signs and traffic controls signs, signals, lane divider markings, and painted pavement marking within the Boundary Limits of the Facility Site for control of vehicles to and on the site shall be furnished and installed. A Facility identification sign shall be installed at the main entrance to the Facility. Type, design and location of the sign shall be approved by the Project.

The site signage system shall direct all users of the Facility and visitors to the appropriate areas for their specific business at the site. The signage shall be designed to create a "campus" type sign system, tying the various graphic elements of the Facility into one visually contiguous group.

All signage will be subject to the regulatory agencies' and Project's approval.

7.4 Landscaping

The appropriate landscape for the Facility shall be designed and furnished. Landscaping for the site shall include visual and acoustic buffers, trees, shrubs, and seeding or sod to provide a visually pleasing environment. All areas on the site which are nonpaved and/or do not have buildings, shall be seeded or sodded and planted with trees and shrubs or covered by landscaping material. Ornamental shrubs and trees shall be planted around outdoor tank areas, main roads, and around buildings. Safety shall be a primary justification for vegetation placement to ensure clarity where visual access is required. Vegetation genus and species shall be carefully selected to adapt to the climatic conditions and the environment developed by activities on the site. Durability and adaptability to harsh conditions shall be the basis for selection criteria.

All landscaping plans shall be approved by the Project. A description of the extent of landscaping shall be included in the Proposal and shall be shown on the rendering.

7.5 Exterior Lighting

The exterior of the buildings shall be provided with lights for night operations. At a minimum, each door, both overhead doors and personnel passage doors shall have artificial light for safety. Accent lighting on structures and/or landscaping should be considered in the development of the aesthetic nature of the Facility.

All parking areas shall have artificial lighting to provide a minimum of 1.0 footcandles, and shall meet or exceed the recommendations of IES.

Site roadway lighting fixture type and light source shall be coordinated with lighting present and proposed for the area. Spacing and amount of light shall follow the local street lighting guidelines and the requirements indicated in Appendix G.

7.6 Personnel Facilities

Centralized personnel facilities shall be provided in a building adjacent to the refuse tipping area for employees. These facilities shall include restrooms, showers, locker rooms, and a meeting room. Facilities shall reflect approved handicapped access requirements. Separate areas shall be developed for use by male and female employees. A room shall be established as a "clean room" to provide an area for an employee meeting and lunch area.

7.7 Administration Building Requirements

An area shall be provided to house administrative and clerical personnel. The area shall include a visitor briefing and confer-

ence room, offices, storage areas, reception area and other spaces required for operations as determined by the Company. In addition to Company determined requirements, four offices shall be provided for Project use. Restrooms shall be provided for visitors and office personnel which are separate from locker rooms. The area shall be heated and air-conditioned. Attention shall be given to the two primary purposes of the administration buildings: providing an area for administrative personnel and offering a comfortable and convenient area for visitors to the Facility.

7.8 Scale Operations Facilities

Two separate facilities shall be provided to house the vehicle weighing activities required for the operation of the Facility. The scalehouses shall be designed for three operators each. Restrooms shall be provided for personnel. The scalehouses shall be heated and air conditioned.

7.9 Maintenance Facilities

A maintenance area shall be furnished and installed including equipment and tools required for the maintenance of equipment installed in the expanded Facility and for Facility vehicles. This building shall include open floor areas, bench areas, and an area for welding. The maintenance building shall be located in the vicinity of the refuse tipping, receiving and storage area, boiler building and turbine building. The maintenance building may also contain a laboratory, electrical/ instrumentation shop, general maintenance shop and an area for spare parts storage. The Company shall determine requirements for maintenance activities and storage of spare parts.

The maintenance shop and electrical/instrumentation shop shall be equipped with cabinets, tool set drawers and storage shelving as required to perform required maintenance activities at the site.

The selection of equipment to be included in the maintenance facilities shall be approved by the Project.

8.0 MECHANICAL

8.1 Equipment Installation

The Company shall provide all labor, supervision, services, technical direction, tools, equipment, materials, and consumable supplies required for the receiving, unloading, storage, protection, testing, start-up, installation, and erection of equipment.

The installation and erection of equipment and materials shall be governed by the applicable Federal, state, and local codes and shall, unless otherwise specified, be in accordance with the latest revisions in force as of the date of the proposal of the Codes and Standards listed below and all other applicable codes and standards:

American Society of Mechanical Engineers (ASME)

American Petroleum Institute (API)

American Insurance Association (AIA)

American National Standard Institutes (ANSI)

American Society for Testing and Materials (ASTM)

American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE)

Air Moving and Conditioning Association (AMCA)

American Institute of Steel Construction (AISC)

American Welding Society (AWS)

Antifriction Bearing Manufacturers Association (AFBMA)

Crane Manufacturers Association of America (CMAA)

Environmental Protection Agency (EPA)

Factory Mutual (FM)

Hydraulic Institute (HI)

Industrial Gas Cleaning Institute (IGCI)

Institute of Electrical and Electronic Engineers (IEEE)

National Electrical Manufacturers Association (NEMA)

National Electrical Code (NEC)

National Electric Safety Code (NESC)

National Fire Protection Association (NFPA)

Occupational Safety and Health Administration (OSHA)

American Water Works Association (AWWA)

Instrument Society of America (ISA)

Erection methods and procedures shall conform with accepted good engineering practice, the requirements of the ANSI Code for Pressure Piping, the ASME Boiler Code where applicable, and in accordance with procedures furnished and approved by the equipment manufacturers. In case of conflict between the RFP and the equipment manufacturers' procedures, the most stringent shall govern.

Equipment shall be designed, fabricated, and assembled in accordance with the best modern engineering and shop practice. Individual parts shall be manufactured to standard sizes and gauges so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required for tests.

Materials shall meet quality standards of products of proven performance and durability for successful operation under the service conditions. All materials shall meet applicable ASTM and ANSI requirements.

The manufacturer's standard or usual construction is required, provided it is judged by the Project to be equal to the equipment requirements herein. The equipment requirements herein are minimum requirements and should not in any way be interpreted as an indication to provide equipment less than the manufacturer's standard or usual product.

8.2 Furnace and Boiler Requirements

The steam generating units shall be drum type, bent tube, field erected, cross drum, with combustion chamber designed for refuse firing. The steam generating units shall be of a design and type which meets the experience requirements listed in the RFQ.

The furnace shall be gas-tight and either an all welded tube, waterwall construction or a combination of a refractory-lined combustion chamber and an all welded tube waterwall construction. Wall tubes shall be bent to accommodate access doors, observation doors, and sootblower and temperature probe ports. Buckstays shall be used to support and guide the walls. Access doors in the furnace enclosure shall be provided and arranged to facilitate inspection and maintenance.

The steam drum shall be fusion welded to ASME Boiler Code specifications and all welds completely radiographed. The steam drums shall be approximately 54 in. ID or greater, and the mud drums (if required) shall be approximately 36 in. ID or greater.

The final steam drum shall be provided with a system of internal piping for feedwater, chemical feed, continuous blowdown, drum internals, separators, scrubbers, and dryers to effect positive separation of steam and water. Nozzles shall be fusion-welded radially to the drum with ends projecting beyond the drum insulation and casing.

8.3 Superheater and Economizer Requirements

The pressure parts of the superheater and economizer shall be designed in accordance with the ASME Boiler Code.

Vertical pendant surface shall be arranged with a maximum depth of 6 ft. and, if a sootblower type cleaning system is used, sootblowers shall be installed between each bank of surface.

The superheater shall be arranged to promote a constant superheater temperature characteristic over the control range and to minimize the amount of desuperheating required. Superheater surface shall not be located in the radiant section of the boiler. Superheater shall be arranged for parallel flow of steam and flue gas to provide the lowest possible superheater metal temperature.

Tubes shall be spaced and arranged to minimize erosion, slagging, and fouling and to promote effective cleaning of tube surfaces with sootblowers or a rapper system.

Necessary equipment for maintaining superheater temperature over the control range shall be furnished as required for this type of service.

Either a continuous loop, horizontal tube or a multiple header, vertical tube economizer shall be provided. Fin tubes are not acceptable. The economizer shall be located in the convection pass of the boiler-furnace setting and arranged for counter flow of feedwater and flue gas.

The economizer support shall allow free expansion of the tubes and headers.

The Company shall ensure that the proposed tubing manufacturers have the facilities required to produce the quality of tubes required.

Boiler tubes shall have as a minimum the following wall thicknesses:

	Location	Tubes
a.	Secondary Superheater	0.040 inches above ASME Code Requirements
b.	Primary Superheater	0.040 inches above ASME Code Requirements
c.	Boiler	0.100 inches above ASME Code Requirements
d.	Economizer	0.100 inches above ASME Code Requirements
e.	Water Walls	0.100 inches above ASME Code Requirements

The maximum skin temperature to which the tube materials will be subjected shall not exceed the oxidation limits specified below. The limits for the more common materials are tabulated below, but the Company may select ASME Boiler Code materials equivalent to those tabulated in order to optimize his design.

Material	Section I Specification	Max Tube Wall Temp
Smls Carbon Steel	SA-210	800 F
ERW	SA-178 Gr C	800 F
Carbon-Moly	SA-209 Gr T 1	875 F
Ferritic Alloys	SA-213 Grs T 11, T 22	1025 F

Above temperatures are based on average high velocity thermocouple (HVT) measurements.

All tubes shall be circular, free of blisters, scale, and mechanical defects. Tubes shall conform to the requirements of the ASME Boiler Code, Section II. Selection of the tube wall thickness shall be based on maximum manufacturing tolerance taking into account all required temperature excursions. Tube connections at headers shall be so arranged as to permit full strength welding of all joints.

Tube spacing shall be based on the following table:

Location	Clear Side Spacing (Minimum), Inches
Superheater (Primary and Secondary)	4
Boiler and Economizer	2

Tube arrangement in the superheater, convection and economizer sections shall be in-line and not staggered.

8.4 Emission Factors

The Company shall guarantee emission factors equal to or less than the values listed below:

Pollutant		
Particulates (Solid and Condensibles)	0.02 gr/dscf at 7% O_2	
Sulfur Dioxide(1)	50 ppm	
Nitrogen Oxides (NO_2)(1)	300 ppm	
Carbon Monoxide(1)	100 ppm (4-day average)	400 ppm (8-hour average
Total Hydrocarbons as CH_4(1)	3 ppm	
Lead	0.001 gr/dscf at 7% O_2	
Chlorides(1)	50 ppm	
Tetra-hepta chlorinated isomers	200 nanograms per dry standard cubic meter at 7% O_2	

1. At dry standard conditions and 7% O_2.

The following elements and compounds have been detected in emissions from resource recovery facilities. The following emissions factors are anticipated to be achievable by the Facility. The Company shall provide information on the emissions of these pollutants on Proposal Form 9. Where the emission factor provided for a pollutant is greater than the value listed below for that substance, the Company shall explain the disparity.

Pollutant	lb/ton refuse (1)	lb/MMBtu (1)(2)
Fluorides	0.026	2.77×10^{-3}
Beryllium	1.51×10^{-6}	1.61×10^{-7}
Mercury(3)	1.7×10^{-3}	1.81×10^{-4}

Asbestos	1.92×10^{-8}	2.04×10^{-9}
Vinyl Chloride	2.74×10^{-6}	2.91×10^{-7}
Reduced Sulfur	2.74×10^{-5}	2.91×10^{-6}
Sulfuric Acid Mist	0.015	1.6×10^{-3}
Arsenic	1.10×10^{-4}	1.17×10^{-5}
Cadmium	7.40×10^{-4}	7.87×10^{-5}
Chromium	2.2×10^{-4}	2.34×10^{-5}
Copper	1.06×10^{-3}	1.13×10^{-4}
Manganese	3.02×10^{-4}	3.21×10^{-5}
Nickel	1.67×10^{-6}	1.78×10^{-7}
Selenium	4.54×10^{-6}	4.83×10^{-7}
Tin	9.77×10^{-4}	1.04×10^{-4}
Vanadium	4.28×10^{-4}	4.55×10^{-5}
Zinc	2.62×10^{-2}	2.79×10^{-3}
PAH(4)	6.04×10^{-6}	6.43×10^{-7}
PCB(4)	5.15×10^{-7}	5.48×10^{-8}

1 Controlled Emission
2 Based on heating value of 4700 Btu/lb
3 Based on 100% vapor phase
4 No collection credit is assumed

8.5 Environmental Monitoring and Auxiliary Burners

The furnace gases must be maintained at 1800F for a one second retention period as a minimum under all operating conditions. Auxiliary burners shall be supplied to maintain this temperature and residence time. The auxiliary burners shall use natural gas and also be designed to pre-heat the furnace to 1800 ± 200F before lighting off waste and to maintain a temperature of 1800 ±200F until the grate surface is empty upon shutdown. The burners shall be equipped with a burner management system which meets the boiler insurance company's approval.

The Company shall propose a method of continuously monitoring and recording temperature in the furnace. The basis for the boiler

design for a residence time of at least one second at or above 1800F shall be presented with the proposal data. The Company may propose to track the 1800F by measuring the temperature at a location with lower temperature. The Company must supply calculations and detailed descriptions of methodology if the temperature tracking option is selected.

In addition to the continuous emissions monitors required by Section 8.14, the following combustion gas parameters shall be continuously monitored and recorded on each combustion system:

a. Oxygen (O_2) shall be measured between the economizer outlet and air pollution control equipment.

b. Carbon Monoxide (CO) shall be measured between the economizer and the air pollution control equipment.

c. Carbon Dioxide (CO_2) shall be measured between the economizer and the air pollution control equipment.

8.6 Refuse Cranes

A minimum of two (2) refuse handling overhead bridge cranes and associated accessories shall be furnished and installed. The overhead bridge cranes shall be as manufactured by P&H, Whiting, KONE, or approved equal.

Each crane shall be capable of continuous operation in the handling of solid waste consisting of light industrial, commercial, and household rubbish, ranging in weight from 300 to 700 lbs. per cubic yard. Each crane shall also be capable of re-handling (mixing and recasting) incoming material. The cranes shall be used to feed refuse to each steam generator and for refuse management in storing and receiving refuse. Each crane shall be designed for continuous feed operation to each steam generator for a total feed rating capacity of each crane equal to 1200 TPD. Each crane shall be designed to meet CMAA Specification No. 70 for Class F service and ANSI/ASME B30.2. The crane shall perform these operations with a temperature rise not to exceed the specified rating of any motor.

Each crane shall be capable of operating with full load at the following speeds:

Hoisting	200 FPM maximum
Trolley	150 FPM maximum
Bridge	200 FPM maximum

The cranes shall be designed for indoor use under the following conditions:

Temperature	
Minimum	-20 F
Maximum	120 F

Relative humidity 100%
Heavy Dust Loading

Each crane shall be furnished with one (1) mechanical or electro-hydraulically operated orange peel type grapple as manufactured by Peiner, Sven, or approved equal.

The crane motors shall include the hoist bridge and trolley drive motors. All motors shall be totally enclosed fan cooled (TEFC), rated for crane service, designed for ambient temperature of 50C, and provided with NEMA Class F insulation. The temperature rise shall not exceed that of a Class B insulation 50C above ambient.

The controls for the refuse crane motions shall be the static stepless type or a 5-step counter torque type control.

Power supply for cross travel shall be by the festooned cable method. Cables and connectors shall be arranged for positive stacking when in the compressed position and shall assure free travel with no tangling when controls call for extension. Cables shall be supported with minimum radius type supports, or equivalent devices, to prevent crimping the cables.

Closed, remote crane control pulpit(s) shall be furnished and installed. The pulpit(s) shall be designed for full hopper viewing and sized to accommodate a minimum of two crane operators and control consoles and allow operation of all cranes at the same time. The pulpit(s) shall also include air conditioning, heating and ventilating equipment, electrical and fire safety water spray and portable devices, and accessories.

Crane electrical gear shall be located in a separate ventilated and cooled electrical room. Crane maintenance areas shall be designed in accordance with Paragraph 6.3.

8.7 Refuse Stokers and Grates

8.7.1 General

The stokers and grates shall be suitable for burning Acceptable Waste having a higher heating value between 3,800 and 5,500 Btu/lb. The stokers and grates shall be considered an integral part of the steam generator in that it shall be subject to all applicable provisions of Section 4.0, Performance Guarantees; Company's performance guarantees stated in his Proposal; and requirements of tests and other warranties specified for the boiler.

8.7.2 Stokers and Grates

The stokers and grates shall be designed in such a way as to provide an effective lifting and turning of the refuse. All stokers and grates throughout the grate area shall be designed for even distribution of the incoming waste and the stokers must provide

for positive air distribution under the waste load regardless of waste composition. The stokers and grates shall be arranged for ash discharge opposite the fuel feed end.

The refuse stokers and grates shall be made of heat resistant cast alloy, and cast to minimize initial strain. Undergrate air seals shall be provided at both front and rear ends in close contact with the under sides of the grates. Side seals between the edge of stoker grates and boiler shall be the manufacturer's proven standard for this type unit.

The stoker and grates shall have a structural steel frame designed to assure permanent alignment of the grate surface. Structural supports shall be so located and protected such that they will not be overheated or damaged by either the furnace or ash chutes.

Each stoker unit shall be provided with necessary observation doors or ports of the self-closing, Pyrex-covered type. All access doors shall be equipped with quick tightening clamp bolts.

Siftings hoppers shall be provided below the grates. The undergrate hoppers shall be of steel construction and provided with access doors, stiffeners, and accessories, including an automatic system for the removal of undergrate siftings into the ash quench tank.

The refuse stokers and grates shall be of a design and type which meets the experience requirements listed in the RFQ and Part 3 of this RFP.

8.8 Refuse Feed System

8.8.1 Charging Hopper

Each furnace unit shall be provided with one refuse charging hopper. The charging hopper shall have a structural steel frame designed for attachment to the support steel and the concrete structure which will form the rear wall of the refuse storage pit.

The charging hopper shall be of welded steel plate and designed to prevent refuse from bridging.

8.8.2 Chute

Below each charging hopper shall be a waste delivery chute. The waste chute shall be of welded steel plate and provided with replaceable wear-resistant plates. The lower section of the chute shall be provided with a water cooling system or be refractory lined to protect against radiation from the furnace. The size of the chute shall be sufficient to accept and pass solid waste objects without jamming. The height of the chute shall be adequate to provide an air seal. The upper chute, below the charging hopper, shall be provided with a hydraulically or pneumatically actuated shut-off gate.

8.8.3 Refuse Feeders

Each furnace shall be provided with a hydraulically actuated refuse feeding system or a feeder grate system for providing an even, constant flow of refuse onto the grates. The feeders shall be of the volumetric type which can be controlled to vary the feed rate depending on the load of the unit, and shall be capable of transporting any item which passes through the chute.

8.9 Boiler Fans

Each steam generating unit shall be provided with a minimum of one (1) underfire air (FD) fan, one (1) secondary air (SA) fan and one (1) induced draft (ID) fan. The fans shall be furnished complete with all necessary accessory equipment.

The fans shall be designed for combustion air flow requirements and ambient air conditions as described in Paragraph 3.2, and flue gas flow resulting from the combustion of solid waste as described in Paragraph 3.3, Fuel Analysis. The total combustion airflow shall be based on the maximum total theoretical air demand of the fuel as specified and operating at 100% excess air. The SA fan shall have a design capacity equal to 50% of the total air flow and the FD fan shall have a design capacity equal to 70% of the total airflow. In addition, the design static pressure of the SA fan shall be sufficient to provide penetration into the furnace to achieve the turbulence and mixing required for this type of service. ID fan gas flow shall include excess air, water, steam, leakage allowance, and calculated flue gas flow. Overhung fan rotor design will not be acceptable. The following margins shall be used to determine the fan test block rating above maximum guaranteed load.

a.	Capacity Margin	Net +15%
b.	Static Pressure Margin	Net +32%
c.	Temperature Margin at Fan Inlet for FD and SA Fans	Net +15 F
d.	Temperature Margin at Fan Inlet for ID Fan	Net +50 F

The fans shall not exceed the following operating speeds.

a.	ID	900 rpm
b.	FD	1800 rpm
c.	SA	3600 rpm

The fans shall be as manufactured by TLT Babcock, Buffalo, Howden, or approved equal.

8.10 Air Heaters

If required by Company's steam generator design selection, the Company shall furnish and install a steam coil air heater between the FD fan and the air plenum(s) on each steam generator. If furnished, coils shall be designed with sufficient capacity to maintain a minimum combustion air temperature of 250F under all weather conditions. Coil shall be designed and controlled for protection from freezing. If finned tubes are required, no more than four fins per inch shall be used.

Whether required by Company's design selection or not, space in ductwork shall be provided to allow this coil to be installed at a later date.

8.11 Air Pollution Control Systems

The facility shall be provided with dry scrubbers for acid gas removal and either electrostatic precipitators (ESPs) or baghouses for particulate removal. The air pollution control equipment shall be enclosed in a building.

8.11.1 Electrostatic Precipitators

One electrostatic precipitator (ESP) shall be provided for each combustion/steam generator unit in the Facility. ESPs shall be designed to meet the performance requirements at all loads when treating the flue gas produced from the burning of Acceptable Waste.

With one field out of service, the ESPs shall be guaranteed to meet particulate emissions of 0.02 gr/dscf at 7% O_2 and 10 percent opacity as measured by CEM and 5% opacity as seen by a certified observer.

Each ESP shall be supplied with a standby transformer-rectifier set, or sets, so that each ESP has an alternative source of high-voltage DC power. The ESPs shall be insulated to maintain a maximum 15F temperature drop through the entire unit; as a minimum, 4 inches of fiberglass bat insulation shall be installed over all external stiffeners. Waterproof outside covering or lagging shall be included. Air spaces between the casing and insulation shall have "stops" to prevent air flow through the spaces. ESP collecting plate cleaning shall be by mechanical rapping. ESPs shall utilize a trough type hopper for flyash collection. All hoppers shall be equipped with anvil striking plates, vibrators, access doors, poke holes and blanket-type heaters to reduce heat loss. Blanket-type heaters shall be applied over a minimum of the lower one-half of the hopper. Access doors shall be double-door type to prevent condensation. All penetrations through the casing or roof shall be sealed to be air-tight. Insulator penetrations shall be provided with heater elements or hot air heated insulator compartments. The flyash conveyor system connection to the hoppers shall be air-tight to

prevent air in-leakage from the conveyor system and/or ambient air through any connections.

Each ESP shall be equipped with a lower explosive limit gas detector with audible alarms at the ESPs and control room with a one percent concentration of combustible gas. The detector shall automatically shut down the ESP power source with a two percent concentration of combustible gas.

The ESP flyash conveyor system shall be designed to convey the the collected particulate from the dry scrubber exit gases.

The ESP shall be manufactured by General Electric, Flakt, Environment Elements, or approved equal.

8.11.2 Dry Acid Gas Scrubbers

One Dry Acid Gas Scrubber shall be provided for each Combustion/ Steam Generating Unit at the Facility. The dry acid gas scrubber shall be designed to meet the performance requirements at all loads when treating flue gas produced from the burning of Acceptable Waste.

The dry acid gas scrubbers shall use a lime/water slurry injected into a reaction chamber to neutralize the acid gases. The quantity and mixture of water and lime, and quality of pebble lime, shall be selected to provide the acid gas removal efficiencies shown below:

Hydrogen Chloride (HCl) - 50 parts per million by dry volume (ppmdv) at 7 percent O_2.

Sulfur Dioxide (SO_2) - 50 ppmdv at 7 percent O_2.

Injection of the slurry into the Dry Scrubber shall be by rotary atomizers or atomizing dual fluid nozzles. An entire set of spare nozzles or rotary atomizers shall be kept on site at all times. The atomization system shall be designed and constructed so that the spares can be installed with the steam generator operating at nameplate capacity.

The Dry Scrubbers shall be insulated and have hopper accessories at least equal to those required for the ESP's, as described under Section 8.11.1.

The Dry Scrubbers shall include a flyash and reacted & unreacted particle collection and handling system with minimum requirements as described under Section 8.12.

Pneumatic truck unloading and silo type lime storage shall be provided.

A minimum of two lime slurry preparation sytems shall be supplied. Each lime slurry preparation system shall consist of a lime feeder, lime slaker with grit removal, slurry tank with mixer, minimum of two (1 operating, 1 spare) lime slurry pumps and water booster pumps per combustion/steam generation unit, piping, instrumentation, controls, foundations, and other auxiliaries as required for complete and operating systems.

The dry scrubber vessel shall be constructed of A36 carbon steel, 1/4 in. thick as a minimum or as required by the manufacturer. The bottom of the dry scrubber vessel shall have a sloped cone hopper with angle of the cone selected to prevent buildup of solids on the hopper walls and also to avoid bridging over all discharge points.

The Dry Scrubber shall be manufactured by General Electric, Joy-Niro, Environmental Elements, or approved equal.

8.11.3 Baghouse

One baghouse shall be provided for each combustion/steam generator/dry scrubber in the Facility. The baghouses shall be designed to meet the performance requirements at all loads when treating the flue gas produced from the burning of Acceptable Waste.

The baghouses shall be guaranteed to meet particulate emissions of 0.02 gr/dscf at 7% O_2 and 10 percent opacity as measured by a CEM and 5% as seen by a certified observer.

The baghouse shall be either reverse air or pulse jet type baghouses consisting of multicompartment units with fabric filter bags. Reverse air or pulse jet air shall be preheated before entering the baghouse compartments. If a pulse jet baghouse is selected, the bag frames shall be 317 stainless steel or approved equal. On reverse air units, the connection of the bag to the tube sheet shall be by a screw-type clamp or approved equal.

Fabric material shall be fiberglass with the weave or felt design and any fabric coatings selected for the intended service. Net-net air-to-cloth ratios shall not exceed 2.0:1.0 for reverse air and 4.0:1.0 for pulse jet. The net-net condition is when the baghouse is operating with one compartment out of service for cleaning and one compartment out of service for maintenance.

The total baghouses shall be complete with inlet and outlet manifolds, internal dampers for compartment isolation, controls and instrumentation, structural support, access stairways and platforms and bag cleaning system. The baghouse compartments shall be insulated and have hopper accessories at least equal to those required for the ESP's as described under Section 8.11.1. The Company shall have available on-site a complete spare set of bags.

The baghouse shall include a flyash collection and handling system with minimum requirements as described in Section 8.12.

The baghouse shall be manufactured by General Electric, Joy-Niro, Environmental Elements, or approved equal.

8.12 Ash Handling System

A complete ash conveying system sized for the expanded Facility shall be furnished and installed. The system shall be designed with a minimum number of transfer points. The system shall be capable of handling bottom ash and flyash as produced from the burning of Acceptable Waste and from the treatment of the flue gas as described in Paragraph 8.11, Air Pollution Control Systems.

Residue from the grates, boiler and economizer hoppers, and siftings from under the grates shall be discharged into a hydraulic pusher type ash discharger. The ash pusher type ash dischargers shall consist of a quench tank equipped with an hydraulically operated ash pusher. The residue shall be discharged from the ash pushers directly onto a series of conveyors which shall convey the residue to an ash building.

The ash handling system shall be sized such that any item able to pass into the furnace shall be able to be passed by the ash handling system to the ash storage building. The ash storage area shall be designed for a minimum of three days' storage of ash and residue at the expanded Facility capacity. The ash storage area shall be completely enclosed with a filtered ventilation system. The ash storage building shall not be connected to any other structures in such a fashion as to enable dust to infiltrate to other parts of the plant.

The vibrating pan or belt conveyors used shall be heavy duty construction, sized to handle the type of residue typical of solid waste as described in Paragraph 3.3, Fuel Analysis.

Minimum width for ash conveyors shall be 6'-0". Maximum speed of belt conveyors for ash shall be 50 fpm.

Flyash shall be collected from each air pollution control system hopper with drag or screw conveyors, and conveyed to the ash storage area for disposal or discharged directly into the bottom ash dischargers.

Flyash drag or screw conveyors shall be completely dust-tight to prevent leakage of flyash.

The flyash conveying system from the air pollution control equipment shall be provided with a surge bin, feeder, and ash conditioner. The ash conditioner shall be of the twin shaft design with counter-rotating paddle conveyor screws. The ash conditioner shall be capable of wetting the dry flyash with water to eliminate dusting.

8.13 Ferrous Recovery System

The Company may provide a ferrous recovery system for the Facility.

8.14 Stack

One (1) concrete shell stack with acid brick flues shall be furnished and installed. The stack will disperse flue gases from the steam generating units that burn Acceptable Waste. The flues shall be cylindrical. The stack shall be provided with one flue for each steam generating unit and an additional flue for a future unit. The stack shall be aesthetically treated to conform to the theme of the Facility.

Design conditions for the stack are as follows:

Stack height	170 ft.*
Gas Velocity at MCR, fps, max.	60

*Based on FAA requirements.

Stack shall be designed for all conditions, loads, and effects to which it may be subjected, including basic design, corrosion, wind loading, thermal load, earthquake loading, dead loading, reaction forces, and vibration effects from vortices produced.

The Company shall provide stack liners constructed of ASTM C980 acid resistant brick. Other materials shall conform to ASTM specifications and have demonstrated compatibility with, and suitability for, design requirements.

An access door shall be provided in the stack to permit access to the base of the stack under the flues and to the base of the flues. Door shall be flanged panel type, gas-tight gasketed door bolted in place to frame. Door shall be reinforced and provided with integral locks. Access shall be provided from ground level to the upper level maintenance platform, sampling platforms, and CEM. All ladders, walkways and platforms shall be designed and installed in accordance with OSHA standards. The entire length of any ladder shall be enclosed in a safety cage. Two capped sampling ports shall be installed 90 degrees apart for each flue in accordance with EPA Regulations, Appendix A, 40 CFR60. The concrete shell shall be provided with redundant annular space pressurization systems.

In addition to the capped sampling ports, continuous emissions monitors (CEMs) shall also be provided for continuous monitoring of oxygen, carbon monoxide, carbon dioxide, opacity, temperature, particulate control device temperature, HCl, and SO_2. The CEMs shall meet the requirements of CFR 40 Part 60 Appendix B. CEM for opacity shall be in accordance with performance Specification 1. CEMs for SO_2, CO_2, and O_2 shall be in accordance with Performance

Specifications 2 and 3. CEM for CO shall be in accordance with Performance Specification 4.

Obstruction marking and strobe lighting shall be provided in accordance with FAA regulations.

Stacks shall be provided by Hoffman Silo, Inc., Peabody Continential-Heine, Crown Union, or approved equal.

8.15 Combustion Air and Flue Gas Ducts, Dampers, and Expansion Joints

The combustion air and flue-gas duct system shall comprise (1) the flue-gas ducts from the economizer outlet to the air pollution control equipment and from the air pollution control equipment to the stack including all necessary attachments to and from the ID fan; (2) the FD fan suction ducts; (3) the under-fire air ductwork from the FD fan to the under-fire air plenum; (4) the SA fan suction ductwork to the SA fan; and (5) the SA supply ductwork from the SA fan to the nozzles.

Ductwork shall be welded steel plate construction. Ductwork and supports shall be designed and fabricated in accordance with the applicable rules of AISC; welding shall be in accordance with the requirements of the AWS.

Hoppers shall be provided at the economizer outlet, and at other locations as required by Company's ductwork arrangement to collect flyash. Hoppers shall be of pyramidal shape with a valley angle of not less than 55 degrees to the horizontal.

Access doors shall be provided in each run of ductwork of 24 in. square or round diameter or greater. Doors shall be located on both sides of turning vanes and between each piece of equipment. Hand holds shall be provided both inside of and outside of the ductwork as required for the safe entry to and exit from the ductwork. Rungs, footholds, and handrails, fitted to vertical and steeply sloping duct runs, and guardrails at abrupt drops in duct runs shall be provided to aid and protect men working inside of the ductwork. Access doors shall be equipped with quick tightening clamp bolts.

Expansion joints shall be provided to permit thermal expansion of the ductwork system without skewing and imposing excessive reactions on the ductwork, the supporting structures, or the connected equipment. Expansion joints shall be of the bellows-type, with elements of sufficient membrane strength to withstand the internal design pressure and temperature over the life of the plant. Expansion joints shall be provided with integral insulation and sliding liner plates, fitted to overlap in the direction of flow. Drains and cleanout nipples shall be provided. Aluminum weather hoods shall be provided for outdoor exposed expansion joints.

Opacity shall be continuously monitored and recorded between the ID fan and stack outlet.

8.16 Sootblowers and Furnace Probes

A complete, automatic, sequential, steam blowing, electrically-driven and controlled, sootblowing system designed to effectively clean the generating bank, the superheater, and the economizer shall be furnished for each unit. The system shall comprise long retractable blowers, fixed-position blowers, hangers, totally-enclosed motor drives, programmable control system with safeguards and interlocks, graphic insert type control panel, and all other equipment required for a complete, operating system.

The Company shall supply sootblowers in number and arrangement to effectively clean the convection pass and heat transfer surfaces so that under normal operating conditions when firing the fuel specified in Paragraph 3.3, Fuel Analysis, rated loads and performance can be continuously met.

In high temperature zones, lances and wall blower nozzle tubes shall be retractable. Lances, wall blower nozzle-tubes, and nozzles shall be constructed of alloy steel suitable for the temperature conditions.

As an alternate to sootblowers, a complete, automatic, sequential, mechanical cleaning system may be provided. The mechanical cleaning system shall be electrically driven and controlled, and designed to effectively clean the superheater, boiler and economizer sections of the unit. The system shall comprise totally enclosed drives, circuit breakers, power and control quick disconnect plugs, local pushbutton stations, programmable control system with safeguards and interlocks, graphic insert type control panel, and all other equipment required for a complete operating system.

Retractable furnace temperature probes for monitoring the gas temperature entering the superheater during start-up shall be provided for each unit. Probes shall be furnished complete with totally-enclosed motor drives, limit switches, power and control quick disconnect plugs, position transmitters, dual-element, Type E, chromel-constantan thermocouples, temperature and position indicator for remote mounting, remote control station, and local pushbutton station.

Retractable probes for monitoring gas temperature entering the superheater shall be designed to monitor across the full furnace width. Probe control shall provide for automatic continuous running of temperature profiles, indexed high-speed traversing, and positioning of the probe in an extended fixed position. Probes shall be suitable for operation in a refuse fired boiler environment of 1500F. Probes shall be arranged for air cooling.

In addition to the retractable temperature probes, means to continuously monitor furnace flue gas temperature of 1800F for the purpose of guaranteeing minimum furnace temperature for one (1) second shall be provided. Refer to Paragraph 8.5.

Sootblowers and furnace probes shall be as manufactured by Diamond Power, Copes-Vulcan or equal.

8.17 Turbine-Generator and Condenser

One (1) nonreheat, uncontrolled extraction, condensing, steam turbine-generator unit, complete with condenser, noncondensible removal package, and accessory equipment shall be furnished.

The turbine-generator and accessories shall be designed for the following operating conditions:

(a) Turbine

		Rated Conditions (Guaranteed)
1.	Throttle steam flow, lb/hr	MCR Boiler Output
2.	Throttle steam pressure, psig	Nominal 650*
3.	Throttle steam temperature, F	Nominal 750*
4.	Condensing turbine exhaust pressure, in. Hg abs at 64F ambient wet bulb temperature	2.0
5.	Number of heaters in service	as req'd

* Higher throttle steam pressures and temperatures may be proposed if demonstrated experience requirements have been met in the RFQ.

(b) Governor and Controls

1. The governor and turbine controls shall have the capacity to hold turbine speed below the overspeed trip setting following local separation under isochronous conditions (instantaneous loss of electrical load), while initially operating with the steam valve wide open.

(c) Generator

1.	Minimum net continuous capability at generator terminals at 0.90 power factor, KVA	Match turbine output at VWO and 5% overpressure with zero auxiliary steam loads.

2.	Generator voltage, KV	13.8
3.	Energy characteristics	3 phase, 60 Hz

(d) Exciter and Voltage Regulator

1.	Type	Brushless
2.	Rating	Match generator
3.	Response ratio	Equal to or greater than 0.5

(e) Condenser

1.	Backpressure, in. HgA at 64F ambient wet bulb temperature	2.0
2.	Circulating water flow, gpm	As req'd
3.	Steam Flow, lb/hr	VWO/5% OP exhaust flow

At least the following heat balances shall be furnished with the Proposal:

Unit Capacity	Throttle Press and Temp (psig/F)	Exhaust Pressure (in. Hg abs)	Makeup (lb/hr)
a. MCR (VWO)	680/750 (5% OP)	2.0	0
b. Guaranteed Load (GL)	650/750	2.0	0
c. Temperature Control Point (CP)	650/750	2.0	0

Heat balance calculations shall be based on the 1967 ASME Steam Tables and presented in British Thermal Units.

Turbine heat rate shall be calculated in accordance with the following formula:

$$HR_G = \frac{QT}{PG}$$

where:

HR_G = Gross heat rate, Btu/kWhr
QT = Heat supplied to turbine, Btu/hr
PG = Gross generator output measured at generator terminals, kW

and:

1. Seal steam and other steam leakages shall be the maximum expected after 5 years' operation with quoted clearances.

2. Assume no blowdown or sootblowing.

3. Feedwater flow equals main steam flow, at 1.25 times turbine throttle pressure, and makeup for steam losses shall be assumed to enter hotwell.

The turbine shall be designed to withstand throttle steam temperatures in excess of the specified rated temperatures as follows:

a. +15 F, provided the 12-month average is not greater than throttle steam temperature +5F.

b. +25 F, during abnormal conditions for operating periods not more than 400 hours in a 12-month period.

c. +50 F, for swings of 15-minute duration or less, aggregating not more than 80 hours per 12-month period.

The turbine-generator and condenser unit shall be complete with all related accessories including, but not limited to, the following major items:

a. Extraction nozzles for feedwater heating steam to closed heaters (if required), and deaerating heater.

b. Capped extraction nozzle located to provide approximately 20,000 lb/hr of steam at approximately 200 psig with GL throttle flow for possible future steam sales.

c. Turbine inlet steam stop and control valves, extraction nonreturn and motor operated block valves.

d. Complete console type hydraulic and lubricating oil system(s) designed for the turbine-generator unit. Lube oil pumps shall include main and auxiliary lube oil pumps driven by AC motors and a DC motor driven emergency lube oil pump.

e. Means of isolation of stop valve during chemical cleaning and steam blowing.

f. A DC motor driven turning gear system shall be provided to assure a reliable system when unit is disconnected from the outside power grid.

g. Complete steam sealing and gland steam exhausting and cooling systems.

h. Internal moisture separators and drainage for all turbine stages where moisture quantity could result in excessive blade erosion.

i. Prefabricated thermal and safety insulation for turbine.

j. Turbine casing drain traps with piping, valves, and piping manifold. Casing drain valves shall be equipped with pneumatic or motor operators and position switches for either manual or manual and remote automatic operation.

k. A grounding device between the stationary and rotating parts of the turbine to prevent the flow of turbine shaft currents between the rotor and the bearings.

l. Complete turbine control system and instrumentation for safe, reliable operation.

m. The generator shall be a revolving field, 13.8 kV, synchronous type, hydrogen cooled, air cooled, or totally enclosed water-to-air cooled generator, provided in accordance with Paragraph 9.0, Electrical.

n. Special tools, including the turbine and generator rotor lifting equipment and all other special lifting slings, wrenches, and tools, including any metric tools, required for repair, maintenance, and overhaul.

o. Special devices and equipment to ensure protection of the turbine generator set during hydrostatic test.

p. One surface condenser for the turbine designed in accordance with HEI Standards and the turbine generator design conditions.

q. A complete noncondensible removal package.

r. Connections for any sparging lines, thermal sleeves, impingement baffles, support tabs and flanged or welded connections which may be required for the normal steam and flashing condensate flows which terminate in the condenser. Rupture disc shall be provided in condenser neck.

One (1) steam dump condenser designed in accordance with ASME and HEI Standards and as required for condensation of the Facility steam production at GL boiler output conditions shall be furnished.

Pressure design shall be determined by Company's system configuration and the dump condenser shall be constructed in accordance with ASME Code and stamped accordingly. Relief valves, nozzles, instrumentation and internals shall be furnished and installed.

Circulating water velocity in tubes shall be a maximum of 8 ft/sec and a minimum of 6 ft/sec. At the same time, sufficient steam velocities shall be maintained throughout the tube bundle to prevent air blanketing of tubes. The tube bundles shall be designed for fouling factors of 0.001 $\frac{\text{hrs Ft}^2\text{ F}}{\text{BTU}}$ tube and shell sides.

Conductivity instrumentation for detecting tube leakage shall be provided.

Level glasses with integral gauge cocks and check valves shall be provided for each half of hotwell and top of each water box compartment. Gauge glass shall be flat and transparent with illuminators.

Vacuum gauges shall be furnished and installed in conspicuous, accessible locations.

The hotwell shall have sloped bottoms and drains to provide ease of clean-out. The minimum storage volume, when operating at normal level, shall be of sufficient capacity to retain the total quantity of steam condensed at maximum load for a period of 5 minutes.

Air removal equipment shall include one completely assembled package consisting of, but not limited to:

a. Steam supply piping including automatic pressure control valve, strainer, block valves, and pressure and temperature gauges.

b. Hogging ejector elements consisting of two stages with two 100% capacity elements for each stage.

c. One atmospheric hogging element.

d. Surface type inter and after condensers, with 304 or 316 SS tubes and stainless steel tubesheets.

e. Interconnecting noncondensibles, steam and condensate piping and fittings including valves, traps and instrumentation.

f. Design, construction and testing in accordance with HEI standards.

In lieu of steam ejector system, two (2) 100% capacity vacuum pumps and accessories shall be furnished and installed.

8.18 Boiler Feed Pumps

Two (2) 50% initial Facility capacity electric driven boiler feed pumps and one (1) 100% initial Facility capacity auxiliary turbine driven boiler feed pump shall be furnished. Submit condensate feedwater system and feed pump arrangement proposed for the Facility. The boiler feed water discharge header shall be sized for the expanded Facility and shall include a capped stub-out for connection of the future unit.

A minimum additional 10% head (above guarantee point) shall be achievable by replacing impellers with maximum diameter impellers as the sole modification.

Pumps shall be designed as a minimum for the following conditions downstream of the deaerator:

a. Design flow: turbine VWO and 5% OP conditions plus 10% flow margin.

b. Design head: 5% OP plus 10% margin.

c. Pumps (if required) shall be capable of providing attemperator water for steam temperature control.

The turbine drive shall be furnished and designed for primary operation at constant load. Several hand valves to change the arc of admission and thereby enable operation with a minimum pressure drop across throttle valve shall be provided.

The turbine shall be capable of at least a 15% increase in power above that required by pump at design conditions by increasing steam flow at expansion nozzle hand valves only.

Turbine driven pump will be required to start up automatically with constant speed governor control. Therefore, governor, trip, and throttle valves shall be provided with all control devices required to enable automatic start-up without manual action of any type when in auto start mode, maintained in warm condition.

8.19 Condensate Pumps

Two (2) 100% or three (3) 50% initial Facility capacity vertical turbine canned condensate pumps and motor drives, and associated accessories shall be provided for each condensate system.

Pumps shall be designed to take suction from condenser hotwell and delivering to the deaerator as a minimum for the following conditions:

a. Design flow: turbine VWO and 5% OP plus a flow margin of 10%.

b. Design head: capable of supplying the deaerator at 5% OP plus 10% and, in addition, filling the boilers for initial operation after drainage.

8.20 Circulating Water Pumps

Three (3) 50% initial facility capacity vertical turbine circulating water pumps, motor drives, and associated accessories shall be provided. Circulating water piping shall be sized for 150% of the initial facility flow.

Pumps shall be designed as a minimum for the following conditions:

a. Design flow: cooling water requirements at turbine VWO and 5% OP plus 10% margin.

b. Design head: piping at 150% initial facility flow, cooling tower head, condenser plus 10% margin.

8.21 Miscellaneous Pumps

All miscellaneous pumps as required in the Facility design shall be furnished.

The miscellaneous pumps and accessories (if applicable) to be furnished and installed by the Company shall include, but not necessarily be limited, to the following:

a. Neutralization basin (sump) pumps sized for the expanded Facility.

b. Boiler chemical feed pumps.

c. Tower chemical treatment pump sized for the expanded Facility.

d. Fire pumps sized for the expanded Facility.

e. Plant sump pumps sized for the expanded Facility.

f. Auxiliary cooling water pumps sized for the expanded Facility.

g. Service water pumps (if required).

h. Condensate transfer pump sized for the expanded Facility.

i. Desuperheater booster pump (if required).

j. Ashwater pump sized for the expanded Facility (if required).

k. Wastewater collection sump pumps sized for the expanded Facility.

l. Forced and gravity main wastewater pumps sized for the expanded Facility.

m. Motors, couplings, coupling guards and baseplates for the above pumps as applicable.

n. Special tools required for maintenance and installation.

Pump capacities and heads for all pumps shall include, as a minimum, a 10% and 10% margin respectively based on the Company's final piping arrangement.

Pumps shall be designed, as a minimum, in accordance with the manufacturer's standard for the service intended.

8.22 Air Compressors, Air Dryer and Accessories

A minimum of two (2) full capacity air compressors with aftercoolers, two (2) air receivers, one (1) air dryer, and associated accessories shall be provided.

Compressors and compressor motors shall be provided with a control system which will load and unload the compressors during operation. Compressor operation shall alternate between the two compressors during normal operation. The control system shall be the compressor manufacturer's standard offering for this type of service.

The air compressor system shall be designed to provide plant air and instrument air for the expanded Facility.

8.23 Deaerating Feedwater Heater

One (1) deaerating feedwater heater, and associated accessories shall be furnished in accordance with HEI standards.

The deaerating feedwater heater shall be furnished complete with all appurtenances including the following:

a. Horizontal storage tank.

b. Support legs and saddles or brackets, platform support and insulation clips and angles and other attachments.

c. Steam, water, drip, drain, vent, instrument, and control connections.

d. Manholes and access doors.

e. Relief valves.

f. Vent valve with suitable orifice drilled in disc.

g. Platform and ladder for servicing the deaerator.

The residual oxygen content in the effluent feedwater leaving the storage tank shall not exceed 7 ppb as determined by the HEI Method and Procedure for the Determination of Dissolved Oxygen.

The total carbon dioxide content in the effluent feedwater shall be zero ppm as determined by the titration method of the American Public Health Association (APHA).

For design purposes, all water entering the deaerator is to be considered as saturated with oxygen and carbon dioxide at the entering temperature and pressure.

Deaerator shall be installed as one of the turbine extraction steam feedwater heaters for the turbine-generator.

The deaerator storage tank shall have a minimum of 10 min. of storage when operating under turbine VWO and 5% OP conditions.

All internal components of the deaerator shall be stainless steel.

The deaerator storage tank shall be stress relieved.

8.24 Closed Feedwater Heaters

The Company shall furnish and install low and/or high pressure closed feedwater heaters and associated accessories, as required by Company system design.

The closed feedwater heaters shall be complete and operational, and furnished with the following items:

a. Shell, head, tube sheet, and complete tube bundle with stainless steel tubes.

b. Tube and shell side pressure and thermal relief valves.

c. Nozzles and connections on head and shell sides, including those for feedwater and condensate inlet and outlet, extrac-

tion steam inlet, drips inlet and outlet, emergency shell dump, relief valves, level controls, monitoring instrumentation, vents, bottom drains, isolation valves and feedwater bypass, chemical cleaning, and nitrogen blanketing.

d. Supports and pulling lugs, including lifting lugs for loading and unloading of heaters.

e. Individual flow orifice for each vent connection.

Shell side noncondensible gases shall be vented to the deaerator or main condenser.

Fluid velocities through tubes shall not exceed ten (10) ft/sec during normal operating conditions, calculated using the specific gravity of feedwater corresponding to the average of the inlet and outlet operating temperatures.

Feedwater heaters shall conform to the requirements of the HEI Standards for Closed Feedwater Heaters, except as amended herein. Feedwater heaters shall also comply with the requirements of ASME Boiler and Pressure Vessel Code, Section VIII, Division I.

8.25 Cooling Tower

One (1) mechanical, induced draft cooling tower for main condenser and dump condenser heat rejection shall be furnished. The cooling tower shall be designed to accommodate the expanded facility heat rejection by adding an integral number of cells.

Include appropriate fouling factor criteria in design and sizing, and state effect on tower performance by additional fouling anticipated by assessment of variation in water quality conditions.

The cooling tower shall be a plume abatement type. The plume abatement system shall be designed to eliminate the formation of a plume by heating the air prior to discharge or through the use of a wet-dry tower. The Company shall provide with their proposal psychrometric charts for the following ambient air conditions.

Condition	Ambient Dry Bulb Temperature	Ambient Wet Bulb Temperature
1	93 F	64 F
2	50 F	49 F
3	40 F	39 F
4	30 F	30 F

The psychrometric charts shall be developed for MCR heat rejection and shall indicate the ambient air conditions, entering air conditions, leaving air conditions prior to and after reheat (if reheat is utilized for plume abatement), air conditions leaving wet section (if a wet-dry tower is proposed), air conditions

leaving dry section (if a wet-dry tower is proposed), and air conditions leaving tower. For any of the above conditions, the line joining the ambient air conditions and the tower leaving air conditions shall not intersect the saturation curve. The turbine exhaust pressure shall be indicated for each condition.

The Company may propose a wet-surface air cooled condenser or an air cooled condenser provided the experience requirements of the RFQ are met. For the wet surface air cooled condenser, the psychrometric charts shall be provided. The turbine-generator heat balances shall be adjusted for the condensing pressure at 93°F dry bulb and 64°F wet bulb.

8.26 Miscellaneous Heat Exchangers

All miscellaneous heat exchangers for boiler blowdown, auxiliary cooling water, and similar services shall be provided. Heat exchangers shall be designed for the service intended.

8.27 Water Treatment Equipment

Two (2) skid-mounted deep bed resin ion exchange demineralizers with regeneration package, one (1) skid-mounted boiler water chemical feed system, one wastewater treatment and collection system, and accessories shall be furnished complete. One (1) skid mounted cooling tower chemical feed system and all water treatment chemical storage tanks and pumps shall be sized for the expanded Facility and provided complete. Capped connections shall be provided at all required points for future installation of an additional steam generating unit.

Two (2) full capacity skid-mounted demineralizers shall be installed and operational and shall each be capable of producing the required quality of make-up water at a minimum rate of 15% of the total initial Facility feedwater flow.

Service water will be supplied through Company's piping connection, to Company's water treatment system. The demineralizer system shall be designed for pushbutton automatic operation. The demineralizer regenerant system shall be capable of adding chemicals to the neutralization basin to control pH.

The characteristics of the water supply are as follows:

Parameter	Concentration mg./l.
Calcium (Ca)	34.3
Magnesium (Mg)	17.4
Sodium (Na)	3.6
Carbonate (CO_3)	0
Sulfate (SO_4)	11.0
Chloride (Cl)	1.6
Silica (SiO_2)	12.0
Alumina (Al)	0

Parameter	Concentration mg./l.
Iron (Fe)	0
ABS	.01
Alkalinity, phenolphthalein (as $CaCO_3$)	0
Alkalinity, methyl orange (as $CaCO_3$)	144
Hardness (as $CaCO_3$)	122
Total Solids	141
Mineral Matter	77
Volatile Material	64
Dissolved Oxygen (O_2)	7.7
Fluorine (F)	trace
Nitrate Nitrogen (NO_3-N)	0.8
Manganese (Mn)	0
pH	7.8

The demineralized water shall meet the boiler and turbine manufacturer's requirements.

One skid-mounted chemical feed system sized for the expanded Facility shall be furnished and installed to inject chemical solutions as specified by boiler and turbine manufacturers into the boiler water system for protection of the boiler and turbine.

Chemical solution makeup and feed tanks along with positive displacement pumps shall be provided. The chemical feeders shall be designed to operate essentially unattended, except for periodic inspection, manual change of feed rates, replenishment of required bulk chemicals and solution makeup.

The boiler water chemical feed system shall be suitable for feeding diluted chemicals on a continuous basis under flow proportioned control for oxygen scavenging, pH and hardness control. Necessary analytical equipment to run regular tests which will provide the basis for changes in pumping rate or product solution concentration shall be provided.

One skid-mounted chemical feed system shall be furnished and installed to inject chemicals into the cooling tower circulating water system for protection against corrosion, scaling and biofouling.

Sulfuric acid shall be injected into the cooling tower makeup water to control pH. Sodium hypochlorite or gaseous chlorine shall be injected to control biological growth. Dispersant and inhibitor shall be injected for corrosion control. The services of water treatment chemical consultant shall be retained and the consultant's recommendations as well as cooling tower manufacturer's instructions as to water treatment shall be followed.

Circulating water total dissolved solids shall be controlled by blowdown from the system. Blowdown control shall be of the automatic modulating type, such that the blowdown valve functions

under modulating control to maintain total dissolved solids (conductivity) within a preset range. Blowdown shall not occur during the feeding of sodium hypochlorite or chlorine.

8.28 Wastewater Treatment System

Wastewater treatment system shall be sized for the expanded facility and include the neutralization sump, wastewater sump, two (2) sump pumps, wastewater treatment equipment as required, acid and caustic injection pumps and system (may be spare identical demineralizer regeneration pumps), and lined and/or nonmetallic piping and accessories. The Company shall determine the wastewater discharge requirements and provide a lift station if required.

Plant wastewater shall be reused within the plant as much as possible. For example, the cooling tower blowdown shall be used for quench tank make-up.

8.29 Tanks

A condensate storage tank, demineralized water storage tank, auxiliary cooling water head tank (if required), and any other miscellaneous tanks necessary to Company's design shall be provided. The tanks shall be sized for the expanded Facility.

8.30 Scales

Complete electronic inbound and outbound scales including four complete motor truck scales with foundations, load cells, digital weight indicators to be displayed to driver on exterior display and to scale operator shall be provided on site. Displays shall, as a minimum, include gross wt, tare wt, and net wt. Traffic signals and all conduit and wiring up to the computer monitoring and recording hardware shall be provided.

Scales and associated equipment shall be furnished by one scale manufacturer.

Load cells shall be designed to withstand damage from water and/or dust and shall be capable of accepting 200% shock loading (twice nominal load capacity of the load cell).

All scale systems shall be furnished complete with all components including ground rods, lightning protection system, ground cable instrumentation and control conduit and wire with disconnects.

The scales shall be a self-contained, fully electronic motor truck scale. The scales shall be constructed with concrete deck and shall nominally be 70 feet long by 10 feet wide with a capacity of 60 tons. If the scale has a pit, permanent electric lighting shall be provided for and drains shall be provided at bottom of pit.

Each scale shall have two sets of red and green traffic lights in each direction to control the trucks on the scales and immediately behind the scales.

Scales shall conform to and shall be calibrated to be in compliance with the latest edition of United States Bureau of Standards Book Number 44 and in compliance with state standards.

The scalehouse computer hardware will be provided by the Project.

8.31 Miscellaneous Hoists and Cranes

The Company shall furnish and install miscellaneous monorail hoists, and cranes with associated accessories.

As a minimum, turbine building and maintenance shop cranes, and boiler feed pump aisle hoists shall be furnished, sized for Company's maximum maintenance loads. Turbine building crane shall be furnished and installed with controls and accessories as required for installation and maintenance of the turbine-generator in strict accordance with manufacturer's requirements and instructions.

8.32 Piping

Labor, supervision, services, tools, equipment, materials and consumable supplies required for the design, fabrication, and erection of all piping systems shall be provided.

The main steam header, the boiler feed pump discharge header, and other points of connection including but not limited to water treatment system, auxiliary cooling water, boiler blowdown, compressed air, and nitrogen shall include capped stub-outs for future installation of an additional steam generating unit. Piping required for the Facility expansion shall be considered when the piping layout is developed.

Fabrication and erection procedures shall conform to the requirements of this specification with regard to materials, welding, heat treatment, tests and inspection, welding operator and procedure qualifications and alignment such that the installed systems comply with ANSI B31.1 and/or ASME Section 1, as applicable, and ANSI material and fabrication standards. Steam piping shall be designed and installed in accordance with the recommendations contained in ASME No. TWDPS-1 "Recommended Practices for Prevention of Water Damage to Steam Turbines" and turbine manufacturer's instructions.

The design, materials of construction and installation of pipe hangers, supports, guides, restraints and anchors shall be in accordance with ANSI B31.1 and MSS Standard SP-58.

Piping shall be designed, installed, tested, and inspected in accordance with the ASME Boiler Code and the Power Piping Code, ANSI B31.1.

Company shall furnish and install electrical temperature controlled heat tracing and insulation on all caustic piping and any water piping exposed to outdoor temperatures such as tank external piping, wet-pipe fire protection, and service water washdown and dust suppression piping.

8.33 Valves

All valves and accessories, including motor and pneumatic operators as required by Company's system design shall be provided. As a minimum isolation valves shall be provided to facilitate repair of all equipment. All valves shall be designed for the service intended.

End connections shall conform to the requirements of the applicable ANSI Standards.

8.34 Refractories, Insulation and Lagging for Piping, Ducts and Equipment

All insulating materials, refractories and lagging required for piping, vessels, ventilation ducts, and equipment shall be designed and provided.

Insulation material shall be provided for the service intended. Insulation shall be installed in accordance with manufacturer's requirements. Insulation shall be properly lagged.

Insulation and refractory system design shall as a minimum insure that exterior surface temperatures do not exceed 125F when the ambient air temperature is 80F and the air velocity is 50 fpm. The 125F exterior surface temperature does not include the thermal effects of direct sunlight.

All interconnecting ductwork between the boiler economizer outlet, air pollution control equipment, ID Fan and stack shall be included. Ducts shall be air-tight and be a minimum 3/16-in. thick carbon steel with exterior stiffeners and external structural steel supports as required. Expansion joints shall be metal bellows type or fabric cloth with bolted flanged connections with air-tight sealing gaskets. Slip-type expansion joints are unacceptable. Metal bellows shall have interior stops to prevent the buildup of particles within the hollow portion of the bellow.

All ductwork and expansion joints shall be insulated to allow for a minimum gas temperature of 400F at the connection to the stack. Insulation shall be minimum of 4-in. thick fiberglass batt insulation over the stiffeners with a weatherproof coating or lagging. Interior ductwork shall be insulated, as required, to prevent

condensation on the outside of the ducts. All expansion joints shall also be insulated to prevent condensation within the joint.

8.35 Miscellaneous Mechanical Specialties

All various miscellaneous mechanical specialty equipment including but not limited to the following shall be designed, furnished, installed and tested:

a. Steam Traps

b. Boiler Drain Flash Tank

c. Expansion Joints

d. Strainers

e. Safety and Relief Valves

f. Nitrogen Supply System (sized for expanded Facility)

g. Sample Coolers

h. Silencers

All specialties shall be designed for the service intended and installed in accordance with manufacturer's recommendations.

8.36 Fire Protection System

The fire protection systems, interior sprinkler systems and exterior fire main system shall meet the requirement and standards of the local fire authority. In addition, the fire protection system shall meet the requirements and standards of the fire insuring agency.

The fire protection system shall be furnished, installed and tested. It shall include all piping, water cannons, valves, fire extinguishers, sprinklers, hydrants, hose cabinets, hose, pumps, fittings and accessories, both underground and above ground, inside buildings, by the boiler and air pollution control equipment, processing equipment, and special items.

All equipment, devices, piping and other materials and the design, installation, inspection and testing of the systems and components shall be in accordance with National Fire Protection Association Standards (NFPA), National Board of Fire Underwriters (NBFU), Occupational Safety and Health Act (OSHA), Industrial Risk Insurers publications, Factory Mutual (FM) requirements, Insurance Services Office requirements, standards required by the fire insurance agency, and applicable state, local and federal laws and regulations.

All materials shall bear the approval of Underwriters' Laboratories, Inc. (UL).

8.37 HVAC

All air conditioning, heating and ventilation equipment, systems and accessories shall be provided, cleaned, tested and balanced. HVAC design outdoor conditions shall be 2-1/2% design dry bulb temperature and mean coincident wet bulb temperature as reported in ASHRAE Fundamentals or other equally reliable weather data source.

The control room shall be heated, cooled and ventilated by a two 100% redundant air handling units. The cooling load calculation shall include 150% of the equipment load to provide cooling capacity for the expanded Facility. Humidification shall be provided. Design indoor conditions for control room shall be:

Temperature 72F
Rel. Humidity 50%

Offices, restrooms, locker rooms, scale operations facilities, reception area, laboratory, electrical and instrumentation shop, and plan room shall be heated, cooled, and ventilated. Design indoor temperatures for administrative areas shall be as follows:

Winter 68F
Summer 78F

The motor control room and cable spreading and relay room shall be cooled and ventilated. Mechanical cooling as well as ventilation shall be furnished, installed and sized to provide 90F maximum space temperature.

The maintenance shop shall be equipped for heating and ventilation.

The boiler building, turbine building, heater bay, air pollution control equipment enclosures, and ash building shall be heated to a minimum of 50F and ventilated with a minimum of five air changes per hour.

Under normal operation, the refuse tipping and storage building shall be ventilated by drawing air from the refuse pit for boiler combustion air.

Equipment of major manufacturers with reputation for quality and energy efficiency shall be provided. Free cooling (economizer cycle), low-leak dampers, and high EER compressors shall be furnished. Systems shall be designed and equipped in accordance with ASHRAE guidelines.

8.38 Plumbing

All plumbing, laboratory services, waste and drainage systems, and service and potable water systems shall be designed, furnished, installed, tested and started up in accordance with local codes and regulations.

All facility restroom sanitary wastes within the Facility shall flow to the sanitary sewer.

Floor drains in the water treatment area of the Facility, a drain from the bulk acid and caustic tanks, sump drains from water treatment equipment, and a chemical cleaning drain shall permit flow of these fluids to the neutralization sump.

Facility roof drains shall be galvanized steel pipe to carry rain water from the roof of the plant to the storm drain system.

Facility floor drains and bell-ups for equipment drains shall provide drainage throughout the plant. The drains shall flow via grease and grit and oil traps to the waste sump.

The potable water system shall be thoroughly flushed and disinfected in accordance with Code requirements and protected by reduced pressure principle backflow preventers.

8.39 Vehicles

All vehicles necessary to operate and maintain the initial Facility shall be provided.

9.0 ELECTRICAL

9.1 General

This section covers all services, labor, and materials necessary to design, furnish, install, test, place in operation, and maintain electrical equipment and materials required to provide a complete, operating Facility.

Although such work is not specifically mentioned, design, furnish, and install all supplementary or miscellaneous items, appurtenances, devices, and services incidental to or necessary for a sound, secure, and complete electrical installation.

The technical criteria contained herein are intended to establish certain requirements supplemental to those, dictated by good engineering judgment and industry accepted design practices or, as deemed prudent by the Company, and in no way are to be construed to limit the Company's responsibility or obligation to fulfill the terms and conditions of the Agreement.

The complete electrical system must conform to WWP's requirements. The Company shall be totally responsible for designing and providing an electrical system in complete compliance with WWP requirements, and must obtain WWP approvals of the production Facility, the related interconnection, operation and protective equipment.

All equipment shall be sized for initial and future thermal and fault duties.

All circuit breakers and protective relaying shall provide selective coordination in isolating faulted or overloaded circuits or equipment and shall conform to WWP's requirements.

The plant electrical system will basically comprise both power generation and power distribution and shall be based on the design criterion that incinerator operation will have priority over power generation. Under normal operations all Facility auxiliary electrical loads including those required for administrative operations will be supplied from the Facility's internal steam turbine driven electric generator, with all excess electrical energy exported for sale. In the event the steam turbine driven electric generator is non-operational, electrical energy must be purchased and will be back fed from the Facility step-up transformer.

The Project will provide the Facility step-up substation including all WWP-required substation metering, relaying, and control equipment.

The Company shall provide for terminating the Facility's electric service conductors on the secondary transformer terminals of the associated step-up substation and shall provide all in-plant

protective relaying, controls, and instrumentation required by WWP. All work provided by the Company within the step-up substation must be performed by WWP personnel.

9.2 Electrical System Configuration

All electrical energy generated by the Facility turbine driven generator in excess of the station auxiliary and Facility administrative loads will be marketed to WWP.

The plant electrical system shall consist of an electrically interconnected power generation and distribution system such that the Facility may:

a. Purchase power from the electric utility through the main step-up transformer during:

   1. Start-up conditions
   2. Generator outage conditions
   3. Any other preselected time.

b. Market excess generated electrical energy through the main step-up transformer with provisions to allow all Facility auxiliaries to be supplied from the Facility's main distribution bus.

The power generation system shall consist of a 15 kV metal clad switchgear line up which includes:

a. Facility main circuit breakers.

b. Generator circuit breakers.

c. Station auxiliaries transformer circuit breakers.

d. Metering and protective relaying.

e. Synchronizing equipment to permit synchronizing across both the main and generator breakers.

f. Switchgear shall be sized for the addition of a future unit.

The auxiliaries distribution system shall consist of 5 kV metal clad and/or 480 V metal enclosed switchgear class lineups.

The auxiliaries distribution system shall include space for future breaker additions to carry the auxiliary load of a future unit.

The station auxiliaries transformer shall be sized to carry the total Facility load and the auxiliary load of a future unit.

9.3 Electric Generator

The electric generator shall be manufactured in accordance with all applicable ANSI, IEEE and NEMA standards and recommendations and these specifications. The turbine, generator/ exciter, and associated accessories shall be designed, built, and tested as a coordinated unit by a manufacturer regularly engaged in the manufacture of turbine generators. The generator/exciter and auxiliaries shall be of a standard design, as previously built by the manufacturer, having at least 5 years successful operating experience on the unit.

The turbine generator shall include the following minimal supplemental provisions in addition to any and all requirements established by WWP or as may be recommended by good engineering design practices:

a. Provide complete CO_2 fire protection and alarm system for each generator exciter combination.

b. Provide brushless or static exciters with 100% redundant silicon type diodes and matched to the generator so as to maintain as a minimum:

   1. 105% rated voltage

   2. Bolted fault at generator bus

   3. Sustained 130% full load generator current for one minute.

c. Provide voltage control for

   1. Single machine and parallel operation

   2. Automatic control, no load to full load

   3. Voltage range, $\pm$ 10% rated voltage

   4. Response ratio of 0.5 per ANSI Standards

The generator surge protection and neutral grounding equipment shall be provided in accordance with WWP requirements, generator manufacturers' recommendations, and all appropriate codes and industry accepted design standards.

9.4 Station Auxiliaries Transformer

Station auxiliary and load center transformers shall be non-flammable fluid insulated or dry type.

Transformer ratings

a. Station auxiliary and load center transformers shall match station auxiliaries loads.

b. Fan cooling or dual temperature rise design shall not be utilized under normal operating conditions, but may be utilized for abnormal operation or to provide sparing capability for loss of any transformer.

9.5 Medium Voltage 5 and 15 kV Metal-Clad Switchgear

Switchgear shall consist of electric motor charged, stored energy, horizontal drawout, vacuum or air type circuit breakers, housed in a metal-clad enclosure, designed and fabricated in accordance with applicable ANSI, IEEE, and NEMA Standards.

a. Fully insulated copper bus supported on porcelain inserts at all interunit supports.

b. Silver plated bolted electrical connections.

c. Surge suppressors shall be provided on all vacuum breakers to minimize switching surges.

When horsepower requirements of Facility auxiliary motors dictate higher distribution voltages than 480V, 5 kV metalclad switchgear shall be provided for motor starting of these larger motors. The requirements of the 5 kV metalclad switchgear shall be as specified above.

9.6 Low Voltage 480 Volt Metal Enclosed Switchgear

Switchgear utilized for 480 Volt, 3 phase, systems shall consist of electrically and manually operated power air circuit breakers in drawout construction, with fully insulated copper bus and silver plated bolted connections, designed and fabricated in accordance with applicable ANSI, IEEE, and NEMA Standards.

9.7 Motor Control Centers

Motor control centers utilized for 480 Volt, 3 phase, systems shall be designed, fabricated and applied in accordance with applicable NEMA standards, shall contain rodent barriers to close all openings and shall utilize fully barriered copper bus.

9.8 Electric Motors

Electric motors shall be full voltage starting, squirrel-cage, 60 Hz, NEMA design B, induction type (except for special application) designed and built in accordance with applicable ANSI, ASTM, IEEE and NEMA standards.

All process electric motors shall be provided with epoxy sealed insulation and sized such that the maximum driven load under normal operating range shall not exceed 95% of rated motor horsepower and utilizing motor service factor only for abnormal operating conditions.

9.9 Emergency and DC Power Systems

As a minimum the emergency power systems shall include:

a. Station dc battery and charger

b. Uninterruptible power supply(s)

c. Essential load bus with automatic transfer switching capabilities

9.10 Lighting

The Facility lighting shall include complete interior and exterior site lighting in accordance with IES Recommended Lighting Levels for Control Stations and paragraph 7.5 of this Appendix B.

Indoor lighting systems shall include emergency lighting and exit lighting as required.

10.0 INSTRUMENTATION AND CONTROLS

The instrumentation and control systems shall be designed to achieve safe, reliable and economical generation of power and steam. Utility power station quality equipment of proven design shall be selected and arranged so that the boiler, turbine-generator and energy management systems can be controlled from a central control room.

A solid state microprocessor digital logic based distributed control system shall be provided as a minimum for all combustion controls, boiler drum level controls, deaerator storage tank level and pressure control, generator temperature controls, and cooling water loop temperature controls. Electronic transmitters shall be used for control room data acquisition and intelligence required for alarm, indication, and control.

The Project is considering continuous monitoring of operating data to provide incentives to the Company for efficient operation of the Facility. Provisions shall be made for the future permanent installation of the necessary instruments to continuously monitor the data required in the Acceptance Test, Appendix C, Paragraph 3.5. Provisions shall include "blanked-off" openings, flanges for probes and meters, and similar appurtenances to allow installation of the instruments while the Facility is operating. The instrumentation and monitoring equipment to be installed will be determined during negotiations based on Company guarantees and risk posture.

Operator interface with data acquisition and control shall be accomplished with multiple color CRT's, keyboards, and printers arranged in a desktop console type unit. Auxiliary control panels furnished integral with major equipment items shall be integrated into the control room layout in a convenient logical manner. The system shall be designed so that no single component failure can disable the system.

11.0 TESTING

11.1 Hydrostatic Tests

After the completion of erection, all pressure parts of the steam generator shall be hydrostatically tested by the Company in accordance with the ASME Boiler Code. The test may be witnessed by the Project. Any gaskets or packing requiring replacement after hydrostatic testing shall be furnished and installed.

Shop assemblies shall be hydrostatically tested in the shop in accordance with the ASME Boiler Code. These tests may be witnessed by the Project.

All piping associated with turbine process steam and feedwater cycle shall be hydrostatically tested to 150% of design pressure. The other piping systems may be similarly tested or shall be tested for leaks at design pressure. Maximum test pressure shall be held for a minimum of 2 hours. No leakage will be acceptable.

11.2 Air Tests

The steam generating unit casings, ductwork and air pollution control equipment shall be tested for leakage. The test will consist of closing off major openings and pressurizing and depressurizing the system with the FD and ID fans and performing a sonic test. The test may be witnessed by the Project.

11.3 Acceptance Tests

The Facility shall be tested upon completion of start-up and initial operation in accordance with Appendix C of this RFP.

12.0 SPARE PARTS AND SPECIAL TOOLS

The Company shall provide spare parts and special tools in order to operate and maintain the Facility. The Company shall submit with his proposal a list showing the anticipated spare parts and special tools and the quantities of each required.

APPENDIX C

ACCEPTANCE TESTING

APPENDIX C
ACCEPTANCE TESTING

1.0 SCOPE

1.1 Acceptance Testing shall follow the startup activities at the Facility. Successful completion of the Acceptance Testing and approval of the test report will signify that the Facility is performing as designed and that long term commercial operation can proceed.

1.2 The tests shall be performed at the expense of the Company.

1.3 The Company shall submit detailed test procedures to the Project not less than three months prior to acceptance testing.

1.4 Before the Acceptance Testing can start, each boiler shall operate a minimum of four weeks at a minimum of 75% capacity to allow the heat transfer surfaces to become fouled to a normal operating level.

1.5 The Acceptance Testing shall consist of a Capacity Test, Energy Recovery Test, Environmental Test, and Putrescible Matter and Unburned Carbon Test. The Capacity Test shall be a continuous seven-day, 24-hr/day test. All other tests shall be run concurrent to the Capacity Test. A maximum sixteen hours of down time for each combustion unit will be allowed during the Capacity Test. If more time is required, the necessary repairs shall be made and the Facility shall be retested. If the Energy Recovery Test or Environmental Test fail and it is not possible to retest during the seven day period, these tests may be run again after the Capacity Test. The Facility will not be deemed acceptable to the Project until all Acceptance Testing is complete and the test report showing successful operation has been issued and approved.

1.6 The Company shall provide, in the Proposal, guaranteed environmental requirements which shall be met during Acceptance Testing. The Facility shall be designed to conform to anticipated environmental standards, regulations, and criteria specified herein.

1.7 Preliminary test runs may be performed prior to the actual tests for the purpose of checking and making adjustments to the equipment and familiarizing test personnel with the Facility and equipment.

1.8 Solid Waste will be delivered to the Facility by the Project in sufficient quantities to complete the tests. Pre-selection of refuse will not be performed; however, some portions may be rejected if the Company and Project agree that the composition deviates greatly from Acceptable Waste.

1.9 The refuse pit shall be marked as a minimum at intervals of 10 feet, pit bottom being zero, on both sides and at least three

evenly spaced places on the back wall. The marks shall be easily seen from the tipping floor and the charging level. The marks will be used to determine pit depth at the beginning, the end, and each day of the Capacity Test. The weight of refuse per unit volume in the pit will be agreed to by the Company and the Project prior to any acceptance testing. The depth of refuse in the pit and the weight of refuse per unit volume will be used to determine the throughput of the Facility. Load cells may be provided and calibrated on the cranes and used as to obtain additional throughput data. Crane scales, if used, shall be calibrated immediately before and after the test, each day of the test, and as needed during the test. The use of pit measurements, crane scales and truck scales shall be agreed to by the Company and the Project prior to any acceptance testing.

1.10 All truck scales shall be calibrated before the Capacity Test period and be certified by the State. The Project shall witness the calibration process if desired.

1.11 The Facility shall be operated at capacity and in a manner consistent with expected day-to-day long term operation with all equipment and accessories performing in their normal mode of operation. Stable firing shall be maintained before and after the Capacity Test. Cleaning during the test shall include only normal rapping and soot blowing.

1.12 Within a period not to exceed thirty (30) days following successful completion of the Capacity Test, the Company shall submit to the Project six copies of the test report. Copies of the original test data sheets and log sheets shall be available to the Project upon request.

1.13 Actual notice of test starting date shall be given a minimum of seven days prior to the start of the tests.

2.0 CAPACITY TEST

2.1 The objective of the Capacity Test is to measure the capability of the Facility to process waste.

2.2 The Facility capacity throughput shall be tested during a continuous seven-day period for the purpose of determining that the Facility meets the capacity guarantees.

2.3 At the start of the test the level of refuse in the pit shall be measured and the quantity of refuse in the pit estimated. At the conclusion of the test period, the height of refuse shall again be measured and quantity estimated. The throughput shall be calculated by adding the initial quantity of refuse in the pit to the quantity brought in during the seven days as recorded by the truck scales and subtracting the quantity which remains in the pit at the end of the test.

2.4 For successful completion of the Capacity test, the Facility shall successfully complete the Putrescible Material and Unburned Carbon Test during the same period.

2.5 The Facility shall process a minimum of 5,600 tons of solid waste in any continuous seven-day period.

3.0 ENERGY RECOVERY TEST

3.1 The objective of the Energy Recovery Test is to establish the ability of the Facility to generate electricity at a specified throughput of Solid Waste for the purpose of meeting guarantees.

3.2 The Energy Recovery Test shall be continuous 24 hour electric generation test run during the Capacity Test. The Facility shall be operated at the guaranteed refuse throughput rate. During the electric generation test, all the steam produced shall be used to generate electricity and all Facility electrical power requirements shall be supplied by the Facility generator.

3.3 The combustion trains shall be operated with normal boiler blowdown and maintained at equal conditions of operation by observation and appropriate adjustment of all operating parameters. The tests shall be conducted in accordance with the American Society of Mechanical Engineers Performance Test Code 4.1-1964, reaffirmed 1973, (Test Code) for Steam Generating Units, as modified herein, for determination of all heat losses, heat outputs and heat credits, using the heat loss efficiency method.

3.4 Electric generation is dependent upon the refuse throughput rate, the refuse composition, and the higher heating value. For Acceptance Testing purposes, it is recognized that the refuse delivered to the Facility may not be representative of the Reference Waste, and the net electric generation must, therefore, be corrected to that obtainable with the Reference Waste. It is further recognized that, by using the combustion system as a calorimeter, the specific higher heating value of the delivered refuse may be determined while the electric generation is measured, and the results can then be corrected to the specified conditions as described hereinafter.

3.5 During the 24 hour Energy Recovery Test period, pertinent test data will be recorded at appropriate intervals and in accordance with the Test Code. Data and measurements will include, but not necessarily be limited to, the following:

a. Processible waste feed rate.

b. Boiler outlet steam rates, net after soot blowing, temperatures and pressures.

c. Feedwater rates, temperatures and pressures.

d. Boiler drum pressures.

e. Air temperatures at the air preheater inlets and outlets.

f. Flue gas rates and temperatures at the economizer outlets.

g. CO_2, O_2, CO, H_2O in the flue gas at the economizer outlets.

h. Residue, siftings, and fly ash quantities and unburned carbon content.

i. Barometric pressure.

j. Ambient wet/dry bulb temperatures.

k. Residue quench water quantities and temperatures.

l. Moisture in residue.

m. Boiler blowdown rate.

n. Plant revenue meter.

o. Generator gross output meter.

p. Voltage, frequency, and power factor at the generation outlet terminals.

3.6 Test measurements will be taken from installed plant instruments which will have been previously calibrated and agreed accurate by the Project. If crane scales are used, a service representative shall be present during the entire energy recovery test. The crane scales shall be "zeroed", then calibrated by lifting a known test weight at the start and end of the test and at six hour intervals during the test. Other data shall be obtained by sampling and lab analysis. Special portable instrumentation may also be used where required and agreed upon.

3.7 Utilizing the test data and measurements from the test, calculations will be made in accordance with the Test Code for the determination of all boiler heat losses, heat outputs, and heat credits. All data and measurements for the test will be averaged for all combustion trains.

3.8 Calculations for heat credits will include sensible and latent heat in the combustion air.

3.9 Calculations for heat outputs will include heat in the output steam and boiler blowdown.

3.10 Calculations for heat losses will include:

a. Carbon loss due to unburned combustibles in the residue and fly ash.

b. Incomplete combustion of carbon monoxide.

c. Sensible and latent heat in the wet flue gas.

d. Heat loss due to radiation and convection from the boilers.

e. Sensible heat in the residue, siftings, and fly ash.

f. Heat loss in the quench cooling water vapor in the combustion gases.

3.11 Refuse higher heating value will be calculated by dividing the heat input by the measured refuse throughput. The heat input is the total of all heat output and losses minus heat credits.

3.12 After determining the refuse higher heating value, the measured gross electrical generation per ton shall be adjusted by multiplying by 4700 Btu/lb and dividing by the actual refuse higher heating value. The measured plant electrical consumption per ton shall be subtracted from the adjusted gross electrical generation to determine the net electrical generation.

3.13 The Facility shall generate, during any 24 hour period during the Energy Recovery Test, the guaranteed kilowatt-hours net per ton of Acceptable Waste processed as calculated and described above, with the energy produced being in compliance with the terms of the Agreement which relates to voltage, frequency, synchronization and similar technical matters.

4.0 ENVIRONMENTAL TEST

4.1 The Facility will be tested in accordance with all Federal, state and local regulations to confirm compliance with pertinent environmental regulations, permit conditions, and the requirements of this RFP.

4.2 Should the regulations or testing methods in effect at the time of Acceptance Testing differ from those specified herein, the Facility will also be tested in accordance with all pertinent Federal, state and local regulations, in effect at the time of testing to determine compliance.

4.3 The combustion units under test will be operated at guaranteed capacity throughput or the throughput capacity as specified by the regulatory agency in charge of the test criteria. The test shall be completed during the Capacity Test. If the Environmental Test fails and it is not possible to complete the test during the Capacity Test, it may be completed after the Capacity Test.

4.4 Testing will be performed on each combustion unit as required by an environmental agency having jurisdiction. During these tests emissions will be measured.

4.5 Emissions will be determined in accordance with the methods and testing procedures in effect at the time the actual test is performed.

5.0 PUTRESCIBLE MATTER AND UNBURNED CARBON TEST

5.1 The objectives of the Putrescible Matter and Unburned Carbon Test are to demonstrate that the average putrescible content of the entire residue stream is less than or equal to 0.2% by dry weight and the average unburned combustible content of the entire residue stream is less than or equal to 5.0% by dry weight.

5.2 The test shall be conducted over a continuous seven-day period and run concurrent to the Capacity Test. The test shall conform to a modified ASME PTC-33 test procedures. A daily gross sample shall be taken each day of the seven-day test. The samples collected throughout the day shall be thoroughly mixed and randomly reduced by appropriate means into one Putrescible Matter and Unburned Carbon sample weighing approximately fifty pounds. This sample shall be crushed in a mill, then three one-pound samples of ash extracted and placed in sealed sample bags. One control sample shall be held by the Project, one retained by the Company, and one test sample forwarded to the independent laboratory.

5.3 The laboratory shall conduct tests on the sample in accordance with ASME PTC-33 for putrescible content and unburned carbon content. These tests shall be performed daily on each of the seven days during the Capacity Test. The arithmetical average of the daily test results shall be calculated and used for determining completion of the tests.

6.0 FAILURE TO MEET TESTS

6.1 In the event that the tests show the steam generating unit or any of Company-furnished equipment fails to meet the guaranteed performance requirements as described in Part Four of this RFP, Performance Guarantees, Company shall immediately proceed with the necessary modifications. On the completion of the modifications, the steam generating unit or equipment shall be retested. The entire cost of retesting including the Project's monitoring expense shall be borne by the Company. In addition, where such failure to meet test requirement impacts upon Scheduled Acceptance Date, refer to Part Five of this RFP.

APPENDIX D

FACILITY SITE DATA

(To be supplied as an addendum to this RFP
as soon as possible)

APPENDIX E

UTILITY INFORMATION

APPENDIX E

UTILITY INFORMATION

1.0 ELECTRIC SERVICE

The information contained herein has been taken from Washington Water Power Company's Schedule 11 for general service to customers in the State of Washington. This schedule was effective April 16, 1986 and is applicable to power purchased from WWP. Information on power purchased by WWP will be provided when available.

SCHEDULE 11
GENERAL SERVICE - WASHINGTON

(Alternating 60-cycle current, available phase and voltage)

AVAILABLE:
To Customer in the State of Washington where Company has electric service available.

APPLICABLE:
To general service supplied for lighting and power purposes when all such service taken on the premises is supplied through one kilowatt-hour meter, except that water heating service separately metered prior to January 28, 1984 may continue to be billed separately.

MONTHLY RATE:
The sum of the following demand and energy charges:

Energy Charge:
$3.50 Basic Charge, plus
5.655¢ per Kwh

Demand Charge:
No charge for the first 20 kw of demand.
$3.00 per kw for each additional kw of demand.

Minimum:
$3.50 for single phase service and $9.25 for three phase service; unless a higher minimum is required under contract to cover special conditions.

DEMAND:
The average kw supplied during the 15-minute period of maximum use during the month as determined by a demand meter.

SPECIAL TERMS AND CONDITIONS:
Service under this schedule is subject to the Rules and Regulations contained in this tariff.

The above Monthly Rate is subject to the provisions of Tax Adjustment Schedule 58.

2.0 WATER RATES AND REGULATIONS

The information contained herein has been provided by the City of Spokane. These rates and regulations were adopted by the Spokane City Council on December 2, 1985.

PART II — WATER RATES AND REGULATIONS

[Note: The following sections apply specifically to Water & Hydroelectric Services.]

Section 1. CITY RESIDENCE RATES:

A. Within the City limits, the service charge for each single family residence shall be **$3.65** per month that the water is on as reflected in the records of the City of Spokane Utilities Commercial Office.

B. Within the City limits, each 100 cubic feet of water used there will be a charge of **36¢**. For two or more single family residences on one meter, the above charge shall apply for each residence.

C. No vacancy allowance will be made on any house in a group served by one meter unless all houses served by one meter are vacant and the water is shut off at the City valve by the **Department of Water and Hydroelectric Services** upon proper request in writing.

Section 2. CITY COMMERCIAL AND INDUSTRIAL RATES.

A. These rates apply to commercial and industrial customers and to all other customer premises not specifically identified on City utilities billing records as single family residences. The rates are for service inside the City limits of the City of Spokane.

B. SERVICE CHARGE:

Size of Service	Service Charge Per month
1" or less	**5.53**
1-1/2"	**10.14**
2"	**14.72**
3"	**24.14**
4"	**33.57**
6"	**47.81**
8"	**98.89**
10"	**144.80**

C. CONSUMPTION:

Amount of Water Used	Charge Rate
0' to 50,000'	at **36¢** per hundred cubic feet
50,000' to 75,000'	at **33¢** per hundred cubic feet
75,000' to 100,000'	at **29¢** per hundred cubic feet
100,000' to 150,000'	at **28¢** per hundred cubic feet
150,000' to 250,000'	at **23¢** per hundred cubic feet
250,000' to 500,000'	at **20¢** per hundred cubic feet
500,000' and over	at **19¢** per hundred cubic feet

Section 3. SMALL METER; MULTI-METER. When meters smaller than the service are used, the size of the meter shall control the service charge. Two or more **accounts** on multiple metering under one ownership in the same complex shall take the commercial rate plus service charge of each meter.

Section 4. CONSTRUCTION RATES:

A. Rates for water used during construction will be charged per month, or fractional part thereof, in accord with the following table, until the meter is set. Work site will be inspected at least every 90 days to determine meter status. The meter installation will be made at the earliest possible date.

B. CONSTRUCTION CHARGE TABLE:

Size of Service	Service Charge Per month
1" or less	**5.53**
1-1/2"	**10.14**
2"	**14.72**
3"	**24.14**
4"	**33.57**
6"	**47.81**
8"	**98.89**
10"	**144.80**

Section 5. WATER FOR PRIVATE FIRE PROTECTION:

A. For inside the City of Spokane metered and unmetered connection on the City's water mains supplying hydrants, standpipes, or automatic sprinklers for private fire protection to the premises, charges will be made in accord with the following table:

Size of Connection	Charge Per Month
3" or smaller	**6.28**
4"	**9.82**
6"	**13.16**
8"	**16.09**
10"	**19.42**

B. For outside the City of Spokane metered and unmetered connection on the City's water mains supplying hydrants, standpipes, or automatic sprinklers for private fire protection to the premises, charges will be made in accord with the following table:

Size of Connection	Charge Per Month
3" or smaller	**7.09**
4"	**11.10**
6"	**14.86**
8"	**18.19**
10"	**21.95**

Section 6. WHOLESALE RATES: Wholesale service to water purveyors including private or public entities are negotiated by the Director of **Water & Hydroelectric Services**, depending on individual cases. Contracts are approved by the City Council.

Section 7. OUTSIDE CITY RESIDENCE RATES: Outside the City, for single family residence, a service charge of **$4.92** per month, plus **46¢** per 100 cubic feet of water used. For two or more residences on one meter the above service charge shall apply for each residence.

Section 8. OUTSIDE CITY COMMERCIAL AND INDUSTRIAL RATES:

A. These rates apply to commercial and industrial customers and to all other customer premises not specifically identified as single family residences. The rates are for service outside the City limits of the City of Spokane.

B. SERVICE CHARGE (OUTSIDE CITY):

Size of Service	Service Charge Per Month
1" or less	**6.21**
1-1/2"	**11.32**
2"	**16.43**
3"	**27.36**
4"	**38.08**
6"	**53.02**
8"	**112.22**
10"	**164.31**

C. For water used, the following rate shall apply:

CONSUMPTION (OUTSIDE CITY):

Amount of Water Used	Charge Rate
0' to 50,000'	at **46¢** per hundred cubic feet
50,000' to 75,000'	at **42¢** per hundred cubic feet
75,000' to 100,000'	at **39¢** per hundred cubic feet
100,000' to 150,000'	at **35¢** per hundred cubic feet
150,000' to 250,000'	at **33¢** per hundred cubic feet
250,000' to 500,000'	at **32¢** per hundred cubic feet
500,000' and over	at **29¢** per hundred cubic feet

Section 9. MAJOR FRACTION. All charges assessed based upon stated consumption units (e.g., per hundred cubic feet) shall be billed based upon the major unit fraction (e.g., 50 cubic feet or more billed as the next 100 cubic feet).

Section **10. REMOTE READING EQUIPMENT** INSTALLATION. Charge for installation of **remote reading equipment is $28.40.** This is a one time charge and can be paid at one time or at the rate of $1.00 per month for 34 months.

Section **11.** TURNING WATER ON OR OFF; OTHER CHARGES: Charges for turning water on **$15.40.** No charge for turning water off. The Director of **Water & Hyrdoelectric Ser-**

vices assesses a reasonable charge, in his sole discretion, for items not otherwise specifically encompassed herein.

Adopted by the City Council of the City of Spokane this 2nd day of December, 1985.

MARILYN J. MONTGOMERY, City Clerk

3.0 WASTEWATER RATES AND REGULATIONS

The information contained herein has been provided by the City of Spokane. These rates and schedules were adopted by the Spokane City Council on December 2, 1985.

PART II — WASTEWATER RATES AND REGULATIONS

Note: The following sections apply specifically to Waste-Water Management services.

Section 1. DEFINITIONS.

Section 1.01.010 "Adjusted" means revised or adjusted by the Director.

Section 1.01.020 "Approved" means approved by the Director unless otherwise specified.

Section 1.01.030 "Apartment Unit" means a dwelling unit occupying a portion of the premises containing two or more dwelling units on a common account, as reflected in the records of the Utilities Commercial Division.

Section 1.01.040

A. "Basic Service Charge" means charges applied to users of the wastewater treatment system for (1) the cost to the City of Spokane attributed to accounting services, local debt services, taxes, billing and account collection for providing sewerage service, (2) for the cost of collection and treatment of stormwater inflow and the groundwater infiltration, and (3) system improvements, each to be divided by the approximate number of municipal sewer service accounts of users.

B. The basic service charges, as set forth in Appendix A, shall be reviewed and may be adjusted by the Director subject to the approval of the City Council.

Section 1.01.050 "Commercial User" means any person, not classified as an Industrial User or Domestic User, doing business solely in the Construction, Wholesale, Retail, Finance, Insurance, Real Estate, Service or Public Administration Industries and others as described by the Standard Industrial Classification Manual 1972.

Section 1.01.060 "Commercial User Charge" means the charge applied to a commercial user service account for the cost of treating the volume of wastewater from that service account of a standard strength of BOD, SS and P, plus a surcharge or credit for the treatment of wastewater of more or less than standard wastewater strength as determined by wastewater monitoring, from a specific commercial user.

Section 1.01.070 "Director" means the Director of Wastewater Management of the City of Spokane, or his authorized deputy, agent or representative.

Section 1.01.080 "Discharge" means the quantity of wastewater, sewerage or other liquid material released into the sewage system of the City of Spokane as determined by:

(1) constant metering by the City of Spokane of actual wastewater flow from a specific property; or

(2) water consumption at a specific property as determined by actual metering of water supply from all sources; or

(3) number (2) above, as adjusted for sanitary usage by employees and/or consumptive water uses determined not to contribute wastewater loading to the sewage collection and treatment system as measured by methods approved by the Director.

Section 1.01.090 "Domestic User" means any person having wastewater treatment system service furnished or available to the person's own dwelling unit.

Section 1.01.100 "Domestic User Charge" means the charge applied to a single dwelling unit for the collecting and treating of the standard wastewater strength loading from an average single dwelling unit. The domestic user charge shall be the minimum user charge for any class of user served by the City of Spokane Wastewater treatment system. The domestic user charges, as set forth in Appendix C, shall be reviewed and may be adjusted by the Director, subject to the approval of the City Council.

Section 1.01.110 "Dwelling Unit" means a structure or portion of a structure capable of habitation by a single family, including but not limited to private houses, each unit of a duplex or apartment house, or a mobile home.

Section 1.01.120 "Industrial User" means any person doing business in the Agricultural, Forestry, Fishing Mining, Manufacturing, Transportation or Utility Industries and others, as described by the Standard Industrial Classification Manual 1972, Divisions A, B, D or E.

Section 1.01.130 "Industrial User Charge" means the charge applied to an industrial user service account for the cost of treating the volume of wastewater from that service account of a standard strength of BOD, SS and P, plus a surcharge or credit for the treatment of wastewater of more or less than standard wastewater strength, as determined by wastewater monitoring from a specific industrial user.

Section 1.01.140 "Person" means any individual, family, firm, company, association, society, corporation or other entity or group.

Section 1.01.150

A. "Process Wastewater Loading" means (1) all wastewater from an industrial user that exceed the upper limits of constituent pollutants: BOD, SS, or P, established for standard wastewater strength, and (2) all standard strength wastewaters from the industrial processes of an industrial user that exceed the volume of 35 gallons per on-site employee per working day (100 cubic feet per on-site employee per month).

B. If wastewater flows from sanitary conveniences and industrial processing areas are separately discharged and monitored, only those wastewater flows from processing areas shall be considered as process wastewater loading.

C. If all wastewater flows are combined for discharge and monitoring, and BOD, SS and/or P concentration in such combined wastewater flows exceed the upper limits for the constituent pollutants established for standard strength wastewater, then the entire discharge shall be considered to be process wastewater loading.

D. If the entire wastewater discharge can be considered standard strength wastewater, then only that portion exceeding a volume of 35 gallons per on-site employee per working day (100 cublic feet per on-site employee per month) shall be considered as process wastewater loading.

Section 1.01.160 "Pretreatment of Wastes" means the treatment of wastewater at its source to modify the nature of concentration of constituent pollutants in the wastewater prior to its discharge into the municipal sewer system.

Section 1.01.170

A. "Standard Wastewater Strength" means wastewater containing constituents typical of wastewater discharged from domestic dwelling units in the City of Spokane, specifically 210 milligrams per liter (mg/1) of BOD, 170 mg/1 SS, 12.4 mg/1 P.

B. Wastewater which is determined by analysis of monitored sample, by the Director, to be within the range of one standard deviation on either side of the typical value: (BOD between 160 and 260 mg/1, SS between 125 and 215 mg/1, and P between 9.6 and 15.2 mg/1) and not containing other elements, materials or substances at concentration levels or amounts shown to be detrimental to the structure or operation of the Spokane Wastewater Treatment System or hazardous to the health of municipal employees, and which will not cause the municipality to violate its National Pollutant Discharge Elimination System (NPDES) Permit, will be considered as being of standard wastewater strength.

Section 1.01.180

A. "User Charge" means the charge required to cover the costs of collection and treatment of wastewaters discharged to the Spokane Wastewater Treatment System, including treatment of the wastewater to remove: (1) suspended solids (SS), (2) biochemical oxygen demand (BOD), and (3) Phosphorus (P), as necessary to meet the standards established under State and Federal law for municipal sewage effluent, as set forth in the City of Spokane's NPDES wastewater disposal permit, and the costs for the disposal of treated wastewater and any residuals.

B. The user charge rates, as set forth in Appendix "B", shall be reviewed and may be adjusted annually by the Director, subject to the approval of the City Council, to accurately reflect the costs for treating each unit volume of wastewater and unit quantity of the

above constituents, as necessary to comply with the requirements of the City of Spokane's NPDES wastewater discharge permit. [Cross reference Appendix B, provision 1.]

C. The user charge will consist of a charge calculated, by the Director, for the treatment and disposal of discharges of standard wastewater strength, plus a surcharge or credit to be applied to commercial user and industrial user sewer service accounts based upon the quality of constituent pollutants: BOD, SS, or P, in the wastewater strength as set forth in Appendix "B". The amount of the surcharge or credit shall be determined by an analysis, by the Director of the wastewater being discharged by specific commercial and industrial users.

Section 1.01.190 "Wastewater loading" means the volume of wastewater flow and its constituent pollutants including: 5-day biochemical oxygen demand (BOD), suspended solids (SS), and total phosphorous(P).

Section 1.01.200 "Wastewater treatment system" means and includes the system of sanitary or combined sewers, outfalls, treatment works, equipment, facilities, and land owned and utilized by the City of Spokane for sewage treatment and disposal, or any and all such facilities.

Section 2. RATES AND CHARGES. Rates and charges for the furnishing of service to those served by the system of sewerage of the City of Spokane, or having such service available, shall be as follows:

Section 2.01.010 Single dwelling units, apartment house units, mobile home units and trailer park units which are shown to pay as separate accounts in the records of the Utilities Commercial Division of the City of Spokane, shall be charged the basic service charges plus one domestic user charge (See Appendix C.)

Section 2.01.020

A. All apartment house, multiple unit dwelling, mobile home and trailer park service accounts shall be charged the basic charges for the first unit, plus the basic service charges minus credit for customer service costs for each additional unit, plus a domestic user charge for each unit of the multiple unit dwelling complex, **provided** all units in the complex are paid as one account to the Utilities Commercial Division **or reflected upon one water meter, all as required by the Director** (See Appendix C).

B. No vacancy allowance will be made on any house in a group served by one meter unless all houses served by one meter are vacant and the water is shut off at the City valve by the Department of Water & Hydroelectric Services.

Section 2.01.030

A. Commercial users shall be charged, for each account, the basic service charges, plus the user charge or the rate for the single dwelling unit, whichever is greater.

B. The commercial user charge shall be determined for each account according to:

(1) actual metering by the City of Spokane of wastewater flow from a specific property; or

(2) water consumption at a specific property as determined by actual metering by the City of Spokane of water supplied from all sources; or

(3) number (2) above as adjusted for sanitary usage by employees and/or consumptive water uses determined by the Director not to contribute wastewater loading to the sewage collection and treatment system as measured by methods approved by the Director.

and either:

(1) the user charge rate for standard wastewater strength, or

(2) the rate for standard wastewater strength plus a surcharge or credit (see Appendix "B").

C. The commercial user surcharge or credit shall be calculated from the strength of the wastewater discharged by a specific user, as determined by a monitoring program conducted by the Director, of the individual discharge of the commercial user or for the discharge of a typical representative of a class of commercial users.

D. A commercial, or class of commercial, user's wastewater strength shall be determined by the City during a monitoring period each year, conducted by the Director. Time interval composite samples taken at the wastewater monitoring access (see Section 3.01.020) shall be used to determine wastewater strength unless flow proportional sampling equipment is available (see Section 3), in which case the samples shall be flow proportioned.

E. The commercial user surcharge rate shall be estabished annually, where applicable, for the commercial entity based on data for the previous sampling period and may be adjusted at the end of each year for future billing periods, by the Director, subject to the approval of the City Council.

Section 2.01.040 Domestic units in combination with commercial user facilities, where the account is metered and paid as one account to the Utilities Commercial Division shall be as follows: One basic service charge plus the commercial user charge, plus the basic service charge, less credit for customer service costs, for each domestic dwelling unit for the complex per month.

Section 2.01.050

A. Industrial Users shall be charged, for each account, the basic service charges plus their established user charge.

B. The Industrial user charge shall be determined for each account according to:

(1) constant metering by the City of Spokane of actual wastewater flow from a specific property; or

(2) water consumption at a specific property as determined by actual metering by the City of Spokane of water supplied from all sources; or

(3) number (2) above adjusted for sanitary usage by employees and/or consumptive water uses determined by the Director not to contribute wastewater loading to the sewage collection and treatment system as measured by methods approved by the Director,

and either:

(1) the user charge rate for standard wastewater strength, or

(2) the rate for standard wastewater strength plus a surcharge or credit (see Appendix "B").

C. The industrial user surcharge or credit shall be calculated from the strength of the wastewater discharged by a specific user, as determined by a monitoring program conducted by the Director, of the individual discharge of the industrial user or for the discharge of a typical representative of a class of industrial users.

D. An industrial user's or class of industrial user's wastewater strength shall be determined by the City during a monitoring period each year, conducted by the Director. Time interval composite samples taken at the wastewater monitoring access (See Section 3.01.020) shall be used to determine wastewater strength unless flow proportional sampling equipment is available (See Section 3), in which case the samples shall be flow proportioned.

Section 2.01.060 Industrial users falling within the classification of Section 3.01.040 will be monitored once each six months by the City as a minimum to establish wastewater strength for utilization in computing the user charge surcharge. Other industrial user monitoring will be on an annual basis. The industrial user surcharge rate shall be established annually for the industry based on data from the previous sampling period and may be adjusted at the end of each year for future billing periods.

Section 2.01.070 Other sewer districts or municipalities depositing wastewater into the Spokane municipal sewer system under contract with the City of Spokane shall be charged the current industrial rate of wastewater loading based upon measurement of flow and waste constituents plus a service fee to recover accounting, debt service and billing expenses as determined by the Director. All industries discharging to the tributary district shall be subject to user charges for extra strength wastewater as if they were connected directly to the City of Spokane wastewater collection system.

Section 2.01.080

A. Septage haulers shall be charged a fixed rate per 1000 gallons of truck tank capacity for each load dumped into the Spokane municipal sewage collection system, to reflect the cost of treatment of a full truck volume of septage of average strength as established by the Director, plus a service for handling.

B. Each septage hauler must log each load dumped with designated wastewater treatment plan operating personnel, and must comply with City rules for septage dumping procedures, times and cleanup, and must carry in the vehicle a copy of a certificate establishing the total truck tank volume. This certificate shall consist of (1) an approved calculation of total trunk tank volume, or (2) an approved report of an actual displacement test to determine volume. The certificate shall accurately indicate the total capacity of the vehicle for hauling septage. The charge to septage haulers (Appendix E) shall be reviewd and may be adjusted annually for future billing periods.

Section 3. EQUIPMENT REQUIRED FOR RATE ADJUSTMENTS.

Section 3.01.010 Commercial and industrial users which derive their water supply solely from the water system of the City of Spokane shall be charged by volume of flow based upon either City water meter readings, approved wastewater flow monitoring equipment, or by such other method as shall be approved by the Director.

Section 3.01.020 Commercial and industrial users which derive all or part of their water supply from wells or sources other than the City of Spokane shall be charged by volume of wastewater flow based upon either readings from City approved water meters, approved wastewater flow monitoring equipment, or other methods approved by the Director.

Section 3.01.030 Commercial and industrial users which derive all or part of the wastewater from product concentration, moisture condensation, foundation drains, yard drains, or other non-metered sources, shall install approved wastewater flow monitoring equipment upon notice given by the Director.

Section 3.01.040

A. Industrial users which contribute more than 150,000 gallons (20,000 cubic feet) per day of wastewater flow, 360 lbs. of BOD per day, 210 lbs. of SS per day, and/or 16 lbs. of P per day, as an average for any seven days in each year, shall install approved wastewater flow metering, recording and totalizing equipment and refrigerated, proportional to flow, sampling equipment.

B. If such industrial users do not supply approved monitoring facilities, they shall provide to the City every three months a report on wastewater loads for periods of normal operations based upon a minimum of seven days of flow proportioned sampling. The report shall be prepared by an approved independent licensed engineer or approved independent laboratory.

Section 3.01.050

A. Designs and plans of wastewater flow measurement and sampling installations must be submitted to the Director for approval prior to installation. Flow or level sensor equipment must be insensitive to or protected from solids accumulation, temperature variations or surface foaming and must be capable of being readily calibrated. Wastewater sampling equipment must obtain flow proportioned samples without distorting the concentration of any waste constituent.

B. Flow instrumentation must include a means for determining daily peak flow rate and a digital flow totalizer reporting in thousands of gallons and the totalizer must not turn over more than once a year during the first year of installation. Representatives of the City of Spokane shall be permitted access to the monitoring station at all times. The industry using the monitoring facilities shall maintain its accuracy and good working order. If the equipment becomes inoperable, the user shall provide a wastewater report as described in Section 3.01.040.

Section 3.01.060

A. Sewerage user charges established on the basis of wastewater volumes calculated upon City water meter readings shall be adjusted on request to reflect water volumes consumed on the property of the customer for irrigation, evaporation equipmen steam equipment, product additions or other similar consumptive water uses, that do not contribute wastewater loading to the municipal sewage collection and treatment system, as follows:

B. Meters of a design approved in coordination with th Director and Department of Water & Hydroelectric Services may be installed by the user for the purpose of adjusting the volume of water consumption to establish actual wastewater loading to the municipal sewage collection and treatment system t determine the proper sewage user charge. Each account may b assessed an additional forty percent (40%) of basic service charges per meter. Meter installations used to determine actual wastewater loadings of the municipal sewage treatment and collectio system must be approved by the Director.

C. The water meter must be a positive displacement meter with a digital dial totalizer reading in hundreds of cubic feet. The totalizer must not turn over more than once per year during th first year of installation. The equipment of plumbing following water meter used for wastewater flow reduction must not contain overflows or valves that can discharge to the sanitary sewer system. The City shall be permitted access to the premises for mete reading and confirming that the water use is as stated by the user

D. Upon written request, and subject to the approval of the Director, the volume of wastewater loading of the municipal sewage collection and treatment system for any specific user may b determined on the basis of the average of the amounts of wate consumed per month by the user during a five month period commencing on the date of a water meter reading in the month of November and concluding on the date of a water meter reading in the following month of April, which average shall be computed annually after the water meter reading in April of each succeeding year.

Section 3.01.070 Each industrial user shall provide an approved wastewater monitoring access to its wastewater stream(s) ahead of the point of entering the public sewer system and downstream of all plants drainage inflows.

Section 3.01.080 Commercial users expected or determined to discharge wastewaters with BOD, SS and/or P concentrations greater than the range established for standard wastewater strength, or wastewater containing any of the materials listed in Section 5.01.020, shall also provide an approved wastewater monitoring access to its wastewater stream(s) ahead of the point of entering the public sewer system and downstream of all plant drainage inflow. The city shall be permitted access to the wastewater monitoring point(s).

Section 3.01.090 The Director shall be empowered to require installation and maintenance at the user's expense of wastewater flow monitoring equipment and proportional flow sampling equipment where wastewater loading cannot be reasonably determined. The City of Spokane shall be given complete access to all such equipment.

Section 3.01.110 Users notified to install flow monitoring and sampling equipment shall have 180 days to install the equipment or have the City of Spokane contract for installation of the equipment and bill to user for the installation.

Section 3.01.120 Any commercial and industrial user initiating a discharge or increasing the rate of discharge of wastewater or pollutants, who is within the definition of Section 3.01.040 of this section, shall receive approval prior to initiation of or increase of such discharge.

Section 4. NEW ACCOUNTS. Rates and Charges for commercial and industrial users commencing to receive service from the wastewater treatment system shall be charged for volume of flow as a standard wastewater load plus surcharges based upon a report of expected wastewater characteristics which shall be submitted by the prospective user and approved by the Director prior to discharge of wastewater.

Section 5. PRETREATMENT

Section 5.01.010 The Director is hereby empowered to require pretreatment of wastewater discharged from any or all commercial and/or industrial users of the wastewater treatment system. Justification for requiring pretreatment by industrial users of any

waste constituent shall include but not be limited to: (1) the limitation of waste loads to sewage treatment plant design criteria, (2) preservation of reserve treatment capacity for priority uses, (3) interference with treatment system operation, (4) damage to the structure of the treatment system, endangerment of health or welfare for City personnel and/or public, or (5) causing a violation of any wastewater discharge permit issued by the Washington State Department of Ecology or the City of Spokane.

Section 5.01.020

A. Any commercial or industrial users who use the following materials as a result of business operations, and cause or allow discharge of these constituents into the wastewater treatment system, must register with the director. The user must act to eliminate, by pretreatment or alternate means of disposal, those constituents in excess of concentrations or mass emissions that are incompatible with wastewater treatment system operations or effluent or residuals usage, as determined by the Director.

Antimony	Fungicides	Radioactive isotopes
Arsenic	Iron	Rhemium
Barium	Lead	Selenium
Beryllium	Manganese	Silver
Bismuth	Mercury	Strontium
Boron	Molybdenum	Sulfur Compounds
Cadmium	Nickel	Tellurium
Chlorinated Solvents	PCB	Tin
Chromium	Pesticides	Uranyl Ion
Cobalt	Petrochemicals	Zinc

B. All other elements determined to be detrimental to the municipal sewerage system by the Director as approved by the City Council.

Section 5.01.030 Users discharging wastes that cause damage to the wastewater treatment system or its operation, obstruction of flows or violations of the City of Spokane's NPDES permits shall be liable for all losses, liabilities, costs and expenses incurred by the City of Spokane for cleanup, correction, litigation or legal settlements, including attorneys fees and costs.

Section 6. WASTEWATER ANALYSES AND REPORTS.

Section 6.01.010 All measurements, tests and analyses of the characteristics of wastewaters to determine wastewater loading and/or whether or not the established limits for standard wastewater are exceeded shall be made as prescribed in the latest edition of "Standard Methods for the Examination of Water and Sewage," a publication of the American Public Health Association, Inc.

Section 6.01.020 All measurements, tests, analyses and reports accepted by the City of Spokane shall be performed by laboratories or persons approved by the Director.

Section 6.01.030

A. The City of Spokane shall monitor the wastewater from industrial users discharging process wastewaters and commercial users expected or determined to discharge wastewaters with greater constituent strength than the range for standard strength wastewaters or constituents listed in Section 5.01.020 to determine the flow and wastewater strength and suitability for treatment at a frequency determined adequate by the Director.

B. The results of this monitoring shall be used to assess representative wastewater charges or to assure that no wastewater loading changes have occurred since the last billing rate adjustment. the schedule frequency for monitoring each user or group of users shall be available for examination by the public.

C. Industrial and/or commercial users who feel that more frequent monitoring would be desirable may monitor more frequently and submit reports for the Director's use in assessing charges. The monitoring and reports shall comply with this ordinance and shall be at the user's expense.

Section 6.01.040 Results of monitoring shall be public information, and records thereof shall be open to public examination upon request to the Director unless the individual user requests otherwise and presents an affidavit that release of such information would allow others to determine therefrom information regarding proprietary processes or operations.

Section 7. ADJUSTMENTS OF CHARGES. The Director will review user charges and revise them periodically to reflect actual treatment works operation and maintenance costs. Charges for each billing period will be determined based on wastewater flow and on approved wastewater strength monitoring.

Section 8. ORDERS.

A. The Director shall be authorized to issue an order prohibiting further discharge into the municipal sewerage system to any user who refuses to comply with the provisions of these regulations or where deemed necessary to protect the public health and safety. Users may appeal to the Director for an adjustment in user charge, such an appeal must be made within thirty (30) days of the billing under dispute.

B. In the event that City-determined wastewater strengths and/or flows are challenged, an appeal must be accompanied by or be followed within thirty (30) days by a report based upon samples and tests performed by an approved laboratory and/or engineer setting forth the flows and/or waste strengths in dispute. Decisions of the Director on appeals may be further appealed to the Manager of Engineering Services, whose decision is final.

Section 9. PERSONS SUBJECT TO SEWER USER CHARGES. Every person to whom service is furnished by the sewage collection and treatment system of the City of Spokane, and every person to whom such service is available by said system of sewerage, as determined by the Director or applicable laws or regulations, shall be charged for such service on the basis set forth herein.

Adopted by the City Council of the City of Spokane this 2nd day of December, 1985.

MARILYN J. MONTGOMERY, City Clerk

December 11, 1985.

APPENDIX A

BASIC SERVICE CHARGE

1. Basic service charges means charges applied to users of the wastewater treatment system for: (1) the accounting services, local debt services, billing and account collection for sewerage service, (2) the cost for the collection and treatment of storm water inflow and infiltration of groundwater, and (3) system improvements, each to be divided by the approximate number of municipal sewer service accounts or users.

2. Cost of Storm Water and Infiltration/Inflow Treatment (Upgraded Treatment Plant):

a. Estimated Operation and Maintenance Cost (See Appendix B)	$3,860,412.69/yr
b. Estimated Cost attributed to BOD, SS and P (See Appendix B)	$918,182.50/yr
c. Cost Attributed to Wastewater Flow	$2,942,230.19/yr
d. Estimated Domestic, Commercial & Industrial Wastewater Flow(1)	8,210.00 Mil.Gal./yr
e. Estimated Infiltration/ Inflow Wastewater Flow(2)	3,316.70 Mil.Gal./yr
f. Estimated Storm Water Flow to Treatment Plant(3)	940.90 Mil.Gal./yr
Total	12,431.60 Mil.Gal./yr
3. Infiltration/Inflow and Stormwater Treatment Cost	$999,126.07/yr

4.0 SEWER RATES RESOLUTION

The following Sewer Rates Resolution, adopted by the Spokane City Council on June 9, 1986, is provided for information.

SEWER RATES RESOLUTION

WHEREAS, Ordinance C-26294, passed the City Council October 12, 1981, the Utilities Code, and SMC 13.03.2002 authorizes the setting of rates for sewer and related utilities services furnished by the City of Spokane and;

WHEREAS, the United States Environmental Protection Agency (EPA) has established general requirements affecting the cost of service to customers, including general EPA wastewater pretreatment requirements reflected in title 40, Code of Federal Regulations, part 403 (40 CFR 403) and related laws and;

WHEREAS, significant additional city surveillance and wastewater monitoring responsibilities have been created as a result of new EPA requirements, including those reflected in the EPA compliance order of Sept. 13, 1985 which necessitate rate increases for certain classes of services and customers, as set forth hereinafter in this resolution and attachments thereto,

NOW THEREFORE, BE IT RESOLVED by the City of Spokane:

Section 00. RATES: REGULATIONS.

The rates and regulations, as adopted and approved July 1, 1985, RES 85-34, shall continue in full force and effect EXCEPT that Appendices A through F (note: Appendix "D" is deleted), attached hereto and incorporated herein, shall replace the prior appendices and the references to said appendices in retained portions of the Sewer Rates Resolution shall be deemed amended to conform to designate replacement Appendices for those superseded by this resolution.

Effective date.

This resolution takes effect July 1, 1986 for billings as issued on or after that date, or as otherwise ordered by the Director of Wastewater Management. Any portion of this resolution declared ineffective or unenforceable shall not effect the remainder if the same can be reasonably implemented.

Adopted by the City Council of the City of Spokane, this 9th day of June, 1986.

MARILYN J. MONTGOMERY, City Clerk

JULY 1986 WASTEWATER RATES

APPENDIX A
BASIC SERVICE CHARGE

1. Cost of Storm Water and Infiltration/ Inflow Treatment:		
a) Operation and Maintenance Cost	$ 3723723	
b) Costs attributed to BOD, TSS & P	$ 805547	
c) Cost attributed to Wastewater Flow	$ 2918176	
d) Domestic, Commercial & Industrial Wastewater Flow		8210 Mgal/yr
e) Infiltration/Inflow Wastewater Flow		3317 Mgal/yr
f) Storm Water flow to Treatment Plant		905 Mgal/yr
Total:		12432 Mgal/yr
2. Infiltration/Inflow and Stormwater Treatment Cost		
Cost of Stormwater and Infiltration/Inflow Collection:		
a) Collection System Operating and Maintenance Cost	$ 1506375	
b) Domestic, Commercial and Industrial Wastewater Flow		8210 Mgal/yr
c) Infiltration/Inflow Wastewater Flow		3317 Mgal/yr
d) Total Stormwater Flow to the Sewer System		905 Mgal/yr
Total:		12432 Mgal/yr
3. Infiltration/Inflow and Storm Collection Cost	$ 511576	
Total Annual Infiltration/Inflow and Storm Water Cost	$ 1502611	
Cost for Customer Services	$ 1410584	
BASIC SERVICE COST:	$ 2913195	
Cost per User Account (56000)	$ 52.02	
System Improvement	$ 18.13	
TOTAL BASIC SERVICE CHARGE:	$ 70.15	
Cost reduction for additional apartments	$ 6	
Cost per Apartment	$ 64.15	

APPENDIX B

I. USER CHARGE		
User Charge for Treatment of Standard Strength Wastewater:		
a) Flow Treatment Costs	$	234.73 Mgal
b) Flow Collection Costs	$	121.17 Mgal
c) Total Flow Costs	$	355.90 Mgal
d) BOD 210 mg/1 x $0.010/lb.	$	17.87 Mgal
e) SS 170 mg/1 x $0.024/lb.	$	33.47 Mgal
f) P 12.4 mg/1 x $0.284/lb.	$	29.37 Mgal
Total User Charge (Standard Strength Wastewater)	$	436.61 Mgal
or	$	0.33 100 Cu Ft
II. TREATMENT PLANT OPERATING COSTS		
1. Wages and Personnel Services	$ 2235220	
2. Chemicals:		
a) Phosphorus Removal	$ 188452	
b) Sludge Dewatering (polymers)	$ 243996	
c) Chlorine	$ 16051	
3. Power:	$ 485487	
a) BOD Removal	$ 223810	
b) Suspended Solids	$ 172057	
c) Other	$ 89621	
4. Supplies, Lab, Grease, etc.	$ 51232	
5. Equipment Maintenance & Parts	$ 94331	
6. Insurance	$ 20076	
7. General and Miscellaneous	$ 161813	
8. Capital Charges	$ 192081	
9. Sludge Disposal	34984	
10. Total	$ 3723723	
11. Cost Attributed to Wastewater Flow	$ 2918176	
12. Cost/Mil. Gal. at 12432 Mgal/yr	$ 234.73	
13. Costs Attributed to BOD:	$ 201042	
14. Cost/lb. at 19.7 Mlb/yr	$ 0.010	
15. Costs Attributed to TSS:	$ 416053	
16. Cost/lb at 17.8 Mlb/yr	$ 0.024	
17. Costs Attributed to P:	$ 188452	
18. Cost/lb at 664000 lb/yr	$ 0.284	
III. UNIT COLLECTION SYSTEM COSTS		
Collection System O&M Costs	$ 1506375	
Annual Wastewater Flows		12432 Mgal/yr
Unit Costs	$ 121.17	

APPENDIX C

1. DOMESTIC USER CHARGE		
a) 73000 g/yr x $441.38/Mgal/yr	$	31.87 yr
b) Basic Cost per Account	$	70.15 yr
c) Total Domestic Charge	$	102.02 yr
	$	8.50 Mo.
Cost for addtnl. Apts:		
Basic Cost/Unit	$	64.15 yr
User Charge	$	31.87 yr
Total	$	96.02 yr
2. COMMERCIAL USER CHARGE		
Flow Treatment Costs	$	239.05
Flow Collection Costs	$	123.40
Total Flow Costs	$	362.46
BOD 8.94 Mlbs/yr at 0.013 /lb	$	29.25
TSS 7.39 Mlbs/yr at 0.028 /lb	$	49.74
P 0.52 Mlbs/yr at 0.355 /lb	$	44.94
TOTAL	$	486.39
		0.3638/100 Cu Ft
3. PRETREATMENT PROGRAM OPERATING		
COSTS LABOR:	$	82425
Administration	$	31500
Industrial Monitoring	$	36750
Laboratory Analysis	$	14175
DIRECT COSTS:	$	15050
OVERHEAD:	$	20000
TOTAL:	$	117475

Wastewater Volume	$ 27019
Charge Rate/unit	$ 6.55
BOD	$ 29369
Charge Rate/unit	$ 0.0033
TSS	$ 30544
Charge Rate/unit	$ 0.0041
PO4-P	$ 30544
Charge Rate/unit	$ 0.0705

APPENDIX D — DELETED

APPENDIX E
SEPTAGE CHARGE RATE

User Charge:	
1000 gallons x user charge/Mgal	$ 0.49/1000 gals.
BOD 167 lb. at 0.013490 /lb	$ 2.25/1000 gals.
TSS 334 lb. at 0.027737 /lb	$ 9.26/1000 gals.
PO4 10 lb. at 0.354536 /lb	$ 3.55/1000 gals.
	$ 15.55/1000 gals.
Administrative & Service Charges:	$ 8.45/1000 gals.
TOTAL SEPTAGE CHARGE RATE:	$ 24.00/1000 gals.

APPENDIX F
RATES:
1. CESSPOOL PUMP AND MISCELLANEOUS CHARGES

GALLONS	BASIC CHARGE
500	$ 58.68
600	$ 66.45
700	$ 74.3
800	$ 82.09
900	$ 89.94
1000	$ 97.74
1100	$101.65
1200	$105.57
1300	$109.48
1400	$113.38
1500	$117.29

2. ADDITIONAL LABOR CHARGES

a) 2 men at	1 hour pumping	$33.42
b) 2 men at	1 hour no pumping	$49.92

3. SPECIALIZED LABOR CHARGES

a) Repair Crew	1 hr. 3 man crew	$ 66.3
b) Rodder Crew	1 hr. 2 man crew	$55.76
c) Vac-all CB Crew	1 hr. 2 men	$62.63
d) T.V. Crew	1 hr. 3 men	$75.22
e) Cesspool Crew	1 hr. + pumping char	$33.42
f) Cesspool Crew	1 hr. no pumping char	$49.92
g) Hydro Cleaner	1 hr. 2 men	$60.92
h) Backhoe	1 hr. + labor	$20.63
i) 4 inch pump	1 hr. + labor	$12.38
j) 6 inch pump	1 hr. + labor	$16.49

Above rates in effect during normal business hours. Service at other times subject to overtime rates at 1.5 x normal labor charges.

4. EQUIPMENT HOURLY CHARGES:

a) Repair Truck	hrs used	1	$16.49
b) Dump Truck	hrs used	1	$16.49
c) Pickup	hrs used	1	$13.75
d) Tank Truck	hrs used	1	$16.49
e) Compressor	hrs used	1	$11.69
f) 1-1/2 Inch pump	hrs used	1	$ 6.88
g) 4 Inch Pump	hrs used	1	$12.38
h) 6 Inch Pump	hrs used	1	$16.49
i) Backhoe	hrs used	1	$20.63
j) T.V.	hrs used	1	$24.06
k) Vac-All CB Cleaners	hrs used	1	$ 27.5
l) Cesspool Truck	hrs used	1	$16.49
m) Sewer Rodder	hrs used	1	$20.63
n) Hydro Cleaner	hrs used	1	$ 27.5
o) Bucket Machines	hrs used	1	$13.75

1. MISCELLANEOUS CHARGES FOR LABORATORY ANALYSIS:
a) CHEMISTRY TESTS

Alkalinity		Oil & Grease	$20.25
Bicarbonate	$ 7.20		
Carbonate	$ 7.20	pH	$ 3.50
Total	$14.00		
Biochemical Oxygen Demand	$16.00	Phosphorus Inorganic	$11.7(
Chloride	$ 5.00	Orthophosphate	$ 8.55
Chemical Oxygen Demand	$15.00	Total	$11.70
Dissolved Oxygen	$12.15	Residue Sett. Solids	$ 6.0(
Flouride	$ 7.20	Suspended Solids	$ 7.2(
		Total Solids	$ 8.00
		Total dissolved Solids	$ 8.0(
		Volatile Solids	$10.0
Hardness	$ 7.00	Vol. Suspended Solids	$10.00
Nitrogen		Specific	
Ammonia	$13.50	Conductance	$ 4.0
Kjeldahl	$13.95		
TKN	$27.00	Sulfates	$10.35
Nitrate	$12.15		
Nitrite	$ 8.00	Turbidity	$ 6.0

ELEMENTAL ANALYSIS PERFORMED BY ATOMIC ABSORPTION SPECTROPHOTOMETRY

FLAME TECHNIQUE:

Aluminum	$8.00	Magnesium	$8.00
Calcium	$8.00	Manganese	$8.00
Cadmium	$8.00	Mercury	$8.00
Chromium	$8.00	Nickel	$8.00
Copper	$8.00	Potassium	$8.00
Iron	$8.00	Sodium	$8.00
Lead	$8.00	Zinc	$8.00

FLAMELESS TECHNIQUE:
Same Elements as above $9.00 ea.

5.0 WASTEWATER DISCHARGE REQUIREMENTS

The following criteria are provided for information.

B. Inspection of private pump station(s) construction shall be by the director of public works and/or wastewater maintenance supervisor. Pump stations connected to on-site sewage disposal systems are subject to the jurisdiction of the jurisdictional health agency.

13.03.090 **Prohibitions and limitations.**

13.03.0902 **Unlawful to dispose of sewage.**

Except as authorized by this chapter, it is unlawful for any person to dispose of sewage, water carried wastes and polluted waters.

13.03.0904 **Prohibited uses of sanitary sewer.**

It is unlawful for any person to discharge or cause to be discharged any stormwater, groundwater, roof runoff, subsurface drainage, cooling water or unpolluted industrial process water to any sanitary sewer.

13.03.0906 **Use of storm sewers.**

Stormwater, industrial cooling water, or unpolluted process waters may be discharged upon approval of the ((~~city engineer~~)) director of wastewater management and the Washington State Department of Ecology to a storm sewer, combined sewer or natural outlet. Stormwater shall not be discharged so as to cross over a public walk or way.

13.03.0908 **Prohibited uses-Public sewers.**

Except as otherwise provided, no person shall discharge or cause to be discharged into any public sewer, directly or indirectly:

A. Any liquid or vapor having a temperature higher than one hundred forty degrees Fahrenheit;

B. Any water or waste which may contain more than forty milligrams per liter by weight of animal or vegetable fat, oil or grease;

C. Any gasoline, benzene, naphtha, fuel oil, or other flammable liquid, solid or gas, or other petroleum products and derivatives;

D. Any garbage that has not been properly shredded;

E. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, hair, bristles, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operations of the sewage works.

Cross-reference: Sections 13.03.0402, 13.03.0412.

13.03.0910 Prohibited waters-Additional.

In addition, except as otherwise provided, no person shall discharge or cause or allow to be discharged into any public sewer:

A. Any waters or wastes having a pH lower than five and one-half or higher than nine or having any other corrosive property capable of causing damage or hazard to sewer structures, equipment, personnel of the sewage works, or which might be adversely active upon sewage treatment processes;

B. Any toxic or poisonous substance in sufficient quantity to injure or interfere with sewage treatment processes, constitute a hazard to humans or animals, or create any hazard in the receiving of the sewage treatment plant or the effluent discharged therefrom;

C. Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant;

D. Any noxious or malodorous gas or substance capable of creating a public nuisance or hazard;

E. Other nonstandard sewage.

13.03.0912 **Injury, breaking manhole, etc., prohibited.**

It is unlawful for any person to injure, break or remove any portion of any manhole, lamphole, flush tank or any part of a public sewer.

13.03.0914 **Obstructing deposits prohibited.**

It is unlawful for any person to deposit any garbage, rubbish, dead animal, or any substance having a tendency to obstruct the flow of the sewer, in any sewer, access portal, manhole, lamphole, flush tank or sewer opening.

13.03.0916 **Breaking structures, appurtenance prohibited.**

It is unlawful for any person to break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is part of the system of sewerage.

13.03.0918 **Opening or connection to public sewers.**

It is unlawful for any unauthorized person or entity to uncover, make any connection with, or open into, use, alter, damage or disturb any public sewer or appurtenance thereof without first obtaining written permission from the department of public works, obtaining permits as required by ordinance and paying fees therefor.

Cross-reference: Sections 4.03.120.C, 13.03.0604.

APPENDIX F

SUMMARY OF REGULATORY REVIEW REQUIRED

APPENDIX F

SPOKANE REGIONAL WASTE TO ENERGY PROJECT

SUMMARY OF REGULATORY REVIEW REQUIRED

Permit/Approval	Agency	Applicant
Air Quality		
PSD Permit	Washington Department of Ecology	Project
Authority to Construct, and Regulation I and II	SCAPCA (Spokane County Air Pollution Control Authority)	Project
Water Quality		
Wastewater System Discharge Permit	Washington Department of Ecology	Project
Water Appropriation	Washington Department of Ecology	Project
Domestic Water System Approval	WDSHS (Washington Department of Social and Health Services)	Project
Solid Waste		
Solid Waste Processing Treatment Permit	Spokane County Health District	Project
State Waste Discharge Permit	Washington Department of Ecology	Project
On-Site Sewage Disposal Permit	Spokane County Health District	Project
Miscellaneous		
Federal Aviation Administration Notification and Approval	FAA	Project
Zoning Ordinances and Codes	Spokane County	Project
Building Permits	Spokane County	Company

APPENDIX G

MASTER PLAN REPORT, SPOKANE AIRPORT BUSINESS PARK

MASTER PLAN REPORT

April 1984

SPOKANE-AIRPORT BUSINESS PARK

JOHN G. MORRISON, Sr., Director
Spokane, Washington

MITCHELL & NELSON ASSOCIATES, Land Development Planning
Portland, Seattle, Long Beach CA, Salt Lake City

REPORT SUMMARY

The (Phase II) Master Site Plan integrates the existing site conditions with the Spokane International Airport Business Park goals and objectives. The desire on the part of SIABP to provide a planned business environment which will satisfy the needs of a variety of tenants is met by a plan for mixed land use.

The Master Site Plan consists of three sections. These are the Site Master Plans, the Design Concepts, and Design Guidelines. The Site Master Plans identify land use blocks and recommend the most appropriate use for each of these areas. Suggested land uses include office space/light industrial, light industrial, light industrial/warehouse, aviation oriented industry, office/light industrial with aviation access, open space, and hotel, lodging and restaurant facilities.

OBJECTIVES OF THE PLAN

There are five overall objectives of the SIABP Master Site Plan:

1. To create economic value for the City and County of Spokane through the development of a competitive business park.

2. To identify and provide guidelines for the creation of a positive visual image for the project.

3. To optimize existing site features and to minimize costs of potential development.

4. To provide flexibility for future growth and uses of the Business Park.

5. To identify appropriate design guidelines and restrictions for development.

6. To construct a logical framework for future growth on the site by land use planning and phasing.

SITE MASTER PLAN

Included in the Site Master Plans are:

1. Land Use and Landscape Plan
2. Vehicular Circulation Plan
3. Maintenance Responsibility Plan

DESIGN CONCEPTS

The Design Concepts section deals with the specific issues and concepts involved in the project. These issues include circulation, landscaping, buildings, utilities and future land use. Each of these is addressed by development of a specific concept. These concepts were used to develop a plan for the Business Park that makes best use of the site and its proximity to Spokane International Airport.

This section includes:

1. Specific Design Concepts Recommendations:

    A. Land Use
    B. Circulation
    C. Landscaping
    D. Buildings
    E. Utilities

2. Prototypical site plans for three specific sites which illustrate typical sight of ways, setback zones, interior lot plans, and planting concepts.

    A. Typical office/light industrial
    B. Light industrial
    C. Office/light industrial with aviation access

DESIGN GUIDELINES

The Design Guidelines have been written to support each of the major concepts included in the Master Plan.

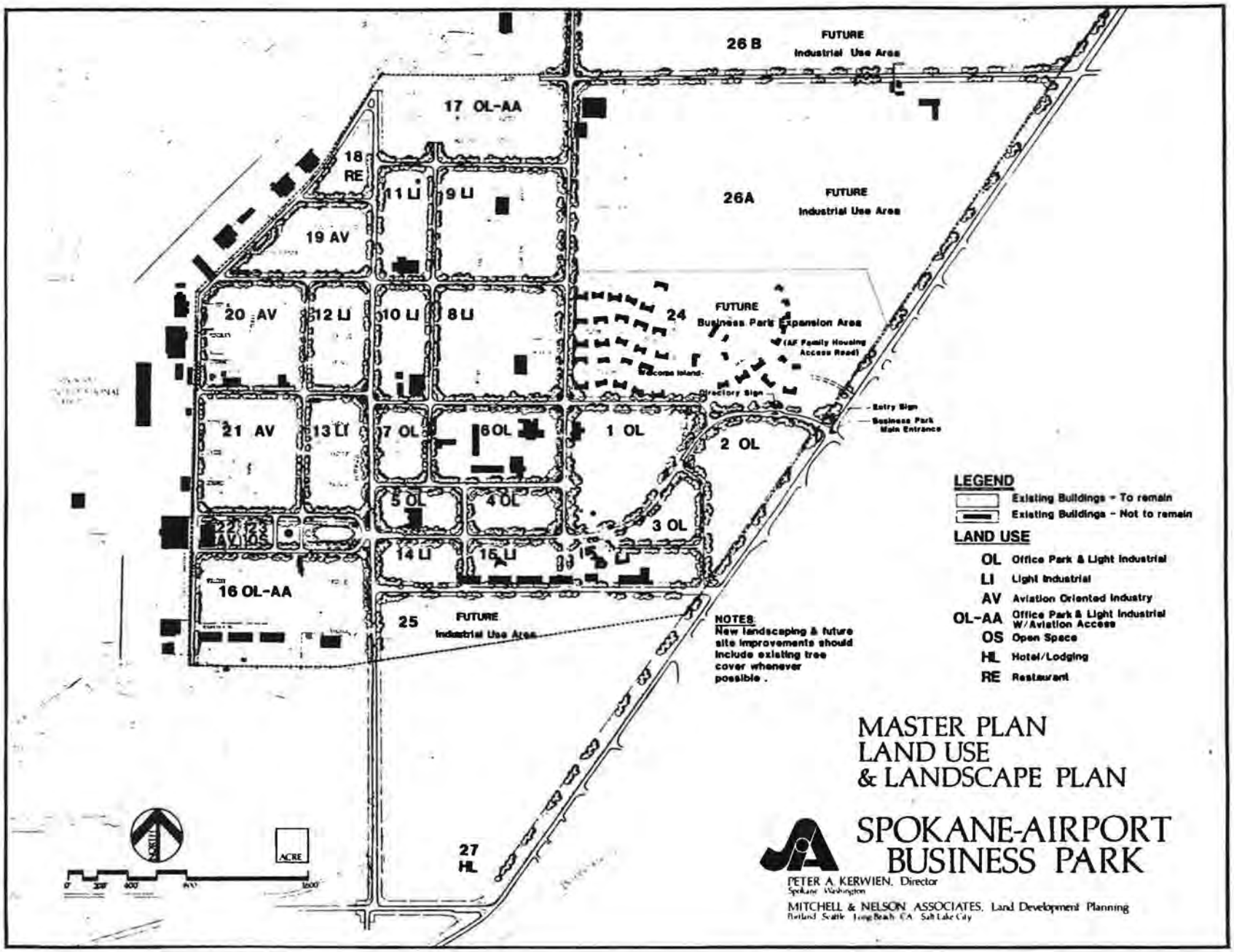
Specific sections deal with:

1. Landscaping
2. Parking
3. Buildings
4. Signs
5. Lighting
6. Maintenance

NOTE: These Design Guidelines can be used as references for C. C. and R's. (Codes, Covenants and Restrictions).

The report also includes:

1. Cross-sections which illustrate three roadways, setbacks and interior site plans.
2. Description of existing site conditions
3. Appendix


26 B
FUTURE
Industrial Use Area
17 OL-AA
18
RE
11 LI
9 LI
26A
FUTURE
Industrial Use Area
19 AV
20 AV
12 LI
10 LI
8 LI
24
FUTURE
Business Park Expansion Area
(AF Family Housing Access Road)
Access Island
Directory Sign
Entry Sign
Business Park Main Entrance
21 AV
13 LI
7 OL
6 OL
1 OL
2 OL
5 OL
4 OL
3 OL
22
AV
23
OS
14 LI
15 LI
16 OL-AA
25
FUTURE
Industrial Use Area
NOTES
New landscaping & future site improvements should include existing tree cover whenever possible .
LEGEND
Existing Buildings - To remain
Existing Buildings - Not to remain
LAND USE
OL Office Park & Light Industrial
LI Light Industrial
AV Aviation Oriented Industry
OL-AA Office Park & Light Industrial W/Aviation Access
OS Open Space
HL Hotel/Lodging
RE Restaurant
NORTH
ACRE
27
HL
MASTER PLAN
LAND USE
& LANDSCAPE PLAN
SPOKANE-AIRPORT
BUSINESS PARK
PETER A. KERWIEN, Director
Spokane Washington
MITCHELL & NELSON ASSOCIATES, Land Development Planning
Portland Seattle Long Beach CA Salt Lake City

EXISTING SITE CONDITIONS

The Spokane International Airport Business Park is located adjacent to the Spokane International Airport and I-90 Freeway Interchange #276. The site under study consists of approximately 600 acres of land zoned and available for business park use.

The site was previously Geiger Air Force Base, which has now been abandoned by the Air Force except for a family housing area that is still being leased on the site.

The location of the Park makes it a prime site for a business park with access to aviation and major transportation routes. The site is also in close proximity to the central business district of Spokane which is continuing to expand along with the surrounding urban and suburban areas.

The site contains an existing road system and has existing utilities to and through the site. These utilities were installed at the time that the Air Force Base was constructed and are now falling into disrepair from age and lack of maintenance. A majority of the roads are old and in a state of disrepair. Some new roads have been constructed.

On the Eastern portion of the site is a natural forest of Ponderosa pines which should be saved as a major site amenity. These trees are of particular importance to the design of the site entry.

There is a gravel mining operation at the far Northwestern portion of the site which has left major topographic changes. These are large excavated areas that collect water and form ponds.

A number of concrete pads and foundations exist on the site that were left from previous AFB structures. There are also existing structures on the site. These structures are of varying types and some are now being utilized as office and warehouse space.

In addition, the county leases several buildings and structures on the site for County use. The Spokane International Airport Business Park has also established an Administration facility on the site and will continue to expand and improve this facility.

Many aviation and air cargo businesses are already located along the flight line which is adjacent to the site on the West side. Most of these are within the jurisdiction of the Spokane International Airport.

Other existing site elements include fuel storage tanks and a water tower. The fuel storage tanks should be relocated or removed. The existing water tower is to be accompanied by an additional water tower to be built by the City in the near future.

DESIGN CONCEPTS

By developing the Master Site Plan in terms of specific concepts, it has been possible to integrate the conditions and amenities of the existing site into a cohesive, well-planned Business Park that will meet the needs of SIABP now and in the future. Concepts for land use, circulation, landscaping, buildings, and utilities and the relationship of each of these to the project as a whole are explained in this section of the report.

LAND USE CONCEPT

The Spokane International Airport Business Park will be developed to create a cohesive and visually unified business park.

Proposed land uses within the Business Park include business office/light industrial, light industrial (warehouse and manufacturing), aviation oriented industry, office park/light industrial with direct aviation access, open space, hotel/lodging, and restaurant uses. All uses are subject to approval by the Spokane International Business Park.

An important consideration for site optimization of land at the Business Park is consolidation of existing parcels of land currently intersected by existing roads.

The Site Master Plan consolidates existing parcels into larger blocks. This increases the availability of land and provides more flexibility for meeting the needs of future tenants.

The major areas of business office/light industrial use have been grouped around the major site entry area and will utilize existing site vegetation. These areas will be able to interface with the parkway on the primary road system. Blocks of land have been consolidated to form larger, more useful parcels.

All aviation oriented and business office/light industrial uses with direct aviation access that are located directly adjacent to the airport flight line boundary have consolidated blocks of land.

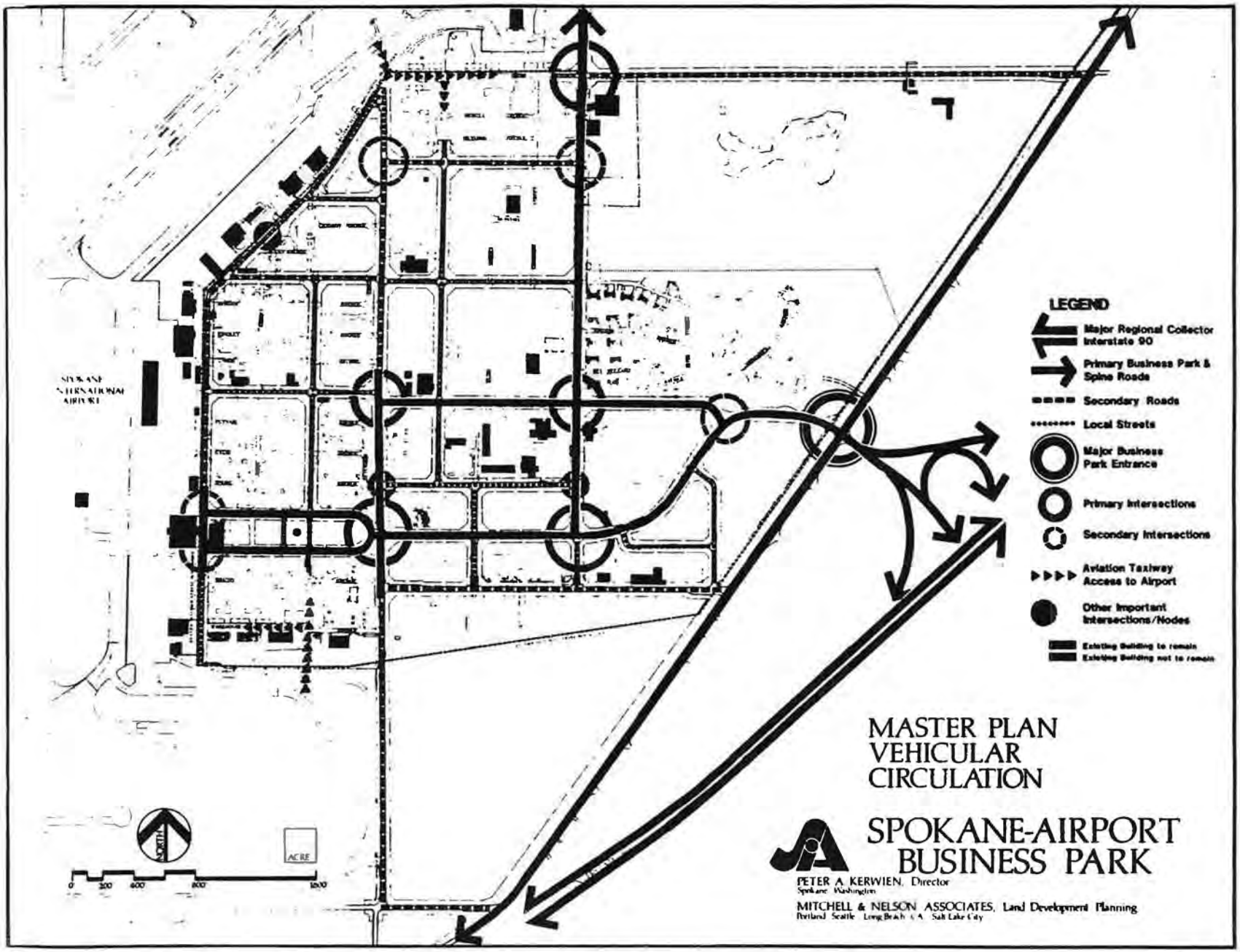
The rest of the light industrial (warehouse and manufacturing, etc.) use areas are located around the business office/light industrial areas and the aviation oriented areas. The blocks have been consolidated to accomodate future spatial needs of various tenants.

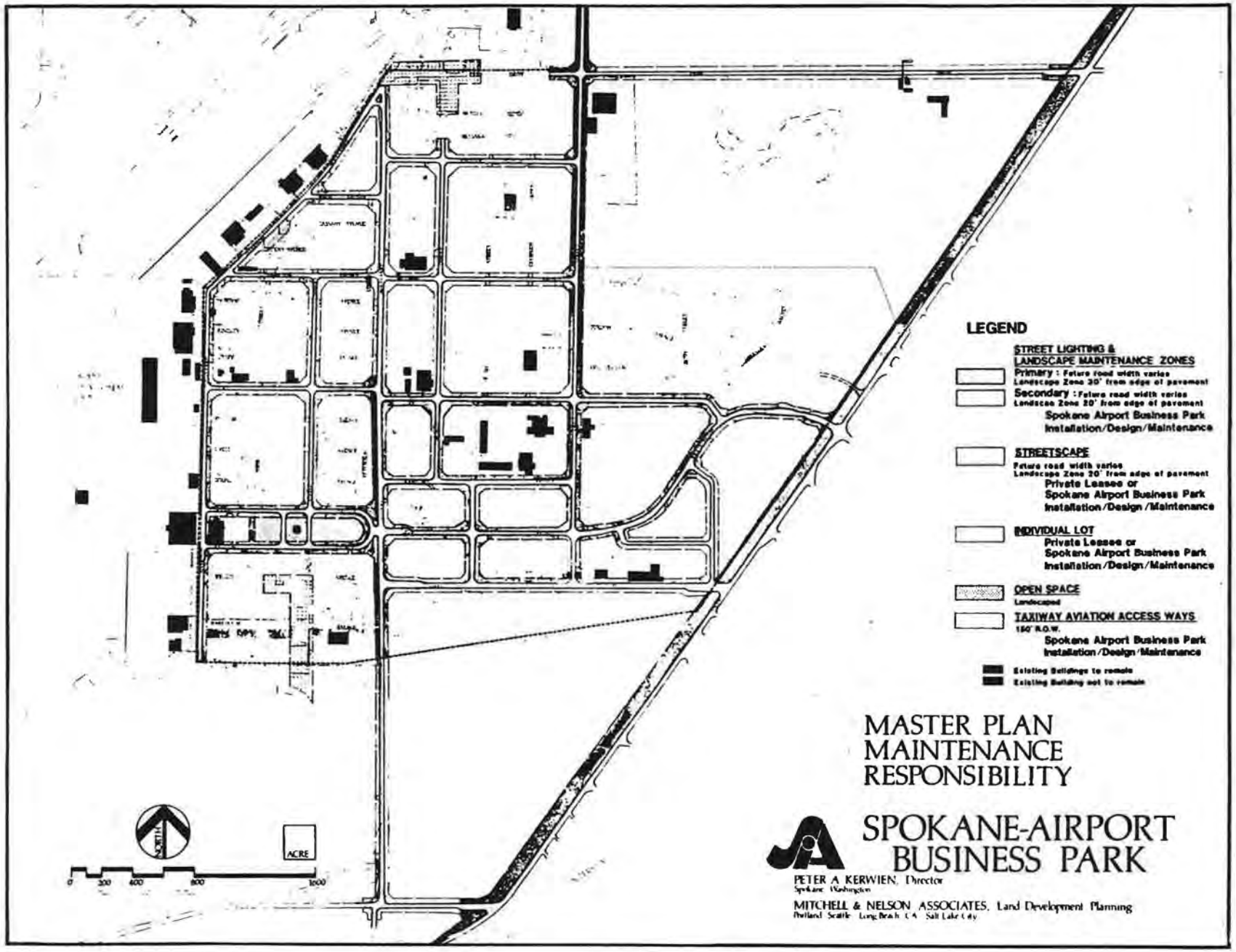
Areas of heavier industrial use that require larger tracts of land will be located in the future industrial areas as shown on the map. These areas require fewer access roads and large parcels may not need to be located in a highly maintained area.

A possible restaurant location has been identified that would enable a business to locate along the flight line and to utilize views of air transportation taking off and landing. This restaurant may be one of several to serve the needs of the sites' tenants in the future.

A hotel lodging site has been located at the Southeast corner of the Business Park that may be utilized to serve the needs of the Business Park and the Airport. This location will have freeway (I-90) visibility.

There will be several blocks around the water tower left open for a future water tower and open space incorporating a major landscape water feature.


LEGEND
Major Regional Collector Interstate 90
Primary Business Park & Spine Roads
Secondary Roads
Local Streets
Major Business Park Entrance
Primary Intersections
Secondary Intersections
Aviation Taxiway Access to Airport
Other Important Intersections/Nodes
Existing Building to remain
Existing Building not to remain
SPOKANE INTERNATIONAL AIRPORT
NORTH
ACRE
0 200 400 800 1600
MASTER PLAN
VEHICULAR
CIRCULATION
SPOKANE-AIRPORT
BUSINESS PARK
PETER A. KERWIEN, Director
Spokane Washington
MITCHELL & NELSON ASSOCIATES, Land Development Planning
Portland Seattle Long Beach C.A. Salt Lake City


LEGEND
STREET LIGHTING & LANDSCAPE MAINTENANCE ZONES
Primary : Future road width varies Landscape Zone 30' from edge of pavement
Secondary : Future road width varies Landscape Zone 20' from edge of pavement
Spokane Airport Business Park Installation/Design/Maintenance
STREETSCAPE
Future road width varies Landscape Zone 20' from edge of pavement
Private Leases or Spokane Airport Business Park Installation/Design/Maintenance
INDIVIDUAL LOT
Private Leases or Spokane Airport Business Park Installation/Design/Maintenance
OPEN SPACE
Landscaped
TAXIWAY AVIATION ACCESS WAYS
150' R.O.W.
Spokane Airport Business Park Installation/Design/Maintenance
Existing Buildings to remain
Existing Building not to remain
NORTH
ACRE
0 200 400 800 1000
MASTER PLAN MAINTENANCE RESPONSIBILITY
SPOKANE-AIRPORT BUSINESS PARK
PETER A KERWIEN, Director
Spokane Washington
MITCHELL & NELSON ASSOCIATES, Land Development Planning
Portland Seattle Long Beach CA Salt Lake City

CIRCULATION CONCEPT

Traffic circulation within Spokane International Airport Business Park has been designed with primary, secondary and local access roads to service the various needs of the project. These roads correspond to assumed traffic volumes, but have not yet been specifically engineered for future development.

The road system serves to consolidate old and new roads on the site and to provide access through the project. These access routes are a determining factor in planning the future phasing and development plan and in developing a pattern that serves future functional traffic flow requirements. The primary road system serves as the site entry and major road system and carries traffic through the site to secondary roads.

Secondary roads serve parcels not accessible and also provide alternative access to the site. Local roads serve the rest of the interior of the site.

Access roads are allowed into the interior parcels where service and loading areas are to be located. These access roads should service the parcels in such a way that they will not obstruct the efficient flow of traffic.

The major site entry will be the Freeway entrance located at Geiger Blvd. and Alton Avenue. Primary and secondary intersections have been designated throughout the project. These are designed to be major identifying points and combine landscaping, signs and street lighting into one thematic design statement.

In developing the concept for the SIABP, it was determined that the automobile and the drivers' and passengers' visual image of the park were key factors. The road system and its surrounding visual corridor have therefore, become the dominant considerations in shaping the character and image of the Business Park.

Aviation Access

The road system is designed to allow best access to and most efficient use of aviation cargo and shipping services.

Direct aviation access into the Business Park is provided for with a 50' taxiway within a 150' clear zone Right-of-Way. Separation of aviation and other vehicle traffic is recommended. Reduction of intersections between traffic and taxiways is also encouraged.

Taxiways may service the rear of industrial lots with access into a common parking apron servicing the adjacent industrial lots.

LANDSCAPING CONCEPT

The main entry, primary, secondary, local roads and intersections will be bounded by landscaping. The landscaping will vary in treatment in each of these areas.

The landscaping on primary roads will include lawn areas and informal groves of deciduous street trees, with a background of low berms, massing of evergreen and deciduous shrubs and massed coniferous trees. The dominant image from the road will be of a lushly planted avenue with broad building setbacks.

The secondary and local roads will also be landscaped. Those roadways that serve the interior site are equal in aesthetic importance to the buildings and major roadways of the site. The secondary roadways are similar in design to the primary roads but the landscaped zone is narrower. Local streets will have a much similar treatment, street trees aligned in rows, lawn and berms.

The main entrance will provide ingress/egress to and from SIABP as well as an aesthetic focus and a statement of the visual character of the project. The main site entry will be landscaped and will utilize the existing native trees as a backdrop.

Intersections throughout the site should allow for open/cutback corners that are landscaped. This will allow for clearer inside traffic sight lines at the intersections. These intersections will be landscaped according to the standards of the Right-of-Way Road type in which they are located.

A lake will be included as a major water feature. This will be located in the open space adjacent to the water tower in the area designated open space on the land use plan.

BUILDING CONCEPT

Design controls and restrictions for individual parcel planning and architectural development have been recommended to reinforce the usual image of the business Park from the road.

Existing buildings have been evaluated and a determination has been made concerning the future uses of these structures.

Buildings that have been slated for removal may be either demolished as soon as is required by the Business Park or gradually phased out during future development of the Business Park. Some of these buildings may be refurbished and leased until another use is required for the site.

There are a number of buildings that will remain on the site. Plans for these buildings should bring them into conformance with recommended guidelines for buildings and landscape design. Positions of these buildings have been considered and incorporated into the Master Site Plan. In some cases, parking and access areas may have to be repositioned to conform to new standards. See Appendix on this report for recommendations pertaining to specific buildings.

New buildings will conform to setback zones that will be established to achieve a feeling of openness and visual continuity along the streets within SIABP.

The Building Design Guidelines offer specific recommendations for architectural features of the project. It is also important to achieve regularity of the spaces formed by buildings along the street and provide clear sight lines for vehicles at all intersections.

Building separation in the interior portion of the site is an important physical separation between adjacent parcels. Buildings located on parcels with common boundaries can be no closer than 50 feet on side or rear yards or from residential zones.

UTILITIES CONCEPT

The Spokane International Airport Business Park will coordinate the improvements and installation of the major site elements of the project. These include all roads, utilities, street lighting, key intersection signs and lighting, Right-of-Way landscaping, and aviation access routes within the project.

Any other project improvements will be installed on an incremental basis by the Owner or the Business Park tenants.

Utilities and Refuse

All future exterior site utilities including, but not limited to, drainage systems, sewers, gas lines, water lines, and electrical, telephone and communication's wires and equipment where possible shall be installed and maintained underground.

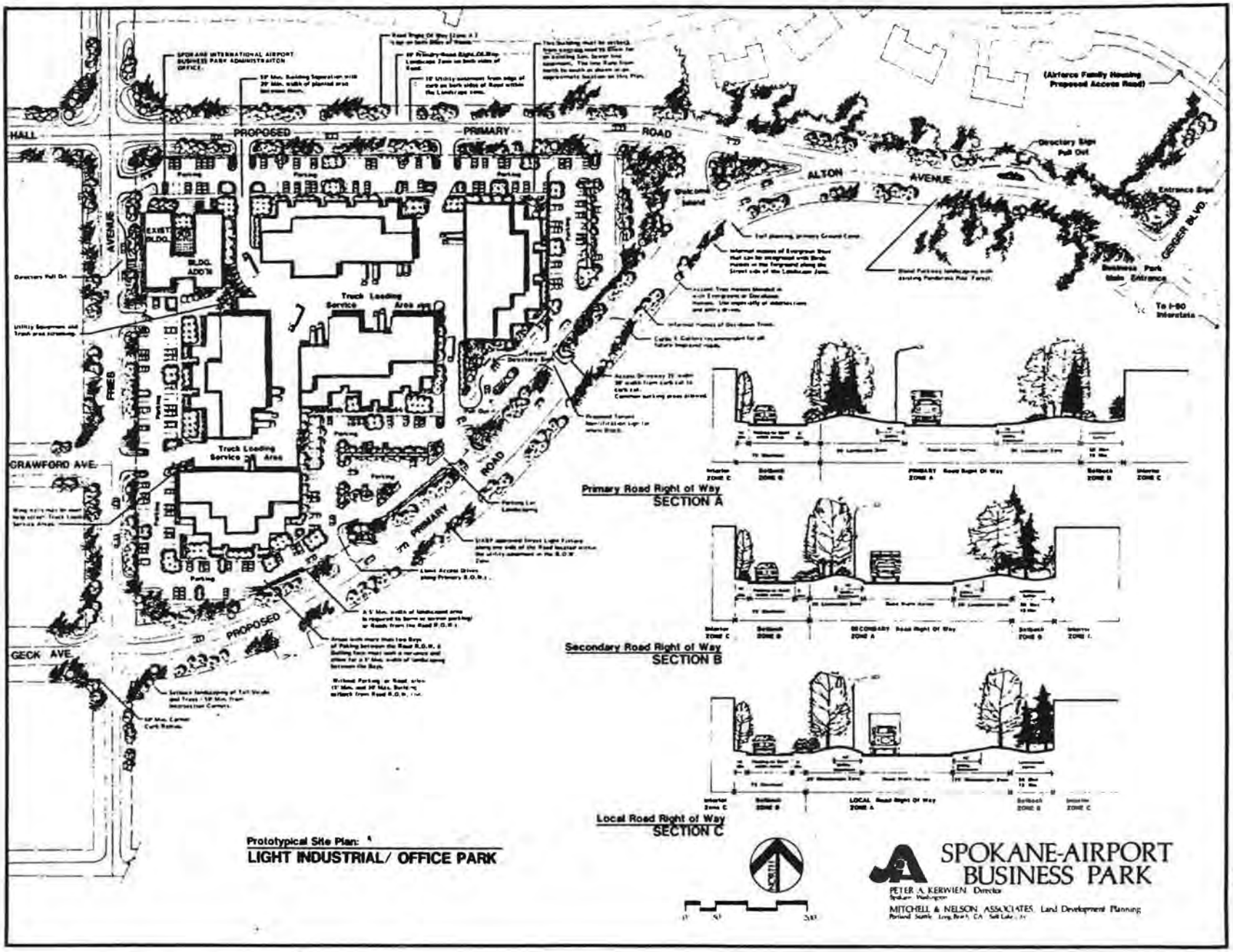
Drainage Systems

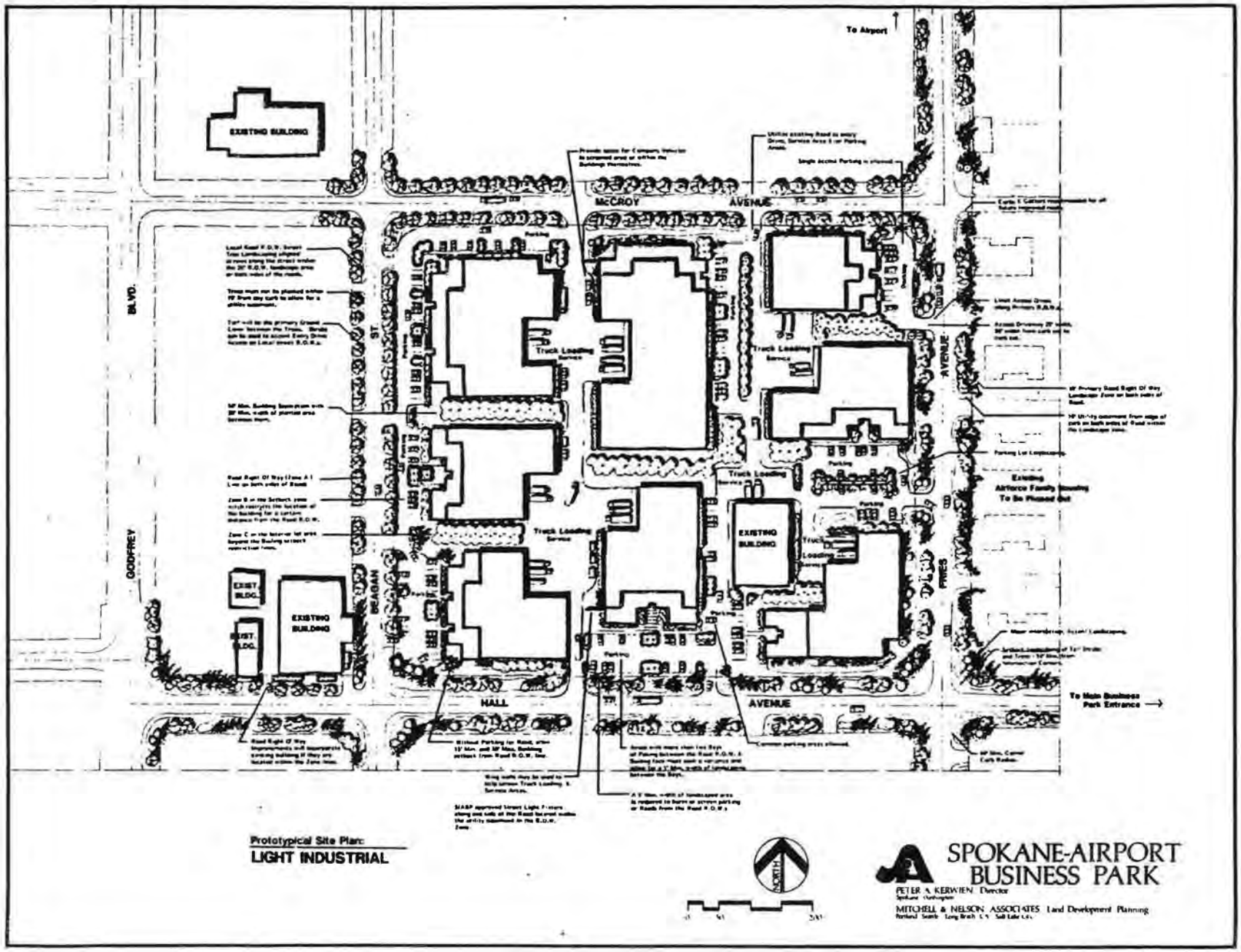
All new streets and roads and all street improvements, where possible, shall incorporate fixed curbs and gutters into future development.

All parcels should be designed to accomodate precipitation falling onto the site and to allow surface water flowing from adjacent sites to be effectively absorbed or to drain off the site. No excessive water concentration on adjacent sites or streets is to be allowed.

Design of drainage systems should encourage site design which protects buildings and business activities from disruption or damage from extreme storm conditions.

A 10' utility easement zone has been provided for in all proposed Road Right-of-Ways.


PROPOSED
PRIMARY
ROAD
ALTON
AVENUE
(Airforce Family Housing
Proposed Access Road)
Directory Sign
Pull Out
Entrance Sign
GEIGER BLVD.
Business Park
Main Entrance
To I-90
Interstate
Truck Loading
Service Area
Truck Loading
Service Area
GRAWFORD AVE.
GECK AVE.
PROPOSED
PRIMARY
ROAD
Primary Road Right of Way
SECTION A
Secondary Road Right of Way
SECTION B
Local Road Right of Way
SECTION C
Prototypical Site Plan:
LIGHT INDUSTRIAL/ OFFICE PARK
SPOKANE-AIRPORT
BUSINESS PARK
PETER A. KERWIEN Director
MITCHELL & NELSON ASSOCIATES Land Development Planning

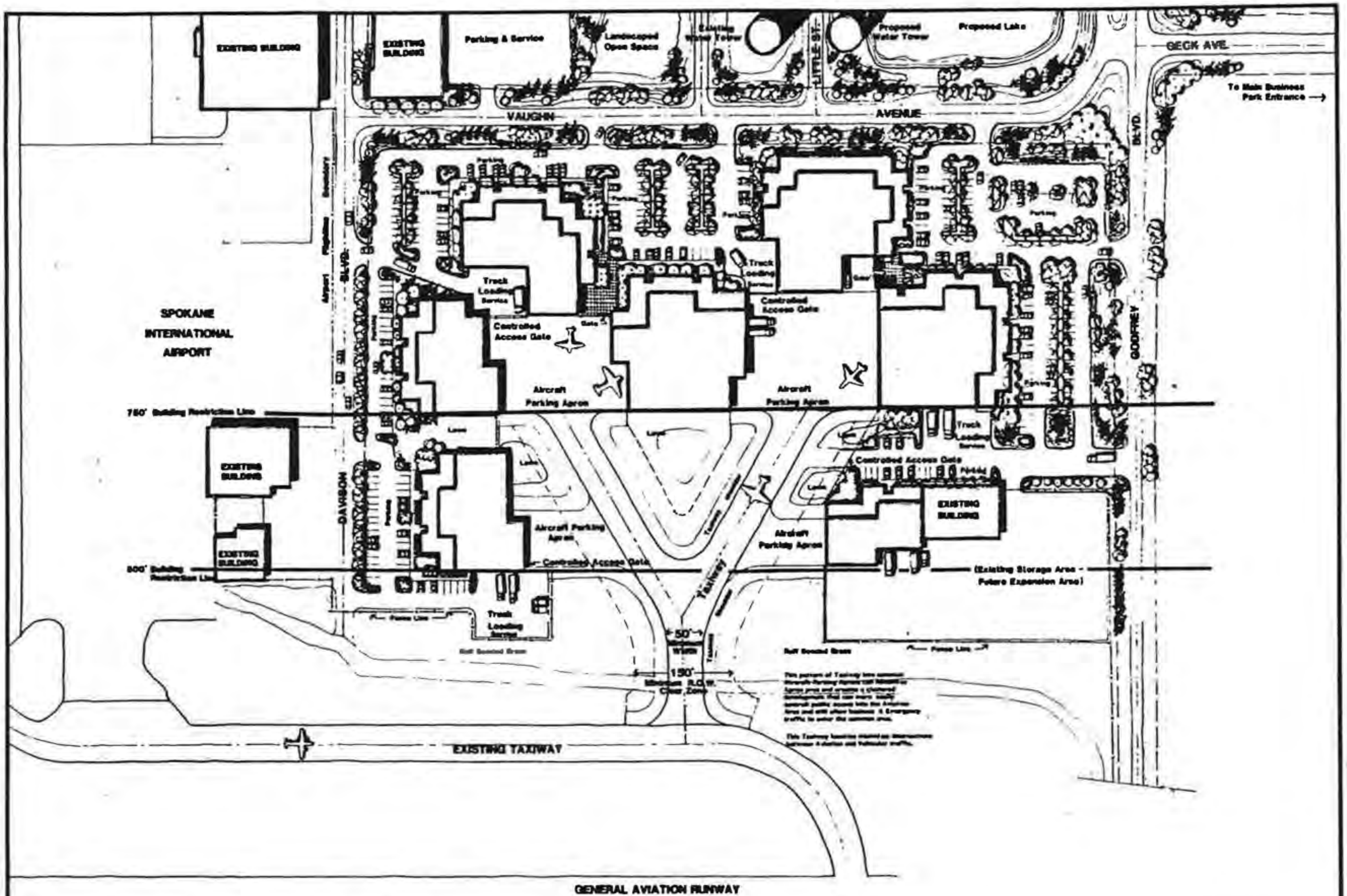


Prototypical Site Plan:
LIGHT INDUSTRIAL

SPOKANE-AIRPORT BUSINESS PARK

PETER A. KERWIEN, Director
Spokane, Washington

MITCHELL & NELSON ASSOCIATES Land Development Planning
Portland, Seattle, Long Beach, CA, Salt Lake City



Prototypical Site Plan:

LIGHT INDUSTRIAL/ OFFICE PARK
W/ AVIATION ACCESS

NORTH

0 50 300'

SPOKANE-AIRPORT BUSINESS PARK

PETER A. KERWIEN, Director
Spokane, Washington

MITCHELL & NELSON ASSOCIATES, Land Development Planning
Portland, Seattle, Long Beach CA, Salt Lake City

DESIGN GUIDELINES RECOMMENDATIONS

The Business Park concept supported by these Design Guidelines serves to enhance the existing environments, and to protect the property owner and the tenant. The Guidelines are designed to permit the development of a variey of light industrial buildings in an attractive and visualy unified Business Park setting. Provided in the Guidelines are criteria for proper site planning, appropriate architecture, adequate landscaping, and compatible sign controls.

The intent of these Guidelines may be more easily understood in terms of the Master Site Plan by using a system of Design Control Zones. These Zones describe the areas to which Design Guidelines refer.

Design Control Zones

1. Zone A - Road Right-of-Ways: This zone is bounded by parallel lines from the outside (future) curb line of a roadway toward the right of way line and includes the three types of roadways.

   Primary R.O.W. - 30' from edge of (Future curbs on each side of road, including roadway.

   Secondary R.O.W. - 20' from edge of (future) curbs on each side of road including roadway.

   Local R.O.W. - 20' from edge of (future) curbs on each side of road, including roadway.

2. Zone B - Setback Zone: This zone is bounded by the Road Right-of-Way line and a parallel line at a distance that varies from 15' minimum to 75' maximum.

   Zone C - Interior Zone: This zone is all of the area within a parcel which is not contained in either the Road Right-of-Way (Zone A) and the Setback Zone (Zone B).

LANDSCAPE

Landscape Design Guidelines have been established for the project in general as well as for specific zones within the Business Park. The goal of these Guideline recommendations is to create a pleasant environmental framework within which businesses can locate facilities. The specific character and sense of place created in SIABP will rely heavily on a controlled, high quality landscaping program.

Objectives:

1. To establish an identifiable visual image for the project as a whole.
2. To limit the palette of plant materials in order to insure both visual unity and optimum physical performance of plants.
3. To insure that a minimum amount of each parcel is left in open space.

4. To insure that plant materials are of sufficient size at planting so that a significant visual impact may be achieved.

5. To insure consistency and compatibility in planting design and materials between different parcels.

Landscaping:

The term "landscaping" shall refer to all areas within the project not utilized for buildings, parking lots, access drives, truck loading, storage, or refuse collection. Landscape areas shall include all walkways.

General Site Landscape Recommendations:

1. A minimum of 20% of each individual parcel must be open space and must be landscaped.

2. All plant materials are to be of sufficient size at planting so as to achieve maximum visual impact within 3 - 5 years after planting.

3. All plant materials must be watered with an automatic irrigation system.

4. No plantings which may be interpreted as excessively decorative will be allowed.

   A. No theme plantings are permitted; for example: Oriental, French Provincial or American Colonial.

   B. No "decorative" landscape materials are permitted; for example: artificial stone, colored gravel, ceramics or wood posts.

5. Plantings should be designed in such a way as to contribute to the visual unity of the project as a whole rather than to call attention to individual parcels.

6. Transition from Road Right-of-Way Zones across the Setback Zone to the interior parcel shall be smooth with grades not exceeding 2:1 and shall utilize continuous planting across the lines.

7. Trees within corner 'clearview triangles' for traffic flow shall have their branches removed at the trunk to 7 feet from ground level. Shrubs must be maintained at 3 feet above grade elevation of the center line of the adjacent streets in this area.

Right-of-Way Zones - Zone A:

This area includes those Right-of-Way areas between the street and the Setback Zone which interface building, or parking areas and access roads.

1. The ground plane shall be articulated with mounded lawn, maximum slope 3:1.

2. Landscaping shall extend to the curb.

3. All planting areas in this zone will be maintained by the Owner.

4. No tenant improvements are permitted on this zone as all development will be completed by the Owner.

Primary Roads Right-of-Way:

Landscaping along primary roads shall reflect a parkway like character. This parkway will be a major landscape within the Business Park.

1. The landscape area will be a 30' width on both sides of a road from edge of curbs to Setback Zones.

2. There will be a 10' utility easement from edge of curb towards Setback Zones. No trees or large shrubs should be planted in this area. Shrubs are allowed in this area at intersections and entry accesses to parcels.

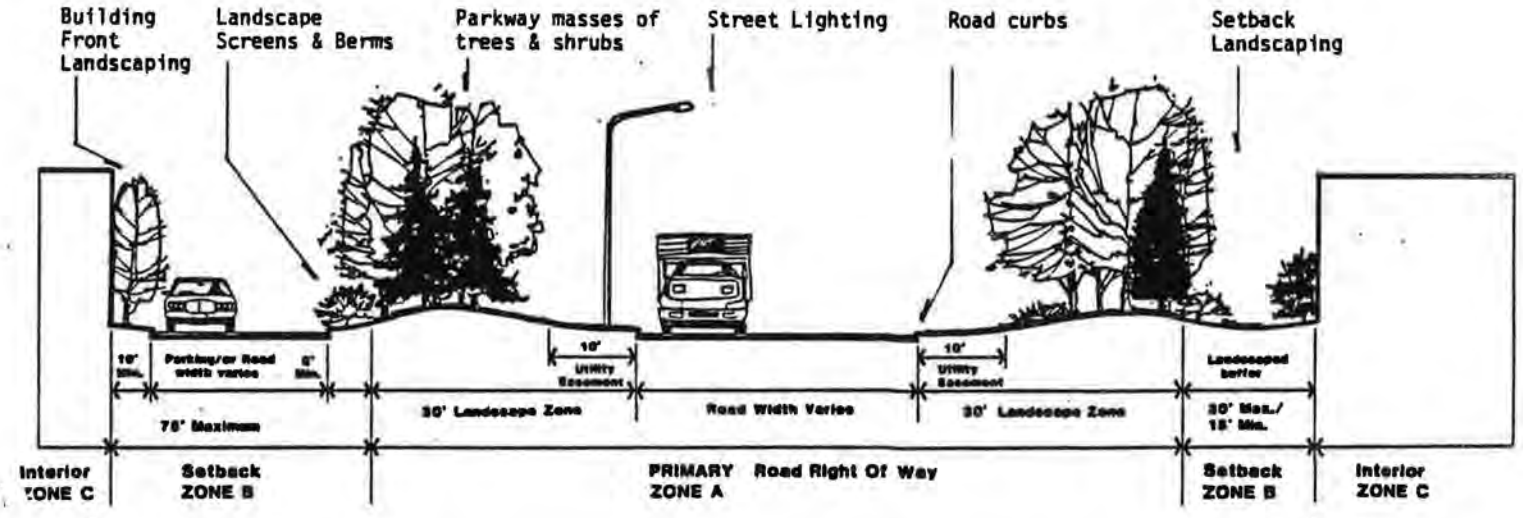
3. Trees and shrubs shall be evergreen and deciduous and laid out in informal masses to create variety and interest.

4. When placed on mounds, the trees shall vary in location on the mound with open spaces between masses or groups.

5. No arrangement of plantings will be permitted which cannot be visually appreciated from roadway vehicle speeds of at least 35 miles per hour.

Primary Road Right of Way Cross Section

Landscaping along the Primary Road Right of Ways shall reflect a Park-like Character with Masses and groves of Coniferous & Deciduous tree on mounds with masses of deciduous & evergreen shrubs integrated along the 'Parkway'. The open spaces between these masses will be planted with lawn and landscaped to the curb of the road.



Secondary Road Right-of-Way:

Landscaping along secondary roads shall reflect a park-like roadway, but will be of less emphasis than primary parkway Right-of-Ways.

1. The landscape area will be a 20' width on both sides of a road from edge of curbs to Setback Zones.

2. No trees or large shrubs should be planted within a 10' utility easement from edge of curb towards Setback Zone on both sides of roads. Shrubs are allowed in this area at intersections and entry access to parcels.

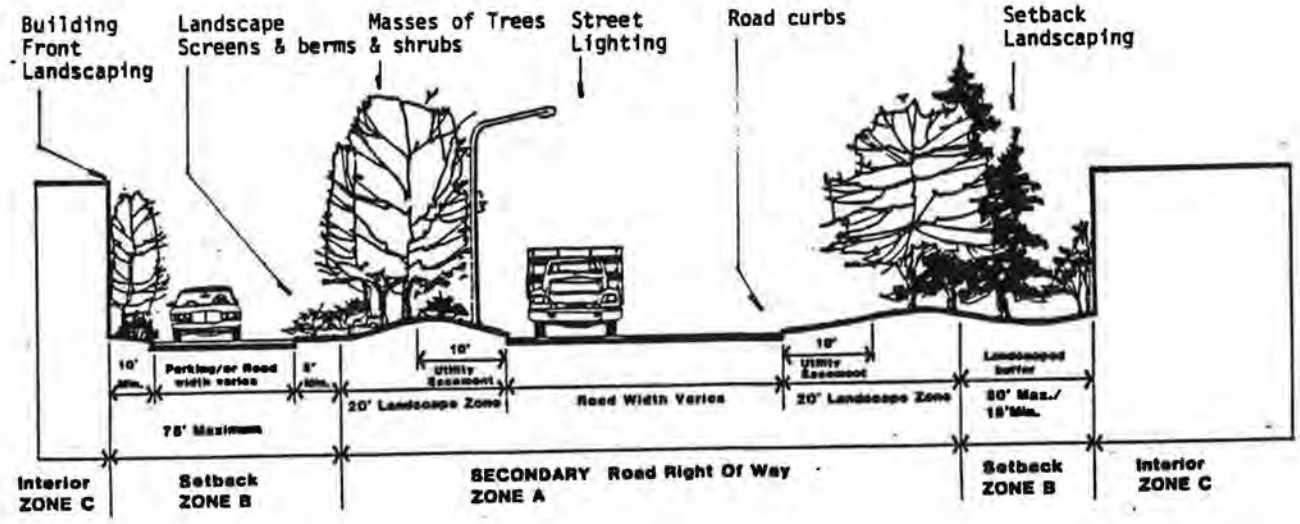
3. Trees and shrubs shall be evergreen and deciduous and be laid out in informal masses and groups to create variety and interest.

4. When placed on mounds, the trees shall vary in location on the mound with open spaces between masses or groups.

5. No arrangement of plantings will be permitted which cannot be visually appreciated from roadway vehicle speeds of at least 35 miles per hour.

Secondary Road Right of Way Cross Section

Landscaping along the Secondary Road Right of Ways shall reflect a Park-like character similar to the Primary R.O.W. but will be less intensely planted with narrower groups and masses of Deciduous & Coniferous trees and shrubs. The open spaces between these masses will be planted with lawn and landscaped to the curb of the road.



Local Road Right-of-Ways:

Landscaping shall reflect a streetscape character with a large company of street trees and turf on graded mounds.

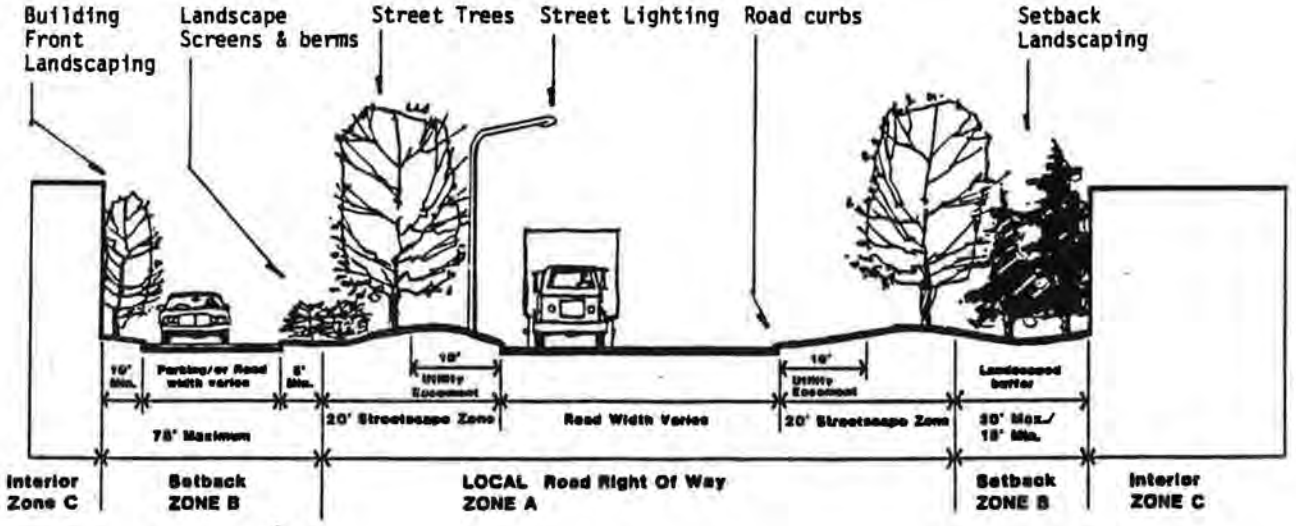
1. **The landscape area will be a 20' width on both sides of a road from edge of curbs to Setback Zones.**

2. **There will be a 10' utility easement from edge of curb towards Setback Zones. No trees should be planted in this area. Shrubs located at entry accesses to parcels are allowed.**

3. **Trees shall be primarily deciduous with some evergreen aligned in rows with appropriate spacing. Shrubs of deciduous and evergreen materials are allowed at entry accesses to parcels.**

Local Road Right of Way Cross Section

Landscaping along the Local Road Right of Ways shall reflect a Streetscape-like character with large canopies of Street trees on landscape mounds along the streets.



Setback and Interior Zones Landscaping

Setback Zone - Zone B:

The Setback is to allow for open space between the Road Right-of-Way and interior site parcels. This Zone is adjacent to the Right-of-Way, therefore, must be designed to integrate with that Zone. This Zone also interfaces the interior zone, provides frontage for businesses and is visible from the street.

1. Minimum setback distance of a building from the Road Right-of-Way Zone is 15'. Maximum distance is 30'. This area must be landscaped.

2. If a parking lot or parcel access road is located within this Zone between the building and the Right-of-Way:

   A. Parking area - 75' maximum setback for building is allowed with 5' minimum required landscaping depth against the front of buildings and 5' minimum screen/landscaping depth between parking and Road Right-of-Way.

   B. Landscaping within this Zone are maintained by the Tenant. See Landscape Parking for specific landscape recommendations.

Interior Zone - Zone C:

The Interior Zone is comprised of all other portions of a tenant parcel including, the area between the side and rear building walls and the parcel boundary.

1. Those areas adjacent to pedestrian entry to buildings and other open spaces shall be planned for the relaxation or enjoyment of building occupants.

2. Landscaping in entry areas should satisfy the following objectives:

   A. Serve to direct pedestrian traffic to the entry area from parking.

   B. Provide annual or seasonal color sources through use of plant material.

   C. Provide sun control for building penetration.

   D. Shrubs and groundcovers should be of a single species and planted in masses.

   E. When shrubs are to be planted in groundcover areas, the groundcover material should not exceed a mature height of 12 inches.

   F. "Foundation" planting of shrubs should be avoided.

Other Interior Landscaping Recommendations:

1. Identical species of plants, rather than a variety, shall be used continuously along abutting parcels and buildings.

2. A minimum of a 10' wide planting strip must occur along all common parcel boundaries. For shrub and tree planting, see recommended list.

3. Plant materials used along abutting parcels at the side and rear of buildings, should create a distinct separation between the two parcels.

4. All undeveloped areas within the property lines shall be landscaped.

5. All landscaping within this Zone is maintained by the Tenant.

6. A maximum slope of 4:1 is allowed within the 10' planting zone. A one-foot minimum flat transition shall be provided at the top and bottom of all slopes within this Zone.

7. The minimum width for landscape planting around trash collection areas shall be 4'0" and shall consist of groundcover or turf, and shrubs or vines or trees or a combination thereof.

General Parking Area Landscaping:

Parking areas are those areas in and adjacent to vehicular parking and maneuvering areas.

1. Parking areas within SIABP shall be planted with trees, shrubs and/or groundcovers in order to enhance the overall character of the project.

Zone B - Setback Zone Parking Recommendations:

1. All parking must be visually screened from the Road Right-of-Way Zones.

2. All surface parking areas must be a minimum of three feet below the top elevation of berms or behind shrub hedges.

Landscape Berms

A. Where parking occurs between the building and the street, berms and grading are encouraged as a buffer.

B. Shrubs used for screening of vehicles in parking areas must be used in a continuous hedge at a minimum double row at 36" on center spacing, 3' to 5' height recommended for shrub screen buffers.

3. 'Buffers' should also be used to screen parking from building areas such as office and entries.

Zone C - Interior Parcel Parking Recommendations:

1. Only one species of tree shall be used in any one parking area. Species may be different in separated parking areas.

2. When parking is more than two bays deep, a planting strip must separate them.

3. Tree wells and planter areas within paved parking areas shall provide a minimum of 5' clear planting space.

   A. Tree wells or planting edge curbs must be used rather than wheel stops.

General Planting Recommendations:

Planting within the SIABP will play a key role in creating overall character for the development as a park-like working environment.

1. When adjacent properties have been developed, plant materials selected should be complementary, providing a sense of continuity to all sites.

2. When adjacent properties have not been developed, plant materials selected should be complementary to the closest developed property and set a positive example for future development.

3. A planting palette has been recommended for use throughout all zones of the Business Park that can be used with the preceding criteria and recommendations.

PLANT MATERIALS LIST

ZONE A - ROAD RIGHT-OF-WAYS (RECOMMENDED)

TREES

DECIDUOUS- (IN GROVES AND MASSES AND STREET TREES)

Botanical Name	Common Name
Acer platanoides	Norway Maple
Acer rubrum 'Red Sunset'	Red Sunset Maple
Acer sacharum	Sugar Maple
Quercus rubra	Red Oak
Populus tremuloides	Quaking Aspen

EVERGREEN- (IN GROVES AND MASSES)

Pinus contorta	Shore Pine
Pinus ponderosa	Ponderosa Pine
Pinus nigra	Austrian Pine

Picea pungens	Colorado Spruce
Thuja plicata	Western Red Cedar
Abies concolor	White Fir
Cedrus deodara	Deodar Cedar

OTHER - (ACCENT TREES, ESPECIALLY AT INTERSECTIONS)

Prunus serrulata 'Amanogawa'	Amanogawa Cherry
Malus purpurea 'Radiant'	Radiant Crabapple
Malus 'Snowdrift'	Snowdrift Crabapple

SHRUBS AND GROUNDCOVERS

The primary groundcover in the R.O.W. Zone shall be lawn and shall be planted to edge of curbs in between masses and groves of trees. Groundcovers and shrubs may be used in conjunction with evergreen tree masses and to accent intersections and entry drives.

SHRUBS

Botanical Name	Common Name
Cornus stolonifera 'Baileyi'	Red Twig Dogwood
Cornu stolonifera 'Flaviramea'	Yellow Twig Dogwood
Berberis thunbergii	Japanese Barberry
Pinus mugo mughus	Dwarf Mugho Pine
Mahonia nervosa	Longleaf Mahonia
Juniperus chinensis 'Pfitzeriana'	Pfitzer Juniper
Juniperus sabina 'Arcadia'	Arcadia Juniper
Juniperus sabina 'Scandia'	Scandia Juniper

GROUNDCOVERS

Juniperus horizontalis 'Wiltonii'	Blue Carpet Juniper
Juniperus horizontalis 'Bar Harbor'	Bar Harbor Juniper
Pyracantha coccinea 'Lalandei'	Scarlet Firethorn

ZONE B - SETBACK (RECOMMENDED)

TREES

DECIDUOUS TREES - CANOPY (BETWEEN BUILDING FACE AND ROAD R.O.W.)

Use trees recommended from deciduous trees list in Zone A

EVERGREEN TREES (IN GROVES ONLY, BETWEEN BUILDING FACE AND ROAD R.O.W.)

Use trees recommended from evergreen tree's list in Zone A and:

Botanical Name	Common Name
Pseudotsuga menziesii	Douglas Fir

SHRUBS

Shrubs shall be planted in informal, massed groups. Utilize plants from shrubs listed under Zone A list and:

Botanical Name	Common Name
Mahonia aquifolium	Oregon Grape
Berberis mentorensis	Mentor's Barberry
Viburnum rhytidophyllum	Leatherleaf Viburnum
Viburnum p. tomentosum "Mariesii'	Maries Doublefile Viburnum
Pinus mugo	Swiss Mt. Pine
Magnolia stellata	Star Magnolia
Prunus bessyi	Western Sand Cherry
Potentilla fruticosa	Cinquefoil
Potentilla verna	Spring Cinquefoil

GROUNDCOVERS

The primary groundcover in the Setback Zone shall be lawn and shall be planted between all parking areas and streets. Groundcovers may only be planted between parking areas and buildings and within contained planting areas in the parking area in masses.

The groundcovers from Zone A list and this list may be used.

Botanical Name	Common Name
Hedera helix	English Ivy
Hypericum calycinum	St. John's Wort
Cotoneaster apiculata	Cranberry Cotoneaster
Cotoneaster horizontalis	Rockspray Cotoneaster
Euonymous fortunei 'Sarcoxie'	Sarcoxie Winter Creeper
Arctostaphylos uva-ursi	Kinnickinnick
Vinca minor	Periwinkle

ZONE C - INTERIOR (RECOMMENDED)

TREES

DECIDUOUS TREES - CANOPY

Use trees recommended from Deciduous and Other Trees lists in Zone A and the following:

Botanical Name	Common Name
Tilia cordata	Little Leaf Linden
Sorbus acuparia	Mountain Ash
Fraxinus pennsylvanica	Green Ash

EVERGREEN TREES - (IN GROVES IN INTERIOR AREAS AND SCREENS)

Use any trees on the Setback and Road Right-of-Way lists.

BUILDING ENTRY TREES

Any trees on the Zone A, B and C lists plus the following:

Botanical Name	Common Name
Gleditsia triacanthos inermis	Seedless Honey Locust
Malus sp.	Flowering Crabapple
Cornus sp.	Dogwood
Prunus sp.	Flowering Cherry
Stryax japonica	Japanese Snowbell

SHRUBS

The following shrubs may be used in addition to the plants listed for the Setback and R.O.W. Zones:

Botanical Names	Common Name
Cotinus coggygria	Smoke Tree
Acer circinatum	Vine Maple
Spirea sp.	Spirea
Stewartia sp.	Stewartia
Prunus laurocerasus 'Zabeliana'	Zabel Laurel
Kolkwitzia amabilis	Beauty Bush
Syringa vulgaris	Common Lilac
Ilex crentata 'convexa'	Convexleaf Japanese Holly
Ilex crenata 'Green Island'	Green Island Japanese Holly
Erica carnea	Spring Heather

GROUNDCOVERS

The following may be used in addition to the plants listed in Zone A and B.

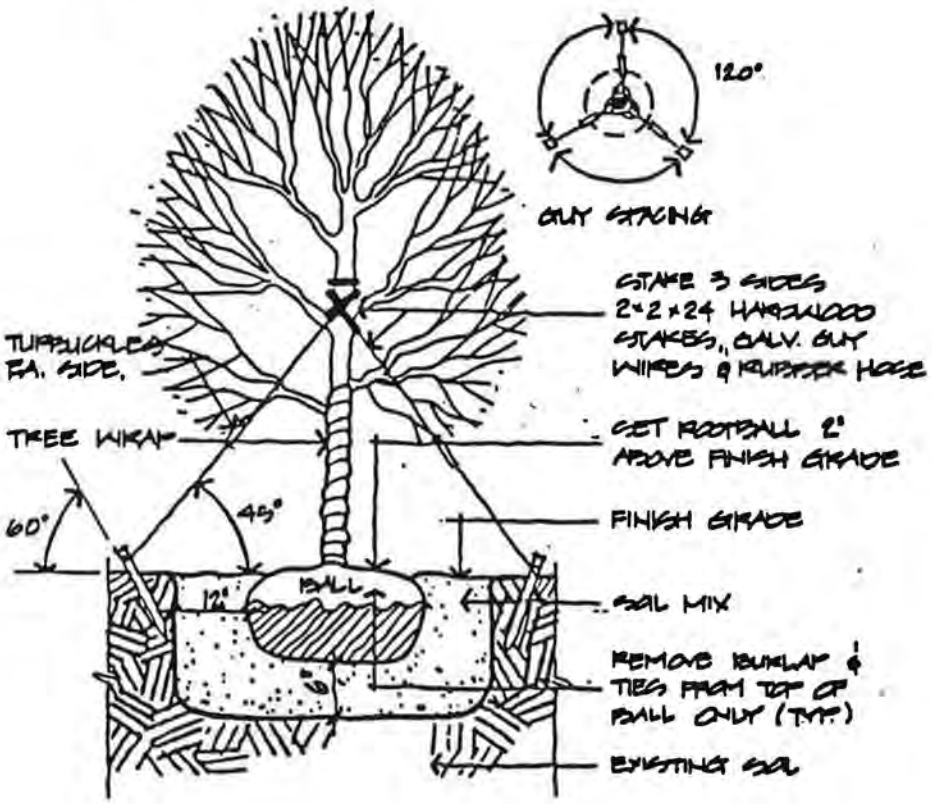
Botanical Name	Common Name
Berberis thunbergi 'Crimson Pygmy'	Crimson Pygmy Barberry
Juniperus chinensis 'Procumbens Nana'	Dwarf Japanese Garden Juniper

PLANTING DETAILS

Plant materials shall be installed as per the following details unless otherwise approved:

A. 2" = trees:

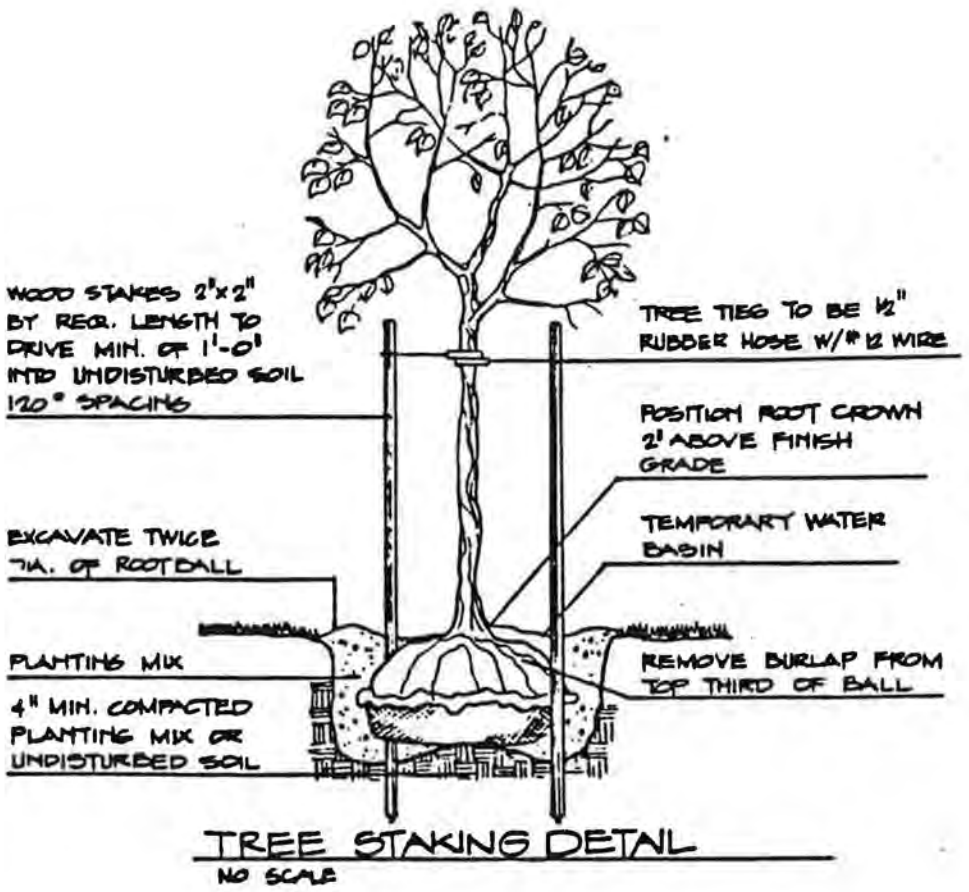
2"+ Trees:



STREET TREE IN LAWN

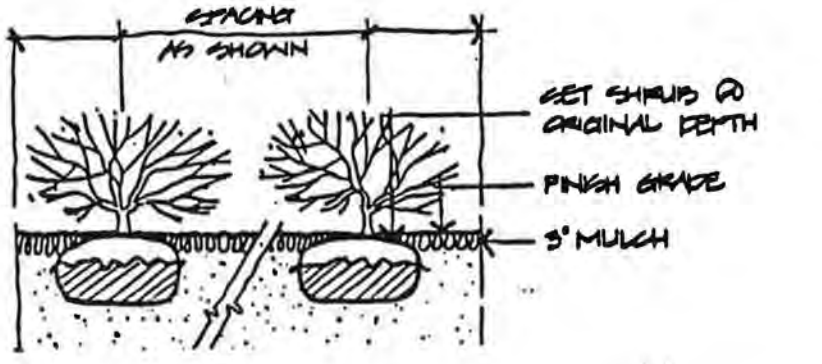
NO SCALE

B. 1-1/2" Trees:



TREE STAKING DETAIL
NO SCALE

C. Shrubs:



SHRUB DETAIL
NO SCALE

TURF

Turf grass shall be selected on the basis of an ability to maintain a reasonably evergreen appearance throughout the year. The following turf grass types and blends have proven successful depending upon the soil type encountered.

Lawn area may be sodded or seeded with the same mix of approved grass types. Recommended seed mix (dependent on availability of seeds.)

25% Tall Fescue
25% Olympic Fescue
50% Kentucky Bluegrass/or Perennial Ryegrass

Mix by weight - spread

Use this mix or other approved sod or seed mix.

PARKING AND SITE ACCESS

PARKING

In a project of the size and nature of SIABP, a large amount of land must be used for parking areas. These Design Guidelines have been created as controls so that parking does not become a factor which dominates or detracts from the overall visual character of the project.

OBJECTIVES:

1. To meet all parking needs of each parcel, including employee parking, company vehicles, motorcycles, bicycles and specially designated areas for "Handicap Parking".

2. To locate parking areas where there is access to the buildings they serve.

3. To prohibit on-street parking within Spokane International Airport Business Park.

4. To design parking areas so that they blend with the overall image.

5. To screen parking from adjacent streets and buildings and to insure that parking areas are not visually dominant.

NOTES: For Design Guidelines which satisfy Objectives #4 and #5 refer to Landscape Design Guidelines, Parking.

Zone A - Road Right of Way

Parking areas are not permitted within the Road Right-of-Way Zone.

Zone B - Setback Zone

No parking areas may occur within 5 feet of the Road Right-of-Way line.

Parking areas located in the front setback area along primary and secondary roads are limited to two bays of parking. Tenants of parcels of atypical shape will need to seek a variance.

Single access parking lots are acceptable.

Zone C - Large Parking Areas must occur along sides or rear site areas.

Only employees' vehicles or commercial vehicles used daily can be stored in exterior parking areas. Special purpose vehicles that are not used daily or vehicles in storage must be inside a building or screened by walls (6' minimum) integrated with the building or in a manner which isolates them inside a compound of buildings so they are unseen.

If the parking layout is one or two rows deep, walking space with a minimum width of 4 feet between stalls should be provided at key locations.

If parking lots exceed two rows in depth, the alignment of the aisles should be in the direction of the pedestrian movement.

General (B & C) Parking Areas

Parking areas are to be planned in such a way as to permit large site development features such as buildings, grading, landscaped areas, and screen plantings to viusally offset the negative impact of large paved areas, rather than relying on plantings within the paved area.

Parking areas shall be all-weather construction, and parking stalls must be striped.

Parking stalls must have adequate ingress and egress.

Standard parking stalls shall be a minimum of 9 feet by 19 feet with a 2-1/2 foot reduction permitted for vehicle front overhangs. (180 square feet per stall minimum).

Designated "Handicap Parking" spaces, 12 feet width, shall be provided. Such parking spaces shall be given preferential locations near building entrances which provide full and convenient handicap access.

The number and dimensions of all parking spaces required for each parcel shall be sufficient to satisfy all of the site's needs. Parking location and layout should facilitate easy and safe pedestrian circulation.

Number and location of off street parking spaces required shall conform to county zoning ordinances and Spokane International Airport Business Park Design Review.

SITE ACCESS

Loading areas shall be set back, recessed, or screened. In no event, shall a loading dock be closer than 15'-0" from a lease or property line fronting upon a street unless otherwise approved.

Design Guidelines have been written concerning site access drives in order to insure adequate site access and proper location of these drives.

Access drives shall be a maximum of 25' wide and shall be located no closer than 200' to any other intersections. Curb cuts for entrances to access drives shall be a maximum of 30' wide.

The number of access drives per parcel is limited to that which will provide for optimum safety and efficiency of traffic flow.

Access drives shall be located in such a way as to provide minimal interruption of street plantings and utilities.

A distance of 200' is recommended for access drives located in relation to intersections.

Access drives shall incorporate provisions for efficient vehicle stacking during periods of peak use.

Corner lots shall not be allowed to have any sight obstruction which constitutes a hazard to the traveling public within the area designated as the "clear view triangle". This triangle is determined by measuring 80 feet from the center of two intersecting streets along the center lines of each street, then connecting the two points with a straight line forming the hypotenuse of the triangle.

BUILDINGS

In order to maintain the character of the SIABP, Design Guidelines have been established to insure that there is a compatibility of architectural features throughout the project. Building design and height, lighting, storage and signs are all elements which contribute to the general visual texture of the project.

Objectives:

1. To insure that the buildings on each parcel contribute to the overall visual character of the SIABP.
2. To encourage the use of compatible materials and colors.
3. To insure that the building coverage on a site is not excessive.
4. To maintain a consistent and compatible height profile throughout the development.
5. To insure that exterior lighting is consistent throughout the project.
6. To have on-site lighting contribute to the safe and efficient use of a development parcel.

7. To insure that service and loading areas have minimum visibility on each site.

8. To prohibit outdoor storage.

9. To provide guidelines for attached signs.

10. To provide guidelines to meet tenants' need for temporary signs.

11. To insure that no site or portion of a site is used to create a nuisance to adjacent streets or sites.

12. To insure minimum separation of buildings on parcels with common boundaries.

NOTES: 1. Refer to Landscaping design Guideline for issues related to Landscape Design.

2. See Building Concepts for building setback requirements.

Building Design

All building design shall be integrated with the overall site design concept, and are subject to design review by the Spokane International Airport Business Park.

Building design shall recognize and be compatible with adjacent structures. Duplication of adjacent structures to create a uniform appearance is not desired. Continuity created by use of similar or compatible materials, colors and textures is encouraged.

The color of exterior building materials used in the construction of all buildings, enclosures and appurtenant structures shall present a consistent, though not identical appearance, throughout the project.

Non-architecturally treated concrete block and exposed galvanized sheetmetal will not be allowed. Building eaves, cornices, belt corners and similar ornamentations may not project out more than 2 feet from building.

Accessory buildings, enclosures and appurtenant structures to any buildings or structures should be of similar or compatible materials, design and construction to the primary building. Non-covered porches, terraces, steps, platforms, not over 42 inches in height may extend from the buildings.

Buildings shall have a consistent and compatible height throughout the project. These must conform to FAA height requirements.

Maximum height is limited to 35 feet, which is the total dimension, including screening devices, parapets, etc., and is limited to three stories.

Building Mounted Lighting and Other On-Site Illumination

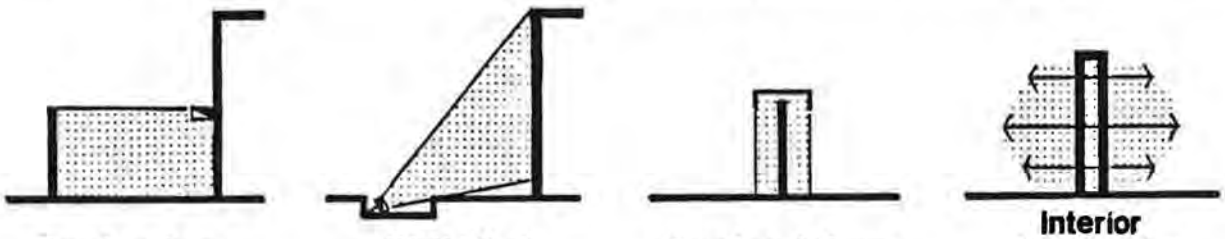
Building illumination and architectural lighting shall be indirect in character (no light source visible). Indirect wall lighting or "wall washing", overhead down lighting, or interior illumination which spills outside is encouraged. Architectural lighting should articulate and animate the particular building design as well as provide the required functional lighting for safety and clarity of pedestrian movement.

Although exterior security and feature lighting is not required, it is strongly recommended for safety and enhancement.

On-site lighting shall contribute to the safe and efficient use of a development parcel. Lighting levels shall be consistent throughout the project and shall complement the architecture and character of the site. Energy efficient lighting is encouraged.

Wall mounted lighting should not project above the wall or building parapet.

No lighting fixtures shall be attached or supported from the roof of any building.



Lighting

Service area lighting shall be contained within the service yard boundaries and enclosure walls. No light spillover should occur outside the service area. The light source should not be visible from the street.

Building Mounted Signs

Each sign shall be harmonious with the texture and color of the building to which it is affixed.

The total sign area of a building mounted sign shall not exceed 10% of the square footage of a building wall and no sign shall project more than 18" from the wall.

No sign shall extend above the dominant roof line of a building without prior approval of the owner.

Office/Light Industrial Zones: separate letters attached to a building or sign wall shall be no larger than 18" high. In the Industrial Zones, separate letters attached to a building or sign wall shall be no larger than 10" high. In either zone, letters for information or directional signs other than the occupant's principal identification sign shall be no larger than 3" high.

Building mounted business or building identification signs shall be limited to the display of the building name and business name and logo.

No more than one building mounted sign shall be permitted for each street frontage of a parcel, except in the case of multiple occupancies of a building. When multiple occupants are individually identified, their signs shall be adjacent to their entrance and not exceed 5 square feet.

Business or building identification signs may be mounted to any vertical surface of a building or building associated wall, provided such signs appear as an integral part of the overall architectural and site design concept.

The sign area of building mounted business or building identification signs may not exceed 15 square feet. The sign area is the surface which displays letters or symbols identifying the business or businesses.

Building mounted business or building identification signs may be illuminated by internal illumination or backlighting provided that the color and intensity of such lighting appears as an integral part of the overall architectural and site design concept. No sign illumination shall cast a glare which will be visible from any street or access drive.

Lettering painted on building surfaces shall not be permitted.

Temporary Signs

Only one temporary sign shall be permitted per development parcel.

Temporary signs shall be of a similar size and design throughout the Business Park and must be approved by the Spokane International Airport Business Park.

No Temporary sign shall be located so as to reduce the safe flow of vehicles and pedestrians, and signs shall be located at least (10) feet from any Right-of-Way or drive.

All temporary signs shall be removed prior to occupancy.

Signs must be unlighted and placed flat against the wall of the main building or mounted on ground; no hanging signs from poles. Signs shall not exceed 6 feet in height nor 10 feet in length and have an area of not greater than 32 square feet.

Nuisance

No nuisance shall be permitted to exist or operate upon any lot or site so as to be offensive or detrimental to any adjacent lot or site or neighboring property or to its occupants.

No obnoxious odors of any kind, no exhaust waste into the air or dust created by industrial operation, no industrial noise in excess of (20) sones as measured from any property line on the lot are allowed.

No discharge of treated or untreated sewage or industrial waste into a resorvoir, lake, stream or open ground is allowed. All methods of sewage and industrial waste treatment shall meet with Spokane Industrial Airport Business Park approval.

No operation will be allowed to carry on operations that produce heat or glare perceptible from any property line of the lot of which the industrial operation is located.

In addition to these Building Guidelines, variances will be necessary during construction periods. Purposes of these variances will be:

1. To allow temporary overhead placement of wires to service construction areas.

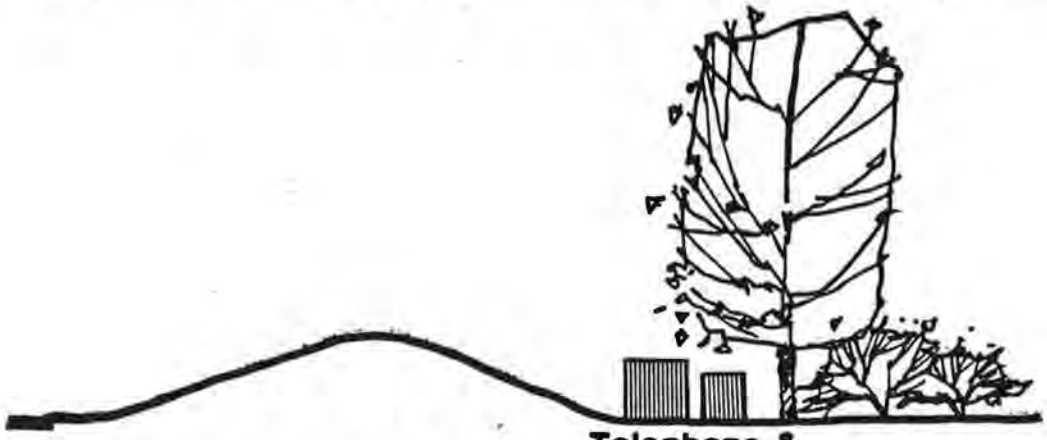
2. Too allow temporary excavation work and heavy equipment in unscreened areas which are currently under construction.

3. To insure that the construction site will be kept in a neat and orderly condition at all times. This includes construction buildings, material storage, machinery and equipment.

Service and Loading Areas

Visual screening devices for exterior mechanical equipment and components of plumbing, processing, heating, cooling, ventilating systems, and electrical equipment shall appear as an integrated part of the architectural design.

All outdoor refuse collection areas should be located in the side or rear areas of the buildings and shall be screened by earth berms and/or landscaping with a minimum of a sight-obscuring, non-pierced fence, not less than (6) feet in height.



All building-mounted mechanical and electrical equipment shall be shielded from view with visual barriers of the same or greater height as the objects they are screening. No exposed conduit, tubing, conductors, transformers or other equipment shall be permitted.

Main gas meters and fire sprinklers (risers) shall be located in the side or rear areas of the buildings and shall be screened by earth berms and/or landscaping.

Telephone and electrical supply equipment external to the building shall be located in the side or rear areas of the building and shall be screened by earth berms and/or landscaping.

Unless approved, no materials or equipment, including trucks or other motor vehicles, shall be stored on a site except inside a closed building.

No loading areas permitted in Zone B.

Loading Dock areas shall be set back, recessed, or screened.

No outdoor storage is permitted.

SIGNS

The purpose of these Guidelines is to enhance the appearance of the SIABP as a whole, to protect property values, and to encourage signs which by their good disign are integrated and harmonious to the buildings and sites which they designate.

Objectives:

1. To allow sufficient identification so that the name of each business is clearly and individually associated with its facilities when viewed from adjoining roadways.

2. To prohibit signs from being used for advertising of any kind, including job openings, services or products.

3. To allow sufficient informational, directional and traffic control signing for convenient and safe movement of traffic on all roadways within the project.

4. To have all informational, vehicular control and temporary signing be similar in design, size, height, color, material and typography.

5. To provide signs which do not detract from the visual continuity and overall image of the project.

NOTE: For building mounted signs, see Building Design Guidelines, Signs.

General Requirements:

Business Identification Signs shall be either of the following: (1) Free-standing or (2) Fixed.

1. One free-standing Business Identification sign for a single occupant building or site shall be permitted in the building setback area of each street frontage.

2. One free-standing Business Identification Sign for a multi-tenant building or site (Property Identification Sign) shall be permitted in the building setback area of each street frontage.

To insure a general consistency among the project's signs, all materials and design shall be compatible with others within the project. All information and vehicular control signs shall be of uniform design using the standards approved by the Owner, and are subject to review before fabrication.

Signs within SIABP shall be of sufficient and uniform size for both business identification and vehicular control. Each business within SIABP shall be allowed to locate its name on a sign where it is clearly visible from the adjoining street.

The following guidelines apply to detached business identification signs:

All detached business identification signs shall be limited to the display of the name and/or symbol of the business or businesses occupying the site and shall include the street address and street name for the building being occupied. No messages or advertising of any kind shall be placed on the sign.

No more than one detached business identification or tenant(s) directory sign shall be permitted on each street frontage of a developmental parcel. This shall be located within Zone B.

All detached business signs may be illuminated by continuous and uniform internal illumination, backlighting, or ground lighting. No flashing or moving lights will be permitted. No unprotected lamp providing sign illumination shall be directly visible when viewed at any angle from a distance of 20 feet or more. No sign should cast a glare which will be visible from any street or access drive.

No detached business sign shall exceed a sign area of 30 square feet per side. The sign area is defined as the area of the surface or surfaces which display letters or symbols identifying the business or businesses occupying the site. The sign area does not include the base or pedestal to which the sign is mounted. The sign's height shall not exceed 6' above the underlying finish grade unless otherwise approved in writing by the owner.

<u>The following guidelines apply to directory, informational and traffic control signs:</u>

All directory and vehicular control signs within SIABP shall be uniform in design and materials with detached business identification signs within the project. Stop sign and Yield signs may be of conventional color and shape.

Directory and vehicular control signs may occur in Zones A, B, and C depending on specific use.

Signs shall not be located so as to reduce the safe flow of vehicles or pedestrians.

No business name, symbol, or advertising of any sort shall be permitted on any directory or vehicular control sign.

Signs shall have a panel face which does not exceed 5 square feet in area per side.

Signs shall not exceed a height of 4 feet above the underlying grade.

Illumination of all directory and vehicular control signs shall be consistent with detached business identification signs throughout the project.

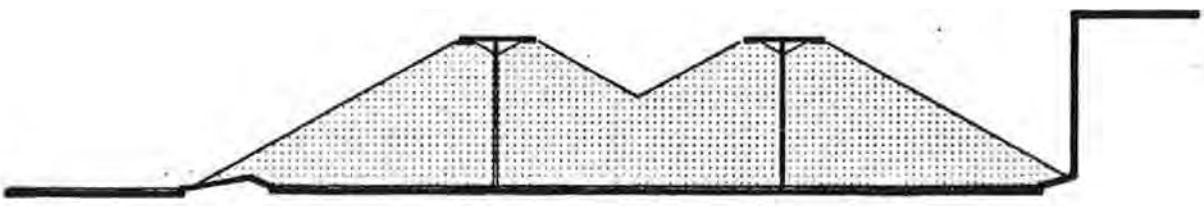
LIGHTING GUIDELINES

On-site lighting will help determine the character of the project. Design Guidelines have been written to establish lighting standards that will enhance safety, security and efficiency throughout the site.

Objectives:

1. To insure that on-site lighting contributes to the safe and efficient use of a development site.
2. To insure that on-site lighting contributes to site security.
3. To insure that lighting levels are consistent throughout the project and complement the architecture and character of the site as a whole.
4. To insure that street lighting and on-site parking lot fixtures and illumination levels are consistent throughout the project.
5. To prevent on-site lighting from casting glare onto adjacent parking lots, buildings and streets.
6. To encourage lighting design that is in conformance with energy-saving guidelines.

NOTE: For lighting which is mounted on or related to buildings, see Building Design Guidelines, Lighting.



On Site Lighting

Lighting

No light fixtures are to be located in the Road Right-of-Way (Zone A) other than street lighting and lighting necessary to illuminate signs.

All lighting potentially visible from an adjacent street (except bollard or pole lighting up to 10 feet in height) shall be indirect or shall incorporate a full cut-off shield type fixture. On-site lighting shall be prevented from casting a glare onto adjacent parking lots, buildings and streets, neighboring property and public highways.
Service area lighting shall be contained within the service yard boundaries and enclosure walls. No light spillover should occur outside the service area.
The light source should not be visible from the street.

Parking areas may require only sufficient illumination to silhouette objects.

Lightpole lighting should be mounted with sufficient fixture height and base to meet local governmental standards, FAA standards and those approved by the SIABP.

As a minimum requirement, site lighting in parking areas, access drives, and internal vehicular circulation areas on all parcels shall provide side and rear property linepole lighting.

Energy efficient lighting is encouraged. All on-site lighting shall be sufficient, but not excessive, for its particular use.

No light poles over 12 feet in height are permited in the Setback Zone (Zone B).

MAINTENANCE

Because the Landscape Concept is a major part of the design of the SIABP, recommendations are included for the maintenance of landscaped areas throughout the project. Maintenance will be the responsibility of both the Owner and Tenants, depending upon whether landscaped areas occur in Zone A, Zone B or Zone C.

OBJECTIVES:

1. To insure that the campus of Spokane Airport Business Park is maintained in such a way as to present an attractive and well-kept appearance at all times.

2. To differentiate maintenance responsibilities of Owners and Tenants.

Landscaping in all parts of the project shall be continuously maintained to insure an orderly, attractive appearance and to meet specific cultural demands of all plant materials.

1. Establish a regular mowing schedule for all turf areas.

2. Trim all groundcovers as necessary to keep borders neat.

3. Prune all shrubs and trees as required.

4. Cultivate all shrub and groundcover areas as necessary.

5. Maintain vegetation in undeveloped areas as is necessary for weed control and fire hazard control.

6. Treat all shrubs, ground covers, and trees with insecticides, herbicides and fertilizers as necessary.

7. Clean up and remove all debris, trimmings, and clippings.

8. Replace any diseased or dead plant materials.

The Road Right-of-Way (Zone A) shall be maintained by the owner (SIABP)

Maintenance shall include roads, landscaping, lighting, signs and utilities which occur in this area.

The Setback Zone and Interior Zone (Zones B and C) shall be maintained by the tenant. Maintenance shall include all landscaping, buildings, signs, lighting, parking/roads, and other facilities which occur within these zones.

All damages which occur in Zones A and B, whether due to natural causes or automobile damage, shall be repaired within 30 days.

APPENDIX H

AIRPORT SITE QUEUING ANALYSIS

AIRPORT SITE QUEUING ANALYSIS

Introduction

This analysis addresses the sizing of the airport site with respect to its traffic service system. This system includes both the site entrance/exit scale facility and the citizen unloading area. Both of these points are potential "bottlenecks" in the smooth flow of traffic through the waste recovery facility.

Methodology

To analyze the operation of the facility, the two service points are individually modeled as single-channel queuing systems. This type of model is based on the assumptions that interarrival and service times are exponentially distributed and the queue discipline is first in, first out. These assumptions are reasonable with regard to the traffic flow distributions and queue discipline of a waste recovery facility.

Traffic Volumes

The actual sizing of this facility is comprised of the sizing of the individual components: 1) the inbound scale facility, 2) the outbound scale facility, 3) the citizen unloading area, and 4) the commercial unloading area. In turn, the sizing of these components is based on their individual peak hour traffic demand.

With the exception of the truck unloading area, the peak period of traffic will be chosen as the peak hour during a Saturday in the peak month of the year. The truck unloading area will be sized for the peak hour of the average weekday during the peak month of the year. For both of these scenarios, the design year traffic volume will be that traffic expected for opening day (1990) of the facility. In addition, the effects of "free-disposal" coupon usage were accounted for by inflating the auto/pickup (citizen) traffic by 70 percent.

Auto/Pickup Unload Area

Design hourly volume equal to 147 vehicles.
Equivalent daily volume equal to 918 vehicles.

Based on the queuing analysis, it appears that 48 unloading bays would be required to provide enough space for all arriving vehicles to unload without delay. This is based on a 95 percent confidence that this unloading capacity would not be exceeded.

Alternatively, the unloading area would require only 39 bays if it were permissible to store at most an equal number (39 or less vehicles) outside the unloading area. The average waiting time for all vehicles in this instance would be 3-4 minutes. Again, this is based on a 95 percent confidence that the total number at any one time would not exceed 78 (= 39+39).

Truck Unload Area

Design hourly volume equal to 28 vehicles.
Equivalent daily volume equal to 232 vehicles.

Similar to the analysis of auto/pickup area, five truck stalls would be needed to serve the peak hour traffic without wait. This conclusion is based on a 95 percent confidence interval.

Alternatively, if only four stalls were provided, trucks may queue periodically. In fact, the average wait for all trucks would be one minute. Again, this conclusion is based on a 95 percent confidence interval.

Inbound Scale Facility

Design hourly volume equal to 152 vehicles.
Equivalent daily volume equal to 980 vehicles.

Based on the queuing analysis, it appears that two inbound stalls will be necessary to serve the combined auto/pickup and truck traffic. The average waiting time for all vehicles in the queue should be about 20 seconds. This conclusion is based on a 95 percent confidence interval.

Outbound Scale Facility

Design hourly volume equal to 147 vehicles.
Equivalent daily volume equal to 918 vehicles.

In this instance, arrivals will be more uniform than exponentially distributed (random). Hence, it is estimated that during the analysis hour approximately 120 vehicles can be served. This would leave a queue of 27 vehicles at the end of the hour.

Recommendations

Based on this analysis, the following number of "service" areas should be used in sizing the Airport site waste recovery facility. These numbers should be used only as practical minimums to preclude the formation of extensive queues during the peak traffic hours.

Component	Recommend Service Points	Pit[(a)] Length
Auto/pickup unload Area	39 bays	240'
Truck unload Area	4 bays	50'
Inbound scale facility	2 scales	--
Outbound scale facility	2 scales	--

(a) Pit lengths based on 12 foot stalls.

Project	SPOKANE EIS	Computed	JB		
Subject	SITE TRAFFIC	Date	9/23/86	Sht. 1	Of

FACILITY SIZING - TRAFFIC FLOWS

AVERAGE WEEKDAY TRUCK TRAFFIC DURING PEAK MONTH OF YEAR

		AIRPORT	CITY	TOTAL	
AM PEAK HR.: 1990	PACKER	3	13	16	
	TRANS	6	4	10	
	"	1	0	1	
	"	1	0	1	
				28	← Design Vol.
2000	PACKER	3	13	16	
	TRANS	7	4	11	
	"	2	0	2	
	"	1	0	1	
				30	

AUTO/PICKUP TRAFFIC DURING SATURDAY IN SPRING - NO COUPONS

	AIRPORT	CITY	TOTAL
AM PEAK HR. 1990	15	71	86
2000	17	75	92

AUTO/PICKUP TRAFFIC DURING SATURDAY IN SPRING = WITH COUPONS
(= ABOVE × 1.7)

	AIRPORT	CITY	TOTAL	
1990	26	121	147	← Design Vol. 1
2000	29	128	157	

Project	SPOKANE EIS	Computed	JB		
Subject	SITE TRAFFIC	Date	9/23/96	Sht. 2	Of

FEE ASSESSMENT POINT TRAFFIC

COMBINED TRAFFIC FOR SATURDAY IN SPRING - NO COUPONS

		AIRPORT	CITY	TOTAL
1990	AUTO	15	71	86
	TRUCK	3	2	5
				91
2000	AUTO	17	75	92
	TRUCK	5	2	7
				99

COMBINED TRAFFIC FOR SATURDAY IN SPRING - WITH COUPONS

		AIRPORT	CITY	TOTAL	
1990	AUTO	26	121	147	← Design Vol.
	TRUCK	3	2	5	
				152	← Design Vol.
2000	AUTO	29	128	157	
	TRUCK	5	2	7	
				164	

Project	SPOKANE EIS	Computed	JB		
Subject	FACILITY SIZING	Date	9/23/86	Sht. 1	Of

AUTO/PICKUP UNLOADING AREA Figure 1

DESIGN HOURLY VOLUME = 147 vph REPRESENTS A SATURDAY DURING THE PEAK MONTH IN 1990. WITH COUPONS.

THE UNLOADING AREA WOULD HAVE TO PROVIDE 49 BAYS (= 0.333 x 147 ÷ 5) TO PROVIDE ENOUGH BAYS FOR THE DESIGN HOURLY VOLUME TO PREVENT QUEUES FROM FORMING 95% OF THE TIME.

ALTERNATIVELY, THE UNLOADING AREA WOULD REQUIRE 39 BAYS IF IT WERE PERMISSIBLE TO ALLOW AN EQUAL NUMBER OF VEHICLES TO QUEUE OUTSIDE THE UNLOADING AREA.

DUE TO THE CONSERVATIVE NATURE OF THE ANALYSIS (i.e. 95% CONFIDENCE, & PEAK CONDITIONS) IT IS RECOMMENDED THAT THE AUTO/PICKUP UNLOADING AREA BE 450 FEET IN LENGTH (= 12' x 39) OR A DOUBLE-SIDED PIT 225' FEET LONG.

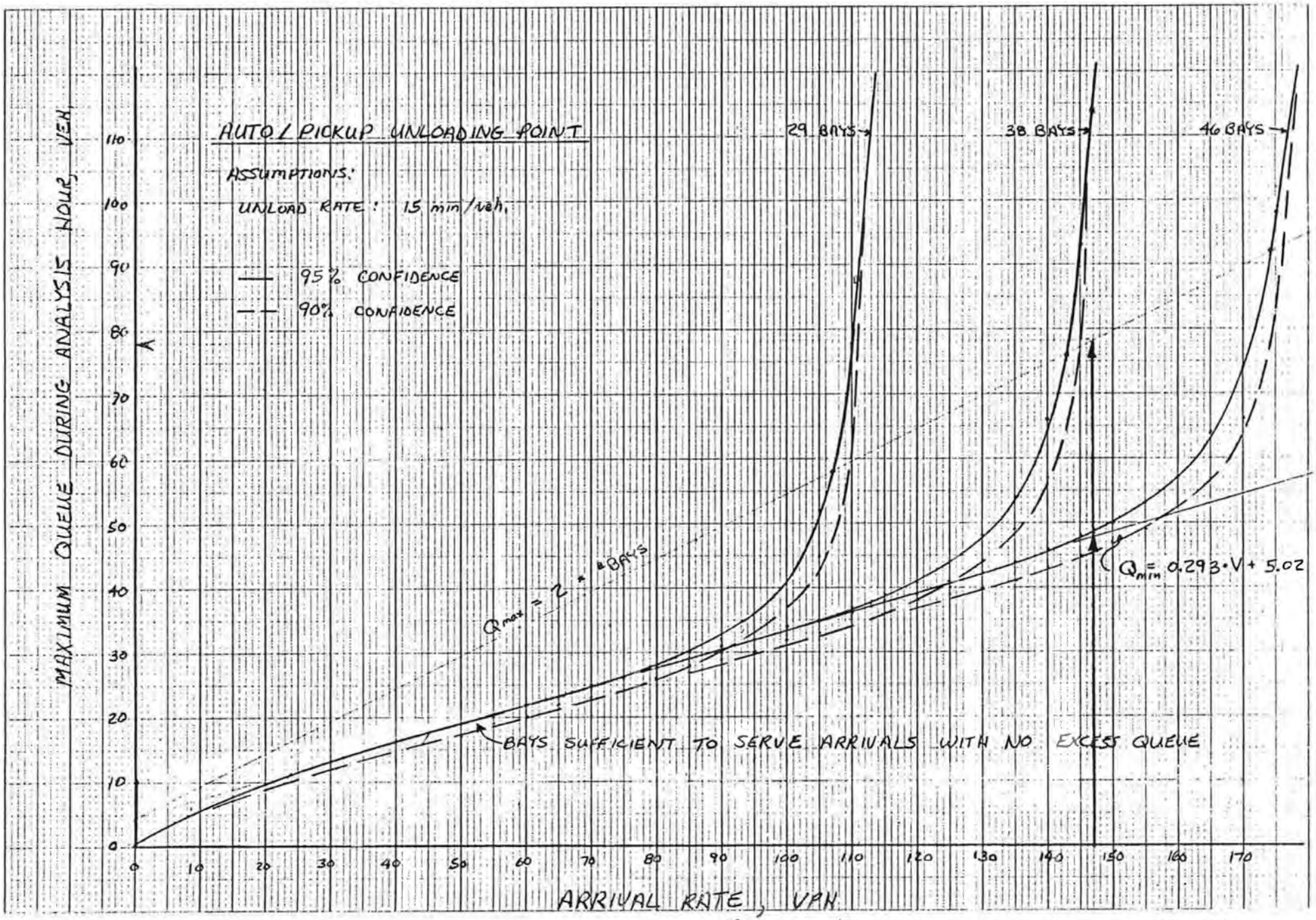


FIGURE 1

Project	SPOKANE EIS	Computed	JB		
Subject	FACILITY SIZING	Date	9/23/86	Sht. 2	Of

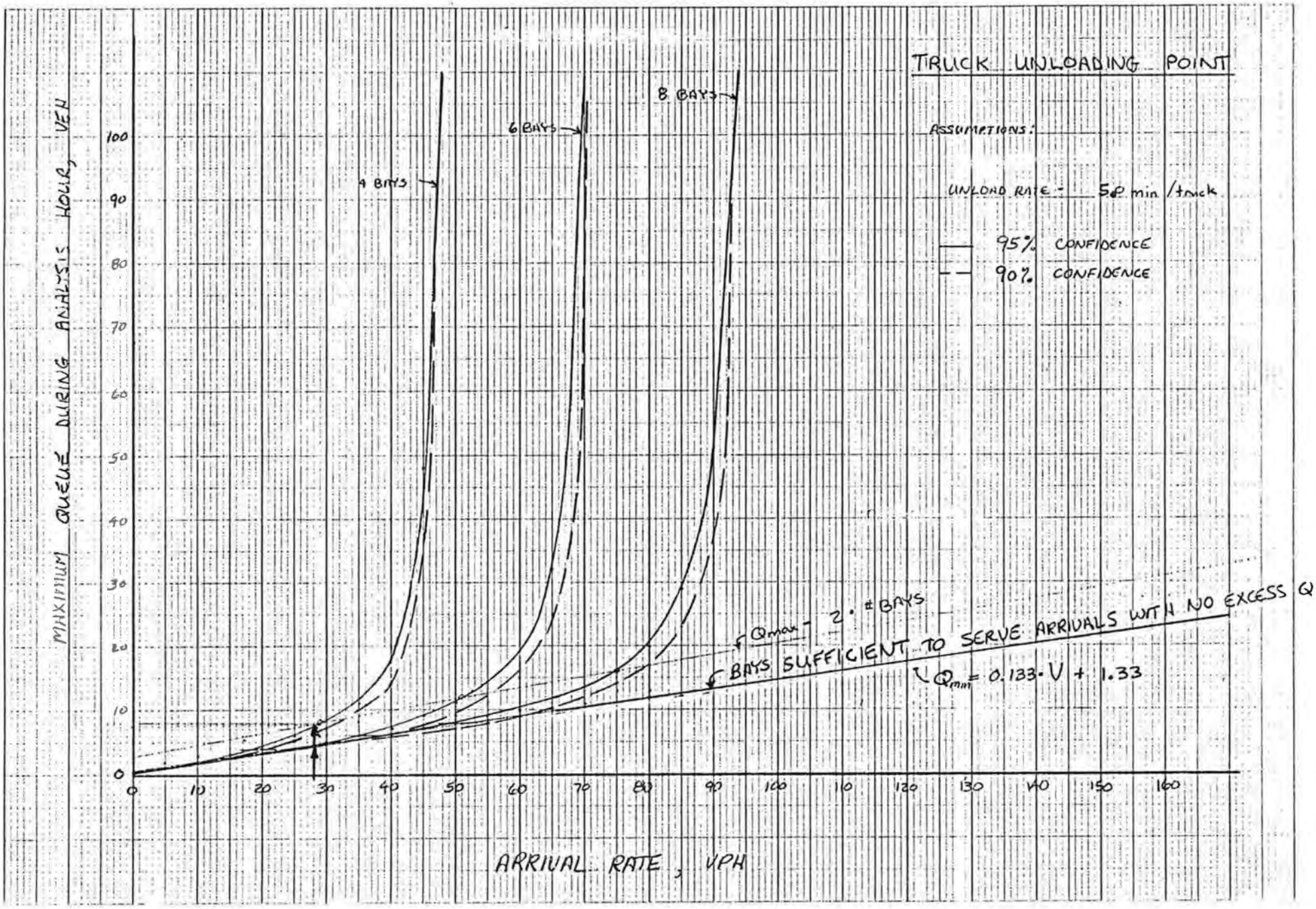
TRUCK UNLOADING AREA Figure 2

DESIGN HOURLY VOLUME = 28 vph REPRESENTS AN AVERAGE WEEKDAY DURING THE PEAK MONTH IN 1990.

THE UNLOADING AREA WOULD HAVE TO PROVIDE 5 BAYS (= 0.133 * 28 + 1.33) TO PROVIDE ENOUGH BAYS FOR THE DESIGN HOURLY VOLUME TO PREVENT QUEUES FROM FORMING 95% OF THE TIME.

ALTERNATIVELY, THE TRUCK UNLOADING AREA WOULD REQUIRE 4 BAYS IF IT WERE PERMISSIBLE TO ALLOW AN EQUAL NUMBER OF VEHICLES TO QUEUE OUTSIDE THE UNLOADING AREA.

DUE TO THE CONSERVATIVE NATURE OF THE ANALYSIS, IT IS RECOMMENDED THAT THE TRUCK UNLOADING AREA BE 50 FEET (= 12' x 4) IN LENGTH.



Project	SPOKANE EIS	Computed	JB		
Subject	FACILITY SIZING	Date	9/23/86	Sht. 3	Of

FEE ASSESSMENT POINT - (INBOUND) Figure 3

- DESIGN HOURLY VOLUME = 152 vph REPRESENTING A SATURDAY DURING THE PEAK MONTH IN 1990 WITH COUPONS.

BASED ON THIS ANALYSIS, IT APPEARS THAT TWO INBOUND SCALES WILL BE NECESSARY TO serve THE COMBINED AUTO/PICKUP AND TRUCK TRAFFIC. THE MAXIMUM VOLUME ONE SCALE CAN SERVE IS 110 VPH.

IT IS RECOMMENDED THAT TWO INBOUND SCALES BE PROVIDED FOR THE INBOUND COMBINED TRAFFIC FLOW.

FEE ASSESSMENT POINT - (OUTBOUND) Figure 4

IN THIS INSTANCE ARRIVALS WILL BE MORE UNIFORM THAN RANDOM. HENCE, THROUGH THE ANALYSIS HOUR 120 veh. $(=\frac{3600}{60} \times 2)$ WILL BE SERVED. THIS WOULD LEAVE A QUEUE OF 27 veh AT THE END OF THE HOUR. $(27 = 147 - 120)$

IT IS RECOMMENDED THAT TWO OUTBOUND SCALES BE PROVIDED FOR THE OUTBOUND AUTO/PICKUP TRAFFIC.

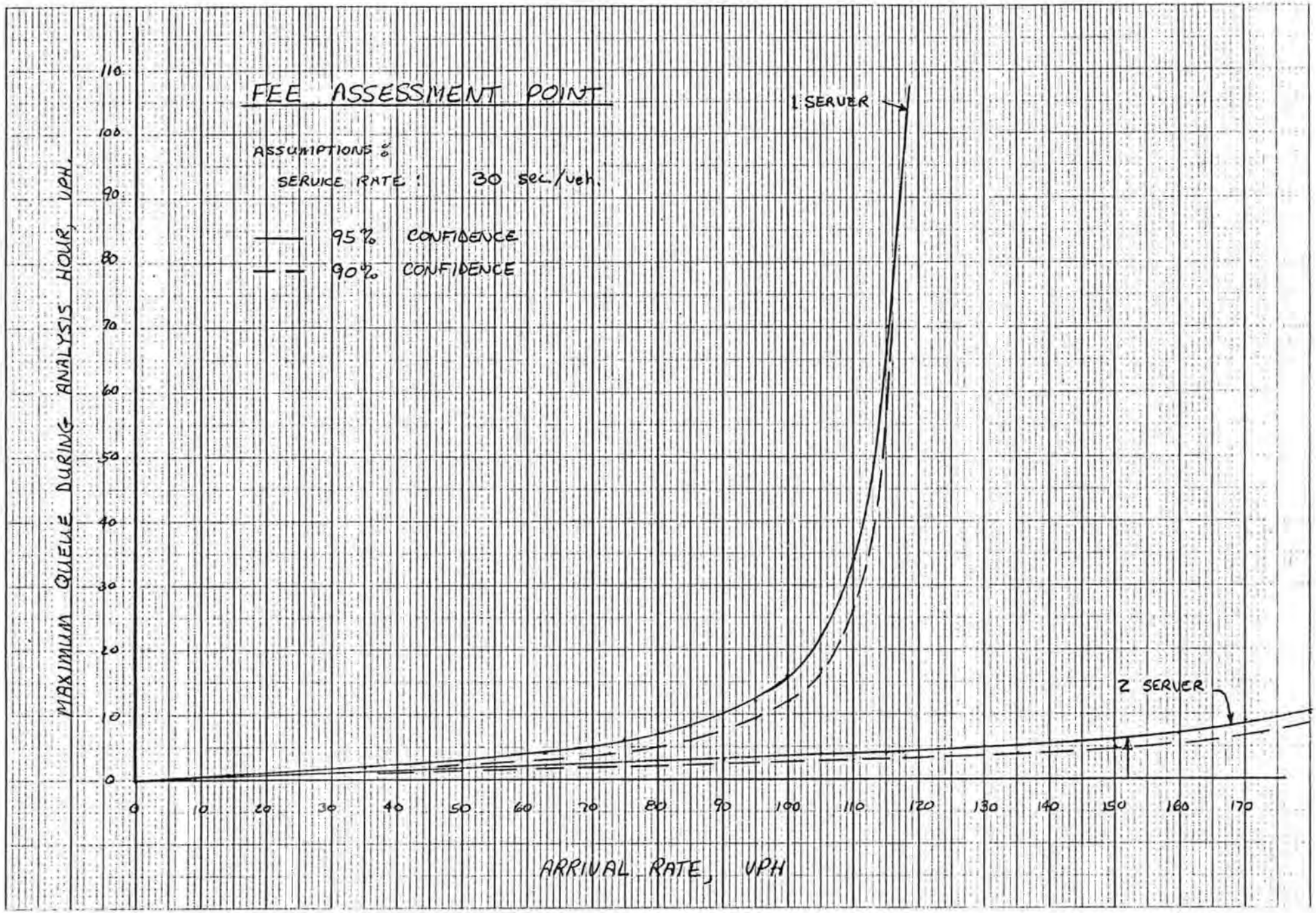


FIGURE 3

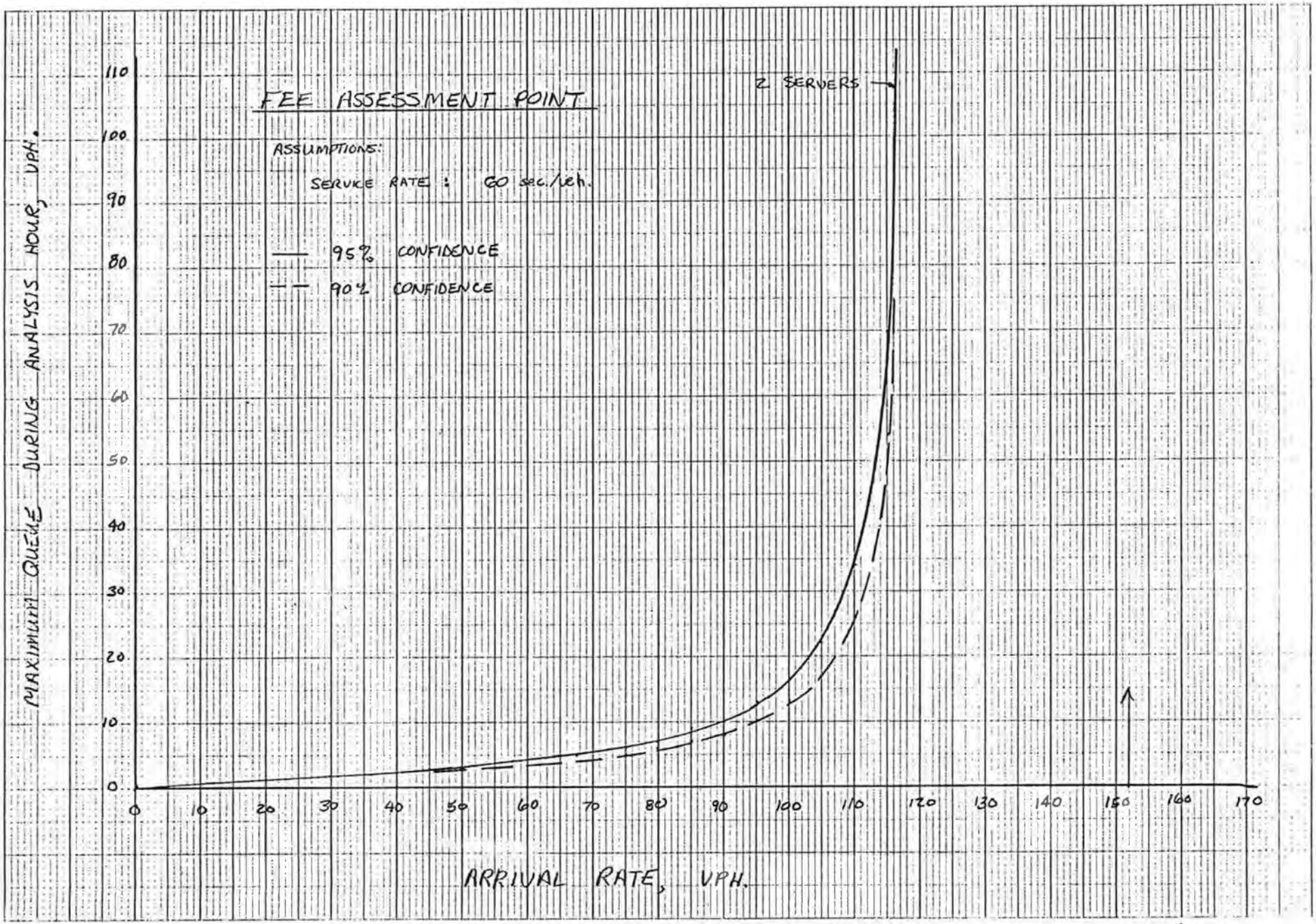


FIGURE 4

APPENDIX I

PROPOSED DEPARTMENT OF ECOLOGY RULES

compliance with the proposed rules for price lists is subject to relatively fewer statutory requirements in comparison to the degree of regulatory oversight due tariffed telecommunications services. Cost savings due to compliance apply similarly to large and small businesses.

Pricing flexibility for competitive services permits economically efficient transactions to take place, and therefore leads to a more economically efficient allocation of resources. The proposed rules for price lists aim to produce this result while retaining sufficient levels of regulatory oversight necessary to protect the public interest.

In addition to the proposed new rules for price lists amendatory rules for tariffs are also suggested. These rules require a more detailed description of proposed changes to tariffs for services provided by utilities. This will permit improved regulatory oversight of tariffed services and enhances the commission's ability to guard the public interest. The proposed amendatory rules for tariffs may lead to augmented cost, but the actual impact is estimated to be, at a maximum, 1.9 cents on a cost per hundred dollars of sales basis.

The development of this estimate is as follows:

Assumptions:

using a small firm as an example
annual revenues of $1,000,000
it takes an employee one day to write the letter
the employee is paid $50,000 a year
261 work days per year

Calculations:

Cost for writing the letter = $50,000/261 = $191.57
Number of $100 sales = $1,000,000/$100 = 10,000
Cost per $100 of sales = $191.57/10,000 = $0.0192

APPENDIX "A"

NEW SECTION

WAC 480-120-027 PRICE LISTS. (1) Pursuant to RCW 80.36-.310 telecommunications services classified by the commission as competitive will be offered under price lists. All services of competitive telecommunications companies as classified by the commission under RCW 80.36.310 will be offered under price lists.

(2) All price lists filed with the commission must describe the service being offered and all prices, charges, terms, and conditions pertaining thereto. Each page of every price list shall contain, in general, the page number and the effective date. All subsequent revisions of a price list shall bear consecutive revision numbers. Price lists must provide sufficient detail for customers and potential customers to understand exactly what is being offered and what charges the customer incurs in obtaining the service.

(3) When price list treatment is authorized in accordance with RCW 80.36.310, the commission will specify the manner of notice to be provided to customers in the event of price list changes.

(4) A telecommunications company which has not been classified as competitive and which offers services under price lists shall provide to the commission information regarding volumes sold and revenues received from such services and the cost of providing such services. This information will be provided as requested or on an appropriate periodic schedule established by the commission.

(5) If the commission finds that a company has not complied with the requirements of this section, it may revoke the waiver of WAC 480-80-040 implied by classification of a telecommunications company or service as competitive.

NEW SECTION

WAC 480-80-041 TARIFF. Services which the commission has classified as competitive telecommunications services, including all services offered by companies which the commission has classified as competitive telecommunications companies, are exempted from the requirement to file tariffs. Price lists for services exempted from the requirement to file tariffs shall be filed in accordance with chapter 480-120-027 WAC. Price list changes must be provided in triplicate and accompanied by a letter of transmittal describing the changes proposed.

AMENDATORY SECTION (Amending Order R-5, filed 6/6/69, effective 10/9/69)

WAC 480-80-050 COPIES OF TARIFF TO BE FILED. Three copies of each tariff shall be sent to the commission accompanied by a letter of transmittal. The letter of transmittal must describe in detail any proposed changes to existing tariffs. One copy will then be returned to the utility by the commission, after processing, with the receipt date noted thereon.

WSR 86-22-071
PROPOSED RULES
DEPARTMENT OF ECOLOGY
[Filed November 5, 1986]

Notice is hereby given in accordance with the provisions of RCW 34.04.025, that the Washington Department of Ecology intends to adopt, amend, or repeal rules concerning solid waste incinerator facilities, chapter 173-434 WAC, establishing emission standards, design requirements and performance standards for solid waste incinerator facilities;

that the agency will at 7:30 p.m., Wednesday, December 10, 1986, in the Spokane County Health District Building, Room 110, West 1101 College, Spokane, WA, and at 7:30 p.m., Wednesday, December 17, 1986, in the Port of Seattle Commissioners Chambers, Pier 66, 2201 Alaska Way, Seattle, WA, conduct public hearings on the proposed rules.

The formal decision regarding adoption, amendment, or repeal of the rules will take place on January 20, 1987.

The authority under which these rules are proposed is chapters 70.94 and 43.21A RCW.

The specific statute these rules are intended to implement is RCW 70.94.331 (2)(c), powers and duties of state board.

Interested persons may submit data, views, or arguments to this agency in writing to be received by this agency before January 12, 1987.

Dated: November 4, 1986
By: Phillip C. Johnson
Deputy Director

STATEMENT OF PURPOSE

Title: Solid waste incinerator facilities, chapter 173-434 WAC.

Description of Purpose: To establish emission controls.

Statutory Authority: Chapters 70.94 and 43.21A RCW.

Summary of Rule: This chapter establishes emission standards, design requirement, and performance standards for solid waste incinerator facilities.

Reasons Supporting Proposed Action: Controls are required to maintain air quality and standards.

Agency Personnel Responsible for Drafting: Jay M. Willenberg, Air Quality Engineer, (206) 885-1900; Implementation and Enforcement: Dan Johnson, Acting Air Program Manager, (206) 459-6256.

Person or Organization Proposing Rule, and Whether Public, Private, or Governmental: Department of Ecology, state government.

Agency Comments or Recommendations Regarding Statutory Language, Implementation, Enforcement, Fiscal Matters: None.

Whether Rule is Necessary as a Result of Federal Law or Federal or State Court Action: No.

Small Business Economic Impact Statement: The applicability of the proposed regulation to small businesses is expected to be limited.

The Regulatory Fairness Act, chapter 19.85 RCW, requires that rules which have an economic impact on more than 20% of all industries or more than 10% of the businesses in any one industry be reviewed and altered to minimize their impact upon small businesses. This regulatory proposal has been reviewed in light of that requirement. The conclusions of this review are summarized below.

This proposed regulation establishes air emission standards for solid waste incinerators. Since solid waste disposal is largely a public function, most such incinerators are likely to be either owned and directly operated by governmental bodies or to be constructed and operated by private entities under contract to local government units. Thus, the applicability of this proposed regulation to small businesses is likely to be quite limited. In any case, the language of WAC 173-434-130 and 173-434-170 provide for less stringent particulate emission standards and testing requirements for small units (less than two hundred fifty tons per day maximum capacity) than for larger incinerators. WAC 173-434-130(10) of this proposed regulation also provides for some degree of flexibility in terms of compliance with hydrogen chloride and sulphur dioxide standards. These provisions give appropriate weight to the special concerns of small versus large businesses within the context of an overall requirement to protect public health and safety.

Chapter 173-434 WAC
SOLID WASTE INCINERATOR FACILITIES

WAC

173-434-010	Purpose.
173-434-020	Applicability.
173-434-030	Definitions.
173-434-050	New source review.
173-434-100	Requirement for BACT.
173-434-110	Adoption of federal standards of performance.
173-434-120	Emission standards for hazardous air pollutants.
173-434-130	Emission standards.
173-434-160	Design and operation.
173-434-170	Monitoring and reporting.
173-434-190	Changes in operation.
173-434-200	Emission inventory.
173-434-210	Special studies.

NEW SECTION

WAC 173-434-010 PURPOSE. This chapter establishes emissions standards, design requirements, and performance standards for solid waste incinerator facilities.

NEW SECTION

WAC 173-434-020 APPLICABILITY. The provisions of this chapter shall apply state-wide to all solid waste incinerator facilities constructed after January 1, 1985, which burn or are designed to burn twelve or more tons per day of solid waste or solid waste derived fuel.

NEW SECTION

WAC 173-434-030 DEFINITIONS. Unless a different meaning is clearly required by context, words and phrases used in this chapter shall have the following meanings, general terms common with other chapters as defined in chapter 173-403 WAC, and terms specific to solid waste incinerators as defined below.

(1) "Facility" means all of the emissions unit(s) including quantifiable fugitive emissions, which are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control), whose activities are ancillary to the incineration of solid waste.

(2) "Residence time" means the minimum amount of time that a parcel of gas is subject to a given temperature.

(3) "Solid waste" means all putrescible and nonputrescible solid and semisolid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and discarded commodities. This includes all liquid, solid and semisolid material, which are not primary products of public, private, industrial, commercial, mining, and agricultural operations. Solid waste includes but is not limited to septage from septic tanks, dangerous waste, and problem wastes. Solid waste does not include wood waste or sludge from waste water treatment plants.

NEW SECTION

WAC 173-434-050 NEW SOURCE REVIEW. Construction shall not commence on any new source until a notice of construction has been approved by the department or cognizant local authority pursuant to WAC 173-403-050. The owner or operator of any source shall notify the department or cognizant local authority prior to replacement of air pollution control equipment or process equipment other than replacement for routine maintenance and repair. The department or cognizant local authority may determine that a notice of construction is required.

NEW SECTION

WAC 173-434-100 REQUIREMENT FOR BACT. (1) No incinerator facility shall cause or permit air contaminant emissions in excess of the limits described in this section, as modified by chapter 173-403 WAC if applicable. Further, all solid waste incinerator facilities are required to use best available control technology (BACT) which may be determined for some facilities to be more stringent than the emissions limitations of this chapter and may include fuel cleaning or separation. In cases where current controls are determined to be less than BACT, the department or cognizant local authority shall, on a case-by-case basis, define BACT for each source and issue a regulatory order to the facility for the installation BACT, with a compliance schedule containing intermediate bench mark dates and final completion date.

(2) Whenever more than one regulation applies to the control of air contaminants from a solid waste incineration facility the more stringent regulation, control, or emission limit shall govern.

NEW SECTION

WAC 173-434-110 ADOPTION OF FEDERAL STANDARDS OF PERFORMANCE. Title 40, Code of Federal Regulations Part 60, subparts A and E and appendixes A, B, C, and D with the exception of sections 60.5 (determination of construction or modification) and 60.6 (review of plans) as promulgated prior to December 1, 1986, is by this reference adopted and incorporated herein. For the purpose of state administration of the federal regulations adopted by reference hereby, the term "administrator" as used therein shall refer to the director of the department of ecology.

NEW SECTION

WAC 173-434-120 EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS. (1) The national emission standards for hazardous air pollutants (NESHAPS) Title 40, Code of Federal Regulation, Part 61, Subparts A, C, M and V and appendixes A, B and C as promulgated prior to December 1, 1986, are by reference adopted and incorporated herein."

(2) The department or cognizant local authority, at any time after the effective date of this section, may conduct or require source tests and require access to: Records, books, files, and other information specific to the control, recovery, or release of asbestos, beryllium, mercury, or vinyl chloride in order to determine the status of compliance of sources of these contaminants and to carry out its enforcement responsibilities. Source testing, monitoring, and analytical methods for sources of the above named contaminants shall conform with the requirements of NESHAPS.

(3) This section shall not apply to any source operating pursuant to a waiver granted by the United States Environmental Protection Agency or an exemption granted by the president of the United States during the effective life of such waiver or exemption.

NEW SECTION

WAC 173-434-130 EMISSION STANDARDS. (1) Particulate.

(a) For incinerator facilities that have the capability of burning two hundred fifty or more tons of solid waste per day, the particulate emissions from each incinerator stack shall not exceed 0.046 grams of particulate per dry cubic meter at standards conditions (0.02 grains/dscf) corrected to seven percent oxygen for an hourly average.

(b) For incinerator facilities that have a maximum capability of burning less than two hundred fifty tons of solid waste per day, the particulate emissions from each incinerator stack shall not exceed 0.069 grams of particulate per dry cubic meter at standards conditions (0.03 grains/dscf) corrected to seven percent oxygen for an hourly average.

(2) Hydrogen chloride. The hydrogen chloride emissions from each incinerator stack shall not exceed fifty ppm corrected to seven percent oxygen for an hourly average.

(3) Sulfur dioxide. The sulfur dioxide emissions from each incinerator stack shall not exceed fifty ppm corrected to seven percent oxygen for an hourly average.

(4) Opacity.

(a) The opacity as measured visually from any incinerator stack shall not exceed an average of five percent opacity for more than six consecutive minutes in any sixty minute period.

(b) The opacity as measured by a transmissometer shall not exceed an average of ten percent opacity for more than six consecutive minutes in any sixty minute period.

(c) The opacity as measured visually shall not exceed an average of zero percent from any point except incinerator stacks for more than six consecutive minutes in any sixty minute period.

(5) Odors. Any person who shall cause or allow the generation of any odor from any source which may unreasonably interfere with any other property owner's use and enjoyment of his property shall use recognized good practices and procedures to reduce those odors to a reasonable minimum.

(6) Fugitive emissions. Each incinerator operator or owner shall take reasonable precautions to prevent fugitive emissions which includes the paving of all normally traveled roadways and enclosing or hooding material transfer points.

(7) Masking. No incinerator operator shall cause or permit the installation or use of any device, or the use of any means which, without resulting in a reduction in the total amount of air contaminant emitted, conceals an emissions of an air contaminant which would otherwise violate any provision of this chapter.

(8) Fallout. No incinerator owner or operator shall cause or permit the emission of particulate matter from any emissions unit which becomes deposited beyond the property boundary under direct control of the owner or operator of the incinerator facility in such qualities or of such character or duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or will interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

(9) Other contaminants. No incinerator owner or operator shall cause or permit air contaminants or water droplets including an air contaminant whose emissions are not otherwise prohibited by this chapter, in such quantities or of such characteristics or duration as is, or is likely to be, injurious to human health, plant or animal life or property, or which unreasonably interferes with use or enjoyment of property.

(10) Control efficiency. The department or cognizant local authority may exempt a source from the requirements of WAC 173-434-130 (2) and (3) provided that the owner or operator demonstrates that the emission of sulfur dioxide and hydrogen chloride are reduced by at least eighty percent of uncontrolled emissions and a procedure for monitoring the emission control system is developed.

(11) Source testing. In order to demonstrate compliance with this chapter, the department or cognizant local authority may require that a test be made of any emissions unit using procedures contained in "Source Test Manual – Procedures for Compliance Testing," state of Washington, department of ecology, on file at the department. The operator of a source may be required to provide the necessary platform and sampling ports for the department or cognizant local authority personnel to perform a test of an emissions unit. The department or cognizant local authority shall be allowed to obtain a sample from any emissions unit. The operator shall be given an opportunity to observe the sampling and to obtain a sample at the same time.

NEW SECTION

WAC 173-434-160 DESIGN AND OPERATION. (1) Combustion temperature. Solid waste shall not be allowed to enter the combustion chamber unless the combustion chamber temperature is above 982°C (1800°F).

(2) Residence time. The minimum combustion chamber temperature must be maintained for at least one second (1.0 second) in a zone after the last over fire air has entered the combustion chamber. Procedures for determining the residence time shall be a part of the new source review.

(3) Excess air. The combustion gases leaving the final combustion zone must be at least three percent oxygen measured on a wet basis.

(4) Combustion air. To minimize odor and fugitive emissions and to maintain a negative pressure in the tipping area, the combustion air shall be withdrawn from the tipping area.

(5) Combustion air distribution and control. The air distribution shall be fully controllable at each location where pressurized air is introduced and the air flow shall be measured and monitored continuously.

(6) Particulate control device temperature. The average temperature of the primary particulate control device shall not exceed 350°F whenever solid waste is being burned.

(7) Operation and maintenance plan. At all times, including periods of abnormal operation and upset conditions, the owner or operator shall, to the extent practicable, maintain and operate any incinerator facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the department or cognizant local authority which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

Before initial start up the owner or operator of the incinerator shall develop a plan for the operation and maintenance of all equipment and procedures that can cause or control air pollution. Every twenty-four months thereafter, the owner or operator must obtain approval of a new or updated plan. The owner or operator must obtain the department's or cognizant local authority's approval of the plan prior to commencing operation and shall not incinerate solid waste without an approved plan. The plan may include operating parameters, maintenance procedure and operation personnel training requirements and procedures.

Incinerator facilities existing prior to the effective date of this chapter have one hundred eighty days after the effective date to obtain approval for their operation and maintenance plan.

NEW SECTION

WAC 173-434-170 MONITORING AND REPORTING. The owners or operators of each incinerator shall conduct routine monitoring of emissions in accordance with a program that has been approved by the department or cognizant local authority.

(1) Monitoring. As part of the program the owners or operators shall install, operate, and maintain continuous monitors for the following:

(a) Opacity;

(b) Combustion temperature;
(c) Particulate control device temperature;
(d) Hydrogen chloride and/or sulfur dioxide;
(e) Oxygen;
(f) Carbon monoxide;
(g) Combustion air distribution.

The monitors for opacity, sulfur dioxide, carbon monoxide, and oxygen shall comply with EPA performance specifications in Title 40, Code of Federal Regulations, Part 60, Appendix B as promulgated prior to December 1, 1986.

(2) Reporting. Results of the monitoring shall be reported within thirty days of the end of each calendar month and shall include but may not be limited to data such as:

(a) The average daily concentration of each monitored pollutant and the daily amount of solid waste burned.

(b) The date, time, and magnitude of any periods during which the standards were exceeded, and what corrective action was or will be taken.

(c) Any period of monitor down time.

(3) Testing. The owners or operators shall conduct emission tests for particulate, sulfur dioxide and hydrogen chloride on a regular basis. These tests may be used to help determine acceptable operating parameters. The testing shall be at least annual for facilities capable of burning two hundred fifty tons or more of solid waste per day and biennial for other facilities.

(4) Other data. Each owner or operator shall furnish upon request of the department or cognizant local authority, such other pertinent data as the department or cognizant local authority may require to evaluate the incinerators emissions or emissions control program.

NEW SECTION

WAC 173-434-190 CHANGES IN OPERATION. If a start up, shutdown, breakdown, or upset condition occurs which could result in an emissions violation or a violation of an ambient air quality standard, the owner or operator of the source shall take the following actions as applicable:

(1) For planned condition, such as a start up or shutdown, the condition shall be reported to the department or cognizant local authority not less than twenty-four hours in advance of its occurrence.

(2) For unplanned conditions, such as a breakdown or upset, the condition shall be reported to the department or cognizant local authority as soon as possible, but no later than the end of the next business day.

If, upon reviewing the available information, the department or cognizant local authority determine that continued operation of any emission unit is likely to cause a significant risk to the public it may order an immediate shutdown of the emissions unit.

Upon request of the department or cognizant local authority the owner or operator of the source shall submit a full written report including known causes, the corrective actions taken, and the preventive measures to be taken to minimize or eliminate the chance of recurrence.

Compliance with the requirement of WAC 173-434-100, does not relieve the owner or operator of the source from the responsibility to maintain continuous compliance with all the requirements of chapter 173-434 WAC nor from the resulting liabilities for failure to comply.

NEW SECTION

WAC 173-434-200 EMISSION INVENTORY. The owner or operator of any solid waste incinerator shall submit an inventory of emissions from the sources each year upon and according to instructions from the department of ecology. The inventory may include stack and fugitive emissions of particulates, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, hydrogen chloride, and other contaminants, shall be submitted when required. The inventory shall include total emissions for the year in tons per year and an estimate of the total emitted each quarter. An estimate shall be made of the one hour and twenty-four hour emissions while operating at capacity. The report shall include the average sulfur content of any fossil fuel used which will result in emissions of more than twenty-four tons per year of sulfur dioxide.

NEW SECTION

WAC 173-434-210 SPECIAL STUDIES. The department or cognizant local authority may require such additional special studies relevant to process emissions and establish completion dates as it determines necessary. These special studies may include the requirement to conduct studies of dioxin emissions and control measures.

WSR 86-22-072
PROPOSED RULES
BOARD OF PILOTAGE COMMISSIONERS
[Filed November 5, 1986]

Notice is hereby given in accordance with the provisions of RCW 34.04.025, that the Washington State Board of Pilotage Commissioners intends to adopt, amend, or repeal rules concerning pilotage rates for Grays Harbor pilotage district, WAC 296-116-185;

that the agency will at 8:00, Thursday, December 11, 1986, in the Washington State Ferries Conference Room, Colman Dock, Seattle, Washington 98104, conduct a public hearing on the proposed rules.

The adoption, amendment, or repeal of the rules will take place immediately following the hearing.

The authority under which these rules are proposed is RCW 88.16.035(4).

Interested persons may submit data, views, or arguments to this agency in writing to be received by this agency before December 5, 1986.

Dated: November 5, 1986
By: Marjorie T. Smitch
Assistant Attorney General

STATEMENT OF PURPOSE

Rule: WAC 296-116-185.

Statutory Authority: RCW 88.16.035(4).

Reason for Amendment: RCW 88.16.035(4) requires that the Board of Pilotage Commissioners shall annually fix the pilotage tariffs for pilotage services performed aboard vessels. The purpose of this amendment is to fix tariffs for the Grays Harbor pilotage district for the forthcoming year.

These rules have been drafted by Marjorie T. Smitch, Assistant Attorney General, 5th Floor, Highways-Licenses Building, Mailstop PB-52, Olympia, WA 98504, phone (206) 753-6126.

These rules will be implemented by the Washington State Board of Pilotage Commissioners, Colman Dock, Seattle, WA 98104, phone (206) 464-7818.

Proposer: Board of Pilotage Commissioners.

Agency Comments: None.

Federal/Law/Court Decision: None.

Small Business Economic Impact Statement: WAC 296-116-300 cost for small business per $100 of sales estimated at 50 cents; and cost for larger business per $100 of sales estimated at 45 cents.

AMENDATORY SECTION (Amending Order 84-5, Resolution No. 84-5, filed 12/31/84)

WAC 296-116-185 TARIFFS AND PILOTAGE RATES FOR THE GRAYS HARBOR PILOTAGE DISTRICT. The following rates shall become effective on January 1, 1985.

APPENDIX J

WWP INTERCONNECTION REQUIREMENTS

Exhibit C

Small Power Production Facility Guidelines and Standards

C-1. INTERCONNECTION REQUIREMENTS.

(a) All interconnected generating facilities shall be constructed and operated in accordance with the applicable federal, state, and local laws and regulations.

(b) The Seller, with a generating capacity of approximately 500 kilowatts or less, will normally utilize a single or three-phase distribution transformer (or bank of transformers) that normally provides services to no other customers, except for the Seller's own service. When connected to a wye grounded distribution system, the primary side of a single-phase transformer will normally be connected line to ground. The primary connection of a three-phase transformer (or bank) for any size generating facility will be determined on an individual basis. This connection could be wye ground or delta as determined by the needs of the Seller and Water Power's local system.

(c) Water Power will provide advice and approval on the point of interconnection location on Water Power's system.

(d) The interconnection of the Seller's Facility with Water Power's system shall not cause any reduction in the quality of service being provided to other customers. Abnormal voltage magnitudes, frequencies, excessive interruptions, or excessive harmonics will not be permitted. These are described as follows:

(1) Abnormal voltage magnitudes. When the generator is connected onto Water Power's system and Water Power's local system is operating in a normal condition, the Seller shall operate its Facility in such a manner that will not cause a reduction in the voltage level at the Point of Delivery from the level that would have been maintained if the Seller's Facility were not connected to Water Power's system. Unless otherwise agreed upon, the Seller's Facility also shall not create a voltage at the Point of Delivery of greater than 3% above the level that would have been maintained if the Seller's Facility were not connected to Water Power's system nor shall it create a voltage to any Water Power customer greater than 5% above nominal operating voltage.

(2) Abnormal frequencies. When the generator is connected onto Water Power's system, the generator shall follow Water Power's local system frequency which is a nominal 60 hertz.

(3) Excessive interruptions. Faults or disturbances on the Seller's Facility shall not create a sustained loss of Water Power's local system. See Section C-3(c)(2) for the description of a sustained loss.

(4) Excessive harmonics.

(A) For salient pole hydro generators with a capacity of 5,000 kva or larger, the harmonics shall not exceed the limits as outlined for telephone influence factor (TIF) in ANSI standard C50.12-1982.

(B) For generators not covered above, distortion of Water Power's volt-time sine wave as measured on the line to neutral voltage at the Point of Delivery will be unacceptable if the sum of all harmonics (defined as the square root of the sum of the squares of the harmonics) superimposed on the 60 hertz voltage sine wave exceeds 5% of the fundamental or the largest individual harmonic exceeds 3% of the fundamental.

(e) The Seller is responsible for the protection of his equipment from any system voltage or frequency excursions.

(f) The Seller may generate power into his own load upon loss of Water Power's system under the conditions outlined in Section C-3(b) herein.

(g) The Seller's Facility shall not provide service to nor interconnect with any other customers.

C-2. EQUIPMENT REQUIREMENTS.

(a) The Seller shall supply, install, own, operate and maintain all equipment on the Seller's side of the Point of Delivery as appropriate and in accordance with all applicable electric codes. The Point of Delivery protection and equipment requirements, ownership, operation and maintenance will be determined on an individual basis determined by the needs of the Seller and Water Power's local system and in accordance with all applicable electric codes.

(b) Water Power will normally supply visible disconnect switch(es) or fused cutout(s) at the Seller's Point of Delivery as appropriate that will be operated by Water Power's personnel. The switching equipment capable of isolating the Seller's generator from Water Power's system shall be accessible to Water Power personnel at all times.

(c) The Seller shall maintain his equipment in good working order and keep adequate maintenance records. The Seller's facilities and maintenance records are subject to inspection by Water Power. Water Power may also witness or review any acceptance tests of the Seller's Facility.

(d) The type of generator grounding (whether solidly grounded, high impedance grounded or ungrounded) will be determined on an individual basis by the needs of the Seller and Water Power's local system. Fault duties for local line to ground faults and protection requirements for the Seller's equipment and Water Power's local system will be considered in this determination.

C-3. PROTECTION REQUIREMENTS.

(a) The Seller shall furnish, install, operate, and maintain in good order and repair and without cost to Water Power such relays, locks and seals, breakers, automatic synchronizers, and other control and protection apparatus as shown by Water Power to be reasonably necessary for the operation of the Seller's facility in parallel with Water Power's system.

(b) The Seller shall provide adequate means or devices that will prevent his generator from being closed into or energizing a de-energized (or single-phased if three-phase) Water Power's system.

(c) Response of Seller's equipment to loss of Water Power's System.

(1) Continuing generation for a temporary loss of Water Power's local system. A temporary loss occurs when a de-energized period lasts from about 1/3 to 5 seconds. The Seller is responsible for protecting his equipment and Water Power personnel due to the Seller's generation during this condition.

(2) Continuing generation during sustained loss (or single-phasing if three-phase) of Water Power's system. A sustained loss occurs when a de-energized period lasts longer than 5 seconds. Water Power's system is open at a location remote from the Seller's generator and the generator could be feeding a fault on Water Power's system or attempting to serve Water Power's system load. For a sustained loss of Water Power's system, the Seller shall not continue to generate into Water Power's system and shall provide adequate protection equipment to prevent such generation.

(d) The Seller is responsible for protecting his equipment from faults. This applies for faults on his equipment or on Water Power's system.

(e) The generator(s) may be manually or automatically started and connected to Water Power's system anytime Water Power's system is in a normal condition. A "normal" condition exists when Water Power's system at the Seller's Point of Delivery is energized and no local conditions exist on Water Power's system such as abnormal voltages, frequencies, single phasing, etc. that would prevent acceptable synchronization or connection to Water Power's system. Induction starting will be permitted where the inrush will not exceed allowable limits at the Seller's delivery metering point. For synchronous generators, the Seller shall provide adequate means for synchronizing to Water Power's system.

(f) The voltage source to the Seller's protection equipment may be taken from either the secondary or the primary side of the generator step-up or interconnection transformer as determined by the local conditions and protection requirements.

(g) The Point of Delivery to the Seller's Facility shall have adequate protective equipment or devices that will separate the Seller's Facility from Water Power's local system for faults or disturbances on the Seller's Facility.

C-4. MISCELLANEOUS REQUIREMENTS.

(a) Water Power reserves the right to open the main disconnecting device and/or cease parallel generation with reasonable notice provided to the Seller (when notice is practicable) for any of the following reasons:

(1) System emergency.

(2) The review of the acceptance tests or inspection of Seller's Facility and protective equipment reveals a hazardous condition, a lack of scheduled maintenance, a lack of maintenance records, or a lack of or inadequate acceptance tests.

(3) The Seller's generating equipment interferes with other customers or the operation of Water Power.

(b) The Seller's Facility shall not take vars from Water Power's system but may supply vars to Water Power's system. This measurement will normally be based on the monthly reading of the kilowatt-hour and kilovar-hour meters but also may be taken from permanently installed demand meters, from telemetry equipment or by tests with portable instruments.

(c) Water Power shall reserve the right to purchase at a future date any or all of a Seller's distribution or transmission line. The value of the line in question will be determined on a depreciated value of the original cost.

(d) The Seller shall operate the generator within the machines capability limits whenever the generator is online and producing power.

(e) The Seller shall supply Water Power with the following data and machine parameters as needed:

(1) Rated KVA output.
(2) Rated voltage.
(3) Rated power factor.
(4) Type of generator (induction motor, DC motor, synchronous generator, etc.).
(5) Proposed protective equipment (breakers, fuses, relay types and settings, etc.).
(6) Generators contribution to faults (subtransient, transient and synchronous reactance).
(7) Inertia constants.
(8) Location on Water Power's system.
(9) Estimated schedule of operation and estimated annual KWH.

(f) When the Seller supplies the transformer(s) for any size of generating facility, he shall supply Water Power with the following generator transformer data:

(1) Rated KVA.
(2) Voltage tap setting.
(3) Impedance.

(g) On generators rated 40 megawatts or larger, a power system stabilizer may be required.

THE WASHINGTON WATER POWER COMPANY

Electric and Natural Gas Service

P.O. BOX 3727 • SPOKANE, WASHINGTON 99220 • (509) 489-0500

THOMAS G. NEWMAN
Manager
System and Hydro Operations

August 2, 1985

Mr. Tom Loder
Project Manager
Century West Engineering
East 429 Third Avenue
Spokane, Washington 99202

Dear Mr. Loder:

Attached are the preliminary cost estimates you requested for the substation facilities necessary to interconnect the proposed Spokane Waste-to-Energy plant with the Washington Water Power Company's transmission system. I have also included the project diagrams for the two potential plant sites.

Please direct any questions concerning the attached estimates or any other interconnection details to Steve Fisher at 489-0500, ext. 2761.

Sincerely,

Tom Newman

Thomas G. Newman
Manager System and Hydro Operations

SVF/cm

cc: G. Lawson
D. Olson
L. Bryan
M. Brammer

enclosures

Attached are the estimates that you requested for the two Waste to Energy plant sites. These estimates are based on 1985 construction costs. Also attached are the project diagrams from which the estimates were developed. No carrying cost, operation or maintenance cost have been included.

Following are the Spokane Waste To Energy Plant Substation estimates concerning your July 16, 1985 request.

These estimates are based on 1985 construction costs + or - 20%.

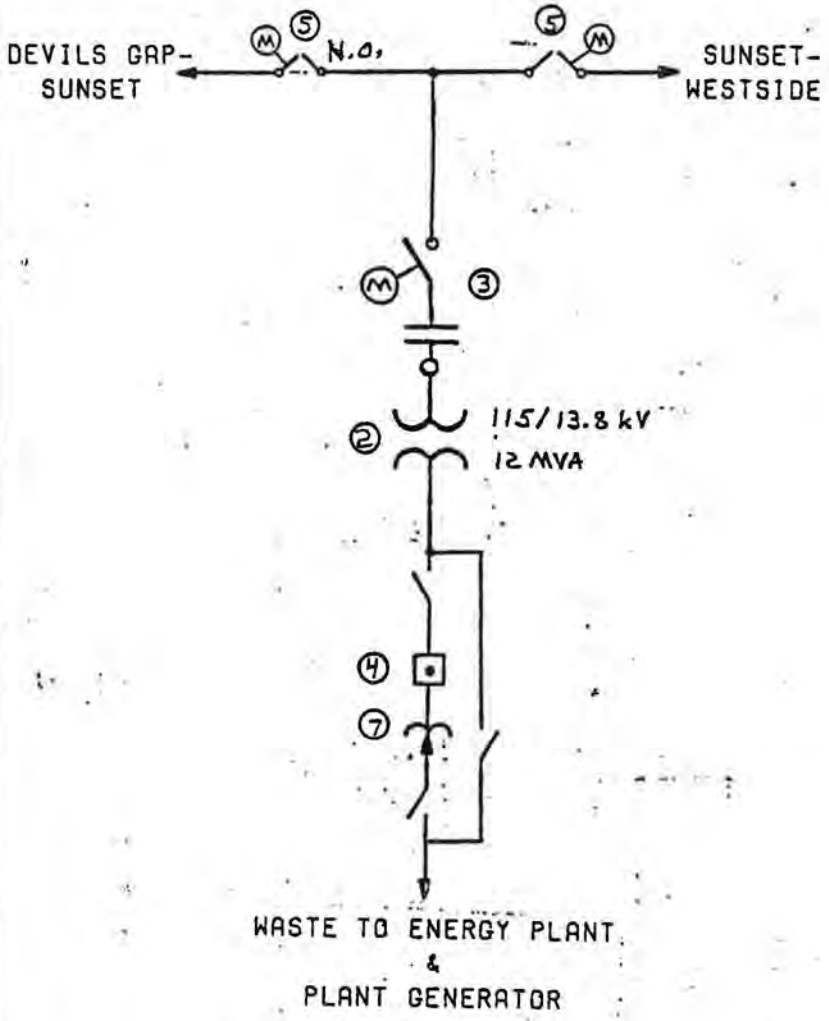
TRENTWOOD SITE:

0.2 Miles of 115 kV Transmission Line	$ 22,000
2 - Two pole Air Switch Structures w/switch	36,500
Substation	361,900
1 - 12 mVA 115/13.8 kV Transformer	223,500
High side Ground Fault Protection	3,100
Sync check and hot bus-dead line reclosing	4,000
	$ 651,000

WEST PLAINS SITE:

0.2 Miles of 115 kV Transmission Line	$ 44,000
2 - Two pole Air Switch Structures w/switch	36,500
Substation	361,900
1 - 12 mVA 115/13.8 kV Transformer	223,500
High side Ground Fault Protection	3,100
Sync check and hot bus-dead line reclosing	16,000
	$ 685,000

RLM: script



Notes:

1. Site location is approximately 3.2 miles from Sunset and 22.5 miles from Devils Gap.
2. Min. step-up transformer size is 12 MVA, 115/13.8 kV
3. S & C circuit switcher with normal relay package.
4. Recloser is an ES56Ø.
5. Install motor operated air switches for auto transfer.
6. Automatic transfer scheme and generator protection require three capacitive potential transformers.
7. Voltage regulator should have reverse power capability.
8. Generation is expected to be about 1Ø MW. Plant load is expected to be between 2Ø% and 5Ø% of output.
9. Should install a High side voltage relay package (ground fault protection)
10. The ES56Ø OCR will have a relaying package similar to Colville 12F3 to Vaagens.
11. Add sync check and hot bus-dead line to the reclosing on Sunset A-484,A198, Devils Gap A-526 and Westside A41Ø OCB's.

NO.	DATE	REVISION	BY	CKD.

SPOKANE WASTE TO ENERGY PLANT
WEST PLAINS SITE

PROJECT DIAGRAM

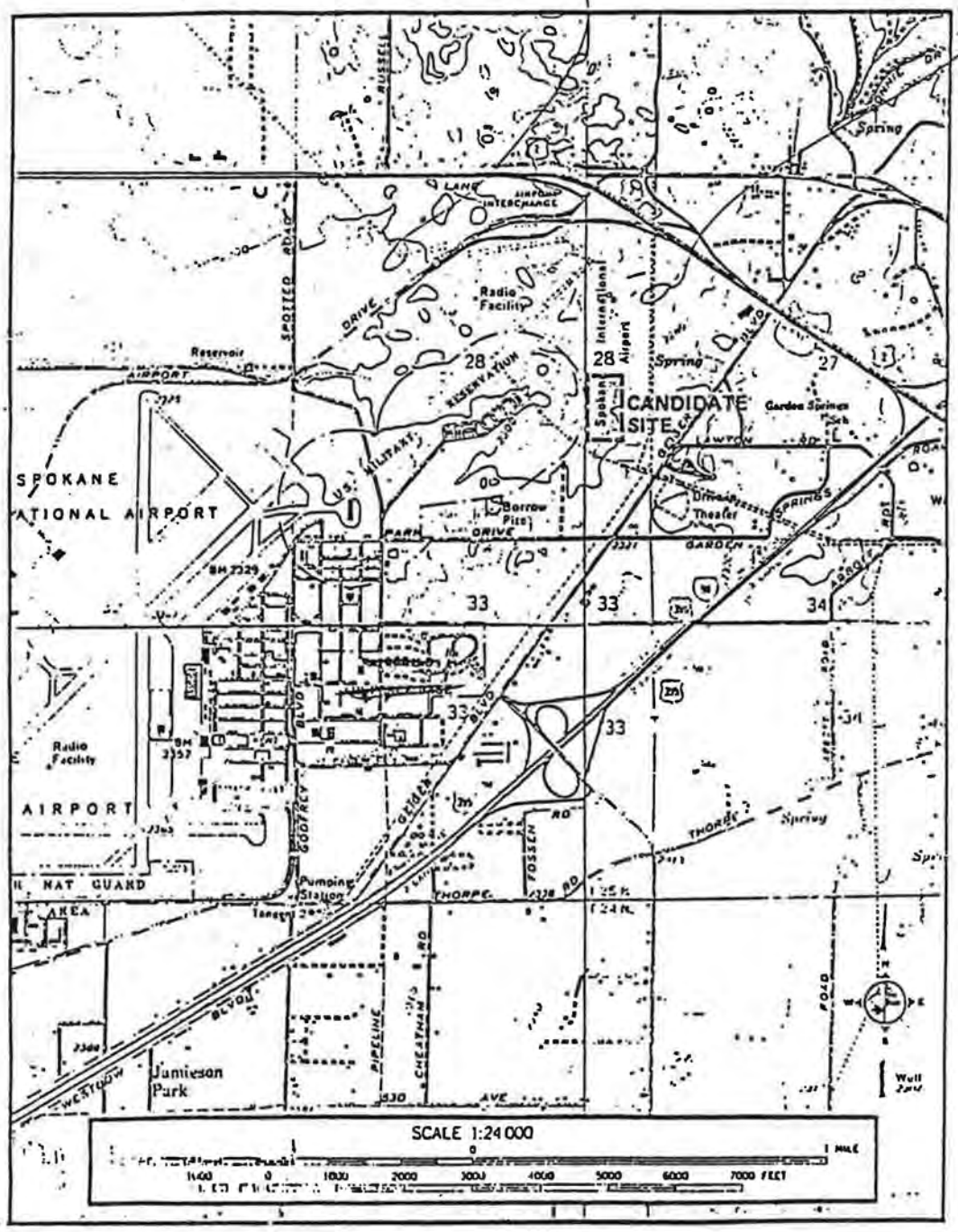
THE WASHINGTON WATER POWER COMPANY
SPOKANE, WASHINGTON

None SCALE	7-11-95 DATE	APPROVED M.K. Brannon
DSN. NW	CKD.	
DR.	NTD. DLH	DATE 7/16/85
CKD.	NTD.	SHT. 1 OF 2

A170

D.G. - Sunset

Sunset - Westside



Location of the Airport Waste-to-Energy Site.

SPOKANE WASTE TO ENERGY PLANT
WEST PLAINS SITE
PROJECT DIAGRAM
THE WASHINGTON WATER POWER COMPANY
SPOKANE, WASHINGTON

SCALE	DATE	APPROVED
DSN. ____ CKD. ____		
DR. ____ NTD. ____		DATE
CKD. ____ NTD. ____	SHT. 2 OF 2	0170

NO.	DATE	REVISION	BY	CKD.