

HARZA-EBASCO

Sustina Joint Venture

HARZA-EBASCO

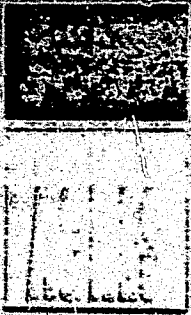
Sustina Joint Venture

Document Number

1626

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Full copy of bid pkg / 8
Amendments?
Hersched version

June 11, 1982
P5700.10.72
T741

TO: PROSPECTIVE BIDDERS

Re: Susitna Hydroelectric Project
Feasibility Study
Summer 1982 Drilling Program
Relict Channel and Borrow Area D

Gentlemen:

You are invited to bid on the above referenced Summer 1982 Drilling Program.
Enclosed herewith are the following documents:

INSTRUCTIONS TO BIDDERS

EXHIBIT A - Prequalification Requirements

EXHIBIT B - Proposal and Statement

ATTACHMENT 1 - Qualification Statement

ATTACHMENT 2 - List of Equipment and Tools

ATTACHMENT 3 - Summary of Key Personnel Experience

ATTACHMENT 4 - Schedule of Pay Items

EXHIBIT C - Agreement

ATTACHMENT A - Site and Borehole Location Plan

ATTACHMENT B - Schedule of Pay Items

ATTACHMENT C - Typical Standpipe Piezometer Installation

ATTACHMENT D - Typical Pneumatic Piezometer Installation

ATTACHMENT E - Bureau of Land Management Temporary Use Permit
AK-017-0096

ATTACHMENT F - Alaska Department of Fish and Game Regulations

ATTACHMENT G - Native Agreement Between the Alaska Power Authority
and the Individual Cook Inlet Native Village
Corporations and the Cook Inlet Region, Incorporated

ACRES AMERICAN INCORPORATED

TELEPHONE 625-4501 ACRES AMG
COLUMBIA, MD. PITTSBURGH, PA. WASHINGTON, DC

Summer 1982 Drilling Program

-2

All questions relating to the bid documents shall be directed to Robert R. Henschel at Acres American Incorporated, 1577 C Street, Suite 305, Anchorage, Alaska 99501, telephone number (907) 276-4888.

Yours truly,

Robert R. Henschel
Geotechnical Coordinator

RRH/brl

ACRES AMERICAN INCORPORATED

ADDENDUM NO. 1 to Bid Documents

Summer 1982 Drilling Program
Relict Channel and Borrow Area D

Bidders are hereby instructed to make the changes listed below in the Bid Documents. All changes shall be included in the work covered by the Proposal and shall become a part of the work to be performed and the terms and conditions of the Agreement as if originally submitted.

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
1	Instructions to Bidders	1	2	Line 11 - CHANGE - June 18, 1982 TO - June 23, 1982
2	Instructions to Bidders	5	7	Line 9 - CHANGE - June 21, 1982 TO - June 26, 1982
3	Instructions to Bidders	5	7	Line 11 - CHANGE - June 18, 1982 TO - June 23, 1982
4	Instructions to Bidders	6,7	10	DELETE ENTIRE SECTION REPLACE WITH: <u>Evaluation of Proposals.</u> Bids will be evaluated based on the following: (a) Bidder's overall experience and capabilities as provided by the Bidder in his Qualification Statement (Attachment 1 to the Proposal and Statement) to perform the Drilling Operations. (b) Bidder's capabilities to meet the specific requirements and to perform the Drilling Operations set forth in the Agreement (Exhibit C).

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
4 (cont)				<u>Evaluation of Proposals:</u> (c) Bidder's total cost of items 1,2, and 3 in the Schedule of Pay Items.
5	Exhibit A	2	1(a)	Line 4 - CHANGE - July 7, 1982 TO - July 10, 1982
6	Exhibit A	2	1(a)(i)	DELETE: -Drill "ZW" (D.C.D.M.A. Standards) casing to minimum depths of 50 feet, "SW" to 75 feet, "PW" to 100 feet, "HW" to 150 feet, "NW" to 200 feet, and 8-inch hollow stem augers (3 3/8-inch I.D. to 100 feet in overburden consisting primarily of interlayered sands, gravel, cobbles, silts etc. of glacial or alluvial origin. REPLACE WITH: -Drill "ZW" (D.C.D.M.A. Standards) casing to minimum depths of 50 feet, "SW" to 75 feet, "PW" to 100 feet, "HW" to 150 feet, "NW" to 200 feet in overburden consisting primarily of inter-layered sands, gravel, cobbles, silts, etc. of glacial or alluvial origin, with rotary (tricone or drag bit), diamond coring and diamond D.C.D.M.A. casing operations utilizing both conventional diamond coring/casing operation (both with casing leading and over reaming), and by utilizing casing advancers or underreamers at the Bidders discretion. -Drill 8-inch hollow stem augers (3 3/8-inc I.D.) and 6 1/2-inch hollow stem augers (3 1/4-inch I.D.) to 100 feet in the materials described above.

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
7	Exhibit A	2	1(a)(i)	ITEM: -Handle and use "NW", "HW", "PW", 2 3/4 x 3 7/8-inch 4 x 5 1/2-inch and 6 x 7 3/4-inch core barrels, ("Q" series acceptable as long O.D. is no larger than comparable "W" series barrel). ADD: -To maximum depths of 200 feet subject to the casing and auger size limits shown above.
8	Exhibit A	2	1(a)(i)	ITEM: -Handle and use split spoon, Shelby tube, Denison, Gus, Osterberg, Pitcher and Sidewall samplers with outside diameters varying from 2 to 7 7/8-inches and maximum lengths to 13 feet (note: 5 foot starter barrel or surface casing may be set as necessary to accomodate chucking long barrels in collaring run). ADD: -To maximum depths of 200 feet subject to the casing and auger size limits shown above
9	Exhibit A	2/3	1(a)(i)	DELETE -Perform Standard Penetration Tests (SPT) utilizing both 2.0 and 3.0 inch diameter sampler with 140 and 300 pound hammers respectively REPLACE WITH: -Ability to have casing of various sizes and sampling barrels in hole simultaneously, and perform Standard Penetration Test (SPT) utilizing both 2.0 and 3.0 inch diameter samplers with 140 and 300 pound hammers, respectively.
10	Exhibit A	7	2	DELETE ENTIRE SECTION AND REPLACE WITH: 2. -Evaluation of Qualification Statement Due to the helicopter lift capacity constraint and the requirements for coring, rotary, and augering capability, it is realized that individual Bidders may not be able to meet all Prequalification Requirements with materials currently in their inventory. Therefore, these Prequalification Requirements will be utilized to evaluate Bidder's overall experience and capabilities to perform the work set forth in the Agreement. (Exhibit C to the Instructions to Bidders). Failure to meet any of the Prequalification Requirements, other than those which are set forth in Section 2.2 of the Agreement, will not be cause for arbitrary disqualification from bidding, but will be a factor in selection of the successful Bidder.

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
10 (cont)				The Bidder must, in its Qualification Statement indicate areas, if any, of inability to meet the Prequalification Requirements. Evaluation of Bidders on the basis of these Prequalification Requirements may result in the award of the Agreement to other than the lowest Bidder, as stated in Section 3 of the Instructions to Bidders.
11	Exhibit B Attachment 1	2		Line 1 - CHANGE - (one who will be employed by July 1, 1982) TO - (or who will be employed by July 1, 1982)
12	Exhibit B Attachment 1	2		Line 7 - DELETE - and whether the individual will be a primary crew member.
13	Exhibit B Attachment 4	1		DELETE - Entire page REPLACE WITH: revised Schedule of Pay Items(Attachment 1, to this addendum).
14	Exhibit C Agreement	INDEX 2	3	CHANGE - 3.2 - Equipment Operating Rate TO - 3.2 - Equipment and Personnel Operating Rate
15	Exhibit C Agreement	INDEX 2	3	CHANGE - 3.3 - Equipment Available Rate TO - 3.3 - Equipment and Personnel Available Rate
16	Exhibit C Agreement	INDEX 2	3	DELETE - 3.4 - Personnel Rate
17	Exhibit C Agreement	INDEX 2	3	CHANGE - 3.5 TO - 3.4
18	Exhibit C Agreement	INDEX 2	3	CHANGE - 3.6 TO - 3.5

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
19	Exhibit C Agreement	INDEX 2	3	CHANGE - 3.7 TO - 3.6
20	Exhibit C Agreement	INDEX 2	3	CHANGE - 3.8 TO - 3.7
21	Exhibit C Agreement	9	1.5(a)	Line 1 - CHANGE - necessary equipment and supplies TO - necessary equipment, personnel and supplies
22	Exhibit C Agreement	9	1.5(a)	Line 2 CHANGE - July 7, 1982 TO - July 10, 1982
23	Exhibit C Agreement	18	2.2(a)(i)	DELETE: Performing sampling utilizing samplers and barrels with diameters from 2 to 7 7/8 inches with overall lengths to 13 feet as specified in Section 1(a) of the Prequalification Requirements, attached as Exhibit A to Instructions to Bidders REPLACE WITH: Performing sampling utilizing split spoon, Shelby tube, Denison, Gus, Osterberg, Pitcher, and Sidewall samplers with outside diameters varying from 2 to 7 7/8 inches and maximum lengths to 13 feet (note: 5 foot starter barrel or surface casing may be set as necessary to accomodate chucking long barrels in callaring run), to maximum depths of 200 feet.

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
24	Exhibit C Agreement	20	2.2(a)(iii)	ADD: (6 1/4 inch O.D. by 3 1/4 inch I.D. hollow stem augers may be used at discretion of Contractor, however, Contractor assumes all responsibilities for jamming problems caused by minimum clearances between samplers and augers. Frequent through-auger sampling will be performed utilizing NW/NQ core barrels and 3-inch samplers. Samplers or rotary bits with diameter of 3 1/8 inch may be used in Drilling Operations. If persistent sampling problems occur, the Engineer shall direct the contractor to replace the 3 1/4 inch I.D. augers with the larger 3 3/8 inch I.D. augers at no additional cost to Acres).
25	Exhibit C Agreement	22	2.2(b)	Line 2 - CHANGE - Item 5 TO - Item 4
26	Exhibit C Agreement	23	2.2(b)(iii)	Line 1 - CHANGE-by 30 inches long TO -by minimum of 24 inches long
27	Exhibit C Agreement	25	2.2(c)	Line 9 - CHANGE-defined in Section 3.5 TO -defined in Section 3.4
28	Exhibit C Agreement	25	2.2(d)	Line 1,2,3 DELETE: Contractor must have adequate support capabilities to ensure the sustained operation of a remote field drilling operation in Alaska REPLACE WITH: Contactor shall have adequate support capabilities to ensure the sustained operation of the Drilling Operations at the site.
29	Exhibit C Agreement	30	2.4(c)	Line 3 - CHANGE dry block TO dry blocking

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
30	Exhibit C Agreement	35	2.8	Line 7 CHANGE shall be considered in the operation TO shall be considered normal in the operation
31	Exhibit C Agreement	40	2.10(b)	Line 1 CHANGE specific equipment TO specified equipment
32	Exhibit C Agreement	41	3.2	Line 1 CHANGE <u>Equipment Operating Rate</u> TO <u>Equipment and Personnel Operating Rate</u>
33	Exhibit C Agreement	41	3.2	Line 4 CHANGE the equipment operating rate TO the equipment and personnel operating rate
34	Exhibit C Agreement	41	3.2(c)	Line 2 CHANGE operational drill rig TO operational drill rig and crew
35	Exhibit C Agreement	41	3.2(d)	DELETE: Instrumentation installation as specified in Section 2.5
36	Exhibit C Agreement	41	3.2	DELETE: For the equipment operating rate, Acres will pay the Contractor at the rate stated in Item 2 of the Schedule, as approved by the Engineer, up to a maximum of 12 hours per shift for each rig. REPLACE WITH: For the equipment and personnel operating rate, Acres will pay the Contractor at the rate stated in Item 2 of the Schedule, as approved by the Engineer, up to a maximum of 12 hours per shift for each rig, unless specifically authorized by the Engineer to exceed this period of work.
	Exhibit C Agreement			

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
37	Exhibit C Agreement	41	3.2	ADD: For purposes of payment regular hourly rates will apply to the first 8 hours per day to a total of 40 hours per week. Overtime hourly rates will apply to all hours over 8 hours per day or a total of 40 hours per week.
38	Exhibit C Agreement	42	3.3	Line 1 - CHANGE - <u>Equipment Available Rate</u> TO - <u>Equipment And Personnel Available Rate</u>
39	Exhibit C Agreement	42	3.3	Line 4 - CHANGE - The equipment available rate shall apply to: TO - The equipment and personnel available rate shall apply to:
40	Exhibit C Agreement	42	3.3	ADD: (d) Instrumentation installation as specified in Section 2.5
41	Exhibit C Agreement	42	3.3	DELETE For the Equipment Available Rate Acres will pay the Contractor at the rate stated in Item 3 of the Schedule for Contractor's equipment available as approved by the Engineer, up to a maximum of 12 hours per shift for each rig except as noted in Sections 2.3 and 2.8. REPLACE WITH For the Equipment and Personnel Available Rate Acres will pay the Contractor at the rate stated in Item 3 of the Schedule as approved by the Engineer, up to a maximum of 12 hours per shift for each rig except as noted in Sections 2.3 and 2.8. No payment will be made for moving between drill sites in excess of six hours unless due to lack of helicopter availability.
42	Exhibit C Agreement	42	3.3	ADD: For purposes of payment regular hourly rates will apply to the first 8 hours per day to a total of 40 hours per week. Overtime hourly rates will apply to all hours over 8 hours per day or a total of 40 hours per week.

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
43	Exhibit C Agreement	42,43,44	3.4	DELETE Section 3.4 - <u>Personnel Rate</u> in its entirety.
44	Exhibit C Agreement	44	3.5	Line 1 CHANGE - 3.5 - <u>Down Time</u> TO - 3.4 - <u>Down Time</u>
45	Exhibit C Agreement	44	3.5	Line 5 CHANGE For equipment and personnel Down Time TO - For Down Time,
46	Exhibit C Agreement	44	3.5	Line 6 CHANGE stated in Items 3 and 4 TO stated in Item 3
47/4	Exhibit C Agreement	44	3.5	Line 9/10 CHANGE - No payment will be made for equipment or personnel Down Time during any monthly billing period in excess of five TO - No payment will be made for Contractor's equipment or personnel during any monthly billing period for Down Time in excess of five
48	Exhibit C Agreement	44	3.6	Line 1 CHANGE - 3.6 <u>Down-Hole Consumables</u> TO - 3.5 <u>Down-Hole Consumables</u>
49	Exhibit C Agreement	44	3.6	Line 2 CHANGE - under Item 5 TO - under Item 4
50	Exhibit C Agreement	46	3.7	Line 1 CHANGE - 3.7 - <u>Other Contractor Supplied Equipment and Materials</u> TO - 3.6 - <u>Other Contractor Supplied Equipment and Materials</u>

ITEM	DOCUMENT	PAGE	SECTION	ADDENDA
51	Exhibit C Agreement	46	3.7(b)	Line 5 CHANGE -plus his direct labor at the "personnel" rates stated in Item 4 TO -plus his direct labor at the "available" rate stated in Item 3
52	Exhibit C Agreement	46	3.7(b)	Lines 6,7,8 DELETE -Plus the number of hours the equipment is unavailable for work at the rate stated in Item 3 of the Schedule
53	Exhibit C Agreement	47	3.8	Line 1 CHANGE -3.8 - <u>Special Payment Provisions</u> TO -3.7 - <u>Special Payment Provisions</u>
54	Exhibit C Agreement	54	6	Line 4 CHANGE Villate Corporations TO Village Corporations
55	Exhibit C Attachment B			DELETE entire page REPLACE WITH: revised Schedule of Pay Items (Attachment 2 to this addendum)

ATTACHMENT 2
ADDENDUM NO. 1 TO BID DOCUMENTS

ATTACHMENT B TO
THE AGREEMENT

SCHEDULE OF PAY ITEMS

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
1.	MOBILIZATION AND DEMOBILIZATION				
	(a) Mobilization	-	Lump Sum	\$ _____	\$ _____
	(b) Demobilization	-	Lump Sum	\$ _____	\$ _____
2.	Equipment and Personnel Operating Rate				
	- reg	720	Hour	\$ _____	\$ _____
	- o.t.	792	Hour	\$ _____	\$ _____
3.	Equipment and Personnel Available Rate				
	- reg	240	Hour	\$ _____	\$ _____
	- o.t.	264	Hour	\$ _____	\$ _____
4.	Down-Hole Consumables (approved by Engineer)	-	Each	(Invoice Amount + 10%) + Transportation	
5.	Other Contractor-Supplied Equipment (approved by Engineer)	-	Each	(Invoice Amount + 10%) = Transportation	
TOTAL FOR ALL ITEMS					\$ _____

ATTACHMENT 1
ADDENDUM NO. 1 TO BID DOCUMENTS

ATTACHMENT 4 TO
PROPOSAL AND STATEMENT

SCHEDULE OF PAY ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
1.	MOBILIZATION AND DEMOBILIZATION				
	(a) Mobilization	-	Lump Sum	\$ _____	\$ _____
	(b) Demobilization	-	Lump Sum	\$ _____	\$ _____
	Equipment and Personnel Operating Rate - reg	720	Hour	\$ _____	\$ _____
	- o.t.	792	Hour	\$ _____	\$ _____
	Equipment and Personnel Available Rate - reg	240	Hour	\$ _____	\$ _____
	- o.t.	264	Hour	\$ _____	\$ _____
	Down-Hole Consumables (approved by Engineer)	-	Each	(Invoice Amount + 10%) + Transportation	
	Other Contractor-Supplied Equipment (approved by Engineer)	-	Each	(Invoice Amount + 10%) + Transportation	
TOTAL FOR ALL ITEMS					\$ _____

ACRES AMERICAN INCORPORATED

INSTRUCTIONS TO BIDDERS

SUSITNA HYDROELECTRIC PROJECT

SUMMER 1982 DRILLING PROGRAM
RELICT CHANNEL & BORROW AREA D

1. Basis of Proposals. All bids submitted must be based upon the terms and conditions set forth in the Agreement attached hereto as Exhibit C. The term of the Agreement shall commence on July 1, 1982, and terminate 90 days thereafter.

2. Preparation and Submission of Proposals. Bids must be executed and submitted in duplicate on the form of Proposal and Statement attached hereto as Exhibit B, including Attachments 1 through 4 to Exhibit B, enclosed in a sealed envelope clearly identified with the name of the Bidder, and its address, telephone number, and the name of the job being bid: "Summer 1982 Drilling Program - Relict Channel & Borrow Area D." Bids shall be delivered to Acres American Incorporated ("Acres"), 1577 C Street, Suite 305, Anchorage, Alaska 99501. Bids are to be in the hands of Acres not later than 4:30 p.m., ADT, June 13, 1982. All copies of bid proposals shall be properly executed, all blank spaces shall be

filled in, and any interlineations, alterations or erasures shall be formally explained and initialed by the Bidder. Failure to comply with these requirements may be cause for rejection of the Proposal. Partial or incomplete proposals will not be considered. Proposals shall be in strict conformity with these Instructions to Bidders, including the Exhibits hereto. Any Proposal received after the due date stated above will be rejected. Each Proposal shall show the full name and business address of the Bidder, including its street address if it differs from its mailing address, and shall be dated and signed with the usual signature of the person or persons authorized to bind the Bidder. Proposals by a partnership or joint venture shall list the full names and addresses of all partners or joint venturers. When a corporation is a party as a bidder, its place of incorporation shall be stated in the Proposal. The name of each signatory shall be typed or otherwise clearly imprinted below each signature. When requested by Acres' authorized representative, satisfactory evidence of the authority of any signatory on behalf of the Bidder shall be furnished. The preparation of the Proposal shall be by and at the expense of the Bidder.

3. Award. Acres reserves the right to reject any or all Proposals and to award the contract to other than the low Bidder. After consideration of the Bidder's qualifications and Proposal, the Agreement will be awarded to the Bidder whose Proposal is determined to be reasonable and in Acres' best interests. Acres' decision is final in all aspects of bid evaluation. Any and all bids received or documents created by evaluation of such bids shall become the property of Acres and are not subject to subsequent review or scrutiny by any party without the express approval of Acres.

4. Changes to the Bid Documents. Acres may, during the bidding period, advise the Bidder by bulletin or addenda of additions, omissions or alterations in the work to be performed, or the terms and conditions of the Agreement. All such changes shall be included in the work covered by the Proposal and shall become a part of the work to be performed and terms and conditions of the Agreement as if originally submitted.

5. Examination of Documents. Bidders should examine with appropriate care the complete package comprising Instructions to Bidders with all Exhibits and Attachments thereto, and are also responsible for informing themselves with

respect to all conditions which may in any way affect the cost of the performance of any work. Failure to do so will be at the sole risk of the Bidder, and no relief shall be given for errors or omissions by the Bidder. In the event a Bidder finds discrepancies in or omissions from the Instructions to Bidders or any Exhibits or Attachments thereto, or should the intent or meaning of any of the documents appear unclear or ambiguous, or should any other questions arise relative to these documents, the Bidder shall direct all inquiries to Robert R. Henschel at Acres American Incorporated, 1577 C Street, Suite 305, Anchorage, Alaska 99501, telephone number (907) 276-4888. It is the Bidder's responsibility to ensure that his inquiries are timely made. Replies to all inquiries will be in writing and may form addenda to the Instructions to Bidders and/or the Exhibits thereto which will be issued simultaneously to all persons who have obtained such Instructions to Bidders.

6. Site Inspection and Conditions. Bidders should satisfy themselves in advance as to the location of the property on which operations will be conducted, the terrain, climactic conditions, and all other factors on which the bids should be based. Bidders desiring to make a pre-bid inspection visit to the site shall make their own arrangements relative to

transportation to and from the site. All such trips shall be coordinated with and approved by Acres at least 48 hours in advance. No overnight lodging will be provided; however, Bidders may obtain lunch at Watana Camp at no cost. Any failure to fully investigate the site or the conditions shall not relieve the Bidder from responsibility for properly estimating the difficulty or cost of successfully performing any work.

7. Modification and Withdrawal of Proposals. Any Bidder may, without prejudice to itself, modify or withdraw its Proposal by written request, provided (a) the request is received by Acres prior to the due date at the address to which Proposals are to be submitted; and (b), in case of a telegraphic request, a written confirmation thereof over the authorized signature of the Bidder must be received by Acres, at the address to which original Proposals are to be submitted, no later than 4:30 p.m., ADT, June 21, 1982. Following withdrawal of its Proposal, a Bidder may submit a new Proposal which must be received prior to 4:30 p.m. ADT, June 18, 1982.

8. Insurance Certificates. The successful Bidder shall deliver to Acres prior to execution of the Agreement,

evidence satisfactory to Acres that the bidder has in force and effect the insurance required in Section 4.11 of the Agreement. Such insurance shall be at the expense of the Bidder.

9. Qualification Requirements. The Bidder understands and agrees that it must provide all information required in the Prequalification Requirements (Exhibit A hereto), and complete and submit the Qualification Statement attached as Attachment 1 to the Proposal and Statement (Exhibit B hereto).

10. Evaluation of Proposals. Bidder qualifications, as provided by the Bidder, will be evaluated in accordance with the provisions of Section 2 of the Prequalification Requirements (Exhibit A to these Instructions to Bidders). For purposes of evaluating the Proposals to determine the lowest bid price, Acres will consider the total cost of items 1, 2, 3 and 4 in the Schedule of Pay Items (Attachment 4 to the Proposal and Statement). This total cost will consist of the sum of the following: the lump sum costs bid for mobilization and demobilization as stated in Item No. 1, plus the total cost for equipment operating rate figured by multiplying the

estimated hours stated in the Schedule of Pay Items by the appropriate hourly rates bid in Item No. 2, plus the total cost for equipment available rate figured by multiplying the estimated hours stated in the Schedule of Pay Items by the appropriate hourly rates bid in Item No. 3, plus the total cost for personnel figured by multiplying the estimated hours stated in the Schedule of Pay Items by the appropriate hourly rates bid in Item No. 4.

11. Alaska Preference. In evaluating the Proposals to determine the lowest bid price, an Alaskan Bidder will be deemed to have a bid price equal to or lower than the bid price of a non-resident Bidder if the Alaskan Bidder's price is not more than five per cent higher than the non-resident Bidder's price. An Alaskan Bidder is defined as one who (1) holds a current Alaska Business License, (2) submits a Proposal under the name appearing on its current Alaska Business License, and (3) has maintained a place of business in this State for a period of six months immediately preceding the date of its bid.

12. Duration of Proposal. The Bidder's Proposal shall remain valid and in effect for sixty days from the date bids are due and may be accepted by Acres at any time during

that period or any extension to that period as may be agreed to by Acres and the Bidder.

13. Return of Documents. All bid documents are the property of Acres and shall be promptly returned by the unsuccessful bidders to Acres American Incorporated, 1577 C Street, Suite 305, Anchorage, Alaska. 99501, attention: Mr. Robert Henschel.

EXHIBIT A
1987-1988

EXHIBIT A

Prequalification Requirements

EXHIBIT A TO
INSTRUCTIONS TO BIDDERS

PREQUALIFICATION REQUIREMENTS

ACRES AMERICAN INCORPORATED
SUSITNA HYDROELECTRIC PROJECT

SUMMER 1982 DRILLING PROGRAM
RELICT CHANNEL & BORROW AREA D

1. Qualification Statement

The Bidder shall submit with its bid a Qualification Statement in the form attached as Attachment 1 to the Proposal and Statement (Exhibit B to the Instructions to Bidders). The said Qualification Statement shall indicate the personnel experience, support capability, and equipment specifications detailed below and shall be submitted by the Bidder in the format shown on Attachment 1 to the Bidder's Proposal and Statement. The Qualification Statement shall indicate capability and experience in utilizing the equipment and techniques described below and shall be in adequate detail and contain sufficient experience references to allow Acres to evaluate the Bidder's capabilities. The Bidder must indicate in its Qualification Statement areas of inability to meet the necessary requirements.

(a) Equipment

Bidder must have equipment currently in its possession, or be able to provide evidence that such equipment will be available to him and can be mobilized to the field prior to July 7, 1982, which meets the following requirements:

(i) Two helicopter-transportable drill rigs of a type which are suitable for auger, core and rotary drilling and which are of adequate size, type and capacity to:

- Drill "ZW" (D.C.D.M.A. Standards) casing to minimum depths of 50 feet, "SW" to 75 feet, "PW" to 100 feet, "HW" to 150 feet, "NW" to 200 feet, and 8-inch hollow stem augers (3 3/8-inch I.D.) to 100 feet in overburden consisting primarily of interlayered sands, gravel, cobbles, silts, etc., of glacial or alluvial origin.
- Install 9-inch I.D. casing to 25 feet either by drilling or driving in the materials described above.
- Handle and use "NW", "HW", "PW", 2 3/4 x 3 7/8-inch, 4 x 5 1/2-inch and 6 x 7 3/4-inch core barrels. ("Q" series acceptable as long as O.D. is no larger than comparable "W" series barrel).
- Handle and use split spoon, Shelby tube, Denison, Gus, Osterberg, Pitcher and Sidewall samplers with outside diameters varying from 2 to 7 7/8-inches and maximum lengths to 13 feet (note: 5 foot starter barrel or surface casing may be set as necessary to accommodate chucking long barrels in collaring run).
- Perform Standard Penetration Tests (SPT) utilizing both 2.0 and 3.0 inch diameter.

samplers with 140 and 300 pound hammers, respectively.

- Allow mutually independent operation of rotary drive, wireline drum, cathead and main hoist drums.
 - Allow hydraulic cylinder operation without rotary or hoist drum operation.
 - Change rapidly between augering, rotary, core drilling and sampling operations.
 - Allow disassembly, helicopter move up to 3 miles, reassembly of all equipment in less than 6 hours, without exceeding 3,000 pounds per individual piece of equipment.
- (ii) Minimum 200 feet each of "AW" and "NW" rod, or equivalent; 200 feet each of "NW" and "HW" casing with all necessary bits, underreamers, adapters, subs and drive heads or other equipment necessary to advance the casing.
- (iii) Minimum 100 feet of 8-inch (3 7/8 inch I.D.) hollow stem auger with all accessories and bits necessary for operation.
- (iv) Equipment for performing Standard Penetration Test sampling utilizing 2- and 3-inch diameter ASTM style split liner sampling spoons to include samplers, jar staff, couplings, 140 and 300 pound hammers, replacement shoes, baskets and all other necessary equipment.
- (v) All necessary equipment for taking 2- and 3-inch diameter Shelby tube samples using a fixed head type sampler (standard Shelby tube sampling).
- (vi) Pumps capable of providing minimum static pressure of 300 psi, and flows in excess of 20 gpm for water supply to drill site and drilling operations.
- (vii) Minimum 10,000 feet of flexible water supply

Bidder must line, and holding tank with minimum 100 gallon capacity.

employed and
(viii) Tubs, hoses, pumps, fittings and other equipment necessary to recirculate the drilling fluid (water, mud, polymers, etc.).

(ix) Flow meters calibrated in gallons to measure flow quantities of water. Meters to be accurate to within one gallon per hundred gallons pumped.

(x) Grout mixer, pump(s), hoses and other equipment necessary for mixing drilling muds, grout and cement-bentonite-water mixtures, and for pumping it into boreholes.

(xi) Adequate supply of blocking and support materials to allow setting-up rigs on maximum 30° slopes.

(xii) "N" and "H" size wireline split tube core barrels in 5-and/or 10-foot run length complete with all necessary equipment for use.

Contractor shall provide the information required about the above-described equipment on the Qualification Statement (Attachment 1 to the Proposal and Statement). Contractor shall include adequate specific data and project references to indicate ability to readily meet the equipment qualifications of this section.

(b) Personnel Experience

Personnel who are experienced and thoroughly familiar with the operations set forth below, must be presently employed and available for assignment to this job by the Bidder, or the

Bidder must provide evidence that named individuals will be employed and available for assignment to this job prior to July 1, 1982.

- (i) Mobilization/demobilization of equipment and materials utilizing helicopters as the primary form of transportation. To include disassembly of equipment, rigging, slinging and reassembly.
- (ii) Drilling in glacial outwash and tills, river alluvium and loose or soft deposits to minimum depths of 200 feet with split spoon and undisturbed sampling over the full depth of the hole utilizing equipment similar to, or equivalent to, that required in Section 1(a)(i) hereof.
- (iii) Drilling on tundra and in permafrost or seasonally frozen ground.
- (iv) Installation of piezometers, thermal probes, standpipes or other instrumentation requiring in-hole seals and backfilling of holes utilizing the following methods:
 - °Open hole installation;
 - °Through-casing installation;
 - °Through-auger installation; and
 - °Through-drill string installation.
- (v) Drilling in remote locations and operating out of field camps.
- (vi) On-site repair and maintenance of drilling rigs, pumps, and other items of equipment associated with the drilling operations.
- (vii) Drilling with revert-type muds, polymer fluids, foaming agents and other types of drill fluids, utilizing a re-circulating set up.

Bidder shall supply the required information regarding personnel experience in the format shown on Attachment 1 to the Proposal and Statement. Bidder shall provide employee's name and position title with adequate specific data and job references to indicate personnel experience meeting these requirements.

(c) Support Capability

Bidder must have adequate support capabilities to ensure the sustained operation of a remote field drilling operation in Alaska. These capabilities shall include:

- (i) Adequate supply of backup equipment, tools, spare parts and materials to either repair or replace field assigned equipment as necessary in the event of a major breakdown.
- (ii) Portable generators, welders, torches, tools and other supplies necessary to facilitate on-site repair of equipment; and all tools necessary for normal repair, maintenance disassembly assembly of rods, casing, augers, samplers, core barrels, etc.
- (iii) Off-site facility located in Alaska with heavy repair capabilities for major overhauls, tear-downs, and repairs of equipment in the event of a major breakdown.
- (iv) Expediting capability to obtain needed parts, equipment, tools, supplies or other materials not in inventory and to transport them as necessary to the field operation.

(v) Personnel resources available to supplement or replace field crews in the event of major breakdown or crew turnover.

(vi) Experienced supervisory personnel available to provide input as required to the field operation.

Bidder shall provide the required information regarding support capabilities on Attachment 1 to the Proposal and Statement.

The Engineer shall be provided access to the Bidder's equipment and facilities prior to award of this contract to allow inspection and verification of items contained in Bidder's Qualification Statement. Bidder shall provide additional information and assistance to the Engineer as necessary for verification of the Qualification Statement.

2. Evaluation of Proposals

Due to the helicopter lift capacity constraint and the specification requirements for coring, rotary, and augering capability, it is realized that individual Bidders may not be able to meet all specifications with materials currently in their inventory. Therefore, these Prequalification Requirements will be utilized to rank Bidders in terms of overall compliance with the specifications and to evaluate each

Bidder's potential for accomplishing the prescribed scope of work utilizing the equipment listed above in Sections 1(a) and 1(c), supplemented with the materials and equipment prescribed in Sections 2.2 and 2.9 of the Agreement as required by the Engineer. Failure to meet any given requirement will not be cause for arbitrary disqualification from bidding, but will be a factor in selection of the successful Bidder. The Bidder must, in its Proposal, indicate areas, if any, of inability to meet the specification. Evaluation of bidders on the basis of these Prequalification Requirements may result in the award of the Agreement to other than the lowest Bidder, as defined in Section 10 of the Instructions to Bidders, and acceptance of bids is contingent upon the Bidder's fulfillment of all Prequalification Requirements outlined herein and in the Qualification Statement provided with the Bidder's Proposal, as well as completion of the Schedule of Pay Items also attached to the Bidder's Proposal.

EXHIBIT B TO
INSTRUCTIONS TO

EXHIBIT B

Proposal and Statement

00162

EXHIBIT B TO
INSTRUCTIONS TO BIDDERS

PROPOSAL AND STATEMENT
(Submit in Duplicate)

SUMMER 1982 DRILLING PROGRAM
RELICT CHANNEL & BORROW AREA D

Date: _____
SUSITNA HYDROELECTRIC PROJECT
FEASIBILITY STUDY
ALASKA POWER AUTHORITY

To: Acres American Incorporated
1577 C Street, Suite 305
Anchorage, Alaska 99501
Attention: Mr. Robert Henschel
Geotechnical Coordinator

Gentlemen:

Having examined the plans, specifications, bid package documents and all addenda for the Summer 1982 Drilling Program-- Relict Channel & Borrow Area D, and having familiarized ourselves with the job conditions, the undersigned does hereby tender this firm bid for all work described in these documents.

The undersigned agrees that payment in accordance with any of the firm unit prices in the Schedule of Pay Items shall constitute full payment for the work specified. All exceptions to the unit prices, where shown, will be subject to Acres'

approval. In case of inconsistency between the unit price and the extension, the unit price shall prevail. In case of error in addition, the correct total shall prevail.

The undersigned agrees that the quantities in the Schedule of Pay Items are approximate only, and upon completion of the work performed under the Agreement, the undersigned will accept (a) the lump sum prices, and (b) the applicable bid unit prices multiplied by the actual quantities of work performed, as complete compensation for the performance of such work.

This bid is valid for period a of sixty (60) days from the date of this Proposal and Statement.

The undersigned agrees to execute, within ten (10) working days from the date of award, an Agreement in the form of Exhibit C attached to the Instructions to Bidders.

The undersigned is (check one):

☐ A corporation, incorporated in the state of _____.

[] A partnership consisting of the following partners
whose full names are:

[] A joint venture consisting of the following joint
venturers whose full names are:

[] An individual whose name is _____

The undersigned acknowledges receipt of the following
addenda by number and date:

Addendum # _____	Dated: _____
Addendum # _____	Dated: _____
Addendum # _____	Dated: _____

The following forms are attached as part of this
Proposal:

Attachment 1 - Qualification Statement
Attachment 2 - List of Equipment and Tools
Attachment 3 - Summary of Key Personnel Experience
Attachment 4 - Schedule of Pay Items

DATED this _____ day of _____, 1982.

Bidder

Signed By:

Title

Address

Telephone Number

Contractor's License Number,
State

ATTACHMENT 1

Qualification Statement

41

QUALIFICATION STATEMENT - EQUIPMENT SPECIFICATIONS

The Equipment Specifications Statement shall briefly list all major equipment and tools currently in Bidder's possession (or which Bidder can prove will be in its possession by July 1, 1982) which meets the requirements of Section 1(a) of the Prequalification Requirements, and shall include, but not be limited to, drill rigs, pumps, samplers and core barrels, drill rods, casing, augers, and casing advance tools such as underreamers or casing advancers. Bidder shall supply adequate description of the equipment or tools, augmented by attached manufacturer's literature (xerox copy acceptable) as appropriate to simplify description. Bidder must supply sufficient information from previous jobs, or other sources, to demonstrate the capability of all equipment and tools listed to meet the requirements of Section 1(a) of the Prequalification Requirements without reliance on manufacturer's data. The format shown below shall be utilized, and additional pages may be attached, as necessary.

<u>ITEM DESCRIPTION</u>	<u>CAPACITY</u>	<u>DEMONSTRATION OF CAPABILITY</u>	<u>REFERENCES</u>
Generic Description, Make Model, Size, Year of Manufacture	Diameter, Depth, Length GPM, Pressure, etc. as Applicable	Specific information relating to equipment performance	Project Name & Location Name, Address, Telephone Number of Person to Contact about Project

QUALIFICATION STATEMENT - PERSONNEL EXPERIENCE

The Personnel Experience Statement shall list personnel currently employed by the Bidder (one who will be employed by July 1, 1982) who will be available for assignment to this job and to perform work under this contract. Bidder shall supply sufficient information from previous jobs, or other sources, which clearly demonstrates the experience of the named individual in performing the type of operations specified in Section 1(b) of the Prequalification Requirements, and in utilizing the equipment specified in Section 1(a) of the Prequalification Requirement. Designation of personnel shall include position title, experience, etc., as applicable and whether the individual will be a primary crew member. The format shown below shall be utilized, and additional pages may be attached as necessary.

Work Experience in Areas Specified in
Section 1(b) of the Prequalification Requirements

Name, Position Title Experience (Years), - Total Drilling - Alaskan/Sub Arctic - In Position Shown - With Equipment Specified in Section 1(a) of the Prequalification Requirements	Project Geographic Location and Normal Sampling Depths, Approx. Total Footage of Type, Etc. as Applicable	Years in which Experience Occurred
---	--	---------------------------------------

QUALIFICATION STATEMENT - SUPPORT CAPABILITY

The Support Capability Qualifications Statement shall briefly list the Bidder's current capabilities and methods of meeting the requirements of Section 1(c) of the Prequalification Requirements, as a minimum, and in Part 1 shall emphasize backup and support resources which will reduce downtime and delays in obtaining sampling and drilling materials. In Part 2 Bidder shall indicate experience in performing work of the type called for in this contract in the last three years. Experience must include, but need not be limited to, use of the equipment types specified in Section 1(a) of the Prequalification Requirements and should include references, by name and phone number, or address, of owners or engineers for whom the work was performed. The format shown below shall be used, and additional pages may be attached, as necessary.

Part 1 - Support Resources
Resource or Capability

Method in which Resource will be Used to
Optimize Exploration Operations

INT

QUALIFICATIONS STATEMENT - SUPPORT CAPABILITY

PART 2 Bidder Experience

Type of Work

Sampling/Drilling
Depths and Types

Client/Engineer Name,
Address, Phone Number

ATTACHMENT 2

List of Equipment and Tools

INT

PROPOSAL FORMS

LIST OF EQUIPMENT AND TOOLS

If awarded the Contract, the Bidder proposes to utilize the following equipment and tools in the performance of the work.

Bidder shall briefly list all major equipment and tools proposed for use in the field under this contract as specified in Section 2.2(a) of the Agreement, and shall include, but not be limited to, drill rigs, pumps, samplers, core barrels, drill rods, casing, augers, and casing advance tools such as underreamers or casing advancers. If any equipment or tools proposed herein are not listed and described in the Bidder's Qualification Statement then Bidder shall supply adequate description of such equipment or tools and sufficient information from previous jobs, or other source, demonstrating capability of meeting the contract specifications. The format shown below shall be utilized, and additional pages may be attached, as necessary.

ITEM DESCRIPTION

NUMBER

CAPACITY

CHOPPER MOBILITY

Generic Description,
Make, Model Size,
Year of Manufacturer

No. to be Provided
Under Contract

Diameter, Depth, Length,
GPM, Pressure as
Applicable

Approx. Total Weight, Est.
Number of Loads for Moves

ATTACHMENT 3

Summary of Key Personnel Experience

PROPOSAL FORMSSUMMARY OF KEY PERSONNEL EXPERIENCE

poses to employ the following personnel in the performance of the work

rect supervisory and field personnel giving name, and position title. Listed in the Bidder's Qualification Statement then Bidder shall supply, or other sources, demonstrating specific experience of personnel Section 2 of the Agreement. Indicate which individual(s) will be the mat shown below shall be utilized, and additional pages may be

Work Experience in Areas Specified in Section 2 of the Agreement:

Project Geographic
Location and Normal Sampling Depths,
Approx. Total Footage of Type, Etc. as
Applicable

Years in which
Experience Occurred

ATTACHMENT 4

Schedule of Pay Items

SCHEDULE OF PAY ITEMS

ESTIMATED
QUANTITY

UNIT

UNIT
PRICE

AMOUNT

-

Lump Sum

\$

\$

-

Lump Sum

\$

\$

756

Hour

\$

\$

252

Hour

\$

\$

480

Hour

\$

\$

528

Hour

\$

\$

480

Hour

\$

\$

528

Hour

\$

\$

960

Hour

\$

\$

756

Hour

\$

\$

480

Hour

\$

\$

528

Hour

\$

\$

Each

(Invoice Amount + 10%) + Transportation

Each

(Invoice Amount + 10%) + Transportation

\$

EXHIBIT C TO
INSTRUCTIONS TO BIDDERS

SECTION 22-1.1

EXHIBIT C

Agreement

EXHIBIT C TO
INSTRUCTIONS TO BIDDERS

SUSITNA HYDROELECTRIC PROJECT

SUMMER 1982 DRILLING PROGRAM
RELICT CHANNEL &
BORROW AREA D

Acres American Incorporated
1577 C Street, Suite 305.
Anchorage, Alaska 99501

INDEX TO SECTIONS OF THIS AGREEMENT

SECTION 1:

WORK AND SERVICES

Page

1.1	- Work Under This Agreement.....	2
1.2	- Purpose.....	3
1.3	- Scope of Work.....	3
1.4	- Location and Site Description.....	5
1.5	- Work Schedule - Term of Agreement.....	8
1.6	- Field Engineering.....	10
1.7	- Applicable Codes.....	10
1.8	- Facilities Provided to Contractor.....	11
1.9	- Access.....	14
1.10	- Water Supply.....	15
1.11	- Project Closeout.....	15

SECTION 2:

TECHNICAL SPECIFICATIONS

2.1	- Mobilization and Demobilization.....	16
2.2	- Contractor-Furnished Equipment, Material, and Personnel.....	18
2.3	- Moving Between Drill Sites.....	27
2.4	- Soil Drilling and Sampling.....	28
2.5	- Instrumentation Installation.....	32
2.6	- Backfilling of Borehole.....	36
2.7	- In-Hole Testing.....	36
2.8	- Standby Time.....	37
2.9	- Down-Hole Consumables.....	38
2.10	- Special Equipment and Materials Requirements.....	39

SECTION 3:

PAYMENT CONDITIONS

3.1	- Mobilization and Demobilization.....	42
3.2	- Equipment Operating Rate.....	42
3.3	- Equipment Available Rate.....	43
3.4	- Personnel Rate.....	44
3.5	- Down Time.....	46
3.6	- Down Hole Consumables.....	47
3.7	- Other Contractor-Supplied Equipment and Materials.....	48
3.8	- Special Payment Provisions.....	49

SECTION 4:

GENERAL PROVISIONSPage

4.1	- Definitions.....	50
4.2	- Contractor Warranties and Representations.....	51
4.3	- Contractor's Undertakings.....	52
4.4	- Prosecution of Work by Contractor.....	53
4.5	- Unemployment and Social Security Payments and Workmans' Compensation.....	53
4.6	- Indemnity by the Contractor.....	54
4.7	- Injuries and Infringements of Rights.....	54
4.8	- Confidentiality.....	55
4.9	- Patent Rights.....	55
4.10	- Non-Discrimination Agreement, Certification and Affirmative Action Compliance.....	56
4.11	- Insurance.....	59
4.12	- Time Sheets and Invoices.....	62
4.13	- Termination of Agreement.....	63
4.14	- Applicable Laws Regulations, Permits, and Access Requirements	64
4.15	- Arbitration.....	66
4.16	- Excusable Delays.....	67
4.17	- Assignment.....	68
4.18	- Changes.....	69
4.19	- Examination of Costs.....	70
4.20	- Taxes.....	71
4.21	- Alaska Preference.....	72
4.22	- Subcontractor Approval.....	72
4.23	- Governing Law.....	72
4.24	- Waiver of Breach.....	73
4.25	- Severability of Invalid Provisions.....	73
4.26	- Notices.....	73
4.27	- Conflict of Interest.....	74
4.28	- Agreement Contingent Upon APA Funds.....	75

Attachment A - Site and Borehole Location Plans

Attachment B - Schedule of Pay Items

Attachment C - Typical Standpipe Piezometer Installation

Attachment D - Typical Pneumatic Piezometer Installation

Attachment E - Bureau of Land Management Temporary Use
Permit AK-017-0096

Attachment F - Alaska Department of Fish and Game Regulations

Attachment G - Native Agreement Between the Alaska Power
Authority and the Individual Cook Inlet Native
Village Corporations, and the Cook Inlet
Region, Incorporated

AGREEMENT

THIS AGREEMENT (hereinafter referred to as "Agreement"
made as of this _____ day of _____, 1982, and to be
deemed effective as of the _____ day of _____, 1982,
is by and between

Acres American Incorporated
(hereinafter referred to as "Acres")
having an office located at
1577 C Street, Suite 305
Anchorage, Alaska 99501

and

(hereinafter referred to as "Contractor")

having an office located at

THIS AGREEMENT consists of of Sections 1 through 4,
together with all attachments and supplements hereto, all of
which said attachments and supplements are incorporated herein
and made a part hereof.

WITNESSETH:

WHEREAS, Acres has entered into an agreement with Alaska Power Authority ("APA") to study the feasibility of development of the Susitna Hydroelectric Project (the "Project"),

AND WHEREAS Acres requires certain drilling operations ("Drilling Operations") and work incidental thereto to be carried out from time to time by the Contractor;

NOW THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties hereto agree as follows:

SECTION 1 - WORK AND SERVICES

1.1 - Work Under This Agreement

The Contractor shall provide the necessary and appropriate equipment, materials and skilled manpower to perform the subsurface investigation program and shall undertake the Drilling Operation in accordance with this Agreement. (See Section 4.1 for definition of terms used in this Agreement.)

1.2 Purpose

The purpose of the Drilling Operation under this Agreement is to secure information regarding the geology, geotechnical properties of the material and ground water conditions at the Site identified in Attachment A "Site and Borehole Location Plans". The essence of the Drilling Operation is the recovery of soil samples.

1.3 Scope of Work

The work to be done under this Agreement shall comprise drilling, sampling and testing boreholes in soil, and to a limited depth into rock. For each borehole this includes setup at the hole, drilling of the hole and the recovery of soil samples and/or cores. Where specified the work may also include instrumentation installation, grouting and backfilling of boreholes at completion, core box storage and delivery, and other such work as the Engineer may require. Permeability testing may be performed in selected boreholes as directed by the Engineer. Split-spoon sampling and Standard Penetration Tests shall be required in all the boreholes. Shelby tube (and other undisturbed samples) and core samples will be taken at

locations and depths determined in the field by the Engineer and shall not be performed without the presence or direction of the Engineer.

The nature of the work is such that the precise extent and the amount of drilling required can only be determined as conditions are revealed as the Drilling Operation proceeds. It is anticipated that approximately 50 holes having maximum depth of 200 feet will be drilled, but the number of holes and the maximum depth may vary significantly. The proposed drill locations, sequence, and exact number of holes will be determined by the Engineer in the field.

It is emphasized that the nature and scope of the exploratory drilling may be modified as the Drilling Operation progresses. Any increase or decrease in the quantities of work shall not be the basis of any change in applicable unit prices, nor the basis of any claim for additional compensation.

Drilling through soil shall be performed using a hollow stem auger or rotary bit or other methods approved by the Engineer. Soil sampling will be performed in all holes at specified intervals utilizing a standard split-spoon sampler or

Shelby tube driven into soil ahead of the drilling, or other sampling tools and methods designated by the Engineer, and as indicated in Sections 2.2 and 2.10.

Core samples will be taken in selected boreholes as directed by the Engineer, or as necessary to advance the hole.

Standpipe and/or pneumatic piezometers, thermistor strings and thermal probes will be installed in selected boreholes to define the ground water and temperature regimes at the Site. This will involve inserting the instrumentation into the borehole, installing bentonite or grout seals, backfilling the hole, and placement of a protective casing at the collar of the hole, all as directed by the Engineer. Installation details are given in Section 2.5 and Attachments C and D.

1.4 - Location and Site Description

The Site of the exploratory drilling to be carried out under this Agreement is located near the Susitna River, along the upper bank areas adjacent to the proposed Watana Damsite. The Site is approximately 90 miles upstream of Talkeetna, on the north side of the river, between Tsusena and Deadman

Creeks. (Attachment A.)

Overburden at the Site consists primarily of glacial tills, outwash, and alluvium with boulder and gravel zones. Previous investigations determined the following general stratigraphy in the overburden, from the surface downward. These general conditions may not prevail over the entire area of the Drilling Operations, and variations will not be a basis for claims or "change of condition" claims.

(a) Surficial Deposits

Organic silts and sands with cobbles and boulders, up to 5 feet thick.

(b) Outwash

Silty sand with gravel and cobbles; up to 18 feet thick.

(c) Alluvium and Fluvial Deposits

Sand, silt with occasional gravel; up to 15 feet thick.

(d) Outwash

Silt, sand, gravel cobbles, partly sorted; up to 55 feet thick.

(e) Till/Water Lain Till

Clayey silty sand with gravel and cobbles, often plastic; up to 65 feet thick.

(f) Alluvium

Silt, sand and gravel, sorted, up to 40 feet thick.

(g) Till

Silt, sand, gravel, cobbles, poorly sorted; up to 60 feet thick.

(h) Interglacial

Sand, gravel, with occasional silt, sorted; up to 45 feet thick.

(i) Till

Silt, sand, gravel, cobbles, poorly sorted; up to 60 feet thick.

(j) Alluvium

Gravel, cobbles, boulders, few fines; up to 160 feet thick.

Scattered frozen ground is found and depth to bedrock varies from 30 to greater than 400 feet. Copies of drill logs from previous investigations are available for inspection at Acres upon request of the Contractor.

1.5 - Work Schedule - Term of Agreement

(a) Commencement

The Contractor shall begin performance under this Agreement July 1, 1982 and proceed such that two rigs complete

with all necessary equipment and supplies are at the Site and mobilization is complete by July 7, 1982. The Contractor shall diligently proceed with the Drilling Operations until directed to cease by Acres or its Engineer, or until termination of this Agreement as defined in Section 4.13. Estimated duration of the drilling program will be approximately 12 weeks.

(b) Completion

All drilling and testing shall be completed by September 28, 1982 and demobilization shall be completed by September 30, 1982, unless approval for extension by Acres has been obtained in writing. The work under this Agreement will be considered complete upon final acceptance as defined in Section 1.11(b). The performance of the work under this Agreement may be terminated at any time by Acres as defined in Section 4.13.

(c) Hours of Work

It is anticipated that the normal hours of work will consist of a single 12-hour daytime shift per rig carried on 7 days per week. These hours may be increased or decreased at

the discretion of the Engineer as necessary for the performance of the work. Engineer will provide Contractor written notification of any changes required in the hours of work.

1.6 - Field Engineering

The Engineer at the Site will determine the location and direct the drilling and sampling procedures to be carried out by the Contractor.

1.7 - Applicable Codes

The work shall be carried out in accordance with the following ASTM Standards:

- | | |
|--------|---|
| D 1452 | Soil Investigation and Sampling by Auger Borings |
| D 1586 | Penetration Test and split-Barrel Sampling of Soils |
| D 1587 | Thin-walled Tube Sampling of Soils |
| D 2113 | Diamond Core Drilling for Site Investigation |
| D 2937 | Density of Soil in Place by the Drive-cylinder Method |
| D 3550 | Ring-lined Barrel Sampling of Soils |

1.8 - Facilities Provided to Contractor

The following will be provided by Acres at its expense for the reasonable use of the Contractor:

(a) Fuel for equipment on site: leaded regular gas and diesel No. 1 to be provided at the camp. Contractor shall provide appropriate Department of Transportation approved containers for transport of fuel from the camp to the equipment in the field.

(b) Camp: housing and food for Contractor's personnel required under Section 2.2(c).

(c) Indoor repair and storage space of approximately 200 square feet.

(d) Transportation of personnel, equipment and materials as follows:

(i) Helicopter transportation of all equipment and materials (limited to a maximum 3,000 pounds per individual piece of equipment) between staging area near Hurricane, Alaska

which is readily accessible from the Parks Highway and Site for mobilization and demobilization as specified in Section 2.1. Personnel required for mobilization and demobilization will be transported between Anchorage and/or the staging area and the Site as required by helicopter or fixed wing aircraft.

(ii) Air transportation (fixed wing, helicopter or combination of two) for replacement personnel, parts, equipment or supplies between Anchorage and the Site. Parts, equipment and supplies shall be limited to those items which can be safely transported in the aircraft provided by Acres. It is anticipated that such aircraft will be capable of carrying at least six passengers or a minimum of 1200 pounds of cargo. Flights will normally be scheduled 4 days per week. The Contractor must give Acres at least 48 hours notice of transportation requirements, and the flight departure time shall be as scheduled by Acres on the designated day. The Contractor shall be responsible for timely arrival of personnel, parts and materials to meet scheduled departure times. Contractor shall be responsible for loading aircraft in Anchorage unless specifically released from that responsibility by Acres or the aircraft operator.

(iii) For those items which are too heavy or too bulky to fit in the aircraft supplied by Acres, the Contractor shall transport the items to the staging area at Hurricane or other such pickup points as may be mutually agreed upon by Acres and Contractor for pickup by helicopter. Contractor shall provide Acres not less than 4 hours notice of the scheduled arrival time at the pickup location. Helicopter pickup will be available only during normal drilling operations hours, and will be subject to previously scheduled activities at the Site. Helicopter will have a maximum hook load capacity of 3,200 pounds.

(iv) In the event the Contractor desires more expedient supply of personnel, parts, equipment or supplies to the Site to reduce his downtime costs, the Contractor shall notify Acres at the earliest opportunity of Contractor's requirement for transportation. Acres may, at its sole discretion, attempt to arrange suitable air transportation and notify Contractor of the scheduled departure time of the earliest available flight. Alternatively, the Contractor may transport the personnel, parts, equipment or supplies in accordance with Section 1.8(d)(iii).

(e) Helicopter transportation of personnel, equipment and materials between camp and the drill sites. Helicopter will have a maximum hook load capacity of 3,200 pounds.

(f) Communications between rigs and camp, and reasonable business use of camp phone to call Anchorage area for parts, recording time worked.

The Contractor shall abide by all applicable rules and regulations governing facilities used as provided by Engineer.

1.9 - Access

As helicopter support is necessary for access to the sites, support of drilling operations, crew changes, drill moves, waterline installation and maintenance, Acres will provide the required helicopters for access and support. The helicopters will be operated by crews and/or pilots experienced in external load operations. The primary helicopter for external load operations will have a maximum hook load capacity of 3,200 pounds. Use of helicopter support by the Contractor will be subject to the terms of Sections 1.8 and 2.2.

1.10 - Water Supply

The Contractor shall be responsible for securing drill water for the Drilling Operation. Some surface ponds exist in the area. The Contractor must supply equipment and personnel necessary to supply water to the drill sites.

1.11 - Project Closeout

(a) Cleanup

The Contractor shall at all times keep the premises free from accumulation of waste material or rubbish caused by its employees or work. Contractor shall maintain drill sites in a clean and workmanlike manner and shall comply with all state and federal regulations regarding environmental disturbance. Engineer and Contractor shall use their best efforts to minimize any damage to the environment.

At the completion of the work and prior to final inspection, Contractor shall remove all temporary structures, tools, scaffolding and surplus materials and all rubbish and

waste from and about the work area. Contractor shall leave his work "CLEAN", ready for immediate use.

No burning of the rubbish and/or waste materials shall be permitted on the project site.

(b) Final Acceptance

Upon completion of the work, the Contractor shall notify the Engineer of such completion in writing. Upon receipt of written notice, the Contractor and Engineer shall conduct a final inspection of the Site and prepare either a written final acceptance or a written punch list.

If the final inspection results in a written punch list, the Contractor shall perform all necessary corrective work which, when work is completed, will require another final inspection of the Site.

SECTION 2 - TECHNICAL SPECIFICATIONS

2.1 - Mobilization and Demobilization

Mobilization and demobilization shall include preparation of equipment and transportation of personnel, materials, and equipment to the project site and return upon

contract completion of all of the Contractor's personnel and equipment to its base. Equipment, supplies and personnel will be transported to and from the Site in accordance with Section 1.8(d).

(a) Mobilization

Mobilization will be considered complete when two drilling rigs and all associated equipment, materials, and personnel necessary to commence drilling are on Site and set up at a hole location ready to work.

(b) Demobilization

Demobilization will begin when drilling and/or testing at the last drill site has been completed and Contractor has been notified to remove its equipment. Demobilization will be considered complete when all equipment, personnel, and surplus material is removed from the Site and cleanup is complete as defined under Section 1.11.

2.2 - Contractor-Furnished Equipment, Material, and Personnel

The materials and equipment (including all rods, subs, adaptors and fishing tools) to be provided by the Contractor at the Site shall include, but not be limited to, those items

listed below in subsections 2.2(a) and 2.2(b). Contractor shall provide the equipment, materials, and personnel in this Section at the Site as necessary to provide uninterrupted Drilling Operations.

(a) All Contractor-furnished material below applies to each drill rig unless otherwise specified, and an adequate reserve must be maintained on Site to ensure compliance with this Section, regardless of wear and tear, damage or loss of equipment and tools.

(i) Two helicopter transportable drill rigs of a type which are suitable for auger, core and rotary drilling and which are of adequate size and capable of:

Drilling "ZW" (D.C.D.M.A. standards) casing to minimum depths of 50 feet, "SW" to 75 feet, "PW" to 100 feet, "HW" to 150 feet, and "NW" to 200 feet, in the soil types described in Section 1.4.

Performing sampling utilizing samplers and barrels with diameters from 2 to 7-7/8 inches with overall lengths to 13 feet as specified in Section 1(a) of the Prequalification Requirements, attached as Exhibit A to Instructions to Bidders.

Driving 9-inch (I.D.) casing to 25 feet in the materials described in Section 1.4 of this Agreement.

Drilling 8-inch hollow stem augers (3-3/8 inch I.D.) to depths of 100 feet in the materials described in Section 1.4.

Through-chuck clearance and jaws adequate to pass "NW" and "AW" rod and "NW" casing.

Mutually independent operation of rotary drive, wireline drum, cathead, and main hoist drums.

"Live" hydraulics allowing hydraulic cylinder operation without rotary or hoist drum operation.

Ability to disassemble, helicopter move, and reassemble all equipment in a move time not to exceed six hours, without exceeding 3,000 pounds per individual piece of equipment.

(ii) 200 feet each of "AW" and "NW" rod (or equivalent as approved by the Engineer) and 200 feet each of "NW" and "HW" casing with casing advancers or bit underreamer as the Contractor deems appropriate to advance

"NW" and "HW" casing, with all necessary adapters, subs, and drive heads.

(iii) 100 feet of 8-inch (3-3/8 inch I.D.) hollow stem auger with all accessories and bits necessary for operation.

(iv) Two and three inch diameter ASTM style split liner sampling spoons together with replacement shoes and baskets; for standard penetration test sampling with all fittings, parts, rods, and 140 and 300 pound hammers.

(v) All necessary equipment for taking two and three inch diameter Shelby tube samples using a fixed head type sampler (standard Shelby tube sampling). Other style Shelby sampler may be accepted at the discretion of the Engineer.

(vi) Pumps of adequate size and capacity for water supply to drill site and for drilling operations, with a maximum lift from source to drill of 150 vertical feet and to flush cuttings from maximum hole depth of 200 feet. Pump must be able to provide 300 psi static pressure, and flows in excess of 20 gpm.

(vii) Minimum 10,000 feet of water supply line, to be of a flexible type amenable to being moved in long segments by helicopter.

(viii) Tubs, hoses, pumps, fittings, and necessary equipment to recirculate drill water and to accurately measure flow quantities and rates downhole to within one gallon per hundred gallons pumped. Holding tub for water supply with minimum 100 gallon capacity.

(ix) Grout mixer, pump, and hoses of suitable capacity to backfill all holes from bottom up with a cement-bentonite-water mixture, and to mix drill mud and bentonite.

(x) Portable generator, welder and necessary tools and supplies to facilitate onsite repair of equipment, and all tools necessary for normal repair and disassembly/assembly of rods, casing, samplers, core barrels, etc.

(xi) Adequate supply of routine spare parts on site to maintain rigs, together with backup supplies, expediting capacity and shop facilities off site, to specifically include adequate supplies of all shoes, lifters, sleeves,

bearings, pins, lubricants, and seals which require frequent replacement during vigorous sampling operations.

(xii) Blocking and support material to allow setting rig up on maximum 30° slopes.

(xiii) "N" and "H" size wireline split tube core barrel (10 foot run length) for dry blocking use, for drilling through boulder zones, and for sampling of bedrock through "NW" and "HW" casing.

(xiv) Microcrystalline wax or approved equivalent and tight fitting caps and plugs (ASTM D-1587) to seal Shelby tubes; with a safe means of maintaining a melted supply of wax without use of open flame which may come in contact with the wax.

(xv) Measuring tapes or rulers adequate for measurement of run lengths, recovery, barrel and sampler lengths, etc., in tenths of feet.

(b) The following materials are to be available onsite at start of work but will be paid for, if consumed, under Item 5 of the Schedule of Pay Items as down-hole consumables, and will be reimbursed through use of approved invoices as described in Section 3 hereof. All materials provided must be new unless

such requirement is previously waived by the Engineer. Reimbursement shall not cover any maintenance costs on the drill rig or accessory equipment nor will coverage include down-hole materials or tools lost or damaged through the negligence, neglect, or abuse of the Contractor's personnel. Normal wear and tear to rod, samplers, augers, and casing will not be reimbursed but replacement of down-hole equipment and materials consumed or lost through no fault of the Contractor will be covered in this Section. The following materials are to be available onsite at the start of work in a quantity sufficient to support the work under this Agreement for a minimum of two weeks.

(i) All bits, shoes, reaming shells, and drill teeth necessary to conduct drilling operations as previously described.

(ii) Bits, shoes, retainers, catchers and liners for the samplers and barrels.

(iii) Shelby tubes, two and three inches (O.D.) by 30 inches long with interior surface lacquered.

(iv) Six inch long brass rings and split liners for use in both two inch and three inch sampling spoons.

(v) Drill muds, fluids, additives, and down-hole lubricants, as necessary to conduct drilling operations. Only bio-degradable "revert" type fluids and muds will be allowed, and use of drill fluids shall be controlled by the Engineer in some holes to prevent contamination of sampled materials.

(vi) Cement, bentonite pellets 3/8- to 1/2-inch size and bagged clean, No. 40 Ottawa Sand or approved equivalent, as required, for backfill and instrumentation sealing.

(c) Contractor-Supplied Workmen and Personnel

The Contractor shall provide at least two workmen for each drill rig. At least one member of each crew shall be experienced in drilling with the equipment and tools specified in Section 2.2(a) to the required depth in soil under similar conditions. In addition, the Contractor shall supply a full-time mechanic thoroughly familiar with the repair and operation of the rigs and performance of the required drilling and testing. One individual must be designated as the Contractor's authorized field representative. The total number of Contractor's personnel on-site shall not exceed five without prior approval of the Engineer.

At the request of the Engineer, the Contractor shall immediately remove from the Site any workman who, in the opinion of the Engineer, misconduct themselves or is incompetent or negligent in the performance of his duties, and such person shall not be employed again on drilling operations for Acres without written permission of Acres. Replacement personnel must be on-site within five calendar days, and non-availability due to lack of personnel will be considered down time as defined in Section 3.5.

(d) Support Capability

Contractor must have adequate support capabilities to ensure the sustained operation of a remote field drilling operation in Alaska. These capabilities shall include:

(i) Adequate supply of backup equipment, tools, spare parts and materials to either repair or replace field assigned equipment as necessary in the event of a major breakdown.

(ii) Portable generators, welders, torches, tools and other supplies necessary to facilitate on-site repair of equipment; and all tools necessary for normal repair, maintenance disassembly, assembly of rods, casing, augers, samplers, and core barrels.

(iii) Off-site facility located in Alaska with heavy repair capabilities for major overhauls, teardowns, and repairs of equipment in the event of a major breakdown.

(iv) Expediting capability to obtain needed parts, equipment, tools, supplies or other materials not in inventory and to transport them as necessary to the field operation.

(v) Personnel resources available to supplement or replace field crews in the event of major breakdown or crew turnover.

(vi) Experienced supervisory personnel available to provide input as required to the field operation.

2.3 - Moving Between Drill Sites

Rig Move time shall be defined as that period of time beginning when all drilling, borehole testing or borehole instrumentation installation activities, utilizing the drill rig, are completed at a given borehole, and ending when the next borehole is spudded up to a maximum of 6 hours. Laying water lines and setting anchor shall be included in Rig Move time. Delays during this period due to lack of helicopter availability shall be regarded as standby time. Contractor is

responsible for rigging and loading the drilling equipment. Acres shall not be liable for standby or any other costs resulting from delays caused by losses or damages to equipment, materials or supplies through improper rigging or loading or similar cause which is due to the negligence or willful act or omission of the Contractor.

2.4 - Soil Drilling and Sampling

The holes shall be advanced through the overburden with the use of an auger, tricone bit, or by other such methods as approved by the Engineer. Water ports in the bit shall be so arranged that there is no jetting action of the drill water ahead of the bit. Casing shall be installed as required to prevent collapse of the overlying soil.

(a) Standard Penetration Test and Soil Sampling

Soil sampling and Standard Penetration Tests (SPT) shall be performed in accordance with ASTM D-1586 and will be required in all holes at the site. Split spoon samples shall be taken at intervals as specified by the Engineer. Samples shall be logged, then carefully removed from the tube, and placed in sample bags, jars, or boxes as directed by the Engineer. All samples are to be labeled with hole number, sample number, depth, and date, etc.

Between sampling elevations, the holes shall be advanced by auger or tricone or other method as approved by the Engineer in such a manner as to prevent disturbance of the soil to be sampled. Casing shall be used when necessary to maintain the hole open and to enable the boring to be advanced. Sampling shall be accomplished in advance of the casing at all times. The bottom of the sampler shall be sharpened to form a cutting edge at its inside circumference. The cutting edge shall be maintained in good condition and replaced as directed by the Engineer. The drive weight assembly for the split spoon sampler shall consist of a 140 pound weight, a driving head, and a guide permitting a free fall of 30 inches, or a 300 pound weight dropping 18 inches as directed by the Engineer.

The boring shall be cleaned out to the sampling elevation using equipment that will ensure that the material to be sampled is not disturbed by the operation. With the split-spoon sampler resting on the bottom of the hole, the sampler shall be driven with blows from the 140-pound hammer falling 30 inches until 18 inches have been penetrated or 100 blows for 6 inches or less of penetration have been applied. The sampler may be driven 24 inches if necessary for sample recovery at the direction of the Engineer.

(b) Undisturbed Sampling

Undisturbed sampling shall be performed as directed by the Engineer in accordance with ASTM D-1587. A standard Shelby tube sampler consisting of a thin-wall tube and head containing a check valve for attaching the tube to the lower end of the drill rods shall be used for normal soil conditions.

The Shelby tubes shall be new, with a sharp cutting edge free from rust and a lacquered coating on the inside surfaces of the tube. 2.0 or 3.0 inch (O.D.) by 30 inch long tubes, or other sizes as required by the Engineer, shall be used. Before each sample is taken, the casing or borehole shall be cleaned out, making sure the soil to be sampled is not disturbed.

The tube shall be forced into the soil without impact or rotation a distance of 24 inches, or as required by the Engineer, in a single continuous operation at a rate from one-half to one foot per second by jacking or pressing. After the sampler has been inserted the required distance, it shall be permitted to stand without movement for a full five minutes. Before the tube is pulled, it shall be turned at least two revolutions.

(d) The sampler tube with the sample shall be detached from the head of the mechanism in a manner to cause as little disturbance as possible to the sample. Samples on no account shall be removed from or moved within the sample tube. The length of sample in the tube and also the distance pressed shall be measured and recorded.

For shipment of the tubes containing soil, the samples shall be packed in sturdy wooden boxes. Boxes shall contain compartments for individual tubes, and each tube shall be completely insulated from any contact with the compartment sides and ends by not less than one-half inches of excelsior or sawdust. No more than four tubes shall be packed in one box. The boxes shall be labeled "FRAGILE - HANDLE WITH CARE" in large, clearly legible print. Tubes shall at all times be supported in vertical position.

(e) Other Sampling Methods

In the event of adverse ground conditions, other sampling methods may be specified by the Engineer including but not limited to coring, dry block, Denison, Osterberg, Pitcher, Heavy-Wall Tube, and sidewall sampling.

(d) Protection of Samples

Measures shall be taken as required by the Engineer to ensure that the soil samples are adequately protected from freezing and any damage at all times.

2.5 - Instrumentation Installation

The depth of the instrumentation shall be as specified by the Engineer.

Installation of instrumentation including tips, riser pipes, readout tubing, sand, bentonite and grout seals will be directly supervised and controlled by the Engineer.

Only clear water or other fluids approved by the Engineer shall be used in the drilling of piezometer holes. Prior to installation of the piezometer, the hole shall be flushed with clean water as directed by the Engineer to clear hole of loose cuttings and debris.

(a) Piezometers

Pneumatic piezometers, and PVC standpipe piezometers of a type and quantity to be approved by the Engineer will be installed in selected boreholes as directed by the Engineer.

The number of installations, the number of tips per installation, the spacing of the tips downhole and installation procedures shall be determined in the field by the Engineer.

Details of a typical PVC standpipe installation and a typical pneumatic piezometer installation are given in Attachments C and D respectively.

In general, the space surrounding the piezometer tip in the borehole shall be backfilled with No. 40 Ottawa Sand or equivalent as approved by the Engineer. A bentonite or grout seal (2 foot minimum thickness) will be placed directly above the sand. After sufficient expansion of the bentonite on set-up of the grout has occurred, grout or other suitable materials as approved by the Engineer shall be tremied into the hole and allowed to rise to ground surface or a level at which another tip is to be installed.

A protective metal casing with a vented screw cap shall be cemented in around the riser pipes/tubing at the surface.

(b) Thermal Probes and Thermistor Strings

Thermal probes consisting of PVC pipe with sealed lower ends and thermistor strings consisting of a multi-strand

cable with redundant thermistor points positioned at intervals along the length of the cable will be installed in selected boreholes as directed by the Engineer. The number of installations, the type of instrument, and installation procedures will be determined in the field by the Engineer.

In general, the PVC pipe thermal probes shall be inserted in the borehole, followed by backfilling of the hole with grout or other approved material to the ground surface. The riser pipes shall be filled with a 50:50 solution of water and antifreeze upon completion of the installation.

The thermistor strings shall be suspended in the borehole or taped to a PVC riser pipe installed in the hole followed by backfilling of the hole with grout or other approved material to the ground surface.

A protective metal casing with a vented screw cap shall be cemented around the riser pipe/readout cables at the surface.

(c) Contractor-Provided Equipment, Tools, Materials and Labor

The Contractor shall provide equipment, tools, materials and labor as necessary for the installation of

instrumentation and as required by the Engineer. Equipment, tools and materials shall include, but not be limited to, the following:

(i) Bentonite Pellets - 3/8- or 1/2-inch size, designed and marketed for use in forming wall seals (Roctest "Peltonite" or equivalent).

(ii) Portland cement for grout seals between piezometer tips and for backfilling the holes.

(iii) 4- to 8-inch I.D. by 15-foot long steel or black iron pipe with screw-on, vented cap.

(iv) Grout mixer, pumps, hoses, rods, couplings, and all other equipment necessary to insert the instrumentation, install the sand, bentonite, grout, as required by the Engineer.

2.6 - Backfilling of Borehole

Upon completion, all boreholes shall be backfilled from the bottom up with a cement-bentonite-sand-water mix or by backfilling with other suitable material as required by the Engineer.

2.7 - In-Hole Testing

In-hole testing may be required from time to time as requested by the Engineer, including falling head, rising head or constant head permeability tests. These tests consist of installing casing to a depth specified by the Engineer, filling the casing with water and measuring the rate of fall of the water level, pumping out the casing and measuring the rate of rise of the water in the casing, and filling the casing with water and measuring the flow rate necessary to keep it full, respectively. Such in-hole permeability testing shall be performed under the direction and supervision of the Engineer. The Contractor shall assist in the performance of in-hole tests performed while the drill rig is set up on the location.

2.8 - Standby Time

Standby time refers to that time when drilling equipment, material, and crew are ready to begin work at the direction of the Engineer but drilling is not possible because of weather, lack of helicopter transportation, or other reasons beyond the control of the Contractor. Travel time or delays in moving crews to or from the drill sites up to 1/2 hour total per day shall be considered in the operation, and will not be chargeable. Standby time shall be chargeable up to a maximum

of 8 hours per shift. Standby time will be determined in accordance with the following items:

(i) Travel time or delays in moving crews to or from the drill sites in excess of 30 minutes total per day will be chargeable as standby up to a maximum of 8 hours per shift;

(ii) When crew is detained in camp for entire shift, 8 hours of Standby will be chargeable;

(iii) When 8 or more hours of work is performed during a shift, subsequent Standby will be chargeable only for time the crew is detained at the drill site; and

(iv) When less than 8 hours of work is performed during a shift, Standby will be chargeable to a maximum combined total (operating and Standby) of 8 hours, unless crew is detained at drill site.

2.9 - Down-Hole Consumables

(a) Down-hole consumable refers to all down-hole equipment, tools, supplies and material expended, lost, stuck, damaged, worn out or broken in any hole drilled by the Contractor during the course of the Drilling Operations. In addition, down-hole

consumables shall include cements, drilling muds or fluids, bentonite, sand, and other such materials as the Engineer may designate for use in borings or to secure the boreholes upon completion.

(b) Down-hole consumables shall specifically exclude drill rigs, pumps, water lines, and surface mechanical and electrical equipment, and all spare parts, maintenance supplies, and repairs thereto. Contractor shall be responsible for the care and maintenance of all surface and down-hole equipment and tools, and shall keep such equipment in good repair and proper working order during the term of this Agreement.

(c) At the start of drilling operations, the Contractor shall provide to the Engineer a complete inventory list of all spare parts, back-up equipment and materials taken to the site. This list shall include but not be limited to: drill bits, auger teeth, drive shoes, casing, rods, augers, cement, etc. This inventory shall be updated each time additional equipment, parts, or materials are sent to the Site. Information to be provided shall include: description of item, part number where applicable, quantity, supplier or manufacturer, unit price, etc.

As items in the inventory are consumed during the course of the job, Contractor shall indicate on the inventory

the date and rig number on which they were consumed. All consumables which are not left in the hole shall be tagged and retained at the Site for the Engineer's inspection.

(d) The nature and quantity of all down-hole consumables must be approved by signature of the Engineer in the field.

2.10 - Special Equipment and Materials Requirements

(a) Due to the varied nature of the exploration activities, it is anticipated that special equipment and materials, in addition to those items required in Section 2.2, will be required to properly perform the drilling and sampling tasks. The Engineer may direct the Contractor to acquire and use, under the provision of Item 6 of the Schedule, those items of special equipment or materials which the Engineer may deem necessary to the performance of the work. The Contractor shall supply only those items required in writing by the Engineer. Alternatively, at the Engineer's discretion, the Engineer may acquire items of special equipment and materials and provide them to the Contractor for the Contractor's use in performing the exploration activities.

All items acquired under this provision will remain in the ownership of the project at all times, and the Contractor

shall incur no interest or right of ownership by the use thereof.

The materials and equipment which may be required or acquired under this section may include, but not be limited to, the following categories and items, excluding those previously listed as specific requirements:

(i) Special drill fluids and aids such as mud, foaming agents, downhole lubricant, etc.

(ii) Casings, including the casing, bits, shoes, and connectors.

(iii) Samplers, to include Split Spoon, Shelby, Denison, Gus, Osterberg (hydraulically activated piston sampler), Pitcher (spring activated Shelby sampler), bailer, auger, or D.C.D.M.A. core barrel types, with barrels, shells, liners, bits, shoes, and repair parts.

(iv) Sample boxes, bags, cans, tins, or other containers.

Should the Contractor have, in his ownership or available to him, items which are required under this provision but not required by the conditions of Section 2.2, the Engineer

may, at his discretion, negotiate with the Contractor a rental or usage rate for such Contractor materials and equipment.

(b) To allow utilization of Engineer, specific equipment modification of Contractor-owned equipment may be necessary. It is expected that such modifications would be limited to standard options such as chuck or chuck jaws, casing accessories, or samplers. All modifications shall be agreed in writing by Engineer and Contractor prior to making any modifications. Any Contractor owned equipment modified under this section will be returned to its original condition on completion of the job at the Contractor's request.

SECTION 3 - PAYMENT CONDITIONS

3.1 - Mobilization and Demobilization

(a) For Mobilization as defined in Section 2.1 of this Agreement, Acres will pay the Contractor the lump sum price stated in Item 1(a) of the Schedule.

(b) For Demobilization as defined in Section 2.1 of this Agreement, Acres will pay the Contractor the lump sum price stated in Item 1(b) of the Schedule. Payment will be made only after final acceptance of the work as defined in Section 1.11(b).

3.2 - Equipment Operating Rate

This rate shall apply to all Drilling Operations where the drill rig is operational and working. The equipment operating rate shall apply to:

(a) All drilling and sampling operations as specified in Section 2.4.

(b) Backfilling of boreholes as specified in Section 2.6.

(c) Any other operations designated by the Engineer involving the use of an operational drill rig which is not specifically covered in Items 3.2, or 3.3.

(d) Instrumentation installation as specified in Section 2.5.

For the equipment operating rate, Acres will pay the Contractor at the rate stated in Item 2 of the Schedule, as approved by the Engineer, up to a maximum of 12 hours per shift for each rig.

3.3 - Equipment Available Rate

as specified

This rate shall apply to all Drilling Operations where the crew is available for work and the drill rig is operational but not working. The equipment available rate shall apply to:

- (a) Standby time as defined in Section 2.8.
- (b) Moving between drill sites as specified in Section 2.3, up to a maximum of six hours per rig per move.
- (c) In-hole testing as specified in Section 2.7 with or without the use of the Contractor's personnel.

For the Equipment Available Rate Acres will pay the Contractor at the rate stated in Item 3 of the Schedule, for Contractor's equipment available, as approved by the Engineer, up to a maximum of 12 hours per shift for each rig except as noted in Sections 2.3 and 2.8.

3.4 - Personnel Rate

This Rate shall apply to all Contractor's personnel employed on-site and necessary for the performance of the Drilling Operations as specified in Section 2.2(c). The Personnel Rates shall apply to:

(a) All hours worked by crew in performance of work, as specified in Sections 2.3, 2.4, 2.5, 2.6, 2.7, and 2.8; up to a maximum of 12 hours per shift, except as noted in Sections 2.3 and 2.8.

3.5 - No payment will be made for Contractor's personnel for (i) time spent in transit between Anchorage and the Site if transit time does not exceed four hours; (ii) transit between Anchorage and the Site if Contractor's personnel misses a scheduled departure under Section 1.8(d)(ii); and (iii) personnel delivering equipment, materials or personnel to the staging area.

No payment will be made for any Contractor's personnel other than those specifically required under Section 2.2(c) unless authorized in writing by the Engineer.

Payment for Contractor's personnel engaged in repair, or waiting for repairs of any rig, tools, samplers, or associated equipment on Down Time will be made in accordance with provisions of Section 3.5.

For purposes of payment regular hourly rates will apply to the first 8 hours per day to a total of 40 hours per week. Overtime hourly rates will apply to all hours over 8 hours per day or a total of 40 hours per week.

handling. For the Personnel Rate, Acres will pay the Contractor at the rates stated in Item 4 of the Schedule, as approved by the Engineer, up to a maximum of 12 hours per shift, except as noted in Sections 2.3 and 2.8.

3.5 - Down Time

Down Time shall apply to that time when the drill rig, tools, samplers or associated equipment is not operating due to mechanical failure, lack of repair parts or equipment, or lack of crew.

For equipment and personnel Down Time, Acres will pay the Contractor at the rates stated in Items 3 and 4 of the Schedule, as approved by the Engineer up to a maximum of 12 hours per shift for each rig.

No payment will be made for equipment or personnel Down Time during any monthly billing period in excess of five per cent of the total time payable during that monthly billing period under Sections 3.2 and 3.3.

3.6 - Down-Hole Consumables

Acres will pay the Contractor, under Item 5 of the Schedule of Pay Items, the invoice cost plus 10 percent

For the Personnel Rate, Acres will pay the Contractor at the rates stated in Item 4 of the Schedule, as approved by the Engineer, up to a maximum of 12 hours per shift, except as noted in Sections 2.3 and 2.8.

3.5 - Down Time

Down Time shall apply to that time when the drill rig, tools, samplers or associated equipment is not operating due to mechanical failure, lack of repair parts or equipment, or lack of crew.

For equipment and personnel Down Time, Acres will pay the Contractor at the rates stated in Items 3 and 4 of the Schedule, as approved by the Engineer up to a maximum of 12 hours per shift for each rig.

No payment will be made for equipment or personnel Down Time during any monthly billing period in excess of five per cent of the total time payable during that monthly billing period under Sections 3.2 and 3.3.

3.6 - Down-Hole Consumables

Acres will pay the Contractor, under Item 5 of the Schedule of Pay Items, the invoice cost plus 10 percent

handling charge, plus actual transportation costs for down-hole consumables as defined in Section 2.9 and as approved by the Engineer. Transportation costs shall not include Contractor transport of materials to or from the project staging areas.

No payment will be made for equipment, tools, materials or supplies ~~which are lost, stuck, damaged, worn or broken during the course of the drilling operations due to lack of maintenance, normal wear and tear (except as noted under Section 2.2(b), poor work practices or negligence on the part of the Contractor.~~ No payment will be made for down-hole consumables unless approved in writing by the Engineer.

No payments shall be made for availability of materials on site which are not consumed if such items are required under Section 2.2. Special purchases directed by the Engineer, if returned unused, will be paid for to the extent of invoice cost plus 10 percent handling charge, plus actual transportation cost, minus any return credits.

Engineer shall be given evidence of reclaim value for all diamond products, and shall receive credit against Contractor's invoices, or direct reimbursement as applicable for all diamond products and similar reclaim or turn-in values coming from the work.

3.7 - Other Contractor Supplied Equipment and Materials

(a) Acres will pay the Contractor under Item 6 of the Schedule of Pay Items, the invoice cost plus 10 percent handling charge, plus actual transportation costs for those items of special equipment or materials, as defined in Section 2.10(a), supplied by the Contractor at the written request of the Engineer. No payment will be made for any items supplied by the Contractor under this section not specifically requested by the Engineer in writing.

(b) Should addition to or modification of Contractor-owned equipment be necessary to allow utilization of Engineer-specified equipment, as defined in Section 2.10(b), the Contractor will be paid actual invoice costs on materials plus his direct labor at the "personnel" rates stated in Item 4 of the Schedule, plus the number of hours the equipment is unavailable for work at the rate stated in Item 3 of the Schedule for all directed modifications of the equipment to meet the project requirements, plus reimbursement on the same basis for returning the Contractor-owned equipment to its original condition, if in fact the equipment is returned to its original condition.

3.8 - Special Payment Provisions

(a) Acres will pay the Contractor in accordance with the Schedule of Pay Items, and except as otherwise provided herein or by memorandum in writing signed by the Engineer, payment in accordance with said Schedule will be deemed to constitute full payment to the Contractor for all labor, equipment, material, and services supplied in respect of the Drilling Operation.

(b) Payment as defined under Sections 3.2, 3.3, and 3.4 shall be made only for a maximum combined total of 12 hours per shift per rig. In no case shall payment be made for cumulative total charges for the sum of Items 2 and 3 of the Schedule of Pay Items in excess of 12 hours per shift for each rig, unless approved in writing by the Engineer.

SECTION 4 - GENERAL PROVISIONS

4.1 - Definitions

(a) The word "Contractor" shall mean the person, persons, firm, company or corporation performing work under this Agreement.

(b) The word "Acres" shall mean Acres American Incorporated.

(c) The word "APA" shall mean the Alaska Power Authority.

(d) "Drilling Operation" means a drilling operation being carried out by the Contractor under this Agreement and includes all work required in connection thereto.

(e) "Engineer" means the Acres field engineer or appointed representative assigned to the Drilling Operation.

(f) "Schedule" means the Schedule of Pay Items submitted by the Contractor with its bid proposal and attached hereto as Attachment B and forming part of this Agreement.

(g) "Site" means the area around and adjacent to the Watana Dam site of the Susitna Hydroelectric Project, together with related proposed borrow areas, as indicated in Attachment A hereto.

4.2 - Contractor Warranties and Representations

In recognition of the fact that the Drilling Operation under this contract represents a critical item in project design activities, Contractor hereby warrants and represents that it will be able to adequately and professionally perform the indicated exploration activities. Contractor further covenants and warrants that all representations made in that

certain Qualification Statement attached as Attachment 1 to the Contractor's Proposal and Statement were true and correct when made and continue to be true and correct to the date of this Agreement. Contractor further covenants and warrants that it meets and will meet the requirements of Section 2.2 of this Agreement.

4.3 - Contractor's Undertakings

(a) The Contractor shall do all work and furnish all labor, tools, and equipment required for performing and completing the work called for in this Agreement.

(b) In performing any of the work under this Agreement, the Contractor shall adopt its own methods, ways and work and select the equipment and labor subject to Acres approval and as hereinabove provided for. Acres may, at the discretion of the Engineer, require the Contractor to utilize the equipment and methods described in Sections 2.2 and 2.10.

4.4 - Prosecution of Work by Contractor

(a) All work shall be prosecuted with diligence and shall be done in a good, substantial and workmanlike manner in accordance with all applicable codes and standards.

(b) Contractor shall employ only competent personnel in the performance of the work herein, and the Engineer shall be notified in advance of the Contractor's intention to use, in the performance of the field work, any personnel not previously listed in the Qualification Statement (Attachment 1 to the Proposal and Statement).

4.5 - Unemployment and Social Security Payments and Workman's Compensation

The Contractor shall be responsible for and shall pay all dues and assessments payable under the Federal Insurance Contributions Act and Unemployment Tax Act and the State Unemployment Insurance Act applicable thereto and the applicable Workmen's Compensation Insurance, and the Contractor agrees to duly report and pay over in the manner provided by law the moneys required thereby to be deducted and withheld, and to make such payments required of it by said Acts and any subcontractor shall be required to agree to make such reports and payment, in respect of his employees or operations and shall, upon request, furnish Acres with satisfactory evidence that he has complied with the provisions of any such Act.

4.6 - Indemnity by the Contractor

The Contractor shall indemnify and save harmless Acres, APA, and its employees from and against all claims,

demands, losses, costs, expenses, actions, suits, proceedings or damages whatsoever (including consequential damages), injury(s) including death, sustained or suffered by any employee or workman of the Contractor or his agents while engaged on or in connection with any or all work performed under this Agreement, but excluding any claims or demands arising out of a negligent act or omission of Acres.

4.7 - Injuries and Infringements of Rights

The Contractor shall further ensure that he, his agents, and all workmen and persons employed by him or under his supervision and/or control shall use due care and diligence that no person or property is injured and that no rights are infringed in the prosecution of a drilling operation. Contractor shall notify the Engineer at the earliest opportunity of all injuries or illness occurring on the job, and assist the Engineer in completing and filing all required injury reports and forms.

4.8 - Confidentiality

The Contractor shall ensure that all findings, results, determinations and information resulting from the drilling operation are held confidential and for the sole use of Acres and APA.

The Contractor shall ensure that all workmen and persons employed by him regard information resulting from the drilling operation as confidential.

4.9 - Patent Rights

The Contractor shall ensure that any method of work performed or material furnished by it hereunder shall not infringe upon any patent issued or pending, covering any such method or material and claimed by the patentee or owner of the patent as an infringement, and in event of any such claim, the Contractor agrees to defend, indemnify and hold Acres and APA harmless from any and all cost or expense arising out of the Contractor use of any such method or material.

4.10 - Nondiscrimination Agreement, Certification and Affirmative Action Compliance

During the performance of this Agreement, Contractor agrees as follows:

(1) Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to

their race, religion, color, sex, or national origin. Such action will include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

(2) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.

(3) Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by Acres advising the labor union or workers' representative of contractor's commitments, under Section 202 of Executive Order Number 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) Contractor will comply with all provisions of Executive Order Number 11246 of September 24, 1965, and the rules, regulations, and relevant orders of the Secretary of Labor.

(5) Contractor will furnish all information and reports, required by Executive Order Number 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by Acres and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) Contractor and all associates performing Services must comply with the provisions of (a) the agreement between the Alaska Power Authority and the Individual Cook Inlet Native Villate Corporations and the Cook Inlet Region, Inc., (b) the Bureau of Land Management Stipulations, and (c) the Alaska Department of Fish and Game Regulations applicable to the Sunitna Hydroelectric Project which this Agreement supports as defined in Attachments G, E, and F, respectively.

(7) In the event of Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this Agreement may be cancelled, terminated, or suspended in whole or in part, and

Contractor may be declared ineligible for further contracts, in accordance with procedures authorized in Executive Order Number 11246 of September 24, 1965, and other such sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rules, regulations or order of the Secretary of Labor, or as otherwise provided by law.

(8) Contractor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor, issued pursuant to Section 204 of Executive Order Number 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

4.11 - Insurance

The Contractor shall have procured prior to execution of this Agreement, and shall maintain the following insurance coverage. Such insurances are subject to the approval of Acres and shall remain in force until termination of this Agreement. The Contractor shall provide complete copies of all policies if requested by Acres.

(a) Workmen's Compensation Insurance in compliance with statutory obligations imposed by law. Employer's Liability Insurance with a limit of \$500,000 per accident.

(b) Comprehensive Automobile Liability Insurance for all owned vehicles, non-owned vehicles, and hired vehicles used in the performance of the work with the following limits of liability: \$1,000,000 Combined single limit per occurrence.

(c) General Liability Insurance covering premises operation, independent contractors, products/completed operations, blanket contractual, broad form property damage, and personal injury with the following minimum limit of liability: \$1,000,000 Combined single limit per occurrence.

(d) Property Insurance covering equipment, supplies, materials and other items of property owned by or in the possession of the Contractor and used for or in the provision of the Drilling Operations.

(e) Excess Liability Insurance in excess of the liability insurances required under (b) and (d) above to a limit of \$5,000,000.

(f) Contractor shall ensure addition of Acres and the APA as named insureds under each of the insurances described in (a), (b), (c), (d), and (e) above.

(g) Contractor shall require its subcontractors to carry at least the minimum insurances described in (a), (b), (c),

(d), and (e) above, and to require said subcontractors to name Acres and APA as named insureds under each of said insurances.

This insurance shall be provided throughout the Agreement term and shall continue in force, for any and all claims resulting from occurrences during the Agreement term, for a period equal to the legal limit or statute of limitations for filing a claim against the Contractor, Acres, or APA.

Under no circumstances will any of the policies above be cancelled or modified without at least 30 days prior notification to Acres.

Before any work is started under this Agreement, current certificates of insurance must be furnished to Acres and contain: (1) name of insurance company, type of insurance, policy number and expiration date; (2) limits of insurance and amount deductible; and (3) name of insured.

4.12 - Time Sheets and Invoices

(a) The Contractor shall submit a daily drilling record to the Engineer containing the particulars of all chargeable items in accordance with the Schedule. This record is to be signed by both the Engineer and the Contractor's representative and will constitute the basis for invoice quantities.

(b) At the beginning of each calendar month, and not later than the 14th working day of the month, Contractor shall submit to Acres an invoice in duplicate giving a detailed breakdown of all charges in accordance with the Schedule together with full supporting information such as time sheets, daily drill reports, equipment and material receipts as applicable for Drilling Operations performed under the Agreement during the preceding month and not included on previous invoices. After review of each invoice, Acres will pay Contractor the amount certified by Acres for payment within forty-five (45) days of receipt by Acres. Neither the review, certification, approval nor payment by Acres of any said invoice shall preclude the right of Acres from thereafter disputing any of the items involved.

4.13 - Termination of Agreement

(a) This Agreement shall apply to every Drilling Operation within the scope of this Agreement unless this Agreement has been terminated in accordance with Clause 4.13(b), or unless an alternative agreement has been negotiated.

(b) The performance of the work under this Agreement may be terminated by Acres in whole or in part:

Whenever the Contractor shall default in performance of this Agreement (including in the term "default" any failure by the Contractor to make progress in the prosecution of the work hereunder as endangers such performance), and shall fail to cure such default within a period of ten (10) working days after receipt from Acres of notice specifying the default.

(ii) Whenever Acres shall terminate for its convenience.

Acres may terminate this Agreement by delivery to the Contractor (by personal service or by registered mail) of a Notice of Termination specifying the extent to which performance of work under the Agreement is terminated and the date upon which such termination becomes effective.

(c) This Agreement may be terminated by notice from Acres as specified in Section 4.13(b), but in any event shall terminate on September 30, 1982 without further notice.

4.14 - Applicable Laws, Regulations, Permits, and Access Requirements

Contractor represents and warrants that (1) Contractor is in compliance with and shall continue to comply with and

secure compliance by its subcontractors with all applicable federal, state and local laws, rules, regulations, decisions, ordinances, stipulations and with the particular environmental and access permits and agreements contained in Attachments E, F and G hereto (collectively "Law"), including but not limited to the provisions of Alaska Statutes 36.05 and 36.10 and regulations thereunder to the extent the same are applicable to the award and performance of this Agreement, and (2) the award of this Agreement to Contractor shall not contravene any of the foregoing Law. Contractor or its subcontractors shall bear any additional costs and defend, indemnify, and hold Acres harmless from any expense resulting from violation and correction thereof.

Contractor shall defend, indemnify, and hold Acres harmless from any liability or penalty which may be imposed on Acres by reason of any alleged violation or violation of Law by Contractor or its subcontractors and also from all claims, suits or proceedings that may be brought against Acres arising under, growing out of, or occurring by reason of work performed under this Agreement with respect to such alleged violation or violation of Law whether brought by employees of Contractor or its subcontractors, by third parties, or by any governmental authority.

Contractor shall not, under any circumstances, enter into negotiations with any governmental authority or agency to develop acceptance of variations or revisions of Law without Acres' prior approval. Acres will act as prime contact with governmental agencies on all such matters relating to this Agreement.

4.15 - Arbitration

(a) All claims, disputes and other matters in question between the parties to this Agreement, arising out of or relating to this Agreement or the breach thereof, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then prevailing unless the parties mutually agree otherwise. No arbitration, arising out of or relating to this Agreement, shall include, by consolidation, joinder or in any other manner, any additional person not a party to this Agreement except by written consent containing a specific reference to this Agreement and signed by Acres, the Contractor and any other person sought to be joined. Any consent to arbitration involving an additional person or persons shall not constitute consent to arbitration of any dispute not described therein or with any person not named or described therein. This agreement to arbitrate and any agreement to arbitrate with any additional person or persons duly consented to by the

parties to the Agreement shall be specifically enforceable under the prevailing arbitration law.

(b) Notice of the demand for arbitration shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. The demand shall be made within a reasonable time after the claim, dispute or other matter in question has arisen. In no event shall the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

(c) The award rendered by the arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

4.16 - Excusable Delays

Except with respect to defaults of subcontractors, Contractor shall not be in default by reason of any failure in performance of this Agreement in accordance with its terms (including any failure by Contractor to make progress in the prosecution of the work hereunder which endangers such performance) if such failure arises out of causes beyond the control and without the fault or negligence of Contractor.

Such causes may include, but are not restricted to, acts of God or the public enemy; expropriation or confiscation of facilities; war, rebellion, sabotage or riots; and floods, that could not reasonably have been anticipated; fires, explosions, or other catastrophies; strikes or any other concerted acts of workmen; or other occurrences which are not within the control of the party affected and which by the exercise of reasonable diligence said party is unable to prevent or provide against.

If the failure to perform is caused by the failure of a subcontractor to perform or make progress, and if such failure arises out of causes beyond the control of both Contractor and subcontractor and without the fault or negligence of either of them, Contractor shall not be deemed to be in default, unless

(a) the supplies or services to be furnished by the subcontractor were reasonably obtainable from other sources, and (b) Acres shall have ordered Contractor, in writing, to procure such supplies or services from such other sources, and (c) Contractor shall have failed to comply with such order.

Upon request of Contractor, Acres shall ascertain the facts and extent of such failure and, if any failure to perform was occasioned by any one or more of the said causes, the schedule of Work shall be revised accordingly, subject to the rights of Acres under Section 4.13 hereof, and subject to the rights of both parties under Section 4.15 hereof.

4.17 - Assignment

This Agreement is not assignable without prior written authorization from Acres, nor is any subcontract issued by Contractor for work to be performed under this Agreement assignable without prior written authorization from Acres provided such authorization shall not be unreasonably withheld.

4.18 - Changes

(a) Contractor shall not make changes to the Drilling Operation or undertake work for Acres additional to the Drilling Operations without written authorization.

(b) Acres may, at any time, by a written order delivered to Contractor, make changes to the technical specifications, or authorize additional work outside the Scope of Work as set forth in Section 1.3 hereof.

(c) If any such change or addition causes an increase or decrease in the estimated cost of, or time required for, the performance of any part of the work under this Agreement, whether changed or not by any such order, or if such change otherwise affects any other provisions of this Agreement, an equitable adjustment shall be made by Acres:

(1) In the estimated cost of completion or schedule, or both; and

(2) In such other provisions of the Agreement as may be affected, and the Agreement shall be modified in writing accordingly.

Any claim by Contractor for adjustment under this Section must be asserted within thirty (30) days from the date of receipt by Contractor of the notification of change; provided, however, that Acres, after deciding that the facts justify such action, may receive and act upon any such claim asserted at any time prior to final payment under this Agreement. Failure to agree to any adjustment shall be settled by arbitration pursuant to Section 4.15 of this Agreement.

4.19 - Examination of Costs

(a) Acres shall have access, at all reasonable times, during the term of the Contract and for a period of three (3) years following the completion of Drilling Operations or termination hereunder, to Contractor's and subcontractor's personnel, books, correspondence, instructions, plans, drawings, receipts, vouchers and memoranda of every description pertaining to Drilling Operations, for the purpose of auditing and verifying costs of Drilling Operations, or for any other reasonable purpose. Acres shall have the right to reproduce this documentation. The audit rights of this paragraph include

audit and verification of Contractor's compliance with the equal opportunity, nonsegregated facilities, subcontractor listings, and other requirements of Section 4.14.

(b) Contractor shall preserve all above-mentioned documents for a period of three (3) years after completion of Drilling Operations hereunder.

4.20 - Taxes

Effective as of the first day Drilling Operations are performed under this Agreement, Contractor shall be responsible for and shall pay or cause payment of, at such times when due and payable, all federal, state or local taxes and contributions imposed upon Contractor for or on account of performing Drilling Operations under this Agreement, including those assessed against and measured by the salaries and paid by Contractor to its employees. Contractor indemnifies Acres and agrees to hold Acres harmless from any and all liabilities and claims resulting from Contractor's failure to make timely payments of or to pay any items, or failure to comply with the reporting, return, or other procedural requirements with respect to their payment. Any interest, penalties or other liabilities arising from such failures shall be solely for Contractor's account.

4.21 - Alaska Preference

Contractor agrees to comply with all applicable provisions of A 36.05 and AS 36.10 and of any regulation thereunder with respect to employment preferences to Alaskan residents and firms in the performance of this Agreement or of any subcontract hereunder.

4.22 - Subcontractor Approval

Acres reserves the right to review and approve any subcontractor or subcontract proposed to perform services covered by this Agreement. Such approval shall not be unreasonably withheld.

4.23 - Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of Alaska.

4.24 - Waiver of Breach

The waiver by Acres of any breach of this Agreement or the failure of Acres to enforce at any time, or for any period of time, any of the provisions hereof, shall be limited to the particular instance, shall not operate or be deemed to waive any future breaches of this Agreement and shall not be

construed to be a waiver of any provision, except for the particular instance.

4.25 - Severability of Invalid Provisions

If any provisions of this Agreement shall be held to contravene or be invalid under the laws of any particular state, country or jurisdiction where used, such contravention shall not invalidate the entire Agreement, but shall be construed as if not containing the particular provision or provisions held to be invalid in the particular state, country or jurisdiction and the rights or obligations of the parties hereto shall be construed and enforced accordingly.

4.26 - Notices

All notices under this Agreement shall be in writing and shall be sent by certified/registered mail or acknowledged electrically transmitted message (i.e., telegram, telex, TWX, facsimile) to Contractor or Acres at their office address set forth in this Agreement, or shall be handed to their duly authorized representatives. The date of any notice shall be the date it is first received by the office address of the addressees.

4.27 - Conflict of Interest

Contractor shall exercise reasonable care and diligence to prevent any actions or conditions which could result in a conflict with Acres' best interests. This obligation shall apply to the Contractor and the employees, agents, and subcontractors of Contractor. Contractor's efforts shall include, but not be limited to, establishing precautions to prevent its employees, agents, and subcontractors from making, receiving, providing or offering substantial gifts, entertainment, payments, loans or other considerations for the purposes of influencing or permitting individuals to act in any particular manner.

4.28 - Agreement Contingent Upon APA Funds

This Agreement is contingent upon the receipt of funds for drilling exploration by Acres from the APA.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in their respective names by their duly authorized representatives, as of the date first above written.

Acres American Incorporated

Contractor

By: _____

By: _____

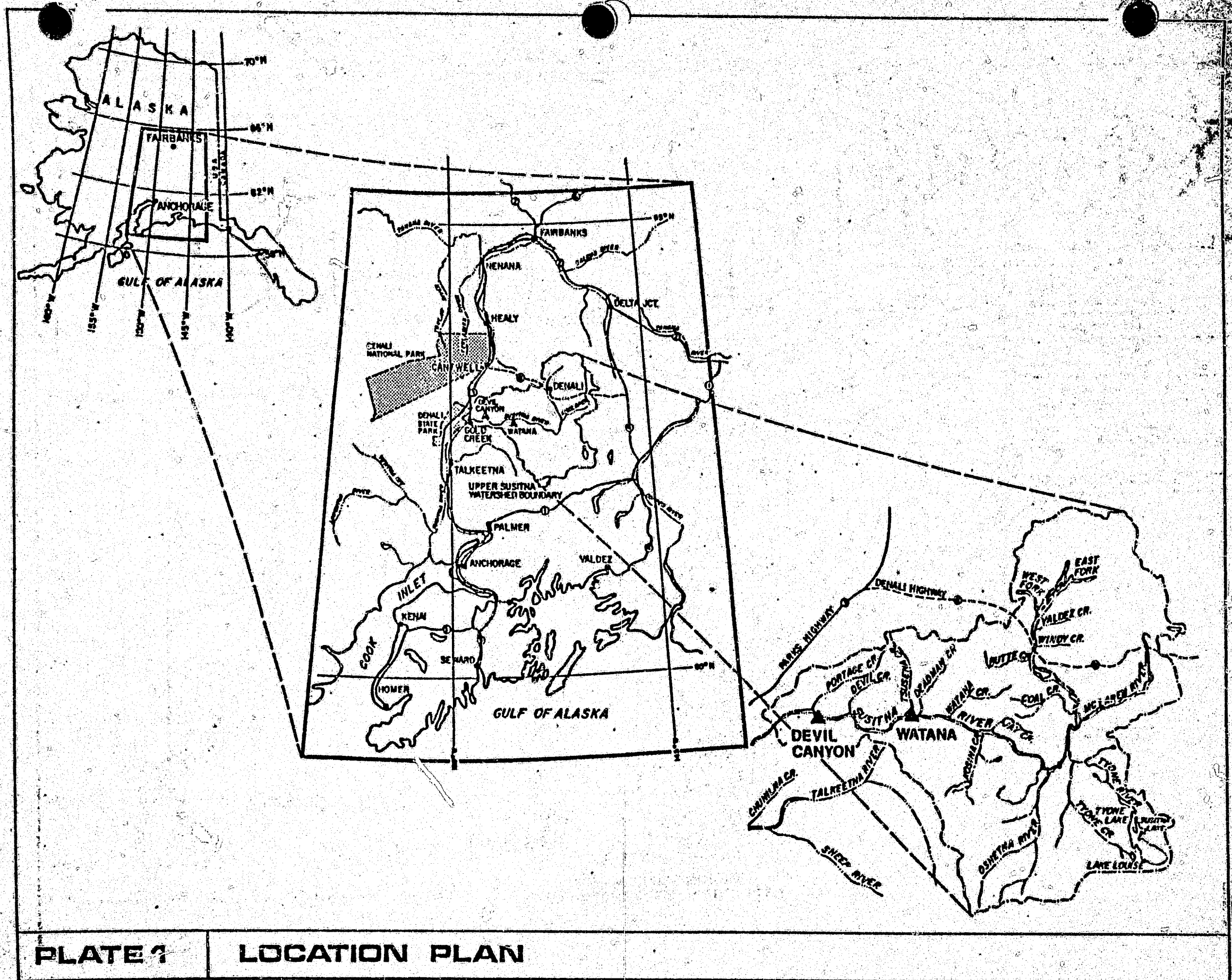
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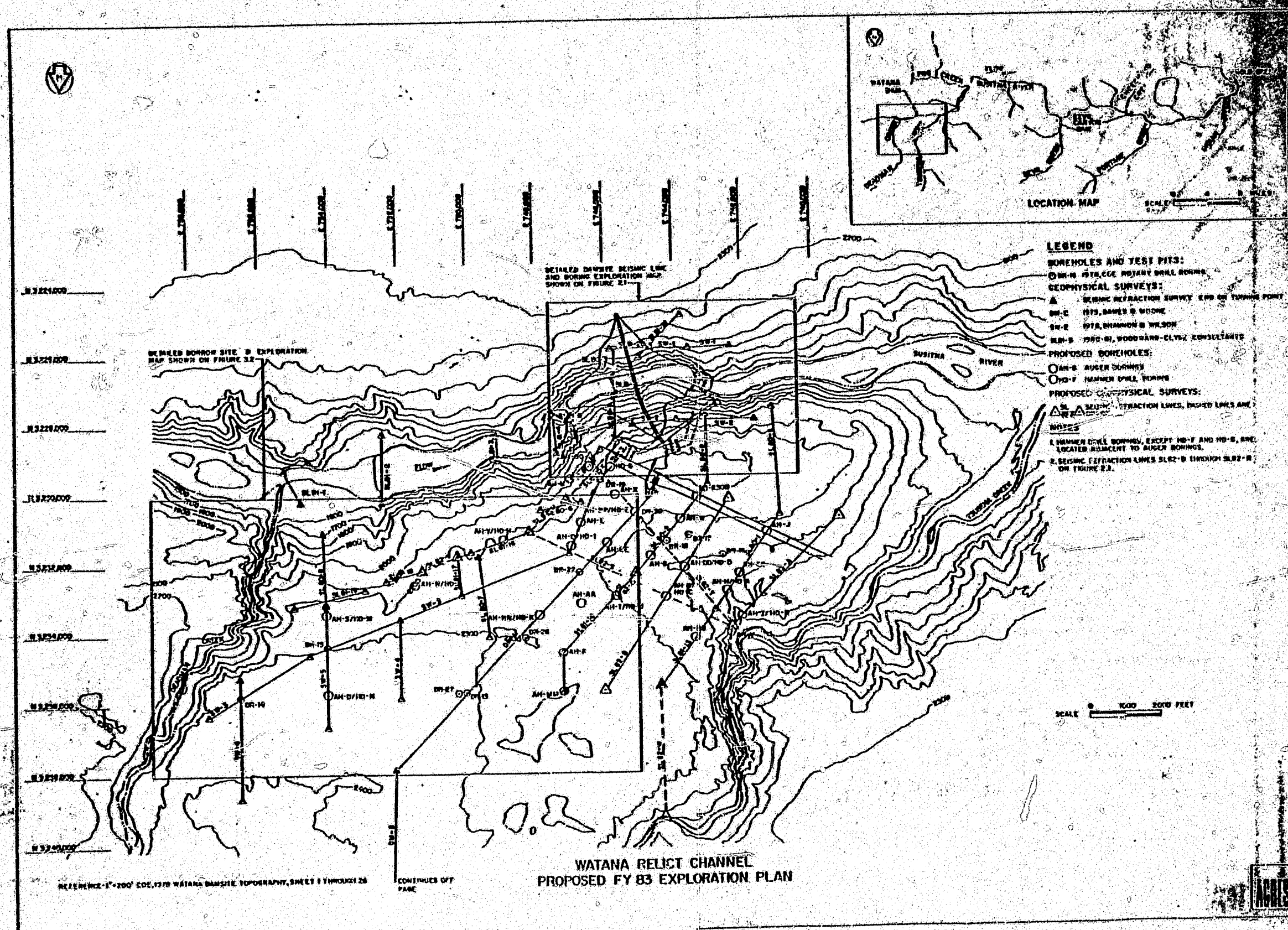
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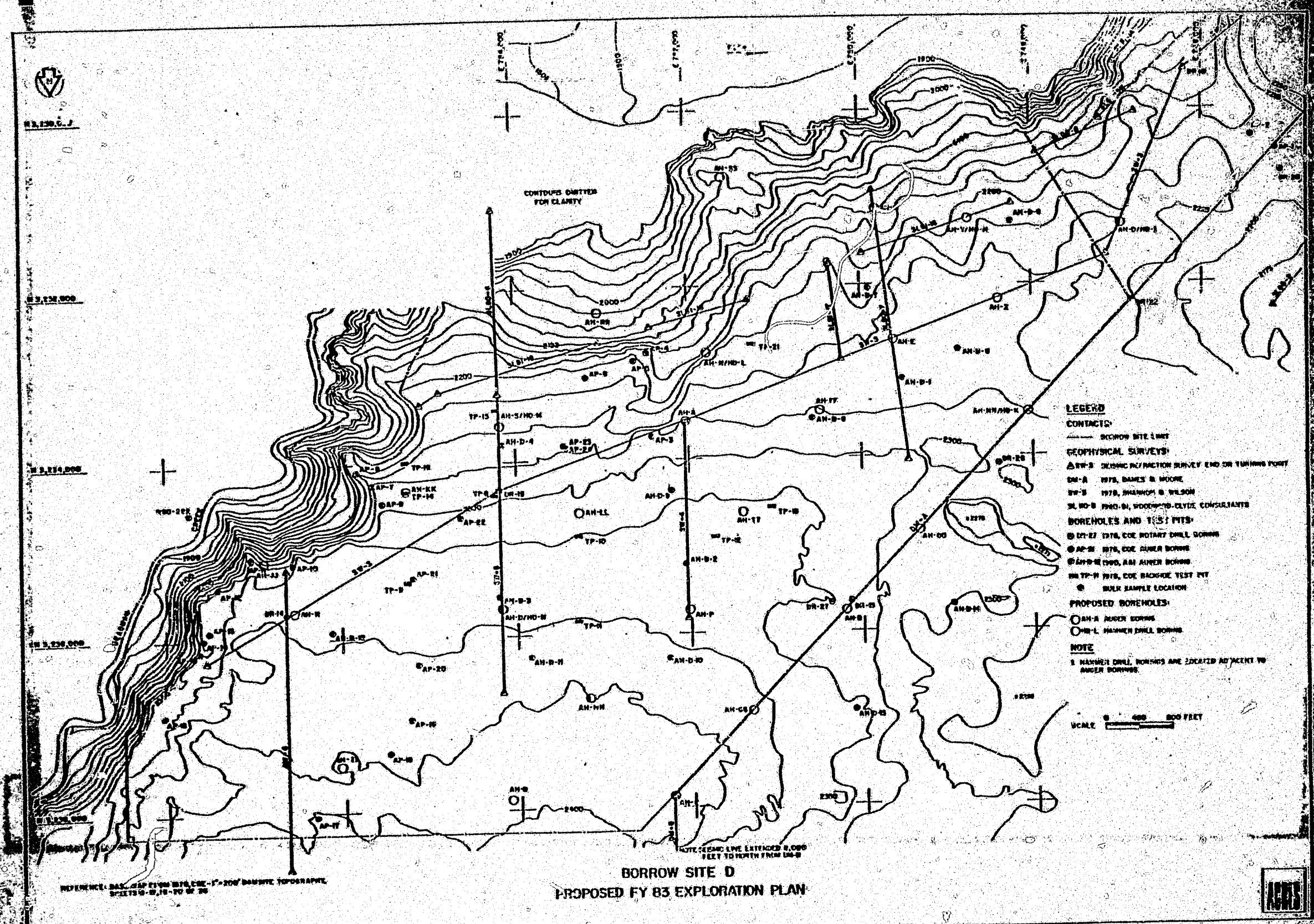
ATTACHMENT A

Site and Borehole Location Plan

PLATE 1







ATTACHMENT B
Schedule of Pay Items

ATTACHMENT B TO
THE AGREEMENT

SCHEDULE OF PAY ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
1.	MOBILIZATION AND DEMOBILIZATION				
	(a) Mobilization	-	Lump Sum	\$ _____	\$ _____
	(b) Demobilization	-	Lump Sum	\$ _____	\$ _____
2.	Equipment Operating Rate	756	Hour	\$ _____	\$ _____
3.	Equipment Available Rate	252	Hour	\$ _____	\$ _____
4.	Personnel				
	(a) Lead Driller/Foreman - reg	480	Hour	\$ _____	\$ _____
	- o.t.	528	Hour	\$ _____	\$ _____
	(b) Driller - reg	480	Hour	\$ _____	\$ _____
	- o.t.	528	Hour	\$ _____	\$ _____
	(c) Helper - reg	960	Hour	\$ _____	\$ _____
	- o.t.	1056	Hour	\$ _____	\$ _____
	(d) Mechanic - reg	480	Hour	\$ _____	\$ _____
	- o.t.	528	Hour	\$ _____	\$ _____
5.	Down-Hole Consumables (approved by Engineer)	-	Each	(Invoice Amount + 10%) + Transportation	
6.	Other Contractor-Supplied Equipment (approved by Engineer)	-	Each	(Invoice Amount + 10%) + Transportation	
	TOTAL FOR ALL ITEMS				\$ _____

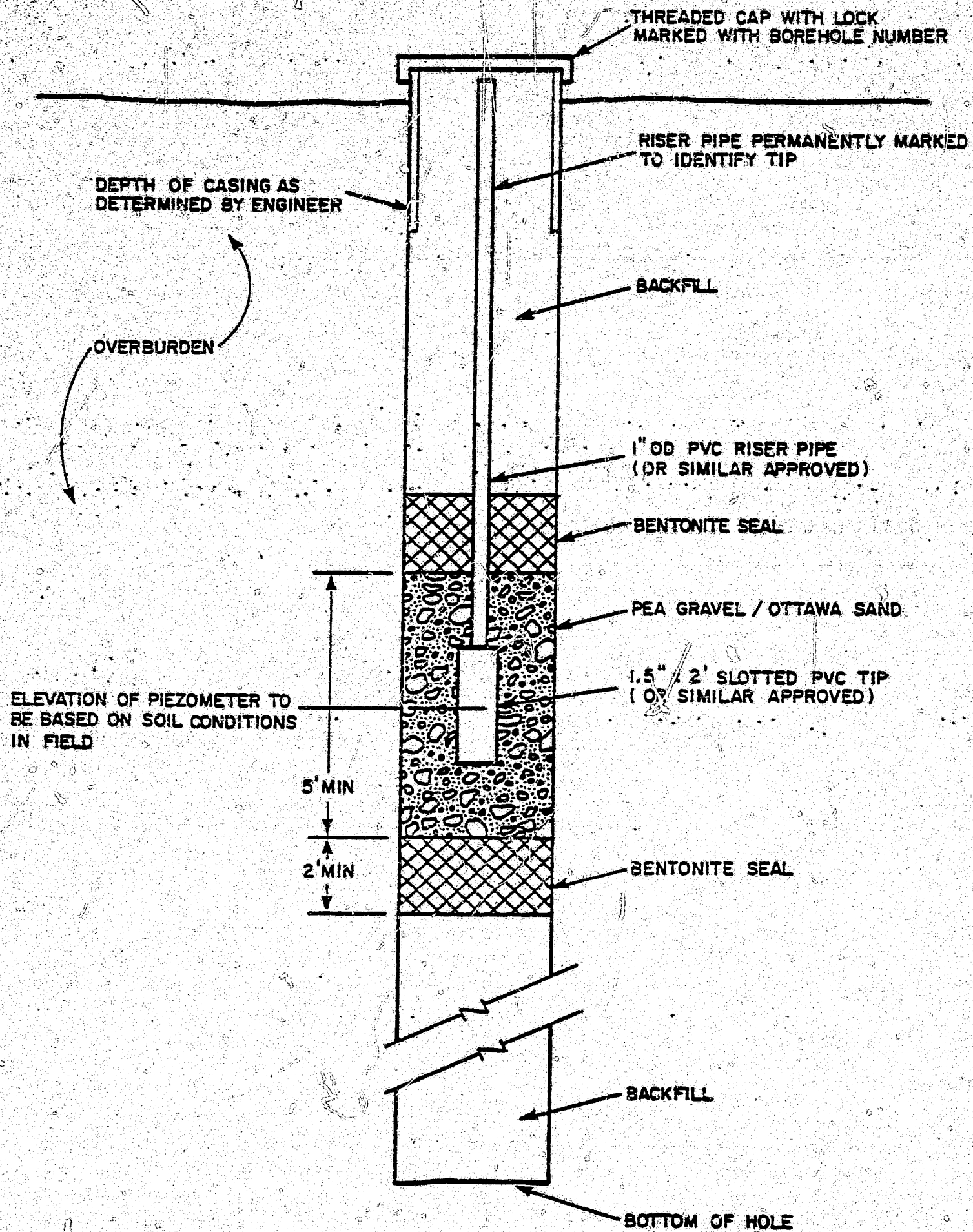
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DET
PIEZOMETER

ATTACHMENT C

Typical Standpipe Piezometer Installation

FIG. 1. STANDPIPE PIEZOMETER INSTALLATION IN EXHIBIT

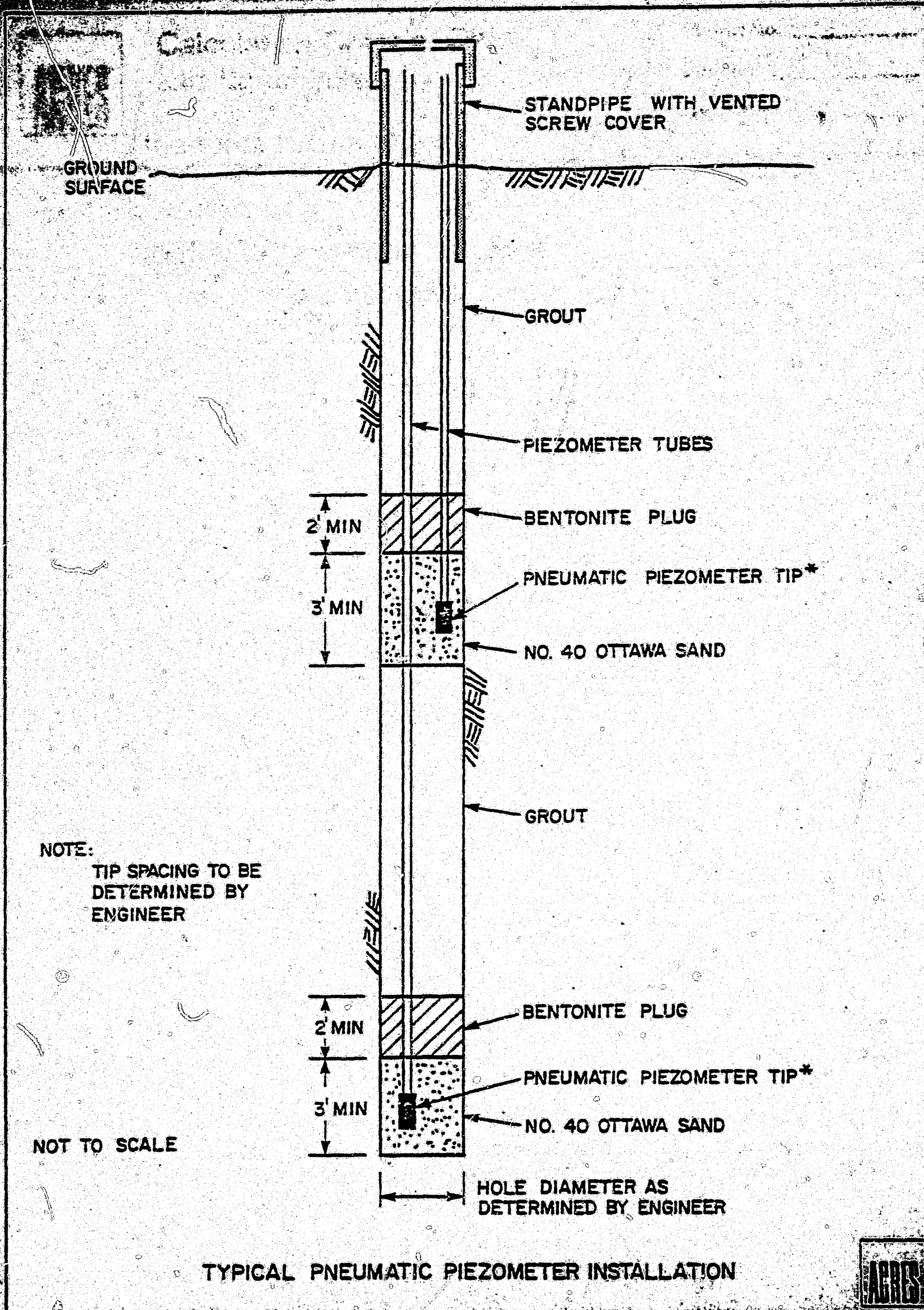


TYPICAL PIEZOMETER INSTALLATION IN OVERBURDEN



ATTACHMENT D

Typical Pneumatic Piezometer Installation





Calculation Criteria, Data and References

1982 SUMMER DRILLING PROGRAM

Project No. P5700

File No. P5700.10.12

Serial No. _____

REMOVED: ATTACHMENTS E,F,G

IDENTICAL TO CORRESPONDING SECTIONS IN :

1982 WINTER HAMMER DRILLING PROGRAM
P5700.10.15