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# Civil Engineering Agreement for Preliminary Update and Basis for Design Between Tri-County Metropolitan Transportation District and Bechtel Civil and Materials, Inc.

Tri-County Metropolitan Transportation District of Oregon

Bechtel Civil and Minerals, Inc.

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TRI-MET/LRT  
LIBRARY

CIVIL ENGINEERING  
AGREEMENT  
FOR PRELIMINARY UPDATE  
AND BASIS FOR DESIGN

BETWEEN

TRI-COUNTY METROPOLITAN  
TRANSPORTATION  
DISTRICT

AND

BECHTEL CIVIL  
AND  
MINERALS, INC.

TRI-MET/LRT  
LIBRARY

CONTRACT NO. 81-196N

TRI-MET - BECHTEL  
CIVIL ENGINEERING  
AGREEMENT  
FOR PRELIMINARY UPDATE  
AND BASIS FOR DESIGN

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AGREEMENT  
FOR PRELIMINARY UPDATE  
AND BASIS FOR DESIGN

THIS AGREEMENT, effective the 15th day of June, 1981, by and between TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON, Portland, Oregon, (hereinafter "Tri-Met") and BECHTEL CIVIL & MINERALS INC., (hereinafter "Bechtel").

W I T N E S S E T H:

WHEREAS, Tri-Met desires to engage a Civil Engineering Consultant for updating and developing the basis for design of the Civil Engineering Elements of the Banfield Light Rail Project (hereinafter "Project"), and

WHEREAS, Tri-Met issued its Civil Engineering Request for Proposal in August, 1980 (hereinafter "RFP"), and Bechtel submitted its Proposal in response thereto, and

WHEREAS, Bechtel's Proposal for Professional Civil Engineering Services on the Civil Engineering Elements of the Banfield Light Rail Transit Project dated September 8, 1980 (hereinafter "Proposal") was selected, and

WHEREAS, Tri-Met has resolved and determined to award an Agreement to Bechtel for this project.

NOW, THEREFORE, in consideration of the terms, conditions and covenants contained hereinafter, the parties agree as follows:

#### ARTICLE I

1. BECHTEL'S GENERAL RESPONSIBILITY

Bechtel accepts the relationship of trust and confidence established between it and Tri-Met by this Agreement and covenants with Tri-Met to furnish its professional skill and judgment in furthering the interests of the Project. Bechtel will exercise in its performance of services the standard of care normally exercised by nationally recognized engineering organizations engaged in performing comparable services, and to use its professional efforts at all times in a manner consistent with the best interest of Tri-Met in assisting in the completion of the Banfield Light Rail Project.

2. INFORMATION AND ITEMS TO BE FURNISHED BY TRI-MET

Tri-Met shall furnish or secure the items and provide Bechtel with sufficient authority required for the expeditious and orderly performance of Bechtel's Services as outlined in Exhibit "A".

3. SPECIFIC SCOPE OF SERVICES

Bechtel will perform or cause to be performed, the partial completion of the Services (hereinafter referred to as the "Services") which are fully described in Exhibit "A" - Scope of Services, attached hereto and made a part hereof. Said performance will be on an actual cost plus fixed fee basis.

Bechtel will perform its Services based in part, and will be entitled to rely upon, information which is transmitted by Tri-Met Manager of Civil Engineering except as provided in the Scope of Services, Exhibit "A".

4. WORK PLAN

Within thirty (30) days after execution of this Agreement, Bechtel and Tri-Met shall mutually agree upon a work plan, as may be modified from time to time, that can be accomplished within the funding limit set forth in Paragraph 20(B) of this Agreement. All provisions and covenants contained in the Work Plan shall be incorporated by reference and shall become a part of this Agreement as if fully set forth herein.

5. TIME OF PERFORMANCE

Bechtel shall complete its Services and use its best efforts to meet the work schedules in accordance with Exhibit "A" as it may be revised from time to time by mutual agreement. Extensions of time may be granted for delays in accordance with Paragraph 25 ("EXCUSABLE DELAYS") of this Agreement.

6. TASK DELETION

There are certain tasks in the Scope of Services which may not require the services of Bechtel. Tri-Met reserves the right at any time to reduce or delete tasks, and, based upon the presently effective budget, Tri-Met shall reduce Bechtel's Fixed Fee as mutually agreed.

7. RIGHT TO ORDER WORK OR DIRECT CHANGE

A. Bechtel understands that changes may occur during progress of the work. Changes which do not substantially alter the original task will be done within the terms of this Agreement.

B. Tri-Met may, at any time, by a written order from the Tri-Met Manager of Civil Engineering, make changes within the scope of services of this Agreement. If any such change causes an increase or decrease in the cost of, or the time required for, the performance of any part of the work under the Agreement,

whether changed or not changed by any such order, an equitable adjustment shall be made in the contract cost or work scope, or both, and the Agreement shall be modified in writing accordingly.

If any authorized order, direction, instruction, interpretation or determination by Tri-Met shall cause an increase or decrease in the cost of, or in the time required for, the performance of any part of the work under the Agreement, whether changed or not changed by such order, an equitable adjustment shall be made in the Agreement cost or work scope and/or time of performance, or both, and the Agreement shall be modified in writing accordingly, but only if Bechtel shall give written notice to Tri-Met within thirty (30) calendar days after receipt of said order, direction, instruction, interpretation or determination and the change in the Agreement requirements alleged to be caused thereby.

Within thirty (30) calendar days of Bechtel's receipt from Tri-Met of a proposed change order, or within thirty (30) calendar days after receipt of Bechtel's written notice as described in the Paragraph above, Bechtel shall provide to Tri-Met a detailed change order proposal describing a proposed equitable adjustment of the Agreement cost or work scope, or

time of performance, or both, and describing any other provision of the Agreement Documents which will required modification by reason of the proposed change or the alleged change. In the event that Tri-Met and Bechtel are unable to agree on an equitable adjustment, Tri-Met may direct Bechtel to proceed in accordance with a written order of Tri-Met's Manager of Civil Engineering, and Bechtel shall so proceed, and the dispute shall be resolved in accordance with Paragraph 27 of this Agreement.

8. PROJECT OFFICE AND KEY PERSONNEL

- A. Bechtel shall establish a full-time Project office at a location designated and provided by Tri-Met. The Project office will be co-located with Tri-Met's Project staff. The office will be staffed full-time by the Project Manager, Robert A. Arnlund, and by other key Project personnel as identified in Exhibit "A". Mr. Arnlund will attend all Project meetings in Portland or elsewhere as required. In the event that Mr. Arnlund cannot attend any meeting, Bechtel shall designate a substitute with the same authority to make decisions or commitments as Mr. Arnlund. Unless expressly authorized by Tri-Met, Bechtel shall not pay its Project staff, agents or subcontractors on a regular or long-term basis, overtime or premium rates in excess of 40 hours per week. However, from time to time

casual overtime may be worked when deemed necessary and authorized by Bechtel's Project Manager.

B. To insure that funds allocated for Direct Nonsalary Costs are effectively utilized during the Project, Bechtel agrees to seek and obtain reasonable means of travel, vehicle rental and lodging for Bechtel's employees, in accordance with Bechtel's personnel policies and procedures. To reduce Direct Nonsalary Costs, Bechtel shall explore leasing a Project residence to lodge its employees not permanently assigned to the Project, if available. Expenses incurred as a result of participation in professional conferences, seminars or activities shall be reimbursed by Tri-Met only to the extent that said participation benefits and is authorized in advance by Tri-Met.

C. Tri-Met shall provide Bechtel with sufficient office space, furniture and utilities, excluding phones, for members of its staff. The offices will be at a location designated by Tri-Met and will also house Tri-Met Project staff.

9. PROJECT MANAGER

In the event that Bechtel's designated Project Manager is changed, Bechtel shall give Tri-Met written notification of such redesignation.



In the event that Tri-Met receives any communication from Bechtel of whatsoever nature which is not executed by Bechtel's Project Manager, Tri-Met may request clarification by Bechtel's Project Manager, which shall be promptly furnished.

10. PERSONNEL CHANGES

Barring any unknown factor beyond Bechtel's control, no substitution shall be made for the Project Manager or Key Personnel shown on Exhibit "A" without the written consent of Tri-Met. Tri-Met reserves the right to request the transfer or removal of any member of Bechtel's staff whose work proves unacceptable to Tri-Met and agrees to contribute one-half of the reasonable and necessary cost to effect the request transfer. In the event that Tri-Met requests the transfer or removal of any member of Bechtel's staff, Bechtel agrees to use best efforts to provide Tri-Met with a qualified replacement acceptable to Tri-Met within sixty (60) calendar days.

11. PERIODIC REPORTS

A. Bechtel shall work with and provide appropriate information to Tri-Met in the preparation of periodic progress and costing reports as provided in the Scope of Services. These reports shall document Bechtel's past Project activities, problems encountered in performance of the Services, potential for delay or cost overrun and other information pertinent to the

Project. The periodic progress and costing reports shall outline future Project activities and provide recommendations for any changes in Project direction or activity that may benefit the Project.

At Tri-Met's request, Bechtel shall submit a quarterly progress report indicating tasks and goals to be achieved during the next quarter.

- B. Bechtel shall provide Tri-Met with timely written documentation when 40%, 85% and 100% of each contract package is completed, except procurement packages where drawings are not involved. Written documentation for these procurement packages shall be made when 85 and 100% of each package is completed.

12. DUTY TO INFORM

- A. If at any time during the performance of this Agreement, Bechtel becomes aware of or obtains information from any source which does or may indicate an actual or potential problem, fault, hazard or defect in any aspect of the civil engineering elements of the Project, or has any objection to any decision or order given to Bechtel by Tri-Met, Bechtel shall give prompt written notice thereof to Tri-Met. Any delay in or failure on the part of Tri-Met to provide a written

response to Bechtel shall neither constitute agreement with or acquiescence to Bechtel's statement or claim, nor constitute a waiver of any of Tri-Met's rights.

- B. Bechtel shall promptly advise Tri-Met's Manager of Civil Engineering if Bechtel finds that the civil engineering elements of the Project being designed will exceed or are likely to exceed the budget estimate for each task as set forth in Exhibit "A".

13. PROJECT INFORMATION

Tri-Met shall provide full information regarding its requirements for the Project. Bechtel agrees to share all Project information, to fully cooperate in sharing information necessary to perform services with all corporations, firms, contractors, governmental entities and persons involved in or associated with the Project. No news or press releases related to the Project, whether made to representatives of newspapers, magazines or television stations shall be made without the authorization of Tri-Met's Banfield Light Rail Project Director. Notwithstanding the foregoing, Bechtel shall have the right to make an appropriate response without the approval of Tri-Met, having due regard for Tri-Met's interests, and notifying Tri-Met in advance, in the event the public news media publishes any information or commentary which in Bechtel's opinion may affect its commercial, financial or legal interests.

14. COMPLIANCE WITH LAWS AND REGULATIONS

The parties recognize that the Project's design and construction will involve various federal, state and local agencies. In the performance of its engineering assignments, Bechtel shall comply with all applicable federal, state and local laws, regulations, rules or requirements relating to building, construction, site design, electrical, engineering and environmental requirements. Bechtel shall notify Tri-Met of conflicts between the plans and specifications and any laws, ordinances, rules, regulations and restrictions that are either known to Bechtel or of which Bechtel becomes aware and the text of which is or has been made generally available.

ARTICLE II

COMPENSATION TO BECHTEL

15. DUTY TO COMPENSATE

Bechtel shall be paid by Tri-Met for Services rendered under this Agreement as provided hereinafter. Such payments shall be full compensation for Services rendered and for all labor, materials, supplies, equipment and incidentals necessary to perform the Services.

16. COMPENSATION AND PAYMENT

For the performance of the Services, Tri-Met agrees to pay to Bechtel, a total Compensation as defined in Exhibit "B", attached hereto and made a part hereof.

17. PROGRESS EVALUATIONS

For the purposes of expenditure and budget control, Tri-Met and Bechtel shall periodically review the Project Budget contained in Exhibit "B" to determine what adjustments, if any, should be made in the budget.

18. MONTHLY PROGRESS PAYMENTS

Bechtel's monthly bills and reports shall be in a format that can be readily introduced into Tri-Met's Project II Management Information System. In consultation with Bechtel, Tri-Met will outline the format of monthly progress bills and reports to assure that the reports provide a breakdown of each project element into those subcomponents outlined in Paragraph 3 of this Agreement.

19. RETAINAGE

Tri-Met reserves the right to keep a retainage equal to five percent (5%) of the total cost of services performed under the terms of this Agreement up to a maximum of \$50,000. Tri-Met shall place the retainage in a separate interest-bearing account and any interest

earned shall be credited to Bechtel. Seventy-five percent (75%) of the retainage shall be remitted annually at the completion of the Project annual review, if the work to date has been satisfactory to Tri-Met. Following completion of this Agreement, a final bill reflecting actual cost plus net fee for the Project engagement, less amounts previously billed, shall be submitted to the Finance Division. Upon approval by Tri-Met, the final billing shall be paid within thirty (30) calendar days.

20. FEDERAL FUNDING LIMITATION

A. Bechtel understands that funds, in part, to pay for the services under this Agreement have been or will be made available from the United States Department of Transportation through the Urban Mass Transportation Administration ("UMTA"). Tri-Met's obligation hereunder is payable from funds that are, in part, appropriated and allocated by UMTA for the performance of civil engineering services as delineated in this Agreement. If funds are not allocated by UMTA for additional civil engineering services for other aspects of the Banfield project, then Tri-Met may terminate or suspend Bechtel's Services in accordance with Paragraph 32 "TERMINATION" or Paragraph 23 "STOP WORK ORDER". Tri-Met shall notify Bechtel promptly in writing of the nonallocation or delay of funding and may terminate or suspend this Agreement as provided above without penalty as soon as it learns of the nonallocation or delay.

B. Upon execution of this Agreement federal funds will only be in the amount of \$950,000. Bechtel is not obligated to incur and Tri-Met shall not be liable for any costs for civil engineering services for any period, unless and until Bechtel has been notified in writing by Tri-Met of the availability of additional funds.

21. PROJECT COMMUNICATIONS

Bechtel shall not accept or proceed on any communication or order which, in its opinion, gives rise to any changes in the scope of work or extra work unless it is signed by Tri-Met Manager of Civil Engineering. In the event that Bechtel receives any communication of whatsoever nature from Tri-Met which is not signed by Tri-Met's Manager of Civil Engineering, which communication Bechtel contends to give rise to any change, acceptance or order for additional services, Bechtel shall not proceed or comply with the communication and shall, within fifteen (15) calendar days after receipt, make written request for clarification by Tri-Met. Tri-Met shall provide Bechtel prompt written notice of any redesignation of its Manager of Civil Engineering.

22. TRI-MET'S GENERAL MANAGER

Tri-Met's General Manager or his designee shall sign any and all modifications or Change Orders issued pursuant to this Agreement.

23. STOP WORK ORDER

Tri-Met may, at any time, for any reason including lack of UMTA funding, by written order to Bechtel, require Bechtel to stop all, or any part, of the Services called for by this Agreement for a period of ninety (90) calendar days (or any lesser period) after the order is delivered to Bechtel, and for any further period to which the parties may agree. Any such order shall be specifically identified as a "Stop Work Order" issued pursuant to this clause. As a minimum, any such Stop Work Order shall include the following in writing:

- (a) A clear description of the work to be suspended;
- (b) Guidance as to the action to be taken on subcontracts;
- (c) Other suggestions to Bechtel for minimizing costs.

Upon receipt of such an order, Bechtel shall forthwith comply with its terms and take all reasonable steps to minimize the incurrence of cost allocable to the work covered by the order during the period of work stoppage. Within the period of ninety (90) calendar days (or the lesser period specified) after a stop work order is delivered to Bechtel, or within any extension of that period to which the parties shall agree, Tri-Met may:



- (1) Terminate the work covered by such order as provided in Paragraph 32; or
- (2) Cancel the stop work order; or
- (3) Allow the period of the stop work order to expire.

24. COSTS OF STOP WORK

If a stop work order issued under Paragraph 23 is cancelled or the period of the order or any extension thereof expires, Bechtel shall resume work. An equitable adjustment shall be made in the Scope of Services, Agreement cost or time of performance and the Agreement shall be modified in writing accordingly if:

- (a) The stop work order results in an increase in the time required for, or in Bechtel's costs properly allocable to, the performance of any part of this Agreement; and
- (b) Bechtel asserts a claim for such adjustment within thirty (30) calendar days after the end of the period of work stoppage; provided that, if Tri-Met decides the facts justify such action, Tri-Met may receive and act upon any such claim asserted at any time prior to final payment under this Agreement.

25. EXCUSABLE DELAYS

- A. Except with respect of defaults of subcontractors, Bechtel shall not be considered in default by reason of any failure to perform in accordance with the Contract if such failure arises

out of causes beyond the the reasonable control of Bechtel. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of Government in either their sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather, but in every case the failure to perform must be beyond the control and without the fault or negligence of Bechtel. If the failure to perform is caused by the default of a subcontractor, and if such default arises out of causes beyond the reasonable control of Bechtel and the subcontractor, Bechtel shall not be in default by reason of any failure to perform, unless the supplies or services to be furnished by the subcontractor were reasonably obtainable from other sources on similar terms and in sufficient time to permit Bechtel to meet the Contract requirements. (As used herein, the terms "subcontractor" and "subcontractors" means subcontractor(s) at any tier.)

- B. Should Bechtel fail to perform because of cause(s) as described in this Paragraph, Tri-Met shall make a mutually acceptable revision in the Project schedule.

26. LOCAL REPRESENTATIVE

Bechtel shall become lawfully authorized and qualified to transact business within the State of Oregon, and, at Tri-Met's request, supply evidence of such authorization and qualification.

27. DISPUTES

All disputes involving issues of facts arising out of this Agreement shall be referred in the first instance to Tri-Met's Manager of Civil Engineering for resolution. If a solution satisfactory to both parties cannot be reached, the dispute shall be referred to Tri-Met's Banfield Light Rail Project Director. If a solution satisfactory to both parties cannot be reached, the dispute shall be referred to Tri-Met's General Manager who shall render Tri-Met's final written decision, a copy of which shall be sent to Bechtel.

If the dispute is not resolved to the mutual satisfaction of both parties, either party may resort to the appropriate court of the State of Oregon, which shall have jurisdiction over any claim, dispute or controversy arising out of this Agreement. Pending final decision of a dispute hereunder, Bechtel shall proceed diligently with the performance of the Agreement and in accordance with the decision.

28. CLAIMS

Claims arising under this Agreement shall be submitted in writing to Tri-Met's Manager of Civil Engineering. Tri-Met shall respond to Bechtel's claim within thirty (30) calendar days of the receipt of the claim by either:

- (a) approving the claim;
- (b) denying the claim;
- (c) requesting necessary information from Bechtel to enable Tri-Met to resolve the claim, in which case Tri-Met shall render its decision on the claim within thirty (30) calendar days of its receipt of the requested information; or
- (d) determine that the claim presents a dispute involving issues of fact which must be resolved in accordance with Paragraph 27 of this Agreement.

29. CONSOLIDATION OF CLAIMS AND DISPUTES

Bechtel agrees to consolidate any claim or dispute involving multiple parties involved in this Project under this Agreement and shall require the inclusion of Paragraph 27 "DISPUTES" and Paragraph 28 "CLAIMS" of this Agreement in other interrelated contracts to which they become a party in this Project.

30. NOTICE AND COMMUNICATIONS

All notices required to be given under this Agreement shall be in writing. Notices to Tri-Met shall be addressed as follows:

Manager, Civil Engineering  
421 S.W. 5th Avenue, Suite 600  
Portland, Oregon 97204

Notices to Bechtel shall be addressed to Mr. Robert Arnlund or his designee or as thereafter designated in writing.

31. UMTA PARTICIPATION

Any dispute or claim as determined shall not commit UMTA to provide funds in support of such dispute or claims unless UMTA approves and agrees to support such determination.

32. TERMINATION

A. Tri-Met may for its convenience terminate Bechtel's Services at any time by giving Bechtel thirty (30) days prior written notice of such termination whereupon Bechtel shall:

1. Stop the performance of Bechtel's Services hereunder except as may be necessary to carry out such termination.
2. Assign to Tri-Met upon Tri-Met's request all rights of Bechtel under contracts, subcontracts or purchase orders then outstanding.
3. Terminate to the extent possible and at Tri-Met's request, outstanding contracts, subcontracts or purchase orders; and

4. Take any other action toward termination of Bechtel's Services which Tri-Met may reasonably direct.
- 
- B. In the event of termination as above provided, Tri-Met shall pay to Bechtel the Recoverable Costs, including costs of terminating subcontract, incurred prior to termination and in compliance with Paragraph A above, and the costs reasonably incurred by Bechtel as a result of termination, plus the Fee due for the Services performed under this Agreement.
  - C. Upon termination, Bechtel's liability to Tri-Met arising out of, or in connection with, Services completed and accepted (as provided in the Paragraph hereof entitled "NOTICE AND ACCEPTANCE OF COMPLETION") shall cease, except as otherwise provided in the Paragraph 33 hereof entitled "BECHTEL'S LIABILITY TO TRI-MET". Bechtel's liability for any Services performed but not completed and accepted (as provided in the Paragraph hereof entitled "NOTICE AND ACCEPTANCE OF COMPLETION") shall cease upon termination.

### 33. BECHTEL'S LIABILITY TO TRI-MET

- A. Bechtel shall perform the Services in accordance with the terms of this Agreement, and applicable laws and regulations.

- B. Bechtel's liability for any deficiencies in its Services is limited to reperforming at its expense any professional services which are (I) deficient because of Bechtel's failure to perform said Services in accordance with the standards imposed by law upon professional engineers performing services of a similar nature; and, (II) reported in writing to Bechtel within a reasonable time, not to exceed thirty (30) days, after the discovery thereof, but in no event later than two (2) years from the completion of the Services.
- C. Except as provided in Paragraph B. Bechtel's liability to Tri-Met for any cause or combination of causes is, in the aggregate, limited to an amount equal to fifty percent (50%) of the Fee paid to Bechtel.
- D. Except as otherwise provided in Paragraph B. above, Bechtel's liability to Tri-Met for any reason in connection with the performance of the Services shall terminate upon acceptance of the Services pursuant to the Paragraph 37 "NOTICE AND ACCEPTANCE OF COMPLETION".
- E. Bechtel's liability for loss of or damage to the Project or other property of Tri-Met or in the custody of Tri-Met shall be limited to those payments made on Bechtel's behalf by the

insurers affording the insurance described in Section B of the Paragraph 34 "INSURANCE" and Tri-Met hereby releases Bechtel from any loss, damage or expense in excess of those payments.

- F. Bechtel, its officers, agents or employees or its subcontractors, or suppliers of any tier providing equipment, materials or services for the Project shall not be liable to Tri-Met for consequential loss of revenue, and Tri-Met hereby releases Bechtel, its officers, agents and employees and such subcontractors and suppliers therefrom.
- G. Bechtel shall have no liability with respect to services, material or equipment provided by others for the Project under contracts or purchase orders entered into by Tri-Met.
- H. Releases from liability and limitations on liability expressed in this Agreement shall apply even in the event of fault, negligence, strict liability, or otherwise, of the party released or whose liability is limited and shall extend to the directors, officers and employees, and related entities of such party.



34. INSURANCE

A. Bechtel has in force and will maintain during the performance of the Services, the following insurance:

1. Workers' Compensation Insurance, United States Longshoremen's and Harbor Workers' Compensation covering Bechtel's employees and Employer's Liability Insurance with a minimum limit of \$500,000.
2. Maritime Employees Liability (Jones Act) Insurance covering Bechtel's employees subject to such Act with a minimum limit of \$2 Million Dollars each occurrence.
3. Automobile Bodily Injury and Property Damage Liability Insurance covering automobiles owned or hired by Bechtel, with minimum limits as follows:
  - i) Bodily Injury: \$2 Million Dollars each occurrence
  - ii) Property Damage: \$2 Million Dollars each occurrence
4. Aircraft and Watercraft Liability Insurance covering aircraft and watercraft owned or hired by Bechtel with a minimum limit of \$2 Million Dollars and including Tri-Met as an additional insured thereunder.

5. "All Risk" Equipment Insurance subject to \$500 deductible each loss, covering physical damage to all engineering, office and automotive equipment owned or hired for use by Bechtel in performance of the Services containing a waiver of right of subrogation against Tri-Met.

Tri-Met shall be furnished with satisfactory evidence that the foregoing insurance is in effect and Tri-Met shall be notified thirty days prior to the cancellation or material change of any such coverage.

- B.1 Tri-Met shall take out, carry and maintain, or cause to be taken out, carried and maintained, during the performance of Services for the period April 15, 1981 to 90 days prior to the award of the first field construction contract, Comprehensive Personal Injury and Property Damage Liability Insurance including contractual and completed operations coverage, but excluding coverage for automobiles owned or hired by Bechtel. The policy limit will be a combined single limit for Personal Injury and Property Damage of not less than \$5 Million Dollars each occurrence, insuring Tri-Met and Bechtel each as a Named Insured, including their officers, directors, employees and related entities, with a cross-liability or severability of interest clause, and covering against liabilities arising out

of or in any way connected with the Project, including personal injury claims against any insured by employees of any other insured. Such insurance shall state that is it primary and that any other insurance carried by Tri-Met or Bechtel shall be specific excess and not contributing therewith. This insurance shall not contain any exclusion which denies coverage because liability for injuries to persons or damage to property arises out of the preparation of maps, plans, designs, specifications, or the performance of inspection services or out of any other Services to be performed by Bechtel under this Agreement.

B.2 Tri-Met shall take out, carry and maintain, or cause to be taken out, carried and maintained, effective 90 days prior to the award of the first field construction contract, Project Wrap-Up Liability Insurance as follows:

- a) Workers' Compensation Insurance coverage for the legal liability of each Contractor and each Subcontractor, for claims for personal injuries to each of Contractors' and each of Subcontractors' employees engaged in the work, and for death resulting therefrom under the Oregon Workers Compensation Act and the U.S. Longshoremen's and Harbor Workers' Compensation Act, if applicable, and Employer's

Liability Insurance with a limit of not less than \$500,000 each accident.

b) Comprehensive Personal Injury and Property Damage Liability Insurance as described in Paragraph B.1 above except as follows:

i) Limit shall be not less than \$50 Million Dollars each occurrence;

ii) The Named Insured shall be Tri-Met, Bechtel, Contractors and Subcontractors, including their respective officers, directors, employees and their respective related and affiliated entities.

iii) The insurance shall be maintained in force until three (3) years after completion or termination of the Services hereunder.

B.3 In the event Tri-Met, effective 90 days prior to the award of the first field construction contract is prohibited by law from furnishing or is unable to purchase or cause to be purchased the Project Wrap-Up Liability Insurance described in B.2 above, it is understood and agreed that the Comprehensive

Personal Injury and Property Damage Liability Insurance described in B.1 above shall be continued through the construction phase of the Project and shall be maintained in force until three (3) years after completion or termination of the Services hereunder, but amended as follows:

- i) The limit shall be increased to not less than \$20 Million Dollars each occurrence.

B.4 In the unlikely event that Tri-Met is unable to continue the Comprehensive Personal Injury and Property Damage Liability Insurance amended as in B.3 above, it is understood and agreed that Bechtel shall take out, carry and maintain, equivalent insurance for the protection of Bechtel, its officers, directors, employees and related entities and the cost thereof shall be deemed a Reimbursable Cost under this Agreement.

B.5 Tri-Met shall obtain Builder's Risk or Course of Construction insurance insuring on an "All Risk" basis, to a limit equal to the full insurable replacement cost value at all times and subject to deductible amounts deemed satisfactory by Tri-Met. This insurance shall cover the Project and all materials and equipment to be incorporated therein, including property in transit or elsewhere and insuring the interests of Tri-Met,

Bechtel and its related entities, its subcontractors, contractors and their subcontractors of any tier providing equipment, materials, or services for the Project.

Such insurance shall include coverage for physical damage resulting in any way from the Services performed by Bechtel and shall include an insurer's waiver of subrogation in favor of each party insured thereunder. The Policy shall state that it is primary and that any other insurance carried by the parties insured thereunder shall be specific and not contributing therewith.

B.6 Tri-Met shall obtain Contractor's Equipment Insurance on an "All Risk" basis covering physical damage to all tools and equipment, including automotive equipment, rented by Tri-Met from Bechtel. Such insurance shall insure the interests of Tri-Met and Bechtel and its related entities, shall include an insurer's waiver of subrogation in favor of each party insured thereunder, and contain a Loss Payable clause in favor of Bechtel.

C. Special Provisions

Tri-Met shall furnish Bechtel a copy of each policy of insurance required by Section B. of this Article. Such policies shall provide that written notice shall be given to Bechtel thirty (30) days prior to cancellation or material change of any protection which said policies provide for Bechtel.

- D. In the event Tri-Met elects to cause any of the insurance described in Paragraph B. of this Article to be carried by a party other than Tri-Met or Bechtel, Tri-Met hereby agrees to cause such other party to arrange the insurance as herein provided.

35. ASSIGNMENT AND SUBCONTRACTS

- A. Except as provided for in Exhibit "A" and subsection B of this Paragraph, Bechtel agrees that it shall not assign, sell, transfer or sublet its rights or delegate its responsibilities under this Agreement in whole or in part without written consent of Tri-Met.
- B. Bechtel may subcontract portions of the Services to its related entities without the prior approval of Tri-Met. Bechtel guarantees such entities' compliance with the requirements of

this Agreement, provided that the limitations on Bechtel's liability set forth in this Agreement shall constitute the aggregate limit of liability of Bechtel and its related entities to Tri-Met, and Tri-Met agrees to hold only Bechtel responsible for any failure to so comply. Bechtel agrees that Tri-Met shall incur no duplication of costs as a result of such subcontract.

36. SUBSTITUTIONS

Any substitution of previously approved subcontractors, suppliers or procedures shall be requested in writing by Bechtel to Tri-Met. Tri-Met shall approve or deny any request in writing within 30 calendar days from receipt of the request.

In the event that there is a substitution of a Minority Business Enterprise (MBE) subcontractor, Bechtel shall use best efforts to substitute another qualified MBE subcontractor if available.

37. NOTICE AND ACCEPTANCE OF COMPLETION

Upon completion of the Services, Bechtel shall notify Tri-Met in writing of the date of said completion and request confirmation of same by Tri-Met. Upon receipt of said notice, Tri-Met shall confirm to Bechtel in writing that the Services referred to in said notice were completed on the date indicated in said notice or provide



Bechtel with a written listing of the Services not completed. Any Services included in Bechtel's notice to Tri-Met and not listed by Tri-Met as incomplete in a listing delivered to Bechtel within thirty (30) days of receipt of said notice, shall be deemed completed and accepted by Tri-Met. With respect to Services listed by Tri-Met as incomplete, Bechtel shall complete such Services and the above acceptance procedure shall be repeated for such services.

38. MINORITY BUSINESS ENTERPRISE

In connection with the performance of this Agreement, Bechtel will cooperate with Tri-Met in meeting its commitments and goals with regard to the maximum utilization of Minority Business Enterprises and will ensure that a minimum of ten percent (10%), based on the dollar amount of this Agreement, Minority Business Enterprises shall be utilized for subcontract work under this Agreement.

Minority person means an individual who is Black, Hispanic, Asian American, American Indian, Alaskan native or a Woman regardless of race or ethnicity.

Owned and controlled means a business which is 1) a sole partnership legitimately owned by an individual who is a minority person; 2) a partnership, joint venture or corporation controlled by minority persons and in which at least fifty-one percent (51%) of the bene-

icial ownership interest legitimately is held by minority persons and in which at least fifty-one percent (51%) of the voting interests legitimately are held by minority persons.

39. EQUAL EMPLOYMENT OPPORTUNITY

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

- A. Bechtel will not discriminate against any employee or applicant for employment because of race, creed, color or national origin. Bechtel 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 shall include, but not be limited to the following: Employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Bechtel agrees to post in conspicuous places, available to employees, and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
  
- B. Bechtel shall, in all solicitations or advertisements for employees placed by or on behalf of Bechtel, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

- C. Bechtel 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 advising said labor union or workers' representatives of Bechtel's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. Bechtel will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.
- E. Bechtel will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
- F. In the event of Bechtel's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations or orders, this Agreement may be cancelled, terminated or suspended in whole or in part and Bechtel may be

declared ineligible for further grantee contracts or Federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

- G. Bechtel will include the portion of the sentence immediately preceeding Paragraph A and the provisions of Paragraphs A through G 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 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. Bechtel will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event Bechtel becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, Bechtel may request the United States to enter into such litigation to protect the interests of the United States.

40. MAINTENANCE AND INSPECTION OF RECORDS

A. Required Records

Records and documentation relating to services performed by Bechtel on this Project shall be kept by Bechtel.

B. Cost and Pricing Data

Bechtel shall keep and maintain, from the time of execution of the Agreement until three (3) years after receipt of final payment under the Agreement, reasonable and reliably detailed records of costs incurred in performing the Agreement.

In the event any change to the Agreement results or is claimed to result in an appropriate equitable adjustment of the Agreement price in excess of the sum of \$100,000, Bechtel shall maintain detailed costs or pricing data sufficient to evaluate the accuracy, completeness and currency of the costs or prices affected or alleged to be affected, and Tri-Met or its representatives shall have the right to examine all books, records, documents and other data to verify the direct costs of Bechtel and its subcontractors and suppliers related to the negotiation, pricing or performance of such change or alleged change. All such records shall be made available at Bechtel's office at all reasonable times, for inspection, audit or reproduction as herein provided. Bechtel shall insert a clause containing all

of the provisions of this clause in all subcontracts or supply agreements relative to this Agreement exceeding the sum of \$10,000. Such right of examination shall specifically extend to representatives of the United States Department of Transportation, Urban Mass Transportation Administration, and the Comptroller General of the United States, all as required by law.

C. Audit and Inspection of Records

Bechtel shall permit the authorized representatives of Tri-Met, the U.S. Department of Transportation and the Comptroller General of the United States to inspect and audit all data and records of Bechtel directly relating to its performance under this Agreement until the expiration of three (3) years after final payment under this Agreement.

Bechtel further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that Tri-Met, the Department of Transportation and the Comptroller General of the United States or any of their duly authorized representatives shall, until the expiration of three (3) years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers and records of such subcontractor,

involving transactions related to the subcontractor. The term "subcontract" as used in this clause excludes (1) purchase orders not exceeding \$10,000 and (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

The periods of access and examination described above, for records which relate to (1) appeals under the "Disputes" clause of this Agreement, (2) litigation of the settlement of claims arising out of the performance of this Agreement, or (3) costs and expenses of this Agreement as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims or exceptions have been disposed of.

- D. For purposes of the financial audit, it is mutually agreed that Tri-Met will not duplicate the audit of Bechtel by Bechtel's cognizant federal audit agency, which audits indirect costs for conformity with Bechtel's accounting system consistently applied to determine reasonableness, allocability and allowability in accordance with Federal Procurement Regulations.

41. OWNERSHIP OF PLANS AND TITLE TO WORK

- A. All data, drawings, plans, specifications and reports, developed by Bechtel under this Agreement, shall become the property of Tri-Met. Any use thereof other than in connection with this Project shall be at the risk of the user and Bechtel shall have no liability thereby. All such data, drawings, plans, specifications and reports shall be delivered to Tri-Met within 30 days after completion of such Services, but Bechtel may retain and use copies thereof.
- B. Upon completion of the Project and in accordance with Tri-Met's instructions, Bechtel shall dispose of temporary facilities and surplus material and equipment, the cost of which has been reimbursed to Bechtel, and credit the proceeds to Tri-Met; or at Tri-Met's option, Bechtel shall leave such facilities, materials and supplies at the Project sites for disposition by Tri-Met.

42. COMPLIANCE WITH UMTA REQUIREMENTS

This contract is subject to a financial assistance contract between Tri-Met and the U.S. Department of Transportation. Bechtel will be required to comply with all requirements prescribed for third-party contracts prescribed in the Department of Transportation Third-Party Contract Manual (UMTA 4220.1).



43. LAW OF OREGON

The Agreement hereunder shall be governed by the laws of the State of Oregon.

44. COMPLIANCE WITH LAWS AND REGULATIONS

Bechtel shall comply with, and make a part of each subcontract in excess of \$100,000, all applicable standards, orders or requirements issued under the Clean Air Act (42 U.S.C. 1857Ch), the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency (EPA) regulations (40CFR Part 15) which prohibit the use under non-exempt Federal Contractor, grants or loans of facilities included on the EPA List of Violating Facilities. Any violation of these laws, rules or regulations shall be reported immediately to the Administrator of UMTA and to the United States Environmental Protection Agency, Assistant Administrator for Enforcement (EN-329).

44. PROHIBITED INTERESTS

No member, officer or employee of Tri-Met, or of a local public body, during his tenure or for one (1) year thereafter, shall have any interest direct or indirect, in this Agreement or the proceeds thereof.

46. INTEREST OF MEMBERS OF CONGRESS

No member of or delegate to the Congress of the United States shall be admitted to any share or part of this Agreement or to any benefit arising therefrom.

47. COVENANT AGAINST CONTINGENT FEES

Bechtel warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide established commercial or selling agencies maintained by Bechtel for the purpose of securing business. For breach or violation of this warranty Tri-Met shall have the right to annul this Agreement without liability or at its discretion, to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

48. PARTICIPATION LIMITATION

Bechtel agrees that its participation in the Project will be limited to the services contained in this Agreement. Bechtel or its subsidiaries or its parent organization will not submit bids for the construction contracts or participate in any of the procurement or construction contracts of the Project as a subcontractor or other agent of the construction contractors of the Project.

49. MODIFICATION

Any modification of the provision of Agreement shall be reduced to writing and signed by Bechtel and Tri-Met's General Manager.

50. SEVERABILITY

In the event that any of the provisions, portions or applications of this Agreement are held to be unenforceable or invalid by any court of competent jurisdiction, Tri-Met and Bechtel shall negotiate an equitable adjustment in the provisions of this Agreement with a view toward effecting the purpose of this Agreement and the validity and enforceability of the remaining provisions, or portions or applications thereof, shall not be affected thereby.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly appointed officers the date first written above.

TRI-MET

By: J E Cowen by John R. Ford  
General Manager

BECHTEL CIVIL AND MINERALS, INC.

By: [Signature]  
Vice President

By: [Signature]  
Secretary

# Inter-Office Memorandum



Date: June 11, 1981

To: Bob Post

From: J. E. Cowen

Subject: Delegation of Authority to Sign Contracts During the General Manager's  
Absence

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To ensure that the business affairs of Tri-Met continue to be effectively and expeditiously administered during my absence, I hereby authorize you to execute contracts on my behalf during the period of June 12 to June 26, 1981.

JEC:htr

cc: Executive Directors  
Department Directors

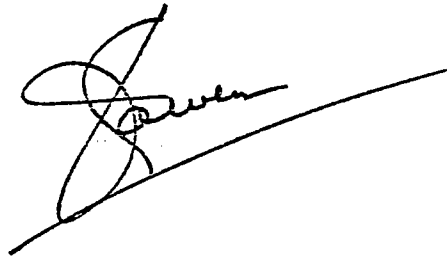


EXHIBIT A  
BANFIELD LIGHT RAIL PROJECT  
SCOPE OF SERVICES

I. ADMINISTRATION/GENERAL

I.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services as follows:

I.A.1 Bechtel Schedule and Budget. Review the preliminary engineering work, technical reports, and estimates prepared in preliminary engineering, and prepare an activities list and schedule with appropriate milestones, for all services included in this civil engineering work scope including design, preparation of specifications, estimates and other contract documents, coordination with others, and technical inspection of construction. Submit this activities list and schedule to Tri-Met, assist in Tri-Met's review of the submission, and develop it into a CPM chart for all civil engineering work. This task is to be closely coordinated with the corresponding schedules for Tri-Met's Systems Engineering Consultant and ODOT. The format of the schedule and CPM chart are subject to Tri-Met approval. Work with Tri-Met to incorporate refinements and modifications as necessary into these work plans. Based on the above schedule, prepare a budget for all Bechtel activities including prime and subconsultants.

I.A.2 Management Information System Coordination. Provide information for periodic progress reports to be prepared by Tri-Met. Provide construction cost, CPM, and schedule control data in a format to support Tri-Met's Management Information Systems (MIS) procedures.

I.A.3 Cost Estimates. Prepare updated preliminary cost estimates and provide ongoing cost estimating services in support of ongoing design work, in connection with evaluating design alternatives and to assist the design managers in meeting the project construction budget. For each construction contract, once the contract is advertized, and all addenda have been issued, prepare an engineer's estimate and submit it to Tri-Met prior to bid opening.

I.A.4 Long Lead Procurement Assistance. Identify long lead procurement items, and assist Tri-Met in developing early procurement if required in order to match the construction, implementation and start of operations schedule.

I.A.5 Contract Documents. Prepare, under the appropriate final design tasks, contract documents including technical specifications and drawings for construction contracts involving stations, trackway, trackwork, street reconstruction, traffic signals, minor structures and LRT utilities. Where necessary, Bechtel will incorporate in its contract documents contract drawings and specifications prepared by public and

private utilities. For each procurement and construction contract package, Bechtel will review Tri-Met's general provisions and assist Tri-Met with incorporation of Bechtel-prepared contract documents into a unified contract package.

I.A.6 Contract Award Assistance. Assist Tri-Met to prepare bid documents and any required addenda to the bid documents. Assist Tri-Met at prebid conferences and in the review and evaluation of bids received. Assist Tri-Met in precontract negotiations, and in the development of the construction contracts. Provide assistance as requested by Tri-Met in the review of subcontractors and programs of safety, affirmative action and minority business enterprise utilization, securing of bonds and proof of insurance coverages, etc.

I.A.7 Project Management. Provide project management assistance to Tri-Met as indicated in this Scope of Services and including the following:

- o Contract Management/Administrative. Provide contract management and administration of the Bechtel staff and subconsultants in performance of the Scope of Services.
- o Citizen Information. Support Tri-Met by providing up-to-date information on tasks within Bechtel's Scope of Services and attend related meetings or discussions as requested by Tri-Met.

- o Coordination - Outside Authorities and Regulating Agencies.  
Support Tri-Met by providing information and participating in technical discussions as requested by Tri-Met.
- o Coordination - Detail Design and Technical Issues. Provide coordination for resolution of detail design problems and technical issues as identified by Tri-Met and ODOT.
- o Progress Reports. Prepare and provide to Tri-Met monthly a brief description of progress, problems and goals including a list of all construction contract packages and the percentage of completion of each contract. A drawing progress summary sheet indicating the percentage of completion of the drawings of each contract by type (General Plans, Alignment, Structural, etc.) will be prepared. A detailed drawing progress report will be provided every three months after each contract reaches the 40 percent level. All forms to be used in the preparation of these reports will be included in the drafting standards.

I.B. Tri-Met Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services as follows:

I.B.1 Provide liaison with cities, county, state and public agencies, the public and media including public hearings and press releases.



I.B.2 Tri-Met and Bechtel will agree upon the general terms and conditions including warranties, to be incorporated into all bid packages, contracts and purchase orders entered into by Tri-Met for the Project.

I.B.3 Provide office facilities exclusive of telephones for Bechtel's staff to be located in the Tri-Met Project Office.

I.B.4 Provide input, review, assistance and approvals as required to support Bechtel.

I.B.5 Provide financial and schedule data on the Project as required by Bechtel to maintain and update budget and schedule reports for Tri-Met.

I.B.6 Provide all standard reporting forms.

I.B.7 Prepare monthly progress reports based on input from Bechtel.

## II. PRELIMINARY DESIGN REVIEW AND UPDATE

### II.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's Services as follows:

II.A.1 Preliminary Design Documents Review. Bechtel shall review the preliminary design documents and submit to Tri-Met comments, recommendations and suggestions regarding errors, inconsistencies and design problems contained in said documents. The preliminary design documents will be reviewed in their entirety for the purpose of identifying any problems impacting the design, cost, schedule and Bechtel's services. Comments will be provided with respect to each of Bechtel's areas of primary responsibility as follows:

- o Utility review
- o Street reconstruction review
- o Trackwork review
- o Traffic engineering review
- o Stations/architecture review

II.A.2 Preliminary Design Criteria Update. The preliminary design criteria will be reviewed as indicated above in Task II.A.1. The preliminary design criteria will be updated as required. Once the final design criteria are established, Tri-Met must review and approve all additions, deviations, changes or revisions that may become necessary during final design.

II.A.3 Preliminary Contract Unit Description. Bechtel will assist Tri-Met to determine the size and work limits of procurement contracts and civil construction contracts. The selection and number of contracts

will be based on physical requirements as well as other considerations such as type of work, schedule, time of year, other construction activities, administration costs, construction costs, location, local participation, access and maintenance of traffic requirements, etc. These preliminary contract unit descriptions along with the schedule and cost estimates will establish the basis for the control of the project and will determine the contract packages to be prepared.

- o Preliminary Contract Drawing List. Bechtel will produce a drawing list indicating the different types of categories and number of sheets estimated for each type, for each contract. Each list will indicate the number of manhours (engineering and drafting) that will be required to produce each drawing. Bechtel will include all sheets that it estimates are needed even if it is not sure of numbers and titles. The drafting standards will include the forms to be used for the drawing lists. All drawings will be listed in sufficient detail to show the absence of repetition or duplications.

II.A.4 Preliminary Schedule Update. Bechtel will assist Tri-Met to establish an updated preliminary design, procurement and construction schedule reflecting the different contracts identified under II.A.3.

II.A.5 Preliminary Contract Unit Milestone Schedule. Based on Tasks II.A.3 and II.A.4, Bechtel, assisted by Tri-Met and ODOT (Major Structures) will establish dates for all the significant milestones of each contract. This includes in-progress reviews, approval periods, advertising and bidding dates, fabrication and delivery dates, completion dates, etc.

II.A.6 Preliminary Cost Estimate Update. Bechtel, assisted by ODOT (Major Structures) will develop an updated preliminary cost estimate for each of the contracts identified under Task II.A.3 and in accordance with the updated schedule.

## II.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services as follows:

II.B.1 Provide a minimum of five (5) copies of each of the preliminary design documents including but not limited to the following:

- o Preliminary plan and profiles and typical section drawings covering the downtown, Steel Bridge and Holladay segments.
- o Preliminary plans showing all utility conflicts and, where appropriate, design solutions for the whole line.
- o Preliminary plans for all stations consistent with the above, and typical station details.
- o LRT design standards and criteria.

- o Various preliminary engineering technical memoranda including a description of the alignment design, traffic recommendations, track design.

II.B.2 Provide a reproducible copy of base mapping and survey control data for the entire route.

II.B.3 Provide a minimum of five (5) copies of ODOT, systems and other schedules, design criteria, preliminary plans, etc., as impact civil construction contract packages and schedules.

II.B.4 Provide preliminary cost estimate data.

II.B.5 Provide input, review, assistance and approvals as required to support Bechtel.

II.B.6 Establish preliminary contract unit descriptions and schedules based on input from Bechtel, ODOT and others.

### III. FINAL DESIGN - GENERAL

#### III.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services as follows:

III.A.1 Final Design Criteria. Bechtel will review and comment on the final design criteria established by Tri-Met based on the work performed in Tasks II.A.1 and II.A.2. Following adoption of the initial final design criteria by Tri-Met, all subsequent proposed additions, changes, alterations or revisions to the final design criteria which may become necessary during final design will be developed under the specific design tasks and submitted to Tri-Met for review and approval.

III.A.2 Contract Unit Description Update. Bechtel will assist Tri-Met in maintaining up-to-date contract unit descriptions.

- o Contract Package Mockup. Based on the preliminary list of drawings, Bechtel will produce a typical contract package mockup with representative samples or rough sketches of the different types of drawings that will be prepared for a typical contract. Two mockups will be produced, one for general construction and one for trackwork.

III.A.3 Contract Unit Milestone Schedule Update. Bechtel will provide input to maintain the Contract Unit Milestone Schedule which will be updated periodically and as required when known changes occur. All proposed changes will be reviewed and approved by Tri-Met.

III.A.4 Special Reports and Studies. Bechtel will prepare, as required, brief technical presentations to support design criteria changes or

deviations, design alternatives and design concept recommendations. Such presentations will consist of a brief explanatory memo with copies of the appropriate design calculations and design backup material.

III.A.5 Contract Documents. For each procurement and construction contract package, Bechtel will prepare, under the appropriate final design tasks, contract documents including technical specifications and drawings. Bechtel will incorporate contract drawings and specifications prepared by public and private utilities as required.

III.A.6 Surveying. Bechtel will provide all surveys required to establish a construction base line, support design activities, locate borings, confirm the location of utilities, acquire additional partial takes, maintain the base line, update mapping, check the general contractor controls, and establish permanent controls on the LRT facilities (except for major structures). The LRT base line shall be established as near to the track areas as possible and in such manner that it follows the LRT while minimizing the possibility of being disturbed during the construction activities. All elements to be built shall be referred to this construction base line by station and offset.

Design support surveys will consist of those surveys required to obtain information that is critical to the final design. These are items such as clearance confirmations, mapping confirmations, exact location of

structures, street configurations, street cross sections, location of existing tracks, soil borings, monuments, etc. Regarding utilities, Bechtel will perform only those surveys required to confirm the location of items which may not be already located in the preliminary design documents or available "as built" drawings. The surveys for actual detail design of relocated utilities are the responsibility of the utility owner.

Right-of-way surveys for those cases where the refinements of the final design require additional small takes will be performed by Bechtel. Bechtel will perform all surveys necessary to maintain the base line during construction, as well as those required to spot check the general contractor controls and work. The actual survey requirements for additional partial takes, maintenance of the base line, and checking of contractor controls will be determined during final design and construction.

Surveys necessary for the construction of the yard site and maintenance facility are excluded from Bechtel's scope of work. Surveys related to the design and construction of the yard tracks are the responsibility of Bechtel.



### III.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met services as follows:

III.B.1 Provide a minimum of five (5) copies of final design criteria and drafting standards. These standards will include format, techniques, materials, standard symbols and abbreviations, etc. The document will include samples and it will cover forms to be used for drawing lists, drawing progress, contract unit descriptions, contract milestone schedule and progress reports.

III.B.2 Provide cover sheets, project sign sheets, basic preliminary general notes, symbols and legend key maps and abbreviations sheets.

III.B.3 Provide blank acetate sheet with standard title block.

III.B.4 Provide approved contract unit descriptions to be maintained by Bechtel.

III.B.5 Provide input, review, assistance and approvals as required to support Bechtel.

IV. UTILITY RELOCATION COORDINATION

IV.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services as follows:

IV.A.1 Identify Impacted Utilities. Review utility plans and reports developed during preliminary engineering. Meet with Tri-Met and each utility owner and confirm or update the project utility plans, both for any newly identified, planned or constructed utilities, and for any final changes in the location of LRT track of other facilities. Identify utility conflicts, investigate utility occupancy status, study alternatives and prepare recommendations.

IV.A.2 Design and Construction Agreements. Assist Tri-Met to prepare utility design and construction agreements.

IV.A.3 Relocation Schedule. Assist Tri-Met to prepare a relocation schedule.

IV.A.4 Coordinate with Utility Owners. Provide Tri-Met with current LRT design information and assist Tri-Met to coordinate with utility designers.

IV.A.5 Monitor Owner's Relocation Program. Monitor the utility relocation program and advise Tri-Met of any anticipated problems.

IV.A.6 Maintain Utility Drawings. Maintain up-to-date utility location drawings.

IV.A.7 Incorporate Utility Construction. Incorporate utility detail designs, prepared by the utility owners, in appropriate Tri-Met construction contract packages where separate utility relocation construction contracts are not possible.

IV.A.8 Prepare LRT Utility Design. Prepare the detail design of LRT duct banks, manholes, substation bases and vaults based on criteria, concepts and data prepared by others for the appropriate Tri-Met civil construction contract packages. All electrical design input and equipment data will be provided by Tri-Met.

IV.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services described as follows:

IV.B.1 Provide input, review, assistance and approvals as required to support Bechtel.

IV.B.2 Provide coordination with utility owners to assist with identification of utility conflicts and determination of a relocation schedule.

IV.B.3 Prepare final utility design and construction agreements based on input from Bechtel.

IV.B.4 Provide criteria, type, size and design concepts for LRT duct banks, manholes, substations bases and vaults for structural design and incorporation into civil construction contract packages.

#### V. FINAL DESIGN - ROADWAYS

This task is the responsibility of Bechtel and includes street design and trackway design, except for the roads within the yard area and the embankment of the Banfield Freeway (ODOT).

Included in the Final Design - Roadways are all soils explorations, testing and recommendations necessary to design and build stations, parking lots, trackwork, trackway, minor structures, catenary pole foundations, duct, substations, drainage facilities and streets. Also included is the structural design of minor structures such as retaining walls, ducts, vaults, etc.

The street design includes the design of station parking lots, kiss and ride areas, bus areas and associated circulation roads as well as street

reconstructions, modifications to intersections and grade crossings. Configurations and geometry design, cross sections, paving and grading design, drainage and possibly small additional right-of-way requirements are part of this task. Bechtel will perform this work based on the preliminary design, design criteria, local jurisdiction design standards and soils investigation, taking into consideration traffic design, right-of-way availability, loads anticipated, safety, operational and economic factors.

The trackway design includes the design of track area subgrade, drainage, erosion control, cross sections, minor structures, fencing and possible small additional right-of-way requirements as well as coordination of catenary pole locations and the structural and civil design of the LRT ducts bank, manholes and substations.

V.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services described as follows:

V.A.1 Review the preliminary engineering plans and design reports.

V.A.2 Assist Tri-Met to secure necessary approvals and permits for construction.

V.A.3 Perform all necessary soils explorations, testing, evaluations and recommendations.

V.A.4 Develop typical sections and proposed pavement design.

V.A.5 Perform all necessary survey work to complete final designs.

V.A.6 Design drainage, street lighting (East Burnside only), landscaping and other features required by Tri-Met or local jurisdictions.

V.A.7 Coordinate restricted clearances with the vehicle and electrical requirements to be provided by Tri-Met. Assist Tri-Met to obtain P.U.C. approvals and exemptions as required.

V.A.8 Coordinate street reconstruction design with other civil, systems and ODOT engineering work. This work will include a systemwide duct for power and/or communications, bases or vaults for substations, and pole bases. Perform structural and civil design of ducts, manholes, substation vaults and pole foundations based on criteria, type, size and design concepts provided by Tri-Met.

V.A.9 Bechtel will be responsible for maintaining the mapping up-to-date during the final design. Any minor modifications necessary during the final design shall be made on other than the original maps, which are not to be altered.

V.A.10 Prepare contract drawings and specifications. Contract document requirements are outlined in this Scope of Services.

V.A.11 Prepare final estimates and bid documents.

V.A.12 Define any additional right-of-way requirements (primarily on the Burnside segment).

V.A.13 Bechtel shall submit, in accordance with the dates established in the Contract Unit Milestone Schedule, in-progress review packages for each contract at the 40, 85 and 100 percent levels except as modified herein. These submissions shall be made in half-size drawings and will include a list of critical pending issues and action items that need Tri-Met's attention. The drawings shall also be marked, highlighting violations to criteria, changes or portions that are unresolved or need specific approval. Submittals shall consist of twenty-five (25) copies.

V.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services described as follows:

V.B.1 Provide approximate catenary pole locations and LRT duct bank, manhole, substation base and vault, electrical design concepts, and criteria for the structural and civil design and construction of those elements.

V.B.2 Provide input, review, assistance and approvals as required to support Bechtel.

## VI. FINAL DESIGN - TRACKWORK

All trackwork design tasks including those related to the tracks of the yard, track/structure interaction and rail/wheel interface are the responsibility of Bechtel. This includes the alignment of the entire LRT (except the yard layout concept), track structure(s), special trackwork and miscellaneous appurtenances.

Also included in this task is the preparation of procurement technical documents for rail, special trackwork, ties, fasteners and other specialties such as rail welding, prefabricated grade crossing panels and miscellaneous hardware. In addition, Bechtel shall provide basic maintenance recommendations and all necessary special trackwork part standards as well as trackwork logistics plan which should include procurement, storage and installation recommendations or conclusions.

### VI.A. Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services described as follows:

VI.A.1 Review preliminary engineering plans and design reports.



VI.A.2 Coordinate rail/wheel interface with vehicle requirements established by Tri-Met.

VI.A.3 Develop designs for typical track sections and special work for use in the street reconstruction and other trackway construction work elements.

VI.A.4 Examine procurement options, and assist Tri-Met to develop a plan for procurement and rail welding.

VI.A.5 Develop costs for alternative materials and designs for use in track construction and paving.

VI.A.6 Refine track geometry as input to the design of street construction or other trackway construction.

VI.A.7 Assist Tri-Met to review and approve ODOT designs for the Steel Bridge, Banfield and I-205 segments.

VI.A.8 Assist Tri-Met to coordinate the design of track and station facilities with ODOT on segments where ODOT has the lead design role.

VI.A.9 Develop final plans, estimates and other bid documents for reconstruction of way and track on the Portland Traction Company (PTC)

and Gresham segments including all field survey work required. This task includes new side tracks and special work.

VI.A.10 Coordinate with other civil and systems engineering work including the systemwide power and/or communications duct, bases or vaults for substations, and power pole bases.

VI.A.11 Prepare contract drawings and specifications, general track charts, track appurtenance drawings, special trackwork and parts standard drawings. Contract document requirements are outlined in this Scope of Services.

VI.A.12 Bechtel shall submit, in accordance with the dates established in the Contract Unit Milestone Schedule, in-progress review packages for each contract at the 40, 85 and 100 percent levels, except as modified herein. The submissions shall be made in half-size drawings and will include a list of critical pending issues and action items that need Tri-Met's attention. The drawings shall also be marked, highlighting violations to criteria, changes or portions that are unresolved or need specific approval. Submittals shall consist of twenty-five (25) copies.

VI.A.13 Prepare final estimates and bid documents for trackwork.

VI.A.14 Prepare a maintenance recommendations report and part standards for special trackwork.

VI.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services described as follows:

VI.B.1 Provide input, review, assistance and approvals as required to support Bechtel.

VII. FINAL DESIGN - TRAFFIC AND TRAFFIC SIGNALS

Traffic and traffic signal design includes the refinement of the preliminary traffic control plan, the inventory of existing signals and controls, the preparation of traffic maintenance plans as well as the design of signs, stripes, signals and controls. Close coordination with Tri-Met's systems engineering group with local jurisdiction, through Tri-Met, will be required.

The purpose of this work element is to provide all required services in the traffic engineering field including the design of traffic signs and controls for intersections and crossings, and the resolution of any outstanding traffic issues arising during design and construction of the project or anticipated as a consequence thereof.

VII.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services described as follows:

VII.A.1 Review of preliminary engineering plans, designs, traffic reports and recommendations.

VII.A.2 Assist Tri-Met to resolve any outstanding design issues with local traffic jurisdictions.

VII.A.3 Working in coordination with the local traffic jurisdictions through Tri-Met, design new traffic signal installations and modifications to existing ones, including interties with existing control systems, adding phases and heads to existing traffic signals, installing new signals, and related traffic detectors except that LRT detectors will be provided under the system's engineering contract.

VII.A.4 Working through Tri-Met with local jurisdictions, plan and design traffic detours for the LRT construction, except on ODOT-designed segments where ODOT will perform this task.

VII.A.5 Prepare contract drawings and specifications.

VII.A.6 Bechtel shall submit, in accordance with the dates established in the Contract Unit Milestone Schedule, in-progress review packages for each contract at the 40, 85 and 100 percent levels, except as modified herein. These submissions shall be made in half-size drawings and will include a list of critical pending issues and action items that need Tri-Met's attention. The drawings shall also be marked, highlighting violations to criteria, changes or portions that are unresolved or need specific approval. Submittals shall consist of twenty-five (25) copies.

VII.A.7 Prepare final estimates and bid documents for all traffic work.

VII.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services described as follows:

VII.B.1 Provide coordination with local agencies for obtaining approvals of traffic engineering designs.

VII.B.2 Provide input, review, assistance and approvals as required to support Bechtel.

## VIII. FINAL DESIGN - STATIONS/ARCHITECTURE

The single major architectural task is the design of the station areas. Bechtel is responsible for the architectural design of stations, platforms, shelters, waiting areas, pedestrian and vehicular access, parking lots, kiss and ride areas, bus areas, franchise areas, passenger information areas, lighting, graphics, etc. Other tasks include landscaping and possible special treatments on streets. The yard and maintenance facility are excluded.

This work element provides for all services in connection with stations not otherwise provided as part of the street reconstruction or other trackway work. Design emphasis is required on simple low cost, aesthetically pleasing station designs. Platforms will be developed with particular attention to resisting vandalism, enhancing security and maintainability. The platforms should be 6 to 8 inches high (depending on car clearances and step height) above top of rail, and approximately 200 feet in length. All stations will have fixed lifts for the handicapped, which will be provided by Tri-Met.

### VIII.A Bechtel's Responsibilities

Bechtel shall perform or cause to be performed Bechtel's services described as follows:

VIII.A.1 Review of the station plans and reports developed during preliminary engineering.

VIII.A.2 Design of major park-and-ride lots for Gateway, 181st, Gresham City Hall and Gresham terminal stations.

VIII.A.3 Design of vertical circulation systems for Hollywood, 60th and 82nd Avenue stations only.

VIII.A.4 Design of all other station elements including lighting, power, signage, paving, shelters, provisions for fare collection equipment and E&H lifts.

VIII.A.5 Assist Tri-Met with coordination of all station design work with other civil and system work elements and with ODOT.

VIII.A.6 Definition of any additional right-of-way requirements (station right-of-way acquisition is in progress and is expected to be completed during final design).

VII.A.7 Perform all soils investigations necessary to support final design.

VIII.A.8 Prepare contract drawings and specifications.

VIII.A.9 Prepare final estimates and bid documents.

VIII.A.10 Bechtel shall submit, in accordance with the dates established in the Contract Unit Milestone Schedule, in-progress review packages for each contract at the 40, 85 and 100 percent levels except as modified herein. These submissions shall be made in half-size drawings and will include a list of critical pending issues and action items that need Tri-Met's attention. The drawings shall also be marked, highlighting violations to criteria, changes or portions that are unresolved or need specific approval. Submittals shall consist of twenty-five (25) copies.

VIII.A.11 Provide a maintenance recommendations report for stations and related areas.

VIII.B Tri-Met's Responsibilities

Tri-Met shall perform or cause to be performed Tri-Met's services described as follows:

VIII.B.1 Provide input, review, assistance, coordination with local agencies and approvals as required to support Bechtel.



## IX. CONTRACT DOCUMENTS

### IX.A Drawings and Specifications

The above work elements require the production of contract documents including drawings and specifications. The following is an outline of the required contents of said documents.

IX.A.1 General Information Drawings. These drawings, which will be made part of all the contracts with slight narrative changes, will include cover sheets, key maps, project sign, general notes, symbols and legend, abbreviations, index, construction staging and other similar drawings that may be required. Tri-Met provides cover sheets and project sign sheets and prepares the preliminary basic general notes, symbols, legend, abbreviations and key map. Bechtel will prepare all other general information drawings and complete and tailor for each contract the preliminary sheets prepared by Tri-Met. The mockup shall include samples of similar drawings.

IX.A.2 Survey Control Drawings. Bechtel will prepare construction baseline plans, control point and benchmark reference sketches, control point and benchmark data tables, and permanent control discs and monument details. These drawings will be part of all contract packages, in partial or complete sets as appropriate. The baseline plans will show both the baseline and the reference sketches and most of the control

point data will be shown on separate tables. Tri-Met will supply samples of similar drawings for guidance.

IX.A.3 Soils Data Drawings. Bechtel will be responsible for providing all soils data drawings which will include boring location plans, boring location reference sketches, soil profiles (as needed) and boring logs (as needed). Bechtel shall use reproductions of the baseline plans (without reference sketches) as a base for the boring location plans and reference sketches.

IX.A.4 General Track Charts. Basic track charts showing approximately one mile per sheet for the entire project, except the yard, shall be prepared by Bechtel. These drawings, which will show in a graphic manner the entire system, crossing streets, plan and profile, and other appropriate elements will be reproduced to obtain sets of basic track charts that will be used for the trackwork contract(s), maintenance, general contracts, and possible signals and communications. Tri-Met will make available to Bechtel samples of similar drawings for guidance.

IX.A.5 Roadway Drawings. These drawings shall include, but shall not be limited to, such things as clearing plans, plan and profiles, erosion control, earthwork details, drainage facilities, cross sections, paving and grading, roadway details, LRT utilities, maintenance of traffic and right-of-way.

The roadway plan and profile drawings shall include the approximate location of the right-of-way lines; the construction baseline and benchmarks; the LRT track centerlines; existing and proposed and future roads, bridges, streets, stations, parking lots, drainage facilities, utilities, catenary pole foundations, grade crossings, substations, curb lines, retaining walls, fencing, etc.; and any other significant roadway elements within the LRT right-of-way or its immediate vicinity.

These drawings shall be prepared using a reproduction of the basic track alignment sheets and complemented with the adequate information. All elements to be built shall be tied to the baseline. Tri-Met will supply samples of similar drawings to be used as a guide.

The roadway cross sections will show all the elements indicated on the plan and profile and complement these drawings. The number of cross sections required is left to Bechtel and they do not have to be produced at a fixed interval. They should be produced as needed to provide a complete understanding of the right-of-way and its immediate vicinity.

These cross sections shall indicate the work to be by the general contractor. In order to reduce drafting, the same cross sections, screened, shall be used for the track contract whenever possible. The typical sections and tables shall show by stationing the areas covered.

The paving and grading drawings shall show plans, elevations, and detail sections as required to reconstruct, alter or repave existing streets as well as those required to build new roads, streets or parking lots. This includes curb and sidewalk construction or reconstruction, station platforms, medians, traffic control elements, etc. Drawings shall be at a suitable scale to present all information clearly.

The roadway details shall include all details necessary for the above plus elements such as fences, gates, catenary foundations, ditches, inlets, curbs, drain pipes, signs, walkways pavement striping, traffic signal equipment, temporary signing and barricades, etc.

The LRT utility drawings are those showing elements related to duct banks, manholes, catch basins, substation vaults and slabs, catenary pole foundations, etc. The electrical design criteria, type, size and location of duct banks, substation vaults and slabs, and catenary pole locations shall be furnished by others.

Maintenance of traffic drawings shall be produced as necessary but using reproductions of other drawings or mapping already established, whenever possible, in order to reduce drafting.

IX.A.6 Architectural Drawings. Bechtel is responsible for producing all architectural plans, elevations, sections and details necessary to

build those facilities or elements requiring the architect's design input.

The architectural drawings shall be shown in sufficient detail on the preliminary drawing lists of each contract to assure that efforts are not being duplicated.

Bechtel shall produce typical architectural drawings, whenever possible, and reproduce them as required to prepare other contract packages. Site-specific drawings shall be kept to a minimum. All elements to be built shall be tied to the baseline. Renderings, perspectives and scale models shall not be produced.

IX.A.7 Mechanical Drawings. These drawings are those related to escalators and/or elevators to be used in three stations (Hollywood, 60th Avenue and 82nd Avenue), handicapped lifts interface, and the pit covers for the 11th Avenue station.

IX.A.8 Electrical Drawings. These drawings relate to architectural tasks and include station and parking lots lighting, power for ticket vending equipment, signs, elevators and/or escalators, janitorial services, lighting for franchise and public information spaces.

IX.A.9 Trackwork Drawings. Bechtel shall prepare all procurement, installation and maintenance drawings as required. This includes special trackwork procurement drawings; rails, ties, fasteners; rail welding, grade crossing and hardware procurement figures; sketches and drawings (if required); track charts; track alignment drawings; cross sections; track structure plans, elevation sections and details; special trackwork installation and part standards; and miscellaneous track appurtenances and details. The yard tracks are included.

The special trackwork procurement drawings shall include turnout general reference data sheets showing in a tabulated form all general information such as gauge, rail section, switch type, length, actual lead, frog angle, basic distances, stock rail projections and maximum design speed as well as references to switch, frog and general plans and/or details. Crossovers and other typical interlocking arrangements, such as pocket tracks, shall also be shown indicating basic geometry and distances as well as reference drawings. Procurement drawings for special trackwork shall also include specific turnout plans; switch plans and details; typical guards, braces, plates, etc., as required. These drawings shall be in sufficient detail and include geometry, distances, turnout offsets, tie spacing and layout, all turnout data, location of all switch element joints and welds (if any); length of all closure rails, stock rails and other rails, bills of ties, plates and other materials, general notes for fabrication, etc., as required.

The track charts shall be produced based on the general track charts and shall show additional information such as insulated joint locations, switch machine locations, rail type and extent, curve data and super-elevations, track structure and extent, alignment, track appurtenances and other relevant data as required.

The track alignment drawings shall show top of rail profile and track centerline alignment. This plan and profile shall show all vertical and horizontal control points, stationing grades, curve numbers, track numbers, bearings, elevations, baseline locations and other basic data. This set of drawings will have separate sheets showing alignment control points data, curve and spiral data and interlocking control points data. These sheets show coordinates, LRT stationing, baseline station and offset and other pertinent information.

The cross sections shall be based on those prepared for the roadway drawings, whenever possible. Track structure drawings shall have all plans, elevations, sections and details necessary to show all track structure elements, their locations, arrangement, type and interdependencies. Typical drawings and tables shall be used where possible.

The track appurtenances drawings shall show plans, elevations and details of items such as sand boxes or bumper blocks, derails, lubricators (if any), retarders, etc.

IX.A.10 Structural Drawings. Bechtel is responsible for producing all type/size/location drawings, plans, elevations, sections, details reinforcing bar schedules, and other drawings as required to adequately build and/or modify minor structures, timber trestles, small retaining walls, catenary pole foundations, substation slabs and vaults, ducts and manholes, slabs on grade, prefabricated concrete elements such as grade crossings, station elements and other miscellaneous elements. Elements within the yard and maintenance facilities are excluded.

IX.A.11 Contract Specifications. For all procurement, installation and construction contracts required, Bechtel is responsible for producing technical specifications and associated drawings, figures, sketches and tables including materials, performance, testing and installation (if applicable), fabrication, identification marks or codes, and construction, transportation, handling and storage requirements as well as contract data requirements lists, quantities, bid items, delivery schedule, shop drawings, reports, engineer's estimates, bid tabulation and other technical input as required.

The technical specifications shall be based on the work efforts indicated in the design and contract drawing tasks of this scope of work. These documents shall be simple, clear and fully coordinated with the design, contract documents, schedule and the terms and conditions section.



EXHIBIT "B"

TO

Agreement for

ENGINEERING, PROCUREMENT AND  
MANAGEMENT OF CONSTRUCTION

between

TRI-MET

and

BECHTEL

COMPENSATION AND PAYMENT

Tri-Met agrees to pay Bechtel for the performance of the Services compensation ("Compensation") consisting of the Recoverable Costs and Fixed Fee as follows:

A. Compensation

The cost of the Services under this Agreement shall not exceed Nine Hundred Fifty Thousand Dollars, a detailed breakdown of which is attached to this Exhibit. The costs in this paragraph are expressed in 1981 dollars and will be adjusted annually in accordance with Paragraph 18 of this Agreement.

B. Recoverable Costs

Tri-Met shall reimburse Bechtel for all costs incurred by Bechtel in the performance of the Services in accordance with Bechtel's established policies and practices.

Allowability of any given expense for reimbursement hereunder shall be guided by Sub-Part 1-15.2 of the Federal Procurement Regulations in effect as of the date of this Agreement, except where they may be in conflict with specific provisions of this Agreement.

Such allowable costs generally include, but are not limited to, the following:

1. Payroll and Related Personnel Costs, Permanent Offices

- a. Payroll costs and related expenses incurred by Bechtel including all salaries and wages of personnel engaged

directly in the performance of the Services plus Bechtel's standard rate of payroll additives and related expenses to cover all employee benefits and allowances for vacation, sick leave, holiday and company portion of employee insurance and retirement benefits, all payroll taxes, premiums for public liability and property damage liability insurance, Workers' Compensation and Employer's Liability Insurance and all other insurance premiums measured by payroll costs, and other contributions and benefits imposed by any applicable law or regulation. Said rate for payroll additives for the calendar year 1981 is 36% and shall be subject to adjustment at the beginning of each calendar year.

- b. Payroll costs and related expenses, as described in Paragraph 1.a. above, incurred by Bechtel's related or affiliated entities in the performance of the Services.
  
- c. Costs for the work of Officers and Directors when engaged directly in the performance of the Services in accordance with Bechtel standard rates which are subject to review at least annually. The rates for 1981 are: Vice Presidents - \$675 per day and Directors - \$975 per day.

d. Payroll costs and related expenses incurred by Bechtel for third party or agency personnel engaged in the performance of the Services.

2. Payroll and Related Personnel

Costs for Field Personnel

Costs and related expenses incurred by Bechtel in accordance with its established personnel policies including all salaries and wages of personnel engaged directly in the performance of the Services, and all employee benefits and allowances for vacation, sick leave, holiday and social and retirement benefits, all payroll taxes, premiums for public liability and property damage liability insurance, Workers' Compensation and Employer's Liability Insurance, and all other insurance premiums measured by payroll costs, and contributions and benefits imposed by any applicable law, regulations, collective bargaining or similar agreements, or required to be paid by currently established local practices in the area of the construction work performed hereunder. The wage rates and fringe benefit payments for all field labor on Bechtel's payroll required in the performance of the work shall be in accordance with Bechtel's applicable collective bargaining agreements.

3. Overhead

Overhead shall be comprised of the actual allowable indirect cost of Bechtel allocable to the Services in accordance with the applicable provisions of the Federal Procurement Regulations (Sub-Part 1-15.2) in effect as of the date of this Agreement. Actual allowable overheads are based on Bechtel's standard accounting practices consistently applied and shall be determined by Bechtel's cognizant federal audit agency in accordance therewith. Pending establishment of such actual allowable overheads, provisional rates shall be used. Upon determination by audit of such actual allowable overheads, or agreement between Bechtel and Owner on a negotiated actual allowable overhead, any variance between the actual allowable overheads and the provisional overhead amounts invoiced will be credited to Owner or paid to Bechtel as the case may be. Said provisional rates may, from time to time, be adjusted through mutual agreement between Owner and Bechtel to reflect any significant deviation from the rates originally used. Overhead rates shall be applied as follows:

- a. Permanent Offices. Overhead rates for Bechtel personnel permanently assigned to permanent offices, including such personnel who may be temporarily assigned to the Project area in accordance with Bechtel's standard practices,

shall be applied to direct wages and salaries including straight time overtime and payroll additives of engineering (both technical and non-technical) and procurement personnel. The initial provisional rate for engineering is 59.85 percent and for procurement is 32.17 percent.

- b. Field Job Site. Overhead rates for all Bechtel personnel formally transferred to the Field Job Site in accordance with Bechtel's standard practices and settled into the Project area, plus local personnel hired for this Agreement, shall be applied to direct non-manual wages and salaries including straight time overtime but exclusive of payroll additives. The initial provisional rate is 59.65 percent.

4. Other Direct Costs

All other costs incurred in the performance of the Services, including such costs as:

- a. Travel and subsistence and relocation and return of personnel engaged in the performance of the Services, including travel and relocation expenses of families of such personnel in accordance with Bechtel's established policies.

1. All air travel shall be at coach or economy class except when less than first class accommodations are not reasonably available to meet Project requirements. Single class air fare shall be construed to be the equivalent of coach or economy class.
2. Reimbursable travel expenses shall include the actual cost of commercial transportation, e.g., taxi, bus, rail, limo and rental automobiles required to perform Bechtel's Services away from the employee's base office or location.
3. For normal business travel, actual reasonable lodging and meals shall be paid beginning with the day of departure from and ending with the day of return to the base office or location to which the employee is assigned. Incidental expenses for necessary and usual personal travel expense items.
4. The cost of relocation and return of personnel in accordance with Bechtel's established policies and practices.

5. The cost of temporary assignment, including living allowances, to the Project of personnel for more than thirty (30) days but less than nine (9) months in accordance with Bechtel's established policies.
- b. The cost of all equipment, equipment rentals, materials and supplies used or consumed in the performance of Bechtel's Services, including the cost of transportation, freight, storage and handling thereof, except the cost of engineering supplies used or consumed in the performance of the Services in Bechtel's permanent offices which costs shall be reimbursed at Bechtel's standard rate. Said standard rate is currently eight (8) cents per technical manhour.
- c. Costs for reproduction of plans, specifications, reports and other data. In-house reproduction shall be reimbursed at Bechtel's standard rates.
- d. The cost of establishing and operating Project offices including rent, office furniture, office equipment, utilities, janitorial, remodeling and communications not supplied by Tri-Met.



- e. Computer use including operator time, and use of Bechtel's standard programs, at Bechtel's standard rates. All other computer programming or outside services at cost to Bechtel.
- f. Telephone costs originating from Bechtel's centrex system shall be reimbursed at Bechtel's standard rate; all other communication expenses, not otherwise reimbursable hereunder, at cost to Bechtel. Said standard rate is currently fifty-four (54) cents per manhour for San Francisco.
- g. All costs associated with consultants, subcontracts and other outside services and facilities.
- h. All federal, state and local taxes, and all taxes, assessments, levies, imposts, duties, excises and licenses, excepting only taxes levied solely on Bechtel's net income.
- i. Employment advertising and other recruiting costs including the cost of using employment agencies.
- j. The cost of premiums for insurance by Bechtel pursuant to this Agreement in connection with the performance of

Bechtel's Services and the deductible under any insurance carried by or on behalf of Bechtel or Owner. (The cost of premiums for public liability and property damage liability, Workers' Compensation and Employer's Liability Insurance covering Bechtel's permanent offices is included in and will be reimbursed under Paragraph A.1. above.)

- k. All costs associated with records management including, but not limited to, the preparation of material for filming, equipment, microreproduction and operator time, at cost to Bechtel.
- l. One and one-and-one-half percent (1.5%) San Francisco payroll tax paid for employees in Bechtel's San Francisco office.
- m. Miscellaneous - other costs and expenses incurred by Bechtel in connection with Bechtel's Services as reasonably necessary in the proper performance of Bechtel's Services hereunder.

All rates set forth in this Paragraph B.4. shall be subject to adjustment periodically to reflect changed costs.

C. Fixed Fee

In addition to the Recoverable Costs set forth in Paragraph B above, Tri-Met shall pay Bechtel a Fixed Fee as specified on Table I of this Exhibit. The Fixed Fee shall be subject to equitable adjustments in accordance with other provisions of this Agreement.

D. Cost Limitation

If, at any time, Bechtel estimates the cost of performing the Services herein will exceed the Project budget or the estimated total cost, Bechtel shall notify Tri-Met immediately in writing indicating the estimated additional amount necessary to complete the Services. Any costs incurred by Bechtel in excess of the aforesaid limitation without the express written consent of Tri-Met shall be at Bechtel's own risk. Bechtel shall not be obligated to continue performance or to incur costs in excess of the Project budget or estimated total costs or "Not to Exceed Cost" unless there is an increase authorized by Tri-Met.

E. Manner and Time of Payment

As soon as practicable after the first day of each calendar month, Bechtel shall submit to Tri-Met a detailed invoice stating allowable costs incurred during the previous calendar month. The invoice shall also include, as a separate item, the amount of Fee then due. Such Fee due shall be calculated at the same ratio which the allowable costs being billed bear to the total estimated cost. Tri-Met agrees to pay the amount invoiced in full within thirty (30) days after receipt of an acceptable invoice.

Should Tri-Met question any portion of the costs invoices, Tri-Met shall immediately notify Bechtel in writing of the amount in question and the reason therefor. The unquestioned portion of the invoice, plus the invoiced fee will be paid promptly, in accordance with the above.

TABLE I  
EXHIBIT "B"

ANALYSES FEE FOR CIVIL ENGINEERING SERVICES

June 8, 1981

Direct Salary Cost		\$ 228,840
Overhead Cost (including payroll additives)	<u>90.85 %</u>	<u>\$ 207,900</u>
	Subtotal	<u><u>\$ 436,740</u></u>
Fixed Fee		<u><u>\$ 43,674</u></u>
<u>Direct Nonsalary Costs:</u>		
a. Travel and Expenses	<u>\$ 7,445</u>	
b. Office Rent & Furniture	<u>\$ Client Furnished</u>	
c. Equipment Rental	<u>\$ 22,370</u>	
d. Reproduction Expenses	<u>\$ 14,675</u>	
e. Computer Expense	<u>\$ 900</u>	
f. Communication	<u>\$ 10,710</u>	
g. Outside Consultants (Firm Name & Service) (See Page 3)	<u>\$316,310</u>	
h. Field Material Testing and Inspection	<u>\$ 44,740</u>	
i. "Off-Site" Inspection	<u>\$ 5,370</u>	
j. Other (Specify) (Empl. Recruit, Exp. + SF Payroll Tax)	<u>\$ 1,940</u>	
k. Relocation Expense	<u>\$ 22,765</u>	Subtotal <u>\$ 447,225</u>
General and Administrative Expense -% of A-K 5% Fee on A-K		<u>\$ 22,361</u>
Total Estimate		<u>\$ 950,000</u>
Not to Exceed		<u>\$ _____</u>

TABLE I  
EXHIBIT B

BREAKDOWN OF DIRECT SALARY AND DIRECT NONSALARY COST

June 8, 1981

Direct Salary Cost

Personnel	Man Hours	Rates of Pay	Estimated Cost
See Attached			\$ 228,840
		TOTAL	\$ <u>228,840</u>
			\$ <u><u>228,840</u></u>

Direct Nonsalary Cost

Travel and Expenses

Per Diem - _____ days at \$ _____	\$ _____
Local Transportation (\$40/RT)	\$ <u>286</u>
Lodging & Subsistence (\$80/day)	\$ <u>2,863</u>
Air Travel - <u>7</u> trips at \$ <u>300</u>	\$ <u>2,147</u>
Cars: 7 RT x 5 days/RT x \$60/day	\$ <u>2,147</u>
_____ miles at \$ _____	\$ _____

Job Office and Equipment

Equipment Rental \$ _____ per month at _____ months	\$ <u>22,370</u>
Reproduction Expenses and Supplies	\$ <u>14,675</u>
Communications	\$ <u>10,710</u>

EXHIBIT "B1"  
DIRECT SALARY COSTJune 8, 1981  
14607

<u>Personnel</u>	<u>Manhours</u>	<u>Rate</u>	<u>Estimated Cost</u>
Project Manager	1,545	20.44	\$ 31,600
Project Engineer	1,440	15.64	22,520
Civil/Str. Engineer	1,120	15.64	17,520
Drafter #1	1,430	9.32	13,340
Drafter #2	1,280	8.42	10,780
Drafter #3	430	8.42	3,620
Estimator	640	18.06	11,560
Procurement	480	15.64	7,510
Cost/Sched. Engineer	1,680	9.32	15,660
Const. Engineer	672	18.06	12,140
Resident Engineer	320	18.06	5,780
Resident Engineer		15.64	
Civil Inspector	690	13.81	9,490
Civil Inspector		12.09	
Civil Inspector		10.64	
Office Engineer	320	15.64	5,005
Clerk/Typist	1,490	6.90	10,275
Clerk/Typist	1,030	6.90	7,110
Engr. Trk.	1,430	15.64	22,390
SFHO Support	1,630	13.81 (Average)	<u>22,540</u>
		Total	\$228,840
		Rounded to	\$228,840

Bechtel Civil & Minerals, Inc.  
 Banfield Light Rail Project

81-196N  
 6/8/81  
 14607  
 Banfield LRT

Bechtel Work Element Breakdown

<u>Title</u>	<u>Man Months</u>			<u>Total</u>
	<u>Admin. Gen.</u>	<u>Design</u>	<u>Const.</u>	
Project Manager	6	4		10
Project Engineer		9		9
Engr. Trk./Res. Engr. Trk.		9		9
Civil/Structural		7		7
Drafter #1		9		9
Drafter #2		8		8
Drafter #3		3		3
Estimator		4		4
Procurement		3		3
Cost/Sched. Engr.	10			10
Construction Engr.		2	2	4
Resident Engr. #1			2	2
Resident Engr. #2				0
Civil.Insp. #1			4	4
Civil Insp. #2				0
Civil Insp. #3				0
Office Engr.			2	2
Clerk Typist	6	3		9
Clerk Typist		6		6
Perm. Office Support	8	1	1	10
	<u>30</u>	<u>68</u>	<u>11</u>	<u>109</u>



Bechtel Civil &amp; Minerals, Inc.

6/8/81  
14607Banfield Light Rail ProjectBechtel Permanent Office Support Estimates

<u>Organization</u>	<u>Manhours</u>
General Manager	10
Office Services	90
Tech. Graphics	30
Project Cost & Sched. Mgmt.	30
Project Cost & Sched. Dept.	60
Contracts	90
Engineering Management	180
Transportation Management	250
Personnel	70
Construction	50
Division Operations	10
Finance & Accounting	540
Procurement (subcontracts)	180
Legal & Insurance	40
Total	1,630

$$1,630 \text{ MH}/16 = 10\text{MM}$$

Outside Consultants

o Zimmer Gunsul, Frasca (Architectural/Stations)	\$ 73,970
o Associated Transportation Engineering & Planning, Inc. (Traffic Signals)	\$ 39,840
o Wilsey & Ham, Inc. (Surveys, Street Reconstruction - West)	\$107,035
o Cooper & Associates, Inc. (Surveys, Street Reconstruction - East)	\$ 93,675
o Timber Bridge Inspection Consultant	\$ 1,790
	\$316,310

Becthel Civil & Minerals, Inc.  
 Banfield Light Rail Project  
 Cost Estimate

6/8/81  
 14607

Work Element IX A.6 - Off-Site Inspections

Inspections

Ties

- Assume 8 weeks production period
- Inspections 3-4 days per week
- 8 weeks x 3 days/wk = 24 inspection days - Say 30 days

Rail

- Assume 30 miles of track @ 115#/yd
- 30 mi x 270 rail/mi x  $\frac{115 \times 13}{2000}$  = 6054 T
- Assume 6500 T rail
- 7 wks. rolling time required
- 3 days/wk inspection
- 7 weeks x 3 days/wk = 21 days -- Say 20 days

Special Trackwork - Assume inspection to be done prior to shipment

- Assume 5 weeks inspection
- 5 weeks @ 5 days/wk - Say 30 days

Total 80 days

Other Assumptions

- 1) Hire "local" inspectors @ \$150/day.
- 2) Add 5 days each for reports.
- 3) Include two "long-distance" round trips to each location (rail mill, tie plant, turnout shop)

Bechtel Civil &amp; Minerals, Inc.

6/8/81  
14607Inspections - Estimate (continued)Inspections Cost Estimate

## (1) Local Inspectors

80 days inspections  
 15 days reports  
 95 days - Say 100 days @ \$150/day = \$15,000

## (2) Travel

6 Trips @ \$2,000/trip = \$12,000  
 \$27,000

Total Off-Site Inspection Allowance = \$30,000

Assume 18% Inspection in this Phase -  $.18 \times \$30,000 =$  \$ 5,370

Work Element IX A.7 - Materials TestingRail Welding Inspections

- Assume 30 miles of track @ 270 rails per mile = 8,100 rails
- Assume every tenth weld inspected @ \$200/inspection  
 $810 \times \$200 = \$164,000$  - Say \$170,000

Material Testing

- Includes ballast & subgrade gradation testing, subgrade compaction tests, concrete slump and cylinder tests, etc.

Materials Testing Allowance \$80,000

Total \$250,000

Assume 18% Testing in this Phase -  $.18 \times \$250,000 =$  \$44,740

June 8, 1981

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EXHIBIT B  
ANALYSIS OF FEE FOR STATIONS

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Direct Salary		\$ 18,524
Overhead Cost including Payroll Additives		\$ 25,934
	Sub Total	<u>\$ 44,458</u>
Fixed Fee		<u>\$ 4,446</u>
Direct Nonsalary Costs		
A. Printing Design Submittal Copies	\$ 2,147	
B. Long Distance Phone	\$ 90	
C. Xerox Printing	\$ 358	
D. Mileage	\$ 358	
E. Presentation Material	\$ 89	
F. Consultants		
P.A.E. (Mechanical)	\$ 4,743	
P.A.E. (Electrical)	\$ 8,677	
Mitchell & Nelson Assoc. (Landscape)	\$ 6,800	
Lerch Bates (Elevators)	\$ 1,074	
	<u>\$24,336</u>	<u>\$ 24,336</u>
General and Administrative Expense 3% of A-F		<u>\$ 730</u>
		<u>\$ 73,970</u>

Note: All Costs are based on 1981 rates

## ZIMMER·GUNSUL·FRASCA PARTNERSHIP

111 S.W. Oak Portland, Oregon 97204

503/224-3860 Cable: ZGFOREGON

## OVERHEAD COST FOR FIRST QUARTER 1981

	\$	%
Project Labor	391,425	100.0
<u>OVERHEAD</u>		
Nonproject Labor	255,410	65.2
Payroll Taxes	60,695	15.5
Health & Accident	17,157	4.4
Employee Development	17,034	4.4
Rent	38,146	9.7
Utilities	466	.1
Supplies	21,109	5.4
Telephone & Telegraph	10,913	2.8
Depreciation & Amortization	7,586	1.9
Postage, Delivery, Shipping	6,044	1.5
Equipment Rental & Maint.	5,753	1.5
Building Repairs & Maint.	1,091	.3
Reproduction Services	2,596	.7
Subscriptions	1,970	.5
In House Blueprinting	(905)	(.2)
Copiers	10,435	2.7
Professional Fees	23,017	5.9
Computer	10,990	2.8
Insurance	23,120	5.9
Auto Expense	3,061	.8
Travel	19,080	4.9
Recruiting Expense	38	---
Temporary Help	6,681	1.7
Photography	9,141	2.3
Settlement Charges	2,778	.7
Microfilm	680	.2
Miscellaneous	7,129	1.8
<b>TOTAL</b>	<b>561,215</b>	<b>143.4</b>

Members American Institute of Architects

Partners Norman C. Zimmer FAIA Brooks R. W. Gunsul AIA Robert J. Frasca FAIA Gary H. Larson AIA

Associate Partners Gregory S. Baldwin AIA Raymond A. Boucher AIA Jack Cornwall Arthur DeRungs Brainard Joy Garnett AIA

Daniel J. Huberty AIA Robert M. Mickelson AIA Wallace W. Roeder AIA John A. Moll

Associates Don Hart, P.E. Lee F. Kilbourn CSI Larry S. Bruton AIA

BREAKDOWN OF ESTIMATED COSTS

A. Direct Salary Costs

<u>Job Title</u>	<u>Hours</u>	<u>Rates (1981)</u>	<u>Amounts</u>	
Partner	14	\$ 31.25	\$ 447	
Project Manager	154	19.25	2,954	
Designer	70	18.60	1,305	
Jr. Designer	70	10.75	746	
Job Captain	585	11.00	6,440	
Draftsman	363	9.10	3,306	
Estimator	47	14.45	672	
Spec. Writer	48	17.00	821	
Tech. Typist	36	7.35	263	
Materials Selection	34	11.60	390	
Structural Engineer	64	15.50	1,000	
Clerical	24	7.36	179	

TOTAL DIRECT LABOR \$ 18,524 \$18,524

B. General Overhead 140% \$ 25,934 \$25,934

C. Consultants

Mechanical	\$ 4,743	
Electrical	8,677	
Landscape	6,800	
Vertical Transportation	1,074	

\$ 21,294 \$21,294

D. Other Direct Costs

Blue Printing	\$ 2,147
Presentation Materials	90
Long Distance Telephone	89
Xerox	358
Travel Expense	358

TOTAL OTHER DIRECT COSTS \$ 3,042 \$ 3,042

Total Costs to ZGF \$68,795

New Fee (10% of ZGF DL & OH) \$ 4,446

Administrative Expense on C and D @ 3% 730

Total \$73,970

TABLE I  
EXHIBIT "B"

ANALYSES FEE FOR CIVIL ENGINEERING SERVICES

June 8, 1981

Direct Salary Cost		\$ 19,028
Overhead Cost (including payroll additives)	<u>80 %</u>	<u>\$ 15,222</u>
	Subtotal	<u>\$ 34,250</u>
Fixed Fee		<u>\$ 3,425</u>
<u>Direct Nonsalary Costs:</u>		
a. Travel and Expenses	\$ 805	
b. Office Rent	\$ -0-	
c. Equipment Rental	\$ 179	
d. Reproduction Expenses	\$ 716	
e. Computer Expense	\$ 179	
f. Communication	\$ 89	
g. Outside Consultants (Firm Name & Service)	\$ _____	
h. Field Material Testing and Inspection	\$ _____	
i. "Off-Site" Inspection	\$ _____	
j. Other (Specify)	\$ _____	
k. Relocation Expense	\$ _____	Subtotal \$ 1,968
General and Administrative Expense -% of A-K		<u>\$ 197</u>
Total Estimate		<u>\$ 39,840</u>
Not to Exceed		<u>\$ _____</u>

## Associated Transportation Engineering &amp; Planning, Inc.

BREAKDOWN OF OVERHEAD COSTApril, 1981

FICA. . . . .	<u>6.9 %</u>
Unemployment. . . . .	<u>1.6 %</u>
Medical Aid and Industrial Insurance. . . . .	<u>-0- %</u>
Company Insurance and Medical (incl. Retirement & Bonus). . . . .	<u>3.9 %</u>
Vacation, Holiday and Sick Leave. . . . .	<u>13.9 %</u>
State B and O Tax . . . . .	<u>-0- %</u>
Insurance . . . . .	<u>5.6 %</u>
Administration and Time Unassignable. . . . .	<u>17.4 %</u>
Printing, Stationery and Supplies . . . . .	<u>3.4 %</u>
Professional Services . . . . .	<u>7.9 %</u>
Travel Not Assignable . . . . .	<u>.4 %</u>
Telephone and Telegraph Not Assignable. . . . .	<u>.8 %</u>
Fees, Dues, Professional Meetings . . . . .	<u>2.5 %</u>
Utilities and Maintenance . . . . .	<u>.5 %</u>
Rent. . . . .	<u>7.0 %</u>
Rental of Equipment . . . . .	<u>8.5 %</u>
Office Miscellaneous, Postage . . . . .	<u>.1 %</u>
Regional Expense. . . . .	<u>-0- %</u>
Corporate Expense . . . . .	<u>-0- %</u>
 TOTAL	 <u>80 %</u>



## ASSOCIATED TRANSPORTATION ENGINEERING &amp; PLANNING, INC.

BREAKDOWN OF DIRECT SALARY AND DIRECT NONSALARY COSTJune 8, 1981Direct Salary Cost

Personnel	Man Hours	Rates of Pay	Estimated Cost
Project Manager	35	27.78	\$ 950
Project Engineer	198	23.34	4,611
Signal Designer	577	23.34	13,457
		TOTAL	\$ <u>19,028</u>
			\$ <u><u>19,028</u></u>

Direct Nonsalary CostTravel and Expenses

Per Diem - _____ days at \$ _____	\$ _____
Meals	\$ _____
Lodging	\$ _____
Air Travel - ___ trips at \$ _____	\$ _____
_____ cars at \$ _____ per month at _____ months	\$ _____
<u>3,660</u> miles at <u>\$.22</u>	\$ <u>850</u>

Job Office and Equipment

Equipment Rental <u>\$17.00</u> per month at <u>10.5</u> months	\$ <u>179</u>
Reproduction Expenses and Supplies	\$ <u>895</u>
Communications	\$ <u>89</u>

WILSEY &amp; HAM

## TABLE I

EXHIBIT "B"June 8, 1981

## ANALYSIS FEE FOR CIVIL ENGINEERING SERVICES

Direct Salary Cost		\$ 30,896
Overhead Cost (including payroll additives) <u>146.8%</u>		\$ 45,488
	Subtotal	<u>\$ 76,474</u>
Fixed Fee		<u>\$ 7,647</u>
<u>Direct Nonsalary Costs:</u>		
a. Travel and Expenses	\$ <u>1,032</u>	
b. Office Rent	\$ _____	
c. Equipment Rental	\$ <u>2,457</u>	
d. Reproduction Expenses	\$ <u>3,221</u>	
e. Computer Expense	\$ <u>429</u>	
f. Communication	\$ <u>134</u>	
g. Outside Consultants (Firm Name & Service)	\$ <u>13,600</u>	
Kelly/Strazer - Geotechnical W. R. Gamble - Estimate/Const. Review		
h. Field Material Testing and Inspection	\$ _____	
i. "Off-Site" Inspection	\$ _____	
j. Other (specify) Baseline Monuments	\$ <u>948</u>	
k. Relocation Expense	\$ _____	Subtotal \$ <u>21,822</u>
General and Administrative Expense -% of A-K		\$ 1,092
	Total Estimate	<u>\$ 107,035</u>
	Not to Exceed	\$ _____

BREAKDOWN OF OVERHEAD COST \*12 mos. ending 12/31 19 80

FICA. . . . .	9.4 %
Unemployment. . . . .	3.0 %
Medical Aid and Industrial Insurance. . . . .	4.2 %
Company Insurance and Medical (incl. Retirement & Bonus). . . . .	18.2 %
Vacation, Holiday, and Sick Leave. . . . .	14.9 %
State B and O Tax . . . . .	3.9 %
Insurance . . . . .	7.5 %
Administration and Time Unassignable. . . . .	44.1 %
Printing, Stationery and Supplies . . . . .	3.7 %
Professional Services . . . . .	13.6 %
Travel Not Assignable . . . . .	7.0 %
Telephone and Telegraph Not Assignable. . . . .	3.6 %
Fees, Dues, Professional Meetings . . . . .	0.7 %
Utilities and Maintenance . . . . .	8.2 %
Rent. . . . .	3.6 %
Rental of Equipment . . . . .	2.1 %
Office Miscellaneous, Postage . . . . .	2.0 %
Regional Expense. . . . .	--- %
Corporate Expense . . . . .	(2.9) % **
<b>TOTAL</b>	<b>146.8 %</b>

\* Bad debt, Interest, Exec. Life Insurance, & Contributions not included

\*\* Interest Income

TABLE I  
EXHIBIT B  
Page 2 of 3

Wilsey & Ham, Inc.

BREAKDOWN OF DIRECT SALARY AND DIRECT NONSALARY COSTJune 8, 1981Direct Salary Cost

Personnel	Man Hours	Rates of Pay	Estimated Cost
Project Manager	205	19.50	\$ 4,006
Survey Manager	12	17.60	214
Project Engineer	507	14.80	7,508
Design Engineer	316	13.50	4,271
Survey Researcher	23	12.25	281
Craftsman II	261	12.85	3,360
Craftsman I	273	10.40	2,844
Clerical	135	8.30	1,117
Man Survey Crew II	92*	26.85	2,460
Man Survey Crew I	9*	24.33	209
4 Man Survey Crew	85*	33.62	2,888
Man Survey Crew (Overtime Basis)	27*	67.24	1,829

\*Crew Hours

TOTAL

\$ 30,986

\$

Direct Nonsalary CostTravel and Expenses

Per Diem - _____ days at \$ _____	\$ _____
Meals	\$ _____
Lodging	\$ _____
Air Travel - ___ trips at \$ _____	\$ _____
survey vehicle at \$32.00 per day at 27 days	\$ 853
662 miles at \$0.27	\$ 179

Job Office and Equipment

Equipment Rental \$96.00 per day at 26 days	\$ 2,457
Reproduction Expenses	\$ 3,221
Communications	\$ 134

TABLE I  
EXHIBIT "B"

ANALYSES FEE FOR CIVIL ENGINEERING SERVICES

June 8, 1981

Direct Salary Cost		\$ 32,632
Overhead Cost (including payroll additives)	<u>120.00 %</u>	\$ <u>39,159</u>
	Subtotal	\$ <u><u>71,791</u></u>
Fixed Fee		\$ <u><u>7,179</u></u>
<u>Direct Nonsalary Costs:</u>		
a. Travel and Expenses	\$ <u>1,148</u>	
b. Office Rent	\$ <u>---</u>	
c. Equipment Rental	\$ <u>769</u>	
d. Reproduction Expenses	\$ <u>1,217</u>	
e. Computer Expense	\$ <u>224</u>	
f. Communication	\$ <u>215</u>	
g. Outside Consultants (Firm Name & Service) Rittenhouse - Zeman - Goetechnical	\$ <u>10,602</u>	
h. Field Material Testing and Inspection	\$ <u>---</u>	
i. "Off-Site" Inspection	\$ <u>---</u>	
j. Other (Specify)	\$ <u>---</u>	
k. Relocation Expense	\$ <u>---</u>	Subtotal \$ <u><u>14,175</u></u>
General and Administrative Expense 5% of G		\$ <u>531</u>
Total Estimate		\$ <u>93,676</u>
Not to Exceed		\$ <u>          </u>

BREAKDOWN OF OVERHEAD COSTDec. 31, 1980

FICA. . . . .	<u>13.0</u>	%
Unemployment. . . . .	<u>3.0</u>	%
Medical Aid and Industrial Insurance. . . . .	<u>5.4</u>	%
Company Insurance and Medical (incl. Retirement & Bonus). . . . .	<u>10.5</u>	%
Vacation, Holiday and Sick Leave. . . . .	<u>2.7</u>	%
State B and D Tax . . . . .	<u>0.5</u>	%
Insurance . . . . .	<u>5.2</u>	%
Administration and Time Unassignable. . . . .	<u>50.5</u>	%
Printing, Stationery and Supplies . . . . .	<u>3.6</u>	%
Professional Services . . . . .	<u>3.7</u>	%
Travel Not Assignable . . . . .	<u>7.5</u>	%
Telephone and Telegraph Not Assignable. . . . .	<u>2.9</u>	%
Fees, Dues, Professional Meetings . . . . .	<u>0.4</u>	%
Utilities and Maintenance . . . . .	<u>1.6</u>	%
Rent. . . . .	<u>6.2</u>	%
Rental of Equipment . . . . .	<u>1.3</u>	%
Office Miscellaneous, Postage . . . . .	<u>2.0</u>	%
Regional Expense. . . . .	<u>-</u>	%
Corporate Expense . . . . .	<u>-</u>	%
 TOTAL	 <u>120.0</u>	 %

TABLE I  
EXHIBIT B  
Page 2 of 3



BREAKDOWN OF DIRECT SALARY AND DIRECT NONSALARY COSTJune 8, 1981Direct Salary Cost

Personnel	Man Hours	Rates of Pay	Estimated Cost
See Exhibit B1			\$ 28,097
See Exhibit B2			\$ 4,535
		TOTAL	\$ 32,632
			<u>\$ 32,632</u>

Direct Nonsalary CostTravel and Expenses

Per Diem - _____ days at \$ _____	\$ _____
Meals	\$ _____
Lodging	\$ _____
Air Travel - _____ trips at \$ _____	\$ _____
<u>4,852</u> miles at <u>\$0.225</u>	\$ _____
_____ miles at \$ _____	\$ 1,092
Materials and Supplies	\$ 56

Job Office and Equipment

Equipment Rental <u>\$2,000</u> per month at <u>0.4</u> months (Survey)	\$ 770
Reproduction Expenses :	\$ 1,217
Communications	\$ 215
Computer	\$ 224
Outside Consultant	\$ 10,602

EXHIBIT "B1"  
DIRECT SALARY COSTJune 8, 1981

<u>DESIGN Personnel</u>	<u>Manhours</u>	<u>Rate</u>	<u>Estimated Cost</u>
Engineer VII	143	\$17.00	\$ 2,434
Engineer VI	109	14.50	1,578
Engineer V	136	13.50	1,836
Engineer IV	687	11.50	7,902
Technician V	212	13.00	2,754
Technician IV	3	10.00	29
Technician III	444	8.25	3,661
Technician II	125	6.00	747
Clerical	93	6.25	582
Survey Technician V	202	13.00	2,624
Survey Technician IV	192	10.00	1,918
Survey Technician III	246	8.25	2,031
TOTALS	2,591		\$28,097



EXHIBIT "B2"  
SPECIAL SERVICES

CONSTRUCTION SUPPORT

TASK IX A-4                    Site Inspection for Roadway & Drainage Construction --  
Burnside Segment with Inspection Report Review

<u>Personnel</u>	<u>Manhours</u>	<u>Rate of Pay</u>	<u>Estimated Cost</u>
Technician IV	344	\$11.50	\$ 3,951
Engineer VII	34	17.00	<u>584</u>
		Total Direct Salary	\$ 4,535
		Indirect Salary (120%)	\$ 5,442
		Fixed Fee (10%)	\$ 998
Non-Salary Costs (Travel & Expense)			
Mileage 1,790 miles @ 0.225		\$403	
Materials and Supplies		<u>\$ 57</u>	
		Total Non-Salary Costs	\$ 459
		Sub Task Total	\$11,435

BREAKDOWN OF DIRECT SALARY AND DIRECT NONSALARY COST

May 21, 1981

Direct Salary Cost

Personnel	Man Hours	Rates of Pay	Estimated Cost
	See Attached		\$ 224,380
		TOTAL	<u>\$ 224,380</u>
			<u><u>\$ 224,380</u></u>

Direct Nonsalary Cost

Travel and Expenses

Per Diem - ___ days at \$ _____	\$ _____
Local Transportation (\$40/RT)	\$ 280
Lodging & Subsistence (\$80/Day)	\$ 2,800
Air Travel - 7 trips at \$300	\$ 2,100
Cars: 7 RT x 5 days/RT x \$60/Day	2,100
___ cars at \$ ___ per month at ___ months	\$ _____
___ miles at \$ _____	\$ _____

Job Office and Equipment

Equipment Rental \$ _____ per month at ___ months	\$ 22,840
Reproduction Expenses & Supplies	\$ 15,070
Communications	\$ 10,940