URB 10-4-1

Sept. 3, 1980

INTEROFFICE MEMORANDUM

TO: Carl Short
Bureau of Street & Structural Engineering
Right of Way Management Division

FROM: M. J. Martini
Bureau of Traffic Engineering

SUBJECT: Vacation of Streets in the South Downtown Waterfront Project.

This bureau is reviewing the South Downtown Waterfront Project as it proceeds through preliminary engineering.

We have no objection to the vacation of the streets not required for the project. However, these street areas should not be vacated until S.W. Front Avenue is fully improved and able to provide all traffic movements.

If you have any questions please contact Mike Bauer at 248-4431.

Sincerely,

M. J. Martinin
Sr. Traffic Engineer

MJM:mc

Bauer

DEPARTMENT OF PUBLIC WORKS

Bureau of Street & Structural Engineering 130/542/Short
Right of Way Management Division

Date: August 22, 1980

Subject: [X] Street Vacation [ ] Street Dedication

Name of Street and Limits S.W. Jefferson St., S.W. Columbia St., S.W. Clay St., S.W. Mill St., S.W. Montgomery St. and S.W. Water St. (S.W. Harbor Way) as shown on the attached map in yellow.

Addressed to:

Planning Commission	[ ]	Sanitary Engineering	[ ]
Traffic Bureau	[✓]	Streets & Structures	[ ]
Water Bureau	[ ]	Public Services	[ ]
Fire Marshal	[ ]	Improvement Coordination	[ ]
Street Lighting	[ ]		

Requested or initiated by Portland Development Commission to consolidate property for the South Downtown Waterfront Project.

We bring the above to your attention to give you an opportunity to determine if this proposal might have some adverse impact on your department or bureau.

[ ] No Objection

[X] No objection subject to conditions listed below

[ ] Disapproval recommended for reasons listed below

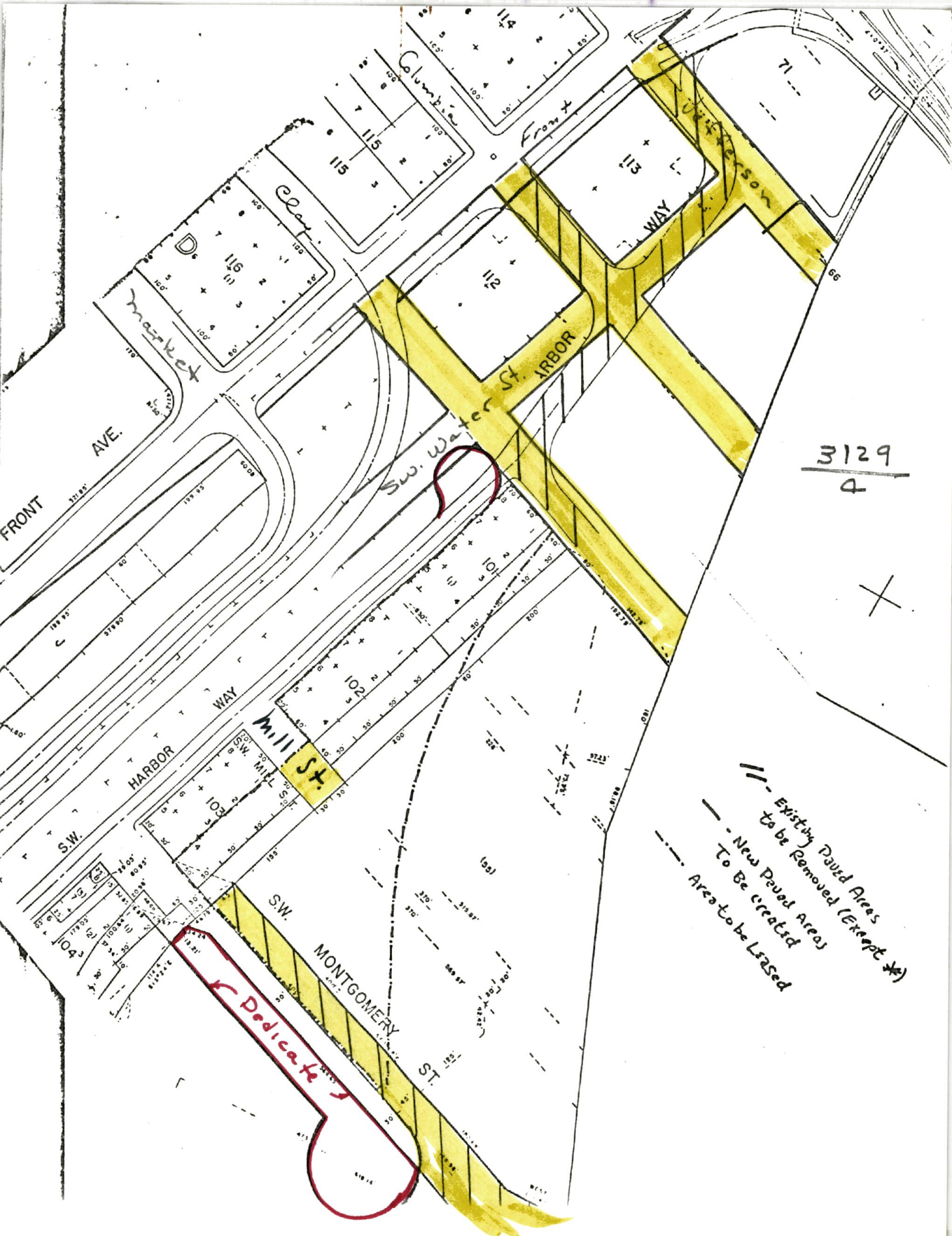
This bureau is reviewing the South Downtown Waterfront Project as it proceeds through preliminary engineering. We have no objections to the street vacations as shown. PROVIDED THAT THE VACATION TAKE PLACE AFTER S.W. FRONT AVE. HAS BEEN IMPROVED.

Reviewed by W W Bauer

Note: Vacation reports to include costs of making investigations, including employee salaries and other related costs.

VAC. 98

RECEIVED
AUG 26 1980
BUREAU OF
TRAFFIC ENGINEERING


Columbia
Front
Jackson
WAY
Clay
Market
AVE.
FRONT
Sw. Water St.
ARBOR
3129
Mill St.
S.W.
HARBOR
WAY
S.W.
MONTGOMERY
ST.
Dedicate
- Existing Paved Areas to be Removed (Except *)
- New Paved Areas To Be Created
- Area to be Leased

THE CITY OF
PORTLAND
OREGON

DEPARTMENT OF
DEVELOPMENT AND
CIVIC PROMOTION

PORTLAND
DEVELOPMENT
COMMISSION

Allison Logan Belcher
Gary W. Masner
Randolph L. Miller
Walter C. Mintkeski
Louis Scherzer

Robert J. Holmes
Executive Director

1500 S.W. First Avenue
Portland, Oregon 97201
(503) 248-4800

July 29, 1980

TO: Richard Johnson
Bureau of Street & Structural Engineering

FROM: Lawrence L. Dully
Director of Development

SUBJECT: South Downtown Waterfront Project
Street Vacations & Street Dedications

The South Downtown Waterfront Project is the City's major project to create public improvements and encourage private development in the area bordered by the Hawthorne Bridge, Marquam Bridge, Southwest Front Avenue and the Willamette River. The project's preliminary plans have been reviewed by the bureaus of the Department of Public Works. Each bureau and David Vargas, acting as general coordinator for Public Works, have given approvals to the basic concepts of the project. The Development Commission is now proceeding with more detailed design.

To accomplish this major project, certain streets will need to be removed and other streets will need to be created. This memorandum requests that your staff provide technical assistance to establish the legal status of the streets to be removed and recommend the best process to remove those streets and create others.

The Development Commission staff and Peter Tryon have contacted Carl Short to informally discuss these issues of removing old and creating new streets. Carl has pointed out that the existing streets within the project boundaries do not necessarily lie within existing rights-of-way. Therefore, the process to remove existing streets or create new streets may not follow the normal processes.

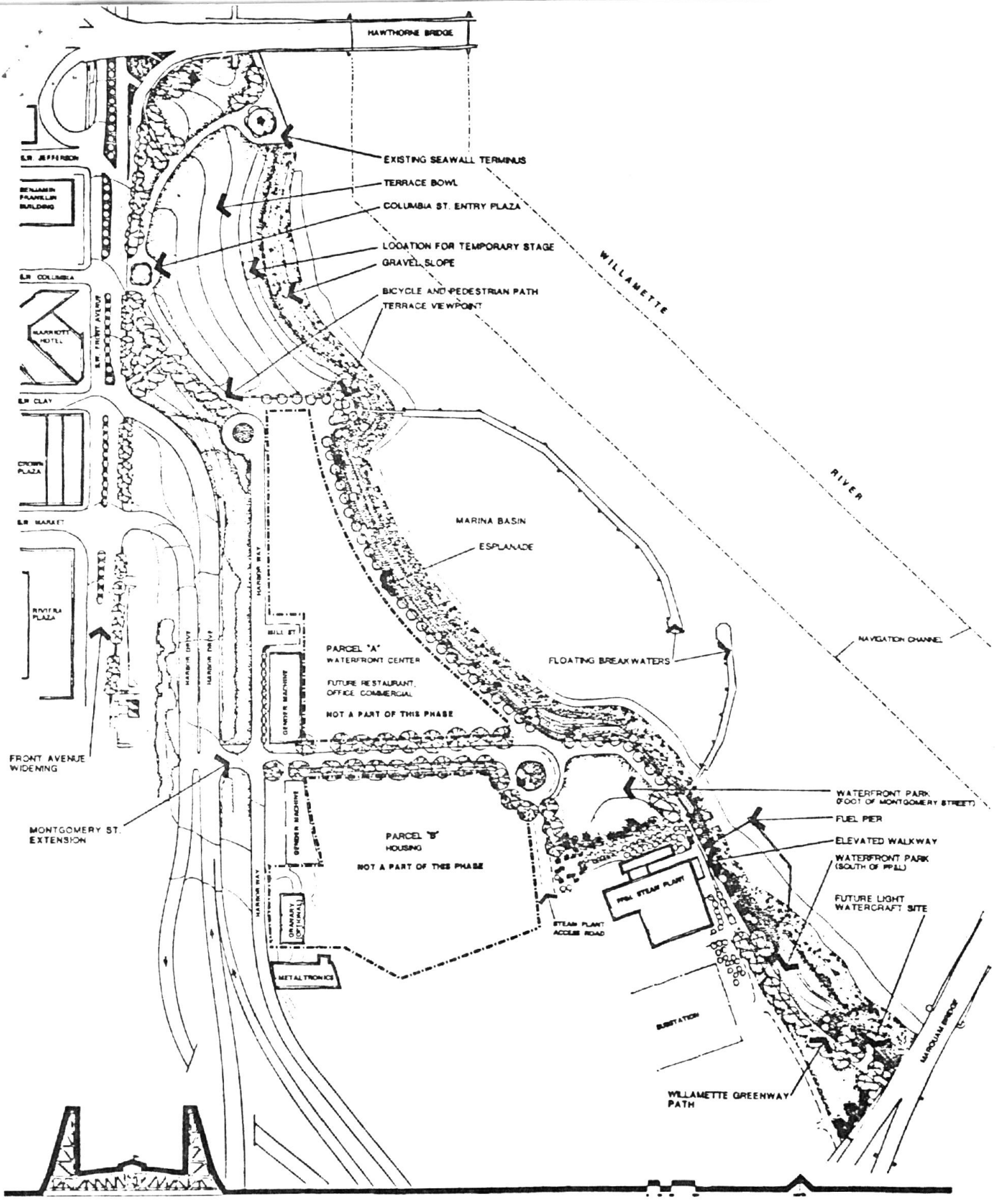
The attached map shows the location of "existing paved areas to be removed" and "new paved areas to be created". We have only attempted to show the "existing paved areas" because of the uncertainty of dedicated rights-of-way. Also we have only shown "new paved areas" because of uncertainty where the Parks Bureau and Maintenance Bureau may want to set the edge of new rights-of-way adjacent to the new parks.

We would like your staff to research the issue of existing rights-of-way within the project boundaries and provide to us a map and narrative explaining the process the Development Commission will need to follow to remove these streets. Also, we would appreciate a recommendation from your staff on the best process to create the new streets.

The Development Commission would like to have any street vacation procedure completed by December, 1980. Therefore, we would appreciate an early response from your office. The Development Commission staff is always available to explain the project and answer questions. Please call me at ext. 4911 or Sandra Peterkort at ext. 4926.

LLD:eg

cc: David Vargas



South Downtown Waterfront
Portland, Oregon

City of Portland Development Commission

CH2M HILL

PUBLIC IMPROVEMENTS: PHASE ONE
MAY 1980

OTHER PUBLIC IMPS

URB 10-19.4

June 16, 1980

Larry Dully
Portland Development Commission
1500 S. W. First Avenue
Portland, Oregon 97201

Re: South Downtown Waterfront Project

This Bureau has reviewed the preliminary plans for the above project. The following are this Bureau's comments:

1) We agree with the recommendation that the pedestrian crossing proposed at Jefferson Street be eliminated.

2) We approve of the lane widths proposed for Front Ave. and Montgomery Street. Front Avenue is a State Highway and any lane widths must meet their approval.

3) We recommend that the striping shown for Front Avenue northbound approaching Market Street be modified. (See attached sketch).

4) We understand the preliminary signal design for this project will be completed soon. Of particular concern is the type of equipment used so these new signals can be tied into our existing signal system. The intersection of Montgomery, Harbor Drive and Harbor Way will have to be handled very carefully to avoid a serious vehicle conflict point during the life of Phase I.

M. J. Martini
Sr. Traffic Engineer

MWB:jjp

Mailed 6-18-80 p.m. to #153

File

THE CITY OF PORTLAND OREGON

DEPARTMENT OF DEVELOPMENT AND CIVIC PROMOTION

PORTLAND DEVELOPMENT COMMISSION

Allison Logan Belcher
Gary W. Masner
Randolph L. Miller
Walter C. Mintkeski
Louis Scherzer

Robert J. Holmes
Executive Director

1500 S.W. First Avenue
Portland, Oregon 97201
(503) 248-4800

June 10, 1980

MEMORANDUM

To: Don Bergstrom
Traffic Engineer

From: Larry Dully, Portland Development Commission

Subject: Preliminary plans, memoranda and agreements for the South Downtown Waterfront Project and Notice of June 16th Meeting

Enclosed are plans and memoranda for your review and comment. Submitted with this package are our revised preliminary engineering drawings and design data.

Prior to entering into our final engineering and contract phase, we request your attendance at a meeting:

* Monday, June 16, 1980 9:00 - 11:30 AM
Portland Development Commission offices
1500 S.W. First Ave. - 7th Floor

We would like to receive your verbal comments at this meeting. Also, please submit your written comments to us not later than Friday, June 20, 1980.

The specific material enclosed is as follows:

A letter from Hideo Sasaki, PDC Design Advisor, dated May 28, 1980 - Subject: South Downtown Waterfront Review

Plans:

Redevelopment Master Plan
Public Improvements Phase One

Street Plans:
- S.W. Front Avenue Improvements
- Montgomery Street
- Typical Sections
- Landscape Plan

Figure 1 - Test Pit and Boring Locations
Existing Utility Plan Sheets 1 thru 3
Proposed Utility Alignments Sheets 1 thru 3

Memoranda:

1. From Mike DiLembo (CH2M Hill) dated June 2, 1980
Subject: Design Notes for Street Improvements South Downtown Waterfront Redevelopment

   From Jim Schneider (CH2M Hill) dated Jan. 3, 1980
Re: Pavement Design Recommendations Montgomery Street Extension, South Waterfront Redevelopment Project

Traffic Flow Charts
1995 Intersection Volume/Capacity (V/C) Ratio:
Alternative Intersection Geometrics Revised 10/18/79
Assignment of 1995 Traffic Figure 1 thru 4 dated 10/18/79

2. From James Schneider (CH2M Hill) May 13, 1980
Subject: Onshore Geotechnical Investigation - South Downtown Waterfront Redevelopment Project
Fig. 2 - Test Pit and Boring Legend
Fig. 3 - Test Pit and Boring Logs

3. From Bruce Rawls (CH2M Hill) June 2, 1980
Subject: Utilities - South Downtown Waterfront Redevelopment

Engineering construction and maintenance agreements to be approved by the City Council, ODOT and Portland Development Commission.

Please direct any questions which arise before the meeting to Gale Taylor, Chief of Engineering (248-4925), or myself.

LLD:LER/ms
Enclosures

June 9, 1980

Misc. Contracts & Agreements
No. 6861

DESIGN, ENGINEERING, CONSTRUCTION AND FINANCE AGREEMENT

COOPERATIVE PROJECT FOR STREET IMPROVEMENTS IN THE SOUTH DOWNTOWN WATERFRONT

THIS AGREEMENT is made and entered into by and between the STATE OF OREGON, acting by and through its Department of Transportation, Highway Division, hereinafter referred to as "State"; the PORTLAND DEVELOPMENT COMMISSION, an agency of the City of Portland, Oregon, hereinafter referred to as "Development Commission"; and the CITY OF PORTLAND, OREGON, hereinafter referred to as "City".

WITNESSETH

RECITALS

1. The Portland Downtown Plan adopted by the City Council in December 1972, the Downtown Waterfront Urban Renewal Plan adopted by the City Council in April, 1974, and the South Downtown Waterfront Redevelopment Program adopted by the City Council in April, 1979, include development of the area bounded by Front Avenue, the Willamette River, the Hawthorne Bridge, and the Marquam Bridge.

2. By the authority granted in ORS 366.755, State and City may enter into agreements for the construction, reconstruction, improvement or repair of any street, highway or road upon such terms and conditions as are mutually agreeable to the contracting parties.

3. By the authority granted in ORS 366.425, as amended by Chapter 365, Oregon Laws, 1979, any County or City may deposit monies, or an irrevocable letter of credit, with the Department of Transportation for performance of work upon any public highway within the State. When any money or a letter of credit is deposited, the State shall proceed with the project. Money so deposited shall be disbursed for the purpose for which it was deposited.

4. By the authority granted in City Ordinance No. 119660, Development Commission and City may enter into agreements for professional and technical services and payment therefore.

5. Under said authority, State, City and Development Commission plan and propose to design and construct street improvements to provide adequate access to the development area, hereinafter referred to as "project". The location of said project and the proposed improvements are approximately as shown on the drawing, Public Improvements: Phase One, attached as Exhibit "A".

6. It is proposed that the project will consist of all work necessary to design and construct street and traffic signal modifications on S.W. Front Avenue between the Hawthorne Bridge and Montgomery Street, extension of Mongomery Street easterly from Harbor Drive and installation of traffic signals on Harbor Drive at Montgomery Street. Preliminary plans, dated , have been reviewed by Development Commission, City and State.

7. State, Development Commission and City will cooperate in the preliminary engineering phase of the project. State will prepare construction documents and perform construction engineering. City will accept ultimate ownership and maintenance of project improvements. A listing of all involved parties and their areas of responsibility is attached as Exhibit "D", Project Participants and Roles.

8. The Development Commission will provide the necessary right-of-way and easements. The Development Commission will pay all costs of the project with no expense to the State or City.

NOW, THEREFORE, the premises being in general as stated in the foregoing RECITALS, it is agreed by and between the parties hereto as follows:

STATE OBLIGATIONS

1. State shall, upon initiation of each phase of the project, assign staff to direct State work and to coordinate State activities with City, Development Commission and other parties involved in that phase of the project.

2. State shall, at Development Commission expense, conduct the necessary field surveys, perform all preliminary engineering, not supplied by City, required to prepare the final plans, specifications and estimates, obtain any license, permit or other document necessary for demolition, construction or other project work items, advertise for bids, award all contracts, and furnish all construction engineering, material testing, technical inspection and resident engineer services for administration of the construction contract.

3. State shall, on behalf of City, arrange for the adjustment of utility installations lying within the existing and proposed rights-of-way for the project. State shall provide coordination for final engineering and construction of the utilities within the project.

4. State shall perform all work in accordance with the project work schedule attached as Exhibit "C". Each month State shall review progress of actual work completed with the project work schedule

and shall report the status to Development Commission. The schedule shall be updated periodically with the concurrence of State, Development Commission and City.

5. State may request Development Commission to arrange conferences with project participants (Exhibit "B") during development, design, and construction to review the work in progress and assure conformance with City and Development Commission requirements and standards.

6. State shall, through Development Commission's Liaison Engineer, consult with City Bureaus as described in Exhibit "D" concerning preparation of plans, design changes during engineering and construction, inspections, and enforcement of approved specifications. If conflicts arise, they shall be given to the Liaison Engineer for resolution with the affected parties.

7. State shall provide in their contract documents and specifications and during construction, for cooperation and coordination of their contractor with others on the site.

8. State shall submit final plans and estimates for Development Commission and City reviews and approvals prior to advertisement for contract bids.

9. State shall submit all construction contract bids to Development Commission for review and approval prior to award of construction contract if lowest responsible bid exceeds State construction estimate by more than ten percent (10%).

10. State shall present all construction change order requests for design changes or payment adjustments to the Liaison Engineer for review, and shall obtain written approval prior to giving contractor authorization to proceed.

11. State shall notify Development Commission in writing when all construction is completed and project is ready for final inspections by Development Commission and City.

12. State has developed and transmitted to Development Commission a cost estimate for their services based on the preliminary plans. However, in any case State shall be paid for all approved costs incurred by them. Each month State shall review the estimated costs and actual costs incurred and shall report the status to the Development Commission.

13. State shall compile accurate cost accounting records, submit monthly cost accounting records or invoices to Development Commission and, when the actual total cost of each phase of the project has been computed, furnish Development Commission with an itemized statement of said costs.

14. State shall not undertake any phase of the project prior to receiving written authorization from Development Commission.

15. State shall adopt a delegation order authorizing State officials to enter into this agreement and same shall become part hereof and attached hereto as Exhibit "E".

DEVELOPMENT COMMISSION OBLIGATIONS

1. Development Commission shall, upon execution of this agreement, assign a Liaison Engineer to assure that development and implementation of the project is in conformance with City and Development Commission requirements and standards. The Liaison Engineer shall act as coordinator between State, Development Commission and the various City bureaus. The Liaison Engineer shall be responsible for resolution of conflicts between the parties concerning design issues, inspections, and enforcement of approved specifications.

2. Development Commission shall forward to State, all preliminary plans, specifications and costs estimates, and all available and pertinent field data including geotechnical investigations for use by State in preparation of the contract documents.

3. Development Commission shall arrange meeting with project participants (Exhibit "B") during development, design and construction to review the work in progress and assure conformance with City and Development Commission requirements and standards. Development Commission shall consult with City bureaus as described in Exhibit "D" concerning preparation of plans, design changes during engineering and construction, inspections, and enforcement of approved specifications. If conflicts arise, they shall be given to Liaison Engineer for resolution with the affected parties.

4. Development Commission shall promptly review and respond, or request the appropriate City bureau to respond, to any State request for additional information, clarificaton of design issues, review of work in progress, or approval, if appropriate, for adjustment of design details.

5. Development Commission shall direct Development Commission and City reviews and approvals of the revised preliminary plans, and the final plans, specifications and cost estimates, and obtain the necessary Development Commission and City bureau approvals in accordance with the project work schedule (Exhibit "C") prior to State advertisement for contract bids. Development Commission shall transmit to State copies of said approved plans, amended if necessary, and other said approvals. Upon Development Commission approval of the final plans, specifications, and cost estimates, Development Commission shall transmit to State written authorization to proceed to advertisement for contract bids.

6. Development Commission shall, if the lowest responsible bid exceeds approved State construction estimate by more than ten percent (10%), review all contract bids and provide State with written authorization to award the contract or to reject the bids.

7. Development Commission shall obtain the necessary right-of-way and easements for construction of the project prior to award of construction contract.

8. Development Commission shall relocate or cause to be relocated all streets, utilities, and such other facilities where such relocation is necessary to conform said streets, utilities and other facilities with the plans and ultimate requirements of this project. Development Commission Liaison Engineer shall work with State and City Utility Coordinators in adjustment and resolution of any street, utility or other conflicts within the development area.

9. Development Commission shall promptly review all construction change order requests for design changes or payment adjustments, and provide written approval to State prior to State giving the contractor authorization to proceed. Change order requests requiring payment adjustments only shall be approved by Development Commission. Change order requests requiring design changes shall be submitted to the appropriate City bureaus for reviews and written approvals prior to Development Commission providing approvals to State to proceed.

10. Development Commission shall, upon completion of all construction, forward to City a written request for City final inspections to confirm that all work for improvements described as City's in the approved final plans and subsequently approved change orders is in conformance with City requirements and standards. Development Commission shall also request City acceptance of such improvements for ownership and maintenance.

11. Development Commission shall provide 100 percent (100%) funding for the project through non-Federal aid redevelopment funds.

12. Development Commission shall pay fees for any license, permit, or other document within Development Commission or City jurisdiction for demolition, construction , or other project work items.

13. Development Commission shall, prior to State proceeding with each phase of the project, forward to State an advance deposit, or irrevocable letter of credit, in the amount of 100 percent (100%) of the estimated total cost of said work. Development Commission shall make payments to State within twenty days of receipt by Development Commission of any State invoice requiring payments for State costs incurred in excess of the advance deposit or letter of credit for that phase of the project. Upon completion of each phase of the project, and receipt from State of an itemized statement, Development Commission shall pay any amount which, when added to said advance deposit and any additional payments for that phase of work will equal 100 percent (100%) of the actual total cost of that

phase of the project. Any portion of said advance deposit which is in excess of the actual total cost of that phase of the project shall be refunded to Development Commission within ninety days of completion of that phase of the project.

14. Development Commission shall make payments to City within twenty days of receipt by Development Commission of any City invoice for payment of actual costs incurred on behalf of the project.

15. Development Commission retains the right to terminate or reduce the scope of the project prior to award of construction contract if estimated costs or actual incurred costs exceed the availiable funds. Development Commission agrees that should it cancel, terminate, or reduce the scope of the project prior to its completion, Development Commission will reimburse State and City bureaus for any Development Commission approved costs that have been incurred by State or City bureaus on behalf of the project.

16. Development Commission shall adopt a resolution authorizing Development Commission officials to enter into this agreement and the same shall become a part hereof and attached hereto as Exhibit "F".

CITY OBLIGATIONS

1. City shall, upon initiation of each phase of the project, have each affected City bureau assign staff responsible for that bureau's active participation and coordination in the project's development and implementation, and for insuring conformance with City requirements and standards.

2. City shall perform necessary preliminary engineering as requested by Development Commission and in accordance with the project work schedule (Exhibit "C").

3. City shall, at the request of Development Commission or State, attend meetings, provide additional information, clarification on design issues, reviews of work in progress, and approvals, if appropriate, for adjustments of design details. City shall direct all requests for project information or adjustments to work in progress to Development Commission's Liaison Engineer.

4. City shall provide sufficient staff resources for timely and thorough reviews of the revised preliminary plans, and the final plans, specifications and cost estimates in accordance with the project work schedule (Exhibit "C"). Upon completion of reviews insuring conformance with City requirements and standards, each affected City bureau shall provide Development Commission with a written letter of approval of said plans.

5. City shall, at the request of Development Commission, promptly review all construction change order requests requiring design changes and provide written approvals to Development Commission, if changes are considered justified. City shall submit to Development Commission requests for design changes where City

considers such changes are necessary for the project to conform to City requirements and standards.

6. City shall, upon written request from the Development Commission, promptly perform all necessary City final inspections, including T.V. inspection of sewer work, to confirm that all work for improvements described as City's in the approved final plans and subsequently approved change orders, is in conformance with City requirements and standards. If at such final inspections all construction provided for and ordered under the contract is found completed and satisfactory to City, then such inspections shall constitute the final inspection. If work is found unsatisfactory, City shall immediately notify Development Commission in writing of the specific problems noted and the specific corrections necessary to insure conformance with City requirements and standards.

7. City shall, upon completion of satisfactory final inspection, provide to Development Commission written acceptance for ownership and maintenance all improvements described as City's in the approved final plans and subsequently approved change orders.

8. City has developed and transmitted to Development Commission a cost estimate for their services based on the preliminary plans. However, in any case City shall be paid for approved costs incurred by them. Each month City shall review the estimated costs and actual costs incurred and shall report the status to Development Commission.

9. City shall compile accurate cost accounting records, submit monthly invoices to Development Commission, and, when the actual total cost of each phase of the project has been computed, furnish Development Commission with an itemized statement of said costs.

10. City shall adopt an ordinance authorizing City officials to enter into this agreement and same shall become a part hereof and attached hereto as Exhibit "G".

GENERAL PROVISIONS

1. State, City and Development Commission mutually agree that this agreement does not negate any existing agreement between State and City concerning maintenance, utility payment costs, or other responsibilities within this highway section, and said agreements shall remain in full force and effect unless and until State and City agree to modifications or deletions as permitted by those agreements.

2. Traffic signal maintenance and electrical energy responsibilities shall be in accordance with the "Policy Statement for Cooperative Traffic Control Projects" approved by the Oregon State Highway Commission and the League of Oregon Cities bearing the date of September 8, 1971.

3. The provisions of this agreement and all rights and obligations of this agreement shall extend to and bind the legal successor or assignee of State, approved successor or assignee of City, and approved successor or assignee of Development Commission.

4. Provisions of Federal and State law applicable to public contracts and agreements of this type are hereby incorporated by reference as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have set their hands and affixed their seals as of the day and year hereinafter written. Development Commission and City officials have acted in this matter pursuant Development Commission to Resolution No._____, (Exhibit "F"), adopted by the Portland Development Commission on the _____ day of _____, 19___, and, City Ordinance No._____, (Exhibit "G"), adopted by the City Council on the ____ day of _____, 19___.

The Oregon Transportation Commission, by a duly adopted delegation order, (Exhibit "E") authorized its Chairman or Vice Chairman to act in its behalf in approving this agreement. Approval for this agreement was given on _____ by _____, which approval is set forth in the Minutes of the Oregon Transportation Commission. The delegation order also authorizes the State Highway Engineer to execute the agreement for and on behalf of the Commission.

APPROVAL RECOMMENDED:

_____
Metropolitan Administrator

STATE OF OREGON, by and through its Department of Transportation, Highway Division

_____
State Highway Engineer

CITY OF PORTLAND,

APPROVED AS TO FORM:

By_____
Mayor

_____
City Attorney

By_____
Commissioner of Public Works

PORTLAND DEVELOPMENT COMMISSION,

APPROVED AS TO FORM:

By_____
Chairman

_____
Development Commission Attorney

By_____
Executive Director

LIST OF EXHIBITS

A. PUBLIC IMPROVEMENTS: PHASE ONE

B. PROJECT PARTICIPANTS AND ROLES

C. PROJECT WORK SCHEDULE

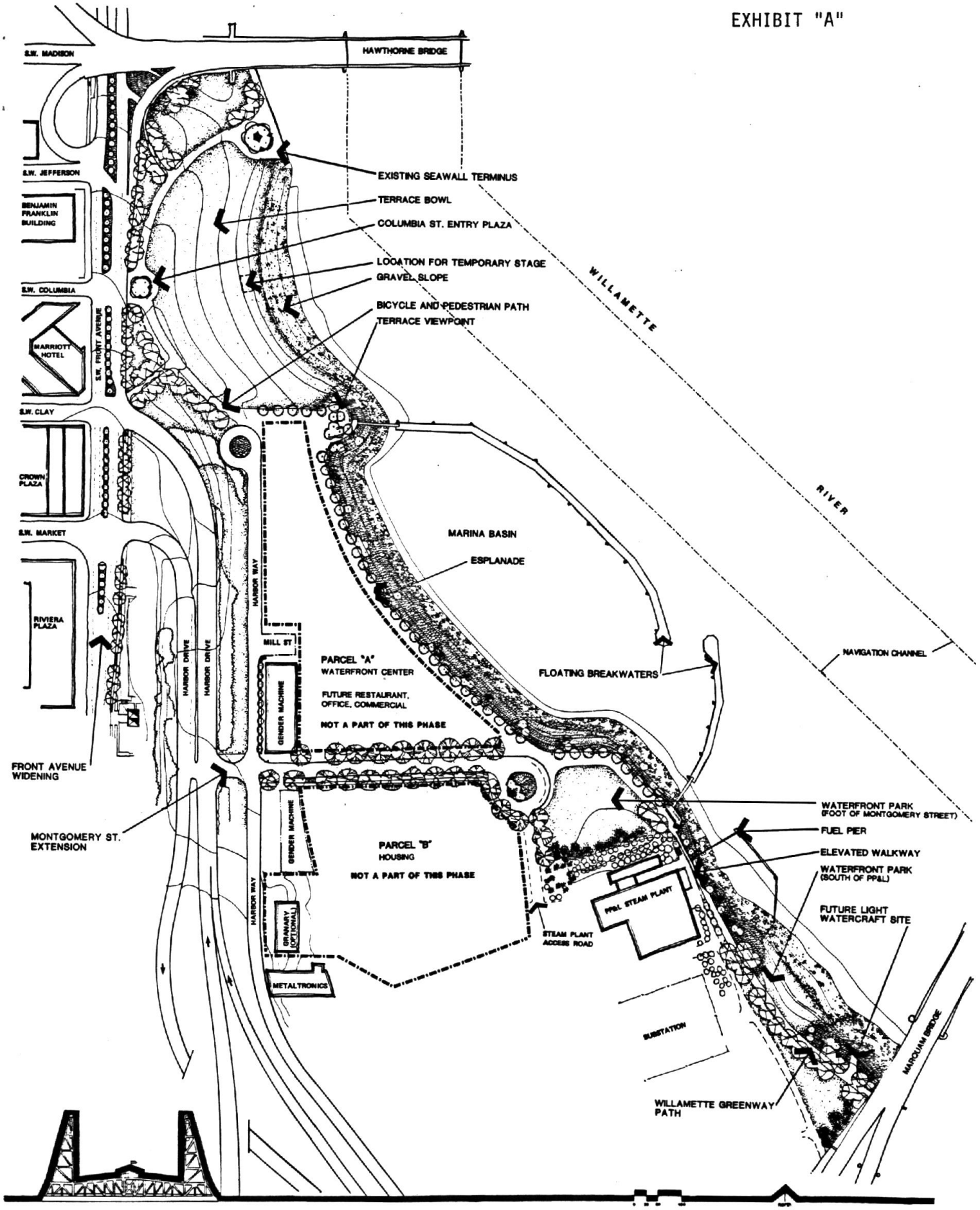
D. PROJECT ADMINISTRATIVE STRUCTURE FOR STREET DESIGN AND CONSTRUCTION

E. STATE DELEGATION ORDER AUTHORIZING PROJECT

F. DEVELOPMENT COMMISSION RESOLUTION AUTHORIZING PROJECT

G. CITY ORDINANCE AUTHORIZING PROJECT

EXHIBIT "A"



South Downtown Waterfront
Portland, Oregon

City of Portland Development Commission

CH2MHILL

The Office of Robert Perron

PUBLIC IMPROVEMENTS: PHASE ONE
MAY 1980

PARTICIPANTS & ROLES Front Avenue - Montgomery Street Portion of SDWF

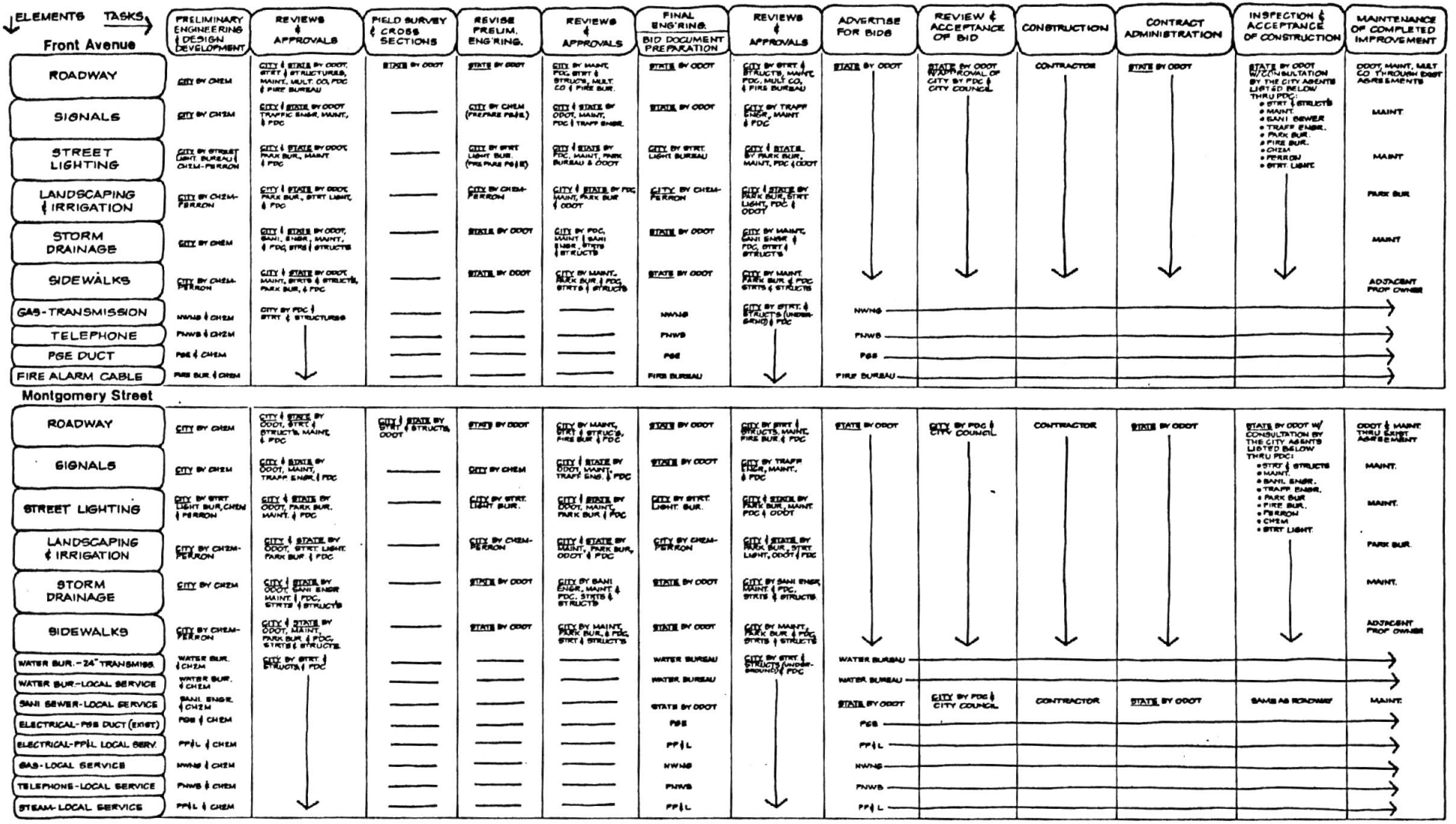


EXHIBIT B

EXHIBIT "C"

PROJECT WORK SCHEDULE

A. State and City shall not begin work on any of the services to be provided hereunder until the Development Commission directs them in writing to proceed. Upon receipt of such notice to proceed, work shall be provided in accordance with the following schedule:

ITEM	DUE	RESPONSIBILITY
1. Field surveys	30 calendar days after transmittal of preliminary plans to State.	State
2. Preliminary engineering	75 calendar days after transmittal of preliminary plans to State and City.	State, City and Development Commission
3. Review and approval of preliminary engineering documents	21 calendar days after preliminary engineering documents are submitted to Development Commission.	Development Commission and City
4. Final engineering documents	112 calendar days after notice to proceed on final engineering is transmitted to State.	State
5. Review and approval of final engineering documents	21 calendar days after final plans, specifications, and cost estimates are submitted to Development Commission.	Development Commission and City
6. Compile bid documents and advertise for bids	30 calendar days after notice to proceed on compilation of bid documents is transmitted to State.	State

7. Review and approval of construction contract award (if necessary)	14 calendar days after bid opening and bid packages submitted to Development Commission.	Development Commission
8. Award of contract	28 calendar days after bid opening.	State
9. Construction engineering, material testing inspection, and resident engineer services for administration of the contract	Duration of construction, 15 months.	State
10. Coordination meetings with Project Technical Advisory Committee	As required during engineering and construction	Development Commission

If delays occur in the prosecution of State's or City's work under this agreement, notice shall immediately be given to the Liaison Engineer so that Development Commission can evaluate the effect upon the project schedule and funding.

Administrative Structure for Street Design & Construction

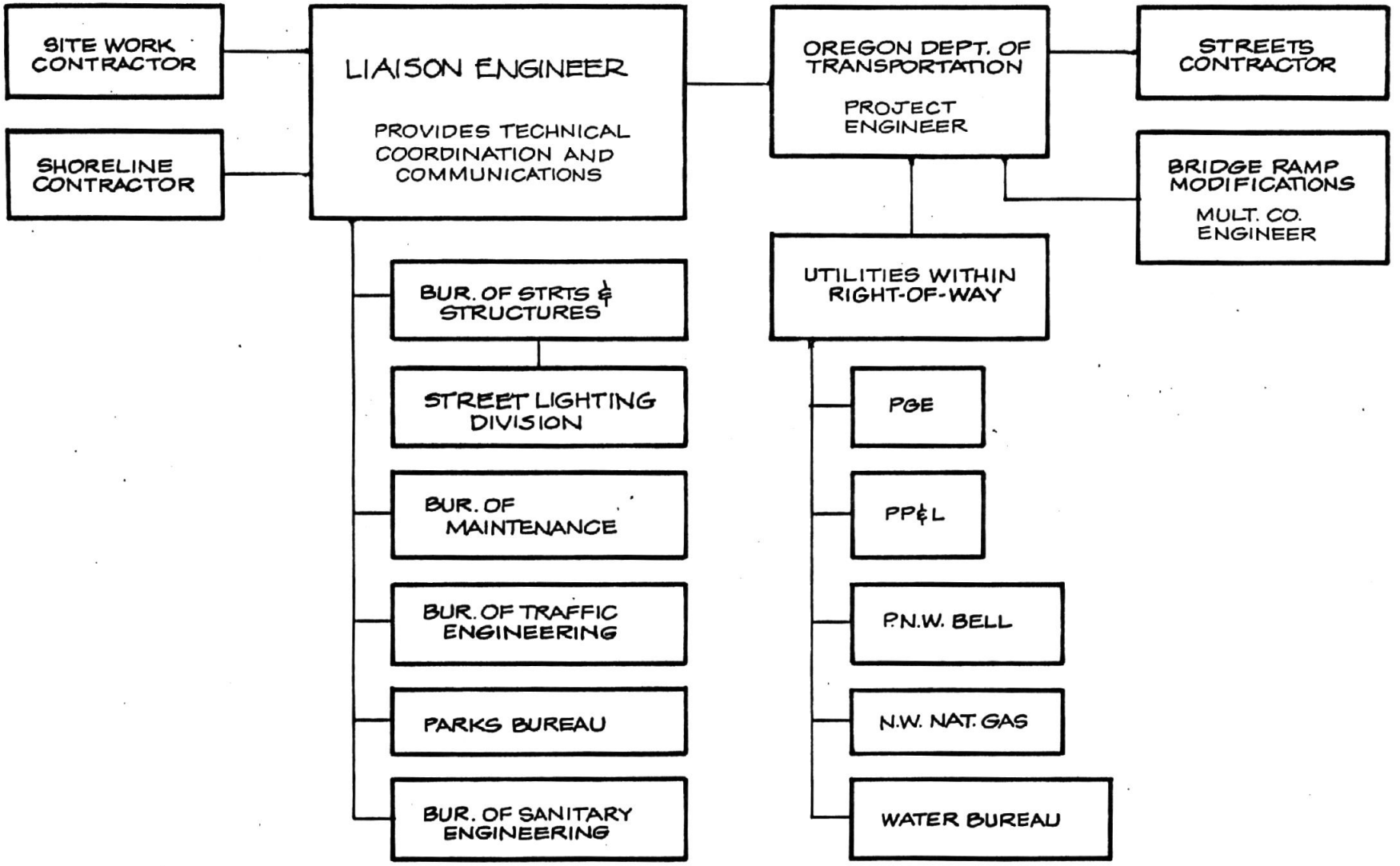


EXHIBIT D

EXHIBIT E

(To be prepared)

STATE DELEGATION ORDER AUTHORIZING PROJECT

EXHIBIT F

(Being prepared - See
Sandra Peterkort for
more information 248-4926)

PORTLAND DEVELOPMENT COMMISSION

RESOLUTION

EXHIBIT G
(To be prepared)

CITY COUNCIL ORDINANCE

SA

Planning Architecture Landscape Architecture
Civil Engineering Environmental Services

May 28, 1980

Portland Development Commission
1500 S.W. First Avenue
Portland, OR 97201

Re: South Downtown Waterfront Project Review

Gentlemen:

In November of 1979, I conducted the review of this project and made recommendations to the Portland Development Commission. Since that time, the design team has evaluated my comments, those of other organizations and other individuals. In addition, the Portland Development Commission has increased its construction budget for this project to accommodate a high quality, but uncomplicated design solution.

In February of this year, I again visited Portland and conducted a thorough review of the plans. The costs required to implement these plans far exceeded the amount of funds available. The design team and I made revisions that would cut the construction costs, but not the quality of design or materials used in the project. The revised drawings being presented for city review and approval have incorporated the required cost savings suggestions and design refinements. Listed below are my comments on the strength and opportunities represented by the revised plans.

Pedestrian and Vehicular Connections

1. The proposed design contains strong pedestrian connections and median pedestrian refuges on Front Avenue.

2. The design also accommodates a potential for future pedestrian bridges over Harbor Drive at Montgomery Street. It is my understanding that this bridge will be constructed when Harbor Drive is realigned and landscaped. Another future waterfront connection to be considered is extending the Willamette Center Bridge over Front Avenue when the Waterfront Park is improved from the Morrison Bridge to the Hawthorne Bridge. This would be a very desirable connection because of its tie to Willamette Center with its covered pedestrian and escalator system.

3. After extensive review and discussion of all alternatives for pedestrian connections at Jefferson Street, we recommend that this crossing be eliminated. It presents a safety hazard to pedestrians.

4. We also recommend that brick crosswalks be eliminated on Front Avenue south of the Hawthorne Bridge because of cost.

Terraced Riverbank Area

1. The proposed solution provides view and access to the river and will be graded so that temporary staging may be provided at the bottom of the bowl for outdoor performances. In addition, an important pedestrian arrival point has been provided in the park at Columbia Street with reasonably sized viewpoints at the north and south ends of the bowl. The width of the esplanade in the bowl area is the same as the Waterfront Park in the Burnside/Morrison area and is well located.

Marina Promenade and Greenway Trail

1. At my suggestion, the Development Commission has retained an architect to conduct design studies for private renewal parcels. These studies have been coordinated with the marina promenade design. Upon completion of the Waterfront Center, this promenade and the adjoining restaurants and shops will provide an exciting waterfront focus.

2. The design team has proposed a six-foot wide elevated walkway structure over the steam plant intake and discharge lines. Significant cost savings can be realized through this width, which prohibits motor vehicles. Most of the pedestrian activity will be concentrated north of Montgomery Street.

When all the basic waterway and design approvals are obtained, I will be available to work with the Development Commission to review final design plans and details and provide further comments to the Development Commission.

Sincerely,

Hideo Sasaki

Hideo Sasaki

mgm/

Sasaki Associates, Inc., 64 Pleasant Street, Watertown, Massachusetts 02172 · (617) 926-3300 Telex 92-2471
353 Alcazar Avenue, Coral Gables, Florida 33134 · (305) 443-2374

CH2M HILL
engineers
planners
economists
scientists

May 13, 1980

P12987.A1

Portland Development Commission
1500 S.W. First Avenue
Portland, Oregon 97201

Attention: Larry Dully

Gentlemen:

Subject: Onshore Geotechnical Investigation
South Downtown Waterfront Redevelopment Project

INTRODUCTION

This report presents the findings of our onshore geotechnical investigation for the proposed South Downtown Waterfront Redevelopment Project. The purpose of this investigation is to determine subsurface conditions and soil parameters to be used for utility design, street design, shoreline and slope protection design, and retaining wall design, as well as to estimate excavation and general site grading requirements. The scope of this investigation included a review of available geologic and geotechnical information, onshore subsurface exploration, engineering analysis, and preparation of this report. Offshore investigations have not been accomplished for this report but are recommended for project completion.

PROJECT DESCRIPTION

The South Downtown Redevelopment Program is a medium-density redevelopment of the land from Front Avenue to the Willamette River between the Hawthorne and Marquam Bridges on the west bank of the river. The major elements of the project include the following public improvements:

- Terrace bowl
- Marina basin and breakwater structure

- Waterfront walkway and bicycle path
- Park and open space landscape improvements
- Widening of Front Avenue
- Extension of Montgomery Street
- Utility Relocation

A brief description of each of the above improvements is given in a report prepared by CH2M HILL in October 1979 for the Portland Development Commission, entitled "South Downtown Waterfront Redevelopment Program, Phase I Public Improvements, Review of Design Options."

SITE DESCRIPTION

The project site consists of approximately 40 acres situated on the west bank of the Willamette River near downtown Portland, as shown on Figure 1. The site is bounded to the west by Harbor Way, to the south by the Marquam Bridge, to the east by the Willamette River, and to the north by the Hawthorne Bridge. Most of the site is relatively flat, with average elevations varying from 33 to 35 (City of Portland datum). The slopes at the east side of the site along the Willamette River vary from 30 to 50 percent. Approximately 420 lineal feet of existing timber retaining wall is also located adjacent to the river. This wall has failed in one location approximately 300 feet from its northern end.

GEOLOGY

The site is located on the western flank of the Willamette Valley. Here, the Willamette Valley consists of a down-warped (or faulted) synclinal basin. The upper geologic unit at the site is Quaternary alluvium of the Willamette River. This unit typically consists of uncemented sand and gravel, with localized deposits of silt. The silt deposits occur primarily along the Willamette River flood plain and outside of the flood plain, where shallow lakes or small creeks occurred during alluviation.

The Troutdale formation, a sandstone and conglomerate, underlies the alluvium. This formation has a lower member of sand, silt, and clay overlain by an upper member of coarse sand and gravel cemented to varying degrees. Underlying the Troutdale formation are basalts of the Columbia River group.

A seismicity study is not within the scope of this investigation. However, it is estimated (Couch and Lowell, 1971) that the Portland area could be expected to experience about one earthquake of Richter Magnitude 5.2± each decade.

FIELD INVESTIGATION

Subsurface conditions were investigated by digging backhoe test pits and by test borings. Backhoe test pits were dug to depths of 8 to 19.5 feet with Case 58C and Caterpillar 225 backhoes. Test borings were advanced using CME 55 and CME 75 drill rigs. Nine backhoe test pits were dug from October 11, 1979, to October 12, 1979, and five test borings were completed from December 17, 1979, to December 19, 1979. A bentonite slurry was used during drilling to prevent sloughing and caving of the holes. Because of the use of this slurry, it was not possible to determine the groundwater elevation in the borings.

Representative samples were taken from the test pits and borings at depths of 1.5 to 100 feet. Disturbed samples from borings were taken with a 2-inch outside diameter standard split spoon, driven as prescribed by ASTM D-1586 for the Standard Penetration Test. Results of this test are expressed as the blow count, "N", or the number of blows required to drive the split spoon sampler 1 foot with a 140-pound hammer falling 30 inches. One exception to this is in boring B-3, where samples below a depth of 25 feet were driven with a 300-pound hammer falling 30 inches. Three-inch outside diameter thin-walled tubes were used to obtain undisturbed samples, in accordance with ASTM D-1587.

The location of the test pits and borings are shown on Figure 1. Edited field logs of all test pits and test borings are presented on Figures 2 and 3. In addition to a description of the materials encountered, "N" values are recorded for each disturbed sample.

GENERALIZED SOIL PROFILE

Based on our review of the test pit and soil boring logs, the soils at the site may be generally characterized as follows:

- Miscellaneous mixed fill material and wood chips that vary in composition and thickness from the ground surface to depths as great as 30 feet. Fill types include mixtures of rubble, gravel, silt, sand, and clay. The wood chips encountered were mixed with silt, bark, and sawdust at various levels. The standard penetration resistance or "N" value ranges from 2 to 43, with an average value equal to 12.

- Loose silty sand and fine sands underlie the miscellaneous fill material and extend to depths of about 80 to 100 feet. The "N" value in this material ranges from 2 to 20 with an average equal to 8.

- Very dense gravel underlies the loose silty sand and fine sand deposits. This gravel is probably part of the Troutdale formation. It was encountered in borings 2, 3, and 4, at depths of 80 to 100 feet. An "N" value of 50 blows for 1.0 inches was obtained in boring B-2.

DISCUSSION

For the purposes of this report, we have developed soil shear strength parameters for design of the slopes to be used along the proposed waterfront. Pavement design recommendations were previously presented in a design memorandum, dated January 3, 1980. A copy of this memorandum is included in the Appendix to this report. Other project elements are not clearly defined at present. Therefore, additional design recommendations will be required as the project develops and specific features are selected for design. Recommendations will then be presented in design of utilities, retaining walls, streets, shorelines, and slope protection, as well as estimates of excavation and general site grading requirements related to the project.

Soil Parameters

Because of the random distribution and highly variable nature of the material in the upper two zones, laboratory tests will not yield representative results and, hence, would be inappropriate or misleading. This is particularly true of tests to determine the California Bearing Ratio of the surface soils for pavement design, due to the great variability of surface soil type, organic content, and consistency. Field shear strength of the soils in and under the waterfront slopes is also highly variable because of the complex soil conditions. Soil parameters for design of these project elements have, therefore, been evaluated based on the field tests conducted during the drilling operations, and on our experience with similar soils. Design shear strength parameters are given in Table 1. The design California Bearing Ratio and pavement recommendations were previously given in the design memorandum, dated January 3, 1980.

Slope Stability

A slope stability analysis was performed in order to design stable slopes along the waterfront. For purposes of this analysis, ordinary low water was taken as elevation +5.0 feet (City of Portland datum). Strength values given in Table 1 were used. Slopes were analyzed for both normal and flood conditions. The results indicated that slopes should be constructed at three horizontal to one vertical or flatter. In addition, slopes should be provided with surface protection, such as gravel or riprap, to prevent localized ravelling or shallow surface slides. The riprap that will be used for erosion protection below elevation 18 will also prevent shallow slides. Above this elevation, 6-inch minus crushed or shot rock, at least 1 foot thick, can be used in place of riprap to prevent surface slides.

LIMITATIONS

The analyses and conclusions submitted in this report are based, in part, upon the data obtained from widely spaced borings and test pits. The nature and extent of variations in the soil profile between borings and test pits may not become evident until construction. If variations are then

Table 1
SUMMARY OF SOIL PROPERTIES

Soil Zone	Strength Parameters: Angle of Internal Friction (Φ)	Strength Parameters: Cohesion (C)	Unit Weights: Saturated γ_s	Unit Weights: Total γ_t	Lateral Earth Pressure Coefficient[1]: Ka (active)	Lateral Earth Pressure Coefficient[1]: Kp (passive)
Fill	30°	0	120	115	0.33	3.00
Loose Silty Sand and Fine Sand	28°	0	120	115	0.36	2.77

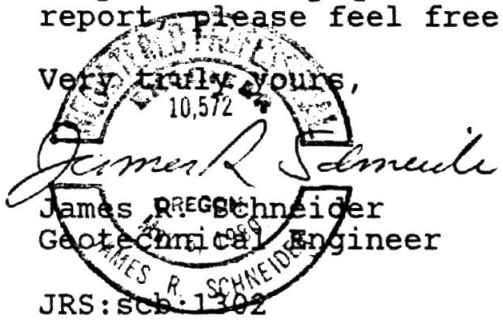
[1]The lateral earth pressure coefficients given above correspond to horizontal backfills placed behind retaining structures. If backfills behind retaining structures are inclined, these values must be modified.

discovered, it will be necessary to reevaluate the recommendations of this report. A qualified geotechnical specialist should be retained to observe all earthwork construction and excavating, in order to detect any differences between actual and anticipated subsurface conditions, as described herein. Such variations, if encountered, may require change orders to the construction contract.

This report has been prepared for the Portland Development Commission, Portland, Oregon, for specific application to the subject site, in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.

If you have any questions about the information in this report, please feel free to call.

Very truly yours,



James R. Schneider
Geotechnical Engineer

JRS:scb:1302

TEST PIT AND BORING LOG LEGEND

- SAND AND GRAVEL MIXED WITH WOOD CHIPS
- GRAVEL AND SILTY SAND WITH MISCELLANEOUS RUBBLE
- SAND AND GRAVEL
- SAND, CLEAN, MEDIUM GRAINED
- WOOD CHIPS, SAWDUST, AND ORGANICS
- SILT WITH WOOD CHIPS AND SAWDUST
- SILT, SOFT, AND COMPRESSABLE
- SILTY SAND, LOOSE
- SANDY SILT, LOOSE
- SANDY GRAVEL WITH RUBBLE
- CLAYEY SILT WITH OCCASIONAL RUBBLE
- GRAVEL IN SILT MATRIX
- RUBBLE
- SAND WITH RUBBLE
- RUBBLE WITH WOOD CHIPS
- SANDY SILT WITH RUBBLE AND WOOD CHIPS
- SILTY CLAY WITH WOOD CHIPS
- SILTY SAND WITH RUBBLE AND WOOD CHIPS

NOTES;

1. BORINGS WERE MADE WITH CME 55 AND CME 75 DRILLS RIGS DECEMBER 17 THROUGH DECEMBER 19, 1979.
2. TEST PITS WERE MADE WITH CASE 58c AND CATERPILLAR 225 BACKHOES OCTOBER 11 AND 12, 1979.
3. THE BORING AND TEST PIT LOGS SHOW SUBSURFACE CONDITIONS AT THE TIME AND PLACE THAT THE BORINGS AND TEST PITS WERE MADE. THE LOCATION OF THE GROUND WATER IN THE BORINGS WAS NOT DETERMINED BECAUSE OF THE HEAVY DRILLING MUD USED.
4. TRANSITIONS BETWEEN SOIL TYPES MAY BE GRADUAL, ONLY APPROXIMATE ENTERFACE ELEVATIONS ARE SHOWN. VARIATIONS MAY EXIST BETWEEN TEST PIT AND BORING LOCATIONS.
5. THE TEST PIT AND BORING LOCATIONS ARE SHOWN ON FIGURE 1. THE LOGS ARE SHOWN ON FIGURE 3

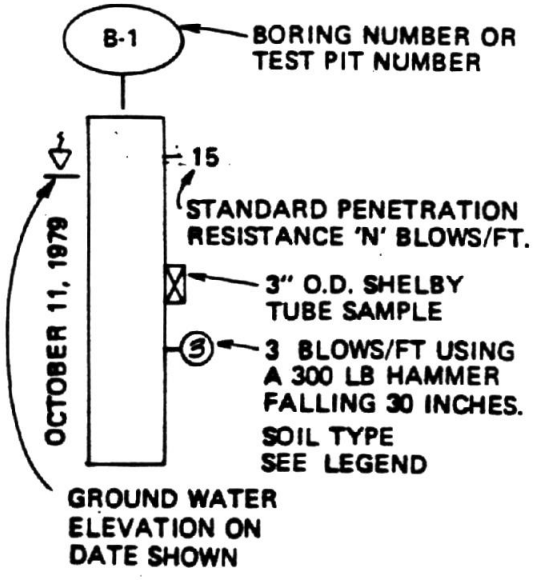


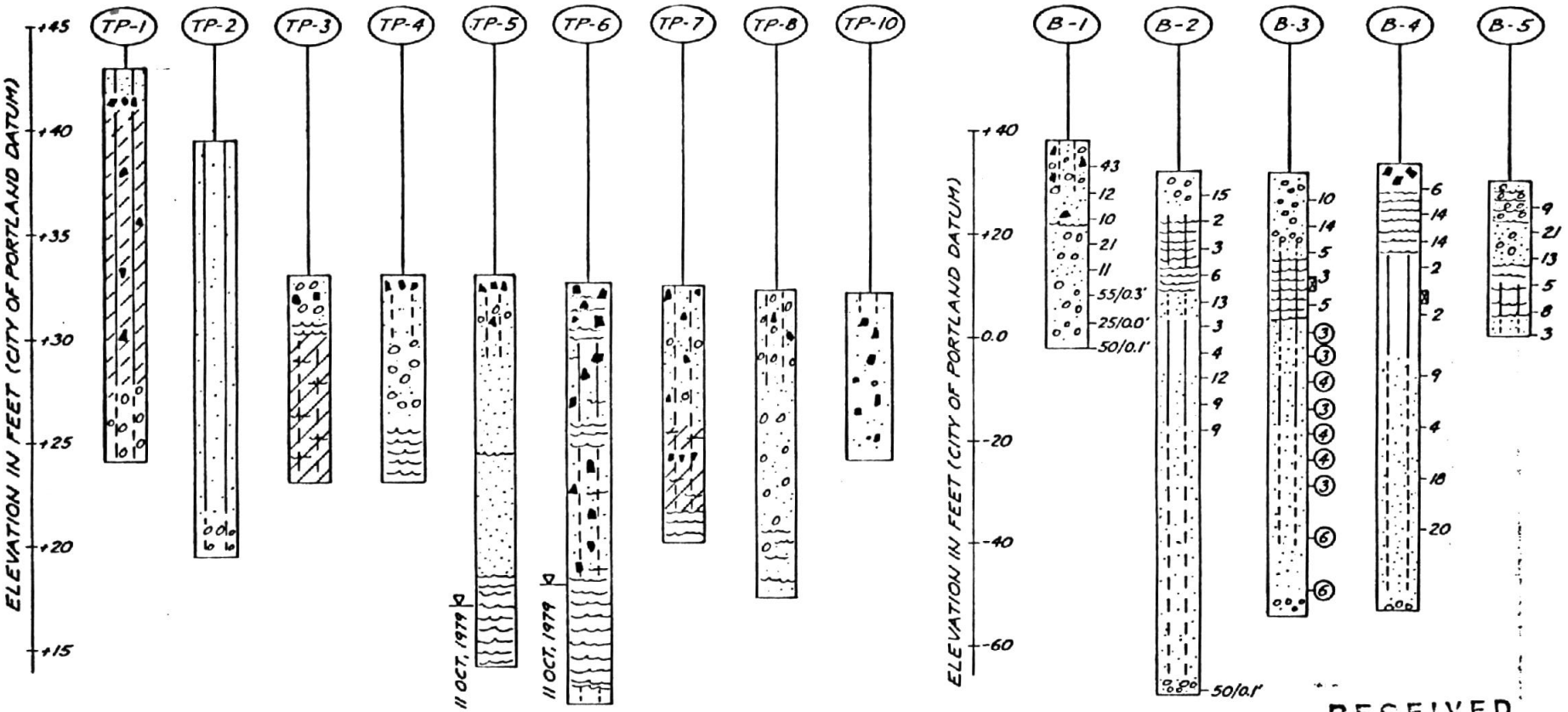
FIGURE 2

TEST PIT AND BORING LOG LEGEND

SOUTH DOWNTOWN WATERFRONT DEVELOPMENT

CH2M HILL

P 12987. A1



NOTES:

1. THE TEST PIT AND BORING LOG LEGEND IS SHOWN ON FIGURE 2.
2. TEST PIT 9 WAS NOT EXCAVATED.

FIGURE 3
TEST PIT AND BORING LOGS
SOUTH DOWNTOWN WATERFRONT REDEVELOPMENT

CH2M HILL

P12987.A1

CH2M HILL

MEMORANDUM

TO: Mike Dilembo

FROM: Jim Schneider

DATE: January 3, 1980

PROJECT: P12987.A1

RE: Pavement Design Recommendations
Montgomery Street Extension
South Waterfront Redevelopment Project

We have reviewed the test pit logs and samples for the proposed Montgomery Street extension. The soils in this area may be generally characterized as follows:

- Two-three feet of silty sand or sandy gravel mixed with rubble at the surface.

- Mixed fill and wood chips. Fill types encountered include silty clay, sand, and sand with some gravel. Variable amounts of organics and wood chips were found, mixed with some bark and sawdust at various levels. It is not possible to correlate between test pits or predict soil types between test pits. The mixed fill and wood chips probably extend to depths as great as 30 feet at the riverward (east) end of the proposed roadway.

- Loose silt and silty sand extending to the underlying Troutdale formation at depths of about 80 feet.

Because of the highly random nature of the material in the dumped fill zones, we feel that the use of laboratory CBR tests in one or two locations may not yield representative results and therefore would be inappropriate. We have evaluated the conditions in light of our experience at other waterfront development sites, and recommend the following:

- Use nonwoven fabric at the bottom of the sub-base and on sides of the sub-base to prevent subgrade intrusion by organic silts and clays. Minimum fabric weight should be 4 oz./square yard.

- Use a field CBR of 6 for the subgrade as improved by the fabric.

- Design sub-base, base, and pavement system based on above, and your required design traffic.

- The sub-base material confined by the fabric should be well-graded, free-draining material. Ideally, use angular crushed rock. Compact sub-base, when placing, to 95 percent of T-99 maximum dry density. The first lift of sub-base material should be 2 feet thick to prevent damage to the fabric. Sub-base must be back-dumped and no equipment should be permitted to operate on the fabric.

- Only minimal amounts of fill (not to exceed two feet) should be placed along or adjacent to the proposed pavement area. Excavate for all pavement materials and replace with imported granular materials. Final pavement grade should be at or below present existing grade.

- The road should have a slight vertical curve convex up for most of its length if this can be accomplished without filling. This will minimize the visual impact of any sags should they develop due to decomposition of wood chips or other organics.

- The decomposition process is expected to be slow and to create negligible settlements.

- No utilities should be installed under the roadway or where any excavation removing the fabric will be required. Perpendicular (or nearly so) crossings can be tolerated, but nothing parallel to the pavement. If utilities must be installed under and parallel to the roadway, then we recommend deleting the fabric and using a field CBR of 2 for the unimproved subgrade. Other recommendations remain the same.

The above should result in a pavement system with minimal maintenance requirements, comparable to other city streets. Please let me know if you need more information.

CH2M HILL

MEMORANDUM

TO: Brian Mostue

FROM: Bruce Rawls

DATE: June 2, 1980

PROJECT: P12987.A1

SUBJECT: Utilities--South Downtown Waterfront Redevelopment

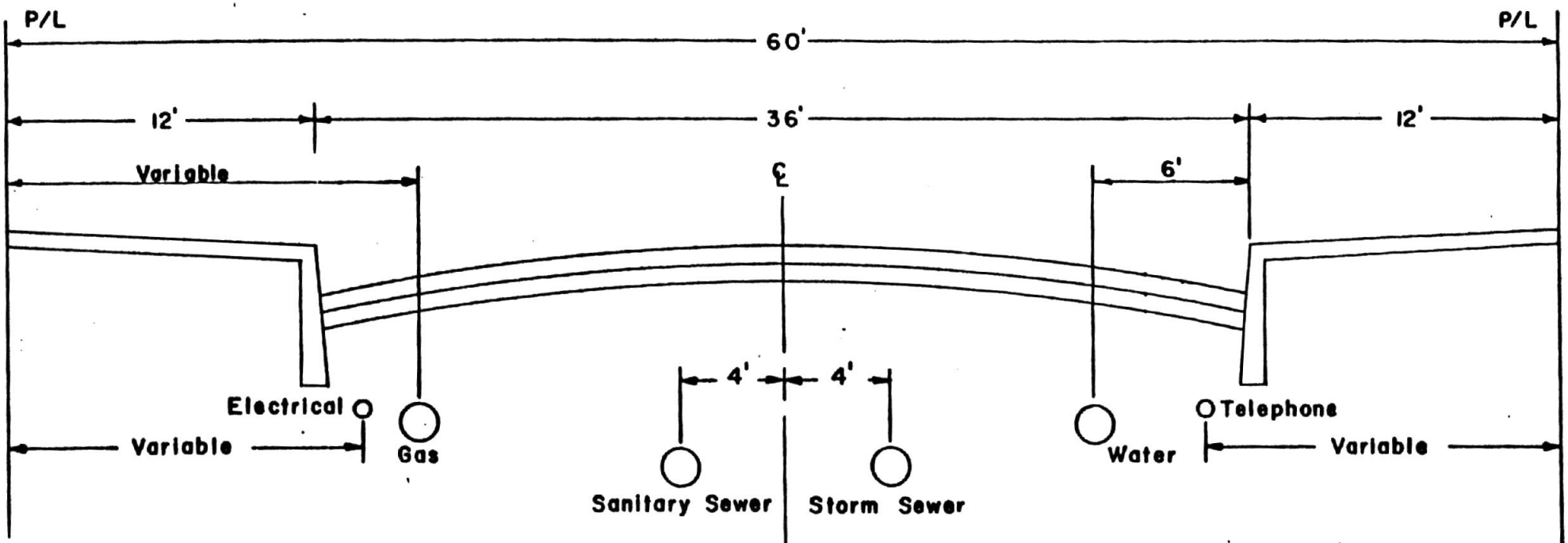
Utility relocation and new service installation will be required for project development. This work is shown on the attached "Proposed Utility Alignments" plans. Plans and profiles for storm sewer and sanitary sewer improvements in Montgomery Street are shown on the "Montgomery Street" drawings.

Reference should also be made to the "Existing Utilities" plans, which are based on record drawings from past construction and on selected field locations. When work is to be conducted in the vicinity of known utilities, these locations should be field verified. Due to the history of the site, variation in location should be anticipated. Settlement of lines has been reported.

Prior to commencing final design for shoreline improvements, the submerged location of critical utility lines will be determined. Plans for project facilities that could impact these lines will be reviewed with affected bureaus or companies.

Utility Alignments

In determining alignment of utilities, the major factors have been minimizing relocation, providing alignments free of conflict with later construction, and providing horizontal spacing to allow for future maintenance of the buried lines or ducts. A copy of Standard Plan No. 130 is attached for reference. This plan shows the desired layout of utilities for new street construction.



NOTE: GAS ON THE NORTH & WEST
WATER ON THE SOUTH & EAST

NOTES:

1. Minimum Cover on any Installation— 36".
2. Any variation from this design must be approved by the City Engineer.

CITY OF PORTLAND, OREGON
DEPARTMENT OF PUBLIC WORKS
LLOYD ANDERSON COMMISSIONER

LOCATION STANDARDS

UNDERGROUND UTILITIES INSTALLATIONS

APPROVED

James L. Agnew DATE 4-10-72
CITY ENGINEER REV. 1-17-74

STANDARD PLAN NO. 130

HORIZ. SCALE: 1" = 6'

For this development, the deep utilities, such as sanitary sewers, storm sewers, and steam lines, should have 8-feet clear on each side. Shallow utilities of less than 6 feet of cover should have 4 feet minimum clear on each side. Crossings should be made at as close to 90 degrees as possible.

Pacific Power and Light Company has indicated that an easement of 20 feet is required for the steamline. The City of Portland will probably require a 20-foot easement for the 42-inch storm sewer outfall.

Profiles and Depth of Cover

Profile is a factor in design of the storm and sanitary sewers and the 18-inch steamline relocation. During final design by the utility companies and agencies, these lines should have first priority in case of conflicts.

- Sanitary sewer must connect to the existing 42-inch interceptor and must be constructed with sufficient slope for cleansing velocity. Branches into the parcel must be laid at 2 percent minimum slope. Minimum cover of 5 feet is required.

- Storm sewer must be constructed with sufficient slope to provide cleansing velocity. Minimum cover of 5 feet is suggested. Discharges to existing outfall pipes or directly to the river provide control elevations.

- An 18-inch steamline must be constructed with uniform upslopes and downslopes to common points for collection of condensate. Minimum cover of 5 feet is suggested; otherwise, special insulation conditions may be required to protect surrounding vegetation.

Water and natural gas transmission mains are normally constructed with 5 feet minimum cover. Both utilities normally follow the natural ground surface and are minimally responsive to conflicts in profile. Fittings for abrupt grade changes are expensive and not always readily available.

Utility lines constructed with 3 feet of cover include local water distribution, PGE ducts, PP&L ducts, and natural gas distribution. Grade adjustments of these lines can be made to solve conflicts at crossing locations. Service lines from these utilities to the parcels are readily laid over and under any potential conflicts.

Fire alarm cables, traffic signal cables, and irrigation conduits are commonly constructed with 2 feet of cover and follow the ground contours.

Existing utilities should have priority over new utilities for grades. An exception to the generalized depth of cover conditions will occur for crossings of the proposed LRT corridor. In this area, many of the utilities may choose to use special construction to allow for minimized costs when the LRT is developed.

Construction

All utilities constructed in street right-of-ways are required to conform to Standard Construction Specifications of the City of Portland by permit issued from the City. The compaction of trenches over the utilities is of particular concern to improvements being constructed in this project. City specifications require 95 percent of maximum density for compaction. We recommend this level of compaction for all areas of the development, including grass areas and esplanade.

PDC SOUTH WATERFRONT

4

1995 INTERSECTION VOLUME/CAPACITY (V/C) RATIO: ALTERNATIVE INTERSECTION GEOMETRIC

ALTERNATIVE A

HAWTHORNE BRIDGE ONLY

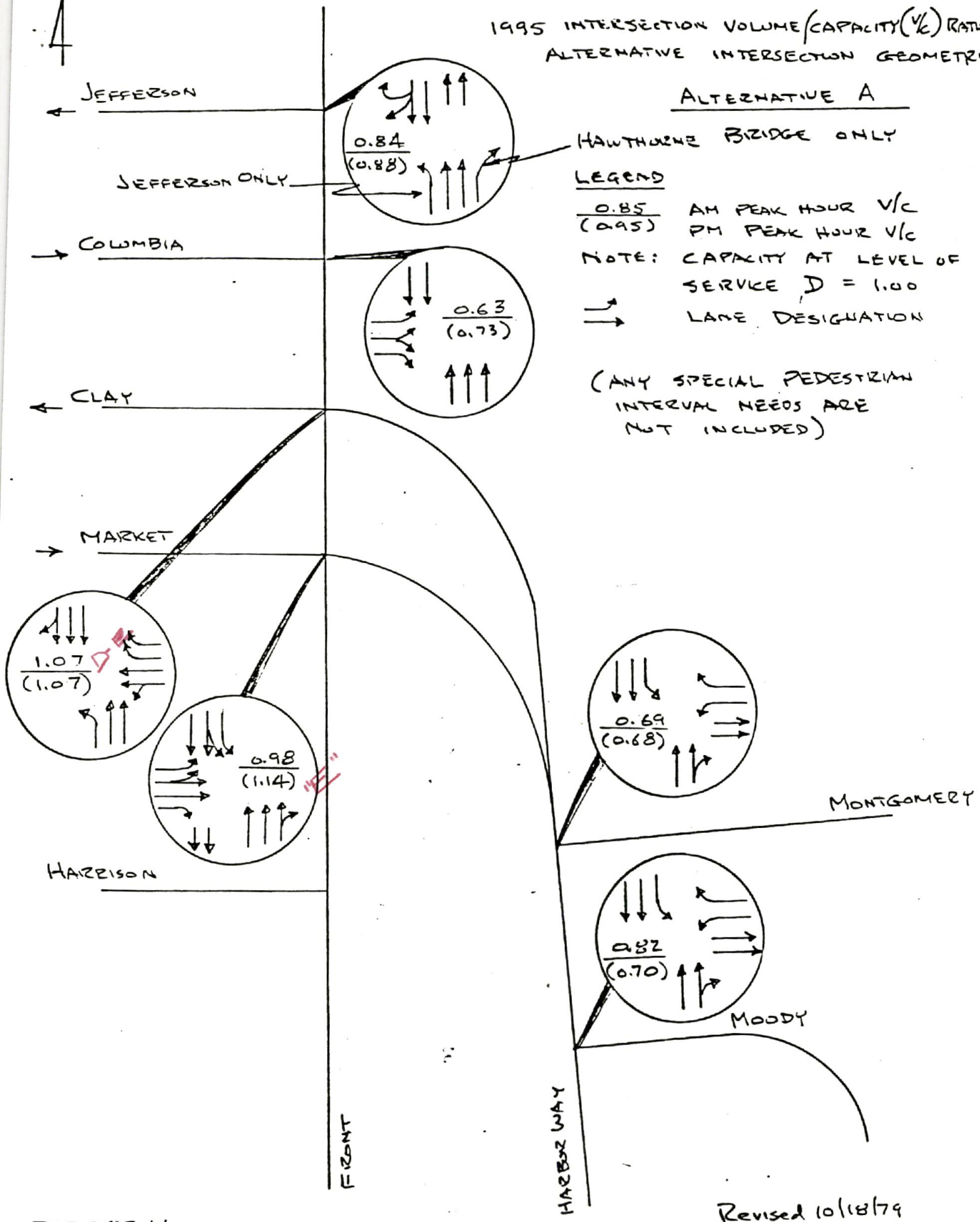
LEGEND

0.85 / (0.95) — AM PEAK HOUR V/C, PM PEAK HOUR V/C

NOTE: CAPACITY AT LEVEL OF SERVICE D = 1.00

LANE DESIGNATION

(ANY SPECIAL PEDESTRIAN INTERVAL NEEDS ARE NOT INCLUDED)



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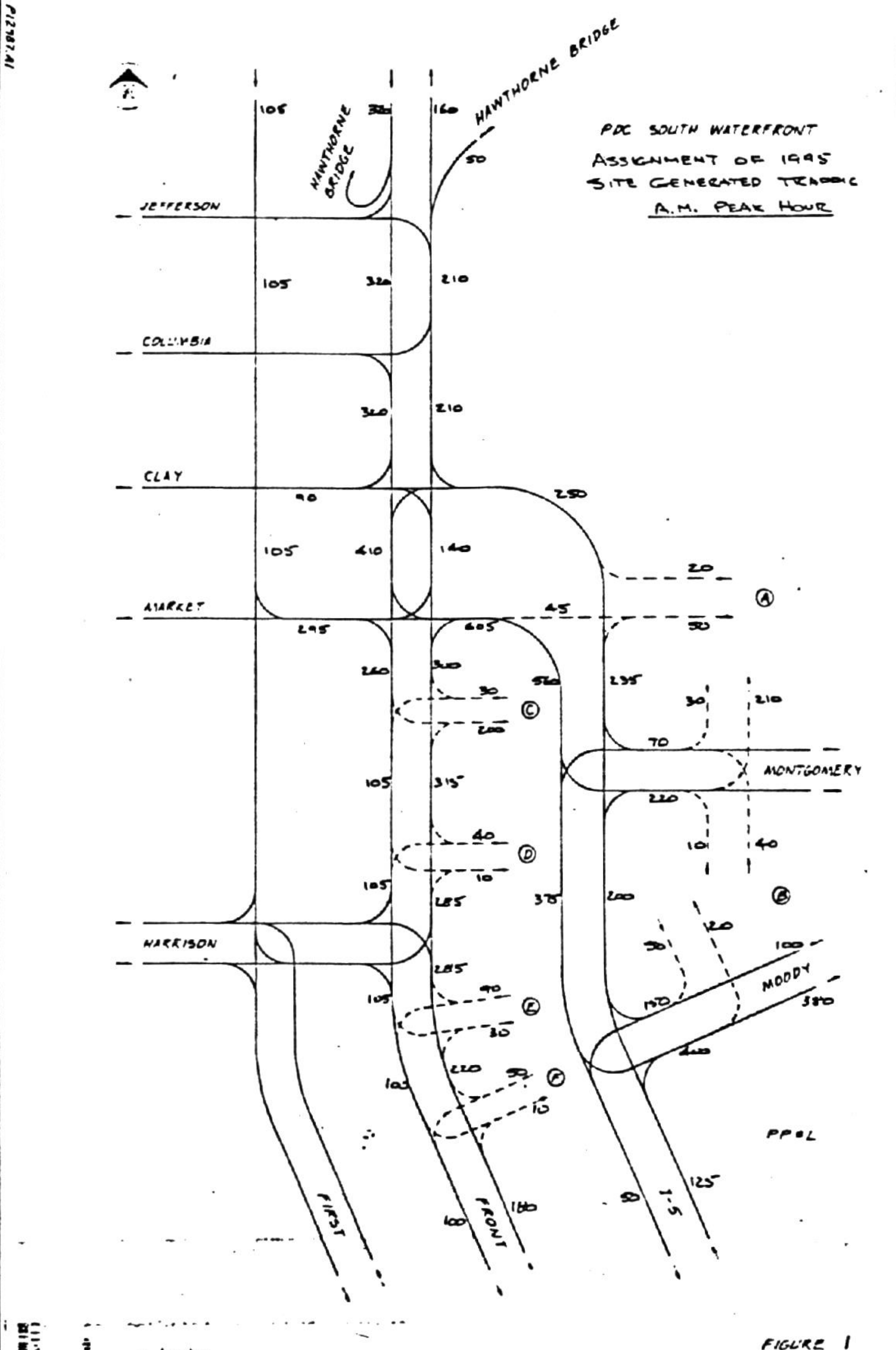
Revised 10/18/79
10/15/79



PDC SOUTH WATERFRONT
ASSIGNMENT OF 1995
SITE GENERATED TRAFFIC
A.M. PEAK HOUR
HAWTHORNE BRIDGE
HAWTHORNE BRIDGE
JEFFERSON
COLUMBIA
CLAY
MARKET
MONTGOMERY
HARRISON
MOODY
FIRST
FRONT
I-5
PP&L
10/18/79

FIGURE 1

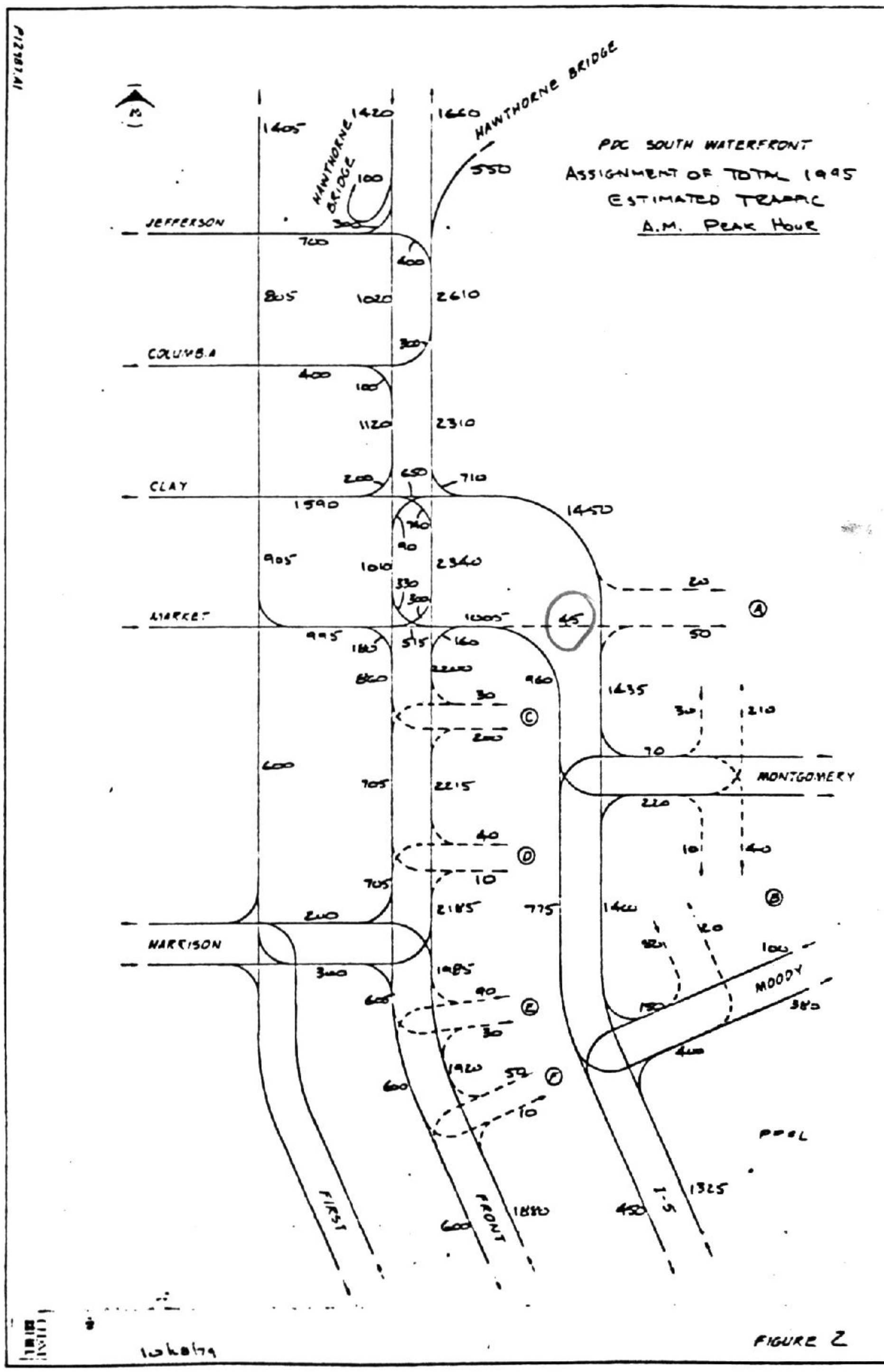
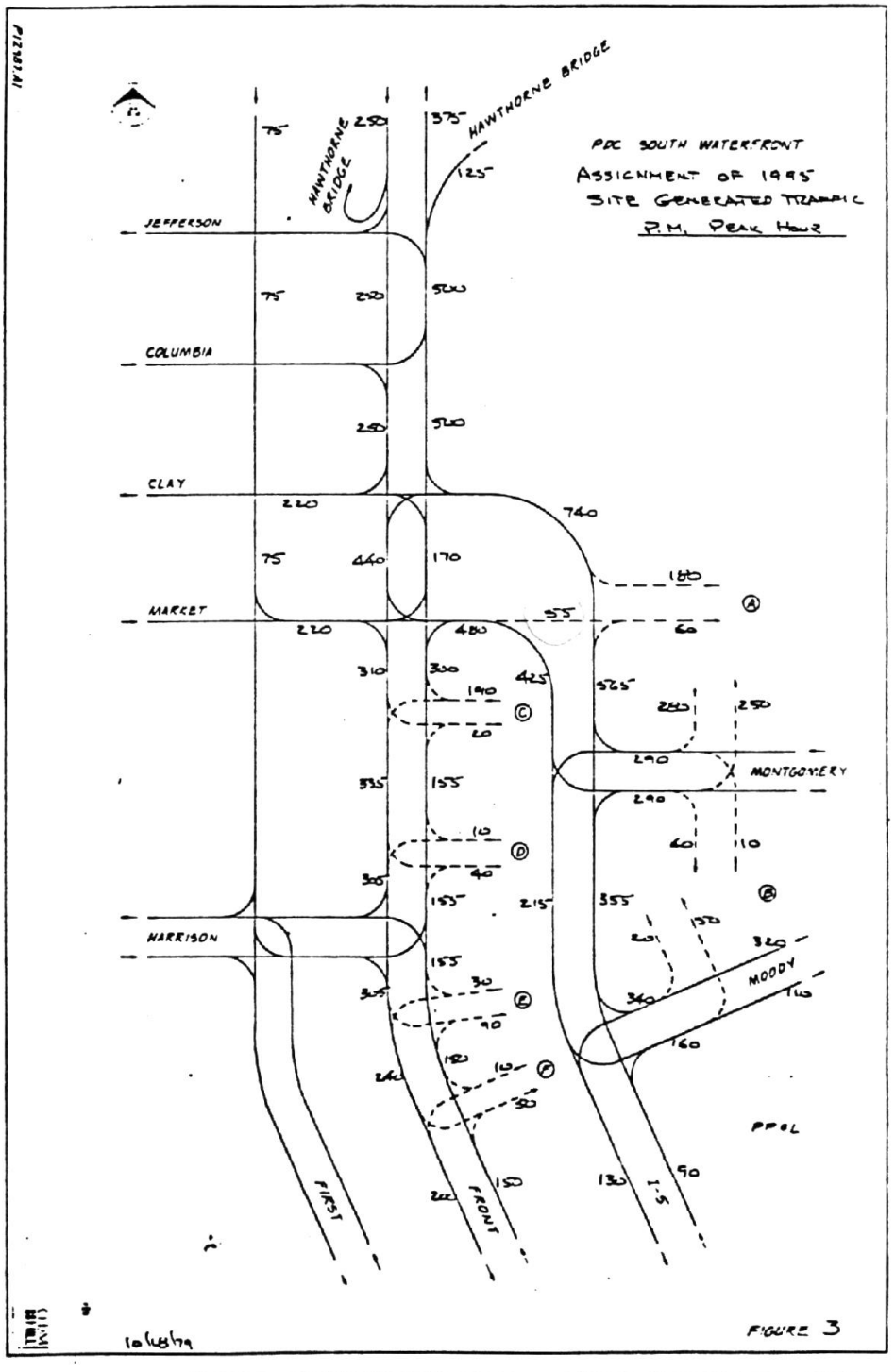

PDC SOUTH WATERFRONT
ASSIGNMENT OF TOTAL 1995
ESTIMATED TRAFFIC
A.M. PEAK HOUR
HAWTHORNE BRIDGE
JEFFERSON
COLUMBIA
CLAY
MARKET
MONTGOMERY
HARRISON
MOODY
FIRST
FRONT
I-5
PEEL

FIGURE 2


PDC SOUTH WATERFRONT
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SITE GENERATED TRAFFIC
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HAWTHORNE BRIDGE
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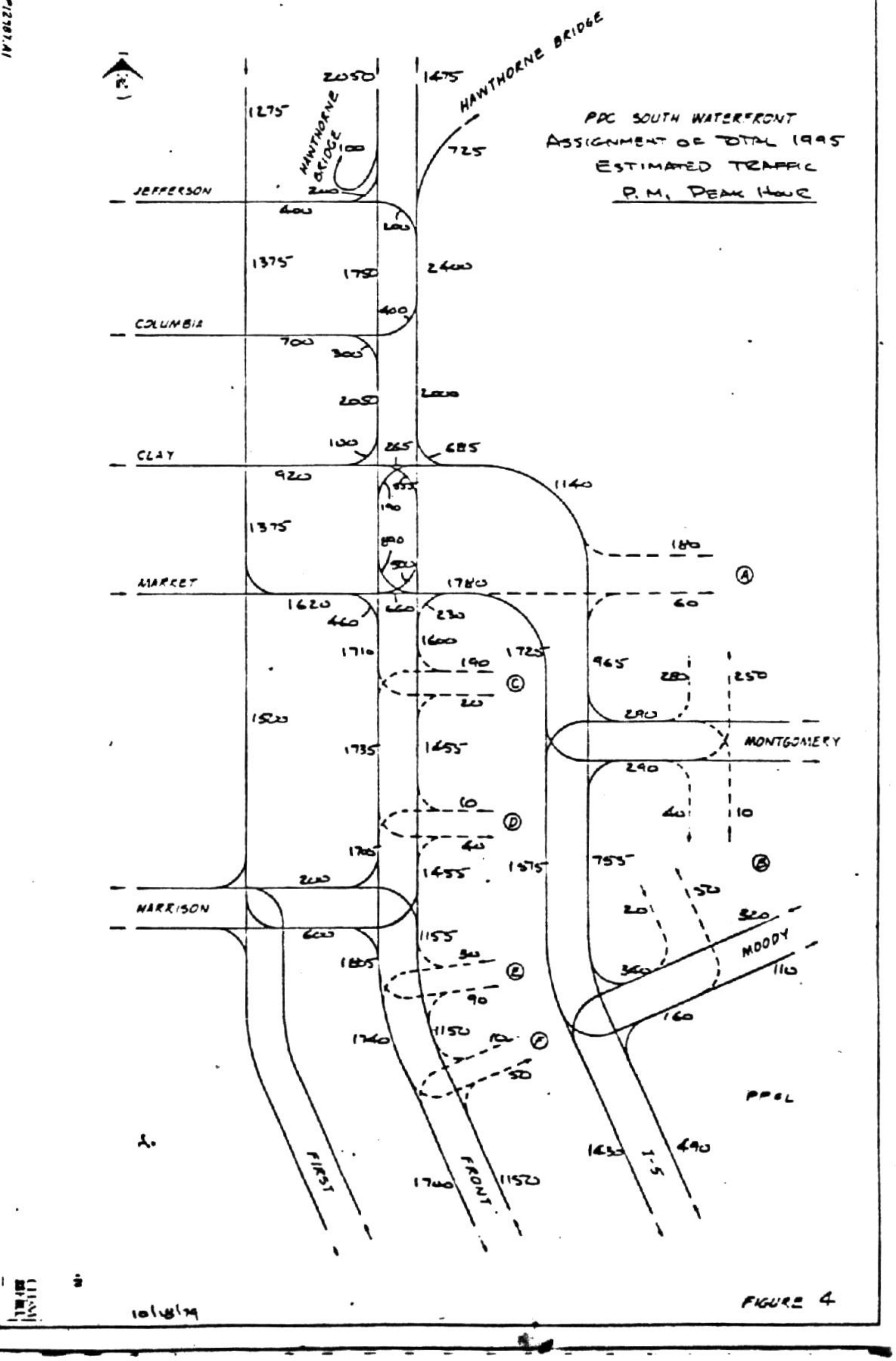
10/18/79
FIGURE 3


PDC SOUTH WATERFRONT
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ESTIMATED TRAFFIC
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HAWTHORNE BRIDGE
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HARRISON
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FIRST
FRONT
I-5

FIGURE 4

CH2M HILL

MEMORANDUM

TO: Brian Mostue

FROM: Mike DiLembo

DATE: June 2, 1980

PROJECT: P12987.A1

SUBJECT: Design Notes for Street Improvements
South Downtown Waterfront Redevelopment

Two basic street improvements will be required to accommodate the traffic volumes, turning movements, and access for the proposed development as currently planned. Front Avenue will be widened to six traffic lanes from Jefferson Street south to Market Street. The main access to the development will be provided by Montgomery Street, a new two-lane facility that will extend from a new intersection at Harbor Drive east to the Willamette River.

The following narrative is intended to assist the final design effort for both roadway improvements. Hopefully, most questions will be answered here. However, should additional information or discussion be needed, our staff will be available.

FRONT AVENUE

Maximum use of existing pavement, drainage facilities, and other in-place appurtenances is highly recommended to minimize costs, construction time, and inconveniences to the road user.

Base Map

A new topographic map was furnished by the Portland Development Commission (PDC) that was used as a base for the plan and profile sheet. It should be noted that this map and all other elevations are on City of Portland datum. The base map was complete for most of Front Avenue and that area to the east; however, the west side of Front Avenue and Front Avenue south of Clay Street were not included in the base map coverage.

In order to complete the base map, the missing areas were traced from the topo base of the plans used by ODOT for the last work in the area. Some problems were encountered in drafting the map; consequently, horizontal and vertical discrepencies may be detected. We strongly recommend that all data be verified by field survey whenever possible.

Horizontal Alignment

The "F" Line denoted on the plans is the same horizontal control line used by ODOT for the last revision of the street. This line was used to minimize field and office work in establishing control for the project.

Vertical Alignment

Grades for the east gutter line were developed by extending the crown slope of the existing pavement to the proposed location of the new curb. Minor modifications may be required as indicated by field survey information. Care should be exercised in designing final grades in the vicinity of the Hawthorne Bridge. Preliminary investigations indicate that it will be feasible to modify Front Avenue and the bridge ramp to alleviate the existing serious safety hazard. To accomplish the revision, a small retaining wall may be needed in the ramp gore area. Bridge ramp modifications must be coordinated with Multnomah County.

Drainage

Existing drainage facilities should be used wherever practical. Existing catch basins can be removed with connecting pipes extended to the new catch basin locations, as shown on the plans. Installation of new storm sewer laterals should be avoided and used only as a last resort.

Utilities

Pertinent underground utilities are shown on the plan; reference should be made to the "Existing Utilities" plans, which are included as part of the project data. The locations shown are based on previous maps and plans and should be field verified for final design work if required.

Miscellaneous

Pavement Section--Recommend using same section for new pavement areas as used on last project for this portion of Front Avenue. Provision should be made for placing a 2-inch asphalt concrete overlay on the entire street at a later date. Cost of the overlay was not included in any of our approved estimates and should not be included in the final design. All new curb exposures should allow for a future 2-inch AC overlay.

Sidewalks--No changes are proposed west of Front Avenue. Include sidewalks east of Front Avenue from Clay Street south only. All other sidewalks will be included with the park development construction plans.

Crosswalks--All crosswalks will be painted as per City standards at locations shown on the plans. Brick crosswalks will not be used for this project.

Traffic Signals--Preliminary design of all required traffic signal modifications and new installations will be submitted as a separate design package in the near future. Preliminary designs will be coordinated with appropriate departments within ODOT and the City.

Parking Lot Access--The existing driveway to the City's parking lot on the east side of Front Avenue, south of Market Street must be retained as a one-way exit. Elimination of the driveway would require that the southerly entrance be modified to two-way operation, which would be extremely costly.

Landscaping and Irrigation--A preliminary planting plan is included for medians and parking strip. Final design of landscape and irrigation will be performed by the Office of Robert Perron and will be coordinated with ODOT and City bureaus.

Illumination--A preliminary layout for street lighting is included. The plan includes new twin ornamental cast iron fixtures east of Front Avenue, north of Market Street. South of Market (east of Front Avenue), the existing hooded fixtures are to be reinstalled. No changes are proposed west of Front Avenue. The City Bureau of Street Lighting will perform final engineering of street lighting.

MONTGOMERY STREET

This street is a new facility for most of its length, as shown on the preliminary plan.

Base Map

A portion of the same project base map was used to make the plan and profile sheet. Again, all vertical datum is City of Portland datum.

Horizontal Alignment

New intersections will be needed at Harbor Drive and Harbor Way. The centerline of Montgomery Street should be perpendicular to "HD-C" Line and 36 feet (16 feet sidewalk and 20 feet of street) south of the Gender property line. Exact station ties should be field located. The reverse 2 degree curves on the "MG" Line are needed to locate the existing 24-inch waterline in the street pavement and the existing PGE powerline in the sidewalk area on the north side of the street.

Vertical Alignment

It is essential that grades be maintained on Montgomery Street to provide good access similar to existing access to the Gender Machine Building and their parking lot across the street. It is also critical that good approach grades and turning radii be used for the Harbor Way and Harbor Drive intersections with Montgomery Street to allow safe operation of Greyhound buses that will continue to use this route.

The elevation of the Montgomery Street cul-de-sac must be retained at 32 or 33 to match with the planned adjacent esplanade.

As pointed out in the geotechnical report, foundations stabilization may become a problem leading to settlement of the roadway. Fill sections should not exceed 2 feet but will not be critical because of other limiting factors--access on the west and the esplanade on the east.

Drainage

The drainage facilities as shown on the plans were designed to accept all adjacent runoff from the developed property on both sides of Montgomery Street as well as from the street itself. Stubouts on both manholes should be installed as part of the street contract to allow the developer of the property to connect to the storm sewer without cutting the street.

The outfall location as shown on the plan is tentative; final location must be coordinated with the marina slope design. The general project permit application to the Corps of Engineers contains this outfall as an integral part. Approval of the permit is now pending with final resolution expected in the near future.

Utilities

Existing underground utilities are numerous in this area; reference should be made to the "Existing Utilities Map," which is included as part of the project data. All utilities should be field verified.

It should be noted that a sanitary sewer must be installed as part of the street construction, as shown on the plans.

Miscellaneous

Intersection--Channelization should be accomplished by stripping and must allow for two lanes of westbound traffic on Montgomery Street at the Harbor Drive intersection as shown on the plans. Parking must be excluded on the north side from the intersection to Station 13+00.

Pavement Section--See geotechnical report.

Sidewalks--Use 16-foot mall sidewalk on north side and standard 8-foot sidewalk on the south side. Omission of the sidewalk around the cul-de-sac was deliberate; this portion will be included with the site development so as to match the adjacent esplanade.

Traffic Signal--A new traffic signal will be required for the Harbor Drive intersection. The preliminary design will be included with the same work as for Front Avenue signal design.

Landscaping and Irrigation--A preliminary planting plan is included. Final design and construction will be handled in the same manner as Front Avenue.

Illumination--A preliminary layout for street lighting is included. Portland's downtown standard twin ornamental cast iron fixtures are proposed. Final design will be by the City Bureau of Street Lighting.

Harbor Way Modification

Since Gender Machine will remain in operation at its existing location and capacity, existing access must be preserved; however, some minor modifications to Harbor Way will be required. These modifications include decreasing the width of the street to allow for a 6-foot planting strip and a 6-foot sidewalk along the west side of the building. The modification should end at the new curb return for Mill Street on the north end of the Gender building. No improvement to Mill Street should be planned nor should any repaving of Harbor Way be included in construction plans.

Harbor Way will be retained at its existing width from Mill Street north about 440 feet where it will terminate with a cul-de-sac, as shown on the plans. Drainage for the cul-de-sac will be connected to the existing storm sewer manhole in the center island. Existing lighting to the west of Harbor Way will be retained; one fixture will require relocation in the cul-de-sac.

MD:pr

Attachments: Geotechnical Report
Traffic Data

CH2M HILL

MEMORANDUM

TO: Mike Dilembo

FROM: Jim Schneider

DATE: January 3, 1980

PROJECT: P12987.A1

RE: Pavement Design Recommendations
Montgomery Street Extension
South Waterfront Redevelopment Project

We have reviewed the test pit logs and samples for the proposed Montgomery Street extension. The soils in this area may be generally characterized as follows:

- Two-three feet of silty sand or sandy gravel mixed with rubble at the surface.
- Mixed fill and wood chips. Fill types encountered include silty clay, sand, and sand with some gravel. Variable amounts of organics and wood chips were found, mixed with some bark and sawdust at various levels. It is not possible to correlate between test pits or predict soil types between test pits. The mixed fill and wood chips probably extend to depths as great as 30 feet at the riverward (east) end of the proposed roadway.
- Loose silt and silty sand extending to the underlying Troutdale formation at depths of about 80 feet.

Because of the highly random nature of the material in the dumped fill zones, we feel that the use of laboratory CBR tests in one or two locations may not yield representative results and therefore would be inappropriate. We have evaluated the conditions in light of our experience at other waterfront development sites, and recommend the following:

- Use nonwoven fabric at the bottom of the sub-base and on sides of the sub-base to prevent subgrade intrusion by organic silts and clays. Minimum fabric weight should be 4 oz./square yard.

- Use a field CBR of 6 for the subgrade as improved by the fabric.

- Design sub-base, base, and pavement system based on above, and your required design traffic.

- The sub-base material confined by the fabric should be well-graded, free-draining material. Ideally, use angular crushed rock. Compact sub-base, when placing, to 95 percent of T-99 maximum dry density. The first lift of sub-base material should be 2 feet thick to prevent damage to the fabric. Sub-base must be back-dumped and no equipment should be permitted to operate on the fabric.

- Only minimal amounts of fill (not to exceed two feet) should be placed along or adjacent to the proposed pavement area. Excavate for all pavement materials and replace with imported granular materials. Final pavement grade should be at or below present existing grade.

- The road should have a slight vertical curve convex up for most of its length if this can be accomplished without filling. This will minimize the visual impact of any sags should they develop due to decomposition of wood chips or other organics.

- The decomposition process is expected to be slow and to create negligible settlements.

- No utilities should be installed under the roadway or where any excavation removing the fabric will be required. Perpendicular (or nearly so) crossings can be tolerated, but nothing parallel to the pavement. If utilities must be installed under and parallel to the roadway, then we recommend deleting the fabric and using a field CBR of 2 for the unimproved subgrade. Other recommendations remain the same.

The above should result in a pavement system with minimal maintenance requirements, comparable to other city streets. Please let me know if you need more information.