53-I-1

1997-0080

883 Congress St

Garage, office, overpass

Maine Medical Ctr.

on Spreadsheet

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM

19970080
I. D. Number

Maine Medical Center
Applicant

10/7/97
Application Date

22 Bramhall St, Portland, ME 04102
Applicant's Mailing Address

Maine Medical Center
Project Name/Description

Squaw Bay/Scott Decker
Consultant/Agent

883- 903 Congress St
Address of Proposed Site

829-6994 **829-5692**
Applicant or Agent Daytime Telephone, Fax

053-I-001/002/003/012
Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply): ☒ New Building ☐ Building Addition ☐ Change Of Use ☐ Residential
☒ Office ☐ Retail ☐ Manufacturing ☐ Warehouse/Distribution ☐ Parking Lot ☒ Other (specify) **Parking Garage**

Proposed Building square Feet or # of Units

59,993 Sq Ft
Acreage of Site

Zoning

Check Review Required:

☒ Site Plan (major/minor)
☐ Subdivision # of lots
☐ PAD Review
☐ 14-403 Streets Review
☐ Flood Hazard
☐ Shoreland
☐ HistoricPreservation
☒ DEP Local Certification
☐ Zoning Conditional Use (ZBA/PB)
☐ Zoning Variance
☐ Other

Fees Paid: Site Plan **$300.00** Subdivision Engineer Review Date: **10/7/97**

Planning Approval Status:

Reviewer **Rick Knowland**

☐ **Approved**
☒ **Approved w/Conditions** See Attached
☐ **Denied**

Approval Date **4/14/98** Approval Expiration **4/14/99** Extension to ☒ Additional Sheets Attached

☒ OK to Issue Building Permit **Rick Knowland** (signature) **7/21/98** (date)

Performance Guarantee ☒ **Required*** ☐ **Not Required**

* No building permit may be issued until a performance guarantee has been submitted as indicated below

☒ Performance Guarantee Accepted	**7/16/98** (date)	**$121,873.00** (amount)	**10/2/00** (expiration date)
☒ Inspection Fee Paid	**7/21/98** (date)	**$2,071.84** (amount)	
☐ Building Permit Issued	(date)		
☐ Performance Guarantee Reduced	(date)	(remaining balance)	(signature)
☐ Temporary Certificate of Occupancy	(date)	☐ Conditions (See Attached)	
☐ Final Inspection	(date)	(signature)	
☐ Certificate Of Occupancy	(date)		
☐ Performance Guarantee Released	(date)	(signature)	
☐ Defect Guarantee Submitted	(submitted date)	(amount)	(expiration date)
☐ Defect Guarantee Released	(date)	(signature)	

RK

APPLICATION FOR PROJECT APPROVAL FROM THE CITY OF PORTLAND UNDER THE SITE PLAN REVIEW ORDINANCE

MAINE MEDICAL CENTER MEDICAL OFFICE BUILDING PARKING STRUCTURE AND OVERHEAD CONNECTOR

883 - 887 CONGRESS STREET
PORTLAND, MAINE

APPLICANT:
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, MAINE 04102

JANUARY, 1997

Squaw Bay Corp
Consulting Engineers

P.O. BOX 86A CUMBERLAND CENTER, ME 04021
TEL. : (207) 829-6994 FAX: (207) 829-5692
EMAIL: squawbay@neis.net

MAINE MEDICAL CENTER

January 5, 1998

Mr. Rick Knowland, Senior Planner
City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101

Re: Response to Jaimey Caron's December 11, 1997 Memorandum
Maine Medical Center Office Building
Congress Street

Dear Rick:

Comment 1:

The parking report should be updated to reflect all MMC offices and properties in the area, including projections for space that MMC owns but is not yet using. A condition of approval should require MMC to submit an updated report for staff review and approval. It would be helpful at the public hearing if staff could generate a list of MMC properties in the city.

Response 1:

We will review with the staff the MMC properties in the Bramhall campus area prior to the January 27 public hearing..

Comment 2:

The Parking Management Report needs to have specific programs for managing parking problems on the Western Prom and should have a mechanism for the city to be involved in seeing that those items are enforced. I would look to John Peverada for suggestions of effective management programs and target areas. I would suggest the creation of a "Western Prom Parking Oversight Committee" consisting of businesses, neighborhood and city representatives working under the city's Parking Division (similar in concept to the Old Port Task Force) to oversee parking and vehicle circulation problems in the neighborhood. The group would monitor the impact of management strategies and provide a forum for feedback and modifications to the plan. I would appreciate your comments and suggestions for crafting a condition of approval for this concept.

Response 2:

MMC does propose to provide a contact person for coordinating directly with John Peverada on parking issues. MMC supports regular monthly meetings with Mr. Peverada to address issues. MMC will make a brochure available to all its staff and doctors detailing where MMC parking is located, requesting people to park in the garages, and to carpool or use the bus whenever possible. MMC will also work with the staff of the Portland Area Comprehensive Transportation Committee (PACTS) to develop a data base for use in their rideshare program. MMC has also committed to Mr. Peverada to make a special effort to educate doctors and staff at McGeachey Hall to use the shuttle rather than to park on Vaughn Street.

Comment 3:

At the workshop, the applicant indicated that parking would need to be removed from Forest Street in the area around the access drive to the garage. Because of the narrow street width, the applicant's traffic engineer stated that Forest Street may be blocked at times if these spaces are not eliminated, particularly in the winter. It is the applicant's responsibility to mitigate the impacts of their development. Since removing these parking spaces requires City Council approval, a condition of approval should be included that, in the event the City Council does not grant the request, the applicant shall submit a revised site plan for the Planning Board's review. An alternative approach would be to provide a turning lane adjacent to the garage on MMC land.

Response 3:

MMC is working with Mr. Bray and Mr. Ash to prepare a request to remove 26 spaces along Congress Street. The city is proposing to remove two spaces directly across from the proposed Forest Street driveway and MMC is working with Mr. Bray on that issue.

Comment 4:

As discussed by the Board at the workshop, the restriping of Congress Street should minimize the removal of existing on-street parking spaces. This is particularly important in minimizing the impact of this development on existing business and neighbors in the area.

In the event the applicant does not revise the plan for Congress Street, a condition of approval should be included that would require the applicant to resubmit alternate plans for the Board's review.

Response 4:

There have been ongoing discussions with Mr. Knowland, Mr. Bray and Mr. Ash regarding the need to eliminate parking on Congress Street. The left turn into the garage on Congress Street is an essential element of the project. We continue to support the proposal to change the parking on Congress Street to eliminate parking from 6 a.m. to 6 p.m. This proposal would make the

parking available to area businesses and residents during the times of day when it is in greater demand. In addition, since most Sea Dogs games begin at 7:00 p.m., parking would be available for those events. We have reviewed our proposal to change the parking on Congress Street with Mr. Paul Severino, Sportsman's Grill. He is in full support of the proposal.

Comment 5:

The current plan indicates the skybridge will allow users of the lower lot to access the main building through the Gilman Street garage. It is not clear to me that there is a safe pedestrian route beyond the skybridge, particularly across the access road behind the hospital. Given the grades, sight lines and stopping distances on the access road, winter use is a particular concern. How many employees will travel this route to and from the hospital? Additionally, how do the employees in the Gilman Street garage currently access the hospital? Staff should review the end of the proposed route and I would suggest a condition of approval requiring signage, striping, bollards, etc. in this area for pedestrian safety as a minimum. Although beyond the Board's authority, ADA access is also a concern.

Response 5:

Approximately 1,500 people in the Gilman Street garage currently cross the access road behind the hospital. This is the only entrance to MMC from the garage. Advance warning signs delineate this crossing. This road is a private road and does not have significant traffic. Handicapped employees are not required to park in the garage. Handicap parking is provided elsewhere on the campus.

Comment 6:

In the event that light poles on the roof of the garage are included in the final submission, I would like a condition of approval crafted that would restrict the height and location so as to be inconspicuous to the surrounding neighborhood on three sides.

Response 6:

MMC continues to work with the staff on the lighting issue.

If you have any questions or need further information concerning the material above, please contact me.

Sincerely,

MAINE MEDICAL CENTER

Paul D Gray

Paul Gray
Vice President of Planning

PG/TLG/sq/JN1471/Knowland1-5

C: John Peverada
Larry Ash
Tom Gorrill

Squaw Bay Corp

Consulting Engineers & Land Surveyors

Principals:

W. Scott Decker, P.E.
John R. Kennedy, P.E.
Peter B. Tubbs, P.E., P.L.S.
David W. Young, P.E., P.L.S.

January 29, 1998

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, ME 04101

RE: Maine Medical Center
Medical Office Building

Dear Rick:

This letter addresses the comments received in your January 20, 1998 letter to me.

Jeffrey Preble's 1/12/98 letter to you

Drawing C-101

Comment #1: *"The proposed plans show a drainage swale along the easterly property line which outlets over the sidewalk and into Boynton Street. It does not appear there are any catch basins along Boynton Street to collect his runoff. We would suggest adding a catch basin and stormdrain to collect the runoff in this area and tie it into the existing combined sewer line in Boynton Street."*

Response: During our recent telephone conversation, you informed me that Tony Lombardo noted that under current conditions icing occurs along Boynton Street and Maine Medical Center should attempt to mitigate this condition. Therefore, enclosed drawing C-101 has been revised to include the requested catch basin. The sewer line in Boynton Street is an 8" sanitary line so we have connected the catch basin to the 12" oil/grit structure discharge line.

Comment #2: *"The existing sidewalk at the Forest Street and Boynton Street intersection is at elevation 39.0. The elevation of the catch basin grate on the Vortechnics unit is 39.75. This should be lowered if the intention is to collect runoff from the swale along the northern property boundary."*

Response: Enclosed Site Plan drawing C-101 has been revised to reflect a lowered catch basin grate elevation.

Comment #3: *"A dimension of 2'-9" has been shown on the Forest Street and Boynton Street Right-of-Way. We are not sure what this dimension represents.".*

P.O. Box 86A, 4 Blanchard Road, Cumberland Center, ME 04021
Phone: (207) 829-6994 • Fax: (207) 829-5692 • Email: squawbay@neis.net

Response: Enclosed Site Plan drawing C-101 has been revised to note the right-of-way width of 33' as depicted on Titcomb Associates' survey drawing.

Comment #4: *"The curb schedule will need to be completed prior to construction."*

Response: The curb schedule will be completed when all issues regarding parking, sidewalk widths and building dimensions have been resolved.

Drawing C-302

Comment #1: *"Grades for the underdrain system have not been shown on the plan. The location for the underdrain cleanouts should be shown on the plans."*

Response: The final location of underdrains (both horizontal and vertical) will be established following final design of the office building and parking garage.

Comment #2: *"It is not clear where the underdrain discharges."*

Response: Enclosed Erosion and Sedimentation Control Plan drawing C-302 has been revised to show the underdrain system outletting to the Vortechs unit discharge line.

Comment #3: *"The location of the construction entrance is not shown on the plan. It might be worth specifying a location for construction traffic to access the site."*

Response: We prefer to allow the contractor to plan this element of the project. He will submit his plan for a construction entrance for approval by the Owner's Engineer and the City of Portland Public Works Department. If Public Works has specific ideas where the entrance must be, it would be helpful if the location was identified.

Comment #4: *"Please note that the details for the overhead walkway have not been included with this submission. The affect on the sidewalk width is therefore not known at this time."*

Response: The final details of the overhead pedestrian walkway have not been completed by the project architect. They await approval of the walkway concept by the Maine Medical Center. However, it is understood at this juncture that the supports on the medical office building side of Congress Street will be constructed into the building and will extend no more than 30" into the sidewalk. The support on the south side of Congress Street will not encroach into the sidewalk but may abut the sidewalk.

John Peverada's 1/9/98 memorandum addressed to you

The traffic comments raised by Mr. Peverada have been or will be addressed directly by Maine Medical Center.

Comment: *"The list of MMC traffic improvements should be put on a site plan. In addition, the following statement should be added to the Site Plan:"*

"Applicant shall be responsible for monitoring the intersection of Park Avenue and Forest Street for a period of one year after a Certificate of Occupancy has been issued for the office building and parking garage. Applicant shall submit a traffic report to the City Traffic Engineer for review and approval. If the City Traffic Engineer determines that a traffic light is required, the applicant shall be responsible for the purchase and installation of the traffic light. An escrow account/performance guarantee shall be established by MMC prior to the issuance of a building permit."

Response: The Site Plan drawing C-101 has been revised to include the requested traffic improvement information.

Comment: *"Some, but not all, of the questions/issues that are listed in my memo of 12-24-97 to Patrick Costin have been addressed (see Attachment C)."*

Response: The architectural related comments will be addressed directly by Harriman Associates.

Comment: *"We need to get a definitive letter from MMC indicating that they will maintain the oil and grit separator, along with the schedule for maintenance."*

Response: Enclosed is a copy of a letter from Maine Medical Center addressed to you which addresses this comment.

Comment: *"Please indicate the dimensions and height of the transformer along Forest Street."*

Response: The transformer will be 6'x6'x6' cube situated on a 9'x9' concrete pad.

Comment: *"Note #9 on Sheet C-101, as well as related notes on curb and sidewalk, need to be changed. Note #9 should read "all curb and sidewalk shall be reconstructed along the entire frontage of the site..." We are skeptical that you will be able to "save" the existing curbs and sidewalks during construction, on this tight site. After construction, we can review the situation again to see if you were able to save the curb and sidewalk on Forest Street and Boynton Street. However, we are not comfortable with the present notes shown on the plans and Note #9."*

Response: Enclosed Site Plan drawing C-101 has been revised to address this issue.

Comment: *"We will need a draft deed to the City for that portion of the sidewalk that is on MMC property."*

Response: The draft deed will be submitted directly to the City by Maine Medical Center.

Comment: *"Do you have a catalog cut of the Miramat material shown on L-101?"*

Response: Enclosed is a catalogue cut of the Miramat material.

Comment: *"How high are the ventilation shafts in relation to the adjacent grade, and is there grating so that someone doesn't fall in?"*

Response: The ventilation shafts will extend no more than one foot above ground and will contain a grate to prevent children and animals from entering.

Comment: *"See the memo from Anthony Lombardo (Attachment D)."*

"Squaw Bay Cop has made the revisions requested by Public Works. The only item that is still missing as part of their submission is a copy of the capacity letter for the combined sewer in Forest Street. This letter has been requested from Bill Goodwin here at Public Works, but no actual letter verifying capacity of this sewer has been submitted."

Response: Mr. Frank Brancely has coordinated with and received additional information from Harriman Associates plumbing engineer and Mr. Brancely continues to review the project relative to sewage flows.

Please call me if you have any questions or require additional information

Very truly yours,

SQUAW BAY CORP

Scott Decker

W. Scott Decker, P.E.
Principal

WSD/cms
cc: Jim Clarkson
Jim Morrison

97-242
know0129.let
4 of 4

MAINE MEDICAL CENTER

January 27, 1998

Mr. Richard Knowland
Senior Planner
Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Congress Street MOB Oil and Grit Separator

Dear Mr. Knowland,

This is to inform you of the intention of Maine Medical Center to maintain the oil and grit separator required for this project. The inspection and cleaning of this separator will be performed in accordance with the specifications outlined on the attached sheet.

If you have any questions, please contact this office.

Sincerely,
Maine Medical Center

Robert D. Bremm
Director, Engineering Services

DELUCA01.WPD

Vortechs Oil and Grit Separator

Maintenance Plan

Inspection

In the first year, Maine Medical Center will inspect the Vortech's Oil/Grit separation structure in January, February, March, spring, summer and fall. The inspection schedule can then be modified in subsequent years according to experience or to meet specific stormwater permit requirements.

During routine inspections, sediment accumulation will be determined by slowly lowering a measuring stick into the center of the grit chamber (accessed through the manhole above the grit chamber) until it contacts the top of the pile. The system is full and should be cleaned when the top of the pile is approximately one foot below the dry weather water level. The measuring stick should be easy to read and not too finely graduated (such as a carpenter's tape with large easy to read numbers). A stadia rod with flashlight can be used for this purpose. For deep systems where reading the measuring stick directly is difficult, dusting the rod will clearly show the depth to the sediment pile as the wet portion of the rod. To avoid underestimating the volume of sediment in the chamber, the measuring stick must be carefully lowered to the top of the sediment pile as the finer, silty particles are typically at the top and offer less resistance to the end of the stick or rod than the larger particles located towards the bottom of the pile[1].

Cleaning

Cleanout of the Vortechs with a vacuum truck is generally the best and most convenient method. Only the manhole cover above the grit chamber (the one furthest from the system outlet) needs to be opened to remove water and contaminants. As the grit chamber is pumped out, the oil and water drains back into it so that oil scum, particulates, and floatables are removed along with the accumulated sediments. With the Vortechs System, a pocket of water between the grit chamber and flow controls seals the bottom of the oil barrier and prevents the loss of floatables to the outlet during cleanings. Manhole covers should be securely seated following cleaning activities to ensure that surface runoff does not leak into the unit from above.

[1]The height of the sediment pile is perhaps more precisely determined by taking two measurements with a stadia rod. The first being the water depth (i.e., water surface to bottom of the tank); the second being the water surface to the top of the sediment pile. The difference between the measurements is the sediment pile depth.

MOHR & SEREDIN
Landscape Architects, Inc.

TRANSMITTAL

Date: JAN 27, 1998 **Project Number:** 186

Project: MMC PARKING GARAGE

To: SCOTT DECKER

From: KIM TURNER

Copy:

Message:

RECOMMEND 3/8" THICKNESS.

MIRAFI, INC
PO BOX 240967
CHARLOTTE, NC 28224
1·800·438·1855

☐ Mailed
☐ Delivered
☒ Fax Number 829-5692
No. of Pages (including cover) 7

18 Pleasant Street, Portland, Maine 04101
(207) 871-0003

MIRAMAT:

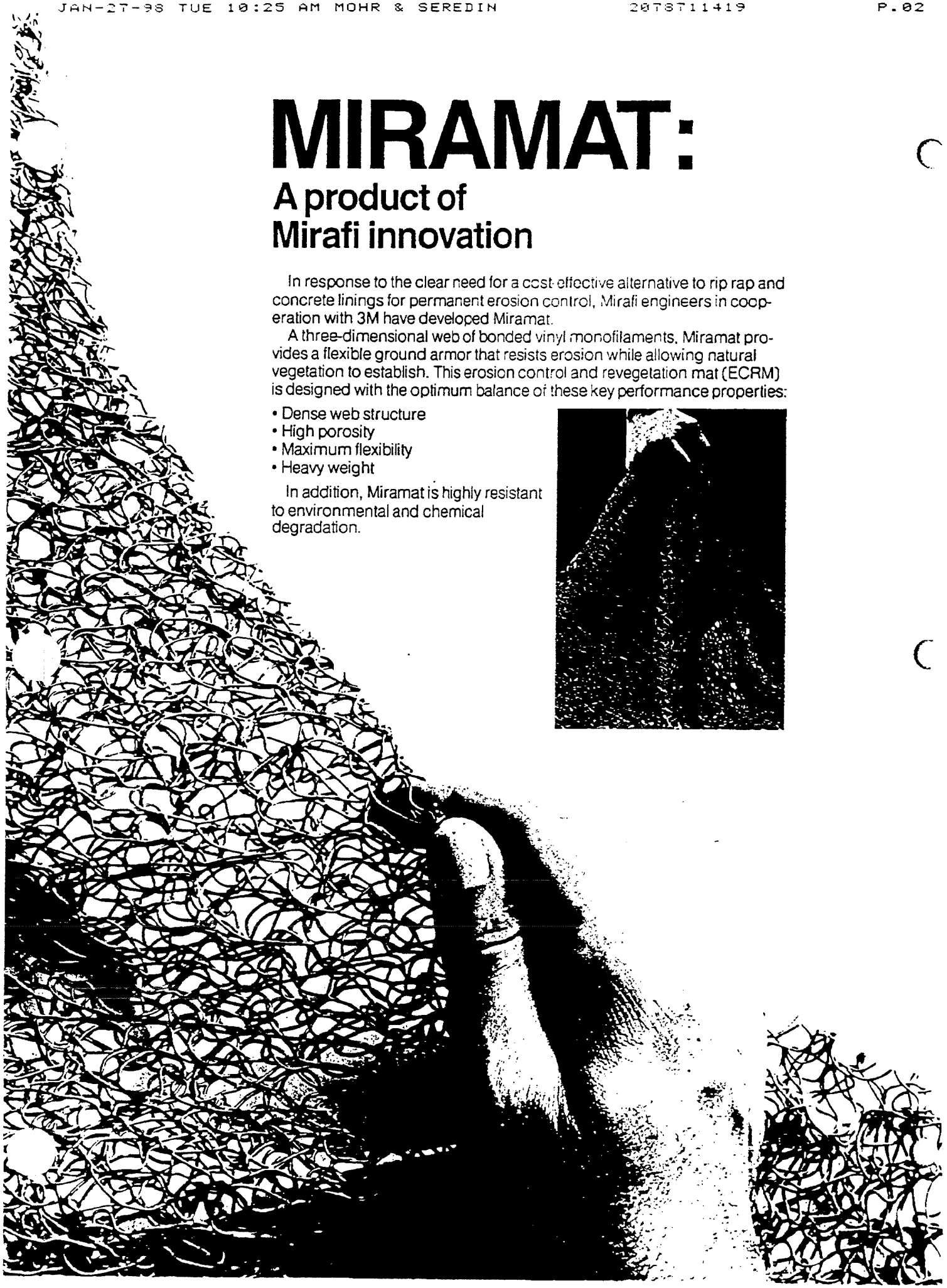
A product of Mirafi innovation

In response to the clear need for a cost-effective alternative to rip rap and concrete linings for permanent erosion control, Mirafi engineers in cooperation with 3M have developed Miramat.

A three-dimensional web of bonded vinyl monofilaments, Miramat provides a flexible ground armor that resists erosion while allowing natural vegetation to establish. This erosion control and revegetation mat (ECRM) is designed with the optimum balance of these key performance properties:

- Dense web structure
- High porosity
- Maximum flexibility
- Heavy weight

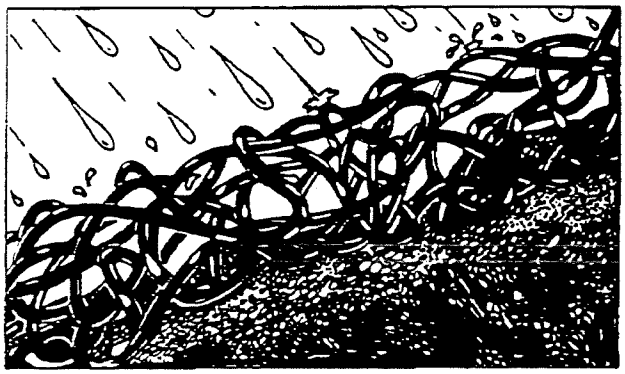
In addition, Miramat is highly resistant to environmental and chemical degradation.



Miramat: Performance that generates results

In order to establish and maintain vegetation growth in areas subject to severe erosion, Miramat has been carefully engineered for superior performance in its primary functions: temporary erosion control, mulching, and permanent erosion control. A secondary benefit to Miramat's use is reduced runoff velocity.

In addition to its "ECRM" functions, Miramat's green color provides an aesthetically pleasing natural grass appearance while vegetation is establishing.



Temporary Erosion Control

Miramat's flexibility, weight, web structure, and porosity make it extraordinarily effective in temporary erosion control.

- Conforms easily to the ground surface.
- Remains firmly in place as a stable ground armor.
- Shields soil surface from the erosive force of wind and rain.
- Prevents soil, seed, and fertilizer from washing away.
- Provides a rough surface to retain sediment deposits during runoff.

Mulching

Miramat's 3-dimensional, high porosity web structure acts as a non-deteriorating mulch.

- Holds soil, seed, and fertilizer in place.
- Retains sediment runoff as a medium for root growth.
- Retains moisture and heat necessary for germination.
- Allows uninhibited growth of grass and other vegetation.

Permanent Erosion Control

Once vegetation growth is established, Miramat continues to provide permanent erosion control as it becomes embedded in the new stem and root system.

- Protects new vegetation from washout.
- Reinforces and anchors the vegetation in place as a cohesive unit.

Reduced Runoff Velocities

Revegetated slopes and ditches reinforced with Miramat reduce runoff flow velocities. This is an important advantage that cannot be achieved with concrete lining.

- Reduces runoff flow volume and concentrations.
- Reduces the need for energy dissipation at the ditch outlet or slope base.
- Promotes water perculation and ground water recharge.

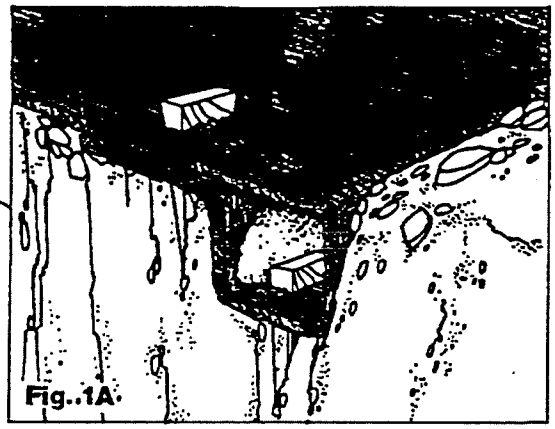


Fig. 1A

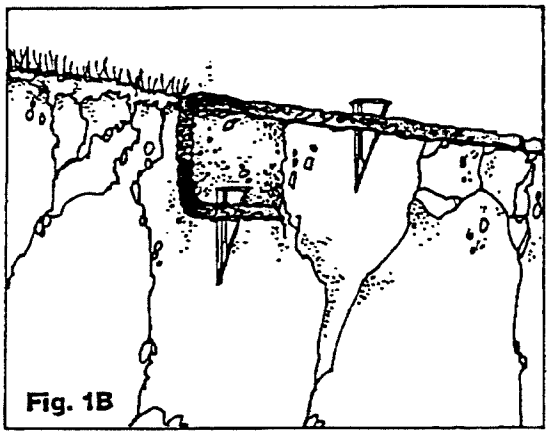


Fig. 1B

BURIAL OF TRANSVERSE TERMINAL END

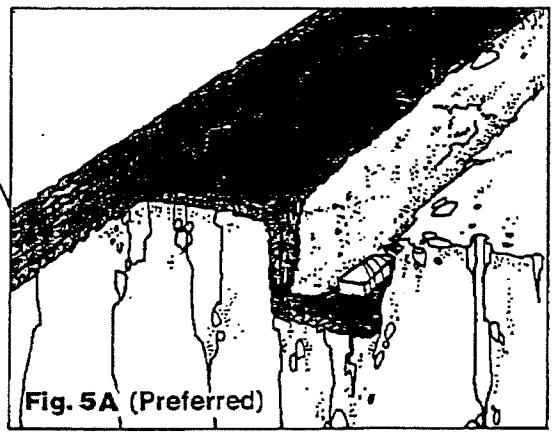


Fig. 5A (Preferred)

EDGE ANCHOR IN TRENCH

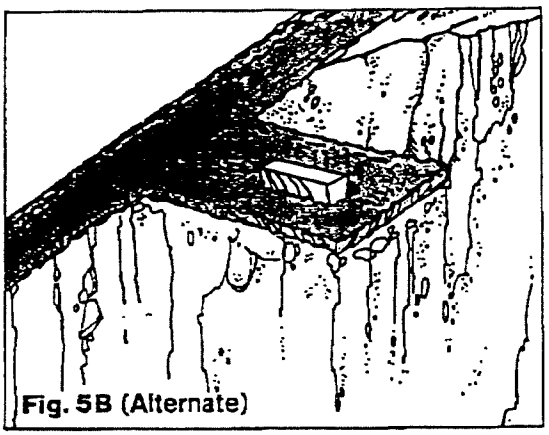


Fig. 5B (Alternate)

EDGE ANCHOR ON LEDGE

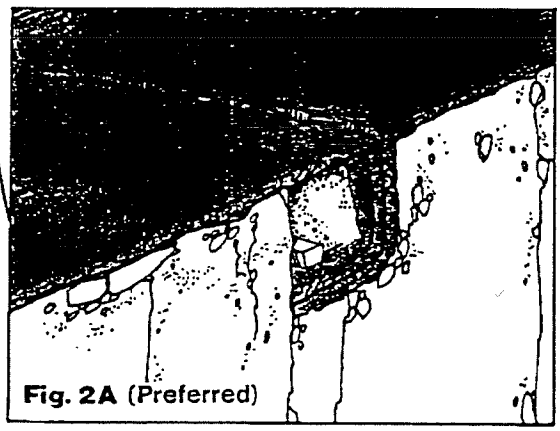


Fig. 2A (Preferred)

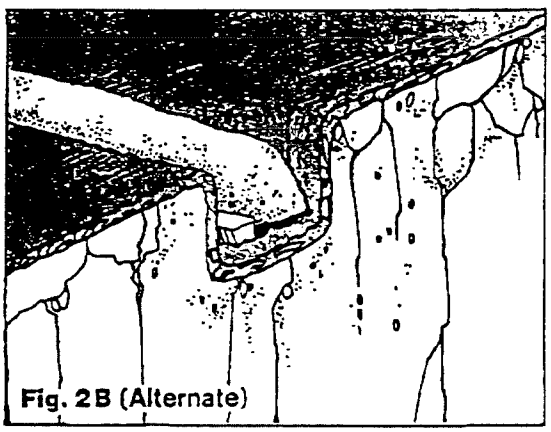


Fig. 2B (Alternate)

SECURE MAT IN CHECK SLOTS

Squaw Bay Corp
Consulting Engineers & Land Surveyors

Principals:

W. Scott Decker, P.E.
John R. Kennedy, P.E.
Peter B. Tubbs, P.E., P.L.S.
David W. Young, P.E., P.L.S.

January 6, 1998

Mr. Richard Knowland, Senior Planner
Department of Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

RE: Maine Medical Center
Medical Office Building

Dear Mr. Knowland:

On behalf of Maine Medical Center and Mediplex Medical Building Corporation we are pleased to submit this final Site Plan Review Application for a Medical Office Building to the City of Portland Planning Board for review under the City's Site Plan Review Ordinance. This letter addresses the following comments: a) Tony Lombardo's 12/3/97 memorandum to you, 2) Planning Board 12/9/97 workshop meeting, 3) City Planning staff 12/19/97 meeting with the major parties involved with the project, and 4) Jeff Preble's 12/18/97 letter to you.

Tony Lombardo's Memorandum

Comment #1: Site Plan needs to specify ADA sidewalk ramps at all street corners and exits/entrances of the proposed building.

Response: General Note #6 has been added to the Site Plan to address this comment.

Comment #2: Applicant must maintain a 4 feet wide sidewalk width on Forest Street. At the corner of Forest and Congress Street the proposed sidewalk scales less than 4 feet wide.

Response: General Note #9 has been added to the Site Plan drawing to specify that if sidewalks on Forest and Boynton Streets are disturbed, they must be replaced in kind.

Comment #3: Applicant needs to specify radius curb at the corner of Forest Street and Boynton Street.

Response: Same response as Comment #2, above.

P.O. Box 86A, Cumberland Center, ME 04021
Phone: (207) 829-6994 • Fax: (207) 829-5692 • Email: squawbay@neis.net

Comment #4: Site Plan must specify proposed sidewalk construction materials.

Response: The note referred to in response to Comment #2 above applies here also. Also, a note has been added to the Site Plan drawing stating that the sidewalk along Congress Street shall be brick.

Comment #5: Site Plan should specify a Bench mark and elevation based on City of Portland datum.

Response: General Note #8 has been added to the Site Plan drawing to address this comment.

Comment #6: Public Works does not allow direct connections into City of Portland manholes. Applicant must connect the proposed outlet pipe from the oil/sediment separation tank into the sewer main in Forest Street.

Response: The Site Plan has been revised to show the stormdrain which discharges from the oil/grit separator connected to the City main in Forest Street upgradient of the manhole at the intersection of Boynton and Forest Streets.

Comment #7: Curb installation detail must specify 7 inches of reveal not 6 inches as shown.

Response: All curb details specify a 7-inch reveal.

Portland Planning Board

Comment #8: Applicant should consider eliminating the turnout drop-off area in front of the building on Congress Street.

Response: Building equipment and supplies delivery vehicles cannot access the garage for deliveries. Therefore the turnout area allows the drop off of supplies and equipment without interfering with traffic on Congress Street. Also, it is anticipated that patients will also use the drop off zone.

Portland Planning Staff

Comment #9: Explain parking garage snow removal plan.

Response: Snow which falls on the upper level of the parking garage will be plowed to the northeast corner of the garage. Here the snow will be scooped up with a front end loader and dropped over the side of the garage into waiting trucks. Snow will not be stockpiled in the landscape area adjacent to the street.

Comment #10: Sidewalks on Congress, Forest and Boynton Streets shall be replaced in accordance with Contract Zone requirements.

Response: General Note #9 has been added to the Site Plan to address this comment.

Comment #11: The desirability of double handicap ramps in the drop off zone should be reviewed.

Response: The ramps and curb along the drop-off zone have been eliminated and bumper posts have been proposed to keep vehicles off the sidewalk.

Comment #12: Show width of all sidewalks.

Response: The width of sidewalk along Congress Street is shown on the Site Plan and General Note #9 has been added to the Site Plan to address the sidewalks on Forest and Boynton Streets.

Comment #13: Exterior lighting needs improvement.

Response: Section 10 of the Site Plan Review Application includes lighting information which addresses the comment.

Comment #14: Where will solid waste dumpster be located:

Response: Section 6 of the Site Plan Review Application addresses this comment.

Comment #15: Written statements of financial and technical ability to perform the work are required.

Response: Section 4 of the Site Plan Review Application contains information which addresses this comment.

Comment #16: The Site Plan must contain information regarding land area, gross building area, building footprint, and number of parking spaces.

Response: The Site Plan has been revised to include these items.

<u>Jeff Preble's 12/18/97 Letter</u>

Comment #17: More details should be provided on the excavation process to ensure a stable work area and handling of contaminated material.

Response: General Note #10 has been added to the Site Plan drawing to address this comment. Also, Section 6 of Site Plan Review Application contains a narrative which address the contaminated material issue.

Comment #18: Have any areas been identified for storage of equipment and materials?

Response: There is no area available adjacent to the site for storage of equipment and materials, therefore it will be the Contractor's responsibility to schedule deliveries of equipment and materials to satisfy his need for off-site areas.

Comment #19: Site safety fencing and other barricades will be required to ensure the safety of people in the area.

Response: General Note #11 has been added to the Site Plan drawing to address this comment.

Comment #20: There is a discrepancy on the plans on the required curb reveal. Drawing C-301 specifies the required 7-inch reveal which drawing L-101 lists a 6-inch reveal.

Response: See response to Comment #7, above.

Comment #21: The S.W. Cole report identifies the need for a foundation drain. This drain should be added to the Site Plan.

Response: The Erosion and Sedimentation Control Plan (Dwg. C-302) has been revised to include underdrain.

Comment #22: The detail sheet lists pipe sizes to 96 inches. We would suggest modifying this schedule to include only the sizes required for the project.

Response: Since there are no utility pipe sizes larger than 12", the pipe dimension tables have been removed from the detail sheet and the utility pipe trench detail has been revised to show 3'-0" minimum trench width.

Comment #23: The configuration of the drop off area along Congress Street needs further development. There is not enough room between the handicap ramps and the angle point on the curbing to allow vehicle parking without interfering with access to the ramps.

Response: See response to Comment #11, above.

Comment #24: Support details for the elevated walkway are needed to determine if there are any impacts on sidewalk widths.

Response: The details of the overhead pedestrian walkway supports have not yet been approved by the Owner. The details will be submitted to the City as soon as they are available.

Comment #25: The erosion control detail sheet is general and not specific to this project. Locations of the proposed erosion control structures should be shown on the plans.

Response: Drawing #C-302 has been revised to include site specific erosion control details.

Comment #26: A storm water management plan should be developed for the project. Specific items that should be addressed include:

- o Handling of surface runoff along the easterly property line to Boynton Street,
- o sizing of the oil/grit separator, and
- o checking the capacity of the existing 12 inch storm drain to handle the proposed roof drain flows. Squaw Bay and Portland Public Works have already agreed to allow the roof drain to be tied into the combined sewer system.

Response: The Stormwater Management Plan in Section 14 of the Site Plan Review Application addresses this comment.

Comment #27: The landscaping plan calls for several plantings in the area of the oil/grit separator. Some coordination is required to make certain access to the separator is not hindered by the plantings.

Response: The Landscape Plan has been revised to address this comment.

Defresne-Henry Inc. 12/15/97 Memorandum

Comment #28: The reveal of granite curving is to be 7-inches. Drawing L-101 specifies a 6-inch granite curb reveal.

Response: See response to comment 7, above.

Comment #29: The proposed roof drain piping should be installed with a clean out assembly.

Response: The Site Plan has been revised to include a catch basin tying the roof drains to the existing stormdrain. The catch basin provides cleanout capability.

Comment #30: The outlet pipe from the proposed oil/water separator is to connect into an existing sewer pipe per City of Portland Public Works.

Response: See response to Comment #6, above.

Comment #31: The details for the concrete sidewalks lack information about control joints.

Response: The sidewalk detail on Drawing C-301 has been revised to include details of concrete sidewalk control joints.

Comment #32: The Site Plan does not specify a curb radius at the corner of Forest Street and Boynton Street.

Response: General note #9 has been added to the Site Plan to address this comment.

Comment #33: The Site Plan does not include details for outdoor lighting.

Response: Section 10 of the Site Plan Review Application addresses this comment.

Comment #34: The erosion control plan is general and not specific to this project. This plan should provide specific erosion control details pertaining to this project.

Response: Drawing #C-302 has been revised to address this comment.

Comment #35: The Site Plan does not include details for site drainage, specifically at Boynton Street.

Response: The Stormwater Management Plan in Section 14 of the Site Plan Review Application addresses this comment.

Comment #36: A construction sequencing plan for the site and the drainage system has not been provided.

Response: A construction sequence plan for site drainage systems has been added to Drawing # C-302.

Comment #37: A maintenance program for the stormwater handling system has not been provided.

Response: The Stormwater Management Plan in Section 14 of the Site Plan Review Application addresses this comment.

Comment #38: The Site Plan should specify a benchmark and elevation per City of Portland datum.

Response: See response to Comment #5, above.

Comment #39: The Site Plan needs to show pedestrian crosswalks at entrances/exits to the proposed building.

Response: Pedestrian crosswalks have been added to the Site Plan.

Also, you will note that Section 8 & 15 contain copies of letters of request to the Portland Public Works Department and Maine Department of Inland Fisheries & Wildlife. Although we have not yet received the information required to satisfactorily address these issues, we expect to receive it prior to the public hearing.

I trust the information contained herein is sufficient to allow the Planning Board to review and approve the Application. Please contact me if you have any questions or require additional information.

Very truly yours,

SQUAW BAY CORP

W. Scott Decker, P.E.
Principal

WSD/cms

Table of Contents

Section 1

PROJECT DESCRIPTION

MMC proposes a new medical office building and garage structure to be built on a site encompassing the following streets: Congress Street, Forest Street and Boynton Street. Further MMC proposes a raised, covered walkway to extend from this new office building across Congress Street, to the existing Gillman Parking Facility. The project will consist of the following:

Multiple story garage structure
- Concrete foundation with reinforced concrete floor system
- Reinforced concrete framing
- Exposed concrete exterior facing
- Brick faced stair enclosures
- No roof on garage, standing seam metal roofs on stair enclosures

Multiple story medical office building
- Concrete foundation
- Steel framing
- Concrete on metal deck floor systems
- Elastomeric sheet roofing system over concrete and metal deck
- Precast concrete and brick facing

Raised covered walkway
- Concrete foundations
- Steel framing
- Concrete on metal deck floor system
- Elastomeric sheet roofing system over concrete and metal deck
- Glass and metal panel facing

The dimensions of the proposed facility consist of the following:

Property size: 58,954 Gross Square Feet
Building Foot Print at Grade: 45,768 Gross Square Feet

Office Building Size:

Level	Gross SF	Useable SF
Sub-2	592	260
Sub-1	4,711	3,575
1	5,802	3.229
2	14,174	11,917
3	15,050	12,781
4	15,050	12,781
Subtotal:	55,379.75	44,543

Garage Size: 159,000 Gross SF on 4+ levels

Elevated Walkway: 1220 Gross SF

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Section 2

DRAWINGS

Drawing #	Revision	Description
96118		Existing Conditions Plan
C-101	F	Site Plan
C-301	E	Miscellaneous Civil Details
C-302	E	Erosion and Sedimentation Control Plans
L-101	O	Landscape Plan
A5.1	1/6/98	Building Elevations
A5.2	1/6/98	Building Elevations

Section 3

TITLE, RIGHT OR INTEREST

Included herein is a copy of property deeds and Contract Zoning provisions as approved by Portland's City Council in July, 1997.

In Witness Whereof, the said William James Associates, Inc. has caused this instrument to be sealed with its corporate seal and signed in its corporate name by , its , thereunto duly authorized, this day of in the year one thousand nine hundred and

Signed, Sealed and Delivered
in presence of

William James Associates, Inc.
(CORPORATE NAME)

By

Its

(CORPORATE SEAL)

State of Maine

County of ss. 19

Then personally appeared the above named , of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Justice of the Peace.
Notary Public.
Attorney at Law.

Know all Men by these Presents,

That William James Associates, Inc.

a corporation organized and existing under the laws of the State of Maine and located at 446 Fore Street in the County of Cumberland and State of Maine in consideration of One ($1.00) Dollar and other valuable consideration

paid by Maine Medical Center

and whose mailing address is 22 Bramhall Street, Portland, ME 04102

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center, Its

heirs and assigns forever,

~~a certain lot or parcel of land~~ certain lots or parcels of land together with the buildings and improvements situated thereon located in the City of Portland, County of Cumberland and State of Maine and being more particularly described as follows:

Parcel A-1. A certain lot or parcel of land, together with the buildings and improvements thereon, situated on the easterly side of Forest Street in the City of Portland, County of Cumberland and State of Maine, known as 7-11 Forest Street in said City of Portland and bounded and described as follows:

Beginning at a point on the easterly sideline of Forest Street in the City of Portland, County of Cumberland and State of Maine, which point is located seventy-five (75) feet, more or less, northerly along the easterly sideline of said Forest Street from the northerly sideline of Congress Street in said City of Portland, and located at the northwesterly corner of land now or formerly of one Richards; thence northerly by the easterly sideline of said Forest Street, a distance of sixty-eight (68) feet, more or less, to land formerly of Charles Gardner; thence easterly by said Gardner land, a distance of fifty-eight (58) feet, more or less, to land nor or formerly of Sophia Mead; thence southerly by said Meade land, a distance of sixty-eight (68) feet, more or less, to said Richards land; thence westerly by said Richards land to the point of beginning (Tax Map 53-I-3).

Parcel A-2. A certain lot or parcel of land, together with the buildings and improvements thereon, situated on the easterly side of Forest Street in the City of Portland, County of Cumberland and State of Maine, known as 13-15 Forest Street in said City of Portland and bounded and described as follows:

Beginning at a point on the easterly sideline of Forest Street in the City of Portland, County of Cumberland and State of Maine, which point is located one hundred twenty-eight (128) feet, more or less, northerly along the easterly sideline of said Forest Street from the northerly sideline of Congress Street in said City of Portland and located at the corner of land formerly of Albion Harmon; thence northerly by the easterly sideline of said Forest Street, a distance of seventy (70) feet, more or less, to land formerly of Mrs. Gray; thence easterly by said Gray land, a distance of fifty-six (56) feet eight (8) inches to land now or formerly of Sophia Mead; thence southerly by said Mead land, a distance of seventy (70) feet, more or less, to said Harmon land; thence westerly by said Harmon land, a distance of fifty-six (56) feet eight (8) inches to the point of beginning (Tax Map 53-I-2).

buildings and improvements thereon, situated on the ... of Forest Street in the City of Portland, County of Cumberland and State of Maine, known as 17-19 Forest Street and 32-34 Boynton Street in the City of Portland, County of Cumberland and State of Maine, and bounded and described as follows:

Beginning at a point on the easterly sideline of Forest Street in the City of Portland, County of Cumberland and State of Maine, which point is located at the northwesterly corner of land formerly of Charles Gardner; thence northerly by the easterly sideline of said Forest Street, a distance of forty-five (45) feet, more or less, to land formerly of Davis Frazier; thence easterly by said Frazier land, a distance of sixty (60) feet, more or less, to land now or formerly of the heirs of S. Medes; thence southerly by land of said Medes heirs, a distance of forty-five (45) feet, more or less, to said Gardner land; thence westerly by said Gardner land a distance of sixty (60) feet, more or less, to the easterly sideline of said Forest Street and the point of beginning; but excepting from the above-described lot a strip of land taken by right of eminent domain by said City of Portland for the extension of Boynton Street (Tax Map 53-I-1).

Meaning and intending to convey and hereby conveying the same premises conveyed to William James Associates, Inc. by Ralph F. Blake, Jr. and Maxine M. Blake as described in a deed dated June 26, 1986 and recorded in Cumberland County Registry of Deeds in Book 7248 and Page 278.

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said Maine Medical Center, Its successors

heirs and assigns, to them and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, Its/ successors heirs and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, Its successors heirs and assigns forever, against the lawful claims and demands of all persons.

MAINE MEDICAL CENTER

BOARD OF TRUSTEES RESOLUTION

Authorizing Purchase of 7-19 Forest Street
and the Transfer of 883-903 Congress Street
from MMC Realty Corp.

VOTED: That the President, Donald L. McDowell, be and hereby is authorized in the name and on behalf of Maine Medical Center to purchase on 12/1/91 properties at 7-19 Forest Street, Portland, Maine from MMC Realty Corp. for $381,605.49 representing Realty's book value at the date of purchase.

VOTED: That the President, Donald L. McDowell, be and hereby is authorized in the name and on behalf of Maine Medical Center to accept the transfer from MMC Realty Corp. of property at 883-903 Congress Street, Portland, Maine at no cost to Maine Medical Center, said property having been transferred previously to Realty by the Medical Center at no cost.

VOTED: That the President, Donald L. McDowell, be and hereby is authorized in the name and on behalf of Maine Medical Center to execute and deliver any and all contracts, documents and instruments deemed by him to be appropriate to purchase said Forest Street properties and acquire by gift the Congress Street properties according to the prior resolutions.

N:100079MMC

CERTIFICATE OF TRUSTEES

To: Maine Medical Center and
Chicago Title Insurance Company

The undersigned Trustees of Edmunds Trust do certify to you as follows:

1. That Edmunds Trust was established by declaration of trust made at Boston, Massachusetts on February 19, 1970 by Ernest Henderson III, Mary Louise Henderson, and Joan Fitzgerald as the Trustees thereof; and
2. That said Edmunds Trust had not been amended or modified or terminated since its formation as aforesaid, and
3. That none of the undersigned have resigned or been removed or for any reason ceased to serve as trustees; that no additional trustees have been appointed; and that the undersigned continued to serve as the sole duly authorized Trustees of said Edmunds Trust, and
4. That as the Trustees of said Edmunds Trust the undersigned have full power and authority under the terms of the Trust to sell the real property situated at and near Congress, Forest and Boynton Streets in Portland, Maine to Maine Medical Center upon terms which they as Trustees deem appropriate and to execute and deliver to said Maine Medical Center a deed therefor as well as any other documents which they as Trustees deem necessary or convenient to accomplish such sale.

Executed this 31st day of October 1984

Ernest Henderson III, Trustee

Mary Louise Henderson, Trustee

Joan Fitzgerald, Trustee

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF MIDDLESEX

Personally appeared the said Ernest Henderson III as Trustee of said Edmunds Trust and acknowledged the foregoing to be his free act indeed and being duly sworn did swear the foregoing statement to be true and correct.

Marilyn H. Woodworth
Notary Public

(Notarial Seal)

MARILYN H. WOODWORTH
NOTARY PUBLIC
My Commission Expires
August 2, 1985

CLOSING AGENDA

SELLER : ERNEST HENDERSON, III, MARY LOUISE HENDERSON and JOAN FITZGERALD, as Trustees of Edmunds Trust under Declaration dated February 19, 1970. (Trustees)

BUYER : MAINE MEDICAL CENTER, a Maine Corporation (MMC)

PREMISES : Land at the corner of Congress and Forest Streets, Portland, Maine

DATE : November 1, 1984

DOCUMENTS:

1. Declaration of Edmunds Trust.

   a) Certificate updating trust, its existence, and authority of trustees, etc.

2. Corporate existence/authority of MMC.

   a) Secretary of State certificate of good standing.
   b) Corporate vote to purchase property and assume mortgage; designation of officer to act for MMC.

3. Deed of Trustees to MMC.

   a) Assumption of Finkelman mortgage.
   b) Declaration of Value.

4. Copies of executed Finkelman mortgage and promissory note of February 27, 1970.

5. Evidence of good title.

   a) Legal opinion, or
   b) Title insurance policy.

6. Closing statement.

   a) Prorations.

7. Recordings.

   a) Cumberland County Registry of Deeds.

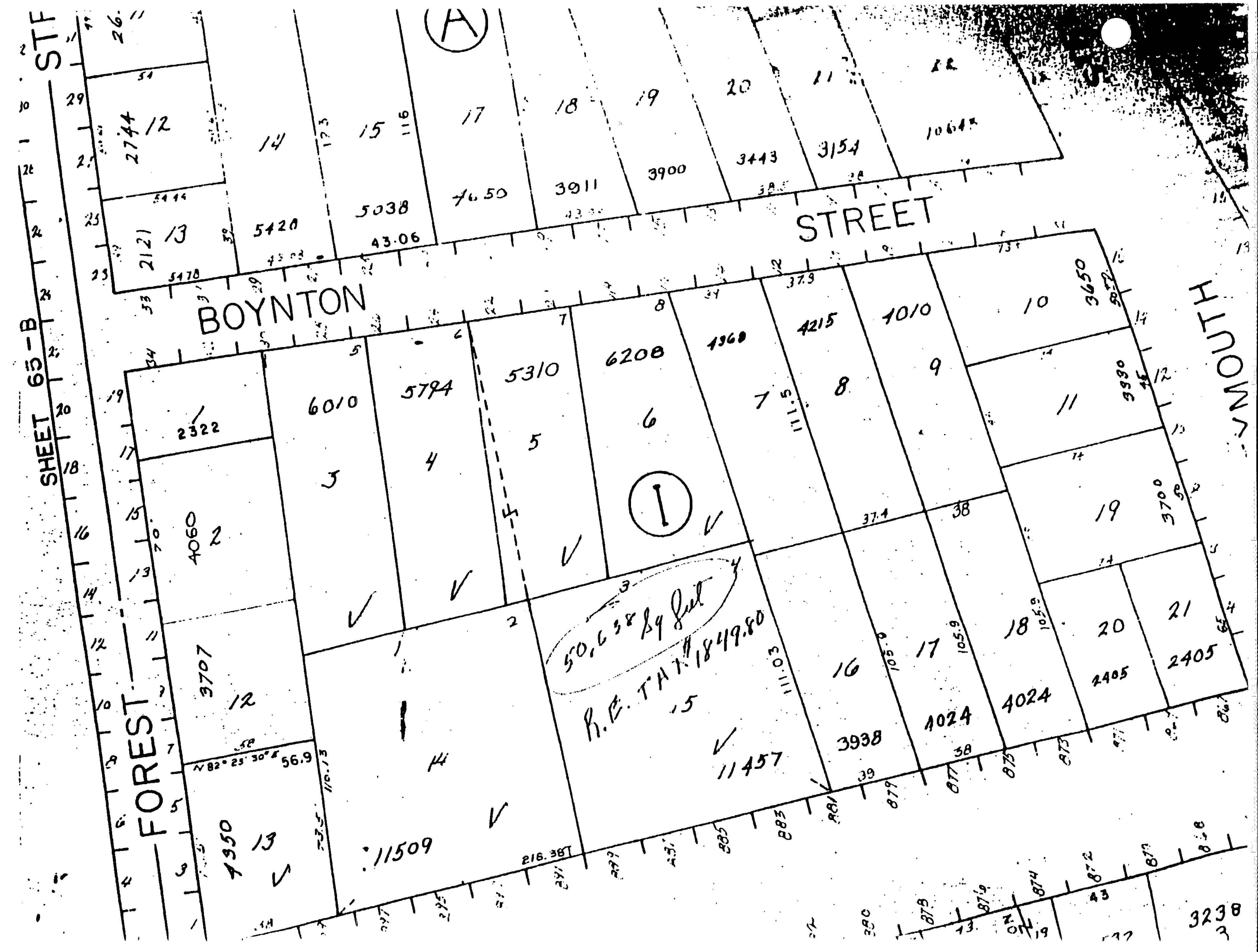
MAINE MEDICAL CENTER • PORTLAND, MAINE 04102

I, Robert B. Williamson, Jr., Secretary of the Board of Trustees of Maine Medical Center hereby certify that the following is a true and correct copy of a Vote taken by the Board of Trustees at their regularly scheduled meeting on September 27, 1984:

> VOTED: That the Hospital purchase the Henderson property located on Congress Street in Portland, Maine for $215,000, consisting of $155,000 in cash and the assumption of a $60,000 six-year mortgage at five percent simple interest; and the officers of the corporation are authorized and directed to take the appropriate steps to effect the purchase, and to execute whatever documents are necessary or desirable to effect the purchase.

1 November 1984
Date

Robert B. Williamson, Jr.
Secretary


BOYNTON STREET
FOREST
SHEET 65-B
50,638 sq feet
R. E. TAX 1849.80

BUREAU OF TAXATION

State House, Station 24, Augusta, Maine 04333

FILE WITH REGISTRY OF DEEDS

STATE OF MAINE

PLACE STAMP ABOVE

3L.)

REAL ESTATE TRANSFER TAX DECLARATION

TITLE 36 SECTION 4641 through 4641 — L M.R.S.A

1. MUNICIPALITY OR TOWNSHIP	COUNTY	BOOK	PAGE
PORTLAND	CUMBERLAND		

GRANTEE (BUYER)

2. NAME(S) (Last, first and middle initial or corporate name)

MAINE MEDICAL CENTER, a Maine corporation

3. NUMBER AND STREET	CITY OR TOWN	STATE AND ZIP CODE
22 Bramhall Street	Portland	Maine 04102

GRANTOR (SELLER)

4. NAME(S) (Last, first and middle initial or corporate name)

ERNEST HENDERSON III, MARY LOUISE HENDERSON and JOAN FITZGERALD
Trustees of Edmunds Trust under Declaration of Trust dated 2/19/70

5. NUMBER AND STREET	CITY OR TOWN	STATE AND ZIP CODE

PROPERTY

6. BRIEF DESCRIPTION (Example: Such as Map and Lot numbers, Located at 17 Elm Street, Augusta or 10 Acres, farmhouse and barn known as Smith Farm, Mill Road, Houlton). Land situated northerly of Congress St., easterly of Forest Ave. and southerly of Boynton St. in the City of Portland, County of Cumberland and State of Maine.

7. DATE OF TRANSFER (Use numerals) ▶ MO. xx10 DAY 31 YR. 84

The GRANTEE should be aware of possible land classification under the provisions of the Maine Tree Growth Tax Law and Farm and Open Space Land Law.

CONSIDERATION

8. Consideration meaning total amount or price paid, or required to be paid, for real property valued in money, whether received in money or otherwise and shall include the amount of any mortgage, liens or encumbrances thereon. (Tax will be calculated at the registry on the basis of line 8 at the rate of 55¢ per $500 or fractional part thereof.)
If exempt, complete line 9.

▶ $ 215,000 .00

EXEMPTION

9. EXPLAIN BASIS FOR EXEMPTION (Complete only if transfer is claimed to be exempt.).
IF INTEREAMILY SALE, See 36 M.R.S.A., Sec. 4641-C for exemption.

SPECIAL CIRCUMSTANCES

10. Were there special circumstances in the transfer which suggest that the sale price of the property was either more or less than its fair market value (Such as the fact that transfer was a forced sale, interfamily sale, intercorporate sale, gift, exchange, etc.).

▶ ☐ YES ☐ NO

OATH

11. Aware of penalties as set forth by Title 36, Section 4641-K, we hereby swear or affirm that we have each examined this return and to the best of our knowledge and belief, it is true, correct and complete.

GRANTEE(S) or AUTHORIZED AGENT	DATE	GRANTOR(S) or AUTHORIZED AGENT	DATE
[signature]	11/1/84	[signature] Authorized Agent	11/1/84
[signature]			

PTS 520
30M 10/80

THIS DOCUMENT IS CONFIDENTIAL WHEN COMPLETED.
THE CONTENTS SHOULD BE PROTECTED — TITLE 36, M.R.S.A. SECTION 191.

Attest: A true copy of the original

Louis A. Wood

Louis A. Wood, Attorney for
Trustees of Edmunds Trust
November 1, 1984

MORTGAGE NOTE

$200,000.00

Portland, Maine
February 27, 1970

FOR VALUE RECEIVED, we, jointly and severally, promise to pay to the order of MYRON FINKELMAN, of Portland, Maine, the sum of Two Hundred Thousand Dollars ($200,000.00) twenty (20) years from this date, with interest on the unpaid principal balance thereof at the rate of five per cent (5%) per annum; interest payments at said rate shall be paid monthly beginning one month from date hereof and continuing on the corresponding day of each month thereafter during the term hereof; principal shall be paid in installments of Ten Thousand Dollars ($10,000.00) beginning one year from date hereof and continuing on the corresponding day of each succeeding year during the term hereof.

Makers reserve for themselves and any person liable herefor the right to prepay at any time the whole or any part of the unpaid principal balance hereof without premium or penalty; any such partial prepayment of principal shall be credited to scheduled principal installments in the inverse order of maturity.

In case of default in the payment of any installment of interest or of principal due hereon and such default is continued for one month, or default in any term or condition of a real estate mortgage of even date given as security for this note, the holder of this note shall have the option to declare the entire principal sum and accrued interest due and payable at once.

Makers and all other parties liable herefor, whether principal, endorser, guarantor, or otherwise, hereby severally waive demand, protest, presentment and notice of every kind, and waive recourse to suretyship defenses generally, including extensions of time, releases of security, and other indulgences which may be granted from time to time by the holder of this note to the makers or any party liable herefor.

This promissory note is secured by a mortgage of land and buildings situated northerly of Congress Street, easterly of Forest Street and southerly of Boynton Street, Portland, Maine. Payments of principal and interest due hereunder shall be made to the holder hereof at 4 Belmeade Road, Portland, Maine unless another place be designated in writing to the makers hereof.

The undersigned Trustees under Declaration of Trust dated February 19, 1970 execute this note solely in their capacities as Trustees of Edmunds Trust and not as individuals.

Witness:

s/Robert Bernstein

s/Ernest Henderson III
Ernest Henderson III

s/Florence Campbell

s/Mary Louise Henderson
Mary Louise Henderson

s/Robert Bernstein

s/Joan Fitzgerald
Joan Fitzgerald

As Trustees of Edmunds Trust and not individually

G U A R A N T Y

The undersigned, as an individual, hereby guarantees full and prompt payment when due of the foregoing promissory note in accordance with its terms until such time as the unpaid principal amount then due on any promissory note or notes secured by a first mortgage upon the said land and buildings in Portland, Maine shall represent less than 75% of the entire cost of the land, buildings and permanent improvements constructed upon said premises; after such time this Guaranty shall be void and of no effect. For the purpose of computing such cost, the value of said land is hereby determined to be $100,000.00 and the cost of construction of buildings and permanent improvements shall include all costs of labor, materials, architectural and engineering fees, contractors' services, landscaping and land improvement, fixtures, cost of construction financing and shall also include costs of machinery, equipment and personal property used in the operation of any business on said mortgaged premises if such items are included within a chattel mortgage or security agreement securing said first mortgage note or notes.

Witness:

s/Charles Cutts

s/Ernest Henderson III
Ernest Henderson III

CLOSING STATEMENT

SELLER : ERNEST HENDERSON III, et al, Trustees of Edmunds Trust

BUYER : MAINE MEDICAL CENTER

PREMISES: Land at Congress, Forest and Boynton Streets, Portland, Maine

DATE : November 1, 1984

Sales Price:			$215,000.00
Less (1)	Mortgage balance assumed	60,000.00	
(2)	Interest on mortgage from October 27 to October 31, 1984 (4 days on $60,000 @ 5% per year)	32.88	60,032.88
Net Due Seller			$154,967.12

Notes:

(1) Under the terms of the lease from the Trustees of Maine Medical Center as lessee, the lessee is to pay in addition to rent one half of lessor's real estate taxes. After closing, the lessee will check its records with records of the Trustees as to such tax payments and will pay Trustees any balance due on such taxes to date of closing.

(2) Copies of assumed mortgage and note by Trustees of Edmunds Trust to Myron Finkleman both dated February 27, 1970 are attached hereto.

(3) Letter from Trustees substantiating mortgage balance at $60,000 plus interest paid to October 27, 1984 is attached hereto.

(4) Seller to pay transfer tax and its legal costs separately.

(5) Buyer to pay its costs to record, its legal costs and title insurance separately.

MAINE MEDICAL CENTER • PORTLAND, MAINE 04102

Taxes

ACKNOWLEDGMENT

Pursuant to Article 3 of a Lease dated September 20, 1982, Maine Medical Center acknowledges that it owes one half of the real estate taxes assessed against the premises described in said Lease to the Edmunds Trust, and shall pay the balance due after a mutually agreed upon accounting.

Reynold R. Welch
Associate Vice President
for Facilities Planning

Date 11/1/84

paid by MAINE MEDICAL CENTER FOUNDATION, a corporation

whose mailing address is 22 Bramhall Street, Portland, Maine 04102

the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey,

and forever quitclaim unto the said MAINE MEDICAL CENTER FOUNDATION, Its

successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land with any improvements thereon situated northerly of Congress Street, easterly of Forest Street and southerly of Boynton Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the easterly side of Forest Street with the northerly line of Congress Street, which intersection is situated one (1) foot south 4° 22' 40" east from an iron set in the easterly side of Forest Street; thence north 4° 22' 40" west by the easterly side of Forest Street 76.50 feet to a tack set in a fencepost and land now or formerly of Blake Brothers, Inc.; thence on the following courses and distances by said land of Blake Brothers, Inc. north 82° 23' 30" east 56.90 feet to an iron set in the ground and the southeasterly corner of said land of Blake Brothers, Inc.; thence north 50° 02' 30" west 172.63 feet to a drill hole in a concrete retaining wall at the southerly side of Boynton Street 178.04 feet to an iron set in the ground at land now or formerly of George L. Nelson; thence south 15° 01' 20" east by said Nelson land and land now or formerly of Mary K. Greene 227.02 feet passing through a tack in a step to the northerly side of Congress Street; thence south 79° 28' 40" west by the northerly side of Congress Street 276.38 feet to the intersection of the easterly side of Forest Street and the northerly side of Congress Street and the point of beginning; containing 49,667 square feet, more or less.

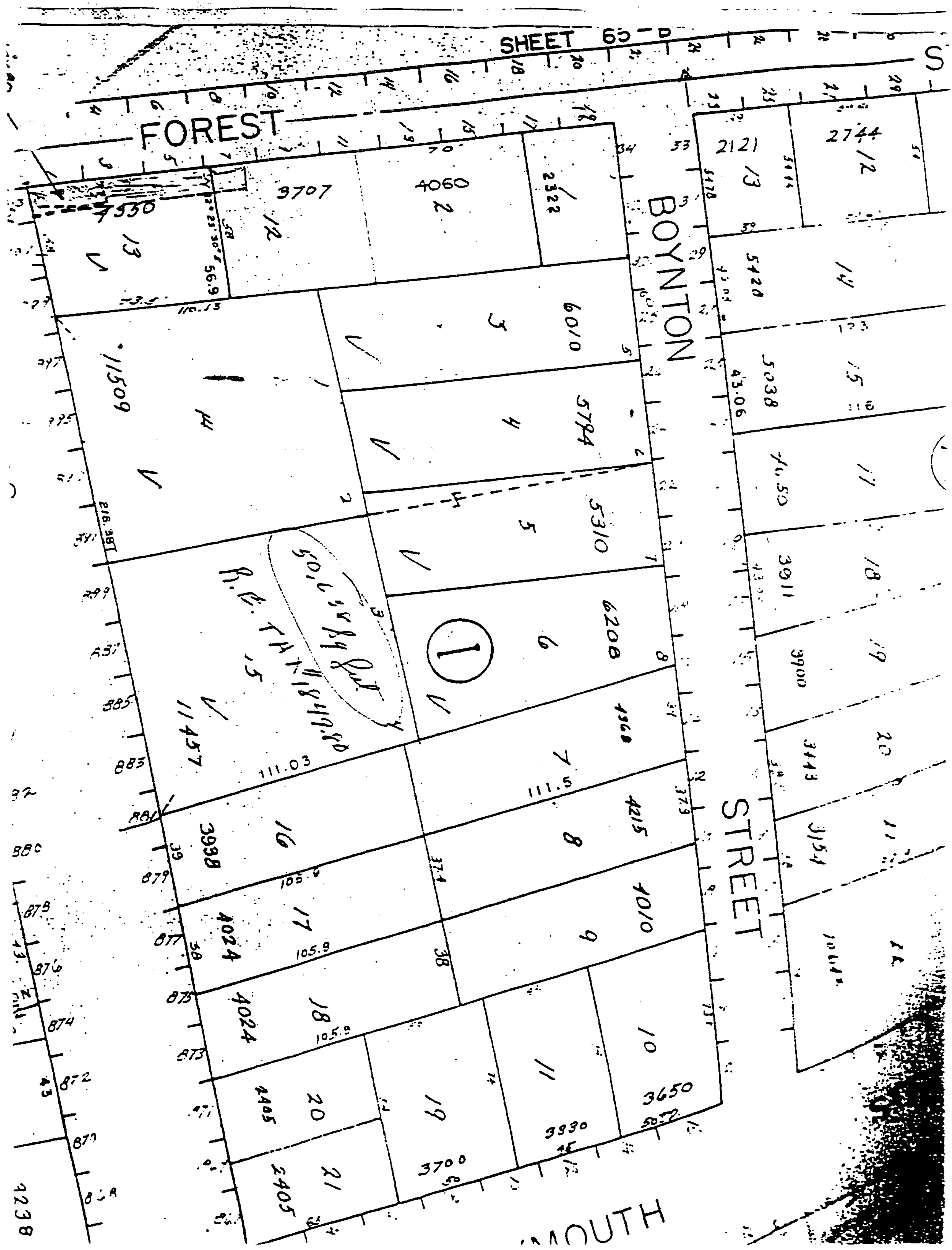
Being the same premises conveyed to Ernest Henderson III, et al, as Trustees by deed of Myron Finkelman dated February 27, 1970, recorded in the Cumberland County Registry of Deeds in Book 3118, Page 869.

This conveyance is made subject to the mortgage of Ernest Henderson III, et al to Myron Finkelman dated February 27, 1970 recorded in said Registry in Book 3118, page 871, the obligations

of which mortgage and the remaining debt it secures the Grantee hereunder, by its acceptance hereof, hereby assumes and agrees to pay and perform.

Meaning and intending to convey and hereby conveying the same premises conveyed to Maine Medical Center by Ernest Henderson III, et als as described in a deed dated October 31, 1984 and recorded in Cumberland County Registry of Deeds in Book 6606, Page 99.

The above described property sometimes is referred to as located at 883-889 Congress Street, 891-897 Congress Street, 889-903 Congress Street, 28-30 Boynton Street, 24-26 Boynton Street, 20-22 Boynton Street and 16-18 Boynton Street.


SHEET 65
FOREST
BOYNTON
STREET
MOUTH
9707
4060
2322
6010
5794
5310
6208
4215
4010
3938
4024
4024
3650
3330
3700
2405
2405
11509
11457
5420
5038
3911
3900
2121
2744
111.03
111.5
105.9
105.9
56.9
43.06
216.38
1238

MAINE MEDICAL CENTER • PORTLAND, MAINE 04102

November 26, 1986

Kenneth E. Snitger, Esq.
Pomeroy & Snitger
465 Congress Street, Suite 606
Portland, ME 04101

Re: Forest and Boynton Streets Closing

Dear Mr. Snitger:

Enclosed please find the following closing documents:

1. Closing Statement;
2. Warranty Deed;
3. Declaration of Value;
4. Corporate Resolution;
5. Clerk's Certificate; and
6. Assignment of Security Deposits.

Please execute the Clerk's Certificate and have your clients execute the Corporate Resolution authorizing the sale prior to the closing date.

We understand from the title examination that there are three outstanding mortgages of record. The first mortgage is from Mr. and Mrs. Blake to Maine National Bank dated February 27, 1986 and recorded in Volume 7091, Page 215. The second mortgage is from William James Associates, Inc. to Maine Savings Bank dated June 26, 1986 and recorded in Volume 7248, Page 281. There is a third mortgage from William James Associates, Inc. to Maxine M. Blake dated June 26, 1986 and recorded in Volume 7248, Page 295. Discharges of these mortgages must be obtained for delivery to us by the sellors at closing along with the execution and delivery of the enclosed documents.

The closing has been scheduled for 11:00 a.m. on Monday, December 1, 1986 at Maine Medical Center.

If you have any questions upon reviewing these documents, please do not hesitate to call me.

Sincerely,

Elisabeth Belmont
Assistant General Counsel

EB/ji
Encls.

CLOSING STATEMENT

SELLER: William James Associates, Inc.

BUYER: Maine Medical Center

PREMISES: 7-11, 13-15, 17-19 Forest Street
32-34 Boynton Street

DATE: DECEMBER 1, 1986

PURCHASE PRICE:	$400,000.00
Less Deposit	5,000.00
Balance Due	$395,000.00

REAL ESTATE TAXES: Taxes due for the period July 1, 1986 - December 1986: $1,660.37

Taxes paid by Seller for the period July 1, 1986 - December 31, 1986 (184 days) $1,660.37

Rebate due Seller for the period December 1, 1986- December 31, 1986 (31 days) $280.00

UTILITIES:
Heating Oil

TRANSFER TAX DUE REGISTRY OF DEEDS:

Seller:	$880.00
Buyer:	880.00
Total	$1,760.00

WILLIAM JAMES ASSOCIATES, INC.

CLERK'S CERTIFICATE

I, the undersigned, Clerk of William James Associates, Inc., a Maine corporation, do hereby certify that the following resolutions were duly adopted by unanimous written consent of the stockholders without formal meeting, and that said resolutions have not been rescinded or modified and are in full force and effect on the date of this Certificate.

RESOLVED, That the stockholders rafify and confirm the action of William J. Dowd as Treasurer of the Corporation in the negotiation and execution of a Purchase and Sale Agreement with Maine Medical Center providing for the sale and conveyance of real estate located at 7-19 Forest Street and 32-34 Boynton Street as well as certain furniture and fixtures therein for the sum of Four Hundred Thousand ($400,000.00) Dollars.

RESOLVED, That the President, James L. Wolf, be and hereby is authorized in the name and on behalf of the corporation to execute and deliver a warranty deed and bill of sale to the real estate located at 7-19 Forest Street and 32-34 Boynton Street as well as certain furniture and fixtures therein to Maine Medical Center in accordance with the aforesaid agreement.

RESOLVED, That James L. Wolf as President of the Corporation, be and hereby is authorized in the name and on behalf of the Corporation to execute and deliver any and all documents and instruments to Maine Medical Center in order to carry out the purposes of the foregoing resolution.

I, the undersigned, Clerk of William James Associates, Inc., do hereby further certify that according to the official records of meetings of Stockholders, all of which are maintained in my possession, that the following named individuals are the duly elected and qualified officers of the corporation on the date of this Certificate:

James L. Wolf, President
William J. Dowd, Treasurer

The undersigned Clerk further certifies that according to the stock register and record book of said corporation which is maintained in my possession, the following named individuals are the sole stockholders of record to whom stock of the corporat-on is issued and outstanding on the date of this Certificate:

James L. Wolf William J. Dowd

IN WITNESS WHEREOF, I have hereunder affixed my signature and the seal of this corporation this day of , 1986.

(Seal)

Clerk

WILLIAM JAMES ASSOCIATES, INC.

ACTION TAKEN BY UNANIMOUS WRITTEN CONSENT

Pursuant to Title 13-A, Section 620, M.R.S.A., the undersigned, being all of the stockholders of the above named corporation, hereby consent to the taking of and hereby take the following actions in the form of the following resolutions adopted by unanimous vote of said stockholders:

VOTED: That the stockholders ratify and confirm the action of William J. Dowd as Treasurer of the Corporation in the negotiation and execution of a Purchase and Sale Agreement with Maine Medical Center providing for the sale and conveyance of real estate located at 7-19 Forest Street and 32-34 Boynton Street as well as certain furniture and fixtures therein for the sum of Four Hundred Thousand ($400,000.00) Dollars.

VOTED: That the President, James L. Wolf, be and hereby is authorized in the name and on behalf of the corporation to execute and deliver a warranty deed and bill of sale to the real estate located at 7-19 Forest Street and 32-34 Boynton Street as well as certain furniture and fixtures therin to Maine Medical Center in accordance with the aforesaid agreement.

VOTED: That James L. Wolf as President of the Corporation, be and hereby is authorized in the name and on behalf of the Corporation to execute and deliver any and all documents and instruments to Maine Medical Center in order to carry out the purposes of the foregoing resolution.

Dated: _____

_____ _____

William J. Dowd James L. Wolf

ASSIGNMENT OF SECURITY DEPOSITS

FOR VALUE RECEIVED, William James Associates, Inc. hereby assigns, transfers and sets over unto Maine Medical Center certain security deposits of tenants located at 7-11, 13-15, 17-19 Forest Street and 32-34 Boynton Street in the sum of Two Thousand Nine Hundred Forty ($2,940.00) Dollars more particularly described in Exhibit A attached hereto.

Maine Medical Center agrees to hold such security deposits on deposit for the tenants listed in Exhibit A attached hereto.

Dated this day of 1986.

WILLIAM JAMES ASSOCIATES, INC.

By _____
Its:

MAINE MEDICAL CENTER

By _____
Its:

SCHEDULE A

	Tenants	Security Deposits
9 Forest Street	Ca Huynh	$400.00
	Mary Buck	275.00
	Patricia Gouthro	-0-
	J&J Construction	450.00
15 Forest Street	Norman Warkwell	150.00
	Ellen Blake	-0-
19 Forest Street	Wadleigh, Yocz, Nabrowsky	425.00
	William Market	100.00
	Mary Jane Brink	200.00
	Vacant	400.00
	Wilfred Martin	340.00*
	Jennifer Alfiero	200.00**

*Portland Housing Authority Subsidy

** Jennifer to pay extra $25 p/week to be applied towards security deposit till the amount of $400 is paid in full.

November 25, 1986

BUREAU OF TAXATION

FILE WITH COUNTY REGISTRY OF DEEDS

STATE OF MAINE

PLACE STAMP ABOVE

Property Tax Division
State House Station #24
Augusta, Maine 04333

REAL ESTATE TRANSFER TAX DECLARATION

TITLE 36, M.R.S.A., SECTIONS 4641 through 4641-K

1. MUNICIPALITY OR TOWNSHIP	COUNTY	BOOK	PAGE
Portland	Cumberland		

GRANTEE (BUYER)

2. IDENTITY: NAME(S) (LAST, FIRST, INITIAL) AND SOCIAL SECURITY NUMBER(S) OR CORPORATE NAME(S) AND FEDERAL IDENTIFICATION NUMBER(S)

Maine Medical Center — 01-0202-38552

3. NUMBER AND STREET	CITY OR TOWN	STATE AND ZIP CODE
22 Bramhall Street	Portland	ME 04102

GRANTOR (SELLER)

4. IDENTITY: NAME(S) (LAST, FIRST, INITIAL) AND SOCIAL SECURITY NUMBER(S) OR CORPORATE NAME(S) AND FEDERAL IDENTIFICATION NUMBER(S)

William James Associates, Inc. — 01-0417617

5. NUMBER AND STREET	CITY OR TOWN	STATE AND ZIP CODE
446 Fore Street	Portland	ME 04101

PROPERTY

6. BRIEF DESCRIPTION (Such as: Map and Lot numbers; Located at 17 Elm Street, Augusta; or 10 Acres, farmhouse and barn known as Smith Farm, Mill Road, Houlton).

7-19 Forest Street and 32-34 Boynton Street, land and buildings situated thereon

7. DATE OF TRANSFER (Use numerals) ► MO. ____ DAY ____ YR. ____

On date of transfer, this property was classified under Title 36 MRSA Chapter 105 as (check only one):

☐ Tree Growth ☐ Farmland ☐ Open Space ☒ Not Applicable

CONSIDERATION

8. Consideration meaning total amount or price paid, or required to be paid, for real property valued in money, whether received in money or otherwise and shall include the amount of any mortgage, liens or encumbrances thereon. (Tax will be collected at the registry when the deed is recorded. The tax rate is $2.20 per $500 of consideration, or fractional part thereof. The tax incidence is equally divided between the buyer and seller.)
If exempt, complete line 9 ► $ 400,000 .00

EXEMPTION

9. EXPLAIN BASIS FOR EXEMPTION (Complete only if transfer is claimed to be exempt).

None

SPECIAL CIRCUMSTANCES

10. Were there special circumstances in the transfer which suggest that the sale price of the property was either more or less than its fair market value (Such as the fact that transfer was a forced sale, intrafamily sale, intercorporate sale, gift, exchange, etc.). ► ☐ YES ☒ NO

OATH

11. Aware of penalties as set forth by Title 36, Section 4641-K, we hereby swear or affirm that we have each examined this return and to the best of our knowledge and belief, it is true, correct, and complete.

GRANTEE(S) or AUTHORIZED AGENT	DATE	GRANTOR(S) or AUTHORIZED AGENT	DATE
Maine Medical Center		William James Associates, Inc.	
Exec V P & Treas			

PREPARER

12. Name and address of person or firm preparing this form: Elisabeth Belmont, Asst. General Counsel Maine Medical Center

PTS520
SDM (REV. 7/88)

THIS DOCUMENT IS CONFIDENTIAL WHEN COMPLETED.
THE CONTENTS SHOULD BE PROTECTED—TITLE 36, M.R.S.A., SECTION 191.
THIS DECLARATION SHALL ACCOMPANY THE DEED AT THE TIME

Quitclaim Deed

Without Covenant

From

ERNEST HENDERSON, III, et al,
Trustees
To

MAINE MEDICAL CENTER

Dated Oct. 31, 1984.

State of Maine,

.....ss. Registry of Deeds.

Received....., 19....

at ....H., ...M., ...M., and

recorded in Book ....., Page .....

Attest: .....
Register.

Return to:

FROM THE OFFICE OF

Office of Legal Affairs
Re. Medical Center
22 Bramhall Street
Portland, Me. 04102

Marks Printing House, Portland, Maine
ML 20-4

Know all Men by these Presents,

3a

That we, ERNEST HENDERSON III and MARY LOUISE HENDERSON, of Wellesley, Massachusetts, and JOAN FITZGERALD, of Maynard, Massachusetts, all as Trustees of Edmunds Trust under Declaration of Trust dated February 19, 1970

in consideration of One Dollar ($1.00) and other valuable considerations, receipt of which is hereby acknowledged,

paid by MAINE MEDICAL CENTER, a Maine corporation,

whose mailing address is 22 Bramhall Street, Portland, Maine 04102

the receipt whereof we do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quitclaim unto the said Maine Medical Center, its successors

heirs and assigns forever, a certain lot or parcel of land with any improvements thereon situated northerly of Congress Street, easterly of Forest Street and southerly of Boynton Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the easterly side of Forest Street with the northerly line of Congress Street, which intersection is situated one (1) foot South 4° 22' 40" East from an iron set in the easterly side of Forest Street; thence North 4° 22' 40" West by the easterly side of Forest Street 76.50 feet to a tack set in a fencepost and land now or formerly of Blake Brothers, Inc.; thence on the following courses and distances by said land of Blake Brothers, Inc. North 82° 23' 30" East 56.90 feet to an iron set in the ground and the southeasterly corner of said land of Blake Brothers, Inc.; thence North 50° 02' 30" West 172.63 feet to a drill hole in a concrete retaining wall at the southerly side of Boynton Street; thence North 85° 30' East by the southerly side of Boynton Street 178.04 feet to an iron set in the ground at land now or formerly of George L. Nelson; thence South 15° 01' 20" East by said Nelson land and land now or formerly Mary K. Greene 227.02 feet passing through a tack in a step to the northerly side of Congress Street; thence South 79° 28' 40" West by the northerly side of Congress Street 276.38 feet to the intersection of the easterly side of Forest Street and the northerly side of Congress Street and the point of beginning; containing 49,667 square feet, more or less.

Being the same premises conveyed to Ernest Henderson III, et al, as Trustees by deed of Myron Finkelman dated February 27, 1970, recorded in the Cumberland County Registry of Deeds in Book 3118, Page 869.

This conveyance is made subject to the mortgage of the grantors herein to Myron Finkleman dated February 27, 1970 recorded in said Registry in Book 3118, Page 871, the obligations of which mortgage and the remaining debt it secures Maine Medical Center, by its acceptance hereof, hereby assumes and agrees to pay and perform.

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to the said Maine Medical Center, its successors and assigns forever.

In Witness Whereof, we the said Ernest Henderson III, Mary Louise Henderson and Joan Fitzgerald, all as Trustees under Declaration of Trust establishing the Edmunds Trust dated February 19, 1970, being the sole trustees of said Edmunds Trust and hereunto duly empowered and authorized by said Trust, which is in full force and effect and has not been amended or mofified to date hereof,

have hereunto set our hands and seals this 31st day of the month of October, A.D. 1984.

Signed, Sealed and Delivered
in presence of

Harriet Elliott

Ernest Henderson, III

Mary Louise Henderson

Joan Fitzgerald

all as Trustees aforesaid

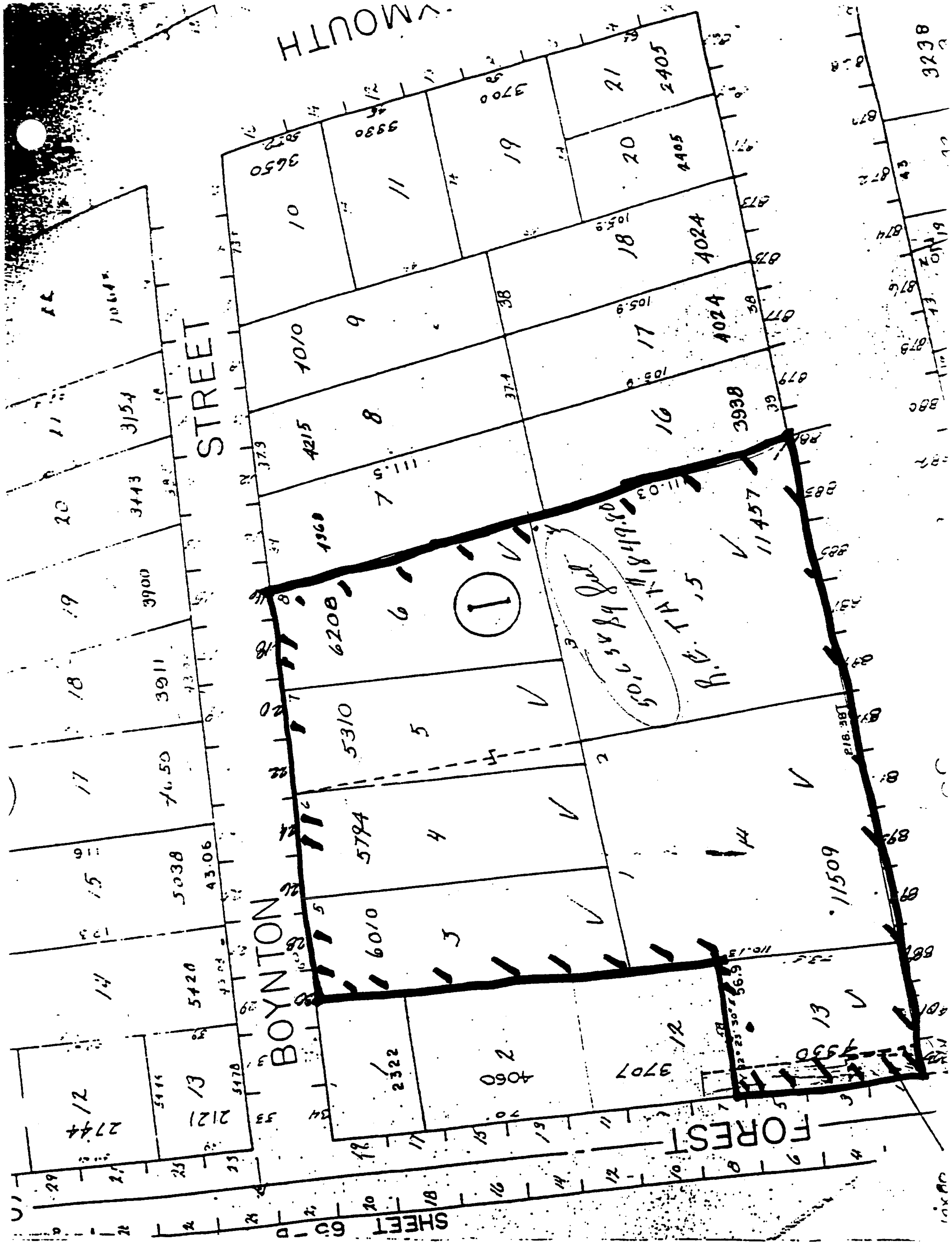
State of Maine, County of Cumberland ss. October 31, 1984.

Then personally appeared the above named Ernest Henderson, III, as Trustee of Edmunds Trust,

and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of said Trust.

Before me,

THOMAS P. HESSION Notary Public
Attorney at Law



BOYNTON
STREET
FOREST
MOUTH
SHEET 65

MMCCONGRESSSTREZ.CON.AP
07.14.97

AGREEMENT BETWEEN

CITY OF PORTLAND

AND

MAINE MEDICAL CENTER

AGREEMENT made this day of , 1997 by and between the **CITY OF PORTLAND**, a body corporate and politic, located in Cumberland County and State of Maine (hereinafter the **"CITY"**) and **MAINE MEDICAL CENTER**, a Maine Corporation (hereinafter **"MAINE MEDICAL"**).

W I T N E S S E T H:

WHEREAS, MAINE MEDICAL did request a rezoning of property located at 883-903 Congress Street, in Portland, in order to permit the establishment and operation of professional office space, clinics and parking; and

WHEREAS, the Planning Board of the City of Portland, pursuant to 30-A M.R.S.A. §4352(8), and after notice and hearing and due deliberation thereon, recommended the rezoning of the property as aforesaid, subject, however, to certain conditions; and

WHEREAS, the **CITY** by and through its City Council has determined that said rezoning would be pursuant to and consistent with the **CITY'S** comprehensive land use plan and consistent with the existing and permitted uses within the original zone; and

WHEREAS, the **CITY** has determined that because of the unusual nature of the proposed development it is necessary or appropriate

to impose by agreement the following conditions or restrictions in order to insure that the rezoning is consistent with the **CITY's** comprehensive land use plan; and

WHEREAS, the **CITY** authorized the execution of this Agreement on , 1997;

NOW, THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The **CITY** shall amend the Zoning Map of the City of Portland, dated March 1958, as amended and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by §14-49 of the Portland City Code, by adopting the map change amendment shown on Attachment 1.

2. The property shall be developed substantially in accordance with the conceptual site plan and elevations shown on Attachment 2; provided, however, that such plan and elevations shall be subject to full site plan review by the Planning Board and approval of this Agreement shall not imply any approval of any element that must be reviewed pursuant to §14-526 of the Portland City Code.

3. **MAINE MEDICAL** shall be authorized to establish and maintain general, business and professional offices, as defined in section 14-47 of the Portland City Code, clinics, as defined in the same section of the Code, and parking on the site.

4. Setbacks shall be as delineated on Attachment 2, but shall in no event exceed ten (10) feet for the front yard and shall not be less than seven (7) feet for the rear yard. The westerly side yard shall be at least ten (10) feet, except the ventilation shaft and the exterior stair tower. The easterly side yard shall be at least fifteen (15) feet, except the ventilation shaft and the exterior stair tower.

5. The maximum height of any structure on the site shall not exceed seventy-two (72) feet.

6. The lease for the proposed skywalk shall be approved by the Portland City Council and the Maine Department of Transportation.

7. **MAINE MEDICAL** shall replace all curb and sidewalks abutting the site on Congress Street, Forest Street, and Boynton Street, as required by the Public Works Department.

8. Signage on the site shall comply with the requirements of the B-2 zone, as set forth in Division 22 of Chapter 14 of the Portland City Code.

9. Development on the site shall comply with the requirements of sections 14-186 and 14-187 of the Portland City Code.

10. **MAINE MEDICAL** shall submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project.

11. **MAINE MEDICAL** shall provide a landscaped/open space area between the parking garage and Boynton Street. This area shall be reviewed as part of the site plan approval process.

The above stated restrictions, provisions and conditions are an essential part of the rezoning, shall run with the subject premises, shall bind **MAINE MEDICAL**, its successors and assigns, as permitted by this Agreement, of said property or any part thereof or interest therein, and any party in possession or occupancy of said property or any part thereof, and shall inure to the benefit of and be enforceable by the **CITY**, by and through its duly authorized representatives.

If any of the restrictions, provisions, conditions, or portions thereof set forth herein is for any reason held invalid or unconstitutional by any Court of competent jurisdiction, such

portion shall be deemed as a separate, distinct and independent provision and such determination shall not affect the validity of the remaining portions hereof.

Except as expressly modified herein, the use and occupancy of the subject premises shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

In the event that **MAINE MEDICAL** or any successor fail to continue to utilize the property in accordance with this Agreement, or in the event of a breach of any condition(s) set forth in this Agreement, the Planning Board shall have the authority, after hearing, to resolve the issue resulting in the breach or the failure to operate. The resolution may include a recommendation to the City Council that the site be rezoned to R-6 or any successor zone and that this Agreement be terminated, requiring a cessation of the general, business and professional offices, clinics and parking uses permitted under this terms of this Agreement.

WITNESS:

_____

CITY OF PORTLAND

By_____
Robert B. Ganley
Its City Manager

WITNESS:

_____

MAINE MEDICAL CENTER

By:_____

Its:

STATE OF MAINE
CUMBERLAND, ss. , 1997

Personally appeared the above-named Robert B. Ganley, in his capacity as City Manager, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the City of Portland.

Before me,

_____
Notary Public/Attorney at Law

STATE OF MAINE
CUMBERLAND, ss. , 1997

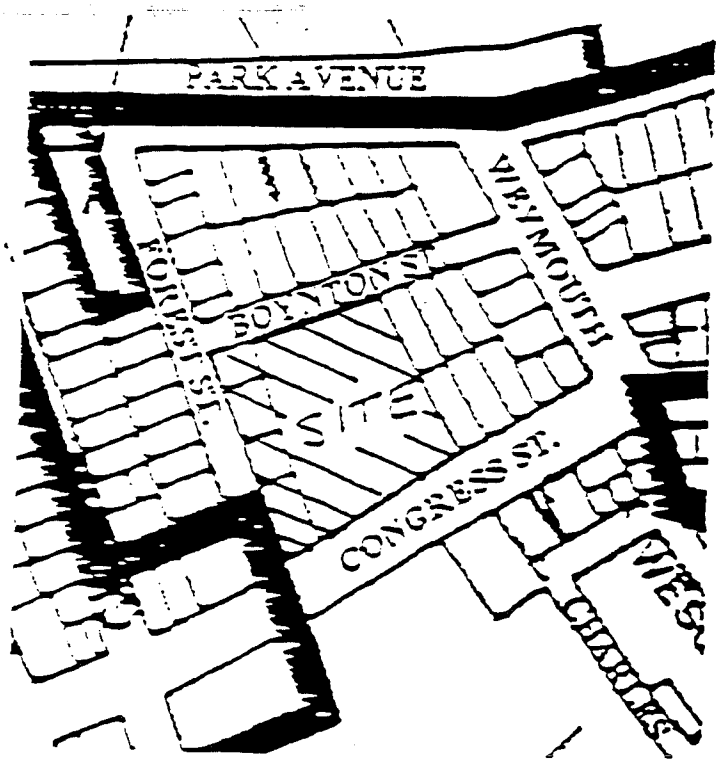
Personally appeared the above-named , in his/her capacity as of Maine Medical Center and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of Maine Medical Center.

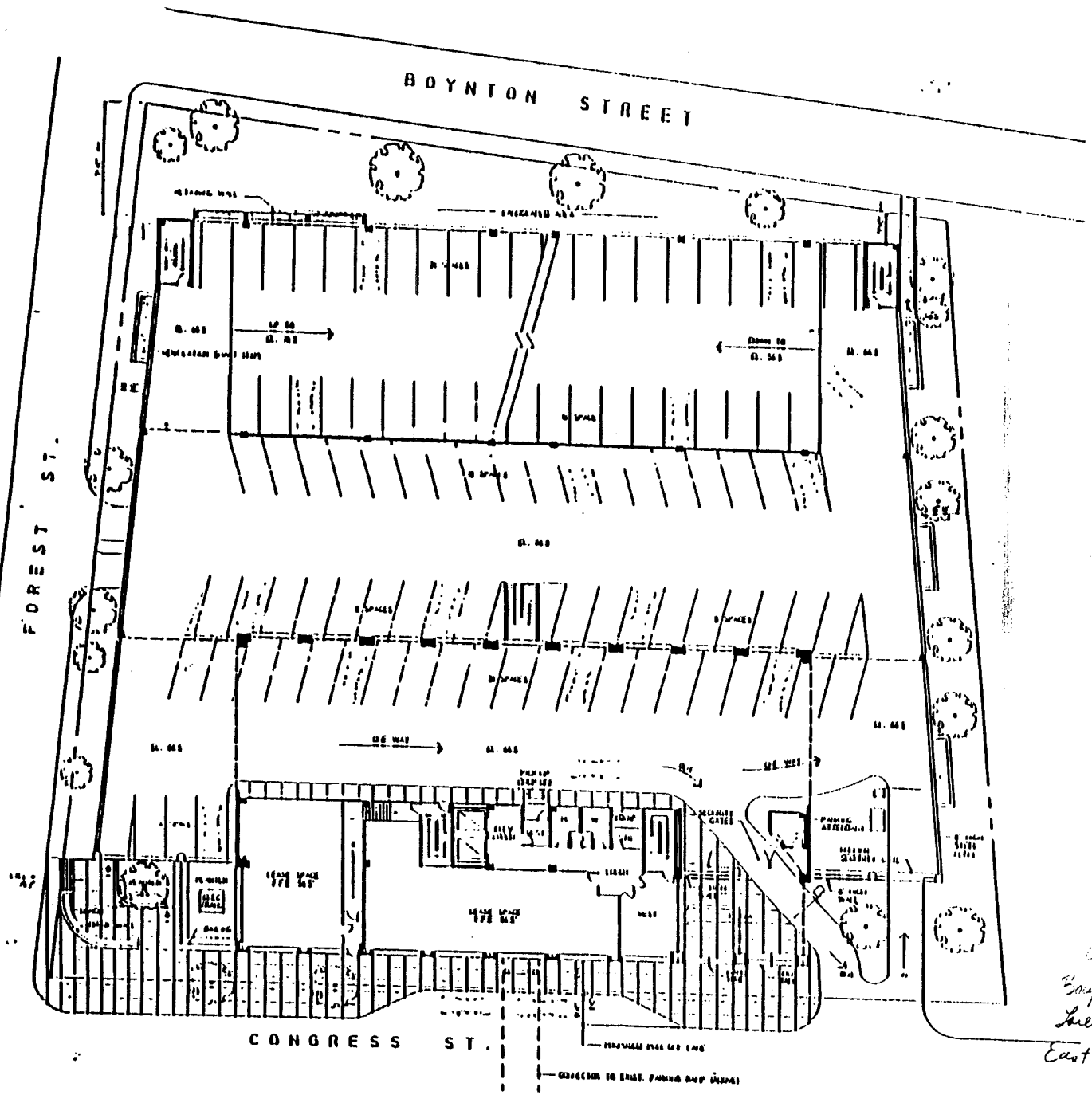
Before me,

_____
Notary Public/Attorney at Law

Attachment 1

SITE OF PROPOSED CONTRACT ZONE





FIRST FLOOR PLAN

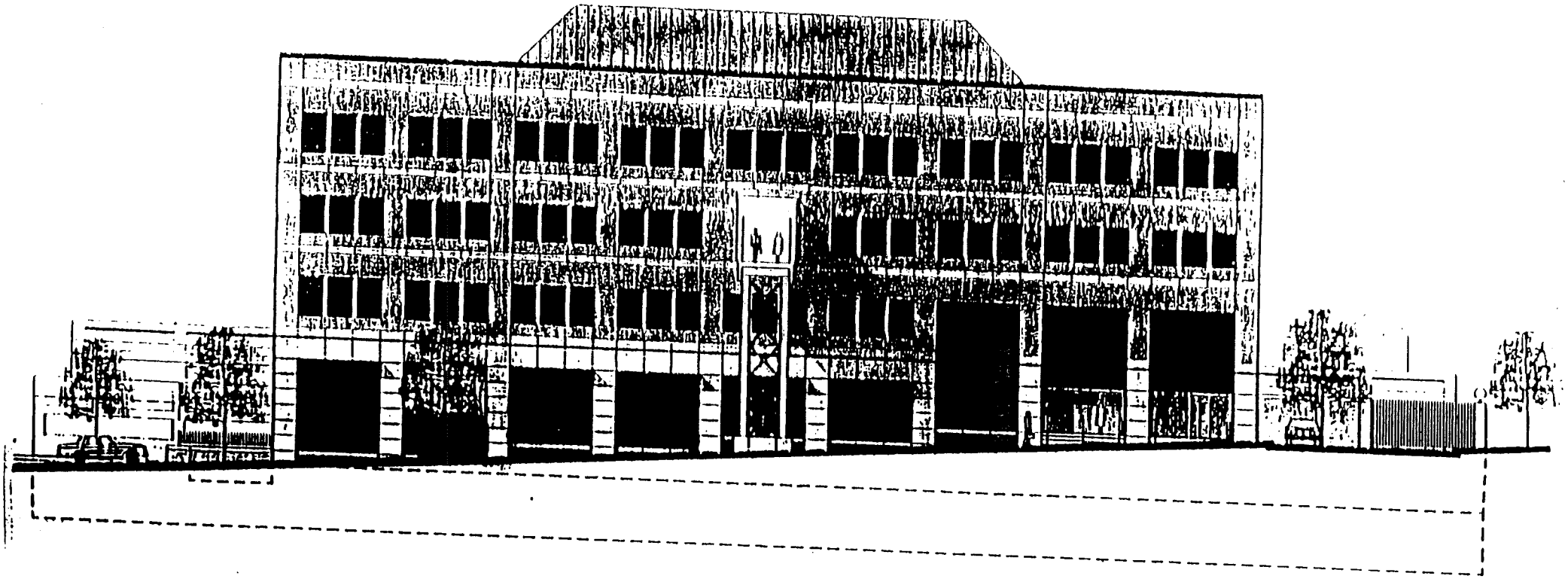
N

MEDIPLEX

PROPOSED MEDICAL OFFICE BLDG
& PARKING GARAGE FOR
MAINE MEDICAL CENTER
PORTLAND, MAINE

PROJECT NO
5195

ATTACHMENT 2-A

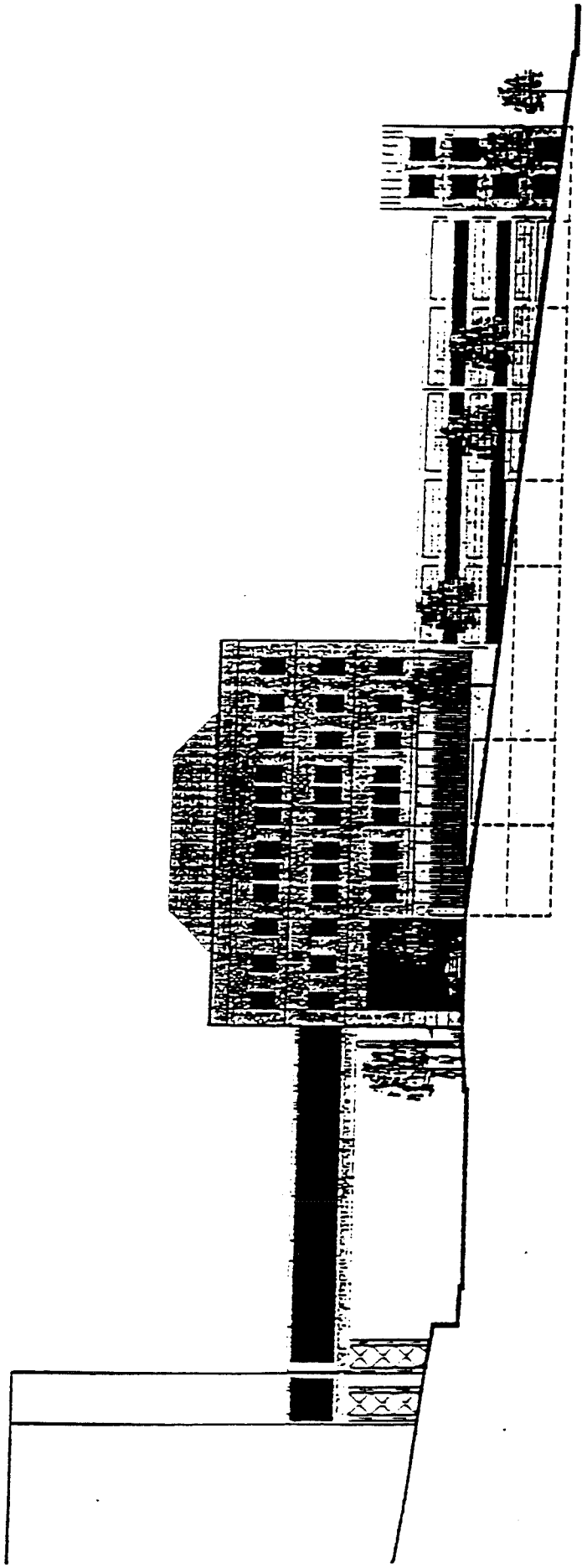


SOUTH ELEVATION

0 8 16 32 48

1/16" = 1'-0"

C-C



EAST ELEVATION

Section 4

FINANCIAL AND TECHNICAL CAPACITY

Included herein is a 10/6/97 letter from Damian Donati of MMBC which includes a list of similar projects undertaken by MMBC. The letter also includes an estimate of project cost.

MMBC

MEDIPLEX MEDICAL BUILDING CORPORATION
5308 WEST PLANO PARKWAY
PLANO, TEXAS 75093-4821

October 6, 1997

Fax: 207-829-5692
Fed-X Priority

FAXED 2:33

W. Scott Decker
Principal
Squaw Bay Corp.
4 Blanchard Road
Cumberland Center, Maine 04021

Re: Maine Medical Center
Portland, Maine

Dear Mr. Decker:

In response to your request of Jim Clarkson in your letter of September 25, 1997, please refer to the following information:

1. MMBC founded in 1979 has successfully completed over 130 similar facilities throughout the United States. Attached you will find a project chart including a list of similar facilities.

2. The estimated costs for each component of this project are the following, exclusive of professional fees related to design, development, leasing and construction management

• Site Work	493,265
• Parking Garage	4,549,400
• Office Building Shell	2,865,075
• Connector	286,650
• Tenant Finish and Allowances	2,032,720

Total Estimated Construction Costs: $10,227,110

Please let me know if additional information is required.

Sincerely,

Damian F. Donati
Vice President Design and Development

DFD:gh
cc: Jim Clarkson

State / Facility	City	Services Provided: Planning Consulting Feasibility	Design Development Construction	Property/ Asset Management
Edward Hospital	Naperville	◆	◆	
Iowa				
Genesis Medical Center	Bettendorf	◆	◆	
Davenport Medical Center	Davenport	◆		
Kansas				
Newton Medical Center	Newton	◆		
Kentucky				
Bowling Green Medical Center	Bowling Green	◆		
Community Health Systems, Inc.	Jackson	◆		
Medical Center at Scottsville	Scottsville	◆		
Louisiana				
Our Lady of the Lake Regional Medical Center	Baton Rouge	◆		
Maine				
Central Maine Healthcare	Lewiston	◆	◆	
Central Maine: Physiatry & Rehab	Lewiston	◆		
Maine Medical Center	Portland	◆	◆	
Rumford Community Hospital	Rumford	◆		
Massachusetts				
Marlborough Hospital	Marlborough	◆		
Michigan				
Hurley Medical Center	Flint	◆		
W.A. Foote Memorial Hospital	Jackson	◆	◆	◆
Annapolis Hospital	Wayne	◆		
Mississippi				
Mississippi Baptist Medical Center	Jackson	◆	◆	◆
Mississippi Baptist Medical Center - Parking	Jackson	◆	◆	
Mississippi Baptist Medical Center - Therapeutic Rehab/Parking	Jackson	◆	◆	
North Mississippi Medical Center	Tupelo	◆		
Missouri				
Hannibal Regional Hospital	Hannibal	◆		
Menorah Medical Center	Kansas City	◆	◆	
Community Health Systems, Inc.	Moberly	◆	◆	
Nebraska				
Bergan Mercy	Omaha	◆		
Nevada				
Desert Springs Hospital	Las Vegas	◆		
St. Mary's Regional Medical Center	Reno	◆		
New Jersey				
St. Elizabeth Hospital	Elizabeth	◆		
Hackensack Medical Center	Hackensack	◆	◆	
The Mountainside Hospital	Montclair/Glen Ridge	◆	◆	
United Healthcare System	Newark	◆		
New Mexico				
St. Joseph Medical Center	Albuquerque	◆		
New York				
Auburn Memorial Hospital	Auburn	◆		
Beth Israel Hospital	Brooklyn	◆		
Brooks Memorial Hospital	Dunkirk	◆		
Long Island Jewish Medical Center	New Hyde Park	◆		
United Healthcare System	Newark	◆		

State Facility	City	SERVICES PROVIDED: Planning Consulting Feasibility	Design Development Construction	Property/ Asset Management
Phelps Memorial Hospital	North Tarrytown	◆	◆	
Sloan Kettering Cancer Center	North Tarrytown	◆	◆	
Nyack Foundation for Health Care, Inc.	Nyack	◆		
Blue Cross and Blue Shield of Utica - Watertown	Utica	◆	◆	
Blue Cross and Blue Shield of Utica - Watertown	Watertown	◆	◆	
North Dakota				
St. Joseph's Hospital	Minot	◆		
Ohio				
Mount Carmel Health	Columbus	◆		
St. Vincent Medical Center (P.A.)	Toledo	◆		
Clinton Memorial Hospital	Wilmington	◆	◆	◆
Oklahoma				
Deaconess Hospital	Oklahoma City	◆	◆	
Stillwater Medical Center	Stillwater	◆		
Pennsylvania				
The Medical Center	Beaver	◆		
Canonsburg General Hospital	Canonsburg	◆	◆	
North Penn Hospital	Lansdale	◆		
Meadville Medical Center	Meadville	◆	◆	
Phoenixville Hospital	Phoenixville	◆		
Pottsville Hospital & Warne Clinic	Pottsville	◆	◆	
St. Luke's Hospital	Quakertown	◆		
Moses Taylor Hospital	Scranton	◆		
Rhode Island				
Rhode Island Hospital and Women & Infant's Hospital of Rhode Island	Providence	◆	◆	
South Dakota				
Rapid City Regional Hospital	Rapid City	◆		
Tennessee				
Community Health Systems, Inc.	Brentwood	◆		
Bristol Regional Medical Center	Bristol	◆	◆	
Fort Sanders West	Knoxville	◆	◆	
Texas				
Northwest Texas Hospital	Amarillo	◆		
Willow Creek Hospital	Arlington	◆		
Austin Family Practice Center	Austin	◆	◆	
H. E. B. Professional Plaza	Bedford	◆	◆	◆
Harris Methodist Hospital	Bedford/Hurst	◆		
Harris Methodist Hospital	Bedford/Hurst	◆		
Harris First Primary Care Program	Bedford/Hurst	◆		
Trinity Professional Plazas I-II-III	Carrollton	◆	◆	◆
Josey Lane Dental Plaza	Carrollton	◆	◆	
Walls Regional Hospital	Cleburne	◆	◆	
Harris First	Colleyville	◆		
Coppell Healthcare Center	Coppell	◆		
The Driscoll Foundation	Corpus Christi	◆		
AEtna	Dallas	◆	◆	
Brookhaven Professional Building	Dallas	◆	◆	
Children's Medical Center of Dallas	Dallas	◆		
American Health Properties	El Paso		◆	

State Facility	City	Services Provided: Planning Consulting Feasibility	Services Provided: Design Development Construction	Services Provided: Property/ Asset Management
R.H. Dedman Memorial Hospital	Farmers Branch	◆	◆	
Key Clinic (P.A.)	Farmers Branch	◆	◆	
Presbyterian Hospital of Greenville	Greenville	◆	◆	
Presbyterian Hospital of Greenville - Renovation	Greenville	◆		
Community Health Systems, Inc.	Hillsboro	◆	◆	
Medical Place I, St. Joseph Hospital	Houston	◆	◆	◆
Houston Eye Associates	Houston	◆	◆	
Methodist Hospital System	Houston	◆		
Irving Community Hospital (P.A.)	Irving	◆	◆	
Lake Jackson Professional Building	Lake Jackson	◆	◆	
Good Shepherd Medical Center	Longview	◆	◆	
University Medical Center	Lubbock	◆		
Pineywood Medical Development Corporation on Behalf of Memorial Medical Center of East Texas	Lufkin	◆		
Mesquite Medical & Surgical Specialty Clinic	Mesquite	◆	◆	
Galloway Medical Arts Building, Phase I	Mesquite	◆	◆	
Presbyterian and Children's Healthcare Center	Plano	◆	◆	
Canyon Creek Professional Plaza	Richardson	◆	◆	
St. Luke's Lutheran Hospital	San Antonio	◆		
Southwest Professional Plaza, Phase I	San Antonio	◆	◆	
Professional Plaza North, Phase I	Temple	◆	◆	
Professional Plaza North, Phase II	Temple	◆	◆	
Citizens Medical Center	Victoria	◆	◆	
Outlar & Blair Clinic	Wharton	◆	◆	
UTAH				
Holy Cross Hospital	Salt Lake City I	◆	◆	◆
Holy Cross Hospital	Salt Lake City II	◆		
VIRGINIA				
Fair Oaks Hospital	Fairfax I	◆	◆	◆
Fair Oaks Hospital	Fairfax II	◆	◆	◆

MAINE MEDICAL CENTER

MEMORANDUM

TO: Planning Board

FROM: Maine Medical Center

RE: Financial and Technical Capability

DATE: January 7, 1997

Section 14-525(c) requires that applicants demonstrate they have the technical and financial expertise to complete their proposed projects.

MMC has assembled a team of experienced professionals for this project including:

Maine Medical Center (MMC) - Owner's Representative
Mediplex Medical Building Corporation (MMBC) - Project Developer
Harriman Associates (HA) - MOB Architect and MEP Engineer
Carl Walker Inc. (CWI) - Parking Garage Architect and Structural Engineer
Squaw Bay Corp. (SBC) - Civil Engineer and Landscape Architect

This group has significant local and regional experience in the design and construction of medical office buildings and parking garages.

MMC has a long record of project development in greater Portland. Recent projects include the 40,000 sq. ft. medical office building in Falmouth, the 100,000 sq. ft. ambulatory care center in Scarborough and the two story addition to the MMC campus currently under way. All of these projects were developed through combinations of equity and debt financing. Our credit rating remains strong and we will provide the Planning Board with a letter from a local financial institution regarding its review of this project.

(010798.pb:mob)

Section 5

EXISTING SOIL CONDITIONS

In January, 1997, S.W. Cole Engineering, Inc. performed a geotechnical investigation for the purpose of exploring subsurface conditions and providing design recommendation to the project engineers.

A copy of the geotechnical investigation report has been submitted to the City of Portland Office of Planning and Urban Development under separate cover.

Section 6

SOLID WASTE DISPOSAL

Construction Site Preparation and Excavation Activities

During site preparation activities it will be necessary to dispose of approximately 125 C.Y. of excavated bituminous pavement and approximately 15 C.Y. of sidewalk bricks. These materials will be disposed of at the Riverside Recycling Facility at Riverside Street in Portland.

Construction Activities:

Contractor's Construction Debris (approximately 200 C.Y.) will be disposed of in a manner approved by City of Portland Code Enforcement Department and as with site preparation solid waste will likely be disposed of at the Riverside Recycling Facility.

The geotechnical report prepared by S.W. Cole Engineering noted that, although no petroleum contaminated soil was encountered during the subsurface investigation, due to historical use of the site such contaminated soil could be encountered and the Owner should be prepared to properly disposed of any such material, if encountered.

There are DEP approved Aggregate Recycling Facilities in the area which operate to treat petroleum contaminated soil. The contractor will be required to submit a plan for disposal of contaminated solid at one of these sites or other DEP approved means, if encountered.

Operational Solid Waste

Solid waste from the medical office building will be collected in storage containers within the parking garage. Regular pickups will be made by solid waste haulers. Trucks will pull up to the Forest Street curb south of the garage entrance and solid waste will be either hand carried or rolled out to the sidewalk on dolleys and deposited into the trucks for disposal at the appropriate DEP approved site.

Following construction, the Medical Office Building will generate approximately 800 C.Y of operational solid waste per year. The operational waste will be disposed of at the Regional Waste System's facility at Blueberry Road in Portland, Maine. Refer to letter from Troiano Waste Services, Inc., included herein. It is expected that less than 50 lbs. of bio-hazard waste will be generated each month. The waste will be moved to the Maine Medical Center where it will be picked up and disposed of by B.F.I. with Maine Medical Center's bio-hazard waste.

Troiano Waste Services Inc.

P.O. Box 3541
Portland, Maine 04104-3541
Telephone: (207) 767-2070
Fax: (207) 767-6156
1-800-310-2070

Rubbish
Containers
1 cu. yd.
to
40 cu. yd.

December 5, 1997

Squaw Bay Corp.
Attn. W. Scott Decker, P.E.
P. O. Box 86A
Cumberland Center, ME 04021

DEC 08 1997

RE: Maine Medical Center Congress Street Medical Office Building

Dear Mr. Decker,

As per your letter of September 29, 1997 we are responding to the questions you needed Troiano Waste Services, Inc. to answer with regards to the waste generation from Maine Medical Center and the proposed additional waste to be generated from the new building on Congress Street. We have reviewed our records and the following analysis is a result of this inquiry.

1. Type and volume of MMC waste currently hauled by TWS.

   TWS currently hauls only MSW solid waste from the several MMC locations we now service. Total MMC daily waste generation averages 61.5 cubic yards of loose uncompacted waste or 9748 lb. of solid waste per day.

2. Disposal facility and location.

   TWS currently hauls all MMC solid waste to the Regional Waste Systems facility on Blueberry Rd. in Portland ME. RWS's director is Charles Foshay and is a Maine DEP approved facility which handles the solid waste from many communities in the surrounding area including the City of Portland. If you have any further questions concerning the facility please contact Mr. Foshay at 207-773-1738.

3. Type and volume of waste generated at Congress St. site.

   Based upon similar facilities we currently haul for MMC and other medical customers we estimate the MSW generation to be 16 cubic yards of solid waste per week or approximately 2500 lb. per week of MSW. TWS has the capability to haul the additional MMC waste which will be generated since we currently run 13 rubbish removal vehicles and handle 1200 commercial customers in the Greater Portland area

If you have any further questions or comments please contact me at Troiano Waste Services, Inc. 207-767-2070.

Sincerely,

Michael S. Troiano
President Troiano Waste Services, Inc.

Section 7

WATER SUPPLY

Please refer to letter from Portland Water District, included herewith.

Portland
Water District

225 Douglass St. • P.O. Box 3553 • Portland, ME 04104-3553

Customer Service Hotline (207) 761-8310
(207) 774-5961
FAX (207) 761-8307

DEC 1 1997

December 12, 1997

W. Scott Decker, P.E.
Squaw Bay Corp.
PO Box 86A
Cumberland Ctr., Me. 04021

Re: Maine Medical Center- Mediplex Facility

Dear Scott,

The District feels it has adequate capacity of clean and healthful water to serve both the domestic and fire service needs of the proposed site. This conclusion is based on the flow capacity of the hydrant, Congress Street @Forest St.

Hydrant # 93- Congress St. @ Forest Street
Static = 83psi
Flow = 1256gpm
Hydrant last tested = 7/18/91

I have included with this letter sizing calculations for both the domestic and fire services. You may want to consider taking the services from Forest or Boynton St. as the costs to open the street would be less. Our records indicate their may be two domestic services to the site that may still be live. If these two services are still live and will not be used by the land owner than the landowner will be billed the cost to terminate at the street main.

If The District can be of further assistance, please let me know.

Sincerely,
Portland Water District

Jim Pandiscio

Jim Pandiscio
Means Coordinator

cc Jim Clarkson
Jim Morrison
Patrick Costin

Section 8

WASTEWATER TREATMENT

Included herein is a copy of a letter from Bill Goodwin.

Squaw Bay Corp

Consulting Engineers & Land Surveyors

Principals:

W. Scott Decker, P.E.
John R. Kennedy, P.E.
Peter B. Tubbs, P.E., P.L.S.
David W. Young, P.E., P.L.S.

November 26, 1997

Mr. Bill Goodwin
Public Works Department
55 Portland Street
Portland, ME 04102

RE: **Mediplex Medical Building Corporation**
Maine Medical Center Medical Office Building

Dear Bill:

Maine Medical Center is planning to construct a medical office building on Congress Street at the corner of Forest Street in Portland. Enclosed is a project "Site Plan", Squaw Bay Corp drawing C-101, revision B for your review.

Prior to the Portland Planning Board granting approval for the project, Maine Medical Center must provide documentation to verify that the sanitary sewer service can and will be provided to the building. At your convenience please contact me so we may begin discussions regarding the details of sewer service.

Very truly yours,

SQUAW BAY CORP

W. Scott Decker, P.E.
Principal

WSD/cms
c: Jim Clarkson
Jim Morrison
Patrick Costin

97-242
coff1126.let
1 of 1

P.O. Box 86A, Cumberland Center, ME 04021
Phone: (207) 829-6994 • Fax: (207) 829-5692 • Email: squawbay@neis.net

Squaw Bay Corp

Consulting Engineers & Land Surveyors

Principals:

W. Scott Decker, P.E.
John R. Kennedy, P.E.
Peter B. Tubbs, P.E., P.L.S.
David W. Young, P.E., P.L.S.

December 15, 1997

Mr. Bill Goodwin
Public Works Department
55 Portland Street
Portland, ME 04102

RE: Mediplex Medical Building Corporation
Maine Medical Center Medical Office Building

Dear Bill:

As a follow up to my 11/26/97 letter to you, I am forwarding a copy of a letter received from the project architect, our stormwater runoff analysis which provides estimated sanitary sewage and stormwater flows based on empirical data provided by the Maine Medical Center and theoretical stormwater runoff amounts, respectively.

Once you have had a chance to review the information, please contact me so we may begin discussions regarding the details of sewer and stormwater service connections. Also, I am requesting you provide a letter to address the Planning Board's requirement for documentation of Public Work's ability and willingness to provide sanitary sewer and stormwater service to the proposed facility.

Very truly yours,

SQUAW BAY CORP

W. Scott Decker, P.E.
Principal

WSD/cms

P.O. Box 86A, Cumberland Center, ME 04021
Phone: (207) 829-6994 • Fax: (207) 829-5692 • Email: squawbay@neis.net

Architects + Engineers

HARRIMAN ASSOCIATES

One Auburn Business Park
Auburn, Maine 04210

207.784.5100 telephone
207.782.3017 fax
www.harriman.com

Offices in Maine
and Connecticut

December 3, 1997
Fax (829-5692) Confirmation Sent December 3, 1997

Mr. Scott Decker
Squaw Bay Corporation
P.O. Box 86A
Cumberland Center, ME 04021

Re: Maine Medical Center
Medical Office Building, Parking Structure and Overhead Connector
Portland, Maine
Project No. 97.129-00

Dear Scott:

As you requested, the projected loads for natural gas, sanitary waste, domestic water, and fire protection are listed below.

Natural gas	Total connected load = 2,000 mbh (20 CCF)
Drainage, sanitary	110 gpm (max.)/*0.20×55,000 = 11,000 CF/month
Domestic water	145 gpm (max.)/*11,000 CF/month
Sprinkler	600 gpm (((1.500×0.15 [density])1.3 [corr. fact. dry sys.])1.2 [overage factor]) + 250 [hose stream]
*Based on historical data from other similar projects.	

Please call me if you require additional information.

Sincerely,
Harriman Associates

Patrick S. Costin, AIA
Project Architect

sjtho

cc: Jim Clarkson, Mediplex Medical Building Corporation, 5308 West Plano Parkway, Plano, TX 75093-4821

O:\MEDICAL\9712900\GEN004.WPD

Section 9

PARKING STUDY

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

January 7, 1998

Mr. Paul Gray
Vice President Planning
Maine Medical Center
22 Bramhall Street
Portland, ME 04102-3175

Subject: Maine Medical Center Parking Demand

Dear Mr. Gray:

Per your request, DeLuca-Hoffman Associates, Inc. has completed a parking analysis for Maine Medical Center (MMC). This analysis has been based on the following conditions:

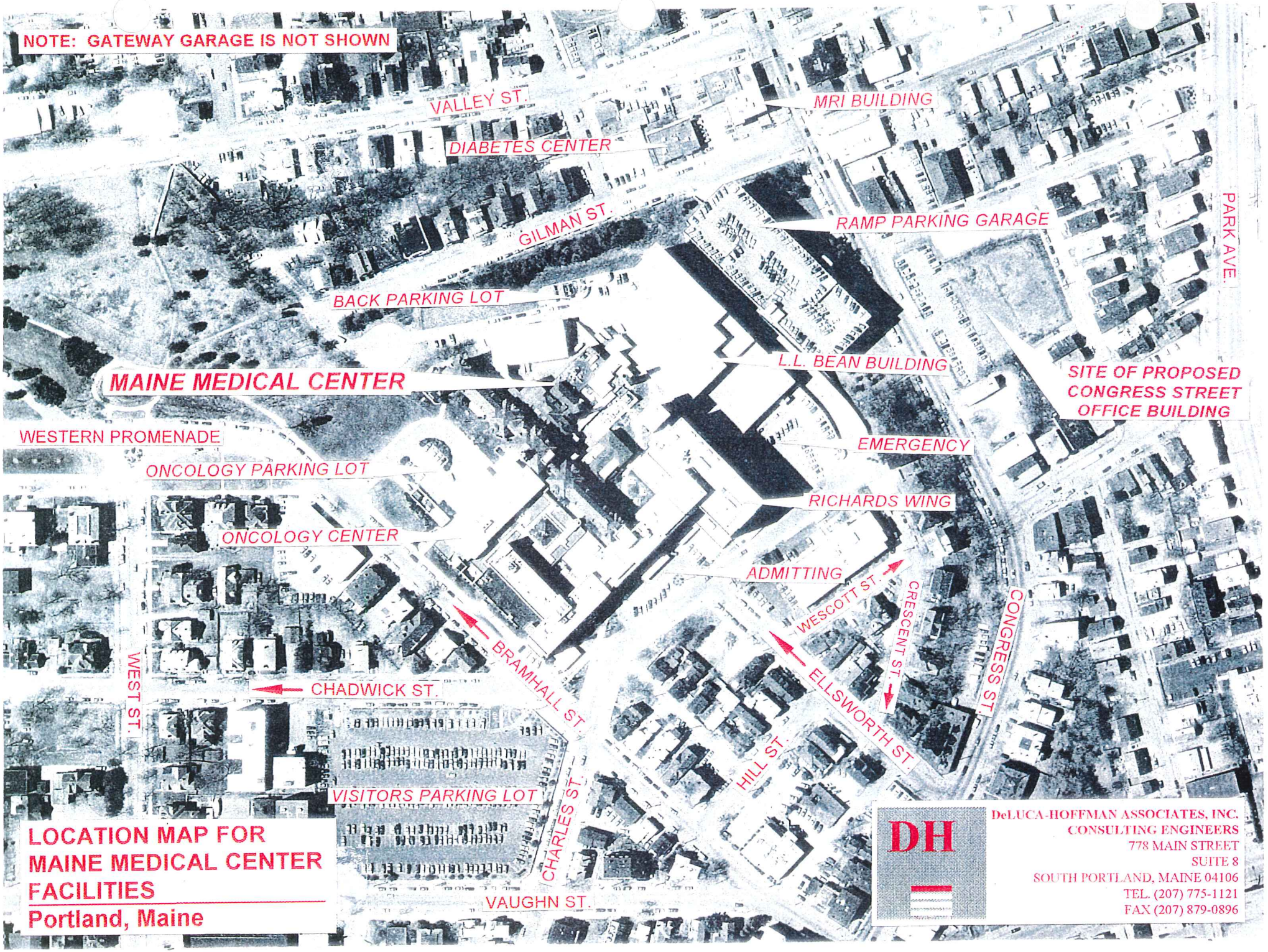
- Completion of the current expansion of the Bean Building and renovation of other portion of the MMC campus.
- Completion of the proposed 49,156 s.f. medical office building and related parking.
- Sale of the Gateway Garage reducing the available parking to MMC from 650 spaces (capacity of the garage) to approximately 120 spaces.

The purpose of this letter is to summarize the demand and supply with the above conditions in place. As you are aware, members of the planning board have requested that MMC provide the City with updated projections for space they own but are not yet using. This information is not contained in this letter but MMC has agreed to review with the Staff the MMC property in the Bramhall Campus area prior to the January 27th Planning Board Meeting. DeLuca-Hoffman Associates, Inc. has also been working with you on development of a parking management plan which we understand will be submitted to the City by MMC under separate cover.

Parking Supply

DeLuca-Hoffman Associates, Inc. completed a parking analysis in June 1996 for the proposed additions to the Bean building which showed a parking supply of 2,363 spaces. Based upon plans prepared by Mediplex for the proposed 49,156 s.f. medical office building on Congress Street northerly of Sportsman's Grill, there are 430 spaces planned as part of the office building. The location of the office building is shown in Figure 1 following this page. The proposed office building will displace 52 spaces currently on the site being used by MMC employees for a net gain of 378 spaces (430-52) over MMC's current supply.

Two other factors which will affect the parking supply are MMC's planned sale of the Gateway Garage which has 650 spaces and the lease of 150 parking spaces on St. John Street. As a condition of the sale of the Gateway garage, 120 spaces will be reserved for MMC employees who currently work at the Gateway.



LOCATION MAP FOR MAINE MEDICAL CENTER FACILITIES

Portland, Maine

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. (207) 775-1121
FAX (207) 879-0896

Based on these factors and supply data previously furnished by MMC, DeLuca-Hoffman Associates, Inc. has summarized the supply after the Gateway sale and completion of the proposed Medical Office Building in Table 1 as follows:

Table 1

Location	Number of Available Spaces
Ramp Parking Garage	1,276
Congress Street, Parking Lot by Sportsman's Grill	430
Admitting	9
Visitors Parking Lot	315
MRI	11
In back of Gilman Street	15
Emergency	10
Oncology	10
Gateway Garage (Not shown in Figure 1)	120
Gilman Street Lot B	15
Spaces Leased on St. John Street	150
Spaces Reserved at Farmers Market Garage	12
Total Available Spaces	**2,373**

Parking Demand

Existing:

Based on the "Parking Analysis for a Proposed Expansion to the Bean Building at Maine Medical Center" completed by DeLuca-Hoffman Associates, Inc. in June 1996, the estimated demand upon completion of the Bean addition and relocation of employees from MMC to the ambulatory care facility in Scarborough was anticipated to be 1,914 spaces. The methodology used to arrive at this estimate is summarized below:

- Existing demand based upon the Institute of Transportation's (ITE) Publication, *Parking Generation, 2nd Edition:*

  Land use Code 610 of the publication contains parking generation rates based upon 20 studies of hospitals around the nation in suburban areas. The facilities surveyed had between 124 and 1,450 beds with an average number of beds of 406. Based upon this data, a fitted curve equation was developed to forecast parking requirements on a weekday based upon the number of beds at the facility.

  Maine Medical Center is currently licensed for a total of 606 beds at their Bramhall Street Campus. However this number is expected to be reduced to 520 by 1999. Applying the fitted curve equation for 520 beds yields a parking requirement of 855 spaces. This appears to be low based experience at MMC. The highest rate observed in the national study was 2.96 spaces per bed. Applying this rate to 520 beds yields 1540 spaces required based on the expected 1999 bed count.

- Existing demand based upon methodology contained in the 2nd edition of the *Dimensions of Parking* published by the *Urban Land Institute.*

  This publication states the following:

  "A sound approach in the determination of parking requirements for industrial facilities, or for that matter, any type of facility with employees, is the following:

  - *Multiply number of employees for the shift under consideration by 85 percent to account for normal absences that occur because of travel, illness, and vacations. The product is the average number of employees who would be present on a given day during a given shift.*

  - *Multiply the number of employees by the percent arriving by automobile--after deducting the percent arriving by transit, by drop-off, or by walking--to determine the number of persons traveling by automobile.*

  - *Divide the number of persons arriving by automobile by the average automobile occupancy factor to determine the parking requirements. Parking requirements determined in this manner represent those for given shift. Through a similar process, parking for a following shift can be determined and the impact of shift overlap on total parking requirements can thus be identified."*

  MMC has the following shifts:

Shift	No. of Employees Projected for 1998
1	2,415
2	489
3	524

The parking requirements have been determined based upon the ULI methodology as follows:

Step 1: Multiply number of employees by 0.85 to account for normal absences.

0.85 x 2,415 = 2,053

Step 2: Determine number of employees traveling by automobile.

The Portland Council of Governments provided DeLuca-Hoffman Associates, Inc. with 1990 census data for people who work in the vicinity of the hospital. (Traffic analysis zone 37). Eighty-seven percent of the people in the zone work in the health service industry. The data showed that 92 percent use the automobile as their means of travel to work.

2,053 x 0.92 = 1,889 people travel to work by car.

Step 3: Divide the number of persons arriving by automobile by the average automobile occupancy. The census data showed the average vehicle occupancy within the zone to be 1.08 people per car.

$$\frac{1,889}{1.08 \text{ people/car}} = 1,749 = \text{staff parking demand}$$

The total parking demand for the visitors must be added to the estimated staff parking. The total visitor vehicles on site at any one time are estimated at 364, which is based upon the capacity of the visitors lot, admitting, and emergency lots. This yields a total demand for the hospital of 2,113.

The above analysis shows a total of 2,113 spaces are required for the day shift. For the purpose of estimating overlap in staff parking, a similar methodology was applied to the evening shift to yield 354 spaces. The departure of the day shift and arrival of the evening shift is somewhat staggered. Therefore, DeLuca-Hoffman Associates, Inc. has assumed that 50 percent of the evening shift will overlap with the day shift yielding a peak parking demand of 2,290 spaces.

DeLuca-Hoffman Associates, Inc.'s estimate of the total demand has been calculated based upon an average of the two methodologies as follows:

Source	Estimated Parking Demand
ITE	1,540
ULI	2,290
Average	1,914

With Proposed Medical Office Building:

Very little information exists through transportation technical publications such as the Institute of Transportation Engineers or the Urban Land Institute to establish the parking demand for a medical office building. Methodologies are set forth in these publications based on the number of employees, however the number of employees is not currently known. DeLuca-Hoffman Associates, Inc. conducted parking inventories at similar facilities on February 11, 1997 from 7:30 a.m. to 3:30 p.m. at the existing Stroudwater Crossing on Congress Street in Portland and on February 12, 1997 from 7:30 a.m. to 3:30 p.m. at the existing medical building on 1250 Forest Avenue in Portland which are very similar to the proposed facility. This information is summarized in the table below:

Use	Available	Size (s.f.)	Peak # of Vehicles Park at Any Time	Occupied Spaces/1,000 s.f.	Available Spaces/1,000 s.f.
Stroudwater Crossing	147	32,190	123	3.8	4.6
1250 Forest Avenue Medical Building	127	40,317	80	2	3.2

Based on this information, DeLuca-Hoffman Associates, Inc. has used a parking ratio of 4.6 spaces/1,000 s.f. to estimate the parking demand for the proposed 49,156 s.f. medical office building. Based on this rate, the proposed office building will require 226 spaces (4.6 x 49,156). Thus, the proposed medical office building will increase the total campus parking demand to 2,140 spaces (1,914 + 226).

Parking Demand Compared to Supply

Based upon the information presented previously in this letter, the parking supply will be 2,373 upon completion of the proposed 49,156 s.f. medical office building with its associated 430 space parking garage and the sale of the Gateway garage. This supply of 2,373 is 233 spaces in excess of the forecast demand of 2,140 spaces upon completion of the office building and full operation of the Scarborough and John Roberts Road facilities. Thus, the supply exceeds the demand by 11% based upon the methodology presented. It will be important that this demand be managed to reduce on-street parking. DeLuca-Hoffman Associates, Inc. has also been working with you on development of a parking management plan which we understand will be submitted to the City by MMC under separate cover.

Please review these findings and contact me if you have questions or would like to discuss these findings in more detail.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President of Transportation

TLG/sq/1471/Gray1-7

c: Robert Bremm

Section 11

SITE LIGHTING

MMBC

MEDIPLEX MEDICAL BUILDING CORPORATION
5308 WEST PLANO PARKWAY
PLANO, TEXAS 75093-4821

April 2, 1998

Via: Fed Ex

Mr. Rick Knowland, Senior Planner
Portland City Hall
City of Portland
389 Congress Street
Portland, ME 04101

RE: LIGHTING AT PARKING GARAGE
MAINE MEDICAL CENTER

Dear Mr. Knowland,

Attached is the additional lighting information you requested. As we discussed over the phone, the lighting design has evolved over the course of the project, and the new design is being sent to you under separate cover from Harriman Associates. Following is a brief explanation of the design and the submitted materials:

The Owner and the design team acknowledge the importance that the City has placed on light pollution in the adjacent neighborhood residences. At the same time, we have successfully balanced this constraint with the need to provide adequate light for a safe and secure structure.

Top Deck

The pole mounted fixtures at the top of the garage remain essentially the same as presented on the January 6, 1998 submittal. We will have to revise one pole at the center of the deck to accommodate a last minute revision for moving a stair tower. The lighting calculations remain essentially the same as presented on the January 6, 1998, submittal. We have added the Boynton and Forest street R.O.W.'s to these drawings for reference, as you have requested. The calculations indicate virtually no light spillage to the residences along Boynton, and Forest. At the east property line, there is some light spilling onto the house at the Congress street entry. We have halved the recommended foot candles in this area, but are still unable to prevent light spillage because the house is right at the property line. The fixture is of high-quality, durable construction and has a unique, architectural look lacking in most utilitarian, rectilinear type fixtures. The pole fixtures are fitted with 250w lamps – generally, high pressure sodium type except where we use metal halide to help distinguish exits. The fixture is of cut-off type design, but additionally we have specified an optional house shield that will further control the light. The fixtures are mounted on 15' painted steel poles.

(972) 248-9100
e-mail: mmoc1@airmail.net
FACSIMILE (972) 931-8966

Lower Decks

We have revised the lower deck since the January 6, 1998, submittal. The perimeter lighting remains unchanged, therefore the lighting calculations presented are also unchanged. We have revised the internal bays to a different fixture. The fixture at the perimeter bays is specifically designed to illuminate the garage without excessive light spillage or glare. Again, the fixture is a high quality, durable construction with a unique, architectural design. The design is such that louvers can be provided to control brightness outside the structure. We have specified this fixture with louvers to shield the residential areas. The fixture specified for the internal bays of the garage have been revised to a single row type fixture where louvers are not required. It is still a cut-off type fixture. Please refer to attached cutsheets. The colored copies help explain some information lost in black and white copies.

Please call if I can be of further assistance on this issue. I appreciate your consideration of our design and look forward to a successful project.

Sincerely,

Jim Clarkson,
Project Architect

cc: Phil Taylor
Ron Blackwell
Damian Donati

MAINE MEDICAL CENTER

January 5, 1998

Mr. Rick Knowland, Senior Planner
Portland City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101

Re: Response to John Peverada's December 5, 1997 Memorandum
Maine Medical Center Proposed Parking Garage on Congress Street

Dear Rick:

This letter contains DeLuca-Hoffman Associates, Inc.'s responses to John Peverada's comments on the above-referenced project. For ease of review, we have repeated each comment, followed by our response. In addition to this letter, we have met with Mr. Peverada to review the project and his concerns. We believe we have established a good relationship with him and we are committed to working with him as we move forward on this project.

Comment 1:
I assume that of the 430 parking spaces to be built that the 226 required for the office building will satisfy both the visitors and employees of the office building.

Response 1:
The 226 spaces were estimated based on studies at two similar facilities in Portland by DeLuca-Hoffman Associates, Inc. as detailed in their parking study. The projected demand of 226 spaces includes both the visitors and employees of the office building. Thus, of the 430 spaces being built, 204 spaces will be available for the general needs of the Bramhall campus.

Comment 2:

The plan states that after the construction of this new garage/office building, the sale of the Gateway Garage and lease of the St. John Street lot, there will be an overall net loss of 176 spaces. However, the 52+ spaces displaced from the existing parking lot on the site of the proposed garage/office building and the 27+ on-street spaces lost to provide a turning lane on the southerly side of Congress Street were not factored in. Therefore, the net loss would actually be 255 spaces, which I think would cause a hardship for the neighboring residents, businesses and the Sea Dogs daytime games.

Response 2:

Mr. Peverada is correct that the 52 spaces displaced from the existing parking lot on the site of the proposed garage/office building. MMC does not include parking on city streets in its inventory of spaces.

While the supply for MMC will be reduced due to the sale of the Gateway Garage, which is planned as a separate action, the proposed garage will reduce the loss over what would otherwise be experienced when the Gateway Garage is sold. In addition, the spaces in the Gateway are not fully utilized due to the remoteness from the Bramhall campus.

We have discussed our proposal with Mr. Paul Severino, Sportsman's Grill and he is in full support of the project. He believes it will enhance his business.

Comment 3:

Exhibit 1, the Parking Supply and Demand Analysis, shows that upon completion of the new garage/office on Congress Street, that the overall planned supply for parking on the Bramhall campus will exceed the demand by 233 spaces, and "the challenge facing MMC is to make the best use of that supply." How do they propose to overcome this challenge?

Response 3:

MMC proposes to meet this challenge through the following measures:

We have reviewed with Mr. Peverada multiple strategies in the Parking Management Plan, including:

- Management of the Gillman Street Garage which eliminates the stacking of cars on Congress and Gillman
- Expansion of the supply of spaces convenient to the campus, i.e. 430 car Congress Street Garage and the 150 spaces on St. John Street

- Internal Education. MMC will make a brochure available to all its staff and doctors detailing where MMC parking is located, requesting people to park in the garages, and to carpool or use the bus whenever possible. MMC will also work with the staff of the Portland Area Comprehensive Transportation Committee (PACTS) to develop a data base for use in their rideshare program.
- MMC will provide a contact person for coordinating directly with John Peverada on parking issues. MMC supports regular meetings to address issues.
- Management of entering and exiting traffic. Mr. Peverada has stated that the primary deterrents to public use of garages are security and convenience. MMC will address these issues through the following specific measures:
  - Security person assigned to the garage to monitor entering and exiting traffic.
  - Direct entry on the employee side of the garage (Forest Street) without gates during the peak periods of traffic flow. This will eliminate potential delay upon entering the garage.
  - MMC will evaluate the use of proximity cards to reduce the delay when leaving the garage. Mr. Peverada stated he has had favorable experience with these.
  - Low user charge of 50 cents per day to eliminate the potential of cost being a deterrent.
- Encourage use of alternate transportation.
- Support of the City's parking enforcement efforts.

Comment 4:

The report states that employees found the shuttle from the Gateway Garage to be inconvenient and time consuming, and as a result, some employees parked on the streets around the Bramhall campus. In the very next paragraph, the plan states that MMC is committed to maintaining the St. John Street lot as long as demand warrants. Are they saying if the employees choose not to use the St. John Street shuttle lot and they park on the neighboring streets, that the shuttle will be eliminated? I hope not, since the present practice of employees in McGeachey Hall is to park on Vaughn Street and leave their work stations and move their cars as soon as they see the Parking Control Officers chalk their tires. As long as the employees continue to move their cars, no tickets can be issued, but more importantly, a customer is being inconvenienced, and deprived of a convenient on-street space.

Response 4:

MMC is committed to maintaining the shuttle to the St. John Street lot and making it free and convenient for employee use. The St. John Street shuttle system has been well received by the employees. MMC has also committed to Mr. Peverada to make a special effort to educate doctors and staff at McGeachey Hall to not park on Vaughn Street.

Comment 5:

Will the current valet parking program at the Admitting lobby entrance and at the Emergency Dept. be continued after construction is completed?

Response 5:

MMC is committed to maintaining the valet parking program after construction.

Comment 6:

How and where will parking be provided for the 25 employees at Holt Hall?

Response 6:

The City's approval for Holt Hall included 25 on-site parking spaces for this leased space.

Comment 7:

The Bramhall campus will be in a period of continuous construction for the next several years. The plan goes on to state that MMC construction agreements with contractors have strict provisions regarding their expectations of the contractors' responsibility to manage the parking of their employees, but it does not say how.

Response 7:

MMC generally has a construction manager or general contractor overseeing the parking of the construction workers. The contract specifies where and when workers can park. Mr. Peverada has given MMC a copy of the specifications the City used in renovating Merrill Hall relative to contractor parking. MMC will utilize this information in preparing upcoming contracts.

Comment 8:

The concluding statement of the plan states MMC is committed to making parking for employees more convenient, encouraging their use of MMC parking rather than City streets. My question is "how?"

Response 8:

- Internal Education. MMC will make a brochure available to all its staff and doctors detailing where MMC parking is located, requesting people to park in the garages, and to carpool or use the bus whenever possible. MMC will also work with the staff of the Portland Area Comprehensive Transportation Committee (PACTS) to develop a data base for use in their rideshare program.
- More convenient location. The proposed 430-space garage will be more convenient to the campus than the Gateway Garage. This will make it easier to educate MMC staff to use the garage rather than park on the street.
- Management of entering and exiting traffic. Mr. Peverada has stated that the primary deterrents to public use of garages are security and convenience. MMC will address these issues through the following specific measures:
  - Security person assigned to the garage to monitor entering and exiting traffic.
  - Direct entry on the employee site of the garage (Forest Street) without gates during the peak periods of traffic flow. This will eliminate potential delay upon entering the garage.
  - MMC will evaluate the use of proximity cards to reduce the delay when leaving the garage.
  - Low user charge of 50 cents per day to eliminate the potential of cost being a deterrent.

Comment 9:

The hospital also wants to "support the City of Portland in its enforcement of parking regulations". Rather than asking "how?", I will ask "who is going to respond to the many letters similar to the one I have attached herewith, addressed to Mr. Ganley, from a 'customer' of the hospital?" This letter truly captures the reality of the parking situation surrounding MMC.

Response 9:

MMC supports increased enforcement of on-street parking through time limitation changes or restrictions. In addition, MMC supports the use of parking meters on Brackett and Gilman Streets.

With regard to the letter which Mr. Peverada cited, MMC has implemented the valet parking program at the emergency room parking area. MMC will improve the signage advising people of the valet parking and further educate the attendants to avoid a similar occurrence in the future.

Comment 10:

Before this project is approved, it is my opinion that the following shall be conditions of approval.

1. *MMC shall verify to the City that every employee has an off-street parking space.*
2. *MMC shall make it a condition of employment with their employees that they will not park on the streets, or somehow assure the City that this will not happen.*
3. *MMC will continue to promote and maintain the existing valet parking program in place.*
4. *MMC shall provide the City with a copy of a long-term lease agreement for the 150 spaces in the St. John Street shuttle lot. What will happen when Amtrak arrives?*
5. *Contractors working at the hospital will have to have their employees park off site, and show the City a parking plan prior to a building permit being issued; a violation of the plan would cause a stop of work.*
6. *MMC shall produce a brochure to distribute to all patients, visitors etc., outlining parking alternatives.*

Response 10:

1. We are developing a schedule to address this issue
2. MMC will encourage employees to park in off-street spaces through the measures outlined in this letter and the parking management plan.
3. MMC is committed to maintaining the valet parking program after construction.
4. A copy of the lease agreement for the 150 spaces in the St. John Street shuttle lot will be provided. If the Amtrak train displaces this parking, MMC will actively pursue other parking.
5. MMC will include measures similar to those utilized by the City in the construction of Merrill Hall in future contract documents.
6. As discussed in this letter, MMC will make a brochure available to all doctors, staff and patients.

Comment 11:

I believe that the continued growth of the Maine Medical Center is beneficial to the City of Portland, however, if people using the facility are frustrated with parking, the negative reflection will be on the City, not MMC.

Response 11:

MMC is committed to educating our staff, patients and visitors to utilize off-street parking to reduce the frustration over parking such that this issue does not overshadow the benefits of the growth of MMC in Portland.

Comment 12:

I would strongly encourage MMC to substantially increase the size/number of parking spaces in the proposed garage/office building on Congress Street, for the betterment of the neighborhood, the City and Maine Medical Center, visitors and employees.

Response 12:

It is not feasible to add additional parking levels to the proposed 430-space garage for the following reasons:

- The sensitivity to neighborhood issues prohibits adding additional height to the building.
- The cost of excavating further into the site to provide an additional level is prohibitive.

If you have any questions on the information presented above, please contact me.

Sincerely,

MAINE MEDICAL CENTER

Paul D Gray

Paul Gray
Vice President of Planning

PG/TLG/sq/JN1471/Know1-5

C: John Peverada
Larry Ash
Tom Gorrill

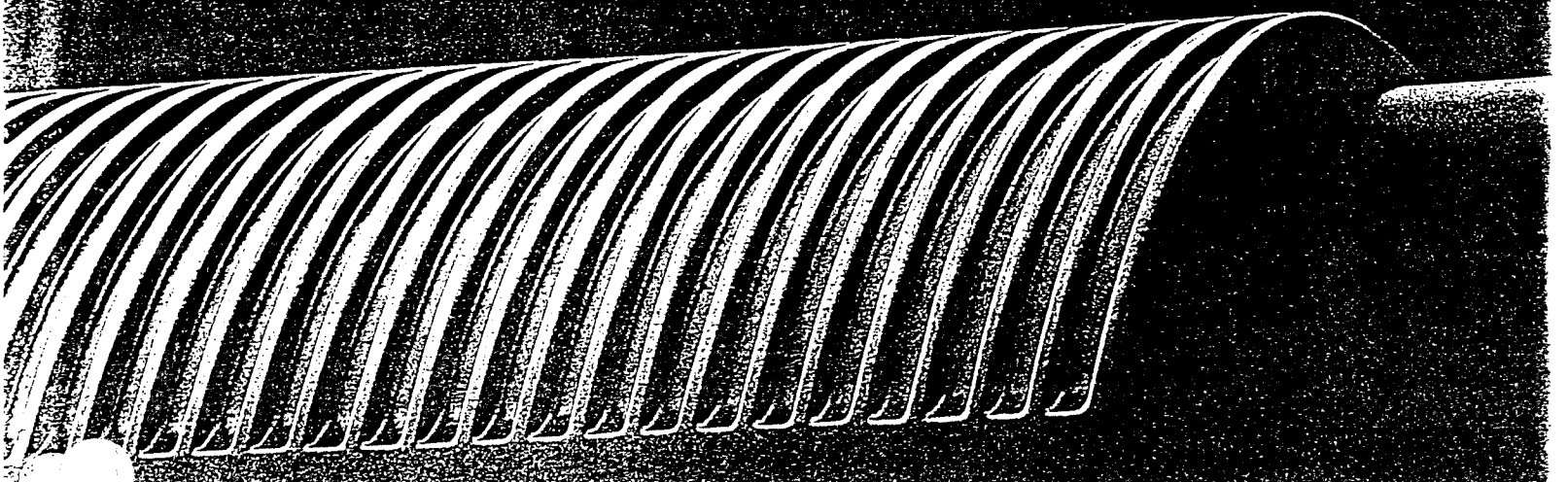
The Archetype®

A1a

Technology and Form Combined to Create a New Standard for Outdoor Area Luminaires

AR Model 150-400W Mogul Base

SAR Model 70-175W Medium Base

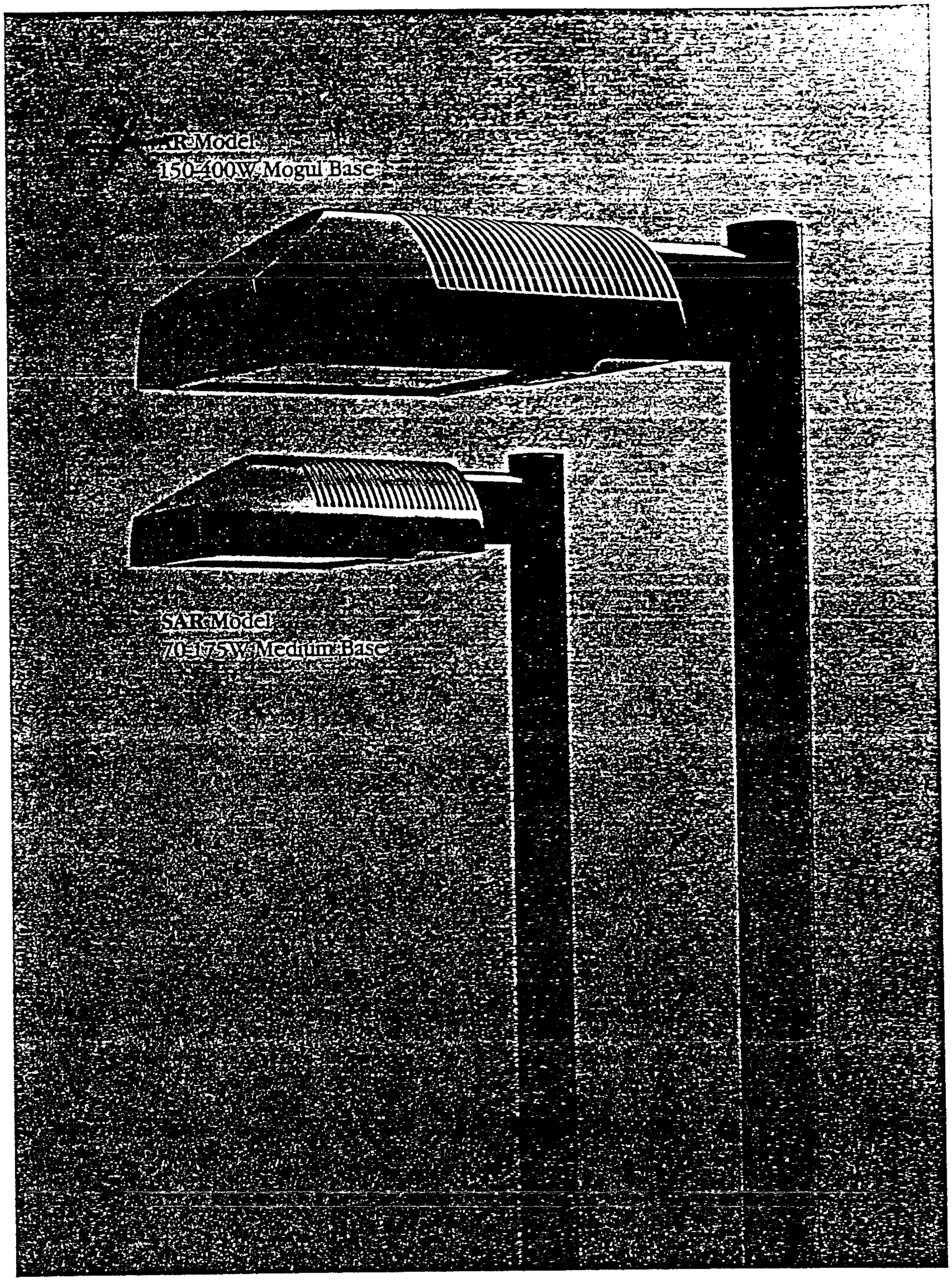


KIM LIGHTING

ar·che·type (är´ke tīp´) **1:** the original pattern or model of which all things of the same type are representations or copies.
2: a perfect example of a type or group.

The . etype® took three years to develop ⅰ nearly twenty years to ɔive. It replaces the ɔoebox" fixture as the ɲdard for architectural ɔtoff luminaires. During the s and 70– the dominant ctiline racter of ildings . ..de the ɔoebox" a preferred ninaire where architectural mpatibility was important. ɔw, both architecture and dustrial design have olved into a new era. day's architecture often mbines curvilinear, ctilinear, classic and neo- ıssic form into a single ucture. Industrial design ɪphasizes a new design gic where product function expressed by articulated rm. The Archetype is so vanc it antiquates all her ou r cutoff minaires. Its eclectic shape iversally adapts to today's chitecture while its nction is beautifully pressed by its form. ghting performance, gonomics, materials and gged construction all ɔmbine to make ɪe Archetype the new state- -the-art luminaire for ɪtdoor cutoff lighting.

he **Archetype** is egistered in the U.S. Patent ɪd Trademark Office.



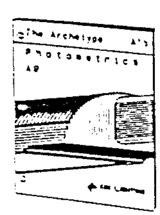
KIM LIGHTING
O. Box 5
ɔ555 East Gale Avenue
ıdustry, California 91749
hone 818/968-5666
AX 818/369-2695

Kim Products
Street and Area Lighting
Parking Garage Lighting
Floodlighting
Environmental Lighting
Landscape Lighting
Fountain Lighting

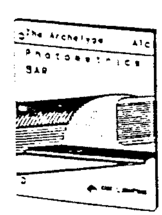
Contents

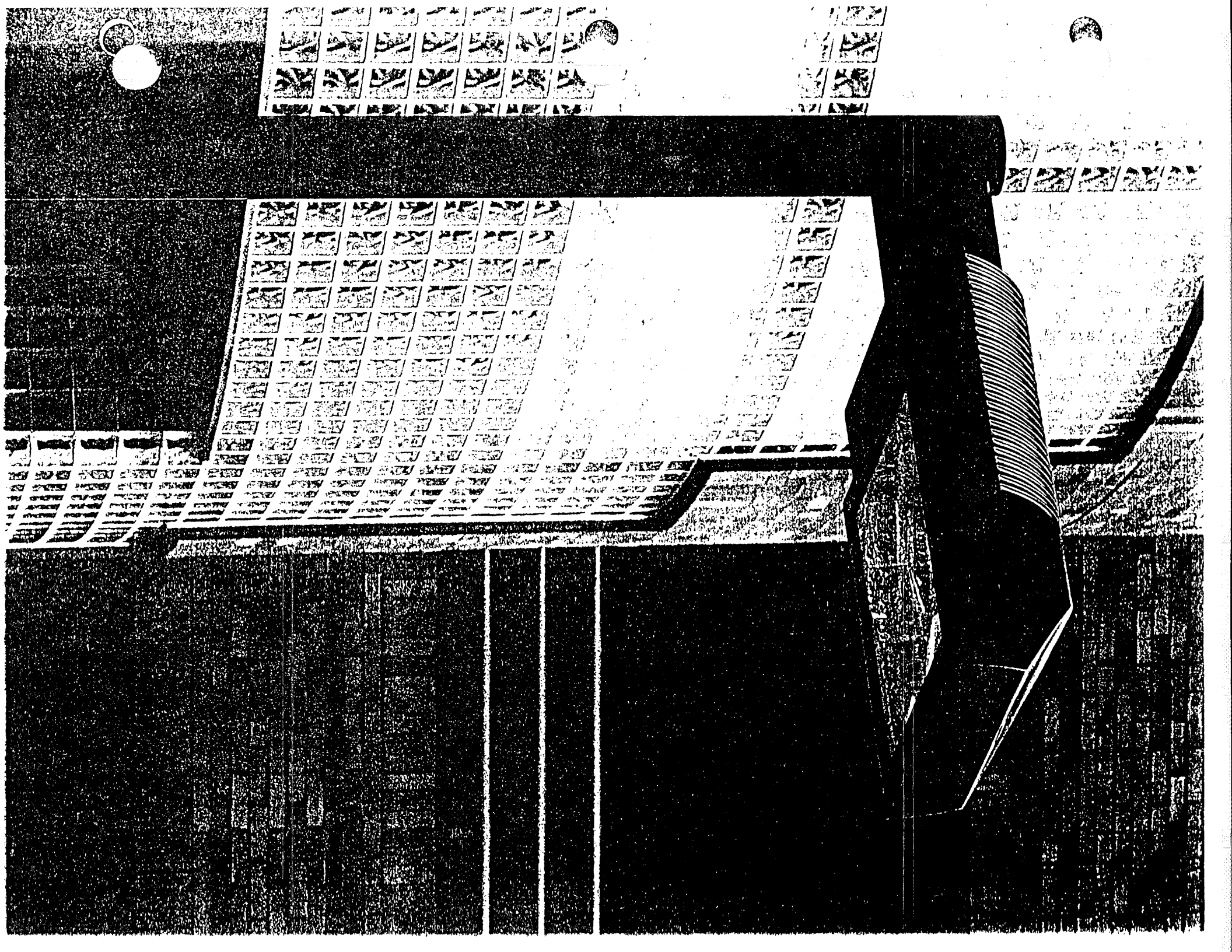
Photometrics
See separate Photometric catalogs:

A1b AR Model



A1c SAR Model

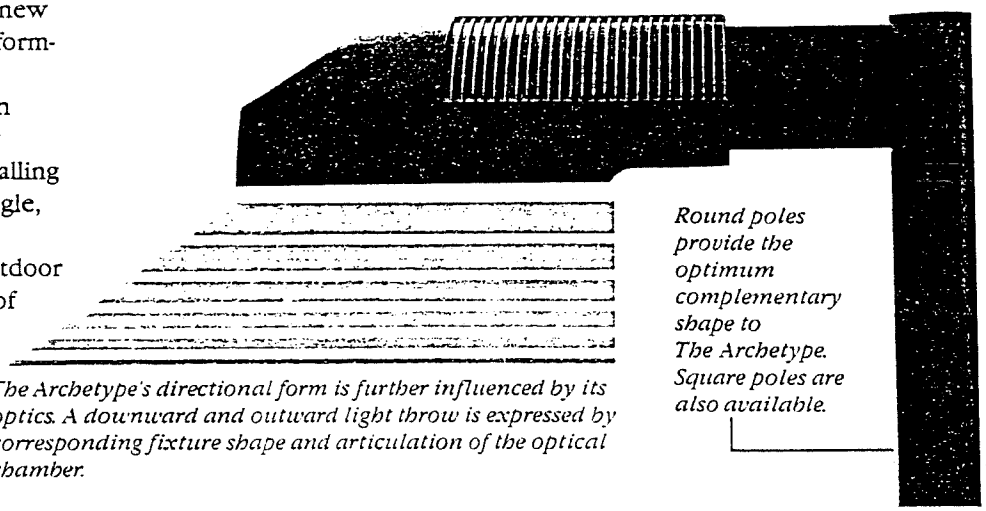




Design Logic

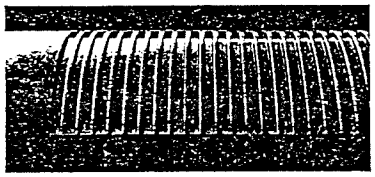
Th out history, design philosophy has undergone many changes, sometimes eating form that disguises function while her times adhering to a strict expression of e object's function and purpose. The new ge of design logic is more than a rigid form-llows-function philosophy which can metim- enerate ugly objects. Design gic a to the creation of form by nction, also answers to a higher calling emanding an overall shape that is a single, nified, aesthetically pleasing design atement. The Archetype is the first outdoor minaire to exemplify the philosophy of esign logic while also providing the ecessary compatibility with its rrounding architecture. It is a end of design and engineering at makes a bold and refreshing ew statement about cutoff lighting.

Arm-mounted luminaires often look overly massive and unbalanced. The Archetype's slanted nose, undercut ballast compartment and oval arm combine to reinforce and balance its directional nature and soft form.



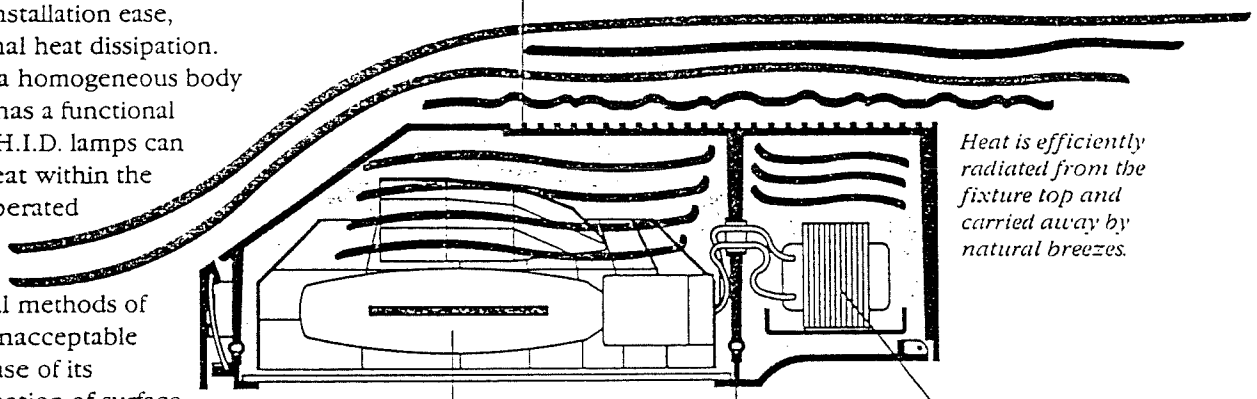
Round poles provide the optimum complementary shape to The Archetype. Square poles are also available.

The Archetype's directional form is further influenced by its optics. A downward and outward light throw is expressed by corresponding fixture shape and articulation of the optical chamber.



Cooling ribs increase surface area by 100% allowing rapid heat dissipation by radiation from the fixture top.

Function is synonymous with form under the concept of design logic. Every engineering factor must contribute directly to e evolvement of shape and mechanics. he Archetype reflects every design factor that ust be accounted for: environmental effects, ghting performance, installation ease, rviceability and internal heat dissipation. he die cast housing is a homogeneous body which every feature has a functional rpose. For example, H.I.D. lamps can oduce tremendous heat within the ousing, yet they are operated temperature-nsitive electrical mponents. Traditional methods of ntrolling heat were unacceptable The Archetype because of its mpact size. A combination of surface diators and a solid barrier wall are employed keep operating temperatures well below e allo le for maximum component life. he o mpartment has been totally aled fr... the electrical compartment cluding all wire penetrations. With full door ame and lens gasketing, there is no ssibility of moisture, insects or air ntamination entering the optical chamber.



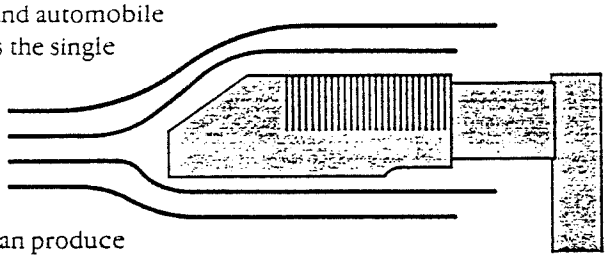
Heat is efficiently radiated from the fixture top and carried away by natural breezes.

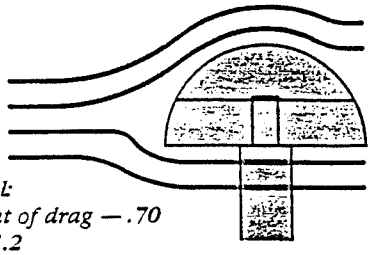
Secondary heat source. The ballast produces heat while adjacent capacitor and ignitor components must operate below 90°C. The electrical compartment also ventilates through the mounting arm.

Primary heat source. A 400 Watt lamp produces bulb temperatures as high as 400°C.

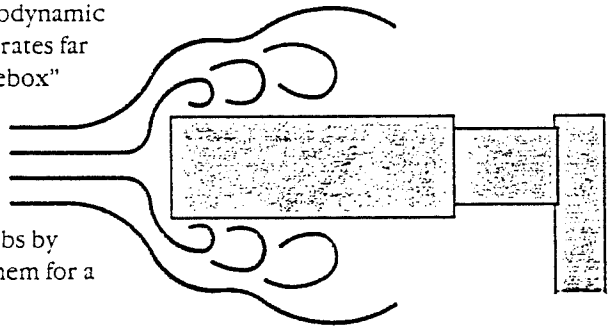
An extra-thick barrier wall separates the optical chamber from the electrical compartment. The optical chamber is totally sealed.

Aerodynamics is a science normally associated with aircraft and automobile design. Yet, luminaire shape is the single most important factor that determines pole size. Furthermore, poles are often more expensive than luminaires, which means that a reduction in pole size can produce a significant savings in overall cost. Fixture weight has little influence on pole size because wind loading produces the greatest lateral force. The aerodynamic shape of The Archetype generates far less wind loading than a "shoebox" luminaire thereby permitting lighter poles to be used when available. The aerodynamic shape also improves the effectiveness of the cooling ribs by keeping the air flow against them for a longer period of time.

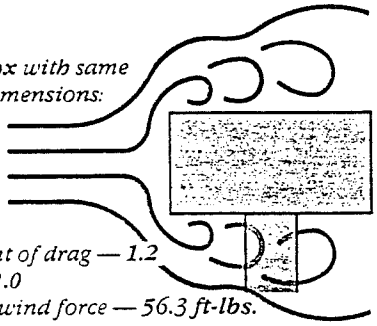




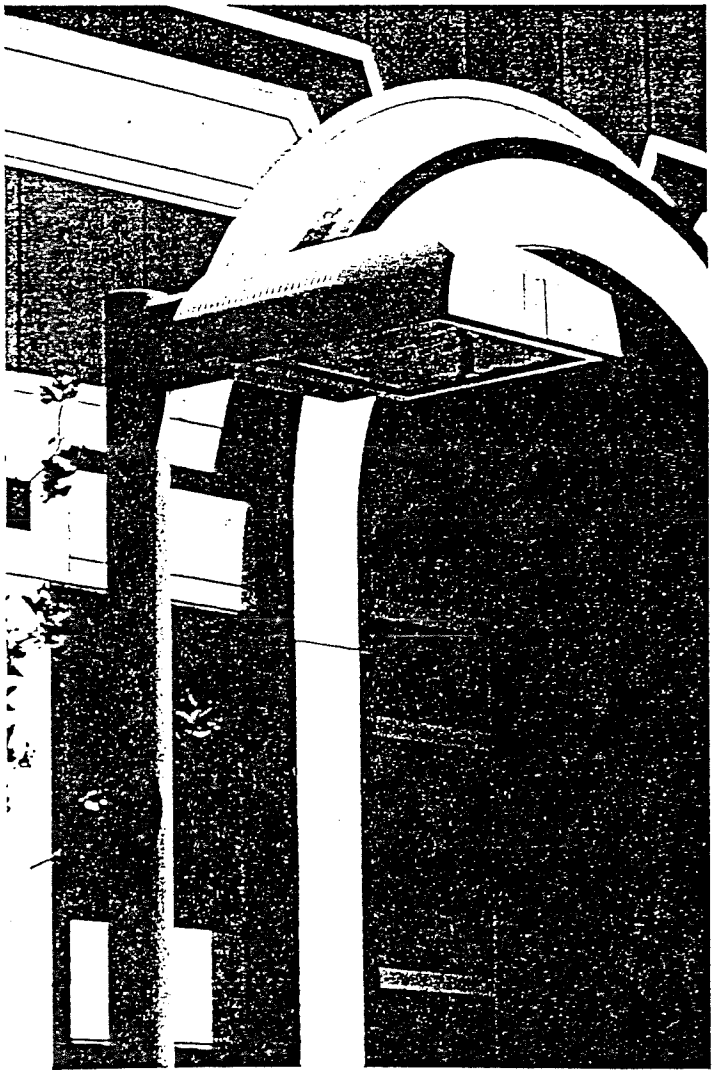
AR Model:
Coefficient of drag — .70
E.P.A. — 1.2
80 m.p.h. wind force — 32.7 ft-lbs.



A Shoebox with same overall dimensions:

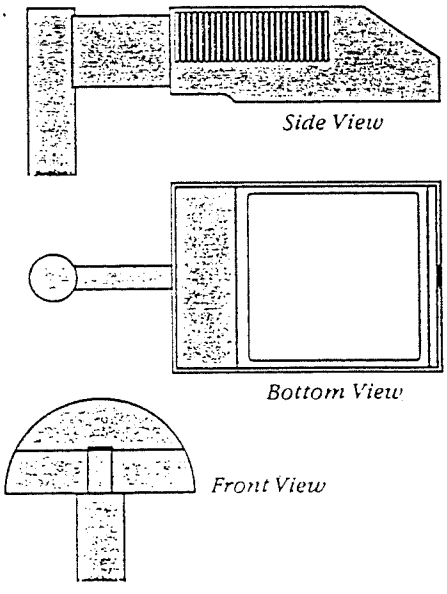


Coefficient of drag — 1.2
E.P.A. — 2.0
80 m.p.h. wind force — 56.3 ft-lbs.



Architecture is the backdrop that controls the design of an architectural luminaire. Buildings with singular geometry demand lighting fixtures that echo the same simple form, traditionally square or round. However, much of today's architecture is eclectic, combining square, round and neo-classic shapes into a single structure. The Archetype is the first outdoor luminaire specifically designed to be eclectic in form and outwardly expressive of function. Yet, this variety in shape and purpose has been beautifully sculptured into a single unified luminaire design that makes a strong statement for both aesthetics and engineering.

The Archetype's eclectic form is evident in these three views. From the side, its function is clearly stated. The bottom view is rectilinear yet the overall length is a simple half cylinder. All elements combine into a soft, unified sculptural form that will integrate with virtually any setting whether it is architecture or landscape.

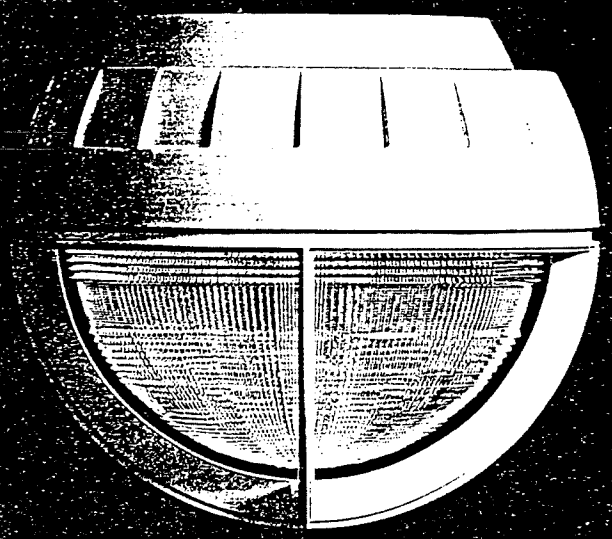


PGL Omni-System™

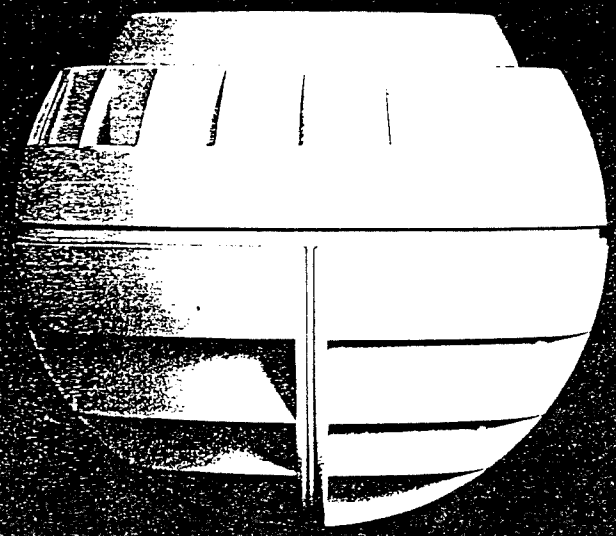
PARKING STRUCTURE
PGL2/3
SERIES

The Next Generation in Parking Garage Lighting

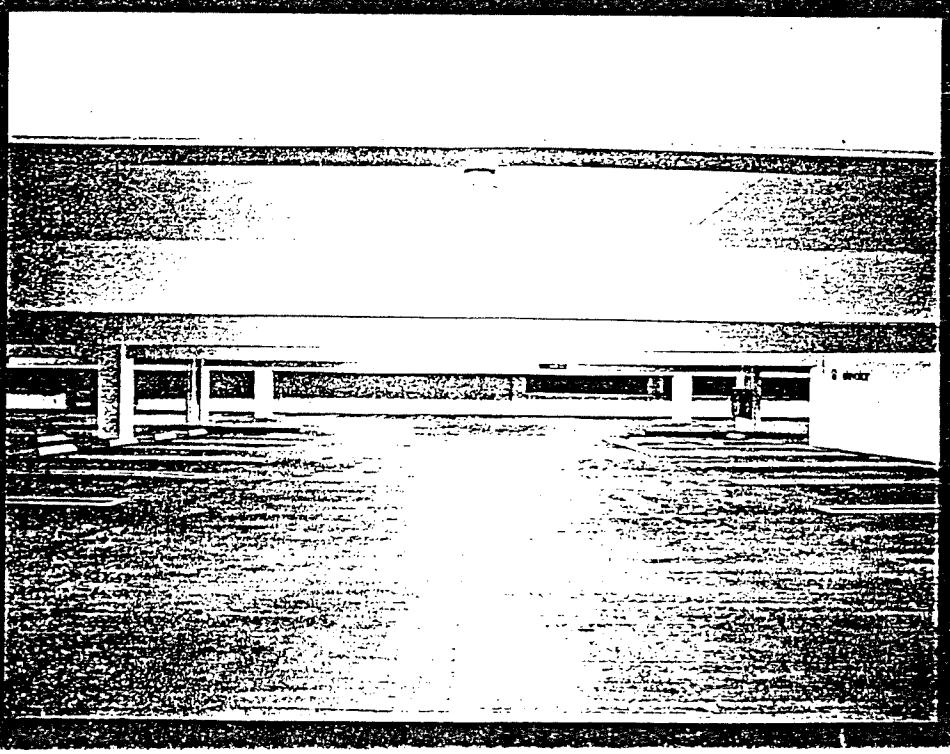
TYPICAL



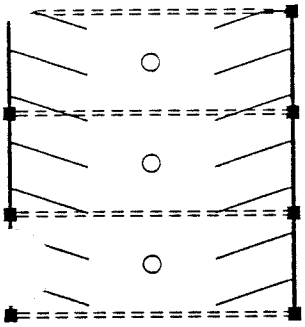
KIM LIGHTING



- 3-Dimensional Illumination
- Performance Task-Driven Optics
- Modular Brightness Control
- Permanence
- Easy Installation and Maintenance

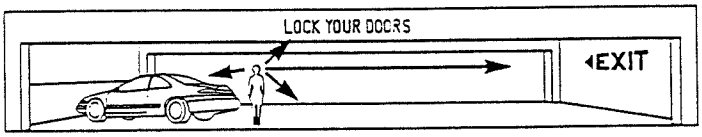


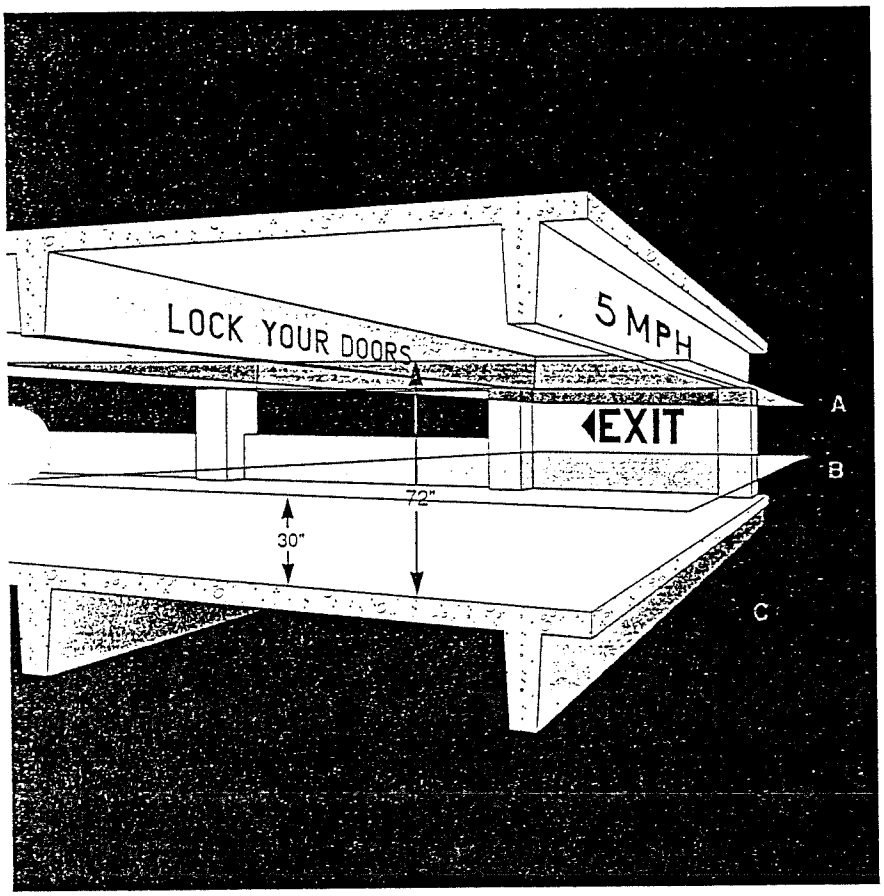
3-Dimensional Illumination



Parking garage lighting is generally evaluated as though the parking bays were simply two-dimensional floor plans. This is comparable to lighting an office as if walls and ceilings did not exist. The two-dimensional approach to garage lighting is a carry over from parking lot lighting where illumination levels are evaluated solely on the pavement.

Since parking garages are essentially interior spaces, their illumination must be achieved in three-dimensions. Ceilings must be lighted to eliminate the cave effect, beams and walls must be illuminated for signage and visual comfort, and vehicles must be lighted at elevations above the floor where tasks actually occur. Floor illumination is only one element of good parking garage lighting.





Today's illumination requirements for parking structures involve both horizontal and vertical footcandles up to 72" above the floor.
Sources: **IES** Illuminating Engineering Society
NPA National Parking Association

Level A–IES recommendation: At 72" above the floor, vertical illumination values on such objects as columns and walls should equal horizontal illumination values on the floor. (See Level C)

Level B–NPA recommendation–Average maintained horizontal illumination 30" above the floor:

Interior Parking and Driving Areas	6Fc
Min. at Perimeters or Vehicle Restraints	2Fc
Surface and Roof Parking Areas	2Fc
Vehicle Entrances	40Fc
Vehicle Exits	20Fc
Stairways and Exits	20Fc
Average to Minimum Illumination	3:1

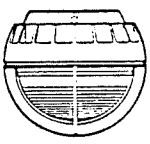
Level C–IES recommendation–Average maintained horizontal illumination on the floor:

(See Level A)	DAY	NIGHT
General Parking & Pedestrian Areas	5Fc	5Fc
Minimum at any location	1.25Fc	
Ramps and Corners	10Fc	5Fc
Entrance Areas	50Fc	5Fc
Average to Minimum Illumination	4:1	4:1

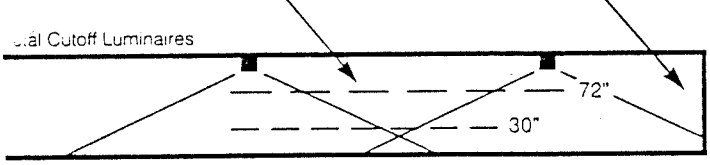
Ceilings–While no specific recommendations exist for ceilings, it is widely accepted that ceilings must be well lighted to eliminate the insecure feeling of entering a dark, cave-like structure. To accomplish this, between 12%-15% of the luminaire's output must be projected upward.

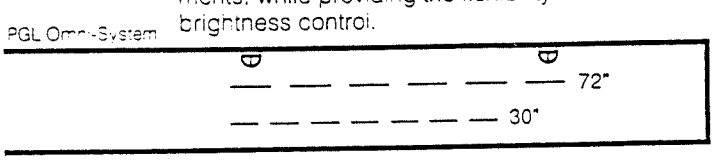
Total cutoff luminaires cannot meet IES or NPA illumination requirements because their light distribution is too narrow. These luminaires do an excellent job of floor illumination, but fall short at elevations above the pavement where vertical illumination on cars, walls, beams and ceilings is required.

Current garage lighting practice includes the illumination of interior shear walls. Signage is often placed on these walls at least 6' above the floor. In addition, it has been found that when these walls are well lighted, they play an important role in creating a bright ambience and secure feeling inside the garage.

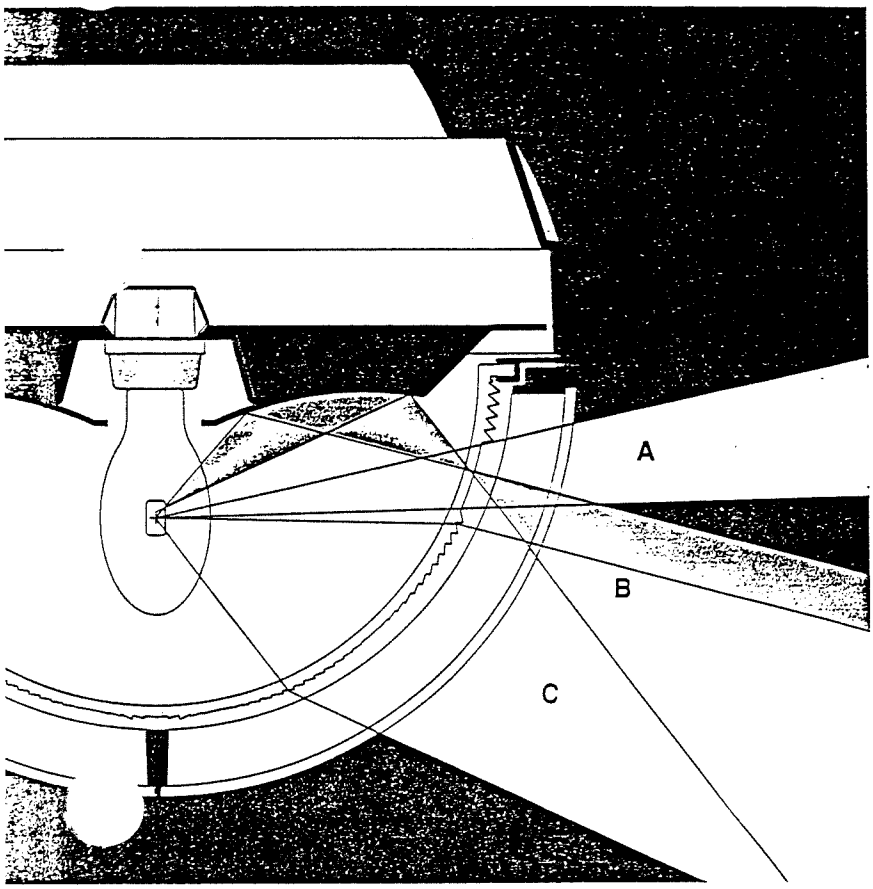


The PGL Omni-System bathes the garage interior with light from floor to ceiling. This approach is virtually dictated by the IES and NPA recommendations listed above. At the same time, the inevitable consequence of this approach is excessive brightness in certain viewing directions. This quandary, and its solution represent the ingenious composition of form and function embodied in the PGL Omni-System. It is the first parking garage luminaire capable of meeting all IES and NPA requirements, while providing the flexibility of modular brightness control.

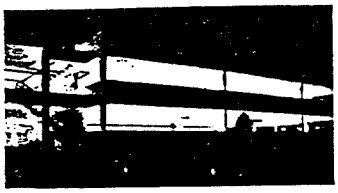




Performance Task-Driven Optics

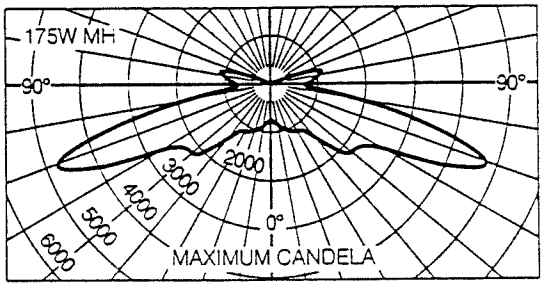


A Ceiling illumination is primarily generated by light passing through a clear window area in the refractor. This window is located slightly above the lamp center, and is engineered to produce a uniform wash of light over large ceiling areas. This illumination projects a secure image to visitors.



B A precision hydroformed reflector captures the up-light and redirects it downward through the clear window area. This light augments the main beam for greater efficiency.

C The main beam is generated by internal and external prisms. It is engineered to meet IES and NPA lighting recommendations while providing outstanding uniformity on both horizontal and vertical surfaces.

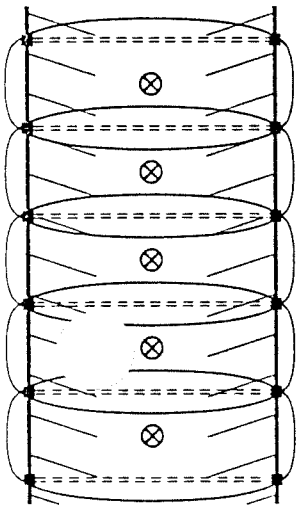


Two Fixture Types Offered:

PGL2 Single Row System

Fixture Icon Shows Plan View Orientation of Lens Cage

PGL2 fixtures are factory assembled with the lens cage oriented 45° to the driving lane. This allows optimum use of Louver Modules as described on page 3. PGL2s are installed with the rectangular light pattern running across the parking bays as shown at left. The light pattern has been perfectly sized for optimum efficiency within all typical garage bays whether one-way or two-way drives are used.

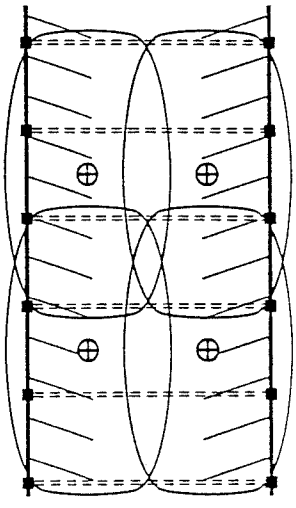


See page 3 for explanation of Modular Brightness Control system as applied to the PGL2.

PGL3 Double Row System

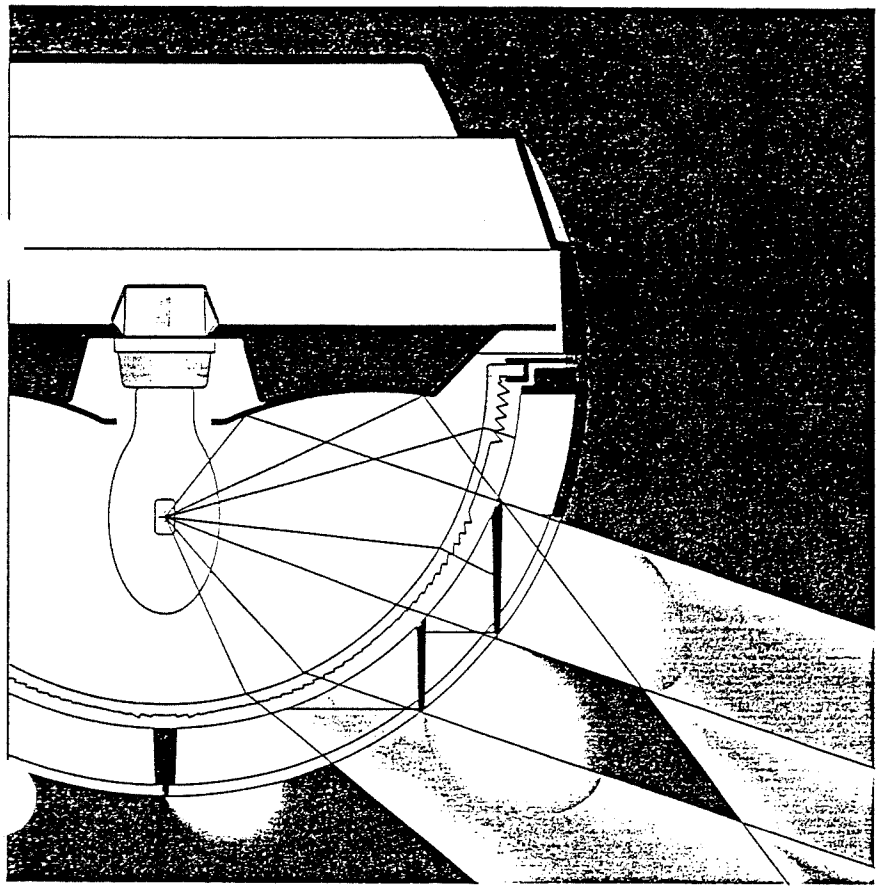
Fixture Icon Shows Plan View Orientation of Lens Cage

PGL3 fixtures are factory assembled with the lens cage oriented at right angles to the driving lane. This allows optimum use of Louver Modules as described on page 3. PGL3s are installed with the rectangular light pattern running parallel with the driving lane as shown at left. This arrangement utilizes the rectangular light pattern to its optimum advantage and efficiency within the garage bays whether one-way or two-way drives are used.

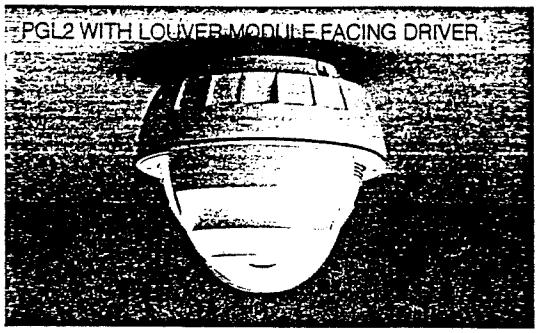


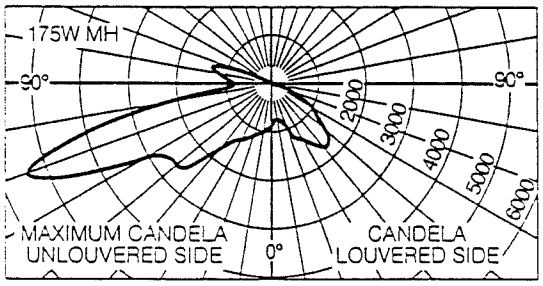
See page 3 for explanation of Modular Brightness Control system as applied to the PGL3.

Modular Brightness Control



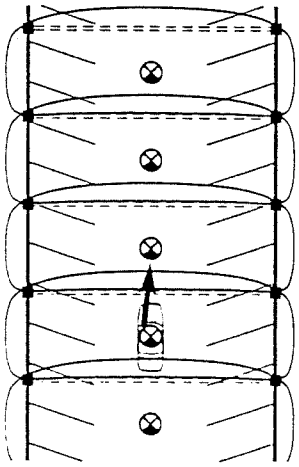
The PGL Omni-System employs an optional Louver Module that can be inserted in any quadrant of the lens cage. It is NOT a total light shield. Instead, it has been carefully engineered to reduce fixture brightness to the same approximate level as its surrounding ceiling and beams.





PGL2 Single Row System

Because the PGL2 lens cage is oriented at 45° to the driving lane, a Louver Module directly faces the driver, providing maximum brightness control. The fixture icon is solid in the quadrant where the louver is to be installed.

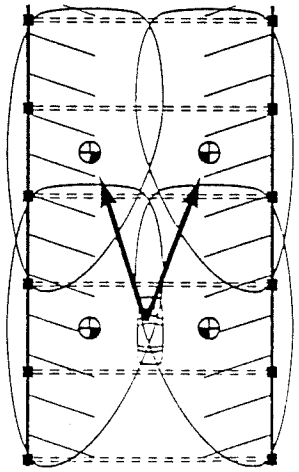


In a typical PGL2 single row layout, one Louver Module would face the driver in a one-way driving bay. The rectangular light pattern is minimally affected by the louver, and the system still provides full coverage of the bay. See page 14 for actual system performance.

For two-way drives, two Louver Modules would be installed on opposite sides of the PGL2.

PGL3 Double Row System

The PGL3 lens cage is oriented at right angles to the driving lane. This allows the Louver Modules to face the driver who is viewing the fixtures at oblique angles. The fixture icon is solid in the quadrant where the louver is to be installed.



In the typical PGL3 double row layout at left, one Louver Module faces the driver in each fixture. The rectangular light pattern is shortened by the louver, but is filled in by the next fixture. See page 15 for actual system performance.

For two-way drives, two Louver Modules would be installed in adjacent fixture quadrants. To compensate for louver loss, the lateral fixture spacing can be shortened.

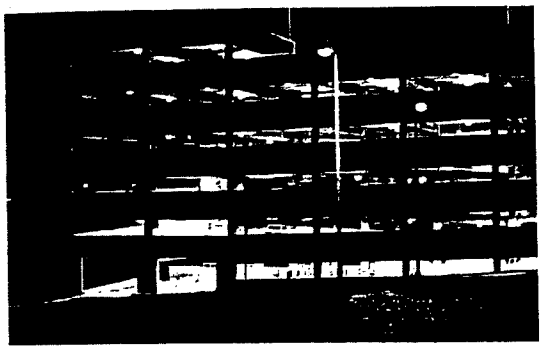
PGL1HP

Parking Garage Luminaire

The High Performance Luminaire Exclusively Designed For Parking Garages.

KIM LIGHTING

Three Functions in One Luminaire

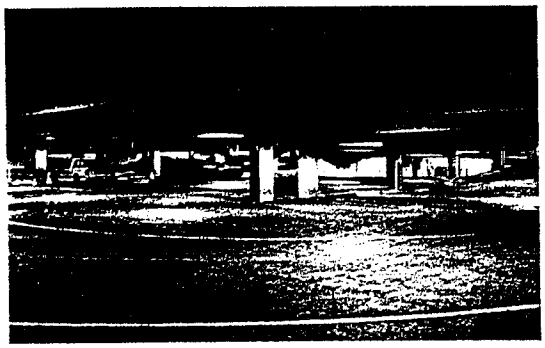


1. Indirect Luminaire

Purpose: Garage ceilings must be illuminated to avoid the "cave effect" or the feeling of entering a dark insecure place. The PGL1HP luminaire has a unique uplight component which lights ceilings and beams, creating a bright and secure ambience within the garage interior. Up-lighting also reflects off the ceiling and beams, thereby adding to the floor illumination and softening shadows.

2. Cutoff Luminaire

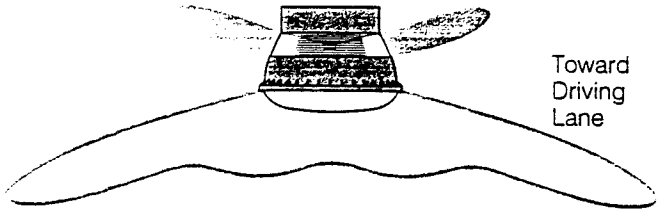
Purpose: Cutoff luminaires have long been acknowledged as providing the best illumination for driving because glare is eliminated at high angles where it can cause loss of visibility. The PGL1HP luminaire has been engineered to provide cutoff lighting up and down the driving lanes for optimum driver and pedestrian visibility. The lamp is fully shielded from high angle view by the opaque section of the luminaire. Collectively the cutoff down-light combines with the indirect up-light to create a bright garage interior void of harsh luminaire intensity.

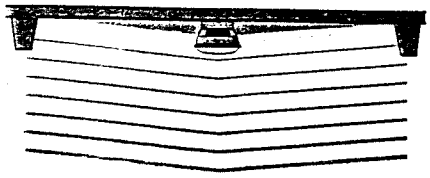


3. Semi-Direct Luminaire

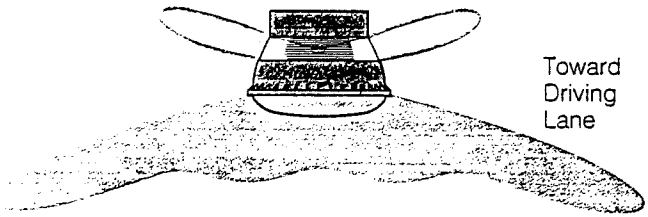
Purpose: Once an automobile leaves the driving lane and is parked, the lighting requirements change. Additional light is needed at high angles to light the area between cars, help light inside the car and to provide a secure environment for people leaving or re-entering their vehicles. The PGL luminaire employs prisms in a selected portion of the up-light window to bend light downward toward the parking stalls. This additional downward light helps fill the parking areas with increased illumination directly from the luminaire and reflected from the ceiling and beams.

Up-light distribution through clear portion of upper window.

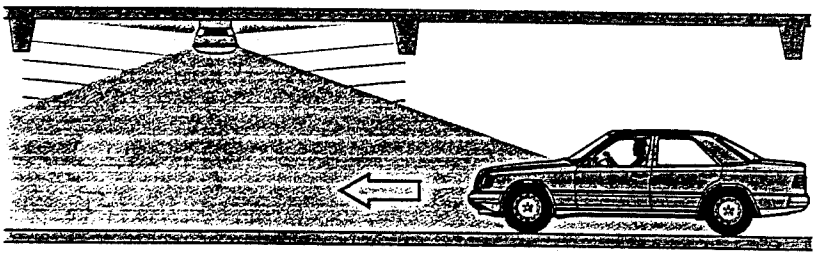




Result: The PGL helps any parking garage give users a secure and inviting feeling even before entering. Up-light eliminates the "cave effect".

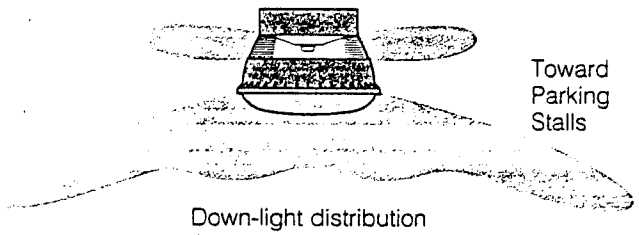


Down-light distribution through lower window.

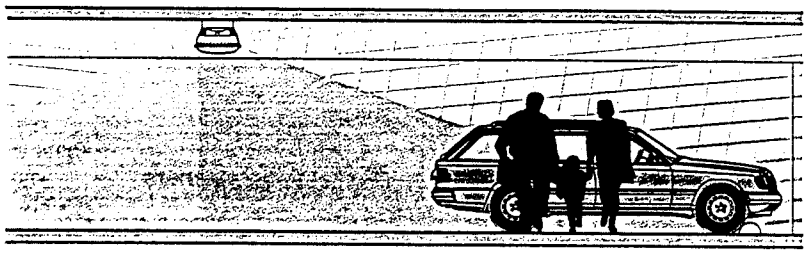


Result: The PGL generates uniform glare-free lighting for safe and comfortable driving within the garage.

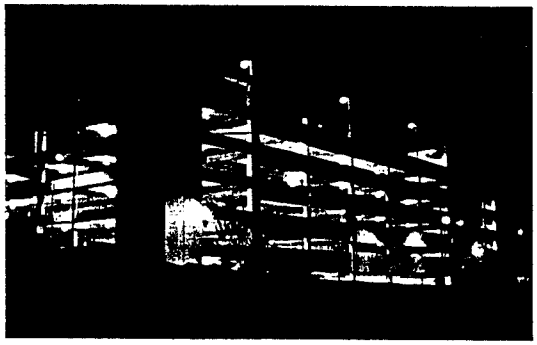
Up-light and down-light distribution through prismed portion of upper window.



Down-light distribution through lower window.



Result: The PGL provides excellent lighting in the parking stalls for security.



Conclusion:
The Kim Parking Garage Luminaire is an innovative solution to a complex lighting task. Never before has parking garage lighting been so thoroughly analyzed and solved by a single product with multiple functions. Today's parking garages must be highly illuminated and visually inviting or they will be avoided. The PGL can create a bright and secure garage ambience without polluting the surrounding neighborhood with glare. In addition to superb lighting, the PGL fixture has a designer-look instead of the typical utilitarian look so common in today's garage luminaires. Day or night, the PGL will complement and enhance the growing effort to make parking garages an integral part of the architectural design theme.

Features and Enhancements

Note: *All enhancements are completely interchangeable with any previous* ***PGL*** *model.*

New Wire Seal
A molded silicone grommet now adds greater protection against moisture entry by sealing all three wires exiting the fixture top.

New Speed Mount
The Kim "Speed Mount" has been redesigned to eliminate the need for a Mud Box Adapter Plate (*old cat.# M*). Now this quick mounting device easily attaches to mud boxes as well as standard 4" J-boxes.

Hydroformed Up-Light Reflector
The one piece hydroformed up-light reflector is configured to capture and redirect lamp output to useful angles. It also retains the lamp socket,and is easily removable for access to the electrical components.

Die Cast Housing, New Finish
The electrical housing is die cast aluminum finished in Kim's exclusive Light Gray "Super TGIC" powder coat paint. Housing hangs from the "Speed Mount" for easy wiring, and locks into place once it is raised to the final mounting position.

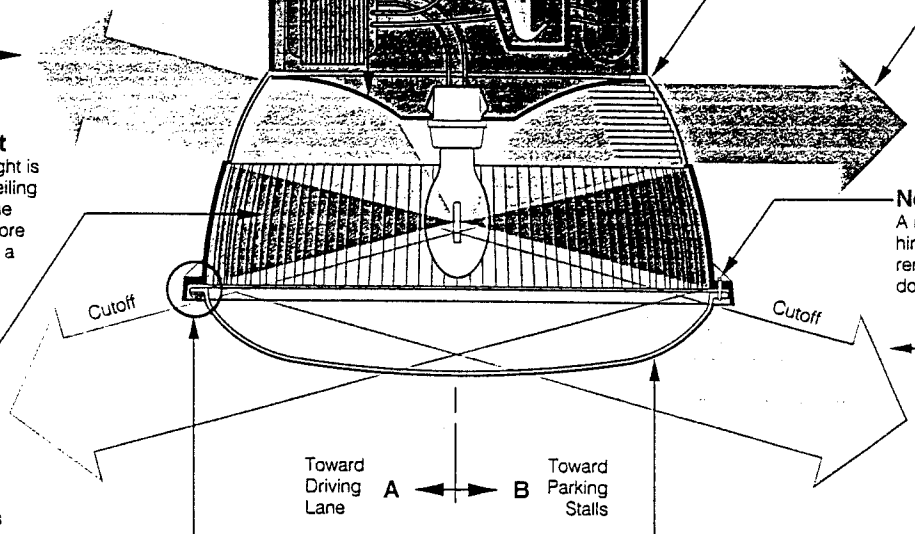
Electrical Components
All ballasts and related components are rigidly mounted inside the die cast housing and 100% tested before shipment.

New Housing Gasket
For added longevity, the housing gasket has been upgraded to a one piece molded silicone component.

Up-Light to Parking Stalls
Two prism areas in the up-light window bend light downward for extra fill into the parking stalls. Prism areas are 180° apart.

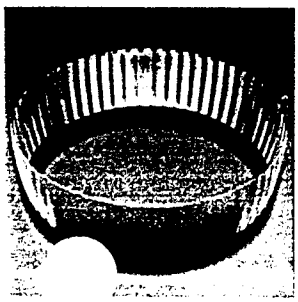
Up-Light Component
A generous amount of up-light is provided to illuminate the ceiling and beams. This reduces the "cave effect", providing a more inv[illegible]rking garage with a gr[illegible]se of security.

New Hanger Hinge
A new stainless steel hanger hinge now allows easy no-tool removal of the down-light window.

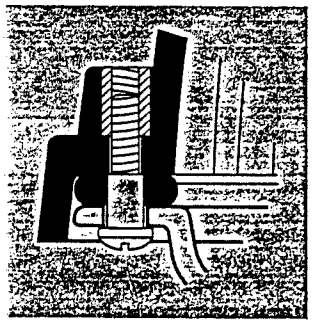


Wide Throw Down-Light
The primary garage illumination is provided by cutoff down-light in which the lamp is fully shielded above horizontal. Full coverage of the garage bay is achieved by the wide throw and high candlepower.

New Hydroformed Reflector
The primary reflector is now a one piece hydroformed aluminum component with an Alzak® finish. This change was made to provide maximum longevity, maintained light output and easier care over the previous vacuum-metalized reflector. Vertical facets prevent reflected light from passing through the lamp for greater efficiency and lamp life. The reflector is retained inside the one piece injection molded polycarbonate optical housing.
See photo below.

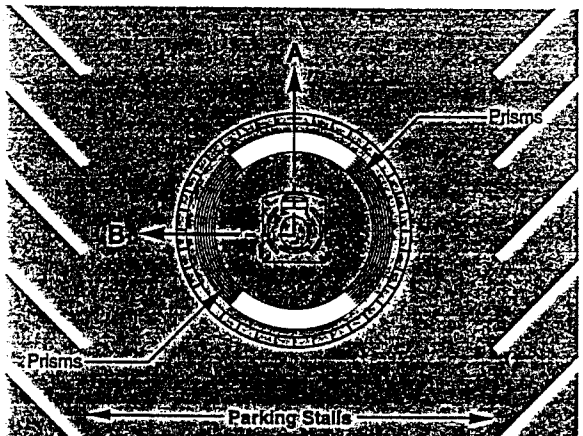


New Gasket and Fasteners
The down-light window gasket has been changed to silicone for maximum recovery of shape after relamping. The closure fasteners are stainless steel captive shoulder screws to prevent over-tightening and cracking of the lens.
See detail below.



New Down-Light Window
The injection molded down-light window has been reconfigured for greater performance by increasing the light transmission at high angles. This new lens produces an average increase of 6% in overall efficiency versus the old lens. The standard material is high temperature U.V. stabilized acrylic with optional polycarbonate available.

Top view of luminaire and orientation to parking stalls.



Carl Walker
Parking
Planning Engineering Restoration

January 6, 1998

Mr. Jim Clarkson
Mediplex Medical Building Corporation
5308 West Plano Parkway
Plano, TX 75093-4821

Re: Maine Medical Center – Parking Garage Lighting
CWI Project No. 3500.04

Dear Jim:

As you requested we have revised the lighting layouts for the proposed parking structure. We have relocated the top-level light fixtures and provided 15"-0" poles. The top-level exterior light fixtures are provided with house side shields to block light spillage onto adjoining property. Interior light fixtures on the exterior of the covered parking levels are provided with louvers to prevent light spillage.

We have based our design on the Illuminating engineering Society (IES) guidelines noted below. Utilizing a computer based lighting modeling program AGI version 2.97 by Lighting analysis, Inc. and manufacturer's digital photometric data we have modeled the lighting levels.

Interior Parking Areas and Drive Aisles (Illumination in Foot-candles, fc)

	General Parking Areas	Vehicle Crossovers	Vehicle Entry/Exits Day	Vehicle Entry/Exits Night	Pedestrian Lobbies
Average	5 fc	10 fc	50*	10 fc	20 fc
Minimum	1.25 fc	2.25 fc	12.5*	2.25 fc	5 fc
Avg./Min.	4:1 max.	4:1 max.	4:1	4:1	4:1 max

*Daytime infiltration plus artificial lighting.

Roof Level Lighting

Average:	2.4 fc
Minimum:	0.6 fc
Avg./Min.:	4:1 max.

Kalamazoo
Dallas
Denver
Chicago
Philadelphia
Atlanta

Carl Walker, Inc.
13747 Montfort Drive
Suite 105
Dallas, TX 75240
U.S.A.

Phone (214) 458-9855
Fax (214) 458-9649

We were provided with elevations at the face of the buildings on Boyton Street and along the east property line. The elevations are overlaid with computer generated light levels in a 10'-0" grid in both directions in foot-candles, that will result from lighting in the proposed parking structure.

Along the East property line the highest light level indicated is 2.99 foot-candles on the north end of the Kontos residence. This building is located very close to the property line and light levels are a combination of light from the vehicle entry way and the level 1 parking. As can be seen from the above IES guidelines, the recommended nighttime light level at a vehicle entry is 10 foot-candles. The light levels are a result of reflectance of light from building and drive surfaces. We have reduced the average light level at the entry to approximately 5 foot-candles, which is below the recommended level, to reduce the reflected light spillage.

The elevation on Boyton Street indicates the highest light level will be .25 foot-candles on the building at No. 23 at approximately the level of the second floor. The light levels primarily result from spillage of reflected light from building the building interior surfaces.

Hopefully, the information provided herein will be appropriate for the site plan review. If necessary, I can be available to answer any questions Maine Medical Center or the City of Portland may have concerning the garage lighting. Please call should you have any questions.

Sincerely,

Carl Walker, Inc.

Joey D. Rowland, P.E.
Project Manager

Enclosures

Section 12

LANDSCAPING

Refer to Landscape Plan included in Section 2.

Section 13

EROSION AND SEDIMENTATION CONTROL

A. GENERAL

1. Soil erosion and sediment control will be performed in accordance with the Maine Erosion and Sediment Control Handbook for construction: Best Management Practices, Cumberland County Soil and Water Conservation District, Department of Environmental Protection, March 1991, and as currently revised.

2. Maine Medical center, its agent, or assigns will be responsible for the repair/replacement/maintenance of erosion control measures until disturbed areas are stabilized.

B. EXISTING CONDITIONS

1. The southerly approximately one-third of the site consists of a paved surface parking lot, while the northwesterly approximately 15% of the site is a gravel surface parking lot. The remainder of the site consists of a grassing vegetated surface. The site drops approximately thirty feet from southeast to northwest (8%).

2. Surface water runoff from the paved parking lot is collected in a catch basin at the southwest corner where flow is directed, via a piped drainage system, to the municipal 18″ combined sewer system in Forest Street. Runoff from all other areas is allowed to spill over the curb into Forest and Boynton Streets where it is collected in catch basins in Forest Street near St. John Street and discharged to the municipal 18″ combined sewer system.

C. PROPOSED CONDITIONS

1. Prior to construction the Contractor will be required to install siltation fencing down gradient of any disturbed soil and to install the Vortechs oil/grit separation structure and connect it to the municipal enclosed sewer system as shown on the drawings. Nearly the entire site will be excavated well below existing ground elevation. The Contractor will be required to direct runoff from the excavation area to the northwest corner of the site where it will be pumped into the Vortechs structure to separate solid particles from the flow prior to discharging to the municipal system.

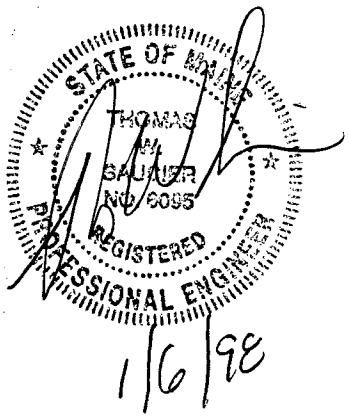
2. Inspections will be undertaken by qualified personnel to ensure the temporary and permanent erosion and sedimentation controls are properly installed and correctly functioning, and that additional erosion control measures are installed if needed. Such inspections will occur once every two weeks and after each significant rainfall event (1 inch or more within a 24-hour period) during construction until permanent erosion control measures have been properly installed and the site is established.

3. The foregoing measures and controls will help ensure that no unreasonable erosion of soil or sediment will occur as a result of the development or operation of the project.

Section 14

STORMWATER MANAGEMENT

Maine Medical Center
Medical Office Building and Parking Garage
Congress Street
Portland, Maine



A. METHODOLOGY

This stormwater runoff analysis has been undertaken utilizing the Hydrocad Stormwater Modeling System software developed by Applied Mircocomputer Systems of Chocorua, New Hampshire. The program is based upon the TR-20 computer program and the TR-55 Tabular Method, both of which are techniques developed by the Soil Conservation Service. Stormdrain system design was based upon a 25-year storm frequency. A twenty-four hour storm with a Type III distribution was the basis for the analysis.

City staff indicated that the combined sanitary sewer/stormdrain system in Forest Street had sufficient capacity to receive stormwater runoff from the developed site. Therefore, staff indicated that detention of stormwater was unnecessary. Oil/water separation is required for stormwater runoff from the parking garage, in order to enhance stormwater runoff quality. Because it was determined that stormwater detention is not necessary, estimation of existing stormwater runoff rates was not relevant to this analysis.

B. PROPOSED CONDITIONS

The proposed development involves the construction of a 45,000 S.F.± parking garage and medical office building on the 1.4 acre site. Stormwater runoff from the office building portion of the development will be collected and discharged to an existing 12″ stormdrain at the southeasterly corner of the site. Stormwater runoff from the parking garage will be conveyed to the northwest corner of the site and discharged to an oil grit separator, prior to discharge to the City system.

The design of the oil grit separator is based upon the 25-year stormwater runoff rate of 5.1 cubic feet per second (see attached calculations). Preliminary numbers indicated that a Vortechs model 4000 would be appropriate for this system. Attached is an excerpt from a Product and Services Guide prepared for a EPA and DEP sponsored stormwater technologies trade show which gives an overview of the Vortechs treatment system.

Stormwater runoff from the small area between the medical office building/parking garage structure and the residential buildings to the east will flow over a vegetated surface and will be directed over the sidewalk and curb on Boynton Street where it will combine with gutter flow to Forest Street, which is the current pattern of flow. The runoff is not collected at Boynton Street and directed to the existing 8" diameter as the sewer appears to convey sanitary sewage only, and also because capacity is questionable. The area between the parking garage and the Forest Street sidewalk north of the Forest Street entrance and the Boynton Street sidewalk is graded to direct surface runoff to the oil/grit separator, where it is collected and directed to the combined sewer line in Forest Street.

The area between the parking garage and the Forest Street sidewalk, southerly of the Forest Street entrance is graded to direct surface runoff to a catch basin to the south of the Forest Street entrance where it will be collected and discharged to the combined sewer in Forest Street.

SUBCATCHMENT 1 SC-1 TO OIL WATER SEPARATOR

PEAK= 5.06 CFS @ 11.98 HRS, VOLUME= .34 AF

ACRES	CN	
.78	98	IMPERVIOUS
.22	80	GOOD OPEN SPACE
1.00	94	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.5 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
DIRECT ENTRY ASSUMED (CONSERVATIVE)	A-B	1.0

SQUAW BAY CORP.
Consulting Engineers

P.O. BOX 192, CUMBERLAND CENTER, ME 04021

JOB NO. 7724R

SHEET NO. 1 OF

CALCULATED BY JWS DATE

CHECKED BY DATE

SUBJECT OIL WATER SEPARATOR

SCALE 1"=

$Q_{DA} = 5.2$ CFS

FOR VORTECHS 545 FM

USE MODEL 4000

I.D.= 12' x 6' x 8.25' DEEP

VORTECHS™ STORMWATER TREATMENT SYSTEM SPECIFICATIONS

Note: All information provided below is representative of typical and approximate sizes and construction details. Specific applications may deviate; Vortechnics can make alterations for shop drawing submittals on specific projects.

Vortechs™ Model	Flow Rate (cfs/gpm**)	Sediment Storage (yd³)	Oil Storage (gallons)	Weight (tons)	Size (LxWxH, ft)
2000	2.8 / 1,300	1.5	350	17	10 x 4 x 8.25
3000	4.5 / 2,000	2.0	500	20	11 x 5 x 8.25
4000	6.0 / 2,800	3.0	700	25	12 x 6 x 8.25
5000	8.5 / 3,800	5.0	900	29	13 x 7 x 8.25
7000	11.0 / 5,000	6.0	1,200	33	14 x 8 x 8.25
9000	14.0 / 6,300	8.0	1,480	37	15 x 9 x 8.25
11000	17.5 / 7,800	10.0	2,400	42	16 x 10 x 8.25
16000	25.0 / 11,200	14.0	2,500	47	18 x 12 x 8.25

MAINTENANCE: Inspect once every three months, or more often if conditions warrant, especially during the first year or when winter sanding is unusually heavy. Inspection consists of measuring depth of sediment in the sump and thickness of the layer of floating material. A record of the measurements should always be kept. Clean by pumping out just the swirl chamber whenever the sediment accumulates to within 6"-12" of the water surface or the floating layer reaches a thickness of 6" or more.

STRUCTURAL CHARACTERISTICS: Materials and structural calculations to be in accordance with ASTM C857 "Recommended Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures" and ASTM C858 "Specification for Underground Precast Utility Structures".

METAL COMPONENTS: Internal components: Grade 3031 aluminum with a minimum thickness of $^1/_4$-inch. Covers and supporting frames: ASTM specification A-48-83, Class 35B gray iron.

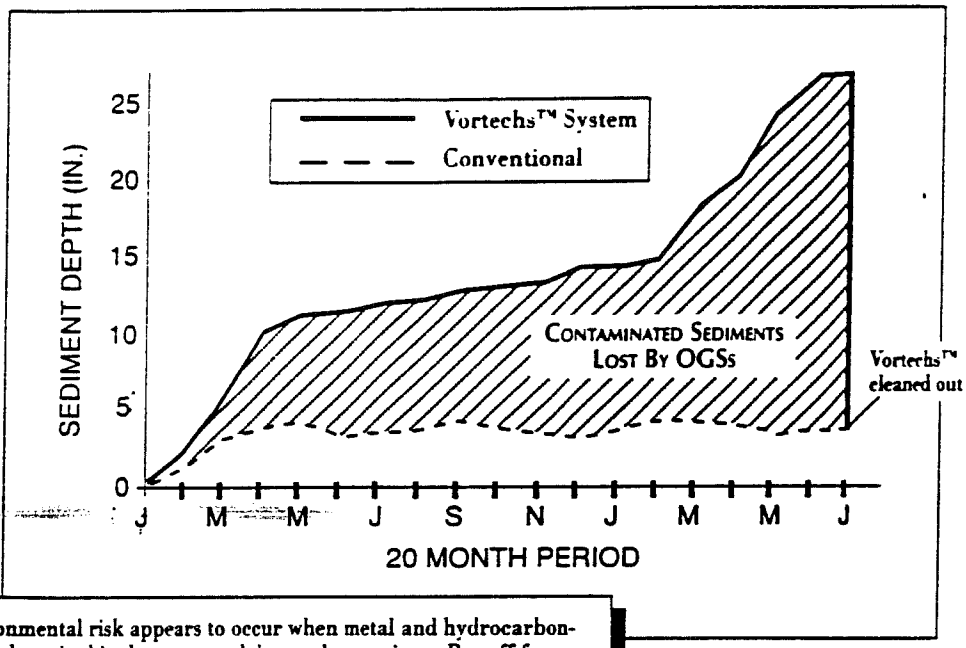
Vortechnics sizing criteria are based on 100 gpm/s.f. for peak flow or, in the case of installations which bypass peak flows, 24 gpm/s.f. for the 2-month storm. For very infrequent storms, (e.g. 25-year, 100-year), of short duration, a service factor of up to 1.4 may be applied to the peak flow rating.

* Gpm/s.f. is calculated based on gallons per minute per square foot of water surface area inside the swirl chamber.

COMPARISON OF VORTECHS™ SYSTEM SEDIMENT REMOVAL TO CONVENTIONAL OIL GRIT SEPARATORS.

VORTECHS™ SYSTEM PRODUCT PERFORMANCE

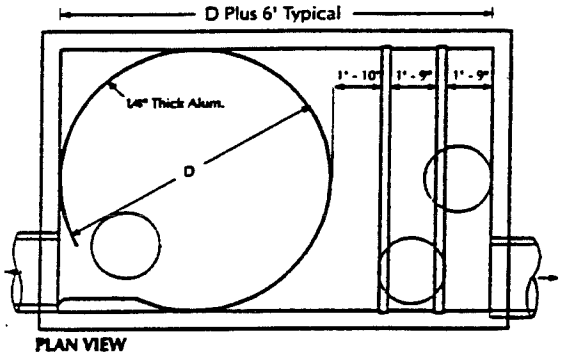
Data for Vortechs™ System obtained through in-field monitoring of actual installation in Freeport, Maine. OGS data taken from comprehensive testing of conventional systems by the department of Environmental Programs, Metropolitan Washington Council of Governments.



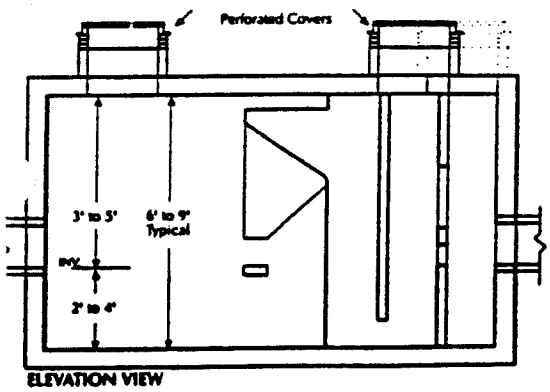
"The greatest environmental risk appears to occur when metal and hydrocarbon-laden sediments are deposited in downstream lakes and estuaries... Runoff from urban hot spots appears to be a major contributing factor to sediment contamination in these cases..."

- Schueler and Shepp, 1992
- McKenzie and Hunter, 1979

VORTECHS™ SYSTEM SPECIFICATION



PLAN VIEW



ELEVATION VIEW

Vortechs™ Model	Grit Chamber Diameter feet	Flow Rate cfs/gpm	Total Volume gallons	Sediment Storage cu. yards	Clean Out Volume gallons
1000	3.0	1/300	2,100	1.5	360
2000	4.5	2/600	2,900	2.0	500
3000	6.0	3/1,000	3,800	3.0	900
4000	8.5	4/1,100	4,800	5.0	1,100
5000	11.0	5/1,300	7,500	6.0	1,400
6000	14.0	6/1,800	9,100	8.0	1,800
8000	17.0	8/2,200	11,100	10.0	2,100

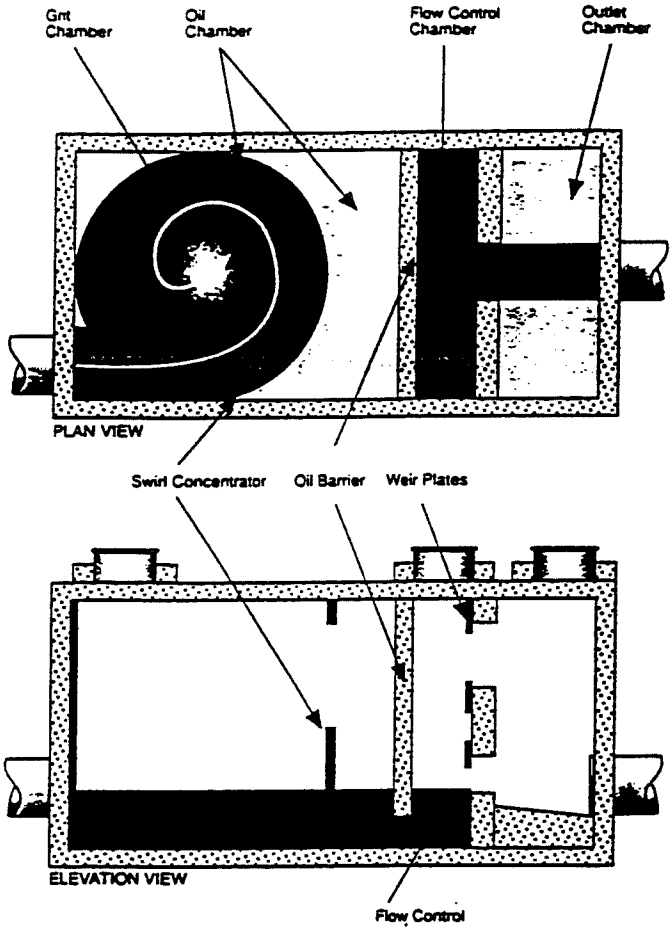
ATTENTION SPECIFIERS

Use the enclosed Specifier's Worksheet to begin the design of your Vortechs™ System. Simply fax completed worksheet to the Vortechnics Engineering Office (Fax No: 207-774-2788) and we'll produce detailed scale drawings based on your site specific information (free of charge).

Note: Availability of models and actual dimensions may vary. Check with Vortechnics or your local licensed manufacturer for specific information.

PATENT PENDING

VORTECHS™



Narrative Description

The *Vortechs™ Stormwater Treatment System* is designed to treat stormwater runoff from urban areas or from any site with an impervious surface that threatens to drain pollutants into watersheds and other ecologically sensitive areas. The *Vortechs™ System* is designed to install below-grade and to remove and retain sand, hydrocarbon-laden sediments, metals, petroleum-based liquids, and other floatable and settleable debris from stormwater runoff. Bench scale tests of the system indicate removal rates of more than 80% during typical monthly rainfall activity. Each system is custom-designed by Vortechnics engineers using local precipitation data to ensure optimum performance during the full range of storm events.

A tangential inlet to the trap's circular grit chamber channels stormwater into a vortex-like flow path. This swirling action directs sediment into the center of the chamber, where it accumulates in a stable pile. Oily contaminants floating in the grit chamber are then trapped by a sealed oil barrier. As the storm event builds in intensity, the inlet becomes submerged and influent is prevented from disturbing previously captured floatables. These two treatment structures work to keep captured pollutants in the trap by abating forces which encourage resuspension and washout.

Specifications

The *Vortechs™ System* is fabricated of a pre-cast Portland cement mixture by a pre-caster local to the work site. Vortechnics works closely with many pre-casters across the country and contracts work to companies who work in strict compliance with manufacturing specifications. Likewise, the circular grit chamber and the weir and orifice plates located on the flow-control wall are fabricated of ¼"-thick aluminum by metal fabricators near the work site. Each *Vortechs™ System* also includes manhole frames and covers – if risers are required for deep installations they will be quoted separately. Dimensions of the systems vary from the Model 1000, which treats up to 1.6 cfs and measures 3'w x 9'l x 6'h, to a Model 16000, which treats up to 25 cfs and measures 12'w x 24'l x 8'h.

Site Constraints/ Installation Requirements.

The *Vortechs™ System* is installed below-grade, which minimizes land consumption, and installs quickly in just a few hours. The excavation floor is leveled and lined with gravel or other granular material, then the *Vortechs™ System* housing and its components are lowered into place. Joints are then sealed, inlet and outlet piping are set in place, a cover is placed over the system and sealed, and the excavation is filled. Since each system is custom-engineered, outlet configurations can be modified to suit site conditions.

Applications

Vortechs™ Systems have been designed for a variety of residential, industrial, commercial, and municipal applications, including parking lots, airport runways, roadways, vehicle maintenance areas, gas stations, outdoor material storage areas, and many others.

Pretreatment Required?

Pretreatment of runoff before it enters the *Vortechs™ System* is not necessary in most cases. As a stand-alone Best Management Practice, the system has proven effective in removing and trapping target floatable and settleable pollutants.

Performance

Nine models of the *Vortechs™ System* are available; treatment capacities range from 1.6 to 25 cfs. Pollutants removed include hydrocarbon-saturated sediments, sands, silts, oily floatable liquids, salts, heavy metals, and other floatable and settleable debris. Laboratory studies of the *Vortechs™ System*, performed in conjunction with the EPA-funded Maine Environmental Internships Program, showed a "net" total suspended solids (TSS) removal efficiency rate over the course of storm events of over 80%. In-field monitoring and testing over a 20-month period at an installation in LL Bean's distribution facility in Freeport, ME, showed a steady increase in the sediment depth, while conventional oil-grit separators consistently demand periods of "wash-out" and loss of pollutants during periods of heavy precipitation.

Maintenance

Cleaning of the *Vortechs™ System* is easily performed with a vacuum truck by removing just one manhole cover. The cost of maintenance when compared to conventional oil and grit separators is reduced by 50 to 70% due to the fact that the system decants water at a controlled rate after a heavy storm, leaving up to 80% less water than in conventional oil and grit separators. The slow decant rate is regulated by built-in flow controls and

drains the tank to less than half full. To facilitate maintenance, as treated water drains out of the trap, accumulated pollutants are exposed and visible for inspection. Typically a newly-installed *Vortechs™ System* is monitored approximately once per month until pollutant accumulation rates are established, then the system may be pumped out 1 to 3 times per year, depending on weather and site activity. It is recommended that the maintenance schedule for New England installations includes cleanout just prior to the winter sanding/salting season.

Longevity

With regular maintenance the *Vortechs™ System* is designed to provide indefinite stormwater treatment. No moving parts, filters, bags, or other components ever need be replaced.

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name:

Comment: 25 YEAR STORM - STORM DRAIN FROM PKG GARAGE

Solve For Full Flow Slope

Given Input Data:

Diameter.....	1.00 ft
Manning's n.....	0.011
Discharge.....	5.10 cfs

Computed Results:

Full Flow Channel Slope	0.0147 ft/ft
Full Flow Depth.....	1.00 ft
Velocity.....	6.49 fps
Flow Area.....	0.79 sf
Critical Depth....	0.92 ft
Critical Slope....	0.0127 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	5.10 cfs
QMAX @.94D.....	5.49 cfs
Froude Number.....	FULL

Open Channel Flow Module, Version 3.11 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

SQUAW BAY CORP.
Consulting Engineers

P.O. BOX 192, CUMBERLAND CENTER, ME 04021

JOB NO. 97242
SHEET NO. ____ OF ____
CALCULATED BY JWS DATE 12/97
CHECKED BY ____ DATE ____
SUBJECT MEDICAL OFFICE BUILDING
SCALE 1"= ____

CHECK Q_{25} TO EXISTING 12" PVC STORMDRAIN

FROM OFFICE BUILDING ROOF

$A = 0.35 Ac \pm$

DUE TO SMALL DRAINAGE AREA USE RATIONAL METHOD

ASSUME $T_c < 5 min$

$i_{25} = 6.2 in/HR$

$C = 0.9$

$Q_{25} = CiA = 0.9(6.2)(0.35) = 2 CFS \pm$

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: EXIST 12" PVC

Comment: 25 YEAR STORM

Solve For Full Flow Capacity

Given Input Data:

Diameter.....	1.00 ft
Slope.....	0.0650 ft/ft
Manning's n.....	0.013
Discharge.....	9.08 cfs

Computed Results:

Full Flow Capacity.....	9.08 cfs
Full Flow Depth.....	1.00 ft
Velocity.....	11.57 fps
Flow Area.....	0.79 sf
Critical Depth....	0.99 ft
Critical Slope....	0.0601 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	9.08 cfs
QMAX @.94D.....	9.77 cfs
Froude Number.....	FULL

$Q_{FULL\ FLOW} = 9.1 CFS$

$9.1 CFS > Q_{ACT} = 2 CFS$

CAPACITY IS SUFFICIENT

Open Channel Flow Module, Version 3.11 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

Section 15

WILDLIFE

IFW

IFW
358 Shaker Rd
Gray ME
04039

Phone: 207-657-3258
FAX: 207-657-2980
email: philip.bozenhard@state.me.us

JAN 07 1998

Tuesday, January 6, 1998

W.Scott Decker, P.E.
Squaw Bay Corp.
P.O. Box 86A
Cumberland Center, ME 04021

Dear Mr. Decker:

I have reviewed our files for significant wildlife information in the vicinity of the proposed Maine Medical Center project and found no information pertaining to the site with regards to significant habitat or threatened or endangered species.

Philip Bozenhard

Philip Bozenhard
Regional Biologist

Section 16

HISTORIC SITE

J... 1998

MAINE HISTORIC PRESERVATION COMMISSION
55 Capitol Street
65 State House Station
Augusta, Maine 04333

JAN 05 1998

Earle G. Shettleworth, Jr.
Director

Telephone:
207-287-2132

January 1, 1998

W. Scott Decker, P.E.
Principal
Squaw Bay Corp
P.O. Box 86A
Cumberland Center, Maine 04021

Project: MHPC #2239 - Maine Medical Center Medical Office Building - Congress Street
Location: Portland, Maine

Dear Mr. Decker:

In response to your recent request, I have reviewed the information received December 24, 1997 on the above referenced project.

I find that there are no properties in the project impact area of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966 (as amended).

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer

EGS/drv

Section 17

UNUSUAL NATURAL AREAS

STATE OF MAINE
DEPARTMENT OF CONSERVATION
159 HOSPITAL STREET
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0093

ANGUS S. KING, JR.
GOVERNOR

RONALD B. LOVAGLIO
COMMISSIONER

JAN 02 '998

December 31, 1997

W. Scott Decker, P.E.
Squaw Bay Corp.
PO Box 86A
Cumberland Center, ME 04021

Re: Maine Medical Center, Proposed Medical Office Building, Congress Street, Portland

Dear Mr. Decker:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request of December 22, 1997 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in the town of Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual, and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, you may want to refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the town of Portland. These features may occur in the project area if suitable habitat exists and should be considered during future environmental surveys.

NATURAL RESOURCES INFORMATION AND MAPPING CENTER
ROBERT G. MARVINNEY, DIRECTOR AND STATE GEOLOGIST

PHONE: (207) 287-8044
FAX: (207) 287-8040
TTY: (207) 287-2213

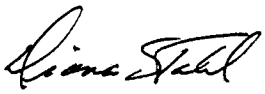
This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features on this site.

The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a $75.00/hour fee to recover the actual cost of processing your request for information. You will receive an invoice for $75.00 for our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,



Diana Stahl
Data Specialist
Maine Natural Areas Program

Enclosures

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM
ADDENDUM

19970080
I. D. Number

Maine Medical Center
Applicant

10/7/97
Application Date

22 Bramhall St, Portland, ME 04102
Applicant's Mailing Address

Maine Medical Center
Project Name/Description

Squaw Bay/Scott Decker
Consultant/Agent

883- 903 Congress St
Address of Proposed Site

829-6994 **829-5692**
Applicant or Agent Daytime Telephone, Fax

053-I-001/002/003/012
Assessor's Reference: Chart-Block-Lot

DRC Conditions of Approval

Planning Conditions of Approval

1. That the design of the skywalk shall be revised and submitted for Planning Board review and approval. The skywalk design shall be submitted to the Planning Office by September 30, 1998.
2. That deeded easements be submitted to the City for a portion of the sidewalk along Congress Street that is outside the right-of-way and for the landscaped area along Boynton Street.
3. The Park Avenue and Forest Street intersection shall be monitored on a monthly basis up to one year from parking garage occupancy to determine whether a traffic signal is warranted.

Inspections Conditions of Approval

Fire Conditions of Approval

Final

EASEMENT

MAINE MEDICAL CENTER, a not-for-profit corporation with offices at 22 Bramhall Street, Portland, Maine, 04102 for one dollar and other good and valuable consideration grants to the City of Portland, Maine, a body politic and corporate with offices at 389 Congress Street, Portland, Maine, 04101, the following described easements:

1. An easement for the purposes of the ~~installation~~, maintenance, replacement and repair and use thereof by the public of a sidewalk on and over a strip of land ten (10) feet in width (the "Sidewalk Easement Area") more particularly described on Exhibit A attached hereto.

2. An easement for purposes of landscaping and public access on and over a parcel of land located on the southerly side of Boynton Street in Portland, Cumberland County, Maine, extending from the intersection of the southerly sideline of Boynton Street and the easterly sideline of Forest Street easterly along Boynton Street approximately one hundred and ninety (190) feet (the "Landscaping and Public Access Easement Area") and more particularly described on Exhibit A attached hereto.

Tony Lombardo to verify survey descriptions on Attachment A.

IN WITNESS WHEREOF, MAINE MEDICAL CENTER has caused this instrument to be duly executed by _____, its _____ thereunto duly authorized, this _____ day of July, 1998.

WITNESS:

_____

MAINE MEDICAL CENTER

By:_____
Its:

STATE OF MAINE
CUMBERLAND, SS.

July ____, 1998

Personally appeared the above-named _____, _____ of Maine Medical Center as aforesaid who acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Before me,

_____

_____
Notary Public/Attorney-at-Law

Maine Medical Center

December 7, 1998

Larry Ash
Traffic Engineer
City of Portland
55 Portland Street
Portland, ME 04101

Re: Congress Street Medical Office Building

Dear Larry,

This is written in response to your request for the widening of Forest Street. The request was to include the work with the construction of our building at 883 Congress Street.

Because of a site condition which required the Design-Builder's and the Contractor's complete attention, they have been unable to put together an estimate for the work requested. The Design-builder has now told us that they will have an estimate to us by late December. After we have an estimated cost from the Contractor, our Senior Administration will have to review. We expect to have a response to you during January.

If there are any questions, please contact this office.

Sincerely,

Jim Morrison
Project Architect

Cc: Gray
Ryan
Swan
Bremm

22 Bramhall Street, Portland, Maine 04102-3175 · (207) 871-0111
The MaineHealth Family

From: Larry Ash
To: Robert Ganley
Date: Tue, Sep 29, 1998 11:44 AM
Subject: Maine Medical Center

Bob; I would like to summarize my input yesterday on street operations on Forest Street relative to the MMC parking garage currently under construction. I met with planning, city staff and MMC representatives. My understanding is that a letter is being written by Planning to Councilor Geraghty expressing these discussions. My opinions are:

1. I do not wish to make Forest Street a two-way street. It is 22 feet wide as is with parking on one side. Even if parking is removed two eleven foot lanes will be difficult to manage and would be even worse in winter with any snow and ice. Travel to/from Forest as well as Congress may be seriously compromised. Residents have already claimed they cannot use Forest during the winter with the street as is.

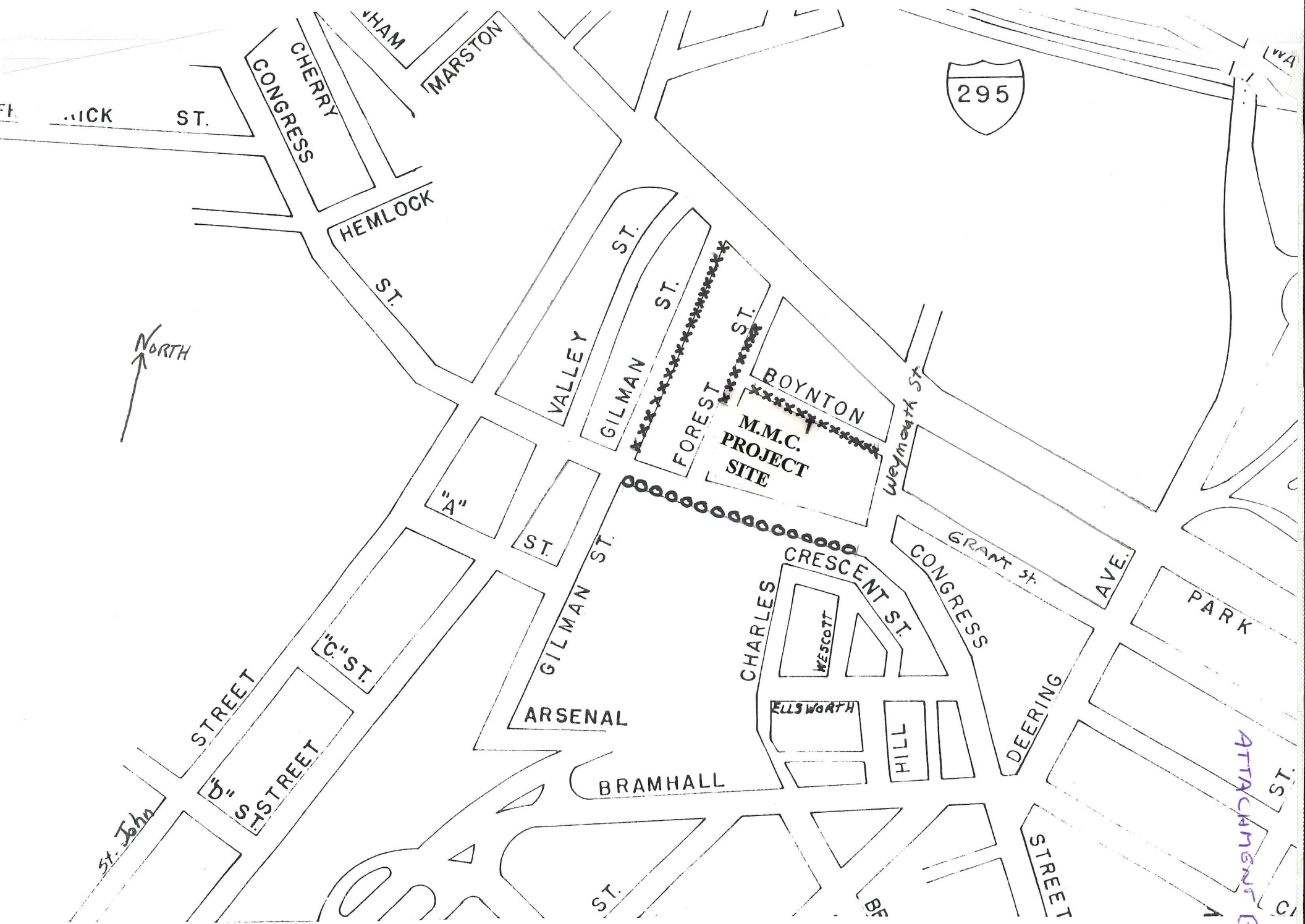
2. I do not wish to put heavy trucks out onto Congress St. as this will complicate traffic during peak travel times, i.e. safety may be compromised. Further, the turning radius for large trucks with a long wheel base onto Congress is not adequate without crossing over the double yellow line into the oncoming lane. These trucks would also have a difficult if not impossible time turning from Congress onto St. Johns if they are going over to Park Ave.

3. The safest and most direct route for these trucks is to proceed on the one-way on Forest St. and then north to Park Ave.

4.For any consideration of trucks exiting the construction site on Forest St. and then onto Congress the parking would have to be removed on Forest st. and Sonny, the owner of the Sportsmans Restaurant, is vehemently opposed to this, claiming he will have to lay people off because his place is losing business or so he has told me.

I do not view Forest Street being any different than any other public street during a construction project. There just is not many alternatives for vehicular traffic including trucks given the constraints of the existing roads surrounding this project. If you have any questions, comments or suggestions please call.

CC: Alex Jaegerman , Bruce Bell, Nadeen Daniels, Ri...



Proposed Parking Changes: **X - Unrestricted Parking to Two-Hour Parking**
O - Unrestricted Parking to "No Parking 6:00 a.m. - 6:00 p.m., Monday thru Friday"

Department of Public Works

William J. Bray, P. E.
Director

Rick
What is status
of this?
Jim

CITY OF PORTLAND

October 22, 1998

Mr. Jim Morrison, Architect
Maine Medical Center
22 Bramhall Street
Portland ME 04102

RE: Forest Street

Dear Jim:

To summarize our discussions of Tuesday, October 20, 1998, the City of Portland is formally requesting Maine Medical Center to provide the following in conjunction with its new parking ramp/office building at 883-903 Congress Street:

1. Widen Forest Street between Congress Street and the entrance to the ramp from its existing 22 feet to at least 28 feet curb to curb. MMC should identify any issues encountered in reestablishing a minimum 5 ft. sidewalk, green space, right-of-way, etc., and any other issue that would impede the widening of Forest Street. The City will work with you to resolve such design and/or engineering issues.

   This portion of Forest Street will, upon issuance of the Certificate of Occupancy, become a two-way street. Forest Street from the ramp exit/entrance to Park Avenue will retain its current one-way status.

2. The entrance/exit to the ramp will need to provide for left-out only so that vehicular traffic cannot physically exit to the right onto Forest Street.

3. The traffic signal that was to have been installed at Forest St./Park Ave. will now have to be located at Forest St./Congress St. and will include a full compliment of vehicle and pedestrian actuation and guidance.

If MMC cannot accomplish any of the above then engineering documentation and justification must be provided.

The City is seeking to minimize the traffic impact this development will have on adjacent neighborhoods and MMC is certainly a neighbor and part of this community.

City staff is looking forward to working with MMC to realize these goals and to assist in any way we can. Should there be any questions as we proceed, please do not hesitate to call me 874-8894 so that all matters may be resolved as expeditiously as possible.

Sincerely,
CITY OF PORTLAND

Larry Ash
Traffic Engineer

LA:jw
pc: Tom Kane, Mayor
Karen Geraghty, City Councilor, District 2
Robert B. Ganley, City Manager
Nadeen M. Daniels, Assistant City Manager
William J. Bray, P.E., Director of Public Works
Bruce A. Bell, Operations Manager
Joe Gray, Planning
Alex Jaegerman, Planning
Rick Knowland, Planning
John Peverada, Parking Manager

From: Larry Ash
To: Rick Knowland
Date: Wed, Sep 1, 1999 3:13 PM
Subject: traffic signal/Maine Medical Center

Rick: I have two issues regarding the MMC parking garage.

First, the plans submitted yesterday on behalf of MMC depicting the widening of Forest Avenue from Congress St to the entrance/exit of the new parking ramp are acceptable. However, corporation counsel probably needs to have some agreement inserted such that if the present plan does not prevent exiting cars from turning right down Forest St then MMC will pay for whatever remedy the City deems necessary to correct this problem.

Second, the plans submitted have nothing regarding the signalization of the intersection of Congress St/Forest St. This signalization is absolutely essential to this entire project. MMC has known of the requirement for the signals ever since discussions took place regarding the changes for Forest St. It is my opinion that MMC needs to immediately make arrangements for the signalization of this intersection without delay. The signal plans need to be reviewed by me before they can be put out for bid.

I certainly could not agree to a CO without the above two items being resolved.

If you have any questions please call. Thanks.

CC: Alex Jaegerman , Bruce Bell, Joe Gray , John ...

CITY OF PORTLAND, MAINE
PLANNING BOARD

April 15, 1999

Mr. Paul Gray
Maine Medical Center
22 Bramhall St.
Portland ME 04102

RE: Maine Medical Center Skywalk, 883-993 Congress Street

Dear Mr. Gary:

On April 13, 1999, the Portland Planning Board voted 6-0 (Cole absent) that the revised skywalk design is in conformance with the site plan standards (including the Site Location of Development law) of the Land Use Code.

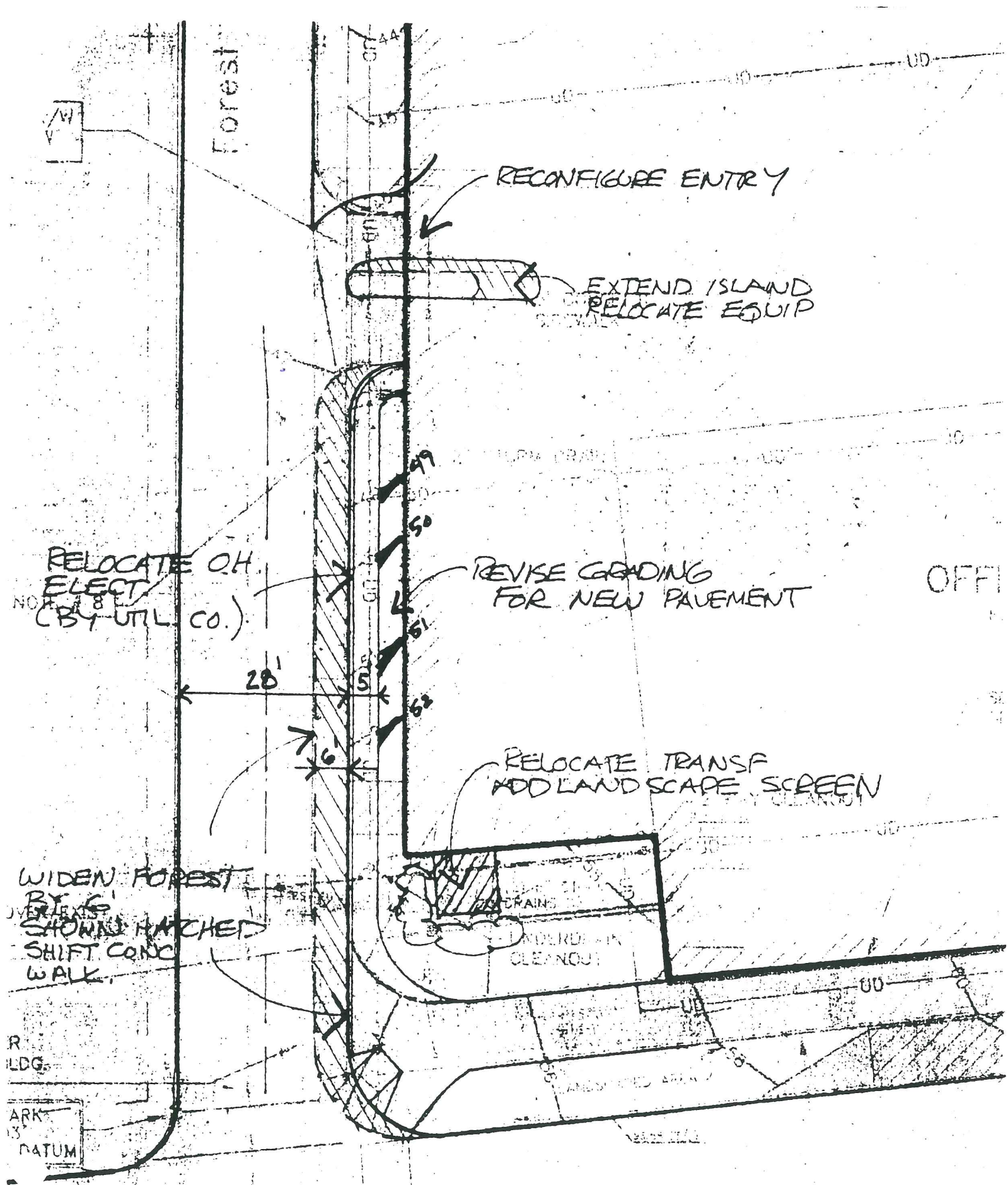
The approval is based on the submitted site plan and the findings related to site plan review standards as contained in Planning Report #10 -99, which is attached.

Please note the following provisions and requirements for all site plan approvals:

1. A performance guarantee covering the site improvements as well as an inspection fee payment of 1.7% of the guarantee amount and 7 final sets of plans must be submitted to and approved by the Planning Division and Public Works prior to the release of the building permit. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.

2. The site plan approval will be deemed to have expired unless work in the development has commenced within one (1) year of the approval or within a time period agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the expiration date.

3. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.


Forest
RECONFIGURE ENTRY
EXTEND ISLAND
RELOCATE EQUIP
RELOCATE O.H.
ELECT
(BY UTIL. CO.)
REVISE GRADING
FOR NEW PAVEMENT
28'
6'
RELOCATE TRANSF
ADD LANDSCAPE SCREEN
WIDEN FOREST
BY 6'
SHOWN HATCHED
SHIFT CONC
WALK.
UD
DATUM

1 OF 2

1/19/99

PROJECT	COMP. BY	JOB NO.
MEDIPLEX MEDICAL BUILDING CORP MEDICAL OFFICE BUILDING FOREST ST WIDENING	S.J.Beaulieu	97242
	CHK. BY	DATE
		12/29/98

FOREST ST. WIDENING
SCALE = 1" = 5'

SK-2

FOR PERMITTING PURPOSES ONLY
NOT FOR CONSTRUCTION

MMBC

MEDIPLEX MEDICAL BUILDING CORPORATION
5308 WEST PLANO PARKWAY
PLANO, TEXAS 75093-4821

July 8, 1998

Via: Fed-X Standard

Mr. Rick Knowland, Senior Planner
Portland City Hall
City of Portland
389 Congress Street
Portland, ME 04101

RE: PROJECT REVISIONS
MAINE MEDICAL CENTER MOB AND PARKING GARAGE

Dear Mr. Knowland,

Several revisions to the above project are necessary due to the fact that our bids came in substantially over the budget. We are submitting several of these revisions that affect the scope of work approved via the site plan review for your review and comment.

1. We are deleting the lower level of the garage. By revising the layout of the upper levels, and relocating the division separating the two parts of the garage, we maintain the 430 spaces requested by the City. Therefore, it will not be necessary to construct additional garage on the top deck. The appearance and function of the garage remain essentially the same as approved at the site plan review. Please see the attached sketches.

2. We are also looking at revising the lighting. We have enclosed the product data for our proposed fixtures. The pole fixtures are very similar to the pole fixtures submitted at the site plan review. The ceiling-mounted fixtures will be similar to the PGL1's that are used in the garage constructed at Marketplace by City Hall. We will use a version of this fixture that has an internal shield, which blocks the light from one side of the luminare at the perimeter locations. Pole fixtures are of the same cut-off type. Fixture locations, lamp types, pole heights, and wattages will remain as originally submitted. Overall, the package represents substantial savings from the fixtures originally submitted and should function similarly. Rick, I've expressed concerns to you previously about the cost of originally specified fixture. The subcontractor has found a suitable substitution to this very expensive fixture.

3. Next we are proposing a larger brick size. There is substantial labor savings in laying larger but a lesser quantity of brick. The brick we are proposing has a 4"x8" face with the same finish as that proposed during site plan review. The larger brick is appropriate for the large building mass, and does not conflict with that of

(972) 248-9100 e-mail mmbc1@airmail.net FACSMILE (972) 931-8966

adjacent structures. Further, the majority of the street facade at the level of the passerby is precast and glass.

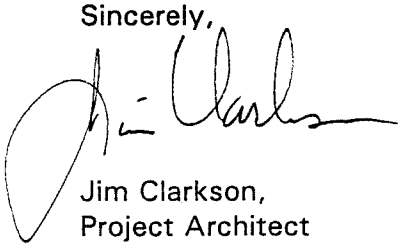
4. We are also modifying the sub-base under pavement of walks to City of Portland standards. We wish to verify this criteria. Attached is a sketch of our proposed revision.

5. We are also proposing an alternate oil/grit separator. We are enclosing the product data on the item for review by Public Works. Again, it should function equivalent to that originally specified.

6. Finally, we are proposing replacing the storm drain along Boynton revised grading such that the water collected along the east property line can be collected at the corner of Boynton and Forest. The construction of our project does not significantly alter the existing drainage of this part of site. We understand the desire to keep this area from draining onto Boynton and propose we channel the small amount of drainage under the snow removal drive and on to the corner. See attached sketch.

These are the main issues that we submit for your consideration. I have submitted a similar list to building inspection consisting of several items not applicable to the site plan review. We feel the above items do not significantly alter the site issues that were of concern to the planning board during the review process. Yet, just these few items represent a substantial savings to the project. We appreciate your consideration of each item. Please let me know if we can provide additional information.

Sincerely,



Jim Clarkson,
Project Architect

cc: Phil Taylor
Ron Blackwell
Damian Donati

KKA/KKB/KKC

CAMBRIDGE I & II

APPLICATIONS

Planned communities, parks, walkways, parking areas, stairs, entrances, residential streets, marinas, school campuses and other no-glare applications.

CONSTRUCTION FEATURES

Housing — One piece die-cast aluminum housing with soft radius corners. Lens door is also cast aluminum with soft radius corners. Lens is a clear tempered, impact resistant, glass held in place with sealant and retaining clips. A continuous gasket seals the door assembly to the housing.

Mounting — An extruded aluminum arm, using four bolts, is provided for rigid attachment of luminaire to pole.

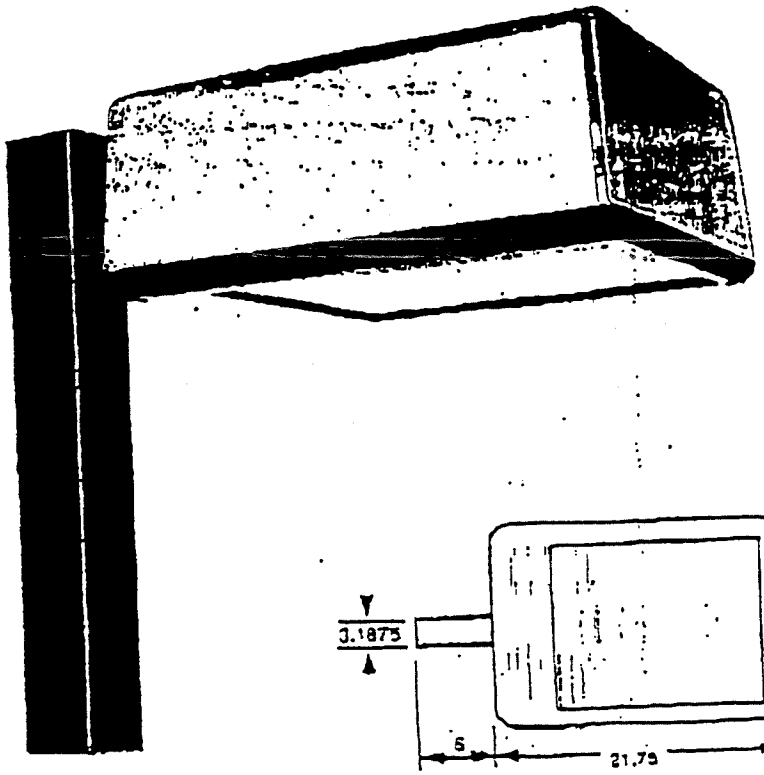
Optical Assemblies — Specular anodized aluminum reflectors provide square symmetrical (type V), forward throw (type IV) or narrow asymmetrical (types I and III) lighting patterns. Reflector is mounted with hinges and captive locking screws into housing for easy access to ballast.

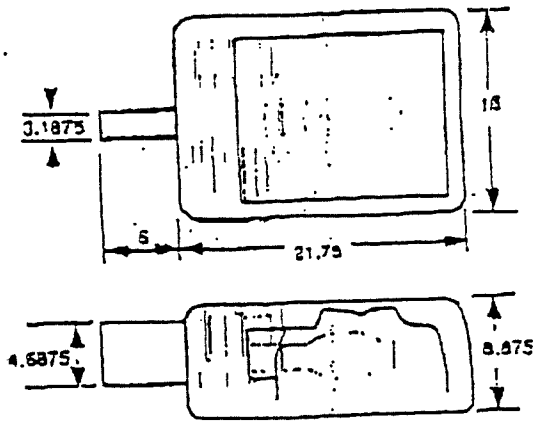
Ballast Assembly — Starting rated to -20°F. Ballasts for Metal Halide are constant wattage autotransformer type. Ballasts for High Pressure Sodium are constant wattage autotransformer type using an electronic starter. Ballasts are mounted directly to die-cast housing for reduced temperature and increased life. All ballasts are high power factor.

Lamps — Luminaires accommodate Metal Halide and High Pressure Sodium mogul base lamps.

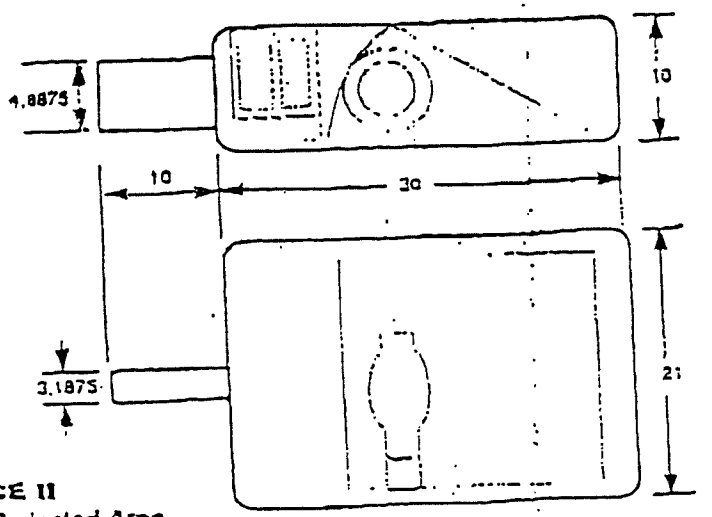
Lampholder — Mogul base glazed porcelain socket with spring loaded, nickel plated center contact and reinforced lamp grip screw shell. High Pressure Sodium sockets are pulse rated.

Finish — Durable baked-on polyester paint finish is available in 10 standard colors. Other finishes are available.





CE I
Effective Projected Area
1.5 Sq. Ft.



CE II
Effective Projected Area
2.9 Sq. Ft.

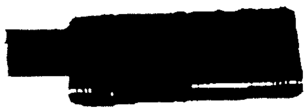
SPAULDING
LIGHTING, INC.

CAMBRIDGE I & II

KKA/KKB/KKC

U.L. & CSA Listed

LUMINAIRE ORDERING GUIDE

Model	CEI – small size (EPA – 1.6)	CEII – large size (EPA – 2.0)
Mounting Mode	PM  Pole Mount	WB  Wall Bracket
Lamp Type/ Watts	small size S100 S150 S250 S400 M175 M250 M400	large size S400 S1000 M400 M1000
Reflector	I – asymmetric III – asymmetric IV – forward throw VS – symmetric square	
Voltage	120 208 240 277 347 480 MT – Multi-tap	
Options	PC – photoelectric cell 120-277v, up to 400w PR – photo receptacle (less cell) VG – polycarbonate vandal guard	SF – single fuse DF – double fuse CS – house side cutoff shield

Colors for Luminaire and Pole	DBZ	BGE	RRN	SGB	WHT	FGP	TBP	RBP	CMB	LTG
	dark bronze	beige	rocket red	black	white	forest green	teal blue	royal blue	burgundy	lite gray

Luminaire Ordering Example	Model	Mounting Mode	Lamp Type Watts	Reflector	Voltage	Options	Color
	CEI		250MH			VG	
	CEI CEII (KKA/KKB)	PM: pole mount: std-8" arm for CEI std-10" arm for CEII (KKC) WB: wall bracket	Small: S100, S150, S250, S400, M175, M250, M400 Large: S400, S1000, M400, M1000	I: asymmetric III: asymmetric IV, forward throw VS, V-square	120 208 240 277 347 480 MT: multi-tap	PC: photoelectric cell 120-277V, up to 400w PR: photo receptacle (less cell) SF: single fuse DF: double fuse VG: polycarbonate vandal guard CS: house side cutoff shield	DBZ: dark bronze BGE: beige RRN: rocket red SGB: black WHT: white FGP: forest green TBP: teal blue RBP: royal blue CMB: burgundy LTG: lite gray

POLE ORDERING

Refer to Poles/Brackets Section for ordering information.

SQS

KKA / KKB

SQUARE STRAIGHT STEEL POLES

Nom. Height Ft.	Ordering Number	Allowable EPA Wind Velocity w/1.3 gust 70	80	90	100	Shaft Size Dim	Ga	Anchor Bolt Size	Wt./ Lbs.
10'	10-SQS-411-*	38	28.5	22	17	4	11	¾x15	91
10'	10-SQS-511-*	50	46	34	20	5	11	¾x15	106
12'	12-SQS-411-*	28	21	15	12	4	11	¾x15	104
12'	12-SQS-511-*	45	33	25	20	5	11	¾x15	132
14'	14-SQS-411-*	23	17	12.5	9.5	4	11	¾x15	116
14'	14-SQS-407-*	34.5	25.5	20	15	4	7	¾x15	158
14'	14-SQS-511-*	38	28.5	21.5	16.6	5	11	¾x15	138
16'	16-SQS-411-*	19.5	14	10.5	7.5	4	11	¾x15	128
16'	16-SQS-407-*	29.5	21.5	16	12	4	7	¾x15	176
16'	16-SQS-511-*	39	23.5	17.5	13.5	5	11	¾x15	151
16'	16-SQS-507-*	47.5	36.5	27	21.6	5	7	¾x15	216
18'	18-SQS-411-*	16.5	11.5	8.5	6	4	11	¾x30	147
18'	18-SQS-407-*	25.5	18	13.5	10.5	4	7	¾x30	201
18'	18-SQS-511-*	27.5	20	14	11	5	11	¾x30	175
18'	18-SQS-507-*	42	31	23.5	18	5	7	¾x30	243
20'	20-SQS-411-*	13.5	9.5	6.5	4.5	4	11	¾x30	173
20'	20-SQS-407-*	22	18	11.5	8.5	4	7	¾x30	180
20'	20-SQS-511-*	23.5	17	12	9	5	11	¾x30	191
20'	20-SQS-507-*	34.5	27	20	15.5	5	7	¾x30	266
20'	20-SQS-607-*	51	38	28.5	22	6	7	¾x30	312
25'	25-SQS-411-*	8.5	5	3	1.5	4	11	1x36	238
25'	25-SQS-407-*	14.5	10	6.5	4.5	4	7	1x36	264
25'	25-SQS-511-*	15	10.5	6.5	4	5	11	1x36	231
25'	25-SQS-507-*	26	18	12.5	9.5	5	7	1x36	324
25'	25-SQS-525-*	30.5	26	18	14	5	.25	1x36	417
25'	25-SQS-607-*	34.5	28	20.5	15	6	7	1x36	404
30'	30-SQS-407-*	4.5	4.5	2.5	1.5	4	7	1x36	313
30'	30-SQS-511-*	7.5	5.5	2.5	NR	5	11	1x36	274
30'	30-SQS-507-*	18	12	8	4.6	5	7	1x36	390
30'	30-SQS-525-*	22	16	13	8	5	.25	1x36	533
30'	30-SQS-607-*	20	20	14	9	6	7	1x36	467
30'	30-SQS-625-*	42	30	22	16	6	.25	1¼x48	640
35'	35-SQS-607-*	28.5	13	8	4.5	6	7	1x36	538
35'	35-SQS-625-*	26	18	12	7.5	6	.25	1¼x48	726
40'	40-SQS-607-*	11	8	3.5	NR	6	7	1x36	614
40'	40-SQS-625-*	14	10.5	5.5	2.5	6	.25	1¼x48	735

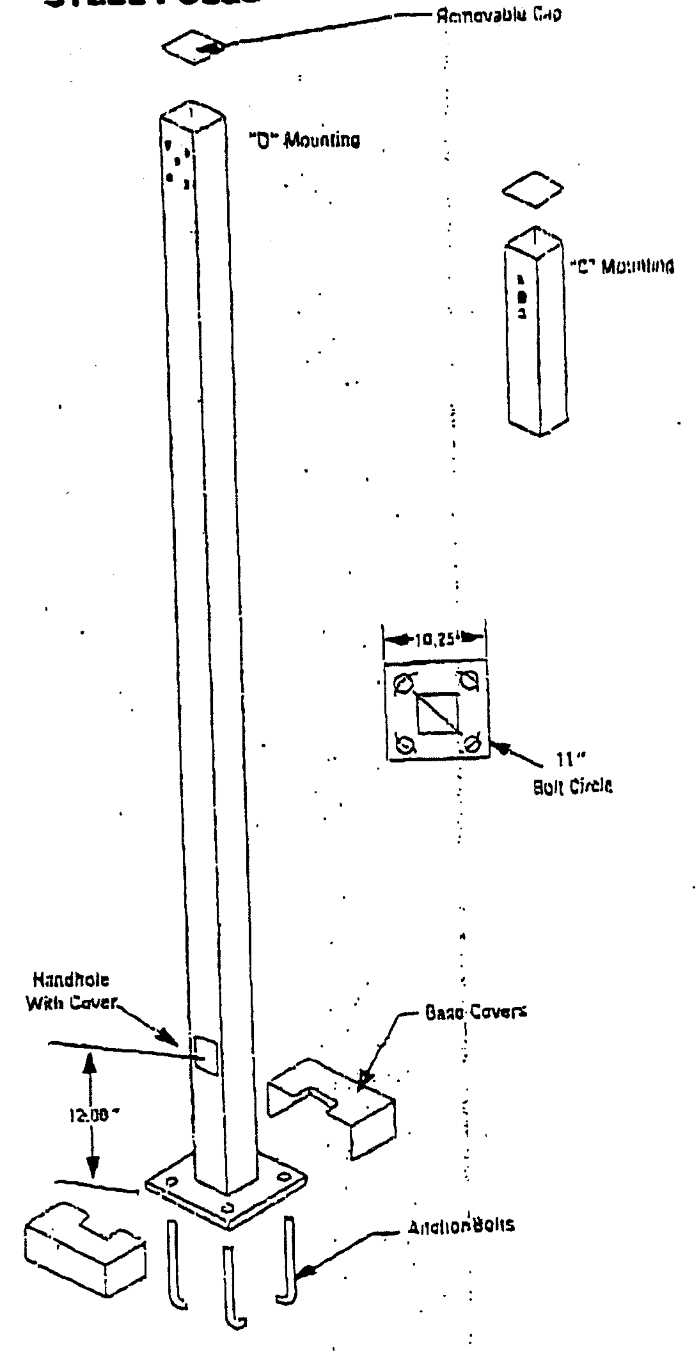
*CONFIGURATION - SUFFIX

SGL · DBL · DBL-90 · TPL · QUAD

*MOUNTING HOLE PATTERN - SUFFIX

Luminaire / POLE	PATTERNS AVAILABLE D 4"	5"	6"	C 3"	4"	5"	5"
Catalina I/II/Legend	X	X	X				
Santa Fe I-III/Aerostar	X	X	X				
Cambridge I, II/LaBaron	X	X	X				
Seattle I				X	X	X	X
Seattle II, III	X	X	X				
Oakland I/Citation I	X	X	X				
Cordova I				X	X	X	X
Cordova II, III	X	X	X				
Anaheim	X	X	X				
Dallas/Escort	X	X	X				
Detroit/Metro	X	X	X				
Washington I, II/Lumina	X	X	X				
Huntington I/Camaro				X	X	X	X
Huntington II/LaSabre/ Riviera	X	X	X				
Newport I				X	X	X	X
Newport II	X	X	X				
Lincoln I, II/Lynx	X	X	X				
Orlando Sq. I, II/Escort	X	X	X				

x Available provided EPA is not exceeded.



NOTE:
All poles have a [illegible] polyester paint finish to match the luminaire's specs.
Ordering information for base covers, receptacles, see page 16 of Poles & Brackets brochure.
All poles are furnished with anchor bolts and double nuts.
NR - Not Recommended

SPECIFY COLOR

SPAULDING/ WHITEWAY LIGHTING, INC.

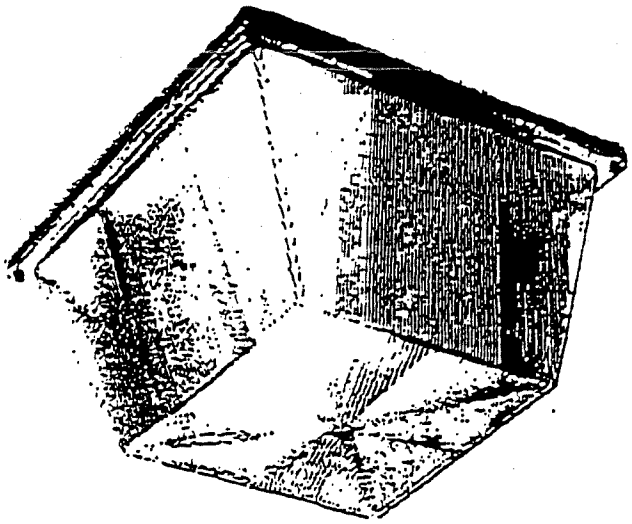
JOB NAME:

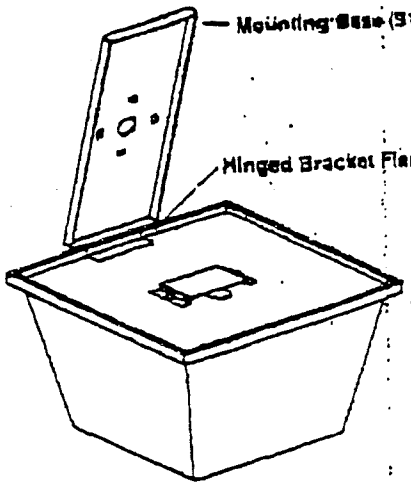
FIXTURE TYPE:

KENALL®

DecPro™ 4600

High Abuse
50/70/100W
High Pressure Sodium
50/70/100W Metal Halide





Quick Mount is Standard. Fixture includes a mounting bracket and a separate mounting base (9146J or 9146P) for fast one-person installation.

U.L. Listed for Ceiling Dry and Damp Locations

The DecPro™ 4600 series is ideal for low-mount, high traffic areas. Seven inch profile, high strength lens which completely encloses metal components, and efficient operation makes the DecPro ideal for parking decks, park shelters, canopies and strip malls.

FEATURES

- Quick mount is standard for fast one-person installation.
- With 69% fixture efficiency and 19% uplight, the DecPro provides high vertical and ceiling illumination with exceptional uniformity.
- Seven inch profile makes it suitable for low clearance ceilings. Designed to withstand abusive conditions such as, moisture, cold temperatures, corrosion, sewage, U.V. and impact.
- Meets IES standards with an optimal square, symmetrical lighting pattern and provides 3:1 spacing to mounting height ratio for parking deck applications requiring two fixtures per bay.

GENERAL SPECIFICATIONS

- Refractor—For HPS units—injection molded polycarbonate in a clear prismatic refractor, UV stabilized. For Metal Halide units—injection molded polycarbonate in a clear prismatic refractor with UVsorb™ protective coating. Both polycarbonate lens types feature internal prisms, smooth outside for ease of cleaning. Wraparound design completely encloses and protects the interior of unit from moisture and contaminants. Nominal thickness .125 inch.
- Baseplate—Corrosion resistant, marine grade .080 inch aluminum.
- Finish—All prime cold rolled steel materials are phosphate coated and electrostatically finished after all other operations with a 2.5 mil white polymer powder and baked to form a 92% reflective, smooth, glossy, non-corrosive durable coating.
- Ballast Housing—22 gauge cold rolled steel with a white urethane finish is corrosion resistant.
- Mounting Base (9146J or 9146P)—Quick mount is standard and requires a separate mounting base for fixtures installed in dry and damp locations. Specify the 9146J for use with surface conduit. Specify the 9146P for use over an existing recessed junction box. For wet locations specify the -W option. Preinstall mounting base. Attach luminaire to hinged bracket flange. Make wire connections. Close and slide luminaire into locked position for secure operation. Locking mechanism may be released through the luminaire interior for removal and maintenance as necessary. Factory installed lamp (specify -L accessory) eliminates the need to open fixture prior to installation.
- Ballast—Uses one high power factor, high pressure sodium (HPS) or metal halide (MH) ballast:

4660	50W HPS (S68/MED/B-17)
4663-PC	50W MH (M110/MED/ED-17)
4670	70W HPS (S62/MED/B-17)
4673-PC	70W MH (M98/MED/ED-17)
4680	100W HPS (S54/MED/B-17)
4683-PC	100W MH (M90/MED/ED-17)

- Lamp (not included)--Uses one medium base lamp.

4660	50W HPS (S68/MED/B-17)
4663-PC	50W MH (M110/MED/ED-17)
4670	70W HPS (S62/MED/B-17)
4673-PC	70W MH (M98/MED/ED-17)
4680	100W HPS (S54/MED/B-17)
4683-PC	100W MH (M90/MED/ED-17)

- Hardware—Four POSIGRIP tamperproof, stainless steel screws are supplied to secure refractor to baseplate.
- Socket—Medium base, porcelain socket, 4KV pulse rated.

OPTIONS

- Internal Shield (-IS)—Die formed aluminum with spread specular pattern blocks light from one side of luminaire.
- Installed Lamp (-L)—Prewired fixture is packaged with lamp installed and refractor completely secured to baseplate to reduce mounting procedure for quick mount steps.
- Wet Location (-W)—Provides broad (9.5 inch square) based mounting, in lieu of quick mount feature; for installation directly to surface. Includes high quality closed cell neoprene rubber gasket to block out insects, moisture and dirt. Not available with quick mount feature.

MOUNTING

UL listed for dry and damp locations, ceiling installations only. For wet locations specify -W option. Quick mount is standard and requires a separate mounting base (9146J or 9146P). We recommend using all four holes provided in the baseplates for mounting with:

- Four ¼-20 machine screws with masonry anchors to mount in brick or concrete.
- Four ¼" lag screws or toggle bolts for mounting in frame construction.

Mounting hardware not included. Please refer to dimensional drawings on page three for exact location of mounting holes. Instruction sheet packaged with each fixture and accessory.

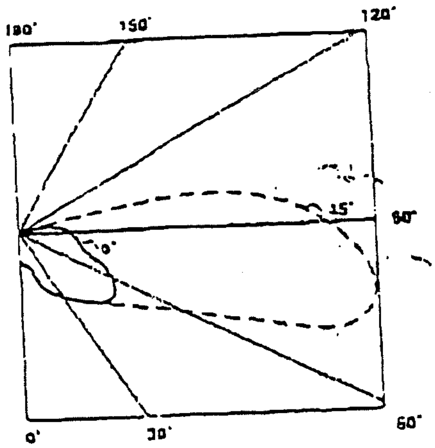
PHOTOMETRIC DATA

MODEL 4880-HPF

One 100W HPS Lamp
Efficiency = 68.8%
CIE Type Semi-Direct

Clear Prismatic Lens
Uplight = 18.7%
Report #ITL38649

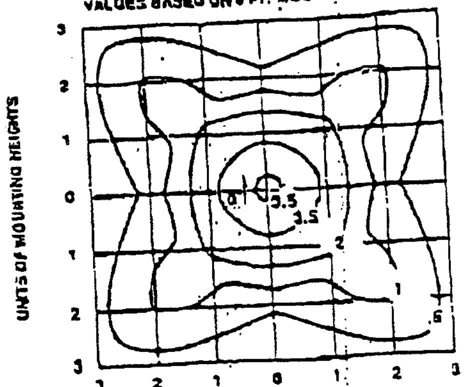
Ceiling Mounted
S/MH = 3.2



Coefficients of Utilization - Zonal Cavity Method
Effective Floor Cavity Reflectance 0.20

RC	70				50			30			0
RW	70	50	30	10	50	30	10	50	30	10	0
0	73	70	76	76	63	63	63	54	54	54	50
1	68	67	53	48	53	48	44	47	44	41	34
2	56	46	40	34	41	36	31	37	40	23	23
3	46	38	31	25	34	28	23	30	26	21	17
4	43	33	26	20	30	23	19	26	21	17	13
5	39	29	22	18	28	20	15	23	18	13	10
6	35	25	18	13	23	16	12	20	15	11	8
7	32	22	16	11	20	14	10	18	13	9	6
8	30	20	14	9	18	12	8	16	11	7	6
9	28	18	12	8	16	11	7	14	10	8	4
10	26	16	10	7	15	9	8	13	8	5	3

ISOFOOTCANDLE LINES
VALUES BASED ON 8 FT. MOUNTING HEIGHT



UNITS OF MOUNTING HEIGHTS

MOUNTING HEIGHT	CATALOG NUMBER/LAMP TYPE MULTIPLIER					
	4860 50W HPS	4863-PC 50W MH	4870 70W HPS	4873-PC 70W MH	4880 100W HPS	4883-PC 100W MH
6'	.53	.46	.78	.67	1.27	1.04
8'	.42	.38	.61	.53	1.00	.82
10'	.34	.30	.49	.43	.81	.67
11'	.26	.24	.41	.35	.67	.55
12'	.24	.20	.34	.30	.56	.46

OPERATING SPECIFICATIONS

HIGH PRESSURE SODIUM
LAMP: Medium Base, 24,000 Hour Life
BALLAST: HX-HPF, -40°F to 90°F Ambient

WATTAGE	50		70		100	
LUMENS	4,000		6,400		9,500	
LINE VOLTAGE (V)	120	277	120	277	120	277
MAXIMUM CURRENT (A)	.93	.44	1.30	.65	1.80	.85
OPERATING CURRENT (A)	.55	.28	.75	.38	1.06	.50
INPUT POWER (W)	82	66	88	88	115	138
POWER FACTOR	HPF	HPF	HPF	HPF	HPF	HPF

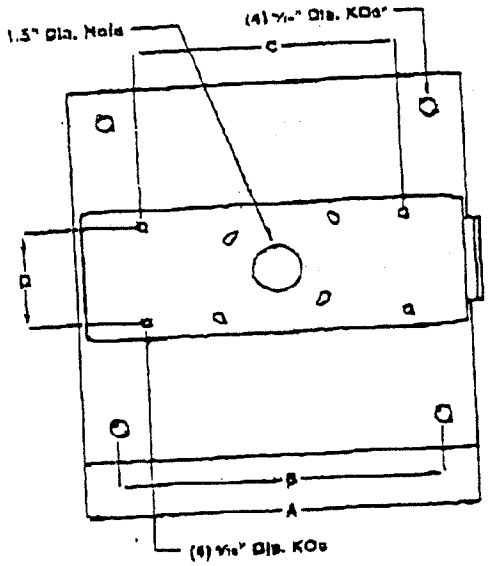
METAL HALIDE
LAMP: Medium Base
BALLAST: HX-HPF, -20°F to 90°F Ambient

WATTAGE	50		70		100	
LUMENS	3,400		5,000		7,800	
LIFE (HOURS)	5,000		6,000		10,000	
LINE VOLTAGE (V)	120	277	120	277	120	277
MAXIMUM CURRENT (A)	1.00	.46	1.59	.72	2.60	1.15
OPERATING CURRENT (A)	.66	.30	.85	.37	1.15	.50
INPUT POWER (W)	72	72	89	89	129	129
POWER FACTOR	HPF	HPF	HPF	HPF	HPF	HPF

DIMENSIONS

4600 SERIES

Housing Top View

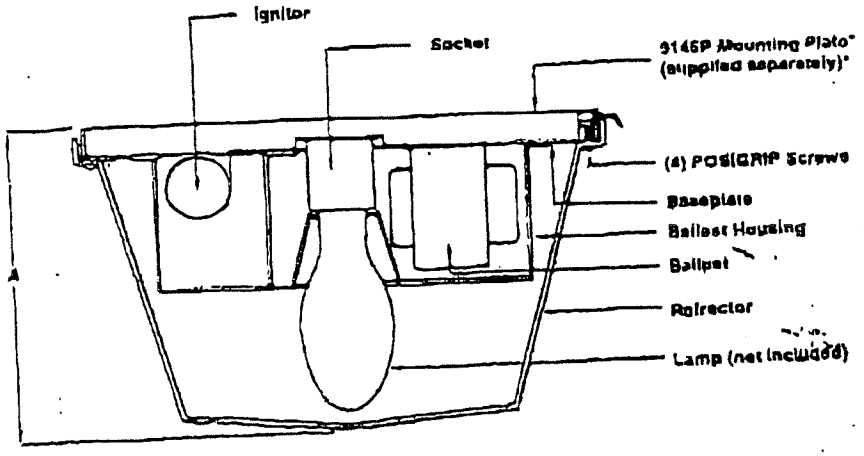


*For use with -W option

Size	A	B	C	D
in.	12.375 sq.	9.50	8	3.125
cm.	31.43	24.13	20.32	7.93

CUTAWAY VIEW

4600 Series
Length: 12.375" Width: 12.375" Height: 7"



*9146P or 9146J required for all units installed in dry/damp locations

Cat. No.	A 4600-W	4600/9146P	4600/9146J
in.	7.0625	7.375	8.375
cm.	17.93	18.73	21.27

ORDERING INFORMATION

Catalog number	Prismatic Lens	Wattage (lamp type)	Voltage/ power factor	Starting temp (F)	Posigrip screws
4660	Polycarbonate	50W HPS (S68/MED/B-17)	120/HPF	-40°	Four
4663-PC	P.U.V.	50W MH (M110/MED/ED-17)	120/277 HPF	-20°	Four
4670	Polycarbonate	70W HPS (S62/MED/B-17)	120/HPF	-40°	Four
4673-PC	P.U.V.	70W MH (M98/MED/ED-17)	120/277 HPF	-20°	Four
* 4680	Polycarbonate	100W HPS (S54/MED/B-17)	120/HPF	-40°	Four
** 4683-PC	P.U.V.	100W MH (M90/MED/ED-17)	120/277 HPF	-20°	Four

P.U.V. - Polycarbonate with UVsorb™ [illegible] Coating
Quick Mount is [illegible]. Mounting base (9146J [illegible] or 9146P plate)
[illegible] except when -W is [illegible]

OPTIONS

- -DT 120/277V HPF ballast for high pressure sodium fixture. Standard on metal halide units.
- -IS Internal shield
- -L Fixtures include lamp installed in prewired fixture
- -QR Hot restrike system for maximum 70W DC bay quartz lamp (lamp not included)
- -W Suitable for wet ceiling locations. Not available with quick mount feature—9146J or 9146P mounting base not required.

ACCESSORIES

- 9105 50W HPS (S68/MED/B-17) lamp
- 9107 70W HPS (S62/MED/B-17) lamp
- 9109 100W HPS (S54/MED/B-17) lamp
- 9146J Mounting junction box for preinstallation of quick mount luminaire in conjunction with surface conduit.
- 9146P Mounting plate (quick mount feature) for preinstallation of quick mount luminaire in conjunction with an existing recessed junction box.
- 9241 HLR fuse and holder. Specify fixture and type (GLR or GMF).
- 9500 POSIGRIP screwdriver

Peace of Mind Guarantee

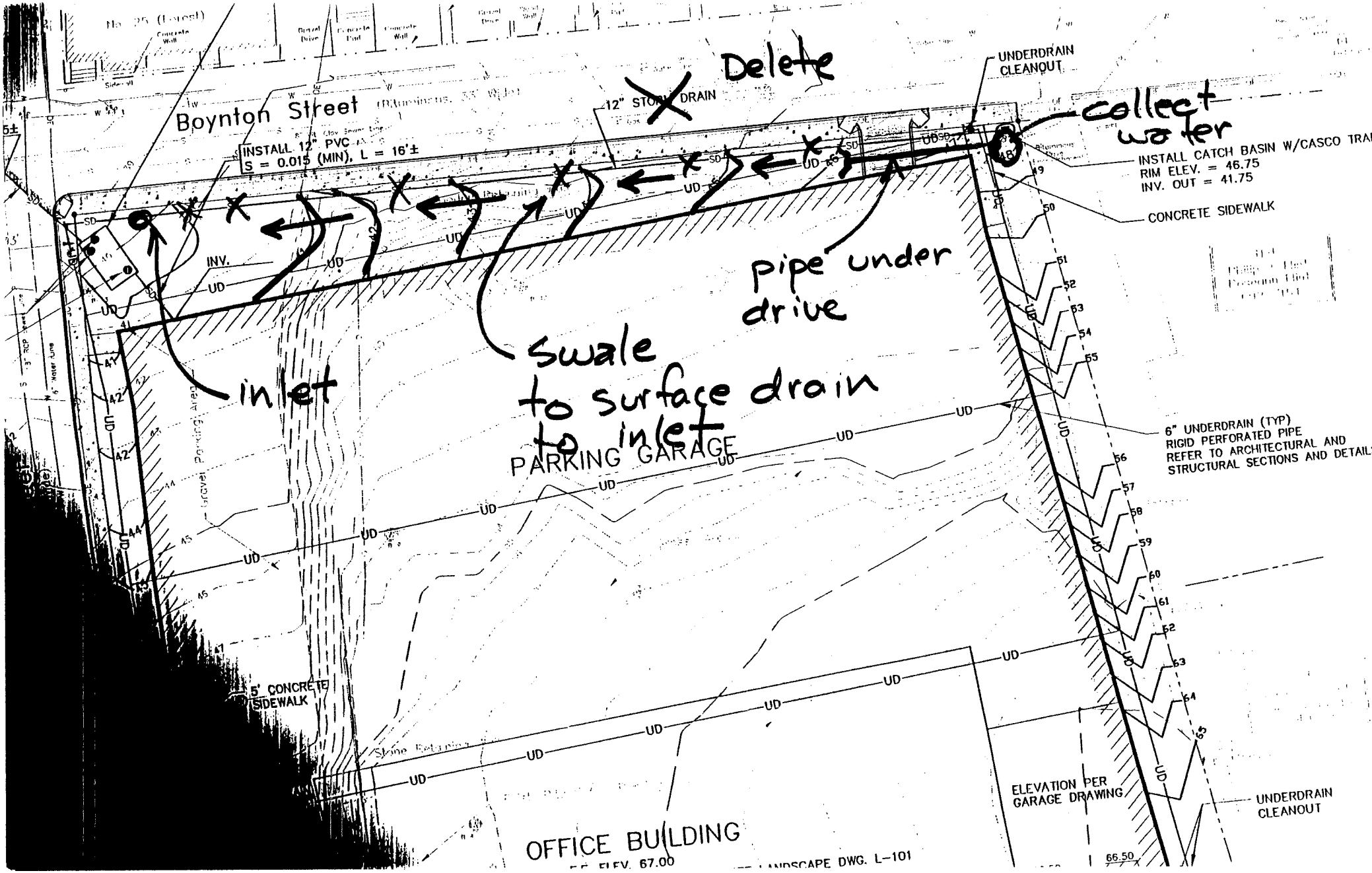
Kenall high abuse luminaires are designed and built to take exceptional physical punishment. When installed according to our instructions, Kenall will repair or replace any fixture using a polycarbonate refractor, diffuser or lens/housing rendered inoperable due to physical abuse within three years of purchase. Thereafter, Kenall will replace any refractor, diffuser or lens/housing broken during the life of the fixture free, subject to a handling charge equal to 25% of the published list price.

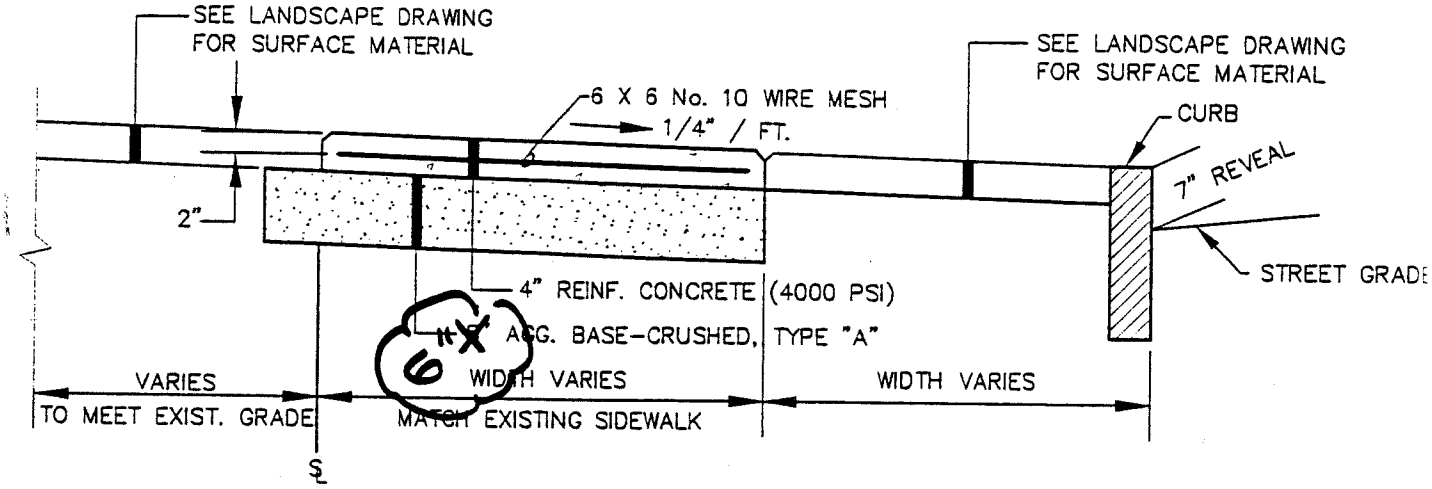
NOTES:

All Kenall high abuse fixtures are provided with POSIGRIP screws. Be sure to order 9500 screwdrivers with all drop shipments of Kenall high abuse fixtures.
Availability and specifications subject to change without notice.
Call 1-800-4-KENALL (453-6255) for standard product modification, photometric assistance or reports, product sample requests, technical clarification, product literature and the location or phone number of local sales representative.

* GGA 4680-277
*** GGBC 4683-QR-277-IS
GGD 4683-277
GGDC 4683-277-IS
GGF 4683-277-QR

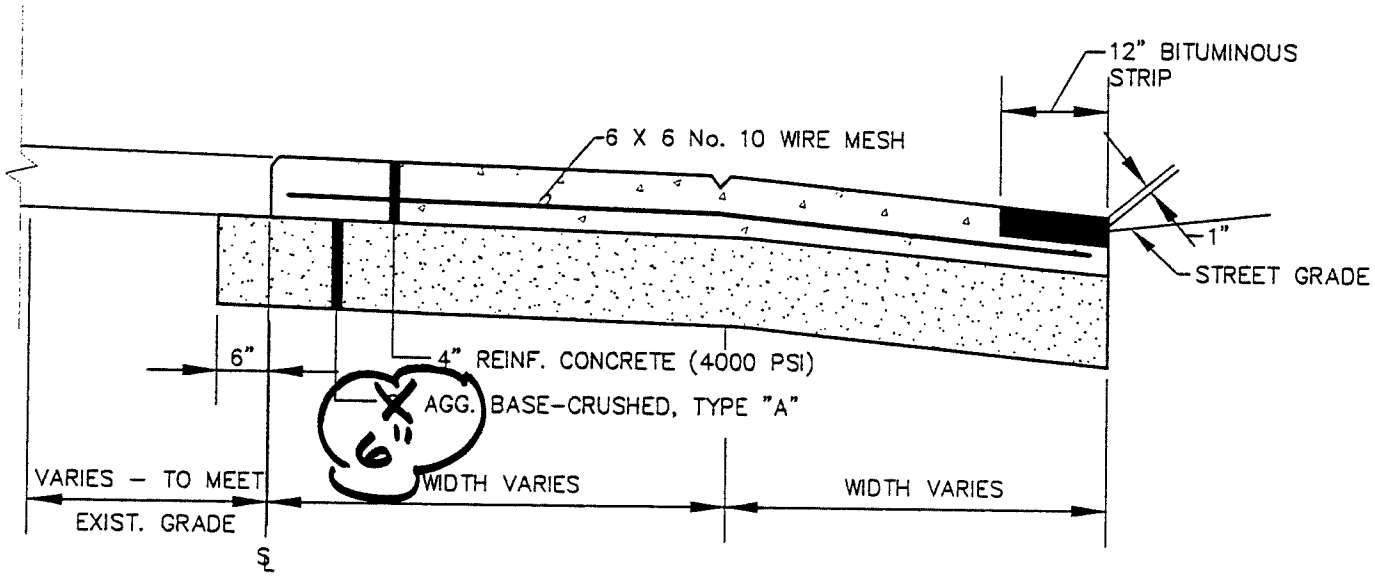
KENALL • 1020 Lakeside Drive • Gurnee, IL 60031 • 847/360-8200 • FAX 847/360-1781


Boynton Street
INSTALL 12" PVC
S = 0.015 (MIN), L = 16'±
12" STORM DRAIN
Delete
UNDERDRAIN
CLEANOUT
collect
water
INSTALL CATCH BASIN W/CASCO TRA
RIM ELEV. = 46.75
INV. OUT = 41.75
CONCRETE SIDEWALK
pipe under
drive
inlet
swale
to surface drain
to inlet
PARKING GARAGE
6" UNDERDRAIN (TYP)
RIGID PERFORATED PIPE
REFER TO ARCHITECTURAL AND
STRUCTURAL SECTIONS AND DETAIL
5' CONCRETE
SIDEWALK
ELEVATION PER
GARAGE DRAWING
UNDERDRAIN
CLEANOUT
OFFICE BUILDING
F.F. ELEV. 67.00
LANDSCAPE DWG. L-101
INV.
SD
UD
66.50



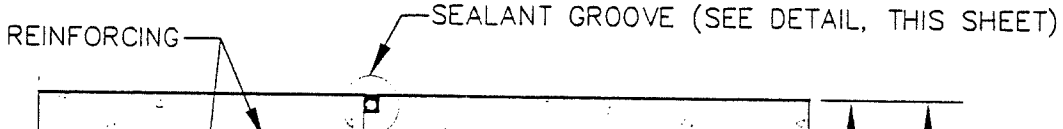
SECTION AT SIDEWALK

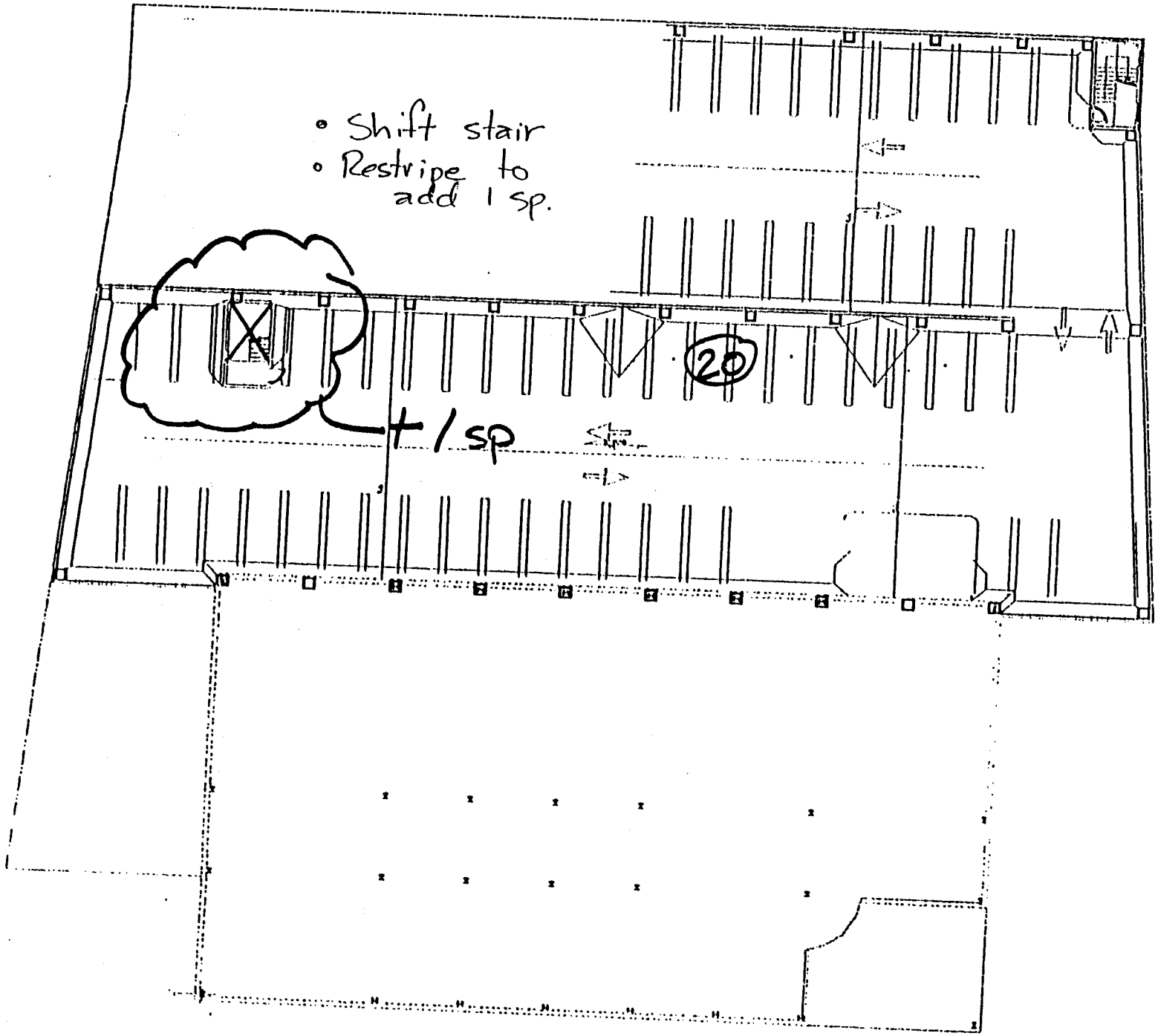
N.T.S.



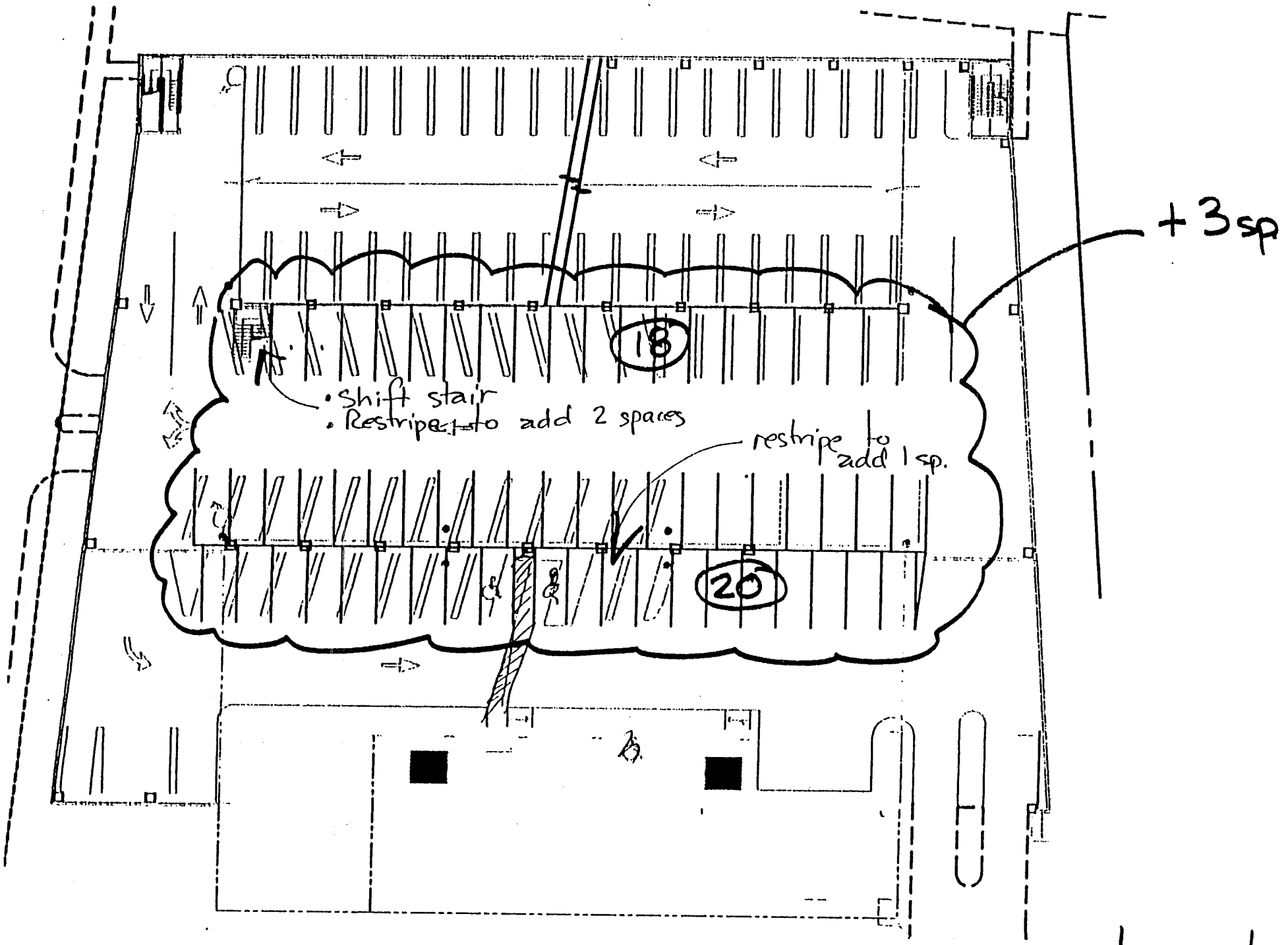
CONCRETE SIDEWALK AND DRIVEWAY CONSTRUCTION

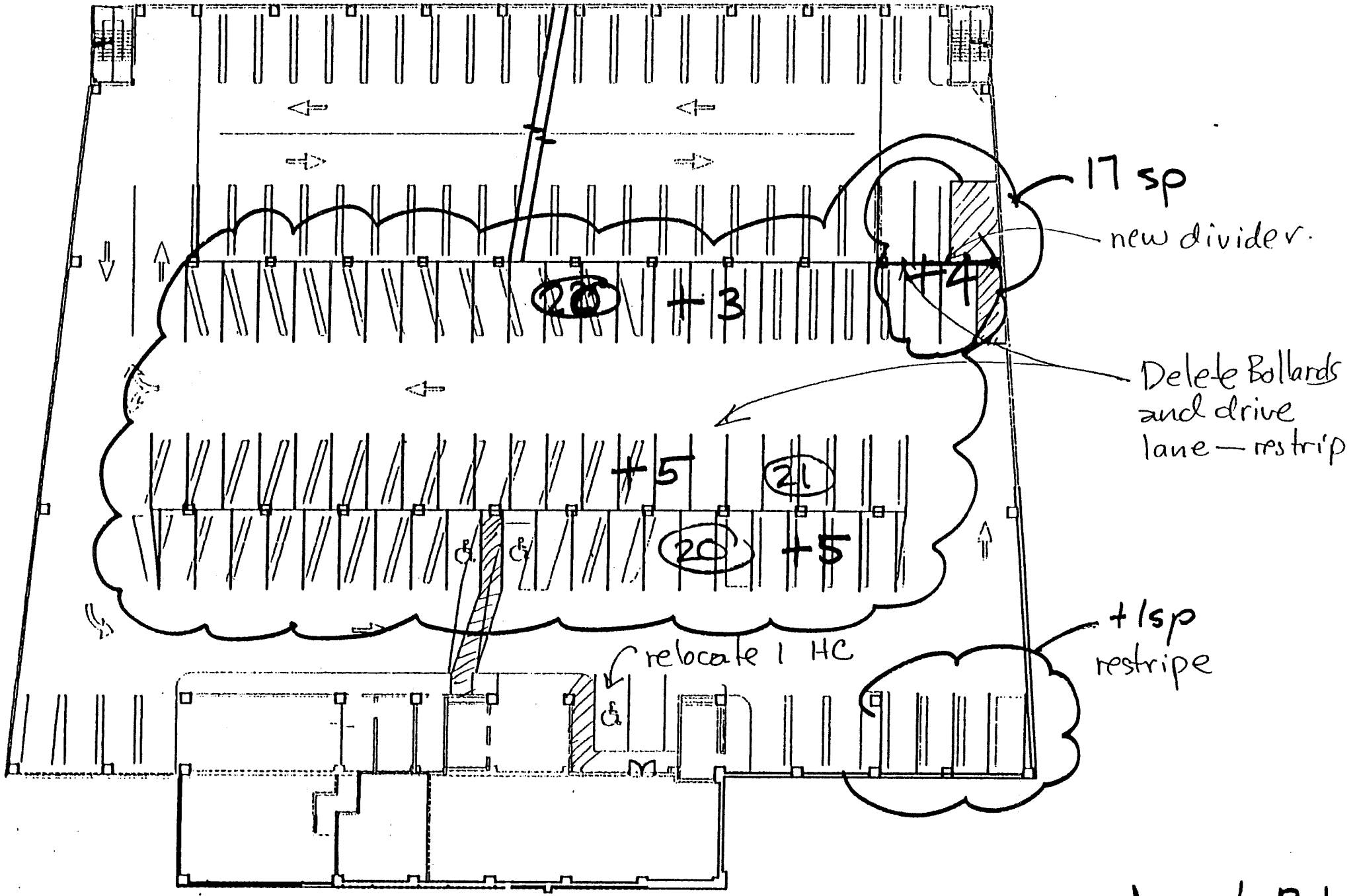
N.T.S.

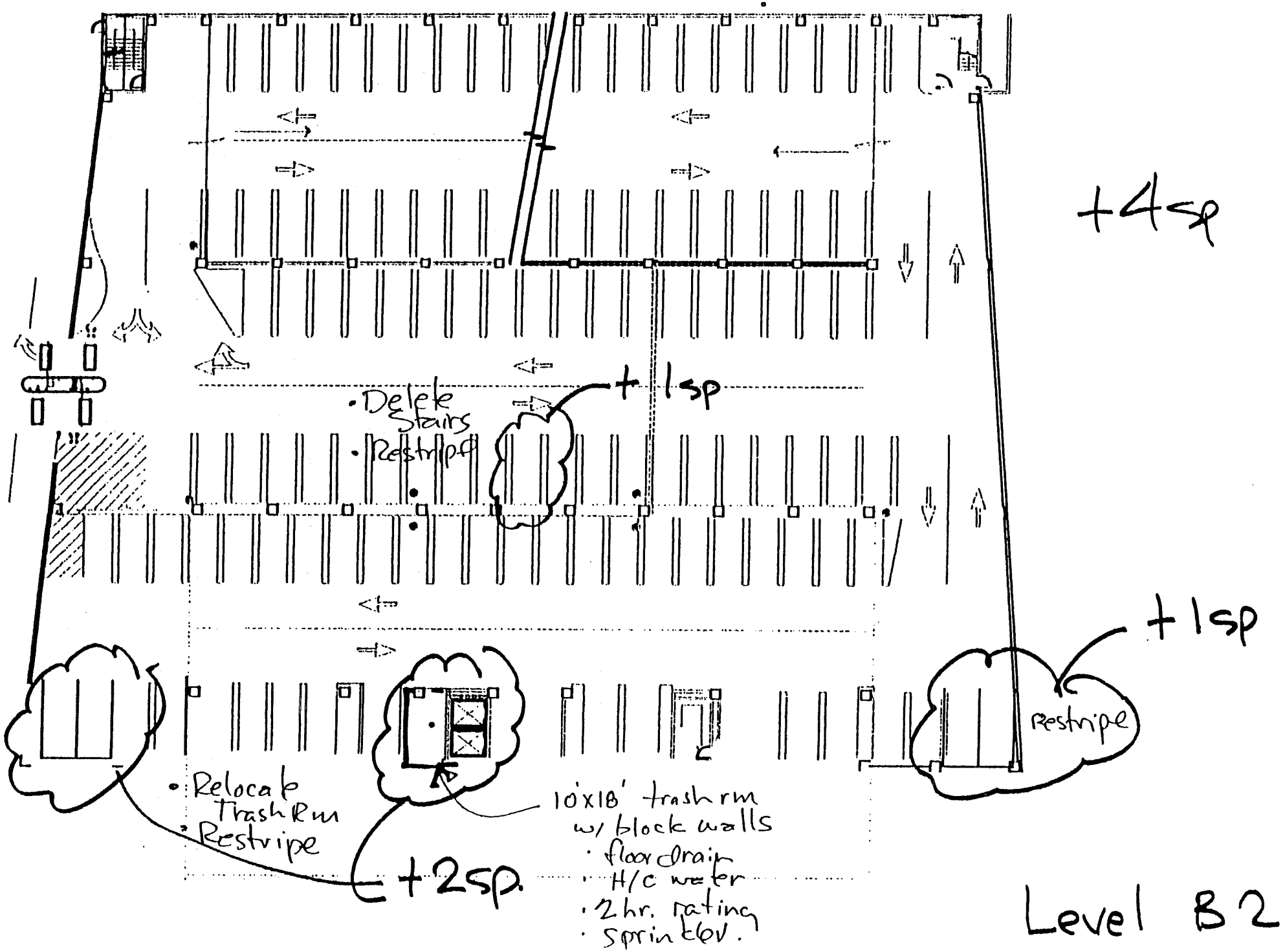


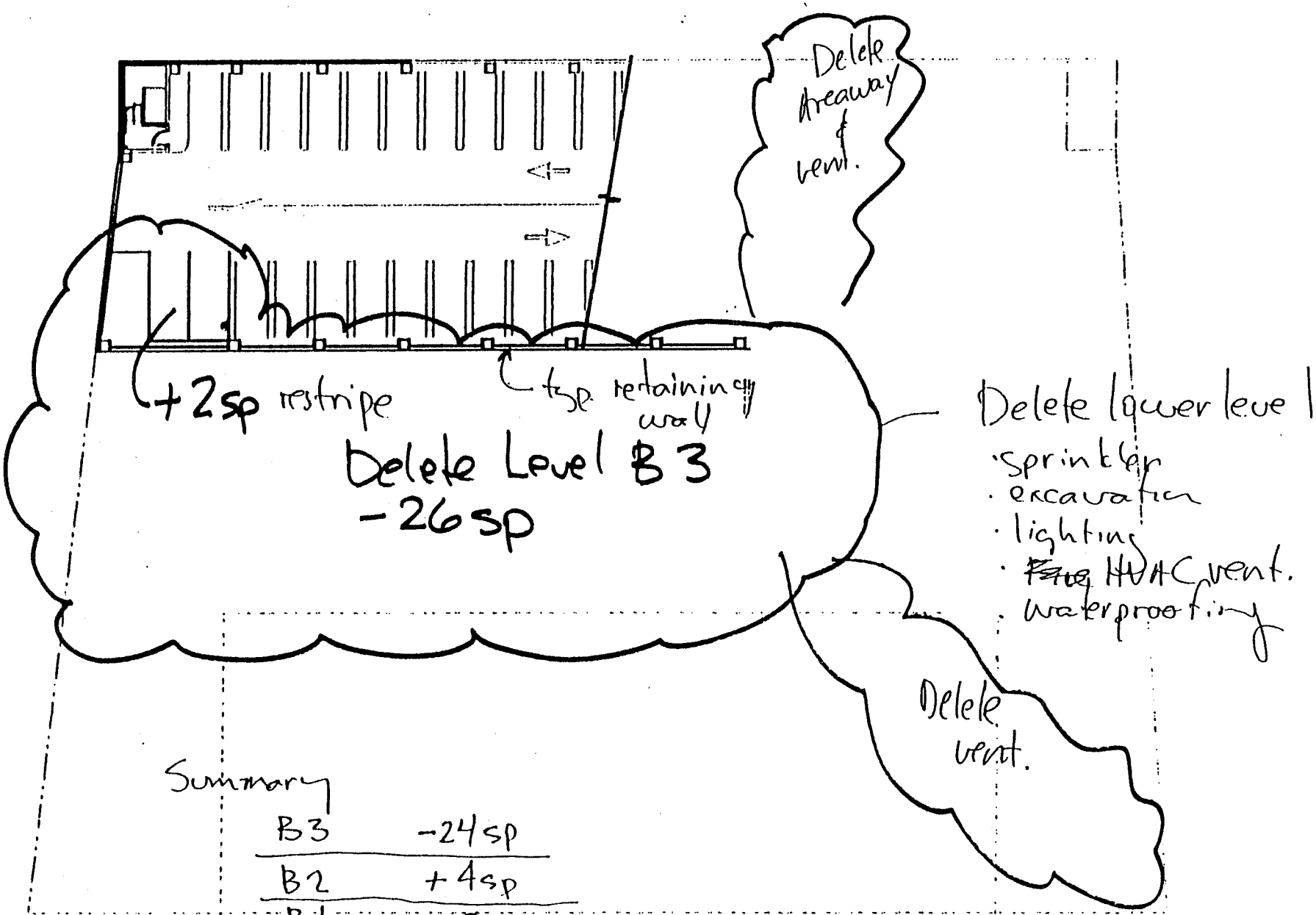


Level 2


+3sp
18
• Shift stair
• Restripe to add 2 spaces
restripe to add 1 sp.
20
Level 1


17 sp
new divider.
+4
20
+3
Delete Bollards and drive lane — restrip
+5
21
20
+5
+1 sp restripe
relocate 1 HC
Level B1

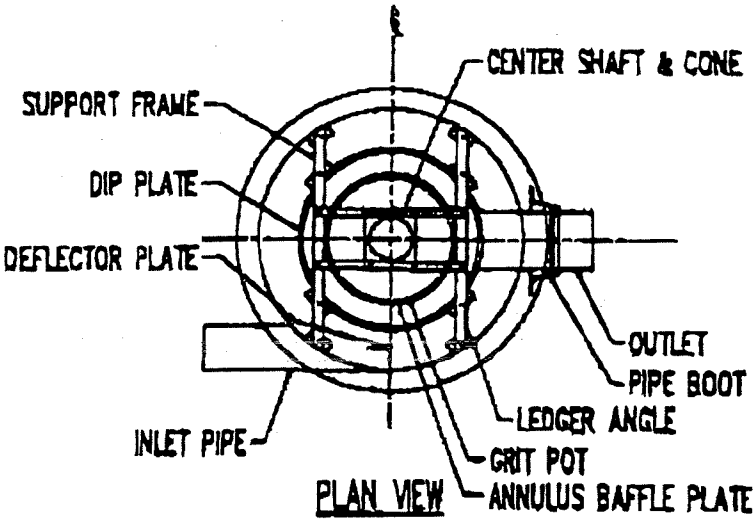

+4sp
+1sp
• Delete Stairs
• Restripe
+1sp
Restripe
• Relocate Trash Rm
• Restripe
+2sp
10'x18' trash rm w/ block walls
• floor drain
• H/C water
• 2hr. rating
• sprinkler.
Level B2



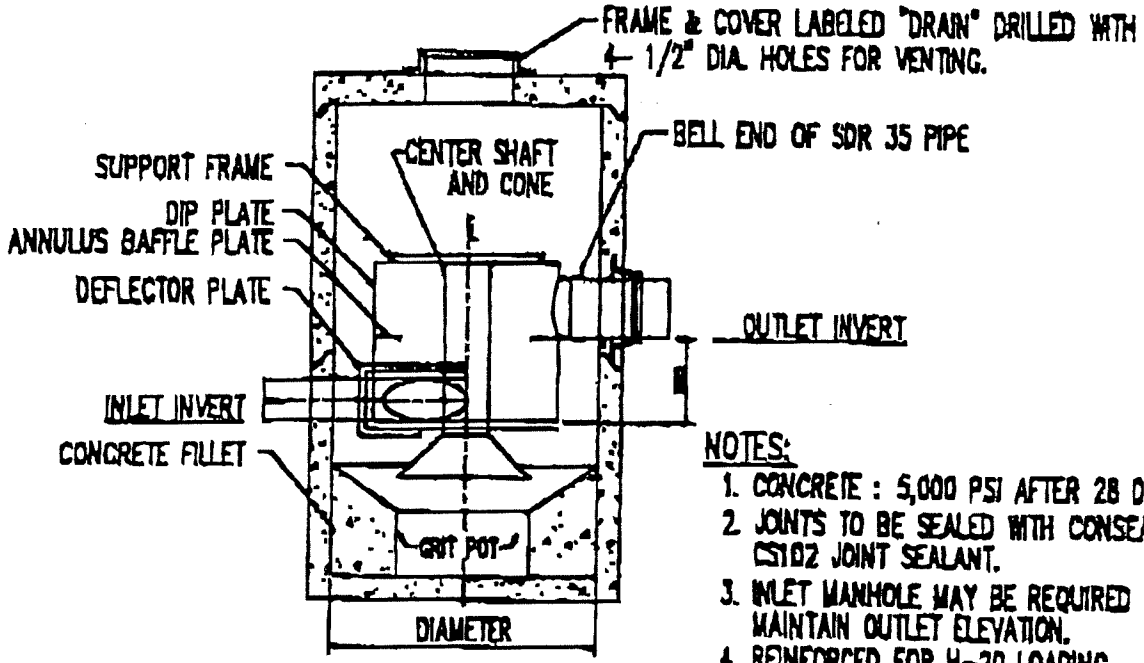
Summary

B3	-24sp
B2	+4sp
B1	+18sp
1	+3sp
2	+1sp
total net + 2 spaces.	

Level B3



PLAN VIEW



SECTION VIEW

NOTES:

1. CONCRETE : 5,000 PSI AFTER 28 DAYS.
2. JOINTS TO BE SEALED WITH CONSEAL CS102 JOINT SEALANT.
3. INLET MANHOLE MAY BE REQUIRED TO MAINTAIN OUTLET ELEVATION.
4. REINFORCED FOR H-20 LOADING.
5. FRAME & COVER:
   4' ID. 1-30" DIA. F&C.
   5' ID. 1-18" DIA. & 1-24" DIA. F&C.
   8' & 10' ID 2 – 24" DIA. F&C's.

UNIT DIAMETER	APPROXIMATE FLOW RANGE* (CFS)	INLET PIPE SIZE	OUTLET PIPE SIZE	GRIT POT DIAMETER
4'-0"	0-0.75	8"	12"	2'-0"
→ 6'-0"	0.75-3	12"	18"	3'-0"
8'-0"	3-7	18"	24"	4'-0"
10'-0"	7-13	24"	30"	5'-0"

*BASED ON 90% REMOVAL OF ALL PARTICLES WITH SPECIFIC GRAVITY OF 2.65 DOWN TO 150 MICRONS.
*AT FLOWS LESS THAN DESIGN, THE DOWNSTREAM DEFENDER WILL HAVE BETTER REMOVAL EFFICIENCIES.

SUPERIOR CONCRETE CO, INC.
AUBURN, ME.

DOWNSTREAM DEFENDER®

STORMWATER SYSTEM

SUPERIOR CONCRETE CO., INC.—AUBURN, MAINE 04210
1-800-482-7417

V C1

Downstream Defender™ Design Chart (Imperial)

UNIT DIAMETER (feet)	DESIGN FLOW/ CAPACITY (cfs)	(gpm)	INLET PIPE DIAMETER (inches)	OUTLET PIPE DIAMETER (inches)	HEADLOSS[2] @DESIGN FLOW (inches)	HEADLOSS @CAPACITY (inches)	WEIGHT FULL (lbs)	WEIGHT EMPTY[3] (lbs)	OIL STORAGE CAPACITY (gallons)	SEDIMENT STORAGE CAPACITY (cy)	UNIT DIAMETER (feet)
	0.75/3.0	330/1,350	8	12	3	23	13,200	10,000	70	0.70	
	3.00/8.0	1,350/3,590	12	18	7	33	32,800	22,400	230	2.10	
	7.00/15.0	3,140/6,730	18	24	9	23	63,000	39,000	525	4.65	
	13.0/25.0	5,830/11,220	24	30	10	22	140,300	94,000	1,050	8.70	

1. Based on 90% removal of all particles with specific gravity of 2.65 down to 150 microns.
2. Headloss is defined as the difference between the top water level upstream and the top water level downstream of the unit.
3. Weights are calculated with stainless steel internal components. Components are also available in polypropylene.

- AutoCAD drawings and WordPerfect specification available on disk.
- For pricing, delivery, and custom designs, please call H.I.L. Technology, Inc., Proposal Engineering Department.

H.I.L. TECHNOLOGY INC.

H.I.L. TECHNOLOGY INC., 94 Hutchins Drive, Portland, ME 04102 • (207) 756-6200 • (207) 756-6212 (Fax) • E-mail: hiltech@hil-tech.com

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

Dear Area Property Owner:

A neighborhood meeting has been scheduled to discuss proposed changes in the on-street parking schedule along Congress Street (southerly side from Gilman Street to Weymouth Street). The meeting will be held on Thursday, January 29, 1998, at 5:30 p.m. in the new banquet room of the Sportsman's Grill restaurant at 911 Congress Street.

The purpose of this meeting is to provide neighborhood residents information on this proposal, as well as offer the opportunity to discuss and comment on the change.

The change in the parking schedule is being proposed by Maine Medical Center in conjunction with the proposed Maine Medical Center office building and parking garage in the vicinity of 883-903 Congress St.

The specific proposal would revise the on-street parking schedule along Congress Street (southerly side from Weymouth Street to Gilman Street) to prohibit parking on Monday through Friday, from 6:00 a.m. to 6:00 p.m. Parking would be allowed the remainder of the time, as well as weekends.

Representatives from Maine Medical Center and the City of Portland will be attending this meeting. Should you have any questions concerning this meeting, call the Portland Planning Office at 874-8300, ext. 8725.

Sincerely,

Joseph E Gray, Jr.
Director of Planning and Urban Development

O:\PLAN\CORRESP\RICK\LETTERS\PARKGCON.LEC

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

Dear Area Property Owner:

A neighborhood meeting has been scheduled to discuss proposed changes in the on-street parking schedule along Congress Street (southerly side from Gilman Street to Weymouth Street). The meeting will be held on **Thursday, March 26, 1998, at 5:30 p.m.** in the **new banquet room** of the **Sportsman's Grill** restaurant at **911 Congress Street.** The change in the parking schedule is being proposed by Maine Medical Center in conjunction with the proposed Maine Medical Center office building and parking garage in the vicinity of 883-903 Congress Street.

This meeting is intended as a follow-up to the January 29th neighborhood meeting (held at the Sportsman's Grill) in which this parking change was discussed, as well as the Maine Medical Center development project.

A summary of the residential parking sticker program, as well as the parking schedule change, is described in the attached summary sheet.

Representatives from Maine Medical Center and the City of Portland will be attending this meeting to answer your questions and listen to your comments. Should you have any questions concerning this meeting, call the Portland Planning Office at 874-8300, ext. 8725.

Sincerely,

Joseph E Gray, Jr.
Director of Planning and Urban Development

Attachments:

A) Summary of Residential Parking Sticker Program and Proposed Change in On-Street Parking Schedule
B) Map Showing Proposed On-Street Parking Changes

O:\PLAN\CORRESP\RICK\SPNOTICE\PARKGFUP.LEC

Attachment A

SUMMARY OF RESIDENTIAL PARKING STICKER PROGRAM AND PROPOSED CHANGES IN ON-STREET PARKING SCHEDULE

At the January 29th neighborhood meeting, several residents requested that the unrestricted (all day) parking in the neighborhood be changed to a one- or two-hour limit, which would prevent employees and others from parking on the neighborhood streets all day, but would allow residents who obtain a residential parking sticker to park in these areas all day without receiving a ticket, and customers of the businesses could park there for up to two hours.

Currently, there is unrestricted parking on the following streets and the City is proposing to change this to a two-hour parking zone:

Forest Street - Middle section of the west side of the street
Boynton Street - Entire south side

The City would also like comments about the possibility of implementing the two-hour parking restriction on the east side of Gilman Street, from Park Avenue to Congress Street - if the neighbors think that is necessary.

To obtain a residential parking sticker, a resident must present the following information to the Parking Division:

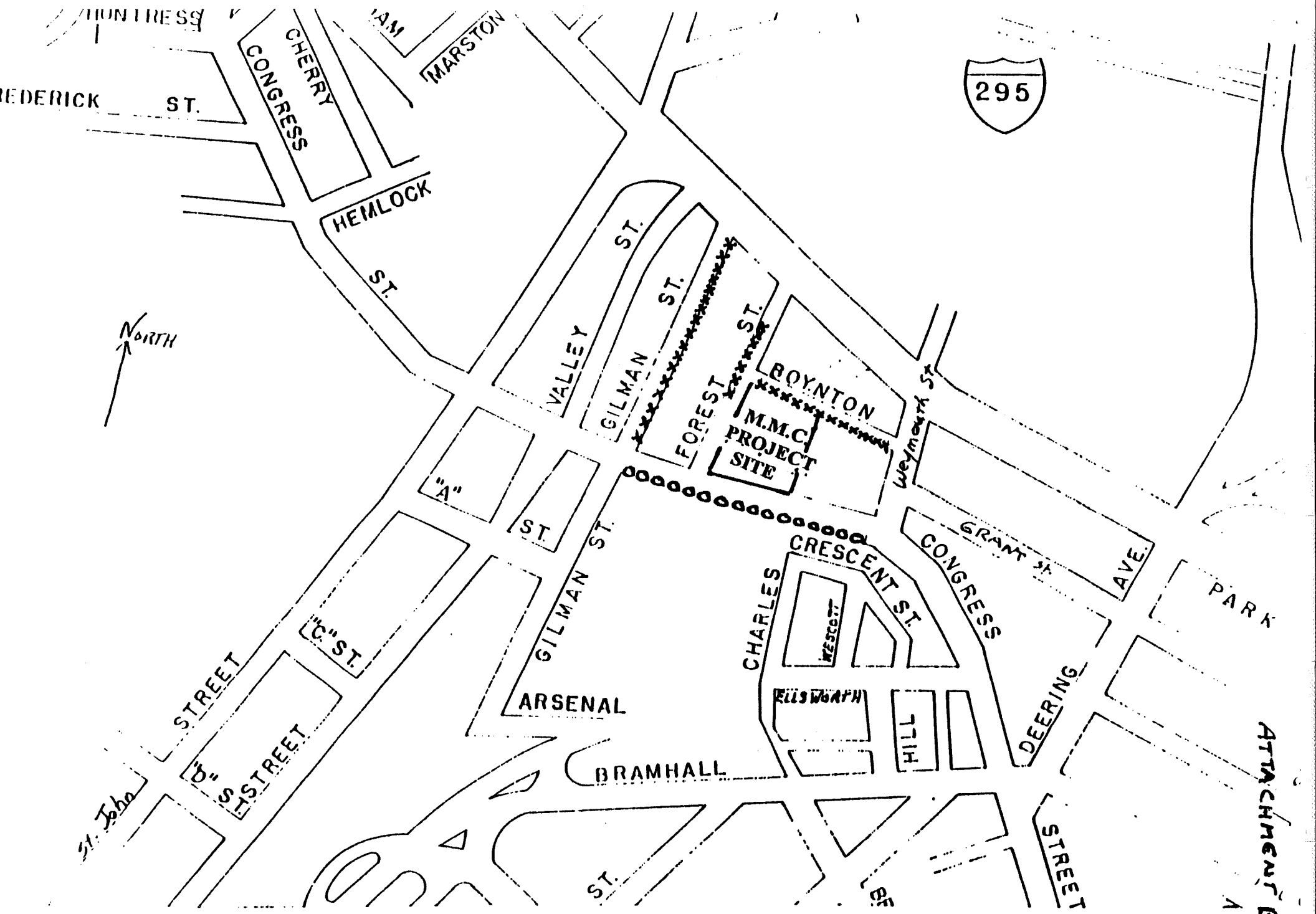
1. MAINE driver's license
2. Current vehicle registration
3. Proof of residence, such as driver's license with current address, a recent utility bill, or a lease
4. All outstanding parking tickets must be paid in full

The parking stickers allow residents to park all day in the one- or two-hour parking spaces within their residential zone. These spaces are marked with green and white signs, which normally allow for only one- or two-hour parking.

All other posted parking signs and regulations must be obeyed. The stickers are not valid at parking meters, no parking zones, overnight parking, etc.

We will also be discussing the current unrestricted parking on the south side of Congress Street, from Gilman Street to Weymouth Street, and changing it to "No Parking 6:00 a.m. - 6:00 p.m., Monday through Friday", to facilitate traffic movement. Parking would be allowed the remainder of the time, as well as weekends. Currently, those spaces are predominately occupied by Maine Medical Center's employees during the above-referenced times.

Finally, we will be discussing the possibility of making Boynton Street a one-way street.



Proposed Parking Changes: X - Unrestricted Parking to Two-Hour Parking

O - Unrestricted Parking to "No Parking 6:00 a.m. - 6:00 p.m., Monday thru Friday"

MAINE MEDICAL CENTER

INVITES YOU TO ATTEND

AN INFORMATIONAL MEETING

REGARDING OUR PROPOSED

MEDICAL OFFICE BUILDING AND
PARKING GARAGE
AT THE CORNER OF CONGRESS STREET
AND FOREST STREET
AND RECOMMENDED PARKING CHANGES
ON THE SOUTH SIDE OF CONGRESS STREET

THURSDAY, JANUARY 29, 1998
5:30 PM

SPORTSMAN'S GRILL
NEW BANQUET ROOM
911 CONGRESS STREET

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

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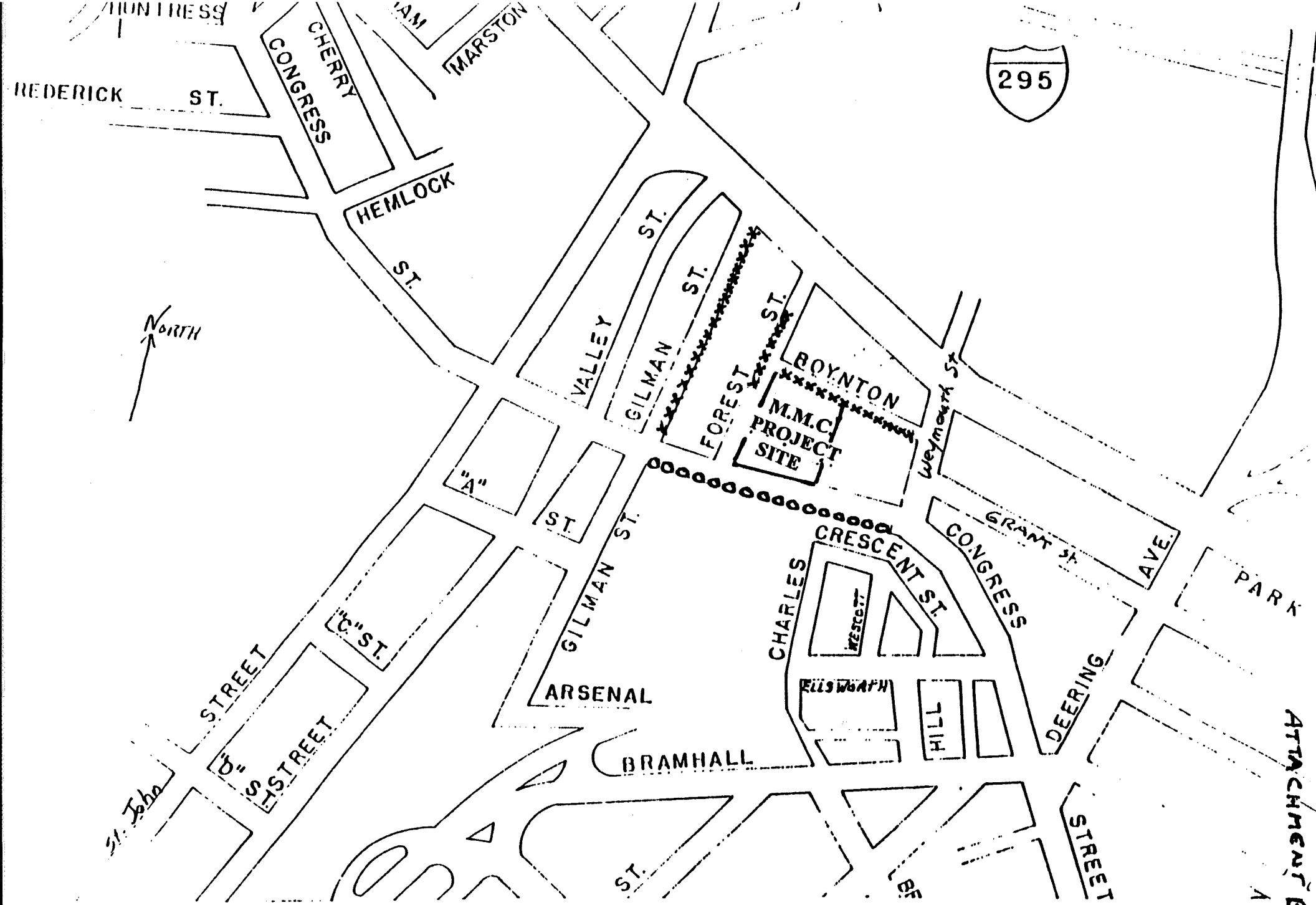

Proposed Parking Changes: **X - Unrestricted Parking to Two-Hour Parking**
O - Unrestricted Parking to "No Parking 6:00 a.m. - 6:00 p.m., Monday thru Friday"

22 Bramhall Street, Portland, Maine 04102

FAX TRANSMITTAL

ENGINEERING SERVICES
TELEPHONE NUMBER (207) 871-2447
FAX NUMBER (207) 871-6195

DATE: 2/2/98

TO : Richard Knowland
Department of Planning and Urban Development
City of Portland

FAX: 756-8258

FROM: Jim Morrison

Re: Congress Street Medical Office Building

Number of pages including cover sheet 3

Message

Rick:
Attached find my notes from the neighborhood meeting for Congress Street MOB.

MEETING REPORT

Meeting Date: 1/29/98

Location: Sportsmans Grill

Attending: Larry Ash-Portland Dept. Of Traffic Engineering
John Peverada-Portland Parking Manager
Rick Knowland-Portland Planning Department
Paul Gray-MMC
Jim Morrison-MMC
Bob Bremm-MMC
Karen Gerrity-Portland City Council

Report Date: 1/30/98

This meeting was called by MMC to update the neighborhood about the MOB project.

- Paul Gray introduced the project and opened the floor to discussion.
- Councilperson Gerrity indicated that she was most interested in hearing what the neighbors thought about the loss of the 26 spaces along Congress Street
- Question: Will the 6 to 6 restricted parking areas be tow away zones. John Peverada indicated that the city would consider it.
- Several neighbors indicated that they perceived a need for a traffic light at the corner of Park and Forest immediately, and did not want to wait the proposed year after construction to monitor the intersection.
- Over what length of time did the traffic study on Forest Avenue occur and what method was employed? Paul Gray answered that the traffic consultant used personnel to physically observe and count cars. Larry Ash indicated that this was done over approximately one week's time.
- Will police or security guards be utilized to direct traffic going in and out of the garage at peak hours?
- Plans require too many left turns to get in and out of the building.
- The city has already taken away the crossing guard from this area. There is still a school for the blind in the are as well as seasonal baseball traffic. Is the city going to bring a crossing guard back if this project is built?
- MMC Public Relations Department really got the neighbors angry by referring to the neighborhood in a newspaper article as being one of "tenements".
- Placing an office building on the property would start to diminish the neighborhood identity.
- The property should be turned in to a park for children.
- The residents are concerned about pedestrian safety - will residents be allowed to use the skywalk. (Paul responded that the building would be open during business hours, and that anybody could use it, however, the only place that it would get anybody is to the big garage.)
- MMC employees park on the street, so do contractors. (Paul said that MMC would support the city in whatever it chose to do about restricting the street parking in the area.)
- Why doesn't MMC let residents park in the building overnight, during times of snow emergency and during baseball games?
- Mr. Haines asked how parking could be restricted at Congress Street. John Peverada told him to look at Park between High and State - it would be the same thing.
- The neighbors seemed to be very much in favor of neighborhood parking stickers.
- Mr. Severino suggested leaving the garage open until 9:00 PM. He suggested that MMC work with the neighbors regarding development and parking issues. (Paul Gray said MMC would work with the neighbors).
- Who is responsible for snow removal? (Ash and Peverada indicated that streets were the

responsibility of the City, and sidewalks were the responsibility of the property owners. Neighbors said snow had never been removed from the Forest or Boynton side of the MOB property.

- Resident noted that the parking spaces across the street from the Forest Street garage entrance would "muck up" the flow of traffic into and out of the garage, and suggested that the garage entrance be relocated.
- Mr. Vasile suggested that MMC had not worked with the neighborhood on this project and should do so.
- Mr. Haines suggested that the parking garage capacity should be increased. (Paul Gray responded that the capacity had already been increased once, that the capacity far exceeds the demand for the garage, and that height limits would not allow the building to get taller, and expense would not allow the building to go further below grade.
- Will construction bother Boynton Street parking? (Paul gray responded it would not)
- Should Boynton be made in to a two way street? (Larry Ash explained the procedure to follow if the residents wanted to explore that possibility).
- A member of the Parkside Neighborhood Association expounded on what a positive experience they had had with the developer of the Hold Hall project because the developer had spoken with the neighbors frequently during the design process. He suggested that MMC should talk to the neighbors more frequently about this project, and further, that he didn't think this project was ready for presentation to City Council, and that if it went before City Council, several neighbors would publicly speak against the project..

CC: T. LaLiberty
P. Gray
B. Bremm
T. Gorrill
R. Knowland

Department of Public Works

Nadeen M. Daniels
Assistant City Manager
Director

William J. Bray
Deputy Director

CITY OF PORTLAND

March 16, 1998

Dear Resident:

A survey is being conducted by City staff to determine resident preference for the following:

1. A 2-hour parking limit on the entire south side of Boynton Street. Residents would be exempt.

☒ Agree ☐ Disagree

2. A 2-hour parking limit on the present unrestricted portion of Forest Street. Residents would be exempt.

☒ Agree ☐ Disagree

3. Make Boynton Street a one-way street from Weymouth to Forest.

☒ Agree ☐ Disagree

There will be a neighborhood meeting March 26, 1998 at 5:30 p.m. at the Sportsman's Grill to discuss these proposals and all other neighborhood concerns relative to the Maine Medical Center Parking Garage.

If you cannot attend this meeting, please return this paper with your preferences to Larry Ash, Traffic Engineer, 55 Portland Street, Portland ME 04101. Your City Councilor, Ms. Karen G. Geraghty would also like to know your preferences. She may be contacted at 761-8376.

Sincerely,
CITY OF PORTLAND

Larry Ash
Traffic Engineer

LA:jw

Department of Public Works

Nadeen M. Daniels
Assistant City Manager
Director

William J. Bray
Deputy Director

CITY OF PORTLAND

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Sincerely,
CITY OF PORTLAND

Larry Ash
Traffic Engineer

LA:jw

ATTACHMENT B

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Senior Planner
FROM: John Peverada, Parking Manager J.P.
DATE: April 10, 1998
RE: MMC Parking Management Plan

This afternoon, MMC sent over a revised Parking Management Plan in response to my memo of March 27th; however, they have still not completely addressed all issues.

In section "F. Contractor Requirements During Renovation / Construction Projects", the hospital continues to state that they will provide additional parking at the St. John St. shuttle lot as necessary to replace the 52 surface spaces on the site. **However, as I have stated previously, there are currently over 120 vehicles parked on the site** (47 in the Congress St. lot, 30 in the Forest St. lot and 45 in the Boynton St. lot). Per the hospital's figures, there are only 150 spaces in the St. John St. lot, and those are already being counted toward employee parking.

If this issue is not dealt with, we will have major neighborhood issues to deal with, which may linger on long after the project is completed.

On page 4, reference is made to Sea Dogs and Parking Bans; however it is still vague. MMC states that they "will make spaces available in the new garage (as they do in the main garage) for evening Sea Dogs games. We will work with the City to define the number of spaces. The charge will be the same as the existing garage". I have to honestly say that since the first Sea Dogs season I was unaware the main garage has been available for Sea Dogs parking. In any case, let's state the rate in this plan, and establish and agree on a minimum number of spaces to be available in the new garage for Sea Dogs games at this time.

Provided that these two issues are addressed accordingly in a revised parking management plan submitted prior to Tuesday's Planning Board meeting, I would agree that Maine Medical Center has completed it's Parking Management Plan to my satisfaction.

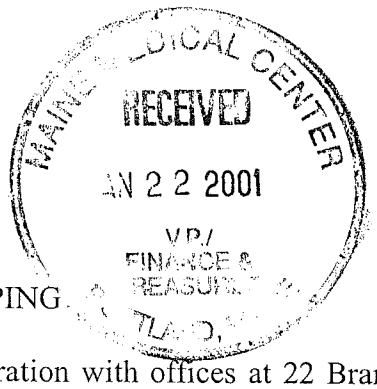
Please advise the appropriate people at Maine Medical Center and the Planning Board of my comments. I do not want to nit pick; however, I do want to avoid any future misunderstandings.

If you should have any additional questions or concerns, please do not hesitate to contact me.

cc: Joe Gray, Planning
Councilor Karen Geraghty
Larry Ash, Traffic Engineer

0005619

BK 15979 PG 163



4/00

EASEMENT
FOR
SIDEWALK AND LANDSCAPING

MAINE MEDICAL CENTER, a not-for-profit corporation with offices at 22 Bramhall Street, Portland, Maine, 04102 for one dollar and other good and valuable consideration grants to the City of Portland, Maine, a body politic and corporate with offices at 389 Congress Street, Portland, Maine, 04101, the following described easements:

1. An easement for the purposes of the installation, maintenance, replacement and repair and use thereof by the public of a sidewalk on and over a strip of land ten (10) feet in width (the "Sidewalk Easement Area") more particularly described on Exhibit A attached hereto.

2. An easement for purposes of landscaping and public access on and over a parcel of land located on the southerly side of Boynton Street in Portland, Cumberland County, Maine, extending from the intersection of the southerly sideline of Boynton Street and the easterly sideline of Forest Street easterly along Boynton Street approximately one hundred and ninety (190) feet (the "Landscaping and Public Access Easement Area") and more particularly described on Exhibit A attached hereto.

IN WITNESS WHEREOF, MAINE MEDICAL CENTER has caused this instrument to be duly executed by ~~John Heye, its Treasurer~~, thereunto duly authorized, this 13 day of April, 2000. ALBERT SWALLOW - AVP FINANCE

WITNESS:

Nancy J. Goodspeed

MAINE MEDICAL CENTER

By: _____
~~John Heye, Its Treasurer~~ ALBERT SWALLOW
ALBERT SWALLOW - AVP FINANCE
ASSOCIATE VICE PRESIDENT FINANCE

STATE OF MAINE
CUMBERLAND, SS.

April 13, 2000

ALBERT SWALLOW, ASSOCIATE VICE PRESIDENT

Personally appeared the above-named ~~John Heye, Treasurer~~ of Maine Medical Center as aforesaid who acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Before me,

Donna M. Williams

DONNA M. WILLIAMS

Notary Public/Attorney-at-Law

EXHIBIT A

1. SIDEWALK EASEMENT AREA

A strip of land ten (10) feet in width located in Portland, Cumberland County, Maine, on the northerly side of Congress Street in Portland, Cumberland County, Maine, and extending from the intersection of the northerly sideline of Congress Street and the easterly sideline of Forest Street along the northerly sideline of Congress Street a distance of two hundred seventy-six (276) feet more or less to land now or formerly of Gregory C. Kontos and Carol A. Kontos which is more particularly described in a deed recorded in the Cumberland County Registry of Deeds in Book 8340, Page 330.

The Sidewalk Easement Area is a portion of a parcel of land described in deed to the Maine Medical Center recorded in the Cumberland County Registry of Deeds in Book 10488, Page 22.

2. LANDSCAPING AND PUBLIC ACCESS EASEMENT AREA

Beginning at a point on the easterly sideline of Forest Street in Portland, Cumberland County, Maine, which lies approximately twenty-nine and nine-tenths (29.9) feet southerly of an iron pin located at the intersection of the southerly sideline of Boynton Street and the easterly sideline of Forest Street in Portland, Maine; thence northerly along the easterly sideline of Forest Street zero degrees six minutes fifty-seven seconds east (N 0° 6' 57" E) a distance of twenty-nine and nine-tenths (29.9) feet to said iron pin at the intersection of Boynton Street and Forest Street; thence easterly along the southerly sideline of Boynton Street eighty-nine degrees fifty-eight minutes fifty-seven seconds east (N 89° 58' 57" E) a distance of one hundred and ninety feet (190) to a point; thence on a course perpendicular to the prior course southerly approximately ten (10) feet to the northerly wall of a parking garage; thence in a generally southwesterly direction along the northerly wall of said parking garage in a straight line approximately two hundred and four (204) feet to the point of beginning.

The Landscaping and Public Access Easement Area is a portion of certain parcels of land described in deeds to the Maine Medical Center recorded in the Cumberland County Registry of Deeds in Book 10488, Page 22 and Page 19, respectively.

RECEIVED
RECORDED REGISTRY OF DEEDS
2001 JAN 24 PM 3:44
CUMBERLAND COUNTY
John B O'Brien

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Hagge and Members of the Planning Board

FROM: Richard Knowland, Senior Planner

DATE: October 28, 1997

SUBJECT: Maine Medical Center Office and Parking Garage

A workshop has been scheduled to consider a proposed 50,000 sq. ft. medical office building and a 430 space parking garage by Maine Medical Center in the vicinity of 883-903 Congress Street. The City Council has approved a contract zone to accommodate this proposal which was reviewed by the Board previously. See Attachment A.

It is expected that a second workshop will be scheduled prior to the public hearing. The workshop will include a more focused discussion on traffic and parking issues.

The site plan previously submitted during the zone change process is similar to the present one (see Attachment B.) More details have been provided on how the Congress Street streetscape will be treated as well as landscaping. The applicant is in the process of working on water quality treatment, stormwater detention and other related site plan issues.

The office space will be occupied by physicians practicing or employed by MMC and private medical offices. Certain diagnostic services may also be provided.

The office building is four stories high on Congress with two additional levels below grade. The slope of the property masses the apparent size and height of the parking garage by accommodating six levels of parking. At the low point of Boynton Street, only four levels of the garage will be visible.

The total package of site and building improvements provides a unique opportunity to serve as a cornerstone for the revitilization of this area of Congress Street.

Building Elevations

Since the zone change public hearing, the building elevations have been developed further. The top of the office building now has a detailed cornice line. Two other cornice lines have been introduced along the facade. The cornice lines help provide a logical base, middle, and top for the building in line with Portland's traditional commercial architecture. Soldier coursing has been added as a sill treatment on the top and bottom of upper story windows. The spacing and proportion of the windows along the facade is now more of an appropriate scale. The basic materials of the facade include brick and precast concrete. The rooftop elevator tower/HVAC penthouse has been significantly reduced in size from the previous plan.

In summary, the office building elevation has improved considerably since the initial submission. A color rendering and material samples will be helpful to understand how the facade elements work together. One further refinement to the facade would be to consider "lowering" the main entrance area so it has more of a human scale.

The parking garage features brick elevator towers with concrete panels on the remainder of the facade.

An elevation of the skywalk that runs from the new building (across Congress Street) to the existing parking garage is shown. A color rendering and sample materials should be submitted to determine how it relates to the surroundings.

Traffic

Circulation remains unchanged from the preliminary plan. Vehicles will enter and exit the site from Congress Street and Forest Street. A drop-off area is shown along Congress Street although there is also a drop-off area within the parking garage.

A traffic impact study and a parking demand study was previously submitted during the zone change process. See Attachment C.

The traffic study concludes that the "level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system." However, the report does recommend restriping the lane used for north bound traffic at the intersection of Congress Street and Valley Street as an exclusive right turn lane and a shared through left turn lane. A traffic signal is also recommended at Park Avenue and Forest Street. At the Bramhall and Congress Street intersection, a recommendation in the change in timing and phasing of the traffic signals is recommended. It is estimated that the project will generate 182 and 212 trip ends during the a.m. and the p.m. peak hours.

The parking demand study takes into account the new building and the overall parking demand of MMC. The study forecasts a parking demand of 2,140 spaces upon completion of the office building and full operation of the Scarborough and John Roberts Road facilities. A parking supply of 2,373 spaces is listed which is 233 spaces above the forecasted demand.

Condition #10 of the contract requires that the applicant submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project. This document will be submitted shortly.

Previous comments from Tom Errico, Traffic Engineer, are shown on Attachment E. Larry Ash, City Traffic Engineer, has met with the consulting traffic engineer and has requested further traffic analysis of nearby intersections. The response to these questions will be available for the second workshop.

Open Space/Landscaping

See Attachment B-5 for landscaping plan. Condition #11 of the contract requires that a landscaped open space be provided between the parking garage and Boynton Street.

Street trees are shown on all three streets abutting the site. Three landscaped pockets are shown adjacent to the Congress Street facade.

Attachments

A. Contract Zone Change
B. Site Plan/Building Elevation
C. Traffic Impact Study
D. Parking Demand Study
E. Tom Errico's Comments

City of Portland
Planning Board

Workshop
October 28, 1997

Maine Medical Center
Medical Office Building
and Parking Garage
883-903 Congress Street

Site Plan Review
Discussion Items

1. General Overview of Project
   - 50,000 sq. ft.
   - 430 cars

2. Site Plan
   - conforms with contract zone terms regarding set backs and height
   - shadow studies

3. Building Elevations
   - significant revisions in line with Portland's traditional commercial architecture

4. Landscaping Plan
   - review with City Arborist

5. Traffic
   - entry/exit on Congress for office building patients, staff and physicians
   - entry/exit on Forest Street for MMC employees
   - restriping of Congress Street north bound to create left hand turn lane
   - eliminate on street parking on Congress Street northbound

6. Parking Management Plan
   - scope is MMC campus and medical office building
   - results of professionally prepared parking study (supply/demand)
   - allocation of spaces for various customers, e.g., patients/visitors, employees, physicians
   - strategies regarding:
     - parking access and traffic flow
     - contractor requirements during construction/renovation projects
     - continued decentralization of MMC programs away from MMC campus
     - alternative transportation
     - charge levels for parking
     - Gateway Garage

ATTACHMENT A-1

MMCCONGRESSREZ.CONPB.FIN
06.11.97

AGREEMENT BETWEEN

CITY OF PORTLAND

AND

MAINE MEDICAL CENTER

AGREEMENT made this day of , 1997 by and between the **CITY OF PORTLAND,** a body corporate and politic, located in Cumberland County and State of Maine (hereinafter the **"CITY"**) and **MAINE MEDICAL CENTER**, a Maine Corporation (hereinafter **"MAINE MEDICAL"**).

W I T N E S S E T H:

WHEREAS, MAINE MEDICAL did request a rezoning of property located at 883-903 Congress Street, in Portland, in order to permit the establishment and operation of professional office space, clinics and parking; and

WHEREAS, the Planning Board of the City of Portland, pursuant to 30-A M.R.S.A. §4352(8), and after notice and hearing and due deliberation thereon, recommended the rezoning of the property as aforesaid, subject, however, to certain conditions; and

WHEREAS, the **CITY** by and through its City Council has determined that said rezoning would be pursuant to and consistent with the **CITY'S** comprehensive land use plan and consistent with the existing and permitted uses within the original zone; and

WHEREAS, the **CITY** has determined that because of the unusual nature of the proposed development it is necessary or appropriate

to impose by agreement the following conditions or restrictions in order to insure that the rezoning is consistent with the **CITY's** comprehensive land use plan; and

WHEREAS, the **CITY** authorized the execution of this Agreement on , 1997;

NOW, THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The **CITY** shall amend the Zoning Map of the City of Portland, dated March 1958, as amended and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by §14-49 of the Portland City Code, by adopting the map change amendment shown on Attachment 1.

2. The property shall be developed substantially in accordance with the conceptual site plan and elevations shown on Attachment 2; provided, however, that such plan and elevations shall be subject to full site plan review by the Planning Board and approval of this Agreement shall not imply any approval of any element that must be reviewed pursuant to §14-526 of the Portland City Code.

3. **MAINE MEDICAL** shall be authorized to establish and maintain general, business and professional offices, as defined in section 14-47 of the Portland City Code, for use by **MAINE MEDICAL** and related medical professionals, clinics, as defined in the same section of the Code, and parking on the site.

4. Setbacks shall be as delineated on Attachment 2, but shall in no event exceed ten (10) feet for the front yard and shall not be less than seven (7) feet for the rear yard. The westerly side yard shall be at least ten (10) feet, except the ventilation shaft and the exterior stair tower. The easterly side yard shall be at least fifteen (15) feet, except the ventilation shaft and the exterior stair tower.

5. The maximum height of any structure on the site shall not exceed seventy-two (72) feet.

6. The lease for the proposed skywalk shall be approved by the Portland City Council and the Maine Department of Transportation.

7. **MAINE MEDICAL** shall replace all curb and sidewalks abutting the site on Congress Street, Forest Street, and Boynton Street, as required by the Public Works Department.

8. Signage on the site shall comply with the requirements of the B-2 zone, as set forth in Division 22 of Chapter 14 of the Portland City Code.

9. Development on the site shall comply with the requirements of sections 14-186 and 14-187 of the Portland City Code.

10. **MAINE MEDICAL** shall submit a parking management plan for all of its parking facilities for review and approval by the Planning Board as part of the site plan review of this project.

11. **MAINE MEDICAL** shall provide a landscaped/open space area between the parking garage and Boynton Street. This area shall be reviewed as part of the site plan approval process.

12. In the event that any portion of the premises becomes subject to taxation under the decision in City of Lewiston v. Marcotte Congregate Housing, Inc., 673 A.2d 209 (Me. 1996), or any successor legislation, then **MAINE MEDICAL** or any successors in interest shall be liable for a payment in lieu of taxes if such portion later becomes exempt from taxation. The payment in lieu of taxes shall be in the amount of the taxes that would be assessed in the absence of such exemption.

The above stated restrictions, provisions and conditions are an essential part of the rezoning, shall run with the subject premises, shall bind **MAINE MEDICAL**, its successors and assigns, as permitted by this Agreement, of said property or any part thereof or interest therein, and any party in possession or occupancy of said property or any part thereof, and shall inure to the benefit

of and be enforceable by the **CITY**, by and through its duly authorized representatives.

If any of the restrictions, provisions, conditions, or portions thereof set forth herein is for any reason held invalid or unconstitutional by any Court of competent jurisdiction, such portion shall be deemed as a separate, distinct and independent provision and such determination shall not affect the validity of the remaining portions hereof.

Except as expressly modified herein, the use and occupancy of the subject premises shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

In the event that **MAINE MEDICAL** or any successor fail to continue to utilize the property in accordance with this Agreement, or in the event of a breach of any condition(s) set forth in this Agreement, the Planning Board shall have the authority, after hearing, to resolve the issue resulting in the breach or the failure to operate. The resolution may include a recommendation to the City Council that the site be rezoned to R-6 or any successor zone and that this Agreement be terminated, requiring a cessation of the general, business and professional offices, clinics and parking uses permitted under this terms of this Agreement.

WITNESS: **CITY OF PORTLAND**

MMCCONGRESSREZ.CONPB.FIN
06.11.97

_____

By_____
Robert B. Ganley
Its City Manager

WITNESS:

MAINE MEDICAL CENTER

_____

By:_____

Its:

STATE OF MAINE
CUMBERLAND, ss. , 1997

Personally appeared the above-named Robert B. Ganley, in his capacity as City Manager, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the City of Portland.

Before me,

_____
Notary Public/Attorney at Law

STATE OF MAINE
CUMBERLAND, ss. , 1997

Personally appeared the above-named , in his/her capacity as of Maine Medical Center and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of Maine Medical Center.

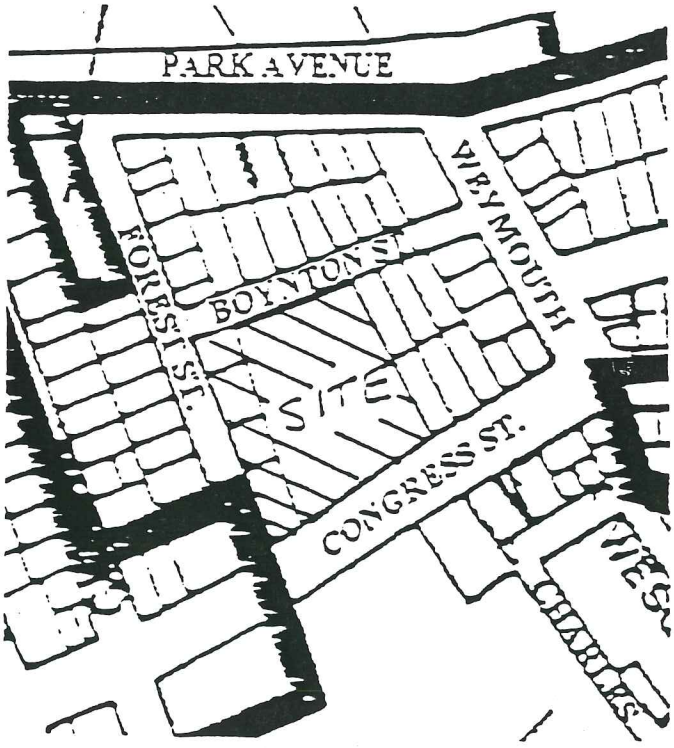
Before me,

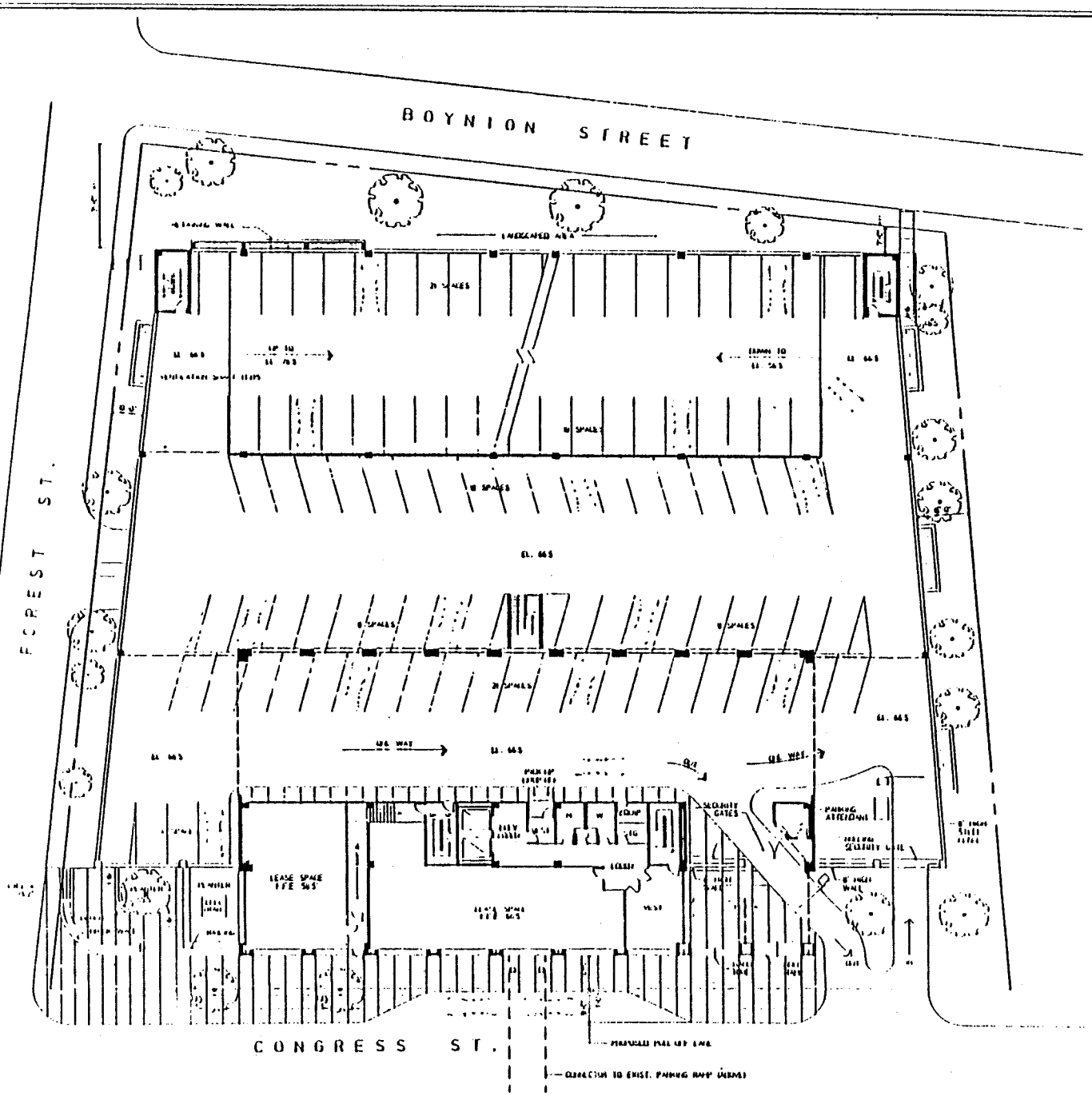
_____
Notary Public/Attorney at Law

A-6

Attachment 1

SITE OF PROPOSED CONTRACT ZONE





FIRST FLOOR PLAN

N

0 8 16 32 48

MEDIPLEX
MEDICAL BUILDING CORPORATION
DALLAS, TEXAS

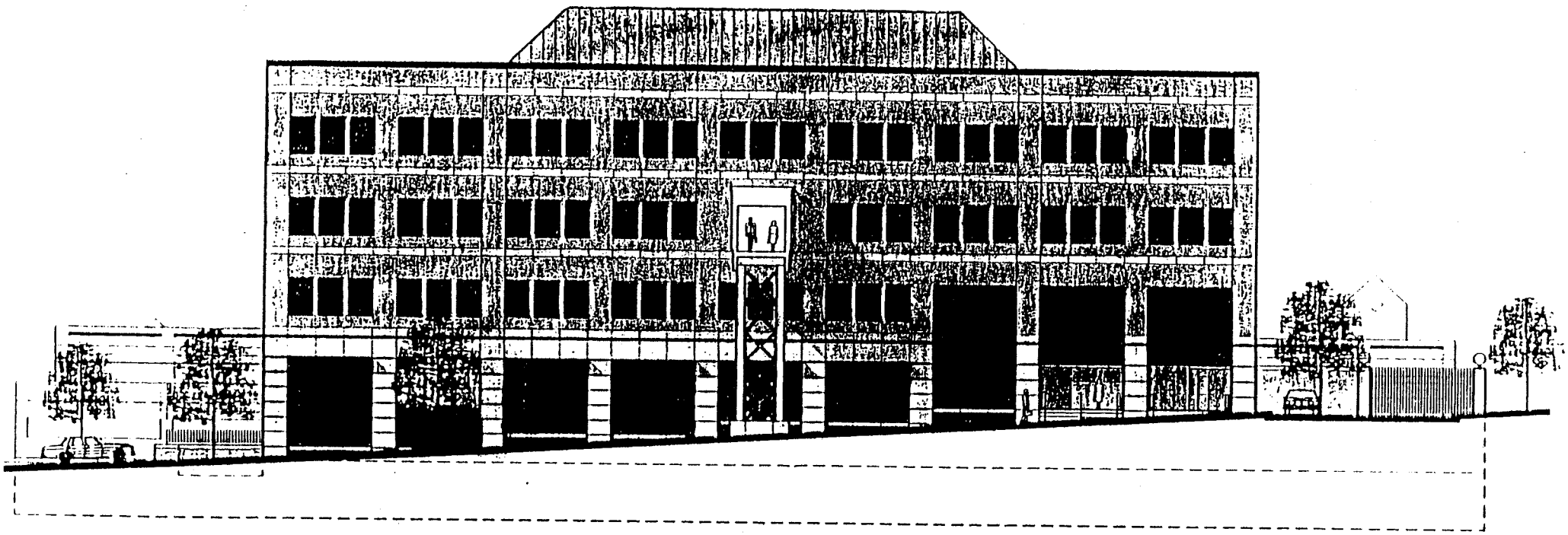
REVISIONS

PROPOSED MEDICAL OFFICE BUILDING
& PARKING GARAGE FOR
MAINE MEDICAL CENTER
PORTLAND, MAINE

PROJECT NO
5195

SHEET NO
A-1

ATTACHMENT A-4

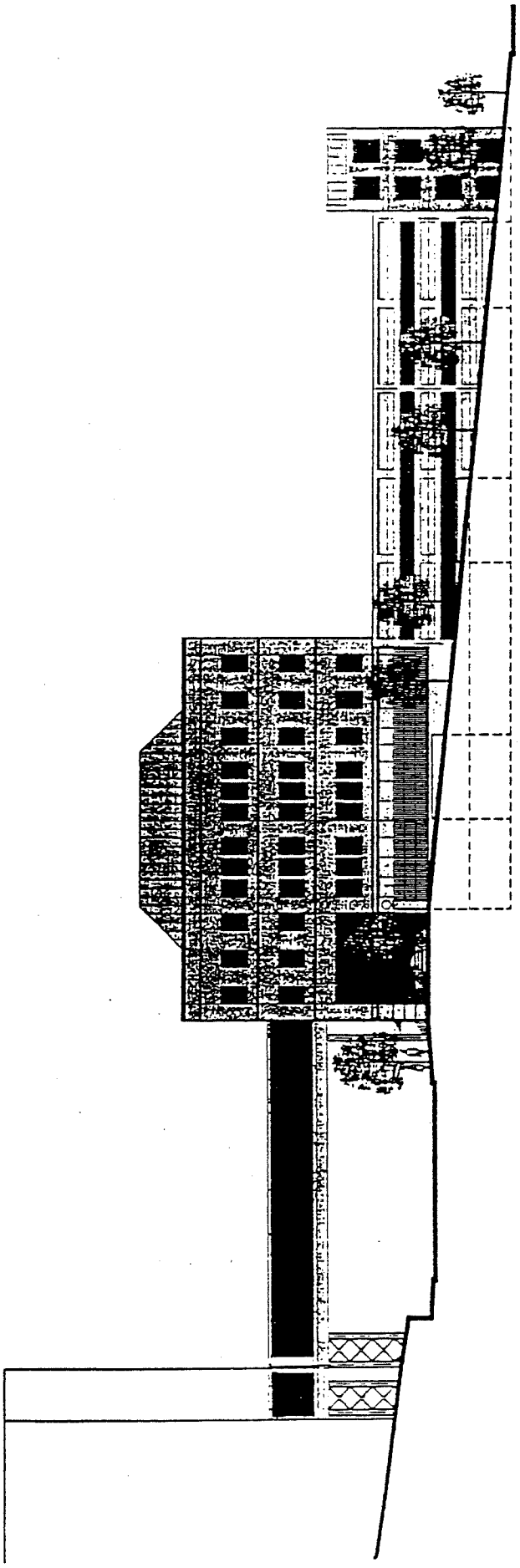


SOUTH ELEVATION

0 8 16 32 48

1/16" - 1'-0"

2-C
A-9



EAST ELEVATION

ATTACHMENT C-1

DRAFT

TRAFFIC IMPACT STUDY
FOR A PROPOSED
MAINE MEDICAL OFFICE FACILITY
PORTLAND, MAINE

Prepared for

Maine Medical Center
22 Bramhall Street
Portland, Maine

Prepared by

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine
(207) 775-1121

February 1997

C-2

TRAFFIC IMPACT STUDY

INDEX

C-3

EXECUTIVE SUMMARY

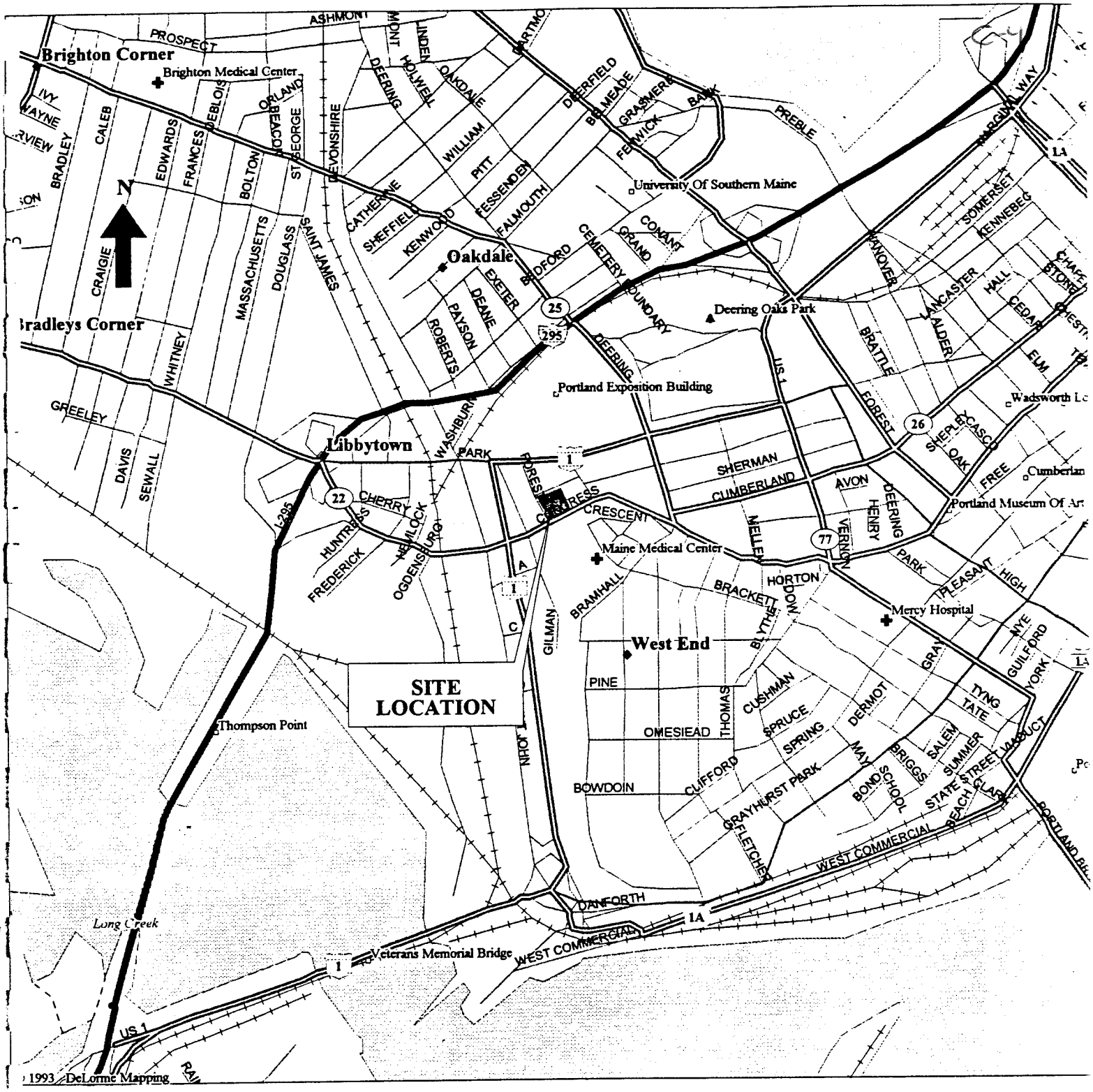
The following executive summary is prepared for the reader's convenience, but is not intended to be a substitute for reading the full report.

DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to conduct a traffic impact study for the proposed Medical Office building with an attached 420 space parking garage in Portland, Maine. The proposed site, currently occupied by the existing Maine Medical Center's parking lot, consists of 52 parking spaces, is located on the northeast corner of the intersection of Congress Street and Forest Street, as shown on Figure 1 following this page. The development consists of a proposed 49,150 square foot Medical Office building with an attached 420 space parking garage. The development also includes proposed driveways to Congress Street and Forest Street.

The purpose of this study is to evaluate the impact on the existing street system of the traffic generated by the proposed development and the planned driveway onto Congress Street and Forest Street. The following is a summary of the major findings of the traffic study:

1. It is estimated the proposed project will generate 182 and 212 trip ends during the AM and the PM peak hours. These trips would consist of 126 trips in and 56 trips out of the site during the a.m. peak hour and 42 trips in and 170 trips out of the site during the p.m. peak hour.
2. All of the trips are expected to be primary trips, i.e. newly generated by the development.
3. The proposed Congress Street driveway is located approximately 260 feet east of Forest Street. This driveway would have a single entrance lane and a single exit lane. The Forest Street driveway will consist of a right turn in and right turn out only. Forest Street is a one way street in the northbound direction.
4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.
5. The intersection of Congress Street at the proposed driveway meets MDOT guidelines for consideration of left turn lane for left turning traffic from Congress Street into the driveway. Based on the projected left turning volumes, DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at the site driveway. This will require removal of parking on the southerly side of Congress Street which will require approval of the City Council.

   DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for left turning traffic from Congress Street onto Forest Street. This location meets criteria for consideration of providing a left-turn treatment. Based on the projected left turning volumes DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at Forest Street. This will also require removal of parking on the southerly side of Congress Street.



EGEND

- State Route
- Geo Feature
- Town, Small City
- Large City
- Hospital
- Park
- Interstate, Turnpike
- US Highway
- Population Center
- Street, Road
- Hwy Ramp
- Major Street/Road
- Interstate Highway
- State Route
- US Highway
- Railroad
- Intermittent River
- Airfield

Scale 1:15,625 (at center)

1000 Feet

500 Meters

PORTLAND, MAINE
Mag 15.00
Tue Feb 04 14:08:51 1997

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. (207) 775-1121
FAX (207) 879-0896

FIGURE 1

C-5

6. The anticipated stacking lengths at the signalized intersections in the study area are within the available/proposed full width storage lengths with two exceptions as discussed below:

   Congress Street and Bramhall Street/Deering Avenue - The Deering Avenue southbound approach for a shared through right turn lane and an exclusive left turn lane, the stacking length is exceeded by 129 feet. This will block Cumberland Avenue. The Bramhall street approach also exceed the available stacking length of 107 feet during the PM peak hour. This also block the intersection of Bramhall Street and Marshall Street. DeLuca-Hoffman Associates, Inc. recommends the signs "Do Not Block the Street" for both Bramhall Street and Cumberland Avenue.

7. Park Avenue and St. John Street is a high accident location experiencing 45 accidents. To correct the predominant pattern of change lane accidents, DeLuca-Hoffman Associates, Inc. recommends overhead lane use control signs and striping through the intersections for westbound duals left turn lanes.

8. DeLuca-Hoffman Associates, Inc. recommends the following improvements to correct existing offsite roadway deficiencies:

   - Restripe the lane uses for northbound approach at the intersection of Congress Street and Valley Street as an exclusive right turn lane and a shared through left turn lane.
   - Change the timing and phasing at the intersection of Bramhall and Congress Streets.
   - Installation of traffic signal controller at Park Avenue and Forest Street.

Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system given existing geometric and the improvements of the traffic signal timing and phasing.

C-6

I. EXISTING CONDITIONS

Site:

The site shown in Figure 1 currently occupied by the existing Maine Medical Center parking lot, is located on the northeast corner of the intersection of Congress Street and Forest Street in Portland, Maine. The existing parking lot contains 52 parking spaces with a single driveway access to Congress Street. The site is bounded by Congress Street to the south, Boynton Street to the north, Forest Street to the west, and an apartment building to the east.

Adjacent Roads:

The site has frontage on Congress Street, Forest Street, and Boynton Street. Congress Street has a 42 foot wide roadway with on street parking on both sides. Congress Street also has a sidewalk along the site frontage. The posted speed limit is 25 mph. Congress Street connects Interstate I-295 to the west and Portland downtown to the east.

Forest Street is a one way street in a northbound direction. It intersects Congress Street to south and Park Avenue to the north. Forest Street has a 22 foot wide travel way with on street parking on the west side of the street.

Boynton Street is a two way roadway and has a 22 foot wide travel way with on street parking. Boynton Street connects Forest Street to the west and Weymouth Street to the east.

DeLuca-Hoffman Associates, Inc. based this study on the following information:

- A 1"=80'± scale Site Plan dated October 29, 1996 prepared by Mediplex Medical Building Corporation.
- Computerized accident data summary for the period 1993 to 1995 for Congress Street from St. John Street to Bramhall Street, for St. John Street from Congress Street to Park Avenue, and for Park Avenue from St. John Street to Forest Street..
- Traffic Impact Study for the Holt Hall Renovation prepared by Eaton Traffic Engineering on August 1996.
- Total active employees at the existing Maine Medical Center in Portland, Maine provided by Maine Medical Center.
- Turning movement count data collected by DeLuca-Hoffman Associates, Inc. at the following locations on February 4 and 6, 1997 from 6:45 a.m. to 8:45 a.m. and from 3:30 p.m. to 5:30 p.m.
    - Congress Street at St. John Street
    - Congress Street at Valley Street (US Route 1 northbound)
    - Congress Street at Gilman Street
    - Congress Street at Forest Street

- Congress Street at Existing Parking Lot Driveway
- Congress Street at Bramhall Street/Deering Avenue
- Park Avenue at St. John Street
- Park Avenue at Valley Street
- Park Avenue at Forest Street

Additionally DeLuca-Hoffman Associates, Inc. collected the turning movement data at the following locations.

The existing Maine Medical Center Garage driveways on February 7, 1997 from 3:00 p.m. to 6:00 p.m. and on February 10, 1997 from 6:45 a.m. to 8:45 a.m..

The Stroudwater Crossing driveway on February 7, 1997 from 6:45 a.m. to 8:45 a.m. and from 3:30 p.m. to 5:30 p.m..

The result of these turning movement counts are shown for the a.m. and the p.m. peak hour in Figure 2 of Appendix A.

II. BACKGROUND TRAFFIC CONDITION

The existing turning movement count volumes were adjusted to approximate the 30th highest hour conditions of the year using the Weekly Group Mean Factor data for Group I (Urban) from the Maine Department of Transportation. The methodology used to determine a seasonal adjustment factor from this data is as follows:

Seasonal Adjustment Factor for February, 1997			
Period	WGMF		Seasonal Adjustment Factor
Week of Counts / 4th Lowest Week	1.12 / 0.88	=	1.27

The proposed facility is planned to be completed in 1998. To approximate traffic in this year, DeLuca-Hoffman Associates, Inc. increased the 1997 counts by 2% and added the traffic generated by other developments expected to be completed in 1998 in the study area. According to the Portland Planning Department, Holt Hall is the only project which is pending. Holt Hall is located on the southeast corner of the intersection of Bramhall Street and Congress Street. The traffic projections associated with this project are included as Figure 3 of Appendix A.

DeLuca-Hoffman Associates, Inc. has combined the existing traffic adjusted to approximately the 30th highest hour, with the peak hour traffic forecasted for the proposed Holt Hall and a 2% annual growth rate yield for the 1998 No-build conditions. The 1998 No-build volumes are shown in Figure 4 of Appendix A.

III. TRIP GENERATION

The proposed Medical Office building will consist of 49,150 square feet with an attached 420 space parking garage. Approximately 226 parking spaces in the parking garage will be reserved to meet the estimated demand of the medical office building with the remaining 194 being available to Maine Medical employees. This trip generation will be made up of trips associated with the medical office building and with Maine Medical Center employees.

Trips associated with the Medical Office Building

To estimate the trips associated with the medical office building, DeLuca-Hoffman Associates, Inc. collected traffic counts at Stroudwater Crossing, a 32,190 s.f. medical office building, located on outer Congress Street. These counts were completed on Friday, February 7, 1997 from 6:45 to 8:45 AM and again from 3:30 to 5:30 PM. The results of the count are summarized below:

USE	Trip Ends				Trip Rate / 1,000 s.f.			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Stroudwater Crossing 32,190 s.f	67	101	45	95	2.08	3.14	1.4	2.95

USE	Trip Ends				Trip Rate / Parking Space			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Stroudwater Crossing Parking Spaces =147	67	101	45	95	0.46	0.69	0.31	0.65

Applying these rates to the medical office building results in the following trip estimates:

Medical office building trips based on 49,150 s.f.:

AM Peak Hour

$$49{,}150 \text{ s.f.} \times \frac{2.08 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 102 \text{ trip ends}$$

PM Peak Hour

$$49{,}150 \text{ s.f.} \times \frac{3.14 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 154 \text{ trip ends}$$

Medical Office building trips based on 226 parking spaces

AM Peak Hour
226 spaces x 0.46 trip ends / one space = 104 trip ends

PM Peak Hour
226 spaces x 0.69 trip ends / one space = 156 trip ends

Based on these calculations, DeLuca-Hoffman Associates, Inc. has used 104 AM and 156 PM trip ends for the portion of the trips generated by the medical office buildings.

Trips associated with the remaining 194 spaces in the parking garage not utilized by the Medical Office building were calculated as follows:

DeLuca-Hoffman Associates, Inc. collected traffic counts at the Maine Medical parking garage on Congress Street to assist in estimating the trips associated with the remaining 194 spaces in the parking garage not utilized by the Medical office building. The results of this data collection is summarized below:

USE	Trip Ends				Trip Rate / Parking Space			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Parking Garage Parking Space = 1276	514	371	355	245	0.4	0.29	0.28	0.19

Applying these rates to the remaining 194 spaces, results in the following trip generation:

AM Peak Hour

194 spaces x 0.4 trip ends / one space = 78 trip ends

PM Peak Hour

194 spaces x 0.29 trip ends / one space = 56 trip ends

Combined Trip Generation

Combining the trips associated with the Medical office building and those associated with the Maine Medical Center employees utilizing excess parking in the garage, results in the following total trip generation estimate:

AM Peak Hour

104 (medical office) + 78 (MMC) = 182 trip ends

PM Peak Hour

156 (medical office) + 56 (MMC) = 212 trip ends

Based on the above calculations, the proposed development is forecasted to generate 182 trip ends during the AM peak hour and 212 trip ends during the PM peak hour.

IV. TRIP COMPOSITION

The ITE "Trip Generation" manual indicates that all the traffic associated with an office will be primary trips. Primary trips are those which are new to the street system not already passing by the site.

V. TRIP DISTRIBUTION AND ASSIGNMENT

DeLuca-Hoffman Associates, Inc. has distributed the primary trip ends associated with the proposed Medical Office facility with 420 parking spaces based on the gravity model of the existing Maine Medical Center employees. This distribution is summarized as follows:

Trip Distribution Based on Employees Gravity Model	
Approaching the Site	***% of Trip Distribution***
Congress Street from west	37.4%
Congress Street from east	14.0%
Valley Street from south	31.9%
St. John Street from north	16.7%
Total	100%

Site generated traffic is assigned at the two site driveways as shown in Figure 5 of Appendix A. Sixty-two percent of the entering traffic will access the site via the Forest Street driveway and thirty-eight percent use the Congress Street Driveway. Approximately 65% of the exiting traffic is anticipated to leave via the Congress Street and 35% via the Forest Street.

VI. STUDY AREA

Criteria - Section 3b2b of the Maine Department of Environmental Protection's (MeDEP) Site Location of Development Law states the Board may define the study area as follows:

a. the first major intersection: and
b. all intersections where, during any one hour period, traffic attributable to the proposed development equals or exceeds:

    i. 25 vehicles in a left-turn only lane;
    ii. 35 vehicles in a through lane, right-turn lane, or a combined through and right-turn lane; or
    iii. 35 vehicles (multiplying the left-turn volume by 1.5) in a combined left-turn and through lane, or a combined left-turn, through and right-turn lane.

Based on the trip assignment summary presented in Figure 5, the study area includes the following intersection:

- Congress Street at St. John Street
- Congress Street at Valley Street (US Route 1 northbound)
- Congress Street at Gilman Street
- Congress Street at Forest Street
- Congress Street at Existing Parking Lot Driveway
- Congress Street at Bramhall Street/Deering Avenue
- Park Avenue at St. John Street
- Park Avenue at Valley Street
- Park Avenue at Forest Street

VII. CAPACITY ANALYSIS

DeLuca-Hoffman Associates, Inc. performed capacity analyses for the intersections contained in the study area. The signalized and unsignalized intersections were evaluated using the Highway Capacity Software computer program. The signalized intersections were evaluated using the SIGNAL 94 program. (See Appendix B)

The capacity analysis assesses the quality of traffic flow at intersections and provides a ranking based upon its delay and Level of Service (LOS). Level of service rankings are similar to the academic grading system where an "A" indicates very little delay and an "F" indicates very poor or extreme conditions. Level of service "D", is generally acceptable at signalized intersections. At an unsignalized intersection, if the level of service falls below a "D", the intersection should be examined further to determine if it meets one or more of the warrants set forth in the Manual on Uniform Traffic Control Devices (MUTCD) for signalization. If a warrant is not met, then the lower level of service is satisfactory.

The following tables summarize the relationship between delay and level of service at both signalized and unsignalized intersections:

Level of Service Criteria for Unsignalized Intersections	
Level of Service	**Stopped Delay per Vehicle (sec)**
A	Up to 5.0
B	5.1 to 10.0
C	10.1 to 20.0
D	20.1 to 30.0
E	30.1 to 45.0
F	Greater than 45.0

Level of Service Criteria for Signalized Intersections	
Level of Service	**Stopped Delay per Vehicle (sec)**
A	Less than 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	Greater than 60.0

Description of Signalized Intersections

Park Avenue and St. John Street - This is a four-leg intersection with the westerly leg of the intersection, Park Avenue being one-way westbound. The westbound Park Avenue approach consists of an exclusive right-turn lane, a through lane and a shared through left-turn lane. St. John Street which forms the northbound approach consists of an exclusive left-turn lane, a shared through left-turn lane, and a channelized right turn lane. The St. John Street southbound approach has exclusive right turn lane and a shared through left-turn lane.

Congress Street and St. John Street - This intersection is a four leg signalized intersection. The eastbound Congress Street approach is a one way street with an exclusive left-turn lane, a through lane, and a shared through right-turn lane. The westbound Congress Street approach consists of an exclusive left turn lane and an exclusive right turn lane. The northbound St. John Street approach has a through lane and a shared through right turn lane. The southbound leg approach consists of a through lane and a shared through left turn lane. This intersection has a shared traffic controller with Congress Street and Valley Street (US Route 1 northbound).

Congress Street and Valley Street(US Route 1 northbound) - This intersection is also a four leg signalized intersection. Congress Street is the east and west legs and Valley Street is the north and south legs. The Congress Street eastbound and westbound approaches have a shared through right turn lane and a shared through left turn lane. The Valley Street (US Route 1 northbound) approach has an exclusive right

turn lane and a shared through right turn lane. The southbound leg is a one way street in the northbound direction. This intersection has a shared a traffic controller with Congress Street and St. John Street.

Congress Street and Bramhall Street/Deering Avenue - This intersection is a four legs and fully actuated signalized intersection with an exclusive pedestrian phase. The Congress Street eastbound approach consists of an exclusive right turn lane and a shared through right turn lane. The Congress Street westbound approach has an exclusive right turn lane and a shared through left turn lane. The Bramhall Street approach has an exclusive left turn lane and shared through right turn lane. The Deering Avenue approach has an exclusive right turn lane and a shared through left turn lane.

Capacity analyses are based on the above geometrics. The No-Build evaluation is based on existing timing and phasing, while the Build condition is based on complementation of improvements as discussed in the paragraph following this Table. The results of the analyses of these signalized intersection are discussed below. Computer printouts of the analyses are provided in Appendix B:

Results of Signalized Capacity Analysis

		1998 No- Build		1998 Build	
Approach	Lanes	AM	PM	AM	PM
St. John St. & Park Avenue					
St. John Street NB	Left	D	F	C	E
	Left/through	D	F	C	E
	Right	D	C	A	A
St. John Street SB	Through/Left	D	C	D	D
	Right	C	C	B	C
Park Avenue WB	Right	C	C	A	A
	Through/Left	C	E	C	D
Overall delay in Second		D 25.0	E 47.7	C 17.8	D 35.0
St. John & Congress Street					
Congress Street EB	Left	D	D	B	B
	Through/Right	D	C	B	B
Congress Street WB	Left	C	C	C	A
	Right	D	F	B	A
St. John Street NB	Through/Right	D	F	B	C
St. John Street SB	Through/Left	C	C	C	C
Overall Delay in Second		D 32.4	E 45.9	B 11.3	B 14.8
Congress & Valley Street					
Congress Street EB	Right/Through/Left	B	A	A	A
Congress Street WB	Right/Through/Left	C	D	B	B
Valley Street NB	Left	B	B	NA	NA
	Through/Right	C	B	NA	NA
	Right	NA	NA	B	B
	Through/Left	NA	NA	B	B
Overall Delay in Second		B 11.3	C 17.7	B 6.1	B 6.7

Congress & Bramhall/Deering					
Congress Street EB	Right	B	B	B	A
	Left/Through	C	C	B	B
Congress Street WB	Right	B	B	B	B
	Left/Through	F	F	B	D
Bramhall Street NB	Right	B	B	B	B
	Left/Through	E	F	B	D
Deering Avenue SB	Right/Through	B	B	C	C
	Left	B	D	B	D
Overall Delay in Second		D 36.1	E 50.0	B 11.9	C 17.9

The results of the analysis of these signalized intersections are discussed below.

Park Avenue at St. John Street - Based on the capacity analysis, the westbound Park Avenue approach has a level of service E for a shared through left turn lane during the PM peak hour under No-Build conditions. The northbound St. John Street approach has a level of service F for an exclusive left turn lane and a shared through left turn lane during PM peak hour under No-Build conditions. Under Build condition, this intersection is an overall level of service D. However the northbound approach has a level of service E for both a left turn lane and a shared through left turn lane. The land use constraints associated with this intersection are such that the intersection cannot be expanded. DeLuca-Hoffman Associates, Inc. does recommend that the cycle length be reduced from 90 to 60 seconds.

Congress Street and St. John Street - Based on the capacity analysis, this intersection has a level of service E under No-Build condition during the PM peak hour. The westbound Congress Street approach has a level of service F for a right turn lane. The northbound St. John Street approach has a level of service F for a shared through right turn lane. Under Build condition, this intersection has a level of service C or better based the following improvements:

- Reduce the cycle length from 90 to 60 seconds.
- Eliminate the following phases:

  AM peak hour (7:00 to 10:00 AM)

  Westbound Congress Street a leading phase.
  Southbound Congress Street a leading phase.

  PM peak hour (3:00 to 6:00 PM)

  Eastbound Congress Street a leading phase.
  Southbound St. John Street a leading phase.

Congress Street and Bramhall - Based on the capacity analysis, the Congress Street westbound approach has a level of service F for a shared through left turn lane during the AM and the PM peak hour under both No-Build condition. Under the Build condition, this intersection has a level of service D or better during the AM and the PM peak hour based on the following improvements:

- Implementation of a lead phase from the northbound Bramhall Street approach.
- Retiming of the intersection.

Congress Street and Valley Street (US Route 1 Northbound) - This intersection has an acceptable level of service under both No-Build and Build conditions based on the capacity analysis. The Build condition is based on the following improvement:

- Restripe the northbound Valley Street approach lane uses as a exclusive right turn lane and a shared through left turn lane.

Unsignalized Intersections

Results of Unsignalized Capacity Analysis

		1998 No-build		1998 Build	
Approach	Lanes	AM	PM	AM	PM
Congress & Gilman Street					
Gilman Street NB	Left/Right/Through	F	E	F	E
Gilman Street SB	Left/Right/Through	C	C	C	C
Congress Street WB	Left	B	B	C	B
Intersection Delay in Second		4.5	2.9	6.7	3.8
Congress St. & Site Drive.					
Congress Street EB	Left	N/A	N/A	A	A
Proposed Driveway SB	Left/Right	N/A	N/A	B	C
Overall				0.3	1.2
Park Ave. & Forest Street					
Forest Street NB	Left/Right	C	F	C	F
Overall		1.2	114	1.7	174.3
Park Ave. & Valley Street					
Valley Street NB	Left	F	F	F	F
	Right	A	A	A	A
Overall		5.4	35.3	5.6	38.6
Congress & Forest Street					
Congress Street EB	Left	A	B	A	B
Overall		.1	0.2	.3	.3

Congress Street at Gilman Street - The Gilman Street northbound approach left turn lane has a level of service F with level E during the AM and PM peak hour under both No-Build and Build conditions. Therefore, this location was evaluated to see if signalization is warranted. This analysis contained in Section VIII, shows that signal warrants are not met for both the No-Build and the Build condition. The northbound approach left turn lane has a level of service F, therefore, no mitigation measures are proposed at this location.

Park Avenue and Forest Street - The Forest Street northbound approach is a one-way street. Based on the capacity analysis, the Forest Street northbound approach left turn lane has a level of service F during the PM peak hour under both No-Build and Build conditions. This location was also evaluated to see if signalization is warranted. This analysis contained in Section VIII, shows that currently signal warrant peak hour volumes are met based on PM peak hour volumes. The proposed development increases in the traffic volume by one vehicle per minute during the PM peak hour. Therefore, the intersection is required a signal.

Left Turn Lane Warrant Analysis

Congress Street at Forest Avenue - DeLuca-Hoffman Associates, Inc. has also reviewed the left-turn warrant criteria for Congress Street at Forest Street in accordance with Figure 8-19 of the MDOT Highway Design Guide. Figure 8-19 is based on a two lane travel way. Based on the Figure, this location meets criteria for consideration of a left-turn treatment. Therefore, DeLuca-Hoffman Associates, Inc. recommends a left-turn lane on Congress Street at Forest Street. This will require removal of parking on the southerly side of Congress Street.

Congress Street at the Proposed Driveway - DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for Congress Street at the proposed site driveway in accordance with Figure 8-19 of the MDOT Highway Design Guide. Based on the Figure, this location meet criteria for consideration of providing a left-turn treatment. Therefore, DeLuca-Hoffman Associates, Inc. recommends installation of a left-turn lane on Congress Street. This will require removal of parking on the southerly side of Congress Street which will require the approval of the City Council.

VIII. SIGNAL WARRANT EVALUATION

The Manual on Uniform Traffic Control Devices (MUTCD) provides eleven conditions for which traffic signal control may be warranted for an intersection. One or more of these warrants should be met before a signal is installed. Traffic conditions evaluated with respect to these warrants are tabulated and discussed below. Warrant analysis worksheets are contained in Appendix D.

		Satisfied			
Number	Description	Gilman & Congress Street		Forest Street & Park Avenue	
		Existing	Proposed	Existing	Proposed
Warrant 1	Minimum vehicular volume	No	No	No	No
Warrant 2	Interruption of continuous traffic	No	No	No	No
Warrant 3	Minimum pedestrian volume	No	No	No	No
Warrant 4	School Crossing.	No	No	No	No
Warrant 5	Progressive movement.	No	No	No	No
Warrant 6	Accident experience	No	No	No	No
Warrant 7	Systems	No	No	No	No
Warrant 8	Combination of warrants	No	No	No	No
Warrant 9	Four hour volumes	No	No	No	No
Warrant 10	Peak hour delays	No	No	No	No
Warrant 11	Peak hour volumes	No	No	Yes	Yes

Congress Street at Gilman Street - The above summary shows that the intersection of Gilman Street and Congress Street does not met the signal warrant. Therefore, no mitigation measures are proposed at this location.

Forest Street and Park Avenue - The above summary shows that currently the intersection meets the peak hour volume warrant. The proposed development increase in traffic volume, 1 vehicle per minute during the PM peak hour. Therefore, the installation of a signal is recommended at this intersection.

IX. STORAGE LENGTH ANALYSIS

DeLuca-Hoffman Associates, Inc. has evaluated the potential storage lengths at the signalized intersections during the a.m. and the p.m. peak hour, for the 1998 Build condition. The available/proposed storage areas and required lengths as computed using SIGNAL 94 are summarized in the following table.

The available/proposed storage areas are based on the existing conditions.

Stacking Length Analysis for Weekday AM and PM Peak Hour

Location		Available/Proposed Storage Length	90% Confidence Stacking Length	
St. John St. & Park Avenue	**Lane**		**AM**	**PM**
St. John Street NB	Left	800	253	400
	Left/Through	800	272	432
	Right	130	126	65
St. John Street SB	Through/Left	300	294	212
	Right	100	90	72
Park Avenue WB	Right	150	37	34
	Through/Left	600	216	361
St. John & Congress Street				
Congress Street EB	Left	300	163	244
	Through/Right	300	290	292
Congress Street WB	Left	250	45	73
	Right	250	111	153
St. John Street NB	Through/Right	400	215	311
St. John Street SB	Through/Left	800	146	142

Congress & Valley Street				
Congress Street EB	Right/Thru/Left	250	197	138
Congress Street WB	Right/Thru/Left	180	81	141
Valley Street NB	Right	150	140	71
	Through/Left	350	110	126
Bramhall & Congress Street				
Congress Street EB	Left/Through	310	309	274
	Right	100	71	46
Congress Street WB	Left/Through	550	172	245
	Right	100	30	61
Bramhall Street NB	Left	200	70	121
	Right/Through	200	181	307
Deering Street SB	Right/Through	100	229	201
	Left	100	44	121

The anticipated stacking lengths at the signalized intersections in the study area are within the available/proposed storage lengths with two exceptions as discussed below:

Congress Street and Bramhall Street/Deering Avenue - The Deering Avenue southbound approach has available stacking lengths of 100 feet for a shared through right turn lane and an exclusive left turn lane. Under the AM peak hour the stacking length is exceeded by 129 feet. This will block Cumberland Avenue. The Bramhall Street approach also exceed the available stacking length of 107 feet during the PM peak hour. This also will block the intersection of Bramhall Street and Marshall Street. DeLuca-Hoffman Associates, Inc. recommends the signs "Do Not Block the Street" for both Bramhall Street and Deering Avenue.

X. SIGHT LINES

The Maine Department of Transportation (MDOT) publication "Access Management, Improving the Efficiency of Maine Arterials" provides recommended sight distances based on driveway classifications. The classifications are as follows:

- **Low Volume Driveway:** Driveways with a traffic volume of less than 500 vehicle trips per day, or 50 or less vehicle trips per peak hour.
- **Medium Volume Driveway:** Driveways with less than 1,500 trips per day and less than 150 trips during the peak hour.
- **High Volume Driveway:** Driveways with more than 1500 trips per day or 150 trips during the peak hour.

The traffic volume associated with the site at both the proposed driveways are 128 and 95 trips during the p.m. peak hour. Therefore, for the purpose of sight distance analysis, DeLuca-Hoffman Associates, Inc. has evaluated the driveway as Low/Medium volume driveways. The guidelines set forth by MDOT for sight distance criteria for a Low/Medium volume driveway are as follows:

MDOT Standards for Sight Distance For a Low/Medium Volume Driveway	
Speed (mph)	**Desirable Sight Distance (full-time)**
25	250
30	300
35	350
40	400
45	450
50	500
55	550

DeLuca-Hoffman Associates, Inc. has evaluated the available sight lines at the proposed driveways in accordance with MDOT standards.

The MDOT standards are as follows:

Driveway observation point: 10 feet off major street travel way
Height of eye at driveway: 3.5 feet above ground
Height of approaching vehicle: 4.25 feet above road surface

The design speed used for the major road is generally the 85th percentile travel speed. This is the speed at which 85% of the traffic is traveling at or below. The posted speed limit on the Congress Street is 25 miles per hour. The estimated 85th percentile travel speed along this road is 5 mph above the posted speed or 30 mph. Therefore, the desirable sight distance is 300 feet.

Forest Street does not have a posted speed limit. Based on field observation, the average vehicle travels approximately 20 to 25 mph. Forest Street has a 22 foot roadway with on street parking, a one way street and is approximately 650 feet long.

The results of the sight line analyses along Congress Street and Forest Street are summarized below:

Driveway Sight Line Evaluation			
Direction	**85th Percentile Travel Speed**	**Required Sight Line**	**Actual Sight Line**
Forest St. Driveway			
From the south	25 mph	250'	275'
Congress St. Driveway			
From the east	30 mph	300'	425'
From the west	30 mph	300'	375'

Based on the above information, the sight distance at the existing and the proposed driveways meet or exceeds the MDOT sight distance standards.

It is recommended that any planting located within the sight triangle will not exceed three feet in height and shall be maintained. Signage shall be placed where it will not obstruct sight lines.

XI. ACCIDENT ANALYSIS

DeLuca-Hoffman Associates, Inc. has based the accident analysis of this study area on data obtained from the MDOT for the period of 1993 to 1995.

In order to evaluate whether a location has an accident problem, MDOT uses two criteria to define High Accident Locations (HAL). Both criteria must be met in order to be classified as an HAL.

1. A critical rate factor of 1.00 or more for a three year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate less than average) and:

2. A minimum of 8 accidents over a three year period.

Computerized accident data summaries were provided by MDOT for the study area. Data for these study area intersections is provided below:

Accident Data			
Intersection	**Number of Accidents**	**CRF**	**HAL**
Park Ave. & St. John St.	45	1.16	Yes
Congress & St. John St.	22	0.49	No
Congress & Valley St.	24	0.82	No
Congress & Gilman St.	11	1.00	Yes
Congress & Forest St.	5	0.46	No
Congress & Weymouth St.	9	1.04	Yes
Congress & Bramhall St.	14	0.33	No
Link Between Park Avenue & Congress along St. John St.	32	2.16	Yes
Link Between Weymouth & Ellsworth along Congress St.	10	1.35	Yes
Park Avenue & Forest St.	1	0	No
Park Avenue & Valley St.	5	0.57	No

The above table shows that three intersections and two links are HAL . The collision diagrams are shown in Appendix C. HALs are discussed below:

Park Avenue and St. John Street - This intersection experienced 45 accidents during the three year study period and the critical rate factor is 1.16. Twelve rear end, nine change lane, and four left turn side swipe accidents occurred northbound on the St. John Street approach. Five rear end, one change lane and five angle accidents occurred westbound on Park Avenue. The St. John Street southbound approach has no clear pattern to determine the problem. The rear end accident for the northbound approach is due to the heavy traffic flow. The rear end collisions are common at signalized intersections. To correct the change lane accidents, DeLuca-Hoffman Associated recommends over head lane use control signs and also striping through the intersections for westbound dual left-turn lanes.

Congress Street & Weymouth Street - This intersect experienced 9 accidents in the three year study period with a critical rate factor of 1.04. Two accidents involved angle, rear end, turning movement, and parking vehicles. There is no clear pattern to be corrected. Therefore no mitigation measures are proposed for this location.

Congress Street & Gilman Street - Based on the accident table shown, the intersection is HAL with the critical rate factor of 1.00. This intersection experienced 11 accidents. Six of these accidents were angle accidents and four of these angle accidents were on the southbound approach. Two angle accidents were in the northbound approach. One of the angle accident was a physical impairment and two angle accident involved winter conditions. There is no clear pattern to identify as a correctable. Therefore no mitigation is proposed for this location.

Roadway Segment Between Weymouth & Ellsworth Street along Congress Street - This link experienced 10 accidents with a critical rate factor of 1.35. Six accidents involved parked vehicles, four of them were located on the north side of Congress Street and two of them on the south side of Congress Street. The remainder of the accidents have no clear accident pattern to identify as a problem. The three accidents involved with parked vehicles occurred during the winter months. Therefore no mitigation measures are proposed at this location.

Link Between Park Avenue & Congress Street along St. John Street - This link experienced 32 accidents in three year study period. The critical rate factor is 2.16. Twenty-two accidents occurred along the portion of the link fronting McDonald's. The most correctable accident pattern is in front of McDonald's driveways. Based on the McDonald's expansion Traffic Impact Study, McDonald's is proposed to close two driveways and create a proposed two-way driveway located approximately 60' south of the existing northerly driveway. This change will improve the safety in the area. The rest of the accident patterns are uncorrectable. Therefore no mitigation measures are proposed for this location.

XII. CONCLUSION

DeLuca-Hoffman Associates, Inc. has examined the impact of traffic associated with the proposed Medical office building with attached 420 space parking garage in Portland, Maine..

The following is a summary of the major findings of the traffic study.

1. It is estimated the proposed project will generate 182 and 212 trip ends during the AM and the PM peak hours. These trips would consist of 126 trips in and 56 trips out of the site during the a.m. peak hour and 42 trips in and 170 trips out of the site during the p.m. peak hour.
2. All of the trips are expected to be primary trips, i.e. newly generated by the development.
3. The proposed Congress Street driveway is located approximately 260 feet east of Forest Street. This driveway would have a single entrance lane and a single exit lane. The Forest Street driveway will consist of a right turn in and right turn out only. Forest Street is a one way street in the northbound direction.

4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.

5. The intersection of Congress Street at the proposed driveway meets MDOT guidelines for consideration of left turn lane for left turning traffic from Congress Street into the driveway. Based on the projected left turning volumes, DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at the site driveway. This will require removal of parking on the southerly side of Congress Street which will require approval of the City Council.

   DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for left turning traffic from Congress Street onto Forest Street. This location meets criteria for consideration of providing a left-turn treatment. Based on the projected left turning volumes DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at Forest Street. This will also require removal of parking on the southerly side of Congress Street.

6. The anticipated stacking lengths at the signalized intersections in the study area are within the available/proposed full width storage lengths with two exceptions as discussed below:

   Congress Street and Bramhall Street/Deering Avenue - The Deering Avenue southbound approach for a shared through right turn lane and an exclusive left turn lane, the stacking length is exceeded by 129 feet. This will block Cumberland Avenue The Bramhall street approach also exceed the available stacking length of 107 feet during the PM peak hour. This also block the intersection of Bramhall Street and Marshall Street. DeLuca-Hoffman Associates, Inc. recommends the signs "Do Not Block the Street" for both Bramhall Street and Cumberland Avenue.

7. Park Avenue and St. John Street is a high accident location experiencing 45 accidents. To correct the predominant pattern of change lane accidents, DeLuca-Hoffman Associates, Inc. recommends overhead lane use control signs and striping through the intersections for westbound duals left turn lanes.

8. DeLuca-Hoffman Associates, Inc. recommends the following improvements to correct existing offsite roadway deficiencies:

   - Restripe the lane uses for northbound approach at the intersection of Congress Street and Valley Street as an exclusive right turn lane and a shared through left turn lane..
   - Change the timing and phasing at the intersection of Bramhall and Congress Streets.
   - Installation of traffic signal controller at Park Avenue and Forest Street.

Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system given existing geometric and the improvements of the traffic signal timing and phasing.

ATTACHMENT O-1

DeLUCA HOFFMAN ASSOCIATES, INC.
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- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

March 11, 1997

Mr. Paul Gray
Vice President Planning
Maine Medical Center
22 Bramhall Street
Portland, ME 04102-3175

Subject: Maine Medical Center Parking Demand

Dear Mr. Gray:

Per your request, DeLuca-Hoffman Associates, Inc. has completed a parking analysis for Maine Medical Center (MMC). This analysis has been based on the following conditions:

- Completion of the current expansion of the Bean Building and renovation of other portion of the MMC campus.
- Completion of the proposed 49,156 s.f. medical office building and related parking.
- Sale of the Gateway Garage reducing the available parking to MMC from 650 spaces (capacity of the garage) to approximately 120 spaces.

The purpose of this letter is to summarize the demand and supply with the above conditions in place.

Parking Supply

DeLuca-Hoffman Associates, Inc. completed a parking analysis in June 1996 for the proposed additions to the Bean building which showed a parking supply of 2,363 spaces. Based upon preliminary plans dated 2/10/97 prepared by Mediplex for the proposed 49,156 s.f. medical office building on Congress Street northerly of Sportsman's Grill, there are 430 spaces planned as part of the office building. The location of the office building is shown in Figure 1 following this page. The proposed office building will displace 52 spaces currently on the site for a net gain of 378 spaces (430-52) over MMC's current supply.

Two other factors which will affect the parking supply are MMC's planned sale of the Gateway Garage which has 650 spaces and the lease of 150 parking spaces on St. John Street. As a condition of the sale of the Gateway garage, 120 spaces will be reserved for MMC employees who currently work at the Gateway.

Based on these factors and supply data previously furnished by MMC, DeLuca-Hoffman Associates, Inc. has summarized the supply after the Gateway sale and completion of the proposed Medical Office Building in Table 1 as follows:

LOCATION MAP FOR
MAINE MEDICAL CENTER
FACILITIES
Portland, Maine

2-0

TABLE 1	
Location	**Number of Available Spaces**
Ramp Parking Garage	1,276
Congress Street Parking Lot by Sportsman's Grill	430
Admitting	9
Visitors Parking Lot	315
MRI	11
In back of Gilman Street	15
Emergency	10
Oncology	10
Gateway Garage (Not shown in Figure 1)	120
Diabetes Center	15
Spaces Leased on St. John Street	150
Spaces Reserved at Farmers Market Garage	12
Total Available Spaces	**2,373**

Parking Demand

Based on the "Parking Analysis for a Proposed Expansion to the Bean Building at Maine Medical Center" completed by DeLuca-Hoffman Associates, Inc. in June 1996, the estimated demand upon completion of the Bean addition and relocation of employees from MMC to the ambulatory care facility in Scarborough was anticipated to be 1,914 spaces.

Very little information exists through transportation technical publications such as the Institute of Transportation Engineers or the Urban Land Institute to establish the parking demand for a medical office building. Methodologies are set forth in these publications based on the number of employees, however the number of employees is not currently known. DeLuca-Hoffman Associates, Inc. conducted parking inventories at similar facilities on February 11, 1997 from 7:30 a.m. to 3:30 p.m. at the existing Stroudwater Crossing on Congress Street in Portland and on February 12, 1997 from 7:30 a.m. to 3:30 p.m. at the existing medical building on 1250 Forest Avenue in Portland which are very similar to the proposed facility. This information is summarized in the table below:

Use	Available	Size (s.f.)	Peak # of Vehicles Park at Any Time	Occupied Spaces/1,000 s.f.	Available Spaces/1,000 s.f.
Stroudwater Crossing	147	32,190	123	3.8	4.6
1250 Forest Avenue Medical Building	127	40,317	80	2	3.2

Based on this information, DeLuca-Hoffman Associates, Inc. has used a parking ratio of 4.6 spaces/1,000 s.f. to estimate the parking demand for the proposed 49,156 s.f. medical office building. Based on this rate, the proposed office building will require 226 spaces (4.6 x 49,156). Thus, the proposed medical office building will increase the total campus parking demand to 2,140 spaces (1,914 + 226).

Parking Demand Compared to Supply

Based upon the information presented previously in this letter, the parking supply will be 2,373 upon completion of the proposed 49,156 s.f. medical office building with its associated 430 space parking garage and the sale of the Gateway garage. This supply of 2,373 is 233 spaces in excess of the forecast demand of 2,140 spaces upon completion of the office building and full operation of the Scarborough and John Roberts Road facilities. Thus, the supply exceeds the demand by 11%.

Please review these findings and contact me if you have questions or would like to discuss these findings in more detail.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President of Transportation

TLG/ajm/1471/brem1-14

c: Robert Bremm

ATTACHMENT E-1

CITY OF PORTLAND - TRAFFIC SECTION
MEMORANDUM

Date: 03/18/97

To: Richard Knowland, Senior Planner

From: Thomas A. Errico, P.E., Traffic Engineer

Subject: Maine Medical Office Facility - Congress Street

In conjunction with the above project, I have reviewed the traffic impact study prepared by DeLuca-Hoffman Associates, Inc. dated March 1997. In addition, I have reviewed the Parking Analysis also prepared by DeLuca-Hoffman Associates, Inc. dated March 11, 1997. My specific comments are summarized below.

- The Parking Analysis performed indicates the parking supply will exceed demand following the construction of the proposed project. In reviewing the data available, the proposed parking garage supply will be absorbed by the parking requirements of the proposed 49,156 square feet medical office building, and the elimination of parking spaces at the Gateway Garage. As indicated by John Peverada, in his Memorandum to you dated March 11, 1997, parking availability in the vicinity of the Maine Medical Center is poor. If the conclusions of the Parking Analysis are in fact accurate, supply is greater than demand, than improvements in the management of parking should be considered. While this project should not worsen parking conditions, it is recommended that improved parking measures (i.e. increasing supply or improved management) be considered.

- According to the traffic impact study, 62% of the traffic will enter the parking garage via the Forest Street driveway. An explanation should be provided that supports the trip distribution assumptions.

- At the Congress Street/Bramhall Street/Deering Avenue intersection, it is recommended that a lead phase be provided from Bramhall Street and the signal timing revised. In conjunction with the lead phase, a five-section signal head will be required. In conjunction with the Holt Hall project, the installation of a five-section head was a condition of approval, and therefore may not be needed for this project. It is recommended that a proposed traffic signal timing plan be provided for implementation after build-out of the project.

- I concur with the recommendation to restripe the northbound Valley Street approach to consist of an exclusive right-turn lane and a shared left/through lane.

- At the Park Avenue/St. John Street intersection, northbound movements from St. John Street currently operate poorly, and will continue to operate poorly following build-out of the project. To help improve conditions, it is recommended that the cycle length be reduced form 90 to 60 seconds. It is recommended that a proposed traffic signal timing plan be provided for implementation after build-out of the project. It should be noted that while the intersection is expected to operate at an acceptable level of service following build-out of the project and revisions to the cycle length, movements from northbound St. John Street will continue to operate poorly.

- At the Congress Street/St. John Street intersection, improvements to the traffic signal phasing and timing are recommended to improve operating conditions. It is suggested that a traffic signal phasing and timing plan be prepared for implementation following build-out of the project. In addition, an assessment into the safety implications of eliminating the existing protected phases should be documented.

- An evaluation of signal warrants was performed at the Congress Street/Gilman Street and Forest Avenue/Park Avenue intersections. It appears that all eleven warrants were reviewed, although the study does not reference the data (i.e. delay, eight hour volumes, etc.) needed to evaluate all warrants. An explanation should be provided summarizing the data used in the evaluation of signal warrants.

- Poor levels of service were projected at the unsignalized intersection of Park Avenue and Valley Street. The study did not develop mitigation measures at this location.

- An evaluation of the need for left-turn lanes at the Congress Street/Forest Street and Congress Street/Proposed Project Driveway intersections were performed. Results indicate left-turn lanes are warranted. It is suggested that a conceptual sketch be prepared outlining the proposed roadway configuration. In addition, determination on the number of on-street parking spaces to be removed, as a result of the proposed left-turn lanes, should be estimated. Additionally, recommendations should be developed in respect to the existing Bus Stop located on Congress Street, and whether the proposed left-turn lanes will compromise safety and mobility.

- Although the intersections of Congress Street/St. John Street and Congress Street/Valley Street do not meet the criteria for a potentially hazardous location, the frequency of accidents is significant. It is recommended that a detailed evaluation of accident conditions be performed at these locations.

- Significant pedestrian activity is expected between the proposed Medical Office Building and Maine Medical Center. Provisions should be investigated relative to the crossing of pedestrians on Congress Street.

- The traffic impact study recommends the installation of a traffic signal at the Park Avenue/Forest Street intersection. It is suggested that the intersection be monitored following build-out of the project, and if actual field conditions warrant, a traffic signal should be installed. Accordingly, funds should be provided in an escrow account to ensure a follow-up study is performed and installation of a traffic signal is accomplished , if necessary.

CC: Bruce Bell, Operation Manager of Public Works

Bill Bray, Deputy Director of Public Works

CITY OF PORTLAND

E-3

MEMORANDUM

TO: Rick Knowland, Planner
FROM: John Peverada, Parking Manager J.P.
DATE: May 15, 1997
RE: Proposed MMC Parking Garage and Office Building

I support the concept presented by Maine Medical Center to construct an office building and parking garage on the vacant lot at the corner of Congress and Forest Streets. In my opinion, aesthetically the proposed development will be an improvement to the area, however, there is a misconception. Whenever anyone hears about a parking garage associated with this project, they naturally assume that on-street parking in the area will be improved. The perception is that parking will not be an issue.

However, as I have previously stated, it is my opinion that the proposed parking garage associated with this project will not be large enough to handle the demand. In fact, after reading MMC's submission to the Planning Board, I believe that the figures quoted in the March, 1997 letter from Mr. Thomas Gorrill of DeLuca Hoffman, and the January 2, 1997 letter from Mr. Don McDowell support my assumptions. The following is my summary of the estimates provided by, or on behalf of, the hospital:

430	parking spaces proposed in the new garage
- 52+	spaces displaced from the existing lot (I'd say more)
- 228	spaces for the new building 4.6/1000 per Mr. Gorrill's letter
- 200+	spaces for vehicles relocated from the Gateway Shuttle, per Mr. McDowell (I'd say more)
- 27+/-	spaces on-street lost due to the proposed left turn lane on Congress St.
- 75	space shortfall

Correct me if you think that the above analysis is wrong, but I believe that everyone should be aware of this situation. Additional parking is needed for MMC visitors, patients and employees. Presently, the Bramhall lot is overflowing, with several cars stacked on the street waiting to get in to the lot on a regular basis. The Western Prom neighbors are complaining about on-street parking as are "customers of the hospital". I believe that unless the proposed garage at Forest and Congress Streets is enlarged, we will be duplicating the current problems at Bramhall St. / Western Prom in this neighborhood. The new garage should be larger, or the office building made much smaller.

If MMC proposes to offset the demand for parking by shuttling employees from an off-site lot, then they should present the City with a long-term lease, or verification of ownership of the lot. They should also assure the City that their employees will not be parking on the streets.

Finally, I quickly looked at the plans, and did not see a snow gate on the roof. How do they plan to dump and remove snow?

Please pass this memo on to the Planning Board and Council.

cc: Bob Ganley, City Manager
Joe Gray, Director of Planning
Alex Jaegerman, Chief Planner
Gloria Thomas, Department Head
Bill Bray, Deputy Director, Public Works

5-14M2.WPS

E-3

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Planning & Urban Development
FROM: John Peverada, Parking Manager J.P.
DATE: March 11, 1997
RE: Maine Medical Center Parking

Attached are copies of two orders that are tentatively on the March 17, 1997 Council agenda. As you can see, both orders deal with implementing two hour parking restrictions in the vicinity of Maine Medical Center (Thomas and Clifford Sts.), because of the unavailability of existing on-street parking due to the "all day parkers" who, I assume, are affiliated with Maine Medical Center.

Recently, I have been told by visitors of the hospital that there is a waiting line to get into the Bramhall St. parking lot between 11:00 am and 1:00 pm. People are forced to ride around the neighborhood looking for on-street spaces.

My purpose in bringing this to your attention is to let you know that parking is in very tight supply in the vicinity of Maine Medical Center, and each time unrestricted parking is taken off one street, those "all day parkers" are just moved another block away, putting a burden on another neighborhood.

In my opinion, Maine Medical Center should be encouraged to increase the size of the proposed parking garage at Congress and Forest Sts., so that their employees who currently park on the street will have an alternative. Mr. Carl Winslow, a landlord on Boynton St., has already inquired about having Boynton St. signed for two hour parking for the reasons outlined above.

cc: Bob Ganley, City Manager
Bill Bray, Deputy Director of Public Works
Joe Gray, Director of Planning
Alex Jaegerman, Chief Planner
Gloria Thomas, Department Head

ORDER (TAB) **ORDER AMENDING TRAFFIC SCHEDULE RE: THOMAS STREET - SPONSORED BY ROBERT B. GANLEY, CITY MANAGER.**

The Traffic Division has received a written request from the residents of Thomas Street to change the existing unrestricted on-street parking. The request is for a two-hour parking restriction for the entire street (Spring Street to Pine Street).

The unavailability of the existing on-street parking due to "All Day Parkers" is what ha prompted the residents to petition for the two-hour parking restriction. This action will allow Thomas Street residents use of the Residential Permit Parking Sticker Program.

The Traffic Division recommends approval of the proposed two-hour parking Traffic Schedule Amendment.

This item requires five affirmative votes for passage; after an opportunity for public comment has been given.

John - Fyl

ORDER (TAB) **ORDER AMENDING TRAFFIC SCHEDULE RE: CLIFFORD STREET - SPONSORED BY ROBERT B. GANLEY, CITY MANAGER.**

The Traffic Division has received a written request from the residents of Clifford Street to change the existing unrestricted on-street parking. The request is for a two-hour parking restriction for the entire street (Vaughn Street to Thomas Street).

The unavailability of the existing on-street parking due to "All Day Parkers" is what has prompted the residents to petition for the two-hour parking restriction. This action will allow residents use of the residential permit parking sticker program.

The Traffic Division recommends approval of the proposed Traffic Schedule Amendment.

This item requires five affirmative votes for passage; after an opportunity for public comment has been given.

<u>LICENSES:</u>

ORDER 221 (TAB) **ORDER GRANTING MUNICIPAL OFFICERS' APPROVAL FOR NEW AND RENEWAL STATE LIQUOR LICENSES AND SPECIAL ENTERTAINMENT PERMITS - SPONSORED BY NADEEN M. DANIELS, CITY CLERK.**

Atch

5-5

CITY OF PORTLAND

MEMORANDUM

TO: Joe Gray, Director of Planning
Rick Knowland, Planning
Tom Erico, Traffic Engineer
FROM: John Peverada, Parking Manager J.P.
DATE: March 19, 1997
RE: Maine Medical Center Parking

Please find attached a typical letter that I receive on a regular basis from the patrons of Maine Medical Center. Unfortunately, this individual felt compelled to write to the City Manager.

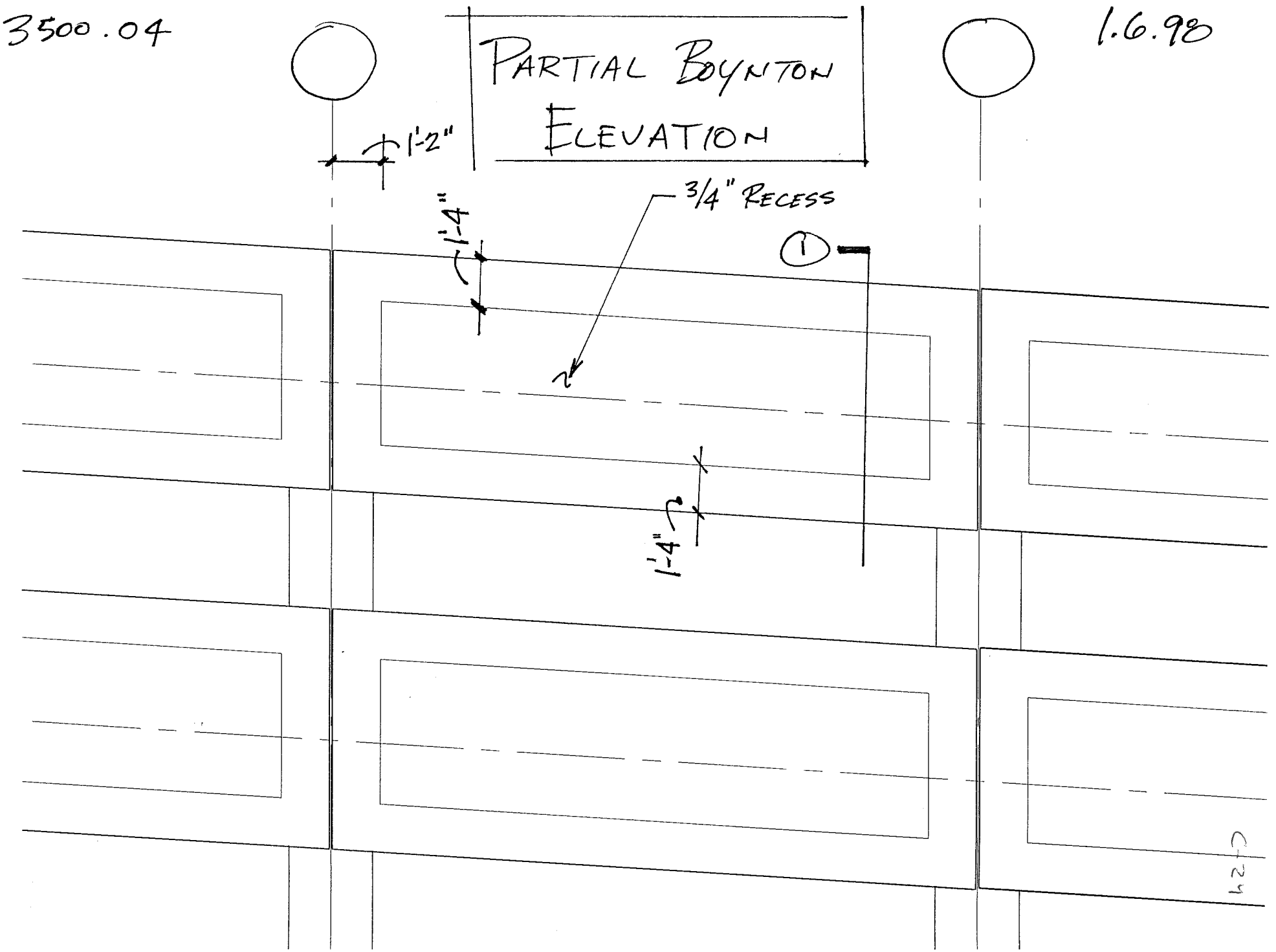
I am sending you this information to you in hopes that you will be able to persuade Maine Medical Center to increase the size of their proposed parking garage. Additional parking is definitely needed in this area, regardless of what Maine Med or their consultants state.

MALL : MEDICAL CENTER

3500.04

CARL WALKER, INC.

1.6.98



FENCING MATERIAL

C-5

Product Presentation

AEGIS II™ - A revolutionary system of fencing posts, framework and mounting accessories that are easily assembled attractive "good neighbor" appearance with no exposed fasteners.

The Aegis II™ Advantage

STRENGTH
- Aegis II™ is the strongest ornamental component fence system available.
- Superior vertical and horizontal load capacities with all-steel framework and specially designed Forerunner™ Rail.

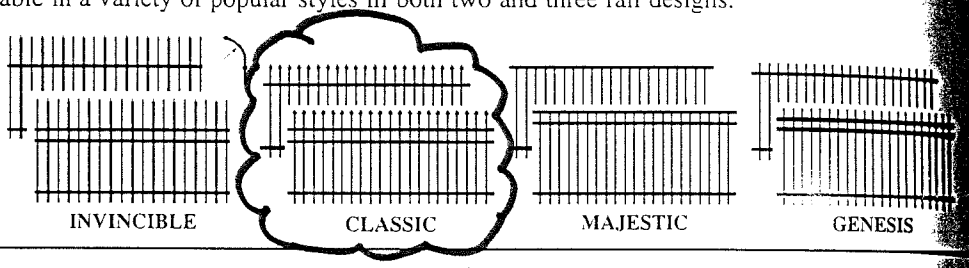
SECURITY
- No external fasteners resulting in increased security and strength.
- Special one-way security fastener for rail-to-bracket connection.
- Internal retaining rod for picket-to-rail connection cannot be breached when panel is in place.

VALUE
- Due to the unique patented design using high technology roll form equipment (in-house tube Ameristar is able to supply an affordable ornamental fence as a welcome alternative to chain fencing.

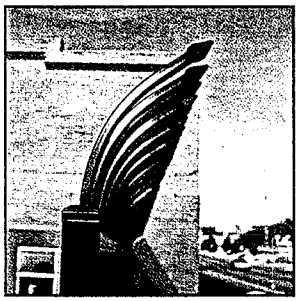
QUALITY
- G-90 galvanized steel resulting in superior rust protection.
- Maintenance free ***Permacoat***™ (double layer) powder coat system.

APPEARANCE
- Architecturally pleasing, free flowing lines with no external fasteners.
- Visually reflects strength, security and beauty.
- Offered in four colors - Black, Brown, Desert Sand and White.
- Available in a variety of popular styles in both two and three rail designs.

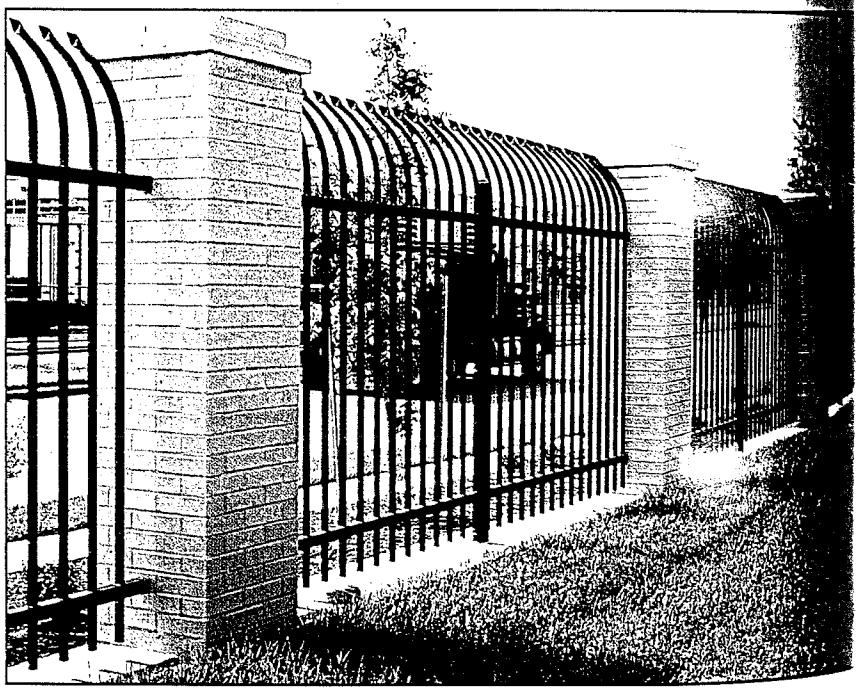
Styles Available



Invincible



Available In:
Style I2 (2-Rail)
or I3 (3-Rail)



2-Rail

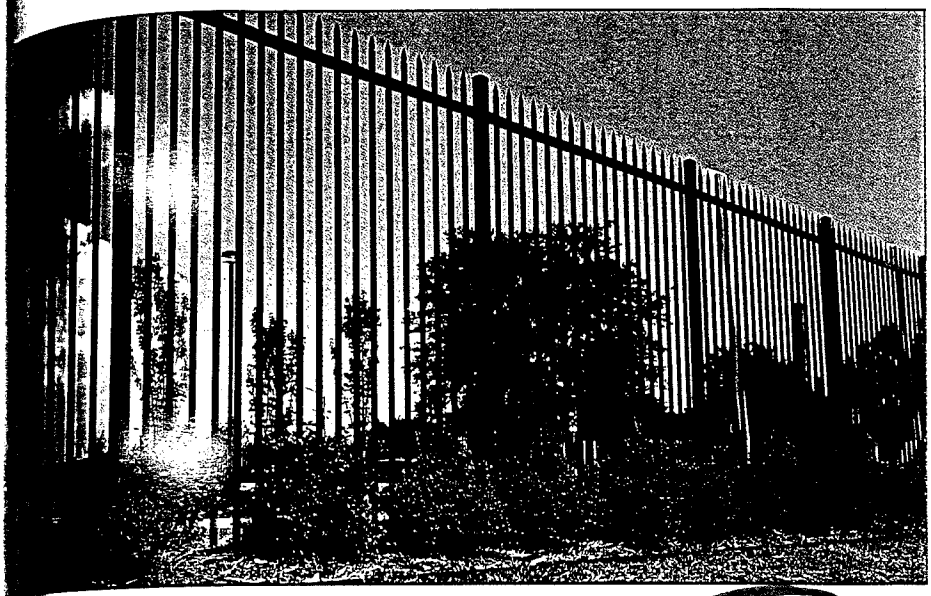
Security and protection are combined with the beauty of ornamental fencing in the Invincible design. Each picket is spear-shaped and extends one foot above the top rail, curving outward to make this fence incapable of being overcome, as the name implies.

3-Rail

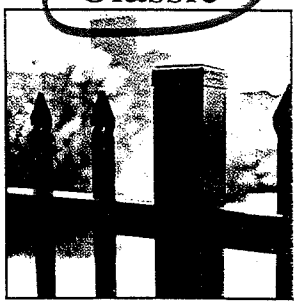
The extra strength of the third rail, coupled with the la strength of the Forerunner™ cross-section, make the Invincible an increasingly popular alternative to sec fencing of chain link and barbed wire.

AMERIS

02830/AMI
BuyLine 3012



Classic



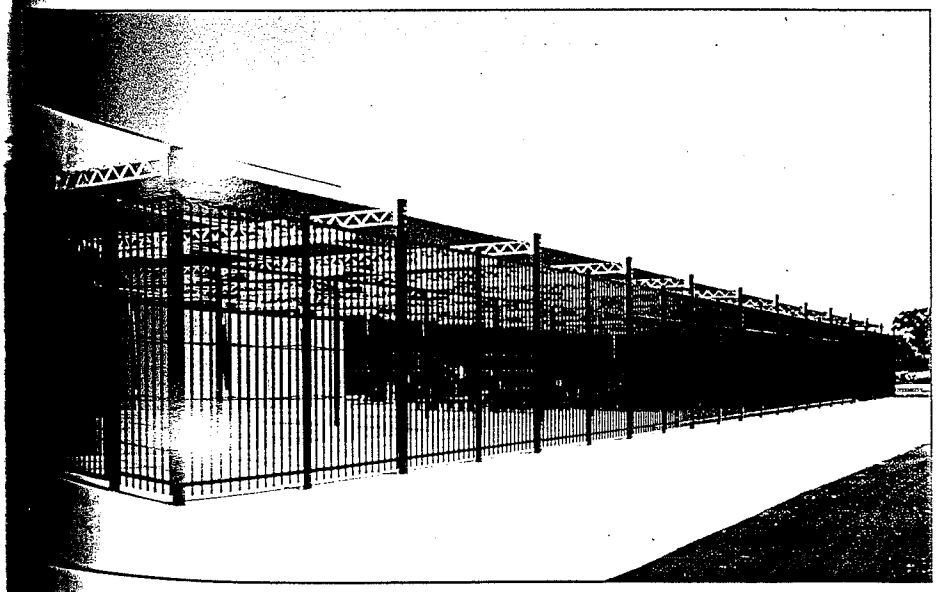
Available In:
Style C2 (2-Rail)
or C3 (3-Rail)

Rail

ristar's spear-shaped picket extends through the runner™ top rail to form the attractive traditional Classic gn. The picket s . is formed with a 3/8" diameter ded tip rather than a sharp point.

3-Rail

Adding the third rail gives the traditional Classic look 50% greater strength. It is ideal when situations require greater fence heights and the fence must withstand heavier vertical loads.



Majestic

Available In:
Style M2 (2-Rail)
or M3 (3-Rail)

l

jestic design is formed to a configuration of porary simplicity that maintains a stately look of Use of the special bottom-punched top rail with ruding pickets makes this a safe perimeter for a a.

3-Rail

Large estates and many companies are moving toward the strength and "no-nonsense" elegance of the 3-Rail Majestic design. The double top rail at the top of this fence enhances the lines of many contemporary facility designs.

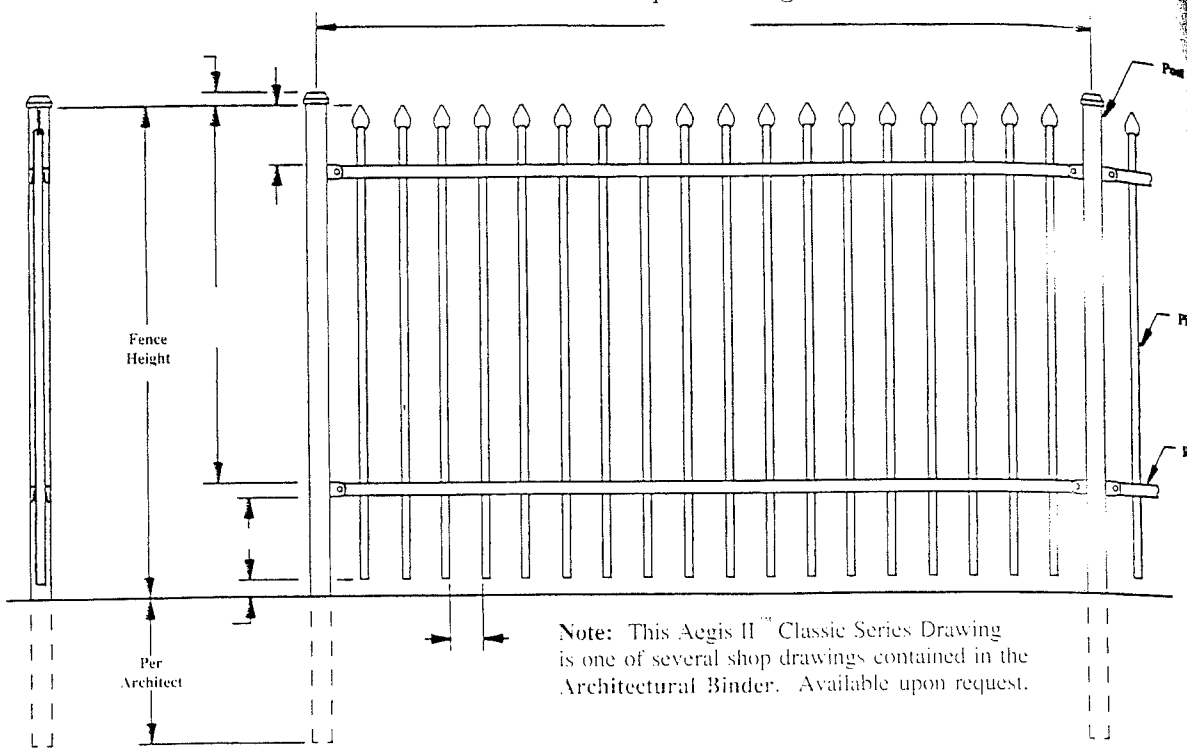
Genesis (Not Pictured)

Genesis style offers extended pickets similar to the Classic, but is differentiated by having a flat rather than a -shaped picket top. Genesis is becoming increasingly popular as a perimeter for apartments and condominiums. ble in both 2 and 3-Rail styles (Style G2 or G3).

C-7

Comprehensive Product Information

Shop Drawings



Note: This Aegis II™ Classic Series Drawing is one of several shop drawings contained in the Architectural Binder. Available upon request.

Framework

Pickets	Rails	Posts
1" X 16 GA.	1-3/4" * X 14 GA.	See Table Below

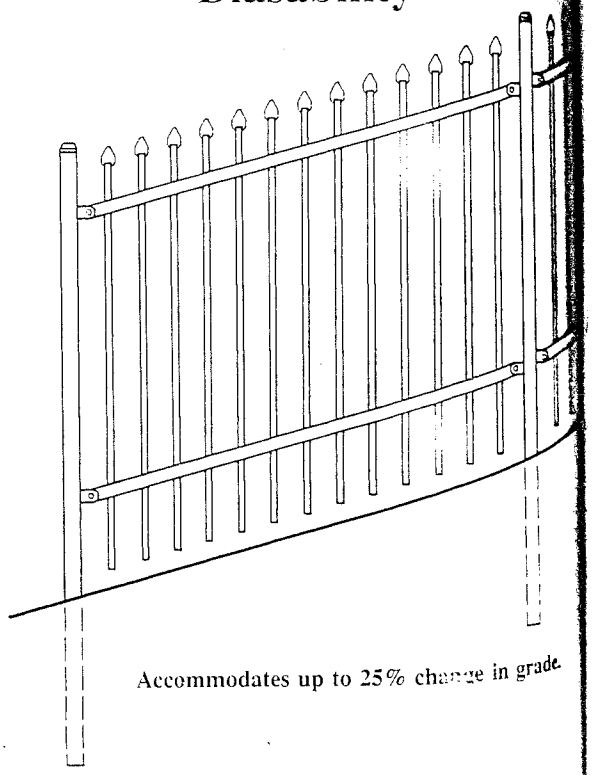
* Special Roll-Formed Forerunner™ Shape

Wind Loading

Height (FT)	Rail Length	Post Size	Wind Load Capacity Factor (PSF)	Typical Wind Load Capacity (mph)
6	6	2-1/2" X 12 GA.	45.5	133
		3" X 12 GA.	54.6	146
	8	2-1/2" X 12 GA.	34.2	116
		3" X 12 GA.	41.0	127
7	6	2-1/2" X 12 GA.	33.4	114
		3" X 12 GA.	40.0	125
	8	2-1/2" X 12 GA.	25.0	99
		3" X 12 GA.	30.0	108
8	6	2-1/2" X 12 GA.	25.6	100
		3" X 12 GA.	30.7	110
	8	2-1/2" X 12 GA.	19.2	87
		3" X 12 GA.	23.0	95
9	6	3" X 12 GA.	24.0	97
10	6	3" X 12 GA.	21.6	92

Note: Mph calculated using ANSI/ASCE 7-88, "American Society of Civil Engineers Minimum Design Loads for Buildings and other Structures." Exposure Category B (urban and suburban areas with closely spaced obstructions having the size of single-family dwellings or larger). For wind loading applicable to a particular specification, consult the appropriate Building Code.

Biasability



Accommodates up to 25% change in grade.

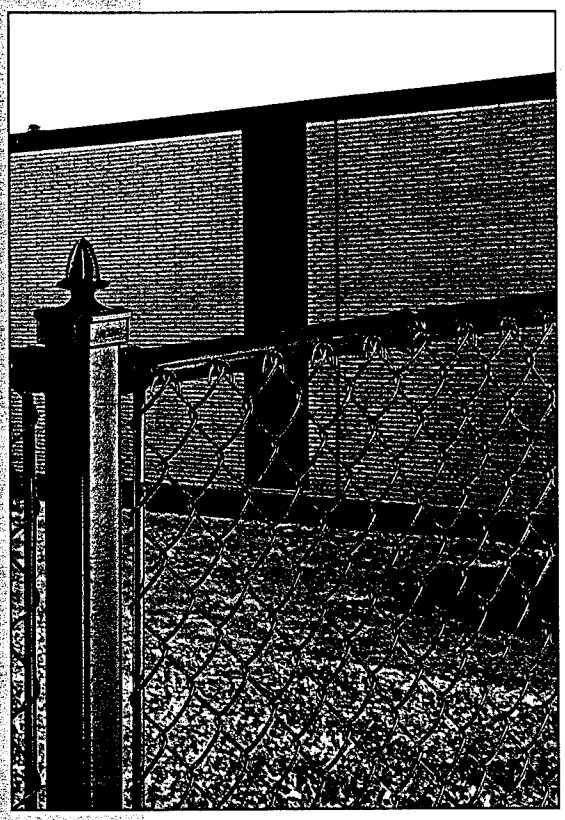
AMERISTAR

C-8

SECURITY GRATING @ GARAGE

Choosing the proper posts

Anchor framework is available in



The End, Corner and *Gate Posts* must be strong to withstand the strain of the fabric which is stretched between them. If they are not of the proper strength, they will bow or bend.

COMPARISON CHART
Based on Calculated load/or yielding of Post

POST TYPE	BEND STRENGTH
2 1/2 " Square Post	547 lbs.
3" O.D. Pipe Post (Sch 40)	444 lbs.
2 1/2" O.D. Pipe Post (Sch 40)	234 lbs.

A 2 1/2 " Square Post Is 25% Stronger Than a 3" O.D. Sch. 40 Pipe Post.

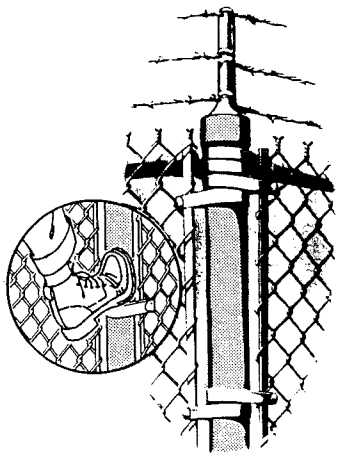
The clips that attach the fabric and posts do not afford a foothold to climb.

You may consider these square posts

OR

~~You may consider round posts...~~

- With Round Corner, End or Gate Posts You Lose a Degree of Security.
- The Bands That Hold the Fabric to a Round Post Act as a Ladder to Climb.
- The Round Band Can be Removed by Loosening its Nut & Bolt.
- Bands are Also Less Attractive Than the Clip that Holds the Fabric to Anchor's Square Post.



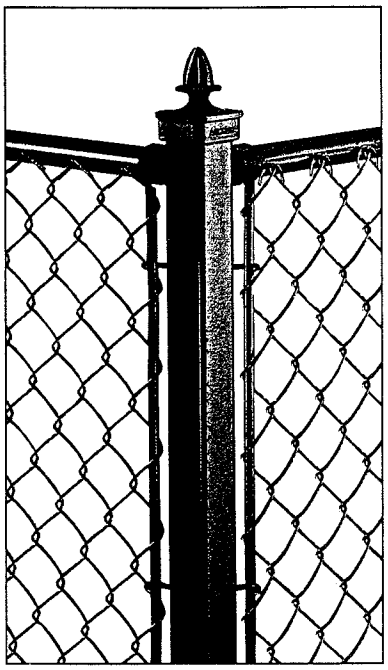
Anchor offers both the pipe posts and the square posts...but...you get more for your money with the stronger, more attractive square posts.

Complete drawings and specs available in CAD or hard copy.

410/633-6500

You must also choose a coating for your framework

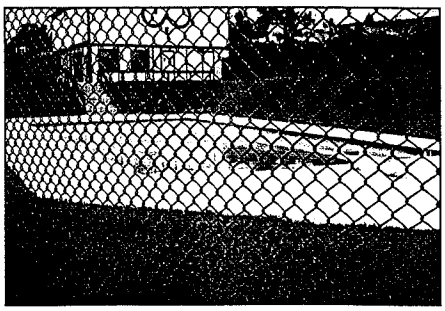
Whether you choose the square end, corner or gate post, and the "C" line posts; or the pipe framework, all are available with galvanized coating or thermally fused vinyl coated over galvanize.



Like the fabric, the metallic galvanized coating will have limited life because of oxidation and rust. On the other hand, the vinyl coated framework will give many additional years of maintenance free life and service.

A quality coated fence system will not only add many years of life to your fence, but will also enhance the appearance of your factories, schools, parks, or other properties. This will give the message that your facility is a major contributor to a successful community.

We at Anchor take more steps to assure that your vinyl coating will be the very best value your money can buy. While some coaters merely apply vinyl to uncleaned or semi-cleaned framework pipe, Anchor takes all of the steps listed to the right so that all parts of the thermally fused PVC framework comply to the adhesion specifications listed in ASTM F1234.



Vinyl Coated Framework is Available in

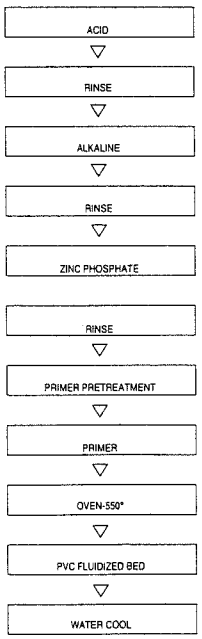
- Woodland Green
- Ensor Green
- Earth Brown
- Black

Custom colors available at slightly higher cost.

Ask for complete specifications & drawings.

410/633-6500

Anchor's 11 Step Cleaning Process



No one else does this much!

C-11

When it comes to chain choice of

There are 3 different categories of fabric coatings that you may choose from,

Galvanized

Aluminized

Or Vinyl Coated over Galvanized Wire

The galvanized and aluminized coatings are metallic and subject to oxidation, *and finally, rust*. This is accelerated as a result of *acid rain* and other pollutants that come in contact with the fence coatings.

Unlike the vinyl coating which is impervious to acid rain, these metallic coatings will *require painting* to maintain their strength and appearance.

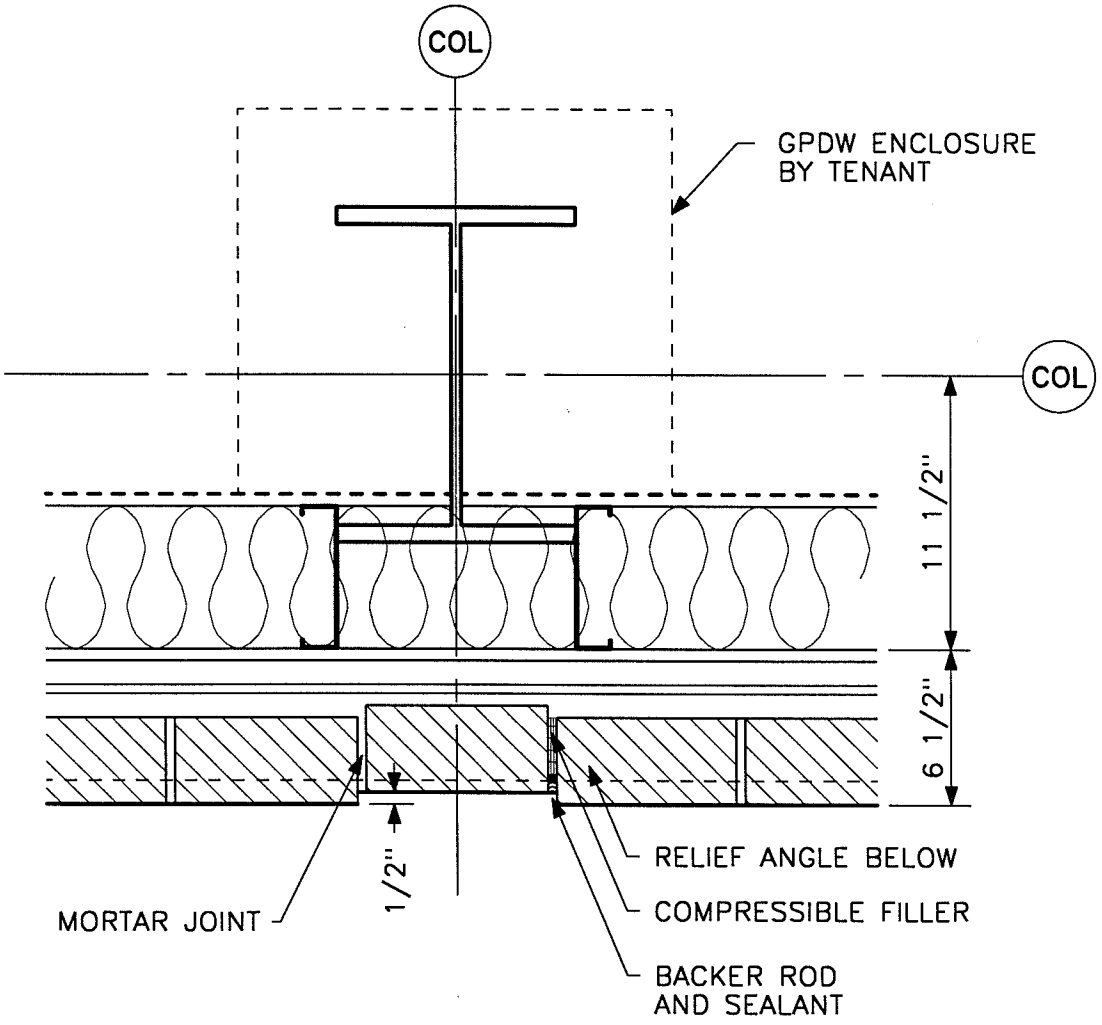
The third choice of coating is vinyl coated over galvanized. There are actually three types of vinyl coated fabric,

1. Extruded vinyl coated,
2. Extruded & Adhered to (glued) vinyl coated,
3. Thermally fused vinyl coated.

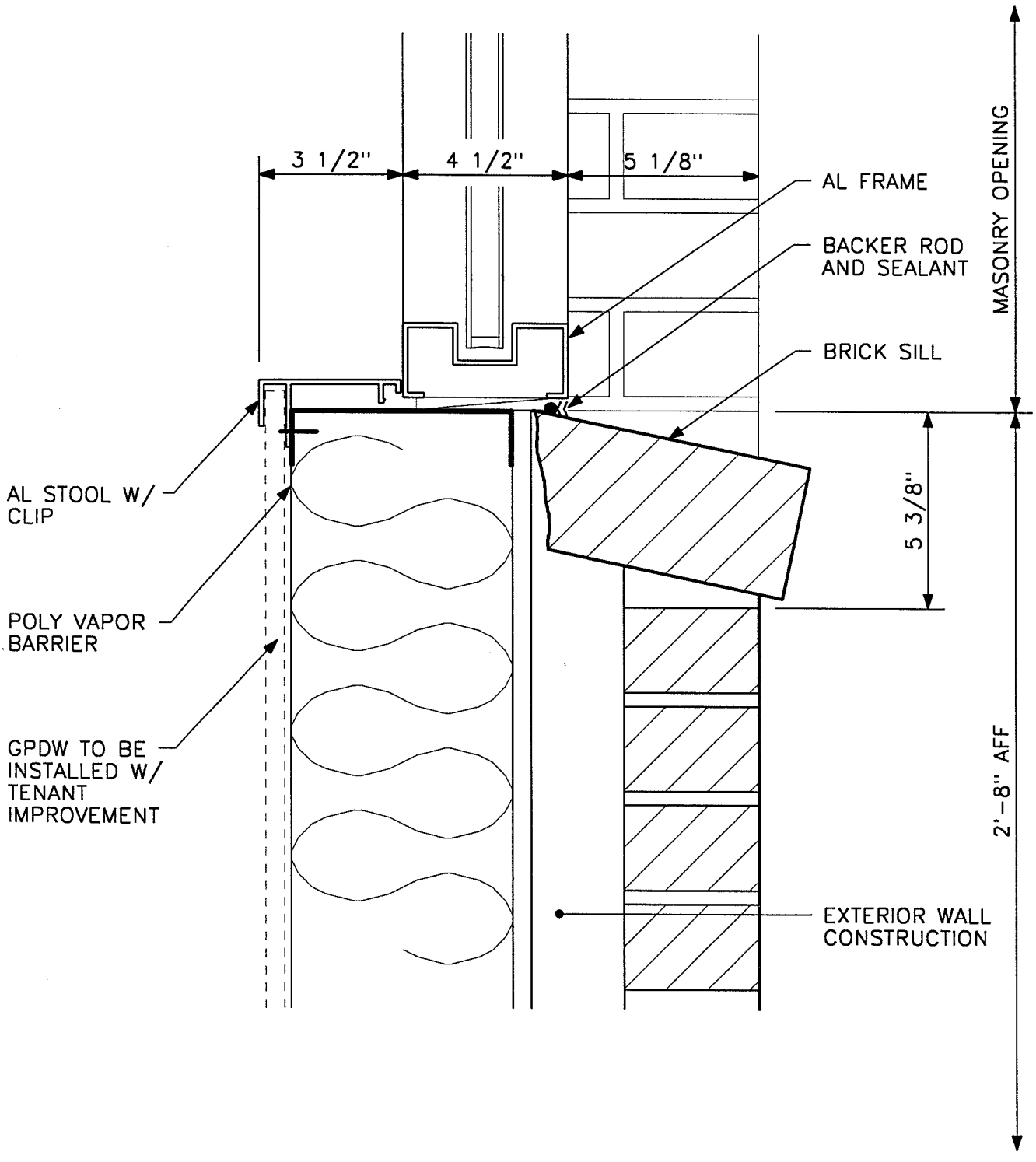
Ask for complete details.

410/633-6500

VERTICAL DETAIL WITH RECESSED ACCENT BRICK ON BUILDING FACADE

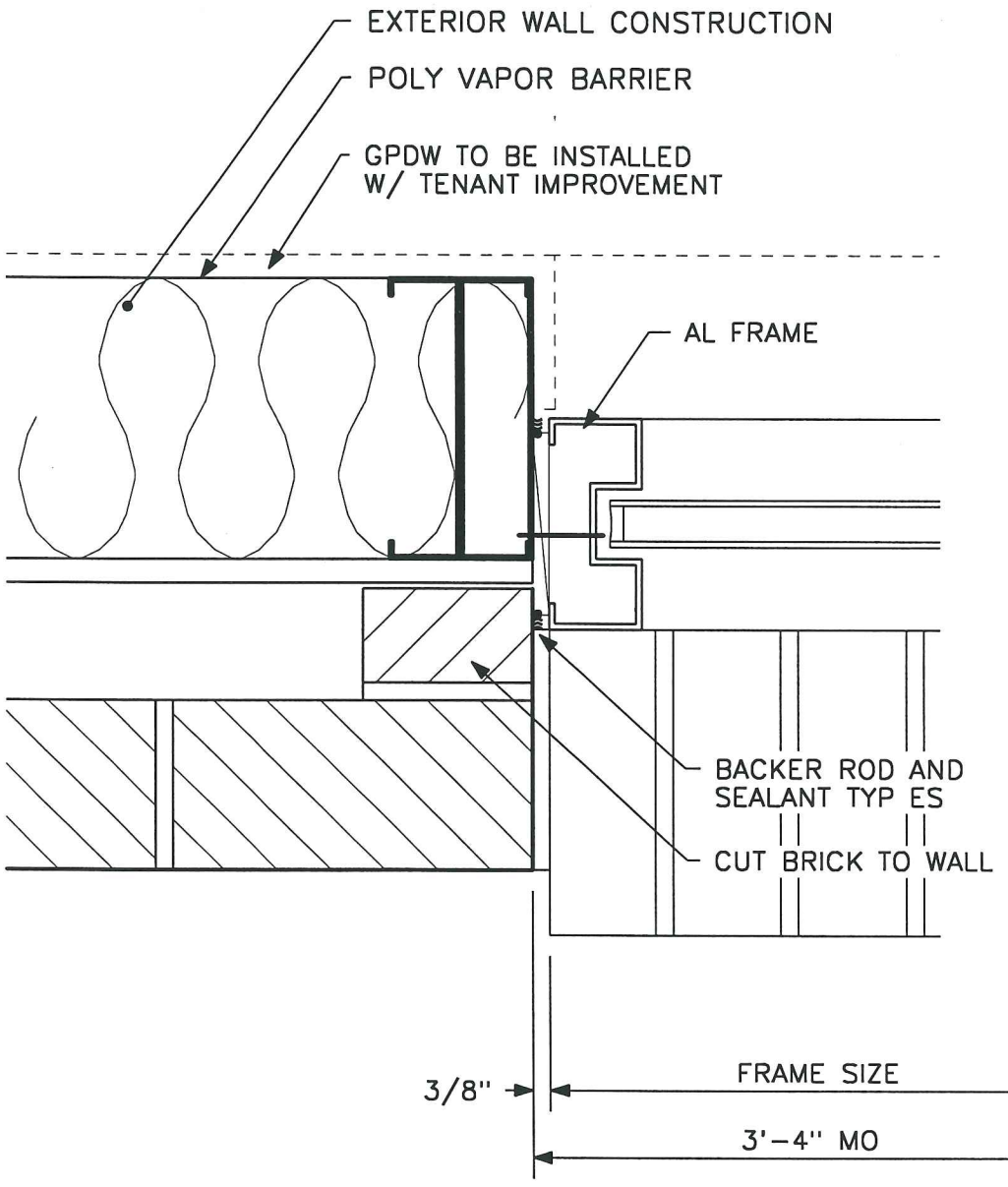


BRICK RECESS AT RELIEF ANGLE			C4
1 1/2" = 1'-0"		REF: A5.1, A5.2	



WINDOW SILL DETAIL

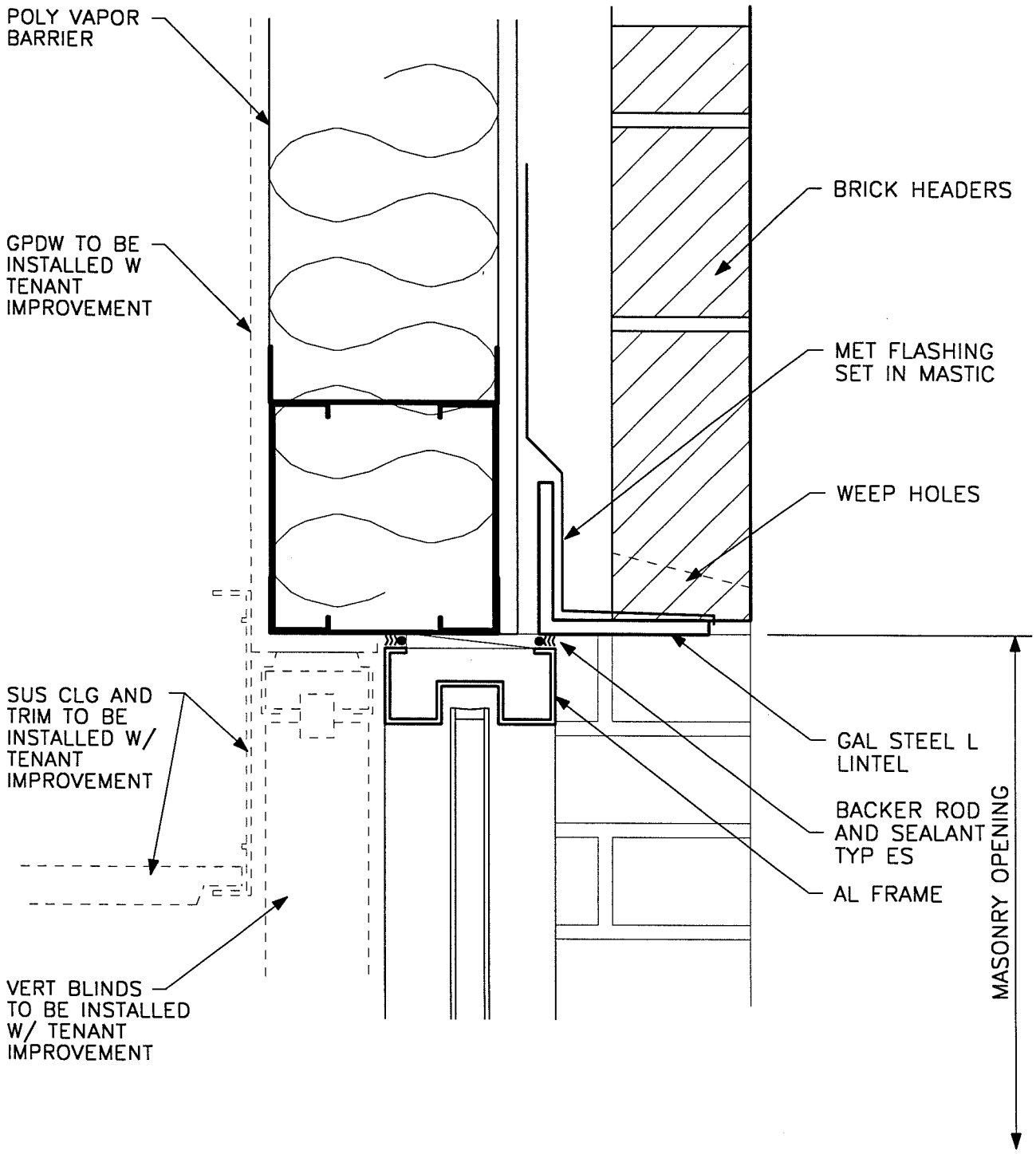
3" = 1'-0"		REF: A10.1	**A1**



WINDOW JAMB DETAIL

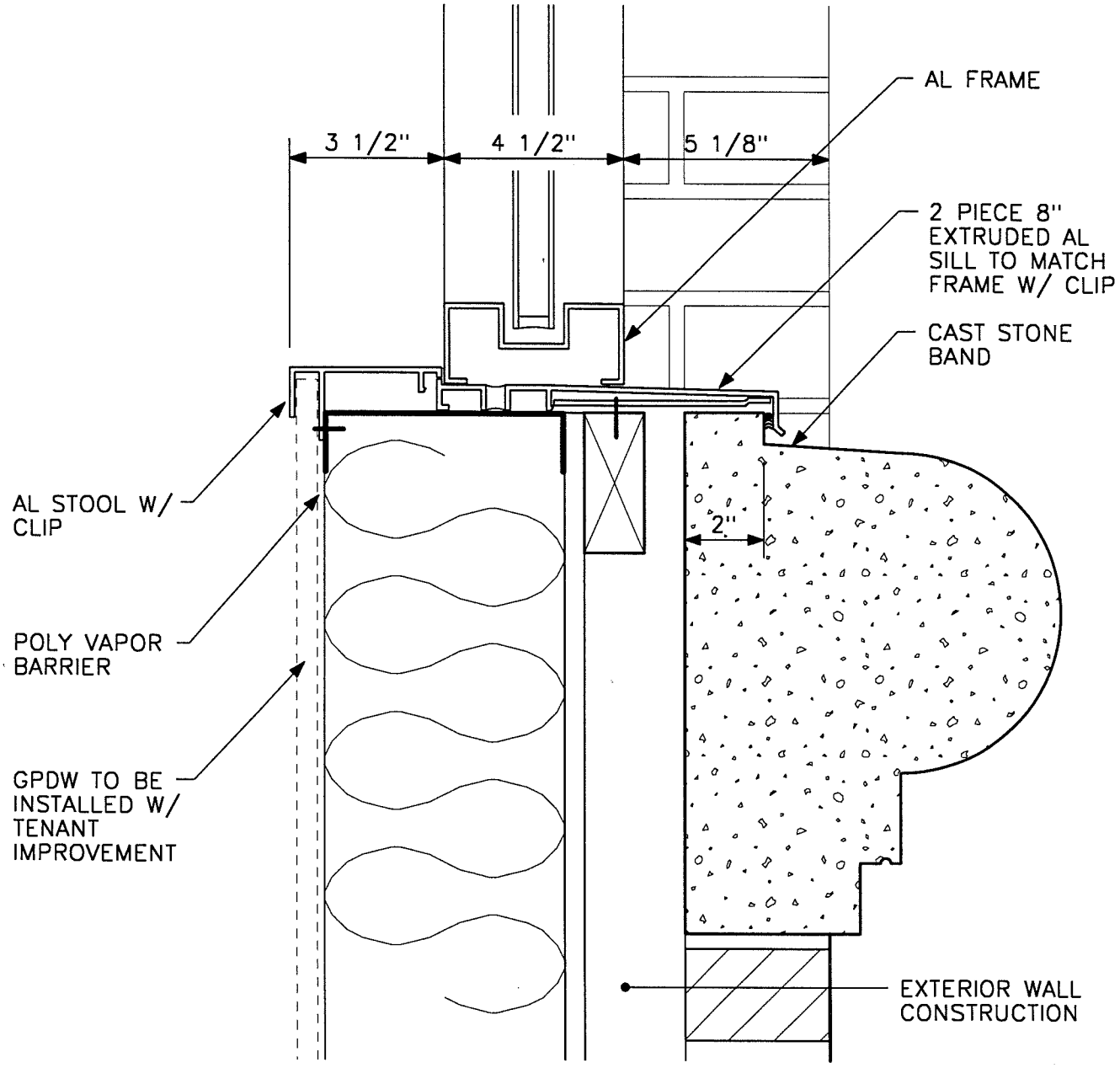
B1

3" = 1'-0"		REF: A10.1



WINDOW HEAD DETAIL

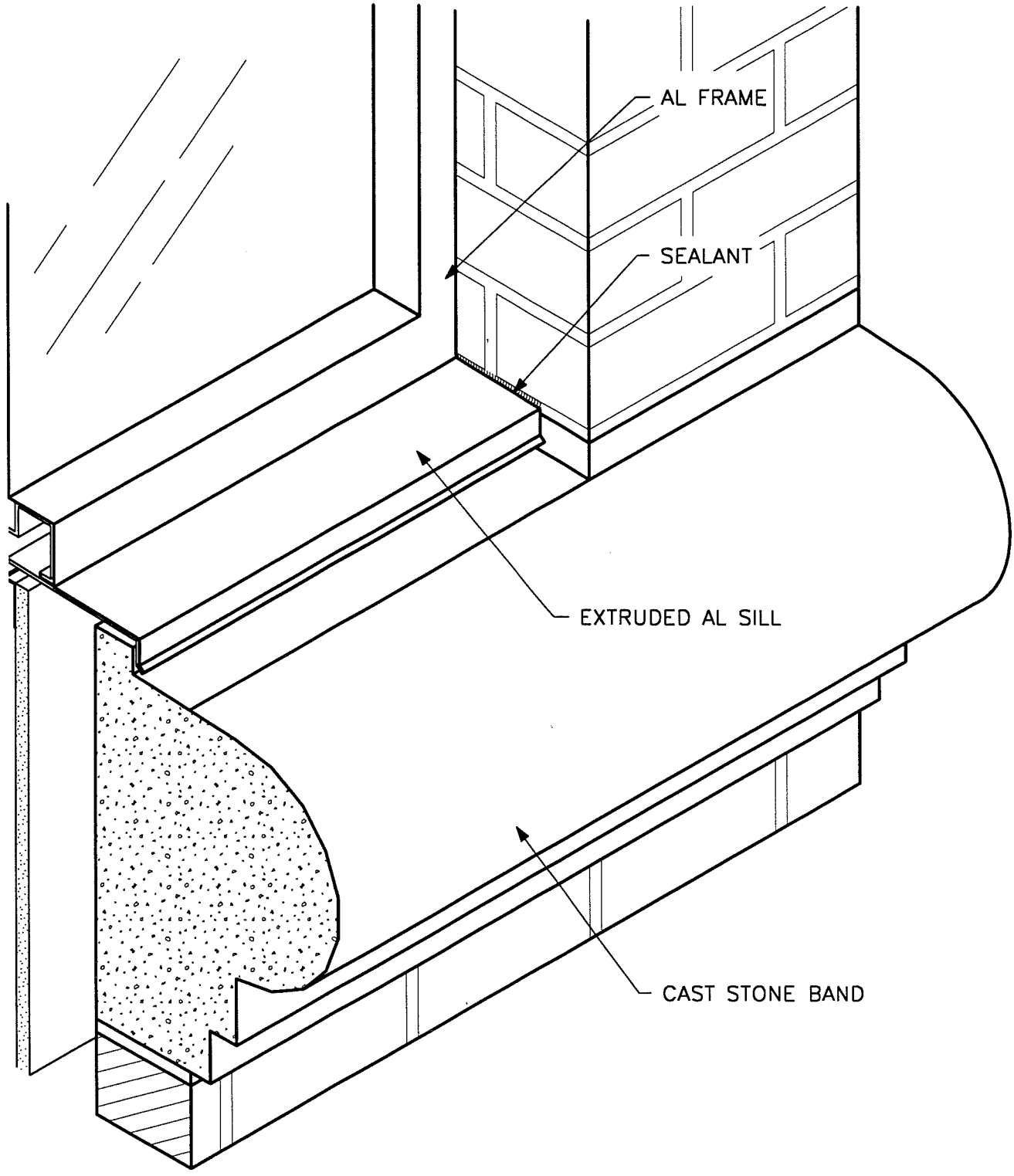
3" = 1'-0"		REF: A10.1	**C1**



NOTE: SEE DETAIL B2/A10.6 FOR ISOMETRIC VIEW OF SILL CONDITION

WINDOW SILL DETAIL AT CAST STONE BAND

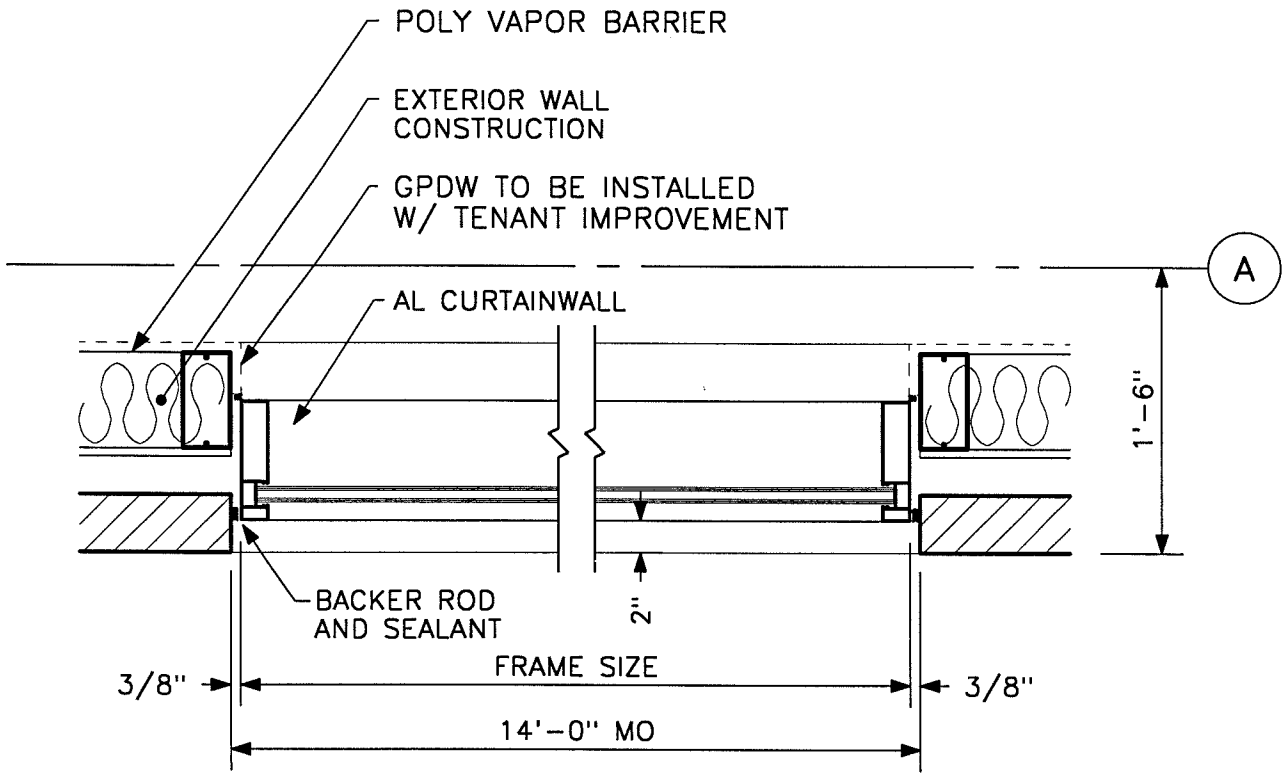
3" = 1'-0"		REF: A10.1	**A2**



ISOMETRIC WINDOW SILL DETAIL AT CAST STONE BAND

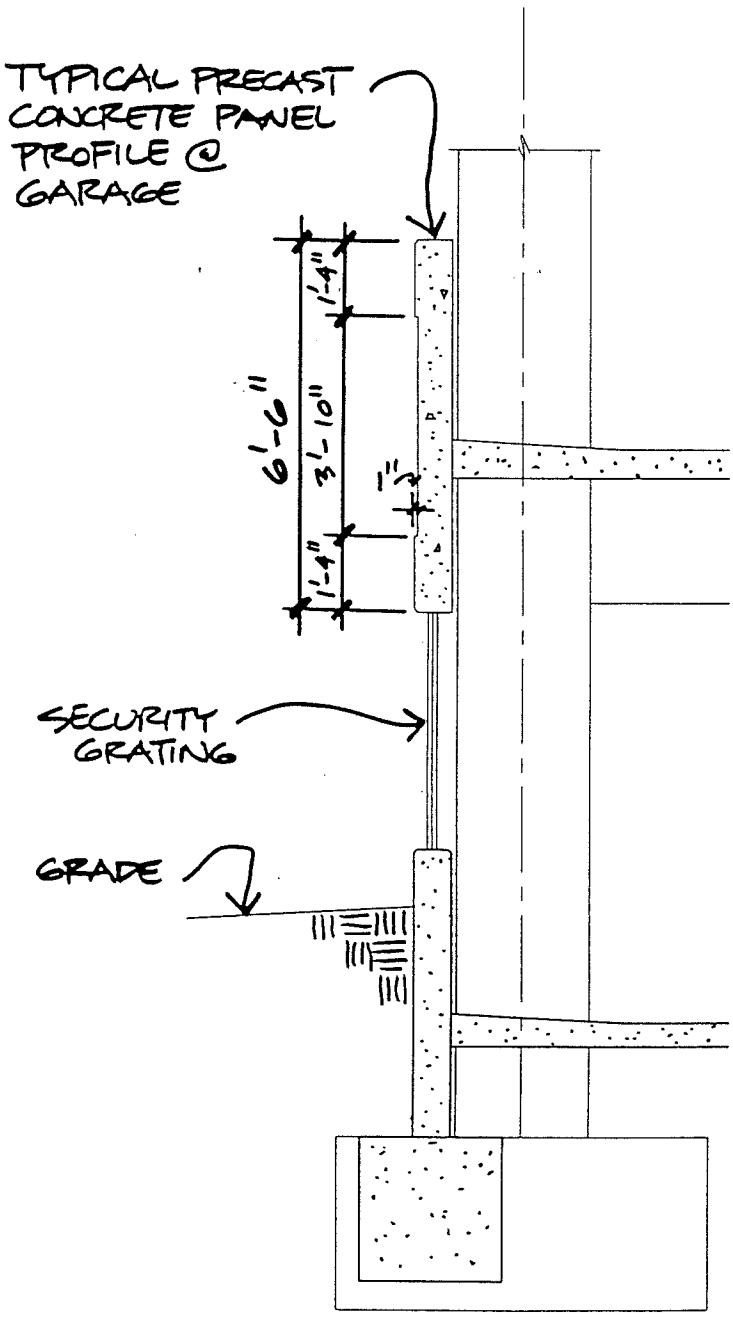
B2

NTS		REF: A10.6



PLAN DETAIL

1" = 1'-0"		REF: A2.3	C2



4 BASEMENT WALL SECTION
1/2" = 1'-0"

C-20

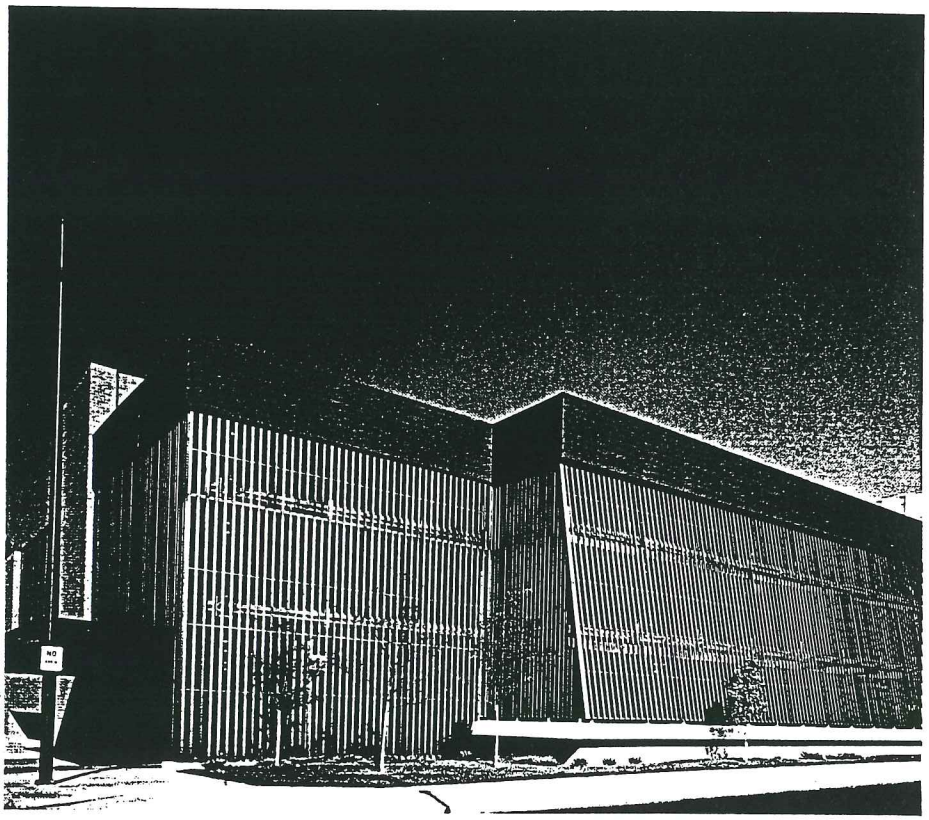
C/S VERT-A-CADE

ROOF TOP MECHANICAL SCREENING MATERIAL

LINCOLN NATIONAL LIFE INSURANCE CO., *Ft. Wayne, Indiana. Architect:* **MARTINDALE TOURNEY & GIBSON, INC.**, *Ft. Wayne, Indiana. Parking Garage Screen: A modified version of the C/S Vert-A-Cade 500 system. Finish: C/S Duranodic #313 Dark Bronze.*

Whatever the sight screening problem, there is a C/S Vert-A-Cade pattern to do the job—attractively and effectively.

A wide range of existing and completely new patterns are available, each varying in width, depth, shape, module and free area.



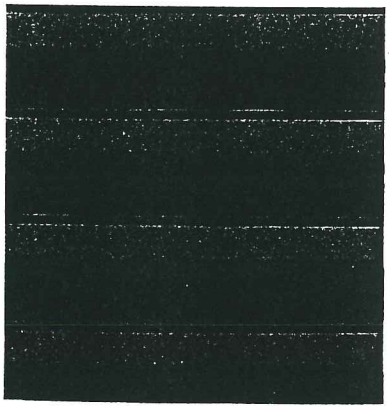
SPECIFICATION SUMMARY

1. GENERAL: The aluminum screening material as shown on the drawings shall be Vert-A-Cade 500 (or other pattern), as manufactured by Construction Specialties, Inc., Cranford, New Jersey, San Marcos, California or Mississauga, Ontario.

2. MATERIALS: All Vert-A-Cade components and trim shall be of aluminum. Miscellaneous hardware shall be of aluminum or type 302 stainless steel.

3. CONSTRUCTION: Fasteners for anchorage of the Vert-A-Cade blades shall be concealed so as not to be visible on the exterior face of the material.

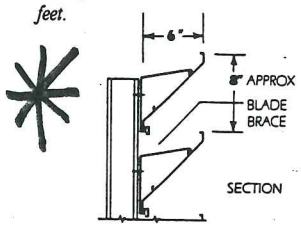
4. FINISH: Vert-A-Cade panels and trim shall be in a standard C/S Kynar 500 finish. Other finishes available: C/S Duranodic 300, C/S Duracolor, Clear Anodize, and C/S TRI-X. Aluminum supports shall be in mill finish. A 5 year or extra cost 20 year limited warranty against failure of the Kynar 500® finish shall be supplied.

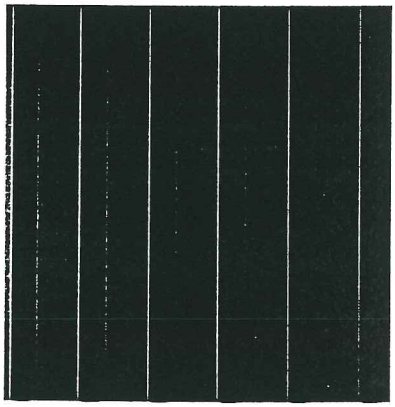


VERT-A-CADE 300

Free Area 58%

Extruded aluminum, 6063-T52 alloy, minimum .081" thick. No blade joints in sections less than 20 feet.

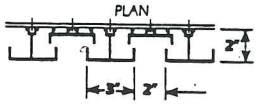


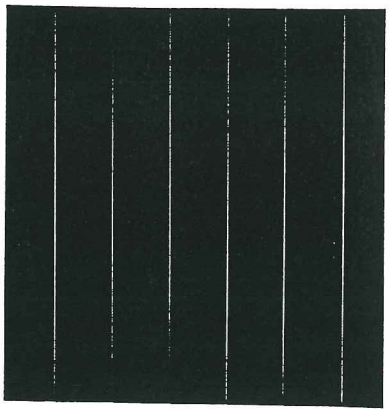


VERT-A-CADE 500

Free Area 20%

Extruded aluminum, 6063-T52 alloy, minimum .062" thick. No horizontal blade joints in sections less than 20 feet high.

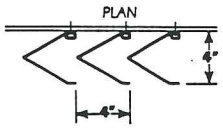


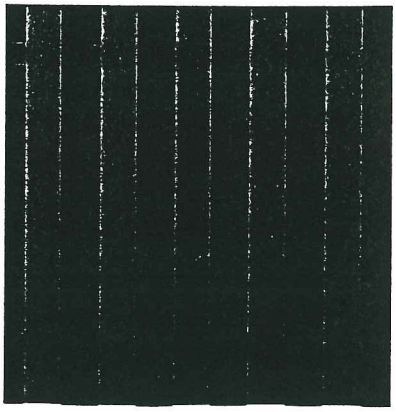


VERT-A-CADE 400

Free Area 32%

Extruded aluminum, 6063-T52 alloy, minimum .081" thick. No horizontal blade joints in sections less than 20 feet high.

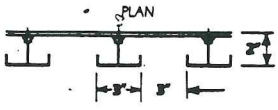




VERT-A-CADE 500M

Free Area 50%

Extruded aluminum, 6063-T52 alloy, minimum .062" thick. No horizontal blade joints in sections less than 20 feet high.

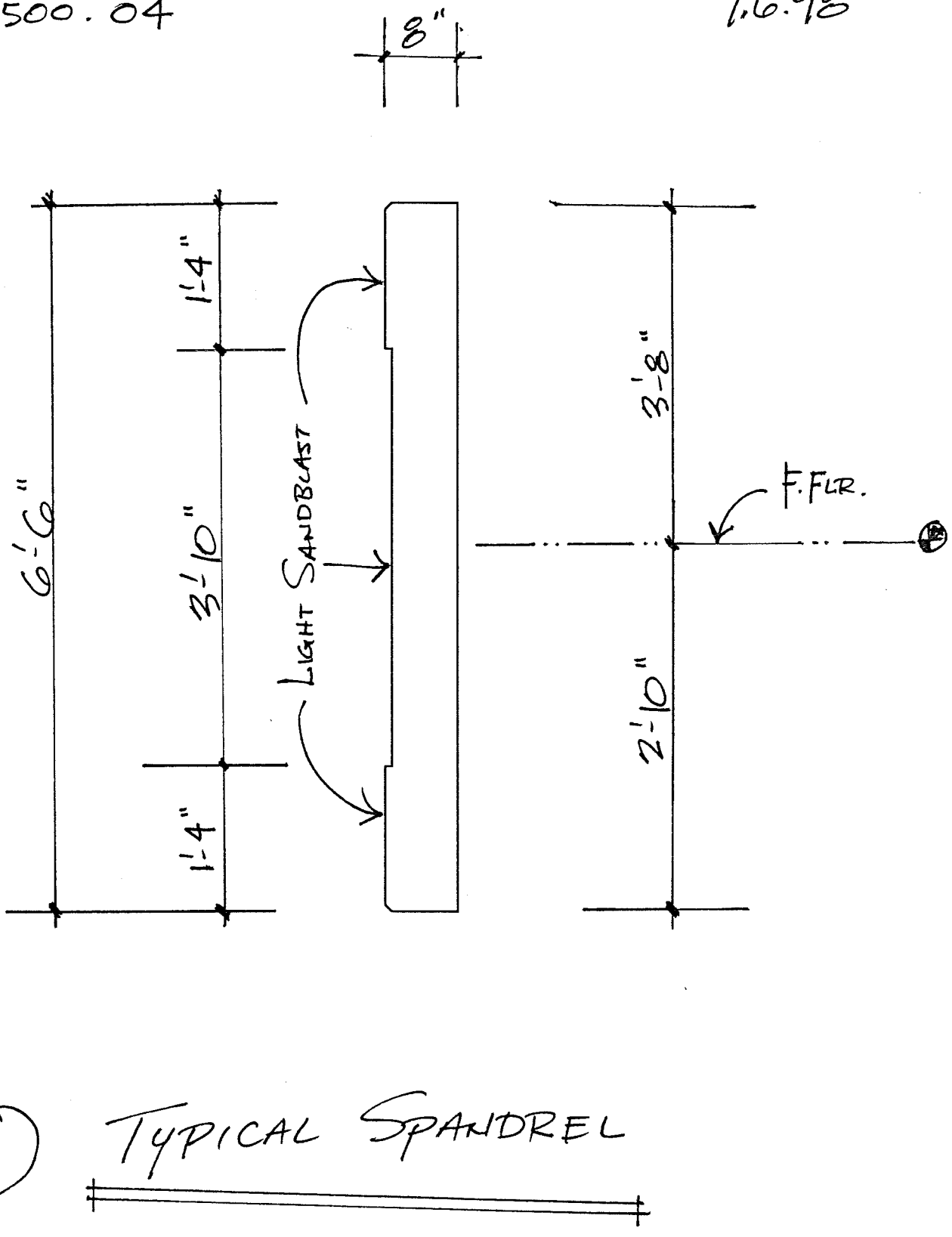


MAINE MEDICAL CENTER

3500.04

CARL WALKER, INC.

1.6.98



1 TYPICAL SPANDREL

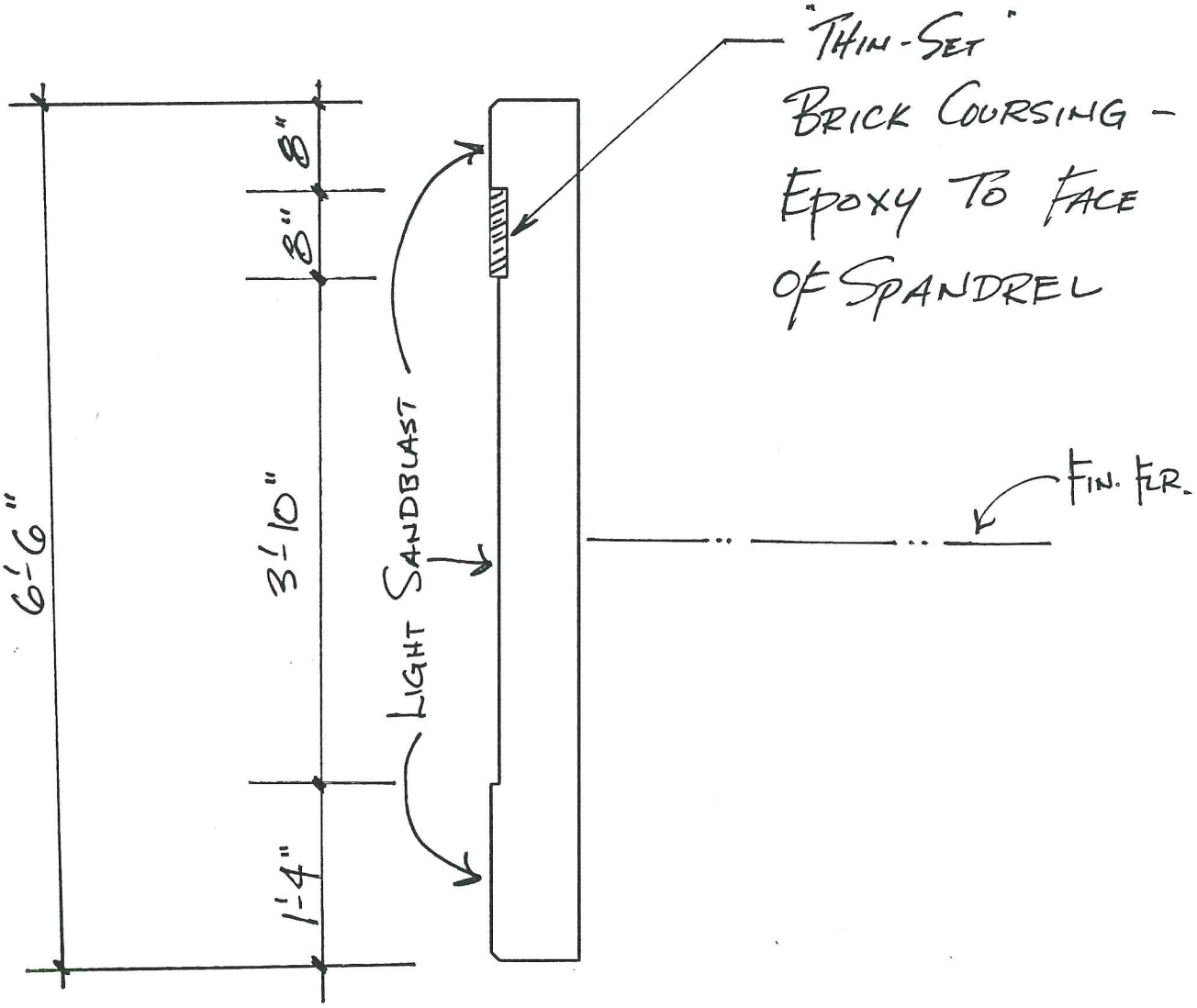
MAINE MEDICAL CENTER

3500.04

CARL WALKER, INC.

C-22

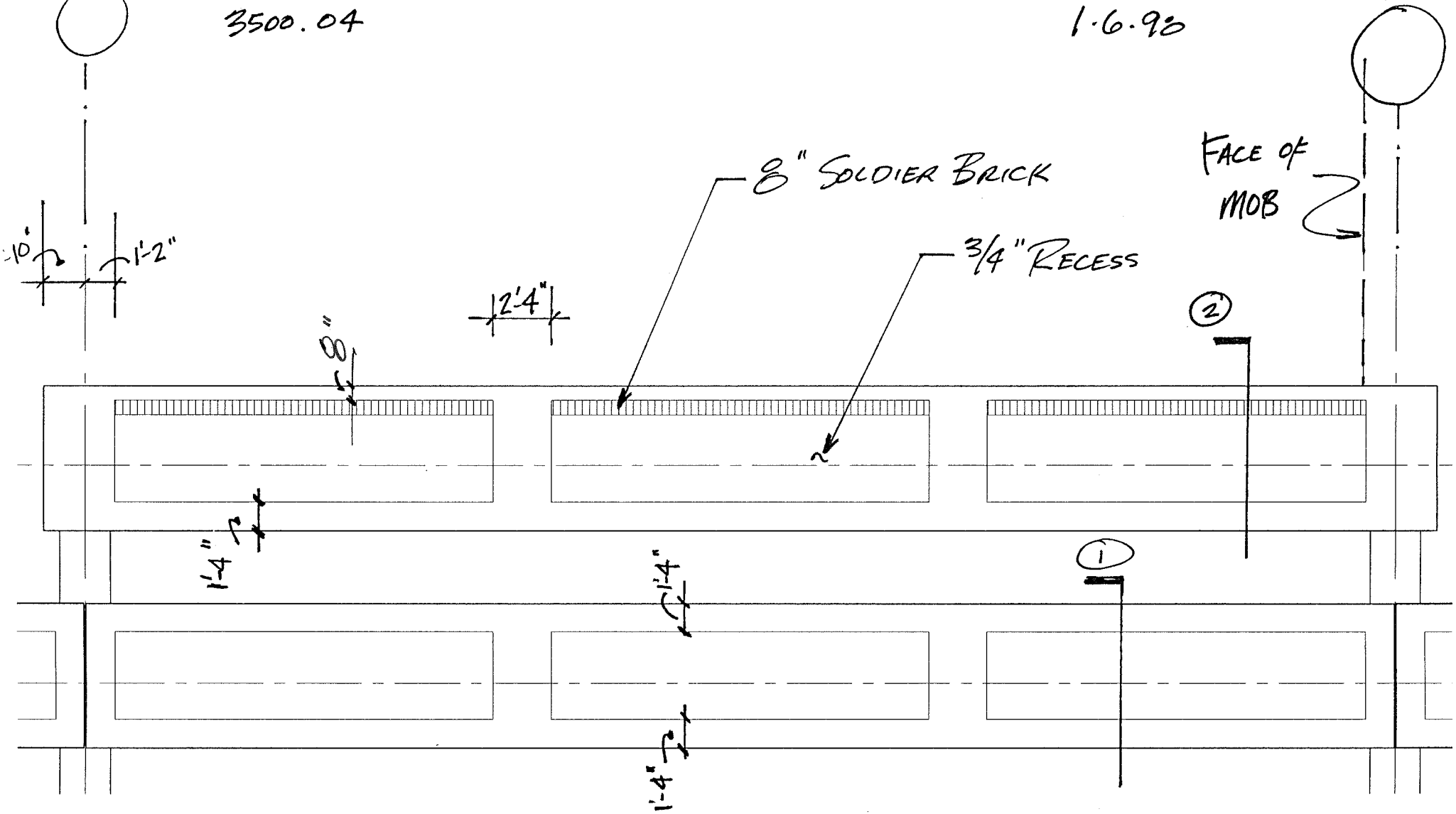
1.6.98



(2) LEVEL 2 SPANDREL

MAINE MEDICAL CENTER
3500.04

CARL WACKER, T.C.
1.6.98

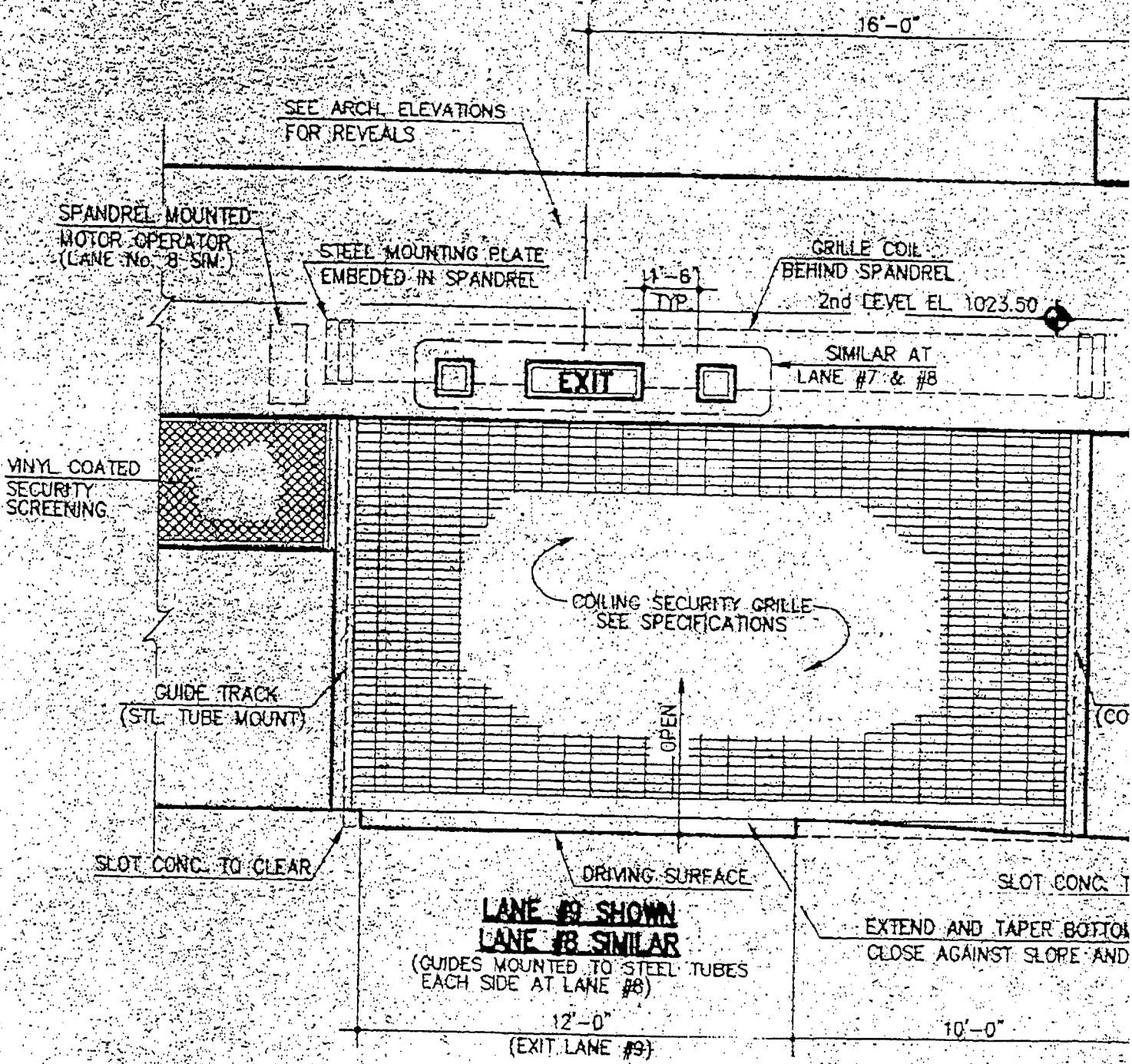


PARTIAL FOREST ST. ELEVATION

C-23

PROPOSED SECURITY GATE @ GARAGE ENTRY/EXIT

C-4



1 / A11.2 ELEVATION

SCALE: 1/4" = 1'-0"

HARRIMAN ASSOCIATES

11. *We are very interested in the latest version of the skywalk. Please let us know when the latest version is available. Obviously, we view the building and skywalk as a cornerstone project to help revitalize this area of Congress Street.*

    The skywalk design is still being reviewed by Maine Medical Center. The final design will be forwarded as soon as it is available.

If you have additional questions, please call me.

Sincerely,
Harriman Associates

Patrick S. Costin, AIA
Project Architect

sjtho

Enclosure

cc: Jim Clarkson (via fax 972-931-8966)
Jim Morrison (via fax 871-6195)

ATTACHMENT G-1

Architects + Engineers

HARRIMAN ASSOCIATES

One Auburn Business Park
Auburn, Maine 04210

207.784.5100 telephone
207.782.3017 fax
www.harriman.com

Offices in Maine
and Connecticut

January 30, 1998
Fax Confirmation Sent January 30, 1998

Mr. Rick Knowland
Senior Planner
Planning & Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Maine Medical Center
Medical Office Building, Parking Structure and Overhead Connector
Portland, Maine
Project No. 97.129-00

Dear Rick:

The following responses are comments to your letter, dated December 24, 1997, outlining staff comments regarding the proposed Maine Medical Center Office Building on Congress Street.

1. *Please submit catalog cut information on the proposed grating, fencing material, and security gate.*

   See attached cut sheets for information.

2. *Describe the dark vertical detail (width, material, it is indented?) on the facade.*

   See attached detail drawing C4 for information on recessed brick.

3. *Are the windows clear tinted (if yes, what color?) or reflective?*

   The windows are bronze tinted, but not reflective.

4. *Has any consideration been given to an alternative color to brown for the window frames? When viewed in the context of the building, brown gives the facade a dark tone. What about green? This color selection has also influenced such elements as the metal roof of the parking garage elevator. Although color is in the eye of the beholder, the trim color seems a bit somber for the building.*

The window frames are medium bronze in color. This color will coordinate with the color palette of the rest of MMC's Portland Campus and integrate well with the proposed color of the brick and precast concrete.

5. *Are the window frames a baked enamel or anodized? A baked enamel color would be preferred.*

   Bronze anodized.

6. *Please show a typical cross section of the window and the surrounding brick wall.*

   See attached window detail drawings A1, A2, B1, B2, C1, and C2.

7. *The southerly elevation shows a fence with two posts. The white color of the posts doesn't seem appropriate, given the material and colors of the building facade.*

   The posts will be clad with brick and precast concrete to match the building facade.

8. *Please describe or show a detail of the facade design of the parking garage concrete panel.*

   See attached detail 4 Basement Wall Section for the profile of the parking garage precast panels. A sample of the proposed precast concrete for the garage is enclosed.

9. *Is the color of the precast concrete on the building facade the same color as the parking garage concrete panels?*

   The color of the precast concrete specified for the project will be consistent throughout the entire project.

10. *Indicate the exterior material of the roof top structures.*

    See attached cut sheet for information on the roof top screen material for mechanical equipment. The stair enclosure will be covered with standing seam metal roofing material. The color for both of these systems will be medium bronze to match the window fenestration.

ATTACHMENT B

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Senior Planner
FROM: John Peverada, Parking Manager J.P.
DATE: March 27, 1998
RE: Maine Medical Center Parking Management Plan

At last night's neighborhood meeting, Paul Gray gave me a copy of the revised Parking management Plan, dated February 11, 1998. He apologized, and said that he thought his secretary sent us a copy weeks ago. Please find attached a copy for your review.

In the last paragraph on page two, the hospital answered my previous question "...provide the City with verifiable documentation that every employee will have an off-street parking space", by stating that they have approximately 1,300 daytime employees, and 1,626 parking spaces. I will take their word on this, and remind any of their employees of the same if they complain about tickets or boots.

If the hospital makes the following few additional revisions to the plan, I will be satisfied:

1. Section F - Contractor Requirements During Renovation / Construction Projects
   a. A sentence should be added that states all contractors, subcontractors and their employees are to park off-site. Even though this is alluded to by the hospital agreeing to utilize the information on the Merrill Auditorium specs, I feel that it should be clarified here.

   b. The hospital states that during the development of the garage/office building, they will provide additional parking at the St. John St. shuttle lot as necessary to replace the 52 surface spaces on the site. At first this sounds good, until you refer to page two of the plan, and realize that there are only 150 parking spaces in the St. John St. lot, and more importantly, **there are currently over 120 vehicles presently parked on the site** (47 in the Congress St. lot, 30 on the Forest St. lot and 45 on the Boynton St. lot).

In order to get this project off to a good start with the neighborhood, it is going to be imperative that this issue be dealt with prior to the issuance of a building permit.

2. The parking plan should make reference to the meeting between the City (Bob Ganley, Councilor Geraghty and Joe Gray) and MMC (Vincent Conti and Paul Gray), in which the hospital agreed to make the new garage available for Sea Dogs and Snow Ban parking. The hospital should state when the parking will be available, how many spaces will be available and at what rate, if any.

I assume that you will forward these comments to the appropriate people at Maine Medical Center. Please contact me if you have any additional questions or concerns.

cc: Gloria Thomas, Department Head
Joe Gray, Director of Planning
Councilor Karen Geraghty
Larry Ash, Traffic Engineer (with attachment)

3-27m.wps

ATTACHMENT D

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel: 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

FILE COPY

February 3, 1998

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

We have completed a review of the January 29, 1998 plans, revision H, and the enclosed project documents for the proposed Maine Medical Center Office and Parking Garage project. The comments in our January 12, 1998 letter have been addressed, as have the other review comments.

We would be happy to review the final project design plans and documents when they become available. Let me know if you have any questions or, need additional information.

Very truly yours,

DUFRESNE-HENRY, INC.

JDP

Jeffrey D. Preble, P.E.
Project Manager

File N:\civil\8160054\Knowlandltr7.wpd

Post-it® Fax Note 7671	Date 3/26	# of pages ▶
To Rick	From JEFF	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 756-8258	Fax #	

ATTACHMENT E-1

From: ANTHONY LOMBARDO
To: rwk
Date: 1/14/98 3:27pm
Subject: Me Medical Center.....Proposed Offices/Parking @883-887 Congress St.

Rick,
Squaw Bay Corp. has made the revisions requested by Public Works. The only item that is still missing as part of their submission is a copy of the capacity letter for the combined sewer in Forest St. This letter has been requested from Bill Goodwin here at Public Works, but no actual letter verifying capacity of this sewer has been submitted.

E-2

Post-it® Fax Note 7671	Date FRIDAY 4/10/98	# of pages ▶ ONE
To Richard Knowland	From Frank Brancely	
Co./Dept.	Co.	
Phone # x8725	Phone #	
Fax # 756-8258	Fax # 874-8852	

Department of Public Works

Nadeen M. Daniels
Assistant City Manager
Director

William J. Bray
Deputy Director

CITY OF PORTLAND

March 6, 1998

Mr. Scott Decker, P.E., Principal
Squaw Bay Corporation
P.O. Box #86A
Cumberland Center Maine 04021

RE: Sanitary Sewer Capacity to Handle Anticipated Wastewater Flows from the Proposed Maine Medical Center Office Building/Parking Structure on the Northeast Corner of Congress Street, at Forest Street.

Dear Mr. Decker:

The existing eighteen inch reinforced concrete sanitary sewer pipe located in Forest Street, and the sewage treatment facilities, in the City of Portland, have adequate capacity to transport and treat the anticipated wastewater flows of 16,390 GPD, from your proposed office building/parking structure to be located at #883-#903 Congress Street, City of Portland.

Proposed Wastewater Flows from the Proposed Office Building/Parking Structure:		
Proposed 60 Doctors	@ 80 GPD/Doctor	= 4800 GPD
Proposed 180 Assistants	@ 15 GPD/Assistant	= 2700 GPD
Proposed 1800 Patients	@ 05 GPD/Patient	= 9000 GPD
Proposed 430 Parking Spaces	@ 01 GPD/Parking Space	= 430 GPD
Total Proposed Increase in Wastewater Flows for this Project		=16,930 GPD

If I can be of further assistance, please call me at 874-8832.

Sincerely,
CITY OF PORTLAND

Frank Brancely

Frank J. Brancely, B.A., M.A.
Senior Engineering Technician

FJB:jw

pc: Joseph E. Gray, Director, Department of Planning & Urban Development, City of Portland
Katherine A. Staples, P.E., City Engineer, City of Portland
William B. Goodwin, P.E., Environmental Projects Engineer, City of Portland
Anthony W. Lombardo, P.E., Project Engineer, City of Portland
✓desk file

Decker.doc

ATTACHMENT A-1

Maine Medical Center

REVISED 4-10-98

PARKING MANAGEMENT PLAN

Overview

The City of Portland/Maine Medical Center contract zone for the medical office building and parking garage at 883-903 Congress Street includes a provision for MMC to develop a parking management plan for the Bramhall campus. This parking management plan addresses the needs of three major groups:

- Patients and others who accompany them to the campus;
- Physicians who come to the campus to examine and treat their patients; and
- Employees of Maine Medical Center.

This plan includes strategies that have already been implemented as well as those still in development. MMC welcomes the opportunity to continue to work with the City of Portland to develop and implement this plan.

The proposed garage associated with the medical office building will have excess capacity built into it; in other words, the facility will have more than enough spaces to meet the demands of the 49,150 s.f. office building. Of the 430 spaces to be built, 226 are required for the office building, for visitors and employees, leaving 204 spaces for the general needs of the Bramhall campus.

The sale of the Gateway garage is also planned as a separate action. A summary of the impact of the combined actions of constructing the office building, sale of the Gateway, and lease of the St. John lot on the overall existing parking supply is as follows:

Action		Net Gain/Loss in Spaces
Sale of Gateway Garage	- 530	(Gateway has 650 spaces but 120 will
Loss of 52 spaces currently on site	- 52	be retained by MMC use.)
Construction of Proposed Building/Garage	+ 204	(Excess once office needs are met.)
Lease of St. John Street Lot	+ 150	
Overall Net Loss	- 228	

While the supply for MMC will be reduced due to the sale of the Gateway Garage, which is planned as a separate action, the proposed garage will reduce the loss over what would otherwise be experienced when the Gateway Garage is sold. In addition, the spaces in the Gateway are not fully utilized due to the remoteness from the Bramhall campus.

22 Bramhall Street, Portland, Maine 04102-3175 · (207) 871-0111

The MaineHealth Family

Supply and Demand

An essential element of a parking management plan is a professionally prepared analysis of the supply of and demand for parking. In the Spring of 1996, MMC retained DeLuca-Hoffman Associates, Inc. The analysis was updated in March 1997 to incorporate the changes in supply and demand associated with the proposed medical office building and other MMC initiatives. This parking management plan incorporates the major findings from the DeLuca-Hoffman analysis. The existing supply, including planned changes with the development of the Congress Street Medical Office Building/Parking Garage, and the estimated demand are presented in Exhibit 1.

Exhibit 1

Maine Medical Center
Parking Supply and Demand
Current and Planned Changes

Location	Spaces
Main Congress Street Garage	1,276
Congress Street Medical Office Garage	430
Admitting	9
Visitors Lot Bramhall	315
Maine Magnetic Imaging	11
Gilman Street Lot A	15
Emergency	10
Radiation Therapy/Oncology	10
Gateway Garage	120
Gilman Street Lot B	15
Farmers Market Garage	12
St. John Street	150
Total	2,373
Demand Following Completion of Bean Building and Relocation of Programs and Employees to the Scarborough Campus	1,914
Completion of Congress Street Building	226
	2,140

Source: "Parking Analysis for a Proposed Expansion to the Bean Building at MMC" DeLuca-Hoffman Associates," June 1996, and March 1997 Update.

Thus, the overall planned supply exceeds the demand by 233 spaces (11%). Specifically with respect to employees, approximately 1,300 employees work the day shift. MMC currently meets that need with the Main Congress Street Garage (1,276 spaces), the St. John's Street lot (150 spaces), and a portion of the Gateway Garage (200 spaces), for a total of 1,626 spaces. The challenge facing MMC is to make the best use of that supply. The balance of this plan identifies the strategies MMC is pursuing in order to better manage the demand and to minimize the impact of the demand on the neighborhood surrounding the Bramhall campus.

Parking Management Strategies

This plan includes strategies that address the following issues:

- Sale of the Gateway Garage and development of the Congress Street Garage.
- Parking access and traffic flow.
- Decentralization of MMC Bramhall campus.
- Contractor requirements during construction/renovation projects.
- Alternative transportation.
- Street parking enforcement.

A. Sale of the Gateway Garage and Development of the Congress Street Office Building Parking Garage

In 1992, in order to expand its supply of parking, MMC purchased the 650-space Gateway Garage at the corner of High Street and Cumberland Avenue and initiated an employee parking program at the garage. Since then, all new employees have been assigned to park there and a shuttle service is provided to the MMC campus. While the program has worked, many employees find the shuttle inconvenient and time consuming. As a result, some employees park on the streets around the Bramhall campus which are subject to strict City of Portland parking enforcement. In order to eliminate the inconvenience, a central strategy is the sale of the Gateway Garage and the development of the Congress Street Office Building Parking Garage. This strategy brings the employees back to the campus, eliminates the shuttle inconvenience and should eliminate the current on-street parking by employees who should be parking at the Gateway.

B. Parking Access and Traffic Flow

Gilman St. Garage

In 1997, MMC implemented a new approach to the management of the utilization of the 1,276-space Main Parking Garage at the corner of Congress Street and Gilman Street. Prior to 1997, in the 6:30-8:30 AM period when most employees arrive, the garage would begin to fill and as a result a one-in/one-out pattern developed, causing queuing of cars on Gilman and Congress. That policy was changed such that when the garage is full, it is closed until approximately 1:30 PM and employees are directed to park at the St. John Street lot and are shuttled to the Bramhall campus. This policy has eliminated the queuing on the streets and given the much shorter shuttle ride, employees have made good use of the St. John Lot. As part of our parking management plan, MMC is committed to maintaining the St. John Street Lot as long as demand warrants.

St. John Street Lot

MMC is committed to maintaining the shuttle to the St. John Street lot and making it free and convenient for employee use. The current shuttle system has been very well received by the employees. MMC has also committed to Mr. Peverada to make a special effort to educate doctors and staff at McGeachey Hall to use the shuttle rather than to park on Vaughn Street.

Proposed Garage

MMC plans to design the new garage to minimize delay and provide security to encourage staff to utilize the garage rather than parking on street. Specific measures to be taken include the following:

- Security person assigned to the garage to monitor entering and exiting traffic and to create a safe atmosphere, encouraging use of the garage.
- Direct entry on the employee side of the garage (Forest Street) without gates during the peak periods of traffic flow. This will eliminate potential delay upon entering the garage.
- MMC will evaluate the use of proximity cards to reduce the delay when leaving the garage. Mr. Peverada stated he has had favorable experience with these.
- Low user charge of 50 cents per day to eliminate the potential of cost being a deterrent.

Valet Parking

Another element of the parking access and traffic flow strategy is our valet parking program at the Admitting Lobby entrance and at the Emergency Department. This program has been very successful, serving 100 campus patients/visitors every day. Valet parking reduces congestion at the entrances, lowers frustration and the temptation to park on the street, and provides for significant improvement in the use of the spaces in the Admitting Lot, the Main Congress Street Garage and the Bramhall Lot. MMC will improve the signage advising the public about the service and include information on the service in patient pre-admission material. MMC is committed to maintaining the valet parking program after construction of the Bean addition.

Sea Dogs and Parking Bans - Based on meetings with city officials, MMC will make available spaces in the new garage (as we do with the main garage) for evening Sea Dogs games. We will work with the city to define the numbers of spaces. The charge will be the same as the existing garage. For Parking Bans, MMC will make space available on a schedule to be agreed upon, perhaps 6 pm to 6 am, at a charge competitive with other facilities. Strict towing rules will be enforced.

C. Decentralization of the Bramhall Campus

Since 1991, MMC has been actively pursuing a Board of Trustees approved decentralization policy for the Bramhall campus. Each program/service that is moved from the Bramhall campus to other locations in the greater Portland area reduces the demand for parking at the Bramhall campus. Major examples of this strategy have included:

- MMC Scarborough Campus - This plan involves the relocation from the Bramhall campus of over 200 MMC employees and 25,000 patient visits to outpatient programs to the Scarborough campus. The Scarborough campus is not yet fully operational. The main remaining element is the consolidation of MMC's labs from the Bramhall and Brighton campuses and leased space on John Roberts Road, South Portland, to the Scarborough campus.

- Relocation of the 80-bed New England Rehabilitation Hospital of Portland and 20 MMC rehabilitation beds to the Brighton campus. This move reduced demand on the Bramhall visitor lot and the Main Congress Street Garage.

- Gateway Garage Condominiums - MMC owns condominiums at the Gateway Garage where 120 employees (data management and patient accounts) work who were formerly at the Bramhall campus. After the sale of the Gateway Garage, MMC will continue to lease 120 spaces at the Gateway Garage for these employees.

- Congress Street Medical Office Building - Consolidates several private practices in office buildings around the campus, reducing demand for on-street parking by patients of those practices.

- Holt Hall - In 1998, MMC will relocate 25 employees (and provide parking) from the Bramhall campus to the 7,000 sq. ft. at Holt Hall. The approval for Holt Hall included 25 on-site parking spaces.

- Brighton Campus - When MMC discontinued inpatient services at the Brighton Medical Center campus, it committed to continuing two major programs at that campus: urgent care and ambulatory surgery. By maintaining those programs, the 20,000 urgent care patients and 2,500 ambulatory surgery patients do not place demands for parking on the Bramhall campus which would have been the case if those programs had been discontinued.

MMC will continue to pursue other opportunities to decentralize its programs, further reducing the demand on the MMC Bramhall campus.

D. <u>Internal Education</u>

MMC will make a brochure available to all its staff and doctors detailing where MMC parking is located, requesting people to park in the garages, and to carpool or use the bus whenever possible. Information on parking will also be made available for patients and visitors. MMC will also work with the staff of the Portland Area Comprehensive Transportation Committee (PACTS) to develop a data base for use in their rideshare program.

Information in the brochure will include the following:

- Map of available off-street parking along with designations (i.e., staff, visitor, etc.).
- Handicapped parking locations.
- Valet instructions.
- Ride share information.
- Metro information.
- Overnight parking.
- Snow bans.

E. Contact Person

MMC will provide a contact person for coordinating directly with John Peverada on parking issues. MMC supports regular monthly meetings to address issues.

F. Contractor Requirement During Renovation/Construction Projects

The Bramhall campus will be in a period of continuous construction for the next several years. Our construction agreements with contractors have strict provisions regarding our expectations of their responsibility to manage the parking of their employees. MMC generally has a construction manager or general contractor overseeing the parking of the construction workers. The contract specifies where and when workers can park. Mr. Peverada has given MMC a copy of the specifications the City used in renovating Merrill Hall relative to contractor parking. It is expected that contractors and their employees for the office building will park at offsite locations (not on city streets) acceptable to MMC. MMC will utilize this information in preparing upcoming contracts. During the development of the Medical Office Building, MMC will provide additional parking at the St. John Street shuttle lot as necessary to replace the 52 surface spaces on the site.

G. Alternative Transportation

MMC has a ride share program to encourage people to car pool to work. The program includes a guaranteed ride home provision and participants are provided preferential parking. MMC proposes a renewed commitment to this program and proposes the following specific action:

- MMC will work with PACTS to develop a database for use in their ride share program.
- MMC will appoint a person to be in charge of the parking program and work with the City in identifying potential solutions to issues as they arise.
- Promote ride share and use of Metro with our employees.

H. Parking Enforcement

MMC fully supports aggressive efforts by the City of Portland to enforce the rules and regulations on the streets surrounding the Bramhall campus. We would encourage the City to step up its enforcement even further and to consider further restrictions on on-street parking. MMC supports increased enforcement of on-street parking through time limitation changes or restrictions. In addition, MMC supports the use of parking meters on Brackett, Chadwick and Gilman Streets.

I. Other Considerations

Beyond the strategies outlined above, there are trends in health care which should continue to reduce the demands on the MMC Bramhall campus. We have forecast that declines in admissions and reductions in lengths of stay will result in MMC becoming a 500-bed hospital in the future, rather than the 600-bed hospital it is today. This continued reduction in activity will translate into reduced demand for parking at the Bramhall campus.

Conclusions

MMC is committed to effectively managing parking on the Bramhall campus. This plan has outlined the following measures to be done by MMC:

- Maintain current management policy for the Main Parking Garage at the corner of Congress and Gilman Street which has eliminated queuing.
- Maintain the shuttle to the St. John Street lot making it free and convenient for employee use. MMC will actively pursue replacement parking if the St. John Street parking is displaced by Amtrak.
- Implementation of the following measures at the proposed garage:
  - Security person.
  - Direct entry from Forest Street without gates during peak periods.
  - Use of proximity cards.
  - Low user fee.
- Maintenance of the valet parking program at the Admitting Lobby entrance and Emergency entry following construction of the Bean Building.
- Create a brochure for distribution to staff, doctors, and patients/visitors detailing where parking is located.
- Provide a contact person for coordinating directly with John Peverada on parking issues and attend regular monthly meetings with him.
- Utilization of specifications similar to those used in Merrill Hall relative to contractor parking.
- Work with PACTS to develop a database for use in their rideshare program.
- Promote rideshare and use of Metro with our employees through the brochure.
- Support for increased enforcement of on-street parking through time limitation changes or restrictions.
- Undertake a special effort to educate doctors and staff at McGeachey Hall to use the shuttle rather than to park on Vaughn Street.

MMBC

MEDIPLEX MEDICAL BUILDING CORPORATION
5308 WEST PLANO PARKWAY
PLANO, TEXAS 75093-4821

April 2, 1998 Via: Fed Ex

Mr. Rick Knowland, Senior Planner
Portland City Hall
City of Portland
389 Congress Street
Portland, ME 04101

RE: LIGHTING AT PARKING GARAGE
MAINE MEDICAL CENTER

Dear Mr. Knowland,

Attached is the additional lighting information you requested. As we discussed over the phone, the lighting design has evolved over the course of the project, and the new design is being sent to you under separate cover from Harriman Associates. Following is a brief explanation of the design and the submitted materials:

The Owner and the design team acknowledge the importance that the City has placed on light pollution in the adjacent neighborhood residences. At the same time, we have successfully balanced this constraint with the need to provide adequate light for a safe and secure structure.

Top Deck

The pole mounted fixtures at the top of the garage remain essentially the same as presented on the January 6, 1998 submittal. We will have to revise one pole at the center of the deck to accommodate a last minute revision for moving a stair tower. The lighting calculations remain essentially the same as presented on the January 6, 1998, submittal. We have added the Boynton and Forest street R.O.W.'s to these drawings for reference, as you have requested. The calculations indicate virtually no light spillage to the residences along Boynton, and Forest. At the east property line, there is some light spilling onto the house at the Congress street entry. We have halved the recommended foot candles in this area, but are still unable to prevent light spillage because the house is right at the property line. The fixture is of high-quality, durable construction and has a unique, architectural look lacking in most utilitarian, rectilinear type fixtures. The pole fixtures are fitted with 250w lamps – generally, high pressure sodium type except where we use metal halide to help distinguish exits. The fixture is of cut-off type design, but additionally we have specified an optional house shield that will further control the light. The fixtures are mounted on 15' painted steel poles.

(972) 248-8100 e-mail: mmbc1@airmail.net FACSIMILE (972) 931-8966

Lower Decks

We have revised the lower deck since the January 6, 1998, submittal. The perimeter lighting remains unchanged, therefore the lighting calculations presented are also unchanged. We have revised the internal bays to a different fixture. The fixture at the perimeter bays is specifically designed to illuminate the garage without excessive light spillage or glare. Again, the fixture is a high quality, durable construction with a unique, architectural design. The design is such that louvers can be provided to control brightness outside the structure. We have specified this fixture with louvers to shield the residential areas. The fixture specified for the internal bays of the garage have been revised to a single row type fixture where louvers are not required. It is still a cut-off type fixture. Please refer to attached cutsheets. The colored copies help explain some information lost in black and white copies.

Please call if I can be of further assistance on this issue. I appreciate your consideration of our design and look forward to a successful project.

Sincerely,

Jim Clarkson,
Project Architect

cc: Phil Taylor
Ron Blackwell
Damian Donati

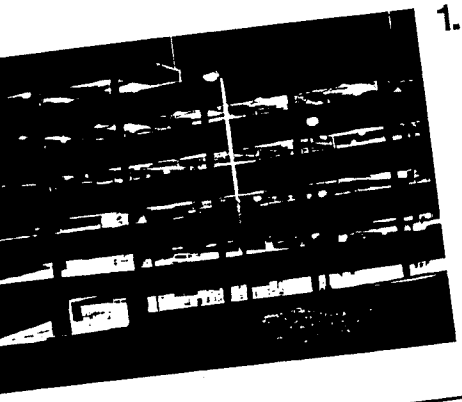
PGL1 HP

Parking Garage Luminaire

The High Performance Luminaire Exclusively Designed For Parking Garages.

KIM LIGHTING

ee Functions in One Luminaire



1. Indirect Luminaire

Purpose: Garage ceilings must be illuminated to avoid the "cave effect" or the feeling of entering a dark insecure place. The PGL1HP luminaire has a unique uplight component which lights ceilings and beams, creating a bright and secure ambience within the garage interior. Up-lighting also reflects off the ceiling and beams, thereby adding to the floor illumination and softening shadows.

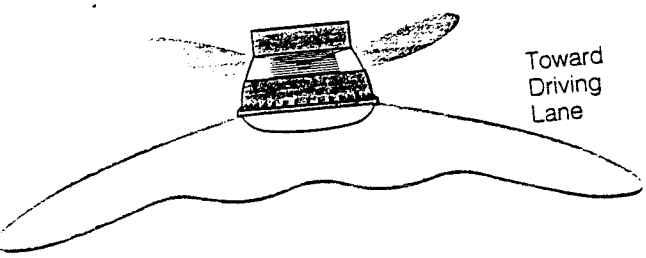
2. Cutoff Luminaire

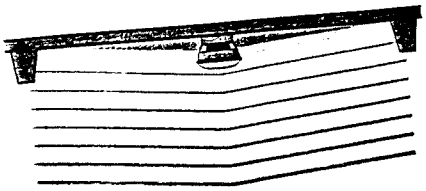
Purpose: Cutoff luminaires have long been acknowledged as providing the best illumination for driving because glare is eliminated at high angles where it can cause loss of visibility. The PGL1HP luminaire has been engineered to provide cutoff lighting up and down the driving lanes for optimum driver and pedestrian visibility. The lamp is fully shielded from high angle view by the opaque section of the luminaire. Collectively the cutoff down-light combines with the indirect up-light to create a bright garage interior void of harsh luminaire intensity.

3. Semi-Direct Luminaire

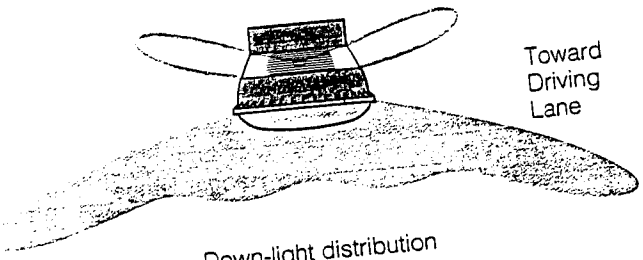
Purpose: Once an automobile leaves the driving lane and is parked, the lighting requirements change. Additional light is needed at high angles to light the area between cars, help light inside the car and to provide a secure environment for people leaving or re-entering their vehicles. The PGL luminaire employs prisms in a selected portion of the up-light window to bend light downward toward the parking stalls. This additional downward light helps fill the parking areas with increased illumination directly from the luminaire and reflected from the ceiling and beams.

Up-light distribution through clear portion of upper window.

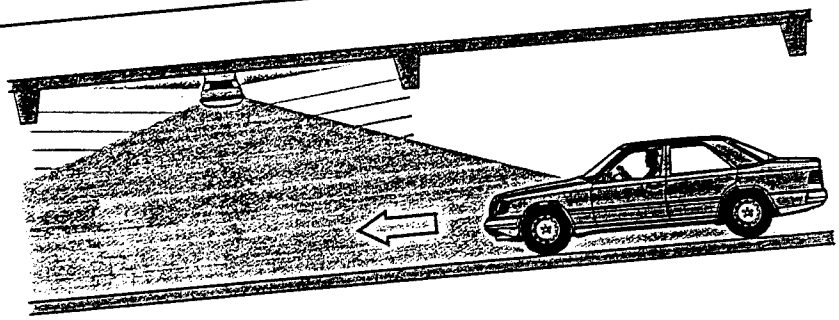




Result: The PGL helps any parking garage give users a secure and inviting feeling even before entering. Up-light eliminates the "cave effect".

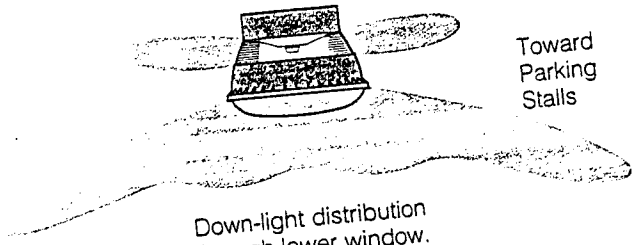


Down-light distribution through lower window.

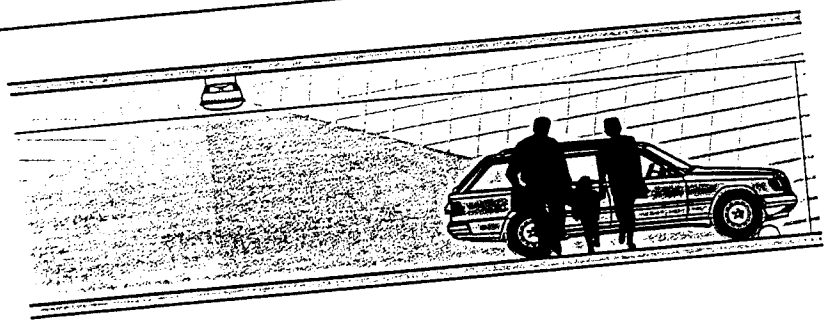


Result: The PGL generates uniform glare-free lighting for safe and comfortable driving within the garage.

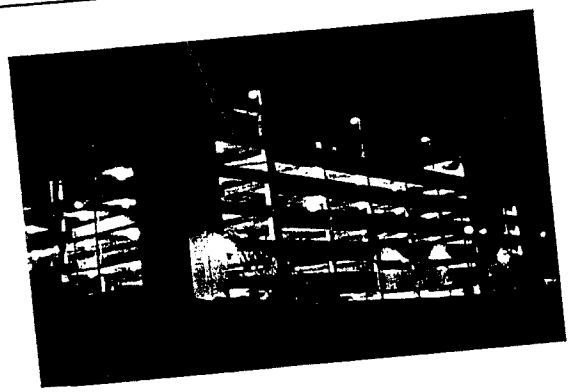
Up-light and down-light distribution through prismed portion of upper window.



Down-light distribution through lower window.



Result: The PGL provides excellent lighting in the parking stalls for security.



Conclusion:
The Kim Parking Garage Luminaire is an innovative solution to a complex lighting task. Never before has parking garage lighting been so thoroughly analyzed and solved by a single product with multiple functions. Today's parking garages must be highly illuminated and visually inviting or they will be avoided. The PGL can create a bright and secure garage ambience without polluting the surrounding neighborhood with glare. In addition to superb lighting, the PGL fixture has a designer-look instead of the typical utilitarian look so common in today's garage luminaires. Day or night, the PGL will complement and enhance the growing effort to make parking garages an integral part of the architectural design theme.

Features and Enhancements

Note: *All enhancements are completely interchangeable with any previous* ***PGL*** *model.*

New Wire Seal
A molded silicone grommet now adds greater protection against moisture entry by sealing all three wires exiting the fixture top.

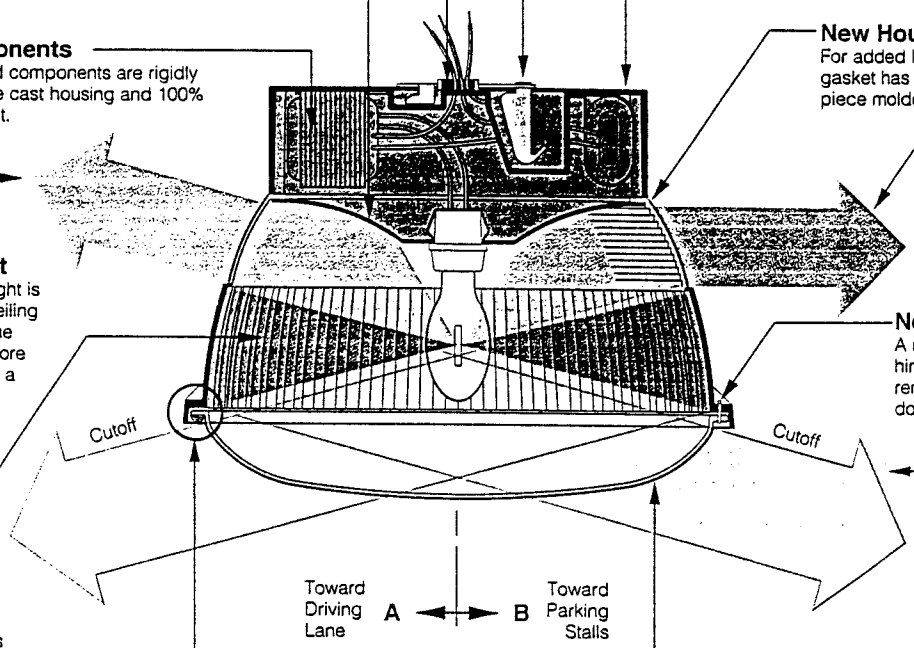
New Speed Mount
The Kim "Speed Mount" has been redesigned to eliminate the need for a Mud Box Adapter Plate (*old cat.# M*). Now this quick mounting device easily attaches to mud boxes as well as standard 4" J-boxes.

Hydroformed Up-Light Reflector
The one piece hydroformed up-light reflector is configured to capture and redirect lamp output to useful angles. It also retains the lamp socket,and is easily removable for access to the electrical components.

Die Cast Housing, New Finish
The electrical housing is die cast aluminum finished in Kim's exclusive Light Gray "Super TGIC" powder coat paint. Housing hangs from the "Speed Mount" for easy wiring, and locks into place once it is raised to the final mounting position.

Electrical Components
All ballasts and related components are rigidly mounted inside the die cast housing and 100% tested before shipment.

New Housing Gasket
For added longevity, the housing gasket has been upgraded to a one piece molded silicone component.



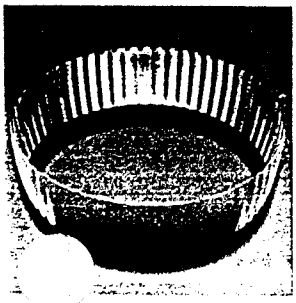
Up-Light to Parking Stalls
Two prism areas in the up-light window bend light downward for extra fill into the parking stalls. Prism areas are 180° apart.

Up-Light Component
A generous amount of up-light is provided to illuminate the ceiling and beams. This reduces the "cave effect", providing a more ir arking garage with a ense of security.

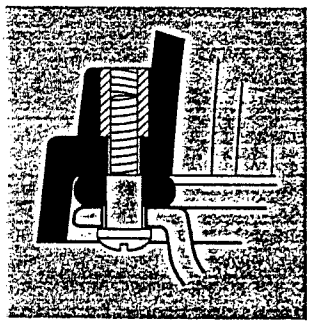
New Hanger Hinge
A new stainless steel hanger hinge now allows easy no-tool removal of the down-light window.

Wide Throw Down-Light
The primary garage illumination is provided by cutoff down-light in which the lamp is fully shielded above horizontal. Full coverage of the garage bay is achieved by the wide throw and high candlepower.

New Hydroformed Reflector
The primary reflector is now a one piece hydroformed aluminum component with an Alzak® finish. This change was made to provide maximum longevity, maintained light output and easier care over the previous vacuum-metalized reflector. Vertical facets prevent reflected light from passing through the lamp for greater efficiency and lamp life. The reflector is retained inside the one piece injection molded polycarbonate optical housing.
See photo below.

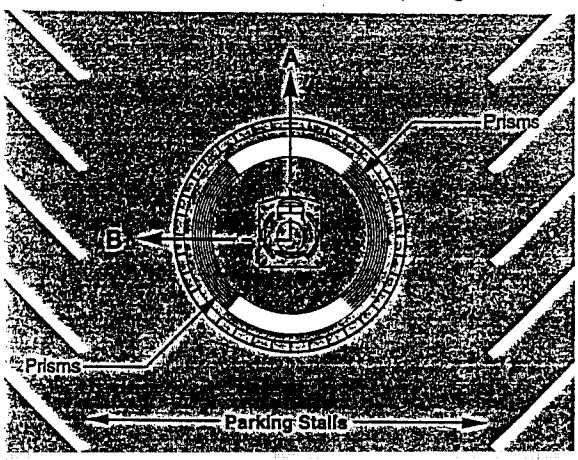


New Gasket and Fasteners
The down-light window gasket has been changed to silicone for maximum recovery of shape after relamping. The closure fasteners are stainless steel captive shoulder screws to prevent over-tightening and cracking of the lens.
See detail below.



New Down-Light Window
The injection molded down-light window has been reconfigured for greater performance by increasing the light transmission at high angles. This new lens produces an average increase of 6% in overall efficiency versus the old lens. The standard material is high temperature U.V. stabilized acrylic with optional polycarbonate available.

Top view of luminaire and orientation to parking stalls.

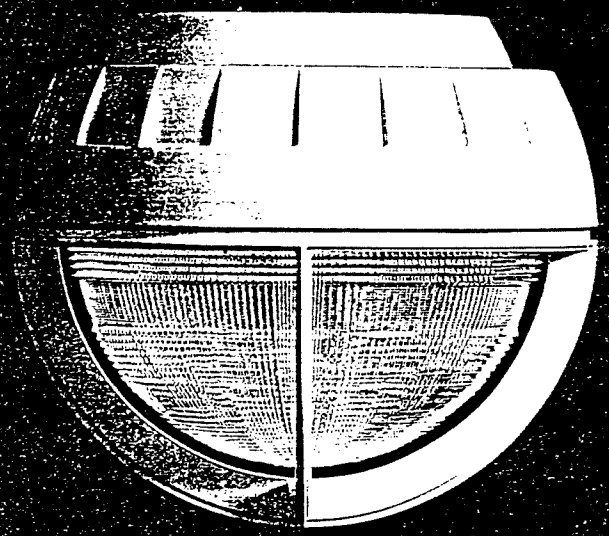


PGL Omni-System™

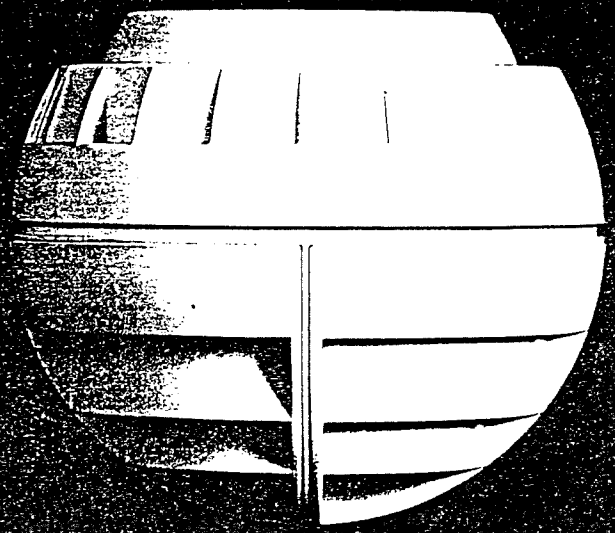
PARKING STRUCTURE
PGL2/3
SERIES

The Next Generation in Parking Garage Lighting

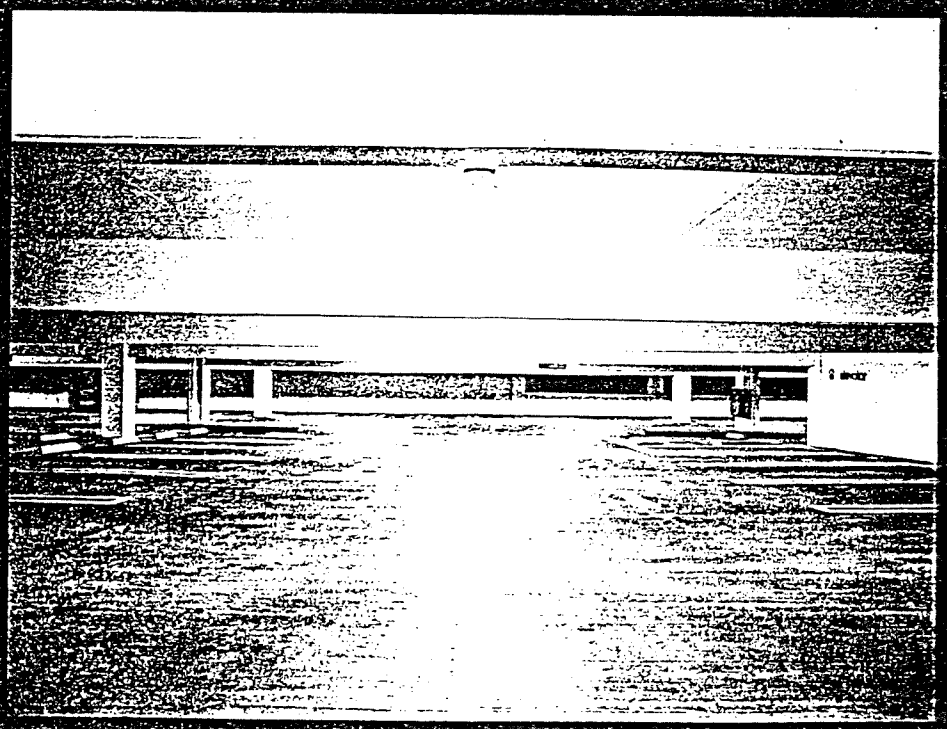
TYPICAL



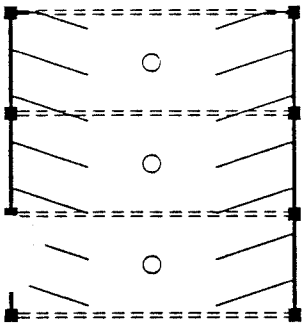
KIM LIGHTING



- 3-Dimensional Illumination
- Performance Task-Driven Optics
- Modular Brightness Control
- Permanence
- Easy Installation and Maintenance

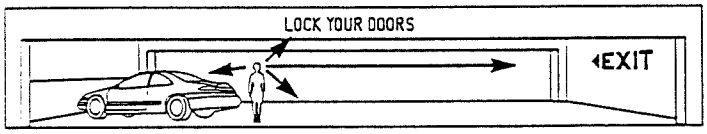


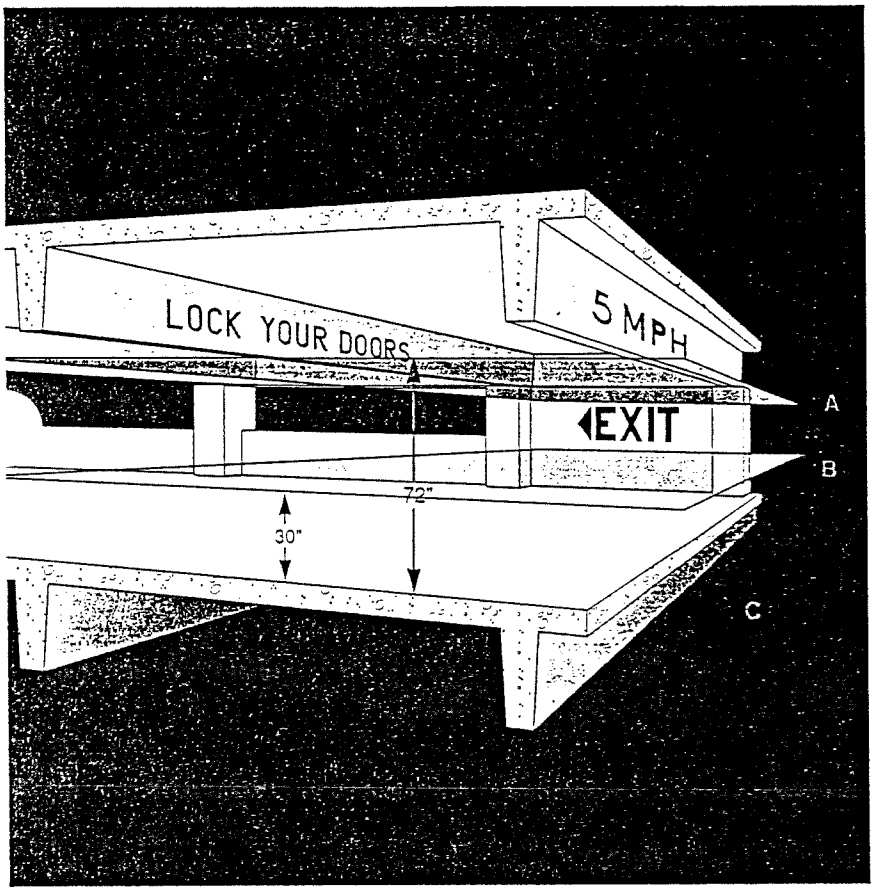
3-Dimensional Illumination



Parking garage lighting is generally evaluated as though the parking bays were simply two-dimensional floor plans. This is comparable to lighting an office as if walls and ceilings did not exist. The two-dimensional approach to garage lighting is a carry over from parking lot lighting where illumination levels are evaluated solely on the pavement.

Since parking garages are essentially interior spaces, their illumination must be achieved in three-dimensions. Ceilings must be lighted to eliminate the cave effect, beams and walls must be illuminated for signage and visual comfort, and vehicles must be lighted at elevations above the floor where tasks actually occur. Floor illumination is only one element of good parking garage lighting.





Today's illumination requirements for parking structures involve both horizontal and vertical footcandles up to 72" above the floor.

Sources: **IES** Illuminating Engineering Society
NPA National Parking Association

Level A–IES recommendation: At 72" above the floor, vertical illumination values on such objects as columns and walls should equal horizontal illumination values on the floor. (See Level C)

Level B–NPA recommendation–Average maintained horizontal illumination 30" above the floor:

Interior Parking and Driving Areas	6Fc
Min. at Perimeters or Vehicle Restraints	2Fc
Surface and Roof Parking Areas	2Fc
Vehicle Entrances	40Fc
Vehicle Exits	20Fc
Stairways and Exits	20Fc
Average to Minimum Illumination	3:1

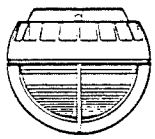
Level C–IES recommendation–Average maintained horizontal illumination on the floor:
(See Level A)

	DAY	NIGHT
General Parking & Pedestrian Areas	5Fc	5Fc
Minimum at any location	1.25Fc	
Ramps and Corners	10Fc	5Fc
Entrance Areas	50Fc	5Fc
Average to Minimum Illumination	4:1	4:1

Ceilings–While no specific recommendations exist for ceilings, it is widely accepted that ceilings must be well lighted to eliminate the insecure feeling of entering a dark, cave-like structure. To accomplish this, between 12%-15% of the luminaire's output must be projected upward.

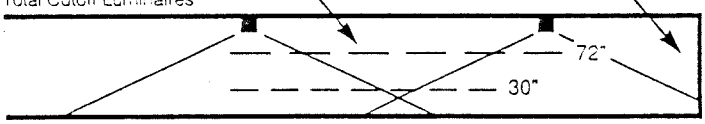
Total cutoff luminaires cannot meet IES or NPA illumination requirements because their light distribution is too narrow. These luminaires do an excellent job of floor illumination, but fall short at elevations above the pavement where vertical illumination on cars, walls, beams and ceilings is required.

Current garage lighting practice includes the illumination of interior shear walls. Signage is often placed on these walls at least 6' above the floor. In addition, it has been found that when these walls are well lighted, they play an important role in creating a bright ambience and secure feeling inside the garage.

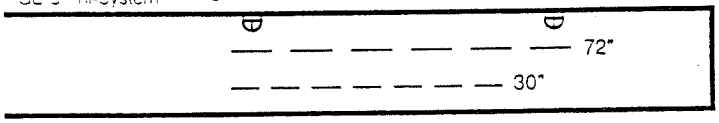


The PGL Omni-System bathes the garage interior with light from floor to ceiling. This approach is virtually dictated by the IES and NPA recommendations listed above. At the same time, the inevitable consequence of this approach is excessive brightness in certain viewing directions. This quandary, and its solution represent the ingenious composition of form and function embodied in the PGL Omni-System. It is the first parking garage luminaire capable of meeting all IES and NPA requirements, while providing the flexibility of modular brightness control.

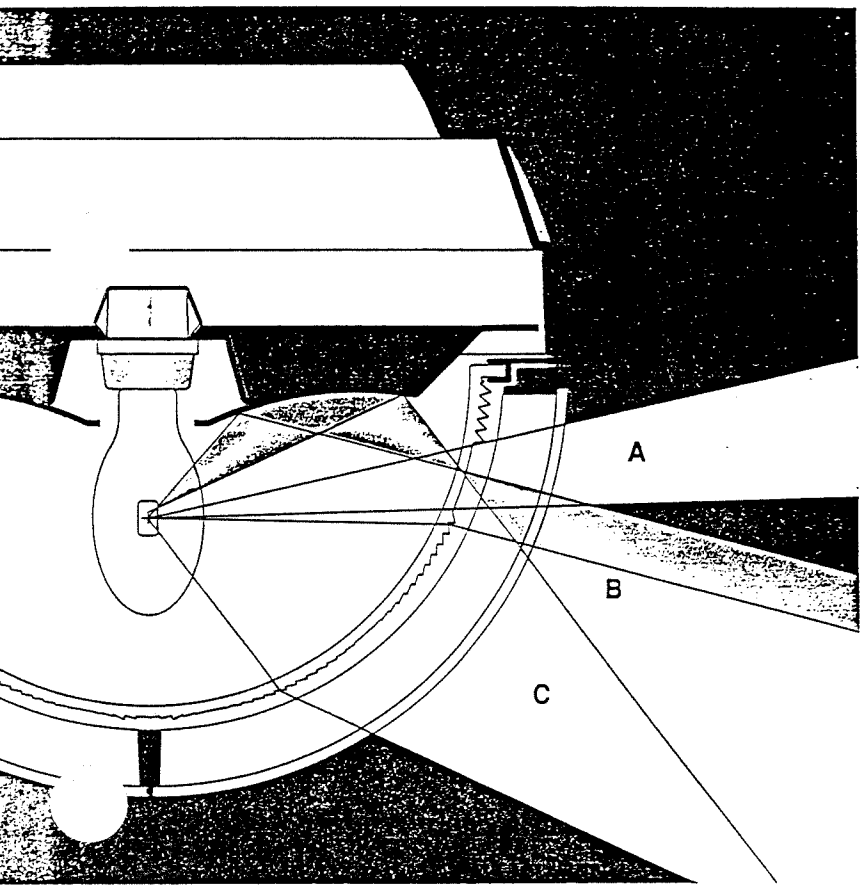
Total Cutoff Luminaires



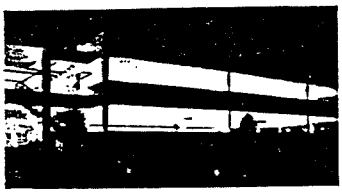
PGL Omni-System



Performance Task-Driven Optics

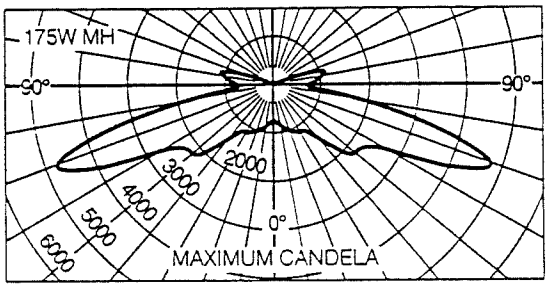


A Ceiling illumination is primarily generated by light passing through a clear window area in the refractor. This window is located slightly above the lamp center, and is engineered to produce a uniform wash of light over large ceiling areas. This illumination projects a secure image to visitors.



B A precision hydroformed reflector captures the up-light and redirects it downward through the clear window area. This light augments the main beam for greater efficiency.

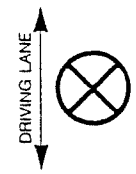
C The main beam is generated by internal and external prisms. It is engineered to meet IES and NPA lighting recommendations while providing outstanding uniformity on both horizontal and vertical surfaces.



Two Fixture Types Offered:

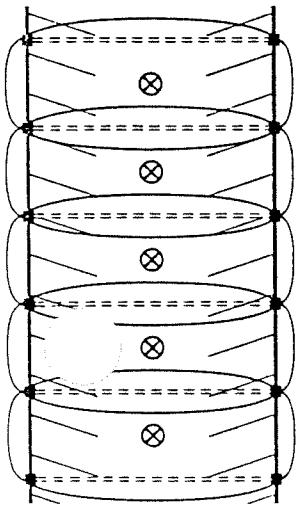
PGL2 Single Row System

Fixture Icon Shows Plan View Orientation of Lens Cage



PGL2 fixtures are factory assembled with the lens cage oriented 45° to the driving lane. This allows optimum use of Louver Modules as described on page 3. PGL2s are installed with the rectangular light pattern running across the parking bays as shown at left. The light pattern has been perfectly sized for optimum efficiency within all typical garage bays whether one-way or two-way drives are used.

See page 3 for explanation of Modular Brightness Control system as applied to the PGL2.

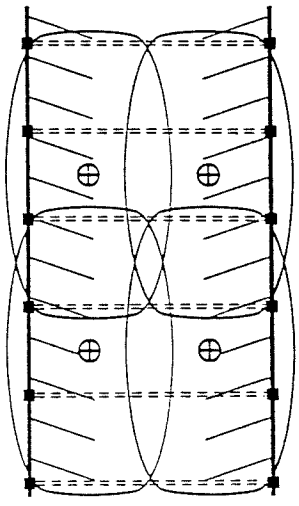


PGL3 Double Row System

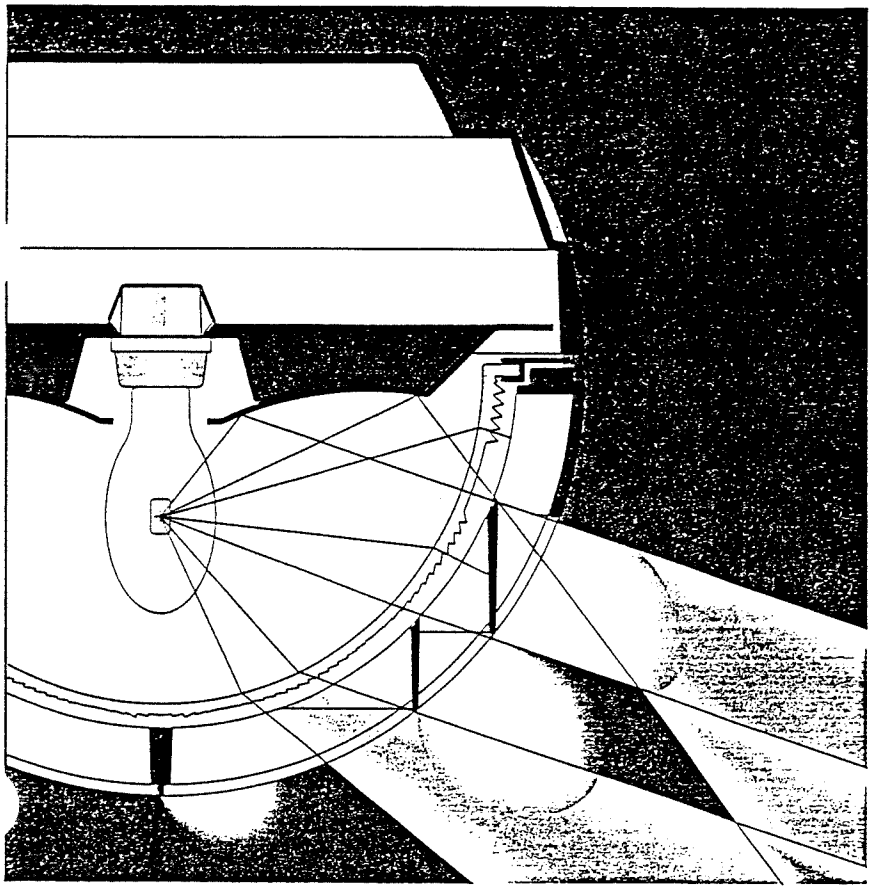
Fixture Icon Shows Plan View Orientation of Lens Cage

PGL3 fixtures are factory assembled with the lens cage oriented at right angles to the driving lane. This allows optimum use of Louver Modules as described on page 3. PGL3s are installed with the rectangular light pattern running parallel with the driving lane as shown at left. This arrangement utilizes the rectangular light pattern to its optimum advantage and efficiency within the garage bays whether one-way or two-way drives are used.

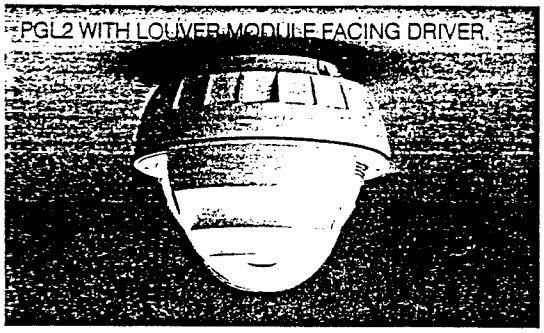
See page 3 for explanation of Modular Brightness Control system as applied to the PGL3.

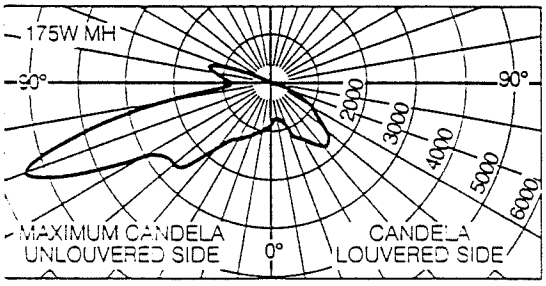


Modular Brightness Control

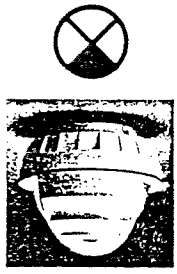


The PGL Omni-System employs an optional Louver Module that can be inserted in any quadrant of the lens cage. It is NOT a total light shield. Instead, it has been carefully engineered to reduce fixture brightness to the same approximate level as its surrounding ceiling and beams.

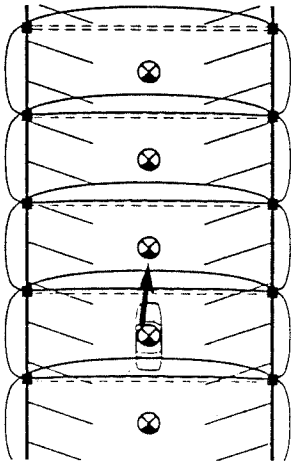




PGL2 Single Row System



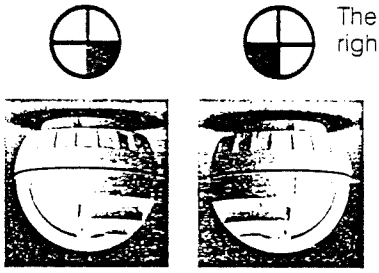
Because the PGL2 lens cage is oriented at 45° to the driving lane, a Louver Module directly faces the driver, providing maximum brightness control. The fixture icon is solid in the quadrant where the louver is to be installed.



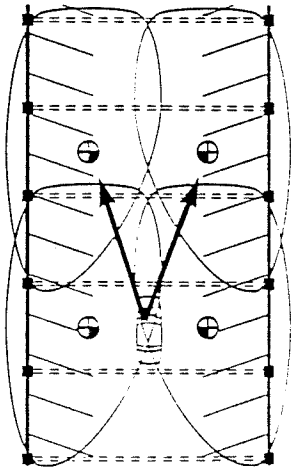
In a typical PGL2 single row layout, one Louver Module would face the driver in a one-way driving bay. The rectangular light pattern is minimally affected by the louver, and the system still provides full coverage of the bay. See page 14 for actual system performance.

For two-way drives, two Louver Modules would be installed on opposite sides of the PGL2.

PGL3 Double Row System



The PGL3 lens cage is oriented at right angles to the driving lane. This allows the Louver Modules to face the driver who is viewing the fixtures at oblique angles. The fixture icon is solid in the quadrant where the louver is to be installed.



In the typical PGL3 double row layout at left, one Louver Module faces the driver in each fixture. The rectangular light pattern is shortened by the louver, but is filled in by the next fixture. See page 15 for actual system performance.

For two-way drives, two Louver Modules would be installed in adjacent fixture quadrants. To compensate for louver loss, the lateral fixture spacing can be shortened.

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: TONY LOMBARDO

COMPANY:

FROM: RICK KNOWLAND

FAX #: 874-8852

OF PAGES: 3

DATE: 12-18-97

RE: ATTACHED IS A SUGGESTED AGENDA FOR THE MMC SITE PLAN REVIEW MEETING ON FRIDAY, DEC. 19TH AT 10:00 AM IN THE PLANNING OFFICE. ADDITIONAL ITEMS CAN BE ADDED TO THE AGENDA.

cc: SCOTT DECKON, SQUAW BAY
JIM MORRISON, MMC
If you do not receive all of the pages, please call 874-8721 or 874-8719.
PAUL GRAY, MMC
TOM GORRILL, DELUCA HOFFMAN
TONY LOMBARDO, CITY ENGINEER
LARRY ASH, CITY TRAFFIC ENGINEER
JEFF PROBIE, DUFRESNE-HENRY

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Hagge and Members of the Portland Planning Board

FROM: Richard Knowland, Senior Planner

DATE: December 9, 1997

RE: Maine Medical Center

I. INTRODUCTION

A second workshop has been scheduled for the proposed Maine Medical Center (MMC) office building and 430-space parking garage in the vicinity of 883-903 Congress Street. Please refer to the staff memo of 10-28-97 for background information.

This development in combination with the MMC main campus, qualifies under the site location of development law. The Board will be reviewing this project for site plan review as well as an amendment to the MMC site location permit. Site location traffic issues will be reviewed by the DEP, although the Board will also be reviewing traffic issues under site plan review.

Tuesday's workshop is expected to focus primarily on traffic and parking. The applicant will also update the Board on design revisions to the skywalk as well as other revisions to the site plan.

II. TRAFFIC

The October 28, 1997 staff memo includes a traffic report by Tom Gorrill of DeLuca-Hoffman Consultants (Attachment 1-C). Comments from Larry Ash, City Traffic Engineer, are shown on Attachment 3. Attached to Mr. Ash's memo are previous comments from Tom Errico, which are intended to supplement this memo. Mr. Gorrill, in response to Mr. Ash's comments, has submitted a letter (see Attachment 4) that is intended to address these issues. Both will be attending Tuesday's workshop meeting.

Traffic-related improvements by MMC for this project are summarized below:

- Restriping of Congress Street to provide a left turning lane onto Forest Street and into the site driveway on Congress Street. Parking would be prohibited between 6:00 a.m. and 6:00 p.m. during weekdays. This will affect 26 parking spaces on the south side of Congress St.

* Retiming of the intersection of Park Avenue and St. John Street and installation of northbound vehicle loop detectors on St. John Street.

- Restripe the northbound approach at the intersection of Congress Street and Valley Street as an exclusive right turn and a shared/left turn lane.

- Retime the intersections of Valley Street/Congress Street and the intersection of Congress Street and St. John Street.

- Install a traffic signal at the intersection of Park Avenue and Forest Street.

III. PARKING MANAGEMENT PLAN

Condition #10 of the contract zone requires that the applicant submit a parking management plan for all of its parking facilities for review and approval by the Planning Board. This report is shown as Attachment 5.

The report includes the following parking management issues:

* Sale of the Gateway Garage and development of the new Congress Street Parking Garage.

* Fine tuning parking access to the main parking garage and the proposed parking garage to avoid queuing on nearby streets. The St. John Street parking lot with a shuttle service provides for overflow parking.

* Decentralization of the Bramhall campus with satellite facilities reducing parking demand on the main campus.

* Promoting alternative transportation such as ride share and bus use.

* Supporting city efforts to enforce on-street parking regulations.

* Appointing a person whose duties include administering and monitoring the MMC parking program. This will serve as a mechanism for regular communication with the city on this issue.

Since the report was submitted late in the week, complete staff comments were not available at the writing of this report. Comments from John Peverada, Parking Manager, are shown as Attachment 6.

IV. SKYWALK

The applicant has been considering further design concepts for the skywalk. It is anticipated that the applicant will submit a revised design concept at Tuesday's workshop. As a gateway location, the new office building in connection with the skywalk, provides an opportunity to make a positive statement for this area of Congress Street. It is the largest development in this area (excluding the existing MMC parking garage) since the St. John Street Shopping Center, which was built in the early 1960's.

V. LIGHTING

Lighting specifications have been submitted. (See Attachment 7.) Given the date of submission, staff has not had the opportunity to fully review this material.

VI. LANDSCAPING

The landscaping plan has been adjusted since the last workshop. Two new benches have been added on the Boynton Street greenspace. Two of the six red oaks originally planned for this area have been replaced by four accolate cherry trees. The trees will be planted near the benches.

Staff would suggest that additional landscaping be planted along the easterly property line, given the length of the parking garage and its proximity to a residential lot.

The design of this area is important since condition #11 of the contract states that "MMC shall provide a landscaped/open space area between the parking garage and Boynton Street."

Attachments:

1. October 28, 1997 Planning Staff Workshop Memo
2. Revised Site Plan
3. Memo from Larry Ash, City Traffic Engineer, dated 11-4-97
4. Traffic letter from Tom Gorrill of Deluca Hoffman, dated 12-3-97
5. Parking Management Plan
6. Memo from John Peverada, Parking manager, dated 12-5-97
7. Background Information

MAINE MEDICAL CENTER
Engineering Department
22 Bramhall Street
Portland, Maine 04102

LETTER OF TRANSMITTAL

WE ARE SENDING YOU
__x__ Attached ____Under Separate Cover

VIA:US Mail

DATE 11/21/97 JOB NO. 97014

TO: Mr. Rick Knowland
Department of Planning and Urban Development
City of Portland
389 Congress Street
Portland ME 04101

RE: Congress St. Medical Office Builidng

No:	Date:		Description:
1c			Telephone conversation report

COPY TO: file

SIGNED

If enclosures are not as noted, kindly notify us at once.

Dufresne-Henry, Inc.

22 Free Street
Portland, Maine 04101-3900
207/775-3211
Fax: 207/775-6434

FAX TRANSMISSION COVER SHEET

Date: DEC 18th *Time:* 12:15

To: Rick Knowland

Fax: 756-8258

Re: Maine Medical office Building

Sender: Jeff Rabe

YOU SHOULD RECEIVE 5 *PAGE(S), INCLUDING THIS COVER SHEET.*
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 207/775-3211.

COMMENTS: Rick -

Here are our comments on the preliminary plans. Let me know if you need anything else prior to the meeting tomorrow.

Jeff

Maine Medical Center

FAX TRANSMITTAL

22 Bramhall Street, Portland, Maine 04102

ENGINEERING SERVICES
TELEPHONE NUMBER (207) 871-2447
FAX NUMBER (207) 871-6195

DATE: 6/15/98
TO: Richard Knowland
Department of Planning and Urban Development
City of Portland
PHONE:

FAX: 756-8258

FROM: Jim Morrison
SUBJECT: Congress Street Medical Office Building

NUMBER OF PAGES INCLUDING TITLE PAGE: 3

Rick:
Attached find revised information sent to us by Mediplex relating to the Cost Estimate of Improvements to be Covered by Performance Guarantee. This is sent to you for City review. It is my understanding that you will notify me when the estimates are approved and at that time I can submit the information relating to guarantees.
Thanks.

Maine Medical Center

FAX TRANSMITTAL

22 Bramhall Street, Portland, Maine 04102

ENGINEERING SERVICES
TELEPHONE NUMBER (207) 871-2447
FAX NUMBER (207) 871-6195

DATE: 6/22/98
TO: Richard Knowland
Department of Planning and Urban Development
City of Portland
PHONE:

FAX: 756-8258

FROM: Jim Morrison
SUBJECT: Congress Street Medical Office Building

NUMBER OF PAGES INCLUDING TITLE PAGE: 2

Rick:
Attached find phone report regarding our conversation this morning.

MAINE MEDICAL CENTER

JOS, ALGX
FYI
RK

PHONE CONVERSATION RECORD

DATE: 6/22/97 PROJECT: Congress Street MOB

TO: File PROJECT NO: 979014

FROM: Jim Morrison

SUBJECT: Connector Design

I had a conversation with Rick Knowland at the City of Portland Planning Department today. During the conversation, Rick indicated that the Planning Department would only give approval for the issuance of a foundation permit until such time as MMC receives approval from the Planning Department for a design of the elevated walkway. Further, Rick indicated that the City will not issue a separate permit for the connector.

I called Jim Clarkson at Mediplex, who said the length of time for work covered only by a foundation permit to be completed would be approximately 6 weeks. Mediplex wants to be in the ground by July 15. As indicated in previous correspondence, the A/E thinks it will take about 5 weeks to design the connector AFTER THEY CAN WORK IT INTO THEIR SCHEDULE.

The City and Mediplex both want to know when MMC will make a decision about the connector design.

cc: P. Gray
M. Swan
B. Bremm
R. Knowland
J. Clarkson

PHON_REC.WPD

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: TOM GORRILL

COMPANY:

FROM: R. KNOWLAND

FAX #: 879-0896

OF PAGES: 2

DATE: 1-12-98

RE: TOM - ATTACHED IS A MEMO FROM JOHN PAVENSTEDT REGARDING THE MMC PARKING MANAGEMENT PLAN

If you do not receive all of the pages, please call 874-8721 or 874-8719.

CITY OF PORTLAND, MAINE
ENGINEERING REVIEW FORM

Address of Proposed Site 883-903 CONGRESS STREET Date 12/22/97

Project Description MAINE MEDICAL CENTER OFFICE BLDG + PARKING GARAGE Job # _____

Applicant MAINE MEDICAL CENTER

Applicant's Mailing Address 22 BRAMHALL, PORTLAND, ME. 04102

Site Review (Planning Department)		Right-of-Way Review (Public Works Department)	
Review Engineer:	DUERING-HENRY	Review Engineer:	T. LOMBARDI
Number of Estimated Hours:	25.5	Number of Estimated Hours:	3
Cost Per Hour:	$ 46.90	Cost Per Hour:	$ 35
Total Amount:	$ 1,196.	Total Amount:	$ 105

An engineering fee has been assessed in the amount of $ 1,301 for the review of your project located at 883-903 CONGRESS ST.

Please make check payable to the City of Portland. The check should be submitted along with this form to the Portland Planning Department, City of Portland, 4th Floor, 389 Congress Street, Portland, ME 04101. Attn: RICHARD KNOWLAND

Office Use Only

Invoice Date: _____ Received: _____ date

Planning Revenue Code: _____

Public Works Revenue Code: _____

cc: Applicant - white
Planner - blue
Engineer - green
Public Works - yellow
Financial Officer - pink
Review/Inspection Fee File - golden

CITY OF PORTLAND, MAINE
ENGINEERING REVIEW FORM

Address of Proposed Site 693-703 Congress Street Date 12/22/97

Project Description Maine Medical Center Office Bldg. + Parking Garage Job # ________

Applicant Maine Medical Center

Applicant's Mailing Address 22 Bramhall, Portland ME 04102

<u>Site Review</u> (Planning Department)	<u>Right-of-Way Review</u> (Public Works Department)
Review Engineer: Gorrill-Palmer	Review Engineer: T. Lombardo
Number of Estimated Hours: 25.5	Number of Estimated Hours: 3
Cost Per Hour: $46.90	Cost Per Hour: $35
Total Amount: $1,196.	Total Amount: $105

An engineering fee has been assessed in the amount of $1,301 for the review of your project located at 693-703 Congress St..

Please make check payable to the City of Portland. The check should be submitted along with this form to the Portland Planning Department, City of Portland, 4th Floor, 389 Congress Street, Portland, ME 04101. Attn: Richard Knowland

Office Use Only

Invoice Date: ________ Received: ________ date

Planning Revenue Code: ________

Public Works Revenue Code: ________

cc: Applicant - white
Planner - blue
Engineer - green
Public Works - yellow
Financial Officer - pink
Review/Inspection Fee File - golden

CITY OF PORTLAND, MAINE
ENGINEERING REVIEW FORM

Address of Proposed Site _____ Date _____

Project Description _____ Job # _____

Applicant _____

Applicant's Mailing Address _____

Site Review (Planning Department)		Right-of-Way Review (Public Works Department)	
Review Engineer:	_____	Review Engineer:	_____
Number of Estimated Hours:	_____	Number of Estimated Hours:	_____
Cost Per Hour:	_____	Cost Per Hour:	_____
Total Amount:	_____	Total Amount:	_____

An engineering fee has been assessed in the amount of _____ for the review of your project located at _____.

Please make check payable to the City of Portland. The check should be submitted along with this form to the Portland Planning Department, City of Portland, 4th Floor, 389 Congress Street, Portland, ME 04101. Attn:_____

Office Use Only

Invoice Date: _____ Received: _____
date

Planning Revenue Code: _____

Public Works Revenue Code: _____

cc: Applicant - white
Planner - blue
Engineer - green
Public Works - yellow
Financial Officer - pink
Review/Inspection Fee File - golden

B. GANLEY
JOE, ALEX, LARRY
BILL B. TOM C.
PAUL G. JIM M.

12-6-97 MMC

Estimate down to $65,000

JO vehicles an hour to ~~Congress~~ St

ROLAND WANTS THE LAND FROM GILMAN SOUTH SIDE

Bob says have an informational meeting 1st, get act together before going to the C.C.

plan based on hour restriction on parking

* GO TO THE INFO. MEETING

CITY OF PORTLAND

MEMORANDUM

TO: Alex Jaegerman, Chief Planner
FROM: John Peverada, Parking Manager J.P.
DATE: December 19, 1997
RE: Maine Medical Center Proposed Office Building/Garage

I have just reviewed Jamey Caron's memo of December 11, 1997 to you on the above referenced project, and would like to express my thoughts, as follows:

I fully agree that MMC should provide the City with updated projections for space that they own but are not yet using. I have been assured by the administration of the hospital that while they may increase the gross square footage of space, the demand for parking in the vicinity of the Bramhall campus will diminish due to the fact that the length of patient stays are reduced, many departments are expanding the physical size of their office space but not the number of employees; and other departments are being relocated to other locations. In any event, MMC should also provide the City with verification that each employee will have an off street parking space.

The City, specifically the Parking Division, should be actively involved in monitoring Maine Medical Center's efforts to manage their parking needs, however, I do not see the necessity to establish a "Western Prom Oversight Committee". I think that if I met with an administrator of the hospital on a monthly basis to discuss specific parking situations as well as educational promotions that the hospital could sponsor, and other means and measures are implemented to keep the employees from parking on the streets, many parking issues will be minimized. My fear is that an Oversight Committee could actually "add fuel to the fire", and make the current parking situation over exaggerated.

Finally, I agree that the City should do everything it can to maintain existing on street parking spaces; however, I do support restricting the use of the 20 +/- on street spaces on the south side of Congress St. to 6:00 pm to 6:00 am. Currently, these spaces are only used by MMC employees from 6:00 am to 6:00 pm, which is evident when driving by and observing the yellow MMC stickers on the front windshields. After 6:00 pm, the traffic associated with the new building will be minimal, and the need for spaces by the neighboring business and the Sea Dogs will be greatest. I also support a curb cut in front of the new building as a 5 minute drop off zone to keep vehicles from the travel lane.

Please continue to keep me appraised of any change to MMC's parking management plan.

Have a happy holiday.

cc: Jamey Caron, Planning Board
Joe Gray, Director of Planning & Urban Development
Rick Knowland, Planning
Gloria Thomas, Department Head

12-19M.WPS

Squaw Bay Corp
Consulting Engineers & Land Surveyors

Principals:
W. Scott Decker, P.E.
John R. Kennedy, P.E.
Peter B. Tubbs, P.E., P.L.S.
David W. Young, P.E., P.L.S.

January 29, 1998

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, ME 04101

RE: Maine Medical Center
Medical Office Building

Dear Rick:

This letter addresses the comments received in your January 20, 1998 letter to me.

Jeffrey Preble's 1/12/98 letter to you

Drawing C-101

Comment #1: *"The proposed plans show a drainage swale along the easterly property line which outlets over the sidewalk and into Boynton Street. It does not appear there are any catch basins along Boynton Street to collect his runoff. We would suggest adding a catch basin and stormdrain to collect the runoff in this area and tie it into the existing combined sewer line in Boynton Street."*

Response: During our recent telephone conversation, you informed me that Tony Lombardo noted that under current conditions icing occurs along Boynton Street and Maine Medical Center should attempt to mitigate this condition. Therefore, enclosed drawing C-101 has been revised to include the requested catch basin. The sewer line in Boynton Street is an 8" sanitary line so we have connected the catch basin to the 12" oil/grit structure discharge line.

Comment #2: *"The existing sidewalk at the Forest Street and Boynton Street intersection is at elevation 39.0. The elevation of the catch basin grate on the Vortechnics unit is 39.75. This should be lowered if the intention is to collect runoff from the swale along the northern property boundary."*

Response: Enclosed Site Plan drawing C-101 has been revised to reflect a lowered catch basin grate elevation.

Comment #3: *"A dimension of 2'-9" has been shown on the Forest Street and Boynton Street Right-of-Way. We are not sure what this dimension represents.".*

P.O. Box 86A, 4 Blanchard Road, Cumberland Center, ME 04021
Phone: (207) 829-6994 • Fax: (207) 829-5692 • Email: squawbay@neis.net

Response: Enclosed Site Plan drawing C-101 has been revised to note the right-of-way width of 33′ as depicted on Titcomb Associates' survey drawing.

Comment #4: *"The curb schedule will need to be completed prior to construction."*

Response: The curb schedule will be completed when all issues regarding parking, sidewalk widths and building dimensions have been resolved.

Drawing C-302

Comment #1: *"Grades for the underdrain system have not been shown on the plan. The location for the underdrain cleanouts should be shown on the plans."*

Response: The final location of underdrains (both horizontal and vertical) will be established following final design of the office building and parking garage.

Comment #2: *"It is not clear where the underdrain discharges."*

Response: Enclosed Erosion and Sedimentation Control Plan drawing C-302 has been revised to show the underdrain system outletting to the Vortechs unit discharge line.

Comment #3: *"The location of the construction entrance is not shown on the plan. It might be worth specifying a location for construction traffic to access the site."*

Response: We prefer to allow the contractor to plan this element of the project. He will submit his plan for a construction entrance for approval by the Owner's Engineer and the City of Portland Public Works Department. If Public Works has specific ideas where the entrance must be, it would be helpful if the location was identified.

Comment #4: *"Please note that the details for the overhead walkway have not been included with this submission. The affect on the sidewalk width is therefore not known at this time."*

Response: The final details of the overhead pedestrian walkway have not been completed by the project architect. They await approval of the walkway concept by the Maine Medical Center. However, it is understood at this juncture that the supports on the medical office building side of Congress Street will be constructed into the building and will extend no more than 30″ into the sidewalk. The support on the south side of Congress Street will not encroach into the sidewalk but may abut the sidewalk.

John Peverada's 1/9/98 memorandum addressed to you

The traffic comments raised by Mr. Peverada have been or will be addressed directly by Maine Medical Center.

Comment: *"The list of MMC traffic improvements should be put on a site plan. In addition, the following statement should be added to the Site Plan:"*

"Applicant shall be responsible for monitoring the intersection of Park Avenue and Forest Street for a period of one year after a Certificate of Occupancy has been issued for the office building and parking garage. Applicant shall submit a traffic report to the City Traffic Engineer for review and approval. If the City Traffic Engineer determines that a traffic light is required, the applicant shall be responsible for the purchase and installation of the traffic light. An escrow account/performance guarantee shall be established by MMC prior to the issuance of a building permit."

Response: The Site Plan drawing C-101 has been revised to include the requested traffic improvement information.

Comment: *"Some, but not all, of the questions/issues that are listed in my memo of 12-24-97 to Patrick Costin have been addressed (see Attachment C)."*

Response: The architectural related comments will be addressed directly by Harriman Associates.

Comment: *"We need to get a definitive letter from MMC indicating that they will maintain the oil and grit separator, along with the schedule for maintenance."*

Response: Enclosed is a copy of a letter from Maine Medical Center addressed to you which addresses this comment.

Comment: *"Please indicate the dimensions and height of the transformer along Forest Street."*

Response: The transformer will be 6'x6'x6' cube situated on a 9'x9' concrete pad.

Comment: *"Note #9 on Sheet C-101, as well as related notes on curb and sidewalk, need to be changed. Note #9 should read "all curb and sidewalk shall be reconstructed along the entire frontage of the site..." We are skeptical that you will be able to "save" the existing curbs and sidewalks during construction, on this tight site. After construction, we can review the situation again to see if you were able to save the curb and sidewalk on Forest Street and Boynton Street. However, we are not comfortable with the present notes shown on the plans and Note #9."*

Response: Enclosed Site Plan drawing C-101 has been revised to address this issue.

Comment: *"We will need a draft deed to the City for that portion of the sidewalk that is on MMC property."*

Response: The draft deed will be submitted directly to the City by Maine Medical Center.

Comment: *"Do you have a catalog cut of the Miramat material shown on L-101?"*

Response: Enclosed is a catalogue cut of the Miramat material.

Comment: *"How high are the ventilation shafts in relation to the adjacent grade, and is there grating so that someone doesn't fall in?"*

Response: The ventilation shafts will extend no more than one foot above ground and will contain a grate to prevent children and animals from entering.

Comment: *"See the memo from Anthony Lombardo (Attachment D)."*

"Squaw Bay Cop has made the revisions requested by Public Works. The only item that is still missing as part of their submission is a copy of the capacity letter for the combined sewer in Forest Street. This letter has been requested from Bill Goodwin here at Public Works, but no actual letter verifying capacity of this sewer has been submitted."

Response: Mr. Frank Brancely has coordinated with and received additional information from Harriman Associates plumbing engineer and Mr. Brancely continues to review the project relative to sewage flows.

Please call me if you have any questions or require additional information

Very truly yours,

SQUAW BAY CORP

Scott Decker

W. Scott Decker, P.E.
Principal

WSD/cms
cc: Jim Clarkson
Jim Morrison

97-242
know0129.let
4 of 4

MAINE MEDICAL CENTER

January 27, 1998

Mr. Richard Knowland
Senior Planner
Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Congress Street MOB Oil and Grit Separator

Dear Mr. Knowland,

This is to inform you of the intention of Maine Medical Center to maintain the oil and grit separator required for this project. The inspection and cleaning of this separator will be performed in accordance with the specifications outlined on the attached sheet.

If you have any questions, please contact this office.

Sincerely,
Maine Medical Center

Robert D. Bremm
Director, Engineering Services

DELUCA01.WPD

* Tree well detail in the sidewalk

* Snow removal area - enough room and is it too close to trees?

* Detail edge treatment on Congress Street side planting . . . is it a curb?

* Ground cover material

9. Exterior Lighting Detail - Needs improvement

10. Dumpster for Solid Waste - Where will it go?

11. Submission of Written Statements {sec. 14-525(c)}

    * Financial and technical capability

12. Miscellaneous site plan detail

    * Land area; building sq. ft.; building footprint; uses; number of parking spaces

13. Engineering Review Fee Due

14. Other Issues

AGENDA FOR MMC SITE PLAN MEETING
DECEMBER 19, 1997

1. Traffic

   * List of traffic-related improvements . . . Is it complete?

      * Improvements should be shown and listed on a site plan . . . What other technical details/information will Larry Ash need to assure improvements are properly planned?

      * Left turn lane issue and parking along Congress Street . . . Planning Board member comments

   * Improvements directly adjacent to the site

      * Drop-off area along Congress Street . . . Planning Board member comments

2. Curbing and Sidewalk . . . contract zone requirements - new curb and sidewalk

   * Double ramp at drop-off area -

   * Show width of all sidewalks

3. Public Works Comments from Tony Lombardo

   * Memo dated December 3, 1997

   * Other comments

4. Development Review Coordinator Comments from Jeff Preble

5. Stormwater

   * Runoff calculations, capacity letter for sewer

   * Maintenance schedule for oil and grit separator

6. Erosion and Sedimentation Control Measures

   * Location - where will they be employed?

7. Utilities . . . Service letters from utilities

8. Landscaping

   * Adequacy of landscaping along easterly property line

O:\PLAN\REZONE\883CNGRS\MTG12-19.LEC

* Tree well detail in the sidewalk

* Snow removal area - enough room and is it too close to trees?

* Detail edge treatment on Congress Street side planting . . . is it a curb?

* Ground cover material

9. Exterior Lighting Detail - Needs improvement volume, where is it going

10. Dumpster for Solid Waste - Where will it go?

11. Submission of Written Statements {sec. 14-525(c)}

* Financial and technical capability

12. Miscellaneous site plan detail

* Land area; building sq. ft.; building footprint; uses; number of parking spaces

13. Engineering Review Fee Due 50,000 sq.ft. P.B. review ain Morse

14. Other Issues

- 11"X17" reductions of final site plan (one set)
- significant historic, architectural or archeological site M.H.P.C.
- water resources, aquifer no site wells, sewage disposal
- copy of deed right title + interest
- SIGNAG

O:\PLAN\REZONE\883CNGRS\MTG12-19.LEC

AGENDA FOR MMC SITE PLAN MEETING
DECEMBER 19, 1997

1. Traffic

    * List of traffic-related improvements . . . Is it complete?

        * Improvements should be shown and listed on a site plan . . . What other technical details/information will Larry Ash need to assure improvements are properly planned?

        * Left turn lane issue and parking along Congress Street . . . Planning Board member comments

    * Improvements directly adjacent to the site

        * Drop-off area along Congress Street . . . Planning Board member comments

2. Curbing and Sidewalk . . . contract zone requirements - new curb and sidewalk

    * Double ramp at drop-off area

    * Show width of all sidewalks

3. Public Works Comments from Tony Lombardo

    * Memo dated December 3, 1997

    * Other comments

4. Development Review Coordinator Comments from Jeff Preble

5. Stormwater

    * Runoff calculations, capacity letter for sewer

    * Maintenance schedule for oil and grit separator

6. Erosion and Sedimentation Control Measures

    * Location - where will they be employed?

7. Utilities . . . Service letters from utilities

8. Landscaping

    * Adequacy of landscaping along easterly property line

Post-it® Fax Note 7671	Date	# of pages ▶
To ALEX	From JAIMEY	
Co./Dept. PLANNING	Co. SMRT	
Phone #	Phone # 772-3546	
Fax # 756-8258	Fax #	

TO: Alex Jaegerman
Planning Department

FROM: Jaimey Caron
Planning Board

DATE: December 11, 1997

SUBJECT: Maine Medical Center Office Building
Congress Street

For the upcoming public hearing on this item, I would like your help in crafting several conditions of approval. I recognize that staff and the Board may not support some or all of these items. Nonetheless, I would like to be prepared to offer them at the hearing.

- The parking report should be updated to reflect all MMC offices and properties in the area, including projections for space that MMC owns but is not yet using. A condition of approval should require MMC to submit an updated report for staff review and approval. It would be helpful at the public hearing if staff could generate a list of MMC properties in the city.

- The Parking Management Report needs to have specific programs for managing parking problems on the Western Prom and should have a mechanism for the city to be involved in seeing that those items are enforced. I would look to John Peverada for suggestions of effective management programs and target areas. I would suggest the creation of a "Western Prom Parking Oversight Committee" consisting of businesses, neighborhood and city representatives working under the city's Parking Division (similar in concept to the Old Port Task Force) to oversee parking and vehicle circulation problems in the neighborhood. The group would monitor the impact of management strategies and provide a forum for feedback and modifications to the plan. I would appreciate your comments and suggestions for crafting a condition of approval for this concept.

- At the workshop, the applicant indicated that parking would need to be removed from Forest St. in the area around the access drive to the garage. Because of the narrow street width, the applicant's traffic engineer stated that Forest St. may be blocked at times if these spaces are not eliminated, particularly in the winter. It is the applicant's responsibility to mitigate the impacts of their development. Since removing these parking spaces require City Council approval, a condition of approval should be included that, in the event the City Council does not grant the request, the applicant shall submit a revised site plan for the Planning Board's review. An alternative approach would be to provide a turning lane adjacent to the garage on MMC land.

- As discussed by the Board at the workshop, the restriping of Congress St. should minimize the removal of existing onstreet parking spaces. This is particularly important in minimizing the impact of this development on existing business and neighbors in the area.

In the event the applicant does not revise the plan for Congress St., a conditional of approval should be included that would require the applicant to resubmit alternate plans for the Board's review.

- The current plan indicates the skybridge will allow users of the lower lot to access the main building through the Gilman St. garage. It is not clear to me that there is a safe pedestrian route beyond the skybridge, particularly across the access road behind the hospital. Given the grades, sight lines and stopping distances on the access road, winter use is a particular concern. How many employees will travel this route to and from the hospital? Additionally, how do the employees in the Gilman St. garage currently access the hospital? Staff should review the end of the proposed route and I would suggest a condition of approval requiring signage, striping, bollards, etc in this area for pedestrian safety as a minimum. Although beyond the Board's authority, ADA access is also a concern.

- In the event that light poles on the roof of the garage are included in the final submission, I would like a condition of approval crafted that would restrict the height and location so as to be inconspicuous to the surrounding neighborhood on three sides.

DEPARTMENT OF PLANNING AND URBAN DEVELOPMENT

RICHARD KNOWLAND
SENIOR PLANNER

12-24-97

SCOTT

ATTACHED IS AN ENGINEERING REVIEW ASSIGNMENT FORM. FOR THE MAIN MEDICAL CENTER PROJECT. THE ENGINEERING REVIEW ASSIGNMENT IS # 1,301. PLEASE FORWARD THIS TO THE APPROPRIATE PERSON FOR PAYMENT.

THE FEE SHOULD BE PAID PRIOR TO THE PUBLIC HEARING.

SHOULD YOU HAVE ANY QUESTIONS ON THIS PLEASE CALL ME. HAVE A WONDERFUL HOLIDAY.

RK

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: PATRICK COSTIN

COMPANY: HARRIMAN ASSOC.

FROM: R. KNOWLAN

FAX #: 782-3017

OF PAGES: 3

DATE: 12-24-97

RE: LETTER REGARDING BUILDING FACADE COMMENTS.

HAVE A WONDERFUL HOLIDAY.

If you do not receive all of the pages, please call 874-8721 or 874-8719.

Dufresne-Henry, Inc.

22 Free Street
Portland, Maine 04101-3900
207/775-3211
Fax: 207/775-6434

FAX TRANSMISSION COVER SHEET

Date: 12/22 *Time:* 9:40

To: RICK KNOWLAND

Fax: 756-8258

Re: MAINE MEDICAL CENTER

Sender: JEFF PRESCUE

YOU SHOULD RECEIVE 2 *PAGE(S), INCLUDING THIS COVER SHEET.*
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 207/775-3211.

COMMENTS: RICK -

Letter on Review fee as we discussed.

original to follow in mail.

JEFF

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel.: 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

December 18, 1997

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

Thank you for asking Dufresne-Henry to review the proposed Maine Medical Office Building and Parking Garage development project on Congress Street. As requested we have developed a budget to complete the review of this project. In developing this budget we have assumed that additional design drawings and documentation will be submitted for review following our meeting this week. We have estimated the review for this project will total $1,600 including reimbursable expenses. As with past projects we will charge towards this fee on an hourly basis.

Our review of this project will focus primarily on the site development issues such as erosion control, storm water handling, and site improvements. We have allotted time within this budget for further review of the design documents and attendance at another review meeting. Although not included in this budget estimate we can also provide periodic inspections during construction if requested.

Our initial set of review comments will be forwarded to you later today. Let me know if you have any questions in review of this proposed budget.

Very truly yours,

DUFRESNE-HENRY, INC.

Jeffrey D. Preble, P.E.
Project Manager

File N:\civil\8160054\Knowlandltr4.wpd

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel.: 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

December 22, 1997

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

Thank you for asking Dufresne-Henry to review the proposed Maine Medical Office Building and Parking Garage development project on Congress Street. As requested we have developed a budget to complete the review of this project. As we discussed earlier, the estimated review fee for this project is expected to total $1,200 including reimbursable expenses. As with past projects we will charge towards this fee on an hourly basis.

Our review of this project will focus primarily on the site development issues such as erosion control, storm water handling, and site improvements. We have allotted time within this budget for further review of the design documents and attendance at another review meeting and planning board meeting. Although not included in this budget estimate we can also provide periodic inspections during construction if requested.

We are looking forward to working with you on this project.

Very truly yours,

DUFRESNE-HENRY, INC.

Jeffrey D. Preble, P.E.
Project Manager

File N:\civil\$160054\Knowlandltr4.wpd

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: TOM GORRILL

COMPANY:

FROM: R. KNOWLAND

FAX #: 879-0896

OF PAGES: 2

DATE: 12-24-97

RE: TOM - LETTER FROM JOHN PUGRADA

If you do not receive all of the pages, please call 874-8721 or 874-8719.

Sportsman's Grill

911 Congress Street
Portland, Maine 04101
Telephone: 772-9324

November 12, 1986

Mr. Donald L. McDowell
Executive Vice President & Treasurer
Maine Medical Center
22 Bramhall Street
Portland, Maine 04102

COPY

Dear Mr. McDowell;

I am writing this letter in regards to the newly opened parking lot adjacent to the Sportsman's Grill. I'm sure you are aware of the general parking shortages in all of Greater Portland and the Sportsman's Grill is among those businesses.

Before Maine Medical Center acquired that parking lot I leased it. It was during this time that the Richard's Wing was begun. I was asked if some equipment and personnel could use the lot. I gave my permission to do so.

The Appleby Lodge property was much desired and needed by MMC. Mr. Appleby would not sell to MMC and his Will prevented his son from so doing. I was asked by MMC to try to buy the property.I spent three years working with the family before it could be accomplished and then resold to MMC.

Recently I was asked to provide help for Nursing School parking, which I did and am still doing so.

I am giving you this information because I consider myself a good neighbor and supporter of MMC.

I would like to discuss some limited evening use of the parking lot at your convvenience.

FRONT DOOR

Sincerely yours,

James J. Vasile, Owner

ALROSE Est. 1950
printing & graphics co.

April 1, 1987

TO WHOM IT MAY CONCERN AT MAINE MEDICAL CENTER:

When the Maine Medical Center attempted to purchase the land and building at 38 Bramhall Street which I owned, the hospital and I could not agree. However, Mr. James Vasile of the Sportsmen's Grill entered the negotiations on behalf of the Maine Medical Center's interest. Based on his expertise in business logic and experience, he was able to expedite the sale of the property at 38 Bramhall Street to Maine Medical Center.

I believe the sale would not have been concluded if Mr. James Vasile had not been involved. The Maine Medical officers involved in the purchase were well aware of the service he had rendered on their behalf. The sale of the property allowed the hospital to make a new and very attractive entrance to the hospital. I appreciated Mr. Vasile's involvement in the negotiations.

Leroy E. Applebee

200 Anderson Street - Portland, Maine 04101 (207) 774-9329

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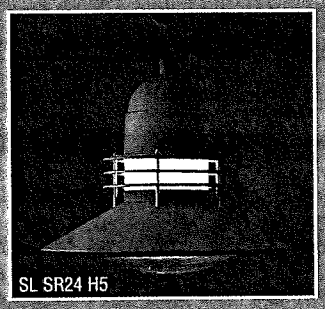
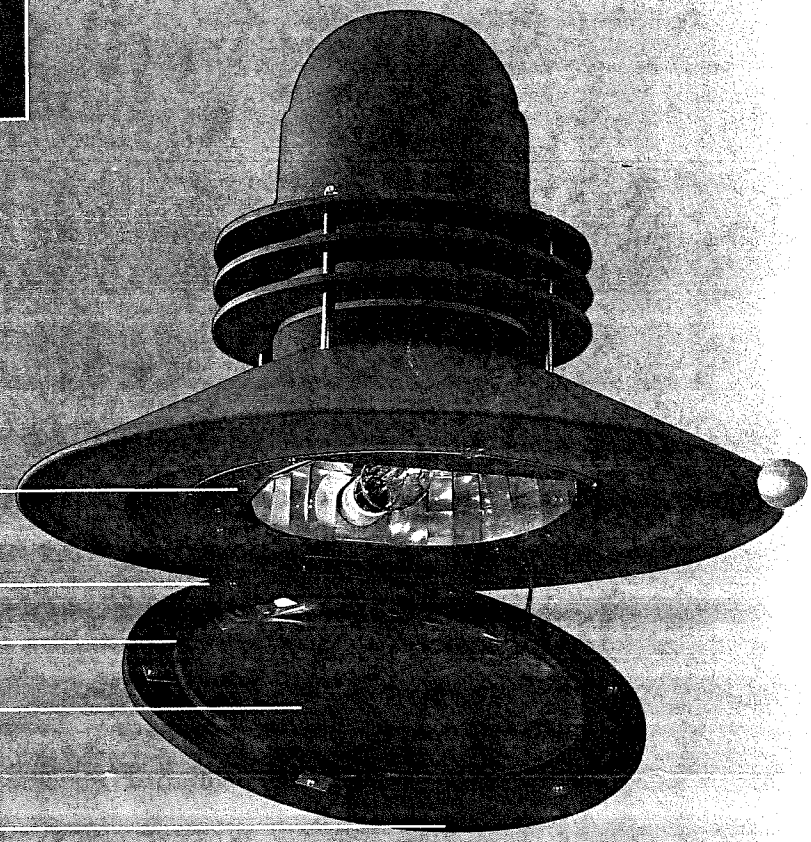
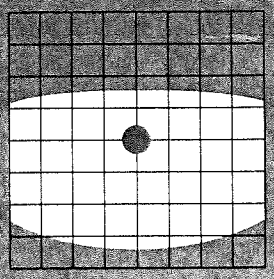
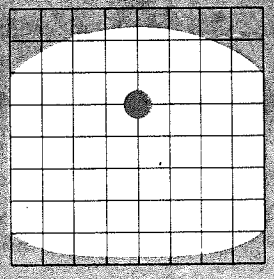

SL SR24 H5



FOUR LIGHT DISTRIBUTION PATTERNS FOR PRECISE CONTROL



TYPE 2
- pathways
- streets



TYPE 3
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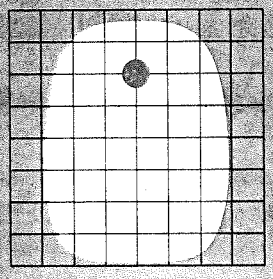
- parking areas
- pathways



TYPE 4
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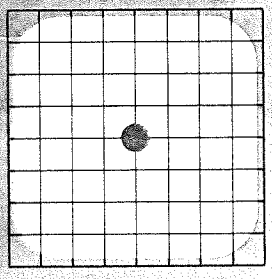
- streets
- structures



TYPE 5
- parking areas
- parks
- [illegible]

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel.: 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

December 18, 1997

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

We have completed our initial review of the plans and design documents for the proposed Maine Medical Center Office and Parking Garage project received at our meeting on December 12, 1997 with Jim Wendell and you. This project involves an office building, parking garage, and associated site work. Existing grades at the site slope steeply from the easterly portion of the site along Congress St. to the northerly end of the project at the Forest St. and Boynton St. intersection. We understand that the plans and design documents are still under development and are considered preliminary, therefore our comments are geared towards the concepts presented in the documents.

Attached to this letter is an interoffice memorandum from Tim Michaud to myself outlining some preliminary comments on the proposed development. The comments are divided into construction, erosion control, storm water, and general issues. These comments and additional items are further discussed below.

Construction Issues

The proposed building and parking garage take up a majority of the project site. In addition a significant amount of excavation is required to achieve the subgrades needed for the parking garage foundation. The deepest excavation is along Congress St. where a cut of over 20 feet will be required. A significant effort will be required to remove this material and ensure stable sidewalls of the excavation. The S. W. Cole report also identified the potential for encountering contaminated materials during the excavation, and recommended that a plan be developed for addressing this possibility during construction. More details should be provided on the excavation process to ensure a stable work area and handling of contaminated soil.

Construction of this project will be complicated by the size of the site. Areas for storage of construction materials will be needed outside of the sites boundaries. Have any areas been identified where this will take place? Site safety fencing and other barricades will be required to ensure the safety of people in the area. Other miscellaneous construction items are listed below.

- There is a discrepancy on the plans on the required curb reveal. Drawing C-301 specifies the required 7 inch reveal while drawing L-101 lists a 6 inch reveal.
- The S. W. Cole report identifies the need for a foundation drain. This drain should be added to the site plan.
- The detail sheet lists pipe sizes to 96 inches. We would suggest modifying this schedule to include only the sizes required for the project.
- The configuration of the drop off area along Congress St. needs further development. There is not enough room between the handicap ramps and the angle point on the curbing to allow vehicle parking without interfering with access to the ramps.
- Support details for the elevated walkway are needed to determine if there are any impacts on sidewalk widths.

Erosion Control Issues

The erosion control detail sheet is general and not specific to this project. Locations of the proposed erosion control structures should be shown on the plans.

Storm Water Management

A storm water management plan should be developed for the project. Specific items that should be addressed include:

- Handling of surface run off along the easterly property line to Boynton St.,
- sizing of the oil/grit separator, and
- checking the capacity of the existing 12 inch storm drain to handle the proposed roof drain flows. Squaw Bay and Portland Public works have already agreed to allow the roof drain to be tied into the combined sewer system.

The landscaping plan calls for several plantings in the area of the oil/grit separator. Some coordination is required to make certain access to the separator is not hindered by the plantings.

General Issues

A snow removal zone has been provided along Boynton St. The size of the zone appears to be small. In addition the location is very close to the sidewalk along Boynton St. Fencing or other safety barriers located between the snow removal zone and the sidewalk should be considered. The landscaping plan calls for some granite stairs to be installed near Congress St. Details for this have not been provided.

We are looking forward to meeting with you on December 19th to review the project with the developers. Let me know if you require any additional information prior to this meeting.

Very truly yours,

DUFRESNE-HENRY, INC.

JDP

Jeffrey D. Preble, P.E.
Project Manager

Enclosure

File N:\civil\8160054\Knowlandltr5.wpd

DUFRESNE-HENRY, INC.
MEMORANDUM

TO: JDP

FROM: TJM

DATE: 12/15/97

SUBJECT: Medical Office Building & Parking Garage Site Plan Review

Site plan review comments are as follows:

Construction Issues:

1. The reveal for granite curbing is to be 7 inches. Dwg L-101 specifies a 6 inch granite curb reveal.
2. The proposed Roof drain piping should be installed with a clean out assembly.
3. The outlet pipe from the proposed oil/water separator is to connect into an existing sewer pipe per City of Portland Public Works.
4. The details for the concrete sidewalks lack information about control joints.
5. The site plan does not specify a curb radius at the corner of Forest St. and Boynton St.
6. The site plan does not include details for outdoor lighting.

Erosion Control Issues:

1. The erosion control plan is general and not specific to this project. This plan should provide specific erosion control details pertaining to this project.

Storm water Management:

1. The site plan does not include details for site drainage; specifically at Boynton St.
2. A construction sequencing plan for the site and the drainage system has not been provided.
3. A maintenance program for the Storm water handling system has not been provided.

General Issues:

1. The ste plan should specify a Benchmark and elevation per City of Portland datum.
2. The Site plan needs to show pedestrian cross walks at entrances/exists to the proposed building.

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel.: 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

January 12, 1998

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

We have completed a review of the January 6, 1998 plans and design documents for the proposed Maine Medical Center Office and Parking Garage project. Most of the comments in our December 18, 1997 letter have been addressed, although there are a few minor items that we have noted during this review of the plans and supporting documents. These items are listed out below.

Drawing C-101

1. The proposed plans show a drainage swale along the easterly property line which outlets over the sidewalk and into Boynton St. It does not appear there are any catch basins along Boynton St. to collect this run off. We would suggest adding a catch basin and storm drain to collect the run off in this area and tie it into the existing combined sewer line in Boynton St.
2. The existing sidewalk at the Forest St. and Boynton St. intersection is at elevation 39.0. The elevation of the catch basin grate on the Vortechnics unit is 39.75. This should be lowered if the intention is to collect run off from the swale along the northern property boundary.
3. A dimension of 2'-9" has been shown for the Forest St. and Boynton St. Right of Way. We are not sure what this dimension represents.
4. The curb schedule will need to be completed prior to construction.

Drawing C-302

1. Grades for the underdrain system have not been shown on the plan. The location for the underdrain cleanouts should be shown on the plan.
2. It is not clear where the underdrain discharges.
3. The location for the construction entrance is not shown on the plan. It might be worth specifying a location for construction traffic to access the site.

Please note that the details for the overhead walkway have not been included with this submission. The affect on the sidewalk width is therefore not known at this time. Let me know if you have any questions in review of our comments. We are looking forward to meeting with you on Thursday.

Very truly yours,

DUFRESNE-HENRY, INC.

Jeff

Jeffrey D. Preble, P.E.
Project Manager

File N:\civil\8160054\Knowlandltr6.wpd

From: ANTHONY LOMBARDO
To: RWK
Date: 12/3/97 7:40am
Subject: Maine Medical Center Parking & Medical Offices Bldg.

The following comments were generated during Public Works/Engineering review of the plans and application submitted Oct. 7, 1997:

1. Site Plan needs to specify ADA sidewalk ramps at all street corners and exits/entrances of the proposed building.
2. Applicant must maintain a 4 feet wide sidewalk width on Forest St. At the corner of Forest & Congress St. the proposed sidewalk scales less than 4 feet wide.
3. Applicant needs to specify radius curb at the corner of Forest St. and Boynton St.
4. Site plan must specify proposed sidewalk construction materials.
5. Site plan should specify a Bench Mark and elevation based on City of Portland datum.
6. Public Works does not allow direct connections into City of Portland manholes. Applicant must connect the proposed outlet pipe from the oil/sediment separation tank into the sewer main in Forest ST.
7. Curb installation detail must specify 7 inches of reveal not 6 inches as shown.

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: SCOTT DICKSON

COMPANY: SQUAW BAY

FROM: R. KNOWLAND

FAX #: 829-5692

OF PAGES: 7

DATE: 10-27-97

RE: SCOTT - ATTACHED IS A WORKSHOP AGENDA, STAFF MEMO TO THE BOARD AND GENERAL STAFF COMMENTS. STAFF MEMO DID NOT INCLUDE ATTACHMENTS

If you do not receive all of the pages, please call 874-8721 or 874-8719.

CITY OF PORTLAND, MAINE
DEPARTMENT OF PUBLIC WORKS
OPERATIONS/ENGINEERING - INSPECTIONS
M E M O R A N D U M

TO: Rick Knowland, Senior Planner
FROM: Larry Ash, Traffic Engineer
DATE: November 4, 1997
SUBJECT: Proposed Maine Medical Center Office Facility

I have reviewed the Traffic Impact Study and Parking Analysis relative to the above-referenced project. I have also reviewed parts of the studies with Tom Gorrill of DeLuca-Hoffman and have the following comments (these comments are in addition to all previously made and do not exempt DeLuca-Hoffman from existing obligations).

- For the Park Ave./St. John intersection, DeLuca-Hoffman has not yet prepared a signal timing plan that will revise plan timings and cycle length. I have reservations that their proposed 60 second cycle is adequate. Since this intersection experiences a high level of accidents and has a high critical rate factor (CRF) DeLuca-Hoffman should prepare a safety analysis of their proposed signal timing changes. I also indicated to Tom Gorrill that northbound vehicle loop detectors need to be installed at this location.

- For the Congress/St. John intersection DeLuca-Hoffman needs to further explain their recommendation for the elimination of some signal phases during peak hours. A signal timing plan for implementation after build-out of the project has not yet been prepared for City review. No mention has been made of the existing exclusive pedestrian phase and whether or not DeLuca-Hoffman has any recommendations for this phase. Finally, DeLuca-Hoffman has not yet submitted for City review a detailed evaluation of accident conditions at this intersection.

- At the Congress/Valley, DeLuca-Hoffman needs to submit for City review an evaluation of accident history. Also, no mention has been made of the existing pedestrian phase at this location.

- The Congress/Gilman and Congress/Weymouth intersections meet criteria for high accident locations (HAL). I requested DeLuca-Hoffman submit a more detailed evaluation of accident conditions at these locations using the most recently available accident data. The City will provide accident records as necessary. Further, a reevaluation of Warrant 6, accident experience, in the MUTCD should be performed.

The elimination of parking on the north side of Congress adjacent to these intersections should be addressed to improve sight distance.

- A conceptual sketch of the proposed elimination of on-street parking on the south side of Congress Street from Gilman to Weymouth has not yet been submitted by DeLuca-Hoffman for City review. I question whether the parking restriction might serve all concerned if only during the peak hours or peak a.m. hours.

- Signal improvements at Bramhall/Congress are supposedly being made due to the Holt Hall renovation project and DeLuca-Hoffman has not been asked to do any additional work at this location at this time.

- I expressed concern to Tom Gorrill that parking by MMC employees and visitors in residential neighborhoods would continue and that residents in these neighborhoods may wish to eliminate as much of this as possible. Tom Gorrill said that MMC is preparing a parking management plan which will address this question.

cc: Tom Gorrill, DeLuca-Hoffman Associates, Inc.
William J. Bray, P.E., Acting Director Portland Public Works
Bruce A. Bell, Operations Manager

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: TOM GORRILL

COMPANY:

FROM: R. KNOWLES

FAX #: 879-0896

OF PAGES: 3

DATE: 11/5/97

RE: COMMENTS FROM LARRY ASH DATED 11-4-97

If you do not receive all of the pages, please call 874-8721 or 874-8719.

Department of Transportation

State of Maine
Dept. of Transportation
State House Station 16
Capitol St. Augusta Me. 04330

Phone: (207) 287-3775
FAX: (207) 287-3725
email: Bruce.Ibarguen@state.me.us

Memorandum

To: Linda Kokemuller
From: Bruce Ibarguen P.E.
cc: file
Date: Thursday March 5, 1998
Subject: Maine Medical Office Building & Parking Garage (L-7981-T3-C-N) - Portland

Maine Medical Center has filed a Site Location of Development application with D.E.P. in order to obtain a "Traffic Permit" for approval to construct a 49,150 square foot office building and a 480 car parking garage. Maine Medical Center has submitted to D.E.P. an off-site traffic impact study which is required by D.E.P. for development projects that are anticipated to generate in excess of 200 trips per hour.

The site is located on a 1.35 acre parcel of land that is bounded by Congress Street, Forest Street, and Boynton Street. Access to the site will be provided as follows: Congress Street will have a driveway that will be used exclusively by patients visiting their doctor at the medical office building. Forest Street will have a driveway that will be used exclusively by Maine Medical Center Staff. The project includes an enclosed pedestrian overpass that will allow doctors and hospital staff to cross Congress Street and enter the Maine Medical Center Hospital without having impact to or by vehicular traffic at street level on Congress Street.

The above referenced D.E.P. Site Location of Development application, has been reviewed for compliance with the "Traffic Movement Standards" of the Site Location of Development Law. Listed below are our review comments regarding Maine Medical 's proposed office building and parking garage project in Portland.

Attached to this memo is a notice to the applicant regarding procedures to obtain M.D.O.T. Entrance Permits (where applicable) and approval for design, construction, and inspection of any improvement to be made on state or state-aid highways.

On-site Impacts:

1. No adverse traffic operational impacts are anticipated.

Off-site Impacts :

Congress Street :

1. Parking spaces on the Southerly side of Congress street from a point 55 feet East of Gilman Street to Weymouth Street should be restricted to no parking between the hours of 6:00 a.m. thru 6:00 p.m.. Appropriate "No Parking from 6:00 a.m. to 6:00 p.m." signs should be installed on this section of Congress Street.

2. One parking space on the Northerly side of Congress Street to the East of the driveway entrance/exit to the Medical Office Building should be restricted to no parking at all times. Appropriate "No Parking Anytime" signs should be installed on this section of Congress Street.

3. A "Bus Stop - No Parking " area 60 feet long should be appropriately signed and marked on the Southerly side of Congress Street opposite Forest Street.

4. A "Bus Stop - No Parking " area 56 feet long should be appropriately signed and marked on the Northerly side of Congress Street just east of Forest Street.

Forest Street :

1. Two parking spaces on the Westerly side of Forest Street opposite the Parking garage driveway entrance/exit should be restricted to no parking at all times. Appropriate "No Parking Anytime" signs should be installed on this section of Forest Street.

Boynton Street (from Forest Street to Weymouth Street):

1. Boynton Street is currently operating as a two-way street with motor vehicular traffic traveling along Boynton Street in both the Easterly and Westerly directions. The curb-to-curb width of Boynton Street is only 22 feet wide. Parking is currently allowed on the Southerly side of Boynton Street. Parked cars along Boynton Street has

resulted in reducing the amount of unobstructed travel surface by approximately 9 feet. Hence, two-way traffic on Boynton Street is not recommended since there effectively is only 13 feet of travel surface. It should be noted that Boynton Street will provide motorists traveling North on Forest Street with an alternative route to either Park Avenue or Congress Street. Traffic exiting the proposed parking garage will undoubtedly be using Boynton Street especially if the Forest Street/ Park Avenue intersection is not signalized. For operational and safety reasons it is recommended that one of the following alternatives be implemented:

a) Restrict on street parking on both sides of Boynton Street from Forest Street to to no parking between 6:00 a.m. to 6:00 p.m., or

b) Restrict traffic flow on Boynton Street to one-way traffic.

Forest Street / Boynton Street :

1. The curb radius on the Southeasterly corner of the intersection of Forest Street and Boynton Street is not large enough to allow passenger vehicles to make a right-turn from Forest Street onto Boynton Street without encroaching into the opposing lane of travel. For operational and safety reasons it is recommended that one of the following alternatives be implemented:

   a) Widen out the curb radius to allow right-turns to occur so that the right-turning vehicle does not encroach into the opposing travel lane.

   b) Restrict traffic flow on Boynton Street to one-way traffic.

St. John Street / Park Avenue:

1. We concur with the Consultant's findings that the following stacking lanes are not sufficiently long enough to provide adequate queue storage:

	Lane length (existing)	Lane Length (needed)	Add't., length (needed)
St.. John Street Northbound right-turn lane:	130 feet	320 feet	190 feet
St. John Street Southbound thru/left lane:	300 feet	432 feet	132 feet
St. John Street Southbound right-turn lane:	100 feet	153 feet	53 feet

It is recommended that St. John Street have parking restrictions be made to provide the additional queue storage to meet the 90th percentile storage requirements.

2. This intersection is classified as a High Accident Location, having a critical rate factor of 1.12 . In the 3 year study period beginning January 1, 1994 and ending on December 31, 1996 a total of 46 accidents occurred at this intersection. We concur with the Consultant's recommendation that supplemental striping through the intersection for the Westbound St. John Street dual left-turn lanes be installed. Pavement markings should be of the thermoplastic type since they will not wear off like paint does.

3m type -380-

3. We concur with the Consultant's recommendation that the traffic signal controller be retimed to provide optimum phasing and timing as reflected in the "Signal 94" capacity analysis worksheets submitted by the Consultant. However, there will still remain unacceptable level of service and v/c ratio for the Westbound Park Avenue left/thru lane group. This lane group is anticipated to operate at a Level of Service "E" with a v/c ratio of 1.36 . To address this capacity deficiency, it is recommended that the exclusive right-turn lane on the Westbound Park Avenue approach be re-striped to operate as a shared thru/right lane. Park Avenue from St. John Street to the I-295 on-ramps should be re-striped to operate with 3 thru lanes.

4. Appropriate overhead lane use signs should be installed on all approaches and on Park Avenue between St. John Street and the I-295 on-ramps.

4. Appropriate overhead lane use signs should be installed on all approaches and on Park Avenue between St. John Street and the I-295 on-ramps.

St. John Street / Congress Street:

1. We concur with the Consultant's findings that the following stacking lanes are not sufficiently long enough to provide adequate queue storage:

	Lane length (existing)	Lane Length (needed)	Add't. length (needed)
Congress Street Eastbound left-turn lane:	300 feet	575 feet	275 feet
Congress Street Eastbound thru/right lane:	300 feet	558 feet	258 feet
Congress Street Westbound right-turn lane:	250 feet	305 feet	55 feet
St. John Street Northbound thru/right lane:	400 feet	478 feet	78 feet

It is recommended that Congress Street and St. John Street have parking restrictions made to provide the additional queue storage to meet the 90th percentile storage requirements.

2. We concur with the Consultant's recommendation that the traffic signal controller be retimed to provide optimum phasing and timing as reflected in the "Synchro 3.2" capacity analysis worksheets submitted by the Consultant.

3. Appropriate overhead lane use signs should be installed on all approaches.

Congress Street / Valley Street:

1. We concur with the Consultant's recommendation that the traffic signal controller be retimed to provide optimum phasing and timing as reflected in the "Synchro 3.2"

capacity analysis worksheets submitted by the Consultant. However, in order to obtain the projected acceptable levels of service and v/c ratios the Eastbound and Westbound Congress Street approaches both need to be re-striped to provide two 10 foot wide lanes with lane use designated for one left/thru lane and one thru/right lane.

2. Appropriate overhead lane use signs should be installed on all approaches.

Congress Street / Bramhall Street / Deering Avenue:

1. We concur with the Consultant's findings that the following stacking lanes are not sufficiently long enough to provide adequate queue storage:

	Lane length (existing)	Lane Length (needed)	Add't. length (needed)
Congress Street Eastbound left/thru lane:	310 feet	370 feet	60 feet
Bramhall Street Northbound thru/right lane:	200 feet	371 feet	171 feet
Deering Avenue Southbound thru/right lane:	100 feet	306 feet	206 feet

It is recommended that Congress Street, Bramhall Street and Deering Avenue have parking restrictions made to provide the additional queue storage to meet the 90th percentile storage requirements.

2. We concur with the Consultant's recommendation that the traffic signal controller be retimed to provide optimum phasing and timing as reflected in the "Signal 94" capacity analysis worksheets submitted by the Consultant. However, there will still remain an unacceptable level of service and v/c ratio for the Southbound Deering Avenue left-turn lane. This lane is anticipated to operate at a Level of Service "F" with a v/c ratio of 1.12 . To address this capacity deficiency, it is recommended that a left-turn prohibition be signed on the Southbound Deering Avenue left-turn lane for the p.m. peak period of 4:00 to 6:00 p.m. .

3. The Consultant's analysis assumes that the existing exclusive pedestrian phase will be eliminated. If the exclusive pedestrian phase is not eliminated from the traffic signal controller, then the anticipated acceptable levels of service for all lane groups will not be realized. Therefore, it is recommended that the exclusive pedestrian phasing be replaced with concurrent pedestrian phasing.

4. Appropriate overhead lane use signs should be installed on all approaches.

Congress Street / Gilman Street:

1. We concur with the Consultant's recommendation that one parking space be eliminated from the Northerly side of Congress Street to the East of Gilman Street so that adequate intersection sight distance is provided to vehicles exiting from Gilman Street onto Congress Street.

Congress Street / Weymouth Street:

1. We concur with the Consultant's recommendation that three parking spaces be eliminated from the Northerly side of Congress Street to the West of Weymouth Street so that adequate intersection sight distance is provided to vehicles exiting from Weymouth Street and turning left onto Congress Street.

Forest Street / Park Avenue:

1. We concur with the Consultant's finding that the intersection currently meets the Peak Hour Warrant as specified under the Manual of Uniform Traffic Control Devices.

2. We concur with the Consultant's recommendation that the intersection be monitored after completion of the Maine Medical Office Building and Parking Garage project to assess whether or not an actuated traffic signal is justified at this intersection. A traffic signal warrant analysis should be done using a minimum of 12 hour (6:00 a.m. to 6:00 p.m.) turning movement counts taken on a typical weekday. If a traffic signal is justified after the monitoring is completed, then a fully actuated traffic signal should be installed, soon thereafter.

Other Comments:

1. Special authorization will need to be granted by M.D.O.T. to allow Maine Medical Center to build an overhead pedestrian sky walk over Congress Street which will provide a protected all-weather enclosure for pedestrians wishing access between the proposed Maine Medical Center's Medical Office Building/ Parking Garage with the existing Maine Medical Center Hospital complex.

Bruce Ibarguen P.E.
Engineer of Traffic
Traffic Engineering
M.D.O.T. - M. & O.

State of Maine

State of Maine
Dept. of Transportation
State House Station 16
Capitol St. Augusta Me. 04330

Phone: (207) 287-3775
FAX: (207) 287-3725
email: Bruce.Ibarguen@state.me.us

Memorandum

To: *Maine Medical Center*
From: *Bruce Ibarguen P.E.*
cc: *file*
Date: *Thursday, March 5, 1998*
Subject: *Maine Medical Office Building & Parking Garage (L-7981-T3-C-N) - Portland*

Notice to the applicant:

Subsequent to the Department of Environmental Protection's approval of a proposed development, as referenced in D.E.P.'s "Condition of Approval" to the applicant, the applicant will be required to obtain the following approvals from the Maine Department of Transportation (M.D.O.T.).

1. If the proposed development abuts the State's Highway System and requires improvement to that system, the applicant must then obtain approval of the design plans and coordinate the work through M.D.O.T.'s Director of the Bureau of Project Development, who can be reached at (207) 287-2055 in Augusta.

2. If the proposed development is located outside the compact or built up section of a town or city and abuts the State's Highway System and does not require improvement to that system, the Applicant must obtain an "Entrance Permit" from M.D.O.T.'s Division Office.

Existing Parking Restrictions in the Vicinity of the Proposed Maine Medical Center Office Building and Garage at the Corner of Congress St. and Forest St., As of March 6, 1998

FOREST ST.

a. West side: 1st half is one hour parking
Middle is unrestricted (2 HR)
End is fifteen minute parking
b. East side: No Parking This Side of Street

BOYNTON*

a. South side: **Unrestricted** (2 HR)
b. North side: No Parking This Side of Street

* recommend making this a one-way street WEYMOUTH TO GRANT

WEYMOUTH ST.

a. Both sides: Unrestricted

GRANT ST. (Weymouth to Deering)

a. Both sides: Unrestricted

CONGRESS ST. (St. John's to Weymouth)

a. North side: One hour parking
b. South side: Unrestricted 6 AM TO 6 PM M-F NO PARKING

GILMAN ST. (Park to Congress)

a. East side: Unrestricted
b. West side: No Parking Any Time

? SHOULD BE TO DRIVEWAY

UPPER GILMAN ST. (Congress St. to end)

a. East side: Unrestricted
b. West side: One hour parking

VALLEY ST. (Park Ave. to Congress St. - only 2 houses)

Short 15 minute zone at Congress St., then mostly unrestricted

a. Congress St. to A Street: Unrestricted
b. A St. to C St.: 2 hour parking
c. C St. to end: Unrestricted

Existing Parking Restrictions in the Vicinity of the Proposed Maine Medical Center Office Building and Garage at the Corner of Congress St. and Forest St., As of March 6, 1998

A ST.

a. Valley to Gillman: Unrestricted
b. St. John to Valley:
    i. South side: Two hour parking
    ii. North side: Unrestricted

C ST.

a: South side: Unrestricted
b: North side: Two hour parking

PARK AVE.

Mostly unrestricted

DEERING AVE.

Unrestricted

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

Dear Area Property Owner:

A neighborhood meeting has been scheduled to discuss proposed changes in the on-street parking schedule along Congress Street (southerly side from Gilman Street to Weymouth Street). The meeting will be held on **Thursday, March 26, 1998, at 5:30 p.m.** in the **new banquet room** of the **Sportsman's Grill** restaurant at **911 Congress Street.** The change in the parking schedule is being proposed by Maine Medical Center in conjunction with the proposed Maine Medical Center office building and parking garage in the vicinity of 883-903 Congress Street.

This meeting is intended as a follow-up to the January 29th neighborhood meeting (held at the Sportsman's Grill) in which this parking change was discussed, as well as the Maine Medical Center development project.

A summary of the residential parking sticker program, as well as the parking schedule change, is described in the attached summary sheet.

Representatives from Maine Medical Center and the City of Portland will be attending this meeting to answer your questions and listen to your comments. Should you have any questions concerning this meeting, call the Portland Planning Office at 874-8300, ext. 8725.

Sincerely,

Joseph E Gray, Jr.
Director of Planning and Urban Development

Attachments:

A) Summary of Residential Parking Sticker Program and Proposed Change in On-Street Parking Schedule
B) Map Showing Proposed On-Street Parking Changes

O:\PLAN\CORRESP\RICK\SPNOTICE\PARKGFUP.LEC

Attachment A

SUMMARY OF RESIDENTIAL PARKING STICKER PROGRAM AND PROPOSED CHANGES IN ON-STREET PARKING SCHEDULE

At the January 29th neighborhood meeting, several residents requested that the unrestricted (all day) parking in the neighborhood be changed to a one- or two-hour limit, which would prevent employees and others from parking on the neighborhood streets all day, but would allow residents who obtain a residential parking sticker to park in these areas all day without receiving a ticket, and customers of the businesses could park there for up to two hours.

Currently, there is unrestricted parking on the following streets and the City is proposing to change this to a two-hour parking zone:

Forest Street - Middle section of the west side of the street
Boynton Street - Entire south side

The City would also like comments about the possibility of implementing the two-hour parking restriction on the east side of Gilman Street, from Park Avenue to Congress Street - if the neighbors think that is necessary.

To obtain a residential parking sticker, a resident must present the following information to the Parking Division:

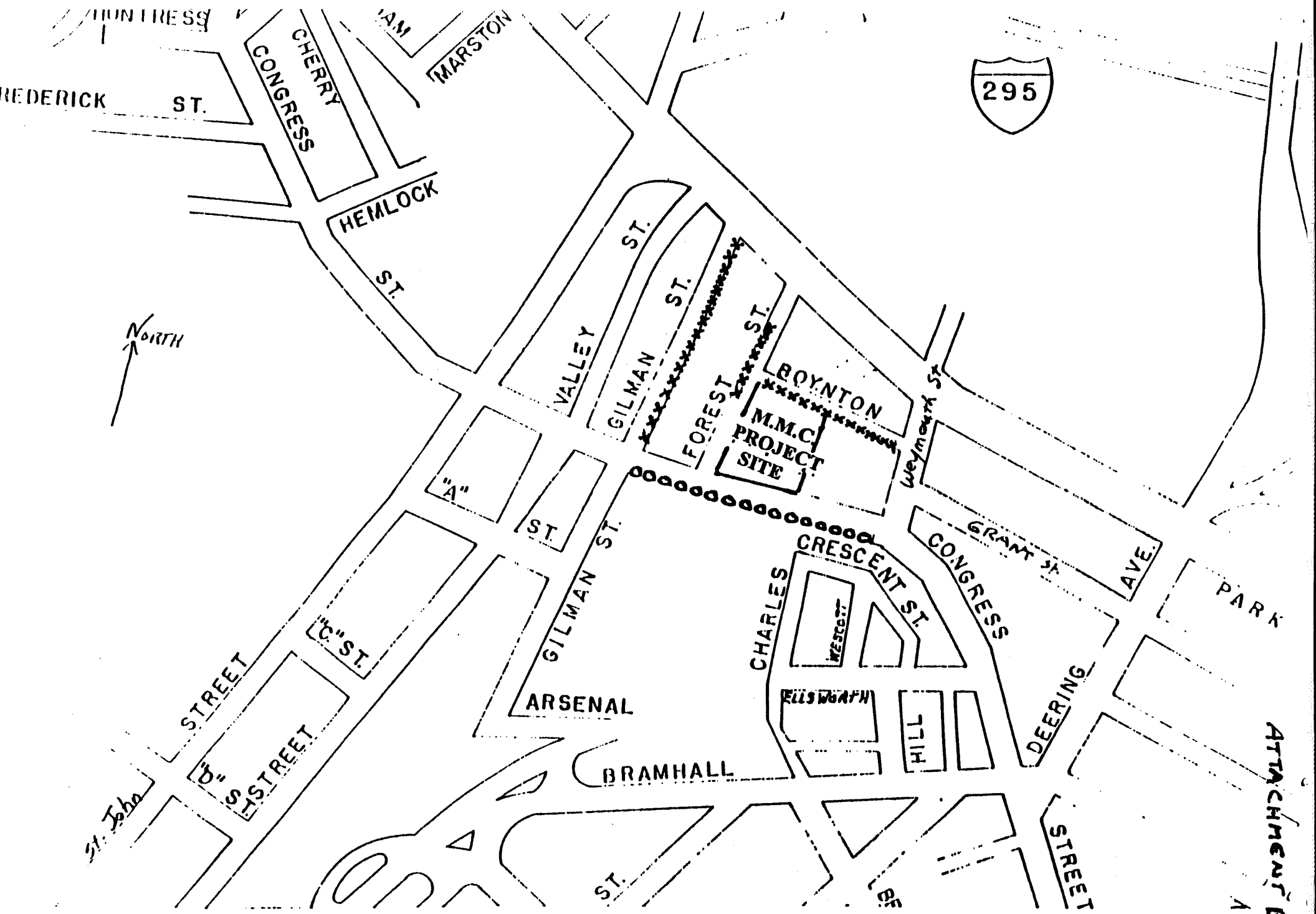
1. MAINE driver's license
2. Current vehicle registration
3. Proof of residence, such as driver's license with current address, a recent utility bill, or a lease
4. All outstanding parking tickets must be paid in full

The parking stickers allow residents to park all day in the one- or two-hour parking spaces within their residential zone. These spaces are marked with green and white signs, which normally allow for only one- or two-hour parking.

All other posted parking signs and regulations must be obeyed. The stickers are not valid at parking meters, no parking zones, overnight parking, etc.

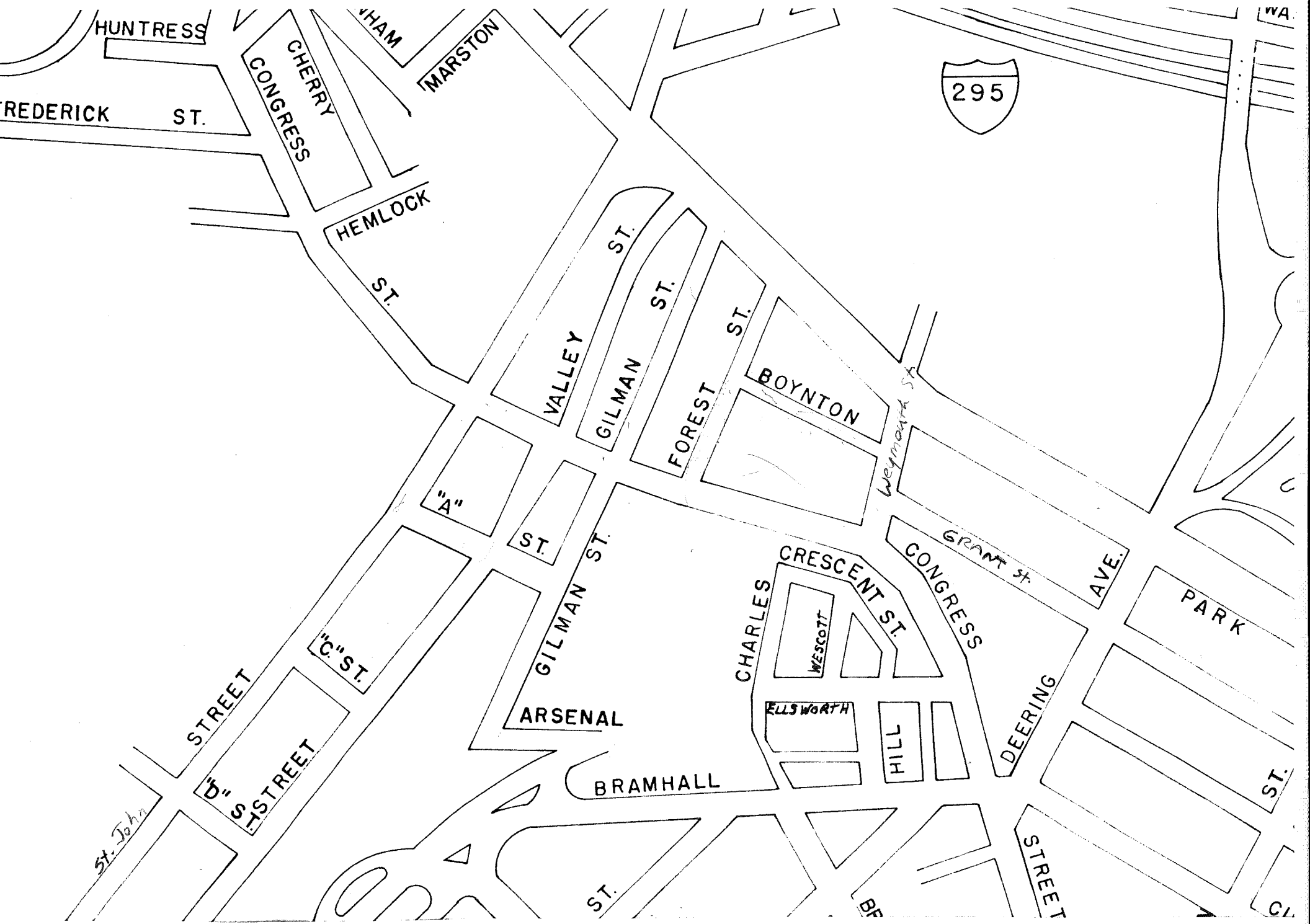
We will also be discussing the current unrestricted parking on the south side of Congress Street, from Gilman Street to Weymouth Street, and changing it to "No Parking 6:00 a.m. - 6:00 p.m., Monday through Friday", to facilitate traffic movement. Parking would be allowed the remainder of the time, as well as weekends. Currently, those spaces are predominately occupied by Maine Medical Center's employees during the above-referenced times.

Finally, we will be discussing the possibility of making Boynton Street a one-way street.



Proposed Parking Changes: X - Unrestricted Parking to Two-Hour Parking

O - Unrestricted Parking to "No Parking 6:00 a.m. - 6:00 p.m., Monday thru Friday"


HUNTRESS
CHERRY
CONGRESS
MARSTON
REDERICK ST.
295
HEMLOCK
ST.
VALLEY ST.
GILMAN ST.
FOREST ST.
BOYNTON
Weymark St.
"A"
ST.
GILMAN ST.
GRANT St.
CRESCENT ST.
CHARLES
CONGRESS
AVE.
PARK
WESCOTT
ELLSWORTH
HILL
DEERING
"C" ST.
STREET
"B" STREET
ARSENAL
BRAMHALL
St. John
ST.
STREET
ST.

R.G.

CITY OF PORTLAND

MEMORANDUM

TO: Councilor Karen Geraghty
FROM: John Peverada, Parking Manager J.P.
DATE: February 4, 1998
RE: Maine Medical Center Parking Garage / Office

In response to Bob Ganley's memo of February 2nd, I am attaching the Zone 5 Residential Parking Sticker Program map which verifies that the neighborhood surrounding the proposed MMC garage and office building is already included in a residential parking sticker zone.

Residents of the neighborhood who currently live on streets that currently have unrestricted parking (i.e. Boynton St.) can petition the City Traffic Engineer to install one or two hour parking signs on their street, which will prohibit non residents from parking on those streets for more than the allotted time restrictions. However, residents who obtain a residential parking sticker from the Parking Division will be exempt from the time restrictions, and be able to park on the street all day, provided they have the appropriate residential sticker displayed in the rear window of their vehicle.

If MMC offers parking for Sea Dogs games as Bob suggested, then there will be no need to change the hours that the existing time zones are in effect. This will also please the businesses in the area such as the Sportsman's Grill, who stated at the public meeting that they would be opposed to longer hours of the time restricted parking.

Finally, as I have stated before, 95% of the vehicles that are parked on the southerly side of Congress St. between 6:00 am and 6:00 pm from Gillman St. to the exit of the MMC garage are employees of MMC, as evidenced by the yellow parking stickers. On weekends, there are very few vehicles parked in this area. Therefore, I do not see the Monday thru Friday 6:00 am to 6:00 pm restriction in this area to be a hardship on the neighborhood. I also strongly support parking along this strip from 6:00 pm to 6:00 am and weekends for the residents, area businesses, Sea Dogs and Fitzpatrick Stadium overflow parking.

Please let me know if I can offer you any additional assistance in this matter, and by all means let me know when and where the next neighborhood meeting will be.

cc: Robert Ganley, City Manager
Joe Gray, Director of Planning & Urban Development
Larry Ash, City Traffic Engineer
Rick Knowland, Senior Planner
Gloria Tho[illegible]partment Head

2-5M.WPS

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Councilor Karen Geraghty
Joe Gray, Director of Planning and Development
John Peverada, Parking Manager

FROM: Robert B. Ganley, City Manager

DATE: February 2, 1998

RE: Maine Medical Center Parking Garage

I have spoken to all of you regarding this particular issue over the past couple of days. There are three things we need to do to move this project along.

1. John Peverada needs to work with the neighborhood representatives and Councilor Geraghty to look at any changes which must be made in the residential sticker program. I understan that there are concerns regarding the number of hours per day and the streets which are included in the program. We need to revisit those to see if any adjustments must be made.

2. The Planning Department should notify Maine Medical Center that their parking issues will not be brought forward to the City Council for final action until they make their peace with the neighborhood and resolve this parking issue. I do not expect Maine Med to be dealing with the neighborhood on site plan issues. That can be done as part of the site plan process with the Planning board; however, in terms of parking Maine Med should be prepared to offer parking for Sea Dogs games, which will free up parking in the neighborhood; free parking during parking bans; and we need to take another look at the number of spaces which must be eliminated to accommodate this garage. If that means revisiting the issue with MDOT, then we need to do so. In any event, there seems to be some potential for middle ground here. If the hospital expects to have the neighborhood buy into this proposal, then they need to be willing to give up something in return.

3. The other issues that the neighbors have such as the landscaping around the garage and the shadow issues, as well as other traffic issues, can be addressed through the site plan process; and that cannot be begun until we get this parking issue resolved with the City Council.

I am asking Joe Gray to pass these comments along to Maine Medical Center and John Peverada to keep Councilor Geraghty advised of the status of the residential parking program.

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: JIM MORRISON

COMPANY:

FROM: R. KNOWLAND

FAX #: 871-6195

OF PAGES: 3

DATE: 2-11-98

RE: MEMO FROM BOB GANLEY

If you do not receive all of the pages, please call 874-8721 or 874-8719.

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: JIM MORRISON

COMPANY:

FROM: R. KNOWLAND

FAX #: 871-6195

OF PAGES: 3

DATE: 2-11-98

RE: JIM - ATTACHED IS A MEMO FROM JOHN ROGERSON FYI. PLEASE FORWARD THIS TO PAUL GRAY. THANKS

RK

If you do not receive all of the pages, please call 874-8721 or 874-8719.

VALLEY
WESTERN
PROMENADE
STREET
CARROL
CHADWICK
VAUGHAN
NEAL
PINE
WEST
ST.
ARSENAL
BRAMHALL
GILMAN ST.
TUE. THUR. SAT
VALLEY
GILMAN ST.
FOREST ST.
CHARLES
CRESCENT ST.
WESCOTT
RUSSELL
HILL
BRAMHALL PL.
BOYNTON
WEYMOUTH ST
CONGRESS
GRANT ST.
DEERING
MARSHALL
CARLETON
BLYTH
HOUGHTON ST.
MACMILLAN
WALKER
DOW
NORTON PL.
STATE
MELLEN
PARK AV.
DEERING

City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: PAUL GRAY

COMPANY:

FROM: RICK KNOWLAND

FAX #: 871-6212

OF PAGES: 3

DATE: 2-3-98

RE: PAUL ATTACHED IS A MEMO FROM BOB GANLEY REGARDING THE MMC PROJECT.

If you do not receive all of the pages, please call 874-8721 or 874-8719.

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

Dear Area Property Owner:

A neighborhood meeting has been scheduled to discuss proposed changes in the on-street parking schedule along Congress Street (southerly side from Gilman Street to Weymouth Street). The meeting will be held on Thursday, January 29, 1998, at 5:30 p.m. in the new banquet room of the Sportsman's Grill restaurant at 911 Congress Street.

The purpose of this meeting is to provide neighborhood residents information on this proposal, as well as offer the opportunity to discuss and comment on the change.

The change in the parking schedule is being proposed by Maine Medical Center in conjunction with the proposed Maine Medical Center office building and parking garage in the vicinity of 883-903 Congress St.

The specific proposal would revise the on-street parking schedule along Congress Street (southerly side from Weymouth Street to Gilman Street) to prohibit parking on Monday through Friday, from 6:00 a.m. to 6:00 p.m. Parking would be allowed the remainder of the time, as well as weekends.

Representatives from Maine Medical Center and the City of Portland will be attending this meeting. Should you have any questions concerning this meeting, call the Portland Planning Office at 874-8300, ext. 8725.

Sincerely,

Joseph E Gray, Jr.
Director of Planning and Urban Development

O:\PLAN\CORRESP\RICK\LETTERS\PARKGCON.LEC

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

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The purpose of this meeting is to provide neighborhood residents information on this proposal, as well as offer the opportunity to discuss and comment on the change.

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Representatives from Maine Medical Center and the City of Portland will be attending this meeting. Should you have any questions concerning this meeting, call the Portland Planning Office at 874-8300, ext. 8725.

Sincerely,

Joseph E Gray, Jr.
Director of Planning and Urban Development

O:\PLAN\CORRESP\RICK\LETTERS\PARKGCON.LEC

From: Gary Wood
To: JEG
Date: 1/28/98 6:01pm
Subject: Perry Junkyard Permit

Tom Kane tabled this at the last meeting because the applicant's attorney (dave hirshon) couldn't attend. Tom would like them to come in and publicly state why they don't want to cooperate with our brownfields program regardless of whether we can withold their permit or not. You or someone who works on the program should probably be present to answer questions about it and about the impact of Perry's refusal. I told David to come with Perry to the meeting.

CC: RBG

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel.: 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

December 18, 1997

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

Thank you for asking Dufresne-Henry to review the proposed Maine Medical Office Building and Parking Garage development project on Congress Street. As requested we have developed a budget to complete the review of this project. In developing this budget we have assumed that additional design drawings and documentation will be submitted for review following our meeting this week. We have estimated the review for this project will total $1,600 including reimbursable expenses. As with past projects we will charge towards this fee on an hourly basis.

Our review of this project will focus primarily on the site development issues such as erosion control, storm water handling, and site improvements. We have allotted time within this budget for further review of the design documents and attendance at another review meeting. Although not included in this budget estimate we can also provide periodic inspections during construction if requested.

Our initial set of review comments will be forwarded to you later today. Let me know if you have any questions in review of this proposed budget.

Very truly yours,

DUFRESNE-HENRY, INC.

Jeffrey D. Preble, P.E.
Project Manager

File N:\civil\8160054\Knowlandltr4.wpd

Dufresne-Henry, Inc.

22 Free Street
Portland, Maine 04101-3900
207/775-3211
Fax: 207/775-6434

FAX TRANSMISSION COVER SHEET

Date: 12/18/97 *Time:* 9:00

To: RICK KNOWLAND

Fax: 756-8258

Re: ME MEDICAL BUILDING

Sender: JEFF PREBLE

YOU SHOULD RECEIVE 2 *PAGE(S), INCLUDING THIS COVER SHEET.*
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 207/775-3211.

COMMENTS: RICK -
ENGINEERING REVIEW FEE FOR YOUR USE.
I'LL FAX OVER OUR INITIAL REVIEW COMMENTS
LATER ON TODAY.

JEFF

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Senior Planner
FROM: John Peverada, Parking Manager
DATE: December 5, 1997
RE: Maine Medical Center Proposed Parking Garage on Congress St.

Thanks for providing me with the "draft" copy of Maine Medical Center's parking management plan. The following are my concerns.

I assume that of the 430 parking spaces to be built that the 226 required for the office building will satisfy both the visitors and employees of the office building.

The plan states that after the construction of this new garage/office building, the sale of the Gateway Garage and lease of the St. John St. lot, there will be an overall net loss of 176 spaces. However, the 52+ spaces displaced form the existing parking lot on the site of the proposed garage/office building and the 27+ on-street spaces lost to provide a turning lane on the southerly side of Congress St. were not factored in. Therefore, the net loss would actually be 255 spaces, which I think would cause a hardship for the neighboring residents, businesses and the Sea Dog's daytime games.

Exhibit 1, The Parking Supply and Demand Analysis, shows that upon completion of the new garage/office on Congress St., that the overall planned supply for parking on the Bramhall campus will exceed the demand by 233 spaces, and "the challenge facing M.M.C. is to make the best use of that supply." How do they propose to overcome this challenge?

The report states that employees found the shuttle from the Gateway Garage to be inconvenient and time consuming, and as a result, some employees parked on the streets around the Bramhall campus. In the very next paragraph, the plan states that M.M.C. is committed to maintaining the St. John St. lot as long as demand warrants. Are they saying if the employees choose not to use the St. John St. shuttle lot and they park on the neighboring streets, that the shuttle will be eliminated? I hope not, since the present practice of employees in McGeechy Hall is to park on Vaughn St. and leave their work stations and move their cars as soon as they see the Parking Control Officers chalk their tires. As long as the employees continue to move their cars, no tickets can be issued, but more importantly, a customer is being inconvenienced, and deprived of a convenient on-street space.

Will the current valet parking program at the Admitting lobby entrance and at the Emergency Dept. be continued after construction is completed?

How and where will parking be provided for the 25 employees at Holt Hall?

The Bramhall campus will be in a period of continuous construction for the next several years. The plan goes on to state that M.M.C. construction agreements with contractors have strict provisions regarding their expectations of the contractors' responsibility to manage the parking of their employees, but it does not say how.

The concluding statement of the plan states M.M.C. is committed to making parking for employees more convenient, encouraging their use of M.M.C. parking rather than City streets. My question is "how?".

The hospital also wants to "support the City of Portland in its enforcement of parking regulations". Rather than asking "how?", I will ask "who is going to respond to the many letters similar to the one I have attached herewith, addressed to Mr. Ganley, from a 'customer' of the hospital?". This letter truly captures the reality of the parking situation surrounding M.M.C..

Before this project is approved, it is my opinion that the following shall be conditions of approval.

1. M.M.C. shall verify to the City that every employee has an off-street parking space.
2. M.M.C. shall make it a condition of employment with their employees that they will not park on the streets, or somehow assure the City that this will not happen.
3. M.M.C. will continue to promote and maintain the existing valet parking program in place.
4. M.M.C. shall provide the City with a copy of a long-term lease agreement for the 150 spaces in the St. John St. shuttle lot. What will happen when Amtrak arrives?
5. Contractors working at the hospital will have to have their employees park off site, and show the City a parking plan prior to a building permit being issued; a violation of the plan would cause a stop of work.
6. M.M.C. shall produce a brochure to distribute to all patients, visitors etc., outlining parking alternatives.

I believe that the continued growth of the Maine Medical Center is beneficial to the City of Portland, however, if people using the facility are frustrated with parking, the negative reflection will be on the City, not M.M.C..

I would strongly encourage M.M.C. to substantially increase the size/number of parking spaces in the proposed garage/office building on Congress St., for the betterment of the neighborhood, the City and Maine Medical Center, visitors and employees.

Please let me know if you have any questions or concerns regarding my comments. Unless I hear otherwise, I will assume that you will be forwarding this information to the Planning Board and Council.

Bob Ganley, City Manager
Joe Gray, Director of Planning
Alex Jaegerman, Chief Planner
Larry Ash, City Traffic Engineer
Gloria Thomas, Parking Department Head

WPS

March 13, 1997

Mr. Robert Ganley
Portland City Manager
389 Congress Street
Portland, ME 04101

Dear Mr. Ganley,

Yesterday, my mother, Mrs. Anna Lyford (91) was in need of the Maine Medical Emergency Room services. In attempting to find parking, I discovered that the emergency room parking facility was under construction and so I frantically drove around the block to the main parking lot. Eight to ten cars were in line waiting to enter the parking lot and so I quickly diverted to the Western Promenade. It was clearly marked one hour parking. That is not my contention.

What troubles me is the seemingly capricious and callous issuance of tickets in that area in the first place. I would assume that most people parked in that area have concerns with the Maine Medical Center facilities. I was greatly concerned for my aged mother being left alone in the cubical of the emergency room due to a very difficult and similar situation about a year ago on March 2nd.

I was aware of the parking time limitation and was doing my best to comply with the time limit. However, circumstances prevented me from relocating my vehicle until 5:02pm. I know the issuing officer was performing his or her duty according to the city's rules, but I strongly feel that special situations regarding the construction and lack of parking in the Maine Medical Center vicinity need to be addressed more appropriately than just handing out tickets. It's an aggravation and insult to those of us concerned with ailing and seriously ill family.

I have inclosed a check for the imposed fine of $10. I am sending it to your office along with this letter. I am asking the City of Portland administration to either nullify the ticket and return the check to me or pass it on to the treasury department in blatant disregard for the circumstances surrounding the parking nightmare surrounding the Maine Medical Center facilities.

Sincerely yours,

W. G. Lyford

William G. Lyford
(207) 829-4401

8 Pinewood Drive
Cumberland Ctr., ME 04021

From: Larry W. Ash
To: WJB,JEG,AQJ,RWK,JBP
Date: 1/14/98 1:12pm
Subject: Parking on Congress/MMC

The parking on Congress from the MMC exit garage to Weymouth Street will be amended from its proposed 24hr restriction to be the same as from Gilman St. to the MMC driveway, i.e. from 6AM-6PM, Mon thru Fri.

The parking therefore will be restricted from 6AM to 6PM, Mon thru Fri from Gilman St. to Weymouth St.

I will be sending an amendment to my amendment to reflect this most recent change. I apologize for any confusion.

MEMORANDUM

CITY OF PORTLAND

TO: Rick Knowland, Senior Planner

FROM: John Peverada, Parking Manager J.P.

DATE: January 9, 1998

RE: Maine Medical Center Parking Management Plan

Rick, I have reviewed the Parking Management Plan you gave me yesterday, and I found it to be an improvement over the first draft. I only have a few changes that I would like to see.

Since I was unable to reach Paul Gray at MMC (I left him a message on his voice mail), I spoke with Tom Gorrill of Deluca Hoffman and conveyed my comments as follows to him:

1. The plan refers to security person(s) assigned to the garage to monitor entering and exiting traffic. Although it is implied, I would like the plan to state that this is being done to create a safe atmosphere and encourage increased use of the garage.
2. Valet Parking: A sentence should be added stating that MMC will improve the signage advising people of the valet parking and provide printed information about valet parking to patients prior to appointments.
3. Internal Education: A brochure is a great idea; however it should be noted that the brochure will also be available to patients and visitors in addition to the staff and doctors.
4. Construction Projects: A sentence should be added at the end requiring all contractors, subs and their employees to park off site.
5. Parking Meters The potential use of parking meters on Chadwick St. should be included to the reference of MMC support of the use of parking meters on Bracket St.

Maine Medical Center should still be required to provide the City with verifiable documentation that every employee will have an off street parking space.

Finally, MMC should provide a plan for the displacement of the 52 + spaces currently on the Forest/Congress St. site during construction as well as the vehicles related to the construction of this project and those of McCarthy Construction which are also presently parking on this site. During the construction period parking will be tight in this neighborhood, especially once the Sea Dogs season begins.

Please let me know if you need any additional information or comments from me on these issues.

1-9-98

TO: JEFF PRIBLE, DUFRESNE-HENRY

FROM: RICK KNOWLAND, SENIOR PLANNER

RE: MAINE MEDICAL CENTER

ATTACHED IS A REVISED SITE PLAN PACKAGE FOR THE MAINE MEDICAL CENTER PROJECT FOR YOUR REVIEW. THE PUBLIC HEARING IS SCHEDULED FOR TUESDAY, JAN 27TH, SO I'D APPRECIATE COMMENTS BY NEXT TUESDAY (IF POSSIBLE)

THANKS. GIVE ME A CALL SHOULD YOU HAVE ANY QUESTIONS.

Dufresne-Henry, Inc.
22 Free Street
Portland, Maine 04101-3900
207-775-3211
Fax: 207-775-6434

FAX TRANSMISSION COVER SHEET

Date: 1/12/98 Time: _____

To: Rick Knowland

Fax: 756-8258

Re: Maine Medical Building

Sender: Jeff Preble

YOU SHOULD RECEIVE 3 PAGE(S), INCLUDING THIS COVER SHEET.
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 207-775-3211.

COMMENTS:

Rick-

Here are our comments on the 1/6/98 submittal. Looks like this project is shaping up fine. See you Thursday.

Vortechs Oil and Grit Separator

Maintenance Plan

Inspection

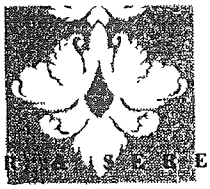
In the first year, Maine Medical Center will inspect the Vortech's Oil/Grit separation structure in January, February, March, spring, summer and fall. The inspection schedule can then be modified in subsequent years according to experience or to meet specific stormwater permit requirements.

During routine inspections, sediment accumulation will be determined by slowly lowering a measuring stick into the center of the grit chamber (accessed through the manhole above the grit chamber) until it contacts the top of the pile. The system is full and should be cleaned when the top of the pile is approximately one foot below the dry weather water level. The measuring stick should be easy to read and not too finely graduated (such as a carpenter's tape with large easy to read numbers). A stadia rod with flashlight can be used for this purpose. For deep systems where reading the measuring stick directly is difficult, dusting the rod will clearly show the depth to the sediment pile as the wet portion of the rod. To avoid underestimating the volume of sediment in the chamber, the measuring stick must be carefully lowered to the top of the sediment pile as the finer, silty particles are typically at the top and offer less resistance to the end of the stick or rod than the larger particles located towards the bottom of the pile[1].

Cleaning

Cleanout of the Vortechs with a vacuum truck is generally the best and most convenient method. Only the manhole cover above the grit chamber (the one furthest from the system outlet) needs to be opened to remove water and contaminants. As the grit chamber is pumped out, the oil and water drains back into it so that oil scum, particulates, and floatables are removed along with the accumulated sediments. With the Vortechs System, a pocket of water between the grit chamber and flow controls seals the bottom of the oil barrier and prevents the loss of floatables to the outlet during cleanings. Manhole covers should be securely seated following cleaning activities to ensure that surface runoff does not leak into the unit from above.

[1]The height of the sediment pile is perhaps more precisely determined by taking two measurements with a stadia rod. The first being the water depth (i.e., water surface to bottom of the tank); the second being the water surface to the top of the sediment pile. The difference between the measurements is the sediment pile depth.



M O H R & S E R E D I N
Landscape Architects, Inc.

TRANSMITTAL

Date: JAN 27, 1998 **Project Number:** 186

Project: MMC PARKING GARAGE

To: SCOTT DECKER

From: KIM TURNER

Copy:

Message:

RECOMMEND 3/8" THICKNESS.

MIRAFI, INC
PO BOX 240967
CHARLOTTE, NC 28224
1·800·438·1855

☐ Mailed
☐ Delivered
☒ Fax Number 829-5692
No. of Pages (including cover) 7

18 Pleasant Street, Portland, Maine 04101
(207) 871-0003

MIRAMAT:

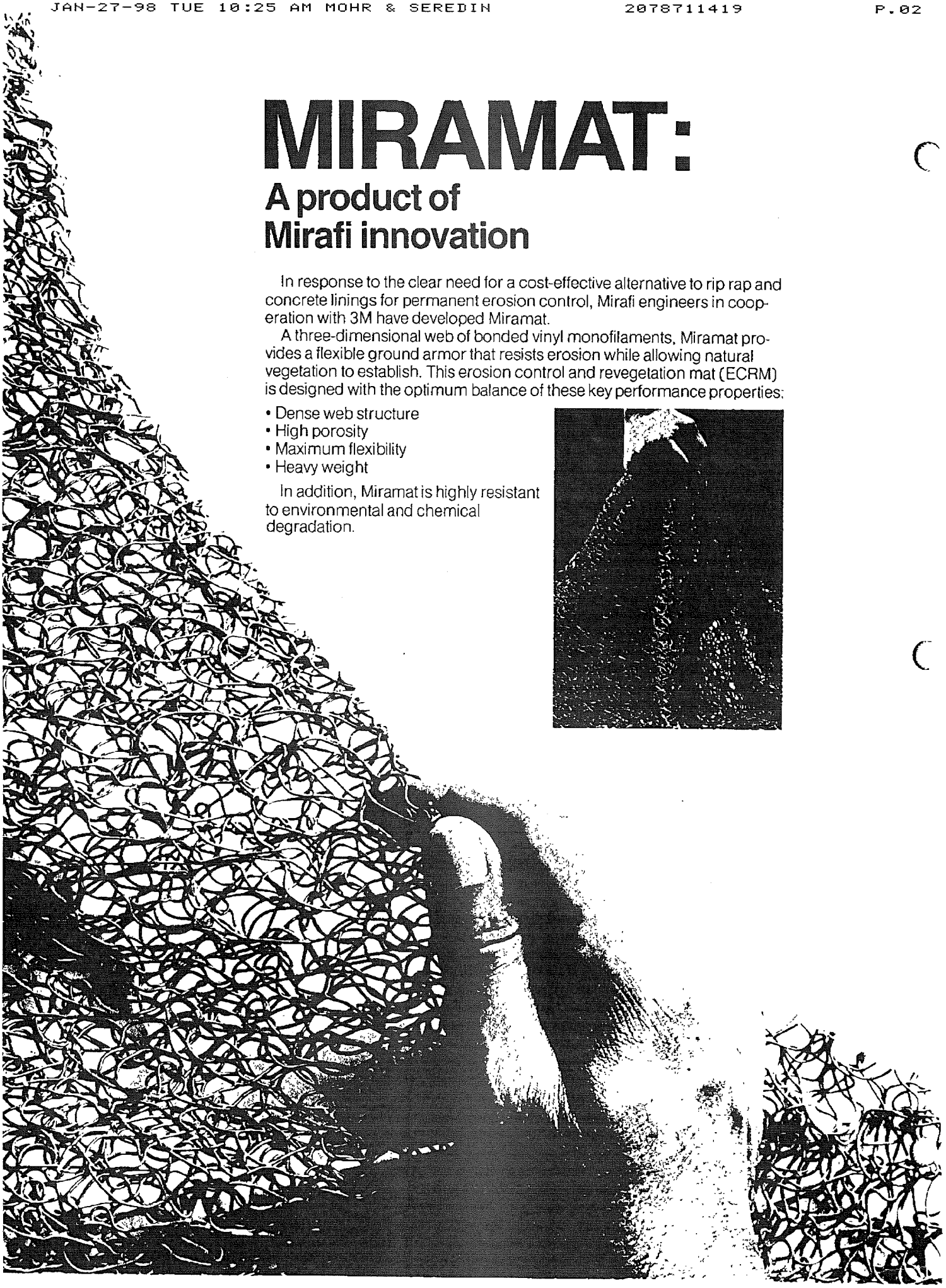
A product of Mirafi innovation

In response to the clear need for a cost-effective alternative to rip rap and concrete linings for permanent erosion control, Mirafi engineers in cooperation with 3M have developed Miramat.

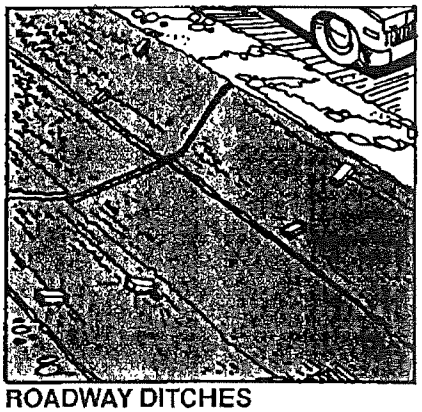
A three-dimensional web of bonded vinyl monofilaments, Miramat provides a flexible ground armor that resists erosion while allowing natural vegetation to establish. This erosion control and revegetation mat (ECRM) is designed with the optimum balance of these key performance properties:

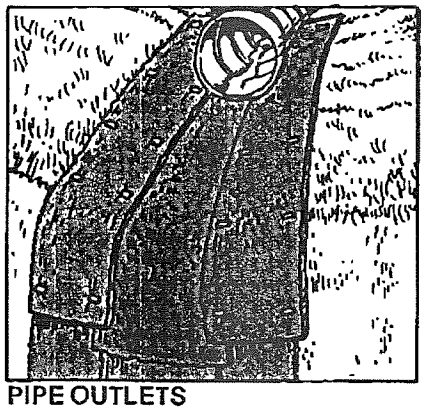
- Dense web structure
- High porosity
- Maximum flexibility
- Heavy weight

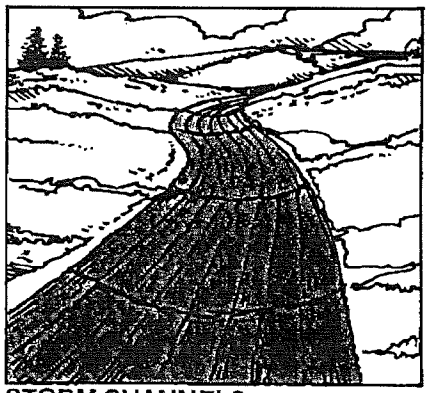
In addition, Miramat is highly resistant to environmental and chemical degradation.

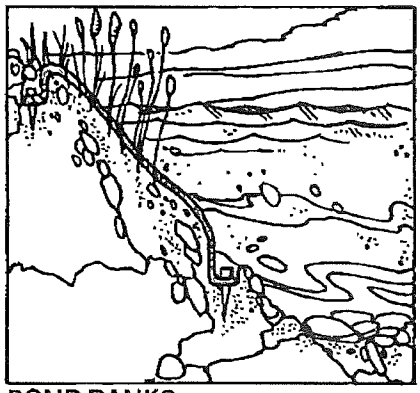


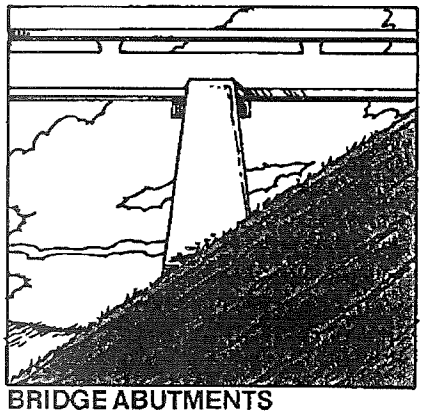
Miramat: A Cost-Effective ECRM with many applications


ROADWAY DITCHES


PIPE OUTLETS


STORM CHANNELS


POND BANKS


BRIDGE ABUTMENTS

Miramat is designed for erosion control and revegetation in those areas where simple mulching techniques do not work because of severe erosive forces. For example, steep slopes, ditches, and banks.

Such applications have typically required the armor protection of expensive rip rap or concrete linings. However, these methods, while usually effective, are costly, difficult to install, and frequently impractical at remote sites where access by heavy haul trucks is difficult.

Miramat provides a cost-effective, easily installed alternative to heavy armor protection for many applications.

- Ditches for roadway and parking lot runoff.
- Storm and irrigation channels.
- Outlets for pipes and culverts.
- Slopes for roadway, berms, bridge abutments, and building sites.
- Banks of ponds and lakes.

The source and magnitude of the erosive forces, as well as the slope and geometry of the area to be protected, will dictate the effectiveness of Miramat. Contact your Mirafi representative for recommendations.

Miramat: General Installation Guidelines

Site Preparation

- Grade surface of finished areas so that ground is smooth and compact.
- Remove all rock, dirt clods, grass clumps, trash and other obstructions which will prevent mat from lying in direct contact with the soil surface.

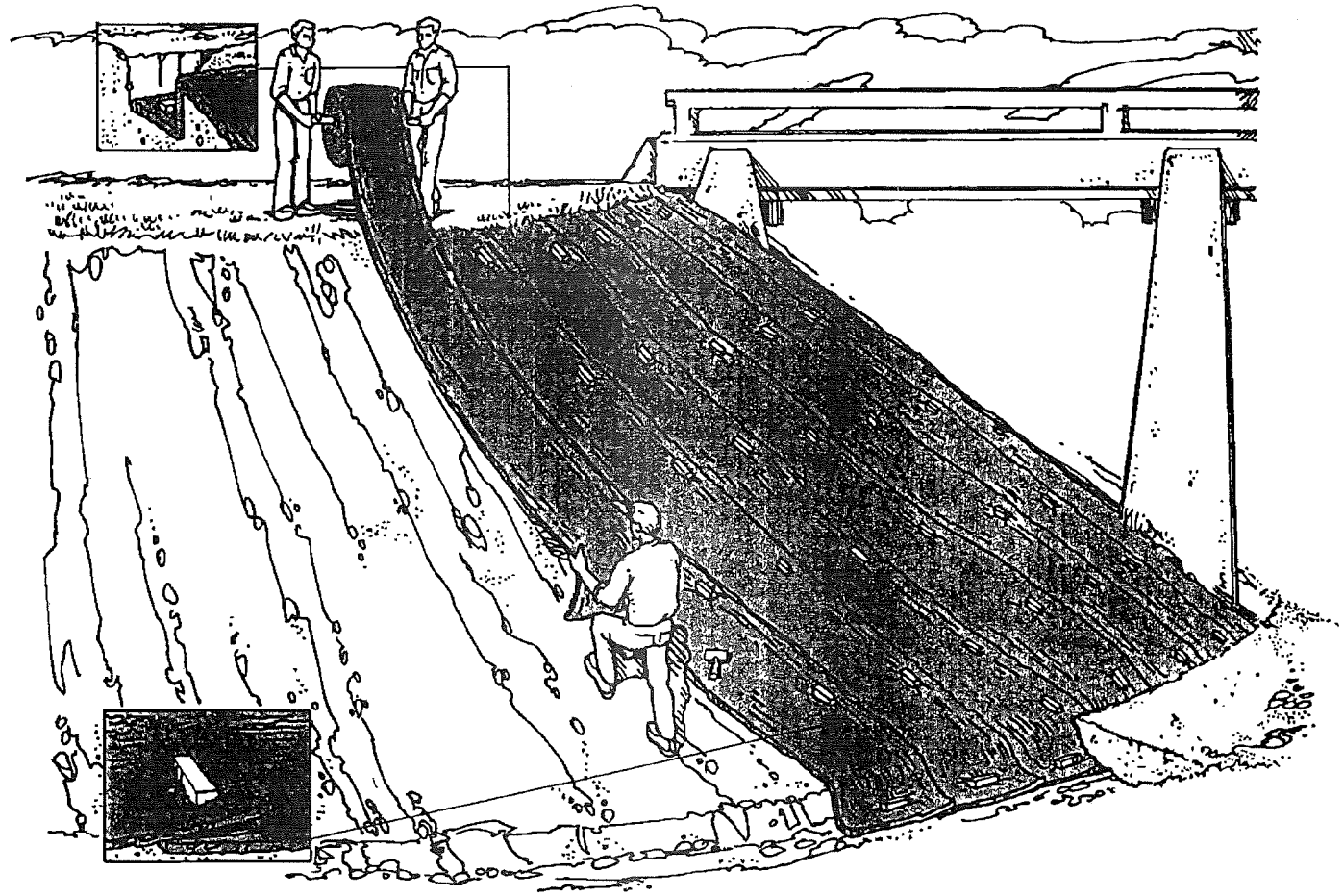
Mat Anchor Trenches

- Excavate terminal trenches to a minimum 12" deep and 6" wide before placing mat.
- Dig check slots 6" deep by 6" wide transverse to mat at approximately 25' intervals.

Seeding

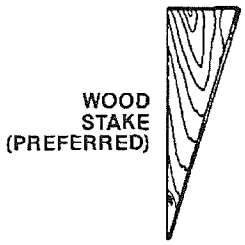
Seed and fertilizer may be spread before or after mat installation. Rate of application should be specified by owner or contractor.

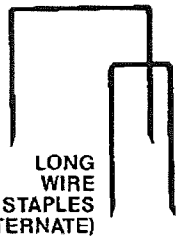
Miramat: General Installation Guidelines



Mat Placement

- Unroll mat onto ground in direction of water flow.
- Mat should lay flat. Do not stretch mat over ground. Stretching may cause mat to bridge depressions in the surface and allow erosion underneath.
- Bury transverse terminal ends of Miramat to secure and prevent erosive flow underneath. Place mat as shown. (Fig. 1A and 1B.)
- Secure mat snugly into all transverse check slots. (Fig. 2A and 2B.)
- Backfill and compact trenches and check slots after staking the mat in bottom of trench...see "Ground Fastening."
- Overlap roll ends by 3' (min.) with upslope mat on top to prevent uplift of mat end by water flow. (Fig. 3.) Note: If installing in the direction of a concentrated water flow, start new rolls in a transverse ditch.
- Overlap adjacent edges of mat by 3" (min.) and stake... see "Ground Fastening." (Fig. 4.)



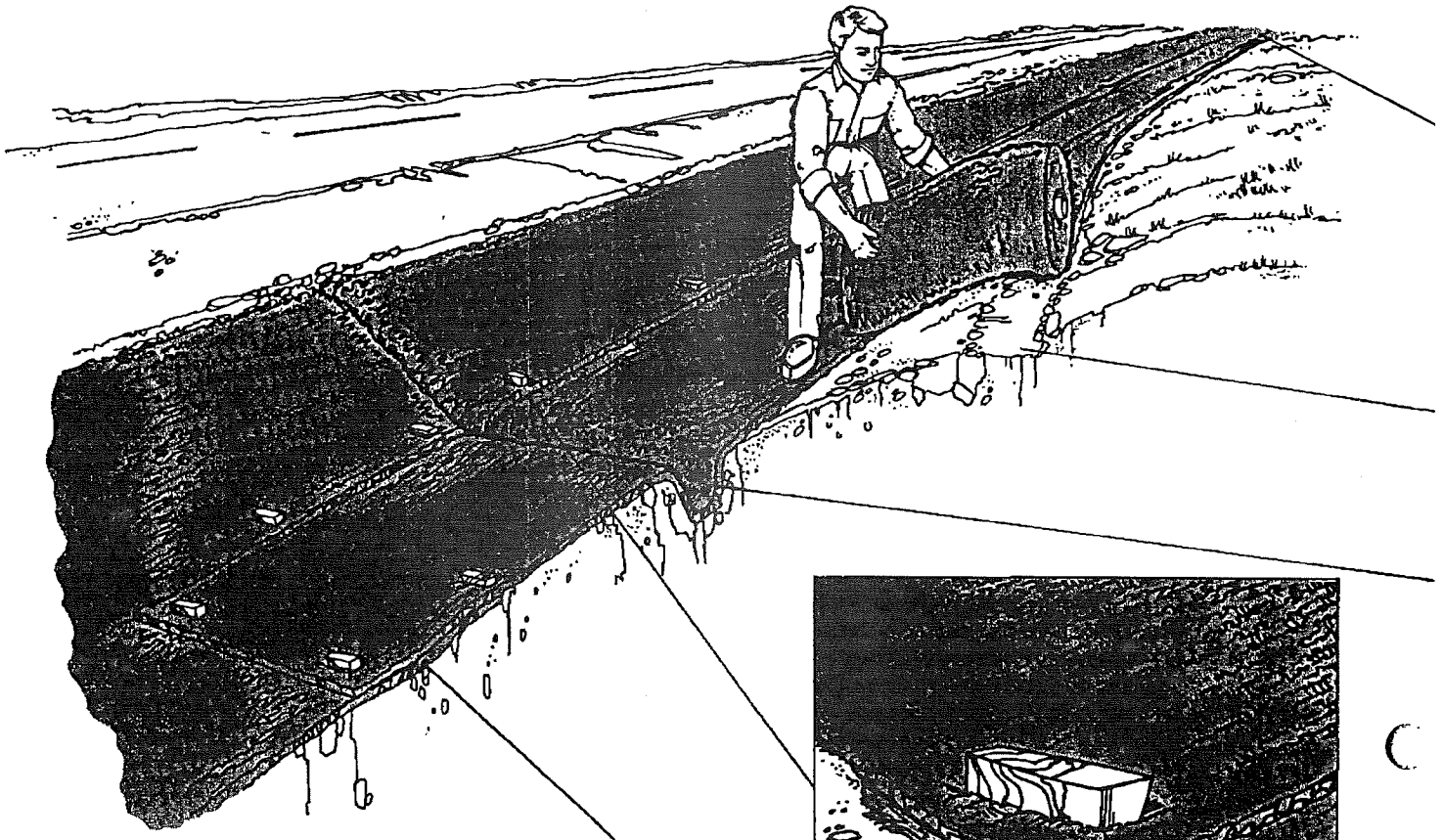


Ground Fastening

Wood stakes are recommended for pinning Miramat to the ground surface. Stakes should be 1" x 3" nominal stock cut in a triangular shape. Stakes should be 12" to 18" long depending on soil density.

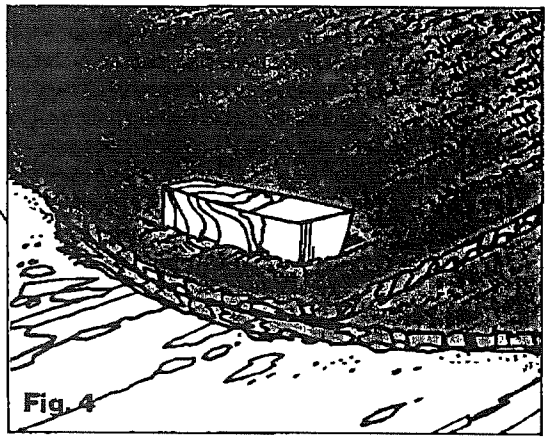
- Drive wood stakes to within 3" of ground surface. Do *not* drive flush to surface.
- In all transverse terminal trenches and check slots stake each mat at its center and at overlapped edges before backfilling and compacting.
- Stake overlaps longitudinally at 3' to 5' intervals.

Installation Guidelines for Ditches/Channels

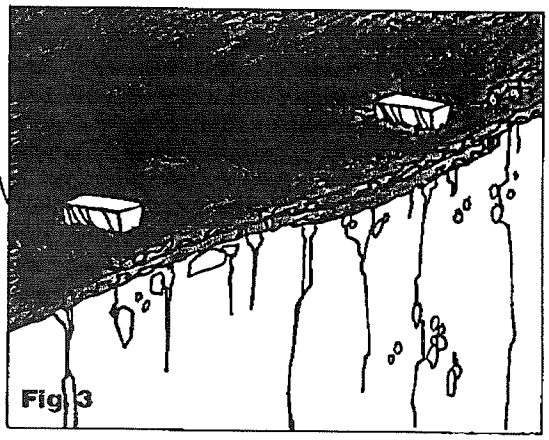


When installing Miramat in ditches or channels, special steps in addition to the preceeding guidelines must be followed.

- Cut check slots across bottom and up the sides of the ditch...see "Mat Anchor Trenches." (Fig. 2A and 2B.)
- Cut 4" (min.) ledge or trench at top of side slope. (Fig. 5A and 5B.)
- Center mat in ditch bottom and unroll starting at upper end of ditch.
- Roll adjacent widths of mat, overlapping side edges of mat by 3". (Fig. 4.)
- Lay outside edge of mat on ledge or into trench at top of side slope. (Fig. 5A and 5B.) Stake at 3'-5' intervals along ledge or in trench.
- Backfill ledge or trench and compact.
- In check slots stake each mat at its center at overlapped edges, and outside edges. (Fig. 2A and 2B.)
- Overlap each roll end of mat by 3' with upslope mat on top. (Fig. 3.)
- Backfill all check slots and anchor trenches with soil or stone and compact.



OVERLAP ADJACENT EDGES



OVERLAP ROLL ENDS

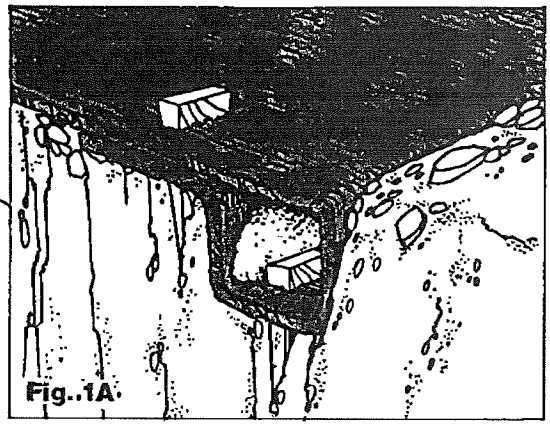


Fig. 1A

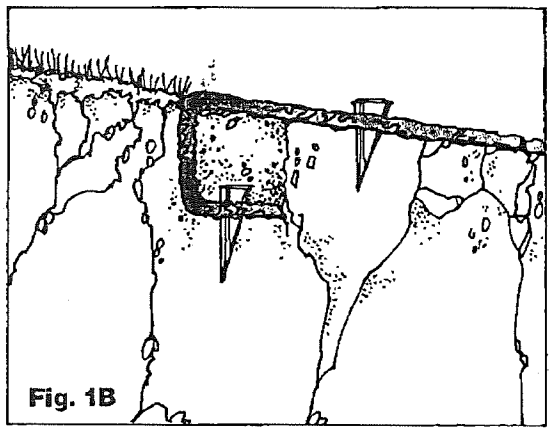


Fig. 1B

BURIAL OF TRANSVERSE TERMINAL END

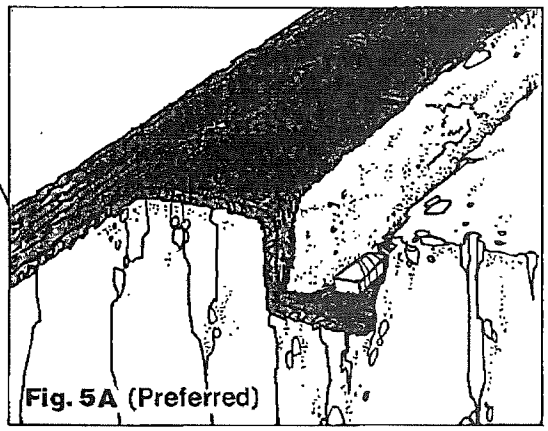


Fig. 5A (Preferred)

EDGE ANCHOR IN TRENCH

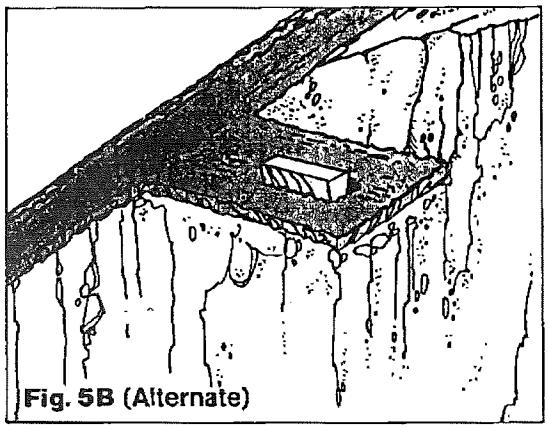


Fig. 5B (Alternate)

EDGE ANCHOR ON LEDGE

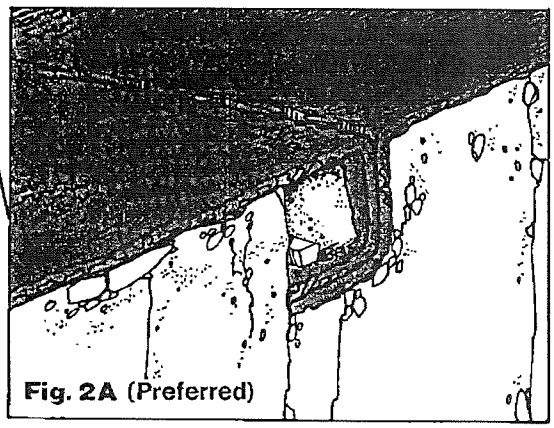


Fig. 2A (Preferred)

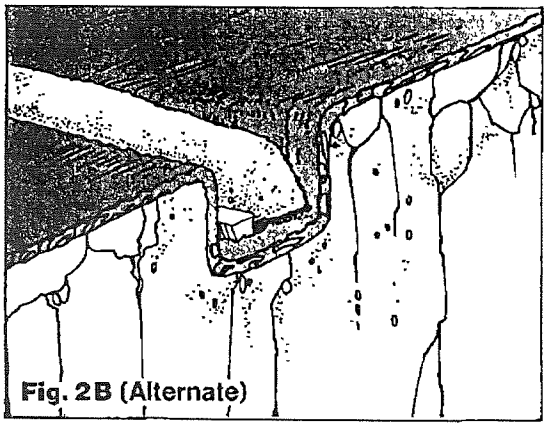


Fig. 2B (Alternate)

SECURE MAT IN CHECK SLOTS

Response: Enclosed Site Plan drawing C-101 has been revised to note the right-of-way width of 33' as depicted on Titcomb Associates' survey drawing.

Comment #4: *"The curb schedule will need to be completed prior to construction."*

Response: The curb schedule will be completed when all issues regarding parking, sidewalk widths and building dimensions have been resolved.

Drawing C-302

Comment #1: *"Grades for the underdrain system have not been shown on the plan. The location for the underdrain cleanouts should be shown on the plans."*

Response: The final location of underdrains (both horizontal and vertical) will be established following final design of the office building and parking garage.

Comment #2: *"It is not clear where the underdrain discharges."*

Response: Enclosed Erosion and Sedimentation Control Plan drawing C-302 has been revised to show the underdrain system outletting to the Vortechs unit discharge line.

Comment #3: *"The location of the construction entrance is not shown on the plan. It might be worth specifying a location for construction traffic to access the site."*

Response: We prefer to allow the contractor to plan this element of the project. He will submit his plan for a construction entrance for approval by the Owner's Engineer and the City of Portland Public Works Department. If Public Works has specific ideas where the entrance must be, it would be helpful if the location was identified.

Comment #4: *"Please note that the details for the overhead walkway have not been included with this submission. The affect on the sidewalk width is therefore not known at this time."*

Response: The final details of the overhead pedestrian walkway have not been completed by the project architect. They await approval of the walkway concept by the Maine Medical Center. However, it is understood at this juncture that the supports on the medical office building side of Congress Street will be constructed into the building and will extend no more than 30" into the sidewalk. The support on the south side of Congress Street will not encroach into the sidewalk but may abut the sidewalk.

John Peverada's 1/9/98 memorandum addressed to you

The traffic comments raised by Mr. Peverada have been or will be addressed directly by Maine Medical Center.

Comment: *"The list of MMC traffic improvements should be put on a site plan. In addition, the following statement should be added to the Site Plan:"*

"Applicant shall be responsible for monitoring the intersection of Park Avenue and Forest Street for a period of one year after a Certificate of Occupancy has been issued for the office building and parking garage. Applicant shall submit a traffic report to the City Traffic Engineer for review and approval. If the City Traffic Engineer determines that a traffic light is required, the applicant shall be responsible for the purchase and installation of the traffic light. An escrow account/performance guarantee shall be established by MMC prior to the issuance of a building permit."

Response: The Site Plan drawing C-101 has been revised to include the requested traffic improvement information.

Comment: *"Some, but not all, of the questions/issues that are listed in my memo of 12-24-97 to Patrick Costin have been addressed (see Attachment C)."*

Response: The architectural related comments will be addressed directly by Harriman Associates.

Comment: *"We need to get a definitive letter from MMC indicating that they will maintain the oil and grit separator, along with the schedule for maintenance."*

Response: Enclosed is a copy of a letter from Maine Medical Center addressed to you which addresses this comment.

Comment: *"Please indicate the dimensions and height of the transformer along Forest Street."*

Response: The transformer will be 6'x6'x6' cube situated on a 9'x9' concrete pad.

Comment: *"Note #9 on Sheet C-101, as well as related notes on curb and sidewalk, need to be changed. Note #9 should read "all curb and sidewalk shall be reconstructed along the entire frontage of the site..." We are skeptical that you will be able to "save" the existing curbs and sidewalks during construction, on this tight site. After construction, we can review the situation again to see if you were able to save the curb and sidewalk on Forest Street and Boynton Street. However, we are not comfortable with the present notes shown on the plans and Note #9."*

Response: Enclosed Site Plan drawing C-101 has been revised to address this issue.

Comment: *"We will need a draft deed to the City for that portion of the sidewalk that is on MMC property."*

Response: The draft deed will be submitted directly to the City by Maine Medical Center.

Comment: *"Do you have a catalog cut of the Miramat material shown on L-101?"*

Response: Enclosed is a catalogue cut of the Miramat material.

Comment: *"How high are the ventilation shafts in relation to the adjacent grade, and is there grating so that someone doesn't fall in?"*

Response: The ventilation shafts will extend no more than one foot above ground and will contain a grate to prevent children and animals from entering.

Comment: *"See the memo from Anthony Lombardo (Attachment D)."*

"Squaw Bay Cop has made the revisions requested by Public Works. The only item that is still missing as part of their submission is a copy of the capacity letter for the combined sewer in Forest Street. This letter has been requested from Bill Goodwin here at Public Works, but no actual letter verifying capacity of this sewer has been submitted."

Response: Mr. Frank Brancely has coordinated with and received additional information from Harriman Associates plumbing engineer and Mr. Brancely continues to review the project relative to sewage flows.

Please call me if you have any questions or require additional information

Very truly yours,

SQUAW BAY CORP

W. Scott Decker, P.E.
Principal

WSD/cms
cc: Jim Clarkson
Jim Morrison
97-242
know0129.let

MAINE MEDICAL CENTER

January 27, 1998

Mr. Richard Knowland
Senior Planner
Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Congress Street MOB Oil and Grit Separator

Dear Mr. Knowland,

This is to inform you of the intention of Maine Medical Center to maintain the oil and grit separator required for this project. The inspection and cleaning of this separator will be performed in accordance with the specifications outlined on the attached sheet.

If you have any questions, please contact this office.

Sincerely,
Maine Medical Center

Robert D. Bremm
Director, Engineering Services

DELUCA01.WPD

Vortechs Oil and Grit Separator

Maintenance Plan

Inspection

In the first year, Maine Medical Center will inspect the Vortech's Oil/Grit separation structure in January, February, March, spring, summer and fall. The inspection schedule can then be modified in subsequent years according to experience or to meet specific stormwater permit requirements.

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MOHR SEREDIN
Landscape Architects, Inc.

TRANSMITTAL

Date: JAN 27, 1998 Project Number: 186

Project: MMC PARKING GARAGE

To: SCOTT DECKER

From: KIM TURNER

Copy:

Message:

RECOMMEND 3/8" THICKNESS.

MIRAFI, INC
PO BOX 240967
CHARLOTTE, NC 28224
1.800.438.1855

☐ Mailed
☐ Delivered
☒ Fax Number 829-5692
No. of Pages (including cover) 7

18 Pleasant Street, Portland, Maine 04101
(207) 871-0003

MIRAMAT:

A product of Mirafi innovation

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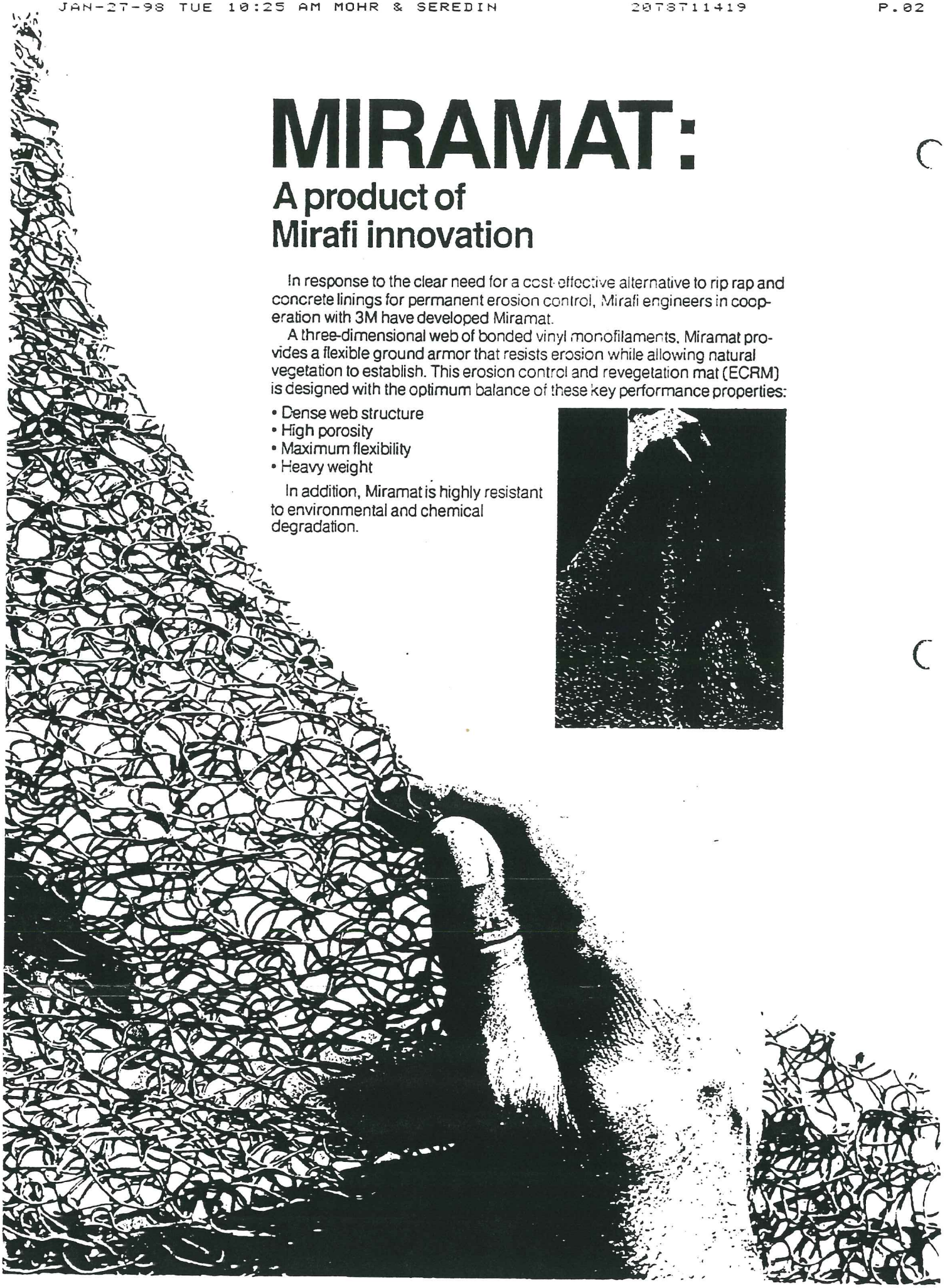

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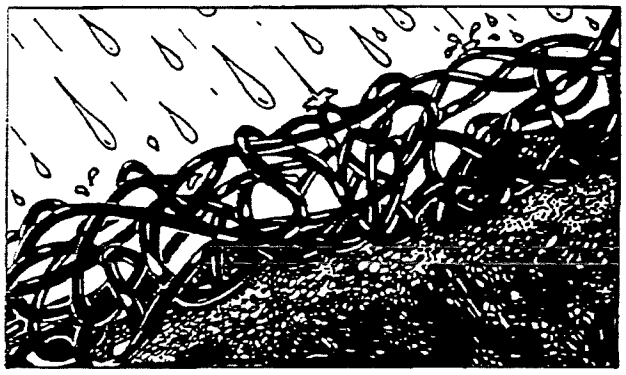

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Miramat's 3-dimensional, high porosity web structure acts as a non-deteriorating mulch.

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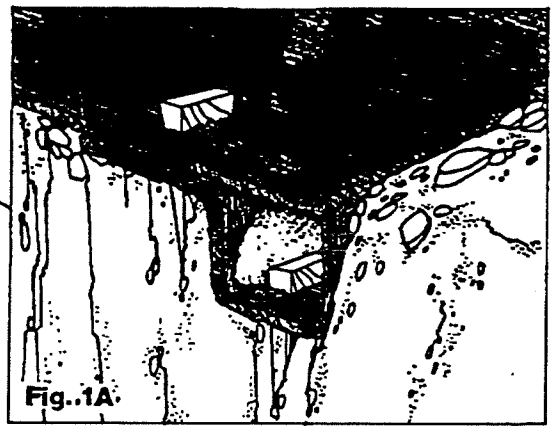


Fig..1A

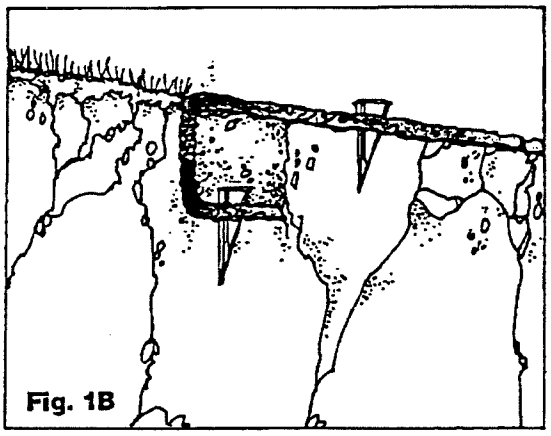


Fig. 1B

BURIAL OF TRANSVERSE TERMINAL END

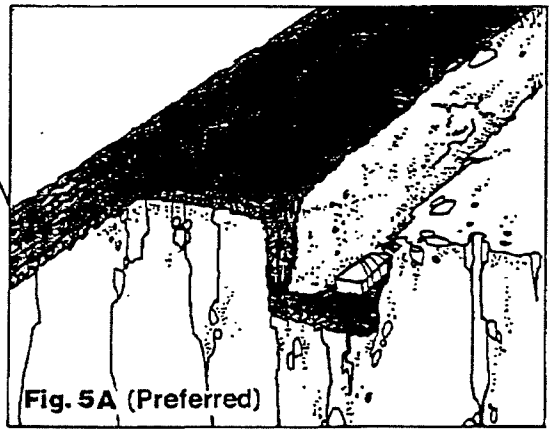


Fig. 5A (Preferred)

EDGE ANCHOR IN TRENCH

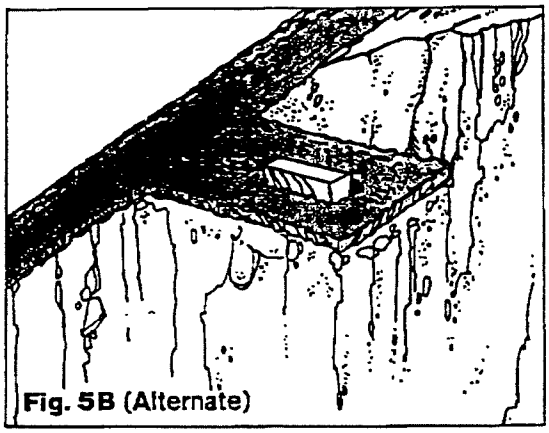
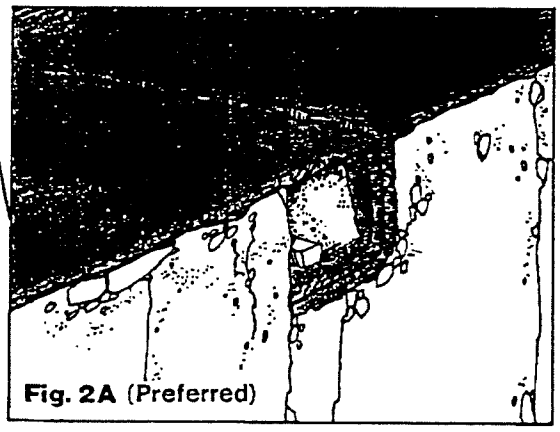


Fig. 5B (Alternate)

EDGE ANCHOR ON LEDGE



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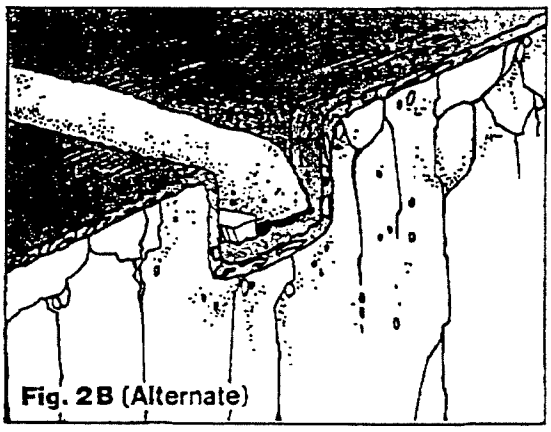

Fig. 2B (Alternate)

SECURE MAT IN CHECK SLOTS

Squaw Bay Corp

Consulting Engineers & Land Surveyors

Principals:

W. Scott Decker, P.E.
John R. Kennedy, P.E.
Peter B. Tubbs, P.E., P.L.S.
David W. Young, P.E., P.L.S.

January 29, 1998

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, ME 04101

RE: Maine Medical Center
Medical Office Building

Dear Rick:

This letter addresses the comments received in your January 20, 1998 letter to me.

Jeffrey Preble's 1/12/98 letter to you

Drawing C-101

Comment #1: *"The proposed plans show a drainage swale along the easterly property line which outlets over the sidewalk and into Boynton Street. It does not appear there are any catch basins along Boynton Street to collect his runoff. We would suggest adding a catch basin and stormdrain to collect the runoff in this area and tie it into the existing combined sewer line in Boynton Street."*

Response: During our recent telephone conversation, you informed me that Tony Lombardo noted that under current conditions icing occurs along Boynton Street and Maine Medical Center should attempt to mitigate this condition. Therefore, enclosed drawing C-101 has been revised to include the requested catch basin. The sewer line in Boynton Street is an 8" sanitary line so we have connected the catch basin to the 12" oil/grit structure discharge line.

Comment #2: *"The existing sidewalk at the Forest Street and Boynton Street intersection is at elevation 39.0. The elevation of the catch basin grate on the Vortechnics unit is 39.75. This should be lowered if the intention is to collect runoff from the swale along the northern property boundary."*

Response: Enclosed Site Plan drawing C-101 has been revised to reflect a lowered catch basin grate elevation.

Comment #3: *"A dimension of 2'-9" has been shown on the Forest Street and Boynton Street Right-of-Way. We are not sure what this dimension represents."*

P.O. Box 86A, 4 Blanchard Road, Cumberland Center, ME 04021
Phone: (207) 829-6994 • Fax: (207) 829-5692 • Email: squawbay@neis.net

Response: Enclosed Site Plan drawing C-101 has been revised to note the right-of-way width of 33' as depicted on Titcomb Associates' survey drawing.

Comment #4: *"The curb schedule will need to be completed prior to construction."*

Response: The curb schedule will be completed when all issues regarding parking, sidewalk widths and building dimensions have been resolved.

Drawing C-302

Comment #1: *"Grades for the underdrain system have not been shown on the plan. The location for the underdrain cleanouts should be shown on the plans."*

Response: The final location of underdrains (both horizontal and vertical) will be established following final design of the office building and parking garage.

Comment #2: *"It is not clear where the underdrain discharges."*

Response: Enclosed Erosion and Sedimentation Control Plan drawing C-302 has been revised to show the underdrain system outletting to the Vortechs unit discharge line.

Comment #3: *"The location of the construction entrance is not shown on the plan. It might be worth specifying a location for construction traffic to access the site."*

Response: We prefer to allow the contractor to plan this element of the project. He will submit his plan for a construction entrance for approval by the Owner's Engineer and the City of Portland Public Works Department. If Public Works has specific ideas where the entrance must be, it would be helpful if the location was identified.

Comment #4: *"Please note that the details for the overhead walkway have not been included with this submission. The affect on the sidewalk width is therefore not known at this time."*

Response: The final details of the overhead pedestrian walkway have not been completed by the project architect. They await approval of the walkway concept by the Maine Medical Center. However, it is understood at this juncture that the supports on the medical office building side of Congress Street will be constructed into the building and will extend no more than 30" into the sidewalk. The support on the south side of Congress Street will not encroach into the sidewalk but may abut the sidewalk.

John Peverada's 1/9/98 memorandum addressed to you

The traffic comments raised by Mr. Peverada have been or will be addressed directly by Maine Medical Center.

Comment: *"The list of MMC traffic improvements should be put on a site plan. In addition, the following statement should be added to the Site Plan:"*

"Applicant shall be responsible for monitoring the intersection of Park Avenue and Forest Street for a period of one year after a Certificate of Occupancy has been issued for the office building and parking garage. Applicant shall submit a traffic report to the City Traffic Engineer for review and approval. If the City Traffic Engineer determines that a traffic light is required, the applicant shall be responsible for the purchase and installation of the traffic light. An escrow account/performance guarantee shall be established by MMC prior to the issuance of a building permit."

Response: The Site Plan drawing C-101 has been revised to include the requested traffic improvement information.

Comment: *"Some, but not all, of the questions/issues that are listed in my memo of 12-24-97 to Patrick Costin have been addressed (see Attachment C)."*

Response: The architectural related comments will be addressed directly by Harriman Associates.

Comment: *"We need to get a definitive letter from MMC indicating that they will maintain the oil and grit separator, along with the schedule for maintenance."*

Response: Enclosed is a copy of a letter from Maine Medical Center addressed to you which addresses this comment.

Comment: *"Please indicate the dimensions and height of the transformer along Forest Street."*

Response: The transformer will be 6'x6'x6' cube situated on a 9'x9' concrete pad.

Comment: *"Note #9 on Sheet C-101, as well as related notes on curb and sidewalk, need to be changed. Note #9 should read "all curb and sidewalk shall be reconstructed along the entire frontage of the site..." We are skeptical that you will be able to "save" the existing curbs and sidewalks during construction, on this tight site. After construction, we can review the situation again to see if you were able to save the curb and sidewalk on Forest Street and Boynton Street. However, we are not comfortable with the present notes shown on the plans and Note #9."*

Response: Enclosed Site Plan drawing C-101 has been revised to address this issue.

Comment: *"We will need a draft deed to the City for that portion of the sidewalk that is on MMC property."*

Response: The draft deed will be submitted directly to the City by Maine Medical Center.

Comment: *"Do you have a catalog cut of the Miramat material shown on L-101?"*

Response: Enclosed is a catalogue cut of the Miramat material.

Comment: *"How high are the ventilation shafts in relation to the adjacent grade, and is there grating so that someone doesn't fall in?"*

Response: The ventilation shafts will extend no more than one foot above ground and will contain a grate to prevent children and animals from entering.

Comment: *"See the memo from Anthony Lombardo (Attachment D)."*

"Squaw Bay Cop has made the revisions requested by Public Works. The only item that is still missing as part of their submission is a copy of the capacity letter for the combined sewer in Forest Street. This letter has been requested from Bill Goodwin here at Public Works, but no actual letter verifying capacity of this sewer has been submitted."

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SQUAW BAY CORP

Scott Decker

W. Scott Decker, P.E.
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WSD/cms
cc: Jim Clarkson
Jim Morrison

97-242
know0129.let
4 of 4

MAINE MEDICAL CENTER

January 27, 1998

Mr. Richard Knowland
Senior Planner
Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

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Director, Engineering Services

DELUCA01.WPD

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MOHR & SEREDIN
Landscape Architects, Inc.

TRANSMITTAL

Date: JAN 27, 1998 Project Number: 186

Project: MMC PARKING GARAGE

To: SCOTT DECKER

From: KIM TURNER

Copy:

Message:

RECOMMEND 3/8" THICKNESS.

MIRAFI, INC
PO BOX 240967
CHARLOTTE, NC 28224
1·800·438·1855

☐ Mailed
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No. of Pages (including cover) 7

18 Pleasant Street, Portland, Maine 04101
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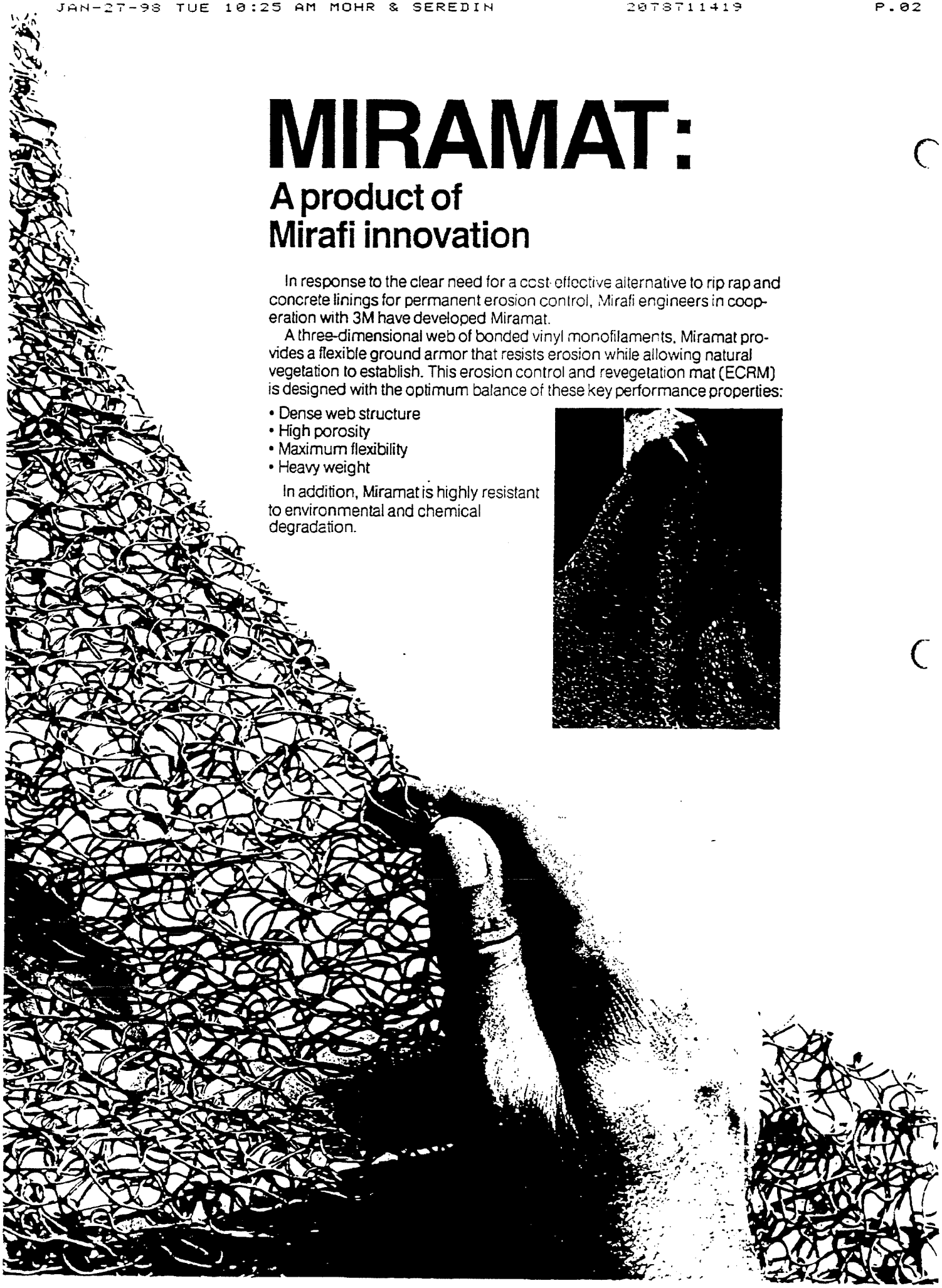

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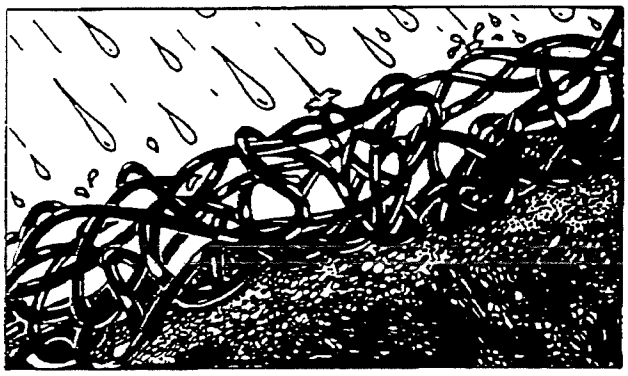

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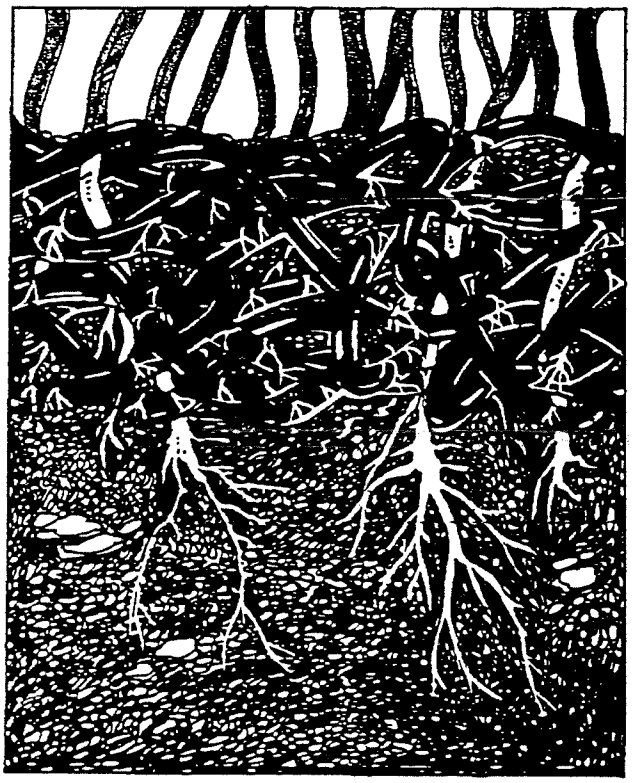

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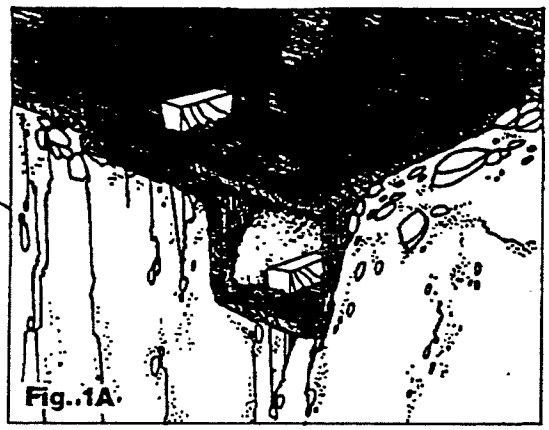


Fig. 1A

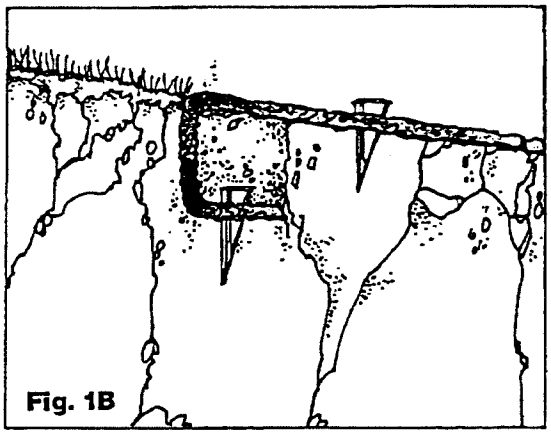
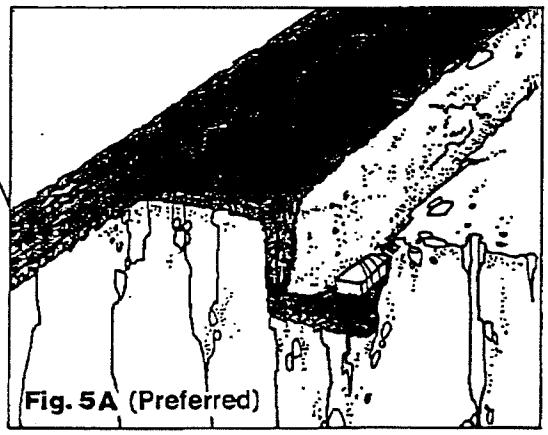


Fig. 1B

BURIAL OF TRANSVERSE TERMINAL END



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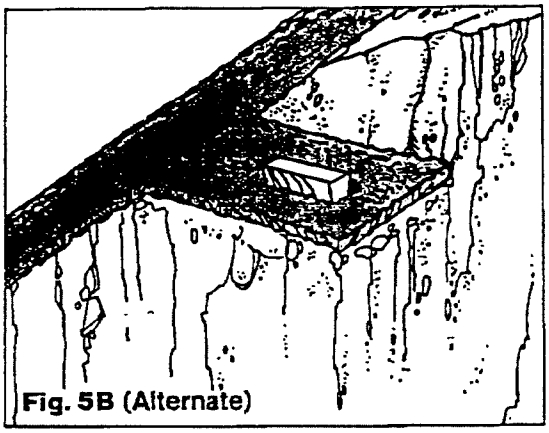

Fig. 5B (Alternate)

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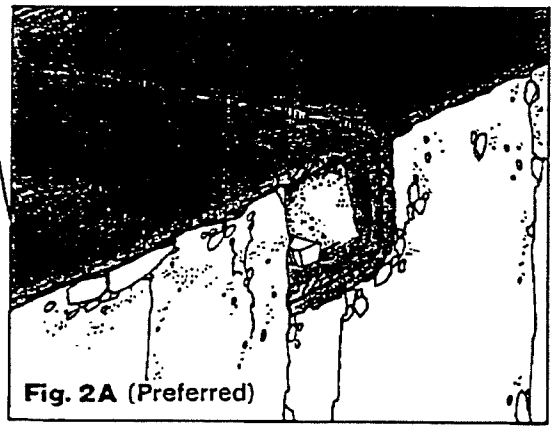

Fig. 2A (Preferred)

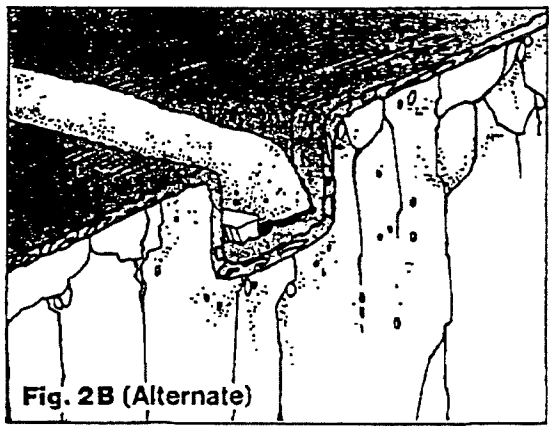

Fig. 2B (Alternate)

SECURE MAT IN CHECK SLOTS

Dufresne-Henry, Inc.
Consulting Engineers

22 Free Street . Portland, Maine 04101-3900 . Tel: 207.775.3211 . Fax: 207.775.6434 . E-mail: dhmaine@agate.net

June 2, 1998

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

As requested, we have reviewed the estimate for site improvements for the Maine Medical Center Office Building you faxed to us on June 1, 1998. The unit prices used in this estimate appear to be low compared to bid results we have recently received from other projects in the region. It also appears that some items have not been included in the estimate such as the costs for the protective posts or site lighting. Some of the areas where we feel the unit costs are low include.

- Granite curbing, we would suggest a unit price of approximately $30 to $35 per linear foot.
- Sidewalks, we would suggest a unit price of approximately $5 to $6 per square foot.
- Brick pavers, we would suggest a unit price of approximately $10 to $12 per square foot.
- Sewer and storm drainage piping should probably be carried at a unit price of approximately $40 to $45 per linear foot.
- Manholes and catch basins will likely cost in the $2,500 range to install.

A breakdown of the landscaping costs was not provided with the estimate. We would be glad to review the breakdown of this item if requested. Let me know if we can be of any further assistance with this project.

Very truly yours,
DUFRESNE-HENRY, INC.

Jeffrey D. Preble, P.E.
Project Manager

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City of Portland, Maine
Planning Department

City Hall
389 Congress Street, 4th Floor
Portland, Maine 04101
Fax Number: 756-8258

FAX TRANSMISSION COVER SHEET

TO: JIM MORRISON

COMPANY:

FAX #: 871-6195

FROM: RICK KNOWLTON

OF PAGES: 2

DATE: 6-2-98

RE: JIM - ATTACHED ARE COMMENTS REGARDING THE SITE IMPROVEMENT ESTIMATE

If you do not receive all of the pages, please call 874-8721 or 874-8719.

Dufresne-Henry, Inc.
22 Free Street
Portland, Maine 04101-3900
207-775-3211
Fax: 207-775-6434

FAX TRANSMISSION COVER SHEET

Date: 6/2/98 Time: 2:20 pm

To: Rick Knowland

Fax: 756-8258

Re: Maine Medical - January Invoice

Sender: Jeff Preble

YOU SHOULD RECEIVE 2 PAGE(S), INCLUDING THIS COVER SHEET.
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL 207-775-3211.

COMMENTS:

Rick -

This is the invoice that we are showing as over 90 days past due.

Thanks for the help.

Jeff

Dufresne-Henry, Inc.
22 Free Street ◇ Portland, Maine 04101-3900 ◇ Tel.: 207 / 775 / 3211 ◇ Fax: 207 / 775 / 6434

In Account with:

ALEX JAEGERMAN
CITY OF PORTLAND
389 CONGRESS STREET
SUITE 400, PORTLAND CITY HALL
PORTLAND ME 04101

INVOICE NO.: 811673 SEQUENCE NO:
INVOICE DATE: January 19, 1998
WORK ORDER NO(S). 8160054

Services rendered for PORTLAND DEVELOPMENT PROJECT REVIEW
through the period ending January 10, 1998.

Description	Hours	Bill Rate	Item Amount
MEDICAL BUILDING AND PARKI	13.00	46.90	$ 609.70
	13.00		
Total Professional Fees			$ 609.70
Total Reimbursable Charges			3.40
Amount Due This Invoice			**$ 613.10**

Summary:

Previously Invoiced	$ 3,609.50
Current Invoice	613.10
Total Received	-3,609.50
Balance	**$ 613.10**

Client Manager: JEFFREY D PREBLE, P.E.

PLEASE RETURN ONE COPY OF INVOICE WITH PAYMENT TO:

DUFRESNE-HENRY, INC.
Precision Park
No. Springfield, VT 05150-0029
Corporate Office

Service Charge: 1½% per month after 30 days

MMBC

MEDIPLEX MEDICAL BUILDING CORPORATION
5308 WEST PLANO PARKWAY ♦ PLANO, TEXAS ♦75093-4821

Facsimile

Date: 5/26
Total Pages, Including This Cover 4

To: Jim Morrison
Portland
Phone:
Fax phone:
Cc:

From: Jim Clarkson
Phone: 972/248-9100
Fax phone: 972/931-8966

REMARKS: ☐ URGENT ☐ FOR YOUR REVIEW ☐ REPLY ASAP ☐ PLEASE COMMENT

Site costs plus plant list, as requested. Call Kevin Anderson or myself if you have questions

Jc.

HARD COPY TO FOLLOW: YES _____ NO _____

Maine Medical Center

FAX TRANSMITTAL

22 Bramhall Street, Portland, Maine 04102

ENGINEERING SERVICES
TELEPHONE NUMBER (207) 871-2447
FAX NUMBER (207) 871-6195

DATE: 5/2998
TO: Richard Knowland
Department of Planning and Urban Development
City of Portland
PHONE:

FAX: 756-8258

FROM: Jim Morrison
SUBJECT: Congress Street Medical Office Building

NUMBER OF PAGES INCLUDING TITLE PAGE 5

Rick:
Attached find information sent to us by Mediplex regarding cost of site improvements as we discussed this morning. My understanding is that you will fax this to Jim Wendell and he will get it back to us in a day or two. Thanks.

GIVE TO
JEFF PROBLE

Dufresne-Henry, Inc.
A DVI Company
22 Free Street ◊ Portland, Maine 04101-3900 ◊ Tel.. 207 / 775 / 3211 ◊ Fax: 207 / 775 / 6434

December 18, 1997

Mr. Richard Knowland, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

RE: Maine Medical Center Office Building

Dear Rick:

We have completed our initial review of the plans and design documents for the proposed Maine Medical Center Office and Parking Garage project received at our meeting on December 12, 1997 with Jim Wendell and you. This project involves an office building, parking garage, and associated site work. Existing grades at the site slope steeply from the easterly portion of the site along Congress St. to the northerly end of the project at the Forest St. and Boynton St. intersection. We understand that the plans and design documents are still under development and are considered preliminary, therefore our comments are geared towards the concepts presented in the documents.

Attached to this letter is an interoffice memorandum from Tim Michaud to myself outlining some preliminary comments on the proposed development. The comments are divided into construction, erosion control, storm water, and general issues. These comments and additional items are further discussed below.

Construction Issues

The proposed building and parking garage take up a majority of the project site. In addition a significant amount of excavation is required to achieve the subgrades needed for the parking garage foundation. The deepest excavation is along Congress St. where a cut of over 20 feet will be required. A significant effort will be required to remove this material and ensure stable sidewalls of the excavation. The S. W. Cole report also identified the potential for encountering contaminated materials during the excavation, and recommended that a plan be developed for addressing this possibility during construction. More details should be provided on the excavation process to ensure a stable work area and handling of contaminated soil.

Construction of this project will be complicated by the size of the site. Areas for storage of construction materials will be needed outside of the sites boundaries. Have any areas been identified where this will take place? Site safety fencing and other barricades will be required to ensure the safety of people in the area. Other miscellaneous construction items are listed below.

- There is a discrepancy on the plans on the required curb reveal. Drawing C-301 specifies the required 7 inch reveal while drawing L-101 lists a 6 inch reveal.
- The S. W. Cole report identifies the need for a foundation drain. This drain should be added to the site plan.
- The detail sheet lists pipe sizes to 96 inches. We would suggest modifying this schedule to include only the sizes required for the project.
- The configuration of the drop off area along Congress St. needs further development. There is not enough room between the handicap ramps and the angle point on the curbing to allow vehicle parking without interfering with access to the ramps.
- Support details for the elevated walkway are needed to determine if there are any impacts on sidewalk widths.

Erosion Control Issues

The erosion control detail sheet is general and not specific to this project. Locations of the proposed erosion control structures should be shown on the plans.

Storm Water Management

A storm water management plan should be developed for the project. Specific items that should be addressed include:

- Handling of surface run off along the easterly property line to Boynton St.,
- sizing of the oil/grit separator, and
- checking the capacity of the existing 12 inch storm drain to handle the proposed roof drain flows. Squaw Bay and Portland Public works have already agreed to allow the roof drain to be tied into the combined sewer system.

The landscaping plan calls for several plantings in the area of the oil/grit separator. Some coordination is required to make certain access to the separator is not hindered by the plantings.

General Issues

A snow removal zone has been provided along Boynton St. The size of the zone appears to be small. In addition the location is very close to the sidewalk along Boynton St. Fencing or other safety barriers located between the snow removal zone and the sidewalk should be considered. The landscaping plan calls for some granite stairs to be installed near Congress St. Details for this have not been provided.

We are looking forward to meeting with you on December 19th to review the project with the developers. Let me know if you require any additional information prior to this meeting.

Very truly yours,

DUFRESNE-HENRY, INC.

JDP

Jeffrey D. Preble, P.E.
Project Manager

Enclosure

File N:\civil\8160054\Knowlandltr5.wpd

DUFRESNE-HENRY, INC.
MEMORANDUM

TO: JDP

FROM: TJM

DATE: 12/15/97

SUBJECT: Medical Office Building & Parking Garage Site Plan Review

Site plan review comments are as follows:

Construction Issues:

1. The reveal for granite curbing is to be 7 inches. Dwg L-101 specifies a 6 inch granite curb reveal.
2. The proposed Roof drain piping should be installed with a clean out assembly.
3. The outlet pipe from the proposed oil/water separator is to connect into an existing sewer pipe per City of Portland Public Works.
4. The details for the concrete sidewalks lack information about control joints.
5. The site plan does not specify a curb radius at the corner of Forest St. and Boynton St.
6. The site plan does not include details for outdoor lighting.

Erosion Control Issues:

1. The erosion control plan is general and not specific to this project. This plan should provide specific erosion control details pertaining to this project.

Storm water Management:

1. The site plan does not include details for site drainage; specifically at Boynton St.
2. A construction sequencing plan for the site and the drainage system has not been provided.
3. A maintenance program for the Storm water handling system has not been provided.

General Issues:

1. The ste plan should specify a Benchmark and elevation per City of Portland datum.
2. The Site plan needs to show pedestrian cross walks at entrances/exists to the proposed building.

CITY OF PORTLAND

MEMORANDUM

TO: Rick Knowland, Senior Planner
FROM: John Peverada, Parking Manager J.P.
DATE: March 27, 1998
RE: Maine Medical Center Parking Management Plan

At last night's neighborhood meeting, Paul Gray gave me a copy of the revised Parking management Plan, dated February 11, 1998. He apologized, and said that he thought his secretary sent us a copy weeks ago. Please find attached a copy for your review.

In the last paragraph on page two, the hospital answered my previous question "...provide the City with verifiable documentation that every employee will have an off-street parking space", by stating that they have approximately 1,300 daytime employees, and 1,626 parking spaces. I will take their word on this, and remind any of their employees of the same if they complain about tickets or boots.

If the hospital makes the following few additional revisions to the plan, I will be satisfied:

1. Section F - Contractor Requirements During Renovation / Construction Projects
   a. A sentence should be added that states all contractors, subcontractors and their employees are to park off-site. Even though this is alluded to by the hospital agreeing to utilize the information on the Merrill Auditorium specs, I feel that it should be clarified here.

   b. The hospital states that during the development of the garage/office building, they will provide additional parking at the St. John St. shuttle lot as necessary to replace the 52 surface spaces on the site. At first this sounds good, until you refer to page two of the plan, and realize that there are only 150 parking spaces in the St. John St. lot, and more importantly, **there are currently over 120 vehicles presently parked on the site** (47 in the Congress St. lot, 30 on the Forest St. lot and 45 on the Boynton St. lot).

In order to get this project off to a good start with the neighborhood, it is going to be imperative that this issue be dealt with prior to the issuance of a building permit.

2. The parking plan should make reference to the meeting between the City (Bob Ganley, Councilor Geraghty and Joe Gray) and MMC (Vincent Conti and Paul Gray), in which the hospital agreed to make the new garage available for Sea Dogs and Snow Ban parking. The hospital should state when the parking will be available, how many spaces will be available and at what rate, if any.

I assume that you will forward these comments to the appropriate people at Maine Medical Center. Please contact me if you have any additional questions or concerns.

cc: Gloria Thomas, Department Head
Joe Gray, Director of Planning
Councilor Karen Geraghty
Larry Ash, Traffic Engineer (with attachment)

3-27m.wps

PARKING MANAGEMENT PLAN

Overview

The City of Portland/Maine Medical Center contract zone for the medical office building and parking garage at 883-903 Congress Street includes a provision for MMC to develop a parking management plan for the Bramhall campus. This parking management plan addresses the needs of three major groups:

- Patients and others who accompany them to the campus;
- Physicians who come to the campus to examine and treat their patients; and
- Employees of Maine Medical Center.

This plan includes strategies that have already been implemented as well as those still in development. MMC welcomes the opportunity to continue to work with the City of Portland to develop and implement this plan.

The proposed garage associated with the medical office building will have excess capacity built into it; in other words, the facility will have more than enough spaces to meet the demands of the 49,150 s.f. office building. Of the 430 spaces to be built, 226 are required for the office building, for visitors and employees, leaving 204 spaces for the general needs of the Bramhall campus.

The sale of the Gateway garage is also planned as a separate action. A summary of the impact of the combined actions of constructing the office building, sale of the Gateway, and lease of the St. John lot on the overall existing parking supply is as follows:

Action		Net Gain/Loss in Spaces
Sale of Gateway Garage	- 530	(Gateway has 650 spaces but 120 will
Loss of 52 spaces currently on site	- 52	be retained by MMC use.)
Construction of Proposed Building/Garage	+ 204	(Excess once office needs are met.)
Lease of St. John Street Lot	+ 150	
Overall Net Loss	- 228	

While the supply for MMC will be reduced due to the sale of the Gateway Garage, which is planned as a separate action, the proposed garage will reduce the loss over what would otherwise be experienced when the Gateway Garage is sold. In addition, the spaces in the Gateway are not fully utilized due to the remoteness from the Bramhall campus.

22 Bramhall Street, Portland, Maine 04102 (207) 871-0111

Supply and Demand

An essential element of a parking management plan is a professionally prepared analysis of the supply of and demand for parking. In the Spring of 1996, MMC retained DeLuca-Hoffman Associates, Inc. The analysis was updated in March 1997 to incorporate the changes in supply and demand associated with the proposed medical office building and other MMC initiatives. This parking management plan incorporates the major findings from the DeLuca-Hoffman analysis. The existing supply, including planned changes with the development of the Congress Street Medical Office Building/Parking Garage, and the estimated demand are presented in Exhibit 1.

Exhibit 1

Maine Medical Center
Parking Supply and Demand
Current and Planned Changes

Location	Spaces
Main Congress Street Garage	1,276
Congress Street Medical Office Garage	430
Admitting	9
Visitors Lot Bramhall	315
Maine Magnetic Imaging	11
Gilman Street Lot A	15
Emergency	10
Radiation Therapy/Oncology	10
Gateway Garage	120
Gilman Street Lot B	15
Farmers Market Garage	12
St. John Street	150
Total	2,373
Demand Following Completion of Bean Building and Relocation of Programs and Employees to the Scarborough Campus	1,914
Completion of Congress Street Building	226
	2,140

Source: "Parking Analysis for a Proposed Expansion to the Bean Building at MMC" DeLuca-Hoffman Associates," June 1996, and March 1997 Update.

Thus, the overall planned supply exceeds the demand by 233 spaces (11%). The challenge facing MMC is to make the best use of that supply. The balance of this plan identifies the strategies MMC is pursuing in order to better manage the demand and to minimize the impact of the demand on the neighborhood surrounding the Bramhall campus.

Parking Management Strategies

This plan includes strategies that address the following issues:

- Sale of the Gateway Garage and development of the Congress Street Garage.
- Parking access and traffic flow.
- Decentralization of MMC Bramhall campus.
- Contractor requirements during construction/renovation projects.
- Alternative transportation.
- Street parking enforcement.

A. Sale of the Gateway Garage and Development of the Congress Street Office Building Parking Garage

In 1992, in order to expand its supply of parking, MMC purchased the 650-space Gateway Garage at the corner of High Street and Cumberland Avenue and initiated an employee parking program at the garage. Since then, all new employees have been assigned to park there and a shuttle service is provided to the MMC campus. While the program has worked, many employees find the shuttle inconvenient and time consuming. As a result, some employees park on the streets around the Bramhall campus which are subject to strict City of Portland parking enforcement. In order to eliminate the inconvenience, a central strategy is the sale of the Gateway Garage and the development of the Congress Street Office Building Parking Garage. This strategy brings the employees back to the campus, eliminates the shuttle inconvenience and should eliminate the current on-street parking by employees who should be parking at the Gateway.

B. Parking Access and Traffic Flow

Gilman St. Garage

In 1997, MMC implemented a new approach to the management of the utilization of the 1,276-space Main Parking Garage at the corner of Congress Street and Gilman Street. Prior to 1997, in the 6:30-8:30 AM period when most employees arrive, the garage would begin to fill and as a resulta one-in/one-out pattern developed, causing queuing of cars on Gilman and Congress. That policy was changed such that when the garage is full, it is closed until approximately 1:30 PM and employees are directed to park at the St. John Street lot and areshuttled to the Bramhall campus. This policy has eliminated the queuing on the streets and given the much shorter shuttle ride, employees have made good use of the St. John Lot. As part of our parking management plan, MMC is committed to maintaining the St. John Street Lot as long as demand warrants.

St. John Street Lot

MMC is committed to maintaining the shuttle to the St. John Street lot and making it free and convenient for employee use. The current shuttle system has been very well received by the employees. MMC has also committed to Mr. Peverada to make a special effort to educate doctors and staff at McGeachey Hall to use the shuttle rather than to park on Vaughn Street.

Proposed Garage

MMC plans to design the new garage to minimize delay and provide security to encourage staff to utilize the garage rather than parking on street. Specific measures to be taken include the following:

- Security person assigned to the garage to monitor entering and exiting traffic.
- Direct entry on the employee side of the garage (Forest Street) without gates during the peak periods of traffic flow. This will eliminate potential delay upon entering the garage.
- MMC will evaluate the use of proximity cards to reduce the delay when leaving the garage. Mr. Peverada stated he has had favorable experience with these.
- Low user charge of 50 cents per day to eliminate the potential of cost being a deterrent.

Valet Parking

Another element of the parking access and traffic flow strategyis our valet parking program at the Admitting Lobby entrance and at the Emergency Department. This program has been very successful, serving 100 campus patients/visitors every day. Valet parking reduces congestion at the entrances, lowers frustration and the temptation to park on the street, and provides for significant improvement in the use of the spaces in the Admitting Lot, the Main Congress Street Garage and the Bramhall Lot. MMC is committed to maintaining the valet parking program after construction of the Bean addition.

C. Decentralization of the Bramhall Campus

Since 1991, MMC has been actively pursuing a Board of Trustees approved decentralization policy for the Bramhall campus. Each program/service that is moved from the Bramhall campus to other locations in the greater Portland area reduces the demand for parking at the Bramhall campus. Major examples of this strategy have included:

- MMC Scarborough Campus - This plan involves the relocation from the Bramhall campus of over 200 MMC employees and 25,000 patient visits to outpatient programs to the Scarborough campus. The Scarborough campus is not yet fully operational. The main remaining element is the consolidation of MMC's labs from the Bramhall and Brighton campuses and leased space on John Roberts Road, South Portland, to the Scarborough campus.

- Relocation of the 80-bed New England Rehabilitation Hospital of Portland and 20 MMC rehabilitation beds to the Brighton campus. This move reduced demand on the Bramhall visitor lot and the Main Congress Street Garage.

- Gateway Garage Condominiums - MMC owns condominiums at the Gateway Garage where 120 employees (data management and patient accounts) work who were formerly at the Bramhall campus. After the sale of the Gateway Garage, MMC will continue to lease 120 spaces at the Gateway Garage for these employees.

- Congress Street Medical Office Building - Consolidates several private practices in office buildings around the campus, reducing demand for on-street parking by patients of those practices.

- Holt Hall - In 1998, MMC will relocate 25 employees (and provide parking) from the Bramhall campus to the 7,000 sq. ft. at Holt Hall. The approval for Holt Hall included 25 on-site parking spaces.

- Brighton Campus - When MMC discontinued inpatient services at the Brighton Medical Center campus, it committed to continuing two major programs at that campus: urgent care and ambulatory surgery. By maintaining those programs, the 20,000 urgent care patients and 2,500 ambulatory surgery patients do not place demands for parking on the Bramhall campus which would have been the case if those programs had been discontinued.

MMC will continue to pursue other opportunities to decentralize its programs, further reducing the demand on the MMC Bramhall campus.

D. Internal Education

MMC will make a brochure available to all its staff and doctors detailing where MMC parking is located, requesting people to park in the garages, and to carpool or use the bus whenever possible. MMC will also work with the staff of the Portland Area Comprehensive Transportation Committee (PACTS) to develop a data base for use in their rideshare program.

Information in the brochure will include the following:

- Map of available off-street parking along with designations (i.e., staff, visitor, etc.).
- Handicapped parking locations.
- Valet instructions.
- Ride share information.
- Metro information.
- Overnight parking.
- Snow bans.

E. Contact Person

MMC will provide a contact person for coordinating directly with John Peverada on parking issues. MMC supports regular monthly meetings to address issues.

F. Contractor Requirement During Renovation/Construction Projects

The Bramhall campus will be in a period of continuous construction for the next several years. Our construction agreements with contractors have strict provisions regarding our expectations of their responsibility to manage the parking of their employees. MMC generally has a construction manager or general contractor overseeing the parking of the construction workers. The contract specifies where and when workers can park. Mr. Peverada has given MMC a copy of the specifications the City used in renovating Merrill Hall relative to contractor parking. MMC will utilize this information in preparing upcoming contracts.

G. Alternative Transportation

MMC has a ride share program to encourage people to car pool to work. The program includes a guaranteed ride home provision and participants are provided preferential parking. MMC proposes a renewed commitment to this program and proposes the following specific action:

- MMC will work with PACTS to develop a database for use in their ride share program.
- MMC will appoint a person to be in charge of the parking program and work with the City in identifying potential solutions to issues as they arise.
- Promote ride share and use of Metro with our employees.

H. Parking Enforcement

MMC fully supports aggressive efforts by the City of Portland to enforce the rules and regulations on the streets surrounding the Bramhall campus. We would encourage the City to step up its enforcement even further and to consider further restrictions on on-street parking. MMC supports increased enforcement of on-street parking through time limitation changes or restrictions. In addition, MMC supports the use of parking meters on Brackett and Gilman Streets.

I. Other Considerations

Beyond the strategies outlined above, there are trends in health care which should continue to reduce the demands on the MMC Bramhall campus. We have forecast that declines in admissions and reductions in lengths of stay will result in MMC becoming a 500-bed hospital in the future, rather than the 600-bed hospital it is today. This continued reduction in activity will translate into reduced demand for parking at the Bramhall campus.

Conclusions

MMC is committed to effectively managing parking on the Bramhall campus. This plan has outlined the following measures to be done by MMC:

- Maintain current management policy for the Main Parking Garage at the corner of Congress and Gilman Street which has eliminated queuing.
- Maintain the shuttle to the St. John Street lot making it free and convenient for employee use. MMC will actively pursue replacement parking if the St. John Street parking is displaced by Amtrak.
- Implementation of the following measures at the proposed garage:
  - Security person.
  - Direct entry from Forest Street without gates during peak periods.
  - Use of proximity cards.
  - Low user fee.
- Maintenance of the valet parking program at the Admitting Lobby entrance and Emergency entry following construction of the Bean Building.
- Create a brochure for distribution to all staff and doctors detailing where parking is located.
- Provide a contact person for coordinating directly with John Peverada on parking issues and attend regular monthly meetings with him.
- Utilization of specifications similar to those used in Merrill Hall relative to contractor parking.
- Work with PACTS to develop a database for use in their rideshare program.
- Promote rideshare and use of Metro with our employees through the brochure.
- Support for increased enforcement of on-street parking through time limitation changes or restrictions.
- Undertake a special effort to educate doctors and staff at McGeachey Hall to use the shuttle rather than to park on Vaughn Street.

DeLUCA HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

January 9, 1998

Mr. & Mrs. Phillip and Roseann Flint
247 Allen Avenue
Portland, ME 04103

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. & Mrs. Flint:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, ME 04106
Phone: (207) 74-1121
Fax: (207) 879-0896

Maine Medical Center anticipates filing of the application to the MeDEP on January 9, 1998.

A copy of the formal Notice of Intent to File for the application, which will be published in the local newspaper, is attached. This advertisement contains additional information on the project.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471.1/abt1-8

Enclosure

C: ✓ Rick Knowland, City of Portland
Larry Ash, City of Portland

DeLUCA HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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- CONSTRUCTION ADMINISTRATION

January 9, 1998

Mr. & Mrs. Gregory and Carol Kontos
PO Box 1785
Windham, ME 04062

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. & Mrs. Kontos:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471.1/abt1-8

Enclosure

C: Rick Knowland, City of Portland
Larry Ash, City of Portland

DeLUCA HOFFMAN ASSOCIATES, INC.
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January 9, 1998

Mr. & Mrs. Frank J. & Margaret Govenik
2 Chester Avenue
Briston, RI 20809

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. & Mrs. Govenik:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471.1/abt1-8

Enclosure

C: Rick Knowland, City of Portland
Larry Ash, City of Portland

DeLUCA HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

January 9, 1998

Mr. Joseph S. Dixon
35 Penrith Road
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. Dixon:

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A copy of the formal Notice of Intent to File for the application, which will be published in the local newspaper, is attached. This advertisement contains additional information on the project.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471.1/abt1-8

Enclosure

C: Rick Knowland, City of Portland
Larry Ash, City of Portland

DeLUCA HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

January 9, 1998

Mr. Tri C. Nguyen
23 Boynton
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. Nguyen:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, ME 04106
Phone: (207) 74-1121
Fax: (207) 879-0896

Maine Medical Center anticipates filing of the application to the MeDEP on January 9, 1998.

A copy of the formal Notice of Intent to File for the application, which will be published in the local newspaper, is attached. This advertisement contains additional information on the project.

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January 9, 1998

Mr. Stephen J. Michaud & Ms. Tammy J. Beaulieu
21 Boynton
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. Michaud & Ms. Beaulieu:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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January 9, 1998

Mr. Hubert A. Verrier
15 Boynton
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. Verrier:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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January 9, 1998

Ms. Sarah M. McKiterick
11 Boynton
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Ms. McKiterick:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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Vice President

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January 9, 1998

Alaska Seaboard Partners LP
PO Box 86359
Baton Rouge, LA 70879

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Sirs:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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January 9, 1998

Mr. & Mrs. Richard S. & Peggy Harris
35 Penrith Road
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. & Mrs. Harris:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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Vice President

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Enclosure

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Larry Ash, City of Portland

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January 9, 1998

SEV Realty, Inc.
905 Congress
Portland, ME 04102

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Sirs:

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Vice President

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Enclosure

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January 9, 1998

Severino Associates Ltd.
539 Brook Street
Westbrook, ME 04092

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Sirs:

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Enclosure

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January 9, 1998

Mr. Clare B. Knight
18 Castine Avenue
Portland, ME 04103

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. Knight:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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Vice President

TLG/sq/JN1471.1/abt1-8

Enclosure

C: Rick Knowland, City of Portland
Larry Ash, City of Portland

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January 9, 1998

Mr. & Mrs. James J. & Pauline Vasile
34 Vesper Street
Scarborough, ME 04074

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. & Mrs. Vasile:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

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Larry Ash, City of Portland

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January 9, 1998

Ms. Mildred A. Cook
10 Tremont Street
South Portland, ME 04106

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Ms. Cook:

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Thomas L. Gorrill, P.E.
Vice President

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Enclosure

C: Rick Knowland, City of Portland
Larry Ash, City of Portland

FORM C 8/94

NOTICE OF INTENT TO FILE

Please take notice that Maine Medical Center, 22 Bramhall Street, Portland, Maine 04102 is intending to file a Site Location of Development Act – Traffic Permit Application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 481-490 including Chapter 374 on or about January 9, 1998. The applications are for the construction of a 49,150 square foot Maine Medical Office Building with an attached 430-space parking garage.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the applications are found by the Department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office at Portland during normal working hours. A copy of the application may also be seen at the municipal offices in:

Portland Maine after the anticipated filing date.

Written public comments may be sent to the Department of Environmental Protection, Bureau of Land & Water Quality, 17 State House Station, Augusta, Maine 04333.

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION SITE LOCATION OF DEVELOPMENT ACT PERMIT APPLICATION

PROPOSED MAINE MEDICAL OFFICE FACILITY PORTLAND, MAINE

APPLICATION FOR TRAFFIC APPROVAL

Prepared for

Maine Medical Center
22 Bramhall Street
Portland, Maine 04102

Prepared by

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121

January 1998

DeLUCA HOFFMAN ASSOCIATES, INC.
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January 8, 1998

Ms. Linda Kokemuller
Project Analyst
Maine Department of Environmental Protection
312 Canco Road
Portland, Maine 04103

Re: Submission of Traffic Permit Application

Dear Linda:

Enclosed please find three copies of a Traffic Permit Application for a proposed medical office building and associated parking to be located on the corner of Congress Street and Forest Street in Portland. Also enclosed is check #6958 in the amount of $2,057.00 to cover the processing and licensing fees. Public notice of the application has been sent to the Portland Press Herald, the City of Portland Planning Department, and abutters. A copy of the notice and a listing of the people to whom the notice was sent is included with the application prior to Section 1. A preapplication meeting was held for this project on Wednesday, November 19, 1997.

Please contact me if you have any questions regarding this application.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471.1/Koke1-8

Enclosures

C: Rick Knowland, City of Portland (with enclosure)
Larry Ash, City of Portland (with enclosure)
Paul Gray, Maine Medical Center (with enclosure)
Jim Morrison, Maine Medical Center (with enclosure)

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta. Maine 04333
Telephone: 207-287-2111

FOR DEP USE
ATS # _____
L- _____
Total Fees: _____
Date: Received _____

7/97

PERMIT APPLICATION - TRAFFIC
SITE LOCATION OF DEVELOPMENT LAW, 38 M.R.S.A. §§481-490

Please type or print:

This application is for (check all that apply): Traffic 100-200 PCE's [ ] Advance Ruling [ ]

Traffic 200+ PCE's [X]

Name of Applicant: MAINE MEDICAL CENTER

Address: 22 BRAMHALL STREET Telephone: (207)871-2500 EXTENSION 552

Name of local contact or agent: PAUL D. GRAY/BOB BREMM/JIM MORRISON

Address: 22 BRAMHALL ST. PORTLAND, ME 04102 Telephone: (207)871-2451 EXTENSION 2447

Name and type of development: MEDICAL OFFICE BUILDING

Location of development including road, street, or nearest route number:

883-887 CONGRESS STREET

City/Town/Plantation: PORTLAND, County: CUMBERLAND, Tax Map # 53-I, Lot # 1,2,3 & 12

Will a Natural Resources Protection Act permit be required for this project? NO Has the NRPA permit application (PBR, Tier, full NRPA) been submitted as part of this application? _____

Will a Stormwater Management permit be required for this project? _____ Has the Stormwater permit application (Full, PBR) been submitted as part of this application? _____

Was this development started prior to obtaining a traffic permit? NO

Is this development or any portion of the site currently subject to department enforcement action? NO

Existing DEP permit number (if applicable): 69-7981-05170

Name(s) of DEP and/or DOT staff person(s) contacted concerning this application:
LINDA KOKEMULLER , NANCY BEARDSLEY, ROLAND ROY, BRIAN BURNE

Name(s) of DEP and DOT staff person(s) present at the scoping meeting for 200+ applications:
LINDA KOKEMULLER, NANCY BEARDSLEY, ROLAND ROY, BRIAN BURNE

7/97

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: _____

Name (print): THOMAS L. GORRILL Engineer #4614

Date: JANUARY 9, 1998 Other _____

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Paul D Gray 1-8-98

Signature of applicant Date

FORM C 8/94

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Please take notice that Maine Medical Center, 22 Bramhall Street, Portland, Maine 04102 is intending to file a Site Location of Development Act – Traffic Permit Application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 481-490 including Chapter 374 on or about January 9, 1998. The applications are for the construction of a 49,150 square foot Maine Medical Office Building with an attached 430-space parking garage.

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Written public comments may be sent to the Department of Environmental Protection, Bureau of Land & Water Quality, 17 State House Station, Augusta, Maine 04333.

ATTACHMENT A

List of Abutters

MAINE MEDICAL CENTER
ABUTTERS LIST

Tax Map/Block/Prop.	Property	Owner
53/I/7	14 Boynton	Phillip and Roseann Flint 247 Allen Avenue Portland, Maine 04103
53/I/16	879 Congress	Gregory and Carol Kontos P.O. Box 1785 Windham, Maine 04062
53/A/13	23-25 Forest 31-33 Boynton	Frank J. & Margaret Govenik 2 Chester Avenue Bristol, RI 20809
53/A/14	27-29 Boynton	Joseph S. Dixon 35 Penrith Road Portland, Maine 04102
53/A/15	23-25 Boynton	Tri C. Nguyen 23 Boynton Portland, Maine 04102
53/A/17	17-19 Boynton	Stephen J. Michaud & Tammy J. Beaulieu 21 Boynton Portland, Maine 04102
53/A/19	13-15 Boynton	Hubert A. Verrier 15 Boynton Portland, Maine 04102
53/A/20	11 Boynton	Sarah M. McKiterick 11 Boynton Portland, Maine 04102
53/A/21	7-9 Boynton	Alaska Seaboard Partners LP P.O. Box 86359 Baton Rouge, LA 70879
53/A/22	20-28 Weymouth	Richard S. & Peggy Harris 35 Penrith Road Portland, Maine 04102
65/E/30	2-10 Forest 905-913 Congress	SEV Realty Inc. 905 Congress Portland, Maine 04102
65/E/25	12 Forest	Severino Associates LTD 539 Brook Street Westbrook, Maine 04092
65/E/23	14-16 Forest	Severino Associates LTD 539 Brook Street Westbrook, Maine 04092
65/E/21	18 Forest	Clare B. Knight 18 Castine Avenue Portland, Maine 04103
65/E/19	22 Forest	James J. & Pauline Vasile 34 Vesper Street Scarborough, Maine 04074
65/E/17	24-26 Forest	Mildred A. Cook 10 Tremont Street South Portland, Maine 04106

ATTACHMENT B

Copy of Notice Sent to Abutters

DeLUCA HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

January 9, 1998

Mr. & Mrs. Phillip and Roseann Flint
247 Allen Avenue
Portland, ME 04103

Subject: **Maine Medical Office Building, Portland, Maine**
Notice of Intent to File Application
To the Maine Department of Environmental Protection

Dear Mr. & Mrs. Flint:

Maine Medical Center intends to file applications with the Maine Department of Environmental Protection for a Traffic Permit (38 MRSA §§ 481-490 including Chapter 374) for the construction of a 49,150 square foot Medical Office Building with an attached 430-space parking garage. The project is located on the northeast corner of the intersection of Congress Street and Forest Street. DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare the application. Written comments or inquiries concerning this project are encouraged and can be directed to:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, ME 04106
Phone: (207) 74-1121
Fax: (207) 879-0896

Maine Medical Center anticipates filing of the application to the MeDEP on January 9, 1998.

A copy of the formal Notice of Intent to File for the application, which will be published in the local newspaper, is attached. This advertisement contains additional information on the project.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471.1/abt1-8

Enclosure

C: Rick Knowland, City of Portland
Larry Ash, City of Portland

FORM C 8/94

NOTICE OF INTENT TO FILE

Please take notice that Maine Medical Center, 22 Bramhall Street, Portland, Maine 04102 is intending to file a Site Location of Development Act – Traffic Permit Application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 481-490 including Chapter 374 on or about January 9, 1998. The applications are for the construction of a 49,150 square foot Maine Medical Office Building with an attached 430-space parking garage.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the applications are found by the Department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office at Portland during normal working hours. A copy of the application may also be seen at the municipal offices in:

Portland Maine after the anticipated filing date.

Written public comments may be sent to the Department of Environmental Protection, Bureau of Land & Water Quality, 17 State House Station, Augusta, Maine 04333.

SECTION 1

SITE AND TRAFFIC INFORMATION

1.1 Overview

DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to prepare a traffic impact study for a proposed 49,150 s.f. medical office building with an attached 430 space parking garage. This narrative provides background site and traffic information that pertains to the project.

1.2 Site Description

The project will be located on a 1.35-acre site which is bounded by Congress Street to the south, Boynton Street to the north, Forest Street to the west and an apartment building to the east. Figure 1 shows the project location. The shape of the site is nearly square with 276 feet of frontage on Congress Street, 252 on Forest Street, and 252 feet of frontage on Boynton Street. The topography on the site ranges from an elevation of approximately 39 feet in the northwest corner of the site near the intersection of Boynton Street and Forest Street, to 68 feet in the southeast corner. There are no wetlands on the site and the developable acreage is 1.35. The surface of the site includes gravel, grass, and bituminous pavement. There is a stone retaining wall parallel with Forest Street and set back on the site approximately 60 feet.

Adjacent Roads

The site has frontage on Congress Street and Boynton Street. Congress Street has a 44-foot-wide roadway with on-street parking on both sides. Congress Street also has a sidewalk along the site frontage. The posted speed limit is 25 mph. Congress Street connects Interstate I-295 to the west and Portland downtown to the east.

Forest Street is a one-way street in a northbound direction. It intersects Congress Street to the south and Park Avenue to the north. Forest Street has a 22-foot-wide travelway with on-street parking on the west side of the street.

Boynton Street is a two-way roadway and has a 22-foot-wide travelway with on-street parking. Boynton Street connects Forest Street to the west and Weymouth Street to the east.

1.3 Existing and Proposed Site Uses

Maine Medical Center currently utilizes the site for 52 parking spaces. Access to these spaces is provided by a single driveway off Congress Street.

The proposed medical office building will consist of 49,150 square feet with an attached 430-space parking garage. Two driveways are planned for the project; one on Congress Street and one on Forest Street.

1.4 Site and Vicinity Boundaries

Figure 1, following this page, is a map showing the project location. According to the Portland Planning Department, Holt Hall is the only project which is pending in the area. Holt Hall is located on the southeast corner of the intersection of Bramhall Street and Congress Street. The traffic projections associated with Holt Hall are included as Attachment A of this Application.

1.5 Proposed Uses in Vicinity of the Proposed Development

The Applicant is unaware of any other proposed development other than Holt Hall that is highly likely to occur in the vicinity of the proposed office building which may increase traffic.

1.6 Trip Generation

The proposed Medical Office building will consist of 49,150 square feet of office plus an attached 430 space parking garage. Based upon a parking evaluation completed by DeLuca-Hoffman Associates, Inc. and submitted under separate cover, approximately 226 parking spaces in the parking garage will be reserved to meet the estimated demand of the medical office building with the remaining 204 spaces being available to Maine Medical employees. Trip generation will be made up of trips associated with the medical office building and with Maine Medical Center employees.

Trips associated with the Medical Office Building

To estimate the trips associated with the medical office building, DeLuca-Hoffman Associates, Inc. utilized three sources: collected traffic counts at Stroudwater Crossing, a 32,190 s.f. medical office building, located on outer Congress Street; a 40,312 s.f. medical office building at 1250 Forest Avenue; and the Institute of Transportation Engineers (ITE) publication Trip Generation, 6th Edition, LUC 720 Medical-Dental Office Building.

Table 1
Trip Generation Per 1,000 s.f.

Source	Peak Hour of the Generator Trip Rate		Peak Hour of Adjacent Street Traffic Trip Rate		Direction Distribution (%) Peak Hour of Adjacent Street Traffic			
					AM		PM	
	AM	PM	AM	PM	In	Out	In	Out
Stroudwater Crossing 32,190 s.f.			2.08	3.14	78%	22%	28%	72%
1250 Forest Avenue 40,317 s.f.			1.19	1.84	83%	17%	23%	77%
ITE LUC 720	3.60	4.36	2.43	3.66	80%	20%	27%	73%

Based on Table 1, the trip generation rate in ITE exceeds the Stroudwater Crossing and 1250 Forest Avenue rates. In a telephone conversation , on

LEGEND

- State Route
- Geo Feature
- Town, Small City
- Large City
- Hospital
- Park
- Interstate, Turnpike
- US Highway
- Population Center
- Street, Road
- Hwy Ramp
- Major Street/Road
- Interstate Highway
- State Route
- US Highway
- Railroad
- Intermittent River
- Airfield

Scale 1:15,625 (at center)

1000 Feet

500 Meters

PORTLAND, MAINE
Mag 15.00
Tue Feb 04 14:08:51 1997

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. (207) 775-1121
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FIGURE 1

September 15, 1997 (see telephone memo in Attachment C), Roland Roy, P.E., Planning Division, Maine Department of Transportation recommended using the ITE trip rate. Therefore, DeLuca-Hoffman Associates, Inc. utilized the ITE rates in this study.

Applying ITE trip rates to the medical office building results in the following trip estimates:

Medical office building trips based on 49,150 s.f.:

AM Peak Hour of Adjacent Street Traffic

$$49{,}150 \text{ s.f.} \times \frac{2.43 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 119 \text{ trip ends}$$

PM Peak Hour of Adjacent Street Traffic

$$49{,}150 \text{ s.f.} \times \frac{3.66 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 180 \text{ trip ends}$$

AM Peak Hour of the Generator

$$49{,}150 \text{ s.f.} \times \frac{3.60 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 177 \text{ trip ends}$$

PM Peak Hour of the Generator

$$49{,}150 \text{ s.f.} \times \frac{4.36 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 214 \text{ trip ends}$$

Trips associated with the remaining 204 spaces in the parking garage not utilized by the Medical Office building were calculated as follows:

DeLuca-Hoffman Associates, Inc. collected traffic counts at the Maine Medical parking garage on Congress Street to assist in estimating the trips associated with the remaining 204 spaces in the parking garage not utilized by the medical office building. (These will be utilized by MMC employees.) The results of this data collection is summarized below:

USE	Trip Ends				Trip Rate / Parking Space			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Parking Garage Parking Space = 1276	514	371	355	245	0.4	0.29	0.28	0.19

Applying these rates to the remaining 204 spaces, results in the following trip generation:

AM Peak Hour of Adjacent Street Traffic

204 spaces x $\frac{0.28 \text{ trip ends}}{\text{one space}}$ = 57 trip ends

PM Peak Hour of Adjacent Street Traffic

204 spaces x $\frac{0.19 \text{ trip ends}}{\text{one space}}$ = 39 trip ends

AM Peak Hour of the Generator

204 spaces x $\frac{0.40 \text{ trip ends}}{\text{one space}}$ = 82 trip ends

PM Peak Hour of the Generator

204 spaces x $\frac{0.29 \text{ trip ends}}{\text{one space}}$ = 59 trip ends

Combined Trip Generation

Combining the trips associated with the medical office building and those associated with the Maine Medical Center employees utilizing excess parking in the garage, results in the following total trip generation estimate:

AM Peak Hour of Adjacent Street Traffic

119 (medical office) + 57 (MMC) = 176 trip ends

PM Peak Hour of Adjacent Street Traffic

180 (medical office) + 39 (MMC) = 219 trip ends

AM Peak Hour of the Generator

177 (medical office) + 82 (MMC) = 259 trip ends

PM Peak Hour of the Generator

214 (medical office) + 59 (MMC) = 273 trip ends

The postdevelopment traffic volumes for the PM peak hour of the generator were compared with the postdevelopment traffic volumes for the PM peak hour of adjacent street traffic to establish the critical time period for the purposes of determining the project impacts. In a telephone conversation on September 15,

1997, Roland Roy concurred with DeLuca-Hoffman Associates, Inc. that the PM peak hour of adjacent street traffic was the critical period to be utilized in the study.

Based on the above calculations, the proposed development is forecasted to generate 176 trip ends during the AM peak hour of adjacent street traffic and 219 trip ends during the PM peak hour of adjacent street traffic.

1.7 Trip Composition

The ITE "Trip Generation" manual indicates that all the traffic associated with an office will be primary trips. Primary trips are those which are new to the street system not already passing by the site. While treated as primary trips in the vicinity of the office building, most of the practices which will be in the office building are currently in other office buildings around the campus. In addition, some of the people parking on the street or utilizing the Gateway garage will now park in this new garage.

1.8 Trip Distribution and Assignment

DeLuca-Hoffman Associates, Inc. has distributed the primary trip ends associated with the proposed Medical Office facility with 430 parking spaces based on the gravity model of the existing Maine Medical Center employees. This distribution is summarized as follows:

Trip Distribution Based on Employees Gravity Model	
Approaching the Site	***% of Trip Distribution***
Congress Street from west	37.4%
Congress Street from east	14.0%
Valley Street from south	31.9%
St. John Street from north	16.7%
Total	100%

Site generated traffic is assigned at the two site driveways as shown in Figure 5 of Appendix A. Based on the proposed parking layout, all the Maine Medical Center employee traffic will utilize the Forest Street driveway and all the Medical Office Building traffic will use the Congress Street Driveway.

1.9 Attachments

Attachment A - Trip Distribution for Holt Hall
Attachment B - Trip Distribution
Attachment C – Telephone Memo

ATTACHMENT A

Trip Distribution for Holt Hall

ATTACHMENT C

Telephone Memo

MEETING NOTES
PREAPPLICATION MEETING FOR MAINE MEDICAL CENTER'S CONGRESS STREET OFFICE BUILDING

LOCATION: Portland Office of the Maine Department of Environmental Protection

DATE: 11/19/97

PROJECT: Maine Medical Center's Congress Street Office Building

JOB #: 1471

BETWEEN: Linda Kokemuller, MeDEP, Portland
Nancy Beardsley, MeDEP, Augusta
Roland Roy, MDOT, Augusta
Brian Burne, MDOT, Division 6
Larry Ash, City of Portland Traffic Engineer
Paul Gray, MMC
Jim Morrison, MMC
Tom Gorrill, DeLuca-Hoffman Associates, Inc.

Summary of Discussion:

1. Paul introduced the project and gave a 10-minute overview.

   No response.

2. Roland asked how the estimated trip generation compared with a study done by DeLuca-Hoffman Associates, Inc. for a CMMC building several years ago. Tom agreed to furnish this information.

   DeLuca-Hoffman Associates, Inc. has provided the information as requested.

3. Tom reviewed the trip generation calculations for the project. He said that approximately 226 parking spaces in the proposed garage will be reserved to meet the needs of the medical office building with the remaining 204 available to MMC employees. Thus, the trip generation is a combination of the rate for the medical office building and a rate for the balance of the garage.

The rate for the office building was determined based on actual counts at two similar medical buildings in Portland; one at Stroudwater Crossing and one at 1250 Forest Avenue. After discussion, Roland agreed that the trip generation estimate for the office portion of the development is acceptable.

See Maly Chap's telephone memo and Roland Roy's telephone notes of September 15, 1997.

4. Roland requested a copy of the counts for the existing Congress Street parking garage which has 1276 spaces. He asked if all the driveways had been counted and Tom responded that they had.

   DeLuca-Hoffman Associates, Inc. has provided the information as requested.

5. Roland feels the turnover rate in the garage is low and would like to look at the garage counts before approving the rate. He questioned how many visitors would utilize the garage.

   See Maly Chap's telephone memo and Roland Roy's telephone notes of September 15, 1997.

6. Roland asked about a left turn lane on Congress for left turning traffic onto Forest Street and into the garage. Tom said a left turn lane would be provided which will lose approximately 26 spaces on the easterly side of Congress Street. Tom said these spaces were inventoried during the day and were utilized by MMC employees. Larry said he would like to explore restricting the parking only during the peak times of the day. Roland questioned this and the issue was left unresolved.

   No response.

7. Roland said Boynton Street is narrow and some MMC traffic may utilize this roadway. He requested it be made one way or the on-street parking be removed. Tom suggested monitoring the traffic and Larry questioned the need for any changes. Roland said he will consider this street in his review.

   No response.

8. Roland requested the sight lines exiting the Congress Street driveway be checked to assure they are not obstructed by parked cars.

9. Paul noted that the third house in on Forest Street from Congress has been removed.

   No response.

10. Roland asked if the traffic assignment at the driveways had assumed equal access to both driveways from all levels. Tom said DeLuca-Hoffman Associates, Inc. had based the assignment on the plan for the parking garage which limited driveway access depending on the level.

    No response.

11. Roland asked what lighting levels are planned at the driveways. Jim Morrison agreed to furnish this information. Jim Morrison agreed to furnish this information.

    No response.

12. Roland asked about the grades at the driveways. Jim Morrison agreed to furnish this information.

13. Roland questioned whether the shift change would influence the peak hour of the traffic generation for the proposed site. Tom agreed to document when the peak hour occurs.

    See Maly Chap's telephone memo and Roland Roly's telephone notes of September 15, 1997.

14. Roland questioned whether Hadlock Field will have an influence on the peak hour. Linda said MeDEP has recently been furnished with traffic counts for Hadlock Field. She said the times were later in the day and on weekends. Linda also said the Department may already have ruled on some of the high accident locations in the MMC study area as part of the Hadlock Field permit. She agreed to furnish the information to DeLuca-Hoffman Associates, Inc. She also suggested we look into the permit for the County Jail.

    (Tom's response.)

15. Roland questioned the distribution of left turning traffic onto Valley Street and onto St. John Street. Roland felt more traffic would turn left at Valley than at St. John. Tom agreed to re-evaluate this issue.

    See Maly Chap's telephone memo and Roland Roy's telephone notes of September 15, 1997.

16. Roland requested DeLuca-Hoffman Associates, Inc. utilize the annual growth rate forecast in the PACTS model for background growth on Congress Street.

    DeLuca-Hoffman Associates, Inc. utilized the annual growth rate forecast in the PACTS model for background growth on Congress Street as requested by Roland Roy.

17. Roland questioned the need for a traffic light at the intersection of Valley Street and Park Avenue. After discussion of the postdevelopment volumes, Roland agreed that Forest Street is the appropriate location for a traffic signal.

    No response.

18. Roland requested the capacity analysis be made utilizing Traf-NETSIM computer software. Tom said the analysis has been done on Signal-94 software and that the City has requested analysis using Highway Capacity software. Roland felt that Traf-NETSIM should be utilized due to the interconnection considerations of the intersections.

Please notify the writer of any errors or omissions to these notes within 10 days.

Prepared by: Thomas L. Gorrill, P.E.

Distribution: Attendees
John Duncan, PACTS

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
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- SITE PLANNING
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TELEPHONE MEMO

SUBJECT: Maine Medical Center

PERSON CONTACTED: Roland Roy, P.E.

JOB NUMBER: 1471

DATE: December 15, 1997

COMMENTS:

Roland Roy has two comments regarding the traffic study for the proposed Medical Office Building on Congress Street in Portland, Maine. The first comment was regarding the trip rate that DeLuca-Hoffman Associates, Inc. used and the second comment was the re-distribution of the proposed westbound left turning traffic on Congress into Valley Street and St. John Street. Each of these comments is discussed below:

Trip Generation

Roland Roy wants DeLuca-Hoffman Associates, Inc. to use the ITE 6th Edition Trip Rate 3.66 trips/1,000 s.f. during the PM peak hour of adjacent street traffic. For the 204 parking spaces, he wants us to use 0.19 trips/space during the PM peak hour of adjacent street traffic. Based on these trip rates, he has determined that the proposed MMC will generate 219 trip ends. DeLuca-Hoffman Associates, Inc. estimated the proposed development would generate 215. He said since the difference is only 4 trips, changing the trip generation will be unnecessary.

Trip Distribution

Roland Roy originally wanted DeLuca-Hoffman Associates, Inc. to redistribute the proposed Congress Street westbound left turning traffic, as shown on Figure 5, onto Valley Street and St. John Street. Roland believed that 2/3 of the total proposed Congress Street westbound left turning traffic at the two intersections would take the first left at the intersection of Valley and Congress Streets. After he realized that the movement was a permitted left turn, he said DeLuca-Hoffman Associates, Inc. could leave it as is, provided the intersections operate acceptably based on capacity analysis using the Synchro computer program.

Prepared by: Maly Chap

Distribution: Roland Roy
Paul Gray
Jim Morrison
Tom Gorrill

JN1471/Memo12-18

FAX

Traffic Engineering
Transportation Building
16 State House Station
Augusta, Maine 04333-0016

Date 12-29-97

Number of pages including cover sheet 3

To:

MALY CHAP
DHAI
778 MAIN ST.
Suite 8
So. PORTLAND, ME

Phone 775-1121
Fax Phone 879-0896
CC:

From: Maine Department of Transportation

ROLAND ROY

Phone (207) 287-3775 2954
Fax Phone (207) 287-3725

Remarks:

__ Urgent X For Your Review __ Reply ASVP __ Please Comment

Telephone Notes - 12/15/97

please EXCUSE spelling error of your FIRST NAME -

Roland

FINAL CHK BY _____ DATE _____ LOCATION _____ SH. NO. _____ OF _____

ITEM NO. _____ SUBJECT Maine Medical Office Bldg And Parking Garage

→ I called Marley Chap (DHAI) To discuss the following ITEMS:

1) Appropriate design hour – for ASSESSING LOS/capacity of Network and to determine appropriate trip generation rate and Study area.
2) Trip distribution of % left turns from Congress St. onto Valley St. vs. % of left turns from Congress St onto St. John Street

1) I Asked Marley to provide me with TRAffic Volume info for intersections within the Study area. Marley told me that the only intersection in the Study area that TRAffic Volumes on Congress Street were APPROXIMATELY the SAME for 3:30 - 4:30 AS compared to 4:30 - 5:30. All other intersections had MUCH more traffic during the PM peak hour of the Adjacent Street which is estimated to occur between 4:30 PM And 5:30 P.M.

→ Therefore - I concurred with Marley that the worst case scenario for the proposed Build-out would be to apply Trip generation rates based on the PM peak hour of the Adjacent Street rather than the PM peak hour of the generator

I asked Marlee to use the new

6th edition ITE trip generation book

ite Code 720 Medical/Dental Office Bldg

Ave. trip rate of 3.66 trips/ksf

for PM pk hour of the adjacent street

49.15 X 3.66 = 180 trips

and add to this the parking garage

trip rate of .19 trip/parking space

for PM pk hour of the adjacent street

~~226~~ 204 parking space X .19 = ~~43~~ 39 trips

∴ 180 trips (med. office)
~~43~~ 39 trips (parking garage)

219 ~~223~~ total

Note: this total is not much different from 215 trips his original project proposal suggested (p.1-4)

2) I asked Marlee to re-adjust % of left turns made from Congress st. onto Valley st. and St. John Street as part of the Traf-Net sim simulation which would provide the driver 2 choices to head toward Memorial Bridge/rotary. The 50:50 split proposed on figure 5 should be re-adjusted to reflect the proposed signal phasing + timing plan for these 2 intersections.

SECTION 2

TRAFFIC ACCIDENTS

2.1 Accident Analysis

DeLuca-Hoffman Associates, Inc. has based the accident analysis of this study area on data obtained from the MDOT for the period of 1994 to 1996.

In order to evaluate whether a location has an accident problem, MDOT uses two criteria to define High Accident Locations (HAL). Both criteria must be met in order to be classified as an HAL.

1. A critical rate factor of 1.00 or more for a three year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate less than average) and:

2. A minimum of 8 accidents over a three year period.

Computerized accident data summaries were provided by MDOT for the study area. Data for these study area intersections is provided below:

Accident Data 1994-1996			
Intersection	**Number of Accidents**	**CRF**	**HAL**
Park Ave. & St. John St.	46	1.12	Yes
Congress & St. John St.	26	0.56	No
Congress & Valley St.	22	0.73	No
Congress & Gilman St.	6	0.52	No
Congress & Forest St.	6	0.52	No
Congress & Weymouth St.	12	1.33	Yes
Congress & Bramhall St.	22	0.50	No
Link Between Park Avenue & Congress along St. John St.	34	2.31	Yes
Park Avenue & Forest St.	6	0.63	No
Park Avenue & Valley St.	7	0.10	No

The above table shows that two intersections and one link are HALs . The collision diagrams are shown in Appendix A. HALs are discussed below:

Park Avenue and St. John Street - This intersection experienced 46 accidents during the three year study period (1994-1996) and the critical rate factor is 1.12. Eleven rear end, eleven lane-change, and eight left turn side swipe accidents occurred northbound on the St. John Street approach. Four rear end, one lane-change and six angle accidents occurred westbound on Park Avenue. The St. John Street southbound approach has no clear pattern of accidents. The rear end

accident for the northbound approach is due to the heavy traffic flow. The rear end collisions are common at signalized intersections. To correct the lane-change accidents, DeLuca-Hoffman Associates, Inc. recommends supplemental striping through the intersections for westbound dual left-turn lanes.

Congress Street & Weymouth Street - This intersect experienced 12 accidents in the three year study period (1994-1996) with a critical rate factor of 1.33. There is no clear pattern of accidents to be corrected. Therefore no mitigation measures are proposed for this location.

Link Between Park Avenue & Congress Street along St. John Street - This link experienced 34 accidents in the three-year study period (1994-1996). The critical rate factor is 2.31. Twenty-three accidents occurred along the portion of the link fronting McDonald's. The most correctable accident pattern is in front of McDonald's driveways. McDonald's recently closed two driveways and created a two-way driveway located approximately 60' south of the previously existing northerly driveway. This change will improve the safety in the area. No further mitigation measures are proposed for this location.

2.2 Attachments

Attachment A - Collision Diagram

ATTACHMENT A

Collision Diagram

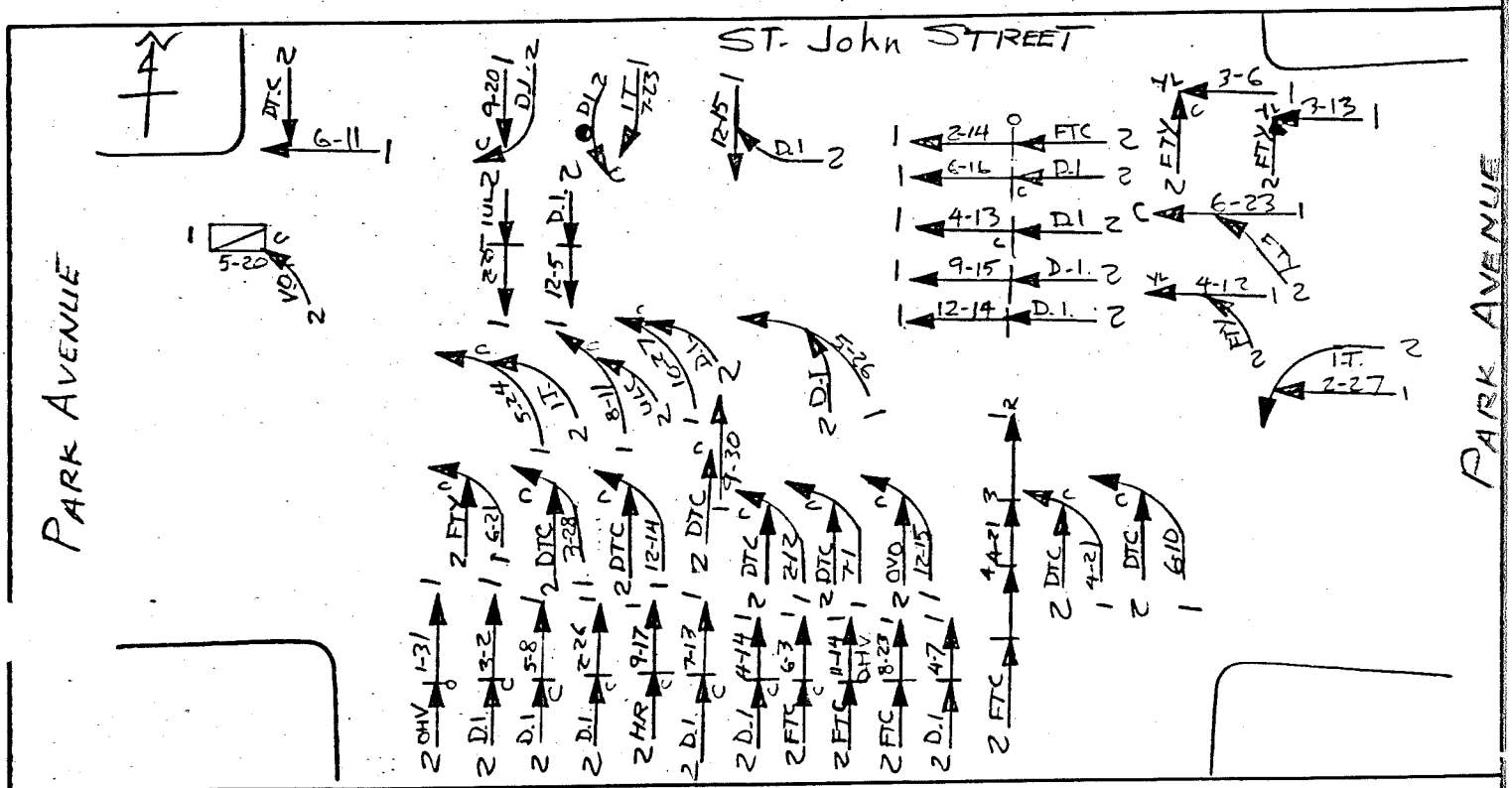
COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION Park Avenue & ST. John Street

TOWN Portland NODE NO(S) 7187

YEAR(S) REVIEWED 1993- 1995 DATE PREPARED 2-6-97



CRITICAL RATE FACTOR 1.16 EQUIV. PROP. DAMAGE ACC/YEAR ____ ACC/MEV ____

LIGHT
1. DAWN (MORNING)
2. DAYLIGHT
3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON)
5. DARK (NO ST. LIGHTS)
6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY
2. WET
3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED
5. MUDDY
6. DEBRIS
7. OILY
8. SNOW/SLUSH-NOT SANDED
9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION
2. FAIL TO YLD. RIGHT OF WAY
3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE
5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING
7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE
9. IMP. PARKING START/STOP
10. IMPROPER TURN
11. UNSAFE BACKING
12. NO SIGNAL OR IMP. SIGNAL
13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION
15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR
17. PHYSICAL IMPAIRMENT
18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT
30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN
51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES
42. DEFECTIVE TIRE/FAILURE
43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR
45. DEFECTIVE STEERING
50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR
F = FOG
R = RAIN
SL = SLEET
S = SNOW
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
B = NON-INCAPACITATING
A = INCAPACITATING
C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
23511	6-23-93	12:10				1	2	1	2	
26746	7-23-93	7:26				1	2	1	14 / 10	
07288	2-14-93	13:36					2	10	4	
22203	6-16-93	15:20					2	1	14	
14301	3-28-93	11:36					2	1	5	
04747	1-31-93	17:00					4	9	30	Icy Road
09722	3-2-93	16:00			1		2	2	14	

COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION PARK AVENUE & ST. JOHN STREET

TOWN PORTLAND NODE NO(S) 7187

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
20012	5-8-93	00:30				1	4	10	14	
22285	6-21-93	19:35			1		3	2	2	
33761	9-20-93	20:20					4	1	14	V_2: Truck
44113	12-14-93	15:15					2	2	5	
11190	2-26-94	20:15					4	1	14,4	
12343	3-6-94	1:45					4	1	2	V_1: Defective Brakes
34091	9-17-94	21:00			1		4	1	31	
26266	7-13-94	18:20				2	2	1	14	
35520	9-30-94	12:10					2	1	5,14	
19875	5-20-94	18:47					3	1	19	
16612	4-14-94	13:06					2	1	14	
13181	3-13-94	00:58					4	1	2.14	
15454	3-25-94	21:30					4	1	8	
24852	7-1-94	14:10					2	1	5	
21569	6-3-94	16:30			1		2	1	4	
46134	12-15-94	6:10					2	1	20	
25203	8-11-95	18:30					2	1	8	
12302	4-13-95	8:15				1	2	1	14	
36273	11-14-95	16:20				1	4	2	4 / 30	wet Road
29017	9-15-95	9:16					2	1	14	
23907	10-27-95	21:20					4	1	14	
26526	8-23-95	17:15				1	2	1	4,14	
41964	12-14-95	14:45					2	8	15	
41647	12-14-95	14:45					2	1	14	
18011	6-11-95	10:10			3		2	2	5	bic'c No Brake V_2
13035	4-21-95	18:31					6	2	4,14	Rain
39903	12-5-95	1648				2	4	1	14	
10774	2-27-95	16:05					2	1	10	
11828	4-7-95	14:30				1	2	1	14	
16073	5-24-95	15:16					2	1	10	
12962	4-21-95	16:14					2	1	5	V_1 Truck
12212	4-12-95	21:08					2	1	2	
16297	5-26-95	11:52					2	1	14	
17904	6-10-95	21:00					4	1	5,14	

COLLISION DIAGRAM

LOCATION PARK AVENUE & ST. JOHN STREET

TOWN PORTLAND NODE NO(S) 7187

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
09357	2-12-94	15:30					2	2	10	

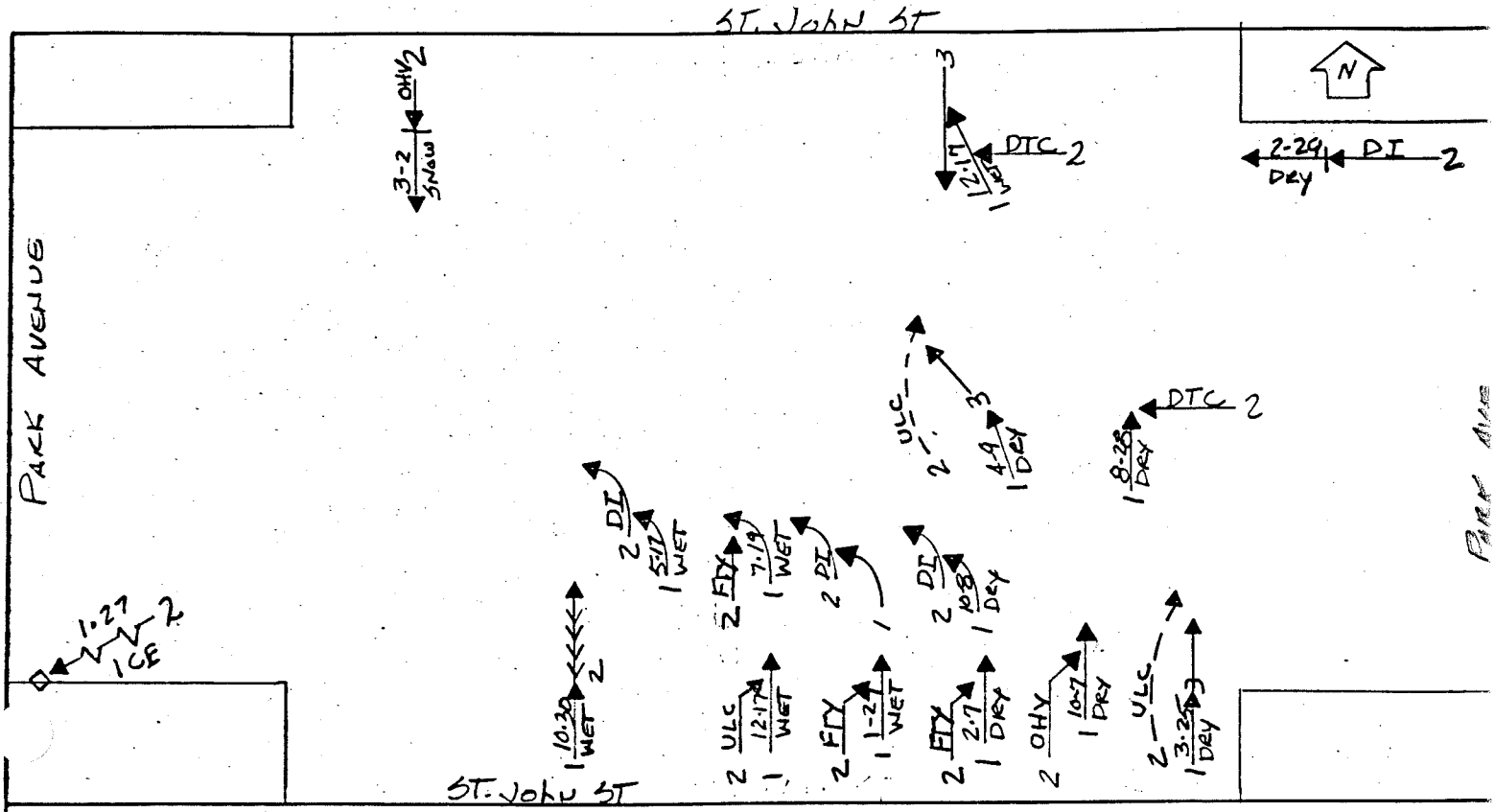
COLLISION DIAGRAM

SHEET 1 OF FAP

LOCATION INTERSECTION OF PACK AVE & ST. JOHN ST

TOWN PORTLAND NODE NO(S) 7186

EAR(S) REVIEWED 1996 DATE PREPARED Nov. 10, 1997



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE	B
OVERTURN	CHANGE LANE	ANIMAL	A
PARKED VEHICLE	OUT OF CONTROL	SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
NODE 7187										
96.44615	12.17.96	10:42				1	2	2	1/5	
96.34138	10.08.96	11:35					2	1	1/14	
.34093	10.07.96	18:54					4	1	30	5
96.35714	10.21.96	11:20					2	2	14	50
96.29432	8-28-96	19:30					3	1	1/5	
96.32993	7-19-96	16:29					2	2	1/2	5

COLLISION DIAGRAM

SHEET 2 OF 2
FAP

LOCATION INTERSECTION OF PARK AVE & ST. JOHN ST

TOWN PORTLAND NODE NO(S) 7186

YEAR(S) REVIEWED 1996 DATE PREPARED NOV 10, 1997

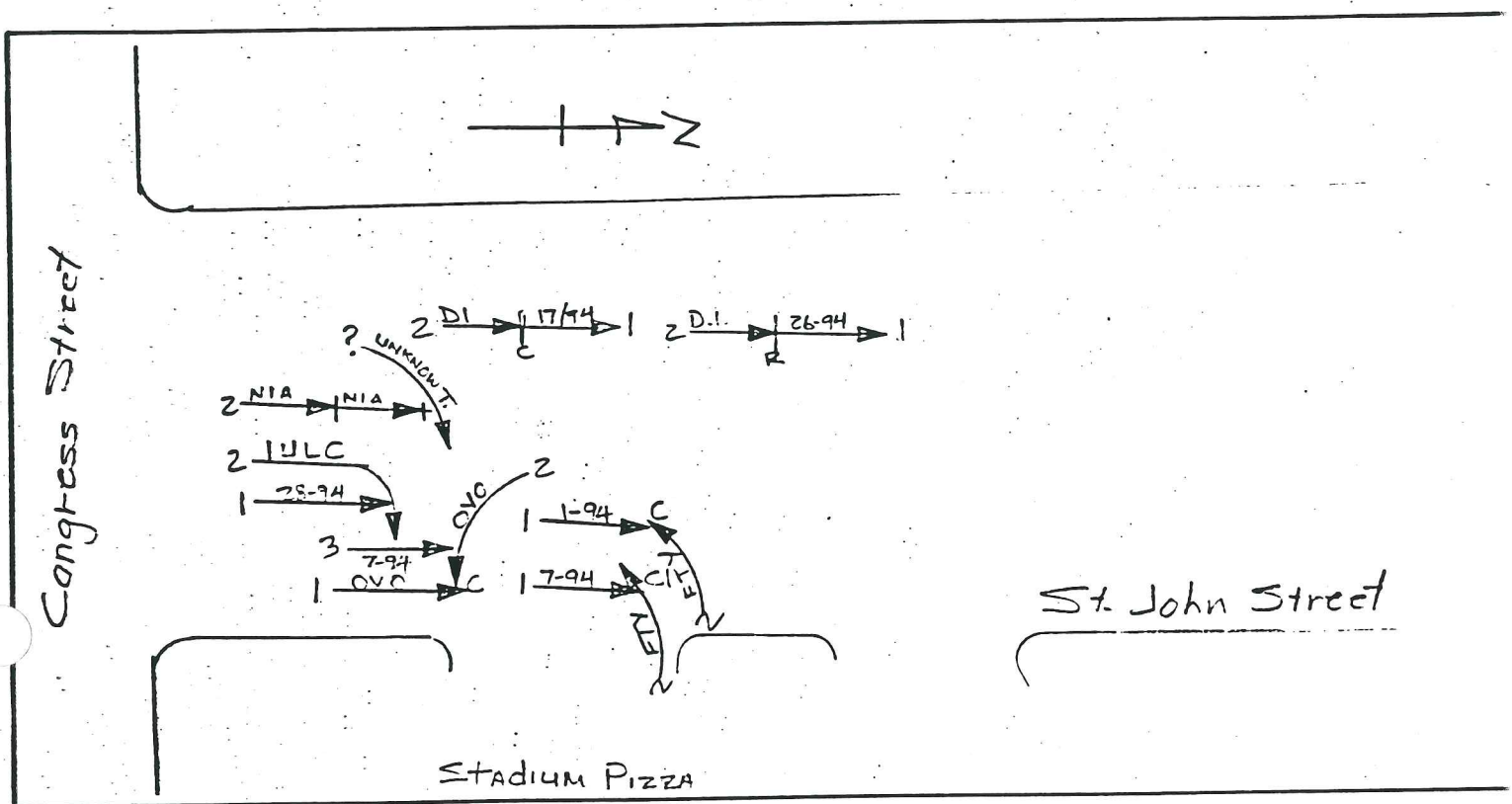
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
96.17506	5-17-96	11:09					2	2	14/14	
96.13740	4-09-96	09:30					2	1	18	
96.04264	1-27-96	01:29					4	1	17	ICE
96.05527	2-07-96	18:10					4	1	2	
96.04214	1-27-96	23:01					4	2	2/14	
96.44491	12-17-96	10:25					2	2	8/14	
96.08624	2-29-96	10:25				1	2	1	1/14	
96.09003	3-02-96	13:50					2	8	1/30	
96.12337	3-25-96	13:56				1	2	1	1/14	

COLLISION DIAGRAM

LOCATION St. John Street between Park Avenue and Congress Street

TOWN Portland NODE NO(S) 7182-7187

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V1/V2	OTHER
25598	7-7-94	15:15					2	1	20/20	
28123	7-28-94	12:20					2	1	1/8	
12477	3-7-94	14:46					2	2	1/2	
43843	12-1-94	10:45					2	1	1,30/2	
41330	11-17-94	12:50					2	1	1/14	
17573	4-26-94	14:57					2	2	1/14	
09306	3-11-95	7:03					1	1	1/1	

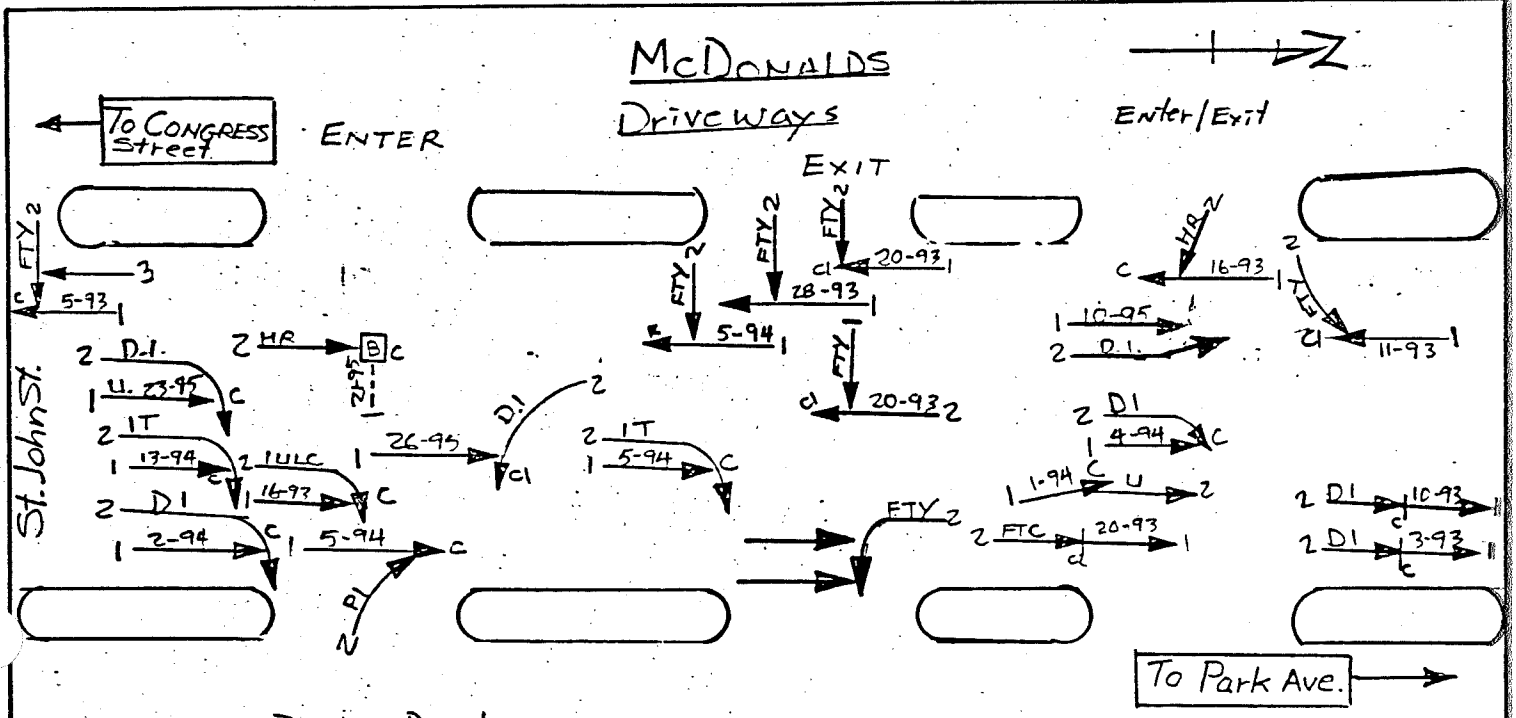
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION St. John Street between Park Ave. and Congress Street.

TOWN Portland NODE NO(S) 7182 - 7187

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
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19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V_1/V_2	OTHER
16489	4-20-93	16:20					2	1	1/4	
33665	9-16-93	19 40					4	1	1/8	
12310	3-16-93	7:37					2	1	1/31	
29484	8-20-93	17:04					1	2	1/2	
09788	3-3-93	16:50			1		2	1	1/14	
29241	8-5-93	17:18				1	2	1	1/2	
29491	8-20-93	16:21					2	2	1/2	

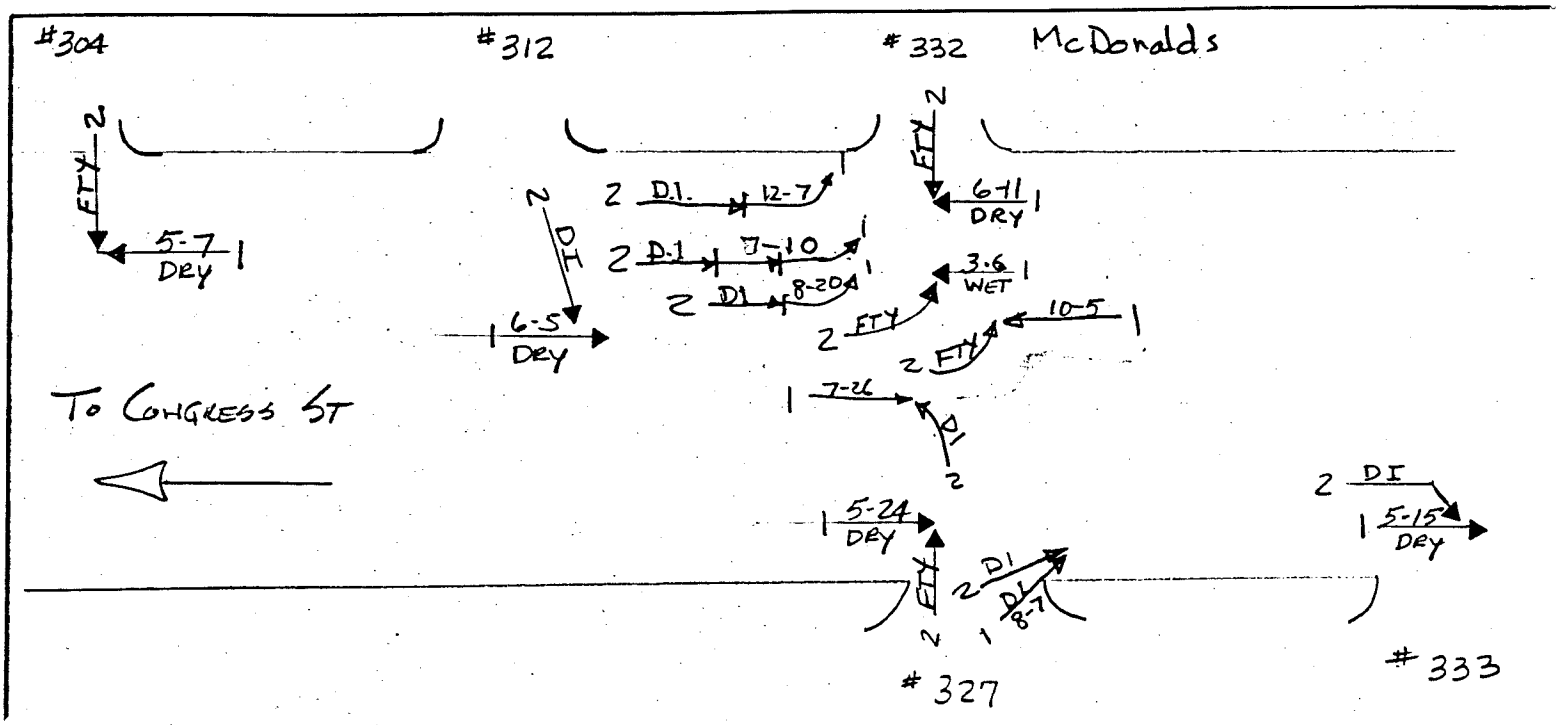
COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION ST. JOHN STREET BETWEEN PARK AVE AND CONGRESS ST.

TOWN PORTLAND NODE NO(S) 7182-7187

YEAR(S) REVIEWED 1996 DATE PREPARED NOV 10, 1997



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
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8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE
PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL
FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (BI), ANIMAL (AN), SLED (SL)

WEATHER
C = CLEAR R = RAIN
SL = SLEET F = FOG
S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
7182-7187										
96.10168	3-06-96	17:20					4	2	1/2	
96.20317	6-11-96	16:13					2	1	1/2	
18406	5-24-96	20:50					4	1	1/2	
96.17356	5-15-96	14:35				1	2	1	1/14	
96.16547	5-07-96	16:35					2	1	1/2	
96.19542	6-05-96	11:42					2	1	1/14	

COLLISION DIAGRAM SHEET ___ OF ___

LOCATION St. John Street between Park Ave and Congress Street

TOWN Portland NODE NO(S) 7182-7187

YEAR(S) REVIEWED 1993—1995 DATE PREPARED 10-8-96

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V_1/V_2	OTHER
02049	1-11-93	11:51					2	2	1/2	
38710	10-28-93	16:21				1	2	1	1/2	
32079	9-10-93	17:36					2	1	1/14	
08254	2-5-94	1:25					4	2	1/17	
01153	1-2-94	23:01					4	1	1/14	
02662	1-13-94	8:30					6	8	1/10	
11418	3-1-94	18:20				1	4	1	51/51	
29047	8-5-94	13:00					2	2	1/2	
15769	4-5-94	17:48					2	1	1/10	
25269	7-4-94	20:00					3		1/14	
05995	2-10-95	20:00					4	2	1/14	
16298	5-26-95	11:53					2	1	1/14	
29636	9-21-95	20:25				1	4	1	1/31	
37742	11-23-95	5:45					2	1	51/14	
37808	11-24-95	14:09					2	1	1/20	
96255 78	7-26-96	9:56					2	2	1/14	
9627039	8-7-96	6:15				1	2	1	14/14	
9623755	7-10-96	12:25				1	2	1	1/14	
9633831	10-05-96	9:55					2	1	1/2	
9628574	8-20-96	12:20					2	1	1/14	
9612542	12-7-96	16:55				1	4	2	1/14	

COLLISION DIAGRAM

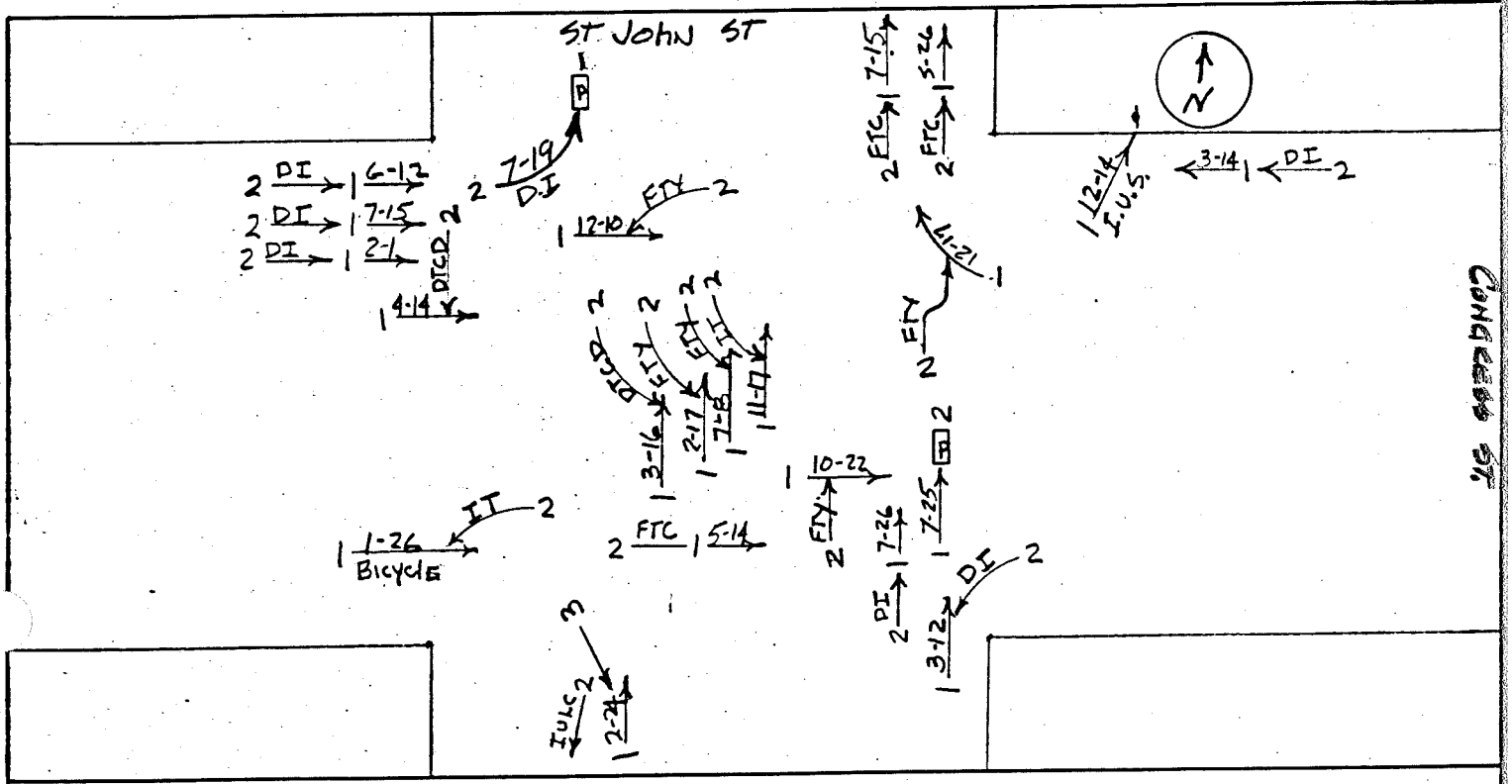
SHEET 1 OF 2

LOCATION ST JOHN ST @ CONGRESS ST

TOWN PORTLAND NODE NO(S) 7182

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 3/24/97

FAP



CRITICAL RATE FACTOR 0.49 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
95-22518	7-19-95	15:17			1		2	1	14	
33305	10-22-95	00:35					4	2	2	
23300	7-26-95	22:15			2		4	2	14	
23165	7-25-95	00:50			1		4	2	SEE ATTACHED	
41789	12-14-95	22:00					4	8		
06923	2-17-95				2		2	1	2	
16301	5-26-95					1	2	1	4	

COLLISION DIAGRAM

LOCATION ST JOHN ST @ CONGRESS ST

TOWN PORTLAND NODE NO(S) 7182

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 3-24-97

FAP

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
95-09523	3-14-95	13:05					2	2	14	
42431	12-17-95	19:45					4	3	3	
09644	3-16-95	15:24					2	2	5-14	
18155	6-12-95	16:30				1	2	2	14	
94-16611	4-14-94	04:57				1	4	2	5	
25726	7-08-94	10:36				1	2	1	2	
41334	11-17-94	19:34					4	1	13	
35420	9-29-94	07:45					2	2	14	
26494	7-15-94	16:13					2	1	4	
19356	5-14-94	12:21					2	1	4	
93-08475	2-24-93	18:56			1		4	3	8	
05220	2-1-93	09:35					2	8	15	
12055	3-12-93	10:45					2	1	14	
43882	12-10-93	15:20			1		2	1	2	
13313	1-26-93	14:55		1			2	1	10	

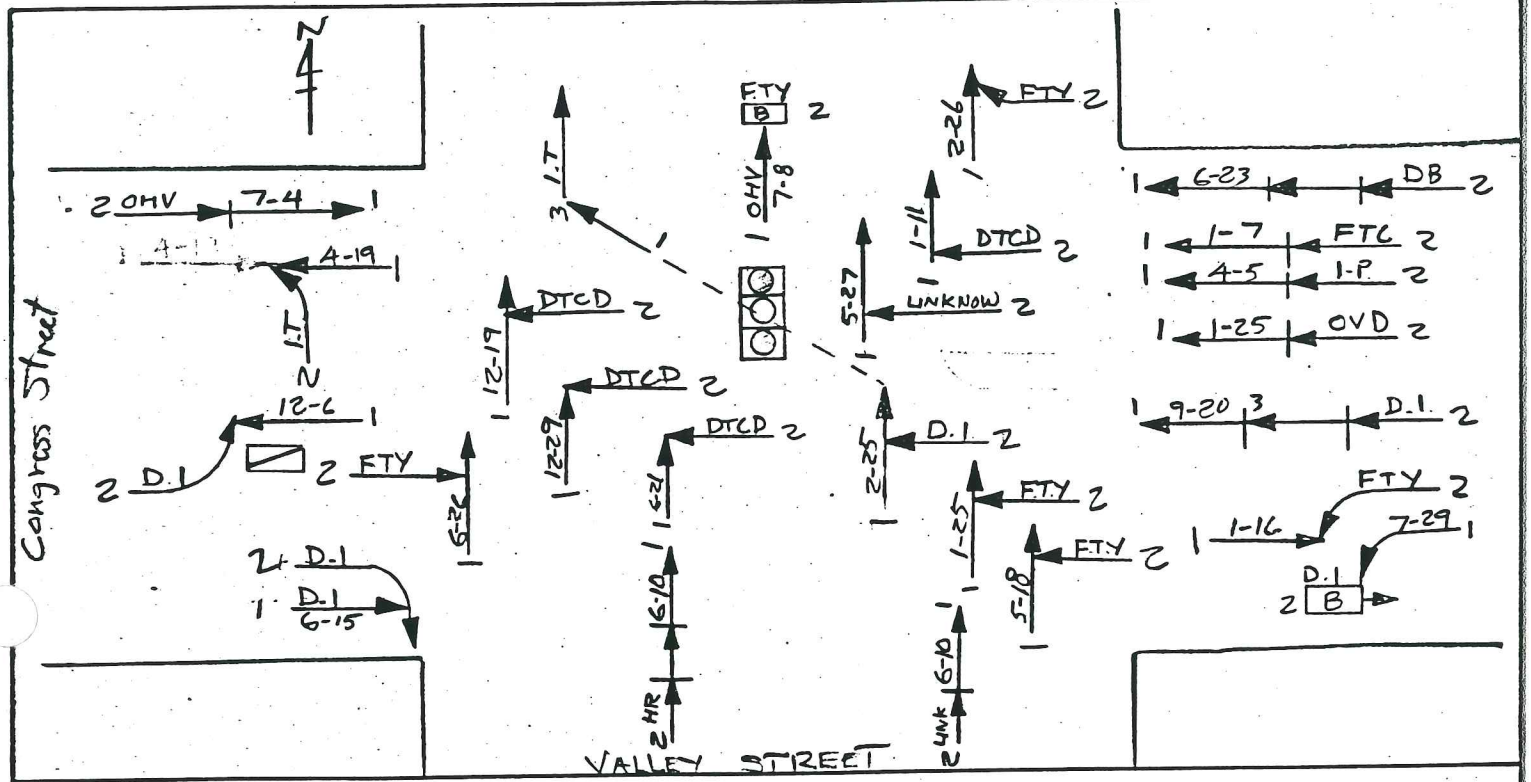
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION INTERSECTION of Congress Street & Valley Street

TOWN Portland NODE NO(S) 7169

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 3-24-97



CRITICAL RATE FACTOR 0.82 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01946	1-11-95	6:50					2	1	F 14	red light
16439	5-27-95	7:57					2	1	51	
19809	6-26-95	14:10					1	1	2	red light
01362	1-7-95	16:34					4	2	4	ice Packed SNOW
07907	2-25-95	9:11			1		2	1	14, 13	
03903	1-25-95	11:15					2	1	2	
12806	4-19-95	16:30					2	2	13	

COLLISION DIAGRAM

LOCATION Intersection of Congress Street & Valley Street

TOWN Portland NODE NO(S) 7169

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 3-24-1997

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
29589	9-20-95	22:51				2	4	1	30 14	
19695	5-18-94	12:00					2	1	2	Hd light
48082	12-29-94	14:18					2	1	5, 14	Hd light
25733	7-8-94	19:34				1	3	1	2	V1 Accl de on
22346	6-10-94	17:05					2	1	31	
12762	3-10-94	7:35					2	9	51	
44648	12-6-94	12:21			1		2	1	14	
03431	1-16-94	15:53			1		2	1	2	
06343	1-25-94	10:30				1	2	9	50	
23762	6-23-94	11:10				1	2	1	41	
23581	6-21-94	16:06					2	2	5	
46769	12-19-94	19:38					4	1	5	
09304	2-26-93	11:20					2	2	2	
26857	7-29-93	12:03				1	2	2	14	
22179	6-15-93	10:10				1	2	1	14, 14	V1=14 V2=14
23612	7-4-93	3:08			2		4	1	30	
16275	4-5-93	14:49				1	2	1	7	

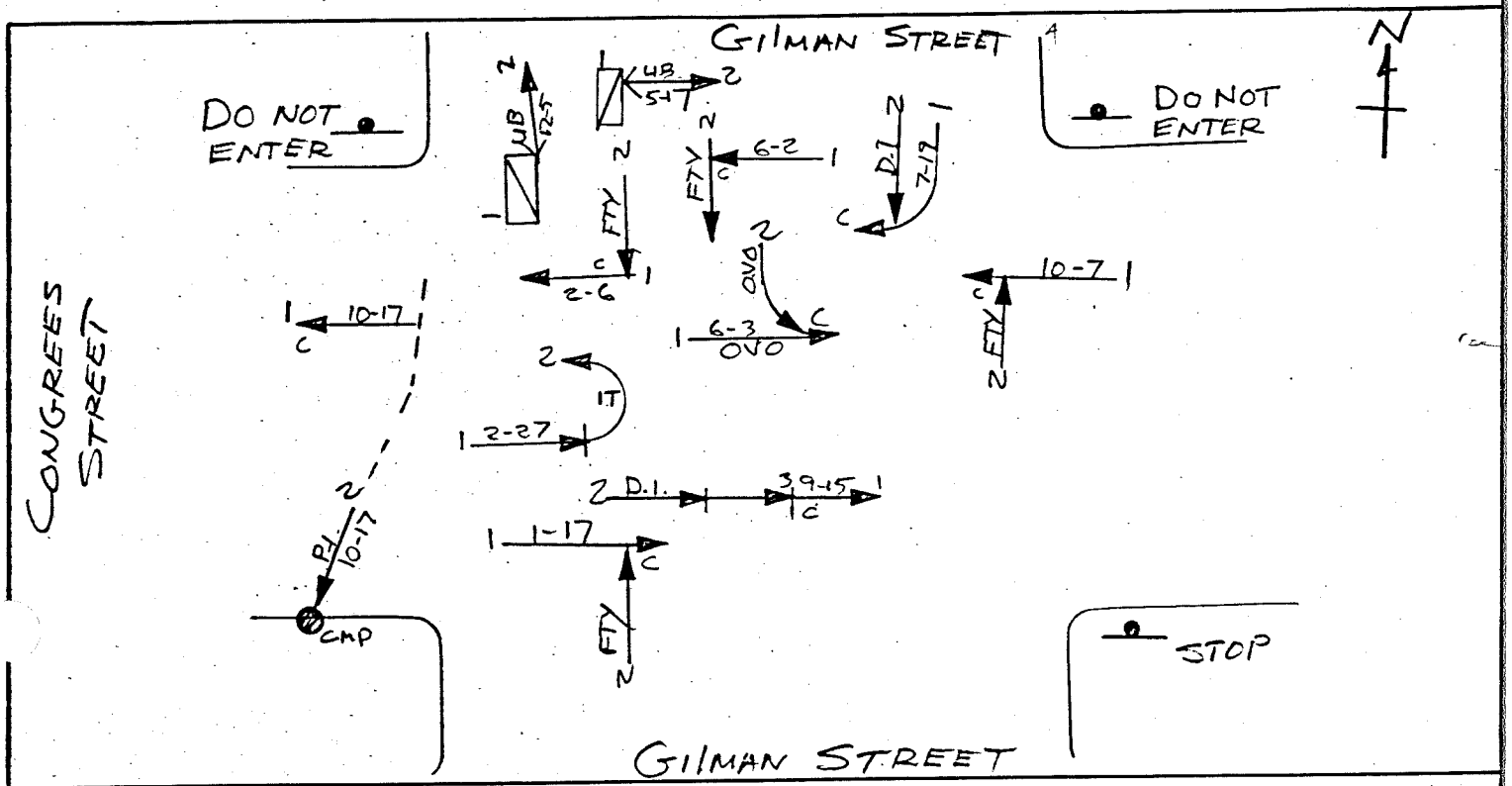
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CONGRESS STREET & GILMAN STREET

TOWN Portland NODE NO(S) 8991

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.00 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
20887	6-2-93	13:00					2	1	2	
06193	2-6-93	21:40				1	4	1	2	
09361	2-27-93	12:02				1	2	1	10	
26278	7-19-93	15:30					2	1	14	V1 was parking
33653	9-15-93	13:00				1	2	1	14	V1 signal left turn
35092	10-7-93	15:46					2	1	2,20	Truck block the RIGHT lane of V1
42671	12-5-93	2:50					4	2	11	V2 Park running

COLLISION DIAGRAM SHEET 2 2

LOCATION CONGRESS STREET & GILMAN STREET

TOWN PORTLAND NODE NO(S) 8991

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
19605	5-17-94	13:07					2	1	11	
21570	6-3-94	20:13					2	1	20/20	
32658	10-17-95	12:11			1	1	2	1	17	
02761	1-17-95	7:34					2	1	2	

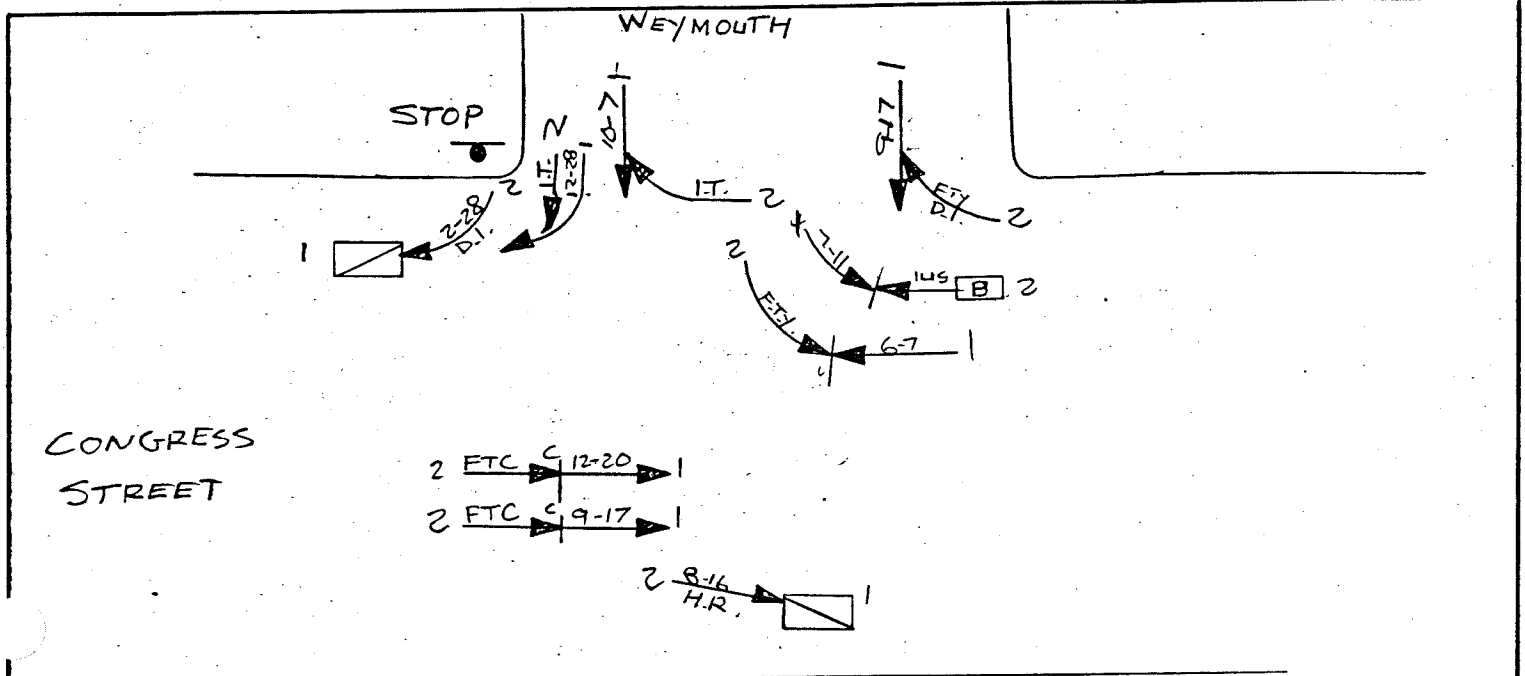
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CONGRESS STREET AND WEYMOUTH STREET

TOWN PORTLAND NODE NO(S) 7245

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.04 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
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20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
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41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
21066	6-7-93	17:11			1	1	2	1	2	V2 Thought V1 Turning onto Weym...
45451	12-20-93	12:33				1	2	1	4	
36095	7-11-94	16:46			1		2	1	3	
36303	10-7-94	8:00					2	8	10	
29226	9-17-95	11-23				1	2	2	4	
44201	12-28-95	15:17					2	1	10,7	V1 Truck
29214	9-17-95	11:34					2	2	4, 14	

LOCATION Congress Street & Weymouth Street

TOWN Portland NODE NO(S) 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
08109	2-28-95	11:10					2	8	14	V1 is parking icy road
25666	8-16-95	23:10					4	1	31	Alcohol Rel.

COLLISION DIAGRAM

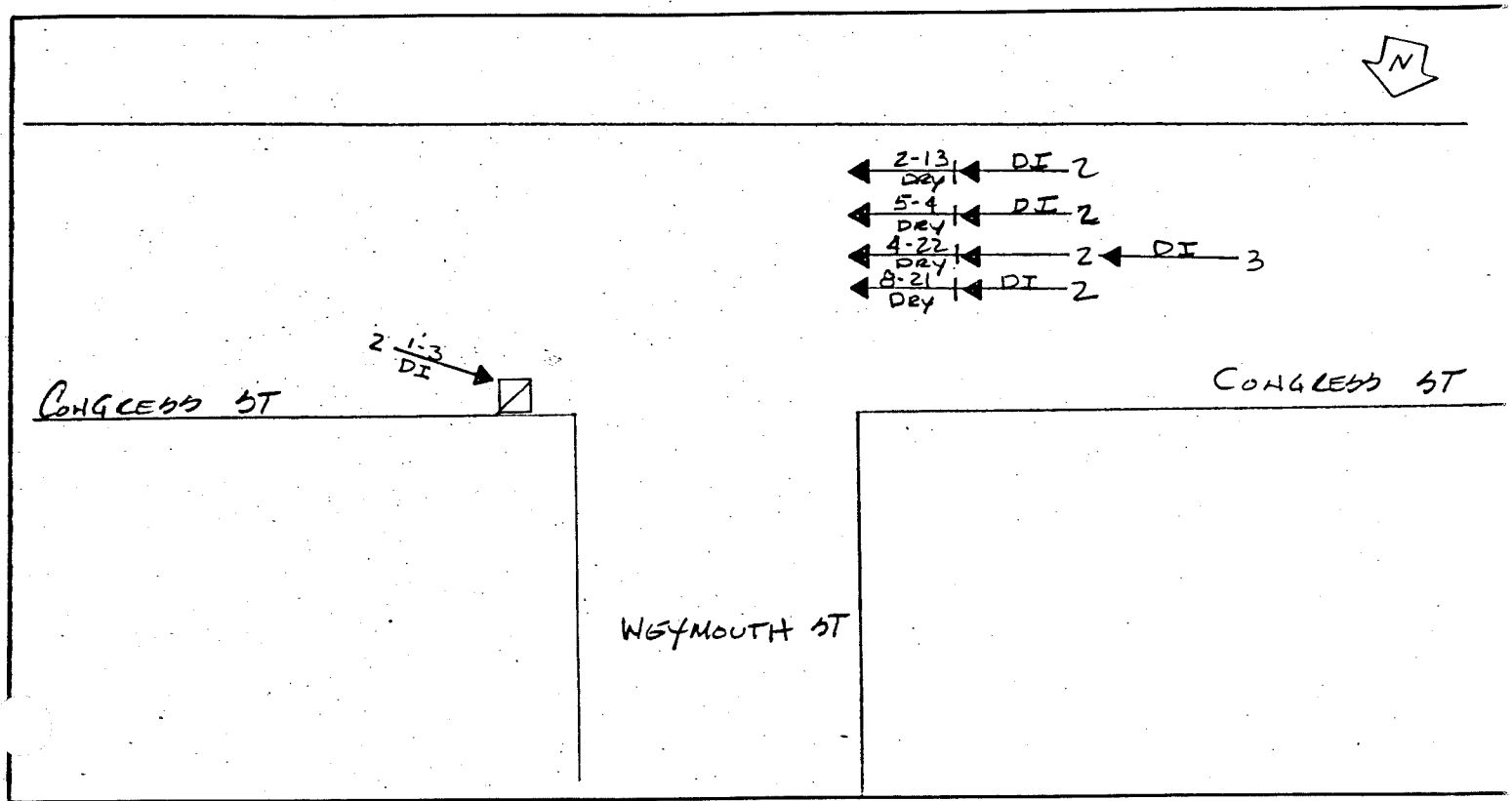
SHEET 1 OF 1

FAF

LOCATION INTERSECTION OF CONGRESS ST & WEYMOUTH ST -

TOWN PORTLAND NODE NO(S) 7245

EAR(S) REVIEWED 1996 DATE PREPARED Nov 10, 1997



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
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1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
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44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (BI), ANIMAL (AN), SLED (SL)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
NODE 7245										
96.28696	8-21-96	15:35					2	1	1/14	
96.00246	1-03-96	15:30					2	1	1/1	51
.16330	5-04-96	13:25					2	1	1/14	
96.08111	2-13-96	15:46					2	1	1/14	

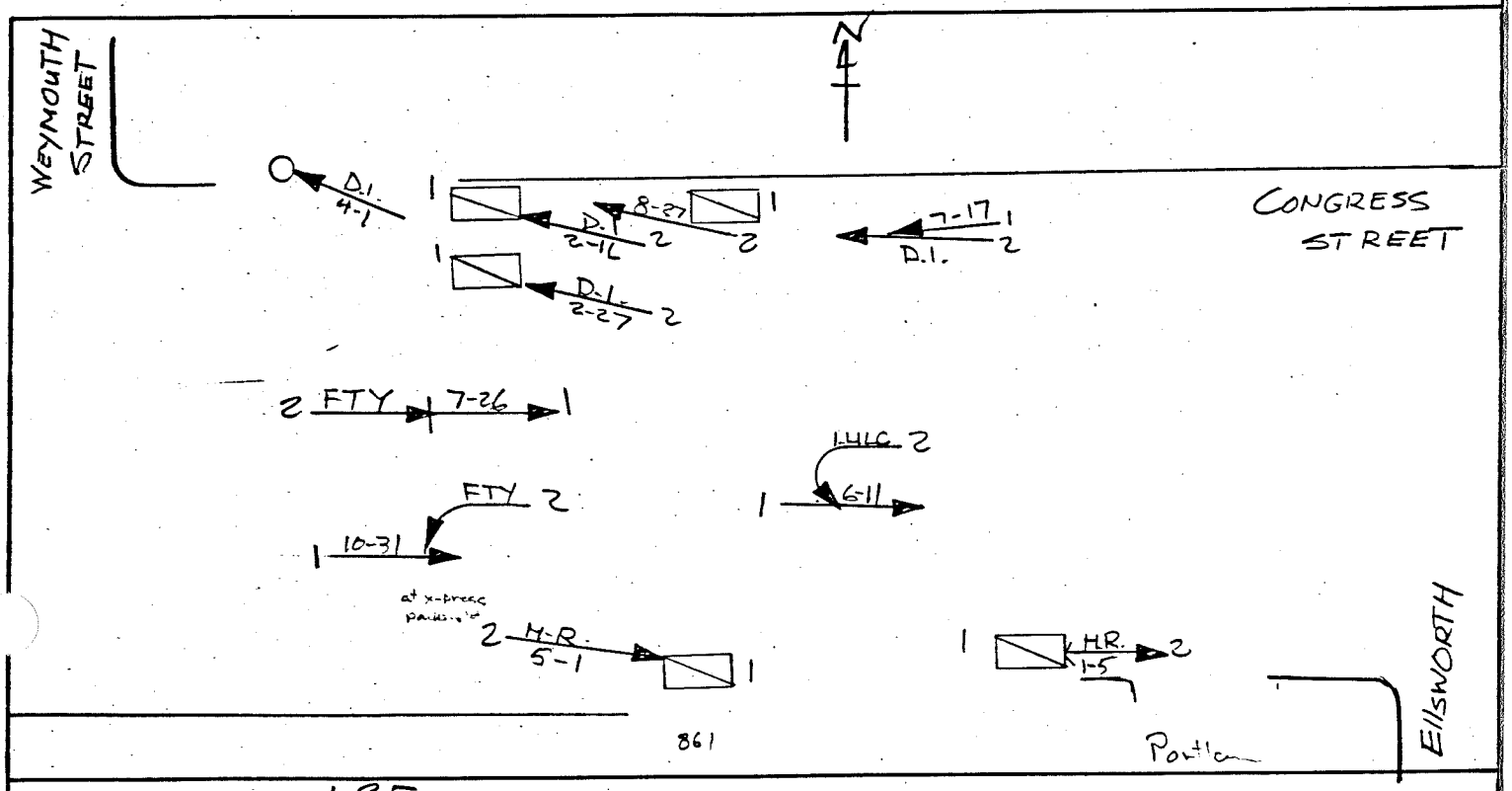
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244 - 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.35 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

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44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
16222	4-1-93	15:05				1	2	9	15	
21509	1-5-93	7:30					2	1	31	
37457	2-16-93	17:53					4	9	14	
20789	5-1-93	20:00					3	1	31	
22046	6-11-93	17:55			1		2	2	8	
39217	10-31-94	13:30					2	1	2	
26722	7-17-94	11:40					2	1	14	V1 was rear-ending

COLLISION DIAGRAM — 2 2

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244-7245

YEAR(S) REVIEWED 1993-1997 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
26962	8-27-95	10:05					2	2	10	
23246	7-26-95	17:53					2	2	4	
10138	2-27-95	14:15					2	4	14	

SECTION 3

DEVELOPMENT ENTRANCES AND EXITS

3.1 Entrance and Exit Location

Two driveways are planned to the facility; one on Forest Street which is one way northbound and one on Congress Street. Entering and exiting traffic will be allowed at both driveways. Attachment A depicts the design of the driveways.

3.2 Plan View of Created Intersection

Attachment A depicts a plan view of the proposed intersections to be created by the project. The plan view includes:

- The names of intersecting roads.
- The posted speed limit.
- The left and right sight distances.
- The locations of driveways opposite the site.

3.3 Attachments

Attachment A - Intersection Plan View

ATTACHMENT A

Intersection Plan View

SECTION 4

TITLE

4.1 Overview

The proposed project site is designated on Portland Tax Map 53-I, Lot 1, 2, 3 & 12. Maine Medical Center owns the property and a copy of the title is attached to this section.

4.2 Attachments

Attachment A - Title

ATTACHMENT A

Title

MAINE MEDICAL CENTER

22 Bramhall Street, Portland, Maine 04102

FAX TRANSMITTAL

ENGINEERING SERVICES
TELEPHONE NUMBER (207) 871-2447
FAX NUMBER (207) 871-6195

DATE: 10/27/97

TO : Tom Gorrill
DeLuca Haffman Associates, Inc.

FAX: 879-0896

FROM: Jim Morrison

Re: Congress Street MOB

Number of Pages Including Cover Sheet: 8

Message

Tom:
Attached find deeds for both parcels involved for the MOB project.

B7509P60186 066366

(90)

Know all Men by these Presents,

That William James Associates, Inc.

a corporation organized and existing under the laws of the State of Maine and located at 446 Fore Street in the County of Cumberland and State of Maine in consideration of One ($1.00) Dollar and other valuable consideration

paid by Maine Medical Center

and whose mailing address is 22 Bramhall Street, Portland, ME 04102

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said Maine Medical Center, Its

heirs and assigns forever,

~~a certain lot or parcel of land~~ certain lots or parcels of land together with the buildings and improvements situated thereon located in the City of Portland, County of Cumberland and State of Maine and being more particularly described as follows:

Parcel A-1. A certain lot or parcel of land, together with the buildings and improvements thereon, situated on the easterly side of Forest Street in the City of Portland, County of Cumberland and State of Maine, known as 7-11 Forest Street in said City of Portland and bounded and described as follows:

Beginning at a point on the easterly sideline of Forest Street in the City of Portland, County of Cumberland and State of Maine, which point is located seventy-five (75) feet, more or less, northerly along the easterly sideline of said Forest Street from the northerly sideline of Congress Street in said City of Portland, and located at the northwesterly corner of land now or formerly of one Richards; thence northerly by the easterly sideline of said Forest Street, a distance of sixty-eight (68) feet, more or less, to land formerly of Charles Gardner; thence easterly by said Gardner land, a distance of fifty-eight (58) feet, more or less, to land nor or formerly of Sophia Mead; thence southerly by said Meade land, a distance of sixty-eight (68) feet, more or less, to said Richards land; thence westerly by said Richards land to the point of beginning (Tax Map 53-I-3).

Parcel A-2. A certain lot or parcel of land, together with the buildings and improvements thereon, situated on the easterly side of Forest Street in the City of Portland, County of Cumberland and State of Maine, known as 13-15 Forest Street in said City of Portland and bounded and described as follows:

Beginning at a point on the easterly sideline of Forest Street in the City of Portland, County of Cumberland and State of Maine, which point is located one hundred twenty-eight (128) feet, more or less, northerly along the easterly sideline of said Forest Street from the northerly sideline of Congress Street in said City of Portland and located at the corner of land formerly of Albion Harmon; thence northerly by the easterly sideline of said Forest Street, a distance of seventy (70) feet, more or less, to land formerly of Mrs. Gray; thence easterly by said Gray land, a distance of fifty-six (56) feet eight (8) inches to land now or formerly of Sophia Mead; thence southerly by said Mead land, a distance of seventy (70)feet, more or less, to said Harmon land; thence westerly by said Harmon land, a distance of fifty-six (56) feet eight (8) inches to the point of beginning (Tax Map 53-I-2).

BK7509PG0188

In Witness Whereof, the said William James Associates, Inc. has caused this instrument to be sealed with its corporate seal and signed in its corporate name by James M. Wolf, its President, thereunto duly authorized, this first day of December in the year one thousand nine hundred and eighty-six.

Signed, Sealed and Delivered in presence of

William James Associates, Inc.
(CORPORATE NAME)

Witness

By James M. Wolf
Its President

(CORPORATE SEAL)

SEAL

State of Maine

County of Cumberland ss. , December 1986

Then personally appeared the above named James M. Wolf President of William James Associates, Inc. said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Witness

Justice of the Peace
Notary Public
Attorney at Law

RECEIVED
RECORDED REGISTRY OF DEEDS
1986 DEC -2 PM 2:27
CUMBERLAND COUNTY

BK7509PG0187

Parcel A-3. A certain lot or parcel of land, together with the buildings and improvements thereon, situated on the easterly side of Forest Street in the City of Portland, County of Cumberland and State of Maine, known as 17-19 Forest Street and 32-34 Boynton Street in the City of Portland, County of Cumberland and State of Maine, and bounded and described as follows:

Beginning at a point on the easterly sideline of Forest Street in the City of Portland, County of Cumberland and State of Maine, which point is located at the northwesterly corner of land formerly of Charles Gardner; thence northerly by the easterly sideline of said Forest Street, a distance of forty-five (45) feet, more or less, to land formerly of Davis Frazier; thence easterly by said Frazier land, a distance of sixty (60) feet, more or less, to land now or formerly of the heirs of S. Medes; thence southerly by land of said Medes heirs, a distance of forty-five (45) feet, more or less, to said Gardner land; thence westerly by said Gardner land a distance of sixty (60) feet, more or less, to the easterly sideline of said Forest Street and the point of beginning; but excepting from the above-described lot a strip of land taken by right of eminent domain by said City of Portland for the extension of Boynton Street (Tax Map 53-I-1).

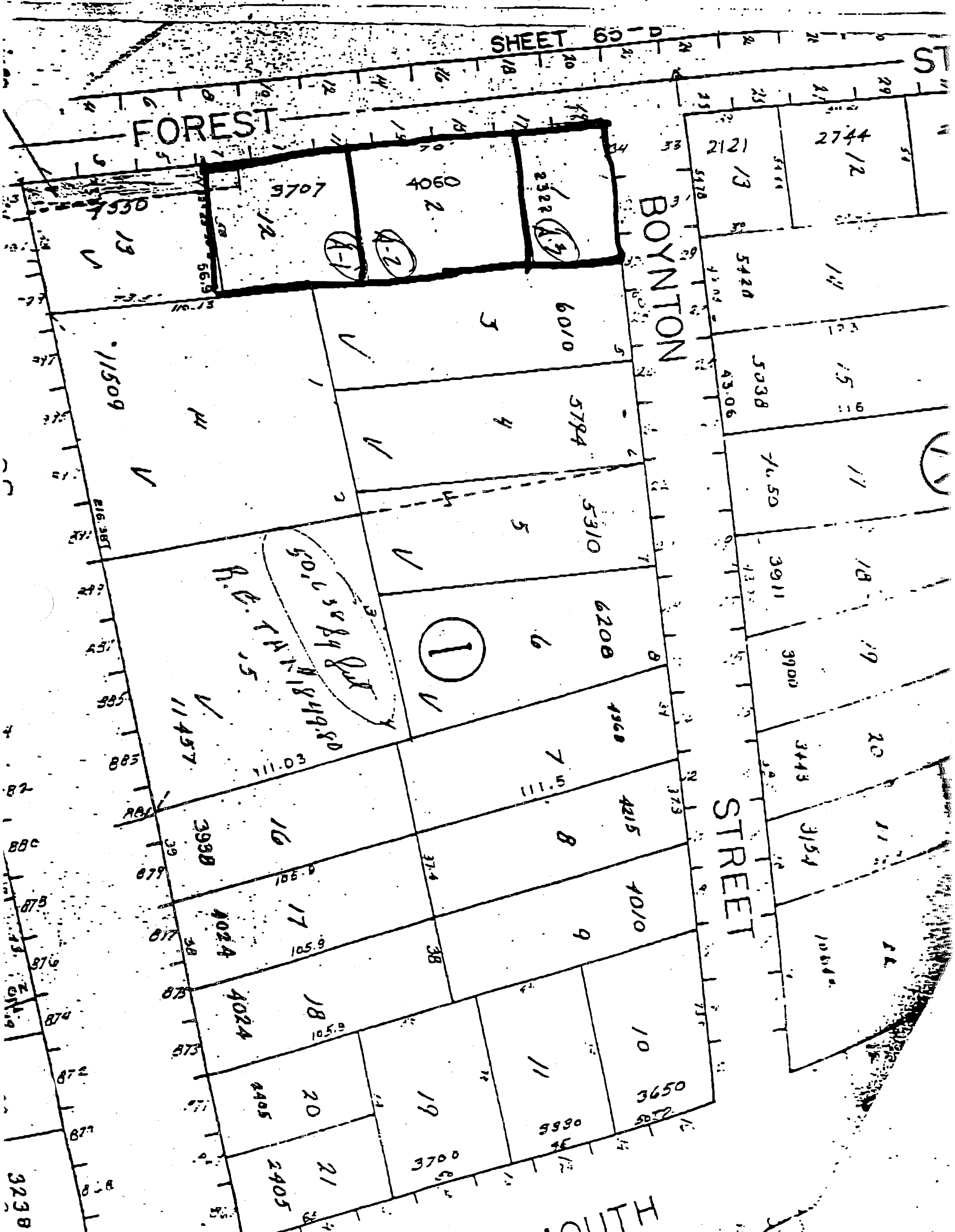
Meaning and intending to convey and hereby conveying the same premises conveyed to William James Associates, Inc. by Ralph F. Blake, Jr. and Maxine M. Blake as described in a deed dated June 26, 1986 and recorded in Cumberland County Registry of Deeds in Book 7248 and Page 278.

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said Maine Medical Center, Its successors

Heirs and assigns, to them and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, Its/ ~~Heirs~~ successors and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, Its successors/s and assigns forever, against the lawful claims and demands of all persons.


SHEET 65-D
FOREST
BOYNTON
STREET
3707
4060
2322
A-1
A-2
A-3
2121
2744
7330
11509
6010
5794
5310
6208
11457
3988
4024
4024
4010
3650
3700
2405
2405

Without Covenant

Know all Men by these Presents,

3a

That we, ERNEST HENDERSON III and MARY LOUISE HENDERSON, of Wellesley, Massachusetts, and JOAN FITZGERALD, of Maynard, Massachusetts, all as Trustees of Edmunds Trust under Declaration of Trust dated February 19, 1970

in consideration of One Dollar ($1.00) and other valuable considerations, receipt of which is hereby acknowledged,

paid by MAINE MEDICAL CENTER, a Maine corporation,

whose mailing address is 22 Bramhall Street, Portland, Maine 04102

the receipt whereof we do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quitclaim unto the said Maine Medical Center, its successors

heirs and assigns forever, a certain lot or parcel of land with any improvements thereon situated northerly of Congress Street, easterly of Forest Street and southerly of Boynton Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the easterly side of Forest Street with the northerly line of Congress Street, which intersection is situated one (1) foot South 4° 22' 40" East from an iron set in the easterly side of Forest Street; thence North 4° 22' 40" West by the easterly side of Forest Street 76.50 feet to a tack set in a fencepost and land now or formerly of Blake Brothers, Inc.; thence on the following courses and distances by said land of Blake Brothers, Inc. North 82° 23' 30" East 56.90 feet to an iron set in the ground and the southeasterly corner of said land of Blake Brothers, Inc.; thence North 50° 02' 30" West 172.63 feet to a drill hole in a concrete retaining wall at the southerly side of Boynton Street; thence North 85° 30' East by the southerly side of Boynton Street 178.04 feet to an iron set in the ground at land now or formerly of George L. Nelson; thence South 15° 01' 20" East by said Nelson land and land now or formerly Mary K. Greene 227.02 feet passing through a tack in a step to the northerly side of Congress Street; thence South 79° 28' 40" West by the northerly side of Congress Street 276.38 feet to the intersection of the easterly side of Forest Street and the northerly side of Congress Street and the point of beginning; containing 49,667 square feet, more or less.

Being the same premises conveyed to Ernest Henderson III, et al, as Trustees by deed of Myron Finkelman dated February 27, 1970, recorded in the Cumberland County Registry of Deeds in Book 3118, Page 869.

This conveyance is made subject to the mortgage of the grantors herein to Myron Finkleman dated February 27, 1970 recorded in said Registry in Book 3118, Page 871, the obligations of which mortgage and the remaining debt it secures Maine Medical Center, by its acceptance hereof, hereby assumes and agrees to pay and perform.

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to the said Maine Medical Center, its successors heirs and assigns forever.

In Witness Whereof, we the said Ernest Henderson III, Mary Louise Henderson and Joan Fitzgerald, all as Trustees under Declaration of Trust establishing the Edmunds Trust dated February 19, 1970, being the sole trustees of said Edmunds Trust and hereunto duly empowered and authorized by said Trust, which is in full force and effect and has not been amended or mofified to date hereof,

[redacted] have hereunto set our hands and seals this 31st day of the month of October .A.D. 1984.

Signed, Sealed and Delivered
in presence of

.....
.....
.....
.....

Ernest Henderson, III
Mary Louise Henderson
Joan Fitzgerald
all as Trustees aforesaid

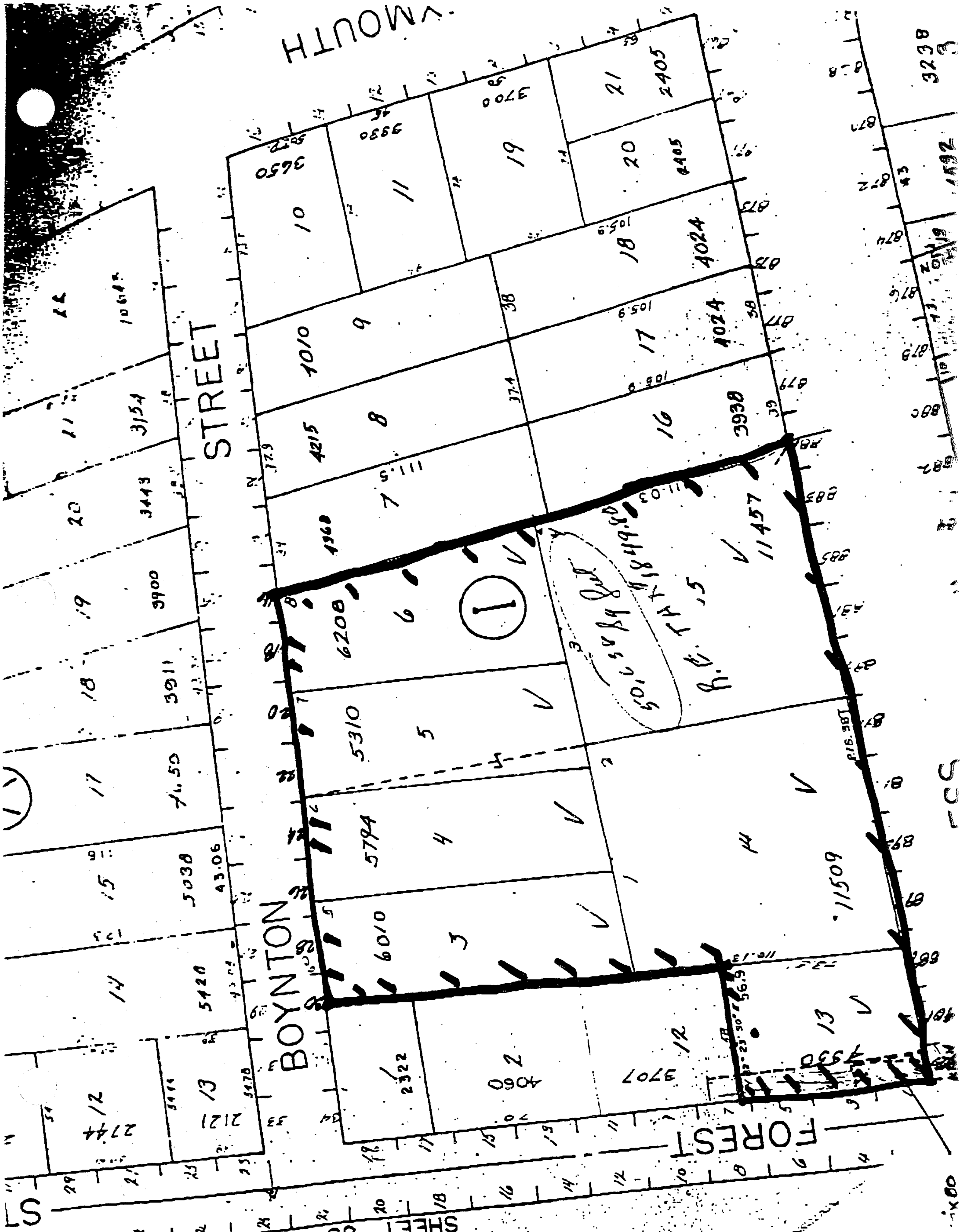
State of Maine, County of Cumberland ss. October 31, 1984.

Then personally appeared the above named Ernest Henderson, III, as Trustee of Edmunds Trust,

and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of said Trust.

Before me,

THOMAS P. HESSION Notary Public
Attorney-at-Law


STREET
BOYNTON
FOREST

SECTION 5

PUBLIC OR PRIVATE RIGHTS OF WAY

5.1 Overview

Attachment A includes a copy of the existing conditions survey for the project site. The width of the rights-of-way for the public streets is presented below:

- Forest Street - 33.00
- Congress Street - 66.00 feet

5.2 Attachments

Attachment A - Existing Conditions Survey

ATTACHMENT A

Existing Conditions Survey

SECTION 6

SCHEDULE

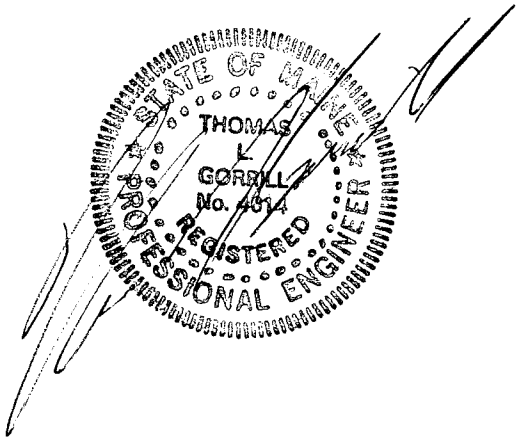
6.1 Overview

Subject to receipt of all necessary approvals, the project is scheduled to commence construction in April 1998 and be completed by September 1999.

REVISED
TRAFFIC IMPACT STUDY
FOR A PROPOSED
MAINE MEDICAL OFFICE FACILITY
PORTLAND, MAINE

Prepared for

Maine Medical Center
22 Bramhall Street
Portland, Maine



Prepared by

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine
(207) 775-1121

January 1998

TRAFFIC IMPACT STUDY

INDEX

EXECUTIVE SUMMARY

The following executive summary is prepared for the reader's convenience, but is not intended to be a substitute for reading the full report.

DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to conduct a traffic impact study for the proposed 49,150 s.f. Medical Office building with an attached 430 space parking garage in Portland, Maine. The proposed site, currently occupied by an existing Maine Medical Center parking lot, is located on the northeast corner of the intersection of Congress Street and Forest Street, as shown on Figure 1 following this page. The development includes proposed driveways to Congress Street and Forest Street.

The proposed development is forecast to generate 273 trip ends during the PM peak hour of the generator, which meets the MeDEP threshold for requiring a scoping meeting, which is 100 or more vehicles during the peak hour. For the purposes of this study, DeLuca-Hoffman Associates, Inc. has determined the PM peak hour of adjacent street traffic is the critical period. The proposed development is forecast to generate 219 trip ends during the PM peak hour of adjacent street traffic.

The purpose of this study is to evaluate the impact on the existing street system of the traffic generated by the proposed development and the planned driveway onto Congress Street and Forest Street. The following is a summary of the major findings of the traffic study:

1. It is estimated the proposed project will generate 176 and 219 trip ends during the AM and the PM peak hours of adjacent street traffic. These trips would consist of 141 trips in and 35 trips out of the site during the AM peak hour and 59 trips in and 160 trips out of the site during the PM peak hour.
2. All of the trips are expected to be primary trips, i.e. newly generated in the vicinity of the driveways by the development, although most of the practitioners who will be in the office building are currently in other office buildings around the campus. In addition, some of the people parking on the street or utilizing the Gateway garage will now park in this new garage.
3. The proposed Congress Street driveway is located approximately 242 feet east of Forest Street. This driveway would have a single entrance lane and a single exit lane. The Forest Street driveway will consist of a right turn in and right turn out only. Forest Street is a one way street in the northbound direction.
4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.
5. The intersection of Congress Street at the proposed driveway meets MDOT guidelines for consideration of left turn lane for left turning traffic from Congress Street into the driveway. Based on the projected left turning volumes, DeLuca-Hoffman Associates, Inc. recommends providing a left turn lane on Congress Street at the site driveway. This will require removal of some parking on the southerly side of Congress Street which will require approval of the City Council.

LEGEND

- State Route
- Geo Feature
- Town, Small City
- Large City
- Hospital
- Park
- Interstate, Turnpike
- US Highway
- Population Center
- Street, Road
- Hwy Ramp
- Major Street/Road
- Interstate Highway
- State Route
- US Highway
- Railroad
- Intermittent River
- Airfield

Scale 1:15,625 (at center)

1000 Feet

500 Meters

PORTLAND, MAINE
Mag 15.00
Tue Feb 04 14:08:51 1997

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. (207) 775-1121
FAX (207) 879-0896

FIGURE 1

DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for left turning traffic from Congress Street onto Forest Street. This location meets criteria for consideration of providing a left-turn treatment. Based on the projected left turning volumes DeLuca-Hoffman Associates, Inc. recommends providing a left turn lane on Congress Street at Forest Street. This will also require removal of some parking on the southerly side of Congress Street.

6. The anticipated stacking lengths at the signalized intersections in the study area exceed some of the available full width storage lengths. However, the proposed development is anticipated to increase the total entering volume at the intersections within the study area by 3%. These changes should not significantly impact the storage lengths. Therefore no mitigation measures are proposed.
7. Park Avenue at St. John Street is a high accident location experiencing 46 accidents. To correct the predominant pattern of lane-change accidents, DeLuca-Hoffman Associates, Inc. recommends supplemental striping through the intersections for westbound dual left turn lanes.
8. DeLuca-Hoffman Associates, Inc. recommends the following improvements to correct existing offsite roadway deficiencies (see Figure 7 in Appendix A):

    - Optimization of the existing signal system at the following locations:
        - St. John Street and Park Avenue.
        - St. John Street and Congress Street.
        - Congress Street and Valley Street.
        - Congress Street and Bramhall.

    - Monitor after development for installation of traffic signal at Park Avenue and Forest Street.

Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system provided left-turn lanes are installed on Congress Street and the existing signal system is optimized.

I. EXISTING CONDITIONS

Site:

The site shown in Figure 1 is currently occupied by the existing Maine Medical Center (MMC) parking lot, and is located on the northeast corner of the intersection of Congress Street and Forest Street in Portland, Maine. The existing parking lot contains 52 parking spaces for MMC employees with a single driveway access to Congress Street. The site is bounded by Congress Street to the south, Boynton Street to the north, Forest Street to the west, and an apartment building to the east.

Adjacent Roads:

The site has frontage on Congress Street, Forest Street, and Boynton Street. Congress Street is a 44-foot wide roadway with on street parking on both sides. Congress Street also has a sidewalk along the site frontage. The posted speed limit is 25 mph. Congress Street connects Interstate I-295 to the west and Portland downtown to the east.

Forest Street is a one way street in a northbound direction. It intersects Congress Street to south and Park Avenue to the north. Forest Street has a 22 foot wide travel way with on street parking on the west side of the street.

Boynton Street is a two-way roadway and has a 22 foot wide travel way with on street parking on the south side. Boynton Street connects Forest Street to the west and Weymouth Street to the east.

DeLuca-Hoffman Associates, Inc. based this study on the following information:

- A 1"=20'± scale Site Plan dated December 18, 1997 prepared by Squaw Bay Corporation.
- Computerized accident data summary for the period 1993 to 1996 for Congress Street from St. John Street to Bramhall Street, for St. John Street from Congress Street to Park Avenue, and for Park Avenue from St. John Street to Forest Street.
- Traffic Impact Study for the Holt Hall Renovation prepared by Eaton Traffic Engineering on August 1996.
- Turning movement count data collected by DeLuca-Hoffman Associates, Inc. at the following locations on February 4 and 6, 1997 from 6:45 a.m. to 8:45 a.m. and from 3:30 p.m. to 5:30 p.m.
    - Congress Street at St. John Street
    - Congress Street at Valley Street (US Route 1 northbound)
    - Congress Street at Gilman Street
    - Congress Street at Forest Street
    - Congress Street at Existing Parking Lot Driveway
    - Congress Street at Bramhall Street/Deering Avenue
    - Park Avenue at St. John Street

- Park Avenue at Valley Street
- Park Avenue at Forest Street

Additionally DeLuca-Hoffman Associates, Inc. collected turning movement data at the following locations.

- The existing Maine Medical Center Garage driveways on February 7, 1997 from 3:00 p.m. to 6:00 p.m. and on February 10, 1997 from 6:45 a.m. to 8:45 a.m..

- The Stroudwater Crossing driveway on February 7, 1997 from 6:45 a.m. to 8:45 a.m. and from 3:30 p.m. to 5:30 p.m.

- Medical Office Building, 1250 Forest Avenue (at Warren Avenue) on February 12, 1997 from 3:30-5:30 PM and February 17, 1997 from 6:45 AM to 8:45 AM.

The result of these turning movement counts are shown for the a.m. and the p.m. peak hour in Figure 2 of Appendix A.

II. BACKGROUND TRAFFIC CONDITION

The existing turning movement count volumes were adjusted to approximate the 30th highest hour conditions of the year using the Weekly Group Mean Factor data for Group I (Urban) from the Maine Department of Transportation. The methodology used to determine a seasonal adjustment factor from this data is as follows:

Seasonal Adjustment Factor for February, 1997			
Period	**WGMF**		**Seasonal Adjustment Factor**
Week of Counts	1.12	=	1.27
4th Lowest Week	0.88		

The proposed facility is planned to be completed in 1999. To approximate traffic in this year, DeLuca-Hoffman Associates, Inc. increased the 1997 counts by a 1% annual growth rate based on annual growth factors produced by PACTS in 1997 and added the traffic generated by other developments expected to be completed in 1999 in the study area. According to the Portland Planning Department, Holt Hall is the only project which is pending. Holt Hall is located on the southeast corner of the intersection of Bramhall Street and Congress Street. The traffic projections associated with this project are included as Figure 3 of Appendix A.

DeLuca-Hoffman Associates, Inc. has combined the existing traffic adjusted to approximate the 30th highest hour, with the peak hour traffic forecasted for the proposed Holt Hall and a 1% annual growth rate to yield the 1999 Predevelopment conditions. The 1999 Predevelopment volumes are shown in Figure 4 of Appendix A.

III. TRIP GENERATION

The proposed Medical Office building will consist of 49,150 square feet of office plus an attached 430 space parking garage. Based upon a parking evaluation completed by DeLuca-Hoffman Associates, Inc. and submitted under separate cover, approximately 226 parking spaces in the parking garage will be reserved to meet the estimated demand of the medical office building with the remaining 204 spaces being available to Maine Medical employees. Trip generation will be made up of trips associated with the medical office building and with Maine Medical Center employees.

Trips associated with the Medical Office Building

To estimate the trips associated with the medical office building, DeLuca-Hoffman Associates, Inc. utilized three sources: collected traffic counts at Stroudwater Crossing, a 32,190 s.f. medical office building, located on outer Congress Street; a 40,312 s.f. medical office building at 1250 Forest Avenue; and the Institute of Transportation Engineers (ITE) publication Trip Generation, 6th Edition, LUC 720 Medical-Dental Office Building.

Table 1
Trip Generation Per 1,000 s.f.

Source	Peak Hour of the Generator Trip Rate		Peak Hour of Adjacent Street Traffic Trip Rate		Direction Distribution (%) Peak Hour of Adjacent Street Traffic			
					AM		PM	
	AM	PM	AM	PM	In	Out	In	Out
Stroudwater Crossing 32,190 s.f.			2.08	3.14	78%	22%	28%	72%
1250 Forest Avenue 40,317 s.f.			1.19	1.84	83%	17%	23%	77%
ITE LUC 720	3.60	4.36	2.43	3.66	80%	20%	27%	73%

Based on Table 1, the trip generation rate in ITE exceeds the Stroudwater Crossing and 1250 Forest Avenue rates. In a telephone conversation , on September 15, 1997 (see telephone memo in Appendix E), Roland Roy, P.E., Planning Division, Maine Department of Transportation recommended using the ITE trip rate. Therefore, DeLuca-Hoffman Associates, Inc. utilized the ITE rates in this study.

Applying ITE trip rates to the medical office building results in the following trip estimates:

Medical office building trips based on 49,150 s.f.:

AM Peak Hour of Adjacent Street Traffic

$$49{,}150 \text{ s.f.} \times \frac{2.43 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 119 \text{ trip ends}$$

PM Peak Hour of Adjacent Street Traffic

49,150 s.f. x 3.66 trip ends / 1,000 s.f. = 180 trip ends

AM Peak Hour of the Generator

49,150 s.f. x 3.60 trip ends / 1,000 s.f. = 177 trip ends

PM Peak Hour of the Generator

49,150 s.f. x 4.36 trip ends / 1,000 s.f. = 214 trip ends

Trips associated with the remaining 204 spaces in the parking garage not utilized by the Medical Office building were calculated as follows:

DeLuca-Hoffman Associates, Inc. collected traffic counts at the Maine Medical parking garage on Congress Street to assist in estimating the trips associated with the remaining 204 spaces in the parking garage not utilized by the medical office building. (These will be utilized by MMC employees.) The results of this data collection is summarized below:

USE	Trip Ends				Trip Rate / Parking Space			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Parking Garage Parking Space = 1276	514	371	355	245	0.4	0.29	0.28	0.19

Applying these rates to the remaining 204 spaces, results in the following trip generation:

AM Peak Hour of Adjacent Street Traffic

204 spaces x 0.28 trip ends / one space = 57 trip ends

PM Peak Hour of Adjacent Street Traffic

204 spaces x 0.19 trip ends / one space = 39 trip ends

AM Peak Hour of the Generator

204 spaces x 0.40 trip ends / one space = 82 trip ends

PM Peak Hour of the Generator

204 spaces x $\frac{0.29 \text{ trip ends}}{\text{one space}}$ = 59 trip ends

Combined Trip Generation

Combining the trips associated with the medical office building and those associated with the Maine Medical Center employees utilizing excess parking in the garage, results in the following total trip generation estimate:

AM Peak Hour of Adjacent Street Traffic

119 (medical office) + 57 (MMC) = 176 trip ends

PM Peak Hour of Adjacent Street Traffic

180 (medical office) + 39 (MMC) = 219 trip ends

AM Peak Hour of the Generator

177 (medical office) + 82 (MMC) = 259 trip ends

PM Peak Hour of the Generator

214 (medical office) + 59 (MMC) = 273 trip ends

The postdevelopment traffic volumes for the PM peak hour of the generator were compared with the postdevelopment traffic volumes for the PM peak hour of adjacent street traffic to establish the critical time period for the purposes of determining the project impacts. In a telephone conversation on September 15, 1997, Roland Roy concurred with DeLuca-Hoffman Associates, Inc. that the PM peak hour of adjacent street traffic was the critical period to be utilized in the study.

Based on the above calculations, the proposed development is forecasted to generate 176 trip ends during the AM peak hour of adjacent street traffic and 219 trip ends during the PM peak hour of adjacent street traffic.

IV. TRIP COMPOSITION

The ITE "Trip Generation" manual indicates that all the traffic associated with an office will be primary trips. Primary trips are those which are new to the street system not already passing by the site. While treated as primary trips in the vicinity of the office building, most of the practices which will be in the office building are currently in other office buildings around the campus. In addition, some of the people parking on the street or utilizing the Gateway garage will now park in this new garage.

V. TRIP DISTRIBUTION AND ASSIGNMENT

DeLuca-Hoffman Associates, Inc. has distributed the primary trip ends associated with the proposed Medical Office facility with 430 parking spaces based on the gravity model of the existing Maine Medical Center employees. This distribution is summarized as follows:

Trip Distribution Based on Employees Gravity Model	
Approaching the Site	***% of Trip Distribution***
Congress Street from west	37.4%
Congress Street from east	14.0%
Valley Street from south	31.9%
St. John Street from north	16.7%
Total	100%

Site generated traffic is assigned at the two site driveways as shown in Figure 5 of Appendix A. Based on the proposed parking layout, all the Maine Medical Center employee traffic will utilize the Forest Street driveway and all the Medical Office Building traffic will use the Congress Street Driveway.

VI. STUDY AREA

The MeDEP Site Location of Development Law traffic statute applies to facilities projected to generate more than 100 trip ends during the peak hour of the generator. Therefore, this project, which is projected to generate 273 PM peak hour of the generator trips, is subject to the Site Law for traffic and requires a scoping meeting with the MDOT to determine the extent of study required. The scoping meeting was held on November 19, 1997 and the meeting notes are included in Appendix E. Based on discussions with the City of Portland and MeDEP criteria, DeLuca-Hoffman Associates, Inc. has considered the area of impact of the proposed development to be at the following intersections:

- Congress Street at St. John Street
- Congress Street at Valley Street (US Route 1 northbound)
- Congress Street at Gilman Street
- Congress Street at Forest Street
- Congress Street at Existing Parking Lot Driveway
- Congress Street at Bramhall Street/Deering Avenue
- Park Avenue at St. John Street
- Park Avenue at Forest Street

VII. CAPACITY ANALYSIS

DeLuca-Hoffman Associates, Inc. performed capacity analyses for the intersections contained in the study area. The signalized and unsignalized intersections were

evaluated using the Highway Capacity Software computer program. The signalized intersections were evaluated using the SIGNAL 94 and Synchro 3 programs. (See Appendix B)

The capacity analysis assesses the quality of traffic flow at intersections and provides a ranking based upon its delay and Level of Service (LOS). Level of service rankings are similar to the academic grading system where an "A" indicates very little delay and an "F" indicates very poor or extreme conditions. Level of service "D", is generally acceptable at signalized intersections. At an unsignalized intersection, if the level of service falls below a "D", the intersection should be examined further to determine if it meets one or more of the warrants set forth in the Manual on Uniform Traffic Control Devices (MUTCD) for signalization. If a warrant is not met, then the lower level of service is satisfactory.

The following tables summarize the relationship between delay and level of service at both signalized and unsignalized intersections:

Level of Service Criteria for Unsignalized Intersections	
Level of Service	**Stopped Delay per Vehicle (sec)**
A	Up to 5.0
B	5.1 to 10.0
C	10.1 to 20.0
D	20.1 to 30.0
E	30.1 to 45.0
F	Greater than 45.0

Level of Service Criteria for Signalized Intersections	
Level of Service	**Stopped Delay per Vehicle (sec)**
A	Less than 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	Greater than 60.0

Description of Signalized Intersections

Park Avenue and St. John Street - This is a four-leg intersection with the westerly leg of the intersection, Park Avenue being one-way westbound. The westbound Park Avenue approach consists of an exclusive right-turn lane, a through lane and a shared through left-turn lane. St. John Street, which forms the northbound approach, consists of an exclusive left-turn lane, a shared through left-turn lane, and a channelized right turn lane. The St. John Street southbound approach has exclusive right turn lane and a shared through left-turn lane.

Congress Street and St. John Street - This intersection is a four leg signalized intersection. The eastbound Congress Street approach is a one way street with an exclusive left-turn lane, a through lane, and a shared through right-turn lane. The westbound Congress Street approach consists of an exclusive left turn lane and an exclusive right turn lane. The northbound St. John Street approach has a through lane and a shared through right turn lane. The southbound approach consists of a through lane and a shared through left turn lane. This intersection has a shared traffic controller with Congress Street and Valley Street (US Route 1 northbound).

Congress Street and Valley Street(US Route 1 northbound) - This intersection is also a four leg signalized intersection. Congress Street is the east and west legs and Valley Street is the north and south legs. The Congress Street eastbound and westbound approaches have a shared through right turn lane and a shared through left turn lane. The Valley Street (US Route 1 northbound) approach has an exclusive left-turn lane and a shared through right turn lane. The southbound leg is a one way street in the northbound direction. This intersection has a shared traffic controller with Congress Street and St. John Street.

Congress Street and Bramhall Street/Deering Avenue - This intersection has four legs and fully actuated signal with an exclusive pedestrian phase. The Congress Street eastbound approach consists of an exclusive right turn lane and a shared through left turn lane. The Congress Street westbound approach has an exclusive right turn lane and a shared through left turn lane. The Bramhall Street approach has an exclusive left turn lane and shared through right turn lane. The Deering Avenue approach has an exclusive right turn lane and a shared through left turn lane.

Capacity analyses are based on the above geometrics. The predevelopment evaluation is based on existing timing and phasing, while the postdevelopment condition is based on completion of improvements as discussed in the paragraph following this Table. The results of the analyses of these signalized intersection are discussed below. Computer printouts of the analyses are provided in Appendix B:

Results of Signalized Capacity Analysis					
		1999 Predevelopment		1999 Post-Development	
Approach	Lanes	AM	PM	AM	PM
St. John St. & Park Avenue					
St. John Street NB	Left	C	E	C	C
	Left/through	C	E	C	D
	Right	C	C	C	B
St. John Street SB	Through/Left	C	E	D	D
	Right	C	D	C	C
Park Avenue WB	Right	C	C	C	C
	Through/Left	D	D	D	E
Overall delay in Second		C 24.4	D 39.8	C 25.0	D 35.3
St. John & Congress Street					
Congress Street EB	Left	D	E	D	D
	Through/Right	F	C	E	C
Congress Street WB	Left	C	C	C	B
	Right	D	F	D	C
St. John Street NB	Through/Right	D	F	D	F
St. John Street SB	Through/Left	C	C	C	C
Overall Delay in seconds		E 49.6	E 49.5	D 37.5	D 39.5
Congress & Valley Street					
Congress Street EB	Right/Through/Left	B	B	A	A
Congress Street WB	Right/Through/Left	C	D	B	D
Valley Street NB	Left	B	B	C	C
	Through/Right	C	C	D	C
Overall Delay in Second		B 11.5	B 16.4	B 11.0	C 21.1
Congress & Bramhall/Deering					
Congress Street EB	Right	B	B	B	B
	Left/Through	B	B	B	B
Congress Street WB	Right	B	B	B	B
	Left/Through	C	D	C	D
Bramhall Street NB	Right/Through	B	C	B	C
	Left/Through	C	B	C	B
Deering Avenue SB	Right/Through	C	C	C	C
	Left	C	F	C	F
Overall Delay in Second		B 14.8	C 23.6	C 15.2	C 23.4

The results of the analysis of these signalized intersections are discussed below.

Park Avenue at St. John Street - Based on the capacity analysis, several movements have a level of service E for the predevelopment condition during the PM peak hour.

The proposed development is anticipated to increase the total entering volume at the intersection by 3%. This additional traffic should not significantly impact the operation of the intersection. Optimization of the existing signal system is the only practical improvement which can be made due to land use constraints. Additionally, MMC is willing to install northbound vehicle loop detectors. Utilizing the current cycle length of 90 seconds, retiming the phases will result in an overall level of service D.

Congress Street and St. John Street - Based on the capacity analysis, the intersection has a level of service E under predevelopment. The proposed development is anticipated to increase the total entering volume at the intersection by 3%. This additional traffic should not significantly impact the operation of the intersection. Optimization of the existing signal system is the only practical improvement which can be made due to land use constraints. Utilizing the current cycle length of 90 seconds, retiming the phases will result in an overall level of service D.

Congress Street and Bramhall - Based on the capacity analysis, the Congress Street westbound approach has a level of service F for a shared through left turn lane during the AM and the PM peak hour under the predevelopment condition. Under the postdevelopment condition, this intersection has a level of service D or better during the AM and the PM peak hour based on the following improvements:

- Implementation of a lead phase from the northbound Bramhall Street approach.
- Retiming of the intersection.

This work is recommended by Bill Eaton in the traffic impact study for Holt Hall.

Unsignalized Intersections

Results of Unsignalized Capacity Analysis					
		1999 Predevelopment		**1999 Postdevelopment**	
Approach	Lanes	AM	PM	AM	PM
Congress & Gilman Street					
Gilman Street NB	Left/Right/Through	F	E	F	F
Gilman Street SB	Left/Right/Through	C	C	C	C
Congress Street WB	Left	B	B	C	B
Intersection Delay in Seconds		4.5	2.9	6.8	4.1
Congress St. & Site Drive.					
Congress Street EB	Left	N/A	N/A	A	A
Proposed Driveway SB	Left/Right	N/A	N/A	B	C
Intersection Delay in Seconds				0.3	1.3
Forest St. & Site Drive					
Proposed Driveway WB	Right	N/A	N/A	A	A
Intersection Delay in Seconds				0.3	0.7
Park Ave. & Forest Street					
Forest Street NB	Left/Right	C	F	C	F
Intersection Delay in Seconds		1.2	96.3	1.5	126.5
Park Ave. & Valley Street					
Valley Street NB	Left	F	F	F	F
	Right	A	A	A	A
Intersection Delay in Seconds		5.4	35.3	5.5	39.4
Congress & Forest Street					
Congress Street EB	Left	A	A	A	B
Intersection Delay in Seconds		.1	0.2	.2	.3

Congress Street at Gilman Street - The Gilman Street northbound approach left turn lane has a level of service F and E during the AM and PM peak hours respectively under both predevelopment and postdevelopment conditions. Therefore, this location was evaluated to see if signalization is warranted. This analysis contained in Section VIII, shows that signal warrants are not met for either the predevelopment or the postdevelopment conditions. Therefore, no mitigation measures are proposed at this location.

Park Avenue and Forest Street - The Forest Street northbound approach is a one-way street. Based on the capacity analysis, the Forest Street northbound approach left turn lane has a level of service F during the PM peak hour under both predevelopment and postdevelopment conditions. This location was also evaluated to see if signalization is warranted. This analysis contained in Section VIII, shows that signal warrant volumes are met based on predevelopment PM peak hour volumes. The proposed development increases in the traffic volume by one vehicle per minute during the PM peak hour. Therefore, this intersection should be monitored for installation of a traffic signal.

Left Turn Lane Warrant Analysis

Congress Street at Forest Avenue - DeLuca-Hoffman Associates, Inc. has also reviewed the left-turn warrant criteria for Congress Street at Forest Street in accordance with Figure 8-19 of the MDOT Highway Design Guide. Figure 8-19 is based on a two lane travel way and 40 mph travel speed. Based on the Figure, this location meets criteria for consideration of a left-turn treatment. Therefore, DeLuca-Hoffman Associates, Inc. recommends providing a left-turn lane on Congress Street at Forest Street. This will require removal of some parking on the southerly side of Congress Street which will require City Council approval.

Congress Street at the Proposed Driveway - DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for Congress Street at the proposed site driveway in accordance with Figure 8-19 of the MDOT Highway Design Guide. Based on the Figure, this location meets criteria for consideration of providing a left-turn treatment. Therefore, DeLuca-Hoffman Associates, Inc. recommends installation of a left-turn lane on Congress Street. This will necessitate removal of parking on the southerly side of Congress Street which will require the approval of the City Council.

VIII. SIGNAL WARRANT EVALUATION

The Manual on Uniform Traffic Control Devices (MUTCD) provides eleven conditions for which traffic signal control may be warranted for an intersection. One or more of these warrants should be met before a signal is installed. Traffic conditions evaluated with respect to these warrants are tabulated and discussed below. Warrant analysis worksheets are contained in Appendix D.

Number	Description	Satisfied			
		Gilman & Congress Street		Forest St. & Park Ave.	
		Existing	Proposed	Existing	Proposed
Warrant 1	Minimum vehicular volume	No	No	No	No
Warrant 2	Interruption of continuous traffic	No	No	No	No
Warrant 3	Minimum pedestrian volume	No	No	No	No
Warrant 4	School Crossing.	No	No	No	No
Warrant 5	Progressive movement.	No	No	No	No
Warrant 6	Accident experience	No	No	No	No
Warrant 7	Systems	No	No	No	No
Warrant 8	Combination of warrants	No	No	No	No
Warrant 9	Four hour volumes	No	No	No	No
Warrant 10	Peak hour delays	No	No	No	No
Warrant 11	Peak hour volumes	No	No	Yes	Yes

Congress Street at Gilman Street - The above summary shows that the intersection of Gilman Street and Congress Street does not meet any signal warrants. Therefore, no mitigation measures are proposed at this location.

Forest Street and Park Avenue - The above summary shows that currently the intersection meets the peak hour volume warrant. The proposed development increases traffic volume 1 vehicle per minute during the PM peak hour. Therefore, this intersection should be monitored for installation of a traffic signal.

IX. STORAGE LENGTH ANALYSIS

DeLuca-Hoffman Associates, Inc. has evaluated the potential storage lengths at the signalized intersections during the a.m. and the p.m. peak hour for the 1998 postdevelopment condition. The available/proposed storage areas and required lengths as computed using SIGNAL 94 are summarized in the following table.

The available/proposed storage areas are based on the existing conditions.

Stacking Length Analysis for Weekday AM and PM Peak Hour				
Location		**Available/Proposed Storage Length**	**90% Confidence Stacking Length**	
St. John St. & Park Avenue	**Lane**		**AM**	**PM**
St. John Street NB	Left	800	369	511
	Left/Through	800	396	550
	Right	130	320	174
St. John Street SB	Through/Left	300	432	316
	Right	100	126	153
Park Avenue WB	Right	150	104	134
	Through/Left	600	332	623
St. John & Congress Street				
Congress Street EB	Left	300	521	575
	Through/Right	300	558	483
Congress Street WB	Left	250	90	179
	Right	250	241	305
St. John Street NB	Through/Right	400	367	478
St. John Street SB	Through/Left	800	219	188
Congress & Valley Street				
Congress Street EB	Right/Thru/Left	250	278	196
Congress Street WB	Right/Thru/Left	180	160	276
Valley Street NB	Right/Thru	350	379	297
	Left	100	25	66
Bramhall & Congress Street				
Congress Street EB	Left/Through	310	370	364
	Right	100	85	58
Congress Street WB	Left/Through	550	184	320
	Right	100	58	80
Bramhall Street NB	Left	200	97	155
	Right/Through	200	251	371
Deering Street SB	Right/Through	100	306	270
	Left	100	59	85

The anticipated stacking lengths at the signalized intersections in the study area exceed some of the available storage lengths during peak periods. However, the proposed development is anticipated to increase the total entering volume at the intersections within the study area by 3% or less. This additional traffic should not significantly impact the storage length requirements. Therefore no mitigation measures are proposed.

X. SIGHT LINES

The Maine Department of Transportation (MDOT) publication "Access Management, Improving the Efficiency of Maine Arterials" provides recommended sight distances based on driveway classifications. The classifications are as follows:

- **Low Volume Driveway:** Driveways with a traffic volume of less than 500 vehicle trips per day, or 50 or less vehicle trips per peak hour.

- **Medium Volume Driveway:** Driveways with less than 1,500 trips per day and less than 150 trips during the peak hour.

- **High Volume Driveway:** Driveways with more than 1500 trips per day or 150 trips during the peak hour.

The traffic volumes associated with the site driveways is 214 at Congress Street and 59 trips at the Forest Street driveway during the PM peak hour of the generator. Therefore, for the purpose of sight distance analysis, DeLuca-Hoffman Associates, Inc. has evaluated the driveway at Forest Street as a Low/Medium volume driveway and the driveway at Congress Street as a High Volume driveway. The guidelines set forth by MDOT for sight distance criteria for a Low/Medium volume driveway and a High Volume driveway are as follows:

MDOT Standards for Sight Distance		
	Driveway Classification	
Speed (mph)	Low/Medium Volume	High Volume
25	250	300
30	300	380
35	350	480
40	400	580
45	450	710
50	500	840
55	550	990

DeLuca-Hoffman Associates, Inc. has evaluated the available sight lines at the proposed driveways in accordance with MDOT standards.

The MDOT standards are as follows:

Driveway observation point: 10 feet off major street travel way
Height of eye at driveway: 3.5 feet above ground
Height of approaching vehicle: 4.25 feet above road surface

The design speed used for the major road is generally the 85th percentile travel speed. This is the speed at which 85% of the traffic is traveling at or below. The posted speed limit on the Congress Street is 25 miles per hour. The estimated 85th percentile travel speed along this road is 5 mph above the posted speed or 30 mph. Therefore, the desirable sight distance is 380 feet.

Forest Street does not have a posted speed limit. The estimated 85th percentile speed for traffic coming from the south is 15 mph since all approaching traffic is turning 90° from Congress Street.

The results of the sight line analyses along Congress Street and Forest Street are summarized below:

Driveway Sight Line Evaluation			
Direction	**85th Percentile Travel Speed**	**Required Sight Line**	**Actual Sight Line**
Forest St. Driveway			
From the south	15 mph	150'	180' (to the intersection)
Congress St. Driveway			
From the east	30 mph	380'	425'
From the west	30 mph	380'	450'

Based on the above information, the sight distances at the existing and the proposed driveways meet or exceed the MDOT sight distance standards.

It is recommended that any planting located within the sight triangle will not exceed three feet in height and shall be maintained. Signage shall be placed where it will not obstruct sight lines.

DeLuca-Hoffman Associates, Inc. has also evaluated the sight distance for the intersection of Congress Street/Gilman Street and the intersection of Congress Street/Weymouth Street. The intersection of Congress Street/Gilman Street southbound approach has a poor sight distance due to vehicles parking on the northerly side of Congress Street adjacent to the intersection. To improve the sight lines, one space should be eliminated to the east of Gilman Street to improve sight lines. At Weymouth Street, existing traffic also has poor sight distance looking to the west due to vehicles parking on the north side of Congress Street close to the Weymouth/Congress Street intersection. These vehicles block the sight line for any vehicles trying to make a left turn out of Weymouth Street. To improve the sight line, DeLuca-Hoffman Associates, Inc. recommends elimination of three parking spaces.

XI. ACCIDENT ANALYSIS

DeLuca-Hoffman Associates, Inc. has based the accident analysis of this study area on data obtained from the MDOT for the period of 1994 to 1996.

In order to evaluate whether a location has an accident problem, MDOT uses two criteria to define High Accident Locations (HAL). Both criteria must be met in order to be classified as an HAL.

1. A critical rate factor of 1.00 or more for a three year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate less than average) and:

2. A minimum of 8 accidents over a three year period.

Computerized accident data summaries were provided by MDOT for the study area. Data for these study area intersections is provided below:

Accident Data 1994-1996			
Intersection	**Number of Accidents**	**CRF**	**HAL**
Park Ave. & St. John St.	46	1.12	Yes
Congress & St. John St.	26	0.56	No
Congress & Valley St.	22	0.73	No
Congress & Gilman St.	6	0.52	No
Congress & Forest St.	6	0.52	No
Congress & Weymouth St.	12	1.33	Yes
Congress & Bramhall St.	22	0.50	No
Link Between Park Avenue & Congress along St. John St.	34	2.31	Yes
Park Avenue & Forest St.	6	0.63	No
Park Avenue & Valley St.	7	0.10	No

The above table shows that two intersections and one link are HALs . The collision diagrams are shown in Appendix C. HALs are discussed below:

Park Avenue and St. John Street - This intersection experienced 46 accidents during the three year study period (1994-1996) and the critical rate factor is 1.12. Eleven rear end, eleven lane-change, and eight left turn side swipe accidents occurred northbound on the St. John Street approach. Four rear end, one lane-change and six angle accidents occurred westbound on Park Avenue. The St. John Street southbound approach has no clear pattern of accidents. The rear end accident for the northbound approach is due to the heavy traffic flow. The rear end collisions are common at signalized intersections. To correct the lane-change accidents, DeLuca-Hoffman Associates, Inc. recommends supplemental striping through the intersections for westbound dual left-turn lanes.

Congress Street & Weymouth Street - This intersect experienced 12 accidents in the three year study period (1994-1996) with a critical rate factor of 1.33. There is no clear pattern of accidents to be corrected. Therefore no mitigation measures are proposed for this location.

Link Between Park Avenue & Congress Street along St. John Street - This link experienced 34 accidents in the three-year study period (1994-1996). The critical rate factor is 2.31. Twenty-three accidents occurred along the portion of the link fronting McDonald's. The most correctable accident pattern is in front of McDonald's driveways. McDonald's recently closed two driveways and created a two-way driveway located approximately 60' south of the previously existing northerly driveway. This change will improve the safety in the area. No further mitigation measures are proposed for this location.

XII. CONCLUSION

DeLuca-Hoffman Associates, Inc. has examined the impact of traffic associated with the proposed Medical office building with attached 420 space parking garage in Portland, Maine..

The following is a summary of the major findings of the traffic study.

1. It is estimated the proposed project will generate 176 and 219 trip ends during the AM and the PM peak hours of adjacent street traffic. These trips would consist of 141 trips in and 35 trips out of the site during the AM peak hour and 59 trips in and 160 trips out of the site during the PM peak hour.
2. All of the trips are expected to be primary trips, i.e. newly generated in the vicinity of the driveways by the development, although most of the practitioners who will be in the office buildings are currently in other office buildings around the campus. In addition, some of the people parking on the street or utilizing the Gateway garage will now park in this new garage.
3. The proposed Congress Street driveway is located approximately 242 feet east of Forest Street. This driveway would have a single entrance lane and a single exit lane. The Forest Street driveway will consist of a right turn in and right turn out only. Forest Street is a one way street in the northbound direction.
4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.
5. The intersection of Congress Street at the proposed driveway meets MDOT guidelines for consideration of left turn lane for left turning traffic from Congress Street into the driveway. Based on the projected left turning volumes, DeLuca-Hoffman Associates, Inc. recommends providing a left turn lane on Congress Street at the site driveway. This will require removal of some parking on the southerly side of Congress Street which will require approval of the City Council.

   DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for left turning traffic from Congress Street onto Forest Street. This location meets criteria for consideration of providing a left-turn treatment. Based on the projected left turning volumes DeLuca-Hoffman Associates, Inc. recommends providing a left turn lane on Congress Street at Forest Street. This will also require removal of some parking on the southerly side of Congress Street.

6. The anticipated stacking lengths at the signalized intersections in the study area exceed some of the available full width storage lengths. However, the proposed development is anticipated to increase the total entering volume at the intersections within the study area by 3%. These changes should not significantly impact the storage lengths. Therefore no mitigation measures are proposed.

7. Park Avenue at St. John Street is a high accident location experiencing 46 accidents. To correct the predominant pattern of lane-change accidents, DeLuca-Hoffman Associates, Inc. recommends supplemental striping through the intersections for westbound dual left turn lanes.

8. DeLuca-Hoffman Associates, Inc. recommends the following improvements to correct existing offsite roadway deficiencies:

   - Optimization of the existing signal system at the following locations (see Figure 7 in Appendix A):
     - St. John Street and Park Avenue.
     - St. John Street and Congress Street.
     - Congress Street and Valley Street.
     - Congress Street and Bramhall.

   - Monitor after development for installation of traffic signal at Park Avenue and Forest Street.

Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system provided left-turn lanes are installed on Congress Street and the existing signal system is optimized.

APPENDIX A

TURNING MOVEMENT DIAGRAMS

LEGEND

- State Route
- Geo Feature
- Town, Small City
- Hospital
- Park
- Interstate, Turnpike
- US Highway
- Population Center
- Street, Road
- Hwy Ramp
- Major Street/Road
- Interstate Highway
- State Route
- US Highway
- Railroad
- Open Water

Scale 1:7,812 (at center)

500 Feet

200 Meters

Portland, Maine
Mag 16.00
Wed Jan 07 09:59:45 1998

DeLORME LOCATION MAP
Maine Medical Center - Portland, Maine

DeLUCA - HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
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FIGURE 7

APPENDIX B

CAPACITY ANALYSES

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	> 1	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes		988	127	26	288		57	0	58	5	3	17
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	1168	320
Potential Capacity: (pcph)	354	953
Movement Capacity: (pcph)	354	953
Prob. of Queue-Free State:	0.80	0.97

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	1239	
Potential Capacity: (pcph)	440	
Movement Capacity: (pcph)	440	
Prob. of Queue-Free State:	0.94	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.92	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1518	1588
Potential Capacity: (pcph)	174	160
Capacity Adjustment Factor due to Impeding Movements	0.92	0.92
Movement Capacity: (pcph)	160	147
Prob. of Queue-Free State:	1.00	0.97

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1528	1550
Potential Capacity: (pcph)	138	134
Major LT, Minor TH Impedance Factor:	0.90	0.92
Adjusted Impedance Factor:	0.92	0.94
Capacity Adjustment Factor due to Impeding Movements	0.89	0.75
Movement Capacity: (pcph)	123	101

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	1168	320
Potential Capacity: (pcph)	354	953
Movement Capacity: (pcph)	354	953
Prob. of Queue-Free State:	0.80	0.97

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	1239	
Potential Capacity: (pcph)	440	
Movement Capacity: (pcph)	440	
Prob. of Queue-Free State:	0.94	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.92	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1518	1588
Potential Capacity: (pcph)	174	160
Capacity Adjustment Factor due to Impeding Movements	0.92	0.92
Movement Capacity: (pcph)	160	147
Prob. of Queue-Free State:	1.00	0.97

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1528	1550
Potential Capacity: (pcph)	138	134
Major LT, Minor TH Impedance Factor:	0.90	0.92
Adjusted Impedance Factor:	0.92	0.94
Capacity Adjustment Factor due to Impeding Movements	0.89	0.75
Movement Capacity: (pcph)	123	101

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	63	123	>					
NB	T	0	160	>	187	56.2	3.9	F	56.2
NB	R	70	354	>					
SB	L	8	101	>					
SB	T	4	147	>	289	14.4	0.4	C	14.4
SB	R	27	953	>					
WB	L	28	440			8.7	0.1	B	0.7

Intersection Delay = 4.5 sec/veh

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Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		494			570		44		39			
PHF		.9			.9		.9		.9			
Grade		2			-3			-1				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							0.95		1.05			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

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Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0 <	0	0	0	0
Stop/Yield			N			N						
Volumes		494			570		44		39			
PHF		.9			.9		.9		.9			
Grade		2			-3			-1				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							0.95		1.05			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	274	
Potential Capacity: (pcph)	1006	
Movement Capacity: (pcph)	1006	
Prob. of Queue-Free State:	0.96	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1182	
Potential Capacity: (pcph)	186	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	186	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	47	186 >					
			309	16.5	1.3	C	16.5
NB R	45	1006 >					

Intersection Delay = 1.2 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		396			578		132		161			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	220	
Potential Capacity: (pcph)	1071	
Movement Capacity: (pcph)	1071	
Prob. of Queue-Free State:	0.82	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1082	
Potential Capacity: (pcph)	215	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	215	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	147	215		46.7	3.9	F	23.3
NB R	197	1071		4.1	0.7	A	

Intersection Delay = 5.4 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	52	1000			313	16						
PHF	.9	.9			.9	.9						
Grade		2			-2							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.40											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		366
Potential Capacity: (pcph)		1147
Movement Capacity: (pcph)		1147
Prob. of Queue-Free State:		0.93
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.80

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	81	1147		3.4	0.1	A	0.2

Intersection Delay = 0.1 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1 < 0		0 > 1		0	0 > 1		< 0	0 > 1		< 0
Stop/Yield			N			N						
Volumes		732	25	42	527		43	0	78	3	5	21
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	827	586
Potential Capacity: (pcph)	528	699
Movement Capacity: (pcph)	528	699
Prob. of Queue-Free State:	0.82	0.95

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	841	
Potential Capacity: (pcph)	681	
Movement Capacity: (pcph)	681	
Prob. of Queue-Free State:	0.93	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.90	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1460	1474
Potential Capacity: (pcph)	187	184
Capacity Adjustment Factor due to Impeding Movements	0.90	0.90
Movement Capacity: (pcph)	168	165
Prob. of Queue-Free State:	1.00	0.95

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1474	1504
Potential Capacity: (pcph)	148	143
Major LT, Minor TH Impedance Factor:	0.86	0.90
Adjusted Impedance Factor:	0.89	0.92
Capacity Adjustment Factor due to Impeding Movements	0.85	0.76
Movement Capacity: (pcph)	126	108

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	48	126	>					
NB	T	0	168	>	256	30.7	3.0	E	30.7
NB	R	96	528	>					
SB	L	4	108	>					
SB	T	8	165	>	335	12.4	0.4	C	12.4
SB	R	32	699	>					
WB	L	45	681			5.7	0.1	B	0.4

Intersection Delay = 2.9 sec/veh

DeLuca-Hoffman Associates, Inc.
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Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		404			1095		194		82			
PHF		.9			.9		.9		.9			
Grade		3			-3			-2				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							0.90		1.00			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	224	
Potential Capacity: (pcph)	1066	
Movement Capacity: (pcph)	1066	
Prob. of Queue-Free State:	0.91	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1666	
Potential Capacity: (pcph)	91	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	91	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	194	91 >					
			129	619.0	21.5	F	619.0
NB R	91	1066 >					

Intersection Delay = 96.3 sec/veh

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Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		341			1233		132		149			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	190	
Potential Capacity: (pcph)	1109	
Movement Capacity: (pcph)	1109	
Prob. of Queue-Free State:	0.83	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1749	
Potential Capacity: (pcph)	81	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	81	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	147	81		492.2	10.6	F	233.3
NB	R	183	1109		3.9	0.6	A	

Intersection Delay = 35.3 sec/veh

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Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR PRE-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	63	753			567	32						
PHF	.9	.9			.9	.9						
Grade		2			-2							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.40											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		666
Potential Capacity: (pcph)		826
Movement Capacity: (pcph)		826
Prob. of Queue-Free State:		0.88
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.77

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	98	826		4.9	0.4	A	0.4

Intersection Delay = 0.2 sec/veh

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	139	356	89	96	468	106	311	268	523	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
LANES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	4	4	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1830	0	1599	3786	0	1404	1796	1805	0	0	0

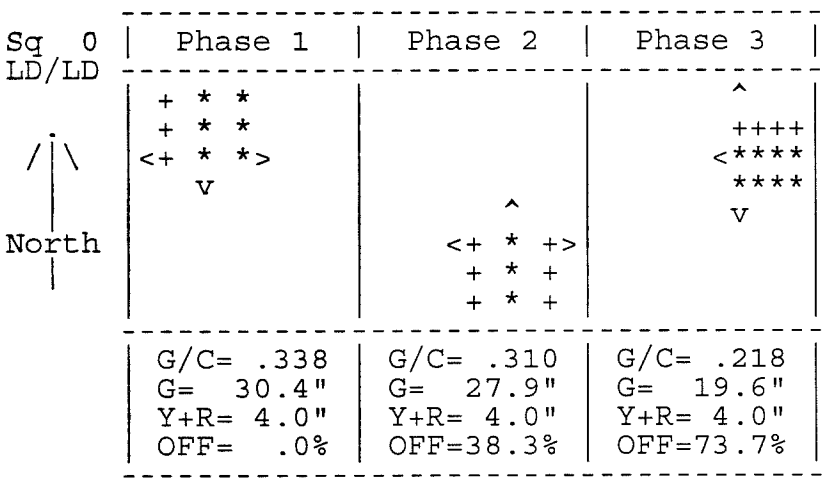
Phasing Parameters

SEQUENCES	-1									
PERMISSIVES	YES	YES	YES	YES				LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES				OFFSET	.00	1
CYCLES	90	90	10					PEDTIME	.0	0
GREENTIMES	30.43	27.92	19.65							
YELLOWTIMES	4.00	4.00	4.00							
CRITICALS	2	8	5							
EXCESS	0									
PHASEMOVEMENTS	1	1	2	3	0	0	0			
PHASEMOVEMENTS	2	7	8	9	0	0	0			
PHASEMOVEMENTS	3	4	5	6	0	0	0			
PHASEMOVEMENTS	4	0	0	0	0	0	0			
PHASEMOVEMENTS	5	0	0	0	0	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

Maine Medical Center in Portland, Maine 12/31/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:25:38
1999 AM PEAK HOUR PRE-DEVELOPMENT : FILE AMNBSTP1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .72 Vehicle Delay 24.4 Level of Service C



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								22.1	C	
RT	10/1	.207	.349	411	526	154	.293	16.2	C+	125 ft
LT+TH	12/1	.342	.349	511	639	495	.775	24.0	*C	409 ft
S Approach								24.1	C	
RT	12/1	.317	.321	354	451	346	.767	24.4	C	320 ft
TH	12/1-	.315	.321	466	577	451	.782	24.0	*C	392 ft
LT	12/1+	.314	.321	443	580	428	.738	24.1	C	363 ft
E Approach								26.9	D+	
RT	12/1	.180	.229	211	364	107	.292	21.9	C	104 ft
LT+TH	26/2	.251	.229	560	869	670	.771	27.7	*D+	328 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	345	67	209	0	71	66	562	0	601	762	417
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
LANES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	3294	0	1390	0	1517	0	3557	0	0	3406	1770

Phasing Parameters

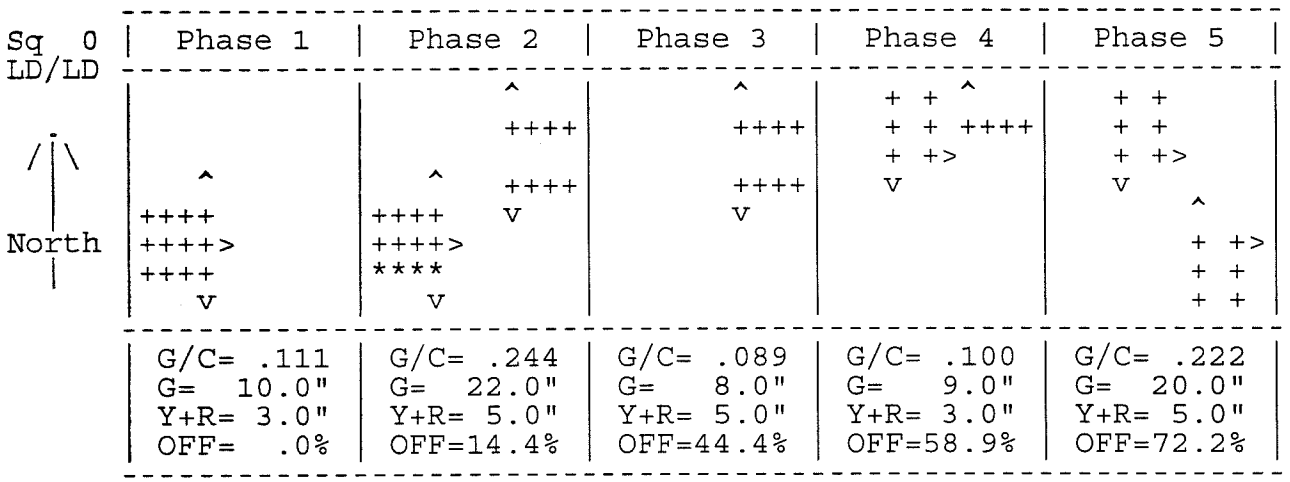
SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	22.00	8.00	9.00	20.00				
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	-4	-6	0		
PHASEMOVEMENTS	3	4	6	0	0	0	0		
PHASEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

M[illegible]ine Medical Center in Portland, Maine
ersection of St. John Street and Congress Street
1999 AM PEAK HOUR PRE-DEVELOPMENT : FILE AMNBSTJ1

12/31/97
17:06:29

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .86 Vehicle Delay 49.6@ Level of Service E+
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								15.6	C+	
LT+TH	24/2	.230	.378	1090	1244	480	.386	15.6	*C+	190 ft
S Approach								28.7	D+	
TH+RT	24/2	.269	.244	615	869	732	.842	28.7	D+	356 ft
E Approach								25.7	D+	
RT	12/1	.256	.244	214	340	232	.682	26.3	D+	220 ft
LT	11/1	.091	.111	130	297	79	.264	23.8	C	87 ft
W Approach								68.7@	F	
TH+RT	23/2	.494	.411	1265	1400	1591	1.136	77.7@	F	594 ft
LT	12/1	.269	.111	1	690	463	.636	37.9	D	521 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	41	279	66	263	145	26	23	852	19
WIDTHS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
ES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1949	0	0	1648	1805	0	3582	0

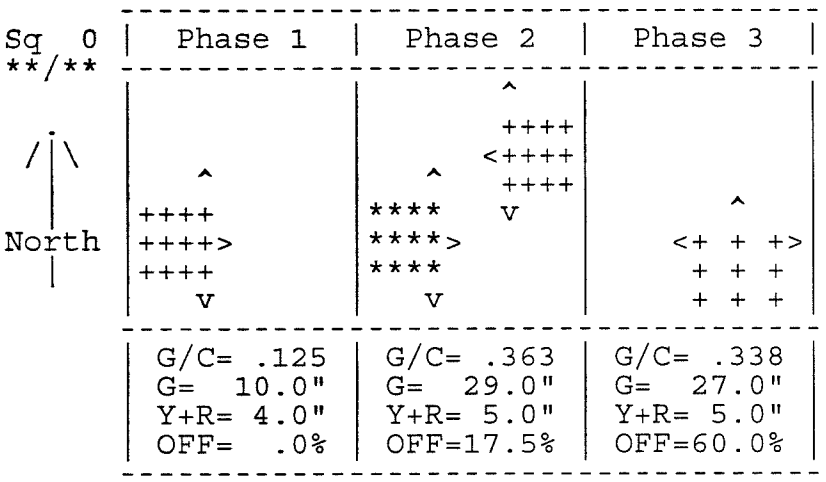
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	NO	NO	YES			LEADLAGS	NONE	NONE
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	60	100	10				PEDTIME	.0	0
GREENTIMES	10.00	29.00	27.00						
YELLOWTIMES	4.00	5.00	5.00						
CRITICALS	8	11	0						
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	12	4	5	6		
PHASEMOVEMENTS	3	7	8	9	0	0	0		
SEMOVEMENTS	4	0	0	0	0	0	0		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 01/06/98
Intersection of Valley Street and Congress Street 12:01:57
1999 AM PEAK HOUR PRE-DEVELOPMENT : FILE AMNBVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .58 Vehicle Delay 11.5 Level of Service B



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								20.4	C	
TH+RT	14/1	.336	.363	502	597	453	.759	20.9	*C	342 ft
LT	12/1	.101	.363	555	654	29	.044	12.6	B	25 ft
E Approach								15.7	C+	
LT+TH+RT	22/2	.290	.387	665	761	450	.591	15.7	C+	156 ft
W Approach								5.5	B+	
LT+TH+RT	22/2	.321	.563	2015	2015	1044	.518	5.5	*B+	257 ft

MAINE MEDICAL CENTER IN PORTLAND, MAINE 01/06/98
INTERSECTIONOF BRAMHAll STREET AND CONGRESS STREET 11:57:25
99 AM PEAK HOUR PRE-DEVELOPMENT :FILE AMNBBRMH

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - BRAMHALL & CONGRESS ST.

METROAREA	NONCBD	
LOSTTIME	3.0	
LEVELOFSERVICE	C	S
NODELOCATION	1000	1000

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	LEFT	NONE	LEFT
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	27	302	63	83	192	51	31	288	119	150	584	69
WIDTHS	.0	11.0	11.0	11.0	11.0	.0	.0	11.0	11.0	11.0	11.0	.0
ES	0	1	1	1	1	0	0	1	1	1	1	0
LIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	4.0	.0	8.0	2.0	8.0	3.0	4.0	2.0	3.0	.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	1778	591	1561	805	0	0	1749	1678	1531	1718	0

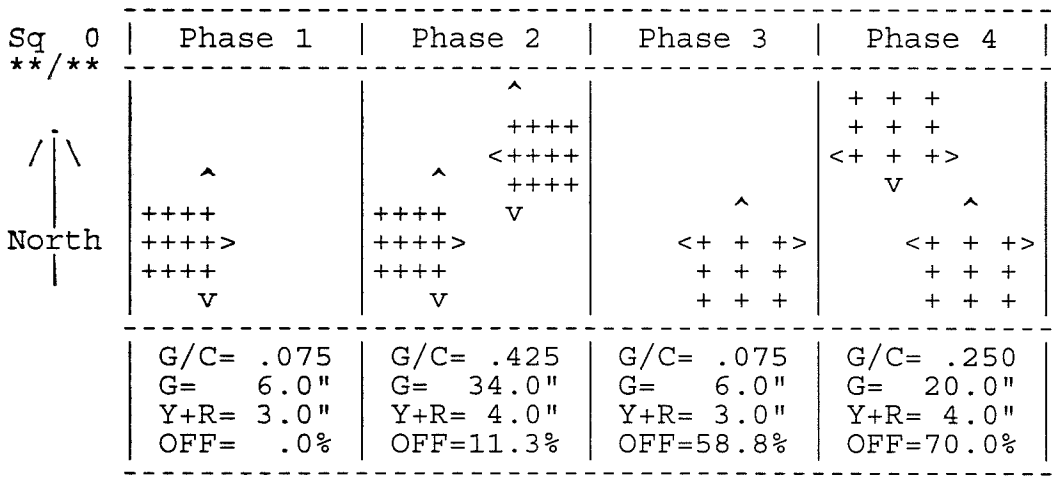
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	NO	YES	NO			LEADLAGS	NONE	NONE
OVERLAPS	NO	NO	NO	YES			OFFSET	.00	1
CYCLES	60	110	10				PEDTIME	.0	0
GREENTIMES	6.00	34.00	6.00	20.00					
YELLOWTIMES	3.00	4.00	3.00	4.00					
CRITICALS	2	8	5	11					
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	4	5	6	10	11	-12		
PHASEMOVEMENTS	3	7	8	9	0	0	0		
SEMOVEMENTS	4	1	2	3	7	8	-9		
SEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

MAINE MEDICAL CENTER IN PORTLAND, MAINE 01/06/98
INTERSECTIONOF BRAMHAll STREET AND CONGRESS STREET 11:57:33
1999 AM PEAK HOUR PRE-DEVELOPMENT :FILE AMNBBRMH

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .64 Vehicle Delay 14.8 Level of Service B



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								22.5	C	
TH+RT	11/1	.256	.262	380	468	366	.782	23.5	*C	303 ft
LT	11/1	.196	.262	107	147	70	.452	17.4	C+	59 ft
S Approach								14.0	B	
TH+RT	11/1	.253	.375	582	656	354	.540	13.4	*B	251 ft
LT	11/1	.050	.075	173	215	132	.611	15.6	C+	94 ft
E Approach								16.7	C+	
RT	11/1	.106	.438	620	683	92	.135	8.7	B+	58 ft
LT+TH	11/1	.407	.438	296	349	270	.774	19.4	*C+	176 ft
W Approach								10.7	B	
RT	11/1	.163	.550	797	842	167	.198	5.9	B+	85 ft
LT+TH	11/1	.457	.550	903	946	726	.767	11.7	*B	369 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	168	250	48	152	990	207	244	417	957	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
ES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	5.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97
ARRIVALTYPES	3	3	3	3	3	3	4	4	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1837	0	1599	3860	0	1404	1790	1805	0	0	0

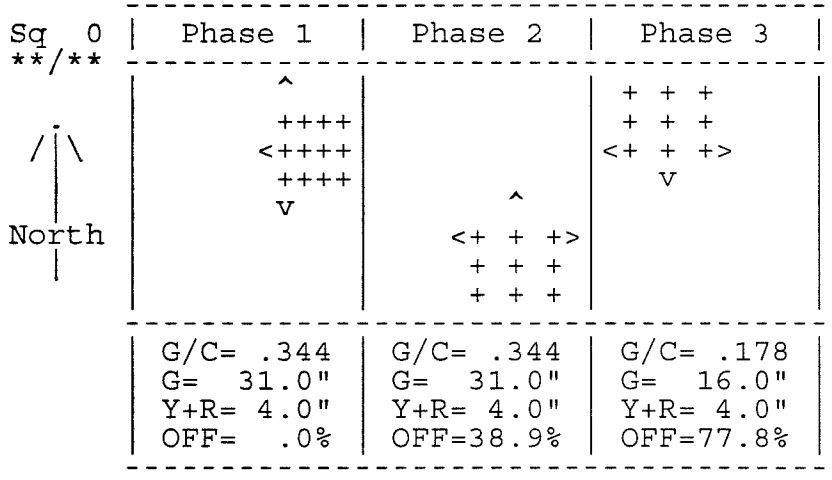
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	NO	YES			LEADLAGS	NONE	NONE
OVERLAPS	NO	YES	YES	YES			OFFSET	.00	1
CYCLES	80	110	10				PEDTIME	.0	0
GREENTIMES	31.00	31.00	16.00						
YELLOWTIMES	4.00	4.00	4.00						
CRITICALS	2	10	0						
EXCESS	0								
PHASEMOVEMENTS	1	4	5	6	0	0	0		
PHASEMOVEMENTS	2	7	8	9	0	0	0		
PHASEMOVEMENTS	3	1	2	3	0	0	0		
SEMOVEMENTS	4	0	0	0	0	0	0		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/31/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:00:18
1999 PM PEAK HOUR PREDEVELOPMENT: FILE PMNBSTP1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .93 Vehicle Delay 39.8@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								37.5	D	
RT	10/1	.217	.189	119	276	173	.607	28.0	D+	175 ft
LT+TH	12/1	.256	.189	148	341	307	.885	42.9	*E+	316 ft
S Approach								49.3@	E+	
RT	12/1	.266	.356	415	499	252	.505	16.8	C+	221 ft
TH	12/1-	.439	.356	543	637	727	1.141	52.6@	E	600 ft
LT	12/1+	.438	.356	517	642	690	1.075	57.7@	E	556 ft
E Approach								29.5	D+	
RT	12/1	.203	.356	451	569	157	.276	15.8	C+	127 ft
LT+TH	26/2	.378	.356	1192	1372	1296	.945	31.2	D+	525 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	342	71	366	0	142	44	868	0	450	577	460
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
ES	0	2	0	1	0	1	0	2	0	0	2	1
LIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2845	0	1390	0	1517	0	3609	0	0	3408	1770

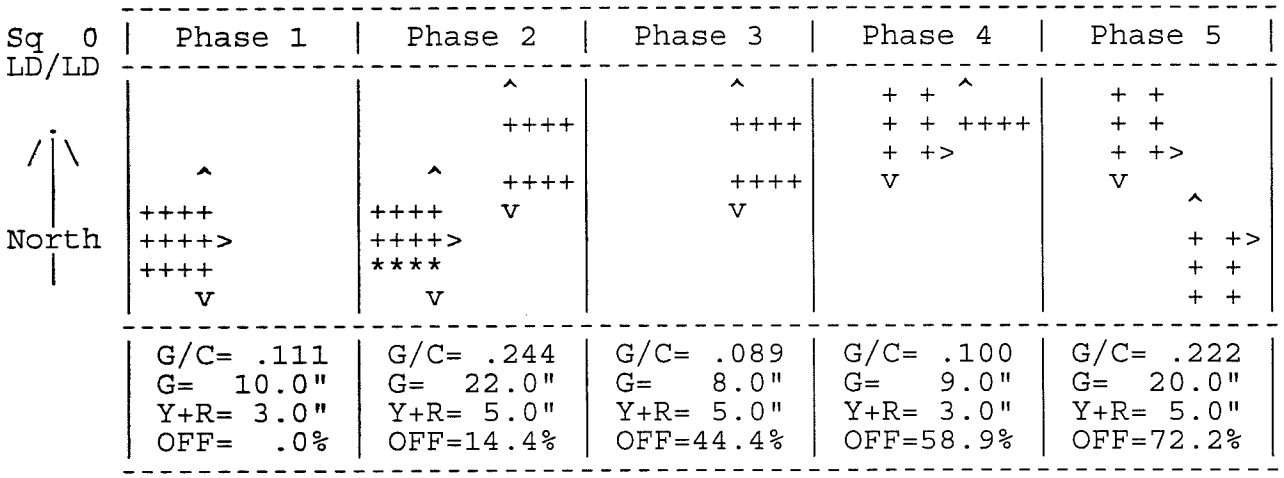
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES				LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES				OFFSET	.00	1
CYCLES	90	120	10					PEDTIME	.0	0
GREENTIMES	10.00	22.00	8.00	9.00	20.00					
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00					
CRITICALS	2	10	0	0	0					
EXCESS	0									
PHASEMOVEMENTS	1	10	11	12	0	0	0			
PHASEMOVEMENTS	2	10	11	-12	-4	-6	0			
PHASEMOVEMENTS	3	4	6	0	0	0	0			
SEMOVEMENTS	4	2	3	4	0	0	0			
HASEMOVEMENTS	5	2	-3	7	8	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

Maine Medical Center in Portland, Maine 12/31/97
Intersection of St. John Street and Congress Street 17:22:25
1999 PM PEAK HOUR PRE-DEVELOPMENT : FILE PMNBSTJ1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .90 Vehicle Delay 49.5@ Level of Service E+
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								16.2	C+	
LT+TH	24/2	.250	.378	930	1075	482	.448	16.2	*C+	190 ft
S Approach								85.0@	F	
TH+RT	24/2	.334	.244	625	882	1064	1.206	85.0@	F	516 ft
E Approach								77.5@	F	
RT	12/1	.354	.244	214	340	407	1.197	98.1@	F	387 ft
LT	11/1	.105	.111	168	298	158	.528	24.4	C	152 ft
W Approach								27.5	D+	
TH+RT	23/2	.394	.411	1266	1401	1198	.855	22.1	C	447 ft
LT	12/1	.284	.111	1	690	511	.702	40.1	E+	575 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	34	447	110	150	126	70	18	606	25
WIDTHS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
LANES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1873	0	0	1692	1805	0	3578	0

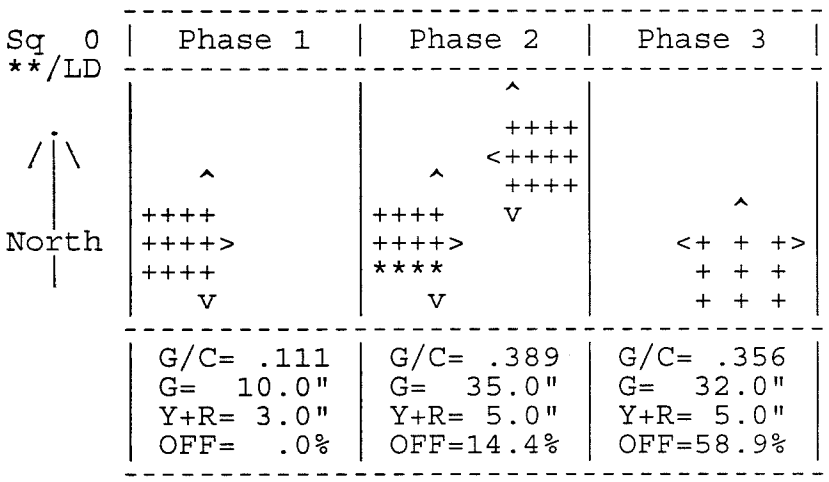
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	YES	YES	YES			LEADLAGS	NONE	LEAD
OVERLAPS	NO	YES	YES	YES			OFFSET	.00	1
CYCLES	90	110	10				PEDTIME	.0	0
GREENTIMES	10.00	35.00	32.00						
YELLOWTIMES	3.00	5.00	5.00						
CRITICALS	2	10	0						
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	12	4	5	6		
PHASEMOVEMENTS	3	7	8	9	0	0	0		
PHASEMOVEMENTS	4	0	0	0	0	0	0		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/31/97
Intersection of Valley Street and Congress Street 17:35:01
1999 PM PEAK HOUR PRE-DEVELOPMENT : FILE PMNBVLL1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .58 Vehicle Delay 16.4 Level of Service C+



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								16.1	C+	
TH+RT	14/1	.269	.378	524	639	307	.480	16.6	C+	253 ft
LT	12/1	.166	.378	564	682	78	.114	13.8	B	61 ft
E Approach								28.2	D+	
LT+TH+RT	22/2	.425	.411	660	770	690	.896	28.2	D+	258 ft
W Approach								5.8	B+	
LT+TH+RT	22/2	.273	.556	1988	1988	757	.381	5.8	B+	213 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - BRAMHALL & CONGRESS ST.

METROAREA	NONCBD	
LOSTTIME	3.0	
LEVELOFSERVICE	C	S
NODELOCATION	1000	1000

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	LEFT	NONE	LEFT
PARKVOLUMES	0	4	0	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	56	0	60

Movement Parameters

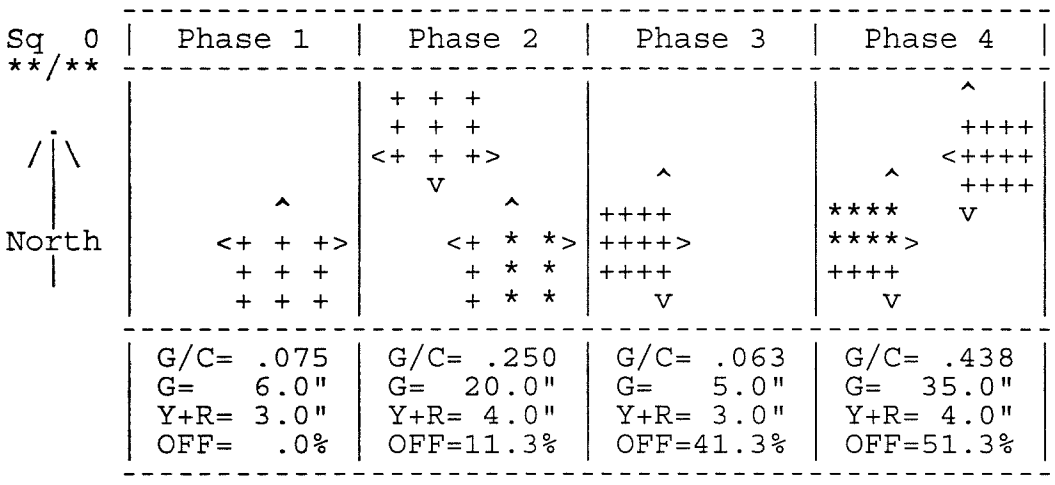
MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	48	247	92	175	411	40	38	438	197	161	559	83
WIDTHS	.0	11.0	11.0	11.0	11.0	.0	.0	11.0	11.0	11.0	11.0	.0
ES	0	1	1	1	1	0	0	1	1	1	1	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	4.0	.0	8.0	2.0	8.0	3.0	4.0	2.0	3.0	.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	1762	336	1561	1146	0	0	1755	1678	1531	1778	0

Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	NONE	NONE
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	80	110	10				PEDTIME	.0	0
GREENTIMES	6.00	20.00	5.00	35.00					
YELLOWTIMES	3.00	4.00	3.00	4.00					
CRITICALS	2	8	5	11					
EXCESS	0								
PHASEMOVEMENTS	1	7	8	9	0	0	0		
PHASEMOVEMENTS	2	1	2	3	7	8	9		
PHASEMOVEMENTS	3	10	11	12	0	0	0		
SEMOVEMENTS	4	4	5	6	10	11	12		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .72 Vehicle Delay 23.6@ Level of Service C
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								49.2@	E+	
TH+RT	11/1	.236	.262	375	463	327	.706	20.6	*C	271 ft
LT	11/1	.412	.262	56	81	102	1.133	140.6@	F	86 ft
S Approach								17.2	C+	
TH+RT	11/1	.346	.375	584	658	529	.804	19.5	*C+	375 ft
LT	11/1	.183	.375	556	629	219	.348	11.8	B	156 ft
E Approach								31.7	D+	
RT	11/1	.135	.450	642	703	132	.188	8.6	B+	81 ft
LT+TH	11/1	.485	.450	458	516	501	.971	37.8	*D	320 ft
W Approach								10.0	B+	
RT	11/1	.123	.550	797	842	112	.133	5.7	B+	57 ft
LT+TH	11/1	.437	.550	935	978	713	.729	10.7	*B	362 ft

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1 < 0		0	> 1	0	0	> 1	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes		1109	127	26	307		57	0	58	5	3	17
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	1302	341
Potential Capacity: (pcph)	303	930
Movement Capacity: (pcph)	303	930
Prob. of Queue-Free State:	0.77	0.97

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	1373	
Potential Capacity: (pcph)	380	
Movement Capacity: (pcph)	380	
Prob. of Queue-Free State:	0.93	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.91	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1672	1743
Potential Capacity: (pcph)	145	133
Capacity Adjustment Factor due to Impeding Movements	0.91	0.91
Movement Capacity: (pcph)	132	121
Prob. of Queue-Free State:	1.00	0.97

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1684	1704
Potential Capacity: (pcph)	112	109
Major LT, Minor TH Impedance Factor:	0.88	0.91
Adjusted Impedance Factor:	0.91	0.93
Capacity Adjustment Factor due to Impeding Movements	0.88	0.71
Movement Capacity: (pcph)	99	78

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	63	99	>					
NB	T	0	132	>	153	94.5	5.0	F	94.5
NB	R	70	303	>					
SB	L	8	78	>					
SB	T	4	121	>	237	18.2	0.6	C	18.2
SB	R	27	930	>					
WB	L	28	380			10.2	0.1	C	0.8

Intersection Delay = 6.8 sec/veh

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778 Main Street
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Ph: (207) 775-1121

Streets: (N-S) PROPOSED SITE DR. (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	> 0	< 0
Stop/Yield			N			N						
Volumes	81	994			329	14				4		20
PHF	.9	.9			.9	.9				.9		.9
Grade		2			-2						-1	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.40									1.05		1.05

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		374
Potential Capacity: (pcph)		895
Movement Capacity: (pcph)		895
Prob. of Queue-Free State:		0.97

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		382
Potential Capacity: (pcph)		1127
Movement Capacity: (pcph)		1127
Prob. of Queue-Free State:		0.89

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)		1568
Potential Capacity: (pcph)		131
Major LT, Minor TH Impedance Factor:		0.89
Adjusted Impedance Factor:		0.89
Capacity Adjustment Factor due to Impeding Movements		0.89
Movement Capacity: (pcph)		116

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB L	4	116 >					
			449	8.5	0.1	B	8.5
SB R	23	895 >					
EB L	126	1127		3.6	0.4	A	0.3

Intersection Delay = 0.3 sec/veh

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Streets: (N-S) FOREST STREET (E-W) SITE DRIVEWAY
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	0	0	0	0	0	0	0	1
Stop/Yield			N			N						
Volumes		68	46									11
PHF		.9	.9									.9
Grade		-3									0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's												1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	102	
Potential Capacity: (pcph)	1229	
Movement Capacity: (pcph)	1229	
Prob. of Queue-Free State:	0.99	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB R	13	1229		3.0	0.0	A	3.0

Intersection Delay = 0.3 sec/veh

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Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		494			570		53		41			
PHF		.9			.9		.9		.9			
Grade		3			-3			-2				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							0.90		1.00			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	274	
Potential Capacity: (pcph)	1006	
Movement Capacity: (pcph)	1006	
Prob. of Queue-Free State:	0.95	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1182	
Potential Capacity: (pcph)	186	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	186	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	53	186 >					
			299	17.9	1.4	C	17.9
NB R	46	1006 >					

Intersection Delay = 1.5 sec/veh

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Ph: (207) 775-1121

Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		396			589		132		161			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	220	
Potential Capacity: (pcph)	1071	
Movement Capacity: (pcph)	1071	
Prob. of Queue-Free State:	0.82	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1094	
Potential Capacity: (pcph)	212	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	212	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	147	212		48.3	3.9	F	24.0
NB R	197	1071		4.1	0.7	A	

Intersection Delay = 5.5 sec/veh

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Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 AM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	92	1081			332	22						
PHF	.9	.9			.9	.9						
Grade		2			-2							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.40											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		393
Potential Capacity: (pcph)		1114
Movement Capacity: (pcph)		1114
Prob. of Queue-Free State:		0.87
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.56

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	143	1114		3.7	0.4	A	0.3

Intersection Delay = 0.2 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	> 0	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes		787	25	42	633		43		78	3	5	21
PHF		.9	.9	.9	.9		.9		.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00		1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	888	703
Potential Capacity: (pcph)	491	610
Movement Capacity: (pcph)	491	610
Prob. of Queue-Free State:	0.80	0.95

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	902	
Potential Capacity: (pcph)	637	
Movement Capacity: (pcph)	637	
Prob. of Queue-Free State:	0.93	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.88	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)		1652
Potential Capacity: (pcph)		148
Capacity Adjustment Factor due to Impeding Movements		0.88
Movement Capacity: (pcph)		130
Prob. of Queue-Free State:		0.94

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1652	1682
Potential Capacity: (pcph)	117	112
Major LT, Minor TH Impedance Factor:	0.83	0.88
Adjusted Impedance Factor:	0.87	0.88
Capacity Adjustment Factor due to Impeding Movements	0.82	0.71
Movement Capacity: (pcph)	96	79

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	48	96	>					
					207	49.6	3.9	F	49.6
NB	R	96	491	>					
SB	L	4	79	>					
SB	T	8	130	>	267	16.1	0.6	C	16.1
SB	R	32	610	>					
WB	L	45	637			6.1	0.1	B	0.4

Intersection Delay = 4.1 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) PROPOSED SITE DR. (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	> 0	< 0
Stop/Yield			N			N						
Volumes	42	750			593	7				18		113
PHF	.9	.9			.9	.9				.9		.9
Grade		2			-2						-1	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.40									1.05		1.05

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		663
Potential Capacity: (pcph)		639
Movement Capacity: (pcph)		639
Prob. of Queue-Free State:		0.79

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		667
Potential Capacity: (pcph)		825
Movement Capacity: (pcph)		825
Prob. of Queue-Free State:		0.92

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)		1543
Potential Capacity: (pcph)		135
Major LT, Minor TH Impedance Factor:		0.92
Adjusted Impedance Factor:		0.92
Capacity Adjustment Factor due to Impeding Movements		0.92
Movement Capacity: (pcph)		124

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB	L	21	124 >					
				407	14.1	1.8	C	14.1
SB	R	132	639 >					
EB	L	66	825		4.7	0.2	A	0.3

Intersection Delay = 1.3 sec/veh

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Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) SITE DRIVEWAY
Major Street Direction.... NS
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	0	0	0	0	0	0	0	1
Stop/Yield			N			N						
Volumes		95	10									29
PHF		.9	.9									.9
Grade		-3									0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's												1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	112	
Potential Capacity: (pcph)	1215	
Movement Capacity: (pcph)	1215	
Prob. of Queue-Free State:	0.97	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB	R	35	1215		3.1	0.0	A	3.1

Intersection Delay = 0.7 sec/veh

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Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		404			1095		219		86			
PHF		.9			.9		.9		.9			
Grade		3			-3			-2				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							0.90		1.00			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	224	
Potential Capacity: (pcph)	1066	
Movement Capacity: (pcph)	1066	
Prob. of Queue-Free State:	0.91	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1666	
Potential Capacity: (pcph)	91	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	91	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	219	91 >					
			126	748.2	25.3	F	748.2
NB R	96	1066 >					

Intersection Delay = 126.5 sec/veh

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Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		341			1277		132		149			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	190	
Potential Capacity: (pcph)	1109	
Movement Capacity: (pcph)	1109	
Prob. of Queue-Free State:	0.83	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1798	
Potential Capacity: (pcph)	75	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	75	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	147	75		562.3	11.1	F	266.2
NB R	183	1109		3.9	0.6	A	

Intersection Delay = 39.4 sec/veh

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778 Main Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1999 PM PEAK HOUR POST-DEVELOPMENT
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	72	795			674	33						
PHF	.9	.9			.9	.9						
Grade		2			-2							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.40											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		786
Potential Capacity: (pcph)		724
Movement Capacity: (pcph)		724
Prob. of Queue-Free State:		0.85
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.68

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	112	724		5.9	0.6	B	0.5

Intersection Delay = 0.3 sec/veh

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		786
Potential Capacity: (pcph)		724
Movement Capacity: (pcph)		724
Prob. of Queue-Free State:		0.85
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.68

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	112	724		5.9	0.6	B	0.5

Intersection Delay = 0.3 sec/veh

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

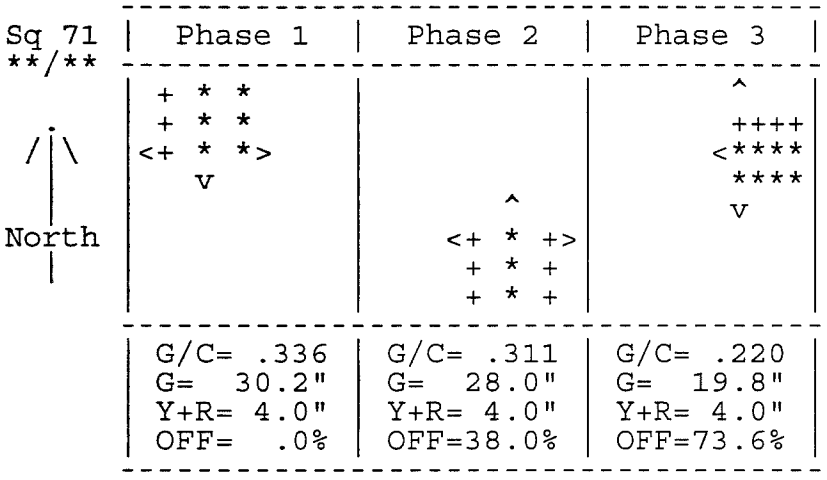
MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	139	380	89	97	477	106	311	270	531	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
ES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	4	4	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1830	0	1599	3788	0	1404	1796	1805	0	0	0

Phasing Parameters

SEQUENCES	71	ALL					
PERMISSIVES	YES	YES	YES	NO	LEADLAGS	NONE	NONE
OVERLAPS	NO	NO	NO	NO	OFFSET	.00	1
CYCLES	90	90	10		PEDTIME	.0	0
GREENTIMES	30.23	27.98	19.79				
YELLOWTIMES	4.00	4.00	4.00				
CRITICALS	2	8	5				
EXCESS	0						

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .73 Vehicle Delay 25.0 Level of Service C



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								23.9	C	
RT	10/1	.207	.347	407	523	154	.294	16.3	C+	126 ft
LT+TH	12/1	.354	.347	507	636	521	.819	26.2	*D+	432 ft
S Approach								24.3	C	
RT	12/1	.317	.322	355	452	346	.765	24.2	C	320 ft
TH	12/1-	.318	.322	467	578	456	.789	24.3	*C	396 ft
LT	12/1+	.317	.322	445	581	434	.747	24.4	C	368 ft
E Approach								27.0	D+	
RT	12/1	.181	.231	214	366	108	.293	21.8	C	104 ft
LT+TH	26/2	.253	.231	569	875	680	.777	27.8	*D+	332 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	345	91	219	0	74	66	562	0	601	814	417
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
LES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	3186	0	1390	0	1517	0	3557	0	0	3416	1770

Phasing Parameters

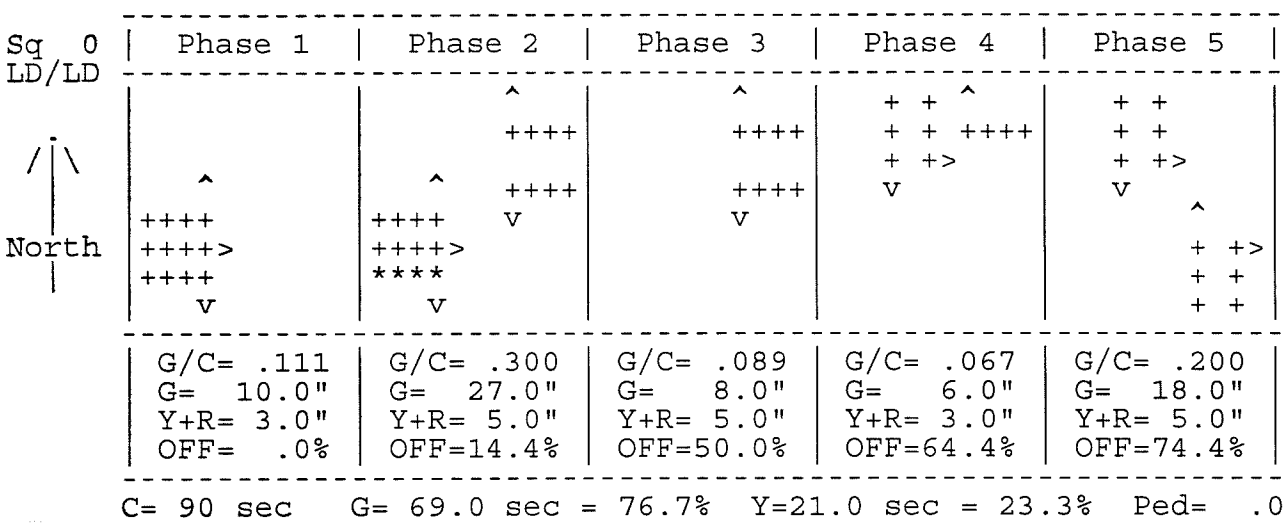
SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	27.00	8.00	6.00	18.00				
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	-4	-6	0		
PHASEMOVEMENTS	3	4	6	0	0	0	0		
PHASEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

ne Medical Center in Portland, Maine
ersection of St. John Street and Congress Street
1999 AM PEAK HOUR POST-DEVELOPMENT :AMSTJH

01/06/98
16:33:45

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .85 Vehicle Delay 37.5 Level of Service D



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								19.0	C+	
LT+TH	24/2	.240	.322	839	1027	508	.495	19.0	*C+	219 ft
S Approach								35.9	D	
TH+RT	24/2	.269	.222	503	790	732	.927	35.9	D	367 ft
E Approach								32.4	D+	
RT	12/1	.262	.211	154	291	243	.829	35.4	D	241 ft
LT	11/1	.090	.111	132	297	82	.274	23.7	C	90 ft
W Approach								43.3	E+	
TH+RT	23/2	.508	.467	1490	1594	1651	1.036	44.9	E+	558 ft
LT	12/1	.268	.111	1	769	463	.561	37.3	D	521 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	75	0

Movement Parameters

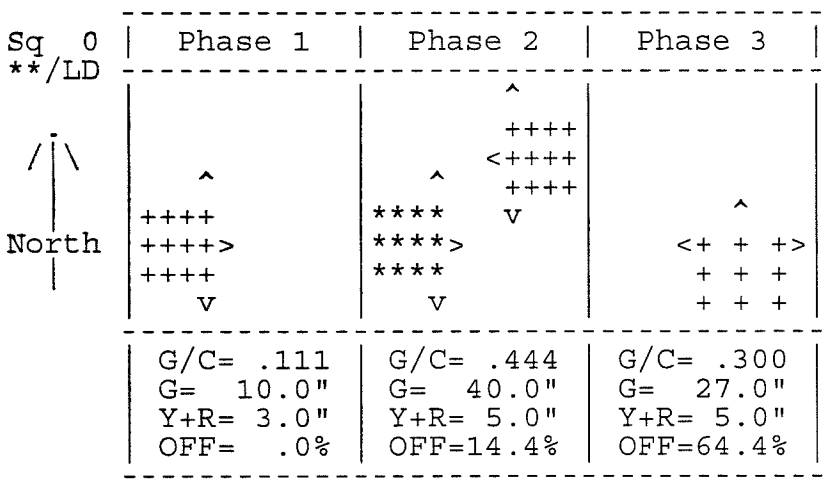
MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	41	292	72	308	145	26	23	928	19
THS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
ES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1879	0	0	1660	1805	0	3584	0

Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	YES	YES	YES				LEADLAGS	NONE	LEAD
OVERLAPS	NO	YES	YES	YES				OFFSET	.00	1
CYCLES	90	100	10					PEDTIME	.0	0
GREENTIMES	10.00	40.00	27.00							
YELLOWTIMES	3.00	5.00	5.00							
CRITICALS	8	11	0							
EXCESS	0									
PHASEMOVEMENTS	1	10	11	12	0	0	0			
PHASEMOVEMENTS	2	10	11	12	4	5	6			
SEMOVEMENTS	3	7	8	9	0	0	0			
SEMOVEMENTS	4	0	0	0	0	0	0			
PHASEMOVEMENTS	5	0	0	0	0	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .57 Vehicle Delay 11.0 Level of Service B



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								25.6	D+	
TH+RT	14/1	.330	.322	405	535	420	.785	26.3	*D+	379 ft
LT	12/1	.152	.322	445	582	29	.050	16.0	C+	25 ft
E Approach								13.4	B	
LT+TH+RT	22/2	.323	.467	793	886	472	.533	13.4	B	160 ft
W Approach								4.3	A	
LT+TH+RT	22/2	.351	.611	2190	2190	1132	.517	4.3	*A	278 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - BRAMHALL & CONGRESS ST.

METROAREA	NONCBD	
LOSTTIME	3.0	
LEVELOFSERVICE	C	S
NODELOCATION	1000	1000

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	LEFT	NONE	LEFT
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

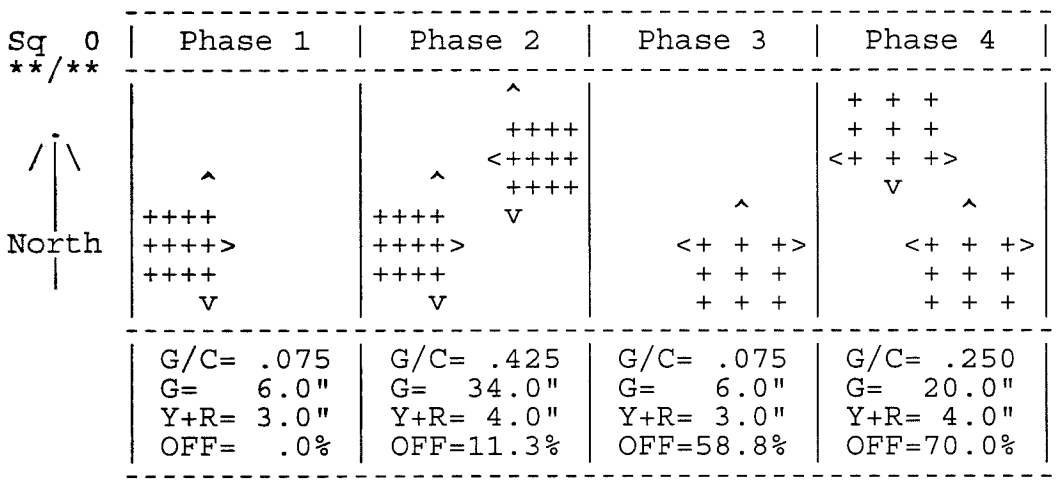
MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	31	302	63	83	203	51	31	288	122	151	586	69
WIDTHS	.0	11.0	11.0	11.0	11.0	.0	.0	11.0	11.0	11.0	11.0	.0
LANES	0	1	1	1	1	0	0	1	1	1	1	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	4.0	.0	8.0	2.0	8.0	3.0	4.0	2.0	3.0	.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	1778	591	1561	805	0	0	1749	1678	1531	1718	0

Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	NO	YES	NO			LEADLAGS	NONE	NONE
OVERLAPS	NO	NO	NO	YES			OFFSET	.00	1
CYCLES	60	110	10				PEDTIME	.0	0
GREENTIMES	6.00	34.00	6.00	20.00					
YELLOWTIMES	3.00	4.00	3.00	4.00					
CRITICALS	2	8	5	11					
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	4	5	6	10	11	-12		
PHASEMOVEMENTS	3	7	8	9	0	0	0		
PHASEMOVEMENTS	4	1	2	3	7	8	-9		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .65 Vehicle Delay 15.2 Level of Service C+



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								22.9	C	
TH+RT	11/1	.258	.262	379	467	370	.792	24.0	*C	306 ft
LT	11/1	.196	.262	107	147	70	.452	17.4	C+	59 ft
S Approach								14.1	B	
TH+RT	11/1	.253	.375	582	656	354	.540	13.4	*B	251 ft
LT	11/1	.053	.075	173	215	136	.630	16.1	C+	97 ft
E Approach								18.1	C+	
RT	11/1	.106	.438	620	683	92	.135	8.7	B+	58 ft
LT+TH	11/1	.418	.438	300	353	283	.802	21.1	*C	184 ft
W Approach								10.7	B	
RT	11/1	.164	.550	797	842	168	.200	5.9	B+	85 ft
LT+TH	11/1	.459	.550	902	945	728	.770	11.8	*B	370 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	17	16	25	0

Movement Parameters

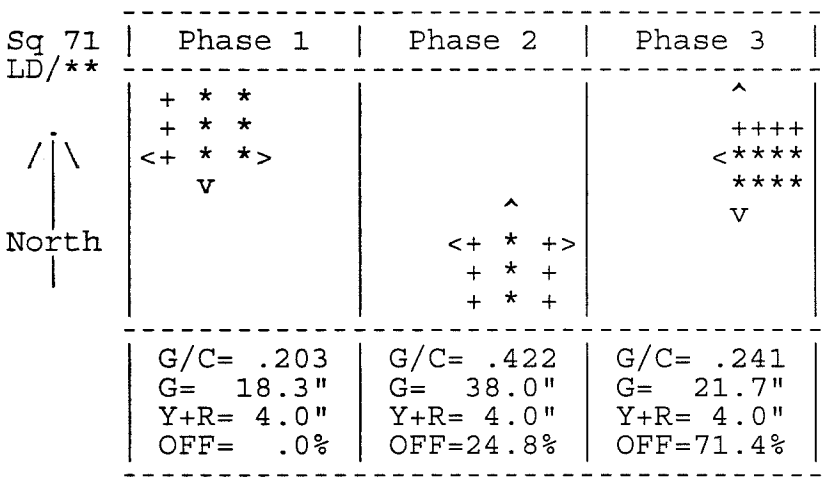
MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	168	260	48	154	1019	207	244	429	1006	0	0	0
THS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
ES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	5.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1837	0	1599	3861	0	1404	1790	1805	0	0	0

Phasing Parameters

SEQUENCES	71	ALL				
PERMISSIVES	YES	YES	YES	NO	LEADLAGS	LEAD NONE
OVERLAPS	NO	NO	NO	NO	OFFSET	.00 1
CYCLES	90	90	10		PEDTIME	.0 0
GREENTIMES	18.30	38.00	21.70			
YELLOWTIMES	4.00	4.00	4.00			
CRITICALS	2	8	5			
EXCESS	0					

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) 1.01 Vehicle Delay 36.7@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								26.7	D+	
RT	10/1	.172	.214	221	322	156	.483	20.9	C	153 ft
LT+TH	12/1	.235	.214	278	394	317	.805	29.6	*D+	316 ft
S Approach								29.1	D+	
RT	12/1	.230	.433	537	609	226	.371	11.3	B	174 ft
TH	12/1-	.463	.433	699	776	758	.977	36.1	*D	550 ft
LT	12/1+	.441	.433	705	782	721	.922	27.3	D+	511 ft
E Approach								48.7@	E+	
RT	12/1	.156	.252	300	403	142	.352	18.1	C+	134 ft
LT+TH	26/2	.372	.252	812	974	1327	1.362	52.0@	*E	623 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	342	81	427	0	157	44	868	0	450	599	460
THS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
ES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2771	0	1390	0	1517	0	3609	0	0	3413	1770

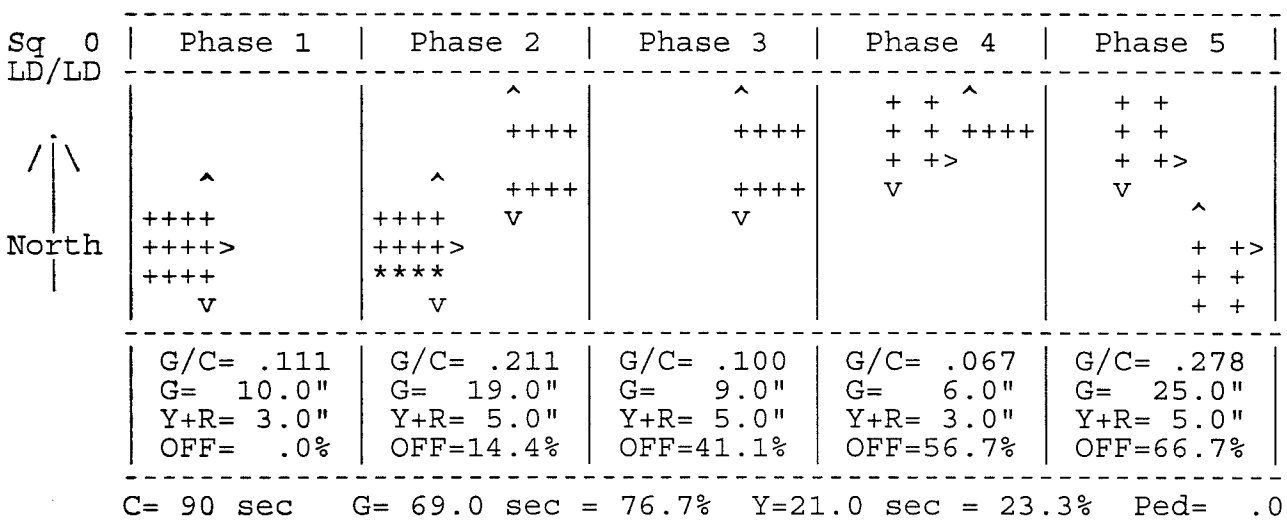
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	19.00	9.00	6.00	25.00				
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	4	-6	0		
SEMOVEMENTS	3	4	6	0	0	0	0		
SEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

ne Medical Center in Portland, Maine 01/06/98
ersection of St. John Street and Congress Street 16:35:40
1999 PM PEAK HOUR POST-DEVELOPMENT:PMBSTJ

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .82 Vehicle Delay 29.9 Level of Service D+



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								15.2	C+	
LT+TH	24/2	.257	.400	976	1108	493	.445	15.2	*C+	188 ft
S Approach								38.2	D	
TH+RT	24/2	.334	.300	899	1083	1064	.982	38.2	D	478 ft
E Approach								15.7	C+	
RT	12/1	.392	.489	637	680	474	.697	12.3	B	305 ft
LT	11/1	.124	.122	171	315	174	.551	25.2	D+	179 ft
W Approach								34.4	D	
TH+RT	23/2	.400	.378	1134	1290	1224	.949	31.4	D+	483 ft
LT	12/1	.285	.111	1	639	511	.764	41.6	E+	575 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

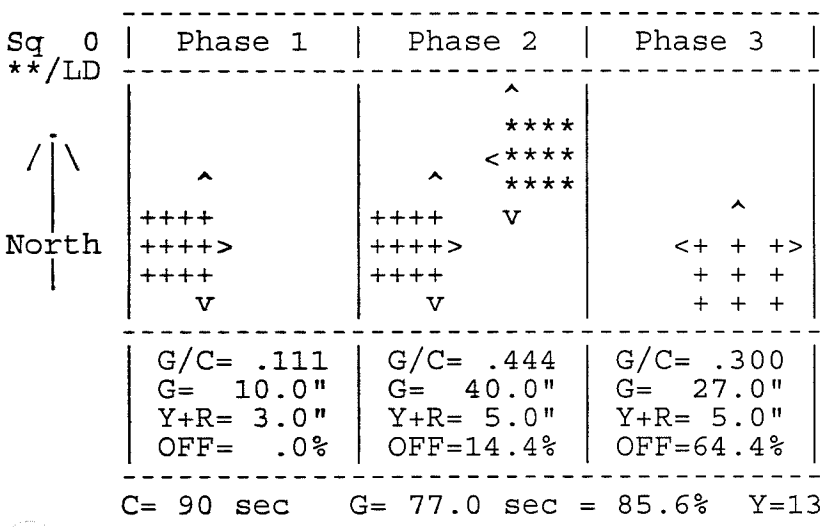
MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	34	523	140	171	126	70	18	641	25
THS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
ES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1773	0	0	1678	1805	0	3580	0

Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	YES	YES	YES			LEADLAGS	NONE	LEAD
OVERLAPS	NO	YES	YES	YES			OFFSET	.00	1
CYCLES	90	90	10				PEDTIME	.0	0
GREENTIMES	10.00	40.00	27.00						
YELLOWTIMES	3.00	5.00	5.00						
CRITICALS	8	5	0						
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	4	5	6	10	11	12		
SEMOVEMENTS	3	7	8	9	0	0	0		
SEMOVEMENTS	4	0	0	0	0	0	0		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .65 Vehicle Delay 21.1 Level of Service C



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	LOS	90% Max Queue
S Approach								20.1	C	
TH+RT	14/1	.282	.322	410	541	330	.610	21.0	*C	297 ft
LT	12/1	.166	.322	445	582	78	.134	16.4	C+	66 ft
E Approach								38.6	D	
LT+TH+RT	22/2	.505	.467	736	827	814	.984	38.6	*D	276 ft
W Approach								3.7	A	
LT+TH+RT	22/2	.282	.611	2188	2188	798	.365	3.7	A	196 ft

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - BRAMHALL & CONGRESS ST.

METROAREA	NONCBD	
LOSTTIME	3.0	
LEVELOFSERVICE	C	S
NODELOCATION	1000	1000

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	4	0	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	56	0	60

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	50	247	92	175	416	40	38	438	198	164	569	83
WIDTHS	.0	11.0	11.0	11.0	11.0	.0	.0	11.0	11.0	11.0	11.0	.0
LANES	0	1	1	1	1	0	0	1	1	1	1	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	4.0	.0	8.0	2.0	8.0	3.0	4.0	2.0	3.0	.0
PEAKHOURFACTORS	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	1761	336	1561	1140	0	0	1755	1678	1531	1779	0

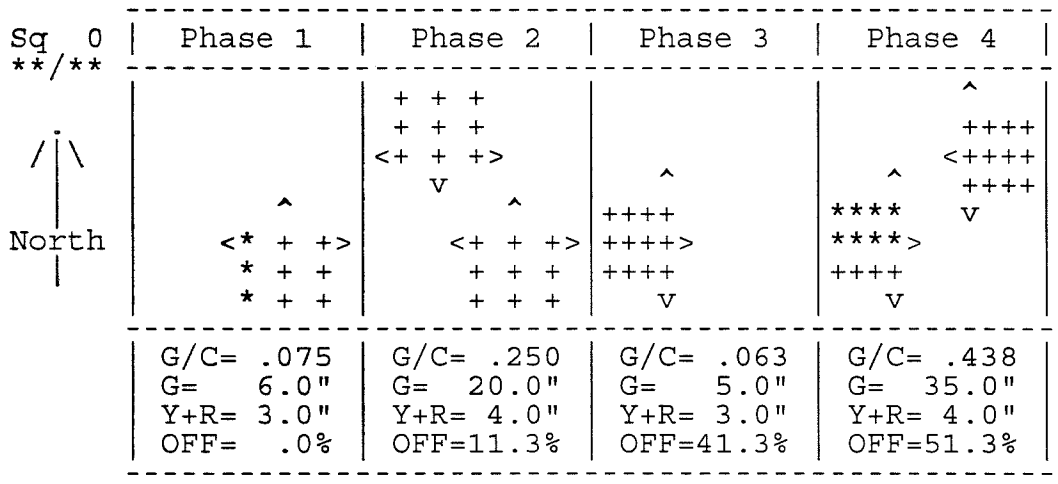
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	NONE	NONE
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	80	90	10				PEDTIME	.0	0
GREENTIMES	6.00	20.00	5.00	35.00					
YELLOWTIMES	3.00	4.00	3.00	4.00					
CRITICALS	9	11	5	11					
EXCESS	0								
PHASEMOVEMENTS	1	7	8	9	0	0	0		
PHASEMOVEMENTS	2	1	2	3	7	8	9		
PHASEMOVEMENTS	3	10	11	12	0	0	0		
PHASEMOVEMENTS	4	4	5	6	10	11	12		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

'NE MEDICAL CENTER IN PORTLAND, MAINE 01/06/98
.ERSECTION OF BRAMHALL STREET AND CONGRESS STREEET 16:43:29
1999 PM PEAK HOUR POSTDEVELOPMENT : FILE PMBBRMHI

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .72 Vehicle Delay 23.4@ Level of Service C
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

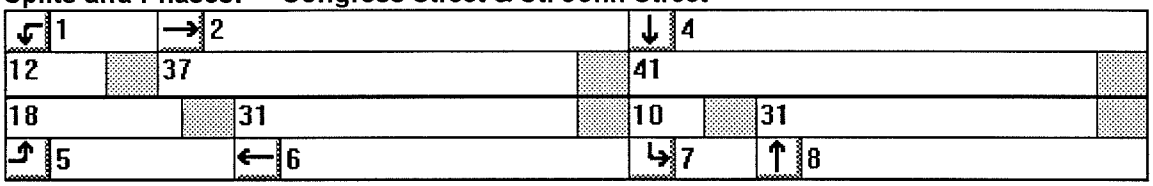
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								47.5@	E+	
TH+RT	11/1	.236	.262	374	462	326	.706	20.6	C	270 ft
LT	11/1	.409	.262	56	81	101	1.122	134.3@	F	85 ft
S Approach								16.9	C+	
TH+RT	11/1	.343	.375	584	658	523	.795	19.0	C+	371 ft
LT	11/1	.183	.375	556	629	218	.347	11.7	*B	155 ft
E Approach								32.4	D+	
RT	11/1	.135	.450	642	703	131	.186	8.5	B+	80 ft
LT+TH	11/1	.486	.450	457	514	501	.975	38.7	*D	320 ft
W Approach								10.1	B	
RT	11/1	.124	.550	797	842	114	.135	5.7	B+	58 ft
LT+TH	11/1	.438	.550	935	978	716	.732	10.8	*B	364 ft

Timings Summary

Cycle Length: 90
Natural Cycle: 90
Control Type: Actuated-Coordinated
Offset: 88 (98%), Referenced to phase 2-EBT and 6-WBT, Start of Green

	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Left Turn Type	P/P		P/P		Perm	P/P	
Phase Number	5	2	1	6	8	7	4
Phase Lagging?	Lead	Lag	Lead	Lag	Lag	Lead	
Can Lead or Lag?							
Maximum Split (s)	18	37	12	31	31	10	41
Maximum Split (%)	20%	41%	13%	34%	34%	11%	46%
Minimum Split (s)	8	20	8	20	20	8	20
Yellow Time (s)	4	4	4	4	4	4	4
Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Splits and Phases: Congress Street & St. John Street

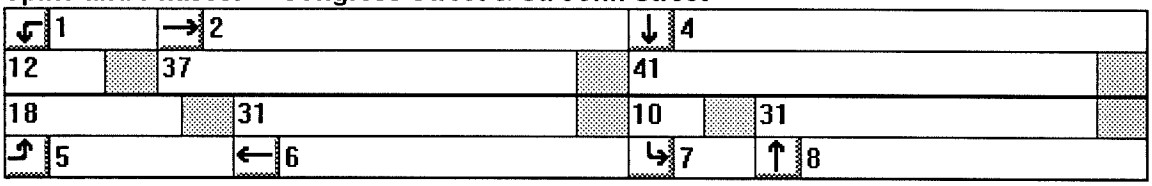


Timing Report, Sorted By Phase

Cycle Length: 90
Control Type: Actuated-Coordinated
Natural Cycle: 90
Offset: 88 (98%), Referenced to phase 2-EBT and 6-WBT, Start of Green

	1	2	4	5	6	7	8
Movement	WBL	EBT	SBT	EBL	WBT	SBL	NBT
Permitted Lefts?		Yes	Yes		Yes		Yes
Phase Lagging?	Lead	Lag		Lead	Lag	Lead	Lag
Can Lead or Lag?							
Recall Mode	None	Coord	None	None	Coord	None	None
Maximum Split (s)	12	37	41	18	31	10	31
Maximum Split (%)	13%	41%	46%	20%	34%	11%	34%
Minimum Split (s)	8	20	20	8	20	8	20
Yellow Time (s)	4	4	4	4	4	4	4
Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Initial (s)	4	4	4	4	4	4	4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		5	5		5		5
Flash Dont Walk (s)		15	15		15		15

Splits and Phases: Congress Street & St. John Street



Volume Worksheet

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	460	599	450	157	0	427	0	868	44	81	342	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	511	666	500	174	0	474	0	964	49	90	380	0
Lane Util. Factor	1.00	1.05	1.05	1.00	1.00	1.00	1.05	1.05	1.05	1.05	1.05	1.05
Lane Group Flow (vph)	511	1224	0	174	0	474	0	1063	0	0	494	0

Lane and Saturated Flow Worksheet

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes	1	2	0	1	0	1	0	2	0	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Shared Lane?	No		Yes	No		No	Yes		Yes	Yes		Yes
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Heavy Vehicles (%)		2%			2%			2%			2%	
Bus Stops (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Frt Protected		0.936				0.850		0.993				
Flt Protected	0.950			0.950							0.990	
Satd. Flow (prot)	1770	3487		1770		1583		3699			3688	
Frt Perm.		0.936				0.850		0.993				
Flt Perm.	0.860			0.143							0.577	
Satd. Flow (perm)	1602	3487		266		1583		3699			2150	

Area Type: Other

Capacity and Level of Service Analysis Summary

Lane Group	EBL	EBT	WBL	WBR	NBT	SBT
Perm or Prot?	Both		Both	Pm+Ov	Perm	Both
Adj Flow (vph)	511	1224	174	474	1063	494
Prot. Satd Flow	1770	3487	1770	1583		3688
Perm. Satd Flow	1602	3487	266	1583	3699	2150
Green Ratio	0.51	0.38	0.41	0.39	0.31	0.42
Lane Grp Cap (vph)	847	1317	260	616	1151	1027
V/C Ratio	0.60	0.93	0.67	0.77	0.92	0.48
Critical LG?		Yes	Yes	Yes	Yes	
Uniform Delay, d1	11.5	20.4	10.0	16.3	22.8	13.2
Actuated G/C Ratio	0.61	0.48	0.51	0.41	0.32	0.32
Actuated V/C Ratio	0.51	0.73	0.61	0.72	0.89	0.71
Percentile Delay	7.6	14.9	10.6	18.7	22.0	18.3
Percentile LOS	B	B	B	C	C	C

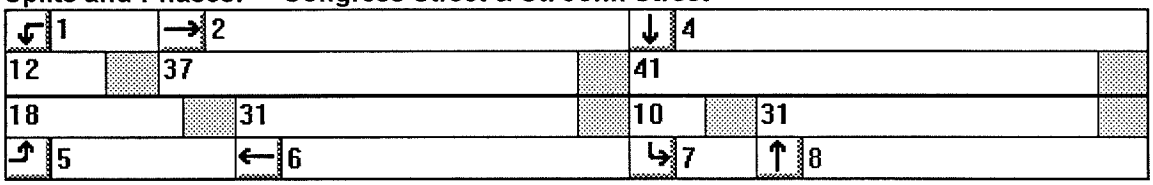
Cycle Length: 90
Lost Time: 12
Sum of Critical V/S Ratios: 0.77
Intersection V/C Ratio: 0.88
Intersection Percentile Delay: 16.6
Intersection Percentile LOS: C

Lanes, Volumes, and Timings Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	460	599	450	157	0	427	0	868	44	81	342	0
Adj Lane Grp Vol.	511	1224	0	174	0	474	0	1063	0	0	494	0
Lanes	1	2	0	1	0	1	0	2	0	0	2	0
Satd Flow (Prot)	1770	3487		1770		1583		3699			3688	
Satd Flow (Perm)	1602	3487		266		1583		3699			2150	
Left Turn Type	P/P			P/P			Perm			P/P		
Right Turn Type			Perm			Pm+Ov			Pm+Ov			Pm+Ov
Phase Number	5	2		1	6			8		7	4	
Phase Lagging?	Lead	Lag		Lead	Lag			Lag		Lead		
Maximum Green (s)	14	33		8	27			27		6	37	
Yellow Time (s)	4	4		4	4			4		4	4	
V/C Ratio	0.60	0.93		0.67		0.77		0.92			0.48	
Actuated V/C Ratio	0.51	0.73		0.61		0.72		0.89			0.71	
Percentile Delay (s)	7.6	14.9		10.6		18.7		22.0			18.3	
Percentile LOS	B	B		B		C		C			C	

Cycle Length: 90
Control Type: Actuated-Coordinated
Offset: 88 (98%), Referenced to phase 2-EBT and 6-WBT, Start of Green
Intersection V/C Ratio: 0.88
Intersection Percentile Delay: 16.6
Intersection Percentile LOS: C

Splits and Phases: Congress Street & St. John Street



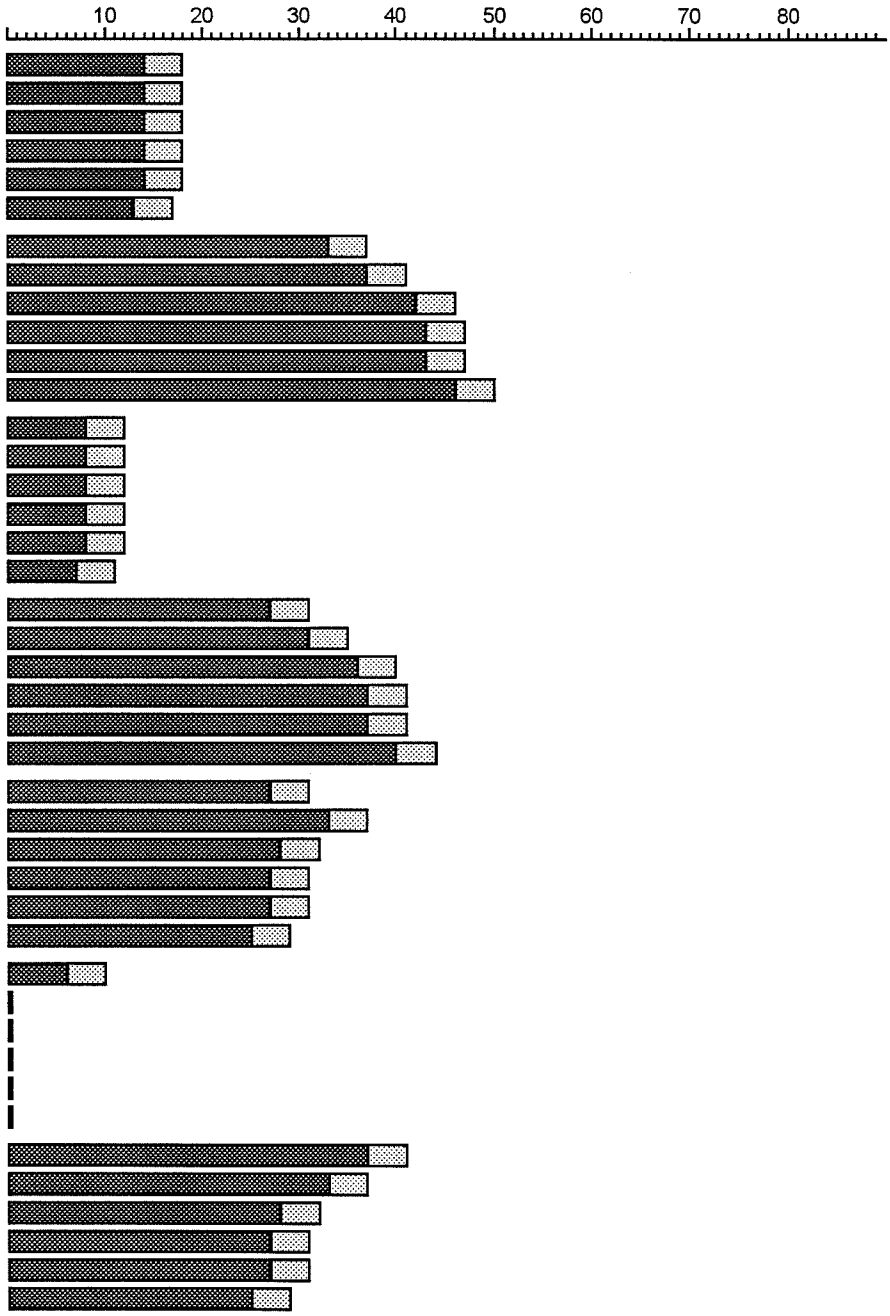
Queue Lengths, and Potential Blocking Problems

Lane Group	EBL	EBT	WBL	WBR	NBT	SBT
Lane Group Volume	511	1224	174	474	1063	494
Queue Length 50% (ft)	169	301	68	257	321	122
Queue Length 95% (ft)	356	#530	#171	#434	#440	175
Link Length (ft)	720	720	240	240	420	720
% of Link Used	49%	74%	71%	181%	105%	24%
Blocks Upstream?				Yes		
Storage Length (ft)	300		250	250		
% of Storage Used	119%		68%	174%		
Fills Storage?	Yes			Yes		
% of Turning Storage		177%			110%	22%
Blocks Turning Storage?		Yes			Yes	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Actuated Signal, Actual Green Times

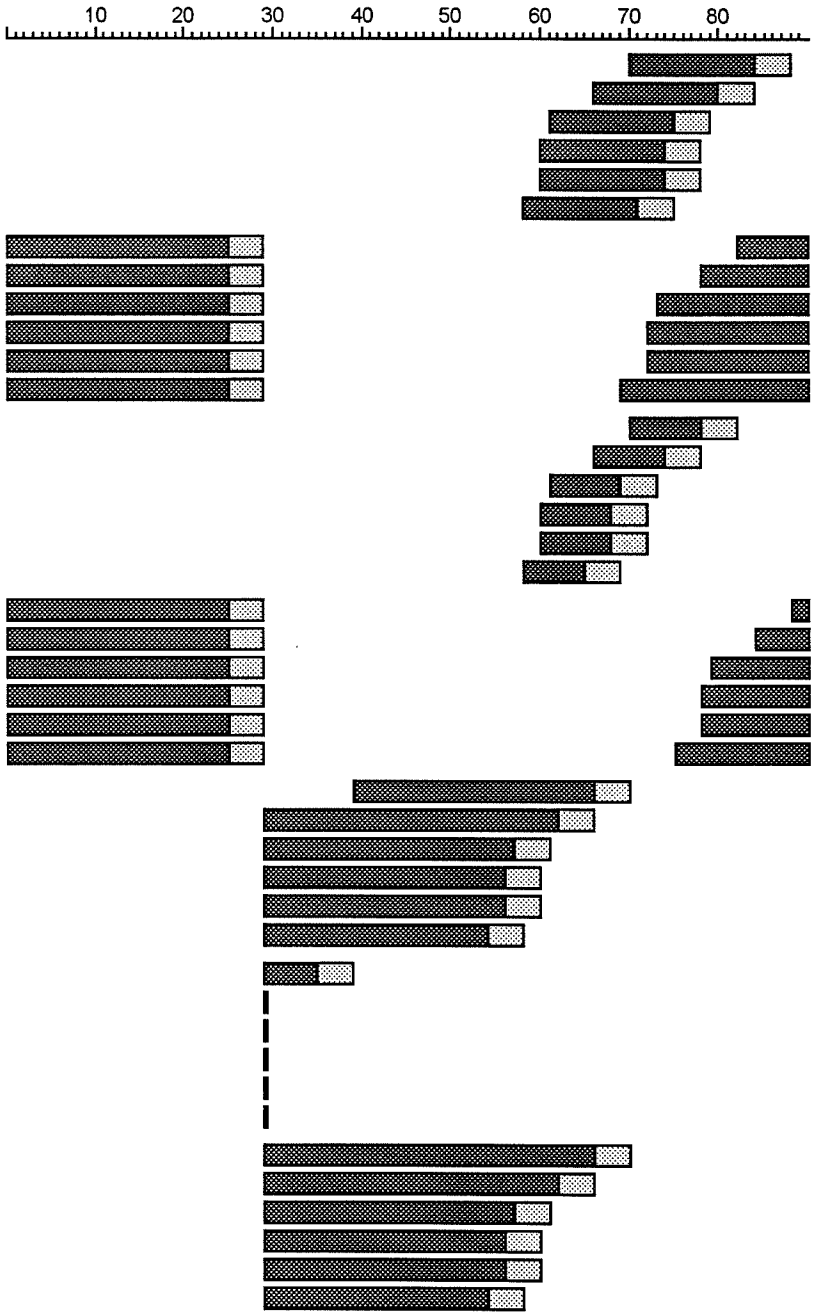
Phase	%ile	Green	Termination
	Max	14	Max
	90	14	Max Out
	70	14	Max Out
	50	14	Max Out
5 EBL	30	14	Max Out
	10	13	Gap Out
	Max	33	Max
	90	37	Coordinated
	70	42	Coordinated
	50	43	Coordinated
2 EBT	30	43	Coordinated
	10	46	Coordinated
	Max	8	Max
	90	8	Max Out
	70	8	Max Out
	50	8	Max Out
1 WBL	30	8	Max Out
	10	7	Gap Out
	Max	27	Max
	90	31	Coordinated
	70	36	Coordinated
	50	37	Coordinated
6 WBT	30	37	Coordinated
	10	40	Coordinated
	Max	27	Max
	90	33	Hold
	70	28	Hold
	50	27	Max Out
8 NBT	30	27	Max Out
	10	25	Gap Out
	Max	6	Max
	90	0	Skip
	70	0	Skip
	50	0	Skip
7 SBL	30	0	Skip
	10	0	Skip
	Max	37	Max
	90	33	Gap Out
	70	28	Gap Out
	50	27	Hold
4 SBT	30	27	Hold
	10	25	Hold



Cycle Length: 90

Actuated Signal, Actual Green Times and Starts

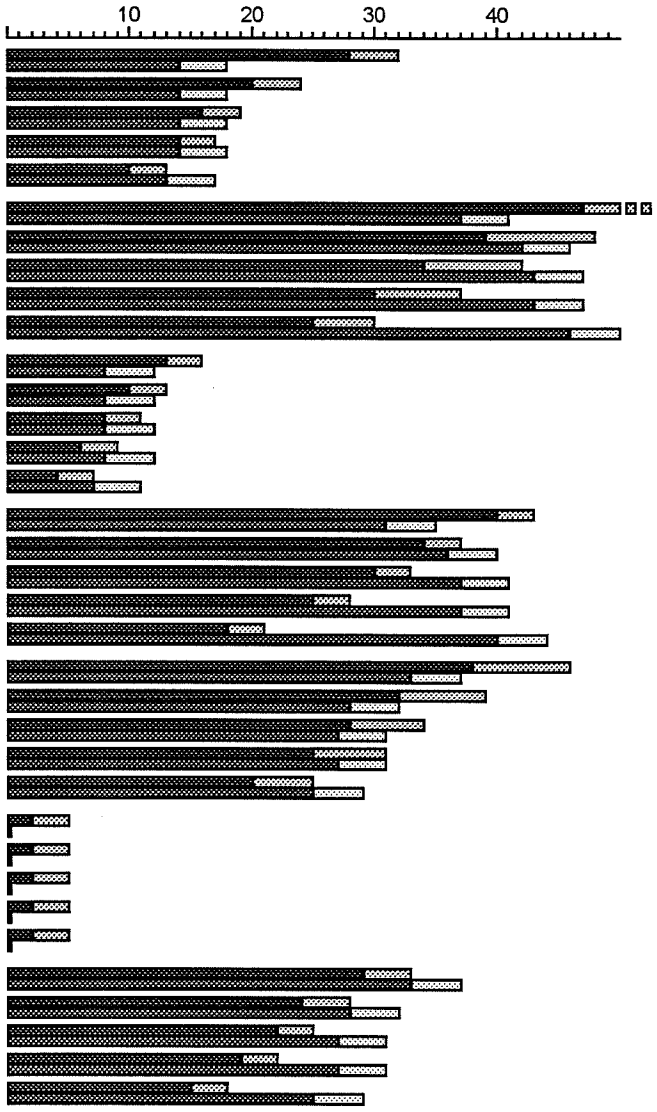
Phase	%ile	Green	Start	Termination
5 EBL	Max	14		Max
	90	14	66	Max Out
	70	14	61	Max Out
	50	14	60	Max Out
	30	14	60	Max Out
	10	13	58	Gap Out
2 EBT	Max	33		Max
	90	37	78	Coordinated
	70	42	73	Coordinated
	50	43	72	Coordinated
	30	43	72	Coordinated
	10	46	69	Coordinated
1 WBL	Max	8		Max
	90	8	66	Max Out
	70	8	61	Max Out
	50	8	60	Max Out
	30	8	60	Max Out
	10	7	58	Gap Out
6 WBT	Max	27		Max
	90	31	84	Coordinated
	70	36	79	Coordinated
	50	37	78	Coordinated
	30	37	78	Coordinated
	10	40	75	Coordinated
8 NBT	Max	27		Max
	90	33	29	Hold
	70	28	29	Hold
	50	27	29	Max Out
	30	27	29	Max Out
	10	25	29	Gap Out
7 SBL	Max	6		Max
	90	0	29	Skip
	70	0	29	Skip
	50	0	29	Skip
	30	0	29	Skip
	10	0	29	Skip
4 SBT	Max	37		Max
	90	33	29	Gap Out
	70	28	29	Gap Out
	50	27	29	Hold
	30	27	29	Hold
	10	25	29	Hold



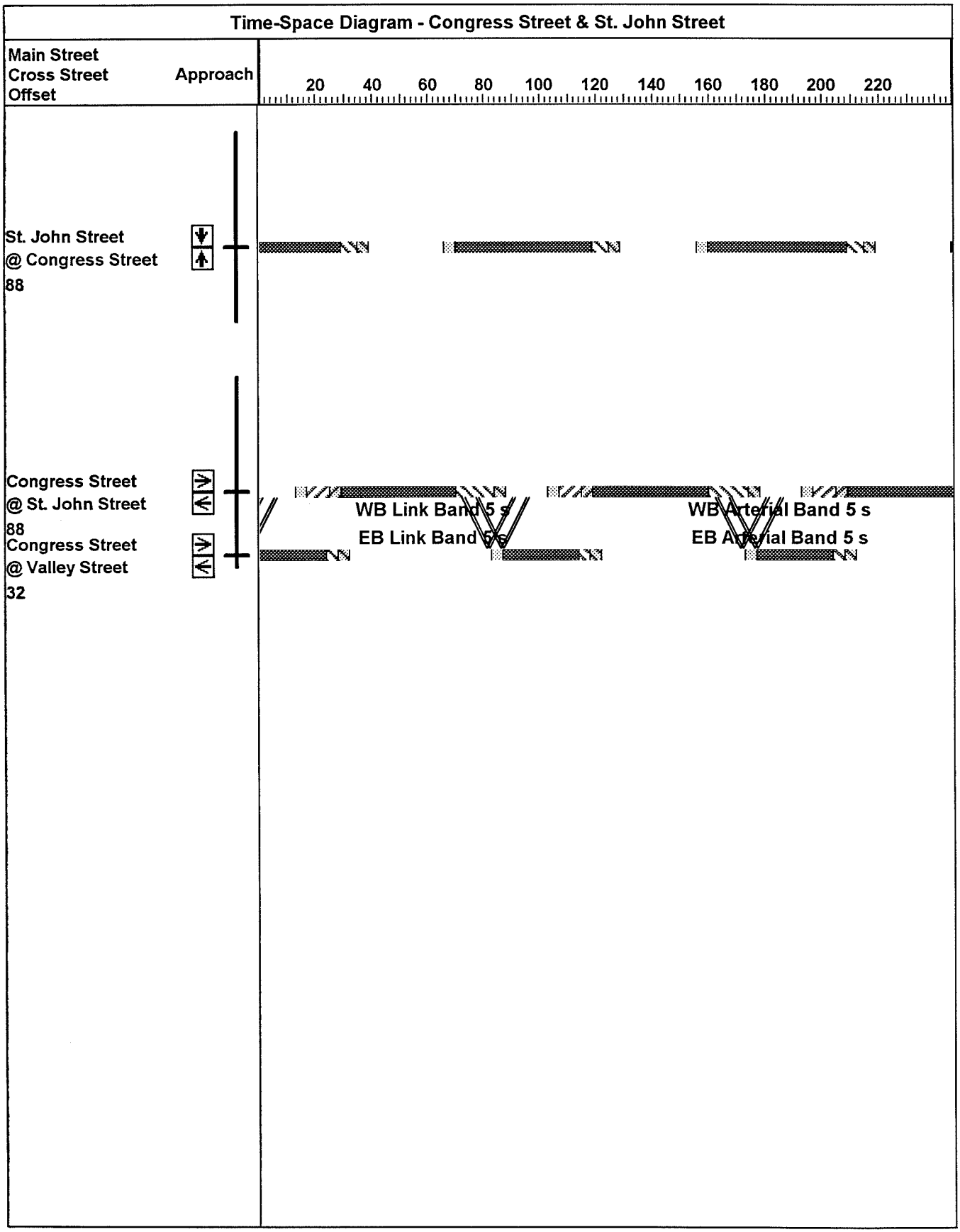
Cycle Length: 90

Actuated Signal, Phase Details

Phase	%ile	Queue	Gap-Out	Green	Termination
	90	28	4	14	Max Out
	70	20	4	14	Max Out
	50	16	3	14	Max Out
5 EBL	30	14	3	14	Max Out
	10	10	3	13	Gap Out
	90	47	10	37	Coordinated
	70	39	9	42	Coordinated
	50	34	8	43	Coordinated
2 EBT	30	30	7	43	Coordinated
	10	25	5	46	Coordinated
	90	13	3	8	Max Out
	70	10	3	8	Max Out
	50	8	3	8	Max Out
1 WBL	30	6	3	8	Max Out
	10	4	3	7	Gap Out
	90	40	3	31	Coordinated
	70	34	3	36	Coordinated
	50	30	3	37	Coordinated
6 WBT	30	25	3	37	Coordinated
	10	18	3	40	Coordinated
	90	38	8	33	Hold
	70	32	7	28	Hold
	50	28	6	27	Max Out
8 NBT	30	25	6	27	Max Out
	10	20	5	25	Gap Out
	90	2	3	0	Skip
	70	2	3	0	Skip
	50	2	3	0	Skip
7 SBL	30	2	3	0	Skip
	10	2	3	0	Skip
	90	29	4	33	Gap Out
	70	24	4	28	Gap Out
	50	22	3	27	Hold
4 SBT	30	19	3	27	Hold
	10	15	3	25	Hold



Cycle Length: 90



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January 7, 1998

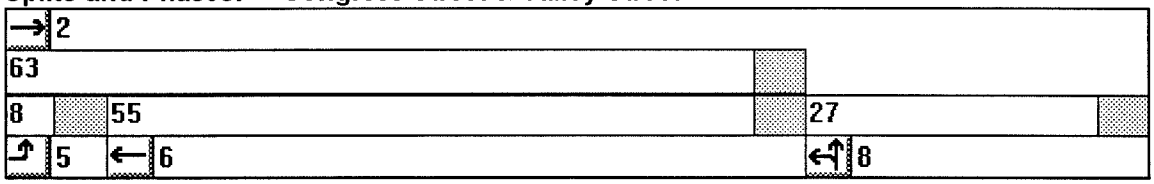
Arterial and Link-Link Bandwidths, Maximum Green Times

Timings Summary

Cycle Length: 90
Natural Cycle: 90
Control Type: Actuated-Coordinated
Offset: 32 (36%), Referenced to phase 2-EBT and 6-WBT, Start of Green

	EBL	EBT	WBT	NBT
Left Turn Type	P/P		Perm	Split
Phase Number	5	2	6	8
Phase Lagging?	Lead		Lag	
Can Lead or Lag?				
Maximum Split (s)	8	63	55	27
Maximum Split (%)	9%	70%	61%	30%
Minimum Split (s)	8	20	20	20
Yellow Time (s)	4	4	4	4
Lost Time (s)	3.0	3.0	3.0	3.0

Splits and Phases: Congress Street & Valley Street

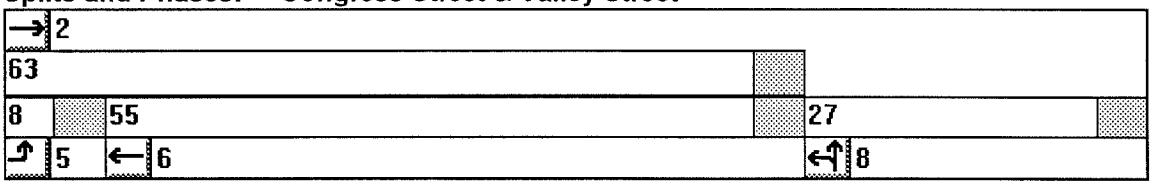


Timing Report, Sorted By Phase

Cycle Length: 90
Control Type: Actuated-Coordinated
Natural Cycle: 90
Offset: 32 (36%), Referenced to phase 2-EBT and 6-WBT, Start of Green

	2	5	6	8
Movement	EBT	EBL	WBT	NBTL
Permitted Lefts?	Yes		Yes	
Phase Lagging?		Lead	Lag	
Can Lead or Lag?				
Recall Mode	Coord	None	Coord	None
Maximum Split (s)	63	8	55	27
Maximum Split (%)	70%	9%	61%	30%
Minimum Split (s)	20	8	20	20
Yellow Time (s)	4	4	4	4
Lost Time (s)	3.0	3.0	3.0	3.0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5		5	5
Flash Dont Walk (s)	15		15	15

Splits and Phases: Congress Street & Valley Street



Volume Worksheet

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	25	641	18	140	523	34	70	126	171	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	712	20	156	581	38	78	140	190	0	0	0
Lane Util. Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Lane Group Flow (vph)	0	798	0	0	814	0	78	330	0	0	0	0

Lane and Saturated Flow Worksheet

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes	0	2	0	0	2	0	1	1	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Shared Lane?	Yes		Yes	Yes		Yes	No		Yes	Yes		Yes
Lane Width (ft)	12	11	12	12	11	12	12	14	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Heavy Vehicles (%)		2%			2%			2%			2%	
Bus Stops (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Frt Protected		0.996			0.993			0.914				
Flt Protected		0.998			0.990		0.950					
Satd. Flow (prot)		3580			3540		1770	1816				
Frt Perm.		0.996			0.993			0.914				
Flt Perm.		0.805			0.535		0.950					
Satd. Flow (perm)		2887			1913		1770	1816				

Area Type: Other

Capacity and Level of Service Analysis Summary

Lane Group	EBT	WBT	NBL	NBT
Perm or Prot?	Both	Perm	NA	
Adj Flow (vph)	798	814	78	330
Prot. Satd Flow	3580		1770	1816
Perm. Satd Flow	2887	1913		
Green Ratio	0.67	0.58	0.27	0.27
Lane Grp Cap (vph)	1963	1105	472	484
V/C Ratio	0.41	0.93dl	0.17	0.68
Critical LG?	Yes	Yes		Yes
Uniform Delay, d1	5.0	10.6	19.2	22.5
Actuated G/C Ratio	0.70	0.70	0.23	0.23
Actuated V/C Ratio	0.39	0.61	0.19	0.79
Percentile Delay	11.3	6.0	20.7	24.5
Percentile LOS	B	B	C	C

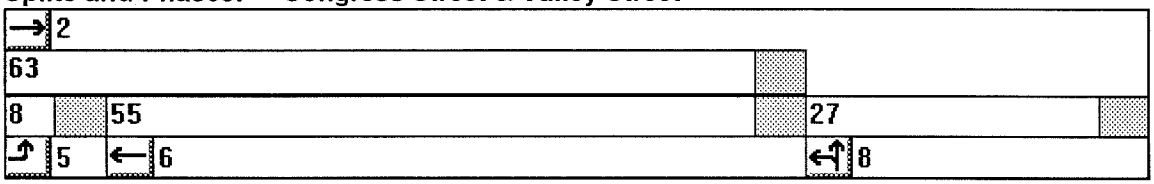
Cycle Length: 90
Lost Time: 9
Sum of Critical V/S Ratios: 0.63
Intersection V/C Ratio: 0.70
Intersection Percentile Delay: 11.7
Intersection Percentile LOS: B
dl: Defacto Left Lane. Recode with 1 though lane as a left lane.

Lanes, Volumes, and Timings Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	25	641	18	140	523	34	70	126	171	0	0	0
Adj Lane Grp Vol.	0	798	0	0	814	0	78	330	0	0	0	0
Lanes	0	2	0	0	2	0	1	1	0	0	0	0
Satd Flow (Prot)		3580			3540		1770	1816				
Satd Flow (Perm)		2887			1913		1770	1816				
Left Turn Type	P/P			Perm			Split			Split		
Right Turn Type			Pm+Ov			Perm			Perm			Pm+Ov
Phase Number	5	2			6		8	8				
Phase Lagging?	Lead				Lag							
Maximum Green (s)	4	59			51		23	23				
Yellow Time (s)	4	4			4		4	4				
V/C Ratio		0.41			0.93dl		0.17	0.68				
Actuated V/C Ratio		0.39			0.61		0.19	0.79				
Percentile Delay (s)		11.3			6.0		20.7	24.5				
Percentile LOS		B			B		C	C				

Cycle Length: 90
Control Type: Actuated-Coordinated
Offset: 32 (36%), Referenced to phase 2-EBT and 6-WBT, Start of Green
Intersection V/C Ratio: 0.70
Intersection Percentile Delay: 11.7
Intersection Percentile LOS: B
dl: Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: Congress Street & Valley Street



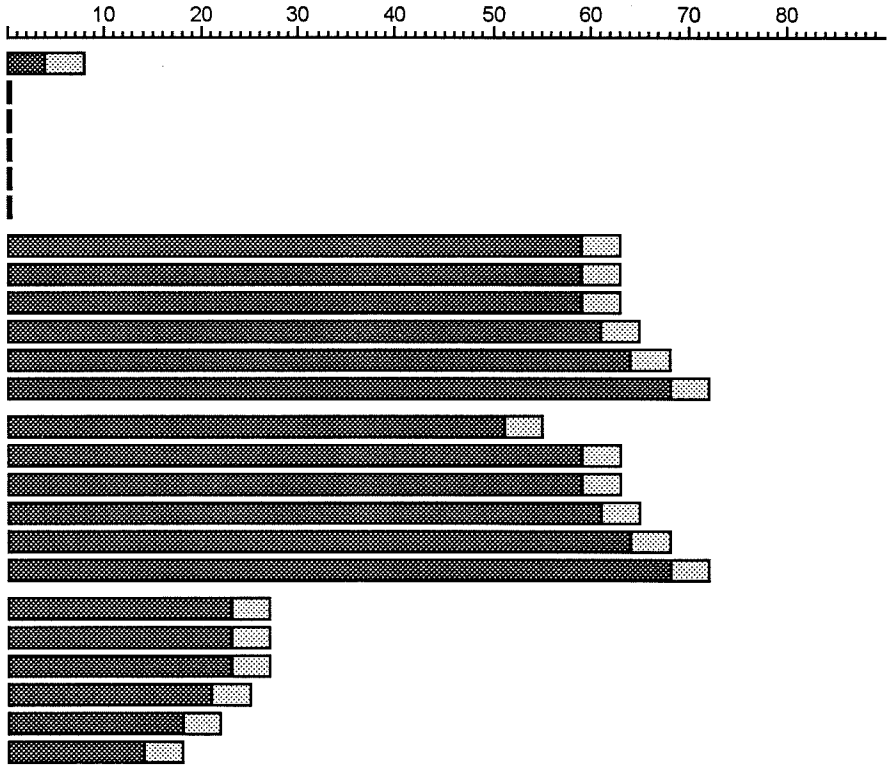
Queue Lengths, and Potential Blocking Problems

Lane Group	EBT	WBT	NBL	NBT
Lane Group Volume	798	814	78	330
Queue Length 50% (ft)	187	136	39	191
Queue Length 95% (ft)	307	275	86	#345
Link Length (ft)	240	420	620	620
% of Link Used	128%	65%	14%	56%
Blocks Upstream?				
Storage Length (ft)			100	
% of Storage Used			86%	
Fills Storage?				
% of Turning Storage	123%	153%		345%
Blocks Turning Storage?	Yes	Yes		Yes

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Actuated Signal, Actual Green Times

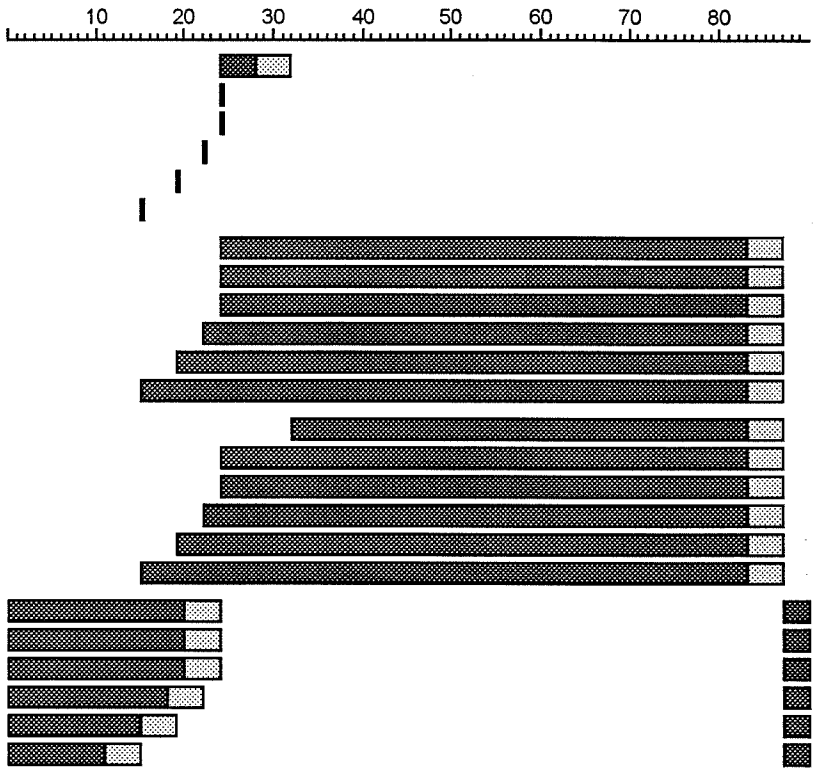
Phase	%ile	Green	Termination
	Max	4	Max
	90	0	Skip
	70	0	Skip
	50	0	Skip
5 EBL	30	0	Skip
	10	0	Skip
	Max	59	Max
	90	59	Coordinated
	70	59	Coordinated
	50	61	Coordinated
2 EBT	30	64	Coordinated
	10	68	Coordinated
	Max	51	Max
	90	59	Coordinated
	70	59	Coordinated
	50	61	Coordinated
6 WBT	30	64	Coordinated
	10	68	Coordinated
	Max	23	Max
	90	23	Max Out
	70	23	Max Out
	50	21	Gap Out
8 NBT	30	18	Gap Out
	10	14	Gap Out



Cycle Length: 90

Actuated Signal, Actual Green Times and Starts

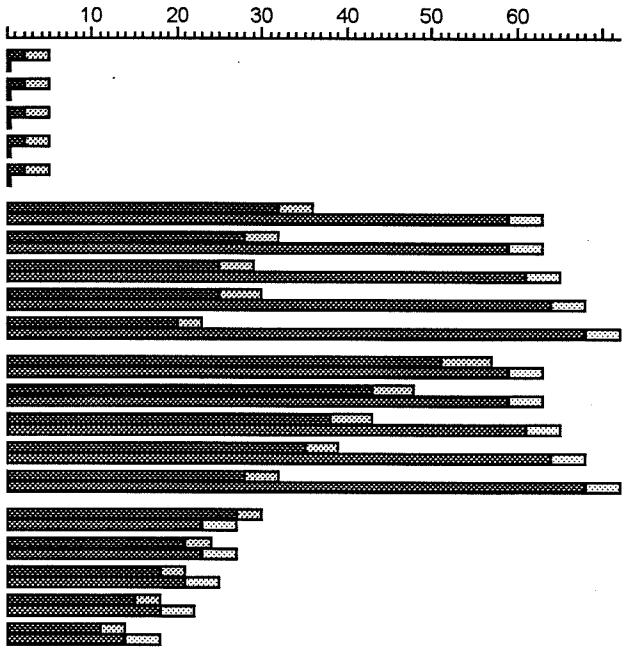
Phase	%ile	Green	Start	Termination
	Max	4		Max
	90	0	24	Skip
	70	0	24	Skip
	50	0	22	Skip
5 EBL	30	0	19	Skip
	10	0	15	Skip
	Max	59		Max
	90	59	24	Coordinated
	70	59	24	Coordinated
	50	61	22	Coordinated
2 EBT	30	64	19	Coordinated
	10	68	15	Coordinated
	Max	51		Max
	90	59	24	Coordinated
	70	59	24	Coordinated
	50	61	22	Coordinated
6 WBT	30	64	19	Coordinated
	10	68	15	Coordinated
	Max	23		Max
	90	23	87	Max Out
	70	23	87	Max Out
	50	21	87	Gap Out
8 NBT	30	18	87	Gap Out
	10	14	87	Gap Out



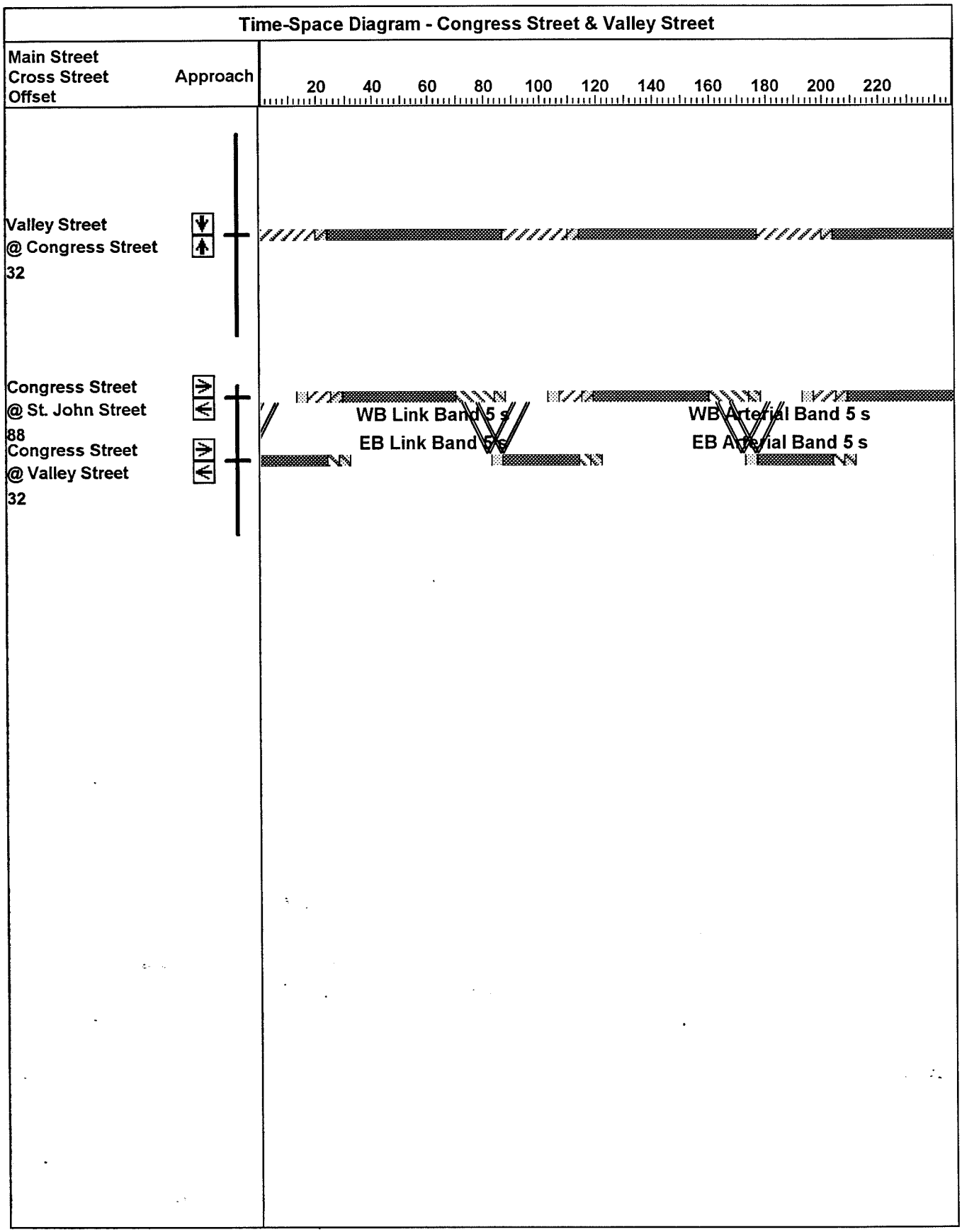
Cycle Length: 90

Actuated Signal, Phase Details

Phase	%ile	Queue	Gap-Out	Green	Termination
	90	2	3	0	Skip
	70	2	3	0	Skip
	50	2	3	0	Skip
5 EBL	30	2	3	0	Skip
	10	2	3	0	Skip
	90	32	4	59	Coordinated
	70	28	4	59	Coordinated
	50	25	4	61	Coordinated
2 EBT	30	25	5	64	Coordinated
	10	20	3	68	Coordinated
	90	51	6	59	Coordinated
	70	43	5	59	Coordinated
	50	38	5	61	Coordinated
6 WBT	30	35	4	64	Coordinated
	10	28	4	68	Coordinated
	90	27	3	23	Max Out
	70	21	3	23	Max Out
	50	18	3	21	Gap Out
8 NBT	30	15	3	18	Gap Out
	10	11	3	14	Gap Out



Cycle Length: 90



A:\PMBSTJV.SY5 January 7, 1998

Arterial and Link-Link Bandwidths, Maximum Green Times

Link: Congress Street, Valley Street to St. John Street

Variable	Value	Comments
Travel Time (s)	9	Travel Time okay For Coordination
CF1	93	
Traffic / Storage Space	1.74	Traffic exceeds 80% of storage, coordination needed
CF2	100	
Proportion of Traffic In Platoon	0.79	Traffic moderately platooned
Ap, platoon adjustment	-1	
Main Street Volume (vph)	1446	High Volumes, coordination is high priority
Av, volume adjustment	12	
Cycle Length	90	at Valley Street
Cycle Length	90	at St. John Street
Combined Cycle Length	90	
Cycle Length Increase	0	
Ac, Cycle Adjustment	0	
CF, Coordinatability Factor	111	Coordination definitely recommended

Intersection: Congress Street & Valley Street

Approach	EB	WB	NB	Total
Volume (vph)	684	697	367	1748
Travel Distance (veh-mi/hr)	41.5	66.0	48.7	156.1
Percentile Signal Delay (veh-hr/hr)	2.8	1.5	3.2	7.6
Stops (vph)	509	353	321	1183
Fuel Used (gal)	6	5	6	17

APPENDIX C

COLLISION DIAGRAMS

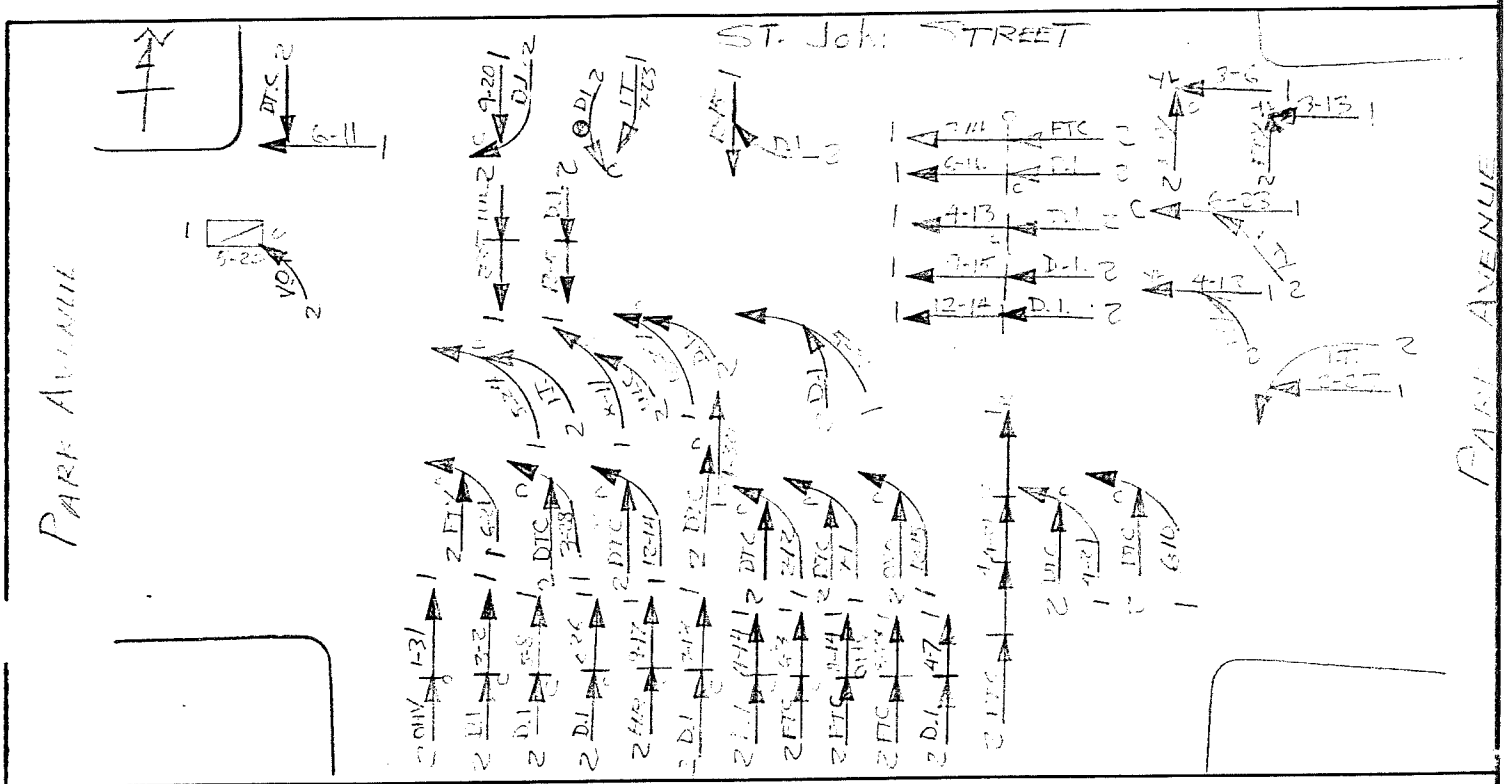
COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION Park Avenue & St. John Street

TOWN Portland NODE NO(S) 7187

YEAR(S) REVIEWED 1992 - 1995 DATE PREPARED 2-6-97



CRITICAL RATE FACTOR 1.16 EQUIV. PROP. DAMAGE ACC/YEAR ____ ACC/MEV ____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
23511	6-22-93	17:10				1	2	1	2	
26746	7-23-93	7:26				1	2	1	14 / 10	
27288	2-14-93	12:26					2	10	4	
28203	6-16-93	15:20					2	1	14	
14201	12-28-93	11:36					2	1	5	
04747	1-31-93	17:00					4	9	30	
09722	3-2-93	16:00			1		2	2	14	

COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION PARK AVENUE & ST JOHN STREET

TOWN PORTLAND NODE NO(S) 7167

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
20017	5-8-93	00:30				1	4	10	14	
22285	6-21-93	19:35			1		3	2	2	
27761	9-27-93	20:20					4	1	12	
44113	12-14-93	15:15					2	2	5	
11190	2-21-94	20:15					4	1	14,21	
12243	3-6-94	1:45					4	1	21	
34091	9-17-94	21:[illegible]			1		4	1	21	
26726	7-13-94	15:20				2	2	1	14	
[illegible]	7-30-94	12:10					2	1	5,14	
19875	5-20-94	12:47					2	1	14	
16612	4-14-94	[illegible]					2	1	21	
13121	3-12-94	20:58					4	1	[illegible]	
15454	3-25-94	[illegible]					4	1	[illegible]	
24852	7-1-94	14:10					2	1	5	
21569	6-3-94	16:30			1		2	1	4	
46134	12-15-94	6:10					2	1	20	
[illegible]	[illegible]	[illegible]					2	1	5	
10307	4-13-95	8:15				1	2	1	21	
26772	11-12-95	16:[illegible]				1	4	[illegible]	[illegible]	
29017	[illegible]	9:[illegible]					2	1	21	
33907	[illegible]	[illegible]					4	1	14	
[illegible]	2-[illegible]	17:[illegible]				1	2	1	4,21	
41764	12-[illegible]	14:45					2	2	15	
[illegible]	10-11-95	14:[illegible]					2	1	21	
18011	6-11-95	12:10			3		2	2	5	
13035	4-21-95	18:21					2	2	4,14	
39907	12-[illegible]	16:49				2	4	1	14	
10774	2-27-95	16:05					2	1	10	
11828	4-7-95	14:30				1	2	1	14	
16073	5-24-95	15:16					2	1	10	
12962	4-21-95	11:12					2	1	5	
12212	4-12-95	21:08					2	1	5	
16997	5-21-95	11:57					2	1	14	
17904	6-10-95	21:00					2	1	21	

COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION PARK AVENUE & ST. JOHN STREET

TOWN PORTLAND NODE NO(S) 7187

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
09257	2-12-94	15:30					2	2	10	

COLLISION DIAGRAM

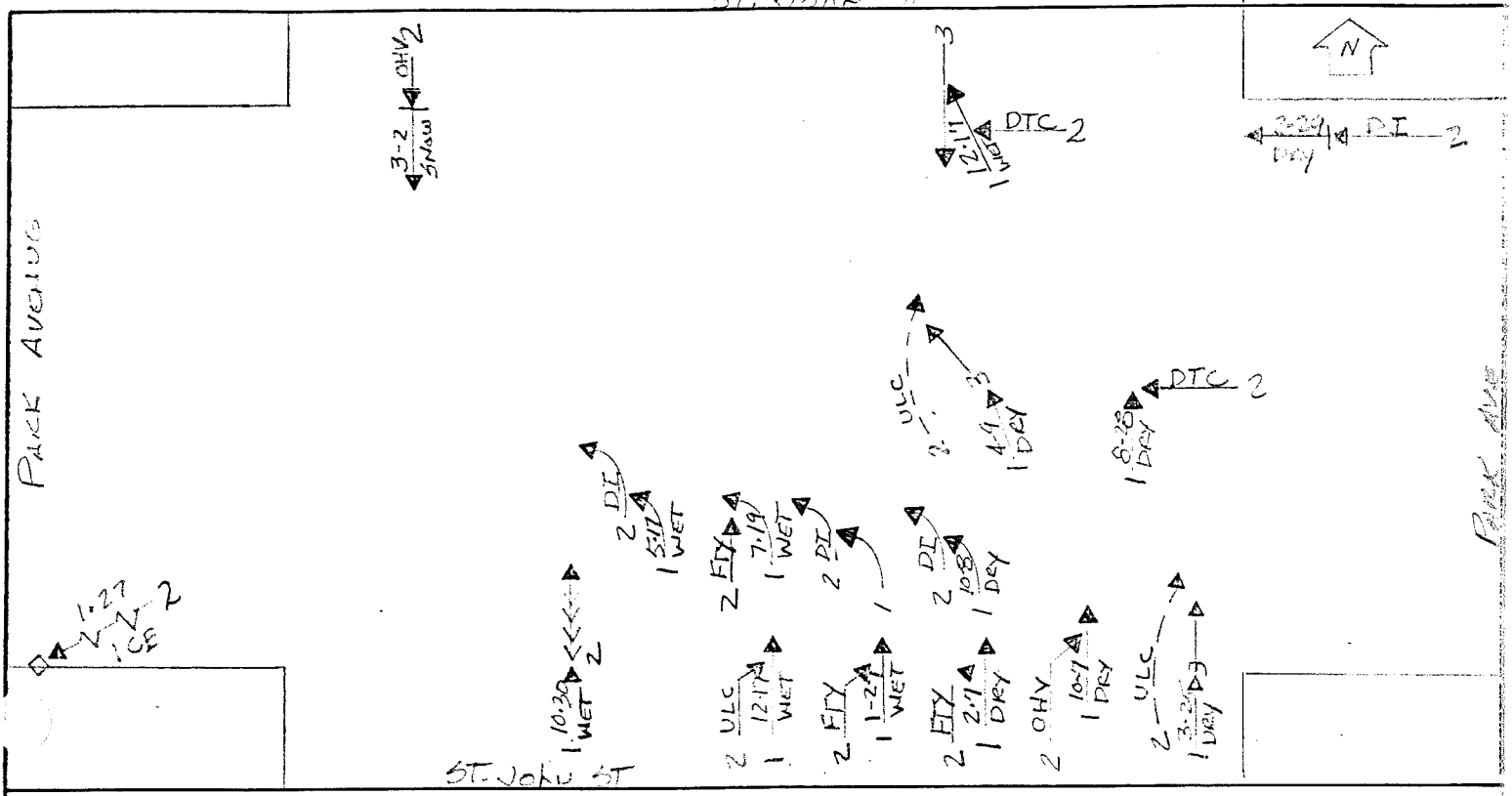
SHEET 1 OF 2

FAP

LOCATION INTERSECTION OF PARK AVE & ST. JOHN ST

TOWN PORTLAND NODE NO(S) 7186

YEAR(S) REVIEWED 1996 DATE PREPARED NOV. 10, 1997



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
NODE 7187										
96.44615	12.17.96	10:42				1	2	2	1/5	
96.34138	10.08.96	11:35					2	1	1/14	
34093	10.07.96	18:54					4	1	30	5
96.35714	10.21.96	11:20					2	2	14	50
96.29432	8-26-96	19:30					3	1	1/5	
96.32993	7-19-96	16:29					2	2	1/2	5

COLLISION DIAGRAM

SHEET 2 OF 2

FAP

LOCATION INTERSECTION OF PARK AVE & ST. JOHN ST

TOWN PORTLAND NODE NO(S) 7186

YEAR(S) REVIEWED 1996 DATE PREPARED NOV 19, 1997

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
96.17506	5-17-96	11:09					2	2	14/14	
96.13740	4-09-96	09:30					2	1	8	
96.04264	1-27-96	01:29					4	1	17	ICE
96.05527	2-07-96	18:10					4	1	2	
96.04214	1-27-96	23:01					4	2	2/14	
96.44491	12.17.96	10:25					2	2	8/14	
96.08624	2-29-96	10:25				1	2	1	1/14	
96.09003	3-02-96	13:50					2	8	1/30	
96.12337	3-25-96	13:56				1	2	1	1/14	

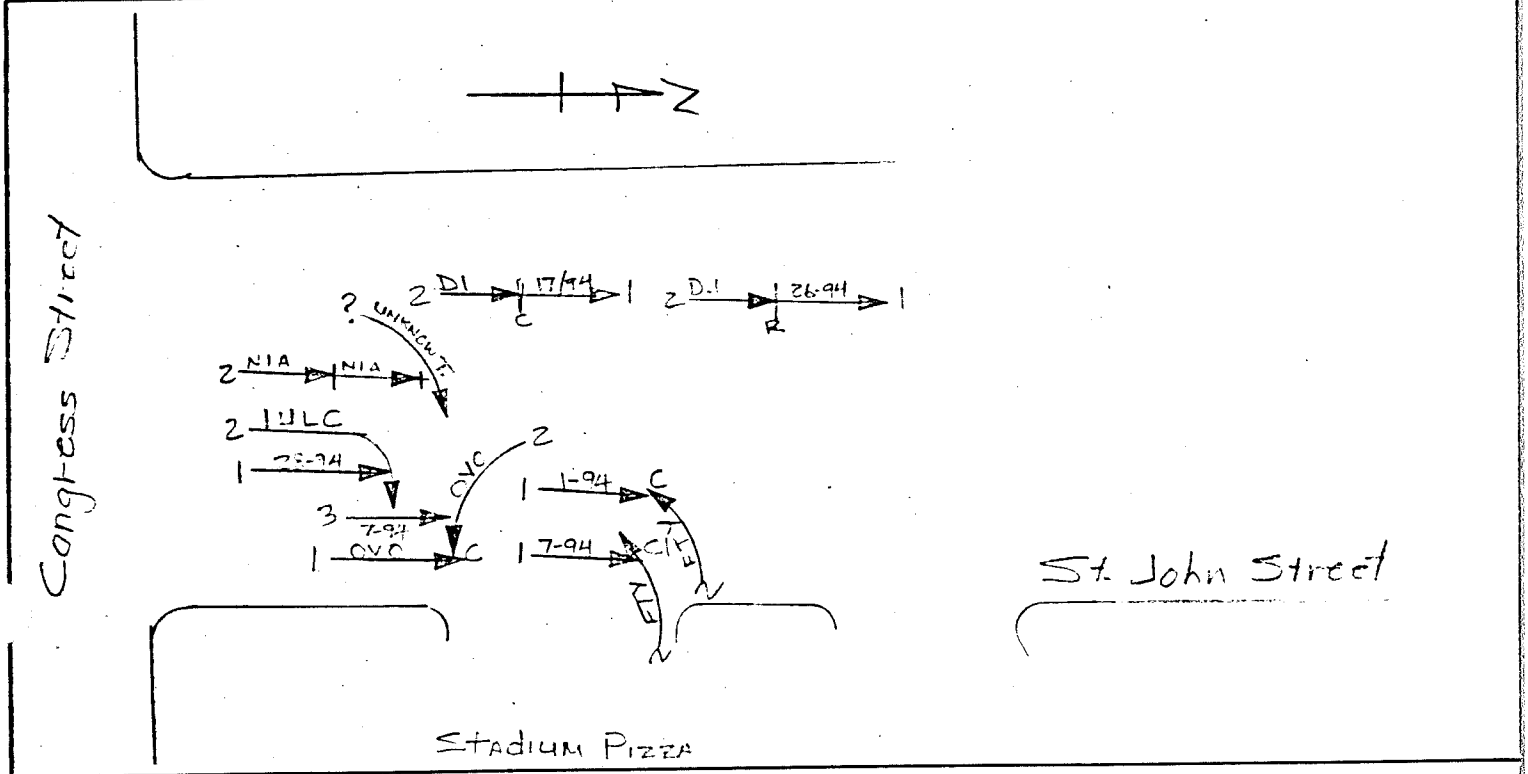
COLLISION DIAGRAM

SHEET 3 OF 3

LOCATION St. John Street between Park Avenue and Congress Street

TOWN Portland NODE NO(S) 7152 - 7157

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V. / V.	OTHER
25598	7-7-94	15:15					2	1	20/20	
28123	7-28-94	12:20					2	1	1/8	
12477	2-7-94	14:46					2	2	1/2	
43843	12-1-94	10:45					2	1	1,30/2	
41330	11-17-94	12:50					2	1	1/14	
17573	4-26-94	14:57					2	2	1/14	
09306	3-11-95	7:03					1	1	1/1	

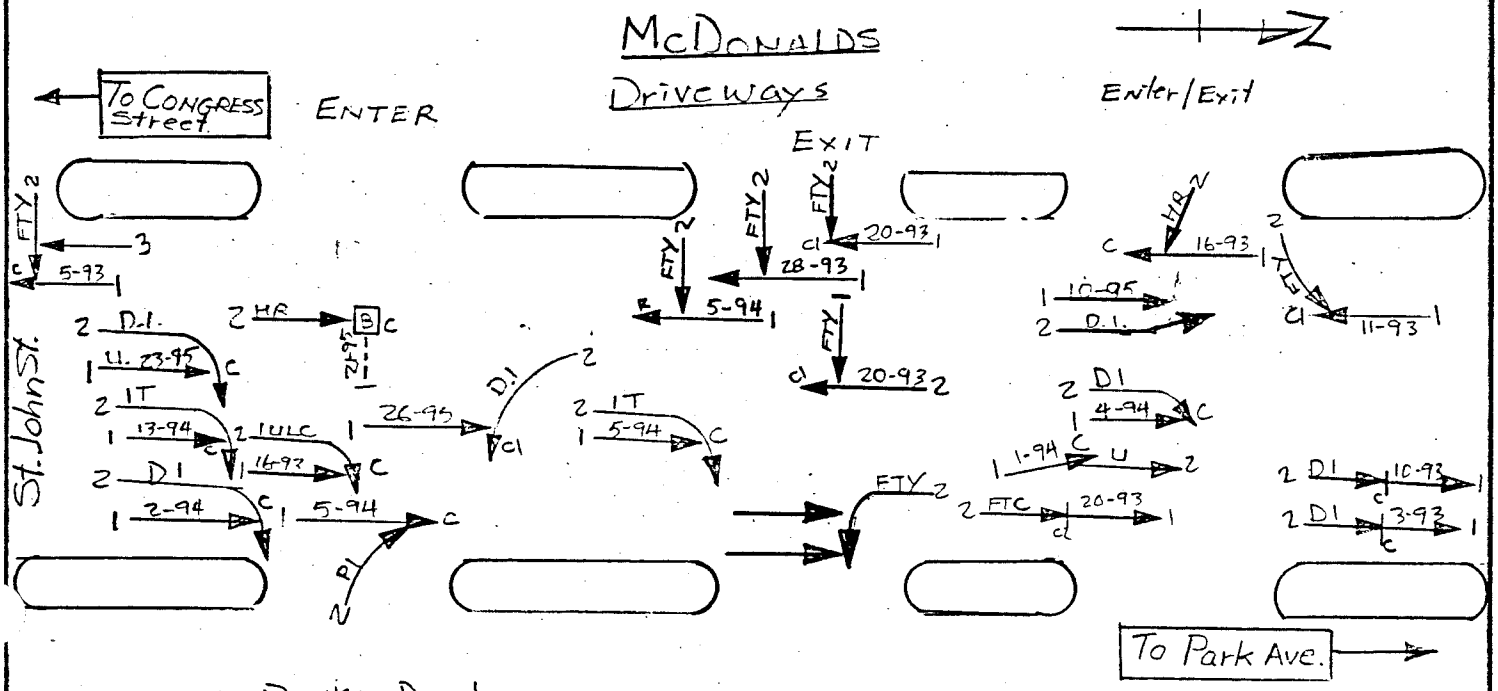
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION St. John Street between Park Ave. and Congress Street.

TOWN Portland NODE NO(S) 7182 - 7187

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	●
BACKING		REAR END			
FIXED OBJECT		SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	B
OVERTURN		CHANGE LANE		ANIMAL	A
PARKED VEHICLE		OUT OF CONTROL		SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V_1/V_2	OTHER
16489	4-20-93	16:30					2	1	1/4	
33665	9-16-93	19:40					4	1	1/8	
12310	3-16-93	7:37					2	1	1/31	
29484	8-20-93	17:04					1	2	1/2	
09788	3-3-93	16:50			1		2	1	1/14	
29241	8-5-93	17:18				1	2	1	1/2	
29491	8-20-93	16:21					2	2	1/2	

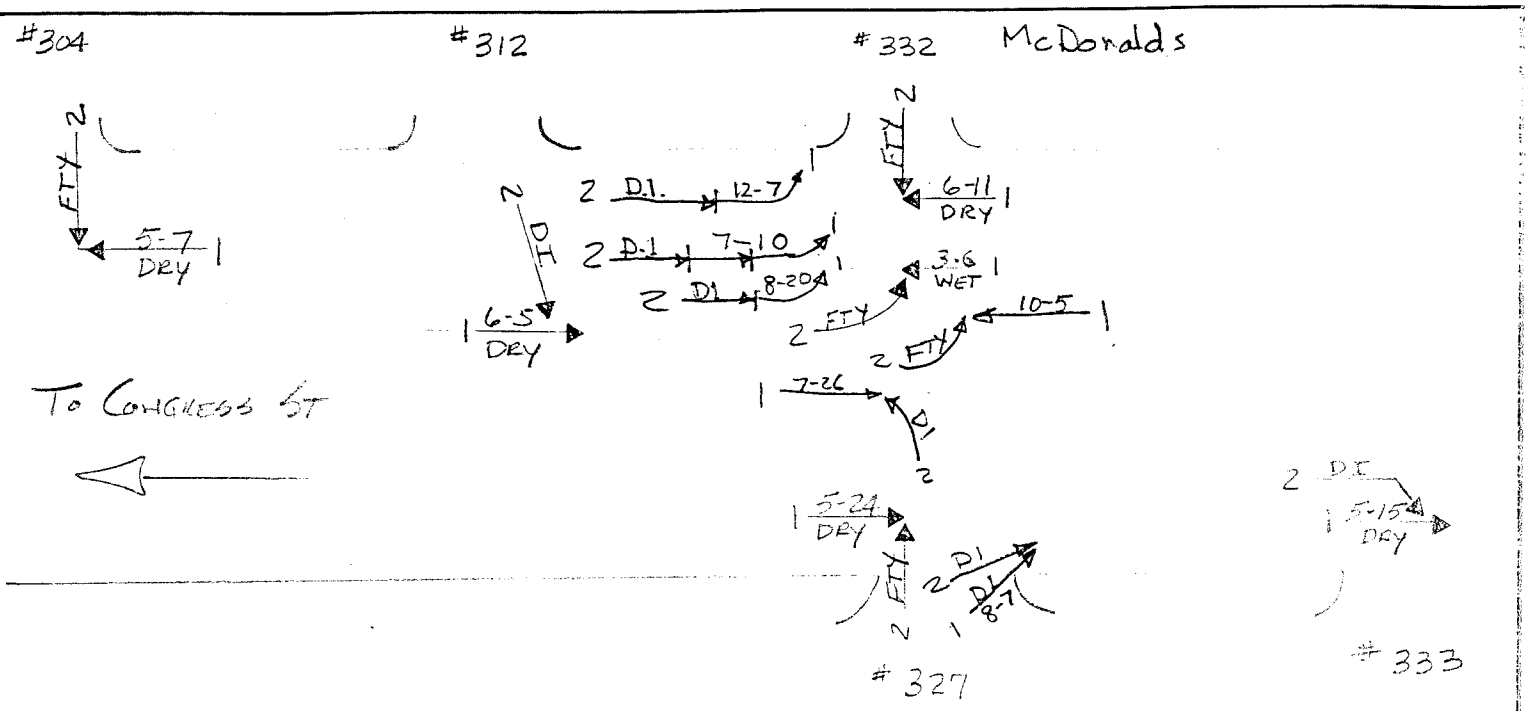
COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION ST. JOHN STREET BETWEEN PARK AVE AND CONGRESS ST

TOWN PORTLAND NODE NO(S) 7182-7187

YEAR(S) REVIEWED 1996 DATE PREPARED NOV 10, 1997



CRITICAL RATE FACTOR ____ EQUIV. PROP. DAMAGE ACC/YEAR ____ ACC/MEV ____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT OR FACTOR
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE (B)	
OVERTURN	CHANGE LANE	ANIMAL (A)	
PARKED VEHICLE	OUT OF CONTROL	SLED (S)	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
7182-7187										
96.10168	3-06-96	17:20					4	2	1/2	
96.20317	6-11-96	16:13					2	1	1/2	
.18406	5-24-96	20:50					4	1	1/2	
96.17356	5-15-96	14:35				1	2	1	1/14	
96.16547	5-07-96	16:35					2	1	1/2	
96.19542	6-05-96	11:42					2	1	1/14	

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION St. John Street between Park Ave and Congress Street

TOWN Portland NODE NO(S) 7182-7187

YEAR(S) REVIEWED 1993–1995 DATE PREPARED 10-8-96

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V_1/V_2	OTHER
02049	1-11-93	11:51					2	2	1/2	
38710	10-28-93	16:21				1	2	1	1/2	
32079	9-10-93	17:36					2	1	1/14	
08254	2-5-94	1:25					4	2	1/17	
01153	1-2-94	23:01					4	1	1/14	
02662	1-13-94	8:30					6	8	1/10	
11418	3-1-94	18:20				1	4	1	51/51	
29047	8-5-94	13:00					2	2	1/2	
15769	4-5-94	17:48					2	1	1/10	
25269	7-4-94	20:00					3		1/14	
05995	2-10-95	20:00					4	2	1/14	
16298	5-26-95	11:53					2	1	1/14	
29636	9-21-95	20:25				1	4	1	1/31	
37742	11-23-95	5:45					2	1	51/14	
37808	11-24-95	14:09					2	1	1/20	
96255 78	7-26-96	9:56					2	2	1/14	
9627039	8-7-96	6:15				1	2	1	14/14	
9623755	7-10-96	12:25				1	2	1	1/14	
96 33831	10-05-96	9:55					2	1	1/2	
9628574	8-20-96	12:20					2	1	1/14	
9612542	12-7-96	16:55				1	4	2	1/14	

COLLISION DIAGRAM

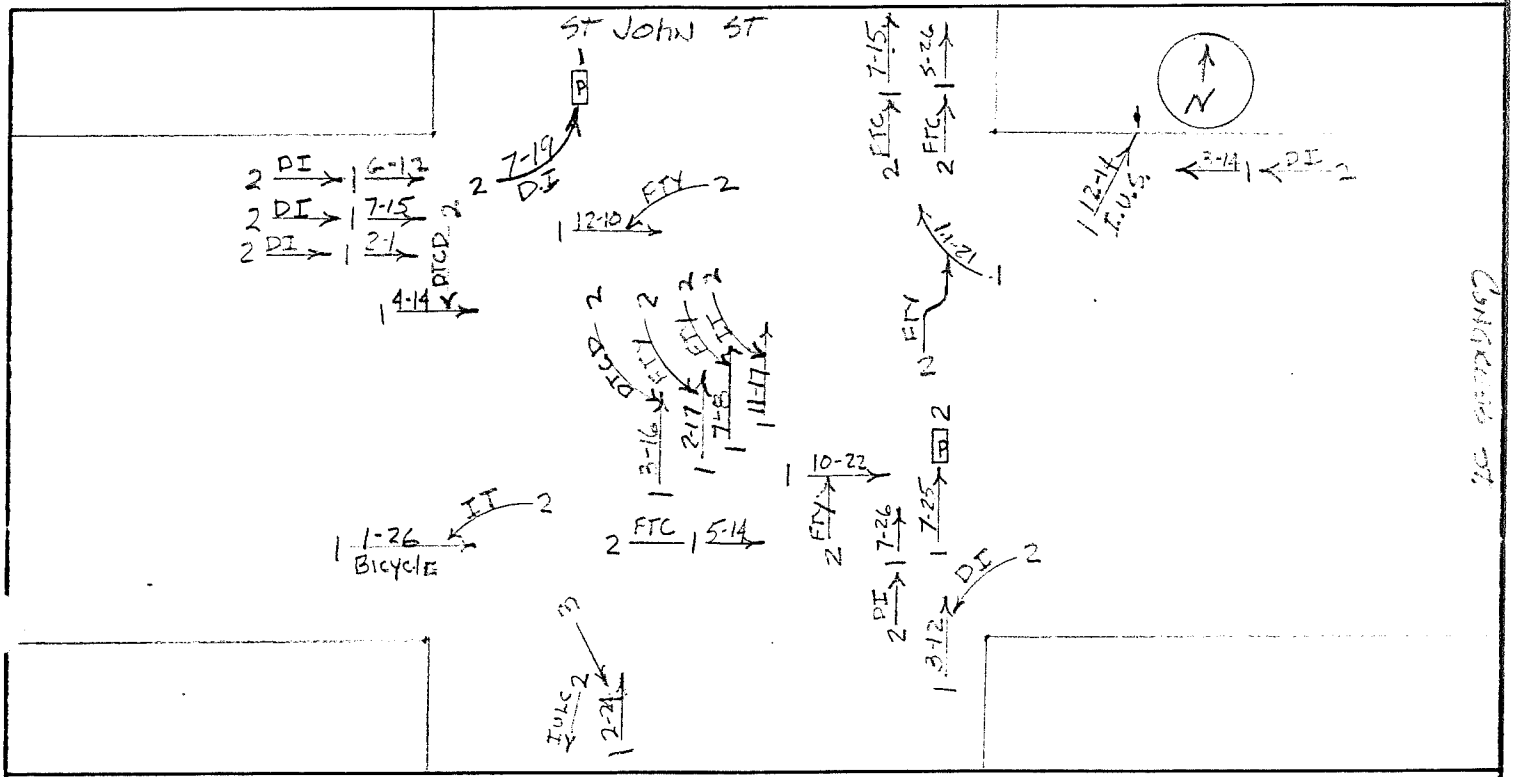
SHEET 1 OF 2

LOCATION ST JOHN ST @ CONGRESS ST

TOWN PORTLAND NODE NO(S) 7192

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 3/24/97

FOP



CRITICAL RATE FACTOR 0.49 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
95-22518	7-19-95	15:17			1		2	1	14	
33305	10-22-95	00:35					4	2	2	
23300	7-26-95	22:15			2		4	2	14	
23165	7-25-95	00:50			1		4	2	SEE ATTACH	
41769	12-14-95	12:00					4	8		
06923	3-17-95				2		2	1	2	
16301	5-26-95					1	2	1	4	

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION ST John ST @ Congress St

TOWN Portland NODE NO(S) 7182

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 3-31-01

FAP

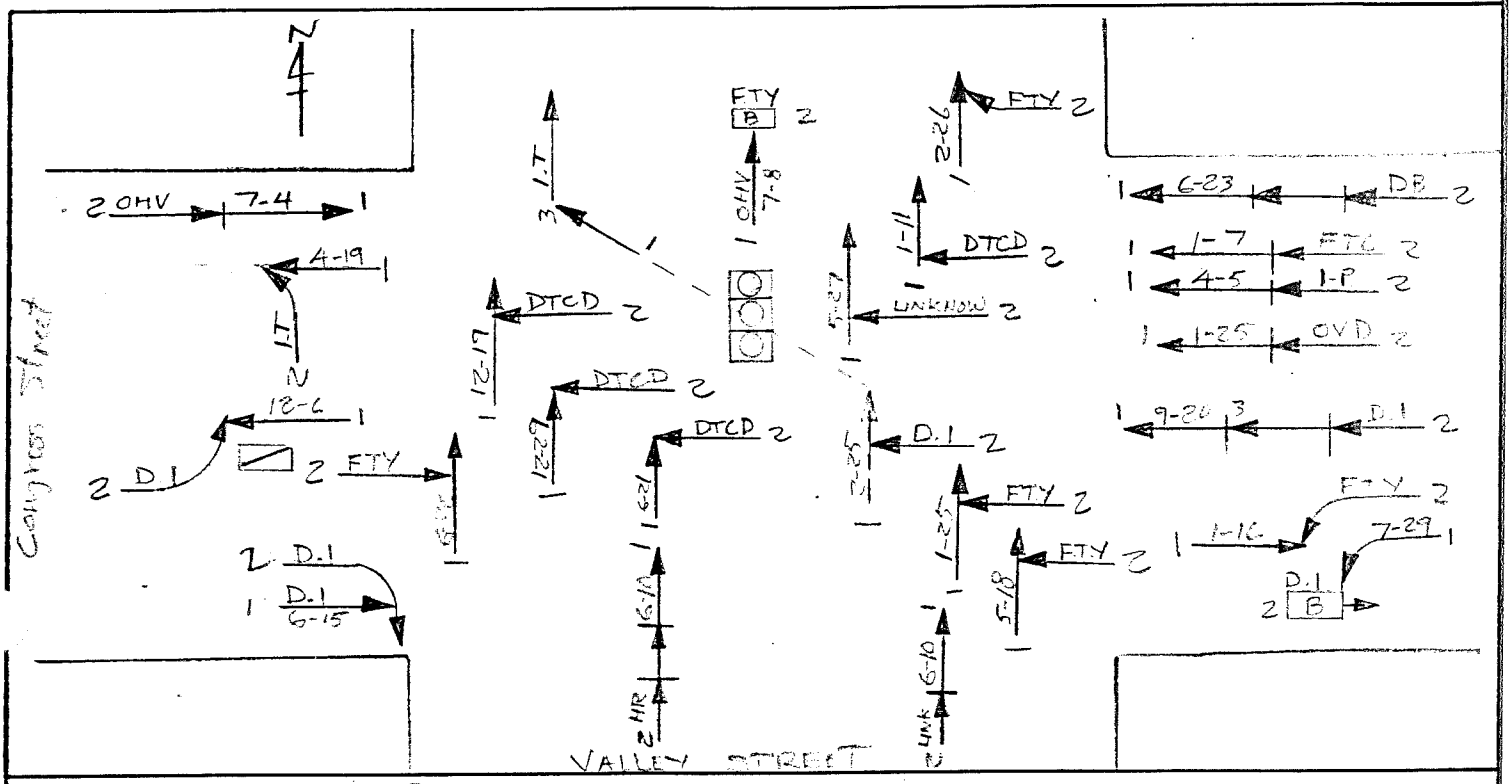
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
95-09523	3-14-95	13:05					2	2	14	
42431	12-17-95	19:45					4	3	3	
09644	3-16-95	15:24					2	2	5-14	
18155	6-12-95	16:30				1	2	2	14	
94-16411	4-14-94	04:57				1	4	2	5	
25726	7-08-94	10:36				1	2	1	2	
41334	11-17-94	19:34					4	1	13	
35420	9-29-94	07:45					2	2	14	
26494	7-15-94	16:13					2	1	4	
19356	5-14-94	12:21					2	1	4	
93-08475	2-24-93	19:56			1		4	3	8	
05220	2-1-93	07:25					2	8	15	
12055	3-12-93	10:45					2	1	14	
43582	12-10-93	15:20			1		2	1	2	
13213	1-21-93	14:55		1			2	1	10	

COLLISION DIAGRAM

LOCATION INTERSECTION of Congress Street & Valley Street

TOWN Portland NODE NO(S) 7169

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 3-24-97



CRITICAL RATE FACTOR 0.82 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01946	1-11-95	6:50					2	1	5 14	
16429	5-27-95	7:57					2	1	51	
9809	6-26-95	14:10					1	1	3	
01367	1-7-95	16:34					4	2	4	
07907	2-25-95	9:11			1		2	1	14, 13	
03903	1-25-95	11:15					2	1	2	
12806	4-19-95	16:30					2	2	13	

COLLISION DIAGRAM SHEET 2 OF 3

LOCATION INTERSECTION of CONGRESS STREET & VALLEY STREET

TOWN PORTLAND NODE NO(S) 7169

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 3-24-1997

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
29589	9-20-95	22:51				2	4	1	30 14	
19695	5-18-94	12:00					2	1	2	
48082	12-29-94	14:18					2	1	5 14	
25733	7-8-94	19:34				1	3	1	2	
22346	6-10-94	17:05					2	1	31	
12762	3-10-94	7:35					2	9	51	
44648	12-6-94	12:21			1		2	1	14	
03431	1-16-94	15:53			1		2	1	2	
06343	1-25-94	10:30				1	2	9	50	
23762	6-23-94	11:10				1	2	1	41	
23581	6-21-94	16:06					2	2	5	
46769	12-19-94	19:38					4	1	5	
09304	2-26-93	11:20					2	2	2	
26857	7-29-93	12:03				1	2	2	14	
22179	6-15-93	10:10				1	2	1	14, 14	
23612	7-4-93	3:08			2		4	1	30	
16275	4-5-93	14:49				1	2	1	7	

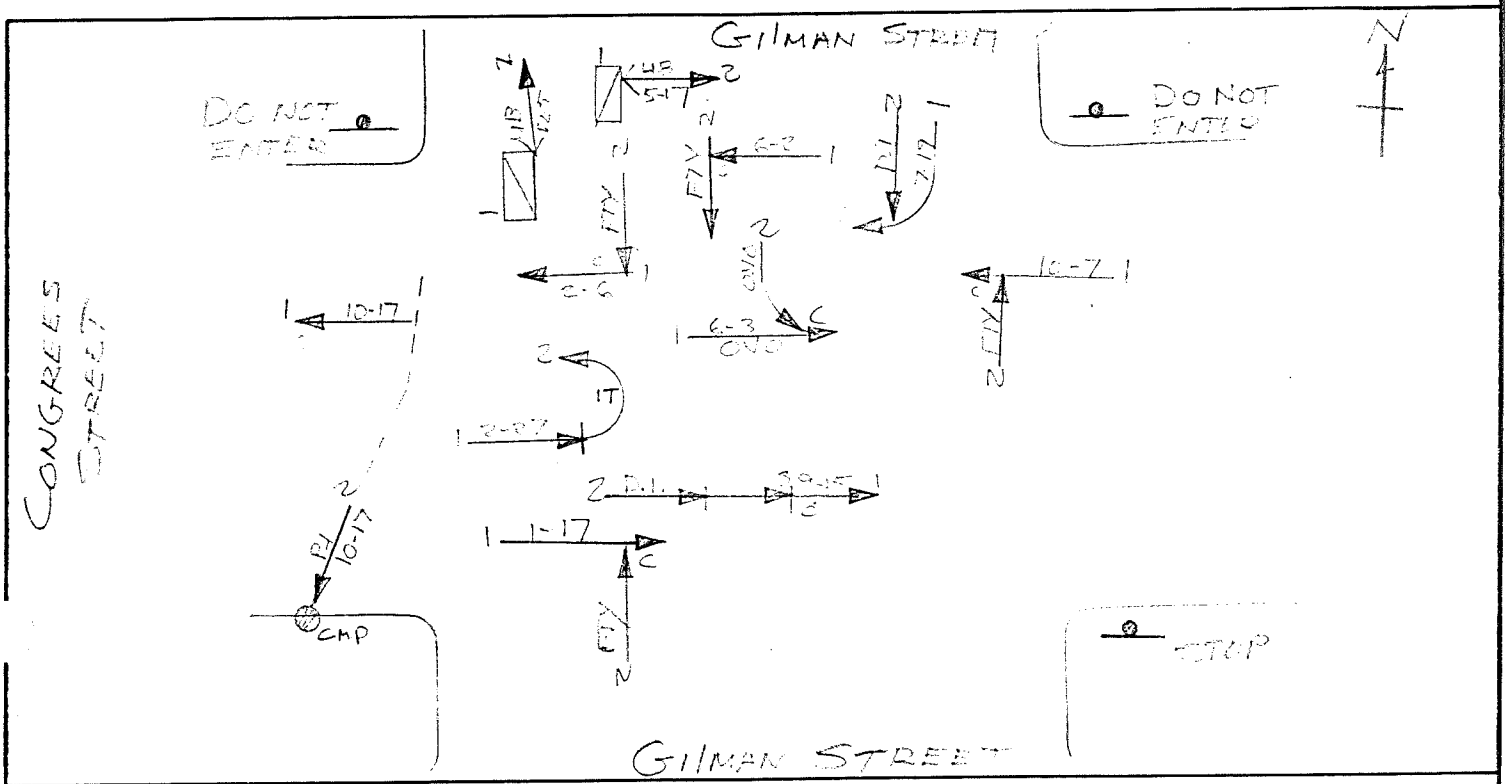
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CONGRESS STREET & GILMAN STREET

TOWN Portland NODE NO(S) 8991

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.00 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE [B], ANIMAL [A], SLED [S]

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
[illegible]	6-2-93	13:00					2	1	2	
06197	2-6-93	21:45				1	4	1	2	
29761	2-27-93	12:07				1	2	1	11	
26178	7-19-93	15:30					2	1	14	
22653	9-15-93	13:05				1	2	1	14	
35092	10-7-93	15:46					2	1	2	
12671	12-5-93	7:50					4	2	11	

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION CONGRESS STREET & GILMAN STREET

TOWN PORTLAND NODE NO(S) 2991

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
19605	5-17-94	13:07					2	1	11	
21570	6-3-94	20:13					2	1	20/21	
32658	10-17-94	12:11			1	1	2	1	17	
02761	1-17-95	7:34					2	1	2	

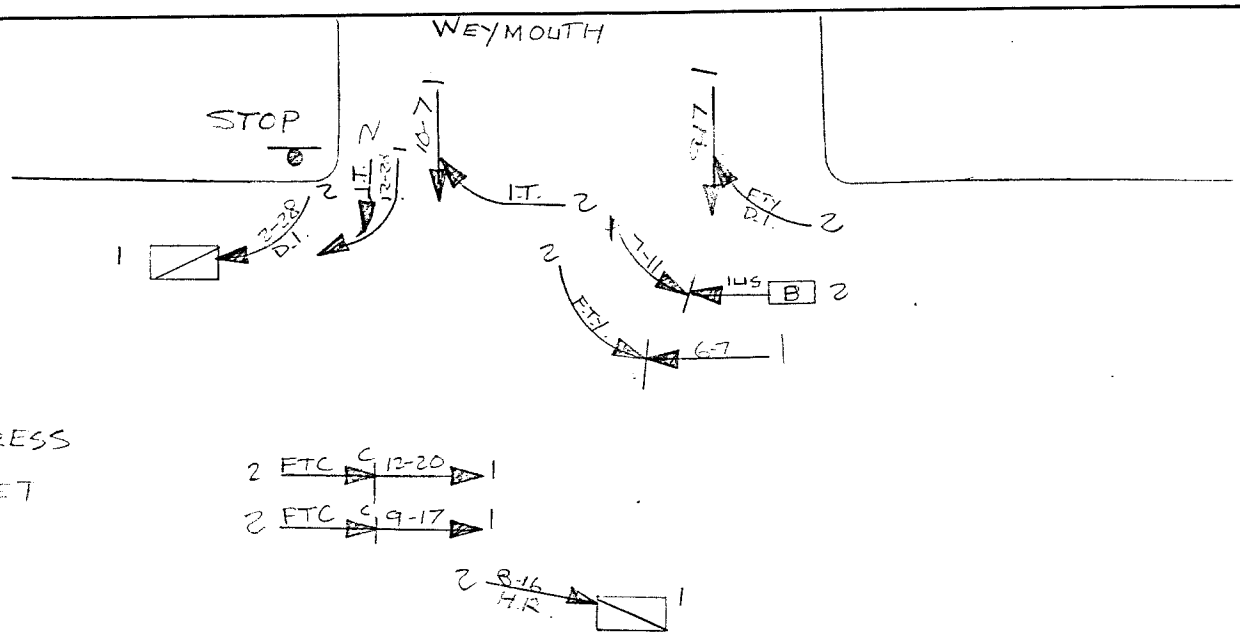
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CONGRESS STREET AND WEYMOUTH STREET

TOWN PORTLAND NODE NO(S) 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.04 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN [P]	FATAL ACCIDENT ●	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE [B]	
OVERTURN	CHANGE LANE	ANIMAL [A]	
PARKED VEHICLE	OUT OF CONTROL	SLED [S]	

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
21066	6-7-93	17:11			1	1	2	1	2	
45451	12-20-93	12:22				1	2	1	4	
36095	7-11-94	16:46			1		2	1	3	
36302	10-7-94	8:00					2	8	10	
29226	9-17-95	11:23				1	2	2	4	
44201	12-28-95	15:17					2	1	10.7	
29214	9-17-95	11:34					2	2	4.14	

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION: CONGRESS STREET & WEYMOUTH STREET

TOWN: PORTLAND — NODE NO(S): 7245

YEAR(S) REVIEWED: 1993-1995 — DATE PREPARED: 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
08109	2-28-95	11:10					2	8	14	[illegible]
25666	8-16-95	23:10					4	1	31	[illegible]

COLLISION DIAGRAM

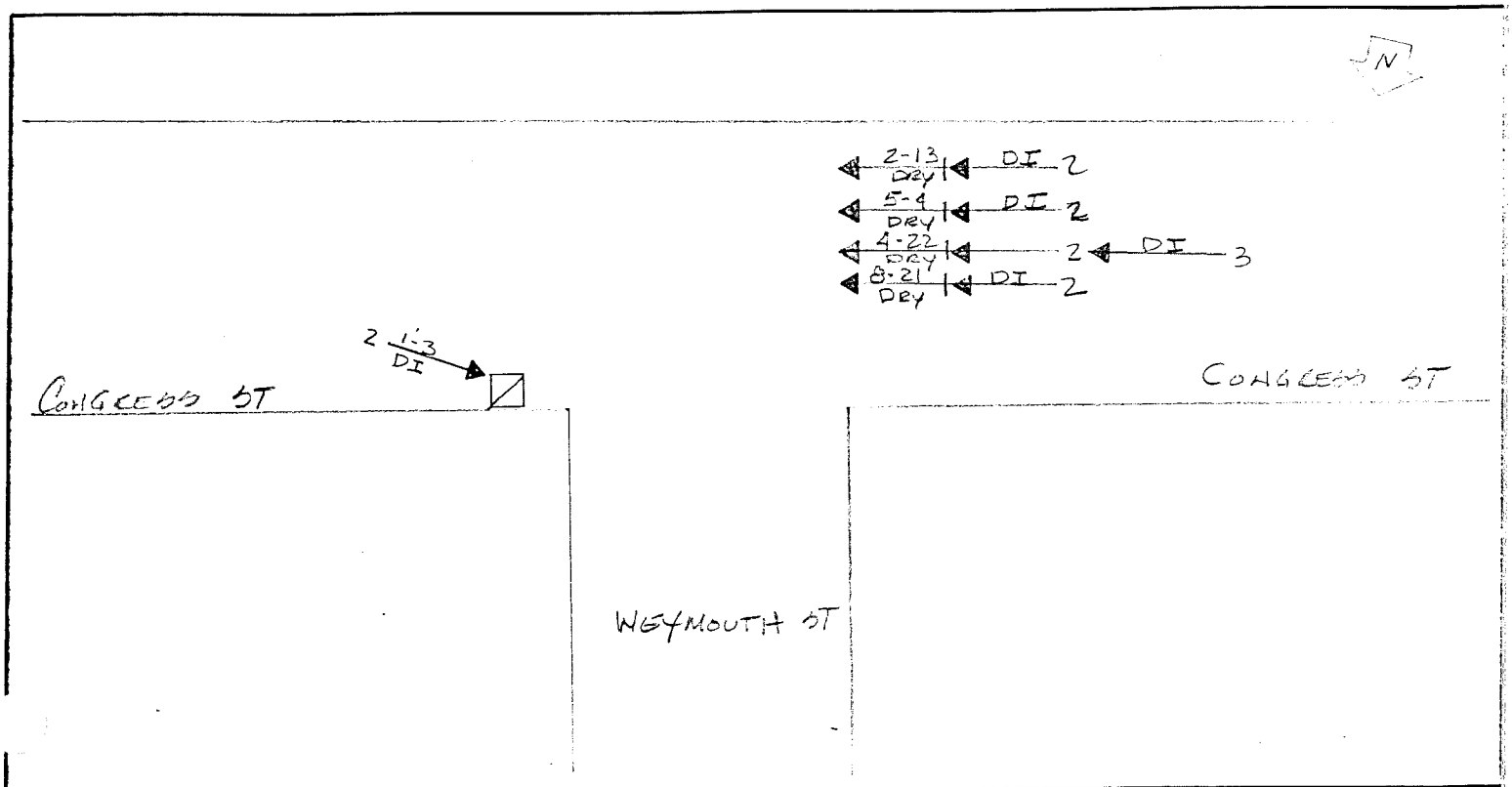
SHEET 1 OF 1

FAP

LOCATION Intersection of Congress St & Weymouth St

TOWN Portland NODE NO(S) 7245

EAR(S) REVIEWED 1996 DATE PREPARED Nov 10 1997



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE		PEDESTRIAN	P	FATAL ACCIDENT	
BACKING		REAR END			
FIXED OBJECT		SIDE SWIPE		VEHICLE (MOVING)	
HEAD ON		TURNING MOVE		BICYCLE	BI
OVERTURN		CHANGE LANE		ANIMAL	AI
PARKED VEHICLE		OUT OF CONTROL		SLED	SI

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
NODE 7245										
96.28696	8-21-96	15:35					2	1	1/14	
96.00296	1-03-96	15:30					2	1	1/1	51
.16330	5-04-96	13:25					2	1	1/14	
96.08111	2-13-96	15:46					2	1	1/14	

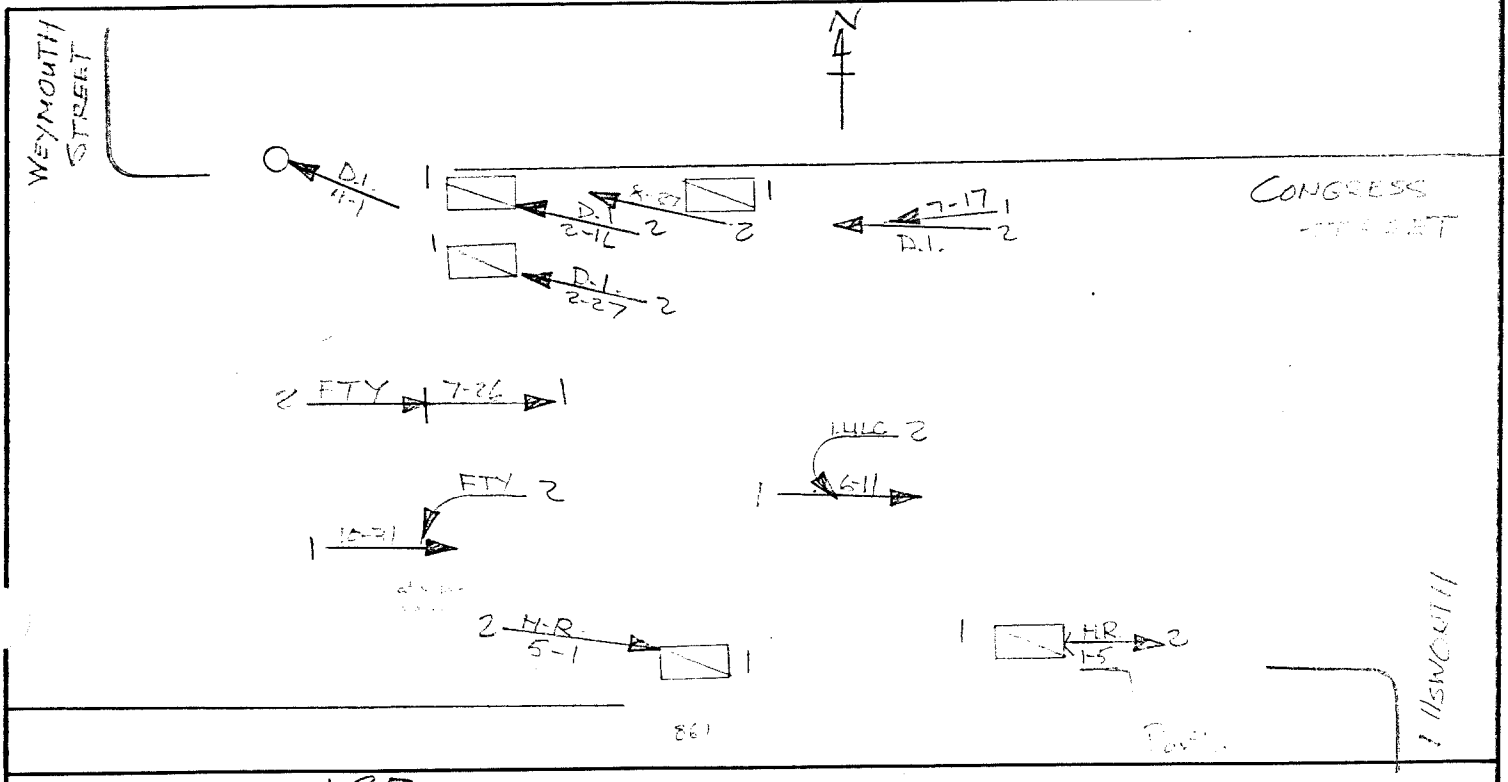
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244 - 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.35 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	--- B
OVERTURN	CHANGE LANE	ANIMAL	--- A
PARKED VEHICLE	OUT OF CONTROL	SLED	--- S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
16222	4-1-93	15:05				1	2	9	15	
01509	1-5-93	7:30					2	1	31	
07457	2-16-93	17:53					4	9	14	
20789	5-1-93	20:00					3	1	31	
22046	6-11-93	17:55			1		2	2	8	
29217	10-31-94	13:30					2	1	2	
26727	7-17-94	11:40					2	1	14	

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION Link Between Weymouth & Ellsworth Street

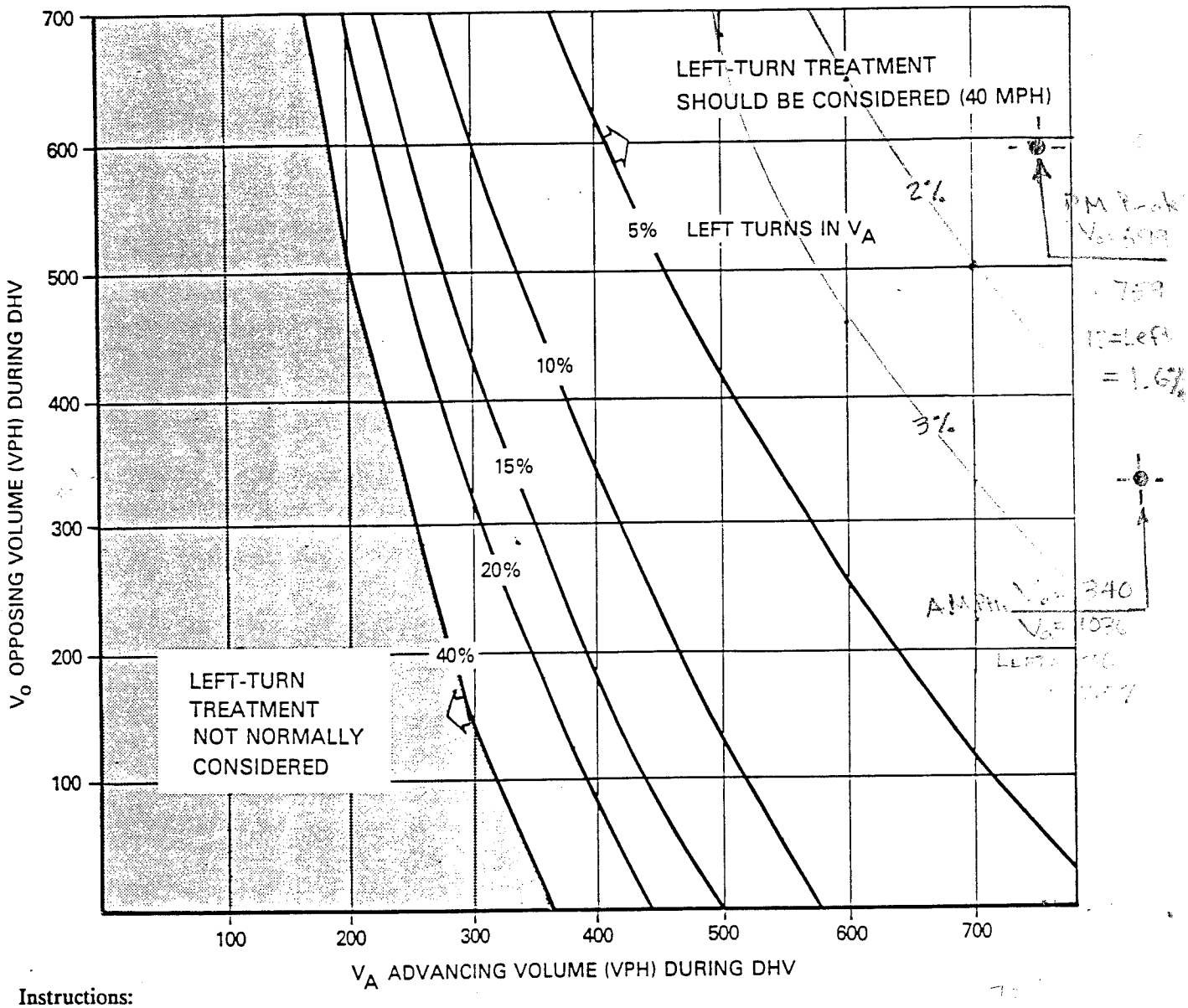
TOWN Portland **NODE NO(S)** 7244 - 7245

YEAR(S) REVIEWED 1993-1997 **DATE PREPARED** 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
26967	8-27-95	10:05					2	2	10	
23246	7-26-95	17:53					2	3	4	
10138	2-27-95	14:15					2	4	14	

APPENDIX D

SIGNAL WARRANT ANALYSES



Instructions:

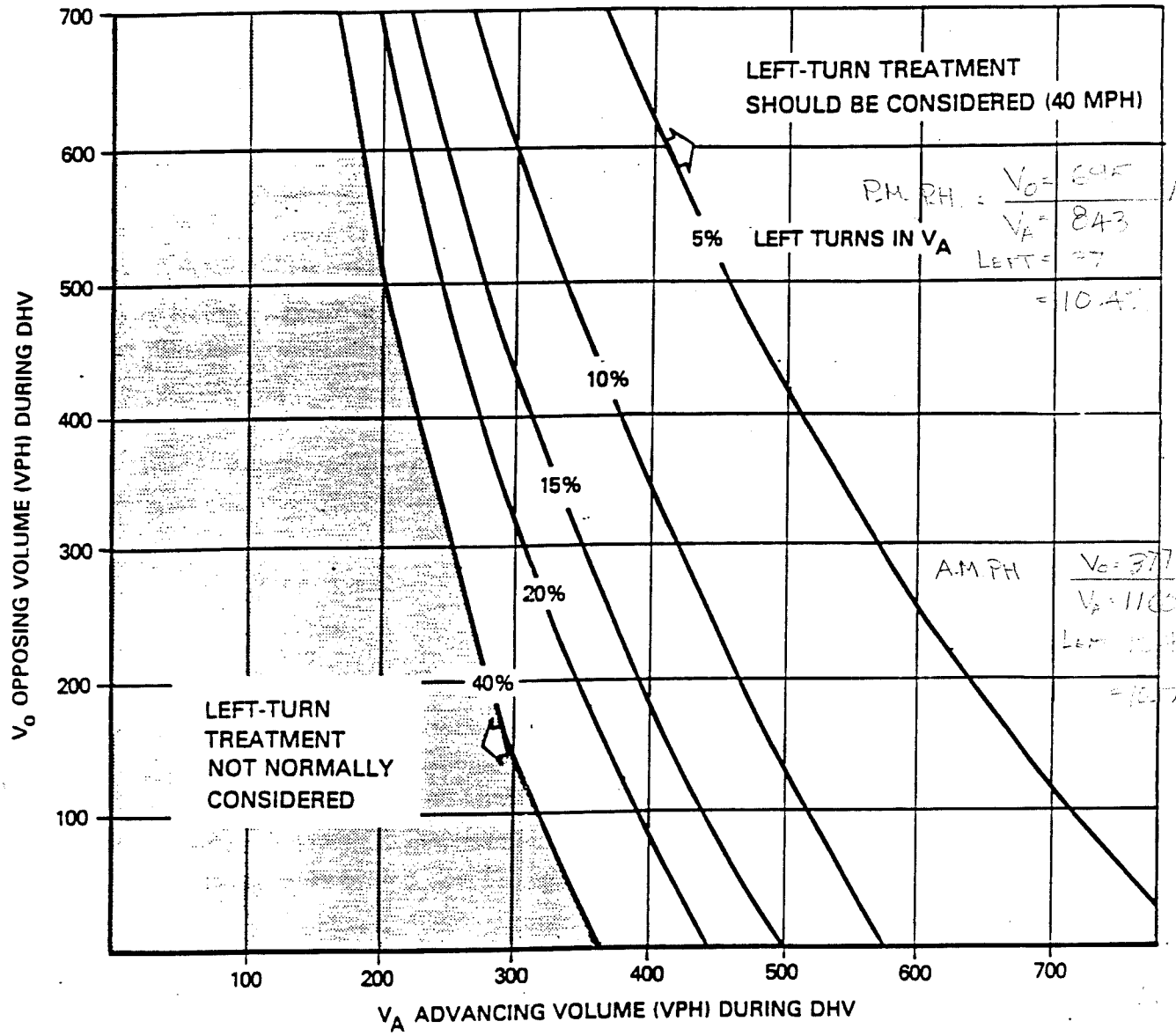
1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.

2. Read V_A and V_O into the chart and locate the intersection of the two volumes.

3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn is not warranted based on traffic volumes.

VOLUME WARRANTS FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (40 mph)

Figure 8-19



Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn is not warranted based on traffic volumes.

VOLUME WARRANTS FOR LEFT-TURN LANE AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (40 MPH)

Figure 8-19

MMC 1471

Intersection of Forest Street & Park Avenue

Figure 9-1A

TRAFFIC SIGNAL WARRANTS

CALC MMC DATE 2-14-97

CHK _____ DATE _____

DIST CO RTE PM

Major St: Park Avenue — Critical Approach Speed _____ mph

Minor St: Forest Street — Critical Approach Speed _____ mph

Critical speed of major street traffic ≥ 40 mph _____ ☑ OR RURAL (R)

In built up area of isolated community of ≤ 10,000 pop. _____ ☐

☐ URBAN (U)

WARRANT 1 – Minimum Vehicular Volume

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☑

Note: Major street traffic volumes are counts

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more		15-16	16-17	8-9	7-8					Hour
Both Approchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)									
Highest Approch Minor Street*	150 (120)	105 (84)	200 (160)	140 (112)	248	220	66	62					

* NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 2 – Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more										Hour
Both Approchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approch Minor Street*	75 (60)	53 (42)	100 (80)	70 (56)	248	220	66	62					

*NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 3 – Minimum Pedestrian Volume

100% SATISFIED YES ☐ NO ☐

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)										
		U	R								
Both Approchs. Major Street Volume	No Median	600 (480)	420 (336)								Hour
	Raised 4' Median	1000 (800)	700 (560)								
Ped's On Highest Volume X-Walk Xing Major Street		150 (120)	105 (84)								

IF MIDBLOCK SIGNAL PROPOSED ☐

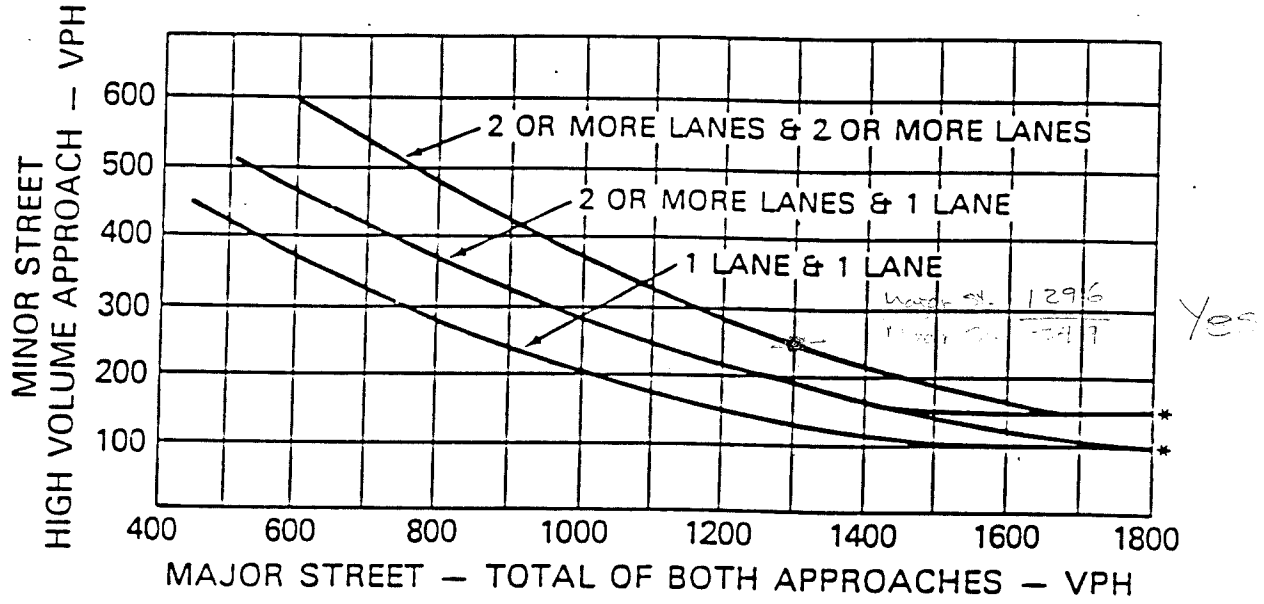
MIN. REQUIREMENT	DISTANCE TO NEAREST ESTABLISHED CRWLK	FULFILLED
150 Feet	N/E ____ ft S/W ____ ft	Yes ☐ No ☐

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 Sample warrant analysis form. (Source: State of California, Traffic Manual)

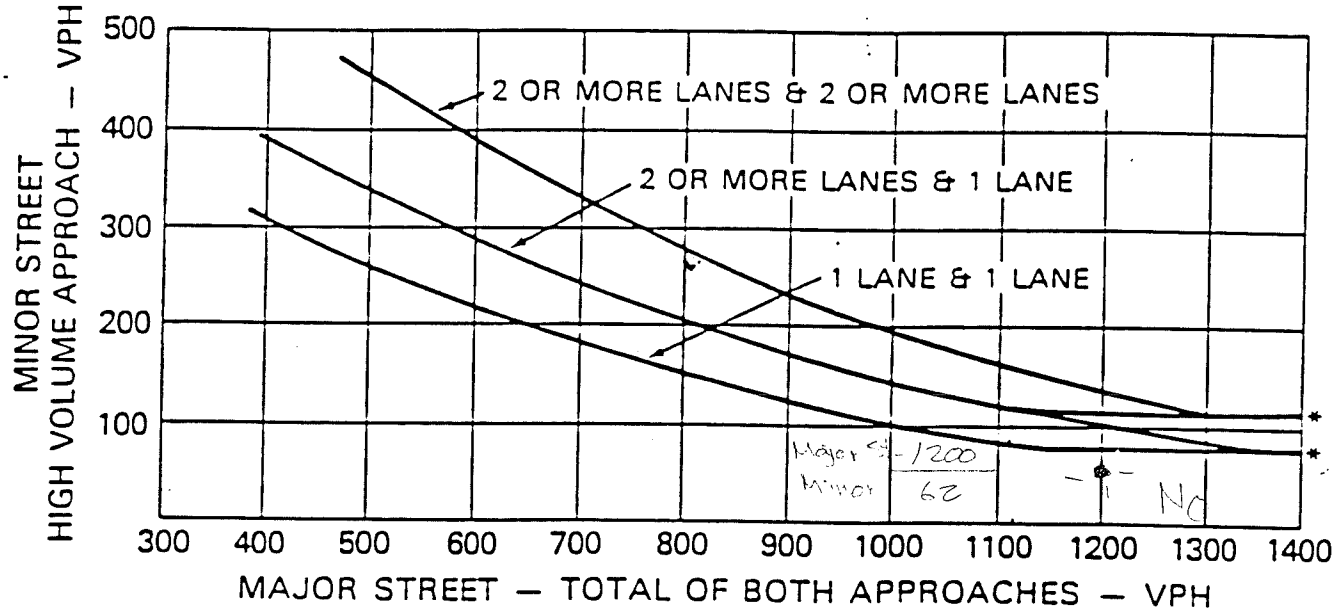
Intersection of Park Avenue & Front

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection at Park Avenue & Forest Street

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

WARRANT 8 – Combination of Warrants SATISFIED YES ☐ NO ☐

REQUIREMENT	WARRANT		FULFILLED
TWO WARRANTS SATISFIED 80%	1 - MINIMUM VEHICULAR VOLUME		
	2 - INTERRUPTION OF CONTINUOUS TRAFFIC		
	3 - MINIMUM PEDESTRIAN VOLUME		YES ☐ NO ☐

WARRANT 9 – Four Hour Volume SATISFIED* YES ☐ NO ☐

Approach Lanes	One	2 or more			Hour
Both Approaches . Major Street					
Highest Approaches . Minor Street	248	220	60	52	

*Refer to Fig. 9-2A (URBAN AREAS) or Figure 9-2B (RURAL AREAS) to determine if this warrant is satisfied.

WARRANT 10 – Peak Hour Delay SATISFIED YES ☐ NO ☐

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; and

   YES ☐ NO ☐

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; and

   YES ☐ NO ☐

3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.

   YES ☐ NO ☐

WARRANT 11 – Peak Hour Volume SATISFIED* YES ☑ NO ☐

Approach Lanes	One	2 or more	Hour
Both Approaches . Major Street			
Highest Approaches . Minor Street	249		249

*Refer to Fig. 9-2C (URBAN AREAS) or Figure 9-2D (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 (*Cont.*)

MMC 1471

Intersection of Gilman and Congress Street

Figure 9-1A

TRAFFIC SIGNAL WARRANTS

CALC Marlin DATE 2-17-97

CHK _____ DATE _____

DIST CO RTE PM

Major St: Congress Street Critical Approach Speed 35 mph

Minor St: Gilman Critical Approach Speed _____ mph

Critical speed of major street traffic ≥ 40 mph ☐ OR RURAL (R)

In built up area of isolated community of ≤ 10,000 pop. ☐

☐ URBAN (U)

WARRANT 1 – Minimum Vehicular Volume

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☑

Note: Major Street required they all meet the requirements for Volumes

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more		15-16	7-8	8-9	16-17					Hour
Both Approchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)									
Highest Approch Minor Street*	150 (120)	105 (84)	200 (160)	140 (112)	94	85	73	63					

* NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 2 – Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more		15-16	7-8	8-9	16-17					Hour
Both Approchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approch Minor Street*	75 (60)	53 (42)	100 (80)	70 (56)	94	85	73	63					

*NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 3 – Minimum Pedestrian Volume

100% SATISFIED YES ☐ NO ☐

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
		U	R										
Both Approchs. Major Street	No Median	600 (480)	420 (336)										Hour
Volume	Raised 4' Median	1000 (800)	700 (560)										
Ped's On Highest Volume X-Walk Xing Major Street		150 (120)	105 (84)										

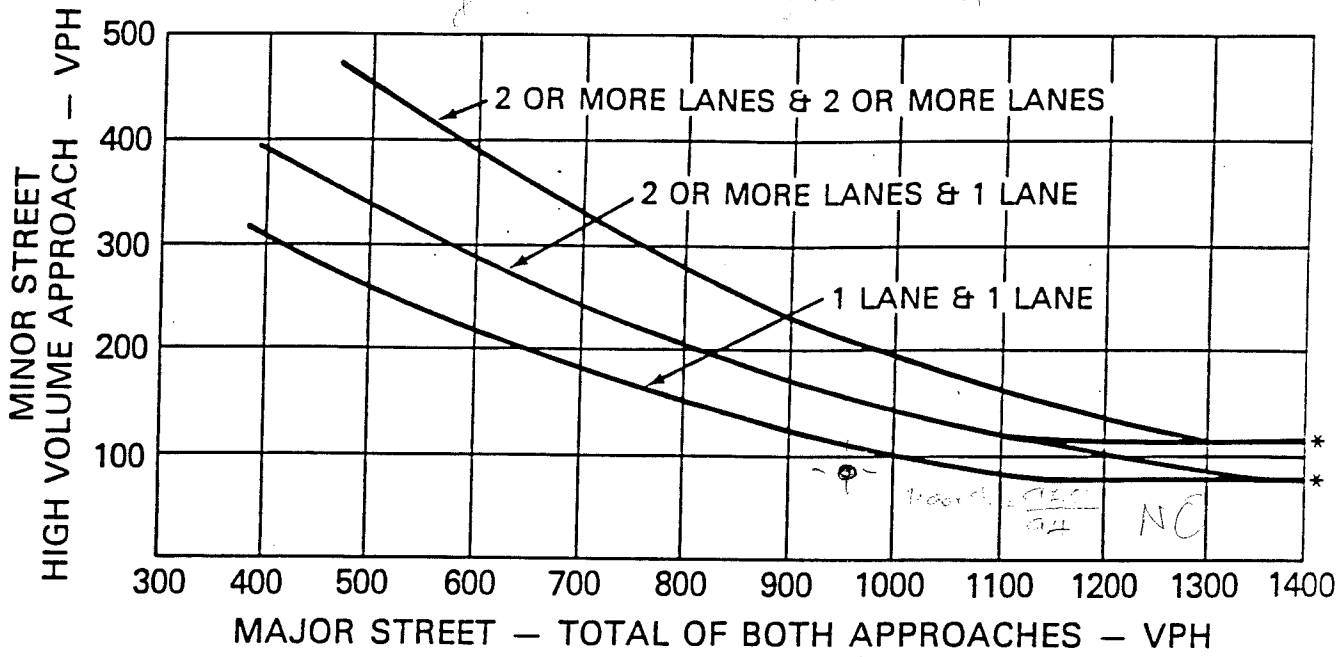
IF MIDBLOCK SIGNAL PROPOSED ☐

MIN. REQUIREMENT	DISTANCE TO NEAREST ESTABLISHED CRWLK	FULFILLED
150 Feet	N/E ____ ft S/W ____ ft	Yes ☐ No ☐

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

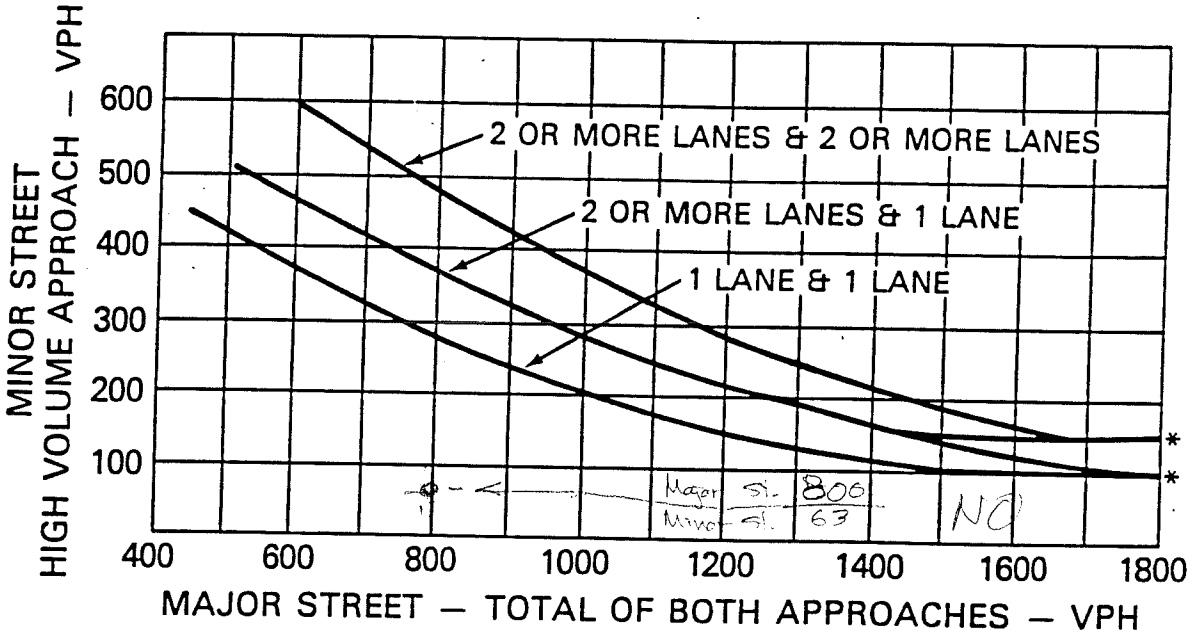
Figure 2-9 Sample warrant analysis form. (Source: State of California, Traffic Manual)

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection of Gilman St. & Congress Street

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

WARRANT 8 – Combination of Warrants

SATISFIED YES ☐ NO ☑

REQUIREMENT	WARRANT		FULFILLED
TWO WARRANTS SATISFIED 80%	1 - MINIMUM VEHICULAR VOLUME		
	2 - INTERRUPTION OF CONTINUOUS TRAFFIC		
	3 - MINIMUM PEDESTRIAN VOLUME		YES ☐ NO ☐

WARRANT 9 – Four Hour Volume

SATISFIED* YES ☐ NO ☑

Approach Lanes	One	2 or more			Hour
Both Approaches . Major Street					
Highest Approaches . Minor Street	94	85	73	63	

*Refer to Fig. 9-2A (URBAN AREAS) or Figure 9-2B (RURAL AREAS) to determine if this warrant is satisfied.

WARRANT 10 – Peak Hour Delay

SATISFIED YES ☐ NO ☐

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; and

   YES ☐ NO ☐

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; and

   YES ☐ NO ☐

3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.

   YES ☐ NO ☐

WARRANT 11 – Peak Hour Volume

SATISFIED* YES ☐ NO ☑

Approach Lanes	One	2 or more	
Both Approaches . Major Street			
Highest Approaches . Minor Street	94		94

*Refer to Fig. 9-2C (URBAN AREAS) or Figure 9-2D (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 *(Cont.)*

APPENDIX E

COMMENTS/MEETING NOTES

MEETING NOTES
PREAPPLICATION MEETING FOR MAINE MEDICAL CENTER'S CONGRESS STREET OFFICE BUILDING

LOCATION: Portland Office of the Maine Department of Environmental Protection

DATE: 11/19/97

PROJECT: Maine Medical Center's Congress Street Office Building

JOB #: 1471

BETWEEN: Linda Kokemuller, MeDEP, Portland
Nancy Beardsley, MeDEP, Augusta
Roland Roy, MDOT, Augusta
Brian Burne, MDOT, Division 6
Larry Ash, City of Portland Traffic Engineer
Paul Gray, MMC
Jim Morrison, MMC
Tom Gorrill, DeLuca-Hoffman Associates, Inc.

Summary of Discussion:

1. Paul introduced the project and gave a 10-minute overview.

   No response.

2. Roland asked how the estimated trip generation compared with a study done by DeLuca-Hoffman Associates, Inc. for a CMMC building several years ago. Tom agreed to furnish this information.

   DeLuca-Hoffman Associates, Inc. has provided the information as requested.

3. Tom reviewed the trip generation calculations for the project. He said that approximately 226 parking spaces in the proposed garage will be reserved to meet the needs of the medical office building with the remaining 204 available to MMC employees. Thus, the trip generation is a combination of the rate for the medical office building and a rate for the balance of the garage.

The rate for the office building was determined based on actual counts at two similar medical buildings in Portland; one at Stroudwater Crossing and one at 1250 Forest Avenue. After discussion, Roland agreed that the trip generation estimate for the office portion of the development is acceptable.

See Maly Chap's telephone memo and Roland Roy's telephone notes of September 15, 1997.

4. Roland requested a copy of the counts for the existing Congress Street parking garage which has 1276 spaces. He asked if all the driveways had been counted and Tom responded that they had.

   DeLuca-Hoffman Associates, Inc. has provided the information as requested.

5. Roland feels the turnover rate in the garage is low and would like to look at the garage counts before approving the rate. He questioned how many visitors would utilize the garage.

   See Maly Chap's telephone memo and Roland Roy's telephone notes of September 15, 1997.

6. Roland asked about a left turn lane on Congress for left turning traffic onto Forest Street and into the garage. Tom said a left turn lane would be provided which will lose approximately 26 spaces on the easterly side of Congress Street. Tom said these spaces were inventoried during the day and were utilized by MMC employees. Larry said he would like to explore restricting the parking only during the peak times of the day. Roland questioned this and the issue was left unresolved.

   No response.

7. Roland said Boynton Street is narrow and some MMC traffic may utilize this roadway. He requested it be made one way or the on-street parking be removed. Tom suggested monitoring the traffic and Larry questioned the need for any changes. Roland said he will consider this street in his review.

   No response.

8. Roland requested the sight lines exiting the Congress Street driveway be checked to assure they are not obstructed by parked cars.

9. Paul noted that the third house in on Forest Street from Congress has been removed.

   No response.

10. Roland asked if the traffic assignment at the driveways had assumed equal access to both driveways from all levels. Tom said DeLuca-Hoffman Associates, Inc. had based the assignment on the plan for the parking garage which limited driveway access depending on the level.

    No response.

11. Roland asked what lighting levels are planned at the driveways. Jim Morrison agreed to furnish this information. Jim Morrison agreed to furnish this information.

    No response.

12. Roland asked about the grades at the driveways. Jim Morrison agreed to furnish this information.

13. Roland questioned whether the shift change would influence the peak hour of the traffic generation for the proposed site. Tom agreed to document when the peak hour occurs.

    See Maly Chap's telephone memo and Roland Roly's telephone notes of September 15, 1997.

14. Roland questioned whether Hadlock Field will have an influence on the peak hour. Linda said MeDEP has recently been furnished with traffic counts for Hadlock Field. She said the times were later in the day and on weekends. Linda also said the Department may already have ruled on some of the high accident locations in the MMC study area as part of the Hadlock Field permit. She agreed to furnish the information to DeLuca-Hoffman Associates, Inc. She also suggested we look into the permit for the County Jail.

    (Tom's response.)

15. Roland questioned the distribution of left turning traffic onto Valley Street and onto St. John Street. Roland felt more traffic would turn left at Valley than at St. John. Tom agreed to re-evaluate this issue.

    See Maly Chap's telephone memo and Roland Roy's telephone notes of September 15, 1997.

16. Roland requested DeLuca-Hoffman Associates, Inc. utilize the annual growth rate forecast in the PACTS model for background growth on Congress Street.

    DeLuca-Hoffman Associates, Inc. utilized the annual growth rate forecast in the PACTS model for background growth on Congress Street as requested by Roland Roy.

17. Roland questioned the need for a traffic light at the intersection of Valley Street and Park Avenue. After discussion of the postdevelopment volumes, Roland agreed that Forest Street is the appropriate location for a traffic signal.

    No response.

18. Roland requested the capacity analysis be made utilizing Traf-NETSIM computer software. Tom said the analysis has been done on Signal-94 software and that the City has requested analysis using Highway Capacity software. Roland felt that Traf-NETSIM should be utilized due to the interconnection considerations of the intersections.

Please notify the writer of any errors or omissions to these notes within 10 days.

Prepared by: Thomas L. Gorrill, P.E.

Distribution: Attendees
John Duncan, PACTS

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
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- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

TELEPHONE MEMO

SUBJECT: Maine Medical Center

PERSON CONTACTED: Roland Roy, P.E.

JOB NUMBER: 1471

DATE: December 15, 1997

COMMENTS:

Roland Roy has two comments regarding the traffic study for the proposed Medical Office Building on Congress Street in Portland, Maine. The first comment was regarding the trip rate that DeLuca-Hoffman Associates, Inc. used and the second comment was the re-distribution of the proposed westbound left turning traffic on Congress into Valley Street and St. John Street. Each of these comments is discussed below:

Trip Generation

Roland Roy wants DeLuca-Hoffman Associates, Inc. to use the ITE 6th Edition Trip Rate 3.66 trips/1,000 s.f. during the PM peak hour of adjacent street traffic. For the 204 parking spaces, he wants us to use 0.19 trips/space during the PM peak hour of adjacent street traffic. Based on these trip rates, he has determined that the proposed MMC will generate 219 trip ends. DeLuca-Hoffman Associates, Inc. estimated the proposed development would generate 215. He said since the difference is only 4 trips, changing the trip generation will be unnecessary.

Trip Distribution

Roland Roy originally wanted DeLuca-Hoffman Associates, Inc. to redistribute the proposed Congress Street westbound left turning traffic, as shown on Figure 5, onto Valley Street and St. John Street. Roland believed that 2/3 of the total proposed Congress Street westbound left turning traffic at the two intersections would take the first left at the intersection of Valley and Congress Streets. After he realized that the movement was a permitted left turn, he said DeLuca-Hoffman Associates, Inc. could leave it as is, provided the intersections operate acceptably based on capacity analysis using the Synchro computer program.

Prepared by: Maly Chap

Distribution: Roland Roy
Paul Gray
Jim Morrison
Tom Gorrill

FAX

Traffic Engineering
Transportation Building
16 State House Station
Augusta, Maine 04333-0016

Date 12-29-97

Number of pages including cover sheet 3

To:

MALY CHAP
DHAT
778 MAIN ST.
Suite 8
So. PORTLAND, ME

Phone 775-1121
Fax Phone 879-0896
CC:

From: Maine Department of Transportation

ROLAND ROY

Phone (207) 287-~~3775~~ 2954
Fax Phone (207) 287-3725

Remarks:

__ Urgent X For Your Review __ Reply ASVP __ Please Comment

Telephone Notes – 12/15/97

please EXCUSE spelling error of your first NAME –

ROLAND

FINAL CHK BY _____ DATE _____ LOCATION _____ SH. NO. _____ OF _____

ITEM NO. _____ SUBJECT Maine Medical Office Bldg And Parking Garage

→ I called Marley Chap (DHAI) To discuss the following ITEMS:

1) Appropriate design hour – for assessing LOS/capacity of Network and to determine appropriate trip generation rate and Study area.
2) Trip distribution of % left turns from Congress St. onto Valley St. vs. % of left turns from Congress St onto St. John Street

1) I Asked Marley to provide me with Traffic Volume info for intersections within the Study area. Marley told me that the only intersection in the Study area that Traffic Volumes on Congress Street were Approximately the same for 3:30 - 4:30 as compared to 4:31 - 5:30. All other intersections had much more traffic during the PM peak hour of the Adjacent Street which is estimated to occur between 4:30 PM And 5:30 P.M.

→ Therefore - I concurred with Marley that the worst case scenario for the proposed Build-out would be to apply Trip generation rates based on the PM peak hour of the Adjacent Street rather than the PM peak hour of the generator

I asked Mailee to use the new 6th edition ITE trip generation book, ite Code 720 Medical/Dental office Bldg Ave. trip rate of 3.66 trips/1ksf for PM PK hour of the Adjacent Street

~19.15 X 3.66 = 180 trips

and Add to this the parking garage trip rate of .19 trip/parking space for PM PK hour of the Adjacent Street

204 → 39
226 parking spaces X .19 = 43 trips

180 trips (med. office)
39 → 43 trips (parking garage)

219 → 223 total

Note: this total is not much different from 215 trips his original project proposal suggested (p.1-4)

2) I asked Mailee to re-Adjust 2% of Left turns made from Congress St. onto Valley St. and St. John Street as part of the TRAF-net sim simulation which would provide the driver 2 choices to head toward Memorial Bridge/rotary. The 50:50 split proposed on figure 5 should be re Adjusted to reflect the proposed Signal phasing + timing plan for these 2 intersections.

ATTACHMENT 4

DH

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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TEL: 207 775 1121
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- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

December 3, 1997

Mr. Larry Ash
City Traffic Engineer
Public Works Building
55 Portland Street
Portland, ME 04101

Re: Response to Comments Concerning Proposed Maine Medical Center Office Facility

Dear Larry:

This letter contains our responses to your memorandum to Rick Knowland dated November 4, 1997 concerning the above-referenced project. For your convenience, each of your comments is repeated below, followed by DeLuca-Hoffman Associates, Inc.'s response.

Comment 1:

For the Park Ave./St. John Intersection, DeLuca-Hoffman has not yet prepared a signal timing plan that will revise plan timings and cycle length. I have reservations that their proposed 60 second cycle is inadequate. Since this intersection experiences a high level of accidents and has a high critical rate factor (CRF) DeLuca-Hoffman should prepare a safety analysis of their proposed signal timing changes. I also indicated to Tom Gorrill that northbound vehicle loop detectors need to be installed at this location.

Response:

DeLuca-Hoffman Associates, Inc. has re-run the capacity analysis for the Park Avenue/St. John Street intersection utilizing an increased cycle length of 90 seconds. Attachment 1 includes this revised analysis which is summarized in Table 1.

TABLE 1
Results of Revised Signalized Capacity Analysis

		1998 Pre-Development		1998 Post-Development	
Approach	**Lanes**	**AM**	**PM**	**AM**	**PM**
St. John St. & Park Avenue					
St. John Street NB	Left	C	E	C	C
	Left/Through	C	E	C	D
	Right	C	C	C	B
St. John Street SB	Through/Left	C	D	C	D
	Right	C	E	C	C
Park Avenue WB	Right	C	D	C	C
	Through/Left	D	C	D	E
Overall delay in Second		C 24.4	D 39.8	C 24.6	D 35.3

The proposed development is anticipated to increase the total entering volume at the intersection by 2%. These changes should not significantly impact the operation of the intersection. Optimization of the existing signal system is the only practical improvement which can be made due to land use constraints. MMC is willing to install northbound vehicle loop detectors as you requested.

A finalized signal timing plan will be prepared for the City once comments have also been received from the MDOT.

Comment 2:

For the Congress/St. John intersection DeLuca-Hoffman needs to further explain their recommendation for the elimination of some signal phases during peak hours. A signal timing plan for implementation after build-out of the project has not yet been prepared for City review. No mention has been made of the existing exclusive pedestrian phase and whether or not DeLuca-Hoffman has any recommendations for this phase. Finally, DeLuca-Hoffman has not yet submitted for City review a detailed evaluation of accident conditions at this intersection.

Response:

DeLuca-Hoffman Associates, Inc. has rerun the capacity analysis for the intersection of Congress Street and St. John Street utilizing an increased cycle length of 90 seconds with the existing phasing. This intersection has a shared traffic controller with the intersection of Congress Street and Valley Street. Therefore, the intersection of Congress Street and Valley Street has to run within the 90 seconds cycle length. The revised capacity analyses are included in Attachment 2 for these locations and are summarized in Table 2.

TABLE 2
Results of Revised Signalized Capacity Analysis

		1998 Pre-Development		1998 Post-Development	
Approach	**Lanes**	**AM**	**PM**	**AM**	**PM**
St. John & Congress Street					
Congress Street EB	Left	D	E	D	D
	Through/Right	F	C	E	C
Congress Street WB	Left	C	C	C	B
	Right	D	F	D	C
St. John Street NB	Through/Right	D	F	D	F
St. John Street SB	Through/Left	C	C	D	C
Overall Delay in Second		E 49.6	E 49.5	D 36.9	D 39.5
Congress & Valley Street					
Congress Street EB	Right/Through/Left	B	B	A	B
Congress Street WB	Right/Through/Left	C	D	B	D
Valley Street NB	Left	B	B	C	C
	Through/Right	C	C	D	C
Overall Delay in Second		B 12.1	B 16.4	B 10.85	C 20.2

The proposed development is anticipated to increase the total entering volume at the intersection by 2%. These changes should not significantly impact the operation of the intersection. Optimization of the existing signal system is the only practical improvement which can be made due to land use constraints.

Comment 3:

At the Congress/Valley, DeLuca-Hoffman needs to submit for City review an evaluation of accident history. Also, no mention has been made of the existing pedestrian phase at this location.

Response:

The intersection of Congress Street and Valley Street is not classified as High Accident Location. DeLuca-Hoffman Associates, Inc. had prepared a collision diagram at this location. DeLuca-Hoffman Associates, Inc. has attached this collision diagram in Attachment 3.

Comment 4:

The Congress/Gilman and Congress/Weymouth intersections meet criteria for high accident locations (HAL). I requested DeLuca-Hoffman submit a more detailed evaluation of accident conditions at these locations using the most recently available accident data. The City will provide accident records as necessary. Further, a reevaluation of Warrant 6, accident experience, in the MUTCD should be performed. The elimination of parking on the north side of Congress adjacent to these intersections should be addressed to improve sight distance.

Response:

The traffic study completed in March 11, 1997, contained an accident history from 1993-1995, the most recent available at that time. Updated accident data summaries for the period 1994-1996 were provided by the MDOT for the study area. An updated analysis of this information is enclosed in Attachment 4 to this letter. The information for the intersections of Congress/Gilman and Congress/Weymouth is summarized below:

Accident Data Summary 1994-1996			
Intersection	**Number of Accidents**	**CRF[1]**	**HAL?[2]**
Congress/Gilman	6	0.52	No
Congress/Weymouth	12	1.33	Yes

In addition to this information, the City supplied 1997 accident information through October which is summarized below and included in Attachment 4:

1997 Accident Data Summary Through October	
Intersection	**Number of Accidents**
Congress/Gilman	2
Congress/Weymouth	5

[1] CRF is critical rate factor.
[2] HAL is High Accident Location.

Based upon this information, the intersection of Congress/Gilman is no longer identified as a high accident location while the intersection of Congress and Weymouth continues to be an HAL.

The Manual on Uniform Traffic Control Devices (MUTCD) states that the accident experience warrant is satisfied when:

> *"1. Adequate trial of less restrictive remedies with satisfactory observance and enforcement has failed to reduce the accident frequency; and*
>
> 2. *Five or more reported accidents, of types susceptible to correction by traffic signal control, have occurred within a 12-month period, each accident involving personal injury or property damage apparently exceeding the applicable requirements for a reportable accident; and*
>
> 3. *There exists a volume of vehicular and pedestrian traffic not less than 80 percent of the requirements specified either in the Minimum Vehicular Volume warrant, the Interruption of Continuous Traffic warrant, or the Minimum Pedestrian Volume warrant; and*
>
> 4. *The signal installation will not seriously disrupt progressive traffic flow."*

All four conditions must be met before a traffic signal should be installed since each condition ends with an "and". Since the number of accidents occurring from 1994-1996 at the intersection of Congress/Gilman was six, an average of 2 per year, this does not meet the number of accidents specified in item #2 of the warrant and therefore no further analysis was completed for this warrant. At the intersection of Congress/Weymouth the yearly breakdown of accidents is as follows:

Year	Number of Accidents	Number Correctable by Signal
1997 (thru October)	5	0
1996	5	0
1995	5	0
1994	2	1
1993	2	1

The accident pattern associated with Weymouth Street is left turning vehicles waiting to turn onto Weymouth Street being struck from behind. This would not be significantly improved by installation of a traffic signal.

With regard to elimination of parking on the north side of Congress adjacent to these intersections to improve sight lines, four spaces should be eliminated to the east and west of Gilman today to improve sight lines. At Weymouth Street, this intersection has a poor sight distance for looking to the west due to vehicle parking on the north side of Congress Street close to the Weymouth and Congress Street intersection. These vehicles block the sight line for any vehicles trying to make a left turn out of Weymouth Street. To improve the sight line, DeLuca-Hoffman Associates, Inc. recommends elimination of three parking spaces.

Comment 5:

A conceptual sketch of the proposed elimination of on-street parking on the south side of Congress Street from Gilman to Weymouth has not yet been submitted by DeLuca-Hoffman for City review. I question whether the parking restriction might serve all concerned if only during the peak hours or peak a.m. hours.

Response:

A conceptual sketch of the proposed elimination of on-street parking on the south side of Congress Street from Gilman Street to Weymouth Street is included in Attachment 5. DeLuca-Hoffman Associates, Inc. concurs with your recommendation to eliminate the parking only between the hours of 6:00 AM and 6:00 PM.

Comment 6:

Signal improvements at Bramhall/Congress are supposedly being made due to the Holt Hall renovation project and DeLuca-Hoffman has not been asked to do any additional work at this location at this time.

Response:

No response required.

Comment 7:

I expressed concern to Tom Gorrill that parking by MMC employees and visitors in residential neighborhoods would continue and that residents in these neighborhoods may wish to eliminate as much of this as possible. Tom Gorrill said that MMC is preparing a parking management plan which will address this question.

Response:

MMC is in the process of completing their parking management plan which will be submitted separately.

DeLuca-Hoffman Associates, Inc. appreciates the opportunity to respond to these comments. If you need any further information, please contact me.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas L. Gorrill, P.E.
Vice President

TLG/sq/JN1471/ash12-2

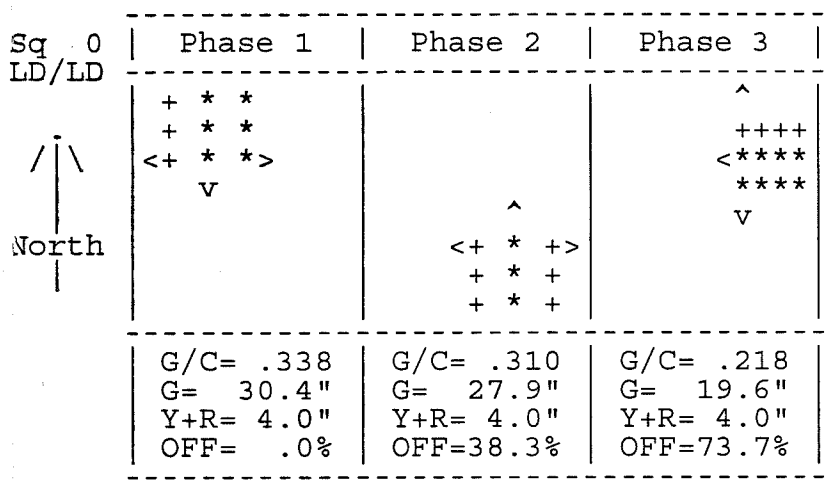
c: Rick Knowland

ATTACHMENT 1

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:36:48
1998 AM NO-BUILD : FILE AMNBSTP1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .72 Vehicle Delay 24.4 Level of Service C



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								22.1	C	
RT	10/1	.207	.349	411	526	154	.293	16.2	C+	125 ft
LT+TH	12/1	.342	.349	511	639	495	.775	24.0	*C	409 ft
S Approach								24.1	C	
RT	12/1	.317	.321	354	451	346	.767	24.4	C	320 ft
TH	12/1-	.315	.321	466	577	451	.782	24.0	*C	392 ft
LT	12/1+	.314	.321	443	580	428	.738	24.1	C	363 ft
E Approach								26.9	D+	
RT	12/1	.180	.229	211	364	107	.292	21.9	C	104 ft
LT+TH	26/2	.251	.229	560	869	670	.771	27.7	*D+	328 ft

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:36:42
1998 AM NO-BUILD : FILE AMNBSTP1

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	139	356	89	96	468	106	311	268	523	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
LANES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	4	4	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1830	0	1599	3786	0	1404	1796	1805	0	0	0

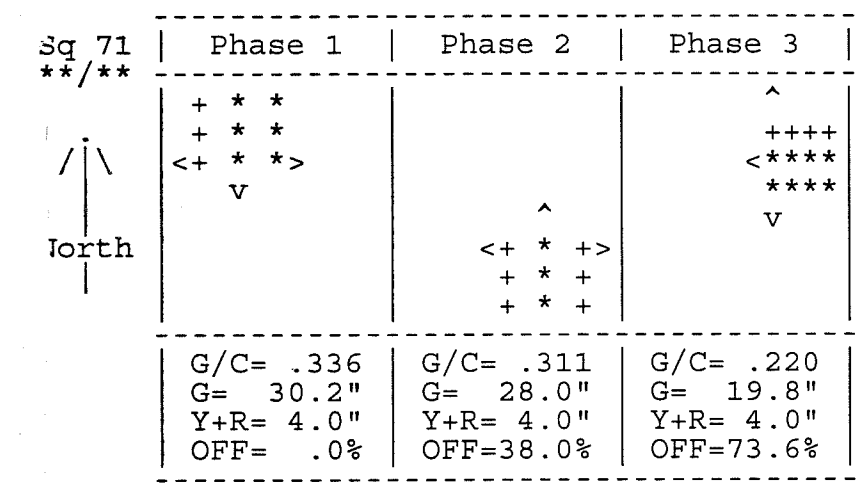
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	90	10				PEDTIME	.0	0
GREENTIMES	30.43	27.92	19.65						
YELLOWTIMES	4.00	4.00	4.00						
CRITICALS	2	8	5						
EXCESS	0								
PHASEMOVEMENTS	1	1	2	3	0	0	0		
PHASEMOVEMENTS	2	7	8	9	0	0	0		
PHASEMOVEMENTS	3	4	5	6	0	0	0		
PHASEMOVEMENTS	4	0	0	0	0	0	0		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:09:11
1999 AM POST-DEVELOPMENT : FILE AMSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .73 Vehicle Delay 24.6 Level of Service C



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								22.4	C	
RT	10/1	.207	.347	407	523	154	.294	16.3	C+	126 ft
LT+TH	12/1	.342	.347	506	635	495	.780	24.3	*C	411 ft
S Approach								24.2	C	
RT	12/1	.317	.322	355	452	346	.765	24.2	C	320 ft
TH	12/1-	.317	.322	467	578	455	.787	24.2	*C	395 ft
LT	12/1+	.317	.322	445	581	433	.745	24.3	C	367 ft
E Approach								27.0	D+	
RT	12/1	.182	.231	214	366	110	.298	21.9	C	106 ft
LT+TH	26/2	.253	.231	569	875	681	.778	27.8	*D+	333 ft

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:10:26
1999 AM POST-DEVELOPMENT : FILE AMSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	139	356	89	99	478	106	311	270	529	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
LANES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	4	4	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1830	0	1599	3788	0	1404	1796	1805	0	0	0

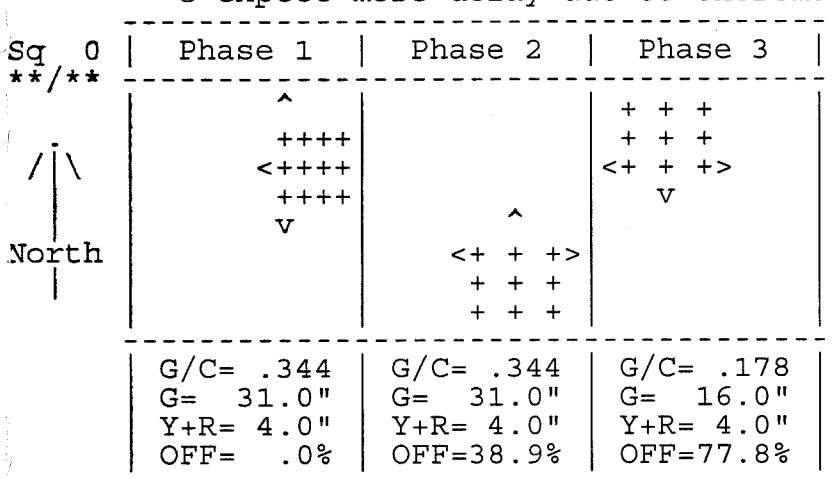
Phasing Parameters

SEQUENCES	71	ALL				
PERMISSIVES	YES	YES	YES	NO	LEADLAGS	NONE NONE
OVERLAPS	NO	NO	NO	NO	OFFSET	.00 1
CYCLES	90	90	10		PEDTIME	.0 0
GREENTIMES	30.23	27.98	19.79			
YELLOWTIMES	4.00	4.00	4.00			
CRITICALS	2	8	5			
EXCESS	0					

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 16:24:38
1998 PM NO-BUILD : FILE PMNBSTP1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .93 Vehicle Delay 39.8@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								37.5	D	
RT	10/1	.217	.189	119	276	173	.607	28.0	D+	175 ft
LT+TH	12/1	.256	.189	148	341	307	.885	42.9	*E+	316 ft
S Approach								49.3@	E+	
RT	12/1	.266	.356	415	499	252	.505	16.8	C+	221 ft
TH	12/1-	.439	.356	543	637	727	1.141	52.6@	E	600 ft
LT	12/1+	.438	.356	517	642	690	1.075	57.7@	E	556 ft
E Approach								29.5	D+	
RT	12/1	.203	.356	451	569	157	.276	15.8	C+	127 ft
LT+TH	26/2	.378	.356	1192	1372	1296	.945	31.2	D+	525 ft

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 16:24:31
1998 PM NO-BUILD : FILE PMNBSTP1

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	168	250	48	152	990	207	244	417	957	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
LANES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	5.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97
ARRIVALTYPES	3	3	3	3	3	3	4	4	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1837	0	1599	3860	0	1404	1790	1805	0	0	0

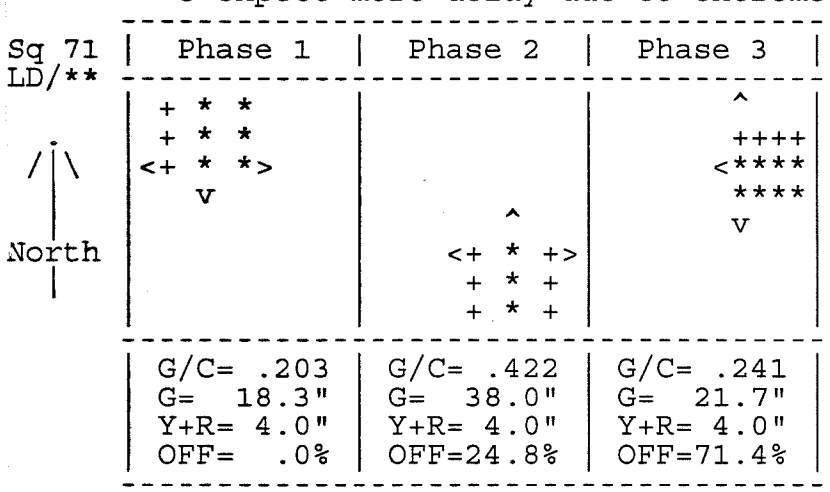
Phasing Parameters

SEQUENCES	-1									
PERMISSIVES	YES	YES	NO	YES			LEADLAGS	NONE	NONE	
OVERLAPS	NO	YES	YES	YES			OFFSET	.00	1	
CYCLES	80	110	10				PEDTIME	.0	0	
GREENTIMES	31.00	31.00	16.00							
YELLOWTIMES	4.00	4.00	4.00							
CRITICALS	2	10	0							
EXCESS	0									
PHASEMOVEMENTS	1	4	5	6	0	0	0			
PHASEMOVEMENTS	2	7	8	9	0	0	0			
PHASEMOVEMENTS	3	1	2	3	0	0	0			
PHASEMOVEMENTS	4	0	0	0	0	0	0			
PHASEMOVEMENTS	5	0	0	0	0	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:30:58
1999 PM POST-DEVELOPMENT : FILE PMSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) 1.00 Vehicle Delay 35.3@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								25.7	D+	
RT	10/1	.172	.214	221	322	156	.483	20.9	C	153 ft
LT+TH	12/1	.230	.214	278	394	307	.779	28.1	*D+	306 ft
S Approach								26.2	D+	
RT	12/1	.230	.433	537	609	226	.371	11.3	B	174 ft
TH	12/1-	.454	.433	699	776	741	.955	32.1	*D+	537 ft
LT	12/1+	.432	.433	705	782	703	.899	24.8	C	498 ft
E Approach								48.6@	E+	
RT	12/1	.160	.252	300	403	149	.370	18.2	C+	140 ft
LT+TH	26/2	.372	.252	812	974	1328	1.363	52.0@	*E	624 ft

Maine Medical Center in Portland, Maine 12/02/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 17:30:51
1999 PM POST-DEVELOPMENT : FILE PMSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & PARK AVENUE

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	850	25	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	NONE
PARKVOLUMES	0	0	0	0
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	17	16	25	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	168	250	48	161	1020	207	244	425	976	0	0	0
WIDTHS	10.0	12.0	.0	12.0	26.0	.0	12.0	12.0	12.0	.0	.0	.0
LANES	1	1	0	1	2	0	1	1	1	0	0	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	5.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	DOPT	NORM	NORM	NORM
SATURATIONFLOWS	1507	1837	0	1599	3861	0	1404	1790	1805	0	0	0

Phasing Parameters

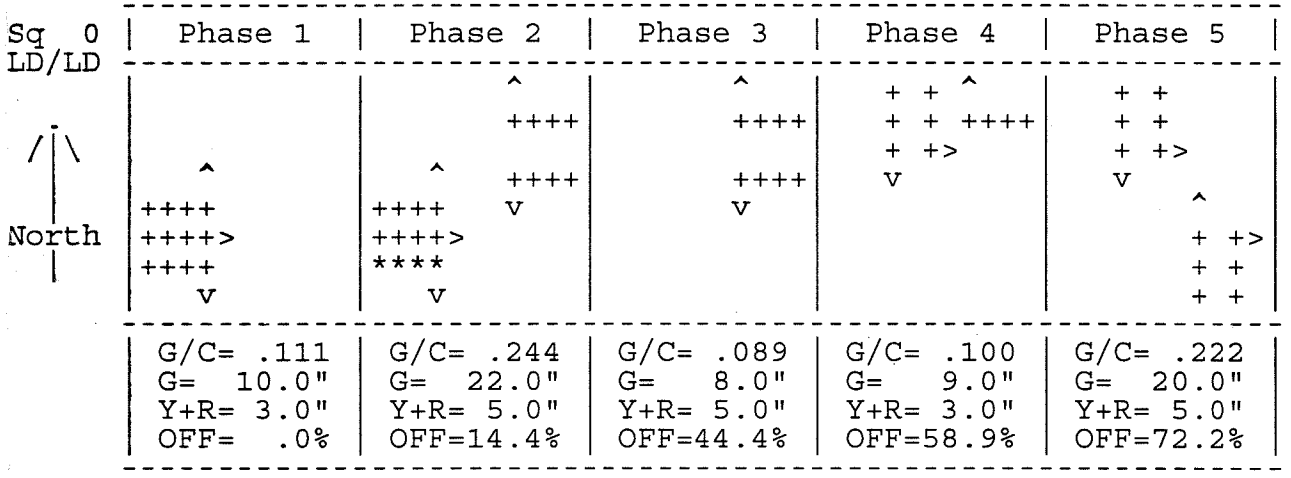
SEQUENCES	71	ALL				
PERMISSIVES	YES	YES	YES	NO	LEADLAGS	LEAD NONE
OVERLAPS	NO	NO	NO	NO	OFFSET	.00 1
CYCLES	90	90	10		PEDTIME	.0 0
GREENTIMES	18.30	38.00	21.70			
YELLOWTIMES	4.00	4.00	4.00			
CRITICALS	2	8	5			
EXCESS	0					

ATTACHMENT 2

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 11:39:00
1998 AM NO-BUILD : FILE AMNBSTJ1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .86 Vehicle Delay 49.6@ Level of Service E+
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								15.6	C+	
LT+TH	24/2	.230	.378	1090	1244	480	.386	15.6	*C+	190 ft
S Approach								28.7	D+	
TH+RT	24/2	.269	.244	615	869	732	.842	28.7	D+	356 ft
E Approach								25.7	D+	
RT	12/1	.256	.244	214	340	232	.682	26.3	D+	220 ft
LT	11/1	.091	.111	130	297	79	.264	23.8	C	87 ft
W Approach								68.7@	F	
TH+RT	23/2	.494	.411	1265	1400	1591	1.136	77.7@	F	594 ft
LT	12/1	.269	.111	1	690	463	.636	37.9	D	521 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 11:38:53
1998 AM NO-BUILD : FILE AMNBSTJ1

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	345	67	209	0	71	66	562	0	601	762	417
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
LANES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	3294	0	1390	0	1517	0	3557	0	0	3406	1770

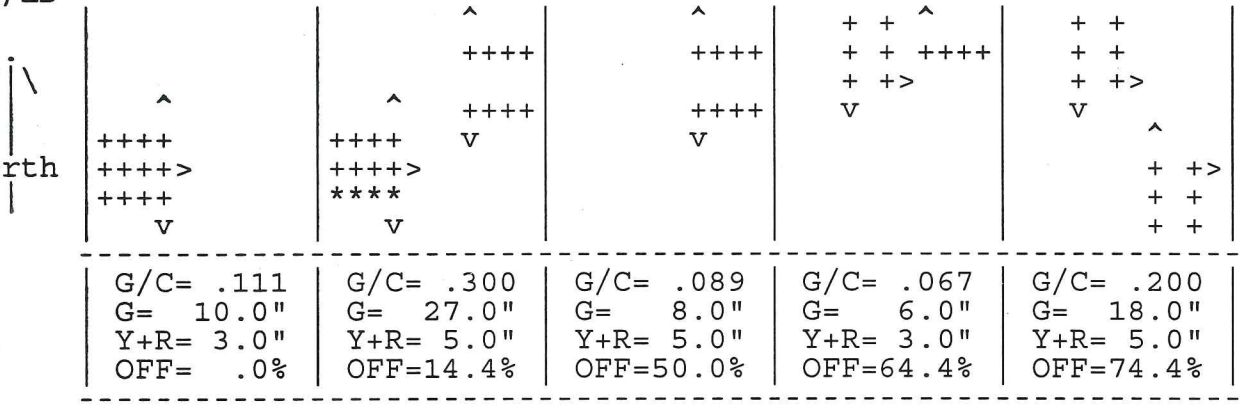
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	22.00	8.00	9.00	20.00				
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	-4	-6	0		
PHASEMOVEMENTS	3	4	6	0	0	0	0		
PHASEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 10:45:12
1999 AM POST-DEVELOPMENT :AMSTJH

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .85 Vehicle Delay 36.9 Level of Service D



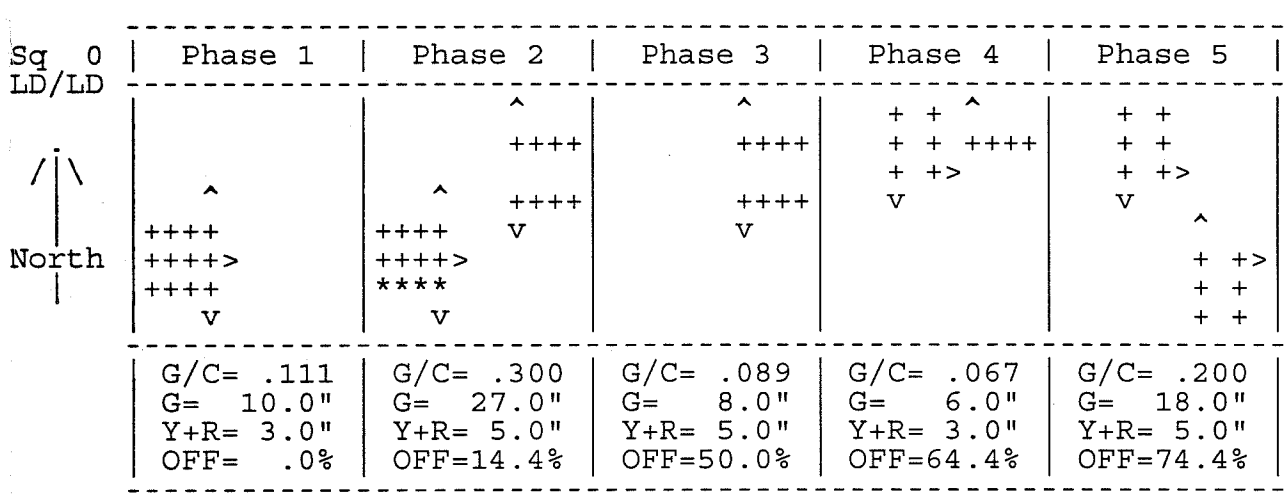
C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								19.0	C+	
LT+TH	24/2	.239	.322	842	1030	505	.490	19.0	*C+	218 ft
S Approach								35.9	D	
TH+RT	24/2	.269	.222	503	790	732	.927	35.9	D	367 ft
E Approach								31.8	D+	
RT	12/1	.261	.211	154	291	241	.823	34.9	D	239 ft
LT	11/1	.093	.111	134	297	91	.304	23.8	C	100 ft
W Approach								42.4	E+	
TH+RT	23/2	.506	.467	1490	1594	1645	1.032	43.8	E+	556 ft
LT	12/1	.268	.111	1	769	463	.561	37.3	D	521 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 10:45:12
1999 AM POST-DEVELOPMENT :AMSTJH

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .85 Vehicle Delay 36.9 Level of Service D



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								19.0	C+	
LT+TH	24/2	.239	.322	842	1030	505	.490	19.0	*C+	218 ft
S Approach								35.9	D	
TH+RT	24/2	.269	.222	503	790	732	.927	35.9	D	367 ft
E Approach								31.8	D+	
RT	12/1	.261	.211	154	291	241	.823	34.9	D	239 ft
LT	11/1	.093	.111	134	297	91	.304	23.8	C	100 ft
W Approach								42.4	E+	
TH+RT	23/2	.506	.467	1490	1594	1645	1.032	43.8	E+	556 ft
LT	12/1	.268	.111	1	769	463	.561	37.3	D	521 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 10:45:18
1999 AM POST-DEVELOPMENT :AMSTJH

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	345	88	217	0	82	66	562	0	601	809	417
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
LANES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	3197	0	1390	0	1517	0	3557	0	0	3415	1770

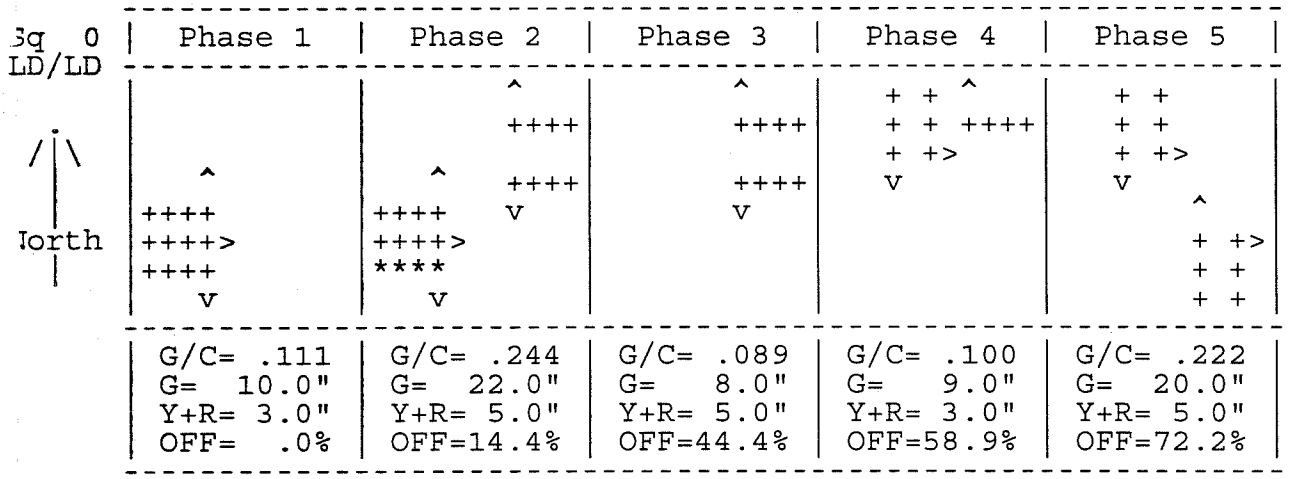
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	27.00	8.00	6.00	18.00				
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	-4	-6	0		
PHASEMOVEMENTS	3	4	6	0	0	0	0		
PHASEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 11:47:12
1998 PM NO-BUILD : FILE PMNBSTJ1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .90 Vehicle Delay 49.5@ Level of Service E+
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 69.0 sec = 76.7% Y=21.0 sec = 23.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								16.2	C+	
LT+TH	24/2	.250	.378	930	1075	482	.448	16.2	*C+	190 ft
S Approach								85.0@	F	
TH+RT	24/2	.334	.244	625	882	1064	1.206	85.0@	F	516 ft
E Approach								77.5@	F	
RT	12/1	.354	.244	214	340	407	1.197	98.1@	F	387 ft
LT	11/1	.105	.111	168	298	158	.528	24.4	C	152 ft
W Approach								27.5	D+	
TH+RT	23/2	.394	.411	1266	1401	1198	.855	22.1	C	447 ft
LT	12/1	.284	.111	1	690	511	.702	40.1	E+	575 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 11:47:05
1998 PM NO-BUILD : FILE PMNBSTJ1

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	342	71	366	0	142	44	868	0	450	577	460
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
LANES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	4	4	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2845	0	1390	0	1517	0	3609	0	0	3408	1770

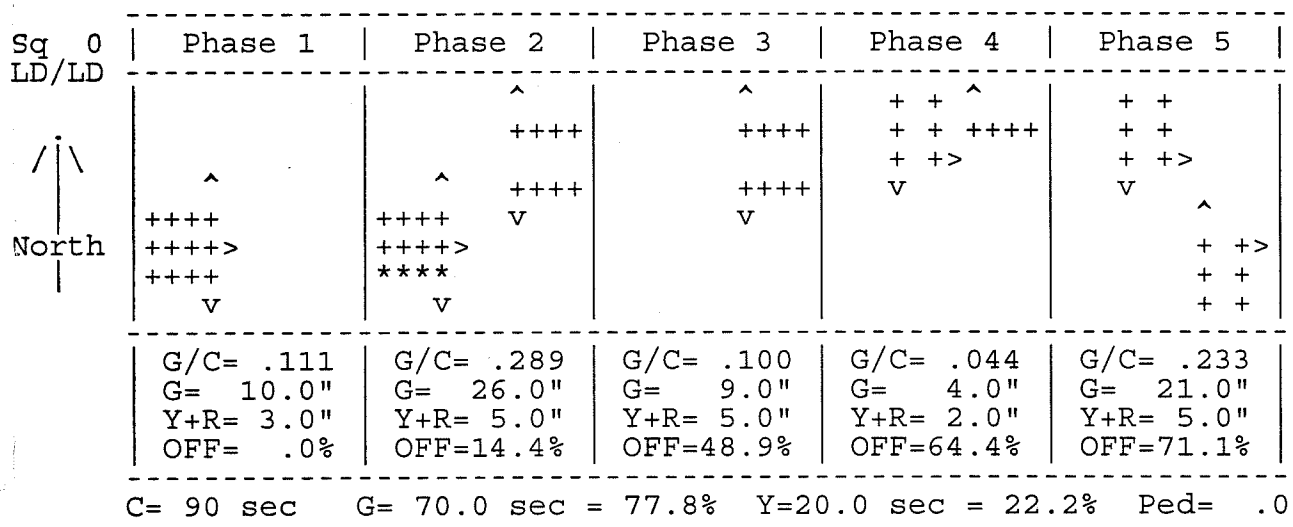
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	22.00	8.00	9.00	20.00				
YELLOWTIMES	3.00	5.00	5.00	3.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	-4	-6	0		
PHASEMOVEMENTS	3	4	6	0	0	0	0		
PHASEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 16:12:52
1999 PM POST-DEVELOPMENT:PMNBST

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .78 Vehicle Delay 39.5@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 90 sec G= 70.0 sec = 77.8% Y=20.0 sec = 22.2% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								19.6	C+	
LT+TH	24/2	.254	.322	728	903	490	.543	19.6	*C+	211 ft
S Approach								87.2@	F	
TH+RT	24/2	.344	.256	658	923	1058	1.146	87.2@	F	505 ft
E Approach								15.3	C+	
RT	12/1	.352	.533	687	741	393	.530	10.8	B	231 ft
LT	11/1	.118	.122	201	316	194	.614	24.5	C	161 ft
W Approach								23.5	C	
TH+RT	23/2	.379	.456	1454	1564	1147	.733	16.5	C+	396 ft
LT	12/1	.282	.111	1	755	511	.633	39.2	D	575 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of St. John Street and Congress Street 16:12:42
1999 PM POST-DEVELOPMENT:PMNBST

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 1 - ST. JOHN & CONGRESS ST.

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	250	25	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1000	1000	NETWORK	WEST	0	0	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	RIGHT	NONE	NONE
PARKVOLUMES	0	4	0	0
BUSVOLUMES	0	3	0	0
RIGHTTURNONREDS	0	39	4	60

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	342	78	393	0	175	44	868	0	450	593	460
WIDTHS	.0	24.0	.0	12.0	.0	11.0	.0	24.0	.0	.0	23.0	12.0
LANES	0	2	0	1	0	1	0	2	0	0	2	1
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	4	4	4	3	3	3	3	3	3
ACTUATIONS	NO	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2802	0	1390	0	1517	0	3613	0	0	3432	1770

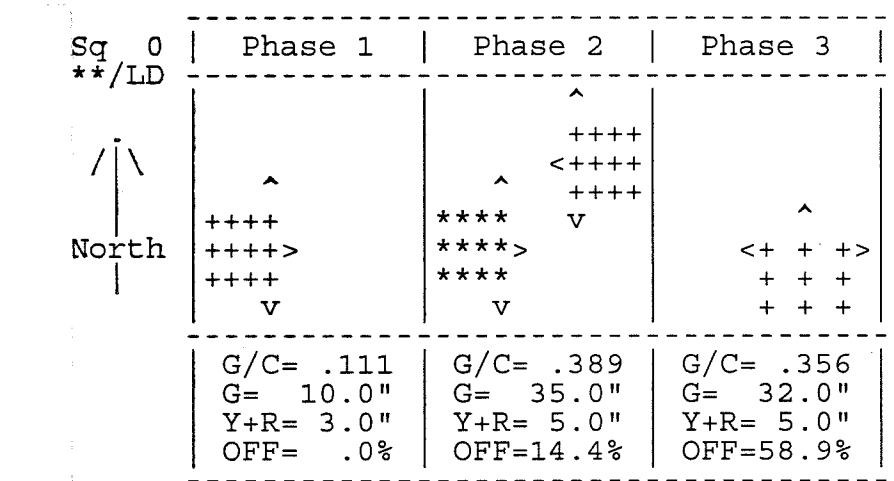
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	YES	YES	YES	YES			LEADLAGS	LEAD	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	90	120	10				PEDTIME	.0	0
GREENTIMES	10.00	26.00	9.00	4.00	21.00				
YELLOWTIMES	3.00	5.00	5.00	2.00	5.00				
CRITICALS	2	10	0	0	0				
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	-12	4	-6	0		
PHASEMOVEMENTS	3	4	6	0	0	0	0		
PHASEMOVEMENTS	4	2	3	4	0	0	0		
PHASEMOVEMENTS	5	2	-3	7	8	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 11:34:52
1998 AM NO-BUILD : FILE AMNBVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .57 Vehicle Delay 12.1 Level of Service B



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								20.7	C	
TH+RT	14/1	.349	.378	510	623	453	.727	21.2	*C	376 ft
LT	12/1	.152	.378	564	682	29	.043	13.5	B	25 ft
E Approach								15.7	C+	
LT+TH+RT	22/2	.297	.411	681	792	421	.532	15.7	C+	158 ft
W Approach								6.6	B+	
LT+TH+RT	22/2	.332	.556	1990	1990	1044	.525	6.6	*B+	294 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 11:34:42
1998 AM NO-BUILD : FILE AMNBVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	41	254	66	263	145	26	23	852	19
WIDTHS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
LANES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1927	0	0	1648	1805	0	3582	0

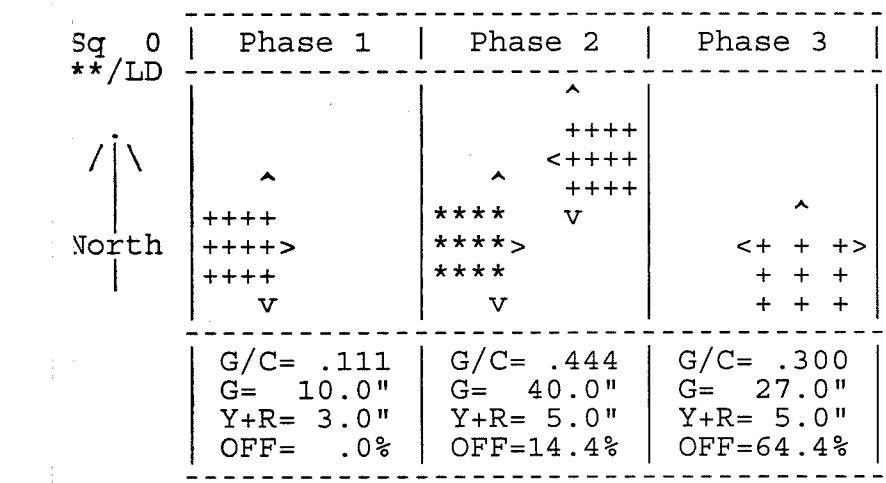
Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	YES	YES	YES			LEADLAGS	NONE	LEAD
OVERLAPS	YES	YES	YES	YES			OFFSET	.00	1
CYCLES	60	100	10				PEDTIME	.0	0
GREENTIMES	10.00	35.00	32.00						
YELLOWTIMES	3.00	5.00	5.00						
CRITICALS	8	11	0						
EXCESS	0								
PHASEMOVEMENTS	1	10	11	12	0	0	0		
PHASEMOVEMENTS	2	10	11	12	4	5	6		
PHASEMOVEMENTS	3	7	8	9	0	0	0		
PHASEMOVEMENTS	4	0	0	0	0	0	0		
PHASEMOVEMENTS	5	0	0	0	0	0	0		
PHASEMOVEMENTS	6	0	0	0	0	0	0		

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 10:51:07
1999 AM POST-DEVELOPMENT: FILE AMVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .56 Vehicle Delay 10.9 Level of Service B



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								25.0	D+	
TH+RT	14/1	.327	.322	406	536	414	.772	25.7	*D+	373 ft
LT	12/1	.152	.322	445	582	29	.050	16.0	C+	25 ft
E Approach								13.4	B	
LT+TH+RT	22/2	.321	.467	775	867	457	.527	13.4	B	155 ft
W Approach								4.3	A	
LT+TH+RT	22/2	.349	.611	2190	2190	1122	.512	4.3	*A	276 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 10:50:52
1999 AM POST-DEVELOPMENT: FILE AMVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	75	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	41	273	77	303	145	26	23	920	19
WIDTHS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
LANES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1857	0	0	1675	1805	0	3584	0

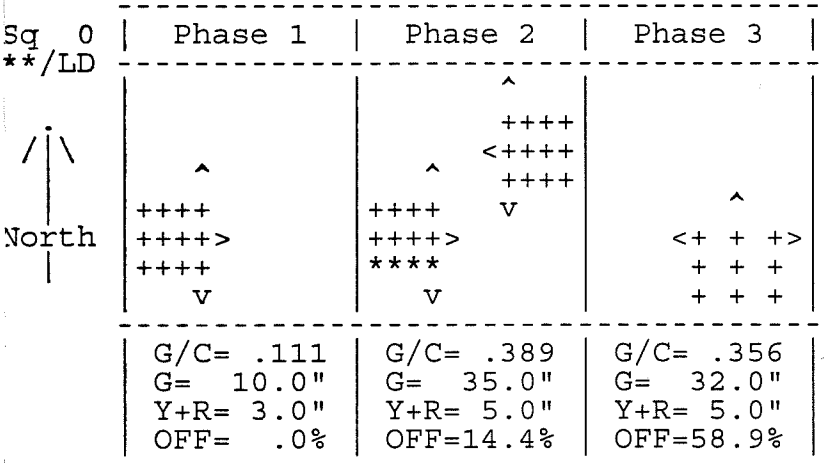
Phasing Parameters

SEQUENCES	-1									
PERMISSIVES	NO	YES	YES	YES				LEADLAGS	NONE	LEAD
OVERLAPS	NO	YES	YES	YES				OFFSET	.00	1
CYCLES	90	100	10					PEDTIME	.0	0
GREENTIMES	10.00	40.00	27.00							
YELLOWTIMES	3.00	5.00	5.00							
CRITICALS	8	11	0							
EXCESS	0									
PHASEMOVEMENTS	1	10	11	12	0	0	0			
PHASEMOVEMENTS	2	10	11	12	4	5	6			
PHASEMOVEMENTS	3	7	8	9	0	0	0			
PHASEMOVEMENTS	4	0	0	0	0	0	0			
PHASEMOVEMENTS	5	0	0	0	0	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 11:49:19
1998 PM NO-BUILD : FILE PMNBVLL1

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .58 Vehicle Delay 16.4 Level of Service C+



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								16.1	C+	
TH+RT	14/1	.269	.378	524	639	307	.480	16.6	C+	253 ft
LT	12/1	.166	.378	564	682	78	.114	13.8	B	61 ft
E Approach								28.2	D+	
LT+TH+RT	22/2	.425	.411	660	770	690	.896	28.2	D+	258 ft
W Approach								5.8	B+	
LT+TH+RT	22/2	.273	.556	1988	1988	757	.381	5.8	B+	213 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 11:49:11
1998 PM NO-BUILD : FILE PMNBVLL1

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	34	447	110	150	126	70	18	606	25
WIDTHS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
LANES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1887	0	0	1692	1805	0	3578	0

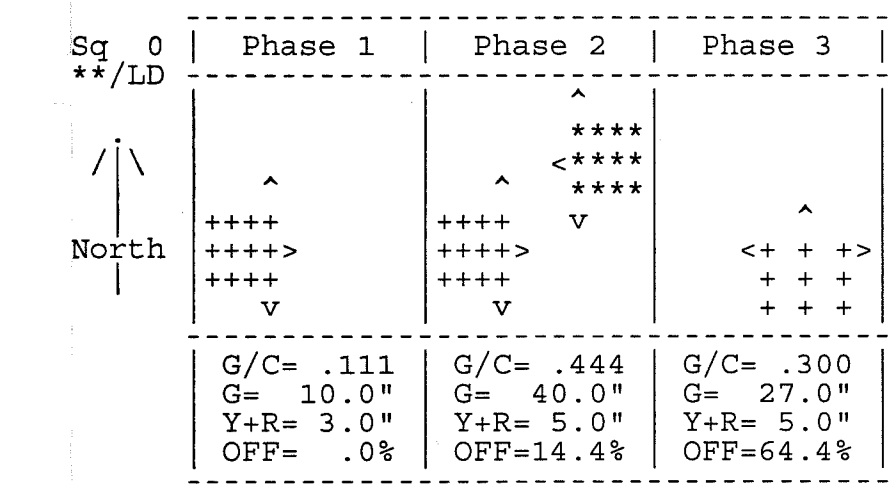
Phasing Parameters

SEQUENCES	-1									
PERMISSIVES	NO	YES	YES	YES				LEADLAGS	NONE	LEAD
OVERLAPS	NO	YES	YES	YES				OFFSET	.00	1
CYCLES	90	110	10					PEDTIME	.0	0
GREENTIMES	10.00	35.00	32.00							
YELLOWTIMES	3.00	5.00	5.00							
CRITICALS	2	10	0							
EXCESS	0									
PHASEMOVEMENTS	1	10	11	12	0	0	0			
PHASEMOVEMENTS	2	10	11	12	4	5	6			
PHASEMOVEMENTS	3	7	8	9	0	0	0			
PHASEMOVEMENTS	4	0	0	0	0	0	0			
PHASEMOVEMENTS	5	0	0	0	0	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 16:01:23
1999 PM POST-DEVELOPMENT : FILE PMVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .62 Vehicle Delay 20.2 Level of Service C



C= 90 sec G= 77.0 sec = 85.6% Y=13.0 sec = 14.4% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								19.3	C+	
TH+RT	14/1	.267	.322	415	546	303	.555	20.1	*C	272 ft
LT	12/1	.166	.322	445	582	78	.134	16.4	C+	66 ft
E Approach								33.9	D	
LT+TH+RT	22/2	.495	.467	736	827	794	.960	33.9	*D	270 ft
W Approach								6.7	B+	
LT+TH+RT	22/2	.279	.611	2177	2188	782	.357	6.7	B+	192 ft

Maine Medical Center in Portland, Maine 12/02/97
Intersection of Valley Street and Congress Street 16:01:11
1999 PM POST-DEVELOPMENT : FILE PMVLLY

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 2 - CONGRESS ST. & VALLEY STREET

METROAREA	NONCBD		NETWORK	NORTH	0	0	0	0	0	0	0
LOSTTIME	3.0		NETWORK	EAST	0	0	0	0	0	0	0
LEVELOFSERVICE	C	S	NETWORK	SOUTH	0	0	0	0	0	0	0
NODELOCATION	1250	1000	NETWORK	WEST	250	25	0	0	0	0	0

Approach Parameters

	N	E	S	W
APPLABELS				
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	BOTH	RIGHT	LEFT	LEFT
PARKVOLUMES	8	4	6	4
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	3	16	2

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	0	0	0	34	507	143	163	126	70	18	629	25
WIDTHS	.0	.0	.0	.0	22.0	.0	.0	14.0	12.0	.0	22.0	.0
LANES	0	0	0	0	2	0	0	1	1	0	2	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	.0	2.0	6.0	1.0	.0	15.0	15.0	4.0	.0	3.0	2.0	2.0
PEAKHOURFACTORS	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90	.90
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	4	4	4
ACTUATIONS	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	0	0	0	1770	0	0	1683	1805	0	3579	0

Phasing Parameters

SEQUENCES	-1								
PERMISSIVES	NO	YES	YES	YES				LEADLAGS	NONE	LEAD
OVERLAPS	NO	YES	YES	YES				OFFSET	.00	1
CYCLES	90	90	10					PEDTIME	.0	0
GREENTIMES	10.00	40.00	27.00							
YELLOWTIMES	3.00	5.00	5.00							
CRITICALS	8	5	0							
EXCESS	0									
PHASEMOVEMENTS	1	10	11	12	0	0	0			
PHASEMOVEMENTS	2	4	5	6	10	11	12			
PHASEMOVEMENTS	3	7	8	9	0	0	0			
PHASEMOVEMENTS	4	0	0	0	0	0	0			
PHASEMOVEMENTS	5	0	0	0	0	0	0			
PHASEMOVEMENTS	6	0	0	0	0	0	0			

ATTACHMENT 3

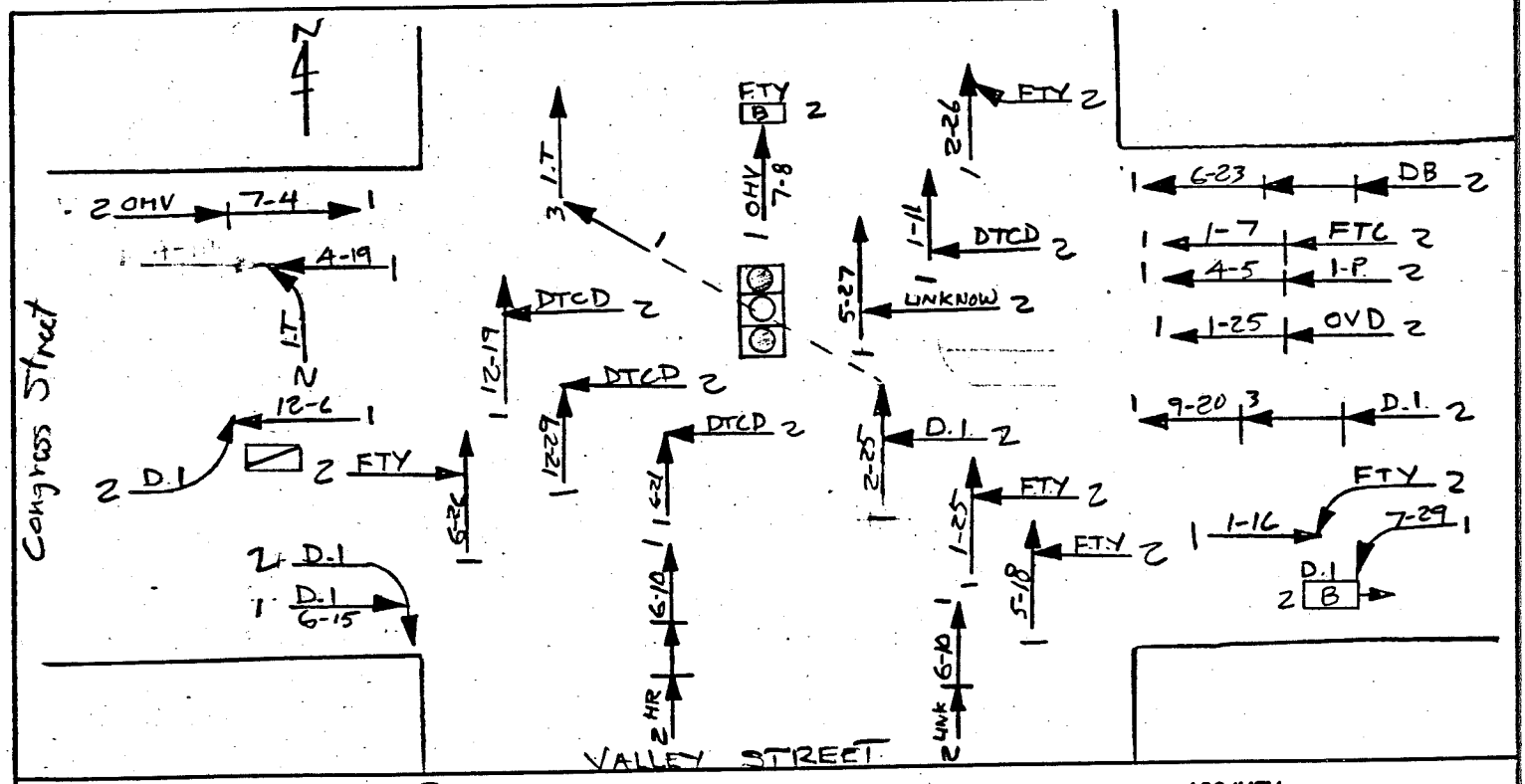
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION INTERSECTION of Congress Street & Valley Street

TOWN Portland NODE NO(S) 7169

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 3-24-97



CRITICAL RATE FACTOR 0.82 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	B
OVERTURN	CHANGE LANE	ANIMAL	A
PARKED VEHICLE	OUT OF CONTROL	SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
01946	1-11-95	6:50					2	1	5 14	red light
16479	5-27-95	7:57					2	1	51	
19809	6-26-95	14:10					1	1	2	red light
01362	1-7-95	16:34					4	2	4	Ice Packed Snow
07907	2-25-95	9:11			1		2	1	14, 13	
03903	1-25-95	11:15					2	1	2	
12806	4-1995	16:30					2	2	13	

LOCATION *Intersection of Congress Street & Valley Street*

TOWN *Portland* NODE NO(S) *7169*

YEAR(S) REVIEWED *1993-1995* DATE PREPARED *3-24-1997*

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
29589	9-20-95	22:51				2	4	1	30, 14	
19695	5-18-94	12:00					2	1	2	red light
48082	12-29-94	14:18					2	1	5, 14	red light
25733	7-8-94	19:34				1	3	1	2	V_1 Alcohol OUI
22346	6-10-94	17:05					2	1	31	
12762	3-10-94	7:35					2	9	51	
44648	12-6-94	12:21			1		2	1	14	
03431	1-16-94	15:53			1		2	1	2	
06343	1-25-94	10:30				1	2	9	50	
23762	6-23-94	11:10				1	2	1	41	
23581	6-21-94	16:06					2	2	5	
46769	12-19-94	19:38					4	1	5	
09304	2-26-93	11:20					2	2	2	
26857	7-29-93	12:03				1	2	2	14	
22179	6-15-93	10:10				1	2	1	14, 14	V_1=14 V_2=14
23612	7-4-93	3:08			2		4	1	30	
16275	4-5-93	14:49				1	2	1	7	

ATTACHMENT 4

SECTION 2

TRAFFIC ACCIDENTS

2.1 Accident Analysis

DeLuca-Hoffman Associates, Inc. has based the accident analysis of this study area on data obtained from the MDOT for the period of 1993 to 1995. 1994-1996 accident data has been ordered and will be furnished when it becomes available.

In order to evaluate whether a location has an accident problem, MDOT uses two criteria to define High Accident Locations (HAL). Both criteria must be met in order to be classified as an HAL.

1. A critical rate factor of 1.00 or more for a three year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate less than average) and:

2. A minimum of 8 accidents over a three year period.

Computerized accident data summaries were provided by MDOT for the study area. Data for these study area intersections is provided below:

Accident Data			
Intersection	**Number of Accidents**	**CRF**	**HAL**
Park Ave. & St. John St.	45	1.16	Yes
Congress & St. John St.	22	0.49	No
Congress & Valley St.	24	0.82	No
Congress & Gilman St.	11	1.00	Yes
Congress & Forest St.	5	0.46	No
Congress & Weymouth St.	9	1.04	Yes
Congress & Bramhall St.	14	0.33	No
Link Between Park Avenue & Congress along St. John St.	32	2.16	Yes
Link Between Weymouth & Ellsworth along Congress St.	10	1.35	Yes
Park Avenue & Forest St.	1	0	No
Park Avenue & Valley St.	5	0.57	No

The above table shows that three intersections and two links are HAL . The collision diagrams are shown in Appendix C. HALs are discussed below. DeLuca-Hoffman Associates, Inc. has ordered the updated 1994-1996 accident data and will update this analysis when it becomes available.

Park Avenue and St. John Street - This intersection experienced 45 accidents during the three year study period and the critical rate factor is 1.16. Twelve rear end, nine change lane, and four left turn side swipe accidents occurred northbound on the St. John Street approach. Five rear end, one change lane and five angle accidents occurred westbound on Park Avenue. The St. John Street southbound approach has no clear pattern to determine the problem. The rear end accident for the northbound approach is due to the heavy traffic flow. The rear end collisions are common at signalized intersections. To correct the change lane accidents, DeLuca-Hoffman Associated recommends over head lane use control signs and also striping through the intersections for westbound dual left-turn lanes.

Congress Street & Weymouth Street - This intersect experienced 9 accidents in the three year study period with a critical rate factor of 1.04. Two accidents involved angle, rear end, turning movement, and parking vehicles. There is no clear pattern to be corrected. Therefore no mitigation measures are proposed for this location.

Congress Street & Gilman Street - Based on the accident table shown, the intersection is HAL with the critical rate factor of 1.00. This intersection experienced 11 accidents. Six of these accidents were angle accidents and four of these angle accidents were on the southbound approach. Two angle accidents were in the northbound approach. One of the angle accident was a physical impairment and two angle accident involved winter conditions. There is no clear pattern to identify as a correctable. Therefore no mitigation is proposed for this location.

Roadway Segment Between Weymouth & Ellsworth Street along Congress Street - This link experienced 10 accidents with a critical rate factor of 1.35. Six accidents involved parked vehicles, four of them were located on the north side of Congress Street and two of them on the south side of Congress Street. The remainder of the accidents have no clear accident pattern to identify as a problem. The three accidents involved with parked vehicles occurred during the winter months. Therefore no mitigation measures are proposed at this location.

Link Between Park Avenue & Congress Street along St. John Street - This link experienced 32 accidents in three year study period. The critical rate factor is 2.16. Twenty-two accidents occurred along the portion of the link fronting McDonald's. The most correctable accident pattern is in front of McDonald's driveways. Based on the McDonald's expansion Traffic Impact Study, McDonald's is proposed to close two driveways and create a proposed two-way driveway located approximately 60' south of the existing northerly driveway. This change will improve the safety in the area. The rest of the accident patterns are uncorrectable. Therefore no mitigation measures are proposed for this location.

2.2 Attachments

Attachment A - Collision Diagram

ATTACHMENT A

Collision Diagram

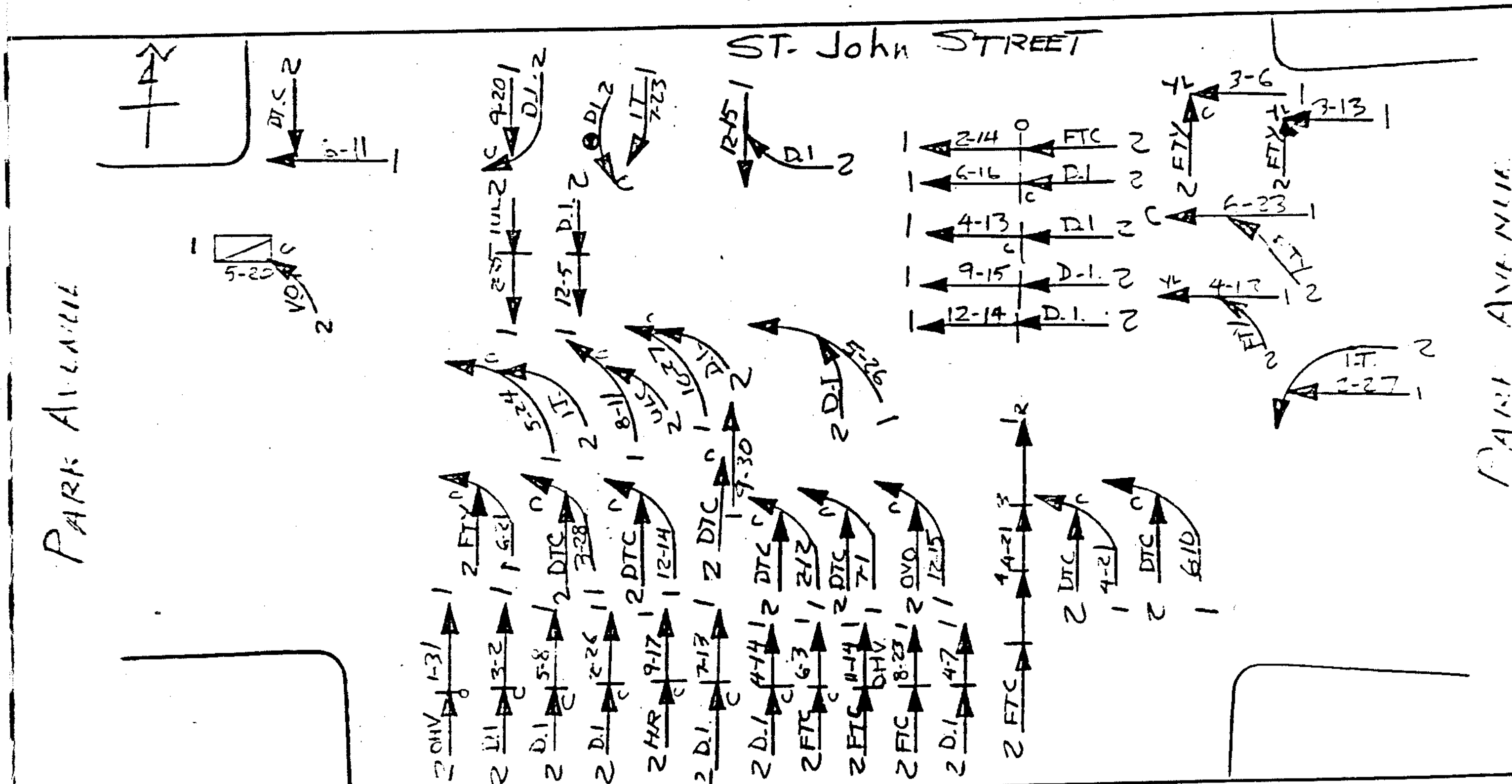
COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION: Park Avenue & ST. John Street

TOWN: Portland NODE NO(S): 7187

YEAR(S) REVIEWED: 1993- 1995 DATE PREPARED: 2-6-97



CRITICAL RATE FACTOR: 1.16 EQUIV. PROP. DAMAGE ACC/YEAR ____ ACC/MEV ____

LIGHT
1. DAWN (MORNING)
2. DAYLIGHT
3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON)
5. DARK (NO ST. LIGHTS)
6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY
2. WET
3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED
5. MUDDY
6. DEBRIS
7. OILY
8. SNOW/SLUSH-NOT SANDED
9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION
2. FAIL TO YLD. RIGHT OF WAY
3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE
5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING
7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE
9. IMP. PARKING START/STOP
10. IMPROPER TURN
11. UNSAFE BACKING
12. NO SIGNAL OR IMP. SIGNAL
13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION
15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR
17. PHYSICAL IMPAIRMENT
18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT
30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN
51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES
42. DEFECTIVE TIRE/FAILURE
43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR
45. DEFECTIVE STEERING
50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT ●, VEHICLE (MOVING), BICYCLE [B], ANIMAL [A], SLED [S]

WEATHER
C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
23511	6-23-93	17:10				1	2	1	2	
26746	7-23-93	7:26				1	2	1	14 / 10	
07288	2-14-93	13:36					2	10	4	
22803	6-16-93	15:20					2	1	14	
14261	[illegible]	11:36					2	1	5	
24747	1-21-93	17:00					4	9	30	[illegible]
[illegible]	3-2-93	16:00			1		2	2	14	

LOCATION Park Avenue & St. John Street
TOWN Portland NODE NO(S) 7187
YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
20017	5-8-93	00:30				1	4	10	14	
22285	6-21-93	19:35			1		3	2	2	
33761	9-20-93	20:20					4	1	14	[illegible]
44113	12-14-93	15:15					2	2	5	
11190	3-26-94	20:15					4	1	14.4	
12343	3-6-94	1:45					4	1	3	[illegible]
34091	9-17-94	21:00			1		4	1	9	
26266	7-13-94	18:20				2	2	1	14	
35530	9-30-94	12:10					2	1	5.14	
19875	5-20-94	12:47					3	1	19	
16612	4-14-94	13:06					2	1	14	
13121	3-13-94	00:58					4	1	3 14	
15454	3-25-94	21:40					4	1	9	
24852	7-1-94	14:10					2	1	5	
21569	6-3-94	16:30			1		2	1	4	
46134	12-15-94	6:10					2	1	20	
25207	3-11-95	18:30					2	1	8	
17302	4-13-95	8:15				1	2	1	14	
36773	11-14-95	16:20				1	4	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	9:16					2	1	14	
33907	10-27-95	21:20					4	1	14	
[illegible]	2-22-95	17:15				1	2	1	4 14	
41964	12-16-95	14:45					2	2	15	
[illegible]	[illegible]-14-95	14:45					2	1	14	
13011	4-11-95	16:10			3		2	[illegible]	[illegible]	[illegible]
17035	4-21-95	18:21					6	[illegible]	4.14	[illegible]
39963	12-5-95	1648				2	4	1	14	
10774	2-27-95	16:05					2	1	10	
11872	4-7-95	14:30				1	2	1	14	
16073	5-24-95	15:16					2	1	10	
13962	4-21-95	[illegible]					2	1	5	[illegible]
13317	4-12-95	21:08					2	1	7	
[illegible]	5-21-95	11:57					2	1	14	
17904	6-10-95	21:00					2	1	5.14	

LOCATION PARK AVENUE & ST. JOHN STREET

TOWN PORTLAND NODE NO(S) 7187

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
09257	2-17-94	15:30					2	2	10	

LOCATION Park Avenue & St. John Street

TOWN Portland NODE NO(S) 7187

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
09257	2-17-94	15:30					2	2	10	

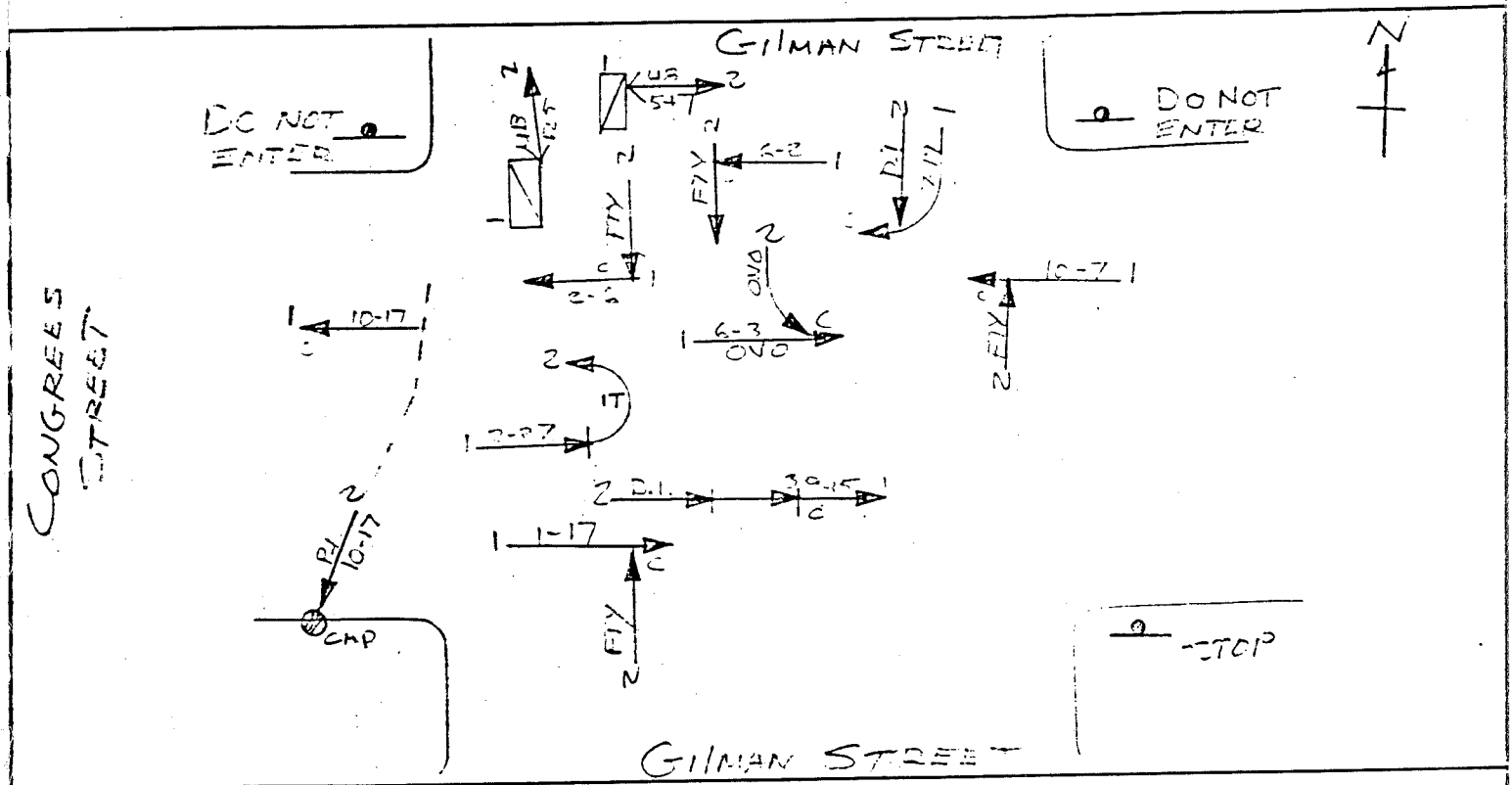
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CONGRESS STREET & GILMAN STREET

TOWN Portland NODE NO(S) 8991

YEAR(S) REVIEWED 1992 - 1994 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.00 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	(B)
OVERTURN	CHANGE LANE	ANIMAL	(A)
PARKED VEHICLE	OUT OF CONTROL	SLED	(S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
[illegible]887	2-3-93	13:03					2	1	2	
26197	3-6-93	21:45				1	4	1	7	
29361	3-27-93	12:03				1	2	1	11	
31378	7-19-93	15:37					2	1	14	
[illegible]553	9-15-93	13:55				1	2	1	14	
[illegible]093	10-7-93	15:42					2			
32471	12-5-93	[illegible]					4	2	11	

LOCATION CONGRESS STREET & GILMAN STREET

TOWN PORTLAND NODE NO(S) 8991

YEAR(S) REVIEWED 1992 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
19[illegible]	5-17-94	13:07					2	1	11	
21570	6-3-94	20:13					2	1	20/20	
37[illegible]	10-17-95	12:11			1	1	2	1	17	
02761	1-17-95	7:34					2	1	2	

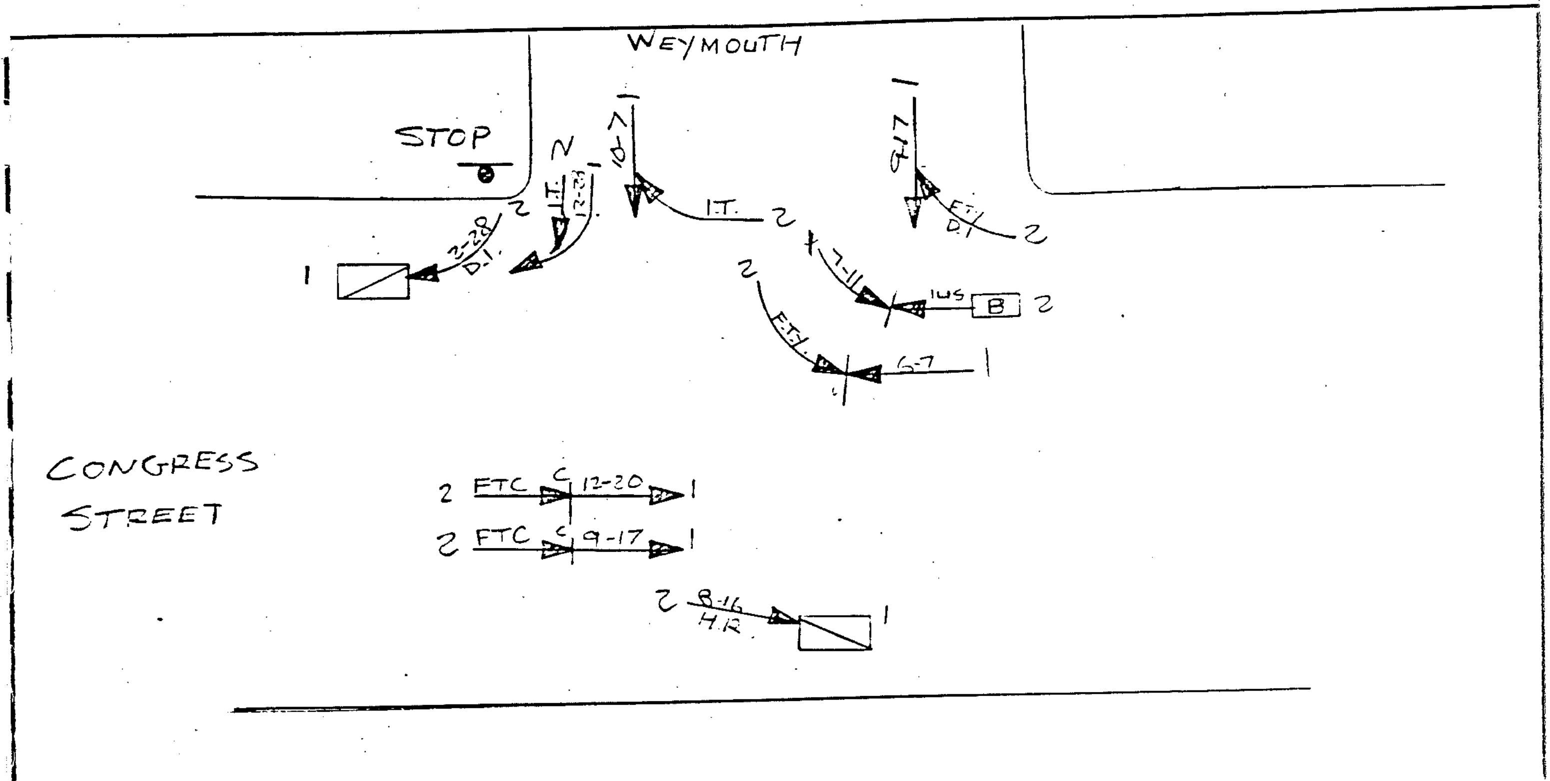
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Congress Street and Weymouth Street

TOWN Portland NODE NO(S) 7245

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.04 EQUIV. PROP. DAMAGE ACC/YEAR ______ ACC/MEV ______

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, PEDESTRIAN [P], FATAL ACCIDENT ●
BACKING, REAR END
FIXED OBJECT, SIDE SWIPE, VEHICLE (MOVING)
HEAD ON, TURNING MOVE, BICYCLE [B]
OVERTURN, CHANGE LANE, ANIMAL [A]
PARKED VEHICLE, OUT OF CONTROL, SLED [S]

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
31066	6-7-93	17:11			1	1	2	1	2	V2 [illegible]
45451	12-30-93	12:33				1	2	1	4	
26095	7-11-94	16:46			1		2	1	3	
36302	10-7-94	8:00					2	8	10	
29326	9-17-95	11:33				1	2	2	4	
44201	12-28-95	15:17					2	1	10.7	V1 [illegible]
29314	9-17-95	11:34					2	2	4 14	

LOCATION: Congress Street & Weymouth Street

TOWN: Portland NODE NO(S): 7245

YEAR(S) REVIEWED: 1993-1995 DATE PREPARED: 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
08109	2-28-95	11:10					2	8	14	[illegible]
25666	8-16-95	23:10					4	1	31	Alcohol [illegible]

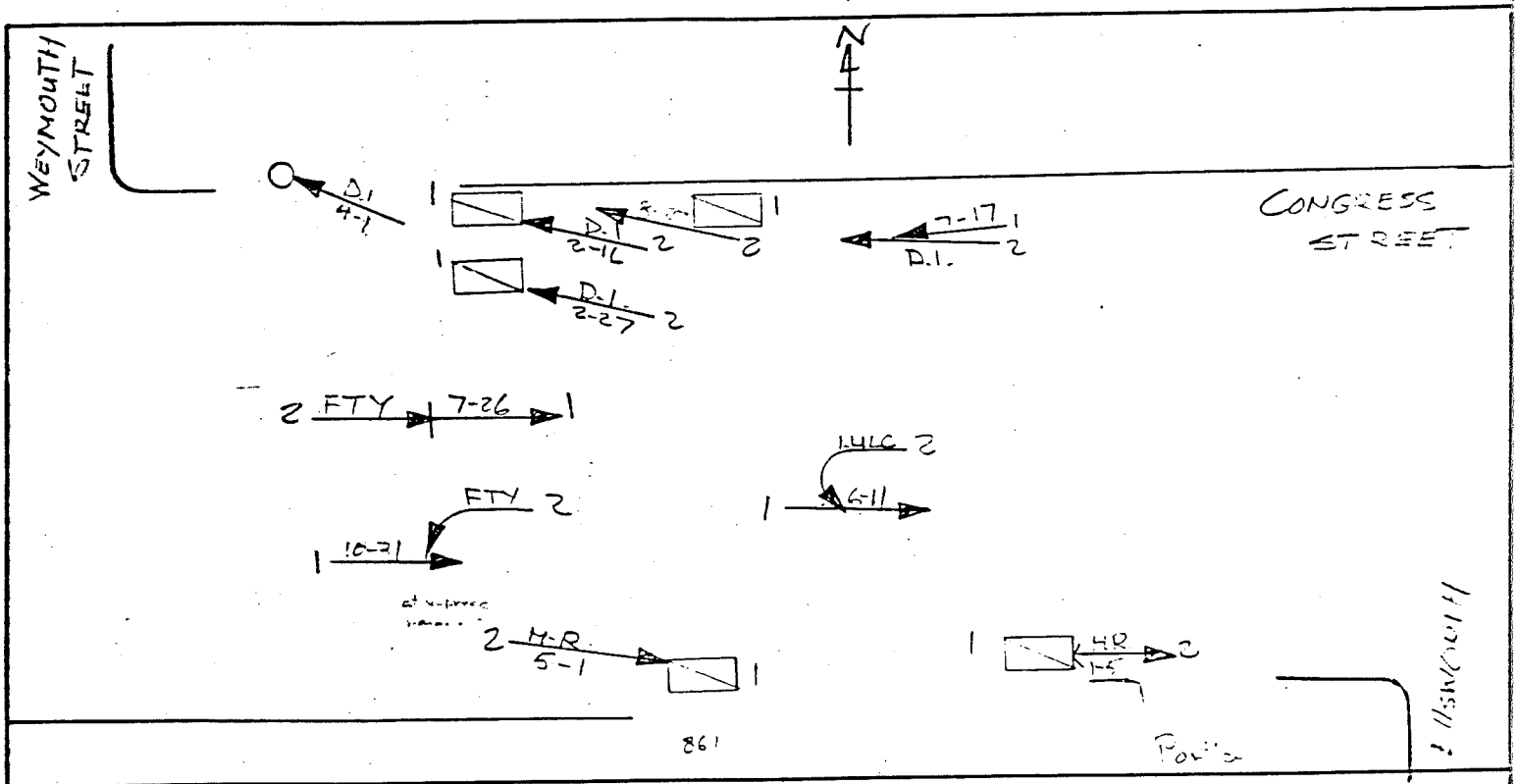
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244 - 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.35 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN [P]	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE	[B]
OVERTURN	CHANGE LANE	ANIMAL	[A]
PARKED VEHICLE	OUT OF CONTROL	SLED	[S]

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
16222	4-1-93	15:05				1	2	9	15	
01509	1-5-93	7:30					2	1	31	
07457	2-16-93	17:53					4	9	14	
20789	5-1-93	20:00					3	1	31	
22046	5-11-93	17:45			1		2	2	8	
illegible	10-21-94	12:20					2	1	2	
26737	7-17-94	11:40					2	1	14	

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244-7245

YEAR(S) REVIEWED 1993-1997 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
26967	2-27-95	10:05					2	2	10	
33346	7-2695	17:53					2	2	4	
10138	2-2795	14:15					2	4	14	

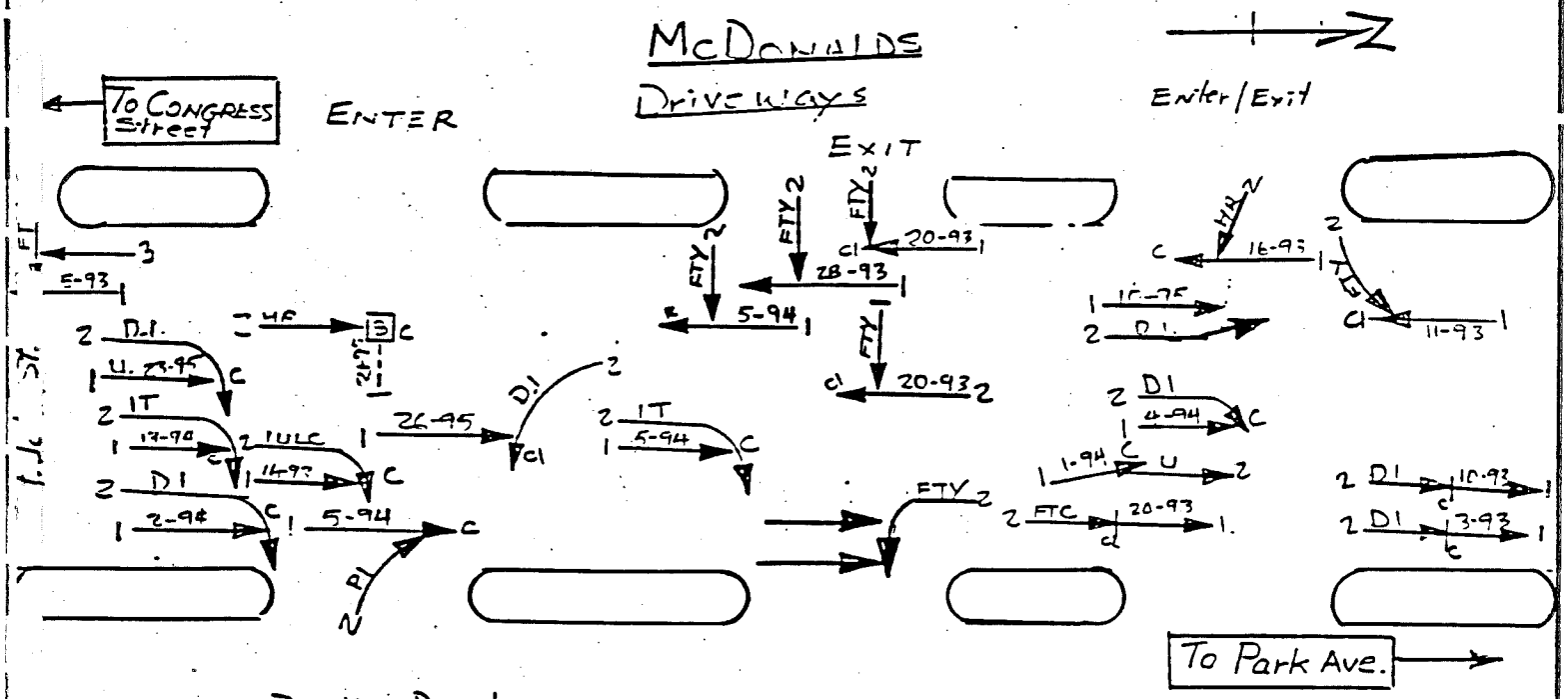
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION St. John Street between Park Ave. and Congress Street.

TOWN Portland NODE NO(S) 7182 - 7187

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED -
WINDSHIELD GLASS
19. VISION OBSCUREMENT 20. OTHER HUMAN VIOLATION FACTOR
21. HIT AND RUN 51. UNKNOWN

VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN [P]	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE	[B]
OVERTURN	CHANGE LANE	ANIMAL	[A]
PARKED VEHICLE	OUT OF CONTROL	SLED	[S]

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V_1/V_2	OTHER
16489	4-20-93	16:30					2	1	1/4	
33665	9-16-93	19 40					4	1	1/8	
12310	2-16-93	7:37					2	1	1/31	
29484	8-20-93	17:04					1	2	1/2	
09788	3-3-93	12:50			1		2	1	1/14	
9241	8-5-93	17:18				1	2	1	1/2	
9491	8-20-93	16:21					2	2	1/2	

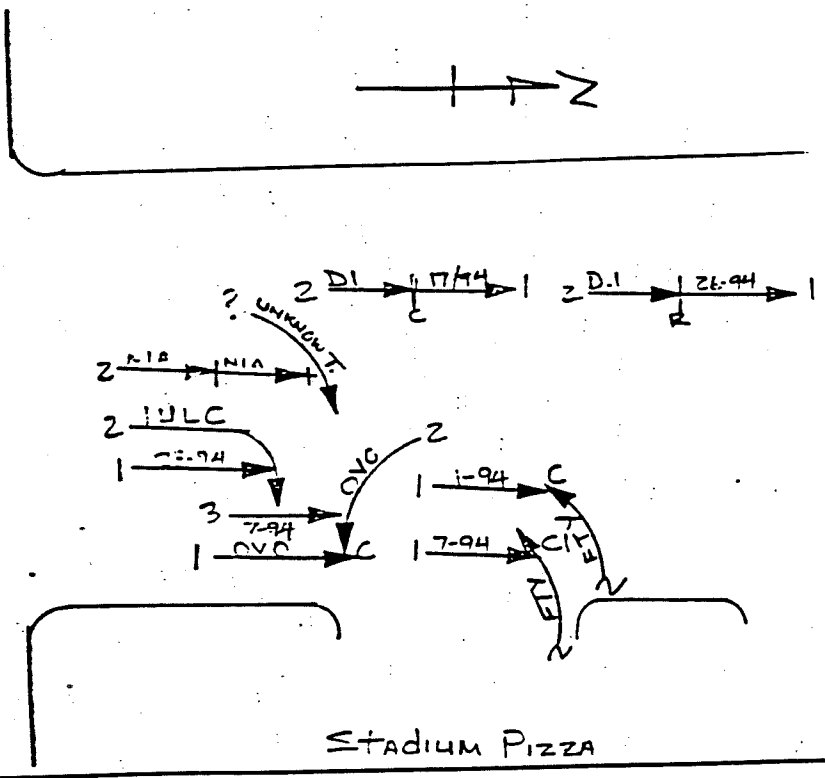
COLLISION DIAGRAM

SHEET 3 OF 3

LOCATION St. John Street between Park Avenue and Congress Street

TOWN Portland NODE NO(S) 7152-7157

YEAR(S) REVIEWED 1992-1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	
HEAD ON	TURNING MOVE	BICYCLE	B
OVERTURN	CHANGE LANE	ANIMAL	A
PARKED VEHICLE	OUT OF CONTROL	SLED	SL

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V. / V.	OTHER
25598	7-7-94	15:15					2	1	20/20	
28123	7-28-94	12:20					2	1	1/8	
12477	2-7-94	14:46					2	2	1/2	
43843	12-1-94	10:45					2	1	1,30/2	
41330	11-17-94	12:50					2	1	1/14	
17573	4-26-94	14:57					2	2	1/14	
09306	3-11-95	7:03					1	1	1/1	

CODE NUMBER 00505 | STATE OF MAINE

DATE OF ACCIDENT	MONTH	DAY	YEAR	DAY OF WEEK	TIME	TIME REPORTED	TIME ARRIVED
	01	17	97	Friday	2100	2056	2100

ON ROUTE | OR NAME OF STREET OR HIGHWAY: Congress St. | CITY OR TOWN: Portland | CODE NUMBER: 019 | COUNTY: Cumberland | HIT AND RUN ☐

AT BETWEEN NODE NUMBERS: 7246 7245 | DISTANCE FROM SCENE: 0 MILES 1 TNTHS | TO NUMBER: 7245 | MILES AND TENTHS TO LANDMARK: .1 mile to Weymouth St. | CIRCLE ONE: N W E S

UNIT NO. 1 - VEHICLE 1 | TOTAL UNITS INV = 2 | **UNIT NO. 2** - ☐ VEH 2 ☒ PED ☐ BIKE

DRIVER

	UNIT NO. 1	UNIT NO. 2
DRIVER'S LICENSE NUMBER	6293175	8521092
STATE	ME	ME
LAST NAME	Gleason	Walker
FIRST NAME	Michael	Timothy
MIDDLE	E	L.
NUMBER AND STREET	84 North St.	General Delivery - Transient
CITY	Portland	Portland
STATE	Me	Me
CODE NUMBER	20	20
DATE OF BIRTH	01/19/73	9/29/56
SEX	M	M
LICENSE STATUS	(A) S P N	A S P N
REST/PERM	—	—
CLASS	C	—

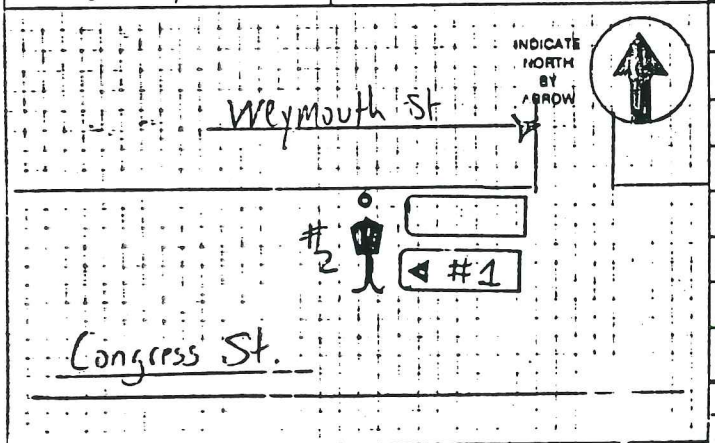
OWNER

	UNIT NO. 1	UNIT NO. 2
LAST NAME - OWNER	White, Sr.	
FIRST NAME	Robert	
MIDDLE	A	
NUMBER AND STREET	111 E Commonwealth Rd	
CITY	Portland	
STATE	Me	

VEHICLE

	UNIT NO. 1	UNIT NO. 2
VEHICLE TYPE	Sedan	
YEAR AND MAKE	1989 Dodge	
COLOR	Gray	
LICENSE PLATE NUMBER	Taxi 6338	
YEAR	97	
ISSUE STATE	ME	
NO OCCUP	3	
VEHICLE IDENTIFICATION NO.	1B3BC4630KD408603	
INSURANCE CO.	Canal c/o Swett Ins. Mgr.	N/A
POLICY NO.	31045	
TOWED BY:	N/A	
DAMAGE CODES	0	
DAMAGE ESTIMATE	$ 0	

9 TOP 10 BOTTOM — TOTAL #11



DESCRIPTION: Unit 1 was driving West on Congress St. when Unit 2 Stepped from behind a parked vehicle heading South. Unit 2 was Subsequently Struck by Unit 1.

AMBULANCE CODES 546

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH) N/A

TOTAL NUMBER OF PERSONS INVOLVED 4

NAMES OF ALL PERSONS INVOLVED (DRIVERS · PASSENGERS · WITNESSES · PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
Micheal Gleason	—	—	—	5	6	1	1	1	M	23
Timothy Walker	9	6	2	3	—	20	—		M	40
Micheal Krager > PO Box 115	—	—	—	5	6	1	1	4	F	28
Colleen Krager > Vinalhaven Me. 863-4475	—	—	—	5	6	1	1	6	F	29

INVESTIGATING OFFICER (SIGNATURE) Proctor Cot | OFFICER NUMBER 53 | TROOP OR DEPARTMENT Portland | APPROVED BY | DATE

LOCAL CODES

RM 13:20A 1/95

CODE NUMBER 0 0 2 0 0 | STATE OF MAINE

DATE OF ACCIDENT	MONTH	DAY	YEAR	DAY OF WEEK	TIME	TIME REPORTED	TIME ARRIVED
	2 -	2 -	97	Sun	1536	1508	1525

	ROUTE	OR NAME OF STREET OR HIGHWAY	CITY OR TOWN	CODE NUMBER	COUNTY	HIT AND RUN
ON	22	Congress St.	Portld	0 1 9	Cumberld	

	BETWEEN NODE NUMBERS		DISTANCE FROM SCENE		TO NUMBER	MILES AND TENTHS TO LANDMARK	
AT		7 2 4 5	MILES	TNTHS	7 2 4 5		N W E S CIRCLE ONE

UNIT NO. 1 - VEHICLE | TOTAL UNITS INV 2 | **UNIT NO. 2 -** ☒ VEH 2 ☐ PED ☐ BIKE

DRIVER

	UNIT NO. 1	UNIT NO. 2
DRIVER'S LICENSE NUMBER	2868082	034466221
STATE	Me	MA
LAST NAME	Baert	Roaen
FIRST NAME	Robert	Michael
MIDDLE	W	J
NUMBER AND STREET	40 Hampshire St	286 S Orleans Rd
CITY	Portld	Orleans
STATE	Me.	MA
CODE NUMBER	2 0	2 2
DATE OF BIRTH	12-30-57	9-25-55
SEX	m	m
LICENSE STATUS	A S P N	A S P N
REST/PERM	None	None
CLASS	C	D

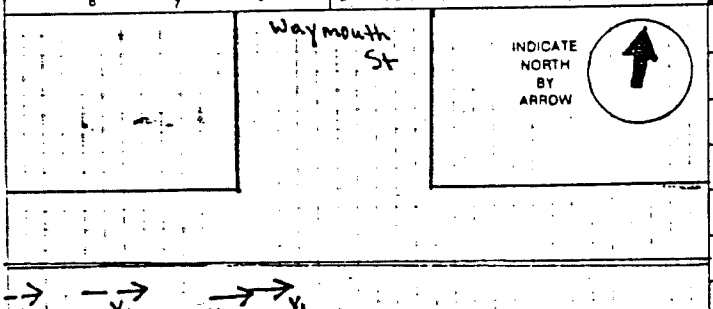
OWNER

	UNIT NO. 1	UNIT NO. 2
FIRST NAME OWNER 1 / OWNER 2	ABC Taxi	SAME AS ABOVE
MIDDLE		
LAST		
NUMBER AND STREET	P.O. Box 3722	
CITY	Portld	
STATE	Me	

VEHICLE

	UNIT NO. 1	UNIT NO. 2
VEHICLE TYPE	4DR	4DR
YEAR AND MAKE	83 Chev	89 Chev
COLOR	OR	BL
LICENSE PLATE NUMBER	Tx 4221	897-WLN
YEAR	97	98
ISSUE STATE	Me	MA
NO OCCUP	1	1
VEHICLE IDENTIFICATION NO	1G1AW6988DR231228	1G1AW51W5K6128231
INSURANCE CO.	Partdese Ins. Co. 784-7028	Commerce Ins. Co.

	UNIT NO. 1	UNIT NO. 2
TOTAL #11	9 TOP, 10 BOTTOM	9 TOP, 10 BOTTOM
TOWED BY:		
DAMAGE CODES	4	18
DAMAGE ESTIMATE	$ 500+	$ 500+



DESCRIPTION: Veh#1 was stopped in traffic to make a left turn onto Waymouth St when Veh#2 traveling East on Congress St. struck veh#1 in the rear. Operator of veh#1 stated that he was not injured, but just shaken up. Veh's were not going fast.

AMBULANCE CODES N/A

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH.) N/A

TOTAL NUMBER OF PERSONS INVOLVED 2

NAMES OF ALL PERSONS INVOLVED (DRIVERS · PASSENGERS · WITNESSES · PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
Robert W Baert.	10	10	2	5	1	1	1	1	m	39
Michael J Roaen 508-240-3081			2	5	1	1	1	1	m	41

INVESTIGATING OFFICER (SIGNATURE)	OFFICER NUMBER	TROOP OR DEPARTMENT	APPROVED BY	DATE
	83	Portld	Sgt A Gerry	2/2/97

LOCAL CODES 97-4449

FORM 13.20A 1/90

TRAFFIC ACCIDENT REPORT
STATE OF MAINE

INVESTIGATING AGENCY NUMBER: 00305

DATE OF ACCIDENT (MONTH / DAY / YEAR)	DAY OF WEEK	TIME	TIME REPORTED	TIME ARRIVED
3-6-97	THUR.	0743	0743	0746

ROUTE	OR NAME OF STREET OR HIGHWAY	CITY OR TOWN	CODE NUMBER	COUNTY	HIT AND RUN
	CONGRESS ST.	PORTLAND	019	CUMBERLAND	

BETWEEN NODE NUMBERS		DISTANCE FROM SCENE	TO NUMBER	MILES AND TENTHS TO LANDMARK	CIRCLE ONE (N E S W)
7245	7244	MILES: — TNTHS: 1	7245	WEYMOUTH ST.	W

TOTAL UNITS INV.: 2

UNIT NO. 1 - VEHICLE 1

DRIVER

DRIVER'S LICENSE NUMBER: 3783171 — STATE: ME.

LAST NAME / FIRST NAME / MIDDLE: PINEAU, MARY, E.

NUMBER AND STREET: 786 SOMERSET ST.

CITY / STATE: RUMFORD, ME. 04276 — CODE NUMBER: 20

DATE OF BIRTH	SEX	LICENSE STATUS	REST/PERM	CLASS
2/1/70	F	(A) S P N	A	C

OWNER

LAST NAME - OWNER 1 / FIRST NAME / MIDDLE: S/A/A

NUMBER AND STREET:

CITY / STATE:

VEHICLE

VEHICLE TYPE	YEAR AND MAKE	COLOR
2D	88 FORD	WH

LICENSE PLATE NUMBER	YEAR	ISSUE STATE	NO OCCUP
24828 Z	97	ME.	1

VEHICLE IDENTIFICATION NO.: 1FAPP33SOJK120403

INSURANCE CO.: STATE FARM

POLICY NO.: TOO 1800-B14-19C D

TOWED BY: — DAMAGE CODES: 3 — DAMAGE ESTIMATE: $1,000

UNIT NO. 2 - VEH 2 (X) PED BIKE

DRIVER

DRIVER'S LICENSE NUMBER 2: Y-210 298-081-002 — STATE: MN

LAST NAME / FIRST NAME / MIDDLE: HASSAN, BASHIR, YUSUF

NUMBER AND STREET: 50 WILMOT ST. # 5

CITY / STATE: PORTLAND, ME. 04101 — CODE NUMBER: 24

DATE OF BIRTH	SEX	LICENSE STATUS	REST/PERM	CLASS
1/1/76	M	(A) S P N		D

OWNER

LAST NAME - OWNER 2 / FIRST NAME / MIDDLE: ABDI ABDINASIB A

NUMBER AND STREET: S/A/A

CITY / STATE:

VEHICLE

VEHICLE TYPE	YEAR AND MAKE	COLOR
4D	87 DODGE	GY

LICENSE PLATE NUMBER	YEAR	ISSUE STATE	NO OCCUP
3773CY	98	ME.	Ø

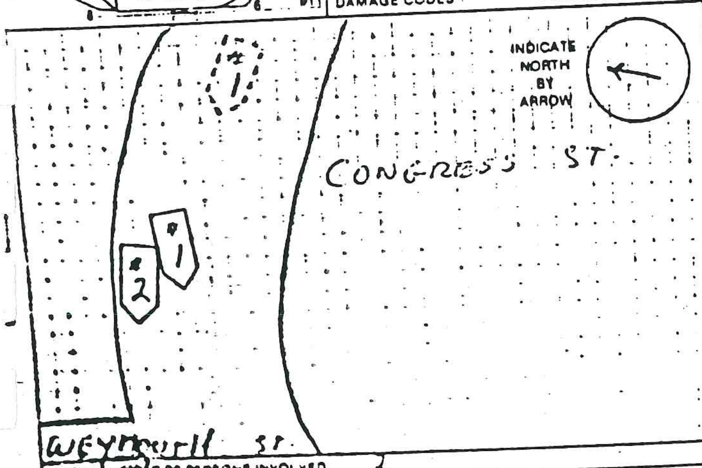
VEHICLE IDENTIFICATION NO.: JB3BA46KXHV054286

INSURANCE CO.: PROGRESSIVE CASUALTY

POLICY NO.: 55210849-0

TOWED BY: — DAMAGE CODES: 6 — DAMAGE ESTIMATE: $400.00

Local codes: 13: 1 — 14: 13 — 15: 14 — 16: 1 — 17: — 18: — 19: 1 — 20: 1 — 21: 2 — 23: 1 — 24: 1



DESCRIPTION: V.1 WAS WESTBOUND ON CONGRESS STREET WHEN IT LOST CONTROL AND STRUCK V.2 WHICH WAS LEGALLY PARKED IN FRONT OF 861 CONGRESS STREET.

AMBULANCE CODES:

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH.):

TOTAL NUMBER OF PERSONS INVOLVED

NAMES OF ALL PERSONS INVOLVED (DRIVERS, PASSENGERS, WITNESSES, PEDESTRIANS)

NAME	25	26	27	28	29	30	31	32	33	34
MARY PINEAU - 775-4653			2	5	1	1	1	1	F	27
BASHIR HASSAN - 775-6252						24			M	21

INVESTIGATING OFFICER	OFFICER NUMBER	TROOP OR DEPARTMENT	APPROVED BY	DATE
[signature]	110	PORTLAND	Sgt. [signature]	3-6-97

LOCAL CODES

FORM 13 80A Rev. 1/96

97-9167

TRAFFIC ACCIDENT REPORT
STATE OF MAINE

INVESTIGATING AGENCY CODE NUMBER: 00305

FOR D.P.S. USE ONLY

DATE OF ACCIDENT: MONTH	DAY	YEAR	DAY OF WEEK	TIME	TIME REPORTED	TIME ARRIVED
6	26	97	Thurs.	16"	16"	16"

1

ON — ROUTE: | OR NAME OF STREET OR HIGHWAY: Congress Street | CITY OR TOWN: Portland | CODE NUMBER: 0 1 8 | COUNTY: Cumberland | HIT AND RUN: ☐

2

AT — BETWEEN NODE NUMBERS: 7245 | DISTANCE FROM SCENE: 0 MILES . 1 TNTHS | TO NUMBER: | MILES AND TENTHS TO LANDMARK: To: Weymouth Street | N W S E (CIRCLE ONE): E

TOTAL UNITS INV: 2

UNIT NO. 1 - VEHICLE 1

DRIVER
- DRIVER'S LICENSE NUMBER - 1: 6577176 — STATE: ME
- LAST NAME: Leonard — FIRST NAME: Justin — MIDDLE: T.
- NUMBER AND STREET: 36 - Salem Street
- CITY: Portland — STATE: Maine — CODE NUMBER: 20
- DATE OF BIRTH: 3/09/71 — SEX: M — LICENSE STATUS: (A) S P N — REST/PERM: 4/I — CLASS: C

OWNER
- LAST NAME - OWNER 1: Leonard — FIRST NAME: Walter — MIDDLE: E.
- NUMBER AND STREET: PO Box 568
- CITY: So. West Harbor — STATE: Maine

VEHICLE
- VEHICLE TYPE: Sedan — YEAR AND MAKE: 1987 Honda — COLOR: Bl
- LICENSE PLATE NUMBER: PC WATR — YEAR: 97 — ISSUE STATE: Maine — NO OCCUP: 1
- VEHICLE IDENTIFICATION NO.: 1HGCA5540HA075548
- INSURANCE CO.: American Central
- POLICY NO.: MMAF19253
- 9 - TOP / 10 - BOTTOM — TOTAL #11 — TOWED BY: N/A
- DAMAGE CODES: — — DAMAGE ESTIMATE: $ 0.00

3

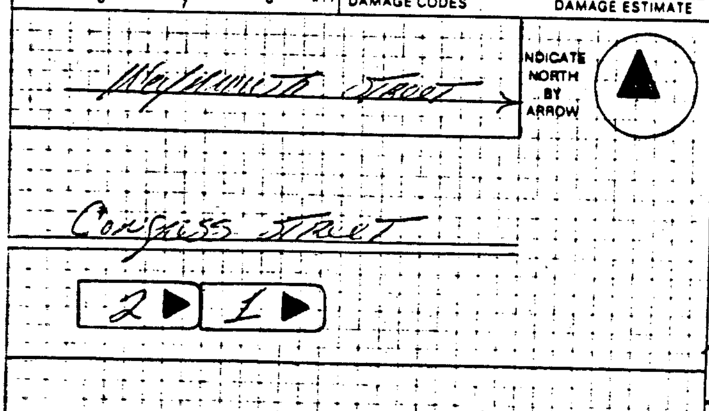
UNIT NO. 2 - [X] VEH 2 ☐ PED ☐ BIKE

DRIVER
- DRIVER'S LICENSE NUMBER 2: 1483238 — STATE: ME
- LAST NAME: Besrat — FIRST NAME: Mulugeta — MIDDLE: T.
- NUMBER AND STREET: 533 - Cumberland Ave. #4
- CITY: Portland — STATE: Maine — CODE NUMBER: 20
- DATE OF BIRTH: 3/29/56 — SEX: M — LICENSE STATUS: (A) S P N — REST/PERM: — — CLASS: C

OWNER
- LAST NAME - OWNER 2: Same — FIRST NAME: — MIDDLE:
- NUMBER AND STREET: Same
- CITY: Same — STATE:

VEHICLE
- VEHICLE TYPE: Sedan — YEAR AND MAKE: 1993 Ford — COLOR: Gr
- LICENSE PLATE NUMBER: PC 7234CU — YEAR: 98 — ISSUE STATE: Maine — NO. OCCUP: 1
- VEHICLE IDENTIFICATION NO.: 2FAPP36X9PB119822
- INSURANCE CO.: Concord General
- POLICY NO.: BA646160
- 9 TOP / 10 BOTTOM — TOTAL #11 — TOWED BY: N/A
- DAMAGE CODES: — — DAMAGE ESTIMATE: $ 0.00

Right margin codes: 13: 10 — 14: 10 — 15: 1 — 16: 4 — 17: — — 18: — 19: 1 — 20: 1 — 21: 2 — 23: 2 — 24: 2



DESCRIPTION: Vehs 1 + 2 were operating East on Congress Street near Weymouth Street. Veh #1 stopped in traffic, veh #2 failed to stop subsequently striking the rear of Veh #1. There was no visible damage.

AMBULANCE CODES: N/A

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH): N/A

TOTAL NUMBER OF PERSONS INVOLVED: 2

NAMES OF ALL PERSONS INVOLVED (DRIVERS - PASSENGERS - WITNESSES - PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
Justin T. Leonard	—	—	—	5	6	1	1	1	14	26
Mulugeta Besrat	—	—	—	5	6	2	1	1	14	41

LOCAL CODES

INVESTIGATING OFFICER (SIGNATURE)	OFFICER NUMBER	TROOP OR DEPARTMENT	APPROVED BY	DATE
Jeffrey Davis	40	Portland	Sgt R. A. O'Connor	6-26-97

13-20A
35

97-052275

TRAFFIC ACCIDENT REPORT
STATE OF MAINE

INVESTIGATING AGENCY CODE NUMBER: 00305

FOR D.P.S. USE ONLY

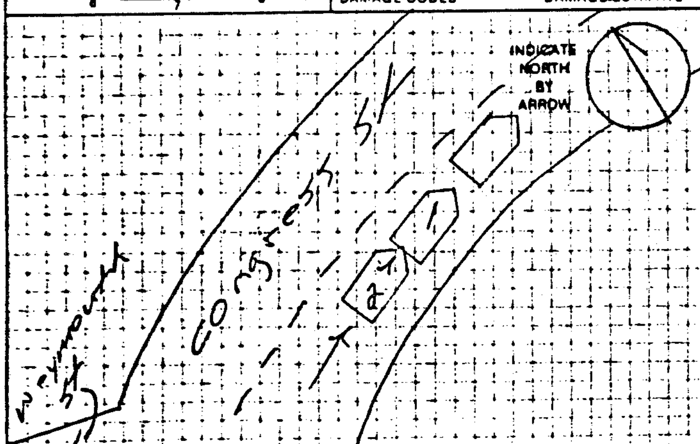
DATE OF ACCIDENT MONTH	DAY	YEAR	DAY OF WEEK	TIME	TIME REPORTED	TIME ARRIVED
10	27	96	Mon	0650	18.50	—

ON	ROUTE	OR NAME OF STREET OR HIGHWAY	CITY OR TOWN	CODE NUMBER	COUNTY	HIT AND RUN
		Congress St	Portland	019	Cumb	

AT	BETWEEN NODE NUMBERS		DISTANCE FROM SCENE		TO NUMBER	MILES AND TENTHS TO LANDMARK	N W E S CIRCLE ONE
	7245	7244	0 MILES	0 TNTHS	7245		

UNIT NO. 1 - VEHICLE 1 — TOTAL UNITS INV 2 — UNIT NO. 2 - [X] VEH 2 [ ] PED [ ] BIKE

	UNIT NO. 1	UNIT NO. 2
DRIVER'S LICENSE NUMBER	1039049	7036155
STATE	ME	ME
LAST NAME / FIRST NAME / MIDDLE	Bourque Louis F	Hegarty Martin P
NUMBER AND STREET	33 Chamberlain Rd	138 Ridgeland Ave
CITY / STATE / CODE NUMBER	Scarborough ME 20	So Portland ME 20
DATE OF BIRTH	120446	071265
SEX	M	M
LICENSE STATUS	(A) S P N	(A) S P N
REST/PERM	0/0	AM/0
CLASS	C	C
OWNER LAST NAME / FIRST NAME / MIDDLE	S	S
OWNER NUMBER AND STREET		
OWNER CITY / STATE		
VEHICLE TYPE	MUV Blazer	Sed
YEAR AND MAKE	95 Chev	88 Dodge
COLOR	red	brn
LICENSE PLATE NUMBER	775BB	5608DG
YEAR	97	97
ISSUE STATE	ME	ME
NO OCCUP	2	1
VEHICLE IDENTIFICATION NO.	1GNDT13W45K201185	1B3BS49D0JN198733
INSURANCE CO.	Horace Mann	Concord Group
POLICY NO.	18-47948420	B494702-0 0397
TOWED BY		
DAMAGE CODES	5	1
DAMAGE ESTIMATE	$370-95	$1411-86



DESCRIPTION: Veh #1 stopped abruptly for car in front which had stopped. #2 struck the rear of #1.

AMBULANCE CODES

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH)

TOTAL NUMBER OF PERSONS INVOLVED: 3

NAMES OF ALL PERSONS INVOLVED (DRIVERS - PASSENGERS - WITNESSES - PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
L Bourque			2	5	1	1	1	1	M	50
Alberta Bourque			2	5	1	1	1	3	F	47
M Hegarty			2	5	1	2	1	1	M	32

INVESTIGATING OFFICER (SIGNATURE)	OFFICER NUMBER	TROOP OR DEPARTMENT	APPROVED BY:	DATE
John Mc	19	Portland	SGT J Cord	10-27-97

LOCAL CODES

97-5817

RM 13:20A Rev 4/97

INVESTIGATING AGENCY CODE NUMBER 00305

TRAFFIC ACCIDENT REPORT
STATE OF MAINE

FOR D.P.S. USE ONLY

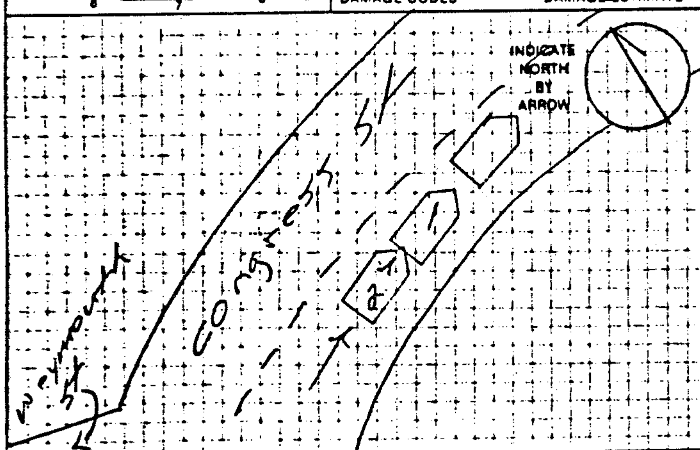
DATE OF ACCIDENT	MONTH 10	DAY 27	YEAR 96	DAY OF WEEK Mon	TIME 0650	TIME REPORTED 18:50	TIME ARRIVED —

ON	ROUTE	OR NAME OF STREET OR HIGHWAY: Congress St	CITY OR TOWN: Portland	CODE NUMBER 019	COUNTY: Cumb	HIT AND RUN ☐

AT	BETWEEN NODE NUMBERS 7245 / 7244	DISTANCE FROM SCENE 0 MILES 0 TNTHS	TO NUMBER 7245	MILES AND TENTHS TO LANDMARK	N W S E CIRCLE ONE

UNIT NO. 1 - VEHICLE 1 — TOTAL UNITS INV 2 — UNIT NO. 2 - ☒ VEH 2 ☐ PED ☐ BIKE

	UNIT NO. 1	UNIT NO. 2
DRIVER'S LICENSE NUMBER	1039049	7036155
STATE	ME	ME
LAST NAME / FIRST NAME / MIDDLE	Bourque Louis F	Hegarty Martin P
NUMBER AND STREET	33 Chamberlain Rd	138 Ridgeland Ave
CITY / STATE	Scarborough ME	So Portland ME
CODE NUMBER	20	20
DATE OF BIRTH	120446	071265
SEX	M	M
LICENSE STATUS	(A) S P N	(A) S P N
REST/PERM	0/0	AM/0
CLASS	C	C
OWNER: LAST NAME / FIRST NAME / MIDDLE	—	—
OWNER: NUMBER AND STREET	—	—
OWNER: CITY / STATE	—	—
VEHICLE TYPE	MUV Blazer	Sed
YEAR AND MAKE	95 Chev	88 Dodge
COLOR	red	brn
LICENSE PLATE NUMBER	775583	5608DG
YEAR	97	97
ISSUE STATE	ME	ME
NO OCCUP	2	1
VEHICLE IDENTIFICATION NO.	1GNDT13W45K201185	1B3BS49D0JN198733
INSURANCE CO.	Horace Mann	Concord Group
POLICY NO.	18-4794420	B494702-0 0397
TOWED BY	—	—
DAMAGE CODES	5	1
DAMAGE ESTIMATE	$370-95	$1411-86



DESCRIPTION: Veh #1 stopped abruptly for car in front which had stopped. #2 struck the rear of #1.

AMBULANCE CODES

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH)

TOTAL NUMBER OF PERSONS INVOLVED 3

NAMES OF ALL PERSONS INVOLVED (DRIVERS - PASSENGERS - WITNESSES - PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
L Bourque			2	5	1	1	1	1	M	50
Alberta Bourque			2	5	1	1	1	3	F	47
M Hegarty			2	5	1	2	1	1	M	32

LOCAL CODES

INVESTIGATING OFFICER (SIGNATURE)	OFFICER NUMBER	TROOP OR DEPARTMENT	APPROVED BY	DATE
John Mc	19	Portland	SGT J Lord	10-27-97

RM 13:20A Rev 4/97

97-5817

TRAFFIC ACCIDENT REPORT
STATE OF MAINE

INVESTIGATING AGENCY CODE NUMBER: 00305

FOR D.P.S. USE ONLY

DATE OF ACCIDENT – MONTH	DAY	YEAR	DAY OF WEEK	TIME	TIME REPORTED	TIME ARRIVED
08	14	97	THURS	1810	1812	1820

ON: ROUTE	OR NAME OF STREET OR HIGHWAY	CITY OR TOWN	CODE NUMBER	COUNTY	HIT AND RUN
	Congress ST	Portland	019	Cumberland	

AT: BETWEEN NODE NUMBERS		DISTANCE FROM SCENE (MILES / TNTHS)	TO NUMBER	MILES AND TENTHS TO LANDMARK	N W E S CIRCLE ONE
8991	7246			in front of 911 Congress	

UNIT NO. 1 - VEHICLE 1 — TOTAL UNITS INV 2 — UNIT NO. 2 - [X] VEH 2 [ ] PED [ ] BIKE

DRIVER

	UNIT NO. 1	UNIT NO. 2
DRIVER'S LICENSE NUMBER	9634137	1677207
STATE	Me	Me
LAST NAME	Ruby	Daicy
FIRST NAME	Thomas	Brian
MIDDLE	L	E
NUMBER AND STREET	21 Weymouth ST.	1524 Congress ST
CITY	Portland	Portland
STATE	Me.	Me.
CODE NUMBER	22	22
DATE OF BIRTH	08-25-60	09-16-72
SEX	M	M
LICENSE STATUS (A S P N)	(A)	(A)
REST/PERM	.	.
CLASS	C	C

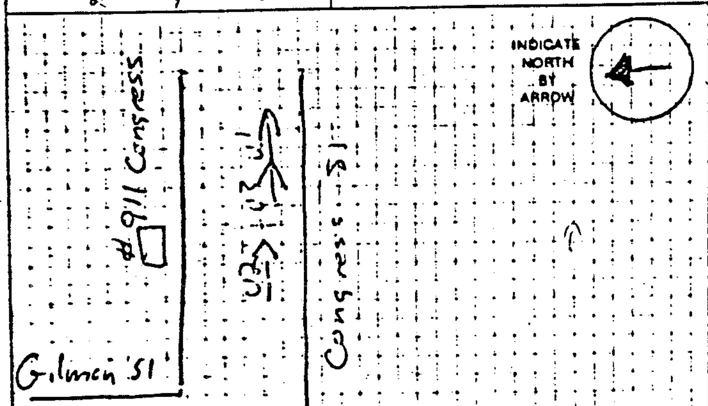
OWNER

	UNIT NO. 1	UNIT NO. 2
LAST NAME - OWNER	Horsley-Plata	Pine State Tobacco
FIRST NAME	Elizabeth	
MIDDLE		
NUMBER AND STREET	21 Weymouth ST	8 Ellis Ave
CITY	Portland	Augusta
STATE	Me	Me

VEHICLE

	UNIT NO. 1	UNIT NO. 2
VEHICLE TYPE	P.U.	SW
YEAR AND MAKE	81 Chevy	96 Dodge
COLOR	MA	MA
LICENSE PLATE NUMBER	132-CE	979722
YEAR	98	98
ISSUE STATE	Me	Me
NO OCCUP	2	1
VEHICLE IDENTIFICATION NO.	1CCCC24M7BS15-8857	2B4FP253XTR799815
INSURANCE CO.	Patrons Oxford Ins	Travelers Ins.
POLICY NO.	AUT0268487	000070949
TOTAL #11 / DAMAGE CODES	9 4-5-6	1
TOWED BY		
DAMAGE ESTIMATE	$ 900.00	$ 1,500.00

(9 - TOP, 10 - BOTTOM)



DESCRIPTION: V#1 was stopped in heavy traffic in front of 911 Congress ST when struck from behind by V#2. V#1 driver hit his head and banged up against the door window, breaking IT.

AMBULANCE CODES: N/A

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH)

TOTAL NUMBER OF PERSONS INVOLVED: 3

NAMES OF ALL PERSONS INVOLVED (DRIVERS - PASSENGERS - WITNESSES - PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
Thomas Ruby		2	1-2	3	1	1	1	1	M	35
Elizabeth Plata-Horsley			1-2	5	1	1	1	2	F	47
Brian Daicy			1-2	5	1	2	1	1	M	24

LOCAL CODES

INVESTIGATING OFFICER (SIGNATURE)	OFFICER NUMBER	TROOP OR DEPARTMENT	APPROVED BY	DATE
[signature]	105	Portland	[signature]	8-14-97

FORM 1320A Rev 4/97

TRAFFIC ACCIDENT REPORT
STATE OF MAINE

INVESTIGATING AGENCY CODE NUMBER: 00301 | DATE OF ACCIDENT: MONTH 10 DAY 14 YEAR 97 | DAY OF WEEK: Sat | TIME: 1045 | TIME REPORTED: 10/1997 1030 | TIME ARRIVED: —

ON: ROUTE | OR NAME OF STREET OR HIGHWAY: Congress St | CITY OR TOWN: Portland | CODE NUMBER R C: 019 | COUNTY: Cumb | HIT AND RUN: ☐

AT: BETWEEN NODE NUMBERS: 8991 | DISTANCE FROM SCENE: MILES ☐ TNTHS ☐ | TO NUMBER: | MILES AND TENTHS TO LANDMARK: Gilman St | CIRCLE ONE: N W E S

UNIT NO. 1 - VEHICLE 1

TOTAL UNITS INV: 2

DRIVER'S LICENSE NUMBER - 1: 26570826X | STATE: ME

LAST NAME: Roy | FIRST NAME: Kristina | MIDDLE: M

NUMBER AND STREET: 12 Prospect St

CITY: Waterville | STATE: ME | CODE NUMBER: 20

DATE OF BIRTH: 071677 | SEX: F | LICENSE STATUS: (A) S P N | REST/PERM: N/O | CLASS: C

LAST NAME - OWNER 1: Roy | FIRST NAME: David | MIDDLE:

NUMBER AND STREET:

CITY: S | STATE:

VEHICLE TYPE: sed | YEAR AND MAKE: 91 mazda | COLOR: BK

LICENSE PLATE NUMBER: 166742 | YEAR: 97 | ISSUE STATE: ME | NO OCCUP: 1

VEHICLE IDENTIFICATION NO.: JMZGD22B7M5174522

INSURANCE CO.: Commercial Union

POLICY NO.: TBA

9 TOP / 10 BOTTOM | TOTAL 011 | TOWED BY:

DAMAGE CODES: 45 | DAMAGE ESTIMATE: $1000

UNIT NO. 2 - ☒ VEH 2 ☐ PED ☐ BIKE

DRIVER'S LICENSE NUMBER 2: 4399041 | STATE: ME

LAST NAME: Ross | FIRST NAME: John | MIDDLE: W

NUMBER AND STREET: 41 Middle Rd

CITY: Cumberland | STATE: ME | CODE NUMBER: 20

DATE OF BIRTH: 100942 | SEX: M | LICENSE STATUS: (A) S P N | REST/PERM: 0/0 | CLASS: C

LAST NAME - OWNER 2: | FIRST NAME: | MIDDLE:

NUMBER AND STREET:

CITY: | STATE:

VEHICLE TYPE: sed | YEAR AND MAKE: 91 Chev | COLOR: WHI

LICENSE PLATE NUMBER: 3600CA | YEAR: 98 | ISSUE STATE: ME | NO OCCUP: 1

VEHICLE IDENTIFICATION NO.: 1G1JC34T0M7251222

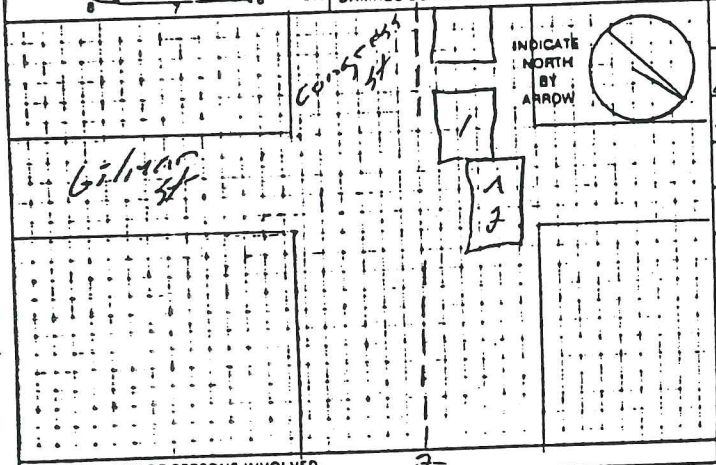
INSURANCE CO.: Concord Group

POLICY NO.: B36-4353-3

9 TOP / 10 BOTTOM | TOTAL 011 | TOWED BY:

DAMAGE CODES: 12 | DAMAGE ESTIMATE: $1000

DESCRIPTION: Veh #1 was stopped in a line of traffic due to a red light at Valley St. #2 struck the rear of #1.



AMBULANCE CODES:

NAME AND ADDRESS OF OWNER OF DAMAGED PROPERTY (OTHER THAN VEH):

TOTAL NUMBER OF PERSONS INVOLVED: 2

NAMES OF ALL PERSONS INVOLVED (DRIVERS · PASSENGERS · WITNESSES · PEDESTRIANS)	25	26	27	28	29	30	31	32	33	34
K Roy			1	5	1	1	1	1	F	20
J Ross			1	5	1	2	1	1	M	55

LOCAL CODES

INVESTIGATING OFFICER (SIGNATURE): | OFFICER NUMBER: 19 | TROOP OR DEPARTMENT: Portland | APPROVED BY: | DATE: 10-19-97

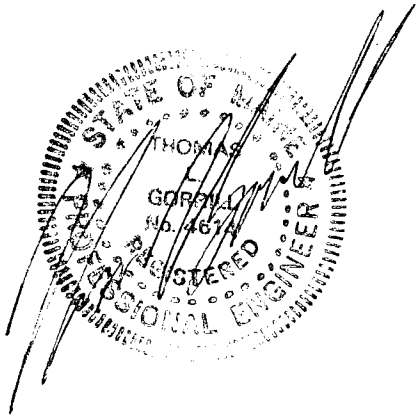
FORM 13-20A Rev. 4/87

ATTACHMENT 5

TRAFFIC IMPACT STUDY
FOR A PROPOSED
MAINE MEDICAL OFFICE FACILITY
PORTLAND, MAINE

Prepared for

Maine Medical Center
22 Bramhall Street
Portland, Maine



Prepared by

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine
(207) 775-1121

March 1997

TRAFFIC IMPACT STUDY

INDEX

INTRODUCTARY STATEMENT

March 10, 1997

Subsequent to completion of this traffic impact study, the size of the proposed Congress Street garage was increased from 420 spaces to 430 spaces. This increase results in a negligible traffic generation increase (three p.m. trips, four a.m. trips) trips and does not change the study area, findings, or conclusions of this study.

EXECUTIVE SUMMARY

The following executive summary is prepared for the reader's convenience, but is not intended to be a substitute for reading the full report.

DeLuca-Hoffman Associates, Inc. has been retained by Maine Medical Center to conduct a traffic impact study for the proposed Medical Office building with an attached 420 space parking garage in Portland, Maine. The proposed site, currently occupied by the existing Maine Medical Center's parking lot, consists of 52 parking spaces, is located on the northeast corner of the intersection of Congress Street and Forest Street, as shown on Figure 1 following this page. The development consists of a proposed 49,150 square foot Medical Office building with an attached 420 space parking garage. The development also includes proposed driveways to Congress Street and Forest Street.

The purpose of this study is to evaluate the impact on the existing street system of the traffic generated by the proposed development and the planned driveway onto Congress Street and Forest Street. The following is a summary of the major findings of the traffic study:

1. It is estimated the proposed project will generate 182 and 212 trip ends during the AM and the PM peak hours. These trips would consist of 126 trips in and 56 trips out of the site during the a.m. peak hour and 42 trips in and 170 trips out of the site during the p.m. peak hour.
2. All of the trips are expected to be primary trips, i.e. newly generated by the development.
3. The proposed Congress Street driveway is located approximately 260 feet east of Forest Street. This driveway would have a single entrance lane and a single exit lane. The Forest Street driveway will consist of a right turn in and right turn out only. Forest Street is a one way street in the northbound direction.
4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.
5. The intersection of Congress Street at the proposed driveway meets MDOT guidelines for consideration of left turn lane for left turning traffic from Congress Street into the driveway. Based on the projected left turning volumes, DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at the site driveway. This will require removal of parking on the southerly side of Congress Street which will require approval of the City Council.

   DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for left turning traffic from Congress Street onto Forest Street. This location meets criteria for consideration of providing a left-turn treatment. Based on the projected left turning volumes DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at Forest Street. This will also require removal of parking on the southerly side of Congress Street.

LEGEND

- State Route
- Geo Feature
- Town, Small City
- Large City
- Hospital
- Park
- Interstate, Turnpike
- US Highway
- Population Center
- Street, Road
- Hwy Ramp
- Major Street/Road
- Interstate Highway
- State Route
- US Highway
- Railroad
- Intermittent River
- Airfield

Scale 1:15,625 (at center)

1000 Feet

500 Meters

PORTLAND, MAINE
Mag 15.00
Tue Feb 04 14:08:51 1997

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FIGURE 1

6. The anticipated stacking lengths at the signalized intersections in the study area are within the available/proposed full width storage lengths with two exceptions as discussed below:

   Congress Street and Bramhall Street/Deering Avenue - The Deering Avenue southbound approach for a shared through right turn lane and an exclusive left turn lane, the stacking length is exceeded by 129 feet. This will block Cumberland Avenue. The Bramhall street approach also exceed the available stacking length of 107 feet during the PM peak hour. This also block the intersection of Bramhall Street and Marshall Street. DeLuca-Hoffman Associates, Inc. recommends the signs "Do Not Block the Street" for both Bramhall Street and Cumberland Avenue.

7. Park Avenue and St. John Street is a high accident location experiencing 45 accidents. To correct the predominant pattern of change lane accidents, DeLuca-Hoffman Associates, Inc. recommends overhead lane use control signs and striping through the intersections for westbound duals left turn lanes.

8. DeLuca-Hoffman Associates, Inc. recommends the following improvements to correct existing offsite roadway deficiencies:

   - Restripe the lane uses for northbound approach at the intersection of Congress Street and Valley Street as an exclusive right turn lane and a shared through left turn lane.
   - Change the timing and phasing at the intersection of Bramhall and Congress Streets.
   - Installation of traffic signal controller at Park Avenue and Forest Street.

Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system given existing geometric and the improvements of the traffic signal timing and phasing.

I. EXISTING CONDITIONS

Site:

The site shown in Figure 1 currently occupied by the existing Maine Medical Center parking lot, is located on the northeast corner of the intersection of Congress Street and Forest Street in Portland, Maine. The existing parking lot contains 52 parking spaces with a single driveway access to Congress Street. The site is bounded by Congress Street to the south, Boynton Street to the north, Forest Street to the west, and an apartment building to the east.

Adjacent Roads:

The site has frontage on Congress Street, Forest Street, and Boynton Street. Congress Street has a 42 foot wide roadway with on street parking on both sides. Congress Street also has a sidewalk along the site frontage. The posted speed limit is 25 mph. Congress Street connects Interstate I-295 to the west and Portland downtown to the east.

Forest Street is a one way street in a northbound direction. It intersects Congress Street to south and Park Avenue to the north. Forest Street has a 22 foot wide travel way with on street parking on the west side of the street.

Boynton Street is a two way roadway and has a 22 foot wide travel way with on street parking. Boynton Street connects Forest Street to the west and Weymouth Street to the east.

DeLuca-Hoffman Associates, Inc. based this study on the following information:

- A 1"=80'± scale Site Plan dated October 29, 1996 prepared by Mediplex Medical Building Corporation.
- Computerized accident data summary for the period 1993 to 1995 for Congress Street from St. John Street to Bramhall Street, for St. John Street from Congress Street to Park Avenue, and for Park Avenue from St. John Street to Forest Street..
- Traffic Impact Study for the Holt Hall Renovation prepared by Eaton Traffic Engineering on August 1996.
- Total active employees at the existing Maine Medical Center in Portland, Maine provided by Maine Medical Center.
- Turning movement count data collected by DeLuca-Hoffman Associates, Inc. at the following locations on February 4 and 6, 1997 from 6:45 a.m. to 8:45 a.m. and from 3:30 p.m. to 5:30 p.m.
    - Congress Street at St. John Street
    - Congress Street at Valley Street (US Route 1 northbound)
    - Congress Street at Gilman Street
    - Congress Street at Forest Street

- Congress Street at Existing Parking Lot Driveway
- Congress Street at Bramhall Street/Deering Avenue
- Park Avenue at St. John Street
- Park Avenue at Valley Street
- Park Avenue at Forest Street

Additionally DeLuca-Hoffman Associates, Inc. collected the turning movement data at the following locations.

The existing Maine Medical Center Garage driveways on February 7, 1997 from 3:00 p.m. to 6:00 p.m. and on February 10, 1997 from 6:45 a.m. to 8:45 a.m..

The Stroudwater Crossing driveway on February 7, 1997 from 6:45 a.m. to 8:45 a.m. and from 3:30 p.m. to 5:30 p.m..

The result of these turning movement counts are shown for the a.m. and the p.m. peak hour in Figure 2 of Appendix A.

II. BACKGROUND TRAFFIC CONDITION

The existing turning movement count volumes were adjusted to approximate the 30th highest hour conditions of the year using the Weekly Group Mean Factor data for Group I (Urban) from the Maine Department of Transportation. The methodology used to determine a seasonal adjustment factor from this data is as follows:

Seasonal Adjustment Factor for February, 1997			
Period	WGMF		Seasonal Adjustment Factor
Week of Counts / 4th Lowest Week	1.12 / 0.88	=	1.27

The proposed facility is planned to be completed in 1998. To approximate traffic in this year, DeLuca-Hoffman Associates, Inc. increased the 1997 counts by 2% and added the traffic generated by other developments expected to be completed in 1998 in the study area. According to the Portland Planning Department, Holt Hall is the only project which is pending. Holt Hall is located on the southeast corner of the intersection of Bramhall Street and Congress Street. The traffic projections associated with this project are included as Figure 3 of Appendix A.

DeLuca-Hoffman Associates, Inc. has combined the existing traffic adjusted to approximately the 30th highest hour, with the peak hour traffic forecasted for the proposed Holt Hall and a 2% annual growth rate yield for the 1998 No-build conditions. The 1998 No-build volumes are shown in Figure 4 of Appendix A.

III. TRIP GENERATION

The proposed Medical Office building will consist of 49,150 square feet with an attached 420 space parking garage. Based upon a parking evaluation completed by DeLuca-Hoffman Associates, Inc. and submitted under separate cover, approximately 226 parking spaces in the parking garage will be reserved to meet the estimated demand of the medical office building with the remaining 194 being available to Maine Medical employees. This trip generation will be made up of trips associated with the medical office building and with Maine Medical Center employees.

Trips associated with the Medical Office Building

To estimate the trips associated with the medical office building, DeLuca-Hoffman Associates, Inc. collected traffic counts at Stroudwater Crossing, a 32,190 s.f. medical office building, located on outer Congress Street. These counts were completed on Friday, February 7, 1997 from 6:45 to 8:45 AM and again from 3:30 to 5:30 PM. The results of the count are summarized below:

USE	Trip Ends				Trip Rate / 1,000 s.f.			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Stroudwater Crossing 32,190 s.f	67	101	45	95	2.08	3.14	1.4	2.95

USE	Trip Ends				Trip Rate / Parking Space			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Stroudwater Crossing Parking Spaces =147	67	101	45	95	0.46	0.69	0.31	0.65

Applying these rates to the medical office building results in the following trip estimates:

Medical office building trips based on 49,150 s.f.:

AM Peak Hour

$$49{,}150 \text{ s.f.} \times \frac{2.08 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 102 \text{ trip ends}$$

PM Peak Hour

$$49{,}150 \text{ s.f.} \times \frac{3.14 \text{ trip ends}}{1{,}000 \text{ s.f.}} = 154 \text{ trip ends}$$

Medical Office building trips based on 226 parking spaces

AM Peak Hour
226 spaces x 0.46 trip ends / one space = 104 trip ends

PM Peak Hour
226 spaces x 0.69 trip ends / one space = 156 trip ends

Based on these calculations, DeLuca-Hoffman Associates, Inc. has used 104 AM and 156 PM trip ends for the portion of the trips generated by the medical office buildings.

Trips associated with the remaining 194 spaces in the parking garage not utilized by the Medical Office building were calculated as follows:

DeLuca-Hoffman Associates, Inc. collected traffic counts at the Maine Medical parking garage on Congress Street to assist in estimating the trips associated with the remaining 194 spaces in the parking garage not utilized by the Medical office building. The results of this data collection is summarized below:

USE	Trip Ends				Trip Rate / Parking Space			
	Peak Hour		Peak Hr. of Adj. Street Traffic		Peak Hour		Peak Hr. of Adj. Street Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM
Parking Garage Parking Space = 1276	514	371	355	245	0.4	0.29	0.28	0.19

Applying these rates to the remaining 194 spaces, results in the following trip generation:

AM Peak Hour

194 spaces x 0.4 trip ends / one space = 78 trip ends

PM Peak Hour

194 spaces x 0.29 trip ends / one space = 56 trip ends

Combined Trip Generation

Combining the trips associated with the Medical office building and those associated with the Maine Medical Center employees utilizing excess parking in the garage, results in the following total trip generation estimate:

AM Peak Hour

104 (medical office) + 78 (MMC) = 182 trip ends

PM Peak Hour

156 (medical office) + 56 (MMC) = 212 trip ends

Based on the above calculations, the proposed development is forecasted to generate 182 trip ends during the AM peak hour and 212 trip ends during the PM peak hour.

IV. TRIP COMPOSITION

The ITE "Trip Generation" manual indicates that all the traffic associated with an office will be primary trips. Primary trips are those which are new to the street system not already passing by the site.

V. TRIP DISTRIBUTION AND ASSIGNMENT

DeLuca-Hoffman Associates, Inc. has distributed the primary trip ends associated with the proposed Medical Office facility with 420 parking spaces based on the gravity model of the existing Maine Medical Center employees. This distribution is summarized as follows:

Trip Distribution Based on Employees Gravity Model	
Approaching the Site	***% of Trip Distribution***
Congress Street from west	37.4%
Congress Street from east	14.0%
Valley Street from south	31.9%
St. John Street from north	16.7%
Total	100%

Site generated traffic is assigned at the two site driveways as shown in Figure 5 of Appendix A. Sixty-two percent of the entering traffic will access the site via the Forest Street driveway and thirty-eight percent use the Congress Street Driveway. Approximately 65% of the exiting traffic is anticipated to leave via the Congress Street and 35% via the Forest Street.

VI. STUDY AREA

Criteria - Section 3b2b of the Maine Department of Environmental Protection's (MeDEP) Site Location of Development Law states the Board may define the study area as follows:

a. the first major intersection: and
b. all intersections where, during any one hour period, traffic attributable to the proposed development equals or exceeds:

    i. 25 vehicles in a left-turn only lane;
    ii. 35 vehicles in a through lane, right-turn lane, or a combined through and right-turn lane; or
    iii. 35 vehicles (multiplying the left-turn volume by 1.5) in a combined left-turn and through lane, or a combined left-turn, through and right-turn lane.

Based on the trip assignment summary presented in Figure 5, the study area includes the following intersection:

- Congress Street at St. John Street
- Congress Street at Valley Street (US Route 1 northbound)
- Congress Street at Gilman Street
- Congress Street at Forest Street
- Congress Street at Existing Parking Lot Driveway
- Congress Street at Bramhall Street/Deering Avenue
- Park Avenue at St. John Street
- Park Avenue at Valley Street
- Park Avenue at Forest Street

VII. CAPACITY ANALYSIS

DeLuca-Hoffman Associates, Inc. performed capacity analyses for the intersections contained in the study area. The signalized and unsignalized intersections were evaluated using the Highway Capacity Software computer program. The signalized intersections were evaluated using the SIGNAL 94 program. (See Appendix B)

The capacity analysis assesses the quality of traffic flow at intersections and provides a ranking based upon its delay and Level of Service (LOS). Level of service rankings are similar to the academic grading system where an "A" indicates very little delay and an "F" indicates very poor or extreme conditions. Level of service "D", is generally acceptable at signalized intersections. At an unsignalized intersection, if the level of service falls below a "D", the intersection should be examined further to determine if it meets one or more of the warrants set forth in the Manual on Uniform Traffic Control Devices (MUTCD) for signalization. If a warrant is not met, then the lower level of service is satisfactory.

The following tables summarize the relationship between delay and level of service at both signalized and unsignalized intersections:

Level of Service Criteria for Unsignalized Intersections	
Level of Service	**Stopped Delay per Vehicle (sec)**
A	Up to 5.0
B	5.1 to 10.0
C	10.1 to 20.0
D	20.1 to 30.0
E	30.1 to 45.0
F	Greater than 45.0

Level of Service Criteria for Signalized Intersections	
Level of Service	**Stopped Delay per Vehicle (sec)**
A	Less than 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	Greater than 60.0

Description of Signalized Intersections

Park Avenue and St. John Street - This is a four-leg intersection with the westerly leg of the intersection, Park Avenue being one-way westbound. The westbound Park Avenue approach consists of an exclusive right-turn lane, a through lane and a shared through left-turn lane. St. John Street which forms the northbound approach consists of an exclusive left-turn lane, a shared through left-turn lane, and a channelized right turn lane. The St. John Street southbound approach has exclusive right turn lane and a shared through left-turn lane.

Congress Street and St. John Street - This intersection is a four leg signalized intersection. The eastbound Congress Street approach is a one way street with an exclusive left-turn lane, a through lane, and a shared through right-turn lane. The westbound Congress Street approach consists of an exclusive left turn lane and an exclusive right turn lane. The northbound St. John Street approach has a through lane and a shared through right turn lane. The southbound leg approach consists of a through lane and a shared through left turn lane. This intersection has a shared traffic controller with Congress Street and Valley Street (US Route 1 northbound).

Congress Street and Valley Street(US Route 1 northbound) - This intersection is also a four leg signalized intersection. Congress Street is the east and west legs and Valley Street is the north and south legs. The Congress Street eastbound and westbound approaches have a shared through right turn lane and a shared through left turn lane. The Valley Street (US Route 1 northbound) approach has an exclusive right

turn lane and a shared through right turn lane. The southbound leg is a one way street in the northbound direction. This intersection has a shared a traffic controller with Congress Street and St. John Street.

Congress Street and Bramhall Street/Deering Avenue - This intersection is a four legs and fully actuated signalized intersection with an exclusive pedestrian phase. The Congress Street eastbound approach consists of an exclusive right turn lane and a shared through right turn lane. The Congress Street westbound approach has an exclusive right turn lane and a shared through left turn lane. The Bramhall Street approach has an exclusive left turn lane and shared through right turn lane. The Deering Avenue approach has an exclusive right turn lane and a shared through left turn lane.

Capacity analyses are based on the above geometrics. The No-Build evaluation is based on existing timing and phasing, while the Build condition is based on complementation of improvements as discussed in the paragraph following this Table. The results of the analyses of these signalized intersection are discussed below. Computer printouts of the analyses are provided in Appendix B:

Results of Signalized Capacity Analysis					
		1998 No- Build		1998 Build	
Approach	Lanes	AM	PM	AM	PM
St. John St. & Park Avenue					
St. John Street NB	Left	D	F	C	E
	Left/through	D	F	C	E
	Right	D	C	A	A
St. John Street SB	Through/Left	D	C	D	D
	Right	C	C	B	C
Park Avenue WB	Right	C	C	A	A
	Through/Left	C	E	C	D
Overall delay in Second		D 25.0	E 47.7	C 17.8	D 35.0
St. John & Congress Street					
Congress Street EB	Left	D	D	B	B
	Through/Right	D	C	B	B
Congress Street WB	Left	C	C	C	A
	Right	D	F	B	A
St. John Street NB	Through/Right	D	F	B	C
St. John Street SB	Through/Left	C	C	C	C
Overall Delay in Second		D 32.4	E 45.9	B 11.3	B 14.8
Congress & Valley Street					
Congress Street EB	Right/Through/Left	B	A	A	A
Congress Street WB	Right/Through/Left	C	D	B	B
Valley Street NB	Left	B	B	NA	NA
	Through/Right	C	B	NA	NA
	Right	NA	NA	B	B
	Through/Left	NA	NA	B	B
Overall Delay in Second		B 11.3	C 17.7	B 6.1	B 6.7

Congress & Bramhall/Deering					
Congress Street EB	Right	B	B	B	A
	Left/Through	C	C	B	B
Congress Street WB	Right	B	B	B	B
	Left/Through	F	F	B	D
Bramhall Street NB	Right	B	B	B	B
	Left/Through	E	F	B	D
Deering Avenue SB	Right/Through	B	B	C	C
	Left	B	D	B	D
Overall Delay in Second		D 36.1	E 50.0	B 11.9	C 17.9

The results of the analysis of these signalized intersections are discussed below.

Park Avenue at St. John Street - Based on the capacity analysis, the westbound Park Avenue approach has a level of service E for a shared through left turn lane during the PM peak hour under No-Build conditions. The northbound St. John Street approach has a level of service F for an exclusive left turn lane and a shared through left turn lane during PM peak hour under No-Build conditions. Under Build condition, this intersection is an overall level of service D. However the northbound approach has a level of service E for both a left turn lane and a shared through left turn lane. The land use constraints associated with this intersection are such that the intersection cannot be expanded. DeLuca-Hoffman Associates, Inc. does recommend that the cycle length be reduced from 90 to 60 seconds.

Congress Street and St. John Street - Based on the capacity analysis, this intersection has a level of service E under No-Build condition during the PM peak hour. The westbound Congress Street approach has a level of service F for a right turn lane. The northbound St. John Street approach has a level of service F for a shared through right turn lane. Under Build condition, this intersection has a level of service C or better based the following improvements:

- Reduce the cycle length from 90 to 60 seconds.
- Eliminate the following phases:

  AM peak hour (7:00 to 10:00 AM)

  Westbound Congress Street a leading phase.
  Southbound Congress Street a leading phase.

  PM peak hour (3:00 to 6:00 PM)

  Eastbound Congress Street a leading phase.
  Southbound St. John Street a leading phase.

Congress Street and Bramhall - Based on the capacity analysis, the Congress Street westbound approach has a level of service F for a shared through left turn lane during the AM and the PM peak hour under both No-Build condition. Under the Build condition, this intersection has a level of service D or better during the AM and the PM peak hour based on the following improvements:

- Implementation of a lead phase from the northbound Bramhall Street approach.
- Retiming of the intersection.

Congress Street and Valley Street (US Route 1 Northbound) - This intersection has an acceptable level of service under both No-Build and Build conditions based on the capacity analysis. The Build condition is based on the following improvement:

- Restripe the northbound Valley Street approach lane uses as a exclusive right turn lane and a shared through left turn lane.

Unsignalized Intersections

Results of Unsignalized Capacity Analysis					
		1998 No-build		1998 Build	
Approach	Lanes	AM	PM	AM	PM
Congress & Gilman Street					
Gilman Street NB	Left/Right/Through	F	E	F	E
Gilman Street SB	Left/Right/Through	C	C	C	C
Congress Street WB	Left	B	B	C	B
Intersection Delay in Second		4.5	2.9	6.7	3.8
Congress St. & Site Drive.					
Congress Street EB	Left	N/A	N/A	A	A
Proposed Driveway SB	Left/Right	N/A	N/A	B	C
Overall				0.3	1.2
Park Ave. & Forest Street					
Forest Street NB	Left/Right	C	F	C	F
Overall		1.2	114	1.7	174.3
Park Ave. & Valley Street					
Valley Street NB	Left	F	F	F	F
	Right	A	A	A	A
Overall		5.4	35.3	5.6	38.6
Congress & Forest Street					
Congress Street EB	Left	A	B	A	B
Overall		.1	0.2	.3	.3

Congress Street at Gilman Street - The Gilman Street northbound approach left turn lane has a level of service F with level E during the AM and PM peak hour under both No-Build and Build conditions. Therefore, this location was evaluated to see if signalization is warranted. This analysis contained in Section VIII, shows that signal warrants are not met for both the No-Build and the Build condition. The northbound approach left turn lane has a level of service F, therefore, no mitigation measures are proposed at this location.

Park Avenue and Forest Street - The Forest Street northbound approach is a one-way street. Based on the capacity analysis, the Forest Street northbound approach left turn lane has a level of service F during the PM peak hour under both No-Build and Build conditions. This location was also evaluated to see if signalization is warranted. This analysis contained in Section VIII, shows that currently signal warrant peak hour volumes are met based on PM peak hour volumes. The proposed development increases in the traffic volume by one vehicle per minute during the PM peak hour. Therefore, the intersection is required a signal.

Left Turn Lane Warrant Analysis

Congress Street at Forest Avenue - DeLuca-Hoffman Associates, Inc. has also reviewed the left-turn warrant criteria for Congress Street at Forest Street in accordance with Figure 8-19 of the MDOT Highway Design Guide. Figure 8-19 is based on a two lane travel way. Based on the Figure, this location meets criteria for consideration of a left-turn treatment. Therefore, DeLuca-Hoffman Associates, Inc. recommends a left-turn lane on Congress Street at Forest Street. This will require removal of parking on the southerly side of Congress Street.

Congress Street at the Proposed Driveway - DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for Congress Street at the proposed site driveway in accordance with Figure 8-19 of the MDOT Highway Design Guide. Based on the Figure, this location meet criteria for consideration of providing a left-turn treatment. Therefore, DeLuca-Hoffman Associates, Inc. recommends installation of a left-turn lane on Congress Street. This will require removal of parking on the southerly side of Congress Street which will require the approval of the City Council.

VIII. SIGNAL WARRANT EVALUATION

The Manual on Uniform Traffic Control Devices (MUTCD) provides eleven conditions for which traffic signal control may be warranted for an intersection. One or more of these warrants should be met before a signal is installed. Traffic conditions evaluated with respect to these warrants are tabulated and discussed below. Warrant analysis worksheets are contained in Appendix D.

		Satisfied			
Number	Description	Gilman & Congress Street		Forest Street & Park Avenue	
		Existing	Proposed	Existing	Proposed
Warrant 1	Minimum vehicular volume	No	No	No	No
Warrant 2	Interruption of continuous traffic	No	No	No	No
Warrant 3	Minimum pedestrian volume	No	No	No	No
Warrant 4	School Crossing.	No	No	No	No
Warrant 5	Progressive movement.	No	No	No	No
Warrant 6	Accident experience	No	No	No	No
Warrant 7	Systems	No	No	No	No
Warrant 8	Combination of warrants	No	No	No	No
Warrant 9	Four hour volumes	No	No	No	No
Warrant 10	Peak hour delays	No	No	No	No
Warrant 11	Peak hour volumes	No	No	Yes	Yes

Congress Street at Gilman Street - The above summary shows that the intersection of Gilman Street and Congress Street does not met the signal warrant. Therefore, no mitigation measures are proposed at this location.

Forest Street and Park Avenue - The above summary shows that currently the intersection meets the peak hour volume warrant. The proposed development increase in traffic volume, 1 vehicle per minute during the PM peak hour. Therefore, the installation of a signal is recommended at this intersection.

IX. STORAGE LENGTH ANALYSIS

DeLuca-Hoffman Associates, Inc. has evaluated the potential storage lengths at the signalized intersections during the a.m. and the p.m. peak hour, for the 1998 Build condition. The available/proposed storage areas and required lengths as computed using SIGNAL 94 are summarized in the following table.

The available/proposed storage areas are based on the existing conditions.

Stacking Length Analysis for Weekday AM and PM Peak Hour				
Location		Available/Proposed Storage Length	90% Confidence Stacking Length	
St. John St. & Park Avenue	**Lane**		**AM**	**PM**
St. John Street NB	Left	800	253	400
	Left/Through	800	272	432
	Right	130	126	65
St. John Street SB	Through/Left	300	294	212
	Right	100	90	72
Park Avenue WB	Right	150	37	34
	Through/Left	600	216	361
St. John & Congress Street				
Congress Street EB	Left	300	163	244
	Through/Right	300	290	292
Congress Street WB	Left	250	45	73
	Right	250	111	153
St. John Street NB	Through/Right	400	215	311
St. John Street SB	Through/Left	800	146	142

Congress & Valley Street				
Congress Street EB	Right/Thru/Left	250	197	138
Congress Street WB	Right/Thru/Left	180	81	141
Valley Street NB	Right	150	140	71
	Through/Left	350	110	126
Bramhall & Congress Street				
Congress Street EB	Left/Through	310	309	274
	Right	100	71	46
Congress Street WB	Left/Through	550	172	245
	Right	100	30	61
Bramhall Street NB	Left	200	70	121
	Right/Through	200	181	307
Deering Street SB	Right/Through	100	229	201
	Left	100	44	121

The anticipated stacking lengths at the signalized intersections in the study area are within the available/proposed storage lengths with two exceptions as discussed below:

Congress Street and Bramhall Street/Deering Avenue - The Deering Avenue southbound approach has available stacking lengths of 100 feet for a shared through right turn lane and an exclusive left turn lane. Under the AM peak hour the stacking length is exceeded by 129 feet. This will block Cumberland Avenue. The Bramhall Street approach also exceed the available stacking length of 107 feet during the PM peak hour. This also will block the intersection of Bramhall Street and Marshall Street. DeLuca-Hoffman Associates, Inc. recommends the signs "Do Not Block the Street" for both Bramhall Street and Deering Avenue.

X. SIGHT LINES

The Maine Department of Transportation (MDOT) publication "Access Management, Improving the Efficiency of Maine Arterials" provides recommended sight distances based on driveway classifications. The classifications are as follows:

- **Low Volume Driveway:** Driveways with a traffic volume of less than 500 vehicle trips per day, or 50 or less vehicle trips per peak hour.

- **Medium Volume Driveway:** Driveways with less than 1,500 trips per day and less than 150 trips during the peak hour.

- **High Volume Driveway:** Driveways with more than 1500 trips per day or 150 trips during the peak hour.

The traffic volume associated with the site at both the proposed driveways are 128 and 95 trips during the p.m. peak hour. Therefore, for the purpose of sight distance analysis, DeLuca-Hoffman Associates, Inc. has evaluated the driveway as Low/Medium volume driveways. The guidelines set forth by MDOT for sight distance criteria for a Low/Medium volume driveway are as follows:

MDOT Standards for Sight Distance For a Low/Medium Volume Driveway	
Speed (mph)	**Desirable Sight Distance (full-time)**
25	250
30	300
35	350
40	400
45	450
50	500
55	550

DeLuca-Hoffman Associates, Inc. has evaluated the available sight lines at the proposed driveways in accordance with MDOT standards.

The MDOT standards are as follows:

Driveway observation point: 10 feet off major street travel way
Height of eye at driveway: 3.5 feet above ground
Height of approaching vehicle: 4.25 feet above road surface

The design speed used for the major road is generally the 85th percentile travel speed. This is the speed at which 85% of the traffic is traveling at or below. The posted speed limit on the Congress Street is 25 miles per hour. The estimated 85th percentile travel speed along this road is 5 mph above the posted speed or 30 mph. Therefore, the desirable sight distance is 300 feet.

Forest Street does not have a posted speed limit. Based on field observation, the average vehicle travels approximately 20 to 25 mph. Forest Street has a 22 foot roadway with on street parking, a one way street and is approximately 650 feet long.

The results of the sight line analyses along Congress Street and Forest Street are summarized below:

Driveway Sight Line Evaluation			
Direction	85th Percentile Travel Speed	Required Sight Line	Actual Sight Line
Forest St. Driveway			
From the south	25 mph	250'	275'
Congress St. Driveway			
From the east	30 mph	300'	425'
From the west	30 mph	300'	375'

Based on the above information, the sight distance at the existing and the proposed driveways meet or exceeds the MDOT sight distance standards.

It is recommended that any planting located within the sight triangle will not exceed three feet in height and shall be maintained. Signage shall be placed where it will not obstruct sight lines.

XI. ACCIDENT ANALYSIS

DeLuca-Hoffman Associates, Inc. has based the accident analysis of this study area on data obtained from the MDOT for the period of 1993 to 1995.

In order to evaluate whether a location has an accident problem, MDOT uses two criteria to define High Accident Locations (HAL). Both criteria must be met in order to be classified as an HAL.

1. A critical rate factor of 1.00 or more for a three year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate less than average) and:

2. A minimum of 8 accidents over a three year period.

Computerized accident data summaries were provided by MDOT for the study area. Data for these study area intersections is provided below:

Accident Data			
Intersection	**Number of Accidents**	**CRF**	**HAL**
Park Ave. & St. John St.	45	1.16	Yes
Congress & St. John St.	22	0.49	No
Congress & Valley St.	24	0.82	No
Congress & Gilman St.	11	1.00	Yes
Congress & Forest St.	5	0.46	No
Congress & Weymouth St.	9	1.04	Yes
Congress & Bramhall St.	14	0.33	No
Link Between Park Avenue & Congress along St. John St.	32	2.16	Yes
Link Between Weymouth & Ellsworth along Congress St.	10	1.35	Yes
Park Avenue & Forest St.	1	0	No
Park Avenue & Valley St.	5	0.57	No

The above table shows that three intersections and two links are HAL . The collision diagrams are shown in Appendix C. HALs are discussed below:

Park Avenue and St. John Street - This intersection experienced 45 accidents during the three year study period and the critical rate factor is 1.16. Twelve rear end, nine change lane, and four left turn side swipe accidents occurred northbound on the St. John Street approach. Five rear end, one change lane and five angle accidents occurred westbound on Park Avenue. The St. John Street southbound approach has no clear pattern to determine the problem. The rear end accident for the northbound approach is due to the heavy traffic flow. The rear end collisions are common at signalized intersections. To correct the change lane accidents, DeLuca-Hoffman Associated recommends over head lane use control signs and also striping through the intersections for westbound dual left-turn lanes.

Congress Street & Weymouth Street - This intersect experienced 9 accidents in the three year study period with a critical rate factor of 1.04. Two accidents involved angle, rear end, turning movement, and parking vehicles. There is no clear pattern to be corrected. Therefore no mitigation measures are proposed for this location.

Congress Street & Gilman Street - Based on the accident table shown, the intersection is HAL with the critical rate factor of 1.00. This intersection experienced 11 accidents. Six of these accidents were angle accidents and four of these angle accidents were on the southbound approach. Two angle accidents were in the northbound approach. One of the angle accident was a physical impairment and two angle accident involved winter conditions. There is no clear pattern to identify as a correctable. Therefore no mitigation is proposed for this location.

Roadway Segment Between Weymouth & Ellsworth Street along Congress Street - This link experienced 10 accidents with a critical rate factor of 1.35. Six accidents involved parked vehicles, four of them were located on the north side of Congress Street and two of them on the south side of Congress Street. The remainder of the accidents have no clear accident pattern to identify as a problem. The three accidents involved with parked vehicles occurred during the winter months. Therefore no mitigation measures are proposed at this location.

Link Between Park Avenue & Congress Street along St. John Street - This link experienced 32 accidents in three year study period. The critical rate factor is 2.16. Twenty-two accidents occurred along the portion of the link fronting McDonald's. The most correctable accident pattern is in front of McDonald's driveways. Based on the McDonald's expansion Traffic Impact Study, McDonald's is proposed to close two driveways and create a proposed two-way driveway located approximately 60' south of the existing northerly driveway. This change will improve the safety in the area. The rest of the accident patterns are uncorrectable. Therefore no mitigation measures are proposed for this location.

XII. CONCLUSION

DeLuca-Hoffman Associates, Inc. has examined the impact of traffic associated with the proposed Medical office building with attached 420 space parking garage in Portland, Maine..

The following is a summary of the major findings of the traffic study.

1. It is estimated the proposed project will generate 182 and 212 trip ends during the AM and the PM peak hours. These trips would consist of 126 trips in and 56 trips out of the site during the a.m. peak hour and 42 trips in and 170 trips out of the site during the p.m. peak hour.
2. All of the trips are expected to be primary trips, i.e. newly generated by the development.
3. The proposed Congress Street driveway is located approximately 260 feet east of Forest Street. This driveway would have a single entrance lane and a single exit lane. The Forest Street driveway will consist of a right turn in and right turn out only. Forest Street is a one way street in the northbound direction.

4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.

5. The intersection of Congress Street at the proposed driveway meets MDOT guidelines for consideration of left turn lane for left turning traffic from Congress Street into the driveway. Based on the projected left turning volumes, DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at the site driveway. This will require removal of parking on the southerly side of Congress Street which will require approval of the City Council.

   DeLuca-Hoffman Associates, Inc. also reviewed the left-turn warrant analyses for left turning traffic from Congress Street onto Forest Street. This location meets criteria for consideration of providing a left-turn treatment. Based on the projected left turning volumes DeLuca-Hoffman Associates, Inc. recommends construction of a left turn lane on Congress Street at Forest Street. This will also require removal of parking on the southerly side of Congress Street.

6. The anticipated stacking lengths at the signalized intersections in the study area are within the available/proposed full width storage lengths with two exceptions as discussed below:

   Congress Street and Bramhall Street/Deering Avenue - The Deering Avenue southbound approach for a shared through right turn lane and an exclusive left turn lane, the stacking length is exceeded by 129 feet. This will block Cumberland Avenue The Bramhall street approach also exceed the available stacking length of 107 feet during the PM peak hour. This also block the intersection of Bramhall Street and Marshall Street. DeLuca-Hoffman Associates, Inc. recommends the signs "Do Not Block the Street" for both Bramhall Street and Cumberland Avenue.

7. Park Avenue and St. John Street is a high accident location experiencing 45 accidents. To correct the predominant pattern of change lane accidents, DeLuca-Hoffman Associates, Inc. recommends overhead lane use control signs and striping through the intersections for westbound duals left turn lanes.

8. DeLuca-Hoffman Associates, Inc. recommends the following improvements to correct existing offsite roadway deficiencies:

   - Restripe the lane uses for northbound approach at the intersection of Congress Street and Valley Street as an exclusive right turn lane and a shared through left turn lane..
   - Change the timing and phasing at the intersection of Bramhall and Congress Streets.
   - Installation of traffic signal controller at Park Avenue and Forest Street.

Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system given existing geometric and the improvements of the traffic signal timing and phasing.

4. The level of service analysis shows that the proposed development will not have a significant impact on the surrounding street system. However, some existing intersections currently have a low level of service.

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Based upon these findings, it is the opinion of DeLuca-Hoffman Associates, Inc. that the traffic generated by the proposed development can be adequately and safely accommodated on the surrounding street system given existing geometric and the improvements of the traffic signal timing and phasing.

APPENDIX A

TURNING MOVEMENT DIAGRAMS

APPENDIX B

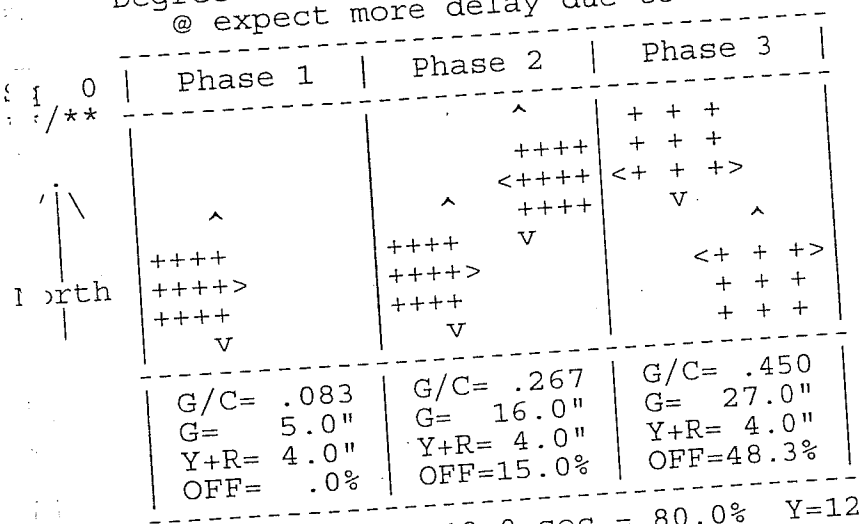
CAPACITY ANALYSES

02/13/97
13:27:24

Maine Medical Center in Portland, Maine
Intersection of Bramhall Street and Congress Street
1998 AM NO-BUILD : FILE AMNBBRMH

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .85 Vehicle Delay 36.1@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



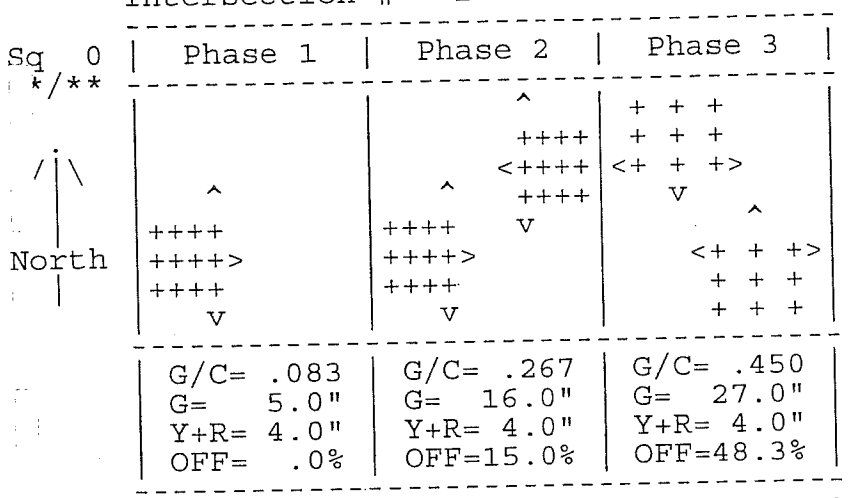
C= 60 sec G= 48.0 sec = 80.0% Y=12.0 sec = 20.0% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	@E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
								7.8	B+	
N Approach										
TH+RT	11/1	.240	.467	792	831	366	.440	7.2	*B+	164 ft
LT	11/1	.000	.467	101	126	70	.538	10.7	B	32 ft
								51.4	E	
S Approach										
RT	11/1	.043	.467	634	675	34	.050	5.6	B+	25 ft
LT+TH	11/1	.526	.467	393	435	452	1.039	54.9	*E	205 ft
								85.8@	F	
E Approach										
RT	11/1	.088	.283	385	442	92	.208	10.6	B	55 ft
LT+TH	11/1	.525	.283	127	162	270	1.627	111.4@	*F	168 ft
								21.5	C	
W Approach										
RT	11/1	.145	.433	619	663	167	.252	7.0	B+	80 ft
LT+TH	11/1	.433	.433	728	771	726	.942	24.8	C	348 ft

Maine Medical Center in Portland, Maine
Intersection of Bramhall Street and Congress Street
1998 AM NO-BUILD : FILE AMNBBRMH

SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

Intersection # 1 - BRAMHALL & CONGRESS ST.



C= 60 sec G= 48.0 sec = 80.0% Y=12.0 sec = 20.0% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
AdjVol: vph	30	336	70	92	213	57	34	320	132	167	649	77	2177
Wid/Ln:ft/#	0/0	11/1	11/1	11/1	11/1	0/0	11/1	11/1	0/0	11/1	11/1	0/0	
V/C Rqd@C:%	0	24	0	9	52	0	4	53	0	14	43	0	
V/C Used: %	0	47	47	28	28	0	47	47	0	43	43	0	
SV @E: vph	0	831	126	442	162	0	675	435	0	663	771	0	4105
Lvc Lvl:LOS		B+	B	B	F		B+	E		B+	C		D
Veg Sat:v/c	.00	.44	.54	.21	1.63	.00	.05	1.04	.00	.25	.94	.00	.85
Avg Del:s/v	.0	12.1	25.1	17.3	191.5	.0	8.9	53.1	.0	11.7	48.2	.0	55.5
Tot Del:min	0	18	7	7	215	0	1	100	0	8	146	0	502
Stops:veh	0	61	12	18	67	0	5	113	0	27	174	0	477
Max Que:veh	0	7	1	2	30	0	1	12	0	3	14	0	70
Max Que: ft	0	164	32	55	779	0	25	306	0	80	348	0	779

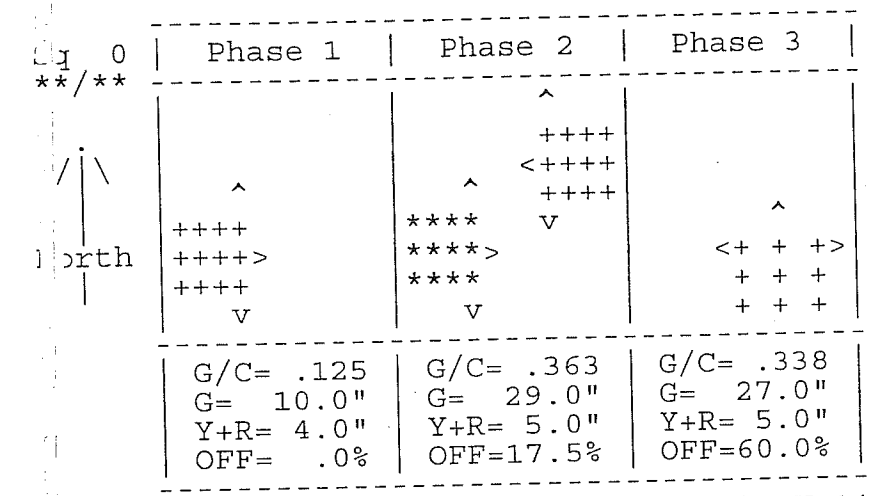
APPR TOTALS	N Approach	E Approach	S Approach	W Approach	Int
Param:Units					Total
AdjVol: vph	436	362	486	893	2177
Lvc Lvl:LOS	B+	F	E	C	D
Veg Sat:v/c	.46	1.27	.97	.81	.85
Avg Del:s/v	14.2	147.2	50.0	41.4	55.5
Tot Del:min	25	222	101	154	502
Stops:veh	73	85	118	201	477
Max Que:veh	8	32	13	17	70
Max Que: ft	164	779	306	348	779

1.aine Medical Center in Portland, Maine
Intersection of Valley Street and Congress Street
7998 AM NO-BUILD : FILE AMNBVLLY

02/18/97
17:27:46

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ıtersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .58 Vehicle Delay 11.3 Level of Service B



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

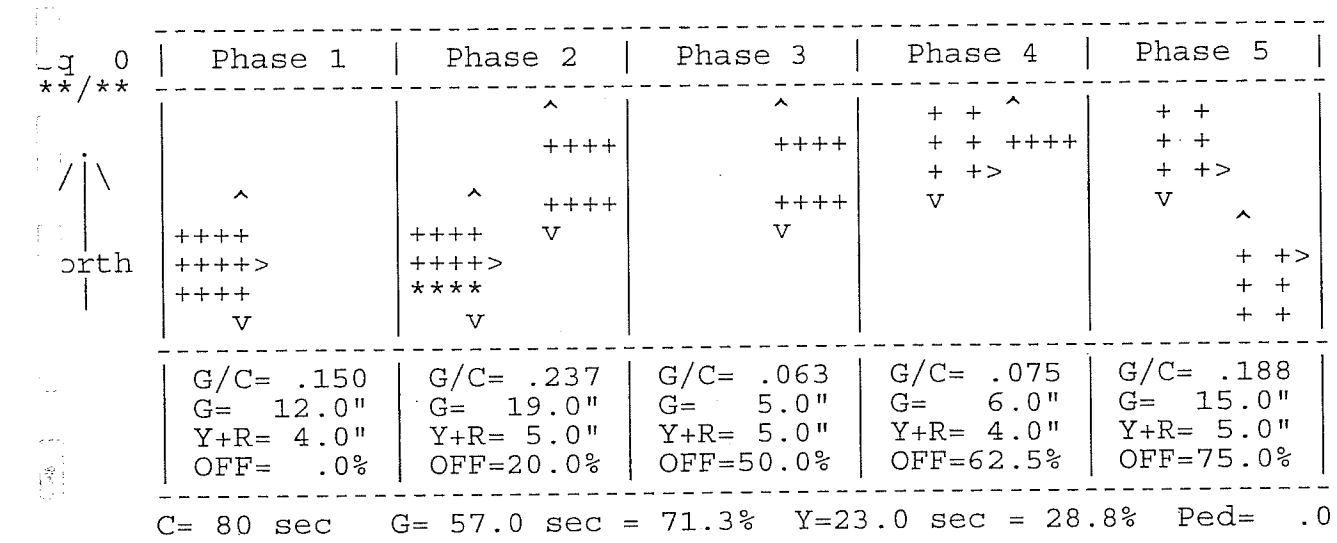
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	@E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								20.4	C	
TH+RT	14/1	.336	.363	502	597	453	.759	20.9	*C	342 ft
LT	12/1	.101	.363	555	654	29	.044	12.6	B	25 ft
E Approach								15.3	C+	
LT+TH+RT	22/2	.278	.387	659	755	421	.558	15.3	C+	146 ft
W Approach								5.5	B+	
LT+TH+RT	22/2	.321	.563	2015	2015	1044	.518	5.5	*B+	257 ft

..aine Medical Center in Portland, Maine
Intersection of St. John Street and Congress Street
-998 AM NO-BUILD : FILE AMNBSTJH

02/18/97
17:18:33

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .84 Vehicle Delay 32.4 Level of Service D+



C= 80 sec G= 57.0 sec = 71.3% Y=23.0 sec = 28.8% Ped= .0 sec = .0%

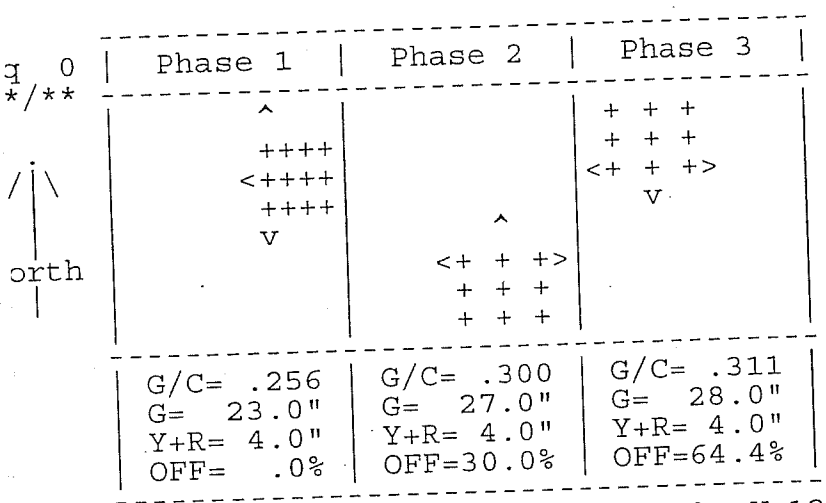
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	@E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								15.8	C+	
LT+TH	24/2	.204	.338	980	1112	480	.432	15.8	*C+	179 ft
S Approach								39.3	D	
TH+RT	24/2	.250	.213	579	756	732	.968	39.3	D	330 ft
E Approach								27.4	D+	
RT	12/1	.235	.213	198	295	232	.786	29.6	D+	204 ft
LT	11/1	.027	.087	172	280	79	.282	21.2	C	77 ft
W Approach								34.6	D	
TH+RT	23/2	.487	.463	1496	1575	1591	1.010	36.1	D	482 ft
LT	12/1	.226	.162	256	807	463	.565	29.6	D+	436 ft

02/18/97
11:54:32

aine Medical Center in Portland, Maine
NTERSECTION OF ST. JOHN STREET AND PARK AVENUE
1998 AM NO-BUILD : FILE AMNBSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .72 Vehicle Delay 25.0 Level of Service D+



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								26.1	D+	
RT	10/1	.207	.322	364	486	154	.317	17.6	C+	130 ft
LT+TH	12/1	.342	.322	452	590	495	.839	28.8	*D+	426 ft
S Approach								25.8	D+	
RT	12/1	.317	.311	335	437	346	.792	26.1	D+	325 ft
TH	12/1-	.315	.311	442	559	451	.807	25.7	D+	398 ft
LT	12/1+	.314	.311	422	562	428	.762	25.5	D+	369 ft
E Approach								23.0	C	
RT	12/1	.180	.267	283	426	107	.251	19.8	C+	99 ft
LT+TH	26/2	.251	.267	749	1010	670	.663	23.5	C	312 ft

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	> 1	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes		988	127	26	288		57	0	58	5	3	17
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	1168	320
Potential Capacity: (pcph)	354	953
Movement Capacity: (pcph)	354	953
Prob. of Queue-Free State:	0.80	0.97

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	1239	
Potential Capacity: (pcph)	440	
Movement Capacity: (pcph)	440	
Prob. of Queue-Free State:	0.94	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.92	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1518	1588
Potential Capacity: (pcph)	174	160
Capacity Adjustment Factor due to Impeding Movements	0.92	0.92
Movement Capacity: (pcph)	160	147
Prob. of Queue-Free State:	1.00	0.97

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1528	1550
Potential Capacity: (pcph)	138	134
Major LT, Minor TH Impedance Factor:	0.90	0.92
Adjusted Impedance Factor:	0.92	0.94
Capacity Adjustment Factor due to Impeding Movements	0.89	0.75
Movement Capacity: (pcph)	123	101

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	63	123 >					
NB T	0	160 >	187	56.2	3.9	F	56.2
NB R	70	354 >					
SB L	8	101 >					
SB T	4	147 >	289	14.4	0.4	C	14.4
SB R	27	953 >					
WB L	28	440		8.7	0.1	B	0.7

Intersection Delay = 4.5 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	52	1000			323	16						
PHF	.9	.9			.9	.9						
Grade		1			0							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.25											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		377
Potential Capacity: (pcph)		1134
Movement Capacity: (pcph)		1134
Prob. of Queue-Free State:		0.94

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	72	1134		3.4	0.1	A	0.2

Intersection Delay = 0.1 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		396			578		132		161			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	220	
Potential Capacity: (pcph)	1071	
Movement Capacity: (pcph)	1071	
Prob. of Queue-Free State:	0.82	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1082	
Potential Capacity: (pcph)	215	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	215	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	147	215		46.7	3.9	F	23.3
NB R	197	1071		4.1	0.7	A	

Intersection Delay = 5.4 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		494			570		44		39			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	274	
Potential Capacity: (pcph)	1006	
Movement Capacity: (pcph)	1006	
Prob. of Queue-Free State:	0.95	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1182	
Potential Capacity: (pcph)	186	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	186	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	49	186 >	310	16.7	1.3	C	16.7
NB R	47	1006 >					

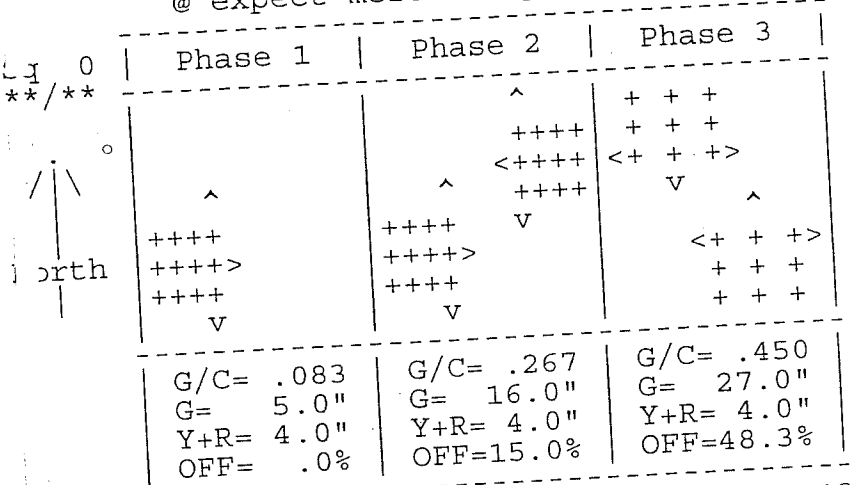
Intersection Delay = 1.2 sec/veh

02/13/97
13:32:39

Maine Medical Center in Portland, Maine
Intersection of Bramhall Street and Congress Street
1998 PM NO-BUILD : FILE PMNBBRMH

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) 1.24 Vehicle Delay 50.0@ Level of Service E
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 60 sec G= 48.0 sec = 80.0% Y=12.0 sec = 20.0% Ped= .0 sec = .0%

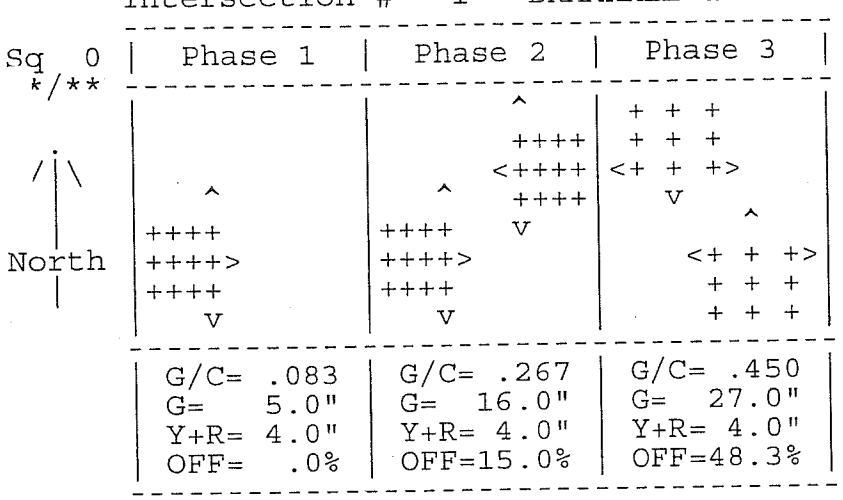
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	LOS	90% Max Queue
N Approach								13.6	B	
TH+RT	11/1	.219	.467	783	822	324	.394	6.9	*B+	145 ft
LT	11/1	.510	.467	92	115	101	.842	35.1	D	46 ft
S Approach								80.5@	F	
RT	11/1	.051	.467	634	675	42	.062	5.7	B+	25 ft
LT+TH	11/1	.899	.467	368	409	782	1.912	84.5@	*F	354 ft
E Approach								75.5@	F	
RT	11/1	.159	.283	385	442	192	.434	11.8	B	115 ft
LT+TH	11/1	.617	.283	197	244	499	2.045	100.0@	*F	311 ft
W Approach								19.6	C+	
RT	11/1	.155	.433	619	663	181	.273	7.1	B+	86 ft
LT+TH	11/1	.426	.433	728	771	714	.926	22.7	C	342 ft

Maine Medical Center in Portland, Maine
Intersection of Bramhall Street and Congress Street
1998 PM NO-BUILD : FILE PMNBBRMH

02/13/97
13:33:12

SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

Intersection # 1 - BRAMHALL & CONGRESS ST.



C= 60 sec G= 48.0 sec = 80.0% Y=12.0 sec = 20.0% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
AdjVol: vph	53	271	101	192	456	43	42	562	220	181	622	92	2835
Wid/Ln:ft/#	0/0	11/1	11/1	11/1	11/1	0/0	11/1	11/1	0/0	11/1	11/1	0/0	
/C Rqd@C:%	0	22	51	16	62	0	5	90	0	15	43	0	
/C Used: %	0	47	47	28	28	0	47	47	0	43	43	0	
SV @E: vph	0	822	115	442	244	0	675	409	0	663	771	0	4141
vc Lvl:LOS		B+	D	B	F		B+	F		B+	C		E
Deg Sat:v/c	.00	.39	.84	.43	2.05	.00	.06	1.91	.00	.27	.93	.00	1.24
Avg Del:s/v	.0	11.7	80.7	19.7	242.1	.0	9.0	224.2	.0	11.9	39.9	.0	120.9
Tot Del:min	0	16	34	16	503	0	2	731	0	9	119	0	1430
Stops:veh	0	53	22	39	124	0	6	195	0	29	169	0	637
Max Que:veh	0	6	2	5	70	0	1	101	0	3	13	0	201
Max Que: ft	0	145	46	115	1818	0	25	2563	0	86	342	0	2563

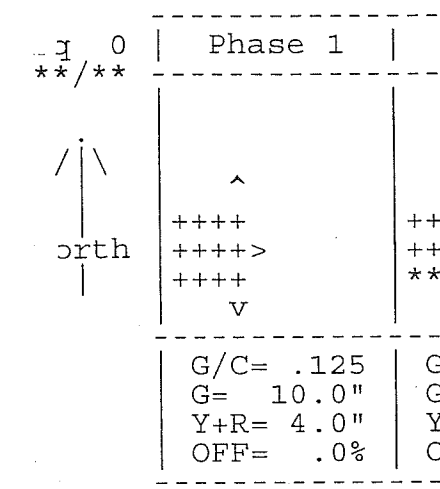
APPR TOTALS Param:Units	N Approach	E Approach	S Approach	W Approach	Int Total
AdjVol: vph	425	691	824	895	2835
vc Lvl:LOS	B	F	F	C+	E
Deg Sat:v/c	.50	1.60	1.82	.79	1.24
Avg Del:s/v	28.1	180.3	213.2	34.2	120.9
Tot Del:min	50	519	733	128	1430
Stops:veh	75	163	201	198	637
Max Que:veh	8	75	102	16	201
Max Que: ft	145	1818	2563	342	2563

.aine Medical Center in Portland, Maine
Intersection of Valley Street and Congress Street
998 PM NO-BUILD : FILE PMNBVLLY

02/18/97
17:25:00

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .60 Vehicle Delay 17.7 Level of Service C+



C= 80 sec G= 66.0 sec = 82.5% Y=14.0 sec = 17.5% Ped= .0 sec = .0%

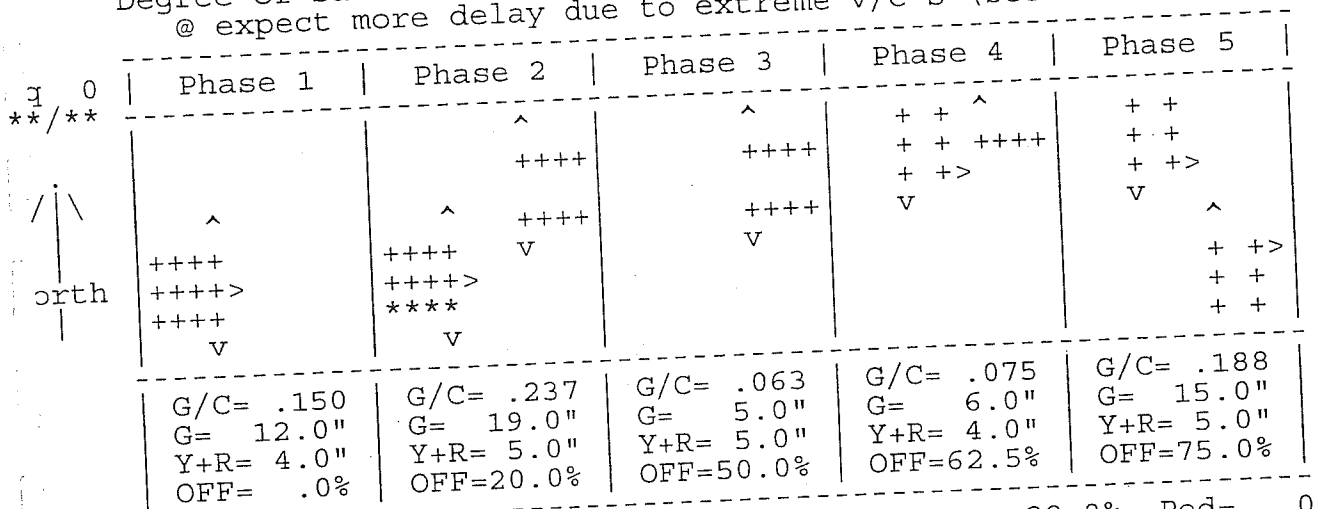
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
S Approach								15.1	C+	
TH+RT	14/1	.251	.363	517	613	307	.501	15.7	C+	230 ft
LT	12/1	.121	.363	555	654	78	.119	12.9	B	55 ft
E Approach								33.1	D	
LT+TH+RT	22/2	.413	.387	636	731	690	.944	33.1	D	239 ft
W Approach								4.9	A	
LT+TH+RT	22/2	.254	.563	2013	2013	757	.376	4.9	A	186 ft

02/18/97
17:17:14

aine Medical Center in Portland, Maine
Intersection of St. John Street and Congress Street
1998 PM NO-BUILD : FILE PMNBSTJH

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .94 Vehicle Delay 45.9@ Level of Service E+
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 80 sec G= 57.0 sec = 71.3% Y=23.0 sec = 28.8% Ped= .0 sec = .0%

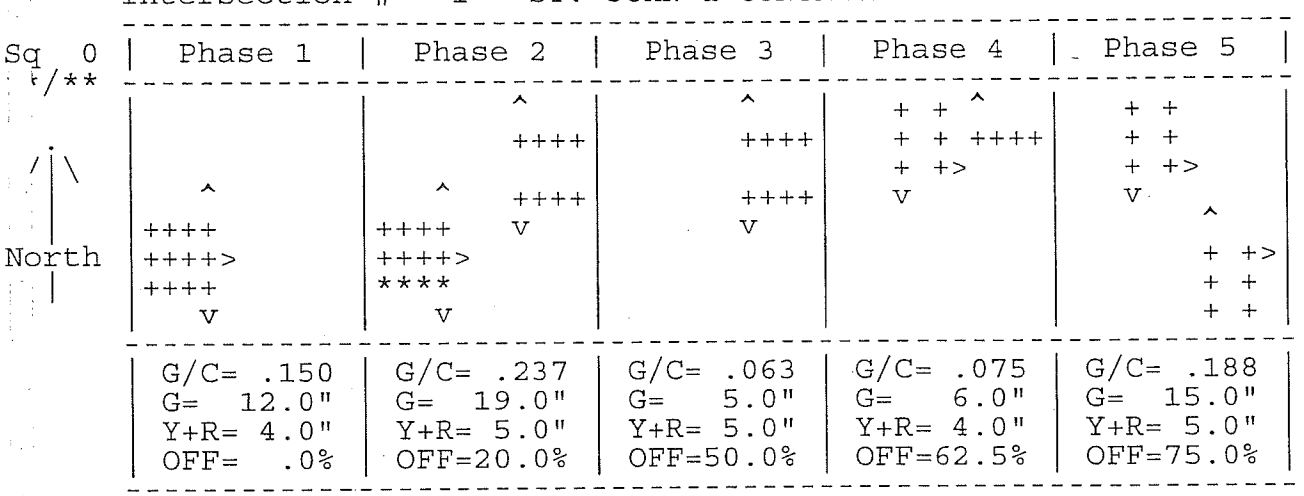
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
								16.4	C+	
N Approach										
LT+TH	24/2	.228	.338	835	960	482	.502	16.4	*C+	180 ft
								84.5@	F	
S Approach										
TH+RT	24/2	.324	.213	588	767	1064	1.387	84.5@	F	478 ft
								77.3@	F	
E Approach										
RT	12/1	.344	.213	198	295	407	1.380	98.9@	F	358 ft
LT	11/1	.062	.087	194	280	158	.564	21.7	C	123 ft
								19.9	C+	
W Approach										
TH+RT	23/2	.385	.463	1497	1576	1198	.760	15.1	C+	363 ft
LT	12/1	.242	.162	256	807	511	.624	31.0	D+	481 ft

Maine Medical Center in Portland, Maine
Intersection of St. John Street and Congress Street
1998 PM NO-BUILD : FILE PMNBSTJH

02/18/97
17:17:22

SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

Intersection # 1 - ST. JOHN & CONGRESS ST.



C= 80 sec G= 57.0 sec = 71.3% Y=23.0 sec = 28.8% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
AdjVol: vph	0	399	83	407	0	158	51	1013	0	525	673	511	3820
Wid/Ln:ft/#	0/0	24/2	0/0	12/1	0/0	11/1	0/0	24/2	0/0	0/0	23/2	12/1	
V/C Rqd@C:%	0	23	0	34	0	6	0	32	0	0	38	24	
V/C Used: %	0	34	0	21	0	9	0	21	0	0	46	16	
PSV @E: vph	0	960	0	295	0	280	0	767	0	0	1576	807	4685
Lvc Lvl:LOS		C+			F			C			F		
Veg Sat:v/c	.00	.50	.00	1.38	.00	.56	.00	1.39	.00	.00	.76	.62	.94
Avg Del:s/v	.0	22.2	.0	152.1	.0	37.8	.0	150.4	.0	.0	19.7	32.1	72.9
Tot Del:min	0	45	0	258	0	25	0	667	0	0	98	68	1161
Stops:veh	0	96	0	101	0	40	0	266	0	0	248	150	901
Max Que:veh	0	14	0	38	0	5	0	101	0	0	29	19	206
Max Que: ft	0	180	0	964	0	123	0	1298	0	0	363	481	1298

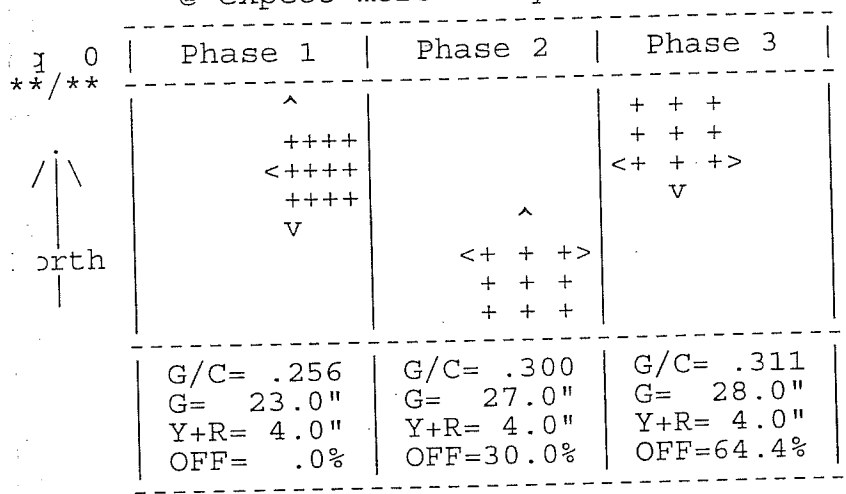
APPR TOTALS	N Approach	E Approach	S Approach	W Approach	Int
Param:Units					Total
AdjVol: vph	482	565	1064	1709	3820
Lvc Lvl:LOS	C+	F	F	C+	E+
Veg Sat:v/c	.50	1.15	1.39	.72	.94
Avg Del:s/v	22.2	120.1	150.4	23.4	72.9
Tot Del:min	45	283	667	166	1161
Stops:veh	96	141	266	398	901
Max Que:veh	14	43	101	48	206
Max Que: ft	180	964	1298	481	1298

02/18/97
11:56:01

laine Medical Center in Portland, Maine
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE
'998 PM NO-BUILD : FILE PMNBSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ıtersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) 1.07 Vehicle Delay 47.7@ Level of Service E+
@ expect more delay due to extreme v/c's (see EVALUATE)



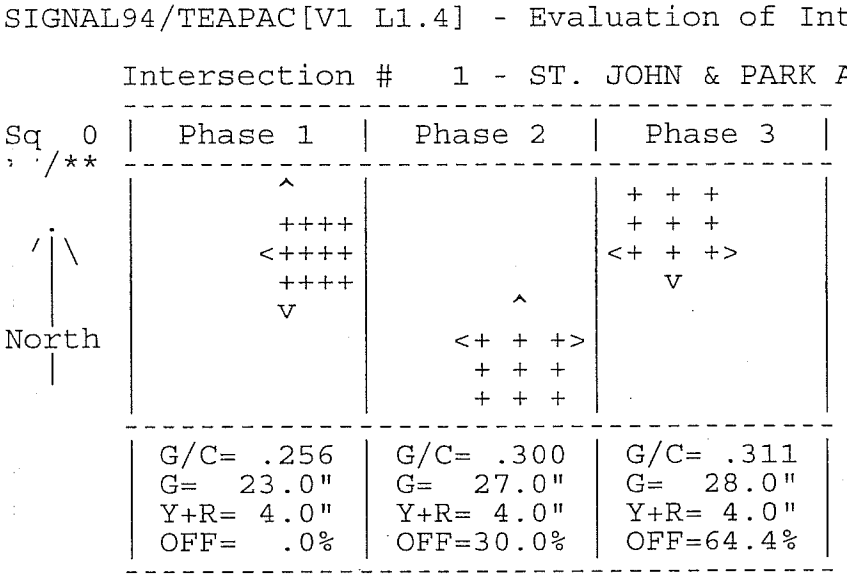
C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								19.0	C+	
RT	10/1	.217	.322	364	486	173	.356	17.9	C+	147 ft
LT+TH	12/1	.256	.322	454	592	307	.519	19.5	*C+	264 ft
S Approach								53.1@	E	
RT	12/1	.266	.311	335	437	252	.577	20.4	C	237 ft
TH	12/1-	.439	.311	440	557	727	1.305	56.7@	E	641 ft
LT	12/1+	.438	.311	422	562	690	1.228	61.3@	F	594 ft
E Approach								51.0@	E	
RT	12/1	.203	.267	283	426	157	.369	20.7	C	145 ft
LT+TH	26/2	.378	.267	765	1029	1296	1.259	54.7@	E	597 ft

Maine Medical Center in Portland, Maine 02/18/97
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE 11:56:09
1998 PM NO-BUILD : FILE PMNBSTPK

SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

Intersection # 1 - ST. JOHN & PARK AVENUE



C= 90 sec G= 78.0 sec = 86.7% Y=12.0 sec = 13.3% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
AdjVol: vph	173	258	49	157	1072	224	252	727	690	0	0	0	3602
Wid/Ln:ft/#	10/1	12/1	0/0	12/1	26/2	0/0	12/1	12/1	12/1+	0/0	0/0	0/0	
C Rqd@C:%	22	26	0	20	38	0	27	44	44	0	0	0	
C Used: %	32	32	0	27	27	0	31	31	31	0	0	0	
SV @E: vph	486	592	0	426	1029	0	437	557	562	0	0	0	4089
Src Lvl:LOS	C+	C+		C	E		C	E	F				E+
Lg Sat:v/c	.36	.52	.00	.37	1.26	.00	.58	1.30	1.23	.00	.00	.00	1.07
Avg Del:s/v	24.9	26.7	.0	28.5	121.5	.0	29.2	132.8	113.9	.0	.0	.0	99.1
Tot Del:min	18	34	0	19	656	0	31	402	328	0	0	0	1488
# Stops:veh	33	62	0	32	324	0	53	181	172	0	0	0	857
Max Que:veh	6	10	0	6	104	0	9	62	51	0	0	0	248
Max Que: ft	147	264	0	145	1313	0	237	1579	1284	0	0	0	1579

APPR TOTALS	N Approach	E Approach	S Approach	W Approach	Int
Param:Units					Total
AdjVol: vph	480	1453	1669	0	3602
Src Lvl:LOS	C+	E	E		E+
Lg Sat:v/c	.46	1.16	1.16	.00	1.07
Avg Del:s/v	26.1	111.5	109.3	.0	99.1
Tot Del:min	52	675	761	0	1488
# Stops:veh	95	356	406	0	857
Max Que:veh	16	110	122	0	248
Max Que: ft	264	1313	1579	0	1579

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1 < 0		0 > 1		0	0 > 1 < 0			0 > 1 < 0		
Stop/Yield			N			N						
Volumes		732	25	42	527		43	0	78	3	5	21
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	827	586
Potential Capacity: (pcph)	528	699
Movement Capacity: (pcph)	528	699
Prob. of Queue-Free State:	0.82	0.95

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	841	
Potential Capacity: (pcph)	681	
Movement Capacity: (pcph)	681	
Prob. of Queue-Free State:	0.93	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.90	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1460	1474
Potential Capacity: (pcph)	187	184
Capacity Adjustment Factor due to Impeding Movements	0.90	0.90
Movement Capacity: (pcph)	168	165
Prob. of Queue-Free State:	1.00	0.95

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1474	1504
Potential Capacity: (pcph)	148	143
Major LT, Minor TH Impedance Factor:	0.86	0.90
Adjusted Impedance Factor:	0.89	0.92
Capacity Adjustment Factor due to Impeding Movements	0.85	0.76
Movement Capacity: (pcph)	126	108

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	48	126 >					
NB	T	0	168 >	256	30.7	3.0	E	30.7
NB	R	96	528 >					
SB	L	4	108 >					
SB	T	8	165 >	335	12.4	0.4	C	12.4
SB	R	32	699 >					
WB	L	45	681		5.7	0.1	B	0.4

Intersection Delay = 2.9 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	63	747			594	32						
PHF	.9	.9			.9	.9						
Grade		1			0							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.25											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		696
Potential Capacity: (pcph)		799
Movement Capacity: (pcph)		799
Prob. of Queue-Free State:		0.89

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	88	799		5.1	0.3	B	0.4

Intersection Delay = 0.2 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		341			1233		132		149			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	190	
Potential Capacity: (pcph)	1109	
Movement Capacity: (pcph)	1109	
Prob. of Queue-Free State:	0.83	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1749	
Potential Capacity: (pcph)	81	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	81	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	147	81		492.2	10.6	F	233.3
NB	R	183	1109		3.9	0.6	A	

Intersection Delay = 35.3 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
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Ph: (207) 775-1121

Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM NO-BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		404			1095		194		82			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	224	
Potential Capacity: (pcph)	1066	
Movement Capacity: (pcph)	1066	
Prob. of Queue-Free State:	0.91	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1666	
Potential Capacity: (pcph)	91	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	91	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	216	91 >	128	733.4	25.2	F	733.4
NB R	100	1066 >					

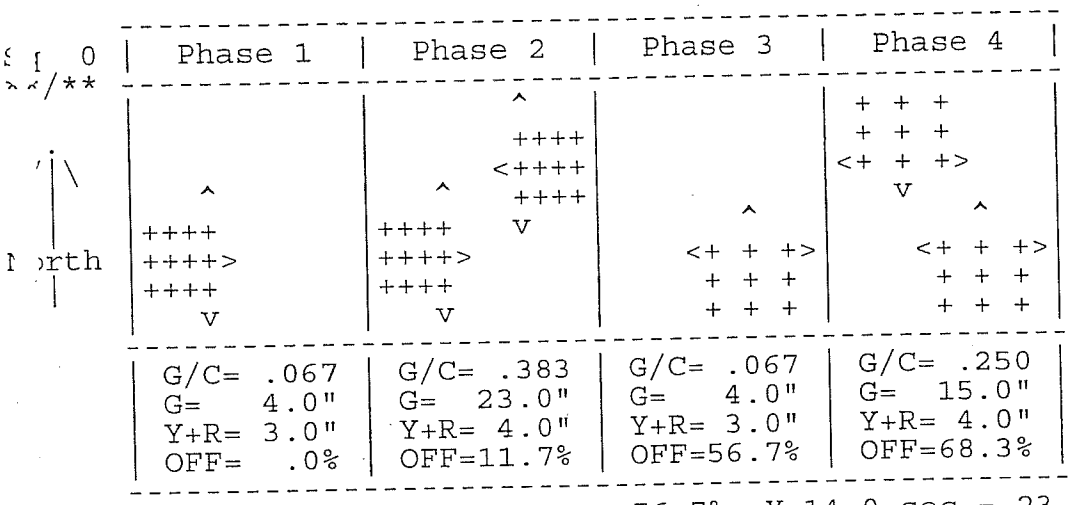
Intersection Delay = 114.0 sec/veh

N AINE MEDICAL CENTER IN PORTLAND, MAINE
INTERSECTIONOF BRAMHAll STREET AND CONGRESS STREET
1998 AM BUILD(WITH IMPROVEMENT) : FILE AMBBRMHI

02/17/97
15:58:07

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .64 Vehicle Delay 13.0 Level of Service B



C= 60 sec G= 46.0 sec = 76.7% Y=14.0 sec = 23.3% Ped= .0 sec = .0%

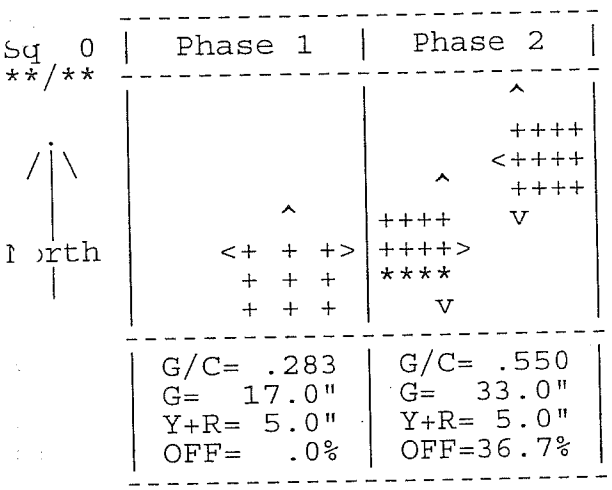
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	@E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								17.9	C+	
TH+RT	11/1	.243	.267	414	474	370	.781	18.8	*C+	229 ft
LT	11/1	.000	.267	120	155	70	.440	13.1	B	44 ft
S Approach								9.4	B+	
TH+RT	11/1	.238	.383	621	671	354	.528	9.9	*B+	186 ft
LT	11/1	.113	.383	593	643	137	.213	8.1	B+	72 ft
E Approach								19.3	C+	
RT	11/1	.088	.400	576	624	92	.147	7.4	B+	46 ft
LT+TH	11/1	.393	.400	286	330	280	.848	23.2	*C	146 ft
W Approach								10.0	B+	
RT	11/1	.146	.517	756	791	169	.214	5.1	B+	69 ft
LT+TH	11/1	.435	.517	887	919	730	.794	11.1	*B	299 ft

Maine Medical Center in Portland, Maine
Intersection of Valley Street and Congress Street
1998 AM BUILD (WITH IMPROVEMENT) : FILE AMBVLLYI

02/25/97
08:02:47

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .51 Vehicle Delay 6.1 Level of Service B+



C= 60 sec G= 50.0 sec = 83.3% Y=10.0 sec = 16.7% Ped= .0 sec = .0%

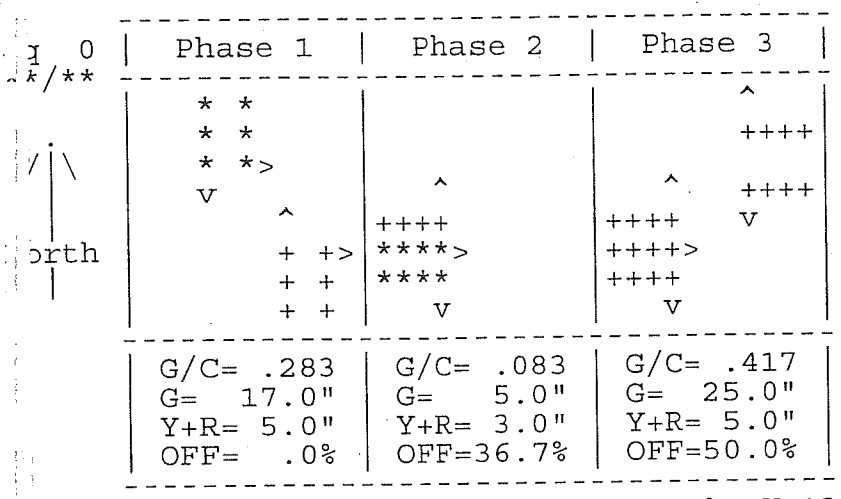
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	LOS	90% Max Queue
S Approach								12.8	B	
RT	12/1	.209	.317	381	445	226	.508	13.5	B	140 ft
LT+TH	12/1	.144	.317	509	578	190	.329	12.0	B	110 ft
E Approach								5.3	B+	
LT+TH+RT	22/2	.274	.583	1105	1132	457	.404	5.3	B+	81 ft
W Approach								3.9	A	
LT+TH+RT	22/2	.349	.583	1943	1943	1122	.577	3.9	A	197 ft

aine Medical Center in Portland, Maine
ntersection of St. John Street and Congress Street
1998 AM BUILD (WITH IMPROVEMENT): FILE AMBSTJHI

02/25/97
07:26:58

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .71 Vehicle Delay 11.3 Level of Service B



C= 60 sec G= 47.0 sec = 78.3% Y=13.0 sec = 21.7% Ped= .0 sec = .0%

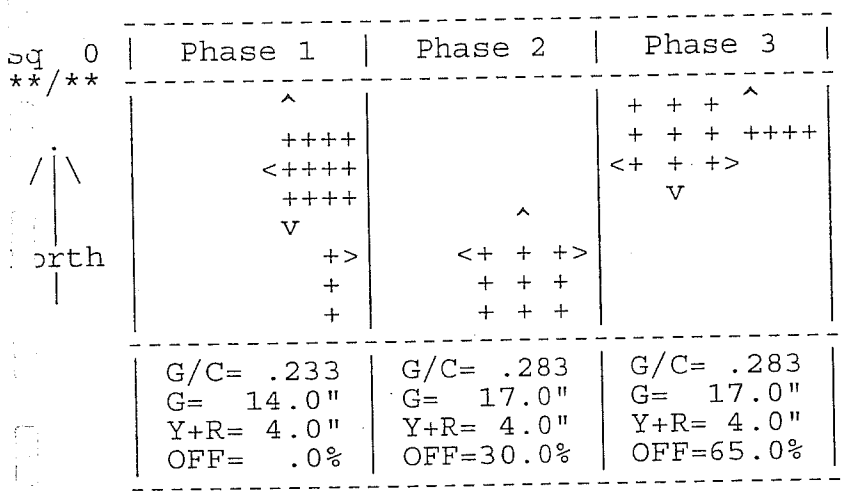
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	@E (vph)	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								17.9	C+	
LT+TH	24/2	.280	.317	585	656	505	.770	17.9	*C+	146 ft
S Approach								13.7	B	
TH+RT	24/2	.227	.317	1074	1126	732	.650	13.7	B	215 ft
E Approach								11.0	B	
RT	12/1	.215	.450	596	626	241	.385	7.1	B+	111 ft
LT	12/1	.344	.450	96	118	91	.758	21.2	C	45 ft
W Approach								8.9	B+	
TH+RT	23/2	.490	.583	1992	1992	1645	.826	9.8	*B+	290 ft
LT	12/1	.301	.583	1003	1032	463	.449	5.6	B+	163 ft

Maine Medical Center in Portland, Maine
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE
998 AM BUILD(WITH IMPROVEMENT): FILE AMBSTPKI

02/18/97
12:00:24

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) .70 Vehicle Delay 17.8 Level of Service C+



C= 60 sec G= 48.0 sec = 80.0% Y=12.0 sec = 20.0% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								24.5	C	
RT	10/1	.146	.300	385	452	154	.341	12.6	B	90 ft
LT+TH	12/1	.309	.300	478	549	495	.902	28.1	*D+	294 ft
3 Approach								15.8	C+	
RT	12/1	.285	.600	840	843	346	.410	2.9	A	126 ft
TH	12/1-	.286	.300	484	539	455	.844	21.1	C	272 ft
LT	12/1+	.280	.300	471	542	433	.799	20.4	C	253 ft
E Approach								15.6	C+	
RT	12/1	.107	.600	930	959	110	.115	3.9	A	37 ft
LT+TH	26/2	.206	.250	855	947	681	.719	17.5	C+	216 ft

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
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Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1 < 0		0 > 1		0	0 > 1		< 0	0 > 1		< 0
Stop/Yield			N			N						
Volumes		1096	127	26	318		57	0	58	5	3	17
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	1288	353
Potential Capacity: (pcph)	308	917
Movement Capacity: (pcph)	308	917
Prob. of Queue-Free State:	0.77	0.97

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	1359	
Potential Capacity: (pcph)	386	
Movement Capacity: (pcph)	386	
Prob. of Queue-Free State:	0.93	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.91	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1670	1741
Potential Capacity: (pcph)	145	133
Capacity Adjustment Factor due to Impeding Movements	0.91	0.91
Movement Capacity: (pcph)	132	121
Prob. of Queue-Free State:	1.00	0.97

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1682	1702
Potential Capacity: (pcph)	112	109
Major LT, Minor TH Impedance Factor:	0.88	0.91
Adjusted Impedance Factor:	0.91	0.93
Capacity Adjustment Factor due to Impeding Movements	0.88	0.72
Movement Capacity: (pcph)	99	78

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	63	99	>					
NB	T	0	132	>	154	92.8	5.0	F	92.8
NB	R	70	308	>					
SB	L	8	78	>					
SB	T	4	121	>	236	18.3	0.6	C	18.3
SB	R	27	917	>					
WB	L	28	386			10.1	0.1	C	0.8

Intersection Delay = 6.7 sec/veh

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Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	124	1036			353	22						
PHF	.9	.9			.9	.9						
Grade		1			0							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.25											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		416
Potential Capacity: (pcph)		1086
Movement Capacity: (pcph)		1086
Prob. of Queue-Free State:		0.84

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	172	1086		3.9	0.6	A	0.4

Intersection Delay = 0.3 sec/veh

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Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		396			591		132		161			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	220	
Potential Capacity: (pcph)	1071	
Movement Capacity: (pcph)	1071	
Prob. of Queue-Free State:	0.82	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1097	
Potential Capacity: (pcph)	211	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	211	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	147	211		48.8	4.0	F	24.3
NB R	197	1071		4.1	0.7	A	

Intersection Delay = 5.6 sec/veh

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Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		494			570		57		46			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	274	
Potential Capacity: (pcph)	1006	
Movement Capacity: (pcph)	1006	
Prob. of Queue-Free State:	0.94	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1182	
Potential Capacity: (pcph)	186	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	186	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	63	186 >	302	19.5	1.8	C	19.5
NB R	56	1006 >					

Intersection Delay = 1.7 sec/veh

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Streets: (N-S) PROPOSED SITE DR. (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 AM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	> 0	< 0
Stop/Yield			N			N						
Volumes	36	994			329	11				6		30
PHF	.9	.9			.9	.9				.9		.9
Grade		1			-1						2	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.25									1.40		1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		372
Potential Capacity: (pcph)		897
Movement Capacity: (pcph)		897
Prob. of Queue-Free State:		0.95

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		378
Potential Capacity: (pcph)		1132
Movement Capacity: (pcph)		1132
Prob. of Queue-Free State:		0.96

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)		1516
Potential Capacity: (pcph)		140
Major LT, Minor TH		
Impedance Factor:		0.96
Adjusted Impedance Factor:		0.96
Capacity Adjustment Factor due to Impeding Movements		0.96
Movement Capacity: (pcph)		134

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB L	10	134 >	445	9.3	0.4	B	9.3
SB R	46	897 >					
EB L	50	1132		3.3	0.0	A	0.1

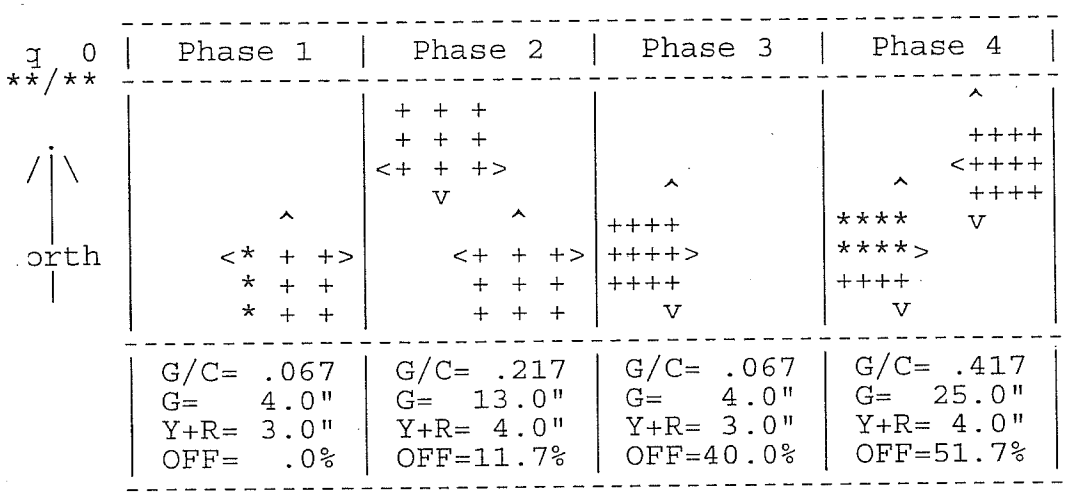
Intersection Delay = 0.3 sec/veh

AINE MEDICAL CENTER IN PORTLAND, MAINE
INTERSECTION OF BRAMHALL STREET AND CONGRESS STREEET
998 PM BUILD(WITH IMPROVEMENT):FILE PMBBRMHI

02/14/97
16:02:01

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 1 - BRAMHALL & CONGRESS ST.
Degree of Saturation (v/c) .73 Vehicle Delay 17.9 Level of Service C+



C= 60 sec G= 46.0 sec = 76.7% Y=14.0 sec = 23.3% Ped= .0 sec = .0%

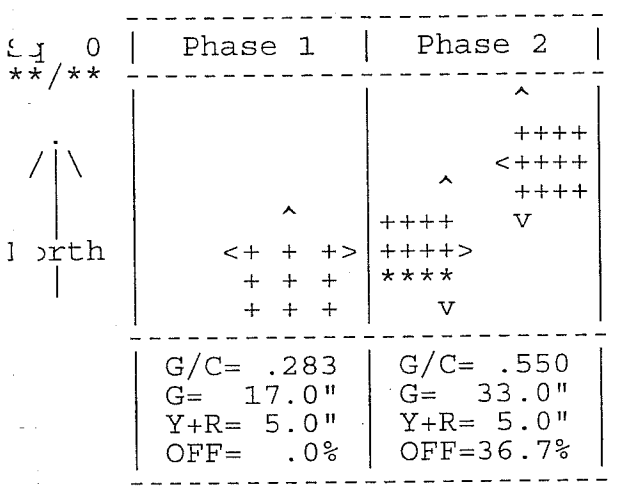
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								24.0	C	
TH+RT	11/1	.211	.233	351	412	312	.757	19.2	C+	201 ft
LT	11/1	.271	.233	85	113	100	.833	38.9	D	65 ft
S Approach								19.0	C+	
TH+RT	11/1	.343	.350	571	624	557	.893	22.7	C	307 ft
LT	11/1	.166	.350	534	587	219	.373	9.6	*B+	121 ft
E Approach								25.9	D+	
RT	11/1	.116	.433	633	677	129	.191	6.8	B+	61 ft
LT+TH	11/1	.448	.433	477	522	497	.952	30.9	*D+	245 ft
W Approach								8.0	B+	
RT	11/1	.111	.550	812	842	120	.143	4.3	A	46 ft
LT+TH	11/1	.430	.550	951	978	720	.736	8.6	*B+	274 ft

Maine Medical Center in Portland, Maine
Intersection of Valley Street and Congress Street
2098 PM BUILD (WITH IMPROVEMENT): FILE PMBVLLYI

02/25/97
08:01:52

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 2 - CONGRESS ST. & VALLEY STREET
Degree of Saturation (v/c) .52 Vehicle Delay 6.7 Level of Service B+



C= 60 sec G= 50.0 sec = 83.3% Y=10.0 sec = 16.7% Ped= .0 sec = .0%

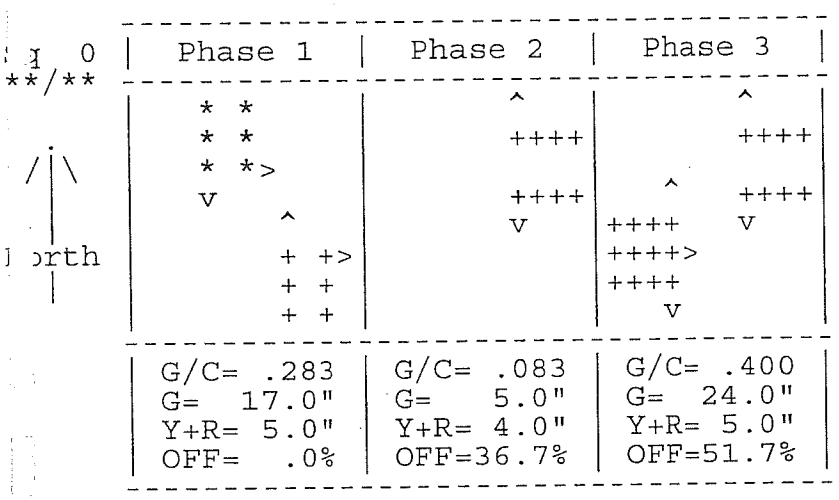
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E (vph)	Adj Volume	v/c	HCM Delay	LOS	90% Max Queue
S Approach								12.1	B	
RT	14/1	.117	.317	409	474	114	.241	11.6	B	71 ft
LT+TH	12/1	.161	.317	507	576	218	.378	12.3	B	126 ft
E Approach								7.7	B+	
LT+TH+RT	22/2	.424	.583	1147	1173	798	.680	7.7	B+	141 ft
W Approach								3.4	A	
LT+TH+RT	22/2	.281	.583	1763	1763	784	.445	3.4	A	138 ft

Maine Medical Center in Portland, Maine
Intersection of St. John Street and Congress Street
1998 PM BUILD (WITH IMPROVEMENT):FILE PMBSTJHI

02/25/97
07:47:02

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

Intersection Averages for Int # 1 - ST. JOHN & CONGRESS ST.
Degree of Saturation (v/c) .76 Vehicle Delay 14.8 Level of Service B



C= 60 sec G= 46.0 sec = 76.7% Y=14.0 sec = 23.3% Ped= .0 sec = .0%

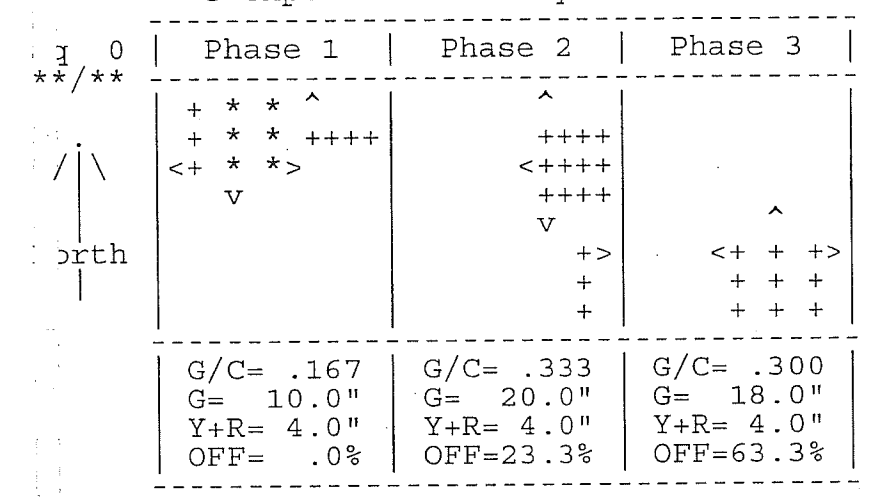
Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								17.7	C+	
LT+TH	24/2	.278	.317	574	645	490	.760	17.7	*C+	142 ft
S Approach								22.4	C	
TH+RT	24/2	.310	.317	1092	1143	1064	.931	22.4	C	311 ft
E Approach								3.6	A	
RT	12/1	.348	.583	805	811	437	.539	4.0	A	153 ft
LT	11/1	.167	.583	882	885	194	.219	2.8	A	73 ft
W Approach								13.5	B	
TH+RT	23/2	.375	.433	1433	1478	1217	.823	14.2	B	292 ft
LT	12/1	.327	.433	713	767	511	.666	11.8	B	244 ft

AINE MEDICAL CENTER IN PORTLAND, MAINE
INTERSECTION OF ST. JOHN STREET AND PARK AVENUE
1998 PM BUILD(WITH IMPROVEMENT) : FILE PMBSTPKI

02/18/97
11:59:07

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary

ntersection Averages for Int # 1 - ST. JOHN & PARK AVENUE
Degree of Saturation (v/c) 1.00 Vehicle Delay 35.0@ Level of Service D
@ expect more delay due to extreme v/c's (see EVALUATE)



C= 60 sec G= 48.0 sec = 80.0% Y=12.0 sec = 20.0% Ped= .0 sec = .0%

Lane Group	Width/ Lanes	g/C Reqd	g/C Used	Service Rate @C (vph)	Service Rate @E	Adj Volume	v/c	HCM Delay	L S	90% Max Queue
N Approach								31.6	D+	
RT	10/1	.109	.183	210	279	106	.380	16.8	C+	72 ft
LT+TH	12/1	.207	.183	264	340	307	.903	36.7	*D	212 ft
S Approach								41.4@	E+	
RT	12/1	.220	.717	1006	1006	252	.250	.4	A	65 ft
TH	12/1-	.431	.317	515	567	741	1.307	48.6@	*E+	432 ft
LT	12/1+	.409	.317	520	572	703	1.229	48.5@	E+	400 ft
E Approach								28.4	D+	
RT	12/1	.097	.583	901	933	96	.103	4.2	A	34 ft
LT+TH	26/2	.360	.350	1285	1351	1328	.983	30.1	*D+	361 ft

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) GILMAN STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	< 0	0	> 1	0	0	> 1	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes		768	25	42	620		43	0	78	3	5	21
PHF		.9	.9	.9	.9		.9	.9	.9	.9	.9	.9
Grade		1			-1			0			2	
MC's (%)				0			0					
SU/RV's (%)				0			0					
CV's (%)				0			0					
PCE's				0.95			1.00	1.10	1.10	1.40	1.40	1.40

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	867	689
Potential Capacity: (pcph)	504	620
Movement Capacity: (pcph)	504	620
Prob. of Queue-Free State:	0.81	0.95

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	881	
Potential Capacity: (pcph)	652	
Movement Capacity: (pcph)	652	
Prob. of Queue-Free State:	0.93	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.88	

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	1603	1617
Potential Capacity: (pcph)	157	155
Capacity Adjustment Factor due to Impeding Movements	0.88	0.88
Movement Capacity: (pcph)	139	137
Prob. of Queue-Free State:	1.00	0.94

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1618	1646
Potential Capacity: (pcph)	122	118
Major LT, Minor TH Impedance Factor:	0.83	0.88
Adjusted Impedance Factor:	0.87	0.91
Capacity Adjustment Factor due to Impeding Movements	0.83	0.74
Movement Capacity: (pcph)	101	87

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	48	101 >					
NB	T	0	139 >	216	44.7	3.7	E	44.7
NB	R	96	504 >					
SB	L	4	87 >					
SB	T	8	137 >	282	15.1	0.5	C	15.1
SB	R	32	620 >					
WB	L	45	652		5.9	0.1	B	0.4

Intersection Delay = 3.8 sec/veh

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Streets: (N-S) FOREST STREET (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	0	0
Stop/Yield			N			N						
Volumes	87	759			687	34						
PHF	.9	.9			.9	.9						
Grade		1			0							
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's	1.25											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		801
Potential Capacity: (pcph)		712
Movement Capacity: (pcph)		712
Prob. of Queue-Free State:		0.83

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	121	712		6.1	0.6	B	0.6

Intersection Delay = 0.3 sec/veh

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Streets: (N-S) VALLEY STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		341			1272		132		149			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	190	
Potential Capacity: (pcph)	1109	
Movement Capacity: (pcph)	1109	
Prob. of Queue-Free State:	0.83	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1792	
Potential Capacity: (pcph)	76	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	76	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	147	76		549.8	11.0	F	260.3
NB	R	183	1109		3.9	0.6	A	

Intersection Delay = 38.6 sec/veh

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Streets: (N-S) FOREST STREET (E-W) PARK AVENUE
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	> 0	< 0	0	0	0
Stop/Yield			N			N						
Volumes		404			1095		233		102			
PHF		.9			.9		.9		.9			
Grade		1			0			0				
MC's (%)							0					
SU/RV's (%)							0					
CV's (%)							0					
PCE's							1.00		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	224	
Potential Capacity: (pcph)	1066	
Movement Capacity: (pcph)	1066	
Prob. of Queue-Free State:	0.88	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	1666	
Potential Capacity: (pcph)	91	
Major LT, Minor TH Impedance Factor:	1.00	
Adjusted Impedance Factor:	1.00	
Capacity Adjustment Factor due to Impeding Movements	1.00	
Movement Capacity: (pcph)	91	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB L	259	91 >	129	954.2	33.1	F	954.2
NB R	124	1066 >					

Intersection Delay = 174.3 sec/veh

DeLuca-Hoffman Associates, Inc.
778 Manin Street
Suite Eight
South Portland, ME 04106-
Ph: (207) 775-1121

Streets: (N-S) PROPOSED SITE DR. (E-W) CONGRESS STREET
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... MALY
Date of Analysis..... 2/6/97
Other Information.....1998 PM BUILD CONDITIONS
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	0	0	0	0	> 0	< 0
Stop/Yield			N			N						
Volumes	12	747			597	4				18		93
PHF	.9	.9			.9	.9				.9		.9
Grade		1			-1						2	
MC's (%)												
SU/RV's (%)												
CV's (%)										1.40		1.40
PCE's	1.25											

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		665
Potential Capacity: (pcph)		637
Movement Capacity: (pcph)		637
Prob. of Queue-Free State:		0.77
Step 2: LT from Major Street	**WB**	**EB**
Conflicting Flows: (vph)		667
Potential Capacity: (pcph)		825
Movement Capacity: (pcph)		825
Prob. of Queue-Free State:		0.98
Step 4: LT from Minor Street	**NB**	**SB**
Conflicting Flows: (vph)		1508
Potential Capacity: (pcph)		142
Major LT, Minor TH Impedance Factor:		0.98
Adjusted Impedance Factor:		0.98
Capacity Adjustment Factor due to Impeding Movements		0.98
Movement Capacity: (pcph)		139

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB L	28	139 >	402	15.5	2.1	C	15.5
SB R	144	637 >					
EB L	16	825		4.4	0.0	A	0.1

Intersection Delay = 1.2 sec/veh

APPENDIX C

COLLISION DIAGRAMS

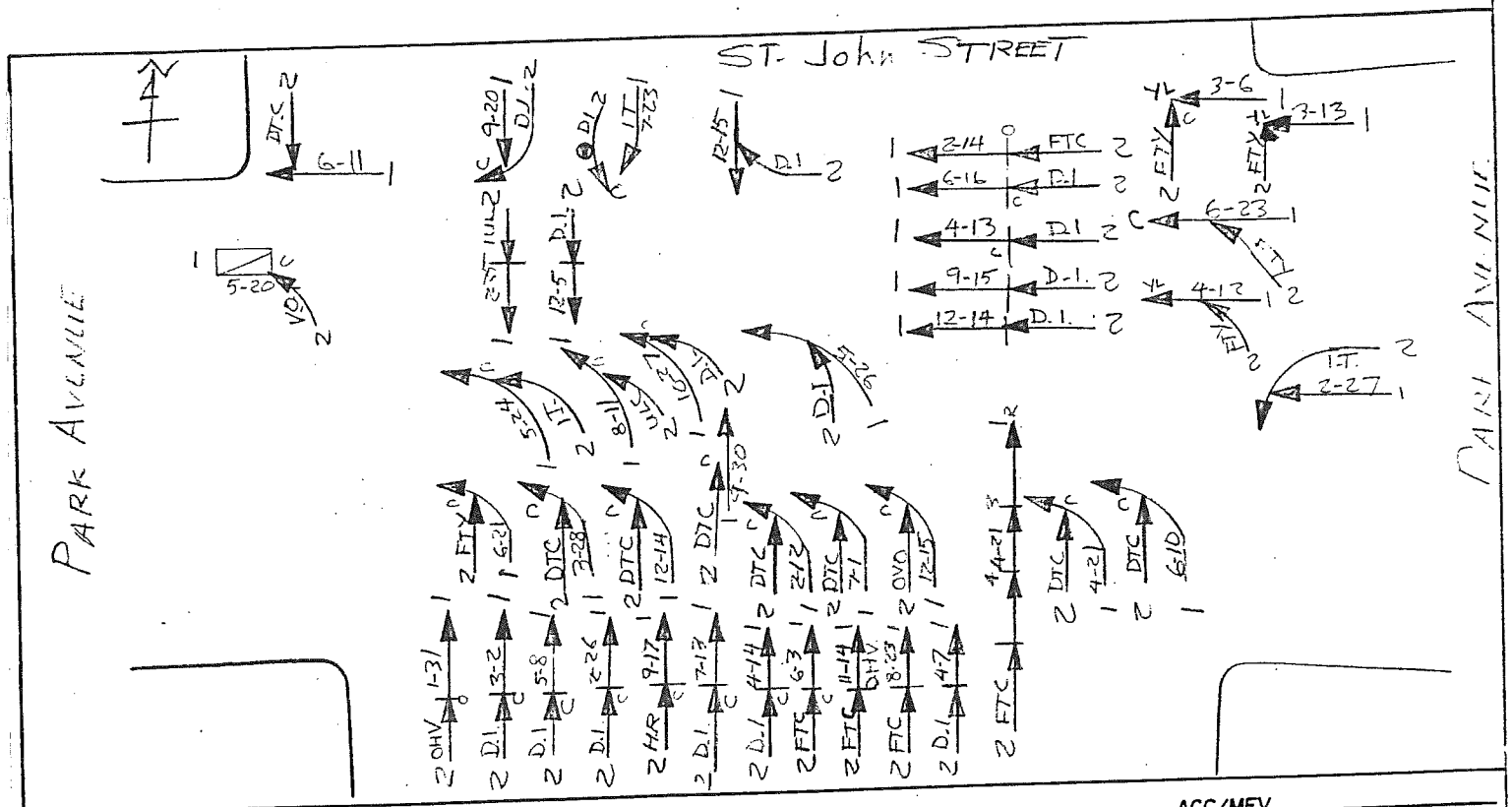
COLLISION DIAGRAM

SHEET ____ OF ____

LOCATION Park Avenue & St. John Street

TOWN Portland NODE NO(S) 7187

YEAR(S) REVIEWED 1992 - 1995 DATE PREPARED 2-6-97



CRITICAL RATE FACTOR 1.16 EQUIV. PROP. DAMAGE ACC/YEAR ____ ACC/MEV ____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE 7. IMPROPER PASS-OVERTAKING
6. DRIVING LEFT OF CENTER - NO PASSING 9. IMP. PARKING START/STOP 10. IMPROPER TURN
8. IMP. UNSAFE LANE CHANGE 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
11. UNSAFE BACKING 15. DRIVER INEXPERIENCE
14. DRIVER INATTENTION - DISTRACTION 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED -
16. PEDEST. VIOLATION ERROR WINDSHIELD GLASS 19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN	P	FATAL ACCIDENT
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE		VEHICLE (MOVING)
HEAD ON	TURNING MOVE		BICYCLE B
OVERTURN	CHANGE LANE		ANIMAL A
PARKED VEHICLE	OUT OF CONTROL		SLED S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
23511	6-23-93	17:10				1	2	1	2	
26746	7-23-93	7:26				1	2	1	14/10	
07288	2-14-93	13:36					2	10	4	
22203	6-16-93	15:20					2	1	14	
14301	3-29-93	11:36					2	1	5	
04747	1-21-93	17:00					4	9	30	ICY R-W
09722	5-2-93	16:00			1		2	2	14	

COLLISION DIAGRAM SHEET ___ OF ___

LOCATION PARK AVENUE & ST. JOHN STREET

TOWN PORTLAND NODE NO(S) 7187

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
20017	5-8-93	00:30				1	4	10	14	
22285	6-21-93	19:35			1		3	2	2	
32761	9-20-93	20:20					4	1	14	Veh Truck
44113	12-14-93	15:15					2	2	5	
11190	2-26-94	20:15					4	1	14,4	
12343	3-6-94	1:45					4	1	2	Veh - Defective Brakes
34091	9-17-94	21:00			1		4	1	31	
26266	7-13-94	18:20				2	2	1	14	
35520	9-30-94	12:10					2	1	5,14	
19875	5-20-94	18:47					3	1	19	
16612	4-14-94	13:06					2	1	14	
13181	3-13-94	00:58					4	1	2,14	
15454	3-25-94	21:30					4	1	8	
24852	7-1-94	14:10					2	1	5	
21569	6-3-94	16:30			1		2	1	4	
46134	12-15-94	6:10					2	1	20	
25203	8-11-95	18:30					2	1	8	
12302	4-13-95	8:15				1	2	1	14	
36273	11-14-95	16:20				1	4	2	4 / 30	Veh Speed
29017	9-15-95	9:16					2	1	14	
23907	10-27-95	21:20					4	1	14	
26526	8-23-95	17:15				1	2	1	4,14	
41964	12-14-95	14:45					2	8	15	
41644	12-14-95	14:45					2	1	14	
18011	6-11-95	10:10			3		2	2	5	Veh No Brakes
13035	4-21-95	18:31					6	2	4,14	Rain
39903	12-5-95	16:48				2	4	1	14	
10774	2-27-95	16:05					2	1	10	
11828	4-7-95	14:30				1	2	1	14	
16073	5-24-95	15:16					2	1	10	
12962	4-21-95	16:14					2	1	5	Veh Truck
12212	4-12-95	21:08					2	1	2	
16297	5-26-95	11:52					2	1	14	
17904	6-10-95	21:00					4	1	5,14	

LOCATION Park Avenue & St. John Street

TOWN Portland NODE NO(S) 7187

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
09357	2-12-94	15:30					2	2	10	

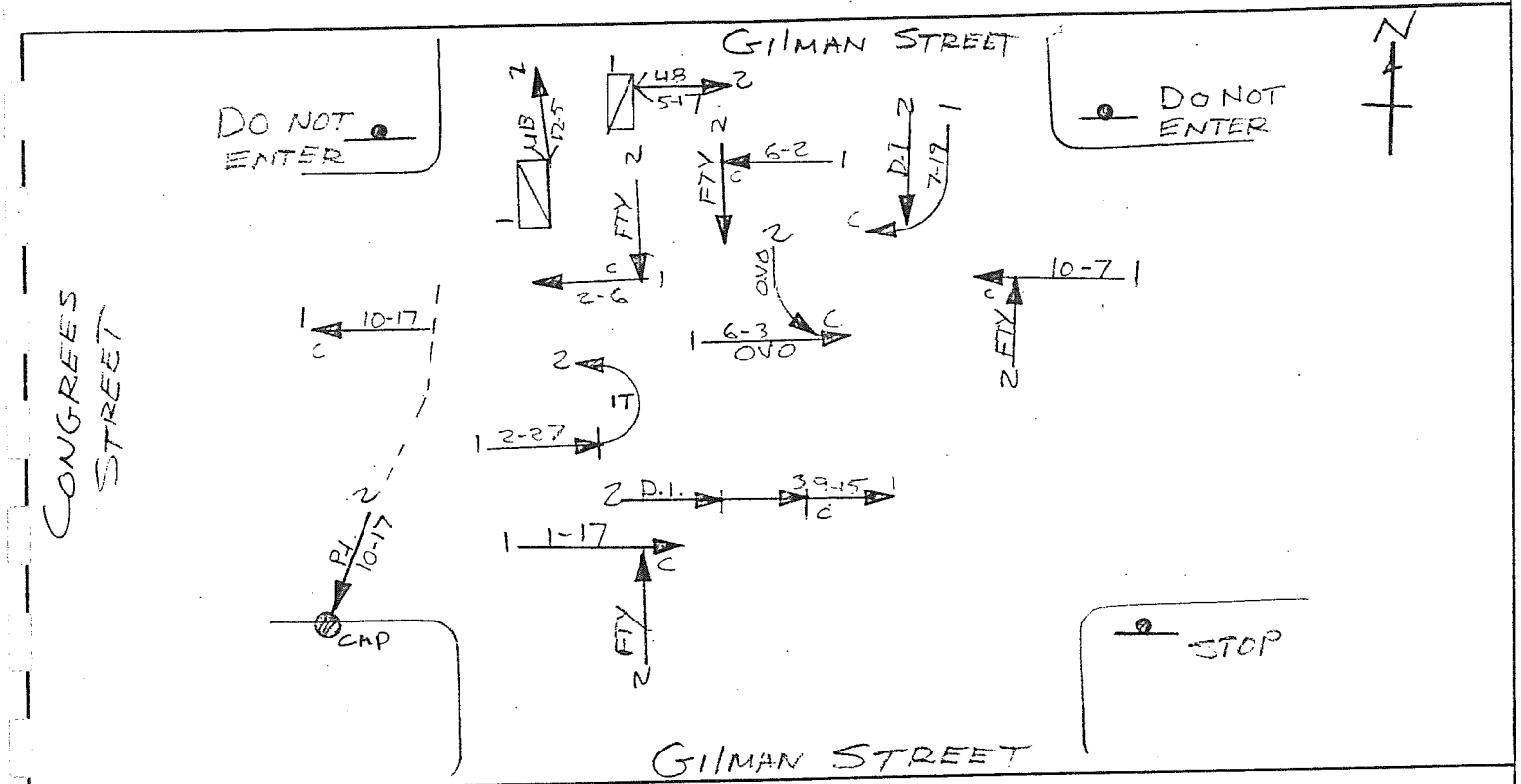
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CONGRESS STREET & GILMAN STREET

TOWN Portland NODE NO(S) 8991

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.00 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
20887	6-2-93	13:00					2	1	2	
06193	2-6-93	21:40				1	4	1	2	
09361	2-27-93	12:02				1	2	1	10	
26278	7-19-93	15:30					2	1	14	½ [illegible]
33653	9-15-93	13:00				1	2	1	14	½ [illegible]
35092	10-7-93	15:46					2	1	2.30	[illegible]
12671	12-5-93	7:50					4	2	11	½ [illegible]

LOCATION CONGRESS STREET & GILMAN STREET

TOWN PORTLAND NODE NO(S) 2991

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
19605	5-17-94	13:07					2	1	11	
21570	6-3-94	20:13					2	1	20/20	
32658	10-17-95	12:11			1	1	2	1	17	
02761	1-17-95	7:34					2	1	2	

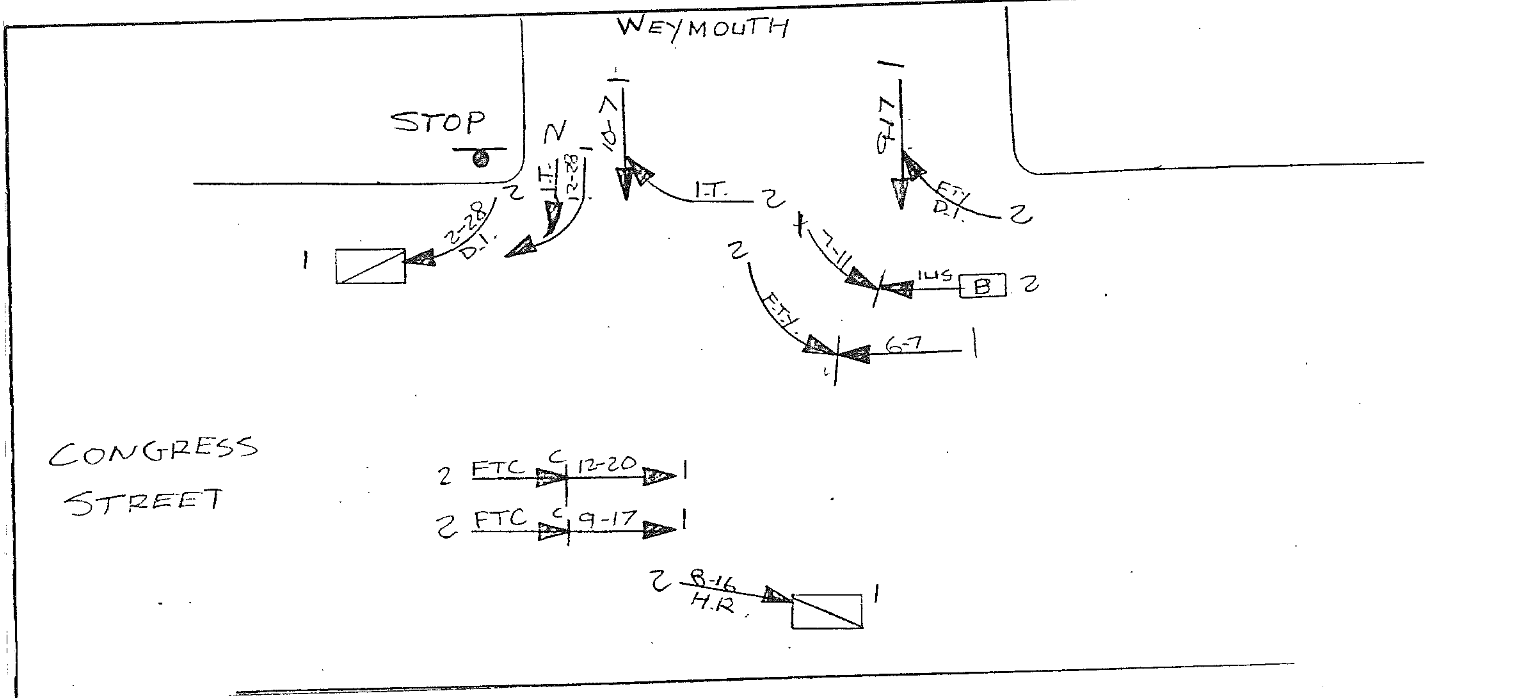
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION: CONGRESS STREET AND WEYMOUTH STREET

TOWN: PORTLAND NODE NO(S): 7245

YEAR(S) REVIEWED: 1993- 1995 DATE PREPARED: 2-7-97



CRITICAL RATE FACTOR 1.04 EQUIV. PROP. DAMAGE ACC/YEAR ______ ACC/MEV ______

LIGHT
1. DAWN (MORNING)
2. DAYLIGHT
3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON)
5. DARK (NO ST. LIGHTS)
6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY
2. WET
3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED
5. MUDDY
6. DEBRIS
7. OILY
8. SNOW/SLUSH-NOT SANDED
9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION
2. FAIL TO YLD. RIGHT OF WAY
3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE
5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING
7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE
9. IMP. PARKING START/STOP
10. IMPROPER TURN
11. UNSAFE BACKING
12. NO SIGNAL OR IMP. SIGNAL
13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION
15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR
17. PHYSICAL IMPAIRMENT
18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT
30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN
51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES
42. DEFECTIVE TIRE/FAILURE
43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR
45. DEFECTIVE STEERING
50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE, ANIMAL, SLED

WEATHER

C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
31066	6-7-93	17:11			1	1	2	1	2	V_2 [illegible]
45451	12-20-93	12:33				1	2	1	4	
26095	7-11-94	16:46			1		2	1	3	
36303	10-7-94	8:00					2	8	10	
29226	9-17-95	11-23				1	2	2	4	V_1 Truck
44201	12-28-95	15:17					2	1	10,7	
29214	9-17-95	11:34					2	2	4, 14	

LOCATION Congress Street & Weymouth Street

TOWN Portland NODE NO(S) 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	INJURIES A	INJURIES B	INJURIES C	LIGHT	ROAD SURFACE	ACF	OTHER
08109	2-28-95	11:10					2	8	14	V1 is parking [illegible]
25666	8-16-95	23:10					4	1	31	Alcohol [illegible]

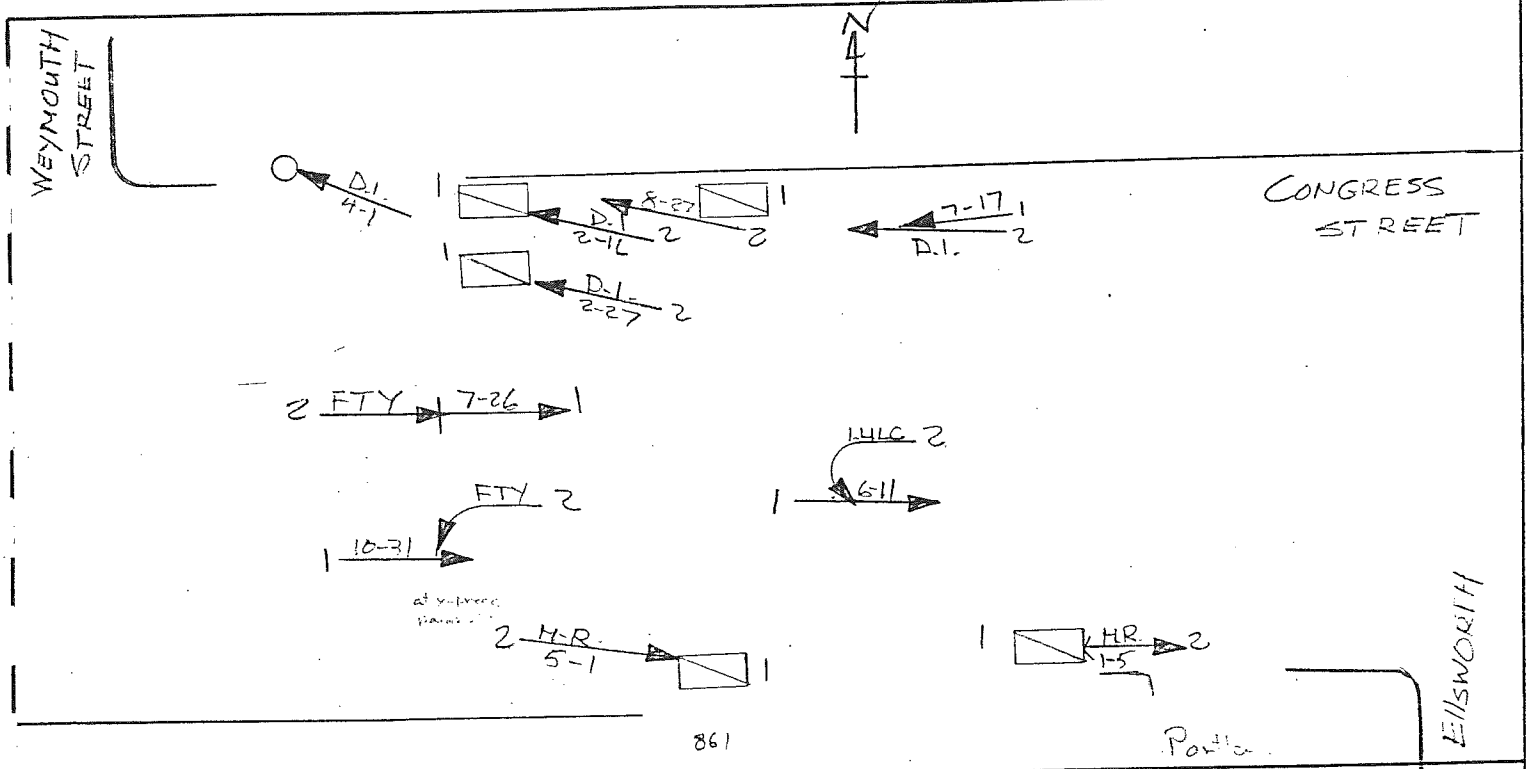
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244 - 7245

YEAR(S) REVIEWED 1993-1995 DATE PREPARED 2-7-97



CRITICAL RATE FACTOR 1.35 EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	---B
OVERTURN	CHANGE LANE	ANIMAL	---A
PARKED VEHICLE	OUT OF CONTROL	SLED	---S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
16222	4-1-93	15:05				1	2	9	15	
01509	1-5-93	7:30					2	1	31	
07457	2-16-93	17:53					4	9	14	
20789	5-1-93	20:00					3	1	31	
22046	6-11-93	17:55			1		2	2	8	
29-17	10-31-94	13-30					2	1	2	
26722	7-17-94	11:40					2	1	14	

LOCATION LINK BETWEEN WEYMOUTH & ELLSWORTH STREET

TOWN PORTLAND NODE NO(S) 7244 - 7245

YEAR(S) REVIEWED 1993 - 1997 DATE PREPARED 2-7-97

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
26967	8-27-95	10:05					2	2	10	
23246	7-2695	17:53					2	2	4	
10138	2-2795	14:15					2	4	14	

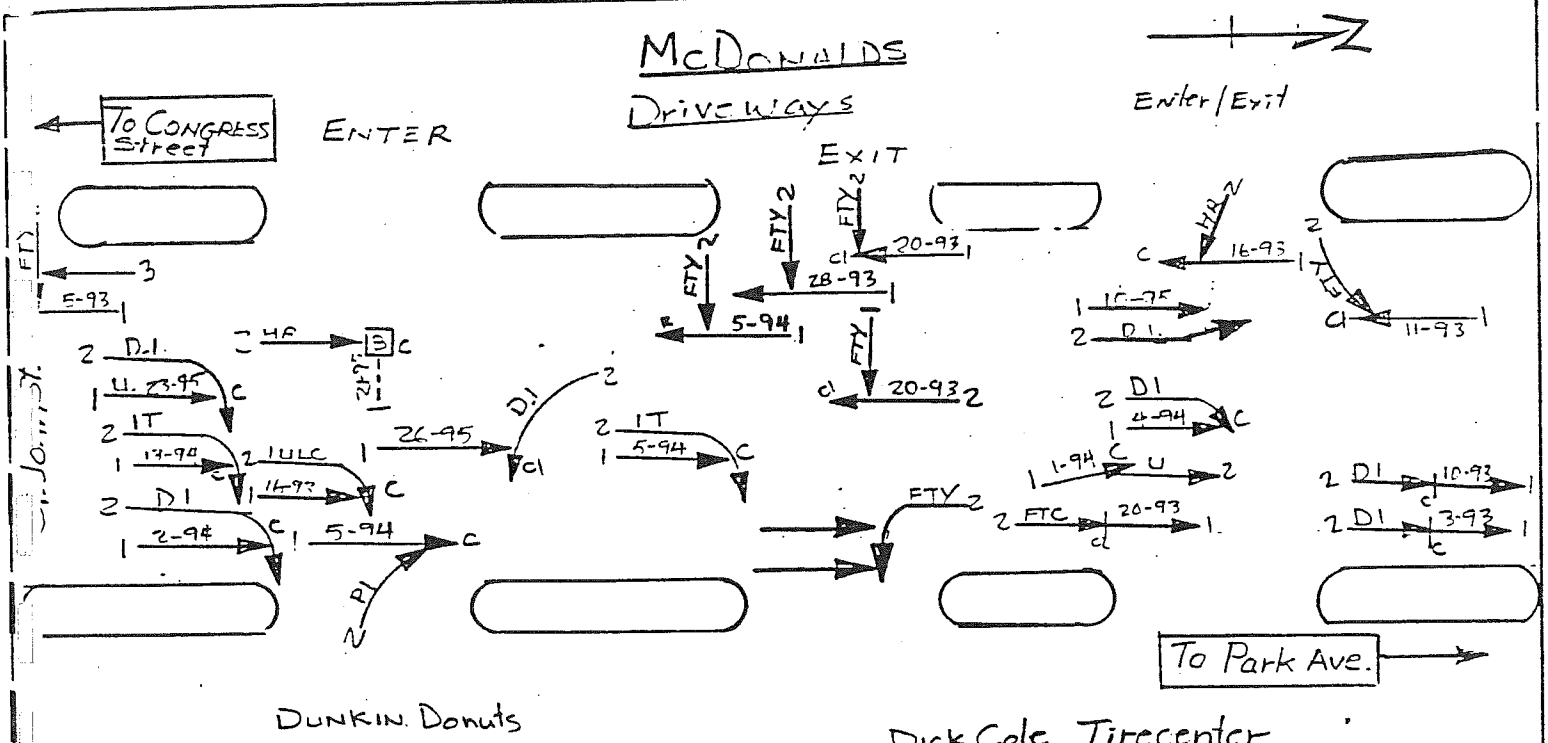
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION St. John Street between Park Ave. and Congress Street

TOWN Portland NODE NO(S) 7182 - 7187

YEAR(S) REVIEWED 1993 - 1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
5. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE	PEDESTRIAN (P)	FATAL ACCIDENT	●
BACKING	REAR END		
FIXED OBJECT	SIDE SWIPE	VEHICLE (MOVING)	→
HEAD ON	TURNING MOVE	BICYCLE	B
OVERTURN	CHANGE LANE	ANIMAL	A
PARKED VEHICLE	OUT OF CONTROL	SLED	S

WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

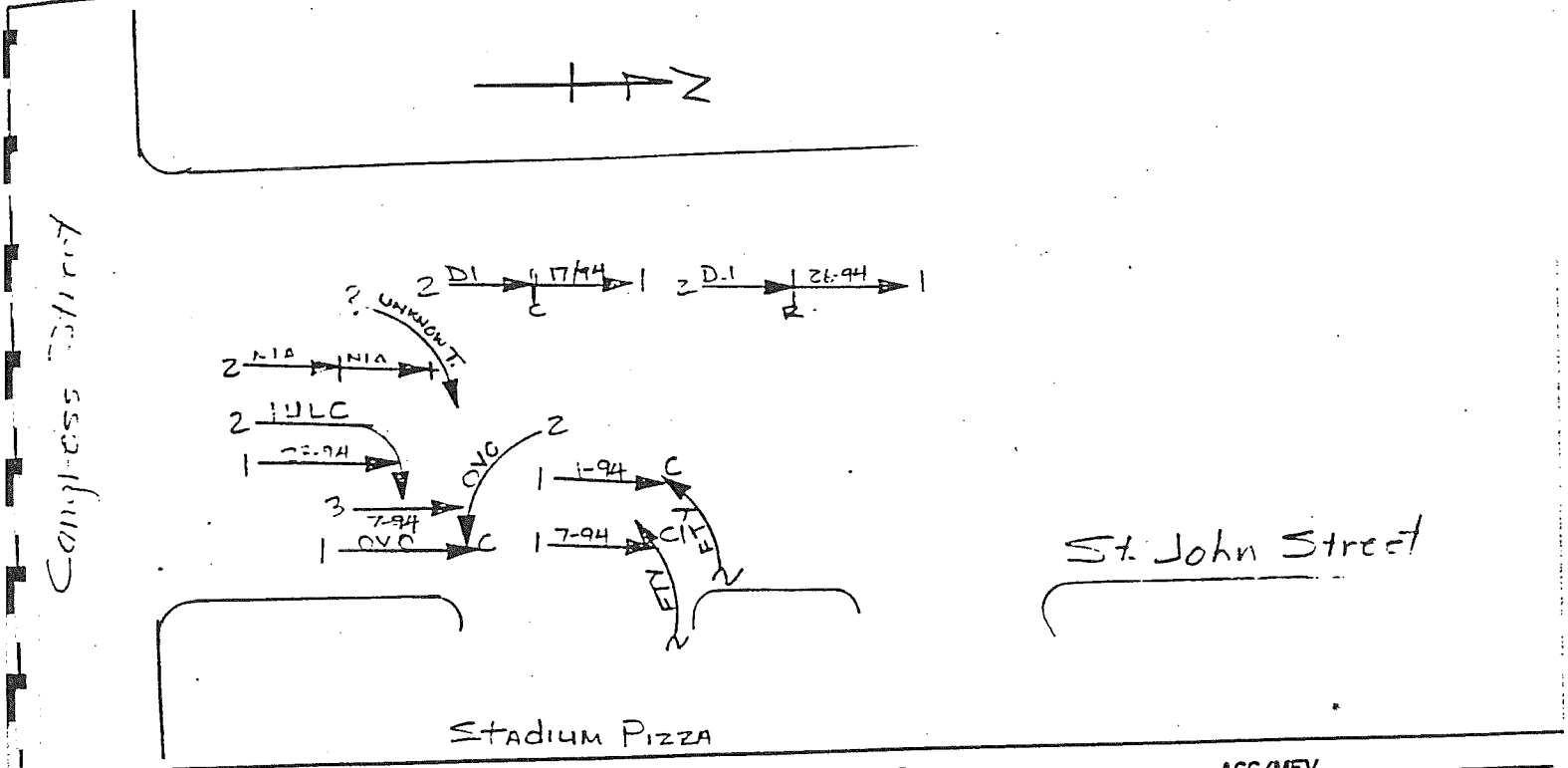
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V_1/V_2	OTHER
16489	4-20-93	16:30					2	1	1/4	
33665	9-16-93	19:40					4	1	1/8	
12310	2-16-93	7:37					2	1	1/31	
29484	8-20-93	17:04					1	2	1/2	
09788	3-3-93	14:50			1		2	1	1/14	
29241	8-5-93	17:18				1	2	1	1/2	
29491	8-20-93	16:21					2	2	1/2	

COLLISION DIAGRAM

LOCATION St. John Street between Park Avenue and Congress Street

TOWN Portland NODE NO(S) 7152-7157

YEAR(S) REVIEWED 1992-1995 DATE PREPARED 10-8-96



CRITICAL RATE FACTOR 2.16 EQUIV. PROP. DAMAGE ACC/YEAR ACC/MEV

LIGHT
1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE
1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN
1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER - NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS
19. VISION OBSCURED - SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

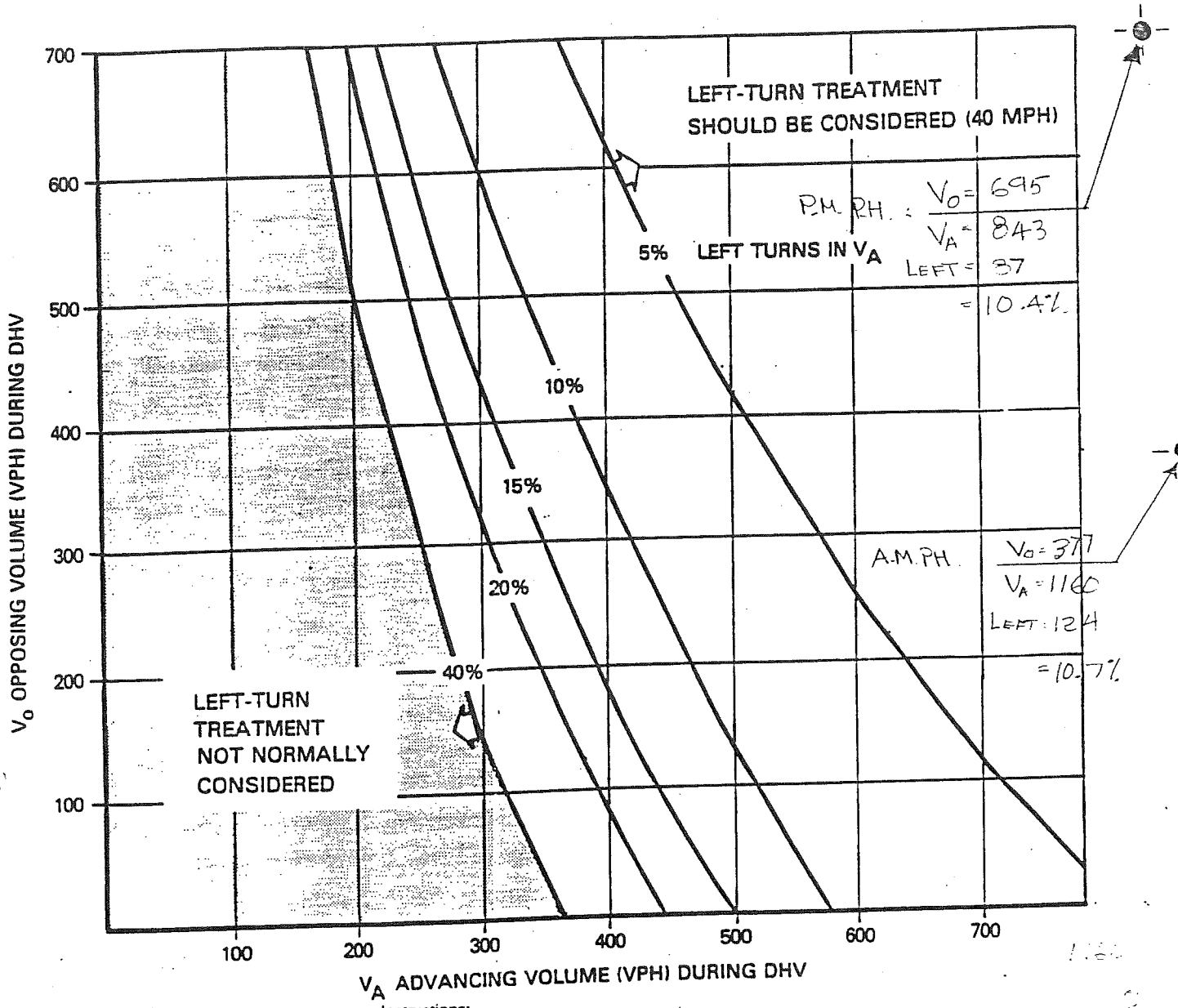
WEATHER
C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW Cl = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF V./V.	OTHER
25598	7-7-94	15:15					2	1	20/20	
28123	7-28-94	12:20					2	1	1/8	
12477	2-7-94	14:46					2	2	1/2	
43843	12-1-94	10:45					2	1	1,30/2	
41330	11-17-94	12:50					2	1	1/14	
17573	4-26-94	14:57					2	2	1/14	
09306	3-11-95	7:03					1	1	1/1	

APPENDIX D

SIGNAL WARRANT ANALYSES



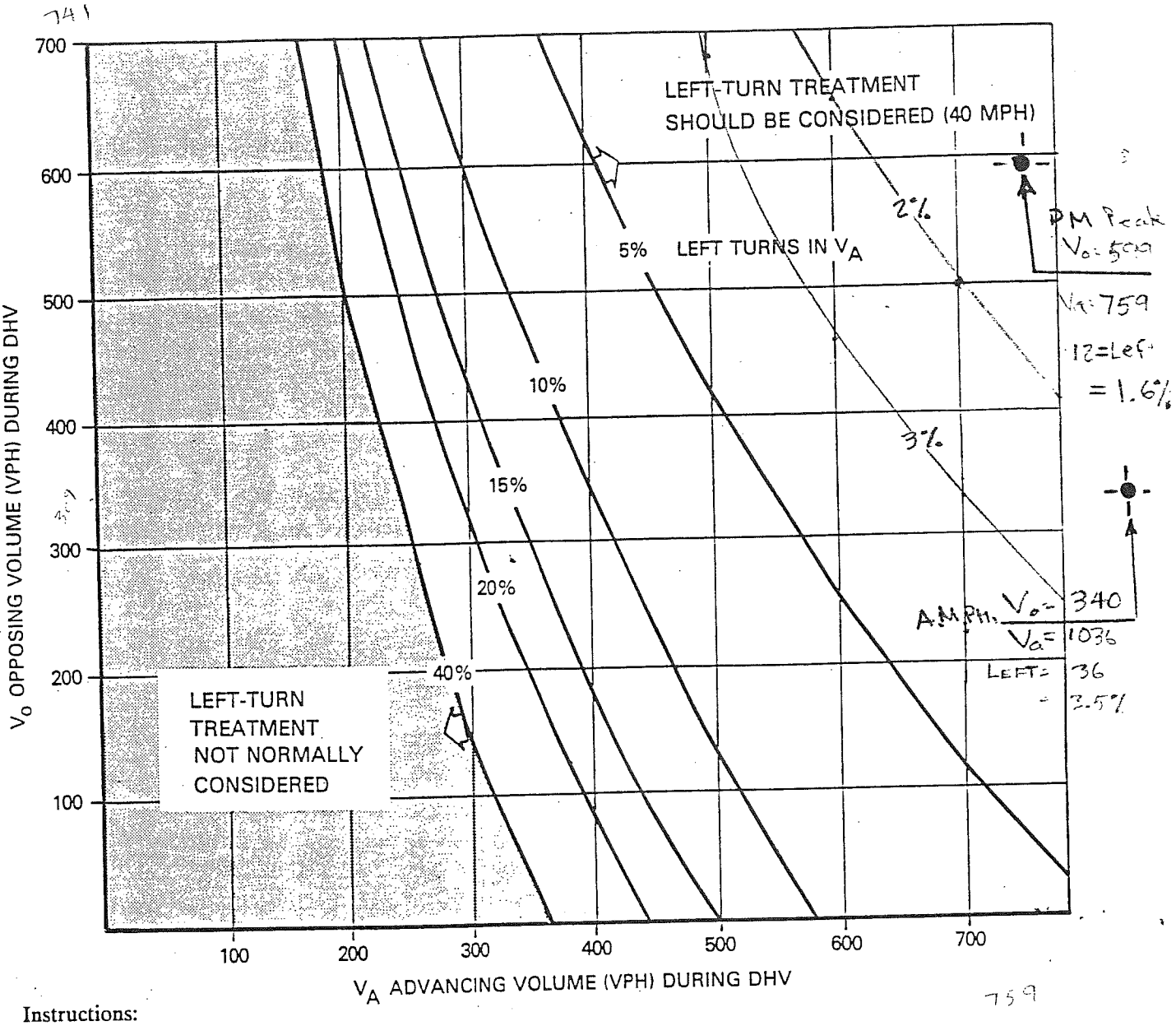
Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn is not warranted based on traffic volumes.

VOLUME WARRANTS FOR LEFT-TURN LANE AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (40 MPH)

Figure 8-19

Connect Street at the Site Driveway



Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.

2. Read V_A and V_O into the chart and locate the intersection of the two volumes.

3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn is not warranted based on traffic volumes.

VOLUME WARRANTS FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (40 mph)

Figure 8-19

Intersection of Forest Street & Park Avenue

Figure 9-1A

TRAFFIC SIGNAL WARRANTS

CALC M.C. DATE 2-14-97

CHK _____ DATE _____

DIST CO RTE PM

Major St: Park Avenue Critical Approach Speed _____ mph

Minor St: Forest Street Critical Approach Speed _____ mph

Critical speed of major street traffic ≥ 40 mph _____ ☑ OR

In built up area of isolated community of ≤ 10,000 pop. _____ ☐

☐ URBAN (U) ☑ RURAL (R)

WARRANT 1 – Minimum Vehicular Volume

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☑

Note: Major street traffic volumes exceed the requirements.

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more		15-16	16-17	8-9	7-8					Hour
Both Approchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)									
Highest Approch Minor Street*	150 (120)	105 (84)	200 (160)	140 (112)	248	220	66	62					

* NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 2 – Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more										Hour
Both Approchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approch Minor Street*	75 (60)	53 (42)	100 (80)	70 (56)	248	220	66	62					

*NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 3 – Minimum Pedestrian Volume

100% SATISFIED YES ☐ NO ☐

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
		U	R										
Both Approchs. Major Street	No Median	600 (480)	420 (336)										Hour
Volume	Raised 4' Median	1000 (800)	700 (560)										
Ped's On Highest Volume X-Walk Xing Major Street		150 (120)	105 (84)										

IF MIDBLOCK SIGNAL PROPOSED ☐

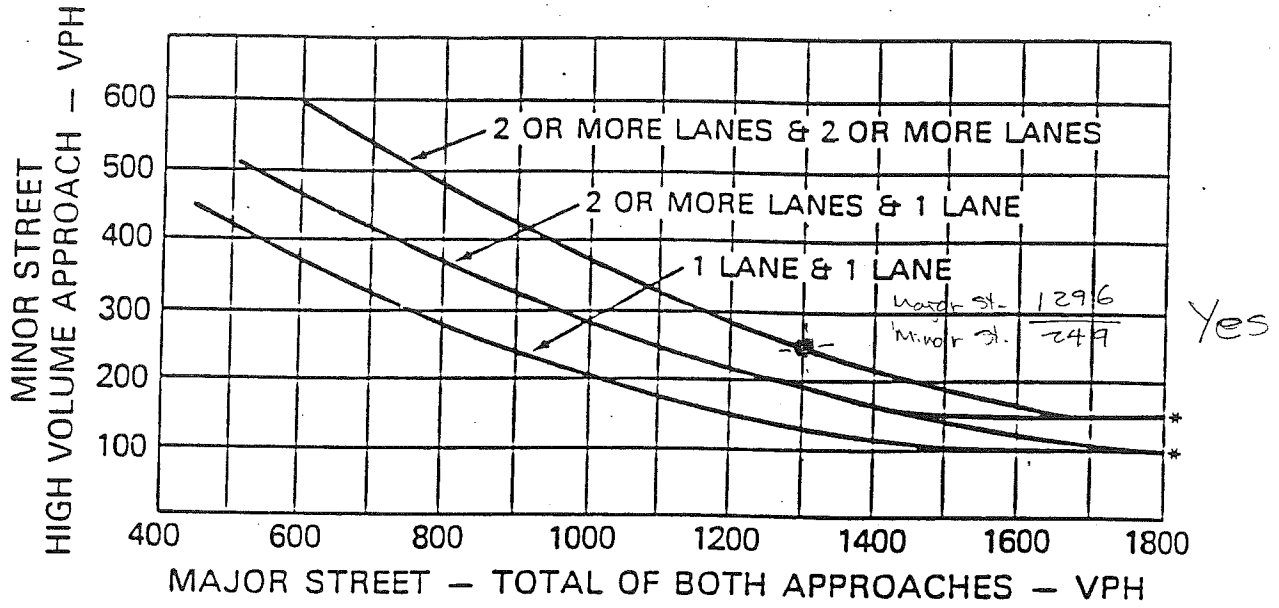
MIN. REQUIREMENT	DISTANCE TO NEAREST ESTABLISHED CRWLK	FULFILLED
150 Feet	N/E ____ ft S/W ____ ft	Yes ☐ No ☐

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 Sample warrant analysis form. (Source: State of California, Traffic Manual)

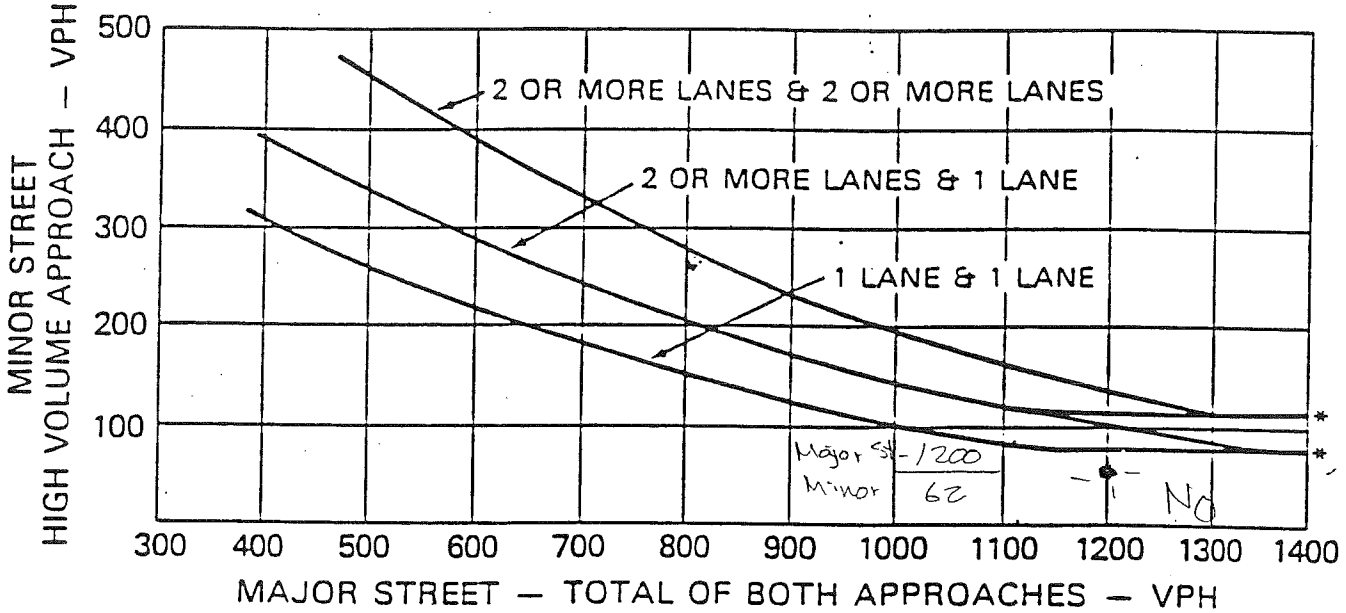
Intersection of Park Avenue & Forest Street

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection of Park Avenue & Forest Street.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

WARRANT 8 – Combination of Warrants

SATISFIED YES ☐ NO ☐

REQUIREMENT	WARRANT	FULFILLED
TWO WARRANTS SATISFIED 80%	1 - MINIMUM VEHICULAR VOLUME	
	2 - INTERRUPTION OF CONTINUOUS TRAFFIC	
	3 - MINIMUM PEDESTRIAN VOLUME	YES ☐ NO ☐

WARRANT 9 – Four Hour Volume

SATISFIED* YES ☐ NO ☐

Approach Lanes	One	2 or more			Hour
Both Approaches . Major Street					
Highest Approaches . Minor Street	248	220	66	62	

*Refer to Fig. 9-2A (URBAN AREAS) or Figure 9-2B (RURAL AREAS) to determine if this warrant is satisfied.

WARRANT 10 – Peak Hour Delay

SATISFIED YES ☐ NO ☐

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; and

   YES ☐ NO ☐

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; and

   YES ☐ NO ☐

3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.

   YES ☐ NO ☐

WARRANT 11 – Peak Hour Volume

SATISFIED* YES ☐ NO ☑

Approach Lanes	One	2 or more		Hour
Both Approaches . Major Street				
Highest Approaches . Minor Street	249		249	

*Refer to Fig. 9-2C (URBAN AREAS) or Figure 9-2D (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 (*Cont.*)

Intersection of Gilman and Congress Street

Figure 9-1A

TRAFFIC SIGNAL WARRANTS

CALC Maly DATE 2-17-97

CHK _____ DATE _____

DIST CO RTE PM

Major St: Congress Street — Critical Approach Speed 25 mph

Minor St: Gilman — Critical Approach Speed _____ mph

Critical speed of major street traffic ≥ 40 mph _____ ☐ OR RURAL (R)

In built up area of isolated community of ≤ 10,000 pop. _____ ☐

☐ URBAN (U)

WARRANT 1 – Minimum Vehicular Volume

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☑

Note: Major Street assumed they all meet the required Minor Volumes

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more		15-16	7-8	8-9	16-17					Hour
Both Approchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)									
Highest Approch Minor Street*	150 (120)	105 (84)	200 (160)	140 (112)	94	85	73	63					

* NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 2 – Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☑

80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
	U	R	U	R									
APPROACH LANES	1		2 or more		15-16	7-8	8-9	16-17					Hour
Both Approchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approch Minor Street*	75 (60)	53 (42)	100 (80)	70 (56)	94	85	73	63					

*NOTE: Heavier left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 3 – Minimum Pedestrian Volume

100% SATISFIED YES ☐ NO ☐

80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												
		U	R										
Both Approchs. Major Street Volume	No Median	600 (480)	420 (336)										Hour
	Raised 4' Median	1000 (800)	700 (560)										
Ped's On Highest Volume X-Walk Xing Major Street		150 (120)	105 (84)										

IF MIDBLOCK SIGNAL PROPOSED ☐

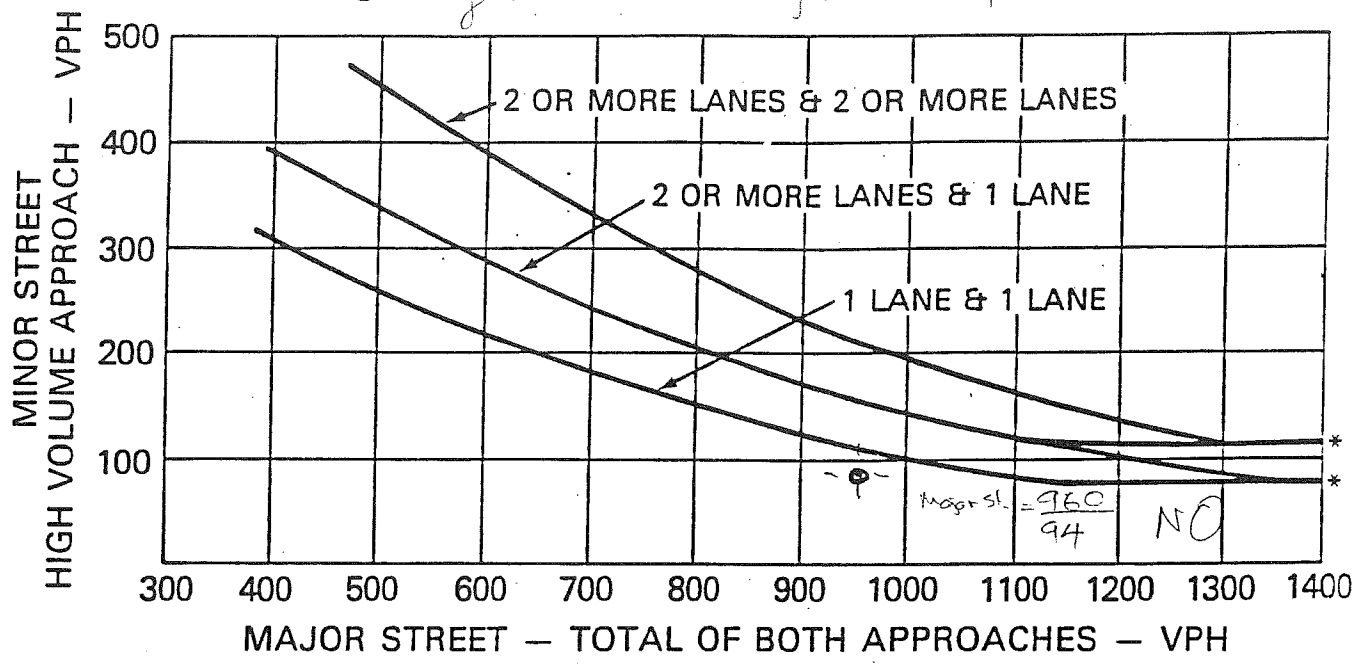
MIN. REQUIREMENT	DISTANCE TO NEAREST ESTABLISHED CRWLK	FULFILLED
150 Feet	N/E ____ ft S/W ____ ft	Yes ☐ No ☐

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 Sample warrant analysis form. (Source: State of California, Traffic Manual)

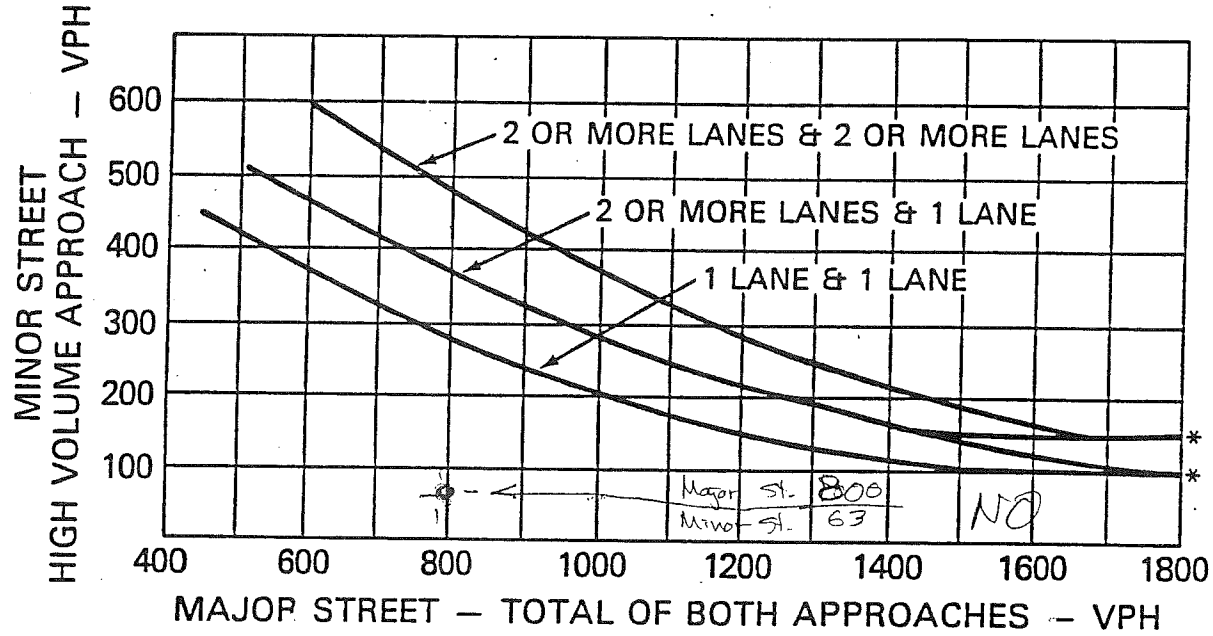
FIGURE 4-7. FOUR HOUR VOLUME WARRANT

Intersection of Gilman and Congress Street



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection of Gilman St. & Congress Street

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

WARRANT 8 – Combination of Warrants

SATISFIED YES ☐ NO ☑

REQUIREMENT	WARRANT		FULFILLED
TWO WARRANTS SATISFIED 80%	1 - MINIMUM VEHICULAR VOLUME		
	2 - INTERRUPTION OF CONTINUOUS TRAFFIC		
	3 - MINIMUM PEDESTRIAN VOLUME		YES ☐ NO ☐

WARRANT 9 – Four Hour Volume

SATISFIED* YES ☐ NO ☑

Approach Lanes	One	2 or more			Hour
Both Approaches . Major Street					
Highest Approaches . Minor Street	94	85	73	63	

*Refer to Fig. 9-2A (URBAN AREAS) or Figure 9-2B (RURAL AREAS) to determine if this warrant is satisfied.

WARRANT 10 – Peak Hour Delay

SATISFIED YES ☐ NO ☐

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; and

   YES ☐ NO ☐

2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; and

   YES ☐ NO ☐

3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.

   YES ☐ NO ☐

WARRANT 11 – Peak Hour Volume

SATISFIED* YES ☐ NO ☑

Approach Lanes	One	2 or more	Hour
Both Approaches . Major Street			
Highest Approaches . Minor Street	94		94

*Refer to Fig. 9-2C (URBAN AREAS) or Figure 9-2D (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right of way assignment must be shown.

Figure 2-9 (*Cont.*)

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ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

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96-043 S

March 24, 1997

Maine Medical Center
% Mediplex Building Corp.
Attn: Mr. Edmund C. Gazinski
14755 Preston Road
Suite 600, Lock Box 15
Dallas, TX 75240

Subject: Subsurface Exploration and Geotechnical Engineering
Proposed Medical Office Building and Parking Garage
Forest Street and Congress Street
Portland, Maine

Dear Mr. Gazinski:

In accordance with our Proposal dated December 12, 1996, and addendum dated January 9, 1997, we have made the subsurface investigation for the proposed Medical Office Building and Parking Garage Project on Forest and Congress Streets in Portland, Maine.

1.0 INTRODUCTION

1.1 Scope of Work - The purpose of the investigation has been to explore the subsurface conditions and provide recommendations relative to foundation design and earthwork associated with the proposed building and parking garage structure. The investigation included the making of eighteen test boring explorations, laboratory testing, and a geotechnical evaluation of the findings as they relate to the proposed construction. The contents of this report are subject to the limitations set forth in Attachment A.

1.2 Proposed Construction - We understand that the proposed structure will be generally rectangular in shape and occupy nearly all of the site. The structure will be on the order of 230 by 240 feet in plan dimensions. The structure will consist of two sections; one

being a medical office building and the other a parking garage structure. The office building portion will be at the southerly end, adjacent to Congress Street, and will be on the order of 90 by 165 feet in plan dimensions. The office portion will be generally 4 levels with two additional sub-levels (smaller in footprint) below Congress Street grade. The lowest office building floor elevation is proposed to be 47.0.

The parking garage will be attached to the office building portion on the northerly, easterly and westerly sides. We understand the parking garage will be 5 levels with the lowest level having a finish floor elevation of 36.5.

Based on the drawings provided, we understand there will be four major rows of columns situated parallel with Congress Street (Lines B, C, D and E). We understand column loads will be:

Line	Total Load
B	425 ± kips
C	950 ± kips
D	950 ± kips
E	510 ± kips

We understand the medical office building will be steel framed with brick veneer. An elevated enclosed walkway connector will be constructed from the new medical office portion of the structure to an existing parking garage located on the opposite (south) side of Congress Street. The parking structure will likely be constructed of cast-in-place and post tension concrete. Cast-in-place concrete retaining walls will be needed to support grade changes of nearly 30 feet at the perimeter of the parking garage structure.

2.0 EXPLORATION AND TESTING

2.1 Exploration Work - Eighteen test borings were made at the site during the period of January 6 through 18, 1997, by Great Works Pump and Test Borings, Inc. of Rollinsford, New Hampshire. Two supplemental test borings (B-1A and B-13A) were made on January 29, 1997, at the same locations as B-1 and B-13 in order to obtain deeper soils information. The test boring locations were selected by Mediplex Building Corporation and established in the field by S. W. COLE ENGINEERING, INC. based on a site plan provided by Mediplex Building Corporation and taped measurements from existing site features. The approximate test boring locations, as provided by Titcomb Associates (project surveyors), are shown on the "Exploration Location Plan", attached as Sheet 1. Logs of the test borings, based on our observations and testing of samples, are attached as Sheets 2 through 25. A key to the notes and symbols used on the logs is attached as Sheet 26. Elevations noted on the logs are based on interpolation of topographic information shown on Sheet 1.

2.2 Laboratory Testing - Laboratory and field testing was performed on selected samples recovered from the test borings. Moisture content and laboratory and field strength test results are noted on the test boring logs. The results of six grain size analyses are presented graphically on Sheets 27 and 28.

3.0 SITE & SUBSURFACE CONDITIONS

3.1 Site Location and Surficial Conditions - The site of the proposed structure is located on the northeasterly side of the intersection of Congress and Forest Streets in Portland, Maine. The site is currently occupied by an existing paved parking lot along Congress Street, a gravel surface parking lot adjacent to Forest Street and an open unoccupied area north of the existing paved lot. The site is bordered to the north by Boynton Street, to the west by Forest Street and to the south by Congress Street. At least one multi-story residential structure exists adjacent to the easterly property line.

A hill is situated south of the site, across from Congress Street, which slopes steeply downward to the north from the existing parking garage area to Congress Street. The ground surface then slopes gradually to the northwest toward Boynton Street. Within the area of the proposed structure the ground surface slopes generally downward southeast to northwest from about elevation 68 down to about 40. It has been reported that this lot was once utilized as a construction laydown yard and was likely filled and/or regraded from near Congress Street, north about 150 feet. It appears that the site has also been utilized as a disposal area for lawn and tree clippings which appear to be deposited mostly in the central portion of the site. A gravel surfaced parking lot exists adjacent to Forest Street which is on the order of 50 by 170 feet in plan dimensions. The parking lot slopes downward to the north. It appears this area may have been excavated to achieve current grades. A dry lain stone retaining wall exists along the easterly edge of this lot supporting a grade change varying from about 2 to 7 feet.

Although no structures exist on the site currently, information obtained by S. W. COLE ENGINEERING. INC. during our research for the Phase I Environmental Services (report dated February 12. 1997), indicates several structures once existed at this site. It is believed that many foundations and footings may still exist. under the existing site. particularly along Congress. Forest and Boynton Streets.

3.2 Subsurface Conditions - The explorations encountered a general stratigraphy consisting of granular fill soils overlying a layered glacial marine deposit of brown and gray silty sands. gray silty clay and sands with clay layers. Gray sand and silt with some gravel (glacial till) was encountered below the marine soils at each exploration.

Fill soils were found at each of the test borings. The fill encountered typically consists of sands with varying amounts of silt and gravel. Pieces of brick and asphalt pavement. wood and other debris was also encountered in the fill at Borings B-1, B-2. B-4. B-5. B-6 and B-7. The fills were generally loose to dense and varied in thickness from about 2 to 13 feet at the explorations. It is likely that fills. demolition debris and old foundation and utility structures exist throughout the site particularly adjacent to Congress Street.

Forest Street and Boynton Street where structures once occupied the site.

With the exception of Borings B-1, B-1A, B-15 and B-16 all explorations encountered the marine soils below the fills. BoringS B-1, B-1A, B-15 and B-16 encountered glacial till directly below the fill. The remainder of the explorations encountered either medium to stiff gray silty clay, loose to dense silty sand with varying amounts of gravel and sands with clay layers below the fill. This zone of layered glacial marine soils was found to vary in thickness from about 6 to 28 feet at the explorations. These borings encountered a layer of compressible gray silty clay within the glacial marine soil layer that varied from about 3 to 10 feet in thickness.

Borings B-2 through B-14 encountered glacial till at depths varying from about 15 to as much as 30 feet below the ground surface. The glacial till is generally medium dense to dense becoming very dense with depth. All of the explorations were terminated in glacial till at depths ranging from 27 to 128 feet below the ground surface. Borings B-1A, B-7, B-8, B-11 and B-13A were advanced to greater depths in the glacial till in an effort to access soil density with depth and the depth to bedrock. These explorations were all terminated in dense to very dense till. Bedrock was not encountered within the depths of the explorations. For a more detailed description of subsurface conditions, please refer to the attached boring logs. Interpretive subsurface profiles are presented on Sheet 29.

The following table is a brief summary of fill thicknesses and depths/elevations to glacial till and bottom of exploration:

Boring No.	Approx. Surf. Elev. (ft.)	Approx. Fill Thick. (Incl. Possible Fill) (ft.)	Approx. Depth/Elev. of Top of Glacial Till (ft.)	Approx. Depth/Elev. of Bottom of Exploration (ft.)
1	65	13	13.0/52.0	27.0/38.0
1A	65	13	13.0/52.0	46.3/18.7
2	60	8	14.5/45.5	27.0/33.0
3	55	2	18.0/37.0	27.0/28.0
4	58	2	23.0/35.0	27.0/31.0
5	62.5	3	23.0/39.5	27.0/35.5
6	60	8	23.0/37.0	27.0/33.0
7	57	8	23.0/35.0	128.0/-70.0
8	48	2	22.0/26.0	31.0/17.0
9	53	3	24.0/29.0	27.0/26.0
10	52	6	23.2/28.8	27.0/25.0
11	50.5	3	28.5/22.0	36.0/14.5
12	50	9	25.0/25.0	26.5/23.5
13	40	2	Not Encountered	27.0/13.0
13A	40	2	30.0/10.0	41.5/-1.5
14	58	10.5	13.5/44.5	37.0/21.0
15	65	2	2.0/63.0	27.0/38.0
16	66.5	2	2.0/64.5	42.0/24.5

3.3 Groundwater - Groundwater observations were made in the boreholes during the exploration work. These observations were limited by the duration of the exploration program. Based on our observations at the site, it appears that groundwater was generally about 10 feet below the ground surface during the time of exploration. It must be expected that higher groundwater levels exist during wet seasons of the year. Additionally, water is likely perched in the granular fills and glacial marine soils. seasonally and during heavy precipitation events.

4.0 EVALUATION & RECOMMENDATIONS

4.1 Site Suitability - Based on the findings at the exploration locations and our knowledge of structural loading, it is our opinion that the surficial fills and underlying glacial marine soils (sands. silts and clay) are not suitable for support of the proposed column loads and below grade perimeter wall foundations. Support of structural loads will need to derive support from the underlying glacial till. The on-grade paved parking and any slabs-on-grade can be supported on compacted fill placed on densified existing granular fills or the glacial marine soils.

The fill encountered at the explorations varies from about 2 to 13 feet in thickness and is generally granular, but does contain pieces of asphalt and wood, brick and other construction debris at several locations. This material is not suitable for support of the proposed structural loadings but could be densified to support slabs-on-grade and/or asphalt pavement. The glacial marine soil deposit overlying the glacial till generally consists of loose to medium dense sands and medium to stiff compressible gray silty clay. Depths to the top of till varies from about 2 to 28 feet from the existing ground surface at the explorations.

We have made an analysis of allowable bearing capacity of the underlying medium dense glacial till. It is our opinion that these soils have an allowable bearing capacity of 4 ksf for support of shallow spread footings. Given the magnitude of structural loading. spread footing dimensions would be quite large.

A shallow spread footing foundation system would involve removal of all existing fill and marine soils from beneath foundation areas and placement of foundations directly on the glacial till or on a compacted structural fill placed on glacial till. This would require a significant amount of over-excavation below foundation grade in some areas, particularly along the northerly portion of the easterly wall, the entire southerly wall, the entire westerly wall, westerly side of the southerly wall and westerly columns along D-Line. These areas would require 8 feet or more of over-excavation work. This would require off-site disposal of removed soil and replacement with a compacted structural fill. There are also other concerns and risks associated with utilizing a spread footing foundation system for the deep unsuitable soil areas of the site, including:

- The fill and marine soils may be thicker in unexplored areas of the site - Although the information at the boring locations indicate fill and marine soil thicknesses range from about 2 to 28 feet, there may be areas where these soils are thicker.

- Excavations will be located adjacent to streets and the existing buildings - General excavation to proposed floor elevations and any over excavation below foundation grade of unsuitable soils will extend significantly below existing grades requiring engineered braced shoring and dewatering.

- Contaminated soils may be encountered - Although not observed during drilling, records indicate that four underground storage tanks were previously on this site. Actual location of the tanks or if they have been removed is not known. Thus, it should be anticipated that some of the soils at this site may be contaminated with petroleum products. A contingency for contaminated soil will need to be provided and a hazardous material handling program should be developed prior to excavation work. Further exploration and analytical sampling would be needed during excavation work to determine the extent and type of contamination (if encountered).

4.2 Foundation Alternatives - Based on the information gathered to date and the assessment of risks discussed above, we recommend that a combination of spread footing foundations and deep foundations be utilized for support of the structural loads. Spread footings would be utilized where the bearing soils can be reasonably reached and deep foundation systems would be used in deep unsuitable soil areas. The on-grade level of the parking structure (asphalt, base and subbase) can be placed on prepared existing soils (see Section 4.11).

We have prepared a general description of several pile foundation systems and associated costs. The cost estimates provided are intended for comparison only and are based upon discussions with foundation specialty contractors. The option chosen should be based on the structural engineers recommendations. Actual constructed cost of the selected foundation system(s) will vary from the estimates provided below.

1. Caissons

Caissons would need to extend on the order of 10 to 15 feet into the glacial till to bear in dense glacial till. An allowable bearing contact pressure of about 12 ksf would be used for the dense till. Caissons would likely be 4.5 to 5.5 feet in diameter and vary from 20 to 40 ± feet in length. Load tests are not required for caissons. An auger would be used in an attempt to reach dense till. A temporary casing would be required to support the excavation sidewalls. The bearing surface would need to be inspected and, potentially, be hand cleaned prior to placing concrete. Caissons can be time consuming to install and may encounter difficulties in augering through the fills and into the dense till. Difficult augering is expected. The auger may not be able to penetrate cobbles and boulders in medium dense till.

Cost Estimate

Installation of Caissons = $360 ±/cubic yard concrete installed

Approximate Working Load = 230 ± kips

Note: This estimate does not include the cost of survey work, removal and disposal of soil, materials testing, bottom inspection, disposal of contaminated soils (if encountered) and cost of over-excavating for obstructions.

2. Auger-Cast Piles

An auger would be advanced into the glacial till, attempting to reach dense till. Auger-cast piles generally range from 12 to 18 inches in diameter. The piles would be installed with a hollow stem auger through which grout is pumped as the auger is retracted. This system is susceptible to the need for over-excavation with an excavator or resetting at an adjacent location if cobbles, boulders or construction debris is encountered. The pile would need to extend 10 to 15 feet into the dense till. The bottom cannot be inspected, thus, there is some risk of not bearing on a sound surface. Only a few piles could be installed per pile group per day because of disturbance from the drilling process. A load test would need to be performed on one pile which would require about 1 week to allow curing of the concrete. Difficult augering is expected. The auger may not be able to penetrate cobbles and boulders in medium dense till.

Because of the anticipated augering difficulties and the relatively low capacities of the piles, we do not recommend this option.

3. Steel H-Piling

Based on the information obtained at the explorations, we believe that steel H-piles would likely need to be driven 15 to 30 feet into the glacial till to achieve a working load of about 80 to 100 tons. Consideration could be given to the use of either an HP 12X53 (A572 Grade 50 or A36) or an HP 14X73 (A36) pile.

Availability is good for both sections, however, the A572 Grade 50 steel requires ordering, while as many piling firms stock the A36 steel. Thus, lead time for ordering will need to be considered. A static load test program would be needed.

Cost Estimate

Steel H-Pile installed = $25 ± /foot

Approximate Working Load = 80 to 100 Tons

4. Franki Piles

A Franki Pile is a cast-in-situ concrete pile with an enlarged base. A thick walled sleeve would be driven through the upper soils into the till and a base of gravel or stiff concrete is then driven out of the sleeve causing densification of the till soils and forming the enlarged base. The Franki Piles would not need to extend deep into the till soils to develop support. The pile would likely extend less than 10 feet into the till. A thin walled sleeve is then installed for a form for the shaft. A steel reinforcing cage is typically lowered in the sleeve prior to placing the concrete shaft. A static load test program would be needed. We have obtained the following approximate cost and load carrying capacities from a specialty contractor.

Cost Estimate

Franki Pile installed = $1600 to $2200/each

Approximate Working Load = 125 Tons Each

Summary - We recommend that steel H-piling or Franki piles be considered for support of the new structure. The H-piling will have a better chance of advancing through

cobbles or construction debris obstructions than augers piles or caissons and are easier to splice and/or cut to length. The Franki Piles would not need to extend deep into the glacial till. Rather, the enlarged end would be developed likely within the top 10 feet of till. The length of these piles are easily adjusted by cutting the thin sleeve to the correct length prior to placing concrete fill in the shaft.

4.3 Spread Foundation Design - We recommend that spread foundations for the columns and heavily loaded walls be supported on at least 12 inches of compacted "gravel fill" overlying a geotextile fabric placed upon glacial till. Foundations supported on glacial till should be designed for a net allowable bearing contact pressure of 4 ksf or less. In areas requiring over excavation (greater than 12 inches below bottom of foundations) due to unsuitable subgrade soils needing removal, we recommend that a geotextile fabric be placed on the subgrade and a compacted "granular borrow fill" be used to bring the area up to the bottom of the proposed "gravel fill". Potentially, some lightly loaded foundations could be placed on densified fills or marine soils. These foundations should be designed for a net allowable bearing contact pressure of 2.5 ksf or less and must be designed to accommodate some differential movement relative to the rest of the structure. All footings should be at least 24 inches in width.

4.4 Seismic Design - The subsurface conditions at the site suggest the use of a seismic coefficient of 1.0 for soil profile S-1.

4.5 Soil and Geotextile Fabric Parameters - It should be noted that the following soils parameters are typical values for soils similar to those found on site and are not based on direct laboratory testing.

A. Modulus of Subgrade Reaction
   Kv (densified existing silty sand fill) = 150 kcf
   Kv (compacted gravel fill) = 400 kcf (min. 12" compacted gravel fill)
   Kv (glacial till) = 250 kcf

B. Shear Modulus
G (densified existing silty sand fill) = 5000 psi
G (compacted gravel fill) = 15,000 psi
G (glacial till) = 9000 psi

C. Young's Modulus, Modulus of Elasticity
E (densified existing silty sand fill) = 4000 psi
E (compacted gravel fill) = 15,000 psi
E (glacial till) = 10,000 psi

D. Poisson's Ratio
γ (densified existing silty sand fill) = .30
γ (compacted gravel fill) = .40
γ (glacial till) = .35

E. Allowable Soil Bearing Capacity
qa = 4.0 ksf (min. 12" compacted gravel fill overlying glacial till)
qa = 2.5 ksf (min. 12" compacted gravel fill overlying existing fill or marine soils) (For lightly loaded foundations only - see Section 4.3)

F. Woven Geotextile Fabric For Subgrade Reinforcing
- Subgrade Reinforcement
  Apparent Opening Size (AOS) = 30 to 50
  Grab Strength = 200 lbs
- Surrounding Foundation Drain Lines
  Apparent Opening Size (AOS) = At least 70

4.6 Frost Protection - The design freezing index for the Portland, Maine area is on the order of 1250 Fahrenheit degree days. Thus, a frost penetration of 4.5 feet should be anticipated. All foundations. including interior column foundations. retaining wall foundations and pile caps should be placed at least 4.5 feet below exterior finish grade.

Proposed utilities should also be placed below frost penetration depths.

4.7 Excavation Work - Excavation for foundations will encounter miscellaneous granular fill (sand with varying amounts of silt and gravel), existing concrete foundation structures, construction rubble, glacial marine sands, silts and clay, and glacial till. Petroleum contaminated soils may also be encountered. Existing foundation structures and rubble fill will need to be removed from beneath all proposed foundations. Existing foundation structures should be removed to at least 3 feet below the proposed pavement or slab areas. Rubble will also need to be removed for construction of utilities. Groundwater will be encountered in the excavations and will need to be controlled to a level at least 12 inches below subgrade. Excavation below proposed spread footing foundations should continue laterally (from the edge of foundation) a distance equal to the depth of excavation (1V to 1H slope). This is to allow placement of new compacted fill up to the bottom of foundations at the same slope (1V to 1H).

Care should be taken to minimize subgrade soil disturbance. Should the subgrade become loose, sloppy and difficult to work, the loose, unsuitable soils should be over-excavated and replaced with a geotextile fabric and clean compacted gravel fill. Excavation sidewalls in the fill and marine soils at the site are susceptible to caving and sloughing. All excavations will need to be properly shored and/or sloped back to protect the construction area. All excavations should be consistent with OSHA guidelines (20 CFR Part 1926).

4.8 Backfill and Compaction Recommendations - After grubbing and cutting is completed, subgrades consisting of granular fill or sand which will remain beneath the paved areas or slabs should be proof-rolled prior to placing any new fill. Subgrades should be densified (proof-rolled) by at least 5 passes with a roller compactor weighing about 15 kips. Use of vibration may or may not be advantageous depending upon the soil moisture content at the time proof-rolling occurs. Proof rolling with vibration should not be performed if soils are wet or if clays exist.

All new fill should be placed in horizontal lifts and be compacted. Lift thicknesses should be such that desired density is achieved throughout the entire lift thickness. typically with 3 to 5 passes of the compaction equipment. Lift thicknesses should generally be on the order of 8 to 12 inches. If over excavation is needed below foundations (below the proposed 12 inch thickness of gravel fill), the excavation should be backfilled with compacted granular borrow. We recommend that all fill placed beneath foundations be compacted to at least 97 percent of its maximum dry density as determined by ASTM D-1557. Fill beneath slabs and paved areas should be compacted to at least 95 percent of ASTM D-1557. Fill adjacent to perimeter wall foundations (inside and out) should be clean "select backfill". At least 12 inches of compacted "gravel fill" should be placed directly below proposed concrete floor slabs and column and wall foundations. General structural fill. other than fill placed adjacent to the perimeter foundations and directly beneath the slab can be a "granular borrow fill". The structural fills should meet the following gradations:

Sieve Size	SELECT BACKFILL	GRAVEL FILL (MDOT 703.06 Type B Base)	GRANULAR BORROW FILL
6 Inch	---	---	100
4 Inch	100	100	---
3 Inch	90-100	Portion Passing 3"	---
2 Inch	---	---	---
1/2 Inch	---	35-75	---
1/4 Inch	25-90	25-60	---
#40	0-30	0-25	0-70
#200	0-5.0	0-5.0	0-10

Some excavated, on-site granular soils may be suitable as "granular borrow fill" beneath the slabs or paved areas provided the soil is at a moisture content at the time of construction that is workable and consistent with the compaction required. Grain size analyses and moisture content testing of the excavated soils should be performed during excavation work to assess potential uses on site. Any soils containing organics must not be used beneath structures or paved areas. Sheet 30 is a detail showing sub-slab fill details.

4.9 Foundation Drainage - We recommend that a foundation drainage system with a positive gravity outlet be provided at foundation depth around the periphery of the structure and along the southerly side of the two interior wall lines (Lines C and D). The two interior drainage lines should also be placed at least 4.5 feet below finish grade and should connect to the peripheral drainage line at the lower end. It is recommended that rigid. perforated underdrain pipe with hole diameters of 1/4 to 5/8 inch be utilized. At least 6 inches of 3/4 inch crushed stone should be used to bed the drain pipe. The stone should be wrapped with filter fabric with an apparent opening size of 70 to 100. See Sheet 30 for details.

We understand the structure will have an elevator extending down to sub-level 2 (elevation 46.5). Elevators typically have a service pit extending about 4 feet below floor elevation. The pit slab should be underlain with at least 12 inches of crushed stone. An individual underdrain line should be installed with a gravity outlet. If drainage cannot be provided. the pit must have a water proofing treatment. If water proofing is done. a sump pit should be provided to allow the installation of a sump pump in the future. should the water proofing prove to be ineffective.

4.10 Lateral Earth Pressure for Retaining Walls - We anticipate that the parking garage retaining walls will support as much as 25 ± feet of grade change. Considering a compacted select fill adjacent to the walls and foundation drainage. we recommend the following parameters be considered:

- Compacted Granular Fill Unit Weight = 130 pcf
- Friction Factor between Mass Concrete on Compacted Gravel Fill ($\tan\delta$) = 0.55
- Friction Factor between Formed Concrete on Compacted Gravel or Select Fill = 0.30
- Active Lateral Earth Pressure Coefficient (K_a) = 0.31
- Passive Lateral Earth Pressure Coefficient (K_p) = 3.2
- At-Rest Lateral Earth Pressure Coefficient (K_o) = 0.47

Wall backfill should be compacted between 92 and 95 percent of ASTM D-1557. Over compaction may result in excessive pressures on the walls. The design will also need to consider construction and long term surface loading.

4.11 Paved Areas - We understand that the ground level of the parking structure will be asphalt pavement. It is our opinion that the asphalt section can be supported on existing soils. We recommend that all existing pavement, topsoil and organics be removed from beneath the proposed paved areas. Once the area has been excavated to subgrade, granular soil subgrades should be densified (proof-rolled at least five passes with a roller compactor weighing about 15 kips) prior to placing aggregate sub-base material. Clayey subgrades should be overlain by a geotextile fabric prior to placing subbase gravel. Clayey subgrades or saturated soil subgrades should not be proof-rolled. A soils technician should be on site to observe the densification process to assess subgrade soil suitability. Any soils that continue to yield should be over-excavated and replaced with granular fill.

We recommend that the pavement structure consist of 3 inches of bituminous pavement consisting of 1 inch of surface and 2 inches of binder over a 4 inch base (MDOT Type A base). and a 12 inch sub-base structure (MDOT Type D sub-base).

	Percent Finer By Weight	
Sieve Size	MDOT Type A	MDOT Type D
6 Inch	100	100
	Portion Passing 3"	
2 Inch	100	---
1/2 Inch	45-70	---
1/4 Inch	30-55	25-70
#40	0-20	0-30
#200	0-5.0	0-7.0

The base and sub-base materials should be compacted to at least 95 percent of their maximum dry density as determined by ASTM D-1557.

4.12 Construction Quality Control - It is important that a construction quality control and environmental monitoring program be implemented for the project before the start of earthwork. It is our opinion that an S. W. COLE ENGINEERING, INC. geotechnical engineer and/or engineering technician should be on site to make observations during excavation, subgrade preparation, foundation construction, and backfilling operations and to monitor soils from an environmental standpoint. Decisions will have to be made in the field by the owner or owner's representative and the geotechnical engineer during the excavation and foundation construction phase.

Field testing and monitoring services should include:

1. Observations and sampling of excavated soil material and subgrades during excavation work
2. Observations of groundwater conditions

3. Field soil sampling and testing including:
   - moisture-density testing (proctor tests)
   - grain size analyses
   - field soil density testing (compaction tests)

Materials testing and quality control will need to be performed on other construction materials such as concrete, steel and form work. A scope of work and budget for this work will be developed prior to construction activity.

5.0 CLOSURE:

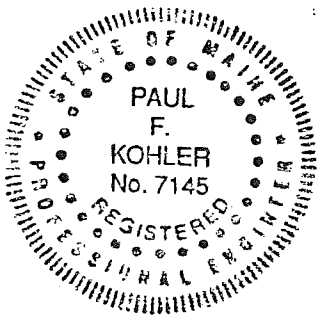
Due to the complexity of the site conditions and proposed foundation alternatives, we expect that further geotechnical consultation will be needed to complete foundation design. We will work closely with your structural designers during this phase.

We request that S. W. COLE ENGINEERING, INC. be provided the opportunity to review the final design and specifications to determine that our earthwork and foundation recommendations have been properly interpreted and implemented.

It has been a pleasure to be of assistance to you with this phase of your project. If you have any questions, please do not hesitate to contact us.

Very truly yours,

S. W. COLE ENGINEERING, INC.



Paul F. Kohler, P.E.

PFK/jel

cc: Paul Gray - V.P. of Planning at Maine Medical Center (3 copies)

Attachment A
Limitations

This report has been prepared for the exclusive use of Maine Medical Center % Mediplex Building Corporation for specific application to the Proposed Medical Office Building and Parking Garage in Portland, Maine. S. W. COLE ENGINEERING, INC. has endeavored to conduct the work in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S. W. COLE ENGINEERING, INC. should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S. W. COLE ENGINEERING, INC.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-1

SHEET 1 OF 1

PROJECT NO. 96-043 S

DATE START 01-13-97

DATE FINISH 01-13-97

ELEVATION 65.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8"	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

OPEN HOLE TO 20.2'

WATER @10.2' AFTER 4 HOURS

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									0.3'	ASPHALT PAVEMENT
	S-1	24"	18"	4.0'	17	19	17	21		BROWN GRAVELLY SAND WITH SOME SILT AND PIECES OF ASPHALT (FILL)
	S-2	24"	18"	7.0'	19	16	12	11		~ DENSE ~
									9.0'	
	S-3	24"	4"	12.0'	2	1	1	7		GRAY SILTY SAND WITH SOME GRAVEL, WOOD, BRICK, AND PIECES OF ASPHALT (FILL)
									13.0'	~ LOOSE ~
	S-4	24"	18"	17.0'	6	7	6	7		GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-5	24"	6"	22.0'	7	8	10	16		~ MEDIUM DENSE ~
	S-6	24"	24"	27.0'	5	12	12	11	27.0'	
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:

S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-1A

SHEET _1__ OF _2__

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: DAVE DIONNE

PROJECT NO. 96-043 S
DATE START 01-29-97
DATE FINISH 01-29-97
ELEVATION 65.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
NO OBSERVATIONS MADE

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
										NOTE : AUGERED TO 30' WITHOUT SAMPLING. SEE LOG FOR B-1 FOR INFORMATION.
									30.0'	
	S-1	24"	24"	32.0'	3	7	6	11		W= 13.2% GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-2	24"	24"	37.0'	10	8	15	21		~ MEDIUM DENSE BECOMING . . . W=7.2%

SAMPLES:
S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[X] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.
BORING LOG

BORING NO. B-1A

SHEET _2_ OF _2_

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: DAVE DIONNE

PROJECT NO. 96-043 S
DATE START 01-29-97
DATE FINISH 01-29-97
ELEVATION 65.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
NO OBSERVATIONS MADE

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-3	24"	24"	42.0'	14	24	30	37		W=8.8%
										GRAY SILTY SAND WITH GRAVEL AND SOME COBBLES (TILL)
										. . . DENSE ~
									46.3'	W=21.8%
	S-4	14"	12"	46.3'	28	86	100/.3"			
										BOTTOM OF EXPLORATION @ 46.3'

SAMPLES:
=SPLIT SPOON
=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-2

SHEET 1 OF 1

PROJECT NO. 96-043 S

DATE START 01-13-97

DATE FINISH 01-13-97

ELEVATION 60.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

SOILS APPEARED SATURATED BELOW 8'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									0.3'	ASPHALT PAVEMENT
										~ DENSE BECOMING . . .
	S-1	24"	10"	4.0'	23	16	12	11		BROWN GRAVELLY SAND WITH SOME SILT, WOOD, WIRE AND BRICKS (FILL)
	S-2	24"	6"	7.0'	3	2	20	6		. . . LOOSE ~
									8.0'	
										GRAY SILTY CLAY
	S-3	24"	24"	12.0'	3	3	1	2		W= 31.3% qp <0.5 ksf
		2"X3"	VANE	12.4'						Sv=2.87/0.49 ksf
									14.5'	~ MEDIUM ~
	S-4	24"	15"	17.0'	9	21	26	28		W=10.2%
										~ DENSE BECOMING . . .
										GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-5	24"	24"	22.0'	5	8	10	9		W=13.0%
										. . . MEDIUM DENSE ~
	S-6	24"	18"	27.0'	4	6	9	11	27.0'	
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:

S=SPLIT SPOON

C=3" SHELBY TUBE

U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-3

SHEET 1 OF 1

PROJECT NO. 96-043 S

DATE START 01-13-97

DATE FINISH 01-13-97

ELEVATION 55.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

SOILS APPEARED SATURATED BELOW 8'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									0.3'	ASPHALT PAVEMENT
									2.0'	BROWN GRAVELLY SAND WITH SOME SILT (FILL)
	S-1	24"	12"	4.0'	11	10	6	9		BROWN SAND WITH SOME SILT (POSSIBLE FILL)
										~ MEDIUM DENSE ~
	S-2	24"	18"	7.0'	4	6	9	10	8.0'	
	S-3	24"	24"	12.0'	4	2	1	6		GRAY SILTY CLAY WITH OCCASIONAL FINE SAND LAYERS
										~ MEDIUM ~
		2"X3"	VANE	12.4'						qp= 1.5-2 ksf
		2"X3"	VANE	12.8'					Sv=0.99/0.30 ksf	
									Sv=1.29/0.49 ksf	
									15.5'	
	S-4	24"	12"	17.0'	1	2	6	7		GRAY SILTY FINE SAND
									18.0'	~ MEDIUM DENSE ~
										~ VERY DENSE BECOMING . . .
	S-5	24"	3"	22.0'	16	50	52	41		GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
										. . . DENSE ~
	S-6	24"	20"	27.0'	10	12	16	12	27.0'	
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:

S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[ ] LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-4

SHEET 1 OF 1

PROJECT NO. 96-043 S

DATE START 01-07-97

DATE FINISH 01-07-97

ELEVATION 58.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

SOILS APPEARED SATURATED BELOW 13'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	24"	18"	2.0'	23	24	27	22	2.0'	BROWN GRAVELLY SAND WITH SILT, BRICKS (FILL) ~ DENSE ~
	S-2	24"	20"	7.0'	6	12	16	23	8.0'	BROWN FINE TO MEDIUM SAND WITH TRACE OF SILT ~ DENSE ~
	S-3	24"	18"	12.0'	6	7	7	9	13.0'	BROWN SILTY FINE TO MEDIUM SAND ~ MEDIUM DENSE ~
	S-4	24"	24"	17.0'	1	2	2	6	21.0'	GRAY SILTY CLAY WITH SOME FINE SAND LAYERS qp= 2.0 ksf ~ MEDIUM ~
	S-5	24"	8"	22.0'	WOH	1	17	30	23.0'	BROWN SILTY FINE TO MEDIUM SAND ~ DENSE ~
	S-6	24"	24"	27.0'	7	10	14	22	27.0'	GRAY SAND AND SILT WITH SOME GRAVEL (TILL) ~ DENSE ~
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:

=SPLIT SPOON

=3" SHELBY TUBE

U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

[ ] DRILLER - VISUALLY

[X] SOIL TECHNICIAN - VISUALLY

[ ] LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-5

SHEET 1 OF 1

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

PROJECT NO. 96-043 S
DATE START 01-07-97
DATE FINISH 01-07-97
ELEVATION 62.5'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
OPEN HOLE TO 12.0'
NO FREE WATER OBSERVED AFTER 12 HOURS
SOILS APPEARED SATURATED BELOW 11'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN	REC	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	24"	12"	2.0'	4	5	6	9	3.0'	BROWN GRAVELLY SAND WITH SILT, BRICKS AND BITUMINOUS FRAGMENTS (FILL) ~ MEDIUM DENSE ~
	S-2	24"	15"	7.0'	7	14	16	23	8.0'	BROWN SILTY FINE TO MEDIUM SAND WITH TRACE OF GRAVEL ~ DENSE ~
	S-3	24"	18"	12.0'	2	1	1	2		GRAY SILTY CLAY WITH OCCASIONAL FINE SAND LAYERS ~ MEDIUM ~ qp <0.5 ksf
		2"X7"	VANE	13.0'					Sv=0.81/0.41 ksf	
		2"X7"	VANE	13.5'					Sv=1.02/0.41 ksf	
									15.5'	
	S-4	24"	12"	17.0'	3	12	23	22	19.0'	BROWN FINE TO MEDIUM SAND WITH TRACE OF SILT ~ DENSE ~
	S-5	24"	18"	22.0'	14	11	9	8	23.0'	RUST BROWN SILTY FINE TO MEDIUM SAND ~ MEDIUM DENSE ~
	S-6	24"	24"	27.0'	7	7	7	7	27.0'	GRAY SAND AND SILT WITH SOME GRAVEL (TILL) ~ MEDIUM DENSE ~
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:
=SPLIT SPOON
=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[ ] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.
BORING LOG

BORING NO. B-6

SHEET 1 OF 1

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETE MICHAUD

PROJECT NO. 96-043 S
DATE START 01-17-97
DATE FINISH 01-17-97
ELEVATION 60.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
SOILS APPEARED SATURATED BELOW 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
										DARK BROWN GRAVELLY SAND WITH SOME SILT, WOOD (FILL)
	S-1	24"	18"	2.0'	4	6	9	8		~ MEDIUM DENSE ~
									3.0'	
										BROWN CLAYEY SILTY FINE SAND WITH TRACE OF GRAVEL
										(PROBABLE FILL OR DISTURBED SOIL)
	S-2	24"	20"	7.0'	3	3	3	4		~ LOOSE ~
									8.0'	
										DARK GRAY SILTY CLAY
	S-3	24"	24"	12.0'	5	4	2	2		~ STIFF ~
		2"X7"	VANE	13.0'						qp=1-1.5 ksf
		2"X7"	VANE	13.5'					Sv=1.91/0.61 ksf	
									14.0'	Sv=3.41/0.81 ksf
										W=2.0%
	S-4	24"	12"	17.0'	18	18	21	24		BROWN FINE TO MEDIUM SAND WITH SOME SILT
										~ DENSE ~
	S-5	24"	18"	22.0'	16	23	25	16		W=4.5%
									23.0'	
										GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-6	24"	24"	27.0'	10	13	15	23	27.0'	~ DENSE ~
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:
S=SPLIT SPOON
T=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-6

S. W. COLE ENGINEERING, INC.
BORING LOG

BORING NO. B-7
SHEET 1 OF 4

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETE MICHAUD

PROJECT NO. 96-043 S
DATE START 01-15-97
DATE FINISH 01-16-97
ELEVATION 58.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
OPEN HOLE TO 71.0'
WATER @ 14.2' AFTER 12 HOURS
SOILS APPEARED SATURATED AT 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
PROBE										
AUGER	S-1	24"	12"	2.0'	19	21	24	11		DARK BROWN SILTY FINE TO MEDIUM SAND WITH TRACE OF GRAVEL, WOOD (FILL)
	S-2	24"	20"	7.0'	15	11	14	12		~ DENSE ~ W=8.7%
									8.0'	
HYD.										GRAY SILTY CLAY
PUSH	S-3	24"	24"	12.0'	3	3	4	6		~ MEDIUM ~ W=30.3% qp=2-2.5 ksf
CASING		3.5"X7"	VANE	12.5'						Sv=0.84/0.14 ksf
		3.5"X7"	VANE	13.0'						Sv=0.90/0.21 ksf
	1 U	24"	24"	15.0'	PUSHED		TUBE		15.7'	qu= 3.2 ksf W=33.5% qp=3 ksf
	S-4	24"	24"	17.0'	2	5	10	10		W=29.6% ~ MEDIUM DENSE BECOMING . . .
OPEN										BROWN SILTY FINE SAND WITH TRACE OF CLAY
HOLE	S-5	24"	15"	22.0'	19	16	18	21		. . . DENSE ~
									23.0'	
	S-6	24"	4"	27.0'	11	14	27	28		~ DENSE ~
	S-7	24"	18"	32.0'	7	9	11	13		~ MEDIUM DENSE ~ GRAY SAND AND SILT WITH SOME GRAVEL AND FEW COBBLES (TILL)
	S-8	24"	18"	36.5'	30	22	40			~ VERY DENSE ~ W=18.1%

SAMPLES:
=SPLIT SPOON
=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-7

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-7

SHEET 2 OF 4

PROJECT NO. 96-043 S

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETE MICHAUD

DATE START 01-15-97

DATE FINISH 01-16-97

ELEVATION 58.0'+-

SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO	PEN	REC	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
OPEN HOLE	S-9	7'	6"	40.2'	93	100/.2'				GRAY SAND AND SILT WITH SOME GRAVEL, COBBLES AND BOULDERS (TILL)
	S-10	.8'	6"	50.8'	95	100/.3'				~ VERY DENSE ~
	S-11	5'	6"	56.5'	120					
	S-12	5"	4"	61.5'	100					
	S-13	2'	2"	65.2'	100/.2'					
	S-14	5"	3"	71.5'	100					
	S-15	.3'	3"	75.3'	100/.3'					

SAMPLES:

S=SPLIT SPOON

O=3" SHELBY TUBE

U=3.3" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-7

SHEET 3 OF 4

PROJECT NO. 96-043 S

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETE MICHAUD

DATE START 01-15-97

DATE FINISH 01-16-97

ELEVATION 58.0'+-

SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
OPEN HOLE	S-16	6"	6"	80.5'	100	50/0				
	S-17	6"	4"	85.5'	100	100/0				GRAY SAND AND SILT WITH SOME GRAVEL, COBBLES AND BOULDERS (TILL) ~ VERY DENSE ~
	S-18	.3'	3"	90.3'	100/.3'					
	S-19	.3'	3"	95.3'	150/.3'					
	S-20	4'	3"	105.4'	100/.4'					
	S-21	6"	4"	116.5'	140					

SAMPLES:

_=SPLIT SPOON
=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.
BORING LOG

BORING NO. B-7

SHEET 4 OF 4

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETE MICHAUD

PROJECT NO. 96-043 S
DATE START 01-15-97
DATE FINISH 01-16-97
ELEVATION 58.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
OPEN										
HOLE										
										GRAY SAND AND SILT WITH SOME GRAVEL, COBBLES AND BOULDERS (TILL)
										~ VERY DENSE ~
	1R	60"		128.0'					128.0'	
										BOTTOM OF EXPLORATION @ 128.0'

SAMPLES:
S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-8

SHEET 1 OF 1

PROJECT NO. 96-043 S

DATE START 01-13-97

DATE FINISH 01-13-97

ELEVATION 48.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

SOILS APPEARED SATURATED BELOW 5'

CASING BLOWS PER FOOT	SAMPLE NO	PEN.	REC	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									2.0'	BROWN GRAVELLY SAND WITTH SOME SILT, COBBLES (FILL)
	S-1	24"	12"	4.0'	7	7	7	13		BROWN FINE TO MEDIUM SAND WITH SOME SILT
	S-2	24"	12"	7.0'	3	8	7	6		~ MEDIUM DENSE ~
									9'+-	
	S-3	24"	24"	12.0'	2	1	3	5		BROWN SILTY FINE TO MEDIUM SAND WITH CLAY LAYERS
									14.6'	~ LOOSE ~
	S-4	24"	24"	17.0'	1	WOH	WOH	WOH		qp <0.5 ksf
		2"X3"	VANE	17.4'	NO PENETRATION					DARK GRAY SILTY CLAY WITH SHELLS, WITH FINE SAND LAYERS
									20'+-	
	S-5	24"	24"	22.0'	4	8	10	6	22.0'	GRAY SAND WITH SILTY CLAY AND COARSE SAND
	S-6	24"	18"	27.0'	25	40	30	26		GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-7	19"	4"	31.0'	42	100	80		31.0'	~ VERY DENSE ~
										BOTTOM OF EXPLORATION @ 31.0'

SAMPLES:

S=SPLIT SPOON
C=3" SHELBY TUBE
J=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-9

SHEET _1_ OF _1_

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

PROJECT NO. 96-043 S
DATE START 01-17-97
DATE FINISH 01-17-97
ELEVATION 53.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
OPEN HOLE TO 14.0'
WATER OBSERVED AT 8.5'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	24"	15"	2.0'	5	5	10	10	3.0'	DARK BROWN GRAVELLY SAND WITH SOME SILT (FILL) ~ MEDIUM DENSE ~
	S-2	24"	12"	7.0'	9	7	6	8	8.0'	BROWN FINE TO MEDIUM SAND WITH TRACE OF SILT ~ MEDIUM DENSE ~
	S-3	24"	10"	12.0'	4	7	6	7	14.0'	BROWN SILTY FINE TO MEDIUM SAND ~ MEDIUM DENSE ~
	S-4	24"	24"	17.0'	1	1	1	1		qp=1-1.5 ksf
		2"X7"	VANE	18.0'					Sv=0.73/0.32 ksf	
		2"X7"	VANE	18.5'					Sv=0.77/0.37 ksf	
	S-5	24"	24"	22.0'	WOH	WOH	2	2	24.0'	GRAY SILTY CLAY WITH NUMEROUS FINE SAND LAYERS ~ MEDIUM ~ qp <0.5 ksf
	S-6	24"	24"	27.0'	7	9	12	12	27.0'	BROWN SAND AND SILT WITH SOME GRAVEL (TILL) ~ MEDIUM DENSE ~
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:
-=SPLIT SPOON
C=3" SHELBY TUBE
=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[ ] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-9

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-10

SHEET _1__ OF _1__

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETER MICHAUD

PROJECT NO. 96-043 S
DATE START 01-17-97
DATE FINISH 01-17-97
ELEVATION 52.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
SOILS APPEARED SATURATED BELOW 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	24"	18"	2.0'	20	11	14	14		DARK BROWN GRAVELLY SAND WITH SOME SILT (FILL) ~ MEDIUM DENSE ~
									3.0'	
	S-2	10"	4"	5.8'	28	50/3"	50/0		6.0'	BLACK SILTY FINE TO MEDIUM SAND WITH COBBLES (FILL) ~ DENSE ~
	S-3	24"	24"	12.0'	5	4	2	1		BROWN SILTY FINE SAND WITH TRACE OF CLAY ~ LOOSE ~
									13.0'	
	S-4	24"	24"	17.0'	2	1	1	1		GRAY SILTY CLAY qp <0.5 ksf
		2"X7"	VANE	18.0'					Sv=0.81/0.41 ksf	
		2"X7"	VANE	18.5'					Sv=0.69/0.41 ksf	
										~ MEDIUM ~
									21.0'	
	S-5	24"	24"	22.0'	WOH	WOH	2	1	Sv=1.10/0.44 ksf	~ STIFF ~ qp <0.5 ksf
		3.5"X7"	VANE	23.0'					23.2'	DARK GRAY SILTY CLAY WITH TRACE OF FINE SAND
										GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-6	24"	20"	27.0'	18	17	19	32	27.0'	~ DENSE ~
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:
S=SPLIT SPOON
T=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[ ] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-11

SHEET 1 OF 1

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETE MICHAUD

PROJECT NO. 96-043 S
DATE START 01-18-97
DATE FINISH 01-18-97
ELEVATION 50.5'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
OPEN HOLE TO 12.0'
NO FREE WATER OBSERVED
SOILS APPEARED SATURATED AT 11'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	6"	6"	0.5'	11					BROWN GRAVELLY SAND WITH SOME SILT AND COBBLES (FILL)
									3.0'	~ MEDIUM DENSE ~
	S-2	24"	20"	7.0'	5	5	5	6		BROWN FINE TO MEDIUM SAND WITH TRACE OF SILT
									10.5'	~ MEDIUM DENSE ~
	S-3	24"	24"	12.0'	4	2	2	3		GRAY SILTY CLAY WITH OCCASIONAL FINE SAND LAYER
		2"X7"	VANE	13.0'					Sv=1.49/0.41 ksf	~ STIFF ~ qp <0.5 ksf
		2"X7"	VANE	13.5'					14.0' Sv=1.99/0.77 ksf	
	S-4	24"	18"	17.0'	4	8	14	14		~ MEDIUM DENSE BECOMING . . .
	S-5	24"	18"	22.0'	7	13	13	17		GRAYISH BROWN SILTY FINE TO MEDIUM SAND WITH SOME GRAY CLAYEY SILT LAYERS W=7.5%
	S-6	24"	20"	27.0'	10	13	15	20		. . . DENSE ~
									28.5'	
	S-7	24"	20"	32.0'	20	21	32	34		W=7.3% LIGHT BROWN SILTY SAND WITH SOME GRAVEL, COBBLES (TILL)
										~ VERY DENSE ~
	S-8	12"	10"	36.0'	56	86			36.0'	
										BOTTOM OF EXPLORATION @ 36.0'

SAMPLES:
S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-12

SHEET _1__ OF_1__

PROJECT NO. 96-043 S

DATE START 01-17-97

DATE FINISH 01-17-97

ELEVATION 50.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: PETER MICHAUD

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

OPEN HOLE TO 8'

NO FREE WATER OBSERVED

SOILS APPEARED SATURATED AT 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	24"	12"	2.0'	6	7	7	16	3.0'	DARK BROWN GRAVELLY SAND WITH SOME SILT (FILL) ~ MEDIUM DENSE ~
	S-2	24"	12"	7.0'	9	8	10	8	9.0'	BROWN SILTY FINE TO MEDIUM SAND (FILL OR DISTURBED SOIL) ~ MEDIUM DENSE ~
	S-3	24"	18"	12.0'	1	2	1	1	13.0'	GRAY SILTY MEDIUM TO FINE SAND WITH SILTY CLAY LAYERS ~ LOOSE ~
	S-4	24"	24"	17.0'	3	1	1	2		DARK GRAY SILTY CLAY WITH OCCASIONAL FINE SAND LAYERS ~ MEDIUM TO STIFF ~
		2"X7"	VANE	18.0'					18.1'	qp <0.5 ksf Sv=1.83/0.65 ksf
		2"X7"	VANE		NO PENETRATION					
	S-5	24"	24"	22.0'	8	9	11	20	25.0'	~ MEDIUM DENSE ~ BROWN SILTY FINE TO MEDIUM SAND WITH SOME GRAVEL
	S-6	18"	12"	26.5'	14	31	57		26.5'	GRAY SAND AND SILT W/SOME GRAVEL (TILL) ~VERY DENSE ~
										BOTTOM OF EXPLORATION @ 26.5'

SAMPLES:

S=SPLIT SPOON

T=3" SHELBY TUBE

O=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

[ ] DRILLER - VISUALLY

[X] SOIL TECHNICIAN - VISUALLY

[ ] LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-13

SHEET 1 OF 1

PROJECT NO. 96-043 S

DATE START 01-07-97

DATE FINISH 01-07-97

ELEVATION 40.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

SOILS APPEARED SATURATED AT 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
	S-1	24"	4"	2.0'	7	11	5	6	2.0'	BROWN GRAVELLY SAND WITH SOME SILT (FILL)
	S-2	24"	15"	7.0'	6	7	8	10	9.0'	BROWN FINE TO MEDIUM SAND WITH SOME SILT
	S-3	24"	24"	12.0'	4	7	7	4	13.0'	BROWN SILTY FINE TO MEDIUM SAND
	S-4	24"	24"	17.0'	1	1	1	1		GRAY SILTY CLAY WITH TRACE OF FINE SAND qp= 2-3 ksf ~ MEDIUM ~
	1 U	24"	24"	19.0'	PUSHED		TUBE			qu=0.65 ksf
	S-5	24"	24"	22.0'	WOH	3	6	9	23.0'	W=38.8% qp=3-4 ksf
	S-6	24"	18"	27.0'	7	9	15	10	27.0'	BROWN SILTY SAND WITH SOME CLAY LAYERS ~ MEDIUM DENSE ~
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:

=SPLIT SPOON

=3" SHELBY TUBE

U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-13

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-13A

SHEET 1 OF 2

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

PROJECT NO. 96-043 S
DATE START 01-29-97
DATE FINISH 01-29-97
ELEVATION 40.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-8	8-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
										NOTE ; AUGERED TO 30' WITH SAMPLING. SEE LOG FOR B-13 FOR INFORMATION FROM 0-30'.
									30.0'	
	S-1	24"	20"	32.0'	26	40	36	35		W=10.3% BROWN SILTY GRAVELLY SAND WITH SOME CLAY (TILL) ~ VERY DENSE ~
	S-2	24"	18"	37.0'	14	17	36	43		W=9.6%

SAMPLES:
S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-13A

SHEET 2 OF 2

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

PROJECT NO. 96-043 S
DATE START 01-29-97
DATE FINISH 01-29-97
ELEVATION 40.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO.	PEN	REC	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									41.5'	BROWN SILTY GRAVELLY SAND WITH SOME CLAY (TILL)
	S-3	18"	18"	41.5'	18	42	70			
										BOTTOM OF EXPLORATION @ 41.5'

SAMPLES:
S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.
BORING LOG

BORING NO. B-14
SHEET _1_ OF _1_

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: JEFF LEE

PROJECT NO. 96-043 S
DATE START 01-07-97
DATE FINISH 01-07-97
ELEVATION 58.0'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
OPEN HOLE TO 35.0'
WATER @ 29.0' AFTER 15 MINUTES
SOILS APPEARED SATURATED AT 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									0.2'	ASPHALT PAVEMENT
	S-1	24"	6"	2.2'	11	10	16	10	3.0'	BROWN GRAVELLY SAND W/SOME SILT, BITUMINOUS FRAGMENTS ~ MEDIUM DENSE ~ (FILL)
	S-2	24"	15"	7.0'	7	10	10	9	10.5'	BROWN SILTY FINE TO MEDIUM SAND WITH TRACE OF GRAVEL (PROBABLE FILL) W=18.2% ~ MEDIUM DENSE ~
	S-3	24"	20"	12.0'	4	4	5	5	13.5'	~ STIFF ~ W=32.1% qp= 3-4 ksf GRAY SILTY CLAY WITH TRACE OF FINE SAND LAYERS
	S-4	24"	20"	17.0'	14	13	18	23		W=12.6% ~ DENSE ~
	S-5	24"	18"	22.0'	7	7	14	8		~ MEDIUM DENSE ~ GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-6	24"	24"	27.0'	5	8	11	13		
	S-7	24"	15"	32.0'	5	7	10	14		~ DENSE ~
	S-8	24"	18"	37.0'	24	22	22	21	37.0'	
										BOTTOM OF EXPLORATION @ 37.0'

SAMPLES:
S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-14

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-15

SHEET _1__ OF_1__

PROJECT NO. 96-043 S

DATE START 01-06-97

DATE FINISH 01-06-97

ELEVATION 65.0'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: SHAWN BAKER

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

OPEN HOLE TO 21.0'

WATER @ 10.3' AFTER 24 HOURS

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									0.2'	DARK BROWN LOAMY SANDY SILT WITH ORGANICS (TOPSOIL)
	S-1	24"	6"	2.0'	3	4	5	8	2.0'	BROWN SILTY SAND WITH SOME GRAVEL (FILL) ~ MEDIUM DENSE
	S-2	24"	10"	7.0'	9	16	23	23		~ DENSE ~
	S-3	24"	18"	12.0'	20	22	25	25		GRAY GRAVELLY SILTY SAND (TILL) W=8.5%
	S-4	24"	18"	17.0'	5	8	9	15		~ MEDIUM DENSE ~
	S-5	24"	20"	22.0'	8	8	10	13		~ DENSE ~
	S-6	24"	12"	27.0'	7	11	28	25	27.0'	
										BOTTOM OF EXPLORATION @ 27.0'

SAMPLES:

S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-16

SHEET 1 OF 2

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER
LOCATION: CONGRESS ST. PORTLAND, MAINE
DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: SHAWN BAKER

PROJECT NO. 96-043 S
DATE START 01-06-97
DATE FINISH 01-06-97
ELEVATION 66.5'+-
SWCE REP. RRJ

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION
SOILS APPEARED SATURATED AT 10'+-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
									0.2'	ASPHALT PAVEMENT
	S-1	18"	8"	1.7'	15	9	23		2.0'	DARK BROWN GRAVELLY SAND WITH SOME SILT (FILL)
	S-2	24"	20"	7.0'	18	75	21	17		GRAY CLAYEY SAND WITH SOME SILT AND TRACE OF GRAVEL (TILL)
	S-3	24"	18"	12.0'	6	17	16	35		~ DENSE TO VERY DENSE ~
	S-4	24"	0	17.0'	39	43	50	61		
	S-5	24"	24"	22.0'	6	16	25	27	23.0'	
									24.5'	BOULDER
	S-6	24"	10"	26.5'	11	20	33	48		GRAY SAND AND SILT WITH SOME GRAVEL (TILL)
	S-7	24"	24"	32.0'	41	33	20	32		~ VERY DENSE ~
	S-8	24"	12"	37.0'	10	12	38	42		

SAMPLES:
=SPLIT SPOON
:=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECHNICIAN - VISUALLY
[X] LABORATORY TESTS

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S. W. COLE ENGINEERING, INC.

BORING LOG

BORING NO. B-16

SHEET 2 OF 2

PROJECT NO. 96-043 S

DATE START 01-06-97

DATE FINISH 01-06-97

ELEVATION 66.5'+-

SWCE REP. RRJ

PROJECT/CLIENT: MEDICAL OFFICE AND PARKING GARAGE / MAINE MEDICAL CENTER

LOCATION: CONGRESS ST. PORTLAND, MAINE

DRILLING FIRM: GREAT WORKS TEST BORINGS, INC. DRILLER: SHAWN BAKER

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING	HSA	4 1/4"		
SAMPLER	SS	1 3/8'	140 LB.	30"
CORE BARREL				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO	PEN.	REC	DEPTH @ BOT.	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH (FT.)	STRATA & TEST DATA
										GRAY SAND AND SILT WITH SOME GRAVEL (TILL),
	S-9	24"	24"	42.0'	12	16	22	31	42.0'	~ VERY DENSE ~
										BOTTOM OF EXPLORATION @ 42.0'

SAMPLES:

S=SPLIT SPOON
C=3" SHELBY TUBE
U=3.5" SHELBY TUBE

SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECHNICIAN - VISUALLY
X	LABORATORY TESTS

REMARKS:

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

KEY TO THE NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - based on laboratory unconfined compressive test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. based on pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass. RQD is computed from recovered core samples.

Description of Proportions:

0 to 5% TRACE
5 to 12% SOME
12 to 35% "Y"
35+% AND

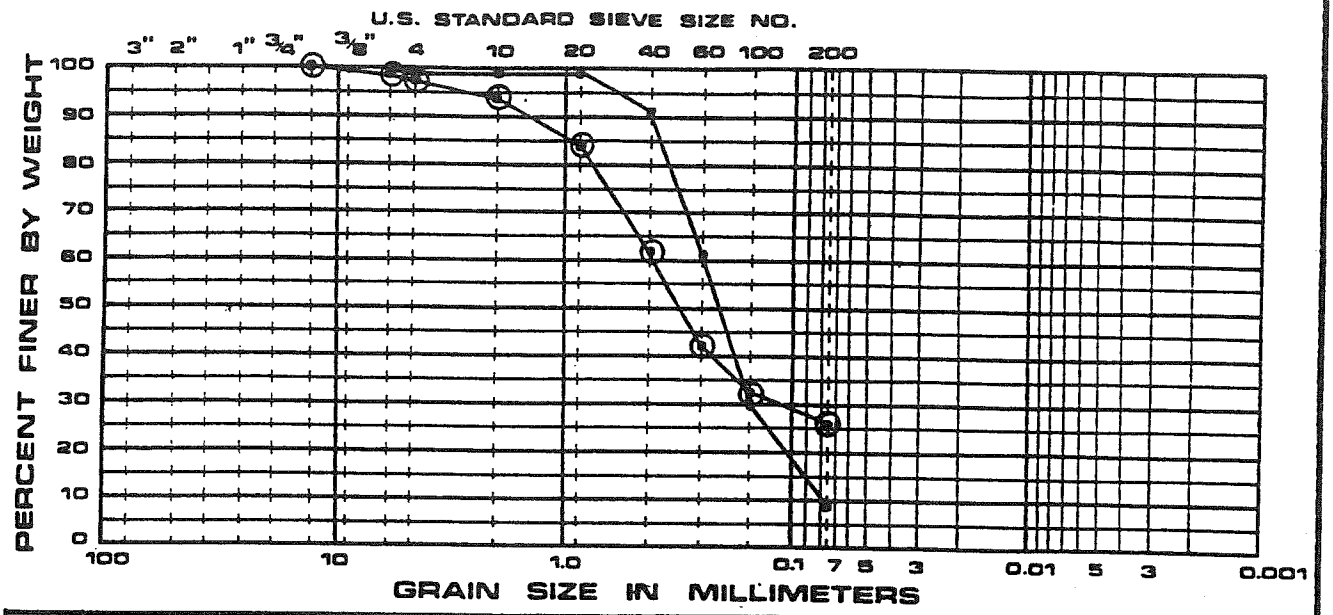
REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

GRAIN SIZE ANALYSIS

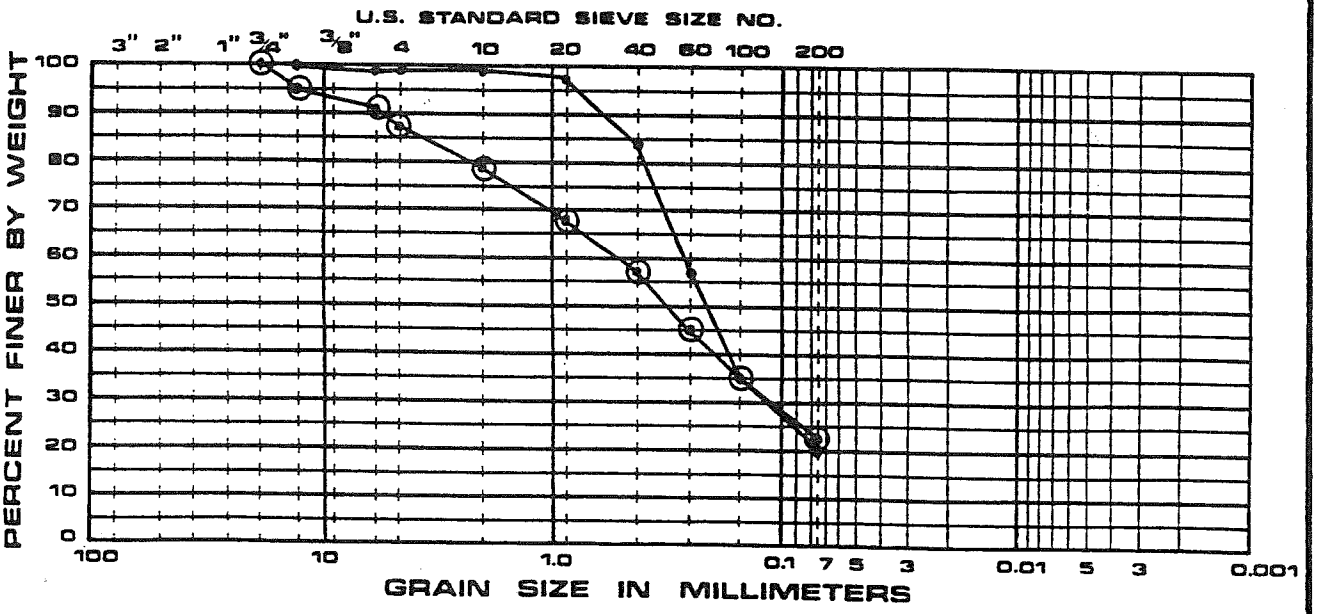
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%
•	B-6	S-4	15'-17'	FINE TO MEDIUM SAND WITH SOME SILT	2.0
⊙	B-7	S-2	5'-7'	SILTY SAND WITH TRACE OF GRAVEL	8.7

GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	

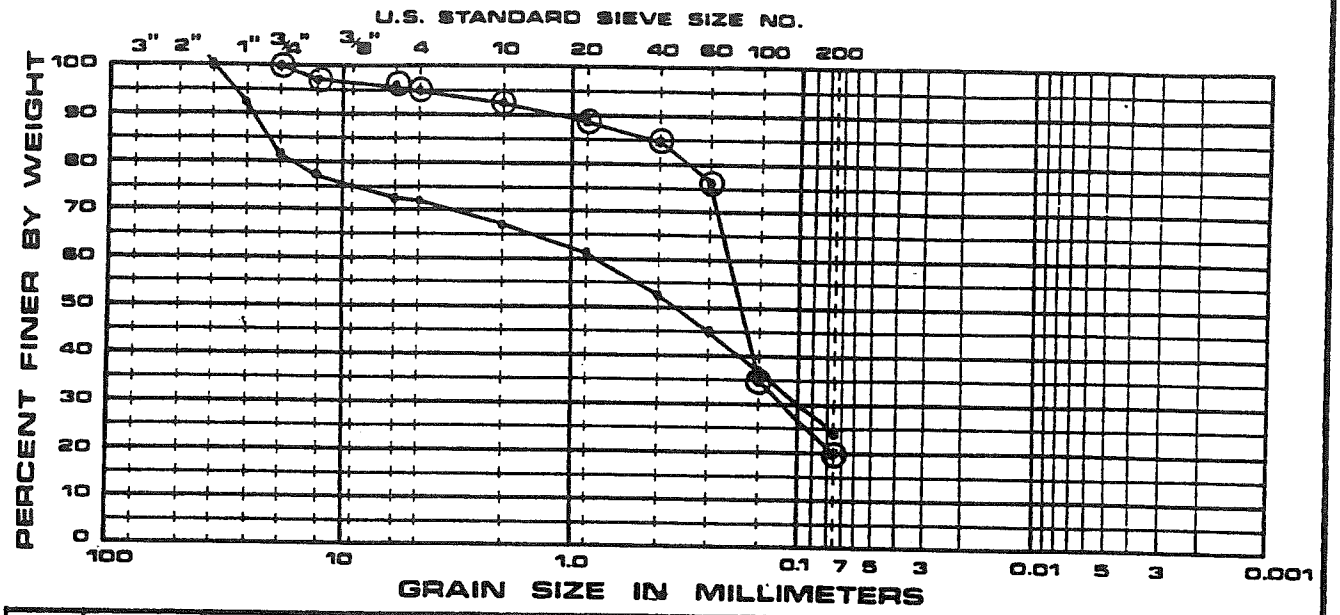


PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%
•	B-11	S-5	20'-22'	SILTY FINE TO MEDIUM SAND	7.5
⊙	B-11	S-7	30'-32'	SILTY SAND WITH SOME GRAVEL (TILL)	7.3

JOB NO. : _____

GRAIN SIZE ANALYSIS

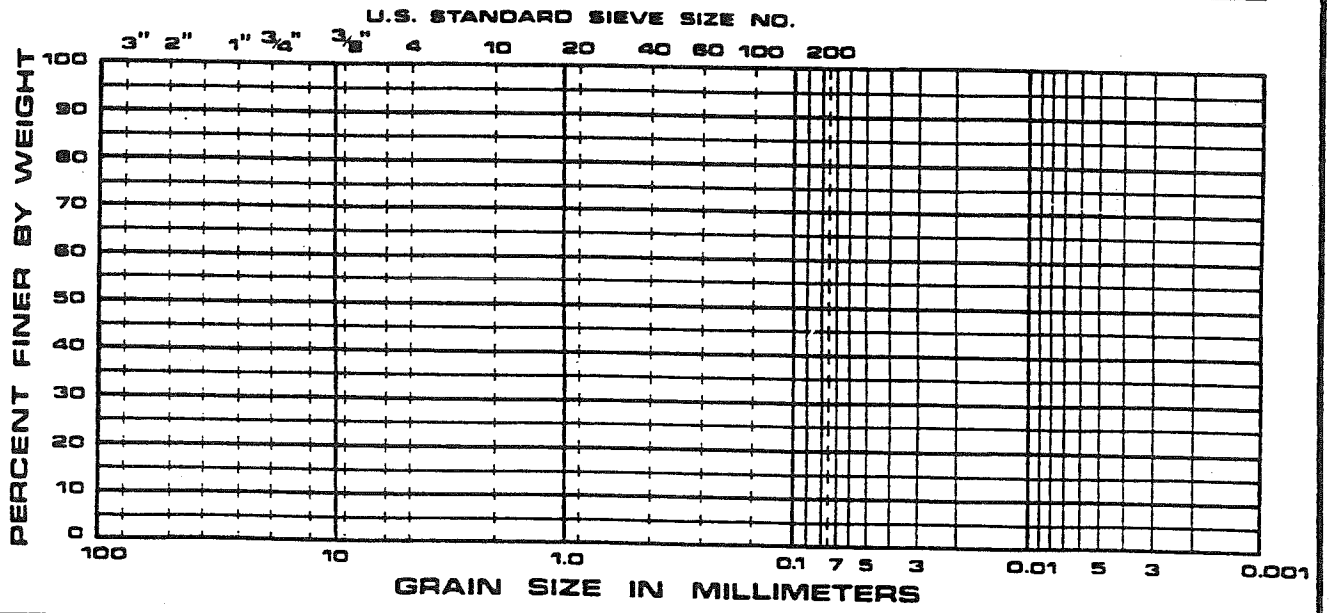
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%
•	B-13A	S-8	35'-37'	SILTY GRAVELLY SAND (TILL)	9.6
⊙	B-14	S-2	5'-7'	SILTY SAND WITH TRACE OF GRAVEL	18.2

GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%