

199-A-1
947 Westbrook
St.

Jetport Pk.
Garage

Portland Int.
Jetport

text

**PORTLAND INTERNATIONAL JETPORT
ACCESS ROADS
SITE PLAN AND SUBDIVISION REVIEW**

CITY OF PORTLAND, APPLICANT

Submitted to:

Portland Planning Board
Portland, Maine

October 22, 1996

I. INTRODUCTION

The City of Portland requests approval for construction of a roadway from Congress Street to the Jetport. The new roadway entrance will line up with the new UNUM driveway on Congress Street adjacent to the Elks BPOE property. This proposal amends the Jetport subdivision plan. Site plan approval is also requested. See Attachment A for site plan/subdivision plan.

27 notices were sent to area property owners. A notice of this public hearing appeared in the October 14th and 15th editions of the Portland Press Herald.

II. FINDINGS

Zoning:	A-B Airport Business and R-2 Residential
Total Land Area:	45.2 acres
Subdivision Lots:	#29 . . . 27.2 acres
	#30 . . . 9.7 acres
	#31 . . . 18.3 acres
	#32 . . . 6.1 acres

Wetlands:	The path of the roadway will disturb 2.3 acres of wetlands. As part of the permit process, the Army Corps of Engineers is requiring that 18 acres of the wetlands on the Jetport site be deed restricted as open space. Other mitigation measures are also required. Copies of the Army Corps of Engineers and DEP wetland permit applications are on file in the Planning Office.
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DEP approval of this project is expected shortly under the Site Location of Development Act.

As portions of the roadway are in South Portland, development approvals will need to be pursued with that municipality.

III. PROPOSED DEVELOPMENT

The City of Portland is requesting approval of the following development activities.

1. Construction of a 2,400 foot long roadway from Congress Street to the Jetport loop road.
2. Improvements to terminate Westbrook Street with a cul-de-sac near Yellow Bird Road. This will preclude public traffic to the Jetport from Westbrook Street forcing vehicles to use the new Congress Street roadway. The dead-end will be able to accommodate emergency vehicles into the Jetport complex.
3. Minor revisions to several parking lots. This will improve circulation by reorganizing several parking lot entrances.

A second roadway is also proposed. This runs from the existing Jetport access road outletting next to the Embassy Suites Hotel on Westbrook Street. It intersects the new Congress Street roadway about 700 feet north of the existing Jetport loop roadway. This roadway is expected to take a significant amount of commercial truck activity bound for airport related businesses on Westbrook Street avoiding excessive traffic around the Jetport loop road.

Although the City does own the land for the Congress Street roadway, the City has been unable to negotiate an acceptable purchase price for a portion of the land area required for the second roadway. The properties are owned by Brooklawn Memorial Cemetery and Thomas Toye III. The City is expected to initiate eminent domain proceedings to acquire this property.

Since the City does not have property rights over this land, the Board will not be formally approving the second roadway at this time. A public hearing will be scheduled in the future once the property issue has been settled. A revised subdivision recording plat will need to be submitted accordingly. The roadway is being submitted for Planning Board and staff review so that site plan issues and technical details can be highlighted at this time. This process does allow the Board to review the entire project in the context of a master plan.

The Congress Street roadway divides the Jetport into two additional lots. The second roadway will also result in two more lots. While the Jetport does not have immediate plans to develop these lots (and there are conservation restrictions as discussed above), the lots should be designated on the plan. As specific development opportunities arise, the subdivision plan can be amended accordingly. Since much of this land is zoned R-2 Residential, it would also likely need a zone change.

IV. STAFF REVIEW

This development has been reviewed for conformance with the standards of the site plan and subdivision ordinances. Staff comments are incorporated in this report.

SITE PLAN REVIEW

1/2. Traffic

The development of a new access road from Congress Street has been a major focus of the Jetport master planning efforts. The new roadway will line up with new UNUM driveway on Congress Street adjacent to the Elks BPOE property. This roadway eliminates the need for a Westbrook Street connection to the Jetport (except for emergency vehicles) and shifts vehicles to Congress Street. The closing of Westbrook Street to Jetport traffic has been a long standing concern of the Westbrook Street neighborhood.

At the request of the Board, the roadway width has been reduced from 40 feet to 32 feet. Granite curbs will be installed along the entire length of the roadway. A sidewalk is proposed on one side of the street. A 2 1/2 foot esplanade is shown between the curb and the sidewalk. A roadway cross section is shown on Attachment A-14.

A traffic report has been submitted by the applicant (Attachment C-1). Tom Errico, Traffic Review Engineer, has reviewed the traffic study and finds them acceptable. He does however have several comments regarding improvements for pedestrian safety.

The traffic report evaluates, impacts of existing traffic and future expansion assuming 200,000 additional (Jetport) enplanements by the year 2000 which is approximately a 34% increase in traffic.

The report concludes.

To adequately accommodate projected traffic volumes, this new (Congress Street) intersection should incorporate the following:

- Traffic control signal.
- Addition of a southbound left turn lane.
- Separate left and right-turn lanes exiting the new access road.

Also, the analysis shows that for the year 2000 without either the Jetport or UNUM expansion, the following improvements are required:

- An additional northbound through lane on Johnson Road at Congress Street.
- An additional through lane on Western Avenue at Maine Mall Road.

The 1996 building analysis also shows that there will be system deficiencies as a result of the new interchange, which are not addressed by that project as indicated below:

- Add eastbound right turn lane on Maine Mall Road at Western Avenue and stripe to provide left turn, left thru and right turn lanes.
- Provide a dual left turn lane from Johnson Road onto the Turnpike Connector to new interchange.

Therefore, the only required improvements which can be directly attributed to the Jetport expansion are those at the proposed new intersection with Congress Street.

The Congress Street improvements are referenced on the plan. The City and UNUM will be sharing the cost of improvements for the intersection.

Westbrook Street Dead-End:

A revised plan has been submitted for the termination of Westbrook Street near Yellow Bird Road. It is similar to one of the five options (Figure 6-C) presented to the Board last summer. The proposed design is in an elongated cul-de-sac with a roadway width of 24 feet wide. A raised curb and vehicle access island has been proposed along the outer edge of the cul-de-sac and Yellow Bird Road. This allows emergency vehicles to drive over it to gain access to the Jetport if required (see Attachment A-15). The raised design is intended to deter general traffic from crossing it. The design has been reviewed and approved by Lt. McDougall of the Fire Department.

This design has been proposed to address the Fire Department's concern for access from Westbrook Street. The Westbrook Street access is important since it is the quickest route to the Jetport for emergency vehicles. A gate at the cul-de-sac would have concerned the Fire Department because it would delay response time. This is complicated by the presence of an existing gate near Yellow Bird Road which provides emergency access onto the air field.

The final design is intended to visually obscure and mask the emergency lane by placing landscaping in the cul-de-sac island and shifting the lane off-center avoiding a straight shot from Westbrook Street.

Parking Lot Entrances:

The new roadway will allow for a more efficient internal circulation system. Accordingly, the Jetport will reorganize access to three of the existing parking lots near the parking garage. This involves eliminating several driveway entrances and creating new ones. See Attachments A-18 and A-21. All of these driveways will help minimize needless traffic movements around the loop road.

Pedestrian Circulation:

Pedestrian circulation is an important issue at the Jetport. Comments from Tom Errico, Traffic Review Engineer, indicates "it is unclear what route pedestrians who originate from the terminal building and are destined to the parking lot southwest of the New Access Road will utilize. It appears crosswalks across the New Access Road supplemented with signs will be required." The applicant indicates that the roadway design was approved by MDOT as a two-way stop. Once traffic is established another review will be made (See Attachment K). There continues to be a need for a thorough review of pedestrian circulation throughout the airport complex. The provisions for sidewalks have improved with each recent project, but there might be other improvements that would result from a more careful pedestrian assessment. This should be done before the final review of the last phase of this project.

Staff is also suggesting that a sidewalk be extended along the southerly side of this access road adjacent to this parking lot starting near station 22+00 (see Attachment A-18).

3. Proposed building and uses impact on health or safety problems

There are no new buildings proposed. The impact of the roadway should enhance public health and safety since it eliminates Jetport related traffic from the residential area of Westbrook Street and transfers it to a new access on outer Congress Street away from Stroudwater Village.

4. Proposed buildings minimizes diminution in value or utility to neighboring structures

No new buildings are proposed.

5. Sewers, storm drains, water and utilities

The project has been designed to minimize its impact on existing drainage conditions of the site. Development activities are limited to the roadway. No new buildings or parking lots are proposed. This leaves the remainder of the parcel as open space. There will be no increase in the rate of stormwater runoff from the site. This is accomplished by ponding near roadway culverts and use of a detention basin for the previously approved (but unbuilt) westerly parking lot.

Stormwater from the roadway will flow into catchbasins connected into storm drains. These storm drains outlet at various points in the site. Several culverts will be installed along the Congress Street access road so that the roadway does not displace stormwater running north to south.

A summary from the drainage report submitted by Deluca-Hoffman Associates is shown below:

Drainage from the site is predominately to 4 individual control points. The western portion of the site drains to twin 36" diameter culverts under Congress Street at the site's southwest corner. The central portion of the site drains into an enclosed storm drain system which flows under Brooklawn Cemetery and eventually discharges to the twin 36" culverts under Congress Street. The southeastern portion of the site discharges to a 21" culvert under the existing access road. This culvert discharges into an open drainage ditch which in turn discharges into the Airport storm drain system. The area of the project adjacent to the existing parking lots drains into an existing detention pond prior to discharging into an enclosed storm drain system that conveys stormwater to the Fore River.

A letter has been received from the Cumberland County Soil and Water Conservation District confirming that stormwater management and erosion and sedimentation control issues of this project have been addressed for the DEP application (Attachment F). Comments from the Development Review Coordinator are shown on Attachment F. Responses to these comments from the applicant are shown on Attachment K. The applicant has agreed to revise the plan accordingly.

Utility information for the new roadway is limited to the storm drain system and power lines for street lighting. Although no development is proposed along the roadway at this time, a complete analysis of future utility services should be undertaken including water and sewer services with the appropriate utility companies, Public Works and the Fire Department. Water service and hydrant locations are particularly important for fire protection. [Note: It was observed during an occupancy inspection for the garage that a significant amount of pavement drains across the driveway crosswalks along the west side of the parking garage, into catchbasins located within the garage. This water flow interferes with pedestrian movements. While not directly connected with this project phase, there might be an opportunity to design an improvement to correct this problem.]

6/7. Landscaping

A landscaping plan has been submitted for the access roads and the Westbrook Street cul-de-sac.

The current site is an open meadow. The landscape plan for the access roadway divides the site into 15 different areas or themes. For example, the first three landscape elements from Congress Street are described as "main entrance", "New England meadow" and "prominent hilltop/open landscape." This site characterization allows for a landscape plan that recognizes existing landscape conditions while acknowledging the roads role as a gateway to the Jetport. A list of plantings are shown on Attachment A-22. Jeff Tarling, City Arborist, has reviewed and approved the landscape plan for the roadway.

The Westbrook Street cul-de-sac plan is shown on Attachment A-23. Landscaping in the cul-de-sac includes three red maples and syringa common lilacs (5 feet). An existing 9 inch twin maple would be preserved. Three Austrian pine (6-7 feet) are proposed between Westbrook Street and the Jetport property. Three white pines (6-7 feet) and one red maple would be planted near Old Yellow Bird Road. This helps mitigate the existing vegetation that will be removed for the cul-de-sac. The City Arborist has reviewed and approved this portion of the landscape plan except that he is recommending that an additional red maple be planted in the cul-de-sac. The applicant has agreed to this recommendation.

8. Soil and Drainage

For drainage related issues see #5 of this section.

An erosion and sedimentation control plan describing temporary and permanent measures has been submitted (see Attachment A-12). The plan indicates the location of silt fencing and installation of erosion control fabric mesh on steep slopes. Rip rap will be used along portions of the roadway to stabilize the adjacent slope (see Attachments A-3 to A-7). All culvert openings will have rip rap installed.

9. Exterior Lighting

Lighting is shown along the proposed streets. Power will be underground. Street light poles will be 30 feet high. Several types of lighting fixtures have been considered by the Jetport. The fixture will be from one of the luminaires shown on Attachment G.

10. Fire

Lt. McDougall of the Fire Department has reviewed and approved the fire access lane from Westbrook Street. The detail of this elevated lane is shown on Attachment A-15. No gate is proposed for the lane.

11. Infrastructure

The proposal is consistent with off-premises infrastructure, existing or planned by the City. The proposed roadway system was a recommendations of the Jetport Master Plan. However, further discussions will need to take place with utility companies, Public Works and Fire Department regarding utility services in the roadway. See #5 of this section.

12. Historic Resources

The proposal is not located within 100 feet of a historic district or landmark.

13. Natural Resources

The proposed development will have no adverse impact upon the existing natural resources including groundwater, surface water, wetlands, unusual natural areas and wildlife and fisheries habitat. While the site totals 45 acres, the only site disturbance will be for construction of the roadway.

The open space adjacent to the roadway protects the natural amenities of the site. Although the roadway will require filling of wetlands (2.3 acres), the Army Corps of Engineers has required the following compensation package which mitigates the impact of the filling.

- .4 acres - creation of new wetlands
- .6 acres - restoration of disturbed wetland
- 18.0 acres - preservation of existing wetlands through deed restriction

These areas are shown on Attachment A-19. The site is not located within an aquifer. There appears to be no threatened, endangered, and special wildlife species and habitats or other special natural features on this site. See Attachment H.

Water quality issues from the roadway are addressed in the storm drain system by installation of a stormceptor that removes sediment and grit pollutants during the first flush of storms.

14. Signage

Signage information is shown on Attachment I.

SUBDIVISION REVIEW

Comments regarding subdivision review criteria have been consolidated in certain instances with the site plan review section.

1. Water or air pollution

The development will not be a source of water or air pollution. There will be no subsurface waste disposal taking place on the site.

2/3. Water supply

As discussed earlier in this report, we are recommending as a condition of approval that further analysis be undertaken to review the need for water services in the roadways. Although development is not proposed along the roadways at this time, the final plan should recognize future water needs.

4. Soil Erosion

See Site Plan section, number 5 and 8.

5. Traffic

See Site Plan section, number 1 and 2.

6. Sanitary waste and storm disposal

See Site Plan section, number 5 and 8.

7. Solid waste

No solid waste will be generated by the development.

8. Scenic or natural beauty, aesthetics, historic sites, significant wildlife

See site plan section, #13 and #12.

9. Comprehensive Plan

The development is in conformance with the City's Comprehensive Plan.

10. Financial and technical capacity

Financial and technical information is shown as Attachment J.

11. Shoreland

The project is not located within a shoreland zone.

12. Groundwater

The project is not located on a groundwater aquifer. There are no buildings proposed on this site.

13. Flood hazard area

The development is not located within a 10 year flood plain area.

14. Wetlands

Wetlands have been identified on the plan.

V. MOTIONS FOR THE BOARD TO CONSIDER

On the basis of plans and materials submitted by the applicant and on the basis of information contained in Planning Report #57-96, the Board finds:

1. The plan is in conformance with the Subdivision Ordinance of the Land Use Code.

Potential Conditions of Approval:

- i. That a revised utility plan for the roadways shall be submitted to City staff for review and approval reflecting comments of Public Works, Fire Department, Portland Water District and other utility services.
 - ii. That a revised subdivision recording plat shall be submitted for Planning Board signature.
 - iii. That the second roadway shall be submitted for Planning Board review and approval when property ownership issues have been resolved.
 - iv. That the plan be revised to reflect the comments of the Development Review Coordinator (see Attachment F). Note: the applicant has agreed to revise the plan accordingly. (See Attachment K)
 - v. That a thorough pedestrian circulation plan be executed as part of the final phase subdivision.
2. The plan is in conformance with the Site Plan Ordinance of the Land Use Code.
 3. The Planning Board [finds/or does not find] that extraordinary conditions [do or do not] exist and/or that undue hardship [may or may not] result from strict compliance with the requirements set forth in sec. 14-498(b)(8), therefore [approves or does not approve] a waiver for a sidewalk on one side of the street.

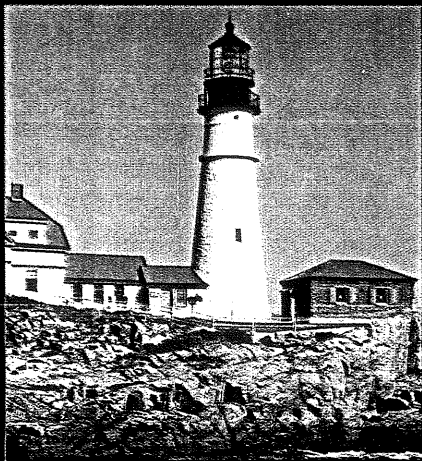
Attachments:

- A. Site Plan/Subdivision Plan
- B. Background Information
- C. Traffic Report
- D. Memo from Traffic Review Engineer
- E. Surface Drainage and Runoff Information
- F. Development Review Coordinator Comments
- G. Lighting
- H. National Heritage Program Comments
- I. Signage
- J. Financial and Technical Information
- K. Updated Information

PORTLAND

INTERNATIONAL JETPORT

Airport Master Plan
Summary Brochure



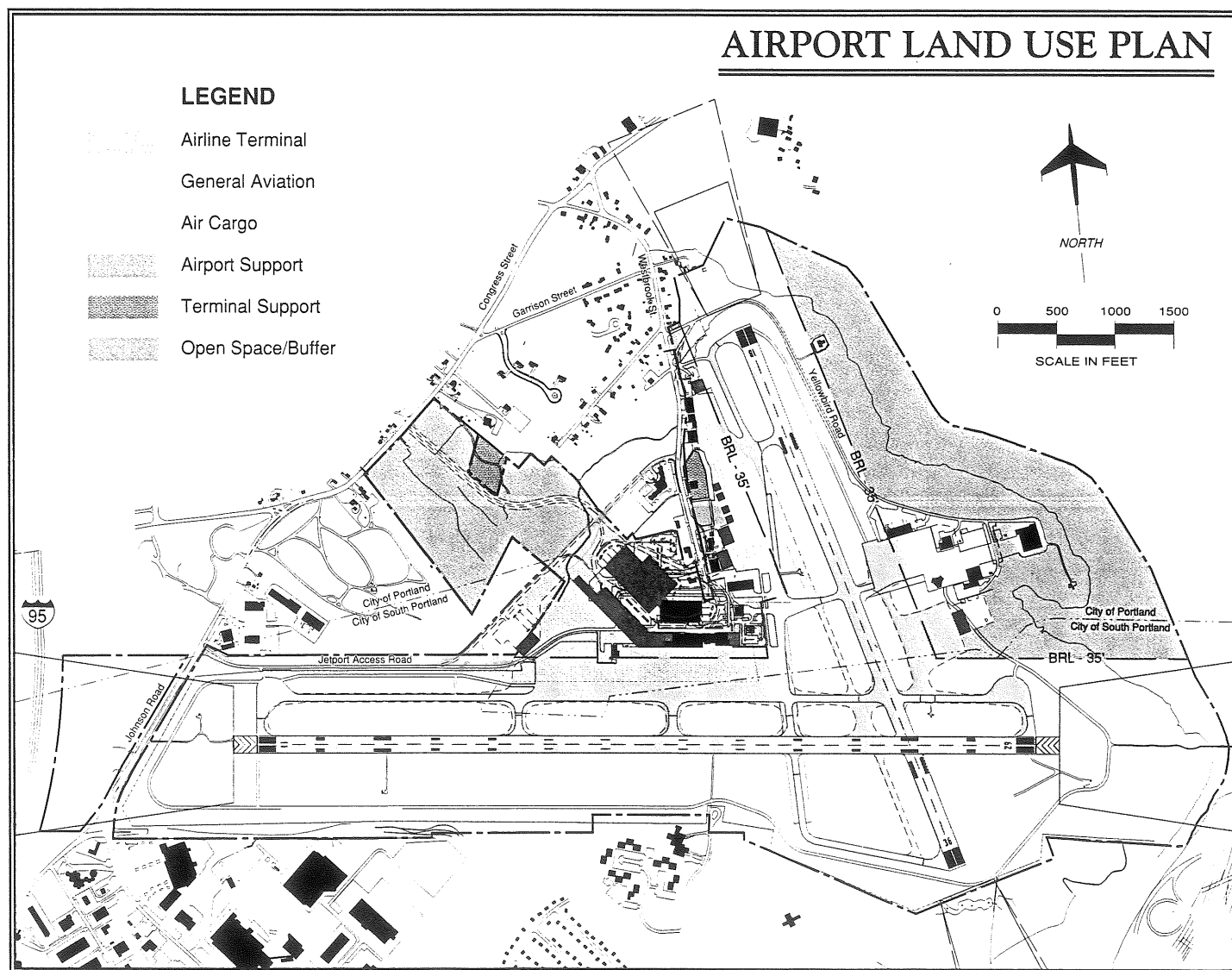
BACKGROUND

The Portland International Jetport Master Plan was undertaken by the City of Portland to outline a long-range orderly direction for airport development which will yield a safe, efficient, economical, and environmentally acceptable air transportation facility. The study was financed jointly by the Federal Aviation Administration (FAA), the Maine Department of Transportation (MDOT), and revenue from passenger facility charges (PFC's) at the Jetport. Technical work was conducted by Coffman Associates Inc. of Kansas City and Dufresne-Henry, Inc. of Portland.

An important part of the planning process was the direct involvement of airport users, local planning officials, and local citizens through a Planning

Advisory Committee. The committee met periodically during the study to review findings and recommendations. This information was made available to the general public at a series of public information workshops held throughout the process.

Portland International Jetport (PWM) is classified as a Primary Commercial Service airport by the FAA in its National Plan of Integrated Airport Systems (NPIAS). The airport is further classified as a small hub airport because it enplanes between 0.05 and 0.24 percent of the airline passengers in the United States. Nine scheduled major and commuter airlines serve PWM on a regular basis with over 55 daily flights. In 1993, the airlines enplaned or boarded over 595,000 passengers.



PWM is also utilized by general aviation aircraft. There are over 45 general aviation aircraft based at the airport with two fixed based operators. Takeoffs and landings by all aircraft totalled over 125,000 in 1993.

Portland International Jetport features a 6,800 foot long, 150 foot wide primary runway (11-29). Also available is a crosswind runway (18-36) that is 5,001 feet long and 150 feet wide. Landings and takeoffs are controlled by the air traffic control tower (ATCT) and the terminal radar approach control facility (TRACON) located on the airport.



AIRPORT DEVELOPMENT PLANS

The proper planning of a facility of any type must consider the demand that may occur in the future. For Portland International Jetport, this involved reviewing and updating forecasts to identify the potential future aviation demand. Because of the cyclical nature of the economy, it is virtually impossible to predict with certainty year-to-year fluctuations in activity when looking twenty years into the future.

Recognizing this, it was the intent of the City of Portland to develop a Master Plan that is demand-based rather than time-based. As a result, reasonable levels of activity potential derived from this forecasting effort are related to planning horizon levels rather than dates in time. These planning horizons were established as levels of activity that will call for consideration of the implementation of the next step in the master plan program.

The Master Plan determined that the existing airfield layout has sufficient capacity for the long range planning horizon, so no major runway development will be necessary. There are provisions for some taxiway improvements and improving the all-weather instrument approach to Runway 11.

Potential growth in airline passenger traffic could eventually create a need for additional airline ter-

minal facilities. The airport has recently been constructing additional gates to more adequately serve current needs. More long range plans include space for additional gates to the northwest. The terminal loop road will be reconfigured in stages to allow for better traffic circulation and additional parking when needed.

This will be incorporated with a new airport access road from Congress Street. The development of this new access road will permit the Westbrook Street access through the historic Stroudwater community, to be closed to airport traffic. The access road from Johnson Road will also remain and be tied into the reconfigured airport road system.

Overnight package delivery service has made air cargo the most dynamic sector of the aviation industry in recent years. Facilities for the all-cargo carriers will now be consolidated on the east side of the airport. The processing of freight and mail carried by the passenger airlines is planned to be consolidated in a facility convenient to the passenger terminal apron.

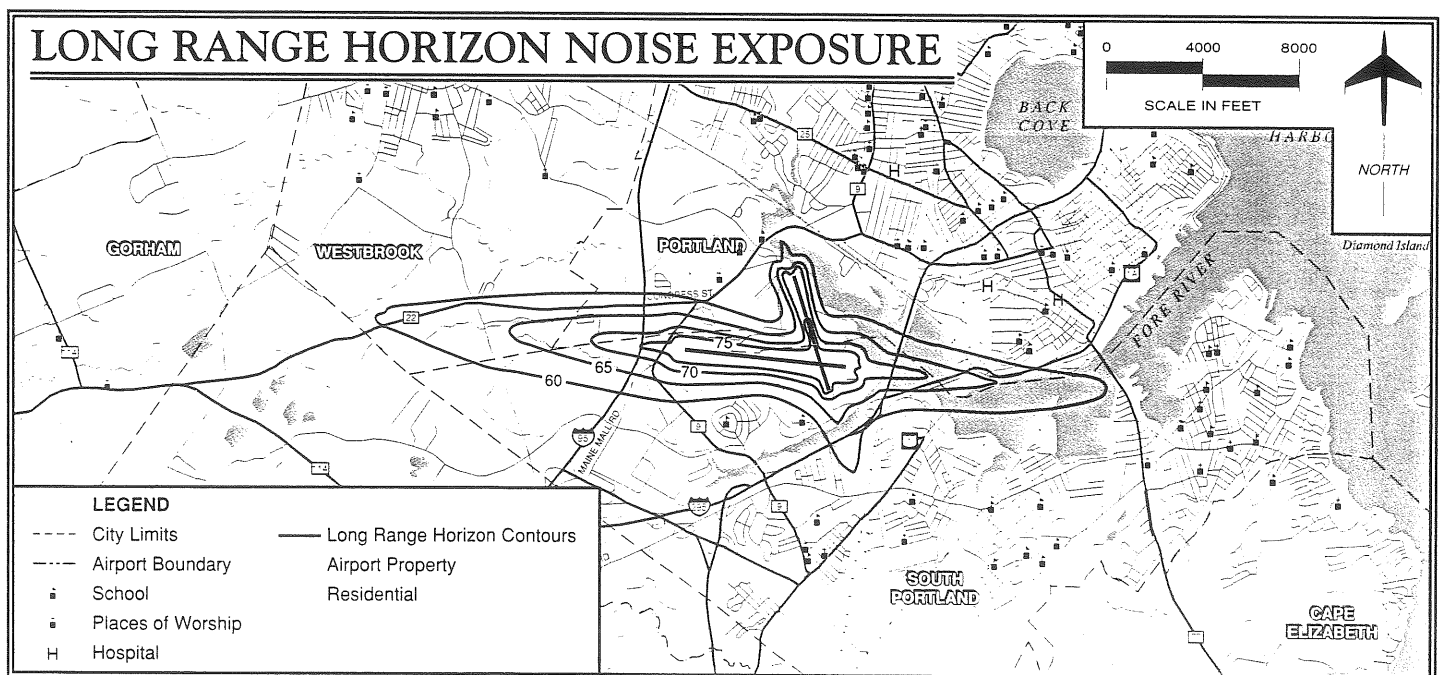
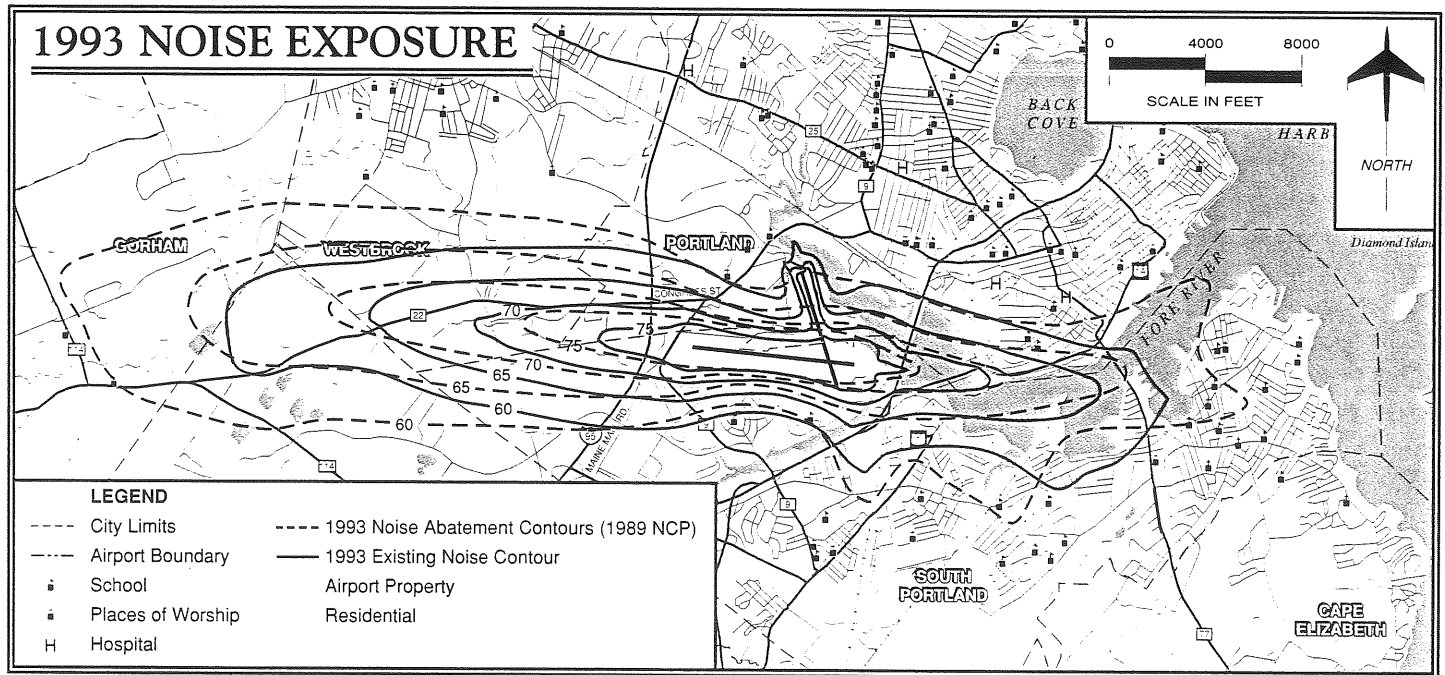
General aviation remains an important part of the airport's activity. Some reconfiguration of the general aviation facilities on the west side of the crosswind runway will provide room for future needs.

AIRPORT NOISE ENVIRONMENT

Aircraft noise has historically been a concern around Portland International Jetport. A Federal Aviation Regulation Part 150 Noise Compatibility Study for PWM was completed in 1989. An update of the noise exposure contours from this study was prepared in conjunction with the Master Plan.

The 1993 predicted noise exposure from the Part 150 study are compared to the actual 1993 con-

tours on the accompanying exhibit. Federal guidelines indicate that residential uses are incompatible with noise above 65 DNL. In 1987, there were an estimated 5,727 persons living inside the 65 DNL noise exposure contours around the airport. The noise abatement recommendations from the Part 150 study were anticipated to reduce this total to 573 by 1993. Based upon the actual aircraft activity in 1993, there are now just 389 persons inside the 65 DNL.



ESTIMATED POPULATION WITHIN NOISE CONTOURS			
Noise Contours	ESTIMATED POPULATION		
	65-70 DNL	70+ DNL	Total
1993 Part 150 NCP Predictions	427	146	573
1993 Existing Conditions	325	64	389
Long-Range Horizon	57	0	57

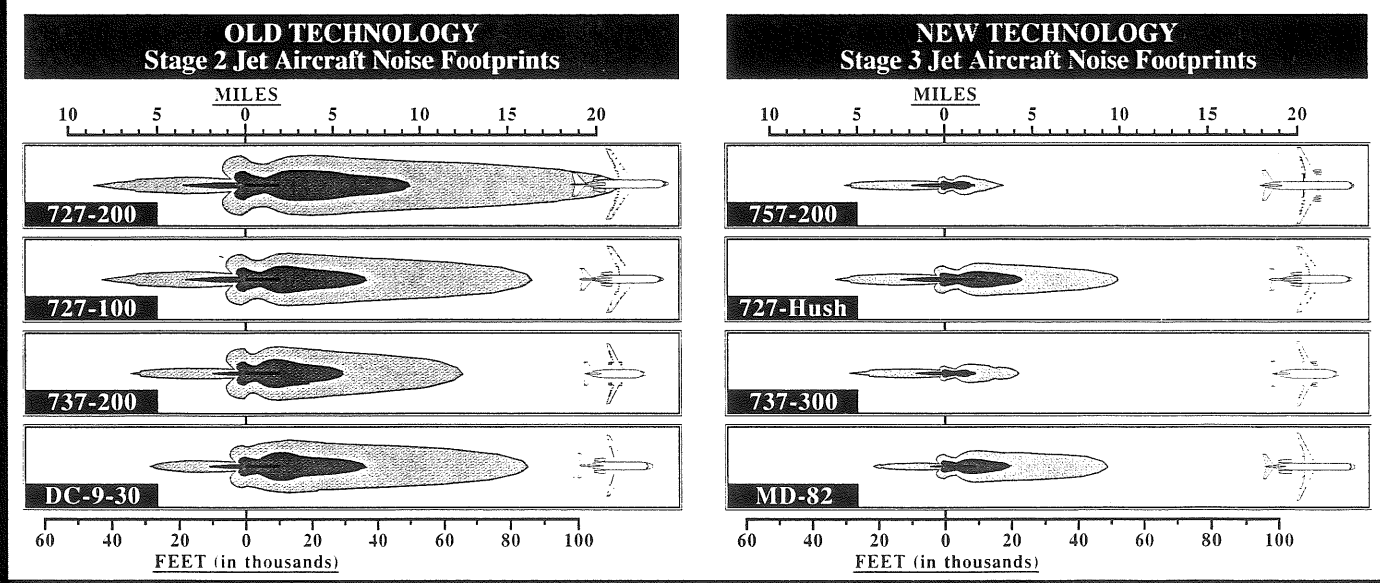
Part of the reason for the additional decline in noise exposure is the fact that Portland is experiencing a growth in the percentage of quieter, high technology Stage 3 commercial jet aircraft. Stage 3 aircraft made up approximately 30 percent of the commercial jet operations in 1993. This compares to just nine percent in 1987 and 19 percent Stage 3 predicted for 1993 by the Part 150 Study.

The Airport Noise and Capacity Act of 1990 established a schedule for phase-out of the noisier Stage 2 jet aircraft used by the airlines. This law requires

Stage 2 aircraft to be phased-out of the airline fleet by the year 2000. As of the end of 1994, the percentage of Stage 3 operations at PWM had risen to nearly 60 percent.

In the future, the areas around the Jetport can expect aircraft noise exposure to continue to decrease over the next five years as the transition to Stage 3 continues. As indicated on the table, there would be only 57 persons residing within the 65 DNL contour when the long range horizon activity level is reached.

CONVERSION TO QUIETER AIRCRAFT



The U.S. Congress has required that older, louder jets, referred to as Stage 2 aircraft, must be refitted with quieter engines or retired from airline fleets. These aircraft are being replaced by much quieter Stage 3 jets. The conversion must be completed by the year 2000, although limited waivers are potentially allowable until 2004.

This chart compares Stage 2 aircraft with their Stage 3 counterparts. The contours represent sound exposure levels of 80 dB (outer contour) and 90 dB (inner contour) for one arrival and one departure. The Boeing 757-200, shown in the top right panel of the chart, is much quieter than the older Boeing 727-200 to the left which it often replaces. The same holds true for each of the other three pairs of aircraft.

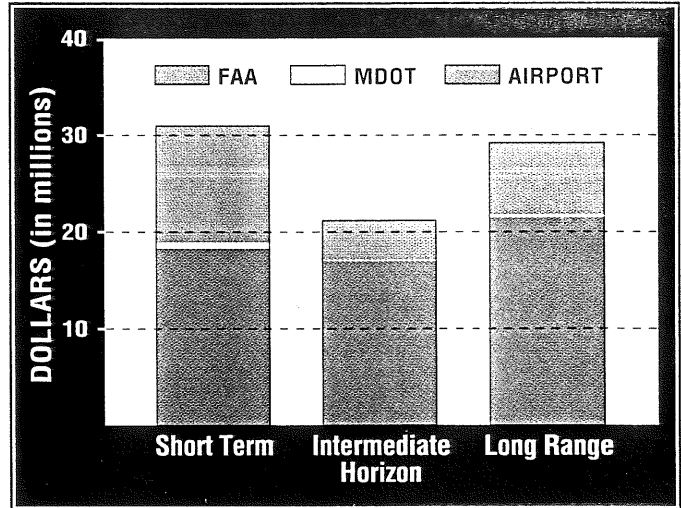
The planned conversion from Stage 2 to Stage 3 aircraft is the main reason the noise contours at PWM are expected to shrink over the next several years despite projected increases in traffic.

DEVELOPMENT FUNDING

The full implementation of the Master Plan will take a financial commitment of over \$81 million dollars. Approximately 30 percent could come from grants-in-aid administered by the Federal Aviation Administration and the Maine Department of Transportation. The other key sources will be passenger facility charges (PFC's) and airport rents and fees. Regardless, all sources for funding will be the aviation community and the aviation user through airport and aviation fees and leases. No local taxes will be used.

Portland International Jetport is a proven asset to the economic development of Portland and Southern Maine. The plan provides a blueprint for development to meet the challenges of the future and ensure the airport remains a viable, safe, and productive facility.

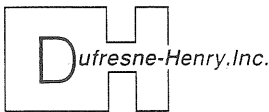
The plan is not intended to happen overnight. Rather, it will require long-term community dedication, coordination, and cooperation over many years. The result will be an airport that continues to not only be an economic asset, but a source of great community pride.



DEVELOPMENT FUNDING SUMMARY (1994 Million \$)				
	TOTAL	FAA	MDOT	AIRPORT
Short Term	\$31.0	\$12.0	\$0.7	\$18.3
Intermediate Horizon	\$21.2	\$4.0	\$0.2	\$17.0
Long Range	\$29.2	\$7.3	\$0.4	\$21.5
TOTAL	\$81.4	\$23.3	\$1.3	\$56.8

For further information, please contact:

Portland International Jetport
 (207) 773-8462
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**Traffic Impact Study
Portland Jetport Expansion
Portland, Maine**

Prepared for

**City of Portland
Department of Public Works
Portland, Maine**

Prepared by

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(207) 775-1121**

March 1996



Peter A. Hedrich

TRAFFIC IMPACT STUDY

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Appendix A

Turning Movement Diagrams
 Ultimate Airport Layout Plan
 Conceptual Design for New Interchange

Appendix B

Capacity Analyses

Appendix C

Raw Data

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 the City of Portland to conduct a traffic impact study for their current and future expansion of the Jetport in Portland, Maine. The Jetport is located adjacent to Johnson Road and Congress Street as shown on the location map, Figure A, following this page. The project currently under construction consists of adding two new gates, parking facilities and renovation of the passenger drop-off/pickup area. This study is being done as a condition of the MeDEP permit for the project and also to address future expansion of the Jetport.

The purpose of this study is to evaluate the impact of the current project on the existing system, anticipating a completion date in 1996. The study also evaluates impacts of future expansion to accommodate 200,000 additional enplanements by the year 2000 which is approximately a 34% increase in traffic.

The following is a summary of the major findings of the traffic study:

1. It is estimated the proposed project will generate additional traffic for the year 2000 build condition as follows:

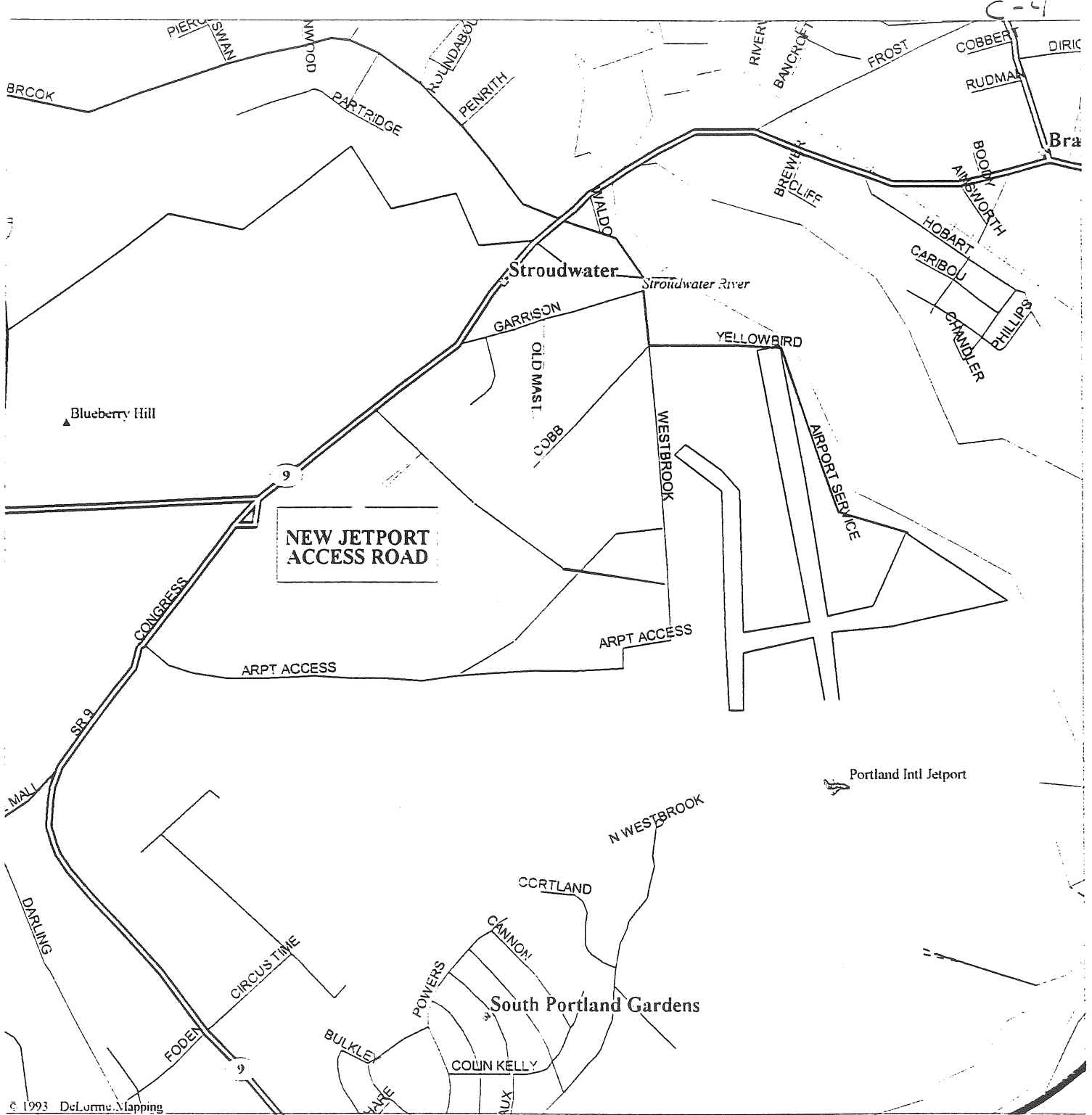
	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>
A.M. Peak Hour	138	98	236
P. M. Peak Hour	137	168	305

2. The analysis assumes the following improvements will be in place beginning with the 1996 Condition:
 - New Jetport Access Road
 - New Turnpike Interchange
 - Johnson Road Widening
3. The analysis shows that the following improvements will be required in addition to those listed in Item 2 above:

1996 Build Condition

Required due to Jetport traffic:

- Add a southbound left turn lane and traffic signal on Congress Street at the new Jetport Access Road.



© 1993 DeLorme Mapping

- LEGEND**
- State Route
 - Airfield
 - Population Center
 - Street Road
 - Major Street Road
 - Interstate Highway
 - State Route
 - Railroad
 - River

- Intermittent River
- Airfield
- Open Water

Scale 1:14,063 (at center)

1000 feet

500 Meters

LOCATION MAP
 Mag 15.00
 Tue Dec 12 16:09:33 1995

Required due to new Turnpike Interchange:

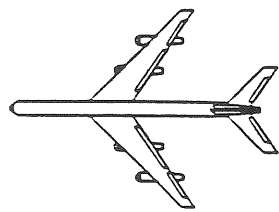
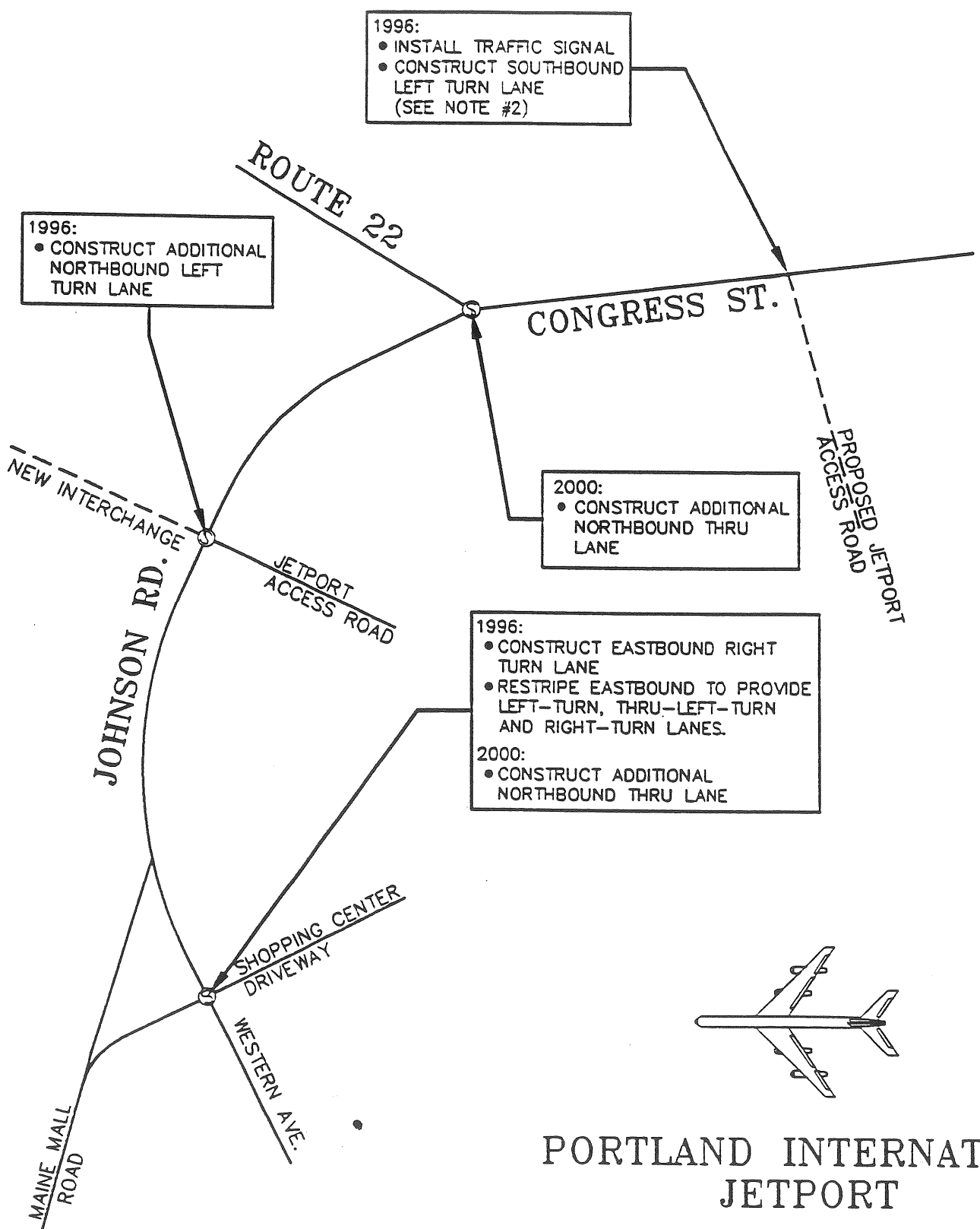
- Add eastbound right turn lane on Maine Mall Road at Western Avenue and stripe to provide left turn, left-thru, and right turn lanes.
- Provide a dual left turn from Johnson Road onto the Turnpike Connector to new interchange.

2000 No-Build Condition

Required due to growth of existing traffic volumes or other development traffic:

- Add northbound thru lane on Johnson Road at Congress Street. This is not needed if the UNUM expansion occurs, since UNUM's new driveway location would reduce the traffic load at this intersection.
- Add northbound thru lane on Western Avenue at Maine Mall Road.

Based on this analysis, the only improvements which are the responsibility of the Jetport are those on Congress Street at the new Jetport Access Road. The recommended traffic improvements are shown on the diagram following this page.



PORTLAND INTERNATIONAL JETPORT

1. IMPROVEMENTS REQUIRED TO ACHIEVE ACCEPTABLE TRAFFIC OPERATIONS (LOS "D" OR BETTER) WITHIN THE STUDY AREA
2. THE ONLY IMPROVEMENTS NECESSITATED AS A DIRECT RESULT OF JETPORT TRAFFIC ARE THOSE ON CONGRESS ST. AT THE NEW JETPORT ACCESS RD.

RECOMMENDED TRAFFIC IMPROVEMENTS



Designed	PAM	Date	JAN 1996
Drawn	FAP	Scale	NTS
Checked	PAM	Job No.	1018

FIGURE
B

I. EXISTING CONDITIONS

Site:

Upon completion of the construction project currently underway, the Jetport will have 6 passenger gates with associated loading/unloading and parking facilities. The Jetport can be accessed via a two-lane roadway from Johnson Road or a two-lane roadway, Westbrook Street, through a residential area to Congress Street.

Adjacent Roads:

This study assumes that several planned improvements will be in place beginning with the 1996 base condition analysis. These improvements are described as follows:

New Access Road: The Jetport access via Westbrook Street will be terminated north of Yellowbird Road. A new roadway would be constructed from the vicinity of Hilton Hotel to Congress Street midway between Garrison Street and Johnson Road. A copy of the ultimate Airport Layout Plan is included in Appendix A. This work will be performed by the Jetport.

New Turnpike Interchange: A new Maine Turnpike Interchange is proposed to be constructed in the vicinity of the Jetport as shown on the Concept Plan contained in Appendix A. A connector road will loop from outer Congress Street to Johnson Road and line up with the existing Jetport access road. A full access intersection with the Turnpike is proposed. This work will be performed by the Maine Turnpike Authority.

Johnson Road: The volume of traffic associated with the new interchange will require improvements to Johnson Road. The MDOT proposes to widen Johnson Road to five lanes at the intersection of the Jetport and Turnpike access roads. This will provide two northbound and southbound through/right-turn lanes plus a left-turn lane in each direction.

Traffic:

Base condition traffic volumes were determined as follows:

- Turning movement counts were performed in May 1995 at the following locations:
 1. Jetport Access Road and Johnson Road
 2. Westbrook Street and Congress Street
 3. Maine Mall Road and Western Avenue
 4. Congress Street and Johnson Road
 5. Congress Street and Waldo Street
- These peak hour volumes were balanced and adjusted using the weekly group mean factor to approximate the 30th highest hour of the year.
- Jetport traffic was redistributed based on new site circulation, a population gravity model and discussions with T. Y. Lin who did the interchange study.

- New traffic oriented to the new interchange was distributed on the system in proportion to existing turning movement volumes.
- Addition of traffic from permitted unbuilt development (MeDEP has advised that the analysis be done for both conditions of the UNUM expansion being built and not being built). This does not apply to the 1996 base condition since the Jetport permit has standing before the UNUM permit.
- Addition of traffic from the National Semi Conductor expansion does not apply to the 1996 base condition since the Jetport permit has standing. However, these volumes were added to the year 2000 no-build condition.

These adjustments and additions resulted in the base volumes depicted on Figure 2, which is included in Appendix A. The following table summarizes Jetport traffic volumes:

Location	Daily	Peak Hour of Jetport		Peak Hour of Adj. Street Traffic	
		AM	PM	AM	PM
1. Westbrook Street	3,834	223	280	172	240
2. Access Road	5,929	393	521	263	327
TOTAL	9,763	616	801	435	567

II. TRIP GENERATION

Peak hour counts performed in May 1995 provide the basis for trip generation at the Jetport with peak hour trip generation assumed to be proportional to enplanements at the Jetport. Therefore, the ratio of projected increases in enplanements to existing enplanements will provide a factor for the peak hour volumes to determine new trip generation. The Jetport Master Plan provides data on the distribution of enplanements at the Jetport on a monthly basis. This can be used to adjust the Jetport traffic count to the peak summer condition and to determine trip generation as follows:

- Total enplanements for the day which peak hour counts were taken was 1,447 enplanements.
- May enplanements at the Jetport represent 7.5% of the yearly total and July enplanements represent 11.6% of the yearly total.
- The 1995 peak hour counts for Jetport traffic are adjusted upward to the July average condition by the following factor:

$$11.6\%/7.5\% = 1.546$$

- Annual enplanements at the Jetport are expected to increase by a maximum of 200,000 enplanements by the design year of 2000. Therefore the trip generation factor to be applied to Jetport peak hour traffic was determined as follows:

$$\text{Factor} = \frac{\text{Increase in enplanements}}{\text{Existing enplanements}}$$

$$\text{Factor} = \frac{200,000}{595,648}$$

$$\text{Factor} = 0.336$$

III. TRIP DISTRIBUTION AND ASSIGNMENT

Existing Trip Redistribution:

Directional split at the Jetport driveways was determined by considering existing split, market area population, the proposed Maine Turnpike interchange, and the new Jetport access road. The market area included the major cities as far north as Augusta and Bath and south as far as Kittery, Maine (see Table 2). Portland and the surrounding communities of South Portland, Scarborough and Cape Elizabeth make up of 30% of the population. In addition to the population base, these four communities are assumed to generate a large portion of the business oriented traffic at the airport. Therefore, these four communities were assigned a 50% share of all Jetport traffic. Traffic oriented to the four communities of Scarborough, Cape Elizabeth, South Portland, and Portland is assumed to primarily use local access roads such as Congress Street and Western Avenue with the remaining communities expected to use the new turnpike exit or connector to outer Congress Street. Therefore, DeLuca-Hoffman Associates, Inc. assigned 50% of the existing Jetport traffic to the new interchange connector road. Based upon population and business community split between the four local communities, DeLuca-Hoffman Associates, Inc. assumed that half of the local trips will be oriented to Portland and the remaining half to the three other communities. Therefore, half of the traffic oriented to local roads was assigned to the new access road right turn movement onto Congress Street and the other half was assigned to the existing access road to turn left onto Western Avenue.

TABLE 2 SERVICE AREA POPULATIONS		
MAJOR CITIES/TOWNS		
CITIES/TOWNS	POPULATION	PERCENT
Auburn	24,309	8.8
Augusta	21,325	7.6
Bath	9,799	3.5
Berwick	5,995	2.1
Biddeford	20,710	7.5
Brunswick	20,906	7.5
Freeport	6,905	2.5
Gardiner	6,746	2.4
Kennebunk	8,004	2.9
Kennebunk Port	3,356	1.2
Kittery	9,372	3.4
Lewiston	39,757	14.3
Lisbon	9,457	3.4
North Berwick	3,793	1.4
North Windham	1,302	0.5
Ogunquit	974	0.4
Old Orchard Beach	7,789	2.8
Saco	15,181	5.5
Sanford	20,463	7.4
Wells	7,778	2.8
Westbrook	16,121	5.8
Yarmouth	7,862	2.8
York	9,818	3.5
Total	277,722	100
PORTLAND & SURROUNDING COMMUNITIES		
CITIES/TOWNS	POPULATION	PERCENT
Portland	64,358	59.1
South Portland	23,163	21.3
Scarborough	12,518	11.5
Cape Elizabeth	8,854	8.1
Total	108,893	100

This trip assignment was then modified after consultation with T.Y. Lin to take into account the distribution contained in the interchange study which was based on the TRIPS Program. The TRIPS model was based on a local road network in contrast to the area wide population model. Therefore, the difference in distribution between the two methods was averaged to obtain the existing trip reassignment and then factored by the enplanement peaking factor of 1.546 to obtain existing trip reassignment shown in Figure 2.

New Trip Assignment:

New trip assignment was determined by applying the trip generation factor of 0.336 to the existing volumes shown in Figure 2. The resultant trip generation for the 200,000 additional enplanements is shown in Figure 7.

IV. STUDY AREA

The study area was determined from Figure 7 in accordance with MeDEP criteria as follows:

"The Board may trace traffic attributable to the proposed development in each direction from the development entrance or entrances to, but no farther than:

- 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 this criteria, the required study area includes the following intersections and links defined by them:

- Maine Mall Road at Johnson Road
- Johnson Road at Jetport Access Road/New Turnpike Connector
- Johnson Road at Congress Street
- Congress Street at New Jetport Access Road
- Congress Street at Stroudwater/Westbrook Streets

V. CAPACITY ANALYSES

Level of service analyses were performed at the study area intersections for the following conditions:

TABLE 3 ANALYSIS CONDITIONS	
Design Hour	Traffic Included
1996 Base Condition	<ul style="list-style-type: none"> • Existing traffic adjusted by WGMF and growthed by 1 year. • Jetport traffic growthed by 4.7% • Traffic from approved unbuilt development. (See Figure 3)
2000 No-Build	<ul style="list-style-type: none"> • 1996 base growthed by 3% annually. • National Semi Conductor, Borders Book Store, Shop 'N Save Expansion.
2000 No-Build Plus UNUM	<ul style="list-style-type: none"> • 2000 no-build plus UNUM expansion.
2000 Build	<ul style="list-style-type: none"> • 2000 no-build plus Jetport expansion.
2000 Build Plus UNUM	<ul style="list-style-type: none"> • 2000 build plus UNUM expansion.

The capacity analyses were done based on procedures in the 1994 Highway Capacity Manual using the SIGNAL 94 program for signalized intersections and highway capacity software for unsignalized intersections (See Appendix B). Criteria used to evaluate levels of service for this methodology are as follows:

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 4 and 5 summarize the relationship between delay and level of service at both signalized and 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	Stopped Delay per Vehicle (sec)
A	Up to 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

Summary of Results - Signalized Intersections

The mitigation required as a result of the analyses of the intersections within the study area are tabulated below. Computer printouts of the levels of service analyses are provided in Appendix B.

TABLE 6 CAPACITY ANALYSES RESULTS					
Location	IMPROVEMENTS* REQUIRED TO ACHIEVE P.M. PEAK HOUR LEVEL OF SERVICE "D" OR BETTER				
	1996 Build (Fig. 4)	2000 No-Build		2000 Build.	
		Without UNUM (Fig. 6)	With UNUM (Fig. 6)	Without UNUM (Fig. 8)	With UNUM (Fig. 8)
Maine Mall Road at Johnson Road	Add EB Right Turn Lane - Stripe for Left, Left-Thru and Right Turn Lanes	Add NB thru lane.	No additional required.	No additional required.	No additional required.
Johnson Road at Jetport Access Road/Turnpike Connector	None. However, 500 NB left turns should have dual lanes with receiving lanes on the connector for best operation.	None. Assumes NB left turn lane added in 1996 condition.	No additional required.	No additional required.	No additional required.
Johnson Road At Congress Street	None	Add NB thru lane.	Additional NB thru lane is not needed.	Same as No-Build without UNUM	Same as No-Build with UNUM.
Congress Street at Westbrook/Stroudwater Street	None	None	None	None	None
Congress Street at New Jetport Access Road/New UNUM Driveway	<ul style="list-style-type: none"> • Signalize intersection. • Access road to have separate left and right turn exit lanes. • Capacity analysis shows that southbound Congress works with the two existing lanes. However, addition of a southbound left turn lane is recommended for efficiency/safety. 	None. Assumes southbound left turn lane added in 1996 condition.	Northbound left turn lane to be added by UNUM.	No additional required.	No additional required.

* Assuming other improvements are constructed as described in Section I "Adjacent Roads."

VI. Sight Lines

The Maine Department of Transportation publication "Access Management, Improving the Efficiency of Maine Arterials" provides recommended sight distances based on driveway classifications. The classifications are as follows:

Low Volume Driveways: Driveways with a traffic volume of less than 500 vehicle trips per day, or 50 or less vehicle trips per peak hour.

Medium Volume Driveways: Driveways with a traffic volume of 500 to less than 1500 vehicle trips per day or 50 to less than 150 vehicle trips per peak hour.

High Volume Driveways: Driveways with a traffic volume of 1500 or more vehicle trips per day or 150 or more vehicle trips per peak hour.

The new Jetport access is expected to meet the criteria for a high volume driveway. The guidelines set forth by MDOT for sight distance criteria from a high volume driveway are identical to AASHTO curve B-2b from Figure IX-40 "Intersection sight distance at at-grade intersection". These requirements are shown below:

MDOT Standards for Sight Distance from a High Volume Driveway	
Speed (mph)	Desirable Sight Distance (ft)
25	300
30	380
35	480
40	580
45	710
50	840
55	990

DeLuca-Hoffman Associates, Inc. has evaluated the available sight lines at the proposed access road in accordance with MDOT standards.

The MDOT standards are as follows:

Driveway observation point:	10 ft. off major street travelway
Height of eye at driveway:	3.5 ft. above ground
Height of approaching vehicle:	4.25 ft. above road surface

The speed limit on Congress Street is 40 mph but the 85th percentile travel speed appears to be close to 45 mph. Therefore, the desirable sight distance at the new access road is 580 feet based on the speed limit and 710 feet based on the 85th percentile travel speed. The results of the sight line analysis along Congress Street are as follows:

Direction	Speed Limit		Travel Speed		Actual Sight Line
	Posted Speed	Required Sight Line	85th Percentile Speed	Required Sight Line	
Looking South	40 mph	580'	45 mph	710'	>800'
Looking North	40 mph	580'	45 mph	710'	565'

The previous table shows that sight distances at the driveway are well within MDOT standards to the south but are below recommended minimums for a high volume driveway looking north. However, since a traffic signal is proposed and traffic turning left from the new Jetport access road should be minimal and meets the standard for a medium volume driveway, the sight line becomes less of a concern. Furthermore, at times when the signal is on flash, traffic volumes will be very low (sight line for a medium volume driveway is 400' for 40 mph and 450' for 45 mph).

VII. 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 1991 to 1993.

In order to evaluate whether a location has an accident problem, MDOT uses the following criteria to define High Accident Locations (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 Congress Street from Waldo Street to Johnson Road and for Johnson Road. This data indicates that there are two high accident locations within the proposed study area as follows:

Location	Number of Accidents	CRF
Congress Street at Waldo Street	25	1.67
Johnson Road at Maine Mall Road	37	1.17

Both of these locations have or will be addressed. The Johnson Road at Maine Mall Road intersection was recently reconstructed which will presumably mitigate the accident problem. Since this work was recently completed, the effect will not be known for several years. The Waldo Street intersection will experience a dramatic decrease in turning movements once the new Jetport access road is constructed. The dramatic reduction in turning movements should improve the safety of the intersection.

VIII. CONCLUSION

DeLuca-Hoffman Associates, Inc. has examined the impact of traffic associated with the Jetport expansion and construction of a new access road to the airport. The primary impact of the expansion will be at the intersection of the new access road with Congress Street. To adequately accommodate projected traffic volumes, this new intersection should incorporate the following:

- Traffic control signal.
- Addition of a southbound left turn lane.
- Separate left and right-turn lanes exiting the new access road.

Also, the analysis shows that for the year 2000 without either the Jetport or UNUM expansion, the following improvements are required:

- An additional northbound through lane on Johnson Road at Congress Street.
- An additional through lane on Western Avenue at Maine Mall Road.

The 1996 build analysis also shows that there will be system deficiencies as a result of the new interchange, which are not addressed by that project as indicated below:

- Add eastbound right turn lane on Maine Mall Road at Western Avenue and stripe to provide left turn, left thru and right turn lanes.
- Provide a dual left turn lane from Johnson Road onto the Turnpike Connector to new interchange.

Therefore, the only required improvements which can be directly attributed to the Jetport expansion are those at the proposed new intersection with Congress Street.

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The 1996 build analysis also shows that there will be system deficiencies as a result of the new interchange, which are not addressed by that project as indicated below:

- Add eastbound right turn lane on Maine Mall Road at Western Avenue and stripe to provide left turn, left thru and right turn lanes.
- Provide a dual left turn lane from Johnson Road onto the Turnpike Connector to new interchange.

Therefore, the only required improvements which can be directly attributed to the Jetport expansion are those at the proposed new intersection with Congress Street.

TYLININTERNATIONAL

To: Bill Bray
From: Tom Errico
Date: October 15, 1996
Subject: Portland International Jetport Expansion
Copy: Richard Knowland

MEMORANDUM

In response to the updated Portland International Jetport Access Roads Design Plans prepared by DeLuca Hoffman Associates submitted on October 8, 1996, I have the following comments.

- Previous information indicated the New Access Road/Relocated Access Road intersection will be four-way stop sign controlled. The current plans depict stop signs and stop lines on only two approaches. In addition, no cross-walks are provided at this intersection.
- Pedestrian activity between the terminal building and parking lots is significant. It is unclear what route pedestrians who originate from the terminal building and are destined to the parking lot southwest of the New Access Road will utilize. It appears crosswalks across the New Access Road supplemented with signs will be required.

For the section southwest of the intersection with the new access road, the sidewalk is on the southeast side in order to minimize wetland impacts and to keep sideslopes from the road and sidewalk construction on City property.

5. **Parking Lots:**

For the large long-term parking lot, we propose to stripe an 8' wide pedestrian walk down the center of the lot. This will be connected to a new sidewalk on the south side of the lot which will be connected to the existing sidewalk on the east side of the lot. For the employee lot, we propose to stripe an 8' wide pedestrian walk that will be connected to the existing sidewalk on the east side of the lot.

6. **Crosswalks:**

Crosswalks will be remarked with thermoplastic markings as shown on the plan. In addition, the first crosswalk at the west end of the terminal will be a raised crosswalk. If necessary, a second raised crosswalk will be constructed as shown on the plan to discourage speeders.

Signage at crosswalks and other appropriate places will be coordinated and approved by the City of Portland.

**CITY OF PORTLAND, MAINE
MEMORANDUM**

TO: Chair Carroll and Members of the Planning Board

FROM: Richard Knowland, Senior Planner

DATE: March 10, 1998

SUBJECT: Portland Jetport Site Plan

At Tuesday's workshop, the city of Portland will provide additional information on the pedestrian circulation plan proposed at the Jetport. Consideration of the Jetport application was tabled at the February 10th public hearing and at the February 24th workshop. Primary concerns focused on the adequacy of (1) pedestrian walkways and (2) a proposal to ban truck traffic on the Embassy Suites section of the new access road. Please review the February 10th packet.

The Jetport recently held a meeting with the Stroudwater neighborhood to update them on future expansion plans, the new access roadways and the pedestrian circulation plan.

Pedestrian Circulation Plan

A revised pedestrian circulation has been submitted. See Attachment A for a narrative of the revised plan. Attachment B includes a site plan showing existing and proposed sidewalks.

The narrative under section #1 indicates that a sidewalk on the westerly side of Westbrook Street between Avis car rental and the loop road will not be built. We believe it is premature to rule out a sidewalk in this area. When the parking garage is expanded, this "gap" in the sidewalk system should be reviewed again. Also, the Jetport proposes to extend the sidewalk on the westerly side of Westbrook Street within three years. The Board may want to impose a specific deadline for this to be accomplished.

Along the northerly loop road, a sidewalk is shown on the site plan. It is intended to be a 5-foot wide area adjacent to the roadway that will be striped. It would be desirable to have the sidewalk offset in some way to better define the walkway since curbing is not proposed.

Ban on Trucks using Embassy Suites end of Access Road

At the public hearing, a representative of the Jetport indicated that truck traffic would be prohibited on the Embassy Suites segment of the new access road. Therefore, trucks would need to use the loop road and pass by the terminal, if they were headed to Westbrook Street. In the previous application, the access road was supposed to function as a bypass route for airport-related businesses along Westbrook Street and Yellow Bird Road.

At the request of the Board, Larry Ash, City Traffic Engineer, has reviewed this issue. Mr. Ash recommends that truck traffic not be directed to the terminal loop road because of pedestrian safety concerns. The

Embassy Suites section of the access road should not exclude truck traffic. He also indicates that the northerly loop road should remain one-way to simplify vehicular/pedestrian movements. A memo from Mr. Ash is shown as Attachment C.

A letter has also been submitted by DeLuca Hoffman addressing this issue (See Attachment D). Their conclusions are similar to Mr. Ash's comments.

Attachments:

- A. Pedestrian Study/Sidewalk Plan
- B. Sidewalk/Pedestrian Site Plan
- C. Memo from City Traffic Engineer
- D. Truck Traffic (Embassy Suites) - DeLuca Hoffman Letter

PEDESTRIAN STUDY/SIDEWALK PLAN

As a result of the February 10, 1998 Planning Board meeting and a February 17, 1998 meeting with Alex Jaegerman, Rick Knowland and Larry Ash from the City of Portland, DeLuca-Hoffman Associates, Inc. proposes the following Plan:

A. SIDEWALKS

1. Westbrook Street:

Currently a sidewalk exists on the east side of Westbrook Street from the loop road to Hertz Rent-a-Car. At that point, on the opposite side of Westbrook Street the sidewalk to Embassy Suites begins. For the near term we propose to use this sidewalk system for pedestrians on Westbrook Street.

For the intermediate term, within 3 years, we propose a sidewalk on the west side of Westbrook Street to the Avis property. At that point, we propose a crosswalk to the N.E. Airmotive Sidewalk. A sidewalk on the west side of Westbrook Street cannot be continued to the corner of Westbrook Street and the loop road for there are large concrete vaults and encased utilities in a raised grass area at the corner. To relocate these utilities would be a major expense. Also, as shown on the plan, there is a future parking garage expansion that will cut off the loop road which would also interfere with a sidewalk system.

For the long term, once the parking garage expansion is designed, a sidewalk will connect to the east side Westbrook Street sidewalk.

2. Loop Road:

On the north side of the loop road we proposed to pave a 5' wide area adjacent to the north side of the road that could be used for a walkway. This area will be striped and signed to discourage cars from parking.

3. New Access Road:

At the intersection of the new access road and the loop road, we propose to shift the proposed sidewalk (200 l.f.) from the south side to the north side. The shift will enhance continuity and be more functional. This sidewalk will continue on this side of the road to Congress Street.

4. Relocated Access Road:

For the section northeast of the intersection with the new access road, the sidewalk is on the opposite side as Embassy Suites. It is located here for this side of the road has the future potential development. The City owns most of the land on the opposite side of the road and a future garage expansion and new ring road are planned. Once constructed this would interfere with a sidewalk. To construct a sidewalk on this side of the road at this time would also involve additional wetland impacts which would require a modification of our permits from the Army Corps of Engineers and Maine DEP.

**PORTLAND INTERNATIONAL JETPORT
ACCESS ROAD**

SITE PLAN REVIEW

CITY OF PORTLAND, APPLICANT

Submitted to:

Portland Planning Board
Portland, Maine

February 10, 1998

I. INTRODUCTION

The City of Portland requests site plan review for a roadway at the Portland International Jetport. The proposed roadway connects the existing Jetport Access Road (off Johnson Road) to Westbrook Street (near the Embassy Suites Hotel).

This is the second phase of airport-related roadway plans proposed by the city. In 1996, the Board approved a new roadway from Congress Street to the airport. See Attachment A for the 1996 Planning Board approval letter. Attachment B includes the roadway site plan.

110 notices were sent to area property owners.

II. BACKGROUND

Zoning: A-B Airport Business.

Street Length: 2,600 feet.

Wetlands: The path of both roadways will disturb 2.3 acres of wetland. As part of the permit process, the Army Corp of Engineers is requiring that 18 acres of the wetlands on the jetport site be deed-restricted as open space. Other mitigation measures are also required. Copies of the Army Corps of Engineers and DEP Wetland Permit Application are on file in the Planning Office.

On October 19, 1996, the Planning Board approved a new roadway from Congress Street to the interior airport loop road. This roadway is under construction and will be completed in 1998. As part of this review, the plan included a second roadway. Since the city did not have property rights over the second roadway, the Board could not formally approve it. Since that time, the city has acquired this land and requests formal approval. The land was acquired from Brooklawn Memorial Cemetery and Thomas Toye.

During the initial review, the airport roadway plan was submitted in the context of a master plan so that site plan issues and technical details could be highlighted.

Initially the roadways were reviewed as a site plan and as a revision to the airport subdivision. We have been informed by Corporation Counsel that recent state legislation exempts airports from the subdivision law. This second roadway therefore will not be processed as a subdivision.

The proposed roadway intersects the new Congress Street roadway about 700 feet north of the existing airport loop roadway. This roadway is expected to take a significant amount of commercial truck activity bound for airport-related business on Westbrook Street, avoiding excessive traffic around the airport loop road.

DEP approval of this project was given under the Site Location of Development Act.

As a significant portion of the roadway is in South Portland (Johnson Road side), development approval was required from that municipality.

The 1996 Planning Board approval included the following:

1. Construction of a 2,400 foot-long street from Congress Street to the airport loop road. This is intended to be the new main entrance to the airport, eliminating airport-related traffic through the residential area of Westbrook Street.
2. Improvements to terminate Westbrook Street with a cul-de-sac near Yellow Bird Road. This precludes public traffic to the airport from Westbrook Street.
3. Minor revisions to several parking lots. This improves circulation by reorganizing several parking lot entrances.

III. STAFF REVIEW

This development has been reviewed for conformance with the standards of the site plan and subdivision ordinances. Staff comments are incorporated in this report.

1/2. Traffic

The development of a new roadway system has been a major focus of the airport master planning efforts. While the 1996 approved roadway proposed a new main access from Congress Street, the second roadway functions as a bypass of the airport terminal the road providing a direct connection to airport-related business on Westbrook Street. Both roadways intersect one another north of the airport parking lots.

The roadway design remains unchanged from the earlier plan. The street will be 32 feet wide with granite curbs installed along the entire length of the roadway. A sidewalk is proposed on one side of the street. This will require a sidewalk waiver since sidewalks are required on both sides of a street. A waiver was granted for the phase one road. A two and one/half -foot esplanade is shown between the curb and the sidewalk.

A traffic report was previously submitted and Tom Errico, then Traffic Review Engineer, reviewed the traffic study and found it acceptable. He did however have several comments regarding improvements for pedestrian safety. A copy of the 1996 planning staff report is attached which includes a summary of traffic issues and a copy of the traffic report.

Mr. Errico indicates "it is unclear what route pedestrians who originate from the terminal building and are destined to the parking lot southwest of the new access road will utilize it. It appears that a crosswalk across the new access road supplemented with signs will be required".

In response to pedestrian safety concerns, the Board required as a condition of approval "that a thorough pedestrian circulation plan be executed" as part of the second roadway plan.

The submitted pedestrian circulation plan is shown as Attachment C. The report includes a pedestrian survey conducted on 12/23/97 and 12/31/97, one of the busiest times of the year. Highlights of the reports are shown below.

- * Thermoplastic striping should be used so that the crosswalks are more visible.
- * Pedestrian crossing signs should be installed at the crosswalks.

- * The "stop for pedestrians" sign in front of the terminal should be replaced with a new sign reading "begin pedestrian zone -stop for pedestrians crossing", since over half pedestrian crossings occur outside the striped crosswalks.
- * Install a new crosswalk across the new access road to the northern satellite parking lot. Other crosswalks should be added also.

Staff has reviewed the plan and offers the following comments:

- * While the plan improves signage and crosswalks, it does not fully address sidewalk issues or interior circulation from parking lots.
- * Several airport roadways were built with a sidewalk on only one side of the street, or no sidewalk at all. For example, there is no sidewalk along the westerly side of Westbrook Street from the loop road past various car rental agencies to the Embassy Suites Hotel (the hotel does have a sidewalk). The loop road has very limited sidewalks.
- * SPECIFIC RECOMMENDATION The large parking lot north of the loop road does not have any internal circulation walkways for pedestrian. This is the largest city parking lot (400+ spaces) at the airport. Staff is suggesting that a series of interior crosswalks be considered for pedestrian circulation. This would result in the loss of about 10 parking spaces. A walkway could be added along the southerly edge of the parking lot to feed into the existing walkway. See Attachment D.
- * Sign #5 on the pedestrian plan is not helpful ("begin pedestrian zone - stop for pedestrians in crosswalk"). By state law cars are always supposed to stop for pedestrians. This could cause confusion in areas not so signed. Better use of signs #1 and #2 and several other strategically placed signs ("it's the law - stop for pedestrians") would be more appropriate.
- * Larry Ash, City Traffic Engineer, also made the following comments:
 - * Signage should be made out of reflective material and should be placed at the appropriate location and height.
 - * A raised crosswalk at the first crosswalk and the third crosswalk by the terminal would more effectively slow down cars and provide a more defined area to cross the street.

3. Proposed Building and Uses Impact on Health or Safety Problems

There are no new buildings proposed. The impact of the roadway should enhance public health and safety since it eliminates airport-related traffic from the residential area of Westbrook Street and transfers it to a new access on outer Congress Street away from Stroudwater Village.

4. Proposed Buildings Minimizes Diminution in Value or Utility to Neighboring Structures

No new buildings are proposed.

5. Sewers, Storm Drains, Water and Utilities

The project has been designed to minimize its impact on existing drainage conditions of the site. Development activities are limited to the roadway. No new buildings or parking lots are proposed at this

time. This leaves the remainder of the parcel as open space. There will be no increase in the rate of stormwater runoff from the site.

Stormwater from the roadway will flow into 18 catchbasins connected into storm drains. These storm drains outlet at various points in the site. On the old jetport access road end, water will flow into an existing 21-inch culvert under the existing roadway. This culvert discharges into an open drainage ditch, which in turn discharges into the runway drain system. On the Embassy Suites Hotel end, stormwater will flow into a storm drain connected into Westbrook Street.

An 8-inch water line is planned along most of the road. It starts near the Embassy Suites Hotel and runs past the cross roads intersection and stops about 700 feet from the existing airport access road (in South Portland).

A new sanitary sewer line will be installed but it stops short of the existing airport access road, since there are limitations due to topography. Any future sewer extension from this point would need to be pumped. Water quality concerns are addressed by the installation of a stormceptor that removes oil and grit during the first flush of storms. The stormceptors will be placed near the Westbrook Street intersection and at the discharge point near the old airport access road.

The plan has been reviewed by the Development Review Coordinator. His comments are shown as Attachment E. While the list is long, these are primarily minor technical details. Staff has met with the project engineer, Mike DeLuca of DeLuca-Hoffman, and he has agreed to make the plan revisions.

6/7. Landscaping

A landscaping plan has been submitted for the proposed road. It is similar to the plan previously submitted. The landscaping plan divides the roadway into different themes or landscape treatments. For example - "crossroads", "woodlawn plateau", and "hotel portal". This site characterization allows for a landscape plan that recognizes existing landscape conditions while acknowledging the road's role as a gateway to the airport. See Attachment B-L-1. Jeff Tarling, City Arborist, has reviewed and approved the landscape plan.

8. Soil and Drainage

For drainage-related issues, see #5 of this section.

An erosion and sedimentation control plan describing temporary and permanent measures has been submitted (see Attachment B-17). The plan indicates silt fencing will be placed along the entire perimeter of the roadway. Rip rap will be used along portions of the roadway to stabilize the adjacent slope (see Attachments B-5 to B-7). All culvert openings will have rip rap installed.

9. Exterior Lighting

Lighting is shown along the proposed streets. Power will be underground. Street light poles will be 30 feet high. The cutoff luminaire fixture is shown on Attachment A-22. It is the same fixture used for the phase one road.

10. Fire

Lt. McDougall of the Fire Department has reviewed and approved the new road. Three fire hydrants are shown along the road.

11. Infrastructure

The proposal is consistent with off-premises infrastructure, existing or planned by the City. The proposed roadway system was a recommendation of the Jetport Master Plan.

12. Historic Resources

The proposal is not located within 100 feet of an historic district or landmark

13. Natural Resources

The proposed development will have no adverse impact upon the existing natural resources including groundwater, surface water, wetlands, unusual natural areas and wildlife and fisheries habitat. The acreage of land acquired by the City for the roadway totals 45 acres. At this point, the only site disturbance will be for construction of the roadway.

Although the roadway will require filling of wetlands (2.3 acres), the Army Corps of Engineers has required the following compensation package which mitigates the impact of the filling:

- .4 acres - creation of new wetlands
- .6 acres - restoration of disturbed wetland
- 18.0 acres - preservation of existing wetlands through deed restriction

These areas are located between the connector road and Congress Street. The site is not located within an aquifer. There appears to be no threatened, endangered, and special wildlife species and habitats or other special natural features on this site.

Water quality issues for the roadway are addressed in the storm drain system by installation of a stormceptor that removes sediment and grit pollutants during the first flush of storms.

14. Signage

Signage information during the first phase.

IV. MOTIONS FOR THE BOARD TO CONSIDER.

On the basis of plans and materials submitted by the applicant and on the basis of information contained in Planning Report #02-98, the Board finds:

1. The plan is in conformance with the Site Plan Ordinance of the Land Use Code.
Potential conditions of approval:

- i. that the site plan be revised reflecting the comments of the Development Review Coordinator, *MINOR TECHNICAL ISSUES*
 - ii. that the pedestrian circulation plan be revised for city staff review and approval,
 - iii. that letters be submitted to the planning staff from utility companies confirming their approval of the roadway utility plan.
2. The Planning Board [finds/or does not find] that extraordinary conditions [do or do not] exist and/or that undue hardship [may or may not] result from strict compliance with the requirements set forth in se. 14-498(b)(8), therefore [approves or does not approve] a waiver for a sidewalk on one side of the street.

Attachments:

- A. 1996 Planning Board Approval Letter
- B. Site Plan
- C. Pedestrian Circulation Plan
- D. Proposed Revisions to Pedestrian Circulation Plan
- E. Development Review Coordinator Memo

CITY OF PORTLAND, MAINE

PLANNING BOARD

Cyrus Hagge, Chair
John H. Carroll, Vice Chair
Joseph R. DeCoursey
Kenneth M. Cole III
Jaimey Caron
Kevin McQuinn
Deborah Krichels

Mr. Jeff Schultes
Portland International Jetport
Westbrook Street
Portland, ME 04101

RE: Jetport Access Road Site Plan

Dear Mr. Schultes:

On October 29, 1996, the Portland Planning Board voted on the following motions regarding the proposed Jetport access road that runs from Congress Street to the Jetport loop road.

1. The Board voted 5-0 (DeCoursey, Krichels absent) that the plan was in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions:
 - i. That a revised utility plan for the roadways shall be submitted to City staff for review and approval reflecting comments of Public Works, Fire Department, Portland Water District and other utility services.
 - ii. That a revised subdivision recording plat shall be submitted for Planning Board signature.
 - iii. That the second roadway shall be submitted for Planning Board review and approval when property ownership issues have been resolved.
 - iv. That the plan shall be revised to reflect the comments of the Development Review Coordinator contained in a memo dated 10-18-96.
 - v. That a thorough pedestrian circulation plan be executed as part of the final phase subdivision (second roadway).
2. The Board voted 5-0 (DeCoursey, Krichels absent) that the plan was in conformance with the Site Plan Ordinance.
3. The Board voted 5-0 (DeCoursey, Krichels absent) that extraordinary conditions do exist and/or that undue hardship may result from street compliance with the requirements set forth in sec. 14-498(b)(8), therefore approves a waiver for a sidewalk on one side of the street.

The Planning Board approval covers the new roadway running from Congress Street to the loop road; the Westbrook Street cul-de-sac and certain revisions to the driveways of parking lots. The second roadway is not included in this approval.

The approval is based on the submitted site plan and the findings related to site plan review standards as contained in Planning Report # 57-96, 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.
4. Prior to construction, a preconstruction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the preconstruction meeting.
5. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

The Development Review Coordinator (874-8300 ext. 8722) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

PEDESTRIAN CIRCULATION STUDY FOR THE PORTLAND INTERNATIONAL JETPORT

Introduction

The City of Portland Planning Board approval for the new access road from the Jetport loop road to Congress Street opposite the new Unum driveway was conditioned that a pedestrian circulation study be executed as part of the second phase (relocated access road) approval. DeLuca-Hoffman Associates, Inc. has been retained by the Jetport to complete the study.

Existing Conditions

Exhibit 1 included in Attachment A of this study shows the conditions at the airport as they will exist in the late spring of 1998 when the new access road and parking lots are completed. The heaviest pedestrian activity occurs in front of the terminal building when people cross the access road in front of the terminal to reach the garage or satellite parking lots. Both the access road in front of the terminal building and loop road around the garage are one-way in a counterclockwise direction. DeLuca-Hoffman Associates, Inc. counted the number of pedestrian crossings of the access road in front of the terminal during the holiday season on Tuesday, December 23, 1997 and again on Wednesday, December 31, 1997. This time period represents one of the busiest times of the year. The counts were collected from 1:00 PM through 4:00 PM and the results for this three-hour period are summarized below. Two observers were stationed in front of the building and one on the northerly section of the loop road. Detailed computer printouts for the counts are included in Attachment A of this study.

Table 1				
Summary of Pedestrian Count in Front of the Terminal Building				
Location	Pedestrian Crossings		Peak Hour Volume	
	12/23/97	12/31/97	12/23/97	12/31/97
In front of Terminal Building – West half	455	373	199 (1:15 PM-2:15 PM)	167 (1:00 PM-2:00 PM)
In front of Terminal Building – East half	941	636	424 (1:30 PM-2:30 PM)	330 (1:00 PM-2:00 PM)
Subtotal	1396	1009	623	497
Loop Road in Back of Garage	103	137	43 (1:00 PM-2:00 PM)	62 (1:30 PM-2:30 PM)
	1499	1146	666	359

These counts show that a high level of pedestrian activity occurs in front of the terminal building with 623 pedestrian crossings in front of the terminal building in a one-hour period. While DeLuca-Hoffman Associates, Inc. was completing the count we made the following observations:

- Over half the pedestrian crossings in front of the terminal occurred outside the striped crosswalks.
- Drivers did yield to pedestrians both in and outside of the crosswalks.
- There are two travel lanes in front of the terminal. Some vehicles in the outside lane (the lane farthest from the terminal) appeared to be traveling too fast.

Pedestrian crossings also occur on the loop road in the rear of the garage as pedestrians cross to access Avis or the satellite parking lots. As shown in Table 1, the level of pedestrian activity in this area is significantly less than in front of the terminal building. Another area where pedestrians cross the access road is at the intersection of the loop road around the garage and the access roadway in front of the terminal building. Traffic from both the loop road around the garage and the access road from Johnson Road are both required to stop. A pedestrian crosswalk is located across the loop road from the sidewalk located on the northerly side of the access road across from the terminal building. The number of pedestrian crossings at this location is currently small but can be expected to increase with the construction of an additional satellite lot on the west side of the loop road.

Evaluation of Existing Pedestrian Facilities

DeLuca-Hoffman Associates, Inc. completed a site walk to assess the existing pedestrian facilities on January 19th. We were accompanied on this review by Dennis Pratt of Alpha One who we retained to assess the access for the people with disabilities. In general, we found the pedestrian facilities to be good, but do make the following recommendations which are illustrated on Exhibit 1 of Attachment A.

- Crosswalks in front of the terminal building – There are three striped crosswalks in front of the terminal building. DeLuca-Hoffman Associates, Inc. recommends that the visibility of these crosswalks, as well as the other crosswalks at the Jetport, be remarked with a thermoplastic material in accordance with the detail shown on Exhibit 1 of Attachment A of this report. This will improve the visibility and reflectivity of the crosswalk. It is also recommended that pedestrian crossing signs be posted at the crosswalks on both sides of the access road as shown on the plan, as well as all other crosswalks. An advanced warning sign exists for traffic approaching the terminal building from the west advising vehicles to stop for pedestrians. DeLuca-Hoffman Associates, Inc. observed during the pedestrian counts that a large majority of pedestrians did not cross in the crosswalks. Since the entire roadway frontage by the terminal is utilized as a drop-off area, it is not feasible to physically channelize the pedestrians to the crosswalks. As a practical matter, pedestrians will cross anywhere along the terminal frontage. For this reason, we recommend that the wording on the existing “stop for pedestrians” sign be replaced with a new sign reading “Begin Pedestrian Zone – Stop for Pedestrians Crossing.” An “End Pedestrian Zone” sign should also be erected at the easterly end of the terminal building.
- Parking Garage – The pedestrian crosswalks in the garage shown on Exhibit 1 should also be remarked with a thermoplastic material in accordance with the detail on the plan. Pedestrian crosswalk signs are posted on the overhead girders. The second and third levels of the garage contain a number of handicap accessible parking spaces in the vicinity of the elevators which serve for both long-term and short-term parking. Alpha One has recommended that the access panel outside the elevator be upgraded to comply with current standards which include raised Braille. The panel on the interior of the elevator has already been upgraded.
- Satellite Parking Lot West of Garage – Access from this surface lot to the terminal building is not well defined, particularly for the handicapped. The handicap-accessible parking spaces are located in the southeast corner of the lot adjacent to the gated access driveway. A sidewalk is located along the southerly side of the lot, but cannot provide direct access to the lot due to a grade differential. DeLuca-Hoffman Associates, Inc. recommends that a

crosswalk be installed from the parking lot to the sidewalk along the westerly side of the parking garage as shown on Exhibit 1. The crosswalk should be located deep enough into the site to minimize potential conflicts with traffic entering the lot and garage.

- Sidewalk Along the Westerly Side of the Parking Garage – The sidewalk runs all the way along the westerly side of the garage to primarily serve the satellite lot on the other side (northerly side) of the loop road. Curb tipdowns are provided at each driveway crossing. The primary concern with this sidewalk is potential conflict with vehicles exiting the garage which occurs at the middle and north driveways on the west side of the garage. The pedestrians are adjacent to the building wall, which limits the visibility of the pedestrian to the driver. DeLuca-Hoffman Associates, Inc. reviewed the potential of relocating the sidewalk further away from the building, perhaps on the easterly side of the parking aisles. However, in our opinion it is likely that pedestrians would continue on their current path which represents the most direct path to the satellite lots. The Jetport has taken measures at the northerly driveway including a gate and mirror. DeLuca-Hoffman Associates, Inc. recommends the following additional measures:
 - Installation of a mirror providing sight lines along the sidewalk to drivers exiting the middle driveway similar to the mirror which exists at the north driveway.
 - Installation of signs on the sidewalk warning the pedestrians approaching the driveways from both directions of exiting traffic.
- Pedestrian Access to the Northern Satellite Surface Lot – Access to this lot is provided via a crosswalk and sidewalk at the southeast corner of the lot across the loop road from the northwest corner of the parking lot and from a crosswalk on the new access road at the southwest corner of the lot. Access for the handicapped is provided via a loop crosswalk at the southeast corner of the lot. Alpha One has recommended that the stair-rail for this lot be extended on the lower landing to be in compliance with ADA standards. DeLuca-Hoffman Associates, Inc. recommends a crosswalk be installed on the new access road to the parking lot.
- Access to the new satellite surface parking lot is proposed from the newly constructed sidewalk on the westerly side of the loop road. If this lot is to be handicap accessible, then Alpha One recommends railings be installed along the portion of the sidewalk with a 1:12 slope as shown on Exhibit A.

Lighting

DeLuca-Hoffman Associates, Inc. are not experts on lighting issues. However, we did complete a site walk after dark to identify any obvious areas where lighting is a problem. Lighting levels in front of the terminal building, within the parking garage and at existing and proposed crosswalks did not appear to be a significant issue. However, the Jetport may wish to have a formal study done by a qualified firm to verify this finding.

Conclusions

In general, the pedestrian facilities at the Jetport appear to be adequate. DeLuca-Hoffman Associates, Inc. does recommend the improvements identified in this report on Exhibit A be implemented. We estimate the cost of this work to be \$25,000.00.

ATTACHMENT A

Weather : CLOUDY
 Counter : MANUAL
 Counted by : ALYSSA (WED)
 Intersection: BAGGAGE AREA

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/31/97
 File I.D. : BAGGAGE
 Page : 1

PEDS

Date	PEDS IN		PEDS OUT		Total
	Southbound	Northbound	Thru	Other	
12/31/97					
13:00	60	0	39	0	99
13:15	47	0	21	0	68
13:30	10	0	59	0	69
13:45	21	0	73	0	94
Hr Total	138	0	192	0	330
14:00	9	0	62	0	71
14:15	7	0	12	0	19
14:30	26	0	12	0	38
14:45	9	0	7	0	16
Hr Total	51	0	93	0	144
15:00	14	0	32	0	46
15:15	17	0	10	0	27
15:30	19	0	23	0	42
15:45	30	0	17	0	47
Hr Total	80	0	82	0	162
TOTAL	269	0	367	0	636

Weather : CLOUDY
 Counter : MANUAL
 Counted by : ALYSSA (WED)
 Intersection: BAGGAGE AREA

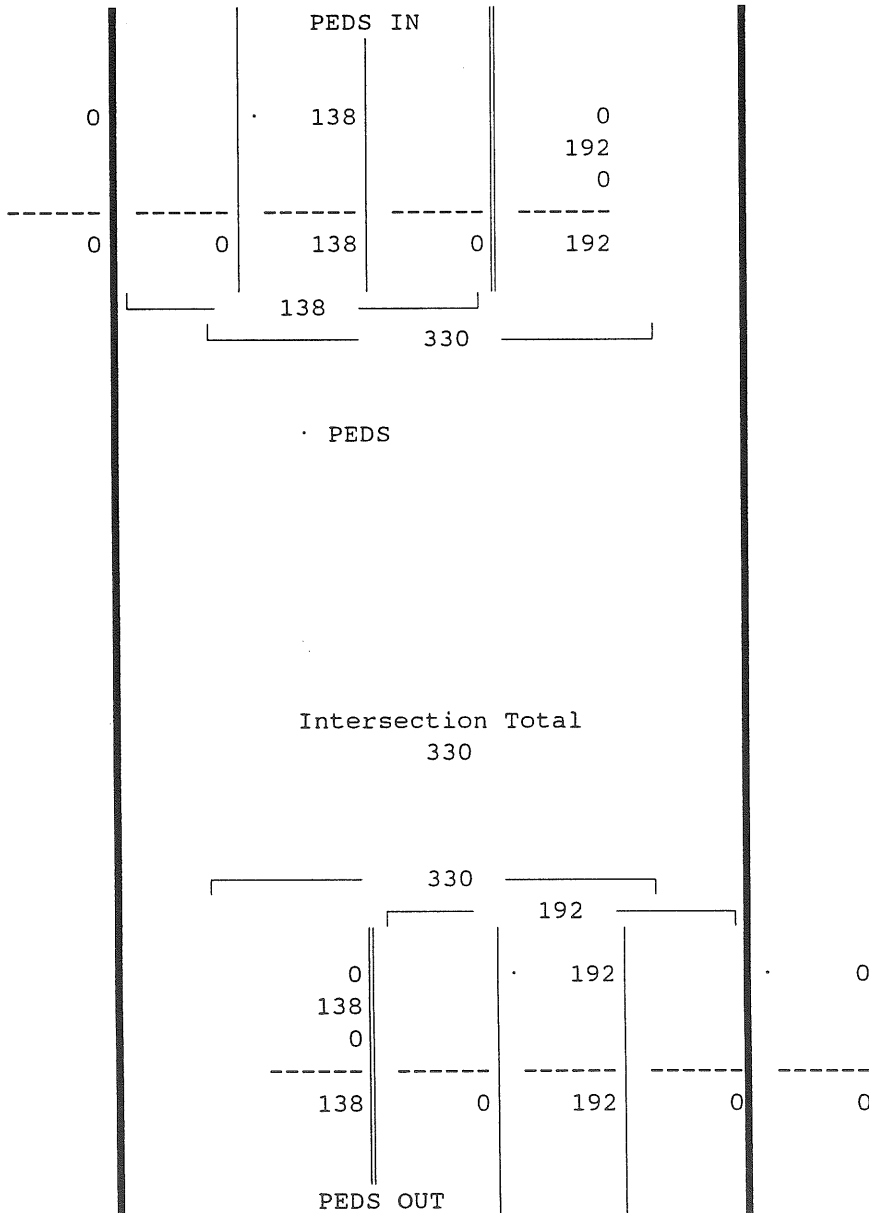
PEDS

PEDS IN		PEDS OUT		Total
Southbound		Northbound		
Thru	Other	Thru	Other	

Date 12/31/97

Peak Hour Analysis By Entire Intersection for the Period: 13:00 to 16:00 on 12/31/97

Peak start	13:00	13:00		
Volume	138	0	192	0
Percent	100%	0%	100%	0%
Pk total	138		192	
Highest	13:00		13:45	
Volume	60	0	73	0
Hi total	60		73	
PHF	.58		.66	



Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/31/97
 File I.D. : TERM
 Page : 1

Weather : CLOUDY
 Counter : MANUAL
 Counted by : FAP (WED)
 Intersection: TERMINAL AREA

PEDS

	PEDS IN		PEDS OUT		Total
	Southbound		Northbound		
	Thru	Other	Thru	Other	

Date 12/31/97	-----				
13:00	34	0	21	0	55
13:15	32	0	8	0	40
13:30	14	0	18	0	32
13:45	12	0	28	0	40
Hr Total	92	0	75	0	167
14:00	1	0	31	0	32
14:15	16	0	19	0	35
14:30	10	0	3	0	13
14:45	11	0	5	0	16
Hr Total	38	0	58	0	96
15:00	11	0	6	0	17
15:15	21	0	12	0	33
15:30	18	0	14	0	32
15:45	20	0	8	0	28
Hr Total	70	0	40	0	110

TOTAL	200	0	173	0	373

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/31/97
 File I.D. : TERM
 Page : 2

Weather : CLOUDY
 Counter : MANUAL
 Counted by : FAP (WED)
 Intersection: TERMINAL AREA

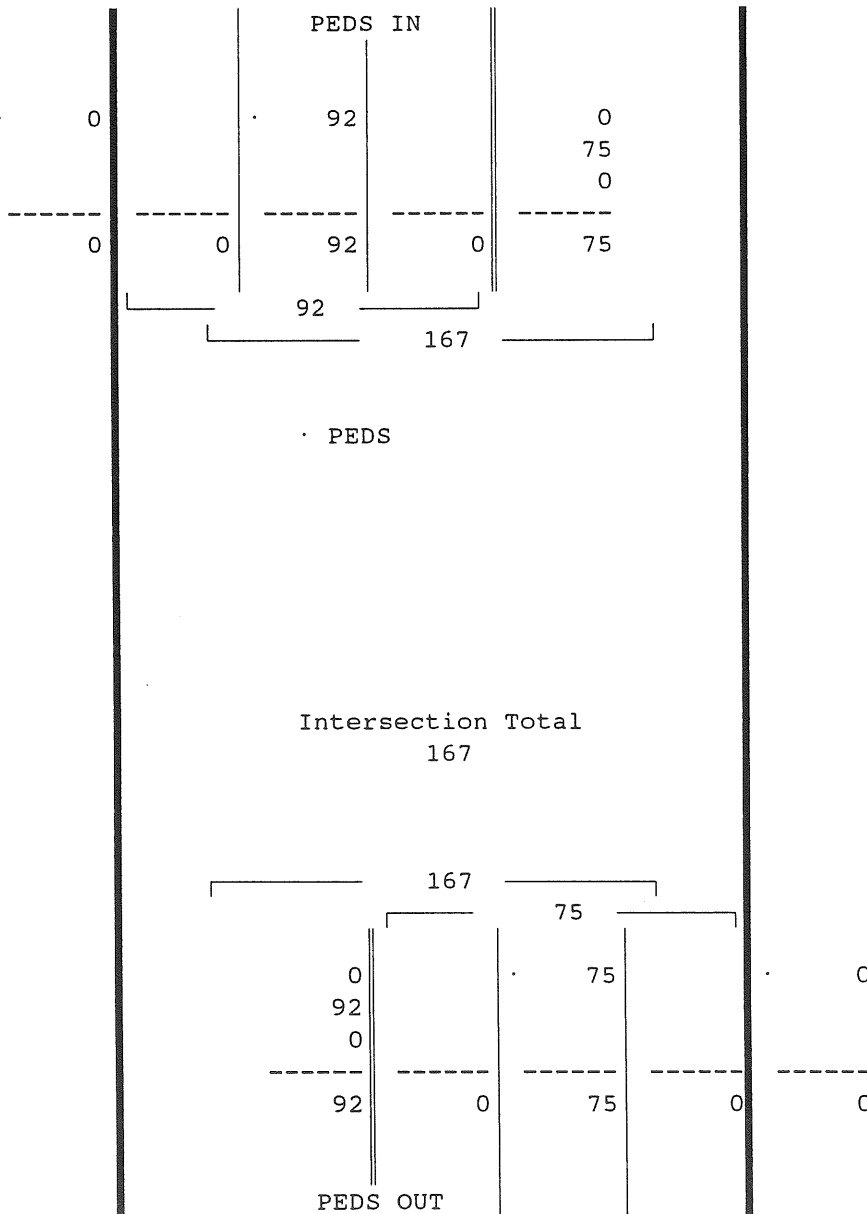
PEDS

PEDS IN		PEDS OUT		Total
Southbound	Northbound	Southbound	Northbound	
Thru	Other	Thru	Other	

Date 12/31/97

Peak Hour Analysis By Entire Intersection for the Period: 13:00 to 16:00 on 12/31/97

Peak start 13:00	13:00			
Volume	92	0	75	0
Percent	100%	0%	100%	0%
Pk total	92		75	
Highest	13:00		13:45	
Volume	34	0	28	0
Hi total	34		28	
PHF	.68		.67	



Weather : CLOUDY
 Counter : MANUAL
 Counted by : JD (WED)
 Intersection: LOOP ROAD

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/31/97
 File I.D. : LOOPRD
 Page : 1

PEDS

	PEDS IN		PEDS OUT		Total
	Southbound	Northbound	Southbound	Northbound	
	Thru	Other	Thru	Other	
Date 12/31/97					
13:00	8	0	2	0	10
13:15	5	0	4	0	9
13:30	5	0	10	0	15
13:45	4	0	9	0	13
Hr Total	22	0	25	0	47
14:00	5	0	15	0	20
14:15	8	0	6	0	14
14:30	4	0	9	0	13
14:45	2	0	7	0	9
Hr Total	19	0	37	0	56
15:00	4	0	1	0	5
15:15	4	0	6	0	10
15:30	3	0	9	0	12
15:45	2	0	5	0	7
Hr Total	13	0	21	0	34
TOTAL	54	0	83	0	137

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Weather : CLOUDY
 Counter : MANUAL
 Counted by : JD (WED)
 Intersection: LOOP ROAD

Site Code : 00010181
 Start Date: 12/31/97
 File I.D. : LOOPRD
 Page : 2

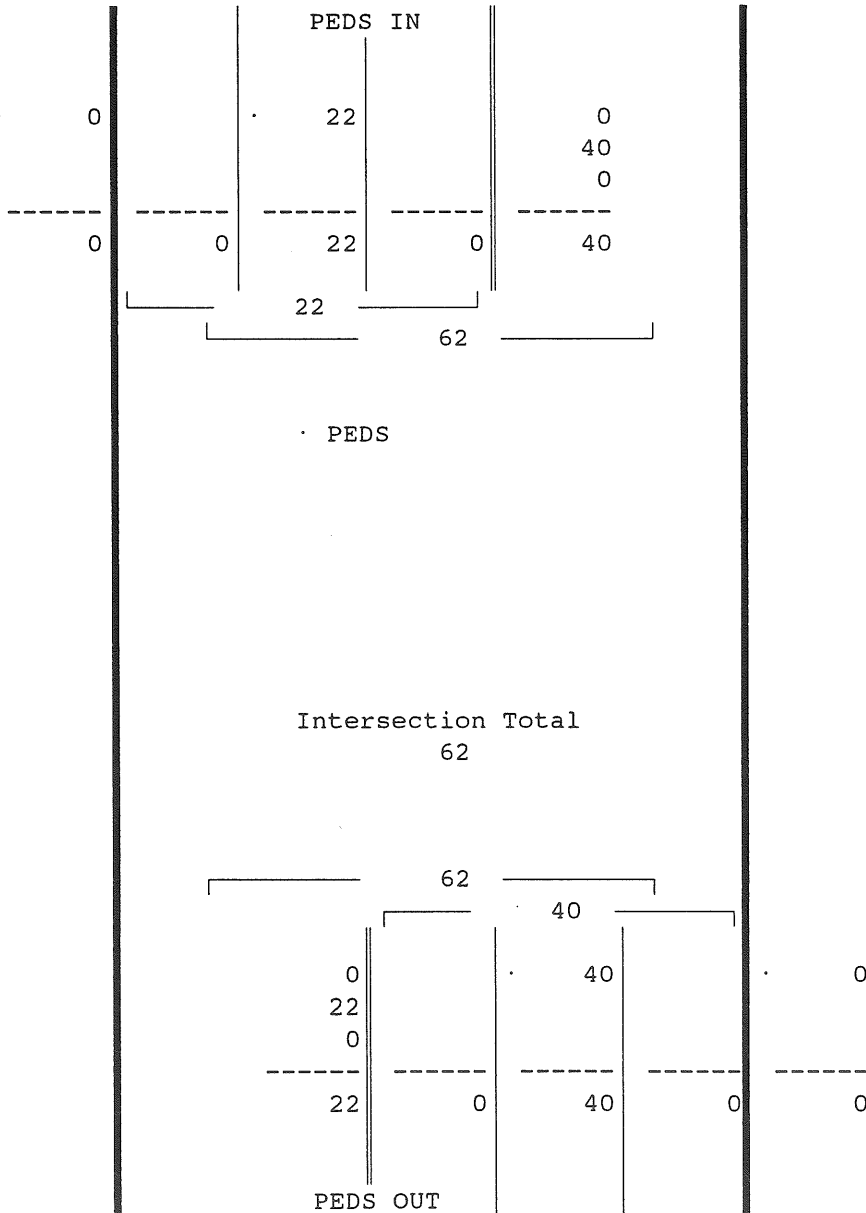
PEDS

PEDS IN		PEDS OUT		Total
Southbound	Northbound	Southbound	Northbound	
Thru	Other	Thru	Other	

Date 12/31/97

Peak Hour Analysis By Entire Intersection for the Period: 13:00 to 16:00 on 12/31/97

Peak start	13:30	13:30		
Volume	22	0	40	0
Percent	100%	0%	100%	0%
Pk total	22		40	
Highest	14:15		14:00	
Volume	8	0	15	0
Hi total	8		15	
PHF	.69		.67	



Weather : STORMY
 Counter : MANUAL
 Counted by : FAP
 Intersection: TERMINAL ENTRANCE

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/23/97
 File I.D. : TERM-23
 Page : 1

PEDS

 PEDS IN | PEDS OUT |
 Southbound | Northbound |
 Thru Other | Thru Other | Total
 Date 12/23/97 -----

13:00	32	0	6	0	38
13:15	41	0	15	0	56
13:30	20	0	32	0	52
13:45	19	0	26	0	45
Hr Total	112	0	79	0	191

14:00	17	0	29	0	46
14:15	11	0	11	0	22
14:30	14	0	12	0	26
14:45	26	0	11	0	37
Hr Total	68	0	63	0	131

15:00	8	0	11	0	19
15:15	39	0	12	0	51
15:30	24	0	14	0	38
15:45	13	0	12	0	25
Hr Total	84	0	49	0	133

----- * BREAK * -----

 TOTAL 264 0 | 191 0 | 455

Weather : STORMY
 Counter : MANUAL
 Counted by : FAP
 Intersection: TERMINAL ENTRANCE

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/23/97
 File I.D. : TERM-23
 Page : 2

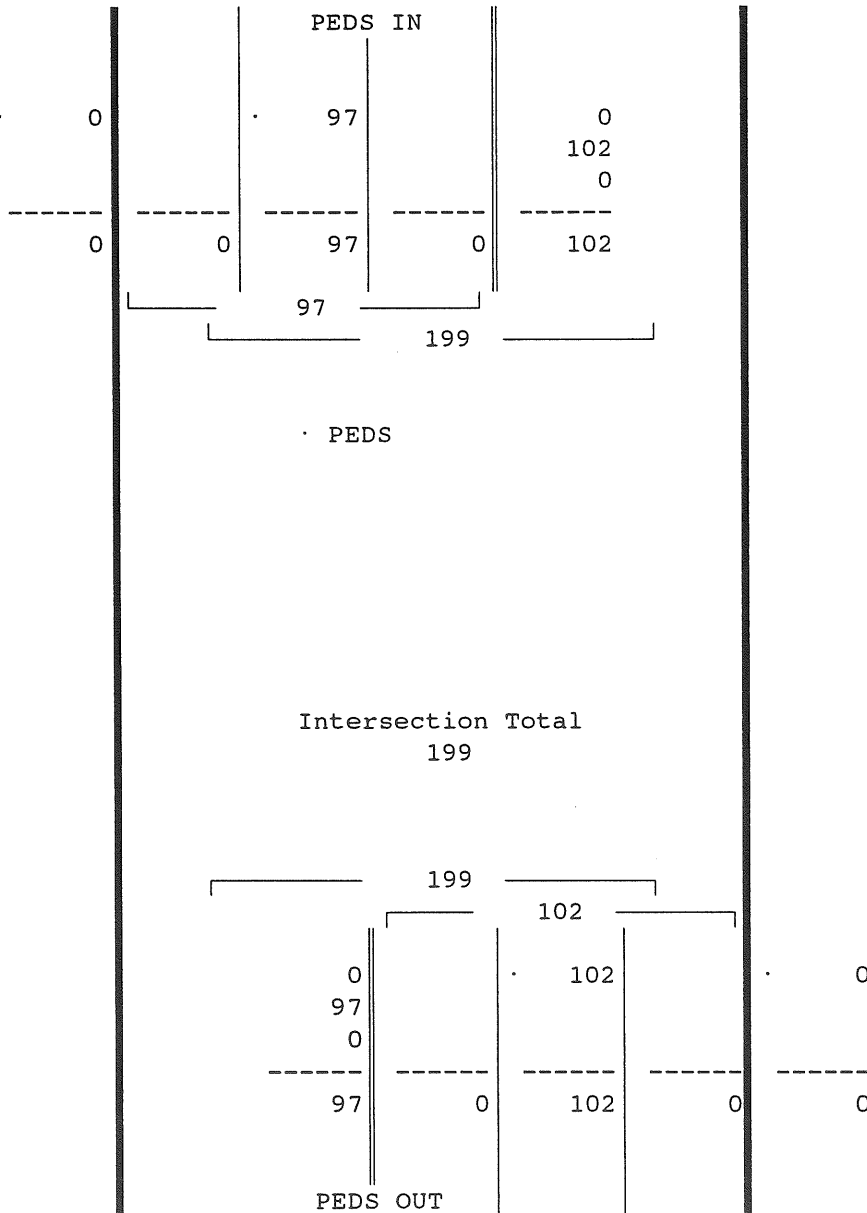
PEDS

PEDS IN		PEDS OUT		Total
Southbound	Northbound	Southbound	Northbound	
Thru	Other	Thru	Other	

Date 12/23/97

Peak Hour Analysis By Entire Intersection for the Period: 13:00 to 16:15 on 12/23/97

Peak start	13:15		13:15	
Volume	97	0	102	0
Percent	100%	0%	100%	0%
Pk total	97		102	
Highest	13:15		13:30	
Volume	41	0	32	0
Hi total	41		32	
PHF	.59		.80	



Deluca-Hoffman Associates, Inc.

778 Main Street, Suite 8

South Portland, ME 04106

(207) 775-1121

Site Code : 00010181

Start Date: 12/23/97

File I.D. : LOOP-23

Page : 1

Weather : STORMY
 Counter : MANUAL
 Counted by : IAN
 Intersection: LOOP ROAD

PEDS

 PEDS IN | PEDS OUT |
 Southbound | Northbound |
 Thru Other | Thru Other | Total

 Date 12/23/97

13:00	3	0	9	0	12
13:15	6	0	4	0	10
13:30	4	0	6	0	10
13:45	2	0	9	0	11
Hr Total	15	0	28	0	43

14:00	4	0	6	0	10
14:15	1	0	7	0	8
14:30	5	0	8	0	13
14:45	4	0	2	0	6
Hr Total	14	0	23	0	37

15:00	4	0	6	0	10
15:15	0	0	0	0	0
15:30	6	0	2	0	8
15:45	1	0	4	0	5
Hr Total	11	0	12	0	23

----- * BREAK * -----

 TOTAL 40 0 | 63 0 | 103

Weather : STORMY
 Counter : MANUAL
 Counted by : IAN
 Intersection: LOOP ROAD

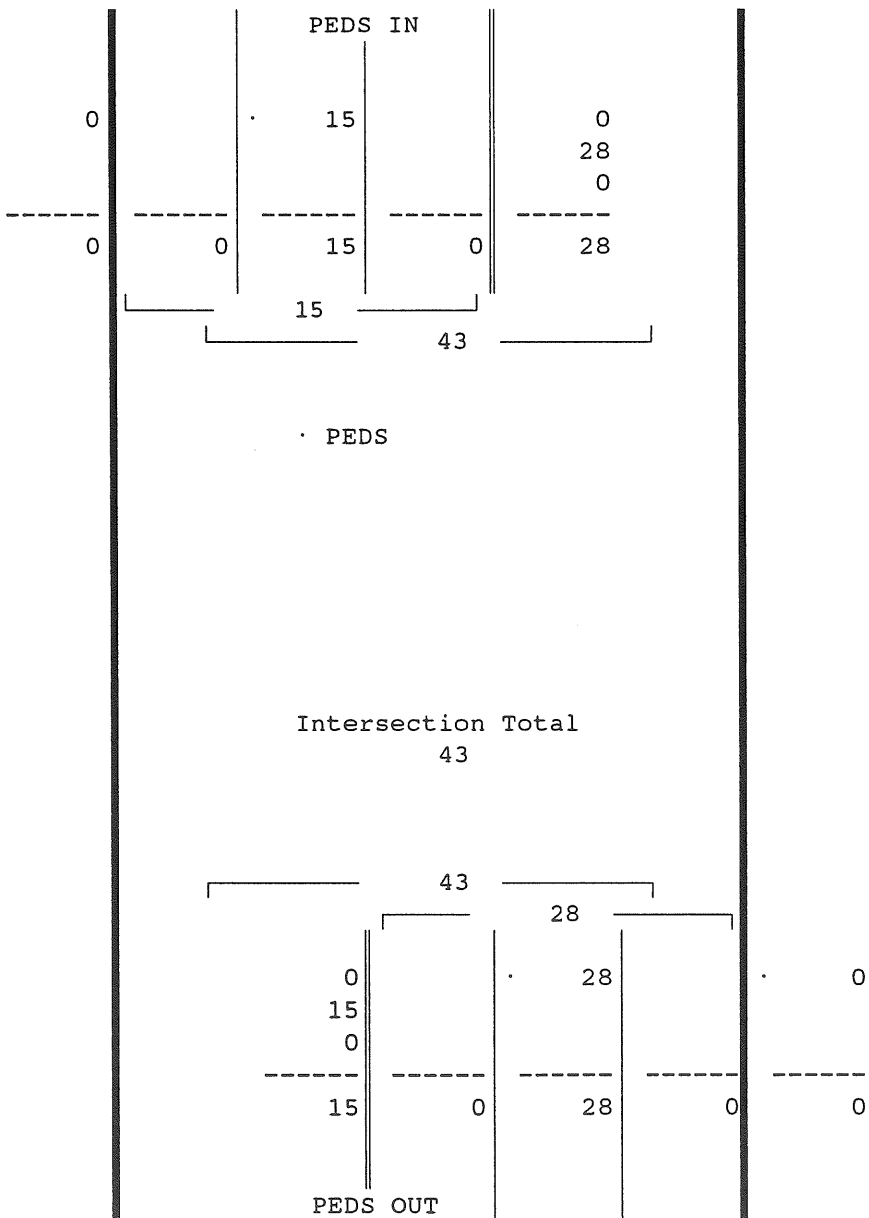
PEDS

PEDS IN		PEDS OUT		Total
Southbound	Northbound	Northbound	Southbound	
Thru	Other	Thru	Other	

Date 12/23/97

Peak Hour Analysis By Entire Intersection for the Period: 13:00 to 16:15 on 12/23/97

	13:00		13:00	
Volume	15	0	28	0
Percent	100%	0%	100%	0%
Pk total	15		28	
Highest	13:15		13:00	
Volume	6	0	9	0
Hi total	6		9	
PHF	.62		.78	



Deluca-Hoffman Associates, Inc.

778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/23/97
 File I.D. : BAG-23
 Page : 1

Weather : STORMY
 Counter : MANUAL
 Counted by : ALYSSA
 Intersection: BAGGAGE AREA

PEDS

Date	PEDS IN		PEDS OUT		Total
	Southbound		Northbound		
	Thru	Other	Thru	Other	

13:00	40	0	27	0	67
13:15	25	0	31	0	56
13:30	36	0	90	0	126
13:45	29	0	117	0	146
Hr Total	130	0	265	0	395

14:00	22	0	65	0	87
14:15	19	0	46	0	65
14:30	23	0	26	0	49
14:45	29	0	26	0	55
Hr Total	93	0	163	0	256

15:00	16	0	35	0	51
15:15	30	0	89	0	119
15:30	25	0	25	0	50
15:45	40	0	30	0	70
Hr Total	111	0	179	0	290

----- * BREAK * -----

TOTAL	334	0	607	0	941
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Weather : STORMY
 Counter : MANUAL
 Counted by : ALYSSA
 Intersection: BAGGAGE AREA

Deluca-Hoffman Associates, Inc.
 778 Main Street, Suite 8
 South Portland, ME 04106
 (207) 775-1121

Site Code : 00010181
 Start Date: 12/23/97
 File I.D. : BAG-23
 Page : 2

PEDS

PEDS IN		PEDS OUT		Total
Southbound		Northbound		
Thru	Other	Thru	Other	

Date 12/23/97

Peak Hour Analysis By Entire Intersection for the Period: 13:00 to 16:15 on 12/23/97

Peak start	13:30		13:30	
Volume	106	0	318	0
Percent	100%	0%	100%	0%
Pk total	106		318	
Highest	13:30		13:45	
Volume	36	0	117	0
Hi total	36		117	
PHF	.74		.68	

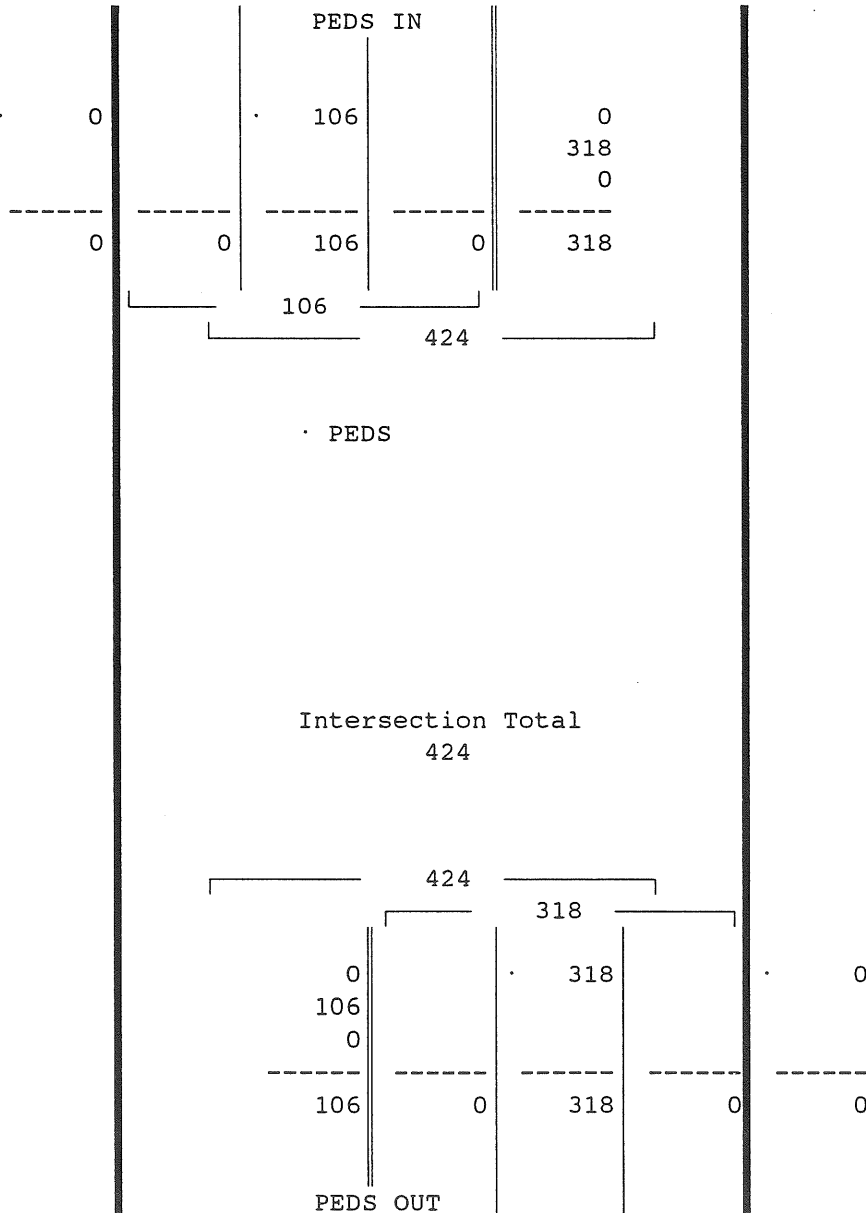


Figure 1

PUBLIC WORKS ENGINEERING

MEMORANDUM

To: Rick Knowland, Senior Planner
From: Anthony Lombardo, P.E., Project Engineer
Date: February 10, 1998
Subject: Jetport Access Road Extension ---DeLuca/Hoffman

The following comments were generated during Public Works Engineering review of proposed Jetport Access Road Extension plans prepared by DeLuca/Hoffman and dated January 1998.

On Sheet 5, the proposed location of SDMH-1 makes it extremely difficult for runoff flowing from WQU-1 to enter and exit SDMH-1. This runoff must turn a corner to change direction at an angle exceeding 90 degrees. The applicant should relocate SDMH-1 to improve this design.

The "Structure Schedule" should specify the location of structures left or right of the proposed road centerline.

On Sheet 6, a utility crossing conflict exists at approximately centerline station 11+85. A 6" dia. sanitary sewer lateral and a 12" dia. storm drain appear to cross at the same elevation.

On Sheet 6, the applicant must propose sidewalk ramps at the intersection of this proposed access road and existing access road, to service and connect all existing and proposed sidewalks

On Sheet 7 & 8, the applicant proposes to connect the storm drain main from SDMH-12 into CB-19. Public Works does not accept main line connections into catch basins. The applicant must propose another SDMH and connect CB-19 and SDMH-12 into this structure.

On Sheet 7 & 8, the applicant proposes to connect the storm drain main exiting SDMH-13 into an existing catch basin located on the northeasterly side of the existing road at sta. 28+50. Once again, this is not acceptable to Public Works. The applicant should propose another SDMH to service the main.

The applicant should propose another water quality structure for this section of the proposed access road.

Several existing storm drain structures are specified on Sheet 7 & 8, but the applicant does not provide any information on the existing connecting network of pipes and the respective pipe inverts. The applicant should provide this information on the plans. Much of this information can be obtained in the Public Works Engineering Archives on plans originally submitted for the existing Embassy Suites development.

The applicant should verify the capacity of the existing downstream detention pond and indicate the effect of connecting the proposed storm drain into this existing system.

If the applicant has any questions regarding these comments, please contact me at 874-8300, extension 8848. Some of these comments may be duplicated by Jim Seymour at Sebago Technics.



MEMORANDUM

370

To: Rick Knowland, City of Portland
From: Jim Seymour, Acting DRC
Date: February 5, 1998
Subject: Jetport Access Road Review Comments

I have performed my initial review of the Jetport Access Road and have provided the following comments:

1. Sheet 5, Connector Road Plan and Profile, Station 0+0 to 5+0

A section of storm drain from Storm Drain Manhole 1 heading easterly 365 feet to a point where it enters a ripped apron and then crosses the existing loop road with an 18" culvert should be redesigned such that the water does not travel in a 90° turn. The 18" culvert crossing the existing loop road should be angled to allow for an easier transition from the pipe system to the road culvert. This would require that the 365 feet of storm drain could be shortened to somewhere around 340 to 345 feet.

2. The applicant should show on the profile all the stormdrain manholes and catch basins in water quality units. Even though there is a schedule, it is difficult to determine their exact location and possible conflicts without showing them on the profile. Also, within the schedule, all structures should be located left or right of the baseline station for construction purposes.
3. On Sheet 5 and the following pages, several sections of the road embankment have been stabilized with stone riprap. That riprap should be sized and referred to the detail section on the plan.
4. On Sheet 6, a section of storm drain between Storm Manhole 3 and Catch Basins 5 and 6 is sized for 10" pipe. The same is true between Stormdrain Manhole 4 and CB-8 and CB-7. The smallest stormdrain to be constructed or installed should not be less than 12" in diameter.
5. On Sheet 6, at Station 15+0 both sides of the access road should be constructed with handicapped tip-down ramps so they can connect with the existing sidewalks which are already constructed or designed at the intersection of the access roads.

6. On Sheet 6, there appears there may be a slight conflict of utilities at Station 11+85. There is a sewer service stub left for future development. There should be an optimum 12" of clearance between the sanitary sewer and the storm drain. If not possible, the minimum should be 6" of clearance between the two pipes. In addition, insulation may be needed to cover the service stub to provide at least 3' of cover over the sanitary service.
7. Just a notice to the applicant that the Water District will require that the water main maintain a 3' separation between the catch basin faces and the outer face of the pipe. Prior to actual construction, the applicant should meet with Portland Water District to review all the plans.
8. On Sheet 8, there are some existing catch basins which need to be verified for their connections. These basins are located at the first driveway to Embassy Suites off Westbrook Street. It is necessary to verify pipe connections and where the runoff eventually discharges.
9. Also on Sheet 8, the applicant shows the storm drain from the Stormdrain Manhole 12 connecting to Catch Basin 19, and then on to Stormdrain Manhole 13. Because this is a City-accepted road, the City does not accept catch basins connected directly into the main storm line. A manhole will have to be installed and the catch basin will have to be connected to that manhole. I would suggest that a manhole be placed at approximately Station 26+60 such that Catch Basin 19 could drain into that manhole and then another stormdrain manhole could be installed at approximately Station 28+0. Due to the unique storm drain alignment at the intersection of the access road in Westbrook Street and the snow cover, I am not certain or convinced of how the storm drain discharges from this area. There appears to be a ditch line on the north side of the access road which is collected by a catch basin within that ditch line. No information has been given as to the location of where that storm drain discharges. Also, we will need to verify the pipe sizes exiting that last catch basin to make certain that the capacity can be matched with the actual runoff rate.
10. No water quality treatment has been proposed for the eastern side of the access road. I would suggest that the applicant prepare treatment measures to handle the water quality from this eastern leg of the access road. The best location to install a water quality system would be prior to the last catch basin located in the ditch line. If alternative measures can be provided, the applicant needs to provide us with those details.

I would also recommend that the benchmark PK nail on the easterly edge of Westbrook Street, Elevation 75.44, also be placed on Sheet 2 so that TBMs can be identified on both ends of the project.

11. On Sheet 10, due to the unique circumstances of the existing catch basin having a shallow invert elevation, I believe a 10" diameter for storm drain would be acceptable for this short section. Because of the shallow cover, I agree with the applicant's design of 2" rigid insulation placed over the top of the storm drain, and I would also suggest that insulation be placed along the side of the pipe because of the relatively short cover and shallow slope.
12. A note should be added to Sheet 10 to verify all pipe elevations of the existing sewer and proposed storm drain crossings to be sure there is no conflict of elevation. If there is such a conflict, the revised plans must be approved by the City Engineer.
13. On Sheet 11, the underdrain system is acceptable with the exception of one area at Station 3+30. Rather than having a 4-way section of underdrain connections, I would suggest that each connection only have a T-connection. The one section of pipe from Elevation 67.39 at .5 percent should flow in an easterly direction to Station 2+90 and connect that section with a T-connection.
14. ~~On Sheet 11, the culvert collecting the ditch water at the inlet end should be riprapped with irregular stone riprap and sized appropriately. The southern side of the proposed or reclaimed parking lot is graded such that the water will be directed to the middle of the parking lot and travel to the easterly end of the parking lot without catch basin collection. The design should provide a catch basin to collect this stormwater and tie into a catch basin and storm drain located on the northerly side of the parking lot. If necessary, a hydrobrake or Vortex valve should be installed in the last catch basin to control the runoff rate into that storm system to make certain that it does not surcharge with runoff from larger storms.~~
15. The parking lot grading is acceptable; however, the applicant needs to disclose what type of pavement cover and thicknesses will be used for the repaving of this parking lot section. ✓
16. On Sheet 13, the applicant has shown grading for a section of parking lot to discharge by sheet flow to an embankment. This embankment will require full stabilization and may need to be riprapped to protect the slope from erosion due to large amounts of runoff generated in the parking lot. Due to the poor quality of the plans, I cannot tell the elevations of the embankment or the pipe invert.
17. On the same Sheet 13, material type for the sidewalk should be shown on the plan. It is not certain whether that will be bituminous or concrete sidewalk. The applicant should clarify this item. ?
18. The applicant should show silt fence around the borders of this parking lot where the sheet flow discharges into the abutting undeveloped land.

19. On Sheet 18, the stone sediment barrier: although the detail has been shown, it is not indicated where within the design plans this is to be implemented. The designer should place notes referencing on the plans that this is to be used within the parking lots or wherever sedimentation into a catch basin is possible during construction.
20. On Sheet 19, drainage details, the applicant should include with the water quality units the design flow rates and desired particle size to be removed, and the efficiency removal rate of that particle. This is necessary information for a contractor to choose a water quality unit of equal size from one of the other specified manufacturers listed.
21. On Sheet 20, road details, with regard to the detail of the ditch on the west side of the parking lot, the applicant should use a jute matting or erosion control mesh along the sides and bottoms of the ditch because of the steep slopes of 2:1.
22. General comments about the planning and construction schedule for the project overall:
 - The applicant needs to indicate where or how all the reclaimed pavement will be removed or re-used on site. All stockpiled materials should be located on the plans and those areas shall be protected with silt fence or other means of erosion control to discourage off-site discharge of pollutants from these materials.
 - The contractor's storage area should be shown in detail, how the area is to be surfaced (either with crushed stone or gravel), and how that area is to be protected with erosion control. Also, a note should be added to the plans that the contractor is responsible for cleaning the street following daily activities and should have methods to keep dust down during dry construction periods. Also, any area with stockpiles or materials for this project should be barricaded from public access.
 - The applicant should also plan a pre-construction meeting with the following utilities: Northern Utilities, Portland Water District, Bell Atlantic, Central Maine Power Company, and the City of Portland Public Works Department. I would also strongly suggest that the applicant submit plans to these utilities for their review prior to construction to be certain that the utility companies approve the locations of the proposed utility.

As you are aware, there are many details and many design sections of this project. All of them may not be covered by my comments. However, I believe any issues that are left outstanding may be minor in detail and can be addressed during construction or prior to construction.

E-5

If you have any comments or questions regarding my review, please contact me at Sebago Technics. I believe Tony Lombardo, P.E. from Public Works and Larry Ash, P.E., Transportation Engineer will be reviewing this project for other aspects. I would suggest that the Planner, the Development Review Coordinator, and Public Works officials meet with the applicant to go over these comments so that they can expedite the project in a timely fashion.

JRS:jc

**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 *LA*
DATE: February 23, 1998
SUBJECT: Jetport/Embassy Suites Motel

With regard to truck traffic utilizing the new access road just north of the Embassy Suites Motel at its intersection with Westbrook Street, I can offer the following comments:

It is preferable for truck traffic to use this street rather than streets immediately adjacent to the terminal building or parking ramp. Pedestrian safety/visibility would appear to be the overriding concern for this recommendation. I would also wish to keep the existing street just north of the parking ramp a one-way street to simplify vehicular/pedestrian movements.

Should you have any questions, please call.

LA:jw

pc: William J. Bray, P.E., Director of Public Works

Jetport Parking Garage Expansion – Phase II

Revised Planning Board Motion for Site Plan Review August 14, 2007

2. On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Report #37-07, relevant to the Site Plan Ordinance and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board finds the plan (is/is not) in conformance with the site plan standards of the land use code, subject to the following conditions of approval:
 - i. Applicant shall conduct a traffic study of the Congress Street/International Drive and Johnson Road/Jetport Drive, as stated in Mr. Thomas Errico's August 10, 2007 memo, following the re-opening of the Maine Turnpike Bridge. If deficiencies are identified, the applicant would be responsible for implementing a mitigation plan reviewed and approved by the City
The approval is subject to a traffic monitoring period, six months from the issuance of a certificate of occupancy, to ensure the effective operation of all traffic improvements. If during that time the City determines the improvements are not working as intended, the Applicant shall be required to modify the improvements as directed by the City.
 - ii. Applicant shall submit a revised lighting plan for Planning Staff review and approval. The plan shall clearly indicate the location of all light fixtures; the type, manufacturer's name and model number; and height of all pole mounted fixtures.



Stantec

May 25, 2007
File: 195210126

Mr. Rick Knowland
Department of Planning and Development
Portland City Hall
389 Congress Street
Portland, Maine 04101

Dear Mr. Knowland:

**Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine**

Enclosed please find for your review our response to comments received for the above referenced project at the Portland International Jetport. The comments were outlined during planning department review meetings between planning department staff, Jetport staff and Stantec Consulting Services, Inc. staff on July 10, 2006 and March 9, 2007. A copy of the meeting minutes from the July 10, 2006 meeting is included as Attachment No. 1. Comments in ***bold italics*** and corresponding responses are as follows:

- 1. Subdivision Standards: Provide an Addendum to the application with responses to each of the city of Portland's subdivision standards; To be used as a summary document by the Planning Board.***

A summary document is included as Attachment No. 2 which addresses each of the thirtyone *Site Plan Approval* standards as outlined in Chapter 14 § 526 of the city of Portland's Code of Ordinances.

- 2. MDOT Traffic Permit: Provide another copy of the Maine Department of Transportation's response letter indicating that a Traffic Movement Permit is not required for this project.***

A copy of correspondence between the Maine Department of Transportation (MDOT) and Stantec is included as Exhibit No. 1 of Attachment No. 2. The response from the MDOT indicates that an *MDOT Traffic Movement Permit* is not required for the proposed project.

Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine

3. MDEP Review: Confirmed that MDEP is performing the Site Location of Development review.

No response required.

4. Existing Conditions Visibility: On all plan sheets, existing phase I garage and terminal labels should be more visible (bold, larger font)

Plan drawings have been revised to make existing structure labels more visible. Refer to attached plan set.

5. Garage Height: Provide the height of the proposed structure from the average ground elevation at base (4 corners) to the top of main structure (not including elevator tower, light posts, etc.). This is exterior height, not interior. Show dimension on elevation sheet A3-1.

The elevation of the proposed structure measured at the top of the railing of level 5 is 113.0 feet. The average ground elevation around the proposed structure is 63.2 feet (63.8' at NW corner, 63.7' at NE corner, 62.6' at SE corner, 62.7' at SW corner). The proposed structure height above grade is therefore 49.8 feet. Refer to the Colored Elevations sheet showing the 49'-10" dimension in the attached plan set.

6. Site Impervious: Provide the calculation for the total impervious surface of the property as a percentage of the total area of the property. Indicate that percentage will not change as Phase II area is already impervious.

The project is proposed to replace highly developed impervious surface with similar impervious surface. Exhibit No. 3 included in Attachment No. 2 is the most recent impervious surface area calculation for the Jetport property. The AB zone allows up to 70% impervious area. The calculation shows that the current development results in an impervious area calculation of approximately 55%.

7. Setbacks: Confirmed that there are no issues with property setbacks.

No response required.

8. Photometric Plans: Provide clean color 11"x17" copies of Photometric plans EP-1 and EP-2.

Color copies of EP-1 and EP-2 are included in the attached plan set.

9. Lighting Fixtures: Catalog cuts and lighting plan included as part of original submission. Referred to Section 12 of the application.

No response required.

Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine

10. Temporary Lot Status: Was the temporary lot ever approved by the Planning Board for permanent status? If yes, were changes made, (i.e. Green space, lighting, signage). If no, review needs to be included in this application, especially signage. Remember discussing this with Paul / Sarah Hopkins as part of baggage claim review.

The remote parking lot was approved as a permanent facility by the Portland Planning Board on September 28, 2004. All conditions associated with the approval have been met. A copy of the approval is included as Attachment No. 3.

11. Plan References: General problem with detail references to sheet numbers need to be addressed.

Refer to attached plan set.

12. Pedestrian Movement Plan: Provide single plan showing pedestrian movement paths, temporary barriers, construction access, etc. Provide written narrative to discuss plan.

Refer to sheet C8-1 included in the attached plan set.

13. Bathrooms: Confirmed there were no additional bathroom facilities proposed in the Phase II garage. No impact to existing sanitary sewer system.

No response required.

14. Parking Master Plan: Provide plan showing updated Master Plan.

Refer to Exhibit 6B included in attached plan set.

15. Parking Capacity: Provide response indicating sufficient capacity of facility to handle usage at completion of project.

The project does not propose a structure or development which will create the need for additional parking. Instead, the project itself involves the construction of a parking garage that is intended to provide additional parking capacity to satisfy existing and future needs at the Jetport as identified in the 2000 Parking Master Plan for the Portland Jetport approved by the City. When completed, the Phase II parking garage will result in a net increase of 451 parking spaces over the existing available parking capacity.

16. Parking Capacity – During Construction:

During construction, the necessary demolition of the existing parking garage structure and the use of a portion of the long term surface parking lot as a contractor staging and laydown area, will result in a temporary decrease in available parking of approximately 610 spaces and 153 spaces respectively for a total of 763 spaces. This decrease in

**Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine**

available parking will be partially offset by use of the Jetport's remote parking facility on outer Congress Street. Shuttlebus service between the remote lot and the terminal will be implemented during the construction period. Although less spaces will be available during construction, the parking demand during the proposed construction period is typically low. The project is scheduled for construction during the months of May 2008 through December 2008, with the new structure being open to parking by Thanksgiving of 2008. As a result, the impacts to available parking will occur during the low demand period of the summer months for parking at the Jetport, and thus the combination of remaining parking spaces and the remote lot will provide adequate available parking during this period. Exhibit No. 2 is a chart developed by the Jetport which demonstrates the typical historical demand for parking during the proposed construction period. The chart shows midnight parking counts for calendar years 04, 05, 06, and part of 07 and confirms that on or about day 115 (late March) the volume of parkers drops dramatically and stays low throughout the summer tourist season. During this time period, the use of the Jetport switches from local travelers leaving the state (and their parked cars) to tourist from outside the state coming in and renting cars. This data confirms that adequate parking will be available during the construction period.

17. Snow Removal: Indicate who is responsible for snow removal from temporary pedestrian movement areas during construction.

Snow removal from pedestrian areas is presently the responsibility of jetport staff. The project is intended to be substantially completed prior to the 2008/2009 winter period. However, In the event that snow removal is necessary, the contractor will be required to remove snow and maintain temporary pedestrian movement areas that pass through the construction site. Jetport staff will continue to be responsible for snow removal in pedestrian movement areas outside of the construction site.

18. Temporary Access: Indicate that proposed temporary construction entrances will be returned to existing conditions at the completion of the project.

Four temporary construction entrances are proposed to facilitate the flow of construction equipment and materials onto the site. The main construction entrance off of Jetport Boulevard will be constructed where the Jetport Access Road was previously located. The road pavement has since been removed and the area is currently turf. The topsoil will be removed and a gravel base prepared for the life of construction. Three other temporary construction entrances are also proposed connecting the airport loop roads to the contractor's temporary staging and lay down areas. At the completion of the project, all of the temporary construction entrances will be returned to their existing vegetated conditions. Refer to sheet C6-2 included in the attached plan set for location of temporary construction entrances.

**Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine**

19. *Parking Stall Dimensions: Obtain technical design standards waiver from the City for smaller than standard parking stalls. Provide interior layout drawing with sizes of stalls and aisles included.*

The proposed parking stall dimensions in the Phase II Garage are 9-feet wide by 18-feet long. These dimensions correspond with the dimensions of the parking stalls elsewhere at the Jetport including the existing Phase I Garage and the surface parking lots. The dimensions are also in accordance with the Parking Master Plan for the Portland International Jetport approved by the City in 2000. We are therefore requesting at this time that a technical design standards waiver be issued for this project as the proposed 9-foot by 18-foot stall is smaller than the current 9-foot by 19-foot city of Portland standard. Refer to sheet PS2-1 included in the attached plan set for interior layout of the proposed and existing garage structures with stall and lane dimensions.

20. *Water Quality Unit: Indicate on plans the location of the existing water quality treatment unit and note that drainage from the proposed project will be draining to this unit and subsequently to the detention basin.*

Stormwater runoff from the proposed garage will be collected by a new system of catchbasins and floor drains that drain to a new drain manhole along the eastern edge of the proposed garage (refer to sheet C5-1 included in the attached plan set). The drain manhole empties to an existing 18" HDPE stormdrain that in-turn empties into a deep gravity system of stormdrains that outlets at a water quality treatment unit in the center of the airfield before discharging to a large detention basin. The water quality treatment unit was constructed during the Phase I garage project and was sized to treat runoff from the Phase II structure as well. However, since construction of the Phase I project, the Maine Department of Environmental Protection (MDEP)'s standards for stormwater treatment were revised. The water quality treatment unit installed no longer meets current treatment standards. Therefore, in consultation with the MDEP, the Jetport is proposing to construct a stormwater filtration basin to meet current treatment standards.

The area surrounding the Phase II garage site is primarily built-up impervious development which limits the amount of space available for a treatment facility. As such, a filtration basin is proposed on the east side of Runway 18-36 to treat runoff from a portion of the runway and sections of the Perimeter Service and Yellowbird Roads (refer to sheet C1-2 included in the attached plan set). This approach of treating existing paved areas within the same watershed instead of the proposed development has been discussed and agreed to by the MDEP. An application for modification of the Jetport's Site Location of Development permit is currently being prepared for submission to the MDEP and a copy of the permit approval will be forwarded to the City when received.

The proposed filtration basin will be located between Yellowbird Road and the Fore River. Approximately half of the basin will be located within the City of Portland's designated Shoreland Protection Zone. The intent of the basin is to collect stormwater

**Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine**

runoff from approximately 1.5 acres of existing impervious surface and detain a volume equal to one-inch of runoff from all impervious surfaces. The runoff will then slowly drain through the bottom of the basin which is made up of a porous sand/organic material layer to an underdrain system approximately 2-feet below the surface. The underdrain will then discharge to an existing drainage ditch that empties into the Fore River. No impervious surfaces are proposed within the Shoreland Protection Zone. The improvements will require excavation, grading, and stormdrain / underdrain construction. No significant vegetation will be impacted by construction of the basin, and Best Management Practices (BMP's) will be implemented during construction. BMP's include silt fence, hay-bale and stone check dams in ditches, riprap at culvert outlets, and erosion control mesh on steep slopes and in areas with high erosion potential.

21. Basic Stabilization during Construction: Update the reference in Section 15 of the application to reflect the most current online version of the MDEP Erosion and Sediment Control Handbook for Construction.

During construction of the proposed Phase II improvements, the Basic Stabilization Standard as defined by MDEP will be met. Erosion and sediment control will be provided in accordance with standards outlined in the 2003 online version of the MDEP's Maine Erosion and Sediment Control BMPs Manual.

22. Renderings: Provide colored 3D drawings of garage, including Phase I.

Refer to colored rendering included in attached plan set.

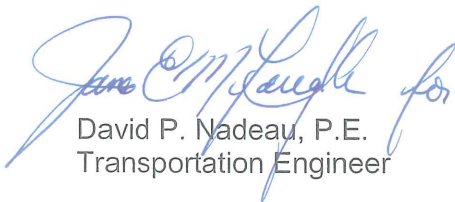
23. Landscaping: On landscaping plans, show all existing plantings.

Refer to sheet C7-1 included in attached plan set.

We trust that the enclosed documentation and responses provides you with sufficient information to finish your review of the proposed project's application for Major Site Plan Review. We look forward to presenting the proposed project at the upcoming Planning Board Workshop scheduled for June 12, 2007. If you require additional information, please don't hesitate to contact us.

Sincerely,

STANTEC CONSULTING SERVICES INC.



David P. Nadeau, P.E.
Transportation Engineer

Stantec

May 25, 2007

Page 7 of 7

**Reference: Phase II Parking Garage
Portland International Jetport
Portland, Maine**

Tel: (207) 775-3211
Fax: (207) 775-6434
dnadeau@stantec.com

Attachments: 9 copies each: 1) July 10, 2006 Meeting Minutes; 2) Site Plan Approval Standards Summary; 3) City of Portland Site Plan Approval for Remote Lot; 4) Revised Plan Set (11"x17")

c. Paul Bradbury - PWM
George Katsoufis - DHK
Jim McLaughlin - Stantec

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Jim Carmody -
* Fore St. - left stop work order -

Paul Bradbury
- Dave Nadeau Stantec

- Presentation -
Paul Bradbury -
- Net # of spaces - 458

Bill - no questions

Dave Silk -

roof top lighting

- canopy to shield bleeding light -
- grade A - Oull - Embassy
Suites

Shielded from resid.

Kevin Deal -

- 1996 - review -

- wayfinding signage - / vehicle movement
- design flaw - added signage

- gates - deplanements - what
is the max capacity -

1997 - 800,000 - anticipated by yr 2000

Lee - traffic improvements -
- tied to deplanements -

trigger point - when does it
get reconsidered

deplanements -

Bureau of transport statistics
2002 - 2007 - only 2 reported -
1996 permit - both major & all
deplanements or just major
carriers -

800,000 - carriers -
not gen-aviation -

- current maxed - over taxed
5:30 - 6:30 - 7am - Peak

9 gates - 20 flights w/in 1 hr -

- over capacity now -
terminal expansion as early as
2007 → traffic analysis at
that time

- accurate comparison -

financial analysis - 960 - 980,000
deplanements - should match what

is permitted —
bonding capacity — how much
needed —
provide to staff —

3. Overflow lot — / permanent lot ^{Bd approved}
— keys for overflow —
— use during construction of shuttle
— BB review —

Michael Patterson —

1. lighting report —

2. Trigger Pt for TMB —

— 570,000 —
770,000 placements

— current statistics —

751 enplanements —

20,000 less —

— doesn't need modified permit

Design of roadway improvements
Not a garage

— improvements might be sufficient
— existing improvements — adeq serve

annual reporting → revisiting
exceed that threshold - modify
permit -

swapping session -
annual reporting - of
prevent done w/ others -
- Projects come through -

Kevin Beal

- reservations -

- confined times
- have no limitation on expansion
of flights - unique situation

- Inter. Parkway - Congress St -
- appropriate recording
condition - total volume
doesn't exceed capacity

DEP - SLODA - permit -
- may

no public

Jetport Parking Garage Expansion – Phase II

**Revised Planning Board Motion for Site Plan Review
August 14, 2007**

2. On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Report #37-07, relevant to the Site Plan Ordinance and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board finds the plan (is/is not) in conformance with the site plan standards of the land use code, subject to the following conditions of approval:

i. Applicant shall conduct a traffic study of the Congress Street/International Drive and Johnson Road/Jetport Drive, as stated in Mr. Thomas Errico's August 10, 2007 memo, following the re-opening of the Maine Turnpike Bridge. If deficiencies are identified, the applicant would be responsible for implementing a mitigation plan reviewed and approved by the City. The approval is subject to a traffic monitoring period, six months from the issuance of a certificate of occupancy, to ensure the effective operation of all traffic improvements. If during that time the City determines the improvements are not working as intended, the Applicant shall be required to modify the improvements as directed by the City.

The son

ii. Applicant shall submit a revised lighting plan for Planning Staff review and approval. The plan shall clearly indicate the location of all light fixtures; the type, manufacturer's name and model number; and height of all pole mounted fixtures.

Subject to final staff approval of fl. fixtures

11.

report

and in the event the historic records ⁸¹⁰⁰⁰ ~~get~~ under shall apply for an amended ^{map} with the city &

The applicant shall submit ^{supplemental} financial information indicating adeg financial capacity for review & approval by city staff

(Alex) tape

H:30

TU

50 Tex/Od/Absent

Cianbro Corporation
 Cianbro Corporation
 1001 Westbrook Street
 Portland, Maine 04102
 Phone: 207-773-6365
 Fax: 207-773-0546

SUBMITTAL
 NO. 2
 PACKAGE NO: 15300

TITLE: Fire Protection Data Sheets
PROJECT: Portland Jetport Parking Garage

DRAWING:
STATUS: NEW
BIC: DUFHEN

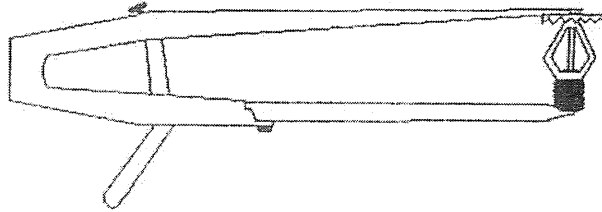
RECEIVED FROM HIGHTECH GD
SENT TO DUFHEN JC
RETURNED BY DUFHEN JC
FORWARDED TO HIGHTECH GD

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Prints	Date	Held Elapsed
001	Fire Protection Data Sheets	2/20/2002	2/21/2002			NEW	0	0	1

Portland Jetport Parking Garage Portland, Maine

HIGH TECH FIRE PROTECTION

P.O. BOX 1511
AUBURN, ME 04211-1511
998-2551



FIRE SPRINKLER SYSTEM PRODUCT DATA SHEETS SECTION 15300

NO EXCEPTION TAKEN	<input checked="" type="checkbox"/>
FURNISH AS CORRECTED	<input type="checkbox"/>
REVISE AND RESUBMIT	<input type="checkbox"/>
REJECTED	<input type="checkbox"/>

Checking is only for general conformance with the design concept and general conformance with the information given in the Contract Documents. Corrections or comments made during this review do not relieve the Contractor from compliance with the requirements of the Contract Documents.

DUFRESNE-HENRY, INC.
Date 2/2/00 By JVC

Cianbro Corporation

Cianbro Corporation
1001 Westbrook Street
Portland, Maine 04102

Phone: 207-773-6365
Fax: 207-773-0546

SUBMITTAL

NO. 3

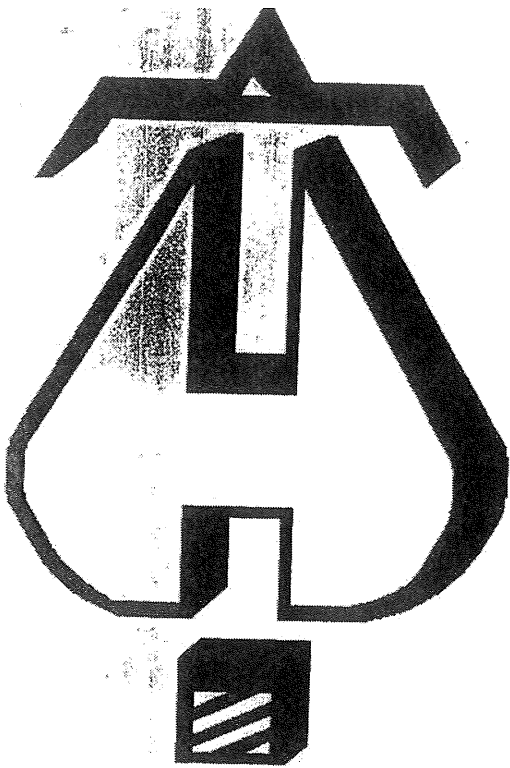
PACKAGE NO: 15300

TITLE: Hydraulic Calculations
PROJECT: Portland Jetport Parking Garage
DRAWING:
STATUS: NEW
BIC: DUFHEN

REQUIRED START:
REQUIRED FINISH:
DAYS HELD: 0
DAYS ELAPSED: 1
DAYS OVERDUE: 0

RECEIVED FROM	SENT TO	RETURNED BY	FORWARDED TO
HIGHTECH GD	DUFHEN JC	DUFHEN JC	HIGHTECH GD

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Sepias	Prints	Drawing Date	Held	Elapsed
001	Hydraulic Calculations	2/20/2002	2/21/2002			NEW	0	0		0	1

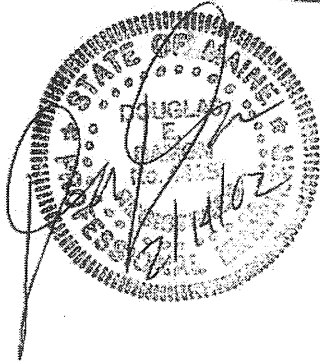


NO EXCEPTION TAKEN	<input checked="" type="checkbox"/>
FURNISH AS CORRECTED	<input type="checkbox"/>
REVISE AND RESUBMIT	<input type="checkbox"/>
REJECTED	<input type="checkbox"/>

Checking is only for general conformance with the design concept and general conformance with the information given in the Contract Documents. Corrections or comments made during this review do not relieve the Contractor from compliance with the requirements of the Contract Documents.

DUFRESNE-HENRY, INC.

Date 2/28/02 By JJC 501



Fire Protection by Computer Design

High Tech Fire Protection
PO Box 1511
Auburn ME. 04210
998-2551

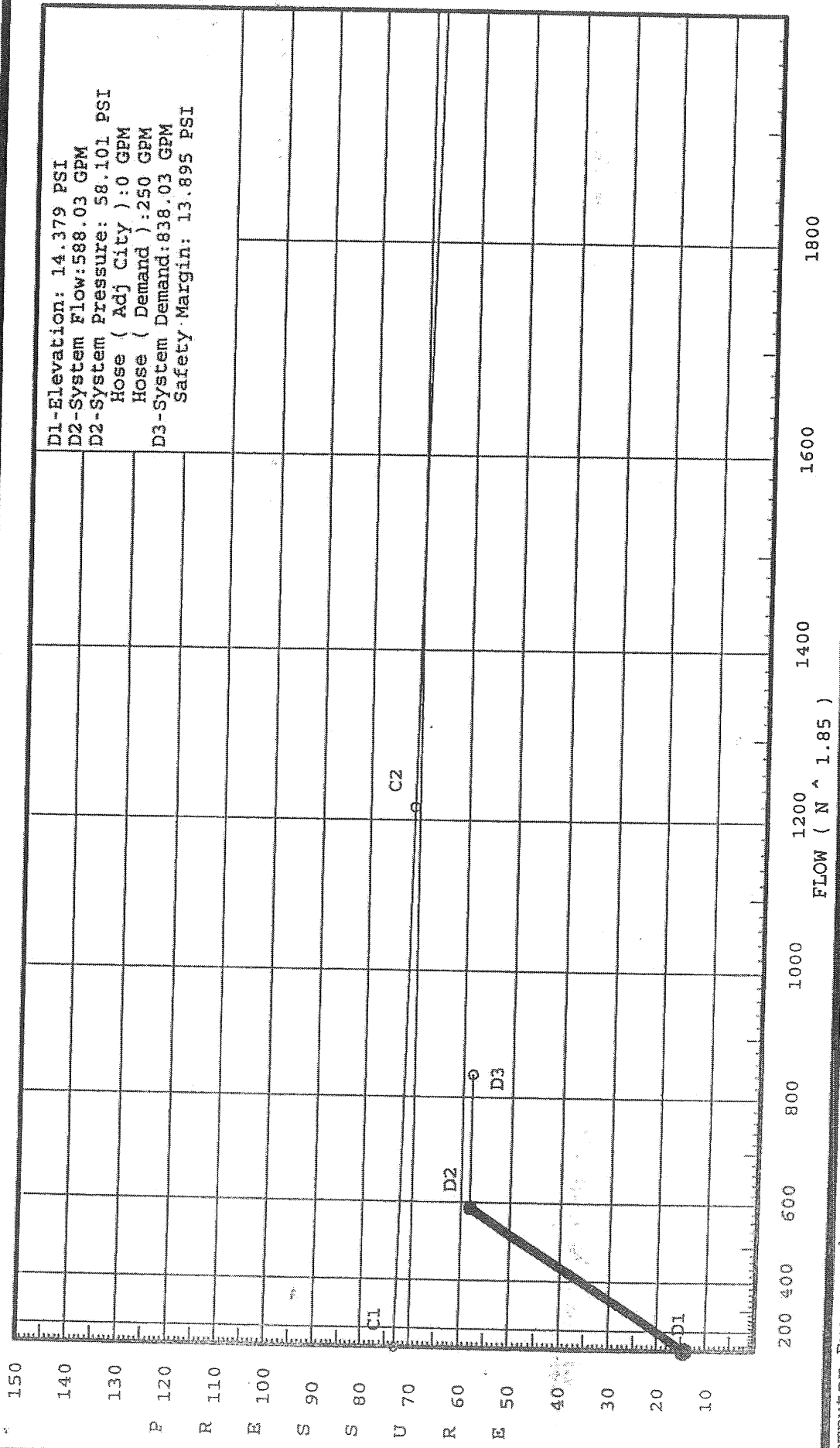
Job Name : CRF CEILING
Building :
Location : *CRF Ceiling*
System : *DRY*
Contract :
Data File : CRF.WX3

.1 / 2535 sqft #

City Water Supply:
C1-Static Pressure: 73 PSI
C2-Residual Pressure: 71 PSI
C2-Residual Flow: 1216 GPM

Pump Data:

D1-Elevation: 14.379 PSI
D2-System Flow: 588.03 GPM
D2-System Pressure: 58.101 PSI
Hose (Adj City): 0 GPM
Hose (Demand): 250 GPM
D3-System Demand: 838.03 GPM
Safety Margin: 13.895 PSI



Fitting Legend
Abbrev.

Name

A	Generic Alarm Va
B	Generic Butterfly Valve
C	Roll Groove Coupling
D	Dry Pipe Valve
E	90' Standard Elbow
F	45' Elbow
G	Gate Valve
H	45' Grvd-Vic Elbow
I	90' Grvd-Vic Elbow
J	90' Grvd-Vic Tee
K	Detector Check Valve
L	Long Turn Elbow
M	Medium Turn Elbow
N	PVC Standard Elbow
O	PVC Tee Branch
P	PVC 45' Elbow
Q	Flow Control Valve
R	PVC Coupling/Run Tee
S	Swing Check Valve
T	90' Flow thru Tee
U	45' Firelock Elbow
V	90' Firelock Elbow
W	Wafer Check Valve
X	90' Firelock Tee
Y	Mechanical Tee
Z	Flow Switch

Unadjusted Fittings Table

1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
						7.7	21.5		17.0
1	1	1	1	1	1	7	10		12
						1	1	1	1
2	2	2	3	4	5	9.5	17		28
1	1	1	1	2	2	6	7	8	10
						3	3	3	4
		1	1.5	2	2	1	1	1	2
		2	3	4	3.5	3	3	3.5	3.5
		4.5	6	8	8.5	6	5.0	8	7
						10.8	13	17	16
1	1	2	2	2	3		14		14
							5	5	6
7	7	2	3	3	4	5	6	6	8
3	3	5	8	9	11	12	13		
1	1	1	6	8	10	12	15		
			2	2	2	3	4		
					18		29		
1	1	1	1	1	1	2	2		35
4	5	5	7	9	11	14	16	19	22
3	4	5	6	8	10	12	15	17	20
					1.8	2.2	2.6		3.4
					3.5	4.3	5		6.8
					8.5	10.8	13		10.3
2.0	4.0	5.0	6.0	8.0	10.5	12.5	15.5		16
2	2	2	3	4	5	6	7	8	22
									10
5	6	8	10	12	14	16	18	20	24
17	27	29							
9	10	12	19	21					
1	1	1	1	1	1	1	1	1	1
	47								
12	14	18	22	27	35	40	45	50	61
5	7	9	11	13	17	19	21	24	28
2	3	4	5	6	7	8	10	11	13
4.5	5	6.5	8.5	10	18	20	23	25	30
8.5	10	13	17	20	23	25	33	36	40
21	25	33	41	50	65	78	88	98	120
	36	55	45						
8	9	13	16	18	24	27	30	34	40
10	12	16	19	22					
	33								
27	32	45	55	65	76	87	98	109	130
25	30	35	50	60	71	81	91	101	121
4.2	5.0	5.0							
8.5	10	13							
	13.1	31.8	35.8	27.4					
21	25	33							
12	14	18	22	27	35	40	45	50	61

Node No.	Elevation	K-Fact	Pt Actual	Pn Actual	Flow Added	Density Req.	Area	Press Req.
DPI	0	5.6	12.25	na	19.6	.1	196	7
100	21.5	K = K @ EQ01	20.06	na	23.85			
102	25.5	K = K @ EQ01	18.59	na	22.95			
104	29.4	K = K @ EQ01	17.5	na	22.27			
106	33.3	K = K @ EQ01	16.89	na	21.88			
108	37.2	K = K @ EQ01	16.86	na	21.86			
101	21.5		20.06	na				
103	25.5		18.59	na				
105	29.4		17.5	na				
107	33.3		16.89	na				
109	44		13.91	na				
110	24.8	K = K @ EQ01	15.96	na	21.27			
112	24.8	K = K @ EQ01	15.96	na	21.27			
113	27.9	K = K @ EQ01	14.73	na	20.43			
115	27.9	K = K @ EQ01	14.73	na	20.43			
116	31.2	K = K @ EQ01	13.91	na	19.86			
118	31.2	K = K @ EQ01	13.91	na	19.86			
119	34.2	K = K @ EQ01	14.06	na	19.96			
121	37.5	K = K @ EQ01	14.61	na	20.35			
111	24.8		15.96	na				
114	27.9		14.73	na				
117	31.2		13.91	na				
120	37.5		12.63	na				
122	44		11.8	na				
123	27	K = K @ EQ01	15.04	na	20.65			
125	27	K = K @ EQ01	15.04	na	20.65			
126	29.5	K = K @ EQ01	14.06	na	19.96			
128	29.5	K = K @ EQ01	14.06	na	19.96			
129	33.2	K = K @ EQ01	13.55	na	19.6			
131	37.1	K = K @ EQ01	13.98	na	19.9			
124	27	K = K @ EQ01	15.04	na	20.65			
127	29.5	K = K @ EQ01	14.06	na	19.96			
130	33.2	K = K @ EQ01	13.55	na	19.6			
132	44		10.99	na				
133	31.8	K = K @ EQ01	24.52	na	26.36			
135	36.1	K = K @ EQ01	22.91	na	25.48			
137	41.2	K = K @ EQ01	21.31	na	24.58			
134	31.8		24.52	na				
136	36.1		22.91	na				
138	44		20.1	na				
139	34.2	K = K @ EQ01	27.47	na	27.9			
141	40.8	K = K @ EQ01	24.85	na	26.54			
140	34.2		27.47	na				
142	44		23.46	na				
143	31.8		28.48	na				
144	27		26.57	na				
145	24.8		16.07	na				
146	21.5		17.43	na				
140	34		27.47	na				
134	31.8		24.52	na				
124	27		15.04	na				
111	24.8		15.96	na				
101	21.5		20.06	na				
G	44		23.86	na				
H	44		23.87	na				
I	44		23.89	na				
J	44		23.96	na				
K	44		24.03	na				
L	44.8		23.69	na				
M	11		39.32	na				
N	11		39.99	na				
O	9		41.63	na				
TOR2	18		41.68	na				
BOR2	9		47.3	na				
BASE	0		56.47	na				

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Added	Density Req.	Area	Press Req.
HOSE	0		56.6	na	250			
TEST	0		58.1	na				

The maximum velocity is 13.25 and it occurs in the pipe between nodes 132 and 1

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
DP1 to EQ01	19.60 19.60	1.049 100 0.1756	2E 1T	1.427 3.568	1.000 6.426 7.426	12.250 1.304	K Factor = 5.6 Vel = 7.276
	19.60					13.554	K Factor = 5.32
100 to 101	23.85 23.85	1.049 100			0.001 0.001	20.062	K Factor @ node EQ01 Vel = 8.854
	23.85					20.062	K Factor = 5.32
102 to 103	22.95 22.95	1.049 100			0.001 0.001	18.585	K Factor @ node EQ01 Vel = 8.520
	22.95					18.585	K Factor = 5.32
104 to 105	22.27 22.27	1.049 100			0.001 0.001	17.504	K Factor @ node EQ01 Vel = 8.267
	22.27					17.504	K Factor = 5.32
106 to 107	21.88 21.88	1.049 100			0.001 0.001	16.893	K Factor @ node EQ01 Vel = 8.122
	21.88					16.893	K Factor = 5.32
108 to 109	21.86 21.86	1.049 100			0.001 0.001	16.860 -2.945	K Factor @ node EQ01 Vel = 8.115
	21.86					13.915	K Factor = 5.86
101 to 103	38.48 38.48	2.157 100 0.0183			14.000 14.000	20.062 -1.732 0.256	Vel = 3.379
103 to 105	22.95 61.43	2.157 100 0.0434			14.000 14.000	18.586 -1.689 0.608	Vel = 5.393
105 to 107	22.27 83.70	2.157 100 0.0770			14.000 14.000	17.505 -1.689 1.078	Vel = 7.349
107 to 109	21.88 105.58	2.157 100 0.1183			14.000 14.000	16.893 -4.634 1.656	Vel = 9.270
109 to G	21.86 127.44	2.157 100 0.1675	4E 1T	4.392 8.783	33.000 26.361 59.361	13.915	Vel = 11.189

Hyd. Ref. Point	Qa Qt	Dia. "C" PF/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
	127.44				23.860		K Factor = 26.09
110 to 111	21.27	1.049 100		0.001	15.964		K Factor @ node EQ01
	21.27			0.001			Vel = 7.896
	21.27				15.964		K Factor = 5.32
112 to 111	21.27	1.049 100		0.001	15.964		K Factor @ node EQ01
	21.27			0.001			Vel = 7.896
	21.27				15.964		K Factor = 5.32
113 to 114	20.43	1.049 100		0.001	14.728		K Factor @ node EQ01
	20.43			0.001			Vel = 7.584
	20.43				14.728		K Factor = 5.32
115 to 114	20.43	1.049 100		0.001	14.728		K Factor @ node EQ01
	20.43			0.001			Vel = 7.584
	20.43				14.728		K Factor = 5.32
116 to 117	19.86	1.049 100		0.001	13.909		K Factor @ node EQ01
	19.86			0.001			Vel = 7.373
	19.86				13.909		K Factor = 5.33
118 to 117	19.86	1.049 100		0.001	13.909		K Factor @ node EQ01
	19.86			0.001			Vel = 7.373
	19.86				13.909		K Factor = 5.33
119 to 120	19.96	1.049 100		0.001	14.056		K Factor @ node EQ01
	19.96			0.001	-1.429		Vel = 7.410
	19.96				12.627		K Factor = 5.62
121 to 122	20.35	1.049 100		0.001	14.612		K Factor @ node EQ01
	20.35			0.001	-2.815		Vel = 7.554
	20.35				11.797		K Factor = 5.92
1 to 4	26.05	2.157 100		12.000	15.964		
	26.05	0.0089		12.000	-1.343		
					0.107		Vel = 2.287

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
114 to 117	40.86 to 66.91	2.157 100 0.0508		12.000	14.728 -1.429 0.610		Vel = 5.875
117 to 120	39.71 to 106.62	2.157 100 0.1204		12.000	13.910 -2.729 1.445		Vel = 9.361
120 to 122	19.96 to 126.58	2.157 100 0.1654		12.000	12.627 -2.815 1.985		Vel = 11.114
122 to H	20.35 to 146.93	2.157 100 0.2180	4E 1T	4.392 8.783	29.000 26.361 55.361	11.797 12.068	Vel = 12.900
	146.93				23.865		K Factor = 30.08
123 to 124	20.65 to 20.65	1.049 100		0.001	15.041		K Factor @ node EQ01
	20.65			0.001			Vel = 7.666
	20.65				15.041		K Factor = 5.32
25 to 24	20.65 to 20.65	1.049 100		0.001	15.041		K Factor @ node EQ01
	20.65			0.001			Vel = 7.666
	20.65				15.041		K Factor = 5.32
26 to 27	19.96 to 19.96	1.049 100		0.001	14.062		K Factor @ node EQ01
	19.96			0.001			Vel = 7.410
	19.96				14.062		K Factor = 5.32
28 to 27	19.96 to 19.96	1.049 100		0.001	14.062		K Factor @ node EQ01
	19.96			0.001			Vel = 7.410
	19.96				14.062		K Factor = 5.32
9 to 0	19.60 to 19.60	1.049 100		0.001	13.554		K Factor @ node EQ01
	19.60			0.001			Vel = 7.276
	19.60				13.554		K Factor = 5.32
1 to 2	19.90 to 19.90	1.049 100		0.001	13.979 -2.988		K Factor @ node EQ01
	19.90			0.001			Vel = 7.387
	19.90				10.991		K Factor = 6.00
4 to 7	31.86 to 31.86	2.157 100 0.0129		8.000	15.042 -1.083 0.103		K Factor @ node EQ01
	31.86			8.000			Vel = 2.797

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
127 to 130	59.90 91.76	2.157 100 0.0913		12.000 12.000	14.062 -1.602 1.095		K Factor @ node EQ01 Vel = 8.056
130 to 132	39.20 130.96	2.157 100 0.1762		12.000 12.000	13.554 -4.677 2.114		K Factor @ node EQ01 Vel = 11.498
132 to I	19.90 150.86	2.157 100 0.2289	4E 1T	4.392 8.783 30.000 26.361 56.361	10.991 12.901		Vel = 13.245
	150.86				23.892		K Factor = 30.86
133 to 134	26.36 26.36	1.049 100		0.001 0.001	24.518		K Factor @ node EQ01 Vel = 9.786
	26.36				24.518		K Factor = 5.32
135 to 136	25.48 25.48	1.049 100		0.001 0.001	22.909		K Factor @ node EQ01 Vel = 9.459
	25.48				22.909		K Factor = 5.32
137 to 138	24.58 24.58	1.049 100		0.001 0.001	21.313 -1.213		K Factor @ node EQ01 Vel = 9.125
	24.58				20.100		K Factor = 5.48
134 to 136	41.58 41.58	2.157 100 0.0211		12.000 12.000	24.518 -1.862 0.253		Vel = 3.651
136 to 138	25.48 67.06	2.157 100 0.0511		12.000 12.000	22.909 -3.421 0.613		Vel = 5.888
138 to J	24.57 91.63	2.157 100 0.0910	4E 1T	4.392 8.783 16.000 26.361 42.361	20.101 3.855		Vel = 8.045
	91.63				23.956		K Factor = 18.72
139 to 140	27.90 27.90	1.049 100		0.001 0.001	27.467		K Factor @ node EQ01 Vel = 10.357
	27.90				27.467		K Factor = 5.32
141 to 142	26.54 26.54	1.049 100		0.001 0.001	24.849 -1.386		K Factor @ node EQ01 Vel = 9.852

Hyd. Ref. Point	Qa Qt	Dia. "C" PF/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
	26.54					23.463	K Factor = 5.48
140 to 142	44.62	2.157 100		10.000		27.467 -4.244	
		0.0240		10.000		0.240	Vel = 3.918
142 to K	26.54	2.157 100		10.000		23.463	
	71.16	0.0570		10.000		0.570	Vel = 6.248
	71.16					24.033	K Factor = 14.52
143 to 144	-16.72	1.049 100	1E	1.427	29.000	28.477 1.428 2.079	
	-16.72	-0.1309			30.428	-3.983	Vel = -6.207
144 to 145	-15.22	1.049 100	1E	1.427	25.000	26.572 1.428 0.953	
	-31.94	-0.4335			26.428	-11.456	Vel = -11.857
145 to 146	30.08	1.049 100	1E	1.427	30.000	16.069 1.428 1.429	
	-1.86	-0.0023			31.428	-0.071	Vel = -0.690
146 to 147	16.49	1.049 100	1E	1.427	24.000	17.427 1.428 9.312	
	14.63	0.1022			25.428	2.600	Vel = 5.431
	14.63					29.339	K Factor = 2.70
140 to 143	-16.72	2.157 100	1E	4.392	3.000	27.467 4.393 1.039	
	-16.72	-0.0039			7.393	-0.029	Vel = -1.468
	-16.72					28.477	K Factor = -3.13
134 to 144	-15.22	2.157 100	1E	4.392	3.400	24.518 4.393 2.079	
	-15.22	-0.0033			7.793	-0.026	Vel = -1.336
	-15.22					26.571	K Factor = -2.95
24 to 45	30.08	2.157 100	1E	4.392	2.000	15.042 4.393 0.953	
	30.08	0.0116			6.393	0.074	Vel = 2.641
	30.08					16.069	K Factor = 7.50
11 to 16	16.49	2.157 100	1E	4.392	4.300	15.964 4.393 1.429	
	16.49	0.0038			8.693	0.033	Vel = 1.448
	16.49					17.426	K Factor = 3.95
11 to 17	-14.63	2.157 100	1E	4.392	7.200	20.062 4.393 9.312	
	-14.63	-0.0030			11.593	-0.035	Vel = -1.284

yd. ef. oint	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
	-14.63				29.339		K Factor = -2.70
G to H	127.44	6.357 100		6.200	23.860		
	127.44	0.0008		6.200	0.005		Vel = 1.288
H to I	146.93	6.357 100		7.500	23.865		
	274.37	0.0036		7.500	0.027		Vel = 2.773
I to J	150.86	6.357 100		7.900	23.892		
	425.23	0.0081		7.900	0.064		Vel = 4.298
J to L	91.64	6.357 100		6.900	23.956 -0.346		
	516.87	0.0116		6.900	0.080		Vel = 5.225
	516.87				23.690		K Factor = 106.19
C to J	71.16	6.357 100		8.900	24.033 -0.346		
	71.16	0.0003		8.900	0.003		Vel = 0.719
J to I	516.87	6.357 100	3E 12.563	30.000 37.705	23.689 14.639		
	588.03	0.0147		67.705	0.994		Vel = 5.944
I to I		6.357 100	1E 12.563	33.000 12.568	39.322 0.669		
	588.03	0.0147		45.568	0.669		Vel = 5.944
I to O		6.357 100	1E 12.563 1T 26.921	13.000 39.500	39.991 0.866		
	588.03	0.0147		52.500	0.771		Vel = 5.944
O OR2		6.357 100	6E 12.563	194.000 75.410	41.627 -3.898		
	588.03	0.0147		269.410	3.955		Vel = 5.944
OR2 O OR2		6.357 100	1D 42.176 1G 2.692 1T 26.921 2E 12.563	20.000 96.956 116.956	41.684 3.898 1.717		
	588.03	0.0147					Vel = 5.944
OR2 O ASE		8.249 140	3E 26.623	42.000 79.870	47.299 8.898		
	588.03	0.0022		121.870	0.270		Fixed loss = 5 Vel = 3.530
ASE O DSE		8.27 140	1G 5.990 1E 26.955	30.000 32.945	56.467 0.138		
	588.03	0.0022		62.945	0.138		Vel = 3.512
DSE O EST	250.00	12.34 140	1T 93.767	2400.000 93.767	56.604		Qa = 250
	838.03	0.0006		2493.767	1.496		Vel = 2.248
	838.03				58.100		K Factor = 109.94

hyd. ref. point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
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Portland Jet Port

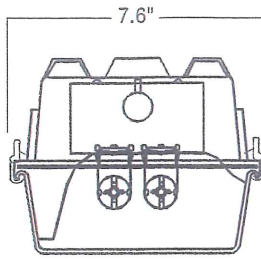
Garage Phase 2

Permitting Fixture Cut-Sheets

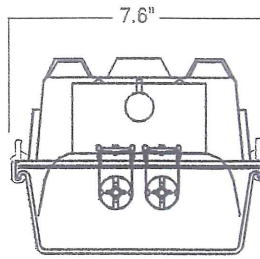
Stantec Project #: 195210126

	RENOVA FOR INTELEENERGY	VT-S-4-B-1-3-H-1		FLUOR	WHITE	PENDANT	277	(3) F32T8 / TL835 / ALTO
	RENOVA FOR INTELEENERGY	VT-S-4-B-1-3-H-1		FLUOR	WHITE	PENDANT	277	(3) F32T8 / TL835 / ALTO
	RENOVA FOR INTELEENERGY	VT-S-4-B-1-3-H-1		FLUOR	WHITE	CEILING	277	(3) F32T8 / TL835 / ALTO
ONE FIXTURE	KIM	1A/STL3/175MH/277/ /TSP/PRA20-6188 A/TS/ (SEE NOTES 1 & 2)		MH	NOTE 1	POLE	277	(1) 175W MH
ONE FIXTURE	KIM	1A/STL3/175MH/277/ /TSP/QSPRA20-6188 A/TS/ (SEE NOTES 1 & 2)		MH	NOTE 1	POLE	277	(1) 175W MH, (1) 100W QTZ (RSRTK)
TWO FIXTURE	KIM	2L/STL3/175MH/277/ /TSP/PRA20-6188 L/TS/ (SEE NOTES 1 & 2)		MH	NOTE 1	POLE	277	(2) 175W MH
TWO FIXTURE	KIM	2L/STL3/175MH/277/ /TSP/QSPRA20-6188 L/TS/ (SEE NOTES 1 & 2)		MH	NOTE 1	POLE	277	(2) 175W MH, (1) 100W QTZ (RSRTK)
	LUMINAIRE	LVP751-260HO-CW-277		FLUOR	WHITE	CEILING	277	(2) F48T12/HO
	LUMINAIRE	LV SAB 1 R 277 WL		FLUOR	WHITE	CEILING	277	(4) F48T12/HO
JUNTED	LITHONIA	LE S 1 R 277		LED	ALUM.	WALL	277	LED
	LITHONIA	QD-UC-MB-56A-277		LED	ALUM.	WALL	277	LED
	FAIL-SAFE	C71422E-7150LI		FLUOR	BLACK	CEILING	277	(2) 28W QUAD
JR	HALO	FW2 810 W 1 T8 E 277 RC PL		FLUOR	WHITE	RECESSED	277	(1) 42W PL-T
3BY CORRIDOR	FOCAL POINT	CB-12-S-42-HORZ-FLAT-AGR-1-26QCF		FLUOR	N/A	RECESSED	277	(1) F32T8/35K
	AAL	LA 2 32 277		CFUOR	WHITE	CONCRETE	277	(1) 26W QUAD
	LITHONIA	GFWF26H120DGPC		FLUOR	WHITE	PENDANT	277	(2) F32T8/35K
	CANLET	ELT24-N-H1212		FLUOR	ALUM.	WALL	120	(1) 26W PL-T
	LITHONIA			HAL	NOTE 1	WALL	277	(2)12W

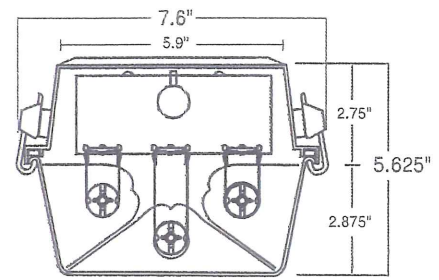
CROSS SECTIONS



2 Lamp
Asymmetric

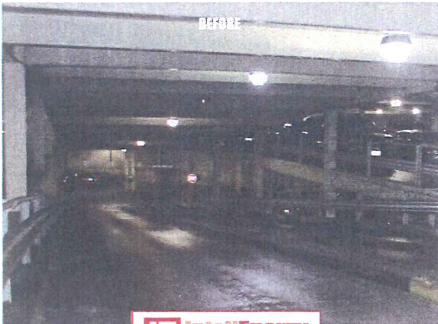


2 Lamp
Normal



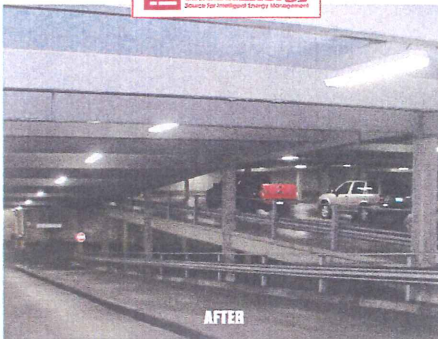
3 Lamp
Broad

FIXTURE DETAIL



Purdue Pharma Garage Stamford, CT

Existing Fixtures:
150-watt MH
(195-watts total)
New Fixtures: Four
foot, SP (90-watts
3-lamp VT's)



Pickwick Plaza Garage Greenwich, CT

Existing Fixtures:
175-watt MH
(210-watts total)
New Fixtures: Four
foot, MP (98-watts
3-lamp VT's)



Models Available



Fixture
Series



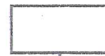
Fixture
Type



Length
4-Four Foot
8-Eight Foot



Photometric
Distribution
N-Normal
B-Broad
A-Asymmetric



Lamp Type
1-F32T8
O-Other
(Specify)



Lamp
Qty
2 thru 4



Ballast Type
L-Low Power
S-Standard
M-Medium
H-High Power



Voltage
1-Universal
2-480 Volt



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(203) 863.1930 • fax (203) 849.1868 • www.intellenergy.com

In New York

155 Stone Meadow • South Salem, NY 10590
(914) 533.5588 Fax (914) 533.5063

IE -VT02
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High-Intensity Fluorescent Garage Luminaire HID Replacement



APPLICATIONS & ADVANTAGES:

Specially designed to provide maximum efficiency lighting for garage environments, the VT high-intensity fluorescent (VT-HIF) luminaire features a heavy grade industrial fixture enclosed inside a fully gasketed, high quality fiberglass body. The VT series is designed to "push" light across and along the luminaire to maximize light output in between the luminaires where it is typically most needed. The VT is suitable for exterior, wet location and damp environments. The VT-HIF luminaire is custom engineered to replace HID fixtures (70-watt to 175-watt) with four foot, two and three lamp T8 configurations from 76-watts to 126-watts. (No four lamp luminaires are needed. Any additional light will come from a higher power ballast). If necessary, eight foot, two, three and four lamp configurations can also be used.

FEATURES:

This efficient, enclosed luminaire is available in 4' and 8' nominal lengths.

- Available in two or three lamp and asymmetric profiles with a wide variety of photometry.
- Standard shatter-resistant high-impact 50% DR acrylic lens fits snugly to provide a water tight seal between lens and gasket.
- Standard zero-degree electronic ballasts with variety of ballast factor configurations.
- Wet location die cast zinc hub provides point of entry for connection.
- Optional mounting bracket available. Paint after fabrication available. Carries UL and CUL wet location listings.

SPECIFICATIONS:

HOUSING: Gasketed, fiberglass enclosure is dust and moisture resistant. Standard shatter resistant 50% DR acrylic lens is held in place by latches that ensure a continuous seal.

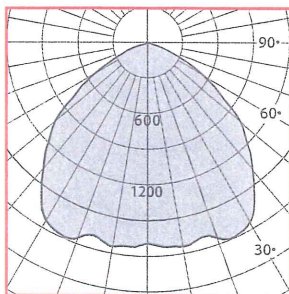
CHANNEL: Formed from cold rolled, pre-painted steel. Five stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

REFLECTOR: Material is Miro® enhanced specular aluminum with a total reflectivity of 95%.

MOUNTING: The VT series fixture is suitable for surface or pendant mounting.

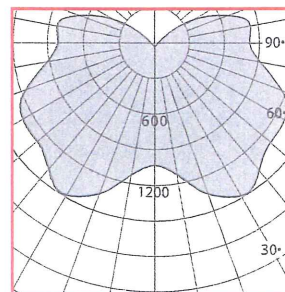
LAMP HOLDERS: T8 lamps are secured with locking lampholders.

PHOTOMETRY:



2-LAMP NORMAL

Fixture Efficiency: 80.2%
SC Across: 1.4, SC Along: 1.3

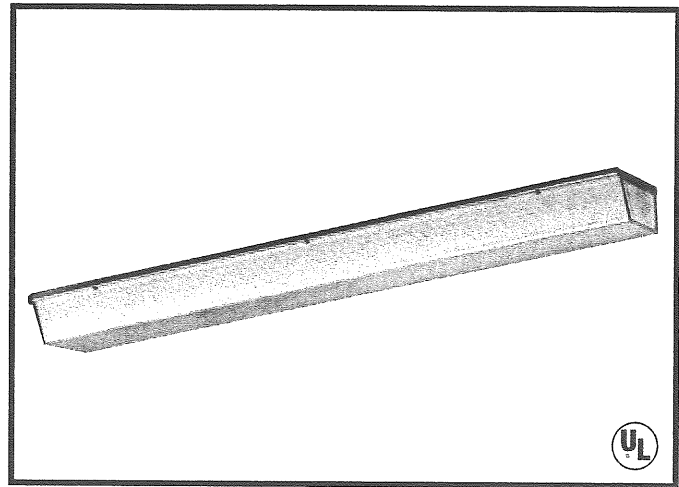


3-LAMP BROAD

Fixture Efficiency: 67.9%
SC Across: 1.9, SC Along: 1.3

SPECIFICATIONS

- Backplate** Die formed 16 gauge cold rolled zinc coated steel. Finished with electrostatically applied white polyester powder coat.
- Lens** One piece injection molded UV stabilized prismatic polycarbonate with minimum 1/8" wall thickness. Secured to backplate with (6) stainless steel TORX® head screws.
- Reflector** Die formed 20 gauge cold rolled steel. Finished with white powder coat.
- Ballast** Electronic high frequency.
- Sockets** Medium bi-pin secured to fixture housing with machine screws and nuts.

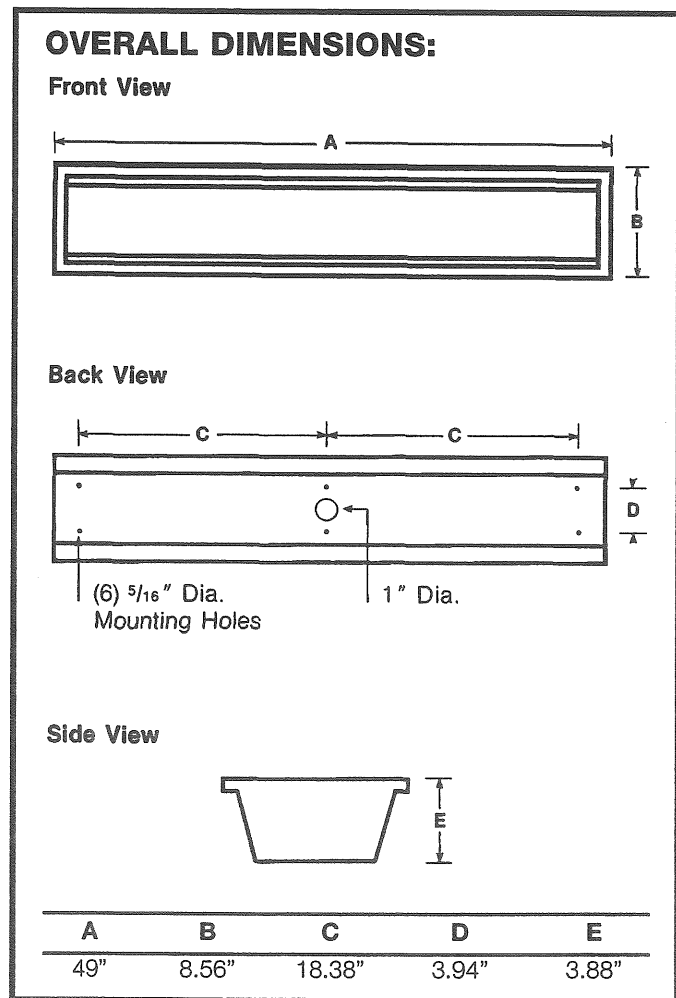


OPTIONS

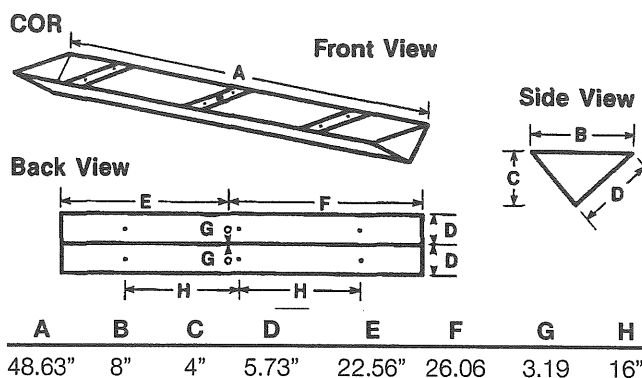
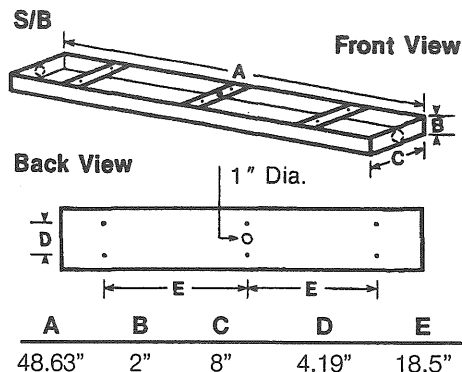
- OPAL** Opal polycarbonate lens instead of clear prismatic.
- WET** Closed cell neoprene gasketing as required for UL wet location listing.
- DAMP** Closed cell neoprene gasketing as required for UL damp location listing.
- 277V** 277 volt ballast.
- NL** PL 5/7 nightlight (lamp not included).
- GLR** Fuse and fuse holder.
- EMB** 90 minute self contained emergency battery pack.
- EMB 50** Specification grade 90 minute self contained emergency battery pack.
- PRS** Program rapid start electronic ballast.
- LH** Low harmonics (10% THD)
- AL** Aluminum backplate and ballast cover.
- ST/SC** Slotted screws instead of TORX® head.

ACCESSORIES

- S/B** Steel surface backbox. Constructed from 16 gauge cold rolled zinc coated steel. Finished with white powder coat.
- COR** Corner mounted backbox. Constructed from 16 gauge cold rolled zinc coated steel. Finished with white powder coat.
- TX/SD** TORX® head bit.

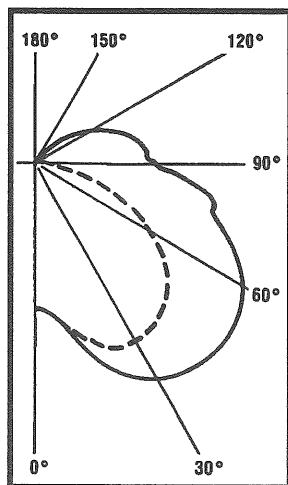


ACCESSORIES OVERALL DIMENSIONS:



PHOTOMETRIC DATA

CANDLEPOWER DISTRIBUTION CURVE



MODEL LVP 751 - 232 - ELECT - 120

LTL #01739
Formed steel housing, white enamel reflector, clear polycarbonate prismatic drop lens.

Ballast: Magnetek B2321120RH

Lamps: Two GE F32T8-SP41 rated 2900 lumens each.

Mounting: Surface

ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt
0-30	450	7.8	12.5
0-40	837	14.4	23.4
0-60	1815	31.3	50.7
0-90	2984	51.5	83.3
90-120	500	8.6	14.0
90-130	563	9.7	15.7
90-150	596	10.3	16.6
90-180	598	10.3	16.7
0-180	3582	61.8	100.0

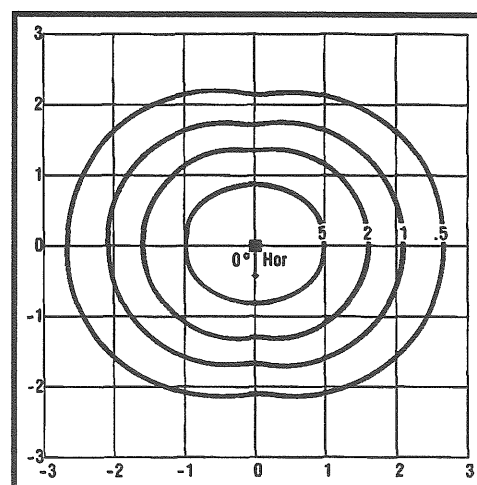
Total efficiency: 61.8%

CIE type: Semi-direct

Plane: 0° 90°

Spacing Criteria: 1.9 2.3

ISOFOOTCANDLE CHART



Mounting Height	Multiplying Factor
5'	1.96
6'	1.36
7'	1.00
8'	0.77
9'	0.60

ORDERING INFORMATION

EXAMPLE: LVP 751 - 232 - ELECT - 277 - OP - EMB - S/B

LVP 751 - **132** - Elect - **120** - CP - -

Series

Lamps

(Not included)
132-(1)F32T8
232-(2)F32T8
332-(3)F32T8
2BX40-(2)F40BX

Ballast

ELECT-Electronic ballast
LH-Electronic ballast with less than 10% total harmonic distortion
PRS-Program rapid start electronic ballast

Volts

120
277

Lens

Clear
Prismatic
Standard.
OP-Opal

Options

WET-Double gasket
GASK-Gasket
NL-PL 5/7 Nightlite (lamp not included)
GLR-Fuse and fuse holder
EMB-90 minute self contained emergency pack
EMB50-Specification grade 90 minute self contained emergency pack
AL-Aluminum construction
ST/SC-Slotted screws instead of TORX® head

Accessories

TX/SD-TORX® head bit
COR-Corner backbox
S/B-Steel backbox

Catalog No.: LVP 751 - 132 - Elect - 120 - CP - -

Fixture Type: Voltage: 120

Job Name:

Approved By:

LIFETIME WARRANTY

Luminaire Vandal Resistant fixtures feature a lifetime warranty. Luminaire Lighting Corporation will repair or replace any fixture damaged due to vandalism for the lifetime of the installation.

NOTES:

For complete photometric test reports and custom colors or finishes, please contact your local representative. Availability and specifications subject to change without notice. All LUMINAIRE fixtures are provided with TORX® head screws. Please remember to order TORX® head bits.

Luminaire
Lighting Corporation

FEATURES

INTENDED USE

Ideal for applications where steel housings or metal lamp heads are a requirement.

CONSTRUCTION

18-gauge steel housing finished in instrument tan color.
Hinged faceplate for easy maintenance.

Two 8-watt (ELT16, ELT24, ELT36) or 12-watt (ELT50) incandescent glass sealed-beam lamps in thermoplastic housings.

Dual-voltage input capability (120 or 277 volts)

BATTERY

Batteries are sealed, maintenance-free, lead-calcium with wattage capacities for 90 minutes of emergency operation. 16-watts (ELT16), 24-watts (ELT24), 36-watts (ELT36) and 50-watts (ELT50).

Low-voltage disconnect prevents excessively deep discharge that can permanently damage the battery.

ELECTRONICS

AC/LVD reset allows battery connection before AC power is applied and prevents battery damage from deep discharge.

Current limiting charger maximizes battery life and minimizes energy consumption.

Thermal protection senses circuitry temperature and adjust charge current to prevent overheating and charger failure.

Thermal compensation adjusts charger output to provide optimum charge voltage relative to ambient temperature.

LISTING

UL listed. Meets UL 924, NFPA 101, NEC and OSHA illumination standards.

WARRANTY

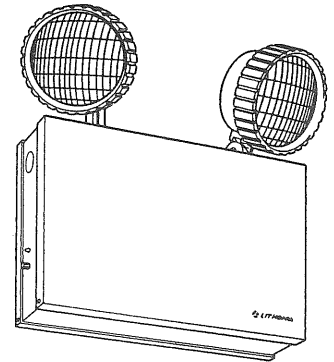
Three-year total customer satisfaction warranty. (For complete details, see warranty sheet in Product Selection Guide).

Catalog Number	
Notes	Type

Industrial Steel Emergency Lighting

ELT16, ELT24, ELT36, ELT50

STANDARD LEAD-CALCIUM BATTERY
OPTIONAL NICKEL-CADMIUM



TITAN[®]

ORDERING INFORMATION

Example: ELT36 N1806

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

Family	Input voltage ¹	Housing color	Lamp heads	Lamp type	Options
ELT16 16W/6V	(blank) 120V/277V	(blank) Instrument tan	(blank) Two heads	PAR36 Sealed-Beam	(blank) None
ELT24 24W/6V		W White	RO Less heads	6 Volts	LD Load disconnect switch
ELT36 36W/6V			MT Metal lamp heads	(blank) 8W/6V incand.	TD Integral time delay ³
ELT50 50W/12V				N1806 18W/6V incand.	N Nickel-cadmium battery ²
				H1206 12W/6V halogen	AM Ammeter ^{3,4}
				12 Volts	VM Voltmeter ^{3,4}
				(blank) 12W/12V incand.	H 8W halogen lamps
				N2512 25W/12V incand.	NOM NOM Certified
				H1212 12W/12V halogen	

NOTES:

- Other voltages available. Consult factory.
- N is not available with ELT36.
- ELT50 uses larger housing when ordered with these options (see UE-205 for larger housing dimensions).
- AM and VM must be ordered together.

Accessories

Order as separate items.

- ELA WG2 Small wireguard (16W-50W)
- ELA MST5 Mounting shelf

ELT16/ELT24/ELT36/ELT50 Industrial Steel Emergency Lighting

SPECIFICATIONS

ELECTRICAL

Primary Circuit

Type	AC Input		Output Volts	Watts Output				
	Volts	Amps		1-1/2hr.	2hr.	3hrs.	4hrs.	
ELT16	120	.163	16.6	6	16	12	8	6
	277	.069	16.4					
ELT24	120	.167	20	6	24	24	16	12
	277	.072	20					
ELT36	120	.172	17.8	6	36	27	18	13.5
	277	.075	18.0					
ELT50	120	.287	30	12	50	37	25	18
	277	.108	30					

* Watts to 87-1/2% of nominal wattage.

BATTERY

Sealed Lead-Calcium

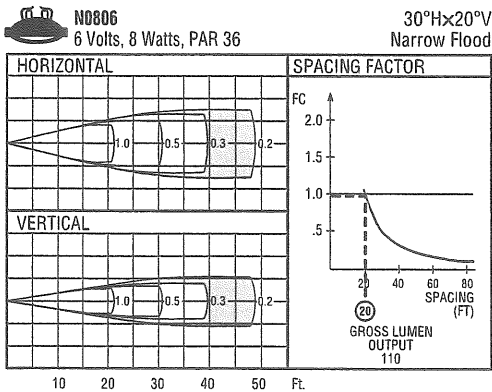
	Voltage	Shelf Life ¹	Expected Life ¹	Maintenance ²	Optimum temperature ³
ELT16	6				
ELT24	6	6 mos.	5-8 yrs.	none	60°-90°F
ELT36	6				
ELT50	12				

Nickel-Cadmium

	Voltage	Shelf life ¹	Expected life ¹	Maintenance ²	Optimum temperature ³
ELT16	6				
ELT24	6	3 yrs.	10 yrs.	none	32°-100°F
ELT50	12				

- At 77°C.
- Periodic system status test recommended.
- Optimum ambient temperature range where unit will provide rated capacity for 90 minutes. Higher and lower temperatures affect life and capacity. Consult factory for more details.

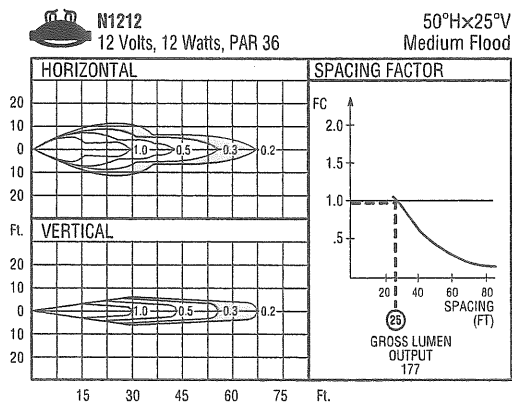
LAMP SPECIFICATIONS



Spacing Factor: Indicates the proper spacing between lamps to the chosen illuminance level (fc) ± 20%.

Footcandle Curves: Show distances in feet and isocurves in footcandles.

REPLACEMENT LAMP #7613



Spacing Factor: Indicates the proper spacing between lamps to the chosen illuminance level (fc) ± 20%.

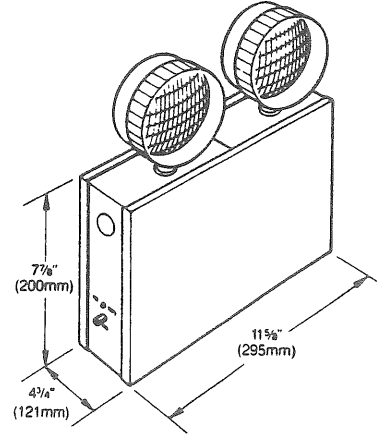
Footcandle Curves: Show distances in feet and isocurves in footcandles.

REPLACEMENT LAMP #4044

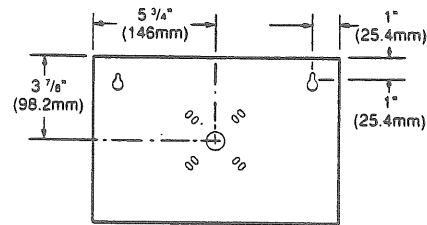
MOUNTING

All dimensions are inches (millimeters).

Shipping weight: ELT16 - 12.8 lbs. (5.8 kgs.)
ELT24 - 12.8 lbs. (5.8 kgs.)
ELT36 - 17.3 lbs. (7.8 kgs.)
ELT50 - 17.3 lbs. (7.8 kgs.)
ELT50 - (large housing) 30.5 lbs. (13.8 kgs.)*



Housing Back



* For ELT50 (large housing) dimensions, reference spec sheet#: UE205.



An Acuity Brands Company

SPECIFICATIONS

ELECTRICAL

Primary Circuit

Type	Rated LED life ¹	Supply voltage	No. of lamps ²	Input watts	Max. amps
Red	25+ years	120	1	2.3	.15
			2	4.6	.30
Red	25+ years	277	1	2.2	.13
			2	4.4	.26
Red	25+ years	347	1	1.12	.29
			2	3.16	.29
Green	25+ years	120	1	1.7	.087
			2	2.8	.081
Green	25+ years	277	1	1.9	.089
			2	3.3	.086

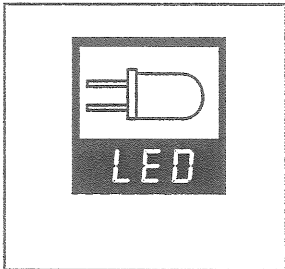
1 Based on continuous operation.

2 Two-lamp version available with double-face only.

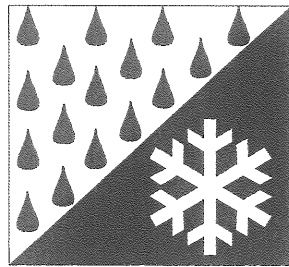
Supplemental Emergency Circuit

Type	No. of faces	Nominal lamp voltage	Electrical watts	Input amps
LDC6	1	6	1.44	.24
LDC12/48	1	12	1.9	.15
LDC12/48	1	24	1.8	.07
LDC12/48	1	32	1.8	.06
LDC12/48	1	48	1.7	.04
LDC6	2	6	2.9	.48
LDC12/48	2	12	3.1	.26
LDC12/48	2	24	3.1	.13
LDC12/48	2	32	3.3	.10
LDC12/48	2	48	3.4	.07

KEY FEATURES



Unique LEDs provide extremely long life and low energy consumption.

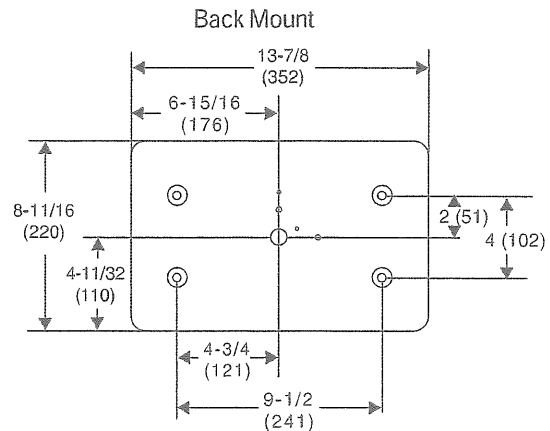
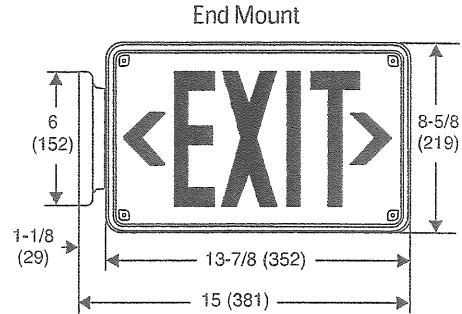


UL and CSA approved for damp or NEMA4X wet locations (see options). Cold weather — down to -40°C.

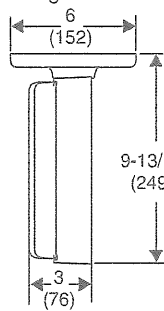
MOUNTING

All dimensions are inches (millimeters).

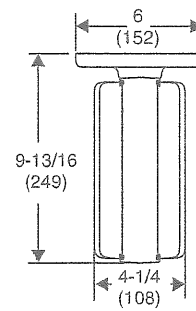
Shipping weight: 11 lbs. (5 kgs.)



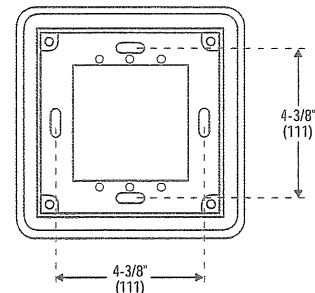
Top Mount Single-Face



Top Mount Double-Face



NEMA 4X Mounting Plate



Housing or canopy mounting bracket should be attached to mounting surface using suitable fastener for type of wall material. All four mounting hole positions should be used, and anchors or screws should have a minimum pullout rating of 160 lbs. Bracket will only fit a 2-gang junction box.

Catalog Number	
Notes	Type

FEATURES

INTENDED USE

Ideal for applications requiring attractive die-cast aluminum signage, superior illumination and low energy consumption.

CONSTRUCTION

Precision-molded, die-cast aluminum construction — ultra-slim, compact housing. Fine-grain brushed aluminum faceplate with matte black electrostatic polymeric trim. Clear lacquer finish on brushed face inhibits fingerprints and other surface contaminants.

Fully overlapping light seal prevents light leaks. Universal directional chevron knockouts are completely concealed and easily removed.

Hinged faceplate and spring latches for easy lamp compartment access.

Letters 6" high with 3/4" stroke.

U.S. Patent No. 5,954,423.

LAMPS

Lamp is constructed using new LED technology. Provides perfectly uniform illumination to meet 3/4" letter stroke required by code.

LED life exceeds 25 years, based on continuous operation. Unique LED lamp platform accommodates both single-face and double-face exits.

Low energy consumption — red lamp consumes .81 watts (120V); green lamp consumes one watt (120V).

INSTALLATION

Universal mounting (top, end or back). Completely concealed, easily-removed mounting knockouts. No exposed hardware.

Die-cast aluminum canopy provided.

LISTINGS

UL listed. Meets UL 924, NFPA 101 (current Life Safety Code), NEC and OSHA illumination standards, and state of Minnesota energy-efficient legislation requiring less than 20W consumption. Listed and labeled to comply with Canadian Standards C-860 and C-22.2 No. 9 (see options).

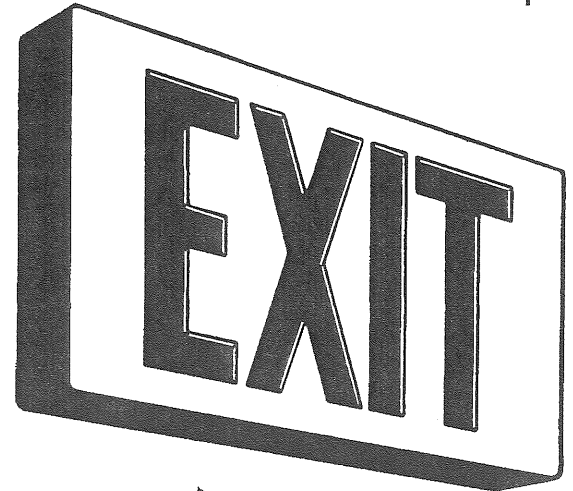
WARRANTY

Five-year total customer satisfaction warranty on exit, including lamps.

Die-Cast Aluminum Exits

LE

LED Lamps



ORDERING INFORMATION

Example: **LE S 1 R 120/277 TP**

LE										
Family	Face type	Housing color	Number of faces	Letter color	Input voltage	Options				
LE LED	S Stencil P Panel ¹	(blank) Matte black, brushed aluminum face BZ Dark bronze ² W White B Matte black ²	1 Single face 2 Double face	R Red G Green ²	120/277 Dual voltage ² 120/347 Dual voltage ³	TP Two tamperproof T20 Torx-head screws	VR Vandal-resistant shield (1/8" thick polycarbonate)	FI Fire alarm flashing interface ²	X2 Lamp wired on two separate circuits ^{2,4,5}	DL UL listed for damp locations
						LDC12/48 12V – 48V DC input for LED lamps ³	CSA Listed and labeled to comply with Canadian standards			

NOTES:

- Panel face available for special wording only.
- Not available with CSA option.
- Only available with CSA option.
- Must specify input voltage (120V or 277V). Not available dual voltage
- UL listed as emergency lighting equipment.

Accessories

Order as separate items.

ELA US12 12" stem kit

LE Surface LED, Signature

SPECIFICATIONS

ELECTRICAL

Primary Circuit

Type	Rated LED life*	Supply voltage	No. of faces	Input watts	Max. amps
Red	25+ years	120	1 or 2	.81	.05
Red	25+ years	277/347	1 or 2	1.2	.06
Green	25+ years	120	1 or 2	1.05	.05
Green	25+ years	277	1 or 2	1.32	.06

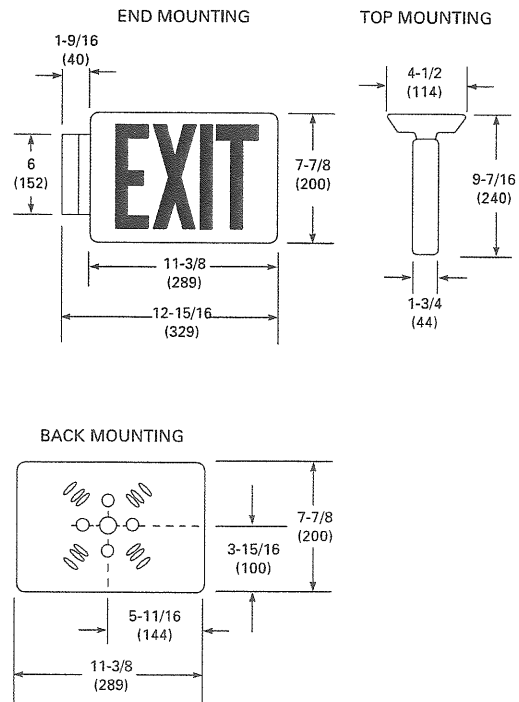
* Based on continuous operation.

Supplemental Emergency Circuit

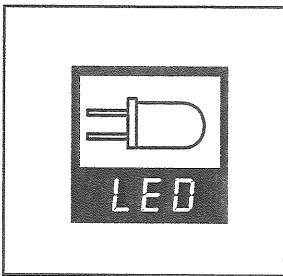
Type	No. of faces	Nominal lamp voltage	Electrical watts	Input amps
LDC12/48	1 or 2	12	1.5	.12
LDC12/48	1 or 2	24	1.5	.06
LDC12/48	1 or 2	32	1.5	.05
LDC12/48	1 or 2	48	1.6	.04

MOUNTING

All dimensions are inches (millimeters). Canopy required for back mounting with X2, FI, or LDC12/48 options only. For VR option, add 1/4" to height and width. Add 1/8" depth for single face; 1/4" depth for double face. Shipping weight: 5 lbs. (2.3 kgs.)



KEY FEATURES



Unique LEDs provide extremely long life and low energy consumption.

DESCRIPTION

Low brightness 7-3/8" aperture downlight for use with a 26W, 32W or 42W Triple Twin Tube 4-pin compact fluorescent lamp. The precisely formed non-imaging optical reflector ensures 55° cutoff to lamp and lamp image and the one piece design eliminates light leaks at the ceiling. Standard features include low iridescent finish on all reflector colors to eliminate "rainbowing" and one electronic ballast to operate 26W, 32W or 42W TTT lamps. Venting ensures maximum lamp life and lumen output. Open downlight, open wall wash and lens trims are interchangeable within the same housing.

Catalog #	C7142E	Type	R
Project		Date	06/24/2007
Comments			
Prepared by			

SPECIFICATION FEATURES

A ... Reflector

.050 thick aluminum, in a one piece spun parabolic contour. Available in a variety of Alzak® finishes. Also available with white or black baffle. Positive reflector mounting, without tools, pulls trim tight to ceiling.

B ... Trim Ring Options

Self flanged or molded white trim ring. Rimless or metal trim ring accessories available.

C ... Socket Connector

One piece die cast aluminum connection allows venting for maximum thermal performance.

D ... Housing Mounting Frame

One piece precision die cast aluminum 1-1/2" deep collar accommodates varying dimensions of ceiling materials.

E ... Universal Mounting Bracket

Accepts 1/2" EMT, C Channel, T bar fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F ... Conduit Fittings

Die cast screw tight connectors.

G ... Junction Box

Listed for eight #12AWG (four in, four out) 90°C conductors feed through branch wiring.

1/2" and two 3/4" pry outs. Positioned to allow straight conduit runs. Access to junction box by removing reflector.

H ... Socket

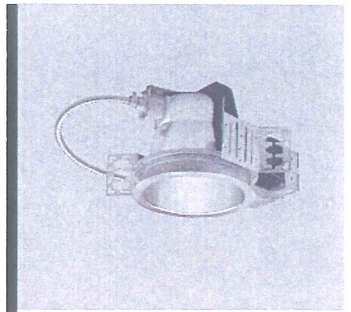
4 pin GX24q-3/4 base with fatigue free stainless steel lamp spring ensures positive lamp retention.

I ... Electronic Ballast

Electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting.

Labels

cULus listed, standard damp label, IBEW union made.



C7142 7151/7150

26W, 32W, 42W TTT Compact Fluorescent

7-3/8" OPEN DOWNLIGHT

26W Triple 4-pin

Ballast: Electronic
120V Input Watts: 29, Line Amps: 0.25
277 Input Watts: 26, Line Amps: 0.09
Power Factor: >.99, THD: <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A

32W Triple 4-pin

Ballast: Electronic
120V Input Watts: 34.5, Line Amps: 0.30
277 Input Watts: 34.5, Line Amps: 0.13
Power Factor: >.99, THD: <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A

32W Triple 4-pin

Ballast: Dimming
120V Input Watts: 39, Line Amps: 0.33
277 Input Watts: 37, Line Amps: 0.13
Power Factor: >.95, THD: <20%
Min. Starting Temp: 10°C (50°F)
Sound Rating: A

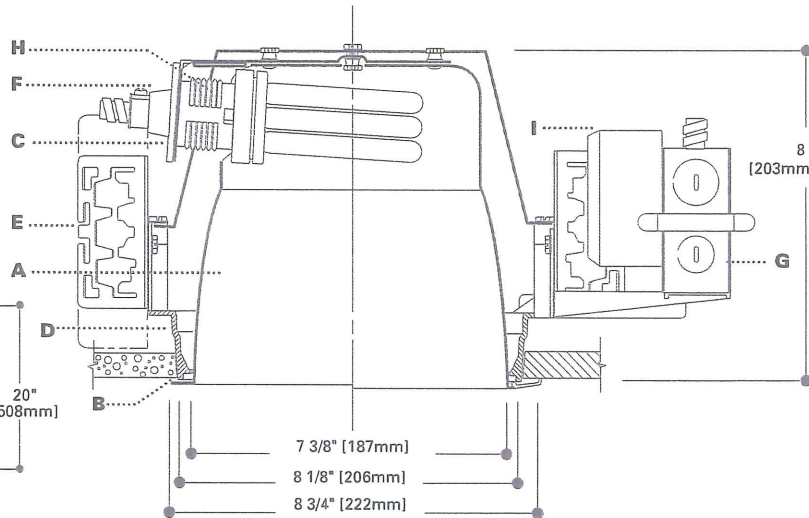
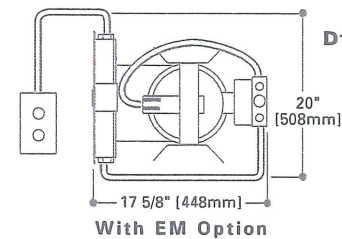
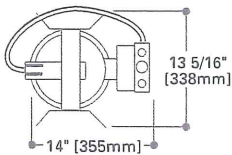
42W Triple 4-pin

Ballast: Electronic
120V Input Watts: 51.0, Line Amps: 0.30
Inrush Current Amps: 5.0
277 Input Watts: 51.0, Line Amps: 0.13
Inrush Current Amps: 9.0
Power Factor: >.99, THD: <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A

NOTES:

Accessories should be ordered separately. For additional options, please consult your Cooper Lighting Representative. Alzak is a registered trademark of Aluminum Company of America. Hi-Lume is a registered trademark of Lutron Co., Inc.

Top View



ORDERING INFORMATION

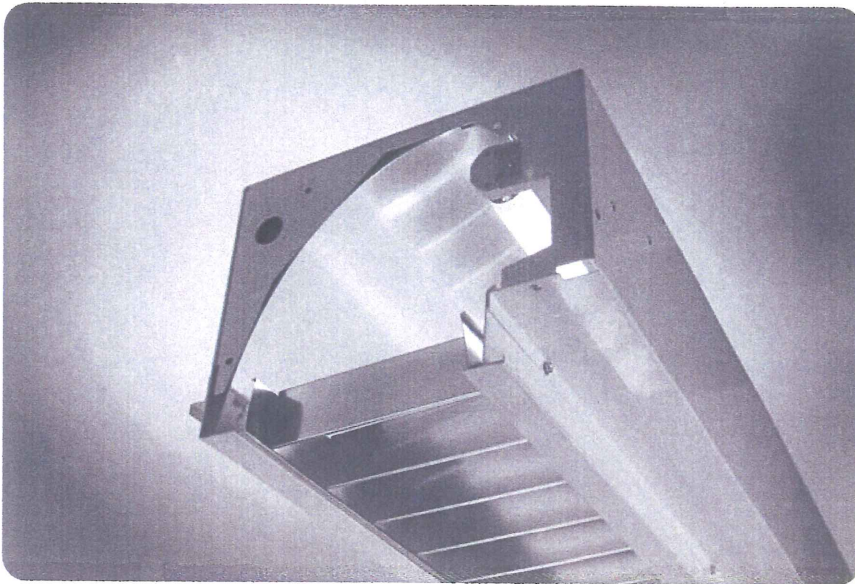
C7142E

C7	1	42	E		7150	LI		
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<p>Housing C7: 7" Horizontal Lamp</p> <p>Number of Lamps 1: 1 Lamp</p> <p>Wattage 42: 26W, 32W, or 42W TTT Lamp</p>	<p>Ballast E: 120/277V 50/60 Hz Electronic 3E: 347V 50/60 Hz Electronic</p> <p>1D26: 26W 120V Dimming, Lutron Compact SE 2D26: 26W 277V Dimming, Lutron Compact SE 1D32: 32W 120V Dimming, Lutron Compact SE 2D32: 32W 277V Dimming, Lutron Compact SE 1D42: 42W 120V Dimming, Lutron Compact SE 2D42: 42W 277V Dimming, Lutron Compact SE</p>	<p>Options CP: Chicago Plenum EM: Emergency Module with remote test switch IEM: Emergency Module with integral test switch</p>	<p>Trims 7151: Self Flanged 7150: Molded Trim Ring 7151E: Self Flanged, use with IEM 7150E: Molded Trim Ring, use with IEM</p>	<p>Finish LI: Low Iridescent Clear H: Haze WMH: Warm Haze G: Gold WH: Wheat W: Gloss White GP: Graphite GPH: Graphite Haze K: Cognac KH: Cognac Haze BB: Black Baffle (7150 only) WB: White Baffle (7150 only)</p>	<p>Option WF: White Painted Flanged (Self Flanged only)</p>	<p>Accessories HB26: C Channel Bar Hangers, 26" Long, Pair HB50: C Channel Bar Hangers, 50" Long, Pair TRM7: Metal Trim Ring, Specify Finish TRR7: Rimless Trim Ring, White FK5: 5 Amp Field Installable Fuse Kit 300V Max DT7: Deco Trims RMB-22: Wood Joist Bar Hanger, 22" Long, Pair HSA7: Slope Adapter for 7" Aperture Housings, Specify Slope ADV985019</p>
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Specifications and Dimensions subject to change without notice. Consult your representative for additional options and finishes.

focus™ 2



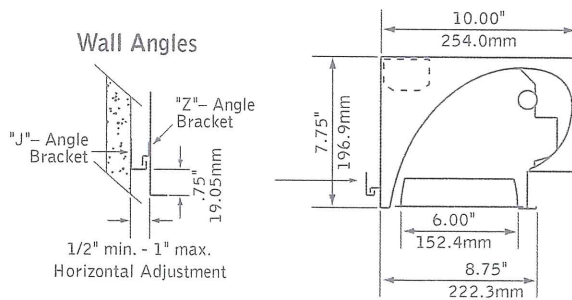
FEATURES

High performance perimeter wall washing system.

Luminaire alignment is maintained with continuous angle and splice brackets.

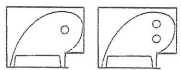
Focus™ 2 offers a selection of shielding media including parabolic louver or bold baffle.

DIMENSIONAL DATA



lamping options

parabolic louver

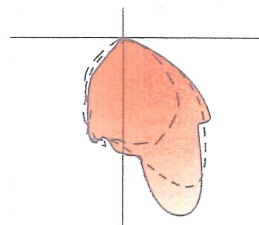


T8 LAMPS

bold baffle



PERFORMANCE



1-Lamp T8
57% Efficiency
1192cd @ 15°

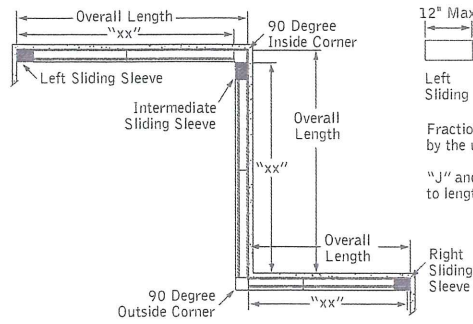
See Photometric section for additional performance data.

fixture type:

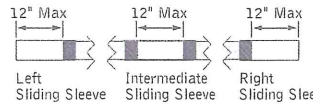
project name:

DETAILS

typical run layout



sliding sleeves



Fractional Dimensions up to 12" are taken up by the use of a sliding sleeve.

"J" and "Z" angle brackets must be cut to length in field.

Luminaires must be installed prior to ceiling.

Start run from corner with any standard luminaire.

Corner to corner runs end with an intermediate sleeve.

SPECIFICATIONS

construction

20 Ga. steel housing.

20 Ga. steel T-rail mates with ceiling.

18 Ga. internal bulkheads join fixtures.

18 Ga. galvanized steel splice brackets are provided to ensure precise luminaire alignment.

20 Ga. steel continuous wall angles are provided to ensure horizontal alignment at wall.

Luminaires are available up to 8' nominal lengths.

4' unit weight: 28 lbs

8' unit weight: 51 lbs

optic

CNC roll formed semi-specular .0235" aluminum front reflector with specular .0235" aluminum back reflector.

Parabolic Louver: semi-specular, low iridescence .024" aluminum 1-1/2"H x 2.4" frequency.

Bold Baffle: .040" aluminum, 1"H x 1" frequency x 3/16" thick louver finished in High Reflectance White powder coat.

Both options use positive lay-in installation.

electrical

Electronic ballasts are thermally protected and have a Class "P" rating.

Optional DALI and other dimming ballasts available.

Consult factory for dimming specifications and availability.

UL and cUL listed.

emergency

Emergency battery packs provide 90 minutes of one lamp illumination.

Initial lumen output for lamp types are as follows:

T8 Lamps: Up to 475 lumens

Battery pack requires unswitched hot from same branch circuit as AC ballast.

finish

Polyester powder coat applied over a 5-stage pre-treatment.

Standard luminaire housing finished in High Reflectance White.

ORDERING

luminaire series

FW2

Focus 2 FW2

shielding

Parabolic Louver, Semi-Specular PL

Bold Baffle, White BB

lamping

One Lamp T8 1T8

Two Lamp T8 2T8

circuit

Single Circuit 1C

Dual Circuit 2C
(Two lamps only)

voltage

120 Volt 120

277 Volt 277

347 Volt 347

(Consult factory for availability)

ballast

Electronic Instant Start <20% THD E

Electronic Program Start <10% THD S

Electronic Dimming Ballast D
(Consult factory for dimming availability)

mounting

Recessed RC

factory options

Air Return AR

Emergency Circuit EC

Emergency Battery Pack EM

HLR/GLR Fuse FU

Include 3000K Lamp L830

Include 3500K Lamp L835

Include 4100K Lamp L841

Sliding Sleeve SS

finish

High Reflectance White HW

luminaire length

Designate length in feet XX'

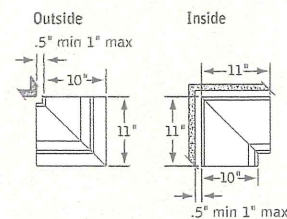
(Nominal lengths: 2', 3', 4', 5', 6', 7', 8')

(All end caps are flat with no flange unless otherwise specified)

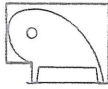
corner options

90-degree Inside Corner FW2-IC90

90-degree Outside Corner FW2-OC90

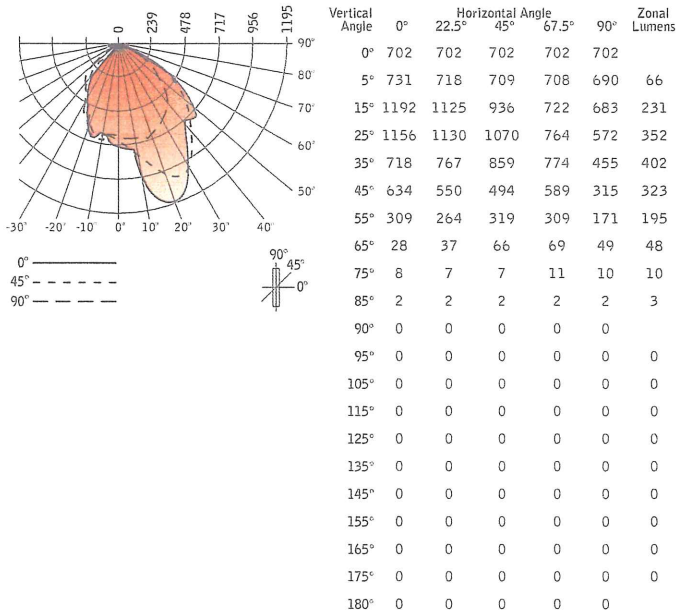


focus™ 2



Filename: FW2PL1T8.IES
 Catalog #: FW2-PL-1T8-1C-120-E-RC-HW
 Efficiency: 57%
 Test #: 8758.0

CANDLEPOWER DISTRIBUTION



LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt	
0°-30°	648	22.8	39.8	
0°-40°	1051	36.9	64.5	
0°-60°	1569	55.0	96.3	
0°-90°	1629	57.2	100.0	
Total Luminaire	0°-180°	1629	57	100.0

Go to www.focalpointlights.com for additional photometric data.

12" Square



CB 12 S 36 HORZ FLAT AGR



CB 12 S 36 HORZ FLAT AGR

SHAPE	OAH	GRILL	TOP	WT (lbs.)
CB 12 S	24	HORZ	FLAT	160
CB 12 S	36	HORZ	FLAT	180
CB 12 S	42	HORZ	FLAT	200
CB 12 S	24	HORZ	PYRM	170
CB 12 S	24	VERT	FLAT	160
CB 12 S	36	VERT	FLAT	180
CB 12 S	42	VERT	FLAT	200
CB 12 S	24	VERT	PYRM	170
CB 12 S	36	VERT	PYRM	190
CB 12 S	42	VERT	PYRM	210

LAMP TYPE

50MH	50 watt metal halide ballast, 120/277 volt. Use medium base, clear ED-17 lamps.
70MH	70 watt metal halide ballast, 120/208/240/277 volt. Use medium base, clear ED-17 lamps.
100MH	100 watt metal halide 120/208/240/277 volt ballast. Use medium base, clear ED-17 lamps.
50HPS	50 watt high pressure sodium 120/277 volt ballast. Use medium base, clear ED-17 lamps.
70HPS	70 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, clear ED-17 lamps.
100HPS	100 watt high pressure sodium 120/208/240/277 volt ballast. Use medium base, clear ED-17 lamps.

CB12S

Catalog Number	
Notes	Type

FEATURES & SPECIFICATIONS

INTENDED USE

Intended for mounting heights up to 16' requiring low to medium light levels. Ideal for light duty task lighting, utility, storage rooms or retail.

CONSTRUCTION

Channel constructed of die-formed cold rolled steel. Sturdy combination reflector and channel cover constructed of die-formed cold rolled steel and secured by quarter-turn latch for easy access to wire-way. Screw on endplates. Available in 2', 4', or 8' tandem wired lengths. Accepts plug-in option for 1, 2 or 3 primary circuits.

FINISH

Five-stage iron phosphate pretreatment ensures superior paint adhesion and corrosion-resistance. Reflector and channel finished with a high-gloss baked white enamel. Reflector is painted after fabrication.

OPTICAL SYSTEM

Solid top or apertured 8% uplight available. Both reflectors are die-embossed and painted after fabrication.

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, non-PCB, UL Listed and CSA Certified ballast is standard. Sound rating depends on lamp/ballast combination.

AWM, TFN, THHN wire throughout, rated for required temperatures.

INSTALLATION

For unit or row installations, surface or suspended mounting.

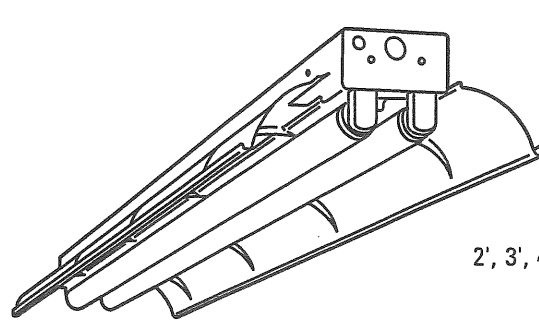
LISTINGS

120V, 277V and MVOLT are UL Listed and CSA Certified (standard). 347V is CSA Certified (see Options). NOM Certified (see Options). Suitable for damp locations.

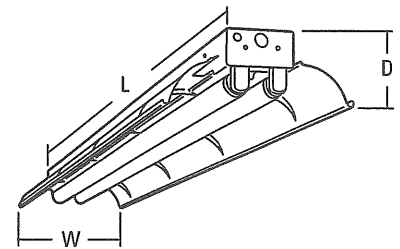
WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Standard Industrial



Rapid Start
2', 3', 4' or 8' length
1 or 2 lamps



Specifications

Length:	24" (610)
	36" (913)
	48" (1219)
	72" (1829)
	96" (2438)
Width:	12" (305)
Fixture Depth:	4" (102)

All dimensions are inches (millimeters).
Specifications subject to change without notice.

ORDERING INFORMATION

Example: **L 2 32 120 GEB**

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

Series	Number of lamps	Lamp type	Voltage	Options
L Standard Industrial, solid top	1, 2	17 17W T8 (24")	120, 277, 347, MVOLT¹	ES Energy-saving ballasts (30W or 40W lamps only)
LA Standard Industrial, apertured reflector	Not included	20 20W TS HPF T12 (24")	Others available	GEB Electronic ballasts, ≤10% THD
For tandem double-length unit, add prefix T. Example: TL		25 25W T8 (36")		GEB10IS Electronic ballasts, ≤10% THD, Instant Start ²
		30 30W RS HPF T12 (36")		GEB10RS Electronic ballasts, ≤10% THD, Rapid Start ³
		32 32W T8 (48")		LPF Low power factor ballasts (20W or 30W only)
		40 40W T12 (48")		EL Emergency battery pack. (Nominal 300 lumens) See Life Safety Section)
				GLR Internal fast-blow fuse (add X for external)
				GMF Internal slow-blow fuse (add X for external)
				CS1 6' cordset, NEMA 5-15P SJT, U-ground plug, 120V
				CS3 6' cordset, NEMA L5-15P SJT, twist-lock plug, 120V
				PLF Plug-in wiring. Specify 1, 2 or 3 branch circuits and hot wires (A=Black, B=Red, C=Blue, AB or AC)
				SSR Specular silver reflector finish (95% reflective)
				TILW Tandem in-line wiring
				CSA CSA Certified (Only required for 347V).
				NOM NOM Certified.

Accessories

Order as separate catalog numbers.

SQ Swivel-stem hanger (specify length in 2" increments).

1B Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).

WGL Wireguard, 4' white. Order 2 for 8' fixtures.

HC36 Chain hangers (1 pair, 36" long).

CONLGC 12" screw-on channel connector.

NOTES:

- MVOLT available with GEB10IS only.
- Available only with 32 watt lamp type.
- Available only with 32 watt and 40 watt lamp types.

L Rapid Start

MOUNTING DATA

For unit or row installation, surface or suspended mounting.

Unit installation — Minimum of two hangers required.

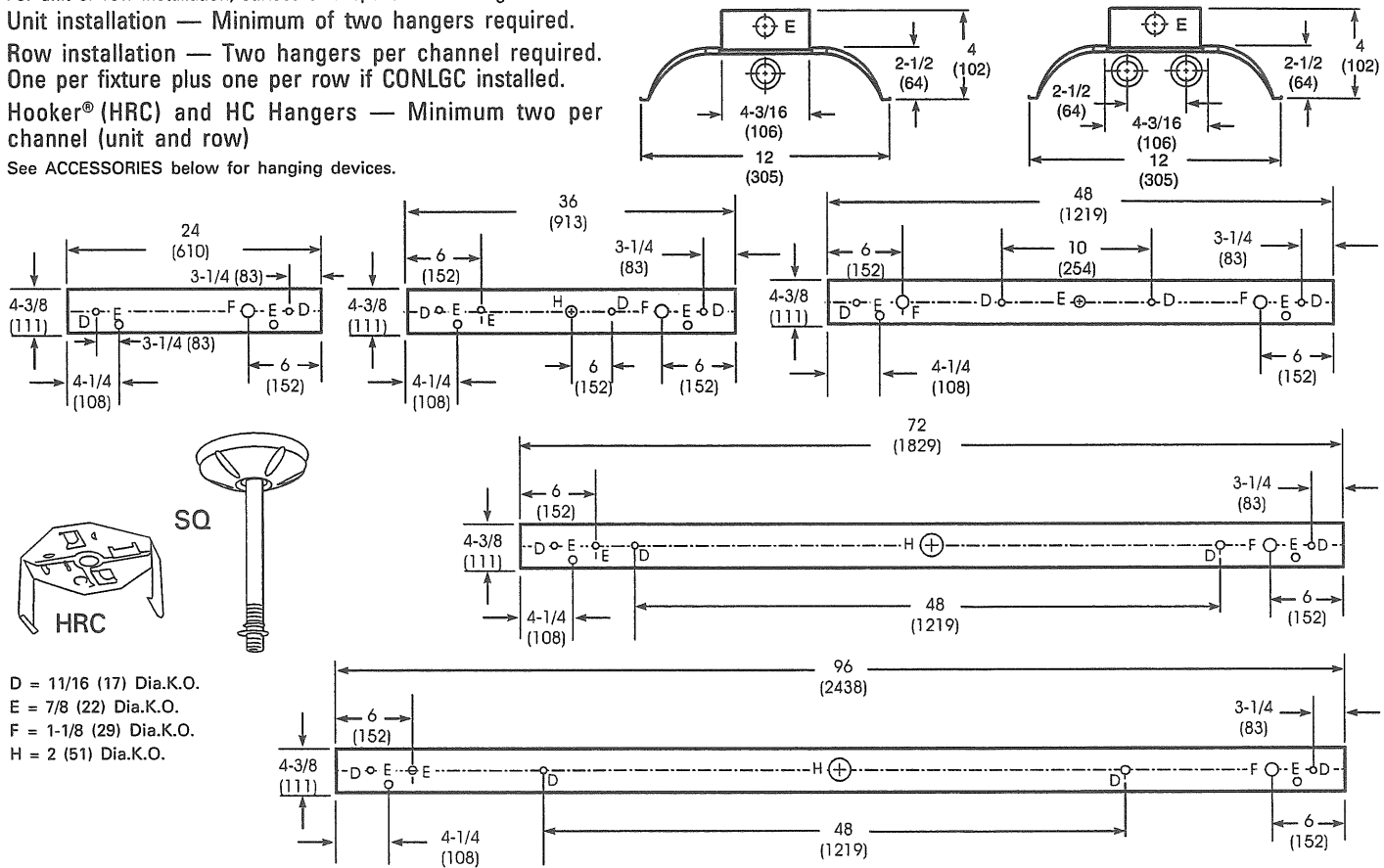
Row installation — Two hangers per channel required.
One per fixture plus one per row if CONLGC installed.

Hooker® (HRC) and HC Hangers — Minimum two per channel (unit and row)

See ACCESSORIES below for hanging devices.

DIMENSIONS

Inches (millimeters). Subject to change without notice.



D = 11/16 (17) Dia.K.O.
E = 7/8 (22) Dia.K.O.
F = 1-1/8 (29) Dia.K.O.
H = 2 (51) Dia.K.O.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Full photometric data available upon request.

L 2 40

Report ITL 18200

S/MH 1.5

Coefficient of Utilization

	80%			70%			50%		
	Ceiling	Wall	10%	Ceiling	Wall	10%	Ceiling	Wall	10%
1	92	88	84	90	86	83	82	80	77
2	84	77	71	81	75	70	72	68	64
3	76	67	60	74	66	60	63	58	53
4	69	59	52	67	58	51	56	50	45
5	63	52	44	61	51	44	49	43	38
10	42	30	23	40	29	23	28	22	18

LA 240

Report ITL 18201

S/MH 1.5

Coefficient of Utilization

	80%			70%			50%		
	Ceiling	Wall	10%	Ceiling	Wall	10%	Ceiling	Wall	10%
1	93	89	86	90	87	84	82	80	77
2	85	78	72	82	76	71	72	68	64
3	77	69	62	75	67	61	64	58	54
4	71	61	53	68	59	52	56	50	46
5	64	53	45	62	52	45	49	43	38
10	42	31	23	41	30	23	29	23	18

L 2 32

Report LTL 5180

S/MH 1.5

Coefficient of Utilization

	80%			70%			50%		
	Ceiling	Wall	10%	Ceiling	Wall	10%	Ceiling	Wall	10%
1	96	92	88	94	90	87	86	83	81
2	87	80	74	85	78	72	75	70	66
3	79	70	63	77	68	62	66	60	55
4	72	61	54	70	60	53	58	52	46
5	66	54	45	64	53	45	51	44	39
10	43	31	23	42	30	23	29	23	18

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1257	19.6	23.3
0-40	2123	33.2	39.3
0-60	4041	63.1	74.9
0-90	5398	84.3	100.0
90-180	0	0.0	0.0
0-180	5398	84.3	100.0

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1254	19.6	22.7
0-40	2107	32.9	38.1
0-60	3975	62.1	71.9
0-90	5214	81.5	94.3
90-180	313	4.9	5.7
0-180	5527	86.4	100.0

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1165	20.1	22.7
0-40	1971	34.0	38.5
0-60	3758	64.8	73.3
0-90	5125	88.4	100.0
90-180	0	0.0	0.0
0-180	5125	88.4	100.0

Energy (Calculated in accordance with NEMA standard LE-5)

LER.FL	ANNUAL ENERGY COST*	LAMP DESCRIPTION	LAMP LUMENS	BALLAST FACTOR	WATTS
86.2	\$2.79	(2)T8 F32	2900	.88	55

* Comparative yearly lighting energy cost per 1000 lumens



Lithonia Lighting

Acuity Lighting Group, Inc.

Fluorescent

One Lithonia Way, Conyers, GA 30012

Phone: 800-858-7763, Fax: 770-929-8789

In Canada: 1100 50th Ave., Lachine, Quebec H8T 2V3

www.lithonia.com

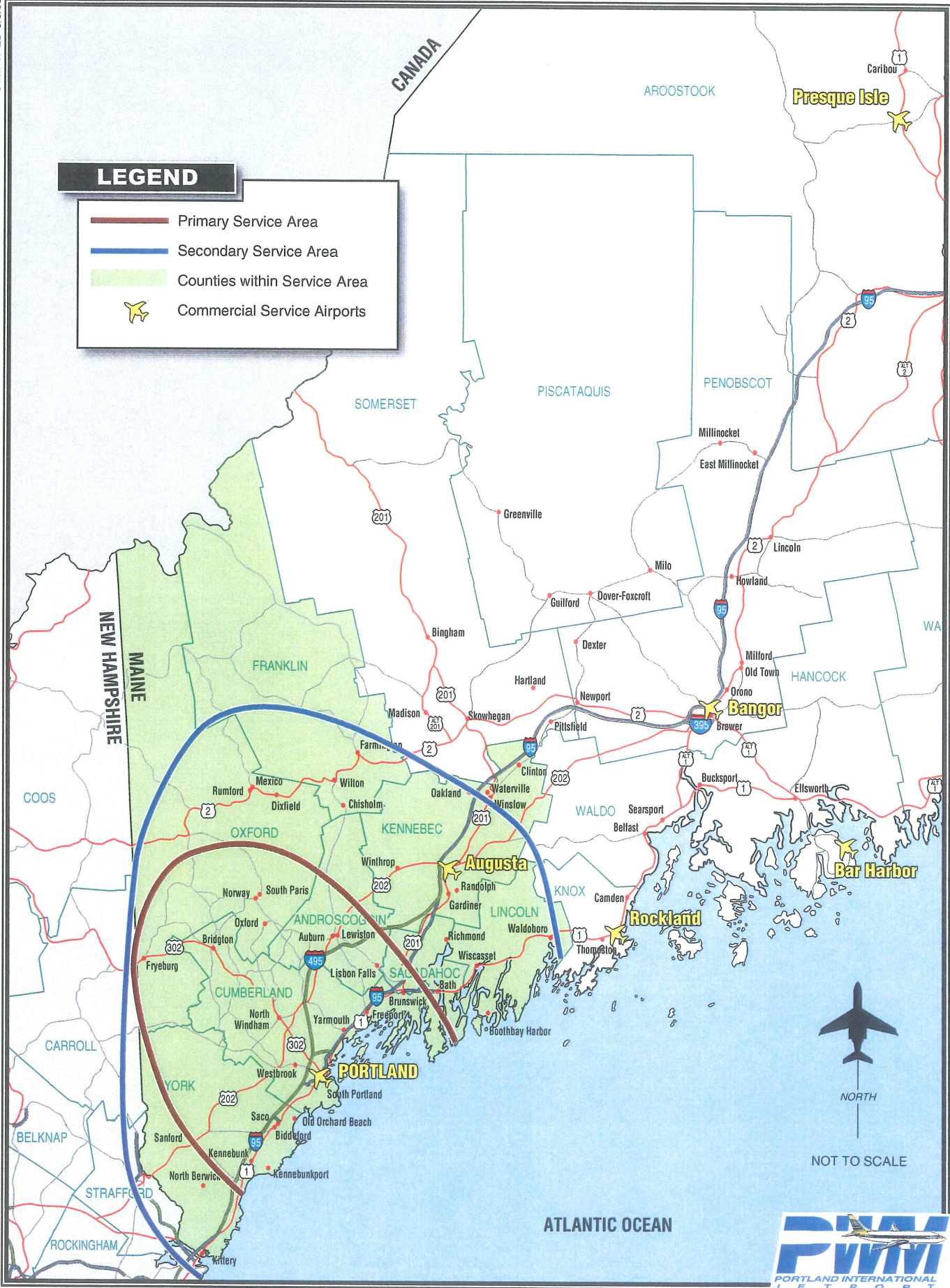


Exhibit 2D
JETPORT COMMERCIAL SERVICE AREA



Stantec Consulting Services Inc.
22 Free Street Suite 205
Portland ME 04101-3900
Tel: (207) 775-3211
Fax: (207) 775-6434

Stantec

March 24, 2008
File: 195210126

Mr. Rick Knowland, Senior Planner
Department of Planning & Development
City of Portland
389 Congress Street
Portland, Maine 04101

Dear Mr. Knowland:

**Reference: Major Site Plan Approval (#2006-0093)
Phase II Parking Garage
Portland International Jetport
Portland, Maine**

Please find enclosed requested information to address conditions of approval for the above referenced project. On August 14, 2007, the Portland Planning Board reviewed the proposal for construction of a five level parking garage at the Portland International Jetport for conformance with the standards of Portland's Shoreland Zoning regulations and Site Plan Ordinance. The Planning Board approved the project with conditions. A copy of the Site Plan approval memorandum dated August 28, 2007 is included as Attachment No. 1. Conditions in ***bold italics*** and our responses are as follows:

- 1. Shoreland Zoning Condition No. 1: That updated letters from the Maine Department of Conservation, the Maine Department of Inland Fisheries and Wildlife and the Maine Historic Preservation Commission shall be submitted referencing the stormwater pond site for Planning Staff review and approval.***

The Maine Department of Conservation (MDoC), Maine Department of Inland Fisheries and Wildlife (MDIFW), and the Maine Historic Preservation Commission (MHPC) were contacted regarding the proposed project, and more specifically the soil filter treatment pond located along Yellow Bird Road. Copies of the correspondence between Stantec Consulting Services, Inc. and the agencies are included as Attachment No. 2. The MDoC indicated that according to their records, "*there are no rare botanical features documented specifically within the project area.*" The MDIFW indicated that "*based on a review of the most current data available, there are no known essential or significant wildlife habitats, nor any documented occurrences of rare, threatened species within the project site.*"

In response to our correspondence, the MHPC indicated that the area proposed for the soil filter pond is "*sensitive for prehistoric archeological sites.*" The MHPC decided that a Phase I Archeological Survey was necessary to determine if such sites actually existed within the proposed pond area. A Phase I Archeological Survey was conducted on the site by Northern Ecological Associates, Inc. (NEA) in October 2007. The survey and resulting report (refer to Attachment No. 3) determined that "*No historic artifacts or indications of prehistoric or historic*

Reference: Major Site Plan Approval (#2006-0093)
Phase II Parking Garage
Portland International Jetport
Portland, Maine

features were recovered from any of the twenty-five (25) excavated shovel test pits” and that “based on the results of the survey, no further archeological investigations are recommended...” A copy of the report and findings were forwarded to the MHPC for their review. Their approval letter, stating that “there will be no historic or archeological properties affected” by the proposed project is included as Attachment No. 4.

2. ***Site Plan Review Condition No. 1: The applicant shall conduct a traffic study of the Congress Street / International Drive and Johnson Road / Jetport Drive following the re-opening of the Maine Turnpike Bridge, as stated in Mr. Thomas Errico’s August 10, 2007 memorandum. If deficiencies are identified, the applicant shall be responsible for implementing a mitigation plan reviewed and approved by the City. The site plan approval is subject to a traffic monitoring period, six months from issuance of a certificate of occupancy that ensures the effective operation of all traffic improvements. If during that time the City determines the improvements are not functioning as required to meet City standards, the Applicant shall be required to modify the improvements as directed by the City.***

The applicant is in the initial phases of beginning design and permitting work associated with an expansion of the jetport’s terminal facility. The terminal expansion will include additional aircraft gates which will increase the overall capacity of the facility and potentially lead to an increase in usage. As a component of the terminal expansion project, the applicant will be undertaking a traffic study of the surrounding roadway infrastructure, including the Congress Street / International Drive and Johnson Road / Jetport Drive intersections. The study will take into account the proposed increase in usage of the facility as a result of the proposed terminal expansion and additional aircraft gates. If deficiencies are identified, the applicant shall implement a mitigation plan and propose additional roadway infrastructure improvements to address the deficiencies. The traffic study is anticipated to begin in the spring/summer of 2008 and be completed prior to Planning Board approval of the terminal expansion project in the winter of 2008/2009.

3. ***Site Plan Review Condition No. 2: The applicant shall submit a revised lighting plan, which shall clearly indicate the location of all light fixtures; the type, manufacturer’s name and model number; and height of all pole mounted fixtures, subject to the final staff review and approval, including approval of fluorescent fixtures.***

Electrical Drawing Nos. E0-0 and E1-1 through E1-5 are included as Attachment No. 5. Drawings E1-1 through E1-5 contain the lighting plans for each of the five levels of the proposed garage showing the location of all light fixtures. Drawing E0-0 contains the lighting fixture schedule which identifies the type, manufacturer’s name, model number, and mounting style for each fixture. Pole mounted fixtures are proposed only on the roof level (level 5) and all are mounted on 20’ high poles as referenced in the catalogue number of the fixture (PRA20-6188).

4. ***Site Plan Review Condition No. 3: Report on enplanements shall be provided by the applicant, and in the event that annual enplanements exceed 800,000 enplanements, the Jetport shall apply for an amended Traffic Movements Permit to the City under its delegated review authority.***

**Reference: Major Site Plan Approval (#2006-0093)
Phase II Parking Garage
Portland International Jetport
Portland, Maine**

As indicated in the response to Site Plan Review Condition No. 1 above, the applicant is initiating preliminary design and permitting services for an expansion of the terminal at the Portland International Jetport. As a result, an increase in enplanements is anticipated that will require an amended Traffic Movements Permit. The applicant is therefore proposing to apply for an amended Traffic Movements Permit in 2008 in conjunction with undertaking the traffic study mentioned above.

5. Site Plan Review Condition No. 4: *The applicant shall submit evidence of adequate financial capacity including verification that the Jetport bonding capacity is available to carry out the project.*

The Portland City Council appropriated funds for the garage project on June 18, 2007 within Order 263-06/07. The order was given a first reading on June 4, 2007, with a Public Hearing and final passage on June 18, 2007 with a vote of 9-0. The order appropriated a not-to-exceed amount of \$36.1 million. The current anticipated project cost with construction contingency is now estimated at approximately \$20 million.

We trust that the enclosed documentation and responses provides you with sufficient information to conclude the Site Plan approval process and make a determination that the Conditions of Approval for the project have been met. If you require any additional information, please don't hesitate to contact us. We have enjoyed working with you and the Planning Department staff on this project and we look forward to your response.

Sincerely,

STANTEC CONSULTING SERVICES INC.



David P. Nadeau, P.E.
Transportation Engineer
Tel: (207) 775-3211
Fax: (207) 775-6434
dave.nadeau@stantec.com

Attachment: as stated

- c. Mr. Paul Bradbury - PWM
- Mr. George Katsoufis - DHK
- Mr. Jim McLaughlin - Stantec



ATTACHMENT NO. 1

Major Site Plan Approval Memorandum (August 28, 2007)

CITY OF PORTLAND, MAINE
PLANNING BOARD

Michael Patterson, Chair
Janice E. Tevanian, Vice Chair
Kevin Beal
Bill Hall
Lee Lowry III
Shalom Odokara
David Silk

August 28, 2007

Mr. Paul Bradbury
Portland International Jetport
1001 Westbrook Street
Portland, ME 04102

RE: Jetport Parking Garage Expansion
CBL: 208-A-001
Application ID: #2006-0093



Dear Mr. Bradbury:

On August 14, 2007 the Portland Planning Board considered the addition to the Jetport Parking Garage, which includes demolishing the existing three story-garage and building a five-story addition to the existing 6 story structure. The total number of parking spaces in both the existing and proposed garage will be 2,134 spaces. The Planning Board reviewed the proposal for conformance with the standards of Portland's Shoreland Zoning regulations and the Site Plan Ordinance. The Planning Board approved the project with the following motions and conditions.

Shoreland Zoning

The Planning Board voted unanimously (5-0, Tevanian and Odakara absent) that the proposed plans are in conformance with the Shoreland Zoning Regulations of the Land Use Code, subject to the following condition:

1. That updated letters from the Maine Department of Conservation, the Maine Department of Inland Fisheries and Wildlife and the Maine Historic Preservation Commission shall be submitted referencing the stormwater pond site for Planning Staff review and approval.

Site Plan Review

The Planning Board voted unanimously (5-0, Tevanian and Odakara absent) that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following conditions of approval:

1. The applicant shall conduct a traffic study of the Congress Street/International Drive and Johnson Road/Jetport Drive following the re-opening of the Maine Turnpike Bridge, as stated in Mr. Thomas Errico's August 10, 2007 memorandum. If deficiencies are identified, the applicant shall be responsible for implementing a mitigation plan reviewed and approved by the City. The site plan approval is subject to a traffic monitoring period, six months from issuance of a certificate of occupancy that ensures the effective operation of all traffic improvements. If during that time the City determines the improvements are not functioning as required to meet City standards, the Applicant shall be required to modify the improvements as directed by the City.

2. The applicant shall submit a revised lighting plan, which shall clearly indicate the location of all light fixtures; the type, manufacturer's name and model number; and height of all pole mounted fixtures, subject to the final staff review and approval, including approval of fluorescent fixtures.
3. Report on enplanements shall be provided by the applicant, and in the event that annual enplanements exceed 800,000 enplanements, the Jetport shall apply for an amended Traffic Movements Permit to the City under its delegated review authority.
4. The applicant shall submit evidence of adequate financial capacity including verification that the Jetport bonding capacity is available to carry out the project.

The approval is based on the submitted plan and the findings related to subdivision and site plan standards as contained in Planning Board # 37-07, which is attached.

Please note the following provisions and requirements for all development review approvals:

1. The above approvals do not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Inspection Division.
2. Final sets of plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*.dwg), release AutoCAD 2005 or greater.
3. A performance guarantee covering the site improvements as well as an inspection fee payment of 2.0% of the guarantee amount must be submitted to and approved by the Planning Division and Public works prior to the recording of the subdivision plat. The subdivision approval is valid for three (3) years.
4. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
5. Prior to construction, a pre-construction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.
6. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

8. The Development Review Coordinator must be notified five (5) working days prior to date required for final site inspection. The Development Review Coordinator can be reached at the Planning Department at 874-8632. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions regarding the Board's actions, please contact Richard Knowland, Senior Planner at 874-8725.

Sincerely,



Michael J. Patterson, Chair
Portland Planning Board

cc: Lee D. Urban, Planning and Development Department Director
Alexander Jaegerman, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Philip DiPierro, Development Review Coordinator
Marge Schmuckal, Zoning Administrator
Jeanie Bourke, Inspections Division
Michael Bobinsky, Public Works Director
Kathi Earley, Public Works
Bill Clark, Public works
Jim Carmody, Transportation Manager
Michael Farmer, Public Works
Leslie Kaynor, Public Works
Jeff Tarling, City Arborist
Captain Greg Cass, Fire Prevention
Assessor's Office
Approval Letter File
David Nadeau, PE., Stantec Consulting Services, Inc., 22 Free Street, Suite 205, Portland, ME
04101



ATTACHMENT NO. 2

Agency Correspondences:

- Maine Department of Conservation Response
- Maine Department of Inland Fisheries & Wildlife Response
 - Maine Historic Preservation Commission Response
 - Stantec Consulting Services Inc. Requests



STATE OF MAINE
DEPARTMENT OF CONSERVATION
17 ELKINS LANE
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0093

JOHN ELIAS BALDACCI
GOVERNOR

PATRICK K. MCGOWAN
COMMISSIONER



October 16, 2007

David P. Nadeau
Stantec Consulting Services, Inc.
22 Free Street Suite 205
Portland, ME 04101-3900

Re: Rare and exemplary botanical features, Phase II Parking Garage, Portland International Jetport, File 195210126, Portland, Maine.

Dear Mr. Nadeau:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request of October 10, 2007 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in the City 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, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been

Rare and Exemplary Botanical Features in the Project Vicinity

10/16/2007

Documented within a Four-Mile Radius of the Proposed Phase II Parking Garage, Portland International Jetport, Project File 195210126, Portland, Maine.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Last Seen</u>	<u>Global Rarity Rank</u>	<u>State Rarity Rank</u>	<u>State Protection Status</u>	<u>Habitat Description</u>
<i>Allium tricoccum</i>	Wild Leek	2006-05-10	G5	S3	SC	Rich hardwood forests, usually alluvial.
<i>Carex polymorpha</i>	Variable Sedge	1911	G3	S1	E	In Maine, habitat is between downslope seeps (with horsetails and wetland sedges) and upslope mixed oak/huckleberry forest. Preferred soil type is Deerfield Loamy Sand.
<i>Carex polymorpha</i>	Variable Sedge	1911-06-29	G3	S1	E	In Maine, habitat is between downslope seeps (with horsetails and wetland sedges) and upslope mixed oak/huckleberry forest. Preferred soil type is Deerfield Loamy Sand.
<i>Selaginella apoda</i>	Creeping Spike-moss	1924-08-20	G5	S1	E	Meadows, lawns, and streambanks.
<i>Selaginella apoda</i>	Creeping Spike-moss	1924-08-21	G5	S1	E	Meadows, lawns, and streambanks.
<i>Zannichellia palustris</i>	Horned Pondweed	1972-06-13	G5	S2	SC	Fresh, brackish or alkaline waters, and stream edges.
<i>Phegopteris hexagonoptera</i>	Broad Beech Fern	1872-08	G5	S2	SC	Rich, often rocky, hardwood forests.

Rare and Exemplary Botanical Features in the Project Vicinity

10/16/2007

Documented within a Four-Mile Radius of the Proposed Phase II Parking Garage, Portland International Jetport, Project File 195210126, Portland, Maine.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Last Seen</u>	<u>Global Rarity Rank</u>	<u>State Rarity Rank</u>	<u>State Protection Status</u>	<u>Habitat Description</u>
<i>Suaeda calceoliformis</i>	American Sea-blite	1932-09-12	G5	S1	T	Rocky or gravelly saltmarshes and sea-strands.
<i>Ranunculus ambigens</i>	Water-plantain Spearwort	1862-08	G4	SH	PE	Sloughs, ditches, and muddy swamps.
<i>Zannichellia palustris</i>	Horned Pondweed	1913-09-13	G5	S2	SC	Fresh, brackish or alkaline waters, and stream edges.
<i>Aureolaria pedicularia</i>	Fern-leaved False Foxglove	1902-09-02	G5	S3	SC	Dry deciduous woods and clearings.
<i>Polygala cruciata</i> var. <i>aquilonia</i>	Marsh Milkwort	1903-08-18	G5T4	SH	PE	Wet pinelands, savannas, peats, and sands.
<i>Lobelia siphilitica</i>	Great Blue Lobelia	1905-09	G5	SX	PE	Rich low woods and swamps
<i>Allium canadense</i>	Wild Garlic	1921-07-26	G5	S2	SC	Alluvial woods, thickets, and meadows.
<i>Saxifraga pensylvanica</i>	Swamp Saxifrage	1913-06-11	G5	S3	T	Wet meadows, swamps, boggy thickets, and seeping banks.

STATE RARITY RANKS

- S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3 Rare in Maine (20-100 occurrences).
- S4 Apparently secure in Maine.
- S5 Demonstrably secure in Maine.
- SH Known historically from the state, not verified in the past 20 years.
- SX Apparently extirpated from the state, loss of last known occurrence has been documented.
- SU Under consideration for assigning rarity status; more information needed on threats or distribution.
- S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: State Rarity Ranks are determined by the Maine Natural Areas Program.

GLOBAL RARITY RANKS

- G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3 Globally rare (20-100 occurrences).
- G4 Apparently secure globally.
- G5 Demonstrably secure globally.

Note: Global Ranks are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered and Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

- SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.



Stantec Consulting Services Inc.
22 Free Street Suite 205
Portland ME 04101-3900
Tel: (207) 775-3211
Fax: (207) 775-6434

Stantec

October 10, 2007
File: 195210126

Ms. Raquel Ross
Information Manager
Department of Conservation
157 Hospital Street
93 State House Station
Augusta, ME 04333-0093

Dear Ms. Ross:

**Reference: Portland International Jetport
Phase II Parking Garage
Natural Areas Program Review**

In April 2006, we requested a review of the above stated project at the Portland International Jetport under the Maine Natural Areas Program. Your response dated April 18, 2006 indicates that there are *"no rare botanical features documented specifically within the project area."* Since that review, a change in the scope of the project has occurred. In order to comply with current Maine Department of Environmental Protection requirements for stormwater runoff, we are now proposing the construction of a stormwater treatment pond on the other side of the airport from the proposed garage. The proposed pond will be located adjacent to Yellowbird Road next to the Fore River. It will collect runoff from runway and roadway pavement and filter it through a system of gravel lined underdrains that outlet to the Fore River. The existing site is primarily upland meadow bordered by woods.

At this time, we are requesting an additional review of the project specifically dealing with the location of the treatment pond between Yellowbird Road and the Fore River. We have enclosed preliminary site plans and a USGS quad map showing location and surveyed ground topography in the area. Please review the enclosed information and confirm with us in writing whether or not you have any concerns associated with the proposed project.

Sincerely,

STANTEC CONSULTING SERVICES INC.

David P. Nadeau, P.E.
Transportation Engineer
Tel: (207) 775-3211
Fax: (207) 775-6434
dave.nadeau@stantec.com

Attachment: Location Map; Filter Pond Grading Plan; MDEC Response Letter dated April 18, 2006

c. Paul Bradbury - PWM
George Katsoufis - DHK

John E. Baldacci
Governor



Roland D. Martin
Commissioner

DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

Wildlife Division, Region A
358 Shaker Road
Gray, ME 04039
Phone: (207) 657-2345 x 109
Fax: (207) 657-2980
Judith.walker@maine.gov

May 16, 2007

James McLaughlin
Stantec Consulting Services, Inc.
22 Free Steet Suite 205
Portland, ME 04101

RE: Portland Jetport Parking Garage, Phase II

Dear Jim,

You contacted our offices regarding any wildlife resources on a project at the Portland International Jetport, in Portland, Maine. Based on a review of the most current data available, there are no known essential or significant wildlife habitats, nor any documented occurrences of rare, threatened species within the project site. I am not aware of any significant vernal pools on this property, however no formal surveys have been conducted. Vernal pools of management concern include those with documented reproduction of the following species; wood frog, spotted salamander, four-toed salamander, blue-spotted salamander, and fairy shrimp.

I have attached a map of the approximate project site, and it appears that the project is outside of the shorebird roosting/feeding area, as well as the area mapped as New England Cottontail habitat. Based on the site plan you provided, I would expect this project to have minimal negative impact on regional wildlife goals and management objectives.

Sincerely,

Judy Walker

Judy Walker
Assistant Regional Wildlife Biologist

McLaughlin, James

From: McLaughlin, James
Sent: Wednesday, May 16, 2007 1:53 PM
To: 'judith.walker@maine.gov'
Subject: Portland Jetport Parking Garage - Phase II
Attachments: Sheet C-1 Overall Project Site Plan.pdf; Sheet C6-3 FILTRATION POND GRADING PLAN.pdf; Letter to Inland Fisheries and Wildlife.doc

Hello Judy,

Per our telephone conversation of this morning, I am attaching a copy of the letter we sent to your office on April 12, 2006 requesting confirmation of our opinion that there will be no negative impact on fisheries or wildlife as a result of the project. I have also included a copy of the overall site plan of the project showing the location of the garage addition and a plan showing the DEP stormwater quality mitigation infiltration pond, which is to be constructed as part of the project. Please call me if you have any questions as you review the information. Thanks.

James E. McLaughlin, PE
Associate, Transportation
Stantec
Ph: (207) 775-3211 Ext. 103
Fx: (207) 775-6434
jim.mclaughlin@stantec.com
stantec.com

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

5/17/2007



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.



October 19, 2007

Mr. David P. Nadeau
Stantec Consulting Services
22 Free St. Suite 205
Portland, ME 04101-3900

Re: Portland International Jetport, stormwater treatment pond adjacent to Fore River (MHPC 1010-06)

Dear Mr. Nadeau:

Based on the information provided in your letter of October 10, I have concluded that the area proposed for the stormwater runoff treatment pond is sensitive for prehistoric archaeological sites, and that this area has never been surveyed by a professional archaeologist. (In fact, survey of the south margin of the airport along Long Creek several years ago located two Native American archaeological sites.) A Phase I archaeological survey will be necessary in order to determine whether such sites are present in the stormwater treatment pond area.

A list of qualified archaeologists is enclosed along with material explaining the Phase I/II/III approach to archaeological survey. This office must approve any proposal for archaeological fieldwork. Please contact Dr. Arthur Spiess of this office if we can be of further assistance in this matter.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

ANGUS S. KING, JR.
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

CONTRACT ARCHAEOLOGY GUIDELINES

June 10, 2002

This document is provided as background information to agencies, corporations, professional consultants or individuals needing contract archaeological services (also known as Cultural Resources Management archaeology) in Maine. These guidelines are based on state rules (94-089 Chapter 812).

Project Types

The vast majority of contract archaeology survey work falls into one of three categories. **Phase I** surveys are designed to determine whether or not archaeological sites exist on a particular piece of land. Such work involves checking records of previous archaeology in the area, walking over the landscape to inspect land forms and look for surface exposures of soil and possible archaeological material, and the excavation of shovel test pits in areas of high probability.

Phase II surveys are designed to focus on one or more sites that are already known to exist, find site limits by digging test pits, and determine site content and preservation. Information from Phase II survey work is used by the Maine Historic Preservation Commission (MHPC) to determine site significance (eligibility for listing in the National Register of Historic Places). **Phase III** archaeological work, often called data recovery, is careful excavation of a significant archaeological site to recover the artifacts and information it contains in advance of construction or other disturbance.

Archaeological sites are further divided into two broad categories of culture, **prehistoric** (or Native American), and **historic** (or European-American). Different archaeological specialists are usually needed for prehistoric or historic sites because the nature of content and preservation and site locations are quite different.

Scope of Work

In responding to a project submission, the MHPC may issue a letter specifying which type of archaeological survey is needed (prehistoric, historic or both) and at what level (Phase I, II, or III). Often the response letter contains further information, such as the suspected presence of an historic site of a certain age, or a statement that only a portion of the project parcel in question is sensitive for prehistoric sites and only that portion needs archaeological survey.

Once the project applicant has one or more scopes of work (proposals) from appropriate archaeologists (see below), the applicant should submit their preferred proposal (*without attached financial information or bid total*) to the MHPC for approval. MHPC will not comment upon cost, but will comment on the appropriateness of the scale and scope of the work. An approval from MHPC of the scope of work is the applicant's guarantee that, if the field and laboratory work are done according to the scope, and appropriately described in writing, the results will be accepted by MHPC.

The final written report on the project must also be submitted to MHPC for review and comment.



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Stantec

October 10, 2007
File: 195210126

Mr. Mike Johnson
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME 04333-0065

Dear Mr. Johnson:

**Reference: Portland International Jetport
Phase II Parking Garage
Section 106 Review**

In April 2006, we requested a review of the above stated project at the Portland International Jetport in accordance with Section 106 of the National Historic Preservation Act. Your response dated May 10, 2006 indicates that there are "no historic properties [architectural or archeological] affected by the proposed undertaking." Since that review, a change in the scope of the project has occurred. In order to comply with current Maine Department of Environmental Protection requirements for stormwater runoff, we are now proposing the construction of a stormwater treatment pond on the other side of the airport from the proposed garage. The proposed pond will be located adjacent to Yellowbird Road next to the Fore River. It will collect runoff from runway and roadway pavement and filter it through a system of gravel lined underdrains that outlet to the Fore River. The existing site is primarily upland meadow bordered by woods.

At this time, we are requesting an additional review of the project specifically dealing with the location of the treatment pond between Yellowbird Road and the Fore River. We have enclosed preliminary site plans and a USGS quad map showing location and surveyed ground topography in the area. Please review the enclosed information and confirm with us in writing whether or not you have any concerns associated with the proposed project.

Sincerely,

STANTEC CONSULTING SERVICES INC.

David P. Nadeau, P.E.
Transportation Engineer
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Attachment: Location Map; Filter Pond Grading Plan; MHPC Response Letter dated May 10, 2006

c. Paul Bradbury - PWM
George Katsoufis - DHK