

CBL:

152-B-1

FOLDER NAME:

PB Workshop (vol. 2) 3/7/06

PROJECT:

Morrills Crossing Contract Rezoning

ADDRESS:

33 Allen Avenue

Morrill's Crossing

Application Review Correspondence



VOLUME TWO

Post 3/7/06 Workshop
Portland, Maine



**Resource
Systems
Engineering**

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February 28, 2006
File 060126

City of Portland
389 Congress Street
Portland, Maine 04101

ATTENTION: Sarah Hopkins, Development Review Manager

REFERENCE: Sound Level Impact Assessment Report
Morrill's Crossing, Portland, Maine
Epsilon Associates, Inc., January 12, 2006

SUBJECT: Review of Sound Level Impact Assessment Report

Dear Ms. Hopkins:

Resource Systems Engineering ("RSE") has reviewed the Sound Level Impact Assessment Report ("Report") prepared by Epsilon Associates, Inc. ("Epsilon") of Maynard, Massachusetts. The referenced Report finds that future sound levels from the Morrill's Crossing development ("Project"), as currently proposed, will meet all applicable community noise standards. The Report provides a summary of relevant federal, state, and local community noise standards potentially applicable to the Project, measurements of existing ambient sound levels in the vicinity of the Project site, and descriptions and sound level estimates of future noise sources associated with the Project.

RSE generally finds the Epsilon Report to provide well-documented measurements and descriptions of existing sound levels and proposed noise sources. This includes continuous 24-hour measurements at two monitoring positions. Instrumentation and field procedures are generally in accordance with requirements as set forth by the Maine Department of Environmental Protection ("DEP") and recognized national standards. Information concerning future noise sources demonstrates Epsilon's detailed understanding of the equipment planned for use by the proposed development and potential noise considerations.

Our review of the results and analysis contained in the Epsilon Report, however, lead to different findings than presented by Epsilon. Where Epsilon concludes that the Project will meet all applicable community noise standards, RSE finds that the Project as currently proposed is not likely to comply with applicable community noise limits as set forth by the City of Portland and possibly the Maine DEP. Discrepancies between the Epsilon Report and our findings deal primarily with determinations by Epsilon concerning whether or not certain state and local noise standards are applicable to the Project and whether specific noise sources, such as truck traffic and loading dock activity, are exempt. There are instances where RSE finds insufficient basis for statements in the Epsilon Report that claim that a standard does not apply or that a noise source is exempt. RSE also found some discrepancies with Epsilon's analysis of future sound levels, comparisons with City noise limits, and assessments of sound level impacts.

The following provides review comments by subject area that are also referenced to specific sections of the Epsilon Report. As appropriate, the comments also include recommendations for clarification or further analysis.

Applicable Noise Standards (Section 3.0, 6.0) – Section 3.2 Maine State Regulations provides a summary of the relevant Maine DEP noise regulation under the Site Location of Development Law and states that because the City of Portland has a quantifiable noise standard, the State noise regulation is not applicable to this site.

The Maine DEP regulation applies the local noise standard to a project, rather than the state noise limits, but only when the local standard meets certain conditions. Maine DEP applies the local standard rather than the Maine DEP limits "for each of the types of sounds the ordinance regulates." The local standard must "limit or address the various types of noise contained" in the Maine DEP regulation or "all the types of noises generated by the development". For example, the City of Portland applies a noise limit to impulse sounds of one-second or less duration. This regulates the type of sound Maine DEP defines as a "short duration repetitive sound". Therefore, for impulse sounds only the Portland noise limits apply. (ref. Chapter 375.10 Section B.1)

Another condition is that local limits cannot be more than 5 dBA above the Maine DEP limit. To determine whether the Portland noise limits meet this condition requires a comparison of the relevant state and local limits. To facilitate this comparison, the Site/Aerial Photo Maps (Figures 2 and 5) should clearly show protected locations as defined by Maine DEP and local zoning designations so that Maine DEP noise limits could be determined. The Maine DEP nighttime limit at a protected location (residence) in a residential zone is 50 dBA from 7 pm to 7 am. The City daytime limit of 60 dBA lasts until 9:00 PM and is therefore more than 5 dBA above the Maine DEP limit between 7 pm and 9 pm.

In addition to impulse sounds, the Maine DEP limits tonal sounds from all regulated developments. However, in the noise standard set forth for the B-2 zone, the City of Portland does not address tonal sounds. Therefore, appropriate adjustments for tonal sounds as set forth by the Maine DEP need to be made to determine compliance with applicable noise limits. This requires a determination of whether a proposed development will generate tonal sounds.

The Report also states that Maine DEP limits are specified in terms of "hourly average noise limits" and that noise from trucks is exempt when entering the site to make a delivery or pickup and when moving, starting, and stopping.

Maine DEP sound level limits are actually stated in terms of hourly equivalent sound levels or L_{eq} (ref. Chapter 375.10, Section G.10 Hourly Sound Level "The equivalent sound level for one hour measured or computed in accordance with this regulation.")

Traffic noise is not always exempt by Maine DEP regulation and is regulated when trucks are parked for over 60 minutes in the development (ref. Chapter 375.10, Section C.5.) There is also precedence that noise from ancillary equipment not related to vehicle movement, such as refrigeration units,

mixers, loading or unloading pumps, is considered part of routine operation and therefore not exempt from Maine DEP limits.

City of Portland Noise Limits (Section 3.0, 6.0) - Section 3.3 Local Regulations of the Report states that the project site has been rezoned via a contract zone and that Performance Standards for noise established for the Community Business (B-2) zone as set forth in Section 14-187(b) of the Code of Ordinances will apply to the project. Inquiry to S. Hopkins, City of Portland, confirms that the contract zone established for the project sets forth the Performance Standards of the B-2 zone. Appendix A of the Report provides a copy of these Performance Standards as Section 14-187(b), which state:

“... the volume of sound ... generated shall not exceed sixty (60) decibels on the A scale between 7:00 a.m. and 9:00 p.m. and fifty-five (55) decibels on the A scale between 9:00 p.m. and 7:00 a.m., on impulse (less than one (1) second), at lot boundaries, excepting air raid sirens and similar warning devices.”

Section 3.3 of the Report further states that the “maximum permissible sound level of any continuous, regular, or frequent source of sound shall be 60 dBA between 7:00 AM and 9:00 PM, and 55 dBA between 9:00 PM and 7:00 AM.”

RSE does not find any language in the Performance Standards for the B-2 zone that requires the source of sound to be “continuous, regular, or frequent.” In fact, the City noise limits are based on sound levels that can occur for less than one second.

Existing/Ambient Conditions (ref. Section 4.0, 7.0)

Section 4.1 Baseline Noise Environment states “An ambient noise survey was conducted during the daytime and quietest nighttime hours to characterize the existing ‘baseline’ acoustical environment in the vicinity of the Project. These quietest times would be midday for the daytime measurements and after midnight for the nighttime measurements.”

Section 4.3 Measurement Methodology states that an objective of the 24 hours measurements was “to confirm that the short-term sampling was indeed representative of the quiet period.” and “Since noise impacts are greatest when existing noise levels are lowest, the study was designed to measure nighttime community noise level under conditions typical of a ‘quiet period’ for the area.” According to Table 1, short-term measurements during daytime measurements were conducted between 11:38 am and 1:24 pm. Similar nighttime measurements were conducted between 12:00 am and 2:06 am.

Section 4.5 Baseline Ambient Noise Levels states “The continuous sound level data confirm the short-term data as a reasonable representation of area sound levels.” Based on the 24-hour measurements, the Report finds that protected locations in the vicinity of the project do not qualify as Maine DEP quiet areas.

Comparing these time periods to the 24-hour monitoring data in Figures 3 and 4 indicates that the selected daytime period was relatively loud compared to other daytime hours. Both the quietest "daytime" and "nighttime hours" are different than the time periods of the short-term measurements. Based on various sound level parameters, RSE finds the quietest "daytime" hours are from 6 pm to 9 pm and the quietest nighttime hours are from 2:00 am and 5:00 am.

RSE agrees that the 24-hour monitoring results demonstrate that protected locations in the vicinity of the site are not quiet areas as defined by Maine DEP. Based on this finding, the Report should state the Maine DEP sound level limits applicable at nearby protected locations for comparison with City noise limits.

Additional comments regarding analysis of existing sound levels are provided relative to Noise Impact.

Noise Sources (ref. Sections 1.0, 5.0 and 6.0) – The Report provides a list of planned uses associated with the proposed development. These include a Stop & Shop Supermarket, retail establishments, residential housing, and recreational facilities. Section 1.0 Introduction and Summary states the Report has been prepared primarily to evaluate noise from operation of the proposed supermarket and that noise from other proposed land uses will be minimal. Section 5.0 Reference Sound Level Data provides additional descriptions and sound level data for some noise sources associated with the proposed supermarket and other retail and residential units.

Mechanical equipment will include 36 Hussman refrigeration condenser fans at one horsepower each and a single Seasons-4 HVAC unit installed on the rooftop of the supermarket, and a compressor installed inside the supermarket building. No sound level performance data is provided for the rooftop mechanical equipment or compressors although estimates are provided in Section 6.0 of the Report for various evaluation points.

A description and sound levels for noise sources associated with operation of the loading/receiving dock and trash compactors are provided. The Report provides maximum dBA sound levels for operation of tractor-trailer trucks (18-wheelers), backup alarms, unloading activity, and truck refrigeration units. The Report states that the most common type of truck will be "medium trucks" and that noise from 18-wheelers are slightly louder than these "vendor" trucks. The estimated volume of tractor-trailer deliveries will average five or six per day. Sound levels for operation of two trash compactors include maximum start/end sound levels and mid-steady sound levels.

The Report also provides a description and sound levels for a "typical Carrier HVAC unit" planned for use for the small retail units and apartments.

Sound level performance data for the rooftop mechanical equipment and compressors is needed to evaluate the sound level estimates presented in Section 6.1 of the Report. Also, the Report does not provide a description of the planned recreational facilities or associated noise sources.

RSE finds that there may be potential for noise from planned recreational facilities and other site activity that may be significant either alone or when combined with sound levels from the proposed

supermarket. Other possible noise sources associated with development may include construction activity, electrical transformers, delivery truck air brakes, parking lot activity (general use) and maintenance (vacuum truck, sweeping, plowing) and trash collection. The noise report should provide guidelines for properly locating fixed noise sources and specify maximum sound levels to ensure that they will meet applicable noise standards. All significant noise sources that are exempt from regulation should be identified in the report and considered in the analysis of noise impacts from the Project.

Future Sound Levels and Comparison to Noise Limits (Section 6.0 and 7.0) – Report Section 6.1.1 and Tables 4 and 5 provide estimates of future sound levels from Mechanical Rooftop Equipment at several “evaluation points”. The Report shows that the highest sound levels from this equipment will be 47 dBA at the residential property line to the east. These results are compared to the City of Portland noise limits. Epsilon selected evaluation points at residential property boundaries to the rear and side of the supermarket. The Report states that the Project will meet all applicable community noise standards including Maine Department of Environmental Protection (“DEP”) Chapter 375, Section 10 “Control of Noise” and City of Portland noise regulation.

As proposed, the Project would locate several noise sources associated with loading dock activity and trash compactors within a relatively small area at the rear of the supermarket. Two loading/receiving docks are proposed and each loading dock appears to have capacity for two tractor-trailer trucks. A waste compactor is also located adjacent to each loading/delivery dock. The north loading dock is closer to existing residential properties and property boundary of the Project. Sound level estimates for noise associated with the loading dock/truck activity are not provided in the Report. Section 6.1.2 Trash Compactors and Table 6 provides estimates of sound levels from the trash compactors. The distance from the compactor to the east property line is given as 85 feet and the resulting estimated sound level is 60 dBA.

As specified in Section 14-187 of the City Code, the City of Portland noise limits apply at the lot boundaries of the Project. Figure 5 clearly shows that the Project lot lines are significantly closer to the proposed noise sources than the nearest residential property lines. Therefore, the resulting sound levels at the Project lot lines would be significantly higher than sound level estimates contained in the Epsilon Report. Estimated sound levels at the Project lot lines should be used to evaluate compliance with City of Portland noise limits.

For Mechanical Rooftop Equipment, the only result provided in the Report is the range of overall sound levels from the rooftop units at the evaluation points. There are no specific measurement results or distances to evaluation points provided as needed to review sound level estimates for the mechanical rooftop equipment or determine the future sound levels at the nearest Project lot lines.

Scaling distances from Figure 5, Sound Level Sources and Modeling Locations, RSE finds the distance from the north trash compactor to the nearest property line would be approximately 50 feet. From sound level data provided in Section 5.1.2, the maximum sound level for the compactor is 73 dBA at 45 feet. This would result in a sound level of 72 dBA at the nearest property line, which is 12 dBA above the Portland daytime limit of 60 dBA. The sound level at 85 feet would be 67 dBA (vs 60 dBA shown in Table 6), which is 7 dBA over the daytime limit.

Exemptions from State and Local Noise Limits (Section 3.0 and 6.0) - Section 6.1.3 Loading Dock Noise & Delivery Truck Activity states "Noise from delivery truck activities is explicitly exempt from the noise regulations as discussed in section 3.2 of this report." Section 3.2 of the Report addresses State of Maine noise regulations. Section 3.3 of the Report addresses the City of Portland noise standard.

RSE finds no language in the applicable City of Portland noise standard that would exempt noise from either delivery trucks or loading dock operation from the Performance Standards applicable to the B-2 zone.

The Maine DEP regulation does exempt vehicular traffic in many instances. This exemption would exclude truck noise when trucks remain on-site for more than one hour and noise from ancillary equipment such as refrigeration units.

From discussions with M. Schmuckal, Zoning Administrator, and S. Hopkins of the City of Portland, RSE understands that traffic noise for new projects is addressed as set forth in the City Code depending on the specifics of the proposed development and proximity to sensitive land uses. As it relates to the subject project, RSE understands that the intent of the Portland noise standard would be to limit noise from designated operating areas, such as a loading/receiving dock, because of the concentration of delivery truck and related activity and close proximity to residential land uses. Specifically, this would include the area located behind the proposed supermarket where trucks would turn around and back into a loading bay, shipments would be unloaded, parked trucks may idle, refrigeration units may be running, and trucks would pull away from loading bays.

The Epsilon Report does not indicate how long the trucks will remain at the loading dock, how long the unloading operations are expected to occur for each truck, or whether trucks will remain idling. Further, there are no quantified estimates of the expected sound levels at the property line from future operation of the loading/receiving docks.

Based on source sound levels and Project site plan provided by Epsilon, RSE estimates that sound levels from individual noise sources at the north loading dock will range from 64 to 80 dBA at the property boundary of the development. This does not include possible sound reflection from the supermarket building, which has the potential to increase off-site sound levels to the east.

Estimated sound levels for each source are above the City daytime limit of 60 dBA and the nighttime limit of 55 dBA. The combined sound levels of these and other noise sources (e.g. additional trucks maneuvering or unloading, trash compactors or rooftop mechanical equipment) are likely to be higher than from individual noise sources. Clearly, further analysis of loading dock noise sources and the applicability of city noise limits is required to demonstrate that the proposed development will comply with relevant noise standards.

Noise Impact (Sections 1.0, 6.0 and 7.0) - The Report states that future sound levels from the Project will not substantially impact the surrounding ambient noise environment. Section 6.1.3 of the Report states that sound levels from these sources "will be perceptible to the nearest neighbors within a



couple of blocks to the rear of the store. However, sound levels from these sources will be no different than existing maximum noise levels in the area." Section 7.0 Conclusions and Summary of Mitigation states "The resulting ambient noise levels will be indistinguishable from current conditions, and consistent with the existing land-use."

When reviewing ambient or "background" sound levels, use of the maximum hourly sound level can lead to unpredictable results because of the extremely short time period of one second or less. Preferred options are to analyze the impacts of noise events utilizing a short-term (e.g. one minute) equivalent sound level or a percentile level (e.g. L_1 or L_{10}) to represent the sound level exceeded a percentage of the time. Use of the percentile would be consistent with Section 2.0 Noise Metrics of the Epsilon Report which states: " L_{10} is the sound level in dBA exceeded only 10% of the time. It is close to the maximum level observed during the measurement period. The L_{10} is sometimes called the intrusive sound level because it is caused by occasional louder noises like passing motor vehicles."

The nearest 24-hour monitoring position in the vicinity of the loading dock area is position 1. From Table 2, hourly L_{10} readings during City of Portland daytime hours (7 am to 9 pm) averaged 54 dBA and 47 dBA during nighttime hours (9 pm to 7 am). According to Section 2.0 of the Report, the L_{10} represents the current level of "intrusive" sounds.

Future sound levels from individual noise sources associated with the loading/receiving dock vary by source and distance from the loading dock. At the nearest existing residence approximately 280 feet from the loading dock, individual source levels will range from 50 dBA (refrigeration unit) to 66 dBA (tractor trailer accelerating). Sound levels from acceleration of a tractor-trailer would be 12 dBA above the average daytime L_{10} measured at position 1. At the nearest residential lot boundary (currently no residence), individual source levels will range from 59 dBA to 75 dBA, which is 5 to 21 dBA above the average daytime L_{10} . Sound levels that exceed the daytime L_{10} by 5 to 21 dBA are likely to be quite noticeable.

Recommendations for Noise Mitigation (Section 7.0) – In addition to the planned noise mitigating equipment, Epsilon recommends that operation of the Trash Compactors be restricted to the daytime hours of 7 am to 9 pm, and truck deliveries be limited to hours of 6 am to 10 pm.

RSE finds that the recommended noise mitigation measures will not result in compliance with the applicable City of Portland noise limits and additional mitigation measures will be required. A noticeable site feature of the proposed site design is that nearly all the primary noise sources associated with the proposed development are located in an area of the site that is in close proximity to the quietest residential areas. In the absence of other site considerations, there appears to be opportunities to locate the primary noise sources significantly further away from residential areas and closer to less sensitive commercial and industrial land uses. This would reduce future sound levels at the residential areas and associated noise impacts.

Overall, RSE finds that the Sound Level Impact Assessment Report by Epsilon Associates does not demonstrate that the proposed Morrill's Crossing development will meet the noise limits as set forth by

applicable state and local noise standards. A summary of the main issues and recommendations for resolution are as follows:

1. Noise Sources and Estimates – Sound level performance data and supporting calculations for supermarket mechanical equipment are needed to evaluate sound level estimates contained in the report. More information concerning other Project noise sources should be provided including identification of exempt noise sources, estimates of combined sound levels, and a description of the proposed recreational facilities.
2. Maine DEP Noise Regulation – The potential exists that certain Maine DEP noise limits apply to the Project. A comparison of state and local standards and analysis of tonal sounds is required to demonstrate that the proposed development will comply with these Maine DEP noise limits.
3. City of Portland Noise Limits – Performance Standards for the B-2 zone do not exempt noise from loading dock noise and delivery truck activity. Sound level estimates show that noise from these sources alone would be over the City noise limits at Project lot lines. In addition, sound levels from operation of the trash compactor and combined noise sources would also be above the City noise limits. Additional mitigation measures or agreement with the City is required to demonstrate that the proposed development will comply with City of Portland noise limits.
4. Noise Impact Assessment – Report findings may understate the potential noise impact of the project on existing residential areas. More information is needed concerning sound levels and their duration from the loading dock and truck delivery activity to fully evaluate the noise impact of the project.
5. Noise Mitigation – Additional noise mitigation measures will be required for the Project to comply with applicable noise standards. Relocation of the primary noise sources away from nearby residential areas could provide significant noise reduction at sensitive land uses.

Please feel free to contact me if you have any questions concerning our review of the Sound Level Impact Assessment Report.

Sincerely,
Resource Systems Engineering

R. Scott Bodwell, P.E.
Project Engineer

Cc: Stephen R. Bushey, DeLuca-Hoffman Associates, Inc.





May 30, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Sarah Hopkins
Development Review Services Manager
Department of Planning & Development
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Morrill's Crossing - Response to Noise Review

Dear Sarah:

An updated Sound Level Impact Assessment Report prepared by Epsilon Associates, dated May 16, 2006 was submitted to you last week. The report has been updated to address the B-2 Community Business Zone noise standards interpreted by Marge Schmuckal, Zoning Administrator for the City.

The report has also been updated to reflect applicable recommendations offered by Mr. R. Scott Bodwell of Resource Systems Engineering in his letter to you dated February 28, 2006.

Two copies of the updated Sound Level Impact Assessment Report were sent to your office on May 25, 2006. VHB requested at that time that one copy be forwarded to Mr. Bodwell for his review.

Please give me a call if you have any questions or need additional information.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.



John Hession
Senior Project Manager

Enclosure

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CARROLL ASSOCIATES

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LANDSCAPE ARCHITECTS

PROJECT MEMO: Morrill's Crossing

TO: Sarah Hopkins
FROM: Pat Carroll
DATE: March 1, 2006

RE: Landscape Peer Review- Response to Resubmission 2/17/06

We are in receipt of a revised landscape Plan for the Morrills Crossing Project and have reviewed the plan and accompanying Response Letter. The Applicant has satisfactorily addressed many of the concerns outlined in my previous memorandum and discussions, however several issues remain unresolved:

- 1. Perimeter Buffer Plantings.** The Applicant has added additional evergreen trees and understory plantings along the back of the buildings and service area, however perimeter plantings along the easterly property line between Morrill Street and extending south of Cambridge Street are not adequate to properly buffer these existing residential neighborhood from the project. It is also noted that one of the apartment buildings that was located on the northeast side of the parking lot, effectively screening the service area and parking lot, has now been moved to the southwest side, allowing headlights and activity from the development to become far more visible and prominent. Headlights are also not effectively screened from the parking lot associated with the recreation field to the properties on Cornell and Cambridge Streets. Fencing and/or dense evergreen plantings are recommended to provide a more effective buffer to the neighborhood.
- 2. Tree Planting in Cutouts-** The Applicant has proposed to increase the cutout size from 3' x 3' to 3' x 12' with the cutout area containing perennials and concrete pavers. No detail has been shown for this configuration, but we have several concerns regarding its viability. The trees proposed are 3-3.5" caliper Maples and Ornamental Pears, which have a minimum root ball size of 32-38" according to ASNS which sets standards for nursery stock. Standard tree planting practice requires a tree pit excavation up to two times the root ball diameter, so it is unclear how these trees can be planted in such a restricted area (36"). It is also unclear how concrete pavers are integrated into the cutout area, what type they are, and whether they really will provide a pervious paving conducive to water infiltration or rather become mostly impervious as they typically do. It is noted that there are porous paver products available that may be suitable in this application. The Applicant is encouraged to research the viability of these products. It has also been the recommendation of the City Arborist in the past that tree cutouts be raised with curbing to better protect the trees from road salts and compaction.
- 3. Site Lighting-** We have not received a revised Site Lighting Plan and still have concerns regarding the level of lighting on the north side of the supermarket, as well as hours of use for the site lighting, especially at the service area.
- 4. Phasing-** It is still unclear how the landscaping works with the phasing of the project and that there will be adequate buffering of the project from the residential neighborhood prior to the buildout of the Townhouses and Apartments, which aid in screening and buffering the retail uses from the residential neighborhood. A phasing plan addressing this issue seems appropriate.

5. **Noise-** It is my understanding that a noise consultant has been retained by the City to review the Applicant's noise report. We will defer to their expertise, however it is noted that in our experience planting alone does little to block or suppress noise.
6. **Snow Storage-** Snow storage areas are not indicated on the landscape Plan and we have concerns regarding the ability to protect the extensive landscaping in the medians and islands from snow damage.
7. **Site Improvements-** It is unclear whether benches, bike racks, soccer goals, waste receptacles, and other site improvements are proposed and where they are to be located on the site. There are several areas where such furnishings seem appropriate and would add to the pedestrian and recreational use of the property.

We look forward to an appropriate response by the Applicant to these remaining issues. Please contact me if you have questions or need additional information.



May 15, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Sarah Hopkins
Development Review Services Manager
Department of Planning & Development
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Morrill's Crossing - Response to Landscape Peer Review

Dear Sarah:

The following are VHB's responses to the landscape peer review response to resubmission offered by Mr. Patrick Carroll of Carroll Associates in his memo addressed to you dated, March 1, 2006 regarding Morrill's Crossing. Mr. Carroll concludes that "the Applicant has satisfactorily addressed many of the concerns outlined in my previous memorandum and discussions, however several issues remain unresolved". Mr. Carroll's recommendations regarding the unresolved issues have been considered and are addressed below.

PERIMETER BUFFER PLANTINGS:

Comment:

...perimeter plantings along the easterly property line between Morrill Street and extending south of Cambridge Street are not adequate to properly buffer these existing residential neighborhood from the project. It is also noted that one of the apartment buildings that was located on the northeast side of the parking lot, effectively screening the service area and parking lot, has now been moved to the southwest side, allowing headlights and activity from the development to become far more visible and prominent. Headlights are also not effectively screened from the parking lot associated with the recreation field to the properties on Cornell and Cambridge Streets. Fencing and/or dense evergreen plantings are recommended to provide a more effective buffer to the neighborhood.

Response:

Additional landscape plantings and stockade fencing have been added in the area of the apartments and the recreational field parking lot to provide enhanced buffering between the development and the neighborhood. The additional landscaping and fencing is highlighted in the Enhanced Buffering Exhibit included as Attachment A.

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TREE PLANTING IN CUTOUTS:

Comment:

The Applicant has proposed to increase the cutout size from 3' x 3' to 3' x 12' with the cutout area containing perennials and concrete pavers. No detail has been shown for this configuration, but we have several concerns regarding its viability. The trees proposed are 3-3.5" caliper Maples and Ornamental Pears, which have a minimum root ball size of 32-38" according to ASNS which sets standards for nursery stock. Standard tree planting practice requires a tree pit excavation up to two times the root ball diameter, so it is unclear how these trees can be planted in such a restricted area (36"). It is also unclear how concrete pavers are integrated into the cutout area, what type they are, and whether they really will provide a pervious paving conducive to water infiltration or rather become mostly impervious as they typically do. It is noted that there are porous paver products available that may be suitable in this application. The Applicant is encouraged to research the viability of these products. It has also been the recommendation of the City Arborist in the past that tree cutouts be raised with curbing to better protect the trees from road salts and compaction.

Response:

As agreed at our meeting on April 12th, the 3'x12' tree planting cutouts in the area of the Bruno's and the adjacent Retail have been replaced by flush 4'x6' tree cutouts. In the area of the Proposed Mixed Used Building, 4'x4' ADA compliant tree grates are proposed. A cut sheet of the ADA compliant grate, as well as an updated layout plan, has been included as Attachment B.

SITE LIGHTING:

Comment:

We have not received a revised Site Lighting Plan and still have concerns regarding the level of lighting on the north side of the supermarket, as well as hours of use for the site lighting, especially at the service area.

Response:

Responses to Mr. Carroll's Site Lighting Plan peer review comments have been submitted under a separate cover.



Sarah Hopkins
Project No.: 07334.00
May 15, 2006
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PHASING:

Comment:

It is still unclear how the landscaping works with the phasing of the project and that there will be adequate buffering of the project from the residential neighborhood prior to the buildout of the Townhouses and Apartments, which aid in screening and buffering the retail uses from the residential neighborhood. A phasing plan addressing this issue seems appropriate.

Response:

It is the applicant's intention to construct the project in a single phase. In the event of the occupancy of any retail space prior to the construction of the townhouses and apartment, the applicant will commit to the installation of landscaping and fencing prior to granting of a certificate of occupancy. An exhibit highlighting the committed buffering is shown in Attachment C. The applicant will install all plantings and fencing within the area depicted as Phase I with the exception of any plantings that specifically conflict with the construction of any retail building not yet complete.

NOISE:

Comment:

It is my understanding that a noise consultant has been retained by the City to review the Applicant's noise report. We will defer to their expertise, however it is noted that in our experience planting alone does little to block or suppress noise.

Response:

The City has retained an independent noise consultant. Any noise comments from the peer review will be addressed under a separate cover.

SNOW STORAGE:

Comment:

Snow storage areas are not indicated on the landscape Plan and we have concerns regarding the ability to protect the extensive landscaping in the medians and islands from snow damage.



Sarah Hopkins
Project No.: 07334.00
May 15, 2006
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Response:

Snow storage areas have been delineated on the Proposed Amenities and Snow Storage Plan included as Attachment D. Again, as discussed at our April 12th meeting, we agree that although the project includes approximately 7 acres of green/open space, the extensive landscaping limits the availability of snow storage areas. The areas identified on the attached plan will provide storage for the smaller snow storm events. The applicant agrees and commits to dispose of excess snow off-site.

SITE IMPROVEMENTS:

Comment:

It is unclear whether benches, bike racks, soccer goals, waste receptacles, and other site improvements are proposed and where they are to be located on the site. There are several areas where such furnishings seem appropriate and would add to the pedestrian and recreational use of the property.

Response:

Benches, bike racks, and trash receptacle locations are shown on the Proposed Amenities and Snow Storage Plan included as Attachment D. As requested by the Parks Department, no trash receptacles have been provided in the area of the recreation field. Also, at the request of the Parks Department, the applicant has agreed to provide a drinking water fountain located adjacent to the field.

Please give me a call if you have any questions or need additional information.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.

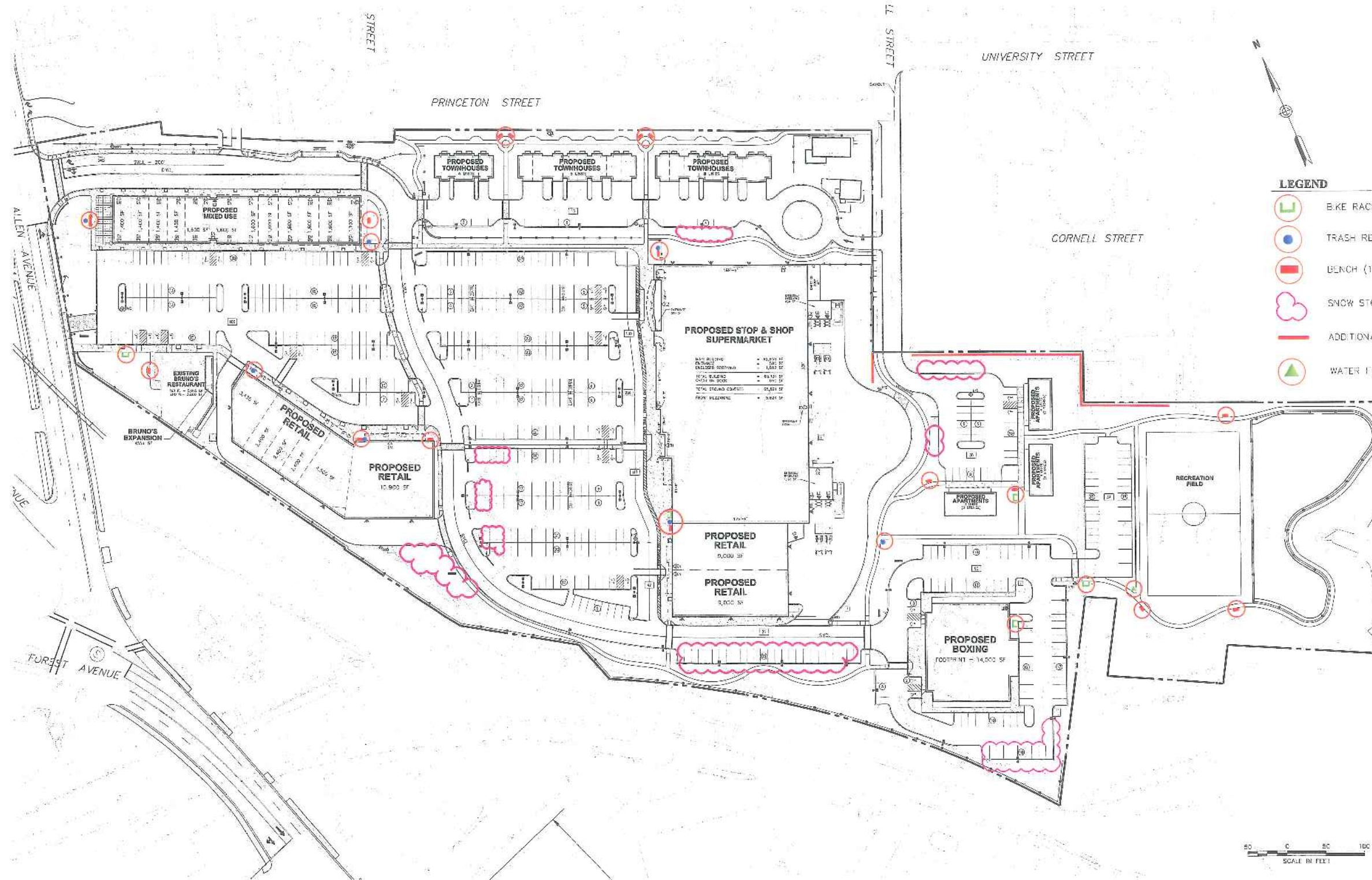
John Hession
Project Manager

David Fenstermacher
Project Engineer

Enclosure

cc: Pat Carroll – Carroll Associates





- LEGEND**
- BIKE RACK (5)
 - TRASH RECEPTACLE (7)
 - BENCH (17)
 - SNOW STORAGE AREA (21,300 SF±)
 - ADDITIONAL 6' STOCKADE FENCING (430'±)
 - WATER FOUNTAIN (1)

NO.	REVISIONS	DATE	BY

Morrill's Crossing

Allen Avenue
Portland, Maine
Project No.
Site Plan Approval

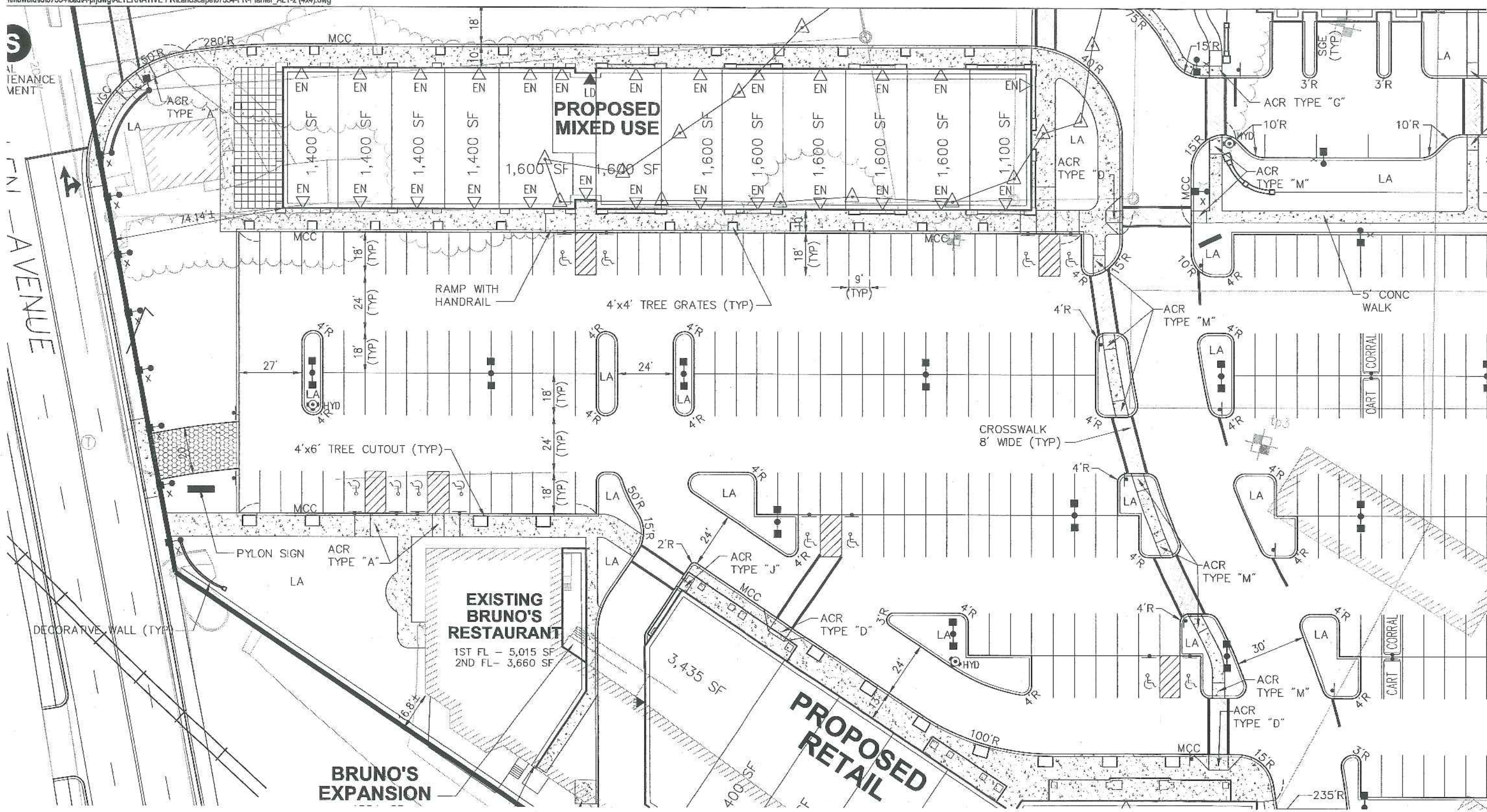
Not Approved for Construction
Scale: 1/8" = 1'-0"

Proposed Amenities and Snow Storage Plan

Drawing Number
C-2
Date: 7/16
Scale: 1/8" = 1'-0"
Project Number: 07334.00



AVENUE



EXISTING BRUNO'S RESTAURANT
1ST FL - 5,015 SF
2ND FL - 3,660 SF

PROPOSED MIXED USE

PROPOSED RETAIL

BRUNO'S EXPANSION

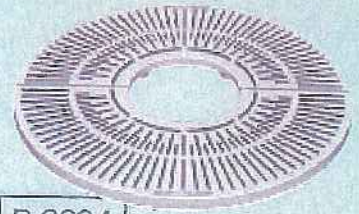
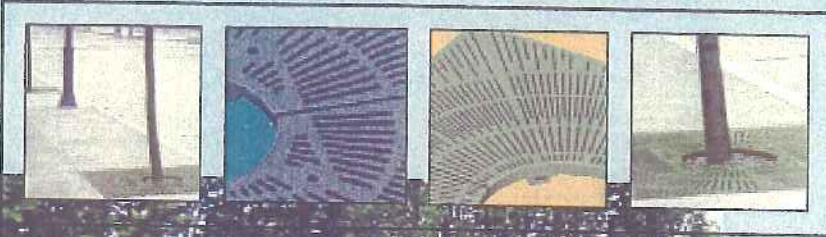
NOTES:
11 TREE GRATES MODIFIED
22 TREE GRATES TO REMAIN

Vanasse Hangen Brustlin, Inc.

Alternative Planter Exhibit
Morrill's Crossing
Portland, Maine
4-4-06

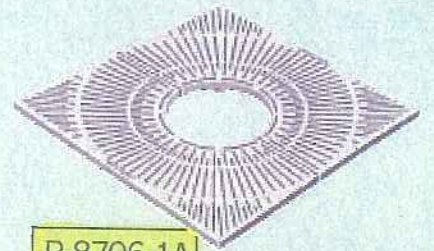
METROPOLITAN COLLECTION

Our most popular concept, the METROPOLITAN collection provides narrow slot openings, an eye-appealing pattern, and is available in a wide variety of sizes and shapes. Don't see exactly what you want? Give us a call!



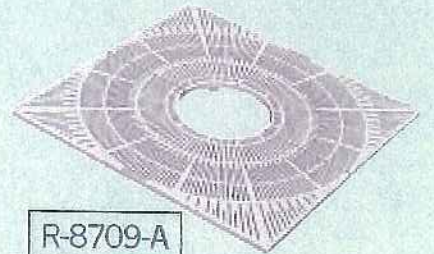
R-8834

36" diameter with 12" diameter expandable tree opening.
1/4" slot openings.
130 pounds per set.



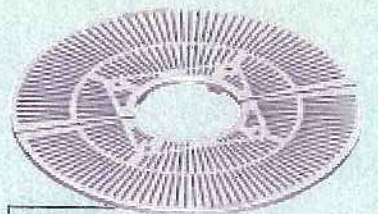
R-8706-1A

48" square with 18" diameter expandable tree opening.
1/4" slot. (Available with light openings, order as R-8706-A.)
330 pounds per set.



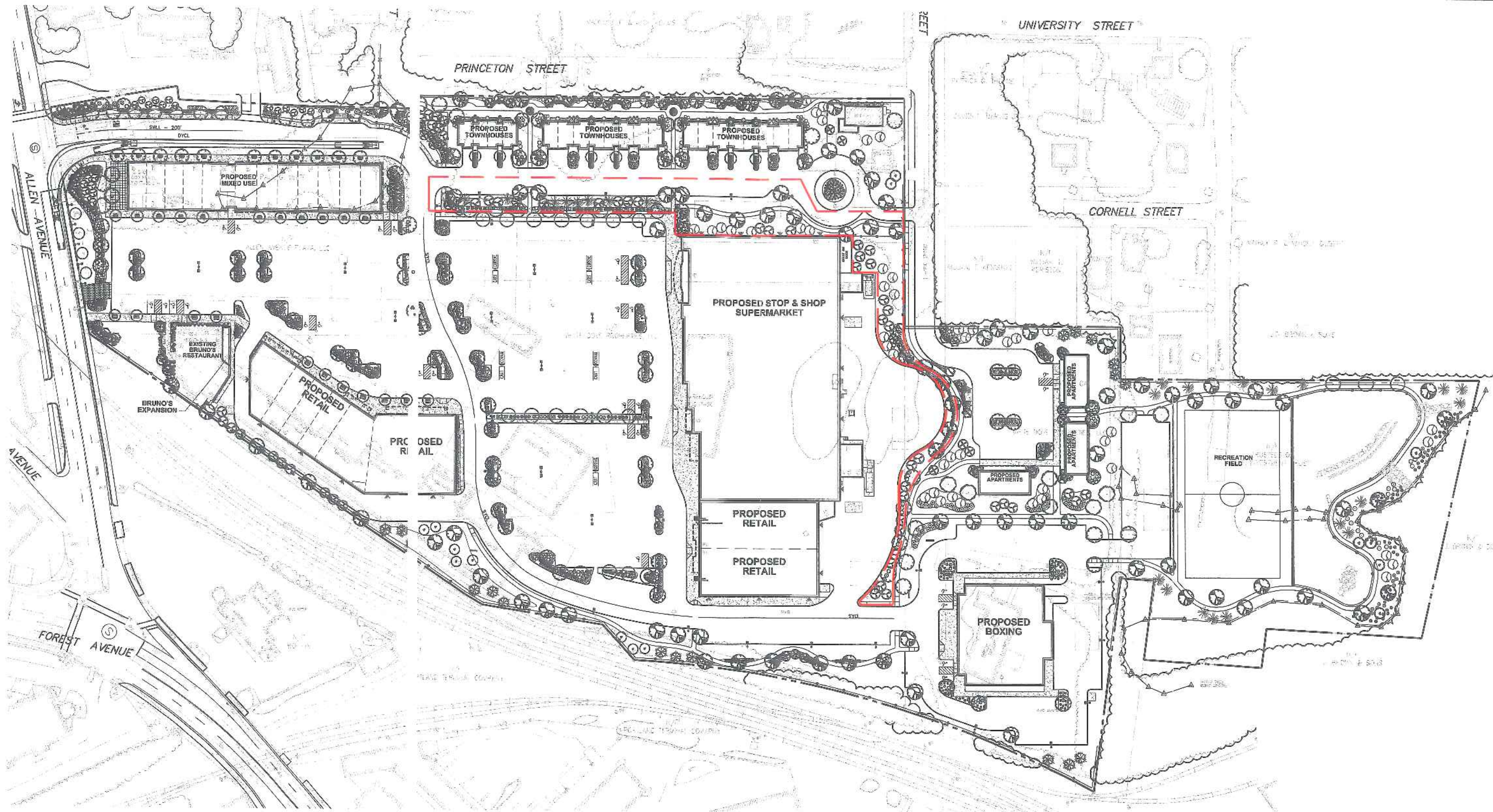
R-8709-A

72" square with 24" diameter expandable tree opening.
1/4" slot openings.
755 pounds per set.



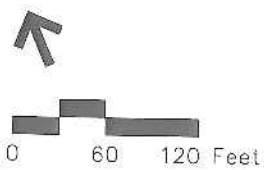
R-8869-A

60" diameter with 18" diameter tree opening.
3/8" slot openings. Four 1" diameter holes for staking tree.
348 pounds per set.



Vanasse Hangen Brustlin, Inc.

Landscape Phasing Plan
Morrill's Crossing
Portland, Maine





Public Works Engineering Memorandum

Date: March 1, 2006

To: Sarah Hopkins, Development Review Services Manager

From: Eric J. Labelle, P.E., City Engineer

Re: Morrill's Crossing

This memorandum is intended to provide clarification and comment on the Morrill's Crossing development.

Princeton and Magnolia Streets

Status:

Both of these streets have been confirmed by Public Works as being "dedicated and unaccepted".

Sewer:

These streets also contain sanitary sewer servicing the area. Public Works does not recommend any work be conducted to this sewer, however, would like be assured that care will be taken in the construction to protect the sewers.

Drainage:

A culvert drains to the southerly side of the Princeton Street. Stormwater is proposed to be collected by a stormwater system to the north of the Townhouses along the property line. The stormwater from the City right of way would be draining through the proposed development's stormwater system. It may be appropriate to request a drainage easement through the site.

Morrill Street

Status:

Morrill Street is also a dedicated and unaccepted from University Street to Milliken Brook. It is not clear where Milliken Brook would have crossed the site prior to

development of this site. Public Works would like to retain a right of way across the site in Morrill Street's current location extending the railroad property at the southern property line. The right of way would not propose building locations and could provide for future access across the railroad property.

Proposed Road:

The developer is currently proposing a 24' wide road to the Townhouses and Apartments. Since this road would become a City street to the site, the road should be constructed to the City's minimum standard and be 28' wide. A turn around also needs to be constructed at the end of the City street.

Stormwater Contribution

In 1993, the City of Portland entered in to a consent agreement with the Maine Department of Environmental Agency due to its combined sewer overflows. This agreement obligates the City complete a series of sewer separation projects in three watersheds, Fall Brook, Capisic Brook and the Fore River. In 1997, the City began work on these projects and is expected to spend nearly 100 million dollars by 2012.

The separation work being conducted requires the reestablishment and the widening of Fall Brook to remove the Mona/Bernard neighborhoods from the 100 year flood planes. In order to do so, the City must acquire drainage easements from property owners to along Fall Brook upstream and downstream entrance into Fall Brook. The acquisition process is ongoing.

Public Works recommends a 100 thousand dollar contribution be made towards the acquisition of downstream stormdrain easements along Fall Brook.



May 30, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Sarah Hopkins
Development Review Services Manager
Department of Planning & Development
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Morrill's Crossing - Response to Public Works Review

Dear Sarah:

The following are VHB's responses to the Public Works comments offered by Mr. Eric Labelle, in his memo addressed to you dated, March 1, 2006 regarding Morrill's Crossing.

Princeton and Magnolia Street :

Comment (Sewer):

These streets also contain sanitary sewer servicing the area. Public Works does not recommend any work be conducted to this sewer, however, would like be assured that care will be taken in the construction to protect the sewers.

Response:

VHB coordinated with the City to verify the sewer locations within Princeton and Magnolia Streets. Attached is an exhibit showing the locations. The limit of work for Morrill's Crossing does not extend past the property line, and therefore will not impact any existing utilities within the above referenced streets. The exhibit is included as Attachment A.

Comment (Drainage):

A culvert drains to the southerly side of the Princeton Street. Stormwater is proposed to be collected by a stormwater system to the north of the Townhouses along the property line. The stormwater from the City right of way would be draining through the proposed development's stormwater system. It may be appropriate to request a drainage easement through the site.

101 Walnut Street
Post Office Box 9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286
email: info@vhb.com
www.vhb.com

Sarah Hopkins
Project No.: 07334.00
May 30, 2006
Page 2

Response:

If requested, VHB will coordinate with the City to prepare appropriate drainage over the portions of the stormwater system that convey runoff from the City right-of way.

Morrill Street:

Comment 1:

Morrill Street is also a dedicated and unaccepted from University Street to Milliken Brook. It is not clear where Milliken Brook would have crossed the site prior to development of this site. Public Works would like to retain a right of way across the site in Morrill Street's current location extending the railroad property at the southern property line. The right of way would not propose building locations and could provide for future access across the railroad property.

Response:

Based on additional research at the registry of deeds, we have determined that the portion of Morrill Street within the project limits was never shown on a subdivision plan recorded at the registry of deeds. Since it was never shown on a recorded subdivision plan, Morrill Street does not exist within the project limits as had been previously believed.

Comment 2:

The developer is currently proposing a 24' wide road to the Townhouses and Apartments. Since this road would become a City street to the site, the road should be constructed to the City's minimum standard and be 28' wide. A turn around also needs to be constructed at the end of the City street.

Response:

VHB has modified the road to the Townhouses and Apartments to meet the standards of a "Minor Residential Street Section" as described in the Technical and Design Standards and Guidelines. The proposed layout calls for a sidewalk along the west side of Morrill Street, but not along the east side, which will require a waiver.

As shown in Attachment B, a hammer-head turn around can be provided at the end of Morrill Street. However, due to the impacts to the open space and buffering of the site to the residential area, the applicant requests a waiver to not construct the turn around. The requested alternative would be the granting of a turn around easement within the apartment parking lot, located at the end of Morrill Street.



Sarah Hopkins
Project No.: 07334.00
May 30, 2006
Page 3

A plan entitled "Morrill Street Plan and Profile" has been prepared showing plan view, profile, and cross section of the design, and has been added to the Site Plan. A copy of the plan is enclosed as Attachment B.

Stormwater Contribution:

Comment:

In 1993, the City of Portland entered in to a consent agreement with the Maine Department of Environmental Agency due to its combined sewer overflows. This agreement obligates the City complete a series of sewer separation projects in three watersheds, Fall Brook, Capisic Brook and the Fore River. In 1997, the City began work on these projects and is expected to spend nearly 100 million dollars by 2012.

The separation work being conducted requires the reestablishment and the widening of Fall Brook to remove the Mona/Bernard neighborhoods from the 100 year flood planes. In order to do so, the City must acquire drainage easements from property owners to along Fall Brook upstream and downstream entrance into Fall Brook. The acquisition process is ongoing.

Public Works recommends a 100 thousand dollar contribution be made towards the acquisition of downstream stormdrain easements along Fall Brook.

Response:

The applicant agrees with the recommended contribution.

Please give me a call if you have any questions or need additional information.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.


John Hession
Senior Project Manager

Enclosure

cc: Eric Labelle, City of Portland – Public Works Engineering

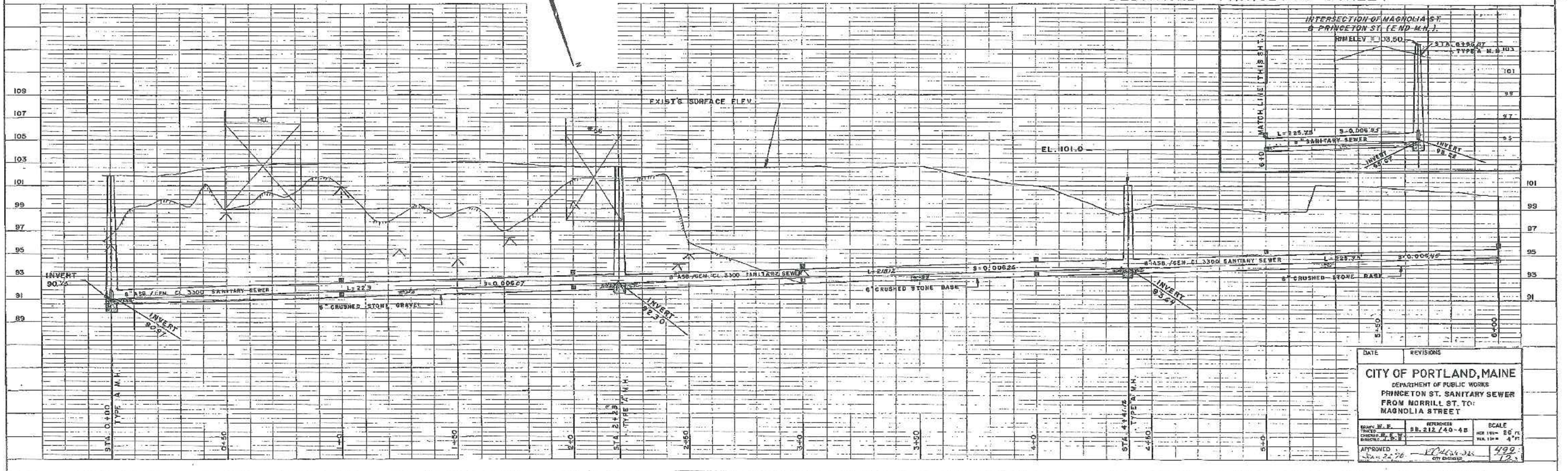
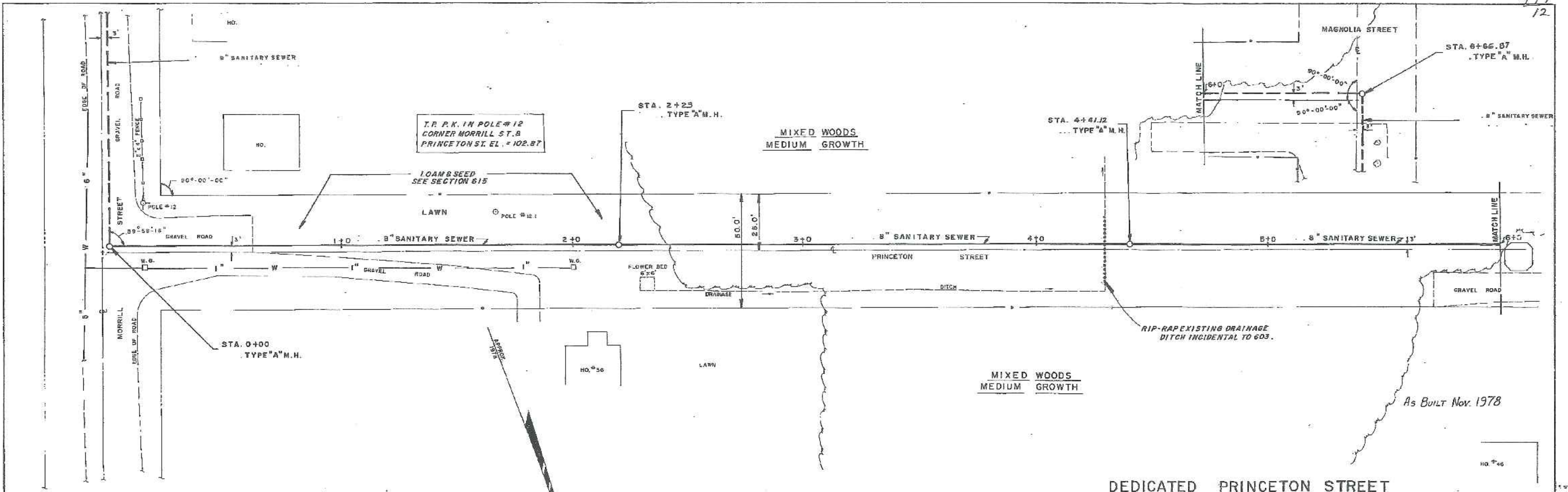


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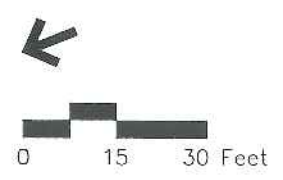
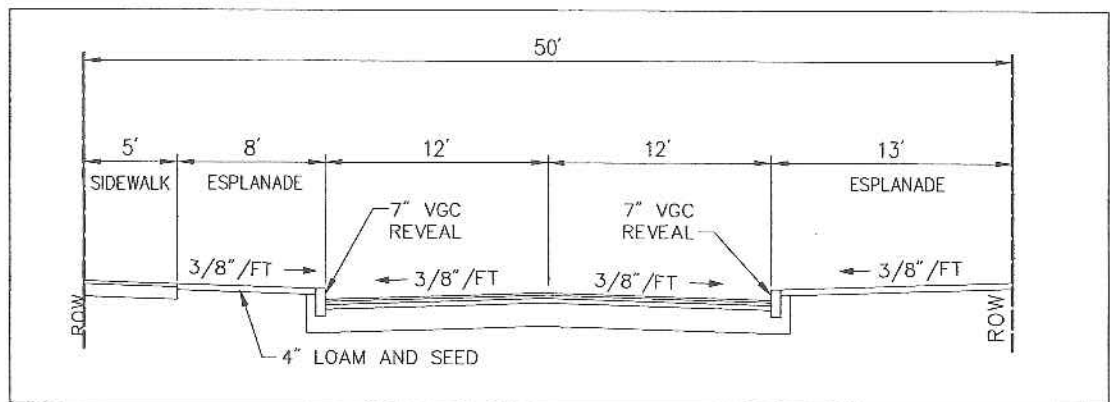
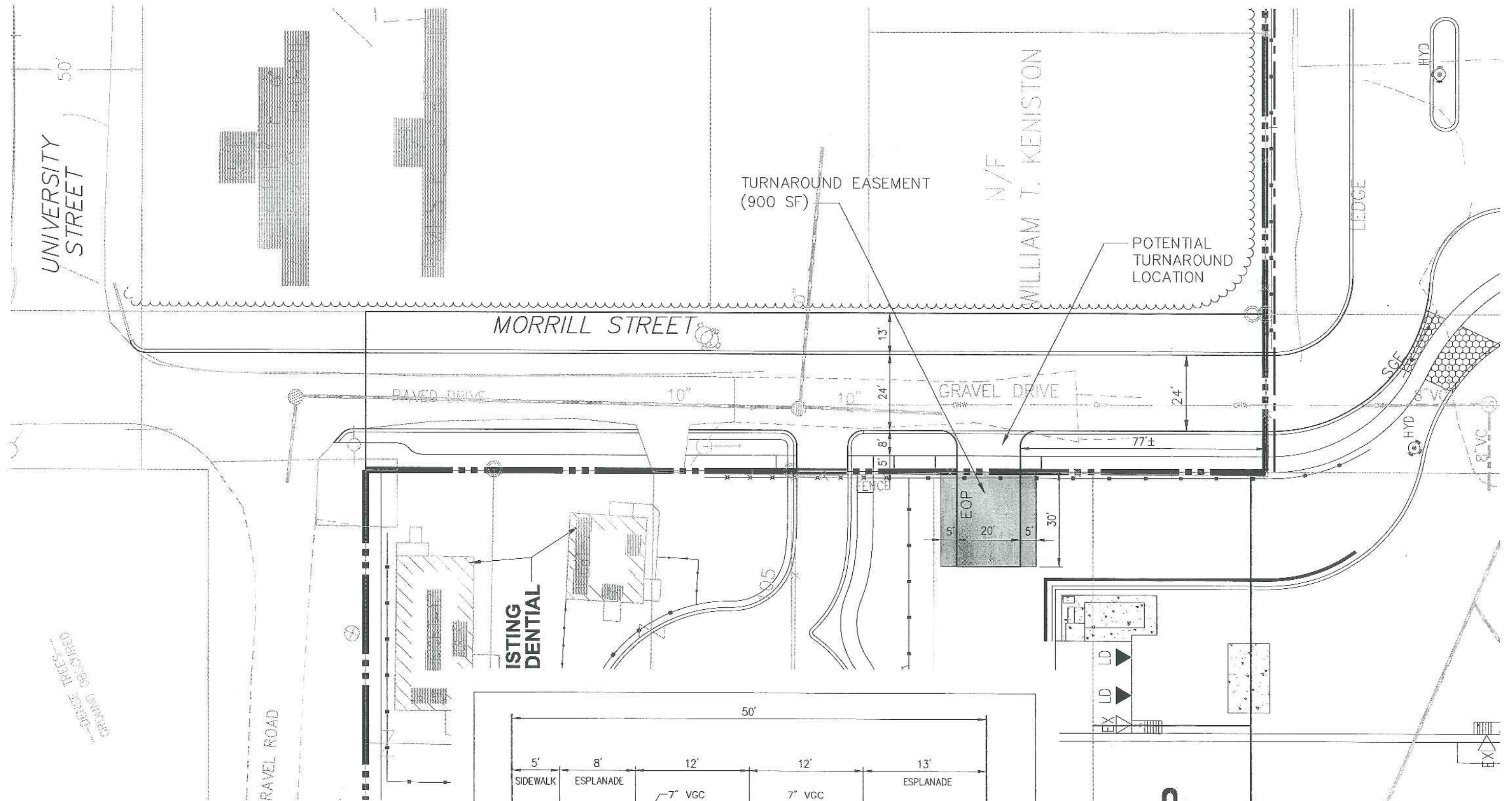
DATE	11-1-78
BY	J.W.S.
CHECKED	D.V.A.
APPROVED	D.V.A.
NOTED	BY CITY ENGINEER
NO. OF SHEETS	12
SHEET NO.	12

DATE	11-1-78
BY	J.W.S.
CHECKED	D.V.A.
APPROVED	D.V.A.
NOTED	BY CITY ENGINEER
NO. OF SHEETS	12
SHEET NO.	12



DATE	REVISIONS
CITY OF PORTLAND, MAINE	
DEPARTMENT OF PUBLIC WORKS	
PRINCETON ST. SANITARY SEWER	
FROM MORRILL ST. TO:	
MAGNOLIA STREET	
DESIGNED BY	SB. 212/40-4B
CHECKED BY	
APPROVED	
DATE	11-1-78
BY	J.W.S.
CITY ENGINEER	

499
12



Vanasse Hangen Brustlin, Inc.

Morrill Street Turnaround Location
Morrill's Crossing
Portland, Maine



Partners

Charles W. Manning, P.E.
John M. Tozzi, P.E.
Edward V. Woods, P.E.
Donald G. Sovey, P.L.S.

Associates

Shelly A. Johnston, P.E., PTOE
Mark A. Sargent, P.E., PTOE
Jeffrey W. Pangburn, P.E.
Thomas R. Johnson, P.E., PTOE

March 7, 2006

Chairman Kevin Beal
Members of the Portland Planning Board
389 Congress Street
Portland, ME 04101

RE: Traffic Comments on the Morrill's Crossing Proposed Mixed Use Development -- Portland, Maine; CME Project No. 04-147.

Dear Chair Beal and Members of the Portland Planning Board:

On behalf of Hannaford Bros. Co., Creighton Manning Engineering, LLP (CME) continues to review VHB's January 17, 2006 responses to CME's December 8, 2005 comments as well as other associated documentation submitted by the applicant. It had been our intention to attend your Planning Board Workshop today to make a presentation to the Board; however, much of the documentation from the applicant wasn't received by us until March 3, 2006 and we haven't had the ability to complete our review. In addition, it is our understanding that the applicant's traffic simulation model is not going to be presented at the workshop, which was another reason for us to attend the workshop.

From the documentation we have reviewed to date, we continue to have the following concerns about this project which haven't been adequately addressed. Also, we request an opportunity to address the Board at a future date when we've been able to complete a thorough review of the applicant's documentation as our comments below represent a partial review.

A. Study Area:

- 1. The explanation for continuously altering the study area limits and which intersections to evaluate is due to changes in land use and size of project. This is unacceptable as the project has been and continues to be primarily a retail project with minimal changes in minor ancillary uses. In fact, the estimate of trips generated for the project over the various editions of the traffic study have either gone up or essentially remain unchanged. The size of the retail uses and trips generated are shown below. Intersections previously analyzed but subsequently dropped from later editions need to be included.

Study Edition	Retail Size	Total Retail Trips (PM/SAT)
June 2004	128,100 SF	760/1055 vph
October 2004	128,100 SF	1070/1245 vph
November 2005	134,030 SF	1080/1265 vph

B. Site Generated Traffic:

- 1. The applicant's response based upon their assertion of my lack of understanding of the traffic engineering principles and my credibility being from New York State is completely unfounded. My

Engineers, Planners and Surveyors

professional credentials, 20-years experience in the field of Traffic Engineering, and work in six other states outside New York State prove otherwise.

The total amount of trip credits taken continues to be high and is not supported by their subsequent submissions. For instance, the ITE data used by the applicant for diverted-linked trips for the supermarket is based on limited data from sites in the Midwestern part of the country and primarily from the 1980s. ITE urges caution when using such limited data. Further, in response to Mr. Errico's similar comment and request to provide additional information from other Stop N' Shop sites (January 9, 2006), the data submitted does not support the high trip credits taken. The one site submitted for example showed a pass-by credit of 44% with notation that the remainder trips were 'new'. No data on diverted-linked trips was provided to support the credits in the traffic study. The result is that the impacts to adjacent intersections continue to be underestimated.

C. Traffic Analysis

1. The applicant has provided additional traffic data as to the actual operating conditions of the Forest Avenue/Allen Avenue/Stevens Street area; however, only partial data has been provided. Lane utilizations and saturation flows were not collected for all approaches as needed, especially for those approaches where the proposed improvements will not be providing benefits (i.e., Stevens approach to Forest and Forest northbound approach to Stevens). Also, there has not been any data submitted that traces the vehicles through the intersections as we noted previously. This is an important piece of information needed for calibration and justification of the model's assumptions for not only how vehicles enter the offset intersections, but also how they leave the intersections.

We have only recently received the backup documentation for the new SimTraffic model and analysis and have not completed our review of that information or the traffic model. We will provide our comments in the near future and when the required additional field is provided.

D. Safety

1. The lane drop/merge area to be created by the site driveway on Allen Avenue and the problems associated with it is not a mischaracterization by CME as the applicant states. As a matter of fact, a month after responding to these comments and through additional field visits on their part, the applicant admits there will be a problem as we have indicated and now proposes to add a second through lane at the site driveway to eliminate the problems noted.

It took a field visit by the applicant to change their response of no problems to a response of acknowledging a problem. It is recommended that the applicant continue to take additional field visits to see the other areas where problems will exist as noted in the comments.

E. Parking

1. We have recently received documentation used by the applicant to support their claim that a sufficient supply of parking will be provided on site. We are in the process of reviewing this information and we will provide our response in the future.

F. Improvements

1. Design details, at least on the preliminary plan level, of the additional signal coordination and preemption with the railroad crossing need to be provided before the project can be approved. A complicated interconnection and preemption condition will be created such that the plans need to be

submitted now for review and approval by the State Department of Transportation and/or the Federal Railway Administration for compatibility, logic, and viability to ensure the safety of all.

2. Again, adequate design plans have not been provided to prove that the recommended improvements to Forest Avenue can be made. This is a critical issue where right-of-way, parking, and sufficient sidewalk widths needs to be further evaluated through detailed designs before project approval.
3. With regard to 6-foot wide sidewalks, there has been no acknowledgement of the multiple obstructions within this 6-foot sidewalk width (utility poles, hydrants, outdoor furniture, door openings, etc.). The typical section provided to the State for their opinion by the applicant continues to be misleading as it also does not show the obstructions within the sidewalk's limited width.

G. CME Letter to Board Dated January 17, 2006

We have the following comments related to responses made by the applicant in regard to our January 17, 2006 submittal with accompanying figures that illustrated our comments. Again, it is noted that these are partial comments as we continue to review the applicant's subsequent documentation.

1. Figure 1 showed the overlapping queuing problems of the back-to-back left turn lanes on Forest Avenue at Warren Avenue and Allen Avenue. Based on updated analysis, the applicant proposes to extend the left-turn storage lane at Allen Avenue by 125 feet. This length has to be taken from the left-turn lane to Warren Avenue. However, queues lengths still exceed the storage lengths and safety problems will continue to exist as shown on the figure.
2. Figure 2 showed the lane-use assumptions used for Allen Avenue. We just received the field data submitted for the lane utilization study conducted on Allen Avenue at Forest Avenue and we are in the process of reviewing it.
3. The applicant's response to concerns of train crossing impacts on Allen Avenue (CME Figure 3) was focused on the train crossings during the evening peak hour. The Morrill's Crossing project will generate significant traffic for many other hours of the weekday and weekend that this issue is not just a peak hour issue. Again, the coordination and preemption plans need to be reviewed by the DOT and/or the Federal Railway Administration. The applicant further responds that traffic flow conditions will remain unchanged from current conditions – how is this possible with the significant amount of traffic from Morrill's Crossing to be added to Allen Avenue at the railroad crossing?
4. As noted earlier in Comment C, no data has been provided to substantiate the lane-use assumptions as shown on Figure 4 of our letter.
5. Again, as noted in earlier in Comment E.3 and shown on Figures 5A and 5B of our letter, the applicant still has not provided the necessary details to show that the widening of Forest Avenue can be made. The applicant continues to ignore the obstructions that currently exist within the sidewalk areas.
6. With regard to unsignalized intersections that will operate at level of service F with the project, the applicant discusses several potential improvements at a couple of intersections. However, no commitment on a specific improvement is made by the applicant nor is there an analysis of the impacts of implementing the improvements.

Also, the applicant quotes the DOT's permit language stating that mitigation requirements at unsignalized intersections may be reduced if traffic conditions provide for safe movement. Based on

the results of the traffic study, there will be substantial increases in delay for vehicles on the side street trying to enter the major street. With increased delays, motorists become much more frustrated and start to accept shorter gaps in mainline traffic, thereby putting their safety at increased risk – how is this providing for safe movement?

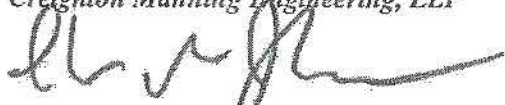
H. Summary

As listed in our comments, the applicant has not adequately addressed the traffic impacts of this project. We are in the process of reviewing the applicant's recent submissions; however, much more information, data, analysis, and plans are needed for us to fully evaluate the project's impact.

Thank you for your consideration in these matters.

Sincerely,

Creighton Manning Engineering, LLP



Thomas R. Johnson, P.E., PTOE
Associate, Senior Traffic Engineer
Maine P.E. License No. 10778

c: Engineering - Hannaford Bros. Co. ←
Peggy McGehee - Perkins, Thompson, Hinckley & Keddy



May 19, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Ms. Sarah Hopkins
Development Review Services Manager
Department of Planning and Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Response to Comments
Morrill's Crossing Traffic Study
Portland, Maine

Dear Sarah:

Vanasse Hangen Brustlin, Inc. (VHB) has received and reviewed the traffic study comment letter submitted on behalf of Hannaford Bros. Co. (Hannaford) by Creighton Manning Engineering, LLP (CME) out of Albany, NY dated March 7, 2006. These responses are being provided at the request of Mr. Thomas Errico, acting City Traffic Engineer.

The majority of the questions being raised by CME focus on the process of creating the Traffic Impact and Access Study currently under consideration by the City of Portland. As you know, the process and procedures required to develop a Traffic Study for use in the MDOT Traffic Movement Permit process and for use in the City's review are clear. These are well documented in the State's Traffic Movement Permit application process.

As the acting City Traffic Engineer and delegated review agent for MDOT, Mr. Errico has been working together with other City staff and the applicant to assure that the submissions follow these detailed and through procedures. With this in mind, VHB believes that all the project submissions have been consistent with the standards. Moreover, where additional analysis or modifications have been requested by the City to provide clarification and/or additional information – the applicant has routinely provided this information.

Once again, as we stated in our initial January 17, 2006 response to the CME comments, before responding to the issues raised, it is important to point out that the traffic study being reviewed by the Board has been prepared in accordance with the City's and Maine Department of Transportation's (MDOT) guidelines. While we recognize that there have been multiple versions of traffic studies authored for this development in the past, these prior versions of the traffic study focused on unrelated and different mixes of land uses, sizes of buildings, and sets of off-site mitigation. In each case, the development program at this site has been evaluated and reevaluated from both the developer's perspective and the City's perspective throughout the re-zoning process. This process has changed the development from its original proposal of a retail-only development, to an office and retail development, and finally into the development of the current mixed-use project that is before the Planning Board now for review.

Ms. Sarah Hopkins
Project Number: 07334.00
May 19, 2006
Page 2 of 5

The other issue that should be considered in reviewing both this study and these responses is that there has been a significant amount of time between the initial submission of a traffic study to the City in support of the rezoning request back in 2002 and the current submission. Through that time, we are all aware that traffic conditions have changed in the Morrill's Corner area. With each submission, information was updated, evaluated, and re-evaluated so as to present the most up-to-date information possible to the various stakeholders and decision-makers. For example, the initial traffic study submitted for this parcel considered the Morrill's Corner and Allen's Corner roadway improvement projects to be constructed at some point in the future. However, over time, these improvements were constructed and traffic has been traveling through these locations for some time. For this reason, the most recent version of the traffic study (and the study that was reviewed by the City Council when the rezoning of the property was under their consideration) included totally updated traffic information that documented not only the beneficial impacts of the improvements on traffic flow, but also included real numbers – not projections – so that the City could make an informed decision on the projects impacts.

Therefore, any reference to prior versions of a traffic study that were submitted to the City is largely irrelevant. Those traffic studies were for alternative development scenarios, had different off-site mitigation measures being proposed, included historical traffic information that has since been updated for the current project, and ultimately did not represent the impacts of the project that is currently under review by the City.

The following brief responses to the CME letter are provided in this context:

Comment A.1 – Study Area:

Response: As noted in the January 17, 2006 response to CME, the study area developed for this traffic study was based on MDOT accepted methodologies and was confirmed by the City Traffic Engineer. Ultimately, in his January 10, 2006 letter, Mr. Errico concurs with our finding and states that the selected study area used in the November 2005 traffic study for this project is acceptable.

Comment B.1 – Site Generated Traffic:

Response: As noted in the January 17, 2006 response to CME, the trip generation methodologies utilized for the development of this traffic study are consistent with Institute of Transportation Engineers (ITE) means and methods and are consistent with other supermarket trip generation studies submitted and approved by the City of Portland. These include traffic studies submitted on behalf of CME's client, Hannaford Bros in the greater Portland area. Ultimately, in his January 10, 2006 letter to the Planning Board, Mr. Errico concurs with our approach and finding and states that the selected trip generation estimates used in the November 2005 traffic study for this project are acceptable.

Comment C.1 – Traffic Analysis

Response: All information relating to the traffic analysis and supporting documentation has been submitted to the City for their review. While we recognize that CME has only recently received the back up information, we believe that they will find that this information is sufficient to analyze the traffic conditions in and around the Morrill's Corner area.



Ms. Sarah Hopkins
Project Number: 07334.00
May 19, 2006
Page 3 of 5

Comment D.1 – Safety

Response: The statement that the lane alignment was changed due to a field visit is incorrect. The reason the lane assignment on Allen Avenue was modified was to accommodate the addition of the fourth leg of the intersection (the Paul White Tile site driveway). VHB, MDOT, and the City all agreed that it would be beneficial to carry two through travel lanes northbound along Allen Avenue from a vehicle queuing perspective through the site driveway intersection. It was for this reason that the design was modified.

Comment E.1 – Parking

Response: The applicant has submitted a significant amount of additional information to the Planning Board and City staff supporting the number of parking spaces on site. This includes ITE and ULI statistical analysis of the site as well as empirical data from the Northgate Shopping Center in December of 2005 and other Stop & Shop supermarket sites throughout New England. In all cases, the information provided indicates that there is adequate parking on the site to support the proposed development program for the vast majority of the year. We believe that there will be adequate parking supply provided on site and are awaiting the City's concurrence with this finding.

Comment F.1 & F.2 – Improvements

Response: The CME comment is requesting that detailed engineering plans being prepared and provided to the Planning Board. As the Board and City are aware, the applicant is required to submit detailed engineering plans for review and consideration to the City and MDOT within 6 months of the issuance of a Traffic Movement Permit from MDOT. VHB is confident that the proposed plans will meet or exceed standard MDOT and City design standards and will undergo a detailed design review process when the Morrill's Crossing project is approved. If, during the MDOT and City design-review process, it is discovered that ADA or other highway design standards are not met, the applicant will be required to either address the design deficiency appropriately or potentially restart the planning board process with alternative off-site mitigation plans.

Comment F.3 – Sidewalks

Response: The applicant has stated numerous times that any obstructions to sidewalks (utility poles, signs, planters, and/or other fixed objects within the sidewalk) will be removed or reset so that they meet the ADA design standards at the applicants expense. As CME is aware, MDOT and the State will not approve design plans that do not meet ADA or MDOT design standards.

Comment G.1 – Queuing

Response: As stated in numerous submissions (most recently in the May 9, 2006 letter from Robert Nagi/VHB to Ms. Sarah Hopkins), vehicle queuing along Forest Avenue will be improved with the proposed project and its mitigation in place. The City's standard to "not aggravate pre-existing safety conditions" is met.



Ms. Sarah Hopkins
Project Number: 07334.00
May 19, 2006
Page 4 of 5

Comment G.2 – Lane Use Assumptions

Response: CME is reviewing this information. No response necessary.

Comment G.3 – Train Activity.

Response: The purpose of reviewing peak hour train impacts was to focus on the worst-case condition with the maximum volume of vehicle traffic along area roadways coupled with the congestion created when a train crosses Allen Avenue. Off-peak train impacts, while they appear to occur on a more frequent basis, do not impact traffic flow as significantly as when they occur during the peak hours. Ultimately, the train crossing equipment will be upgraded at the applicant's expense which will result in improved efficiency and safety along both Allen Avenue and Forest Avenue when a train crosses these arterial roadways.

Comment G.4 – Lane Use Assumptions

Response: CME is reviewing this information. No response necessary.

Comment G.5 – Widening of Forest Avenue

Response: See responses to Comment F.1 through F.3 above.

Comment G.6 – Unsignalized Intersection Operations

Response: This was submitted to the City with the statement that the applicant will, if so directed by the City as a condition of approval to the project, implement any or all of the improvements at the unsignalized intersections stipulated in our January 17, 2006 response letter to CME. Furthermore, the City Council as part of the rezoning effort for this project also has required the applicant to review and, if necessary, address any unsignalized locations that are severely impacted by this project above and beyond those impacts noted in the traffic study.



Ms. Sarah Hopkins
Project Number: 07334.00
May 19, 2006
Page 5 of 5

Conclusion

I trust that this information addresses the Hannaford traffic consultant's comments relating to this project and the accompanying traffic study. Should you have any questions related to these responses, please feel free to contact me directly. We are eager to address all of the Planning Board's traffic safety and operational questions and look forward to presenting this information to the Board.

Regards,

VANASSE HANGEN BRUSTLIN, INC.



Robert L. Nagi, PE, PTOE
Principal/Project Manager

Attachments

Copies: Tom Errico, Wilbur Smith Associates
Tom Gorrill, Gorrill-Palmer Consulting Engineers, Inc.



From: "Patrick Carroll" <pcarroll@carroll-assoc.com>
To: "Sarah Hopkins " <SH@portlandmaine.gov>
Date: 03/24/2006 5:49:50 PM
Subject: Morrills Crossing

Sarah,

I looked over the Lighting Plan and memo from VHB and offer the following initial comments:

1. The lighting Plan is based on the old site layout. This should be updated with the new site plan, especially around the apartments as the buildings and circulation has substantially changed in this area.
2. The use of the proposed ornamental fixture on 12 foot poles along the entrance roadway, townhouse drive, and apartment parking lot seems appropriate and will be a much more aesthetically pleasing fixture than the typical shoebox type utilized elsewhere. The use of 250W MH seems to be creating the illumination levels which exceed standards, and typically provide perhaps more light than required in these more residential areas. The applicant should study the effects of downsizing to 175W MH fixtures, as I think they might help with the uniformity as well as maximum FC allowed.
3. The wall mounted fixtures on the north (Townhouse) side of the Shop and Stop still bother me. I am not sure they are needed and seem to call attention to a façade of the building that directly faces the residential neighborhood. If more light is needed here for safety the pole lights along the driveway could perhaps become double fixtures to throw light in the zone between the driveway and building.
4. Lighting appears to be minimal along the sidewalks connecting the apartments to the retail center, on the Princeton Street side of the Townhouses, and connections to the athletic field and neighborhood streets.
5. Lighting adjacent to Bruno's Restaurant also appears to be rather minimal.
6. I would also like to see cut sheets on the fixture types, colors, and poles, and a detail of the fixtures mounted on brick piers that are proposed along Allen Avenue.

Once these items are addressed in the next submission we can finalize any comments relating to lighting.

Please contact me with any questions you might have.

Patrick J. Carroll

Carroll Associates

207-772-1552

pcarroll@carroll-assoc.com <mailto:carassoc@maine.rr.com>



May 15, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Sarah Hopkins
Development Review Services Manager
Department of Planning & Development
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Morrill's Crossing - Response to Site Lighting Peer Review

Dear Sarah:

The following are VHB's responses to the site lighting peer review comments offered by Mr. Patrick Carroll of Carroll Associates in his email sent to you on March 24, 2006 regarding Morrill's Crossing. Mr. Carroll's recommendations regarding the site lighting have been considered and are addressed below.

Comment 1:

The lighting Plan is based on the old site layout. This should be updated with the new site plan, especially around the apartments as the buildings and circulation has substantially changed in this area.

Response:

A revised Site Lighting Plan has been prepared to reflect the changes referenced above and is included as Attachment A.

Comment 2:

The use of the proposed ornamental fixture on 12 foot poles along the entrance roadway, townhouse drive, and apartment parking lot seems appropriate and will be a much more aesthetically pleasing fixture than the typical shoebox type utilized elsewhere. The use of 250W MH seems to be creating the illumination levels which exceed standards, and typically provide perhaps more light than required in these more residential areas. The applicant should study the effects of downsizing to 175W MH fixtures, as I think they might help with the uniformity as well as maximum FC allowed.

101 Walnut Street
Post Office Box 9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286
email: info@vhb.com
www.vhb.com

Sarah Hopkins
Project No.: 07334.00
May 15, 2006
Page 2

Response:

The use of 175W MH fixtures along the entrance roadway, townhouse drive, and apartment parking lot was analyzed for the site. An alternative plan utilizing all 175W MH with photometrics is included as Attachment B. We agree the illumination levels are more appropriate for the residential areas (townhouses and apartments). However, we are concerned that the illumination levels are not adequate for the main entrance drive to the site. Our preferred alternative would be to maintain a higher illumination level along the entrance roadway with the 250W MH fixtures, and to utilize the 175W MH fixtures for the townhouse drive and apartment parking lot.

Comment 3:

The wall mounted fixtures on the north (Townhouse) side of the Shop and Stop still bother me. I am not sure they are needed and seem to call attention to a façade of the building that directly faces the residential neighborhood. If more light is needed here for safety the pole lights along the driveway could perhaps become double fixtures to throw light in the zone between the driveway and building.

Response:

The wall mounted lights on the north side of the supermarket have been eliminated.

Comment 4:

Lighting appears to be minimal along the sidewalks connecting the apartments to the retail center, on the Princeton Street side of the Townhouses, and connections to the athletic field and neighborhood streets.

Response:

Lighting fixtures have been added to the sidewalks connecting the apartments to the retail center and to the recreation field parking lot. The sidewalk on the Princeton Street side of the Townhouses is not intended to be lit. The front doors of the townhouses will be facing Princeton Street and will provide typical residential scale wall sconces and porch lighting. It should be noted that an alternative, well lit route for pedestrian travel is provided on the opposite side of the townhouse drive.



Sarah Hopkins
Project No.: 07334.00
May 15, 2006
Page 3

Comment 5:

Lighting adjacent to Bruno's Restaurant also appears to be rather minimal.

Response:

The Bruno's Restaurant currently has wall mounted lighting at the main entrance, the secondary front door, and the side patio. There is also existing up-lighting on the building along the side abutting the railroad. These lights, in addition to the proposed parking lot lighting, will provide adequate illumination levels for the pedestrian route and entry ways to Bruno's.

Comment 6:

I would also like to see cut sheets on the fixture types, colors, and poles, and a detail of the fixtures mounted on brick piers that are proposed along Allen Avenue.

Response:

Cut sheets have been provided and are included as Attachment C.

Please give me a call if you have any questions or need additional information.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.

John Hession
Project Manager

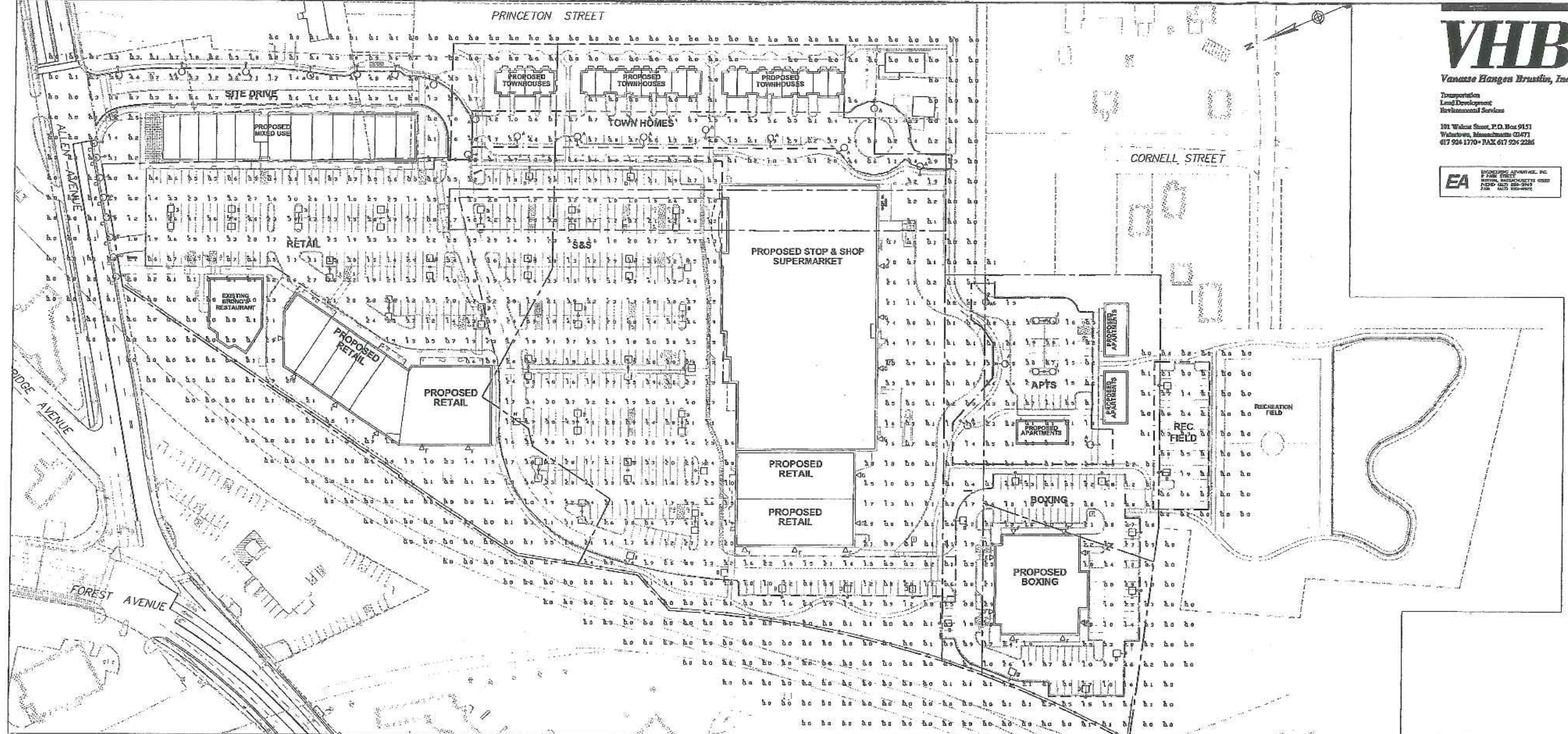
David Fenstermacher
Project Engineer

Enclosure

cc: Pat Carroll – Carroll Associates



Attachment A



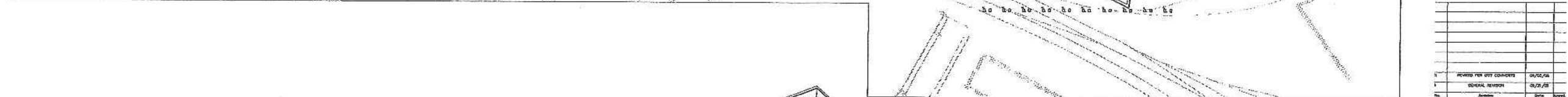
VHB

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Waltham, Massachusetts 02471
617 924 1770 • FAX: 617 924 2285

EA ENGINEERING ADVANCE, INC.
2 PARK STREET
WILMINGTON, MASSACHUSETTS 01890
TEL: 617 262-8942
FAX: 617 262-8942



Designed by LAP, Drawn by CJC, Checked by LAP
Scale: 1" = 50', Date: 02/16/05

Proposed Mixed Use Development
Morrill's Crossing
Portland, Maine
Proposed Contract Zone

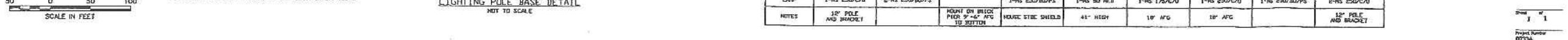
Not Approved for Construction
Drawn By

SITE LIGHTING & PHOTOMETRICS PLAN

Scale in Feet: 0, 50, 100

NOTES:

- SITE LIGHTING FIXTURES SHALL BE PROVIDED AS SPECIFIED OR APPROVED EQUAL.
- ALL FIXTURES SHALL BE SUPPLIED WITH 1/2 INCH ANGLE FITTING ROUND PIPES.
- ALL PIPES SHALL BE 1/2" X 1/2" X 1/2" 15 FOOT ROUND TAPERED STEEL WITH TENDON.
- ALL LAMPS SHALL BE PHILIPS.
- ALL WORK SHALL BE INSTALLED IN A NEAT MANNER. THE NUMBER AND SHALL COMPLY WITH STATE AND LOCAL CODES.
- NOT USED.
- AT EACH PULL IN SIGN FURNISH UP JUNCTION BOX AND CONNECT SIGN.
- ALL SITE LIGHTING FIXTURES TO BE WIRED FOR 277 VOLTS.



Greenbriar Flat Lens

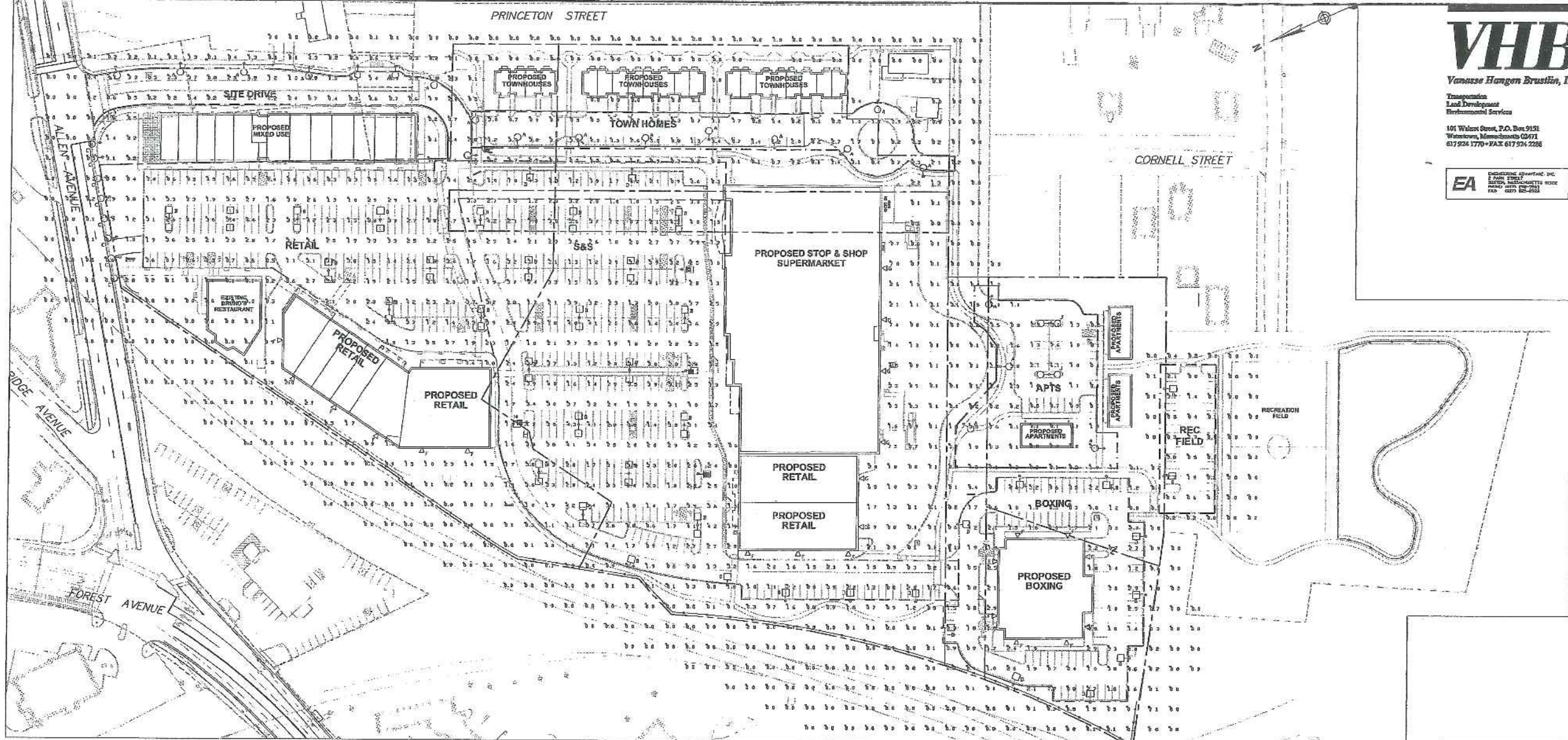
Luminaire Schedule

Symbol	Qty	Label	Arrangement	Lumens	MF	Description
1	1	A	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE
2	1	B	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
3	1	C	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
4	1	D	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
5	1	E	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
6	1	F	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
7	1	G	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
8	1	H	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
9	1	I	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE
10	1	J	SINGLE	22000	0.750	LUM-3-250-80-F 1/2" POLE 2" BASE

SITE LIGHTING SCHEDULE
ALL EQUIPMENT TO BE LIST INDUSTRIES

ADAPTER	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TYPE J
	LSI-GRD/LIE	804-RN-090-CLR	LSI-GRD/LIE	804-RN-090-CLR	LSI-GRD/LIE	804-RN-090-CLR	LSI-GRD/LIE	804-RN-090-CLR	LSI-GRD/LIE
NO. FIXTURES PER POLE	1 @ 90°	2 @ 180°	WALL MOUNT	1 @ 90°	BOLLARD	WALL MOUNT	WALL MOUNT	1 @ 90°	2 @ 90°
FIXTURE CAT. NUMBER	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F	LUM-3-250-80-F
FIXTURE DIST. TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8	TYPE 9
LAMP	1-HS 250/CAU	2-HS 250/CAU	1-HS 250/CAU	1-HS 250/CAU	1-HS 250/CAU	1-HS 250/CAU	1-HS 250/CAU	1-HS 250/CAU	2-HS 250/CAU
NOTES	1" POLE AND BRACKET		HOIST ON BRICK PIER 9" @ 4" TO BOTTOM	HOIST SITE SHIELD	41" HIGH	18" AFG	18" AFG	18" AFG	1" POLE AND BRACKET

N:\548 STPOPTLAND, ME\4182-10\Drawing.dwg



VHB

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

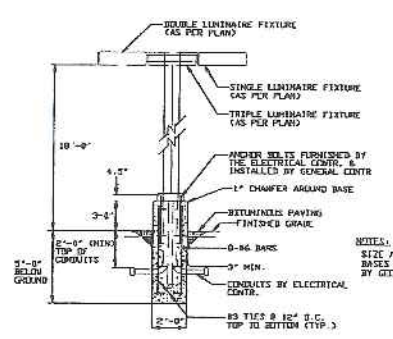
101 Walnut Street, P.O. Box 9131
Worcester, Massachusetts 01611
617 854 1770 • FAX 617 524 2266

EA ENGINEERING ASSOCIATES, INC.
1000 STATE STREET
SOUTH LYNNBOROUGH, MASS
TEL 617 854 3333
FAX 617 854 3333



50 0 50 100
SCALE IN FEET

- NOTES:**
1. SITE LIGHTING FIXTURES SHALL BE PROVIDED AS SPECIFIED OR APPROVED EQUAL.
 2. ALL FIXTURES SHALL BE SUPPLIED WITH 3/4" DIA ARMS FOR ROUND POLES.
 3. ALL POLES SHALL BE ANTI-RUST-15-4-BLK, 2 1/2" DIA TAPERED STEEL WITH TENON.
 4. ALL LAMPS SHALL BE PHILIPS.
 5. ALL WORK SHALL BE INSTALLED IN A NEAT WORKMANLIKE MANNER AND SHALL COMPLY WITH STATE AND LOCAL CODES.
 6. NOT USED.
 7. AT EACH Pylon SIGN FURNISH UP JUNCTION BOX AND CONNECT SIGN.
 8. ALL SITE LIGHTING FIXTURES TO BE WIRED FOR 277 VOLTS.



LIGHTING POLE BASE DETAIL
NOT TO SCALE

GREENBRIAR FLAT LENS

Symbol	Qty	Location	Lumens	LLF	Description
1	21	A	24000	0.750	LMH-3-175-180-15' POLE
2	60	B	11100	0.750	LMH-3-175-180-15' POLE 3" BASE
3	9	C	15100	0.750	LMH-3-175-180-15' POLE 3" BASE
4	17	F	15100	0.750	LMH-3-175-180-15' POLE 3" BASE
5	6	H	24000	0.750	LMH-3-175-180-15' POLE 3" BASE
6	4	H	24000	0.750	LMH-3-175-180-15' POLE 3" BASE
7	2	J	11100	0.750	LMH-3-175-180-15' POLE

SITE LIGHTING SCHEDULE
ALL EQUIPMENT TO BE LIST INDUSTRIES.

ASAPPER	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TYPE J
NO. FIXTURES PER POLE	1 @ 90°	2 @ 90°	WALL MOUNT	1 @ 90°	WALL MOUNT	WALL MOUNT	WALL MOUNT	1 @ 90°	2 @ 90°
FIXTURE CAT NUMBER	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE	LMH-3-175-180-15' POLE 3" BASE
FIXTURE DIST. TYPE	TYPE 3	TYPE 3	TYPE 3	TYPE 3	TYPE 3	TYPE 3	FORWARD THROW	TYPE 3	TYPE 3
LAMP	1-MS 175/CAU	2-MS 250/BUFS	1-MS 250/BUFS	1-MS 50/BUFS	1-MS 50/BUFS	1-MS 175/CAU	1-MS 250/CAU	1-MS 250/BUFS	2-MS 250/CAU
NOTES	12" POLE AND BRACKET		MONY ON BRIDGE PIERS 2" AFF TO BRIDGE	HOUSING SIDE SHIELD	41" HIGH	18" AFG	18" AFG	18" AFG	12" POLE AND BRACKET

NO.	REVISION	DATE	BY

Checked by LAF
CIP checked by CAC
Scale 1/8"=1'-0"
Project No. 027102

Proposed Mixed Use Development
Moxill's Crossing
Portland, Maine
Proposed Contract Zone

Not Approved for Construction

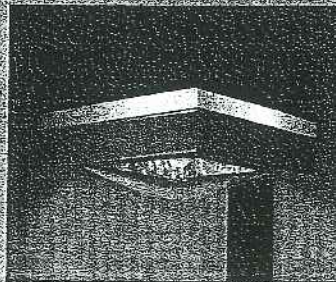
ALTERNATE SITE LIGHTING & PHOTOMETRICS PLAN

SL-1A

lsi
Outdoor Lighting

THE GREENBRIAR[®] SERIES

*Vertical Burn Uniformity with
a Flat or Contoured Lens*





**Medium
Arm-Mount**

**Medium
Pole-Top**

**Reduced
Arm-Mount**

**Reduced
Pole-Top**

**MEETS IESNA
FULL CUTOFF
CLASSIFICATION**

IESNA FULL CUTOFF GUIDELINES

A light fixture with a light distribution where no candela (light) occurs at or above an angle of 90° above nadir. Additionally, the candela per 1000 lamp lumens does not numerically exceed 100 (10%) at a vertical angle 80° above nadir. This applies to all lateral angles around the luminaire.



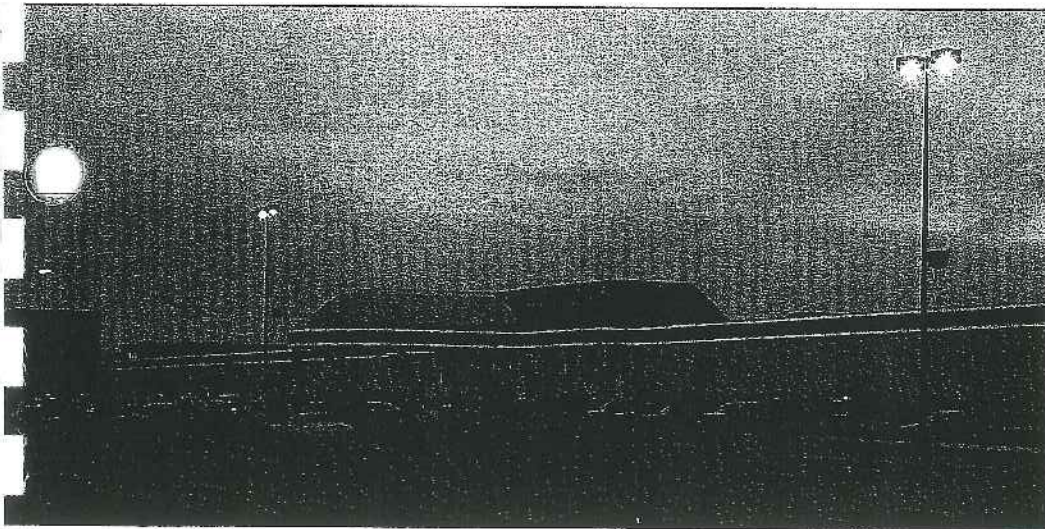
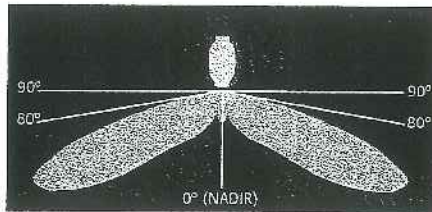
Community-friendly lighting is intended to eliminate unnecessary uplight, minimize light trespass, glare and wasted energy, and still provide quality lighting as required in today's society.

THE GREENBRIAR® FLAT LENS – WHEN FULL CUTOFF IS REQUIRED

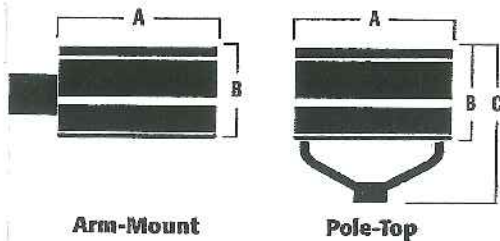
With the Greenbriar Flat Lens, you can enjoy naturally uniform illumination for increased safety, savings and "see-ability."

Outdoor fixtures that can reduce light spill are necessary for meeting today's ever-stricter zoning requirements for light pollution. The Greenbriar Flat Lens is designed to meet the Illuminating Engineering Society of North America's (IESNA) requirements for classification as a full cutoff fixture.

Greenbriar Flat Lens Vertical Burn fixtures combine the benefits of traditional Vertical Burn technology with the cutoff advantages of a flat lens. The reflector system totally surrounds the vertically oriented lamp to control the lamp output, while optimizing light distribution and energy consumption. The lamp is positioned within the reflector system to produce sharp cutoff lighting required in strict zoning areas. In addition, the lamp's arc tube is perpendicular to the lens, minimizing arc image and maximizing the distance to the lens surface. This helps to reduce any perceived glare.



DIMENSIONS



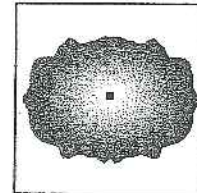
	A	B	C
GFM Arm-Mount	21-5/8"	12-3/4"	—
GPPM Pole-Top	21-5/8"	12-3/4"	21-15/16"
GFR Arm-Mount	21-5/8"	16-1/8"	—
GPPR Pole-Top	21-5/8"	16-1/8"	25"

REFLECTOR OPTIONS

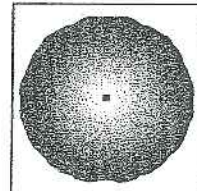
Various reflector models are protected by U.S. Patent 6,464,378.

The Greenbriar Series offers a wide variety of flat lens reflector systems to meet your needs, including these high-performance options:

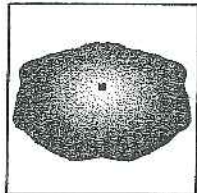
GREENBRIAR MEDIUM TYPE 2



GREENBRIAR GFR TYPE 5



GREENBRIAR GFR AUTOMOTIVE FORWARD THROW



Please visit our website at www.lsi-industries.com for detailed photometric data.



**Medium
Arm-Mount**



**Medium
Pole-Top**



**Reduced
Arm-Mount**



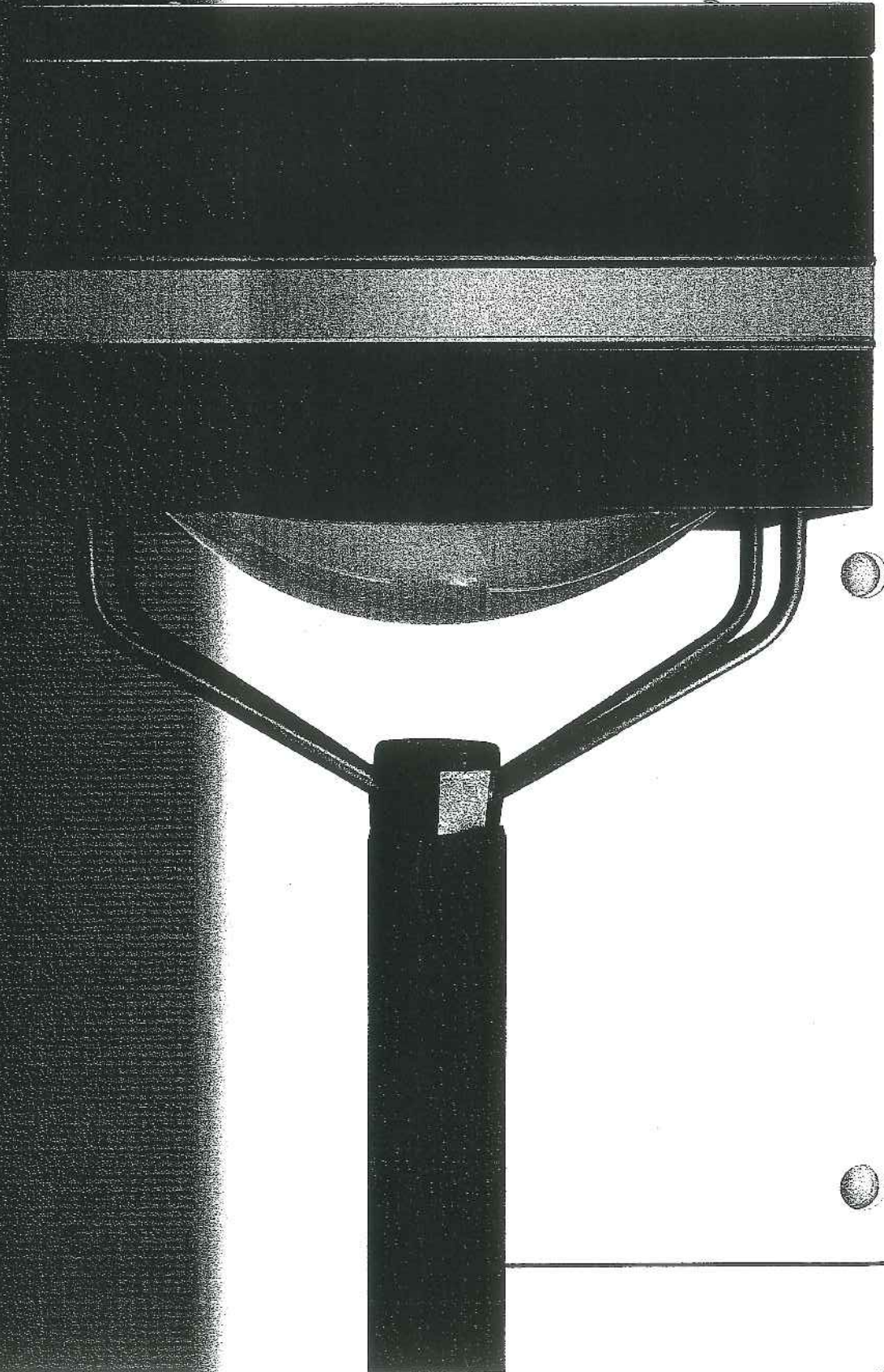
**Reduced
Pole-Top**



**Stretched
Arm-Mount**



**Stretched
Pole-Top**

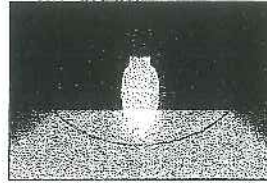


THE GREENBRIAR® CONTOURED LENS — WHEN WIDE COVERAGE IS PREFERRED

When your site design calls for lighting a larger space using higher poles, choose the Greenbriar Contoured Lens. Like the Greenbriar Flat Lens, the Greenbriar Contoured Lens features a reflector system which completely surrounds a vertically oriented lamp to maximize light distribution and uniformity.

Greenbriar fixtures with contoured lens meet either IESNA cutoff or semi-cutoff classification requirements.

The contoured lens allows for broader lighting coverage from every fixture in an even, uniform distribution pattern. This results in enhanced visibility and security. In addition, fewer poles and fixtures can be used to improve cost efficiency.

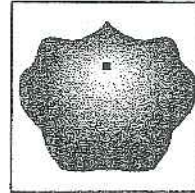


REFLECTOR OPTIONS

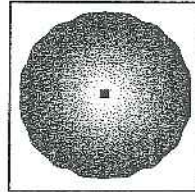
Various reflector models are protected by U.S. Patent 6,464,378.

The Greenbriar Series offers a wide variety of contoured lens reflector systems to meet your needs, including these high-performance options:

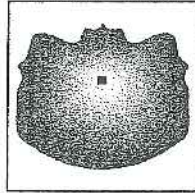
GREENBRIAR REDUCED PERIMETER FORWARD THROW



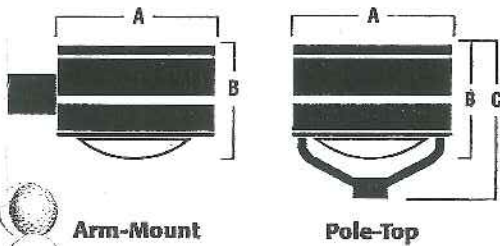
GREENBRIAR REDUCED TYPE 5



GREENBRIAR REDUCED AUTOMOTIVE FORWARD THROW



DIMENSIONS



	A	B	C
GBM Arm-Mount	21-5/8"	16-7/16"	—
GBPM Pole-Top	21-5/8"	16-7/16"	21-15/16"
GBR Arm-Mount	21-5/8"	16-7/16"	—
GBPR Pole-Top	21-5/8"	16-7/16"	21-15/16"
GBRS Arm-Mount	21-5/8"	19-13/16"	—
GBPRS Pole-Top	21-5/8"	19-13/16"	25"

Please visit our website at www.lsi-industries.com for detailed photometric data.

**THE GREENBRIAR® SERIES –
BROAD SELECTION. UNBEATABLE
VALUE.**

The Greenbriar Series has always been regarded as a high-performance Vertical Burn family of site lighting fixtures that provides excellent uniform lighting and incredible value.

To meet the growing demands of stricter zoning requirements, LSI offers high-performance flat lens fixtures with the Greenbriar family. Greenbriar Flat Lens fixtures deliver high-performance lighting, uniformity, and cost-efficiency recognized in LSI's traditional Greenbriar fixtures, in addition to full cutoff as defined by the Illumination Engineering Society of North America (IESNA).

With the Greenbriar Series, you can choose from:

- A Variety of Housing Sizes
- Arm or Pole-Top Mounting
- Five Reflector Systems
- Flat or Contoured Lenses
- An Assortment of Finishes and Color Decals

No matter what your lighting requirements, from the roadway, through the parking lot and along your walkways, the Greenbriar Series offers you the ultimate lighting solution through style and performance.



**The Greenbriar
Flat Lens**



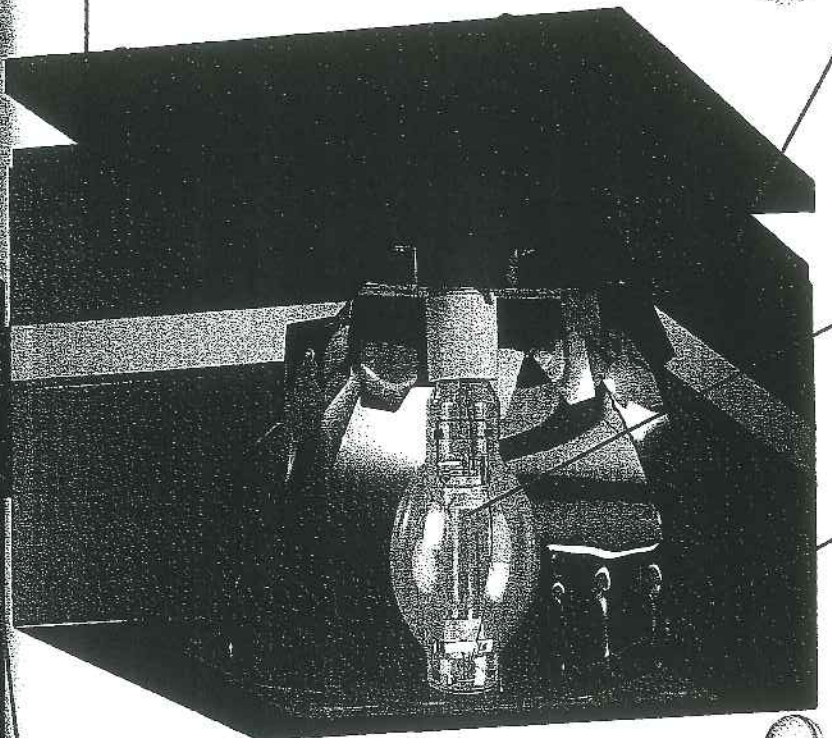
**The Greenbriar
Contoured Lens**



**The Greenbriar
Wall Sconce**

TOP-ACCESS

The Greenbriar's Top-Access housing and sealed lens makes maintenance easy and internal cleaning virtually unnecessary. Top-Access cover is secured to the housing with four stainless steel, captive door fasteners.



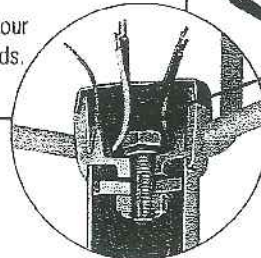
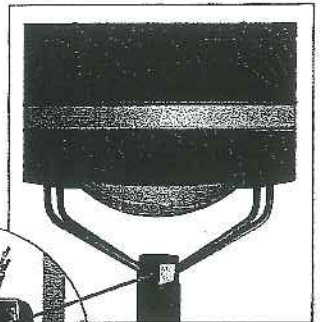
ARM MOUNTING

A one-piece, extruded arm with internal bolt tracks offers easy mounting. Standard arm is compatible with all fixture mounting configurations.

POLE-TOP MOUNTING

The cast aluminum mounting hub conceals the wiring compartment and mounts directly to LSI's unique "pole-top mounting plate" via a high-strength, grade five steel bolt with nylon insert and split-lock washer for double locking. The fixture is pre-wired for ease of installation.

Support arms consist of four 11/16" O.D. aluminum rods.



HOUSING

Greenbriar fixtures are available in two sizes to best complement your site design and lighting requirements (see Dimensions Chart). All fixtures are finished to provide a clean, sharp appearance and weather-tight construction.

The Greenbriar Reduced is designed around a 1000 Watt Metal Halide Reduced Envelope lamp, allowing for a more compact housing. This results in reduced windloads for lower EPAs, and permits the use of existing poles for retrofitting or lighter-gauge, less expensive poles for new construction.

LIGHT SOURCES

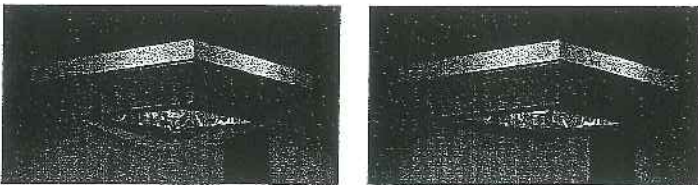
Clear lamps are supplied as standard. Choose Pulse-Start Metal Halide, Super Metal Halide, Super Metal Halide Reduced Envelope, Metal Halide, Metal Halide Reduced Envelope or High-Pressure Sodium lamps to meet your specific lighting requirements.

REFLECTORS/DISTRIBUTION PATTERNS

The Greenbriar Series offers five high-performance, high-tech reflectors which are completely rotatable for flexible, uniform light distribution. Available reflector systems include: Type II, Type III, Type FA, Type FP, and Type V.

LENSES

Flat lenses are available for sharp cutoff lighting, while contoured lenses provide broad lighting coverage. All flat and contoured lenses are sealed to the aluminum housing with an EPDM gasket to prevent entry of dust, moisture and insects.

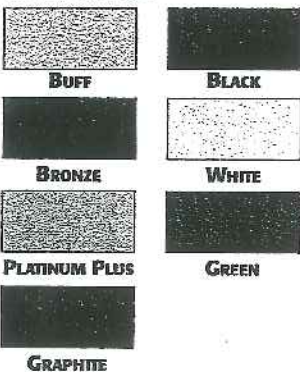


FINISH COLORS & ACCENT STRIPING

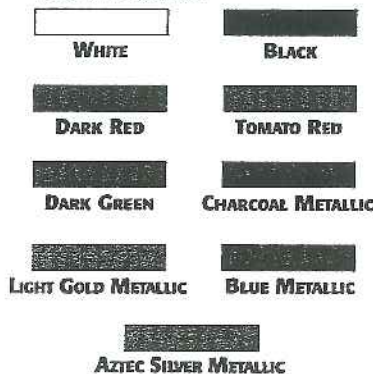
Each Greenbriar fixture is finished with DuraGrip,® LSI's baked-on, polyester-powder coat finishing process. LSI's DuraGrip finish withstands weather changes without cracking or peeling, and is guaranteed for 5 full years.



FINISH COLORS



ACCENT STRIPING

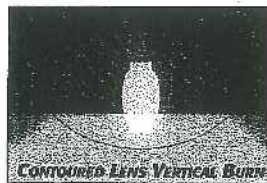
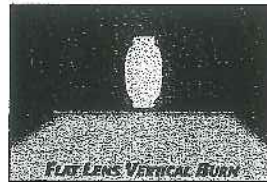


VERTICAL BURN –

Total Uniformity for Safety, Savings and "See-Ability"

Vertical Burn lighting creates increased visibility through uniform lighting performance, reduced hot spots and reduced pockets of darkness. This uniform "see-ability" heightens your customers' and employees' sense of security.

- Reflector completely surrounds vertically positioned lamp to control light output and maximize light distribution
- Maximum light coverage and uniformity prevent glaring hot spots
- Fewer fixtures burn up to 30% less energy annually
- Maximum lamp life lowers long-term maintenance costs
- Fewer poles and fixtures lower overall costs



PULSE-START METAL HALIDE – For High Performance and Efficiency

Pulse-Start Metal Halide delivers the white light of Metal Halide along with the energy efficiency and lumen maintenance of High-Pressure Sodium.

- Available in 250, 320, 400, 750 and 1000 Watt versions
- Longer lamp life
- More lumens per watt
- Better lumen maintenance with more light output over time
- Improved color stability with less color shift
- Faster warm-up
- Quicker restrike

GENERAL COMPARISON OF METAL HALIDE, HIGH-PRESSURE SODIUM AND PULSE-START METAL HALIDE TECHNOLOGY*

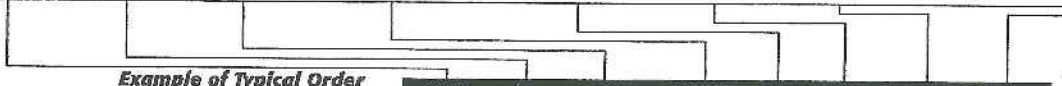
Feature	Standard M.H.	Pulse-Start Metal Halide	H.P.S.
Color	White	White	Yellow
Efficiency (L/W)	60-85	90-110	100-125
Lumen Maint. Lamps	65%	80%	90%
Lamp Life (kHrs)	175-1000	35-1900	35-1000
	6-16	10-30	24+

*Reprinted with permission from Advance Transformer Co.

GREENBRIAR ORDERING INFORMATION (Select appropriate choice from each column to formulate order code. Refer to example below.)

Luminaire Prefix	Distribution	Lamp Wattage	Light Source	Lens	Line Voltage ⁴	Luminaire Finish	Options
CONTOURED LENS							
Medium Vertical Burn GBM - Arm Mount	2 - Type II 3 - Type III FP - Perimeter Forward Throw 5 - Type V	250 320 400	PSMV - Pulse-Start Metal Halide 250, 320, 400 Watt SMV - Super Metal Halide 400 Watt MH - Metal Halide 250, 400 Watt HPS - High Pressure Sodium 250, 400 Watt	CT - Contoured Clear Impact Resistant Glass	480V MT - Multi Tap ⁵ TT - Tri-Tap ⁶	BRZ - Bronze BLK - Black PLP - Platinum Plus BUF - Buff WHT - White GRN - Green GPT - Graphite	8BK - 8" Bracket ⁷ PCI120V - Button-Type Photoelectric Control ⁸ PCI208V - Button-Type Photoelectric Control ⁸ PCI240V - Button-Type Photoelectric Control ⁸ PCI277V - Button-Type Photoelectric Control ⁸ LL - Less Lamp Color Decals 45 - Light Gold Metallic 20 - Charcoal Metallic 94 - Blue Metallic 59 - Dark Green 21 - Tomato Red 55 - Black 50 - White 51 - Dark Red 700 - Aztec Silver Metallic
Reduced Vertical Burn GBR - Arm Mount	2 - Type II 3 - Type III FP - Perimeter Forward Throw FA - Automotive Forward Throw 5 - Type V	750 1000	PSMV - Pulse-Start Metal Halide 750, 1000 ³ Watt MHR - Metal Halide Reduced Envelope 1000 Watt				
Stretched Vertical Burn GBRS ² - Arm Mount	2 - Type II FP - Perimeter Forward Throw 5 - Type V	1000	HPS - High Pressure Sodium 1000 Watt				

Luminaire Prefix	Distribution	Lamp Wattage	Light Source	Lens	Line Voltage ⁴	Luminaire Finish	Options
FLAT LENS							
Medium Vertical Burn GFM - Arm Mount GFRM - Pole Top ¹	2 - Type II 3 - Type III FP - Perimeter Forward Throw 5 - Type V	250 320 400	PSMV - Pulse-Start Metal Halide 250, 320 Watt SMVR - Super Metal Halide Reduced Envelope 400 Watt MH - Metal Halide 250 Watt MHR - Metal Halide Reduced Envelope 400 Watt HPS - High Pressure Sodium 250, 400 Watt	F - Flat Clear Tempered Glass	480V MT - Multi Tap ⁵ TT - Tri-Tap ⁶	BRZ - Bronze BLK - Black PLP - Platinum Plus BUF - Buff WHT - White GRN - Green GPT - Graphite	8BK - 8" Bracket ⁷ PCI120V - Button-Type Photoelectric Control ⁸ PCI208V - Button-Type Photoelectric Control ⁸ PCI240V - Button-Type Photoelectric Control ⁸ PCI277V - Button-Type Photoelectric Control ⁸ LL - Less Lamp Color Decals 45 - Light Gold Metallic 20 - Charcoal Metallic 94 - Blue Metallic 59 - Dark Green 21 - Tomato Red 55 - Black 50 - White 51 - Dark Red 700 - Aztec Silver Metallic
Reduced Vertical Burn GFR - Arm Mount GFPR - Pole Top ¹	2 - Type II 3 - Type III FP - Perimeter Forward Throw FA - Automotive Forward Throw 5 - Type V	400 750 1000	PSMV - Pulse-Start Metal Halide 400, 750, 1000 ³ Watt MHR - Metal Halide Reduced Envelope 1000 Watt				



Example of Typical Order



- When ordering pole top fixtures for tenon mounting, a pole top adaptor must be ordered.
- For MH or PSMV, select GBR or GBPR.
- Tri-Tap not available in 1000 watt PSMV. Voltage must be specified - 120V, 277V or 347V.
- For international voltages, consult factory.
- MT - Multi Tap is shipped standard unless otherwise specified. Multi Tap consists of 120V, 208V, 240V, and 277V. Multi Tap is pre-wired for highest voltage. Alternate voltages will require field re-wiring.
- Tri-Tap is shipped standard for Canadian applications. Tri-Tap consists of 120V, 277V, and 347V. Tri-Tap is pre-wired for highest voltage. Alternate voltages will require field re-wiring.
- An 8" bracket can only be ordered with single and D180 configurations.
- PCI is not available in GBR/GBPR or GBRS/GBPRS Series. On GFR/GFPR photoelectric control can only be used with 400 Watt PSMV.

LUMINAIRE EPA CHART

Includes Bracket.

	Pole-Top Mount	Single	D90°	D180°	T90°	TN120°	Q90°
Greenbriar - 12" Arm-Mount Bracket (GBM)	—	3.3	5.9	6.6	9.1	9.3	11.7
Greenbriar - Pole-Top (GBPM)	3.4	—	—	—	—	—	—
Greenbriar Flat - 12" Arm-Mount Bracket (GFM)	—	3.2	5.7	6.3	8.8	9.0	11.3
Greenbriar Flat - Pole-Top (GFPM)	3.2	—	—	—	—	—	—
Stretched							
Greenbriar - 12" Arm-Mount Bracket (GBRS)	—	4.4	8.8	8.8	13.1	13.0	17.5
Greenbriar - Pole-Top (GBPRS)	4.5	—	—	—	—	—	—
Reduced							
Greenbriar - 12" Arm-Mount Bracket (GBR)	—	3.3	5.9	6.6	9.1	9.3	11.7
Greenbriar - Pole-Top (GBPR)	3.4	—	—	—	—	—	—
Greenbriar Flat - 12" Arm-Mount Bracket (GFR)	—	3.8	7.6	7.6	11.4	11.4	15.2
Greenbriar Flat - Pole-Top (GFPR)	4.0	—	—	—	—	—	—



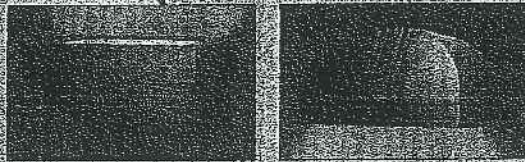
LSI OUTDOOR LIGHTING
10000 Alliance Road
Cincinnati, Ohio 45242
(513)793-3200 FAX (513)793-0147
www.lsi-industries.com

THE POWER OF IMAGE

lsi
Lighting Solutions plus

THE CHALLENGER[®] WALL SCONCE SERIES

*Small and Medium
Available in HID and
Compact Fluorescent*



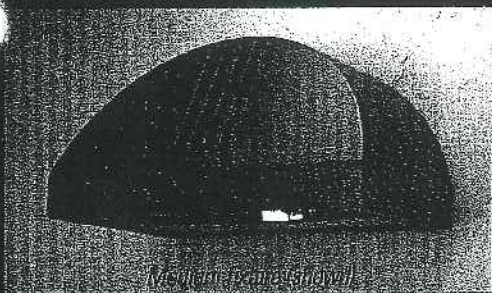
**THE CHALLENGER® WALL SCONCE SERIES –
AN INTEGRAL COMPONENT OF YOUR
ARCHITECTURAL DESIGN**

Indoor or outdoor. General illumination, focused accent spotlighting, or a simple extension of your architectural statement. The new Challenger Wall Sconce Series combines versatility and performance with sleek, aerodynamic styling for the perfect complement to your architectural experience.

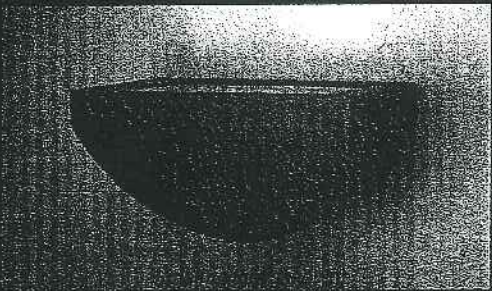
Featuring simplified access, a horizontal lamp orientation, a flat lens, and a choice of high-performance reflector options and light sources, the Challenger Wall Sconce is extremely efficient and easy to maintain.

In addition, the Challenger Wall Sconce comes fully assembled for quick and easy installation. With smooth lines, refined curves, a choice of two sizes, and seven standard finish colors, the Challenger Wall Sconce blends smoothly into any design environment for enhanced architectural appeal.

Downlight mounting is available for indoor and outdoor applications.



Uplight mounting is available for indoor or under canopy applications only.



LSI
Lighting Systems™

HIGH-PERFORMANCE HORIZONTAL BURN

Where strict zoning requirements are encountered, the environmentally friendly Challenger Wall Sconce downlight offers full cutoff lighting distribution as defined by the IESNA (Illuminating Engineering Society of North America).



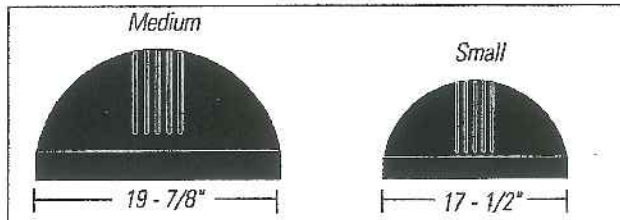
ARCHITECTURAL HOUSING

Formed aluminum housing is rectangular in shape, featuring sleek, smooth lines and refined curves for an aerodynamic look that enhances the architectural integrity of any site.



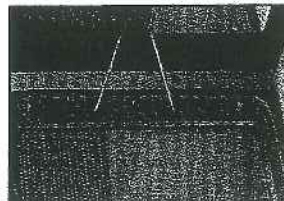
TWO SIZES

Small fixture is available from 50 to 175 Watts HID and 26 to 2/42 Watts Compact Fluorescent. Medium fixture is available from 250 to 400 Watts HID and 57 to 2/70 Watts Compact Fluorescent.

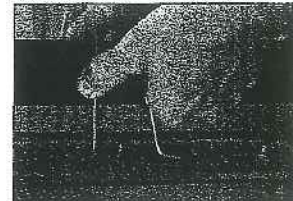


REMOVABLE DOOR FRAME WITH FLAT LENS

Aluminum door frame is sealed to housing with a one-piece, extruded silicone gasket, and is removable for easy access. Clear, flat, tempered glass lens is sealed to the door frame with EPDM gasketing to prevent entry of insects, dust and moisture.



Loosen two captive, stainless steel fasteners, and door frame swings open.



Squeeze wire-formed retainer to remove door frame.

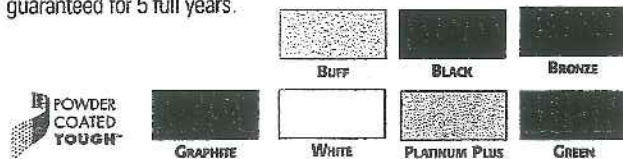
SILICONE GASKET

One-piece, extruded silicone gasket seals the door frame against the housing.



LUMINAIRE FINISHES

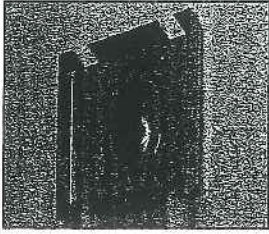
Each Challenger Wall Sconce fixture is finished with DuraGrip®, LSI's baked-on, polyester-powder coat finishing process. LSI's DuraGrip finish withstands weather changes without cracking or peeling, and is guaranteed for 5 full years.



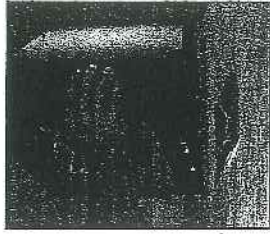
THE NEW BENCHMARK IN WALL SCONCE PERFORMANCE & STYLE

FULLY ASSEMBLED FOR QUICK AND EASY INSTALLATION

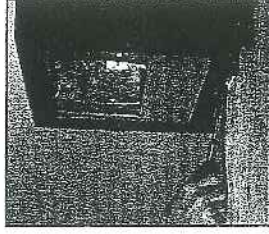
The Challenger Wall Sconce comes fully assembled (pre-wired and HID pre-lamped) from the factory. The specially designed mounting plate provides for easy installation in just three quick steps.



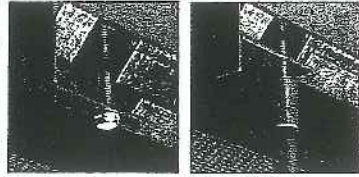
1. Attach wall-mounting plate to the junction box.



2. Make the wiring connections, and attach the fixture to the wall-mounting plate by hanging it over the beveled lip of the wall-mounting plate.



3. Lock fixture into place by tightening two hex head screws.



SEALING GROMMET

One-piece grommet, positioned at the point where internal wiring exits the housing, helps keep insects, dust and moisture out of the housing and ballast compartment.

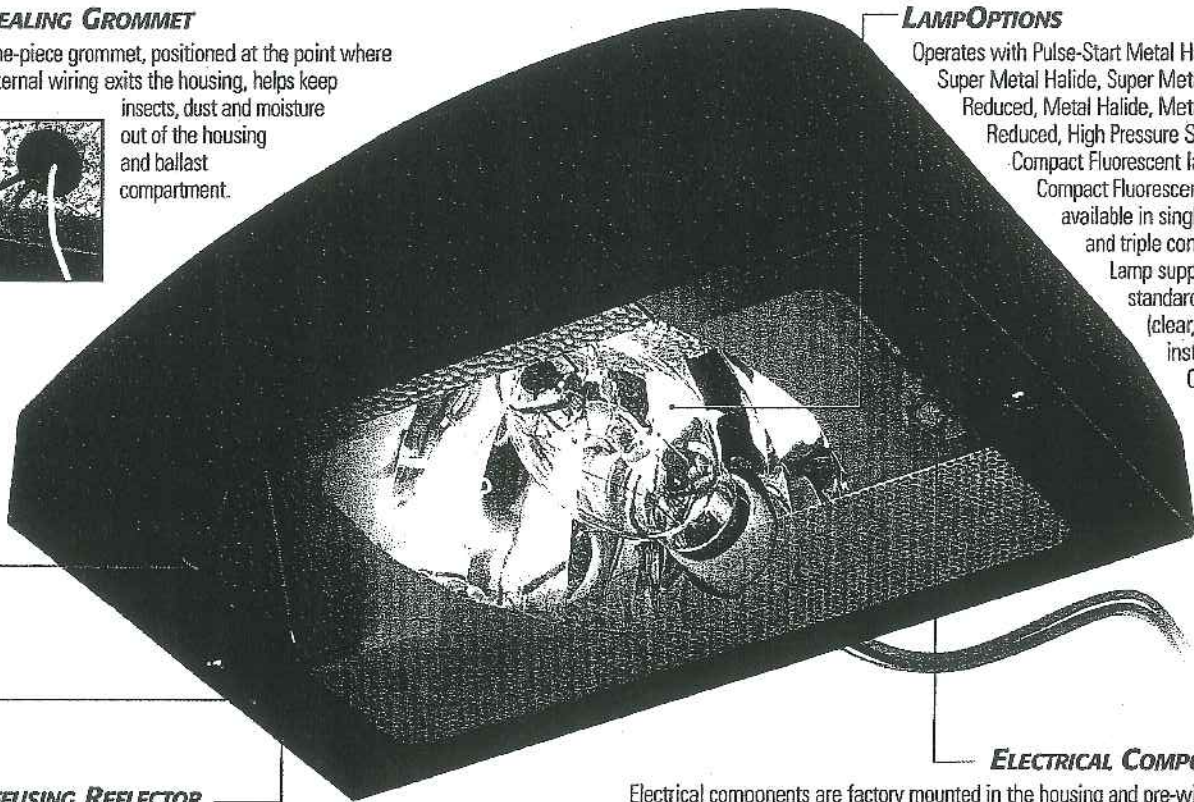


LAMP OPTIONS

Operates with Pulse-Start Metal Halide, Super Metal Halide, Super Metal Halide Reduced, Metal Halide Reduced, High Pressure Sodium and Compact Fluorescent lamps.

Compact Fluorescent lamps are available in single, double, and triple configurations.

Lamp supplied as standard – HID (clear, shipped installed) or Compact Fluorescent (coated, 4100K).



ELECTRICAL COMPONENTS

Electrical components are factory mounted in the housing and pre-wired with leads extending out the back of the unit. This eliminates the need to open the fixture when making wiring connections, ensuring quick and easy installation. Components are UL Listed.

DIFFUSING REFLECTOR

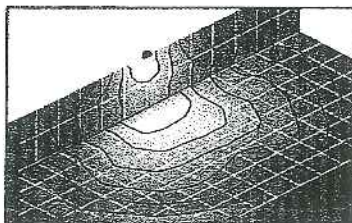
The Medium Challenger Wall Sconce has a unique diffusing reflector designed to eliminate hot spots on the wall directly above or below the fixture.

REFLECTOR OPTIONS – Reflector models are protected by U.S. Patent # 6,464,378.

Forward Throw (FTM & FT) and Type III reflector systems are available with both small and medium fixtures. Both offer high-performance, full cutoff distribution as defined by the IESNA. Please visit our website at www.lsi-industries.com for detailed photometric data.



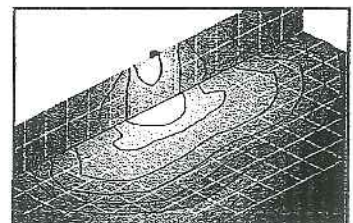
Typical Type FT photometric pattern.



CHWM FT 400 MHR



Typical Type III photometric pattern.



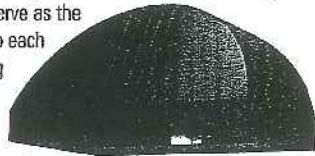
CHWM 3 400 MHR

THE CHALLENGER® FAMILY – FOR THE ULTIMATE IN ARCHITECTURAL INTEGRITY

Challenger site lighting fixtures have long been known as one of the industry's best values in architectural lighting, coupling a smooth, contoured appearance with high performance for maximum architectural effect.

Challenger Wall Sconces can be combined with Challenger site lighting fixtures for added architectural appeal and a sense of continuity throughout your site.

Working together, Challenger Wall Sconces and Challenger site lighting fixtures serve as the perfect complement to each other, while enhancing your overall architectural experience both inside and out.



The Challenger Wall Sconce



The Challenger II Series – Featuring a die-formed aluminum housing in two sizes, available with Vertical or Horizontal Burn optical systems. Up to 1000 Watt MH.



The Challenger – Featuring a die-cast aluminum housing, available with Vertical or Horizontal Burn optical systems. Up to 1000 Watt MH.

CHALLENGER® WALL SCONCE ORDERING INFORMATION (select appropriate choice from each column to formulate order code. Refer to example below.)

Luminaire Prefix	Distribution	Lamp Wattage	Light Source	Lens	Line Voltage*	Luminaire Finish	Options
CHWS (Small)	3 - Type III FT - Forward Throw	50	MH - Metal Halide 50, 70, 100, 150 ¹ , 175 Watt HPS - High Pressure Sodium 50, 70, 100, 150 Watt	F - Flat Clear Tempered Glass	120V 208V 240V 277V 347V	BRZ - Bronze BLK - Black WHI - White PLP - Platinum Plus BUF - Buff GRN - Green GPT - Graphite	PC120V - Button-Type Photocell PC208V - Button-Type Photocell PC240V - Button-Type Photocell PC277V - Button-Type Photocell SQT - Stand-by Quartz (Time Delayed) ⁷ SQN - Stand-by Quartz (Non-Time Delayed) ⁷ EQ - Emergency Quartz (separate circuit - HID only) ⁶ TP - Tamper Proof ⁸ PMA - Pole Mount Adaptor for use with square poles PMAR - Pole Mount Adaptor for use with round poles DIM - CFL Control Voltage Dimming Ballast ⁷ C - Coated MH or PSMH Lamp BB - CFL Battery Back-up ⁸ LL - Less Lamp
		70 100 150 175					
CHWM (Medium)	3 - Type III FT - Forward Throw	26	PSMH - Pulse Start Metal Halide 250, 320 Watt SMH - Super Metal Halide 250 Watt SMHR - Super Metal Halide Reduced Envelope 400 Watt MH - Metal Halide 250 Watt MHR - Metal Halide Reduced Envelope 400 Watt HPS - High Pressure Sodium 250, 400 Watt	F - Flat Clear Tempered Glass	UE - Universal Electronic (120-277V 50/60Hz) 347V (60Hz) ⁴	BRZ - Bronze BLK - Black WHI - White PLP - Platinum Plus BUF - Buff GRN - Green GPT - Graphite	PC120V - Button-Type Photocell PC208V - Button-Type Photocell PC240V - Button-Type Photocell PC277V - Button-Type Photocell SQT - Stand-by Quartz (Time Delayed) ⁷ SQN - Stand-by Quartz (Non-Time Delayed) ⁷ EQ - Emergency Quartz (separate circuit - HID only) ⁶ TP - Tamper Proof ⁸ PMA - Pole Mount Adaptor for use with square poles PMAR - Pole Mount Adaptor for use with round poles DIM - CFL Control Voltage Dimming Ballast ⁷ C - Coated MH or PSMH Lamp BB - CFL Battery Back-up ⁸ LL - Less Lamp
		32 42					
CHWM (Medium)	3 - Type III FT - Forward Throw	250 320 400	PSMH - Pulse Start Metal Halide 250, 320 Watt SMH - Super Metal Halide 250 Watt SMHR - Super Metal Halide Reduced Envelope 400 Watt MH - Metal Halide 250 Watt MHR - Metal Halide Reduced Envelope 400 Watt HPS - High Pressure Sodium 250, 400 Watt	F - Flat Clear Tempered Glass FPC - Flat Clear Polycarbonate ²	120V 208V 240V 277V 347V 480V	BRZ - Bronze BLK - Black WHI - White PLP - Platinum Plus BUF - Buff GRN - Green GPT - Graphite	PC120V - Button-Type Photocell PC208V - Button-Type Photocell PC240V - Button-Type Photocell PC277V - Button-Type Photocell SQT - Stand-by Quartz (Time Delayed) ⁷ SQN - Stand-by Quartz (Non-Time Delayed) ⁷ EQ - Emergency Quartz (separate circuit - HID only) ⁶ TP - Tamper Proof ⁸ PMA - Pole Mount Adaptor for use with square poles PMAR - Pole Mount Adaptor for use with round poles DIM - CFL Control Voltage Dimming Ballast ⁷ C - Coated MH or PSMH Lamp BB - CFL Battery Back-up ⁸ LL - Less Lamp
		26 32 42 57 70					
CHWM (Medium)	3 - Type III FT - Forward Throw	26	CFL - Compact Fluorescent Single 57, 70 Watt CFL2 - Compact Fluorescent Double 57, 70 Watt CFL3 - Compact Fluorescent Triple 26, 32, 42 Watt	F - Flat Clear Tempered Glass FPC - Flat Clear Polycarbonate ²	UE - Universal Electronic (120-277V 50/60Hz) 347V (60Hz) ⁴	BRZ - Bronze BLK - Black WHI - White PLP - Platinum Plus BUF - Buff GRN - Green GPT - Graphite	PC120V - Button-Type Photocell PC208V - Button-Type Photocell PC240V - Button-Type Photocell PC277V - Button-Type Photocell SQT - Stand-by Quartz (Time Delayed) ⁷ SQN - Stand-by Quartz (Non-Time Delayed) ⁷ EQ - Emergency Quartz (separate circuit - HID only) ⁶ TP - Tamper Proof ⁸ PMA - Pole Mount Adaptor for use with square poles PMAR - Pole Mount Adaptor for use with round poles DIM - CFL Control Voltage Dimming Ballast ⁷ C - Coated MH or PSMH Lamp BB - CFL Battery Back-up ⁸ LL - Less Lamp
		32 42 57 70					

Example of Typical Order CHWS 3 175 MH F 120V BRZ

- Supplied with a HX-HPF transformer as standard. Also available with a 120/277/347 volt Super CWA transformer. Consult factory.
- If a polycarbonate lens is required on an upright Medium fixture in 70 CFL2 or 42 CFL3, the glass lens with a Polycarbonate Shield (CHWM PLS) accessory must be ordered.
- For international voltages, consult factory.
- 347V CFL is not available with dimming ballast (DIM) or battery back-up (BB) options.

- Fixtures 250 Watt and below are shipped with 100 Watt quartz lamp. 320 and 400 Watt fixtures are shipped with 250 Watt quartz lamp. SQN or SQT available on 100 watt minimum HID fixtures.
- Tamper proof screwdriver must be ordered separately. (See Accessories)
- CFL Dimming Control by others.
- Battery Back-up available on single, double and triple 26, 32 and 42 watt units. On double and triple units, one lamp will be energized by BB.

ACCESSORIES

FK120V - Single Fusing+	CHWS PLS - Polycarbonate Shield
FK277V - Single Fusing+	For Small Fixture
FK347V - Single Fusing+	CHWM PLS - Polycarbonate Shield
DFK208, 240V - Double Fusing+	For Medium Fixture
DFK480V - Double Fusing++	SW BLK - Surface Wiring Box+++
SCD - Tamper Proof Screwdriver	

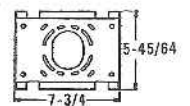
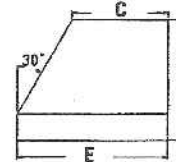
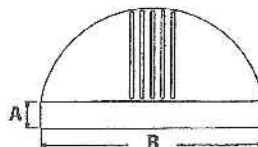
- + Available on HID fixture only
- ++ Available on HID Medium fixture only
- +++ SW BLK not compatible with PMA option.



Listed for wet locations. (Downlight only)
Listed for damp locations. (Uplight only)

DIMENSIONS

	A	B	C	D	E
Small	1-7/8	17-1/2	5-21/32	8-3/4	9-5/8
Medium	2-3/8	19-7/8	8-5/8	10-3/4	13-7/16



Universal Mounting Plate

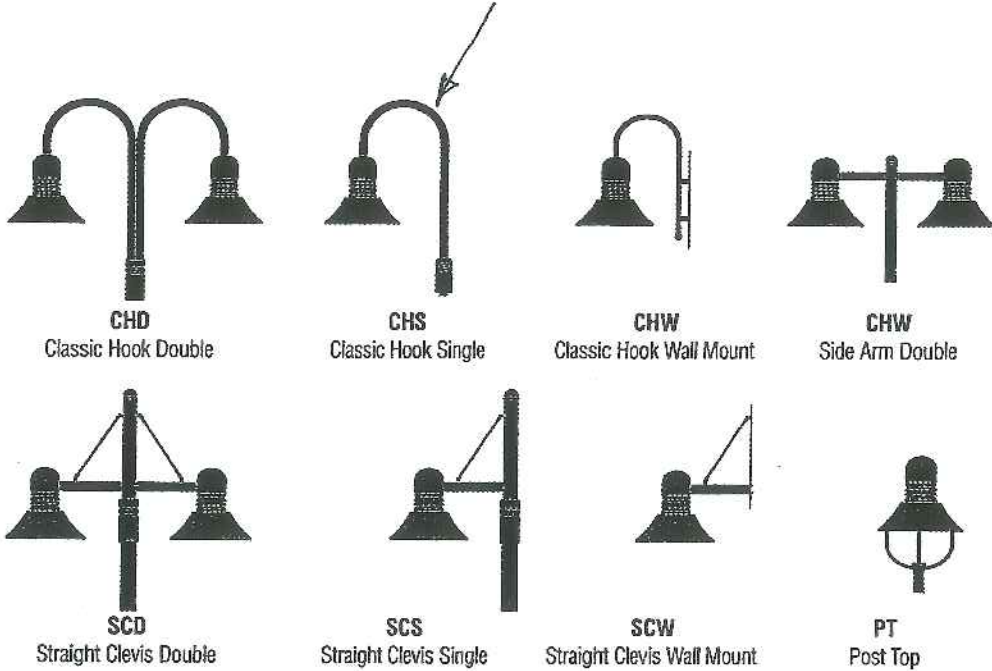


LSI LIGHTING SOLUTIONS PLUS
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www.lsi-industries.com

GREENLEE LIFESTYLE SERIES

Series	Shade	Crown	Wattage/ Lamp Type	Voltage	Optics	Lens	Finish
LS Lifestyle Series Small	A B F	N H V	50, 70, 100, 150, 175 MH E-17 Medium Base 50, 70, 100, 150, HPS E-17 Medium Base 42 CFL GX 24q-4 Type V Optics only	MT - Multi-Tap ¹ TT - Tri-Tap ² (Magnetic Ballast is not available in 50, 70, 150MH or 50 HPS) UE - Electronic Universal Electronic 120-277 V 50 or 60 HZ	2 - Type II 3 - Type III FP - Forward Throw Perimeter 5 - Type V	F - Flat Lens (provides full cut off) CT - Contoured Clear Tempered Glass	SGM - Silver Grey Metallic SVG - Satin Verde Green BLK - Black BRZ - Bronze BUF - Buff WHT - White
LM Lifestyle Series Medium	A B F	N H V	250, 400 MHR Reduced MH-Mogul Base 250, 320, 350, PSMH Pulse Start Metal Halide 250, 400 HPS High Pressure Sodium (Requires contoured lens)				
<p>LS B V 175MH MT 3 F SGM</p>							

A+ J



LSI ARCHITECTURAL OUTDOOR DECORATIVE AREA LIGHTING

© 2004 LSI INDUSTRIES INC.

Project Name _____ Fixture Type _____
 Catalog # _____



GREENLEE LIFESTYLE SERIES (Various reflectors are protected by U.S. Patent No. 6,464,378.)

LAMP TYPES: Standard or Pulse Start Metal Halide, High Pressure Sodium, and Compact Fluorescent.

SHADE AND CROWN: Die Cast Aluminum.

BRACKETS: Brackets are extruded and cast aluminum assemblies or fabrications. All decorative elements are die cast or extruded aluminum.

FINISH: Available in silver gray metallic, satin verde green, bronze, black, white or buff polyester powder coat.

LENS: Flat or Contoured tempered glass lenses are available. Lens is sealed to the lens frame casting.

GASKETS AND SEALS: Silicone gaskets seal the lens to the housing and the crown to the shade. All gaskets and seals are extruded, molded or die cut silicone.

OPTICS: Four distributions - Type II, III, V, and Forward Throw Perimeter. Shade attachment allows field orientation of optics in 90° increments.

LAMPHOLDER: Matched to the lamp. Glazed porcelain, medium or mogul base, 4KV pulse rated with spring center contact.

BALLASTS: High power factor for -20°F starting is standard. Universal electronic for 120-277V, 50 or 60HZ operation is available for some wattages.

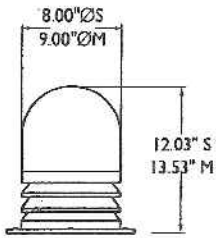
COLOR BANDS: Accent color decals are available in nine colors, and guaranteed for five years against peeling, cracking, or fading.

FASTENERS: All exposed fasteners are black oxide coated stainless steel.

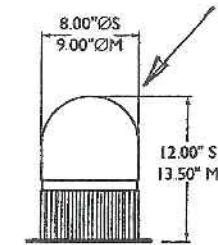
BASE COVER: Optional Decorative or Contemporary base covers have two-piece die cast construction with stainless steel fasteners. Base covers are polyester powder coated to match pole.

CROWN DIMENSIONS

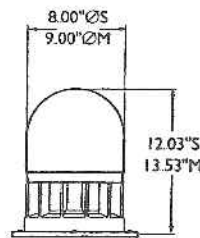
S = Small M = Medium



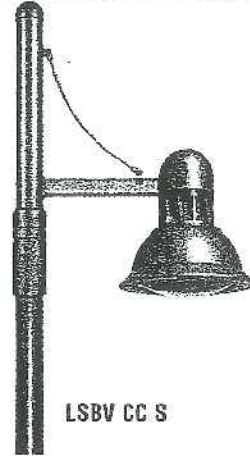
H-HORIZONTAL LOUVER



N-NON LUMINOUS



V-VERTICAL LOUVER



LSBV CC S



LSAN CH D180

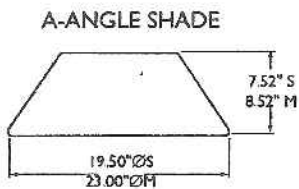


LSFH CC D180

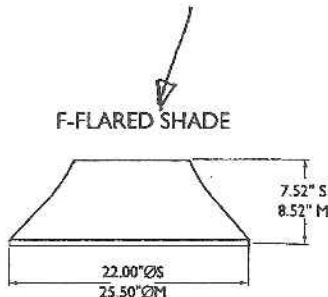


SHADE DIMENSIONS

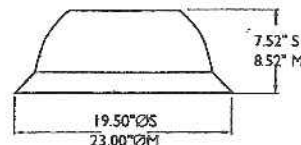
S = Small M = Medium



A-ANGLE SHADE



F-FLARED SHADE



B-BELL SHADE



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Project Name _____ Fixture Type _____
 Catalog # _____



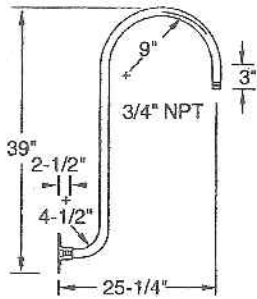
Brick Pier

ABOLITE GOOSENECK AND WALL BRACKETS

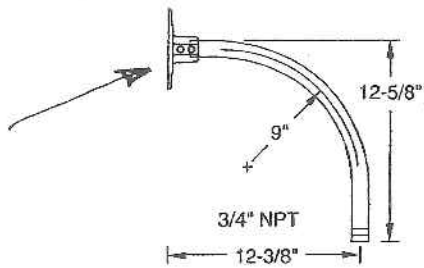
RLM ACCESSOR

LSI ARCHITECTURAL INDOOR LIGHTING

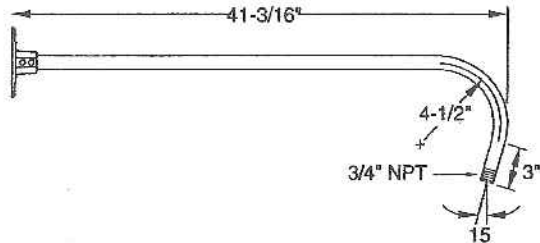
GB J 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



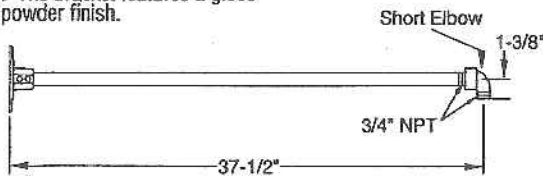
GB K 3 GWT 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.



GB P 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

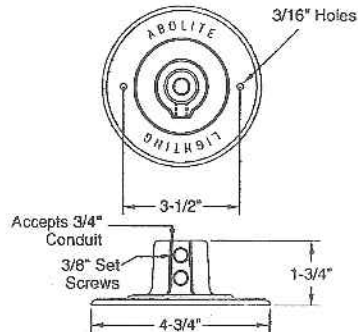


GB U 3 GWT - 3/4" Single Reflector Gooseneck Wall Bracket. Features rigid conduit and cast wall plate which fits 4" octagonal box (by other). The bracket features a gloss white powder finish.

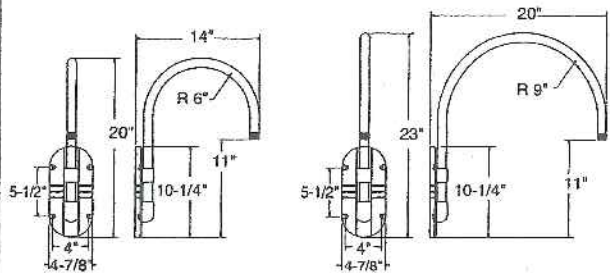


CA 5- part #102962GWT - Wall Plate Included with all GB Brackets (gloss white powder finish).

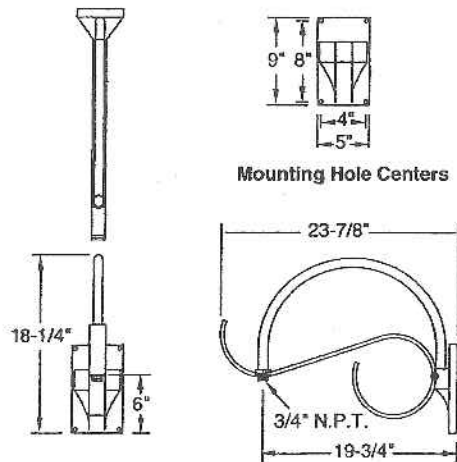
- Mounts to recessed 4" octagon box (by others).



CWBM 1 GWT and CWBL 1 GWT - Contemporary Wall Bracket.



DWB 1 GWT - Single Reflector Wall Bracket. Measures 18-1/4" high by 23-7/8" deep, less reflector. Four 5/16" diameter holes are provided for wall mounting. The bracket features a gloss white powder finish.



ABOLITE HARBOR

Brick Pier

FINISH - Available in either Brushed and Anodized Aluminum, Architectural Textured, or High Gloss finish.

LAMP OPTIONS - Single Compact Fluorescent Lamps, High Intensity Discharge, and Incandescent lamps. CFL and H.I.D. lamps available - order separately; Incandescent lamps by other.

MOUNTING - Cast hub tapped for 3/4" NPT conduit. Available factory prewired with 96" leads (approved for wet locations) or white or black cord set and matching canopies, Coiled Cords, and SWAG options (approved for damp locations).

REFLECTOR - Heavy-duty, spun aluminum.

SOCKETS - Incandescent (rated 660 Watt/600 Volt) and HID (4KV pulse rated) are medium base porcelain. Compact Fluorescent 26/32/42 Watt sockets feature smart push-pull thermoplastic design for ease of lamping.

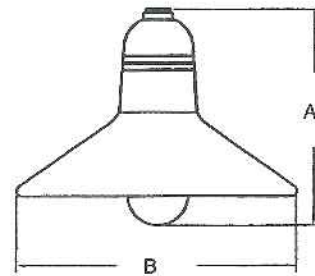
LENS ASSEMBLY - Prismatic shatter-resistant and heat-resistant glass. (Frosted globe available as an option).

BALLASTS - Compact Fluorescent: factory pre-wired in neck, high power factor electronic ballast will operate 26/32/42 Watt lamps.

HID versions: remote high power factor -must be ordered separately.



DIMENSIONS



Type 'C'

Fixture	Height (A)	Diameter (B)	Weight (lbs.)
HBR 15"	15-1/4"	15"	6.5
HBR 20"	15-1/4"	20"	7



Fixture Prefix	Rated Wattage	Light Source	Line Voltage	Fixture Finish	Reflector Size	Globe	Mounting	Field Installed Accessories
HBR	26/32/42	CFL - Single Compact Fluorescent	UE 347	BRU - Brushed, Anodized Aluminum*	AL15 - 15" Aluminum Reflector AL20 - 20" Aluminum Reflector	PG4 - 4" Clear Prismatic Glass Globe PG4F - 4" Frosted Prismatic Glass Globe	LDS96WL - 8' prewired leads. Includes 3/4" top mounting casting. Labeled for 'wet location' mounting. CA120WHT - 10' prewired white cord set and canopy. CA120BLK - 10' prewired black cord set and canopy CA120WHTS - 10' prewired white cord set and canopy with SWAG option. CA120BLKS - 10' prewired black cord set and canopy with SWAG option. RC72BLK - 6' prewired black cord set and canopy. Includes SWAG cable.	Wire Guards MH Remote Ballast Postline Ballast Wall Brackets Pole Brackets 4" Round Steel Poles 4" Round Aluminum Pole
	200	INC - Incandescent	120	PNA - Painted Natural Aluminum				
	50	MH - Metal Halide (Enclosed Optics)	120	GWT - Gloss White				
	70		GRD - Gloss Red					
	100		GGN - Gloss Green					
	150		GPT - Textured Graphite					
175	RUS - Textured Rust	277	VGN - Textured Verdigris					

HBR 26/32/42 CFL UE GWT AL20 PG4 LDS96WL X

* Brushed Aluminum (BRU) approved for indoor applications only

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Project Name _____ Fixture Type _____
 Catalog # _____



Brick Pier

ABOLITE REMOTE BALLASTS

WTRB - Weather Remote Ballasts

- Highest quality Class H core and coil.
- Finish is white textured powder. Optional textured RLM colors available.
- High Power Factor Design.

WTRB STYLE ORDERING DATA

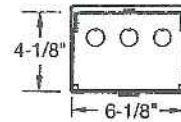
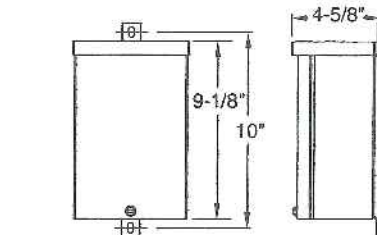
Indoor/Outdoor Catalog Number	Designed for Lamp Type	Distance to Lamp	Net Weight
WTRB 50 MH 120 WHT	50 Watt Metal Halide	50 ft.	10 lb.
WTRB 70 MH MT WHT	70 Watt Metal Halide	50 ft.	11 lb.
WTRB 100 MH MT WHT	100 Watt Metal Halide	50 ft.	12 lb.
WTRB 175 MH MT WHT	175 Watt Metal Halide	165 ft.*	15 lb.
WTRB 26/32/42 CFL UE WHT	26/32/42 Watt PL-T 4-Pin	15 ft.	8 lb.

*Based on #14 Ga. wire - Other wire sizes may allow greater distance. Consult factory.

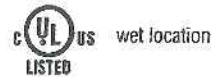
NOTES

For international voltages, consult factory.

MT - Multi Tap is shipped standard unless otherwise specified. Multi Tap consists of 120V, 208V, 240V, and 277V. Multi Tap is pre-wired for highest voltage. Alternate voltages will require field re-wiring.

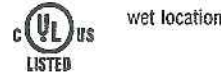
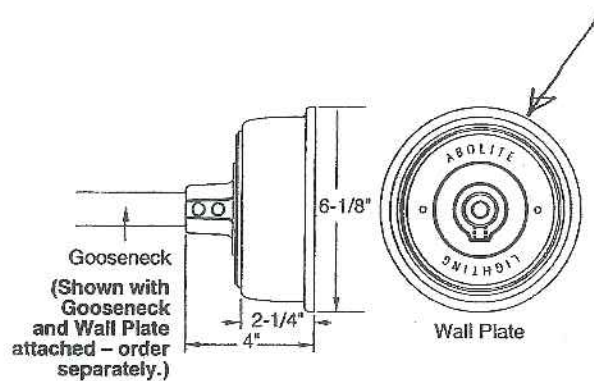


All K O's are for 1/2" fittings. Units must be positioned so that at least 12" of free space exists between adjacent ballast.



WMB - Weather tight CFL Wall Mount Ballasts

- Designed for outdoor or wet locations.
- Operates 26, 32, and 42 Watt CFL-T4-Pin lamps.
- Highest quality electronic ballast.
- Allows operation of lamps down to 0°C.
- Housing of cast aluminum.
- Gloss white powder finish. Optional RLM colors available.
- Mounts to recessed 4" octagonal box (by other).

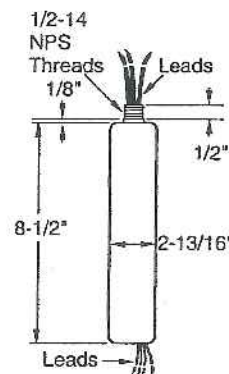


WMB STYLE ORDERING DATA

Indoor/Outdoor Catalog Number	Designed for Lamp Type	Distance to Lamp	Net Weight
WMB 26/32/42 CFL UE GWT	26/32/42 Watt PL-T 4-Pin	15 ft.	1 lb.

POSTLINE BALLAST (FOR USE INSIDE 4" POLES) ORDERING DATA

Postline Catalog Number	Designed for Lamp type	Distance to Lamp	Net Weight	Height
PB 50 MH UE	50 Watt Metal Halide	6 ft.	6 lb.	8-1/2"
PB 70 MH UE	70 Watt Metal Halide	6 ft.	6 lb.	8-1/2"
PB 100 MH UE	100 Watt Metal Halide	6 ft.	7 lb.	8-1/2"
PB 26/32/42 CFL UE	26/32/42 Watt PL-T 4-Pin	5 ft.	1 lb.	5"



Metal Halide Postline Ballast Shown

Note: 26/32/42 Watt CFL Postline Ballast measures 1" x 2-3/8" x 5"



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Project Name _____ Fixture Type _____
 Catalog # _____





Vanasse Hangen Brustlin, Inc.

April 20, 2006

Ref: 07334.00

Ms. Sarah Hopkins
Development Review Services Manager
Department of Planning and Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Final Traffic Information
Morrill's Crossing
Portland, Maine

Dear Sarah,

In response to the few outstanding traffic-related items raised by the Acting City Traffic Engineer, Mr. Thomas Errico, PE, *Vanasse Hangen Brustlin (VHB)* is pleased to provide additional information for the board's consideration. We believe that this response provides all the information necessary for Mr. Errico to complete his review of the Morrill's Crossing application. Also included in this letter is our review of the project's impacts as they relate to the City of Portland site plan and subdivision standards and *Maine Department of Transportation (MDOT)* traffic movement permit standards. Our finding is that, with its mitigation, the proposed project meets or exceeds all the City and MDOT requirements for the site plan approval and the issuance of a Traffic Movement Permit.

Collision Information

At a meeting with Mr. Errico, the applicant was asked to provide an opinion of the causes of the collisions at the high accident locations within the study area as summarized by the collision data submitted to the City on February 8, 2006. The following provides a summary and professional opinion as to the nature and causes of the collisions occurring at these locations. This additional collision data was provided by the City of Portland's police department. Information contained within the original traffic study submission summarized collision data between 2002 and 2004. This additional information focuses on 2005 collision data.

Forest Avenue at Stevens Avenue and Bishop Street

This intersection has not realized any physical improvements in some time. Based on the Portland Police data, there were ten reported collisions at this intersection in

101 Walnut Street
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Watertown, Massachusetts 02471-9151
617.924.1770 - FAX 617.924.2286
email: info@vhb.com
www.vhb.com

2005. This is slightly lower than the average rate of collisions between 2002 and 2004 (there were 39 collisions in this three-year period). Of these ten collisions, seven involved driver inattention and six were associated with drivers traveling inbound along Forest Avenue. In reviewing the various police officer reports, there does not appear to be any overwhelming recurring causes of collisions at this intersection – although there does appear to be several instances where the drivers heading inbound were rear-ending other drivers along Forest Avenue.

As has been stated, the proposed roadway improvements being offered by the applicant will eliminate the need for drivers to switch lanes as they travel inbound along Forest Avenue. Additionally, these improvements will reduce the number of rear-end collisions on this approach as the additional capacity will reduce the overall amount of congestion along this corridor.

Forest Avenue between Allen Avenue and Eleanor Street (including the intersection of Allen Avenue/McDonald's Driveway)

While no longer designated a high crash location (prior to the reconstruction of this intersection by MDOT and the City, this intersection and roadway segment was designated a high crash location), VHB reviewed the collision trends to determine if any recurring themes could be identified. The following is a summary of the information provided by the Portland Police Department for this stretch of roadway:

In 2005, there were 18 collisions reported along this link with only two minor injuries reported according to the police reports. Seven of these collisions were associated with the Forest Avenue inbound approach to the Allen Avenue intersection – although no recurring trend is associated with the causes of these collisions. In reading the collision reports and reviewing the collision diagrams provided by the Portland Police Department, there does appear to be approximately eight to ten incidents that could be classified as “congestion-related” collisions. These are collisions that occurred during the peak commuter hours (between 7:00-9:00 AM and 3:00-6:00 PM) and/or involved drivers traveling too close to each other to react if/when the driver in front of them made an unexpected maneuver.

The proposed roadway and signal timing improvements being offered along this stretch of roadway by the applicant will reduce the number of congestion-related collisions by reducing the overall congestion within the intersection and roadway link.



Ms. Sarah Hopkins
Project No.: 07334.00
April 20, 2006
Page 3

Forest Avenue from Eleanor Street to Warren Avenue (including the intersection of Forest Avenue at Warren Avenue)

Once again, this corridor is not designated as a high crash location according to MDOT. For this reason, the data being provided is more for informational purposes as it is not a high crash location. The location experienced 14 collisions in 2005 according to the Portland Police Department. Similar to the previous locations, there does not appear to be any recurring trend associated with these collisions.

In addition to the review of the 2005 data, Mr. Errico requested that recent collision information be summarized and submitted to the City at Allen's Corner to identify post-construction trends at that location. The following provides a summary of these collisions and VHB's opinion of the various causes.

Allen's Corner

Since the completion of the final roadway improvements at Allen's Corner in June 2004, there have been 18 reported collisions at the intersection of Washington Avenue and Allen Avenue. Only two of the 18 collisions involved possible injury to motorists involved in the collision – in all cases, there was no report of significant incapacitating or fatal injuries. Ten of the 18 collisions were classified by the responding police officer as "driver inattention". Only one collision occurred during the morning peak commuter period (7:00-9:00 AM) and four occurred during the evening peak commuter period (4:00-6:00 PM). Based on our review of the collision data, there appears to be a slightly larger than average number of rear-end collisions along Allen Avenue in front of the new Dunkin Donuts with seven collisions occurring on the Allen Avenue approach or internal to the Dunkin Donuts site. The overwhelming majority of these collisions are due to driver inattention.

Given that there were 37 collisions between January 2002 and December 2004 (an average of approximately 1.03 accident per month) and there have been only 18 collisions between June 2004 and February 2006 (0.86 accidents per month), it appears that there has been some reduction in the number of collisions occurring since the Allen's Corner improvements have been implemented.

Site Driveway Area Modification

Through discussions with the City and MDOT, the following changes have been made to the site driveway layout and design. All of these modifications are reflected in attachments to this letter.



Allen Avenue Apartment Driveway

As was discussed; VHB, MDOT, and the City have worked cooperatively to develop a reasonable access management plan associated with the Allen Avenue Apartment. As shown in the attachment "Raised Island Alternative", the applicant has made arrangements with the owner of the Allen Avenue Apartments to relocate their driveway to the north approximately 25 feet further away from the proposed Morrill's Crossing driveway. In concert with this modification, a combination scored-concrete and raised-median island will be constructed along Allen Avenue. This will physically discourage illegal left-turns into and out of the relocated Allen Avenue Apartment driveway, as well as provide for full truck turning movements into and out of the project's site driveway.

Paul White Tile Layout Changes

Mr. Errico had expressed concern with the impact that the inclusion of the Paul White Tile site would have to the internal operations of the parking and internal traffic flow of this site if it were tied into the proposed traffic signal at the Morrill's Crossing driveway. Attached to this letter is an attachment titled, "Paul White Tile Exhibit". There is no apparent impact to the day-to-day operations of this parcel by providing direct access to the signal. While there are one or two unmarked parking spaces that will be impacted by this change, there is no formal parking that will be impacted. This does not appear to fall within the requirements for the submission for minor site plan approval.

Pedestrian Crosswalk

Lastly, an eight-foot wide pedestrian cross-walk has been added to the southern approach of the traffic signal at the Morrill's Crossing site driveway which will provide pedestrians an added opportunity to cross Allen Avenue under the control of the traffic signal. Shown in the attachment titled, "Crosswalk Alternative", this cross-walk will connect the Morrill's Crossing development with the Paul White Tile site and the sidewalk systems on either side of Allen Avenue. We believe that this will serve as an added amenity to the overall pedestrian network being provided by the applicant.

SimTraffic Queuing Summary

Included with this letter is a summary of the Average, 95th Percentile, and Maximum vehicle queues for the Existing and Build with Mitigation development scenarios as reported by the SimTraffic analysis software. As has been noted previously, the SimTraffic analysis is a micro-simulation of vehicle operations on a roadway network. Alternatively, Synchro is a macroscopic evaluation of the traffic operations at individual intersections. At the request of MDOT and the City, VHB had previously conducted both the Synchro and SimTraffic analysis evaluations to determine the pre- and post-build traffic conditions in and around the Morrill's Corner area.



The attached table provides a summary of all the individual vehicle queues for the average, 95th percentile, and maximum conditions for all individual movements at all signalized intersections within the study area. In all cases, the post-build condition is no worse than, and in several instances is better than, the existing condition with respect to vehicle queuing.

Parking Information

The applicant was asked to provide additional information with respect to the adequacy of parking on the site. Previously, the applicant has submitted parking information based on *Institute of Transportation Engineers* (ITE) data and *Urban Land Institute* (ULI) data – both of which indicated that there is adequate parking supply provided on the site during the vast majority of the year.

While there appears to be general agreement with this finding, Mr. Errico directed the applicant to provide empirical (real-world) parking information with respect to existing Stop & Shop supermarket-based developments in New England to confirm that the ITE and ULI data is applicable and reasonable. With this in mind, the applicant is providing information gathered at 13 Stop & Shop sites in Massachusetts, Rhode Island, and Connecticut for consideration and concurrence. Furthermore, the applicant is also providing parking information gathered at the Northgate Plaza site near Allen's Corner in Portland as an example of a parking demand at a local supermarket-based shopping center.

Stop & Shop Empirical Information

Stop & Shop operates a number of supermarkets throughout New England. Over time, Stop & Shop has gathered parking accumulation information at a number of their sites – many located in shopping centers and communities similar to the proposed Morrill's Crossing development in Portland. A table summarizing the parking accumulation observations at these Stop & Shop shopping centers which are similar in nature to the proposed development is attached to this document.

The finding of this evaluation indicates that the parking demand at these 13 Stop & Shop facilities averages 2.20 parking spaces per 1,000 square feet (ksf) of gross floor area on a weekday and 2.64 parking spaces/ksf on a Saturday. This is well below the estimates used in the prior assessments using the ULI data which assumed that the general retail parking demand on the Morrill's Crossing site would require approximately 3.6 and 4.0 parking spaces/ksf in the weekday and Saturday conditions, respectively.

Ultimately, this information confirms that the ULI and ITE parking projections are likely in excess of the demands to be placed upon this site in the future.



Northgate Plaza

In addition to the Stop & Shop empirical data, the City requested that local Portland-based data might also be helpful in evaluating the parking issues for the proposed development. With this in mind, the City requested that the applicant provide data relative to parking conditions at a nearby shopping center that is similar in size and uses to the proposed Morrill's Crossing development. In order to provide this information, the applicant directed VHB to observe and document parking conditions at the nearby Northgate Shopping Plaza at Allen's Corner. The Northgate Shopping Plaza is a supermarket-anchored (Shaw's) shopping center that is essentially the same square footage (120,496 sf¹) as the proposed Morrill's Crossing development (158,764 sf²). While it is recognized that the Northgate Plaza does not provide a direct comparison to the proposed Morrill's Crossing development (as it has no residential component and limited non-retail components associated with it), it should also be noted that the bulk of the parking demand at both sites is/will likely be made up of retail shoppers.

For this reason, the applicant conducted a parking accumulation study at the Northgate facility on the Saturday prior to the Christmas holiday in order to provide a worst-case evaluation of parking utilization. A summary of the full day of observed parking data at Northgate Plaza is attached to this document.

In summary, the Northgate development provides approximately 641 parking spaces on-site. Based on the study, Northgate exhibited a 3.5 parking spaces/ksf utilization rate at the busiest time of the day on the Saturday prior to the Christmas holiday. Based on the research prepared and presented by the ULI and ITE, this time period would be expected to exhibit the highest parking utilization rate over the course of a year for a retail development of this nature.

The results of this evaluation indicate that the Northgate Plaza development generated significantly less parking demand than would normally be expected using the ITE or ULI estimates. Given this information, VHB is confident that the number of parking spaces being proposed on the site will be adequate to support the normal day-to-day parking demands of the Morrill's Crossing development. Furthermore, during the peak-season weekend

¹ The Northgate Plaza facility provides 120,496 square feet (sf) of supermarket, retail and office space on its site. When the land uses which abut the site are also added into the equation (including the Mobil gas station, Fire Station, and bank uses – all of which use the same parking fields along with their own parking), the total site plan increases to 147,345 sf of building space.

² Exclusive of the residential and boxing club uses on the site, the proposed Morrill's Crossing site plan includes 158,764 sf of building space on the site divided between supermarket, retail, restaurant, and office uses, making it very similar in size to the Northgate Plaza development.



conditions, there appears to be more-than-adequate parking supply provided for the likely demand. To further highlight this conclusion, the applicant has developed a parking management plan for these few peak-season occurrences to assure adequate parking will be available on the site.

Consistency with City Standards

In reviewing the City of Portland Subdivision standards and Site Plan Review Requirements, we felt that it would be helpful to summarize our findings as they relate to the City's standards. According to the standards, "*with the proposed mitigation in place, the proposed site traffic:*

1. *will not create unreasonable highway or public roadway congestion or unsafe conditions with respect to the use of the highway or public roads existing or proposed.*" – With the proposed mitigation in place, the proposed site traffic will not create unreasonable congestion or unsafe conditions with respect to the use of the highway or public roads. As has been stated previously, the proposed project and its off-site roadway mitigation will alleviate many pre-existing locations of congestion within the project's study area. Furthermore, where high accident locations have been identified, recommendations have been made to the City which will serve to reduce or eliminate the various causes of these conditions.
2. *will not create or aggravate any significant hazard to safety at or to and including intersections in any direction where traffic could be expected to be impacted.*" – As noted, many of the high crash locations within the study area have already been addressed by the City and State's roadway projects (including Allen's Corner and the work along Forest Avenue between Warren Avenue and Allen Avenue). The applicant has committed to building upon this prior work by widening and upgrading Forest Avenue from the railroad crossing to Read Street and along Allen Avenue from Forest Avenue to Woodlawn Avenue. These improvements will not only serve to address the operational issues of traffic flow through the study area, but will significantly improve the vehicular safety of drivers in and around the project's study area.

Specifically, as has been requested by the City and provided in many different forms, the vehicle queuing conditions – whether viewed in the average, 95th percentile, or maximum format – all indicate that the pre-build condition is worse today than the post-build condition will be with the off-site mitigation in place. In this light, the project will not be "creating or aggravating" any hazards to safety, but in fact, will be improving these current conditions by reducing the vehicle queues along many of the approaches. While there are still some vehicle queues that are reported to be extending beyond their storage lanes, they will remain essentially unchanged or improved in the post-build condition. As the City's standards state, this project will not create or aggravate any significant hazard to safety – it will either leave the vehicle queues unchanged or improve upon them. With this in mind, we believe that this



project meets the City's standard. In our professional opinion, the queue analysis results show that this project meets this City standard.

3. *will not cause traffic congestion on any street which reduces the level of service below LOS D.* – as has been stated throughout this process, there are no signalized intersections where the level of service will fall below the LOS D standard. In fact, there are many locations where the LOS is currently below LOS D standards which will be improved with the recommended mitigation in place. As for the unsignalized intersection locations, there are several locations where there is currently LOS F operations. With the additional traffic being generated by the project along with future growth unrelated to the project on the roadway network, these intersections will continue to operate at LOS F in the future. The applicant has been working with the City to identify solutions to all of these locations. Where practical, recommendations have been made to improve the LOS at many of these locations. Where impractical, the applicant has committed to assist with the large scale improvements at these locations on a fair-share basis. Ultimately, the impacts at each of these locations can and will be mitigated by the proponent's off-site roadway mitigation package and will be followed up with additional study as required by the conditions set forth in the City Council's rezoning of the parcel which will require the applicant to document the delays at the various unsignalized intersections and address them if they are worse than expected.

In addition to the City standards, Mr. Errico also requested that the VHB provided a summary of the Maine Department of Transportation standards and how this project is in concert with those requirements. This evaluation is included with this letter as an attachment in the following section.

Again, we believe that this provides all the necessary information requested by the City of Portland to determine the appropriateness of this development and how it meets or exceeds the City's and MDOT's standards. We look forward to the final review of this information.



Ms. Sarah Hopkins
Project No.: 07334.00
April 20, 2006
Page 9

Regards,

VANASSE HANGEN BRUSTLIN, INC.



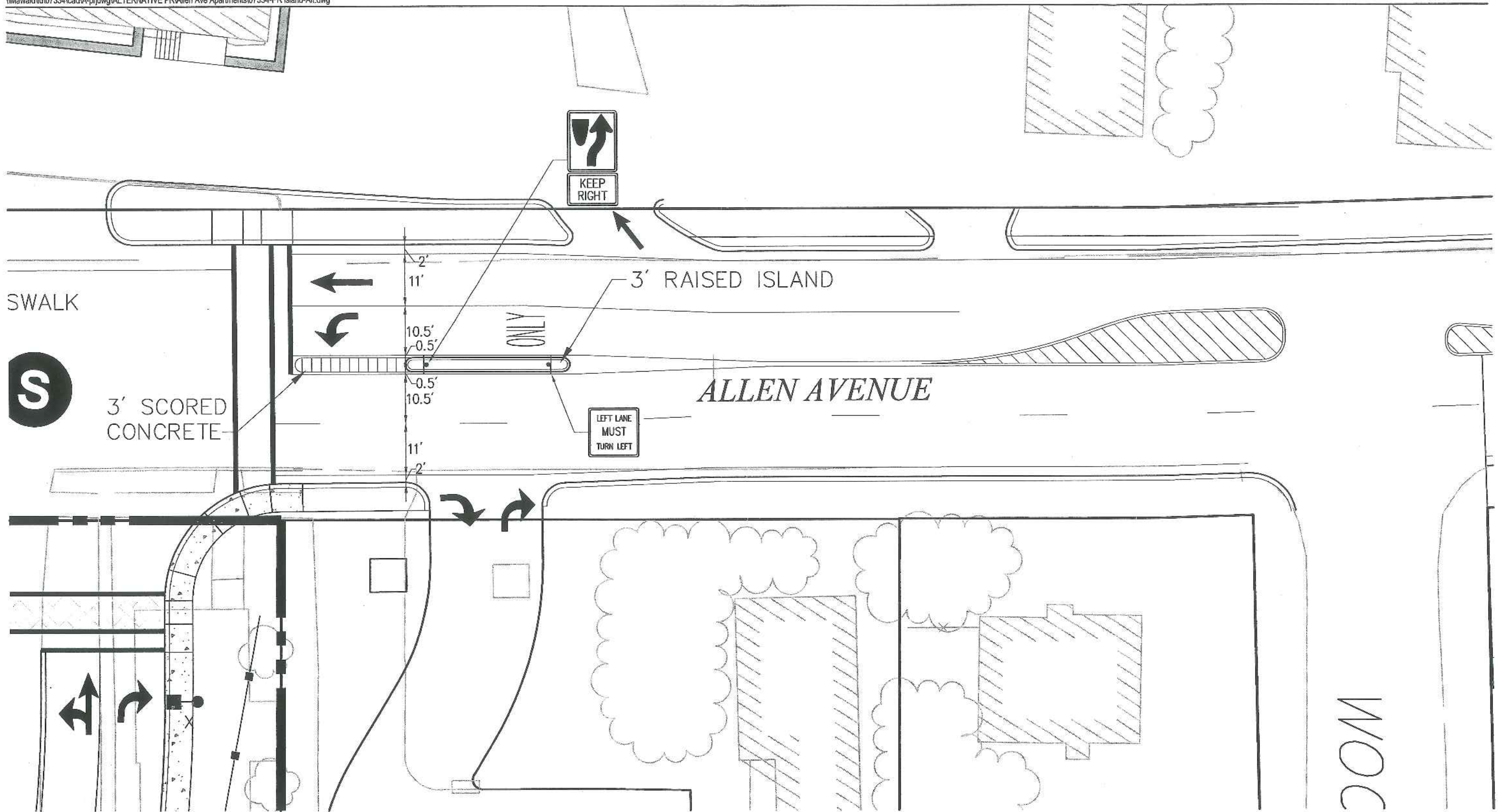
Robert L. Nagi, PE, PTOE
Principal - Transportation Systems



Attachments

- Site Driveway Area Modification Plans
- SimTraffic Queue Table
- Stop & Shop Empirical Parking Data
- Northgate Plaza Parking Data
- MDOT Traffic Movement Permit Standards

Site Driveway Area Modification Plans



S

3' SCORED CONCRETE

3' RAISED ISLAND

ALLEN AVENUE

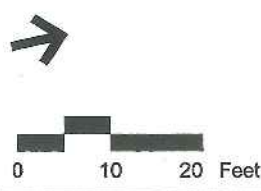
LEFT LANE MUST TURN LEFT

KEEP RIGHT

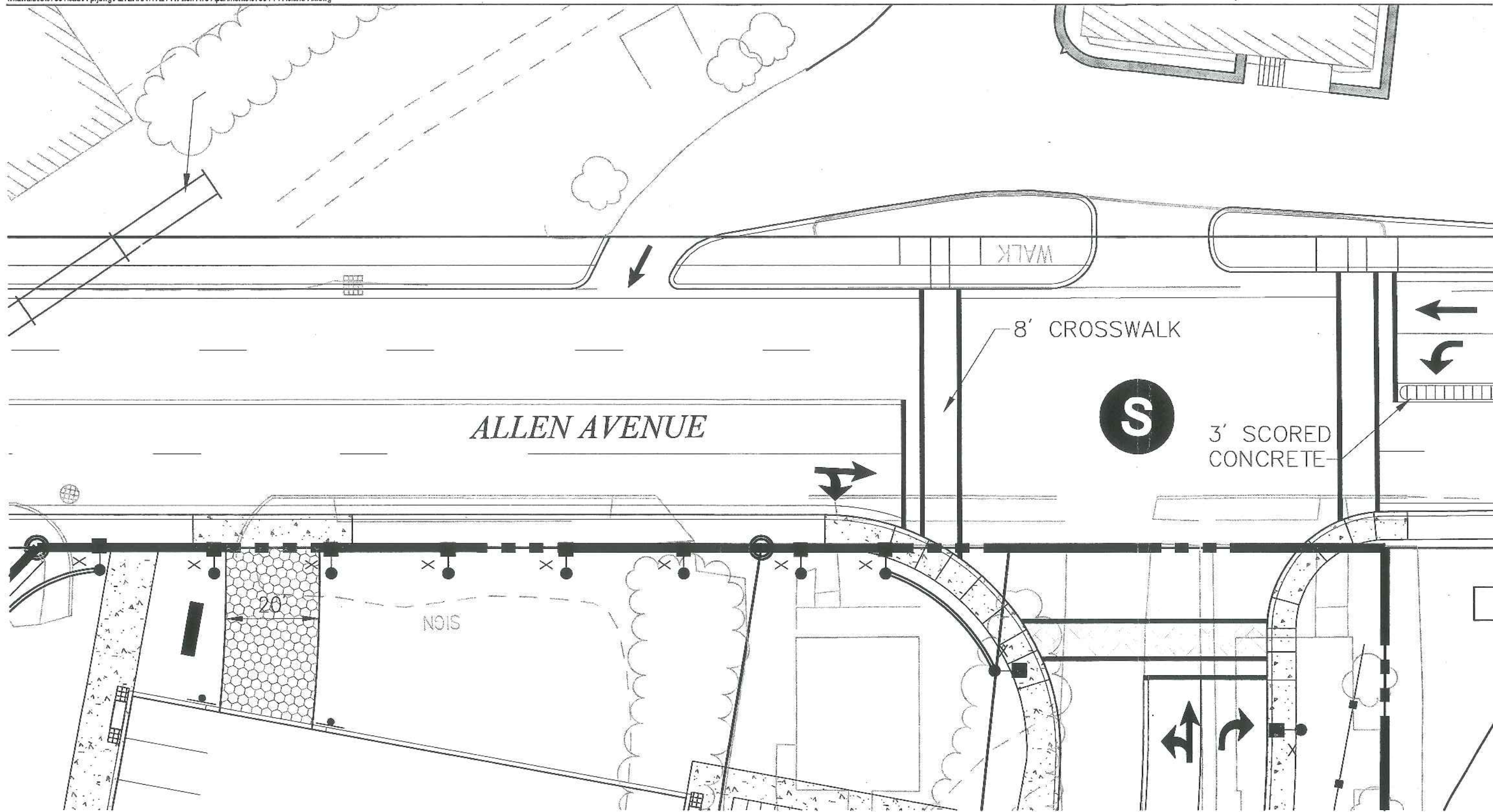
ONLY

WOC

Vanasse Hangen Brustlin, Inc.

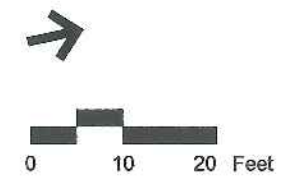


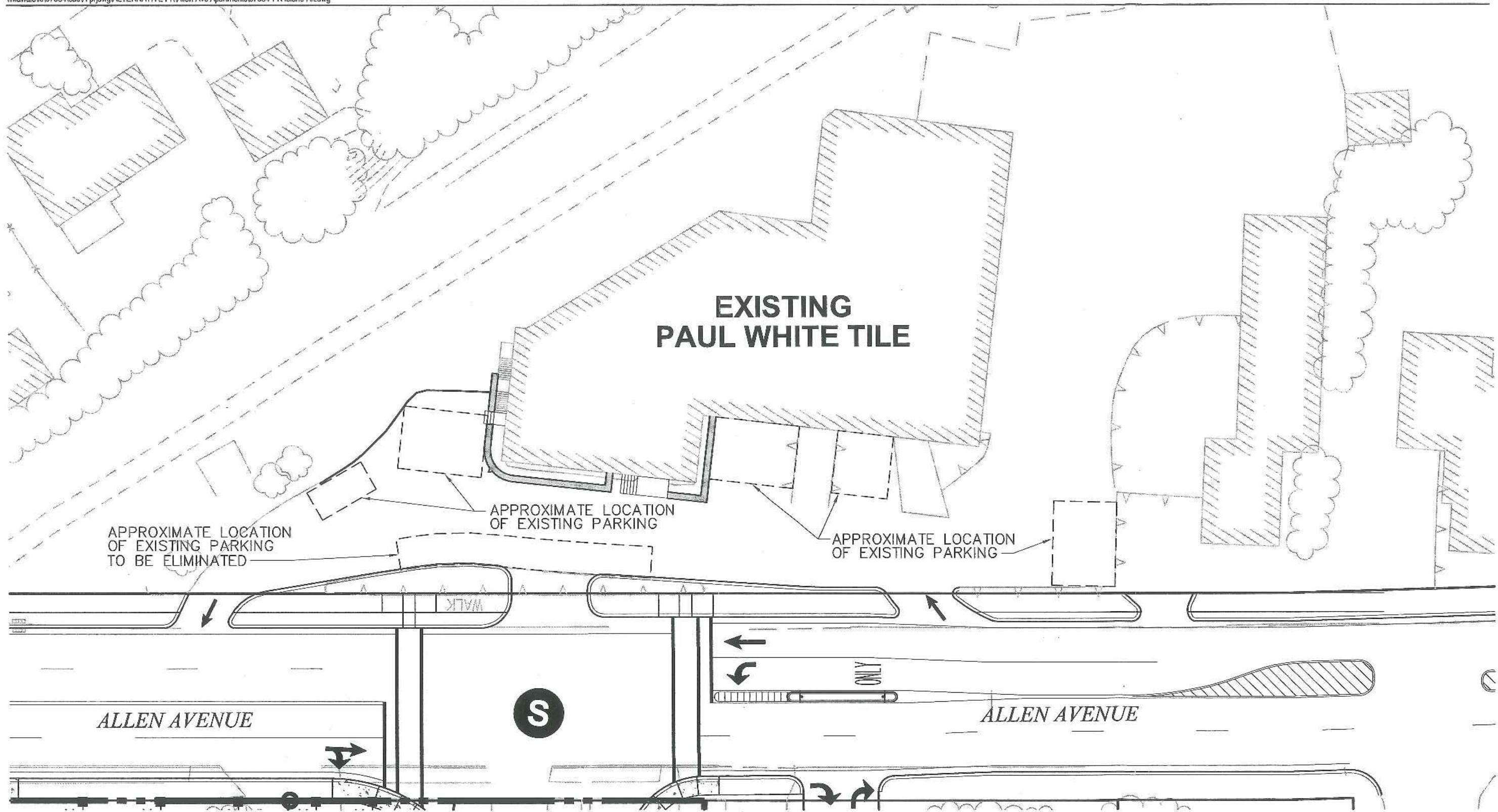
Raised Island Alternative
Allen Avenue Apartments
Morrill's Crossing
Portland, ME



Vanasse Hangen Brustlin, Inc.

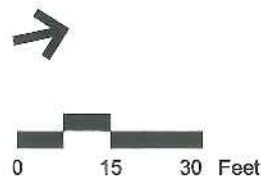
Crosswalk Alternative
Morrill's Crossing
Portland, ME





Vanasse Hangen Brustlin, Inc.

Paul White Tile Exhibit
Morrill's Crossing
Portland, ME



SimTraffic Queue Table

Evening Peak Hour SimTraffic Queue Results – Existing vs. Build Comparison

Location	Movement	2004 Existing Condition				2007 Build Condition with Mitigation			
		Storage ^a	Average	95 th %ile	Maximum	Storage	Average	95 th %ile	Maximum
Forest Avenue at Warren Avenue	EB L/T	-	334	650	515	-	232	530	512
	EB R	200	151	297	232	200	191	272	236
	WB L/T/R	-	15	60	58	-	11	35	47
	NB L	275	149	332	304	150	131	206	187
	NB T	645	221	640	562	645	99	309	443
	NB T/R	645	209	609	446	645	52	148	259
	SB L/T	-	451	959	763	-	501	895	840
	SB T/R	-	384	892	731	-	467	884	815
Forest Avenue at Allen Avenue	EB L	-	17	61	52	-	5	21	30
	EB T	-	25	97	67	-	9	37	61
	EB R	-	19	45	52	-	24	59	72
	WB L	535	505	719	593	535	328	579	530
	WB L/T	535	487	717	589	535	364	633	556
	WB R	160	86	233	196	160	167	251	204
	NB L	75	6	40	72	75	5	33	68
	NB T	340	323	453	437	340	362	496	472
	NB T	340	350	495	499	340	393	541	565
	NB R	80	73	151	110	85	107	130	124
	SB L	275	228	379	300	400	383	520	435
	SB T	645	463	893	684	645	506	882	694
SB T/R	645	402	895	667	645	468	872	709	
Forest Avenue at Stevens Avenue / Bishop Street	EB L/R	-	588	1,179	991	-	218	448	452
	NB T	-	325	379	361	-	323	361	357
	NB T	-	311	405	372	-	311	352	357
	SB T	340	318	513	431	340	226	454	461
	SB R	340	149	340	408	n/a			
	SB T/R	n/a				340	264	449	401
	NEB L	-	345	448	384	-	335	418	358
	NEB L/R	-	283	408	372	-	277	375	355
Allen Avenue at Plymouth Street/ Northfield Green Drive	EB L/T/R	-	32	125	98	-	20	46	58
	WB L/T/R	-	24	92	73	-	9	30	35
	NB L/T/R	-	78	233	315	-	190	431	448
	SB L/T/R	-	301	621	477	-	202	484	437
Allen Avenue at Washington Avenue	EB L	250	93	185	192	250	92	148	158
	EB L	250	132	268	255	250	133	250	285
	EB T/R	-	221	540	683	-	250	502	726
	WB L	100	76	156	128	100	94	152	129
	WB T/R	-	381	695	652	-	407	810	832
	NB L	340	181	363	321	340	174	316	330
	NB T	-	543	1,776	1,453	-	196	347	431
	NB T/R	-	517	1,694	1,317	-	192	334	435
	SB L	250	55	124	173	250	66	142	180
	SB T	-	146	286	290	-	135	221	255
	SB T	-	152	304	287	-	134	216	250
SB R	250	136	307	280	250	77	162	214	
Allen Avenue at proposed site drive	EB L/T/R	n/a				50	2	14	29
	WB L/T					-	229	383	474
	WB R					200	94	228	226
	NB L/T					535	259	366	402
	NB T/R					535	208	325	333
	SB L					250	126	244	228
SB T/R	-	214	321	283					

a lane or lane group storage capacity length, measured in feet
 EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; NEB = Northeastbound; L = Left; T = Through; R = Right
 n/a not applicable; movement does not exist under current condition

Stop & Shop Empirical Parking Data

**Stop & Shop
Summary of Parking Accumulation Studies**

Site	Size (square feet)	Parking Supply		Peak Parking Demand		Peak Parking Rate (Parking/ksf)		% Utilization		Date of Parking Observations	
		Friday	Saturday	Friday	Saturday	Friday	Saturday	Friday	Saturday	Weekday	Saturday
Beverly, MA (Enron St)	67,750	208	207	148	207	2.18	3.06	71%	100%	4/12/1996	4/13/1996
Beverly, MA (Enron St)	67,750	208	161	149	161	2.20	2.98	72%	77%	4/19/1996	4/20/1996
Beverly, MA (Enron St)	67,750	208	173	142	173	2.10	2.55	68%	83%	4/26/1996	4/27/1996
Cumberland, RI	106,540	915	285	237	285	2.22	2.68	26%	31%	2/6/1998	2/7/1998
Lynn, MA	81,684	436	236	200	236	2.45	2.89	46%	54%	12/12/1997	12/13/1997
Lynn, MA	81,684	436	243	175	243	2.14	2.97	40%	58%	2/24/2000	2/26/2000
Lynn, MA	81,684	436	264	149	264	1.82	3.23	34%	61%	2/26/2001	3/1/2001
Mansfield, MA	87,079	408	271	221	271	2.54	3.11	54%	86%	1/21/1998	1/24/1998
Medford, MA	80,182	369	286	231	286	3.84	4.75	63%	78%	12/12/1997	12/13/1997
Middletown, RI	80,230	462	150	117	150	1.46	1.87	25%	32%	3/24/2001	8/26/2000
N. Smithfield, RI	89,800	426	254	204	254	2.27	2.63	48%	60%	9/26/1997	9/27/1997
Quincy, MA	109,040	636	237	362	237	3.32	2.17	57%	37%	11/25/1997	11/29/1997
Revere, MA	132,000	754	290	243	290	1.84	2.20	32%	38%	12/5/1997	11/29/1997
Revere, MA	132,000	754	357	--	357	--	2.70	--	47%	--	12/11/2004
Vernon, CT	105,484	506	292	194	292	1.84	2.77	38%	58%	1/30/1998	1/31/1998
Watertown, MA (Pleasant St)	80,704	415	232	200	232	2.48	2.87	48%	56%	4/13/2000	4/15/2000
Woburn, MA	134,064	685	177	143	177	1.07	1.32	21%	26%		
Woburn, MA	122,348	614	339	--	339	--	2.77	--	55%	--	12/11/2004
Worcester, MA (Grafton St)	214,980	837	406	280	406	1.30	1.89	33%	49%	11/25/1997	11/29/1997
Worcester, MA (W. Boviston St)*	79,783	400	149	204	149	2.56	1.87	51%	37%	11/26/1997	11/29/1997
Averages:	99,127	506	250	200	250	2.20	2.64	46%	56%		

*Does not include Beny's and JT's Home Improvement

Northgate Plaza Parking Data



Transportation Data Corporation
P.O. Box 334 Wakefield, MA 01880
t. (781) 587-0086 f. (781) 587-0189

VHB #07334.00/J. Quitter
Northgate Shopping Center
Washington Avenue, Portland, ME

**Parking Lot Accumulation Study (Total occupied spaces by section)
Saturday, December 17, 2005 10:00 AM-5:30 PM**

<u>Time:</u>	<u>Section 1: Main Storefront (Shaw's, UPS, CVS, Imagine)</u>	<u>Section 2: Side/Corner-End (Shaw's, Osco, Banknorth)</u>	<u>Section 3: Narrow End (Hollywood Video)</u>	<u>Total (Northgate Shopping Center)</u>
10:00	275	92	1	368
10:30	289	110	2	401
11:00	314	108	3	425
11:30	295	102	1	398
12:00	243	88	3	334
12:30	260	80	4	344
13:00	222	65	1	288
13:30	221	71	4	296
14:00	223	77	5	305
14:30	217	62	5	284
15:00	211	71	2	284
15:30	208	65	2	275
16:00	171	62	1	234
16:30	146	60	2	208
17:00	144	53	1	198



Building Areas

Northgate Plaza
Portland, ME

LOT	BUILDING	AREA (SF)	ULI Land Use
375 C-1-15-17	Supermarket	63,155	Retail
	Retail	42,151	Retail
375 C-39	Office	10,038	Office
375 C-23	Office	5,152	Office

TOTAL	120,496
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ALL BUILDING AREAS TAKEN FROM PORTLAND ASSESSORS WEBSITE

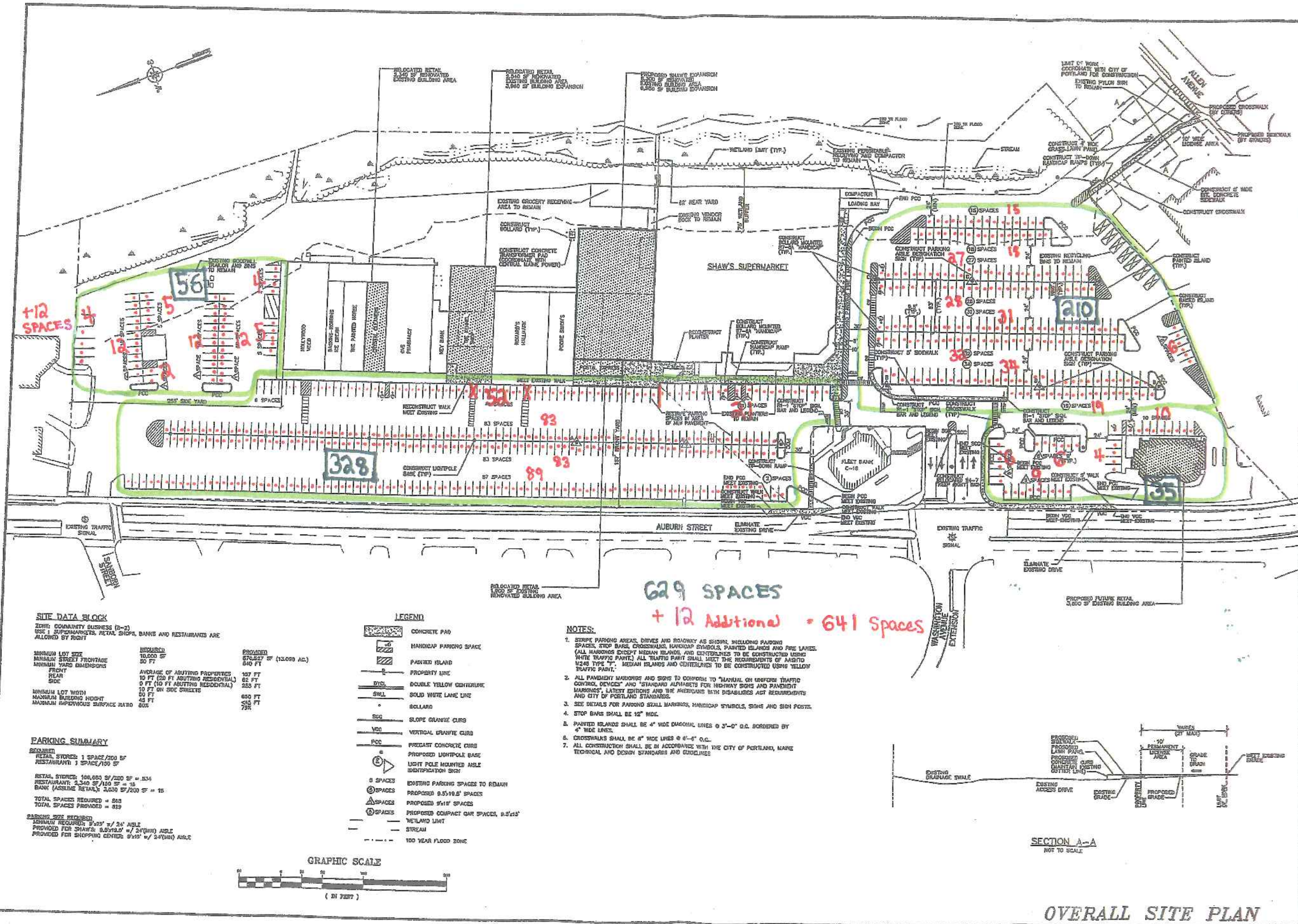
No.	Description	App'd	Date
1	REMOVED PER CITY REVIEW	DAB	5/25/00

DATE	SCALE	DESIGNED BY	DRAWN BY	APPROVED BY	PROJECT NO.	FILE NO.
MARCH 21, 2000	AS SHOWN	DAB	DEJ	GRM	1251	1251/00

Shaw's
NORTHGATE PLAZA
PORTLAND, MAINE



Appledore Engineering Inc.
600 State Street, Suite D
Portland, New Hampshire 04101
(603) 485-0811



SITE DATA BLOCK

ZONE: COMMUNITY BUSINESS (C-2)
USE: SUPERMARKETS, RETAIL SHOPS, BANKS AND RESTAURANTS ARE ALLOWED BY RIGHT

MINIMUM LOT SIZE	REQUIRED	PROVIDED
10,000 SF	10,000 SF	676,827 SF (13,089 AC)
MINIMUM STREET FRONTAGE	50 FT	640 FT
MINIMUM YARD DIMENSIONS		
FRONT	AVERAGE OF ADJUTING PROPERTIES	157 FT
REAR	10 FT (20 FT ADJUTING RESIDENTIAL)	62 FT
SIDE	0 FT (10 FT ADJUTING RESIDENTIAL)	253 FT
	10 FT ON SIDE STREETS	
MINIMUM LOT WIDTH	50 FT	650 FT
MAXIMUM BUILDING HEIGHT	45 FT	515 FT
MAXIMUM IMPERVIOUS SURFACE RATIO	50%	79%

PARKING SUMMARY

REQUIRED
RETAIL STORES: 1 SPACE/200 SF
RESTAURANT: 1 SPACE/100 SF

RETAIL STORES: 106,000 SF/200 SF = 534
RESTAURANT: 2,340 SF/100 SF = 24
BANK (MISSING RETAIL): 3,000 SF/200 SF = 15

TOTAL SPACES REQUIRED = 583
TOTAL SPACES PROVIDED = 641

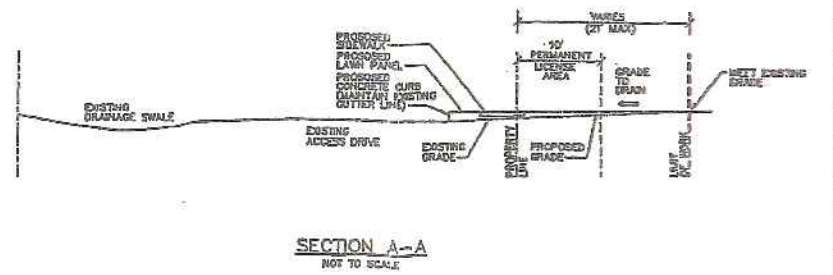
PARKING SIZE PROVIDED

MINIMUM REQUIRED: 9'x27' w/ 24" WALKWAY
PROVIDED FOR SHAW'S: 8.5'x19.5' w/ 24"(MIN) WALKWAY
PROVIDED FOR SHOPPING CENTER: 9'x19' w/ 24"(MIN) WALKWAY

LEGEND

	CONCRETE PAD
	HANDICAP PARKING SPACE
	PAINTED ISLAND
	PROPERTY LINE
	DOUBLE YELLOW CENTERLINE
	SOLID WHITE LANE LINE
	BOLLARD
	SLOPE GRANITE CURB
	VERTICAL GRANITE CURB
	PRECAST CONCRETE CURB
	PROPOSED LIGHTPOLE BASE
	LIGHT POLE MOUNTED AISLE IDENTIFICATION SIGN
	EXISTING PARKING SPACES TO REMAIN
	PROPOSED 9.5'x19.5' SPACES
	PROPOSED 9'x11' SPACES
	PROPOSED COMPACT CAR SPACES, 8.5'x11'
	WETLAND LIMIT
	STREAM
	100 YEAR FLOOD ZONE

- NOTES:**
- STRIPE PARKING AREAS, DRIVES AND ROADWAYS AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, CROSSWALKS, HANDICAP SPACES, PAINTED ISLANDS AND FIRE LANES (ALL HANDINGS EXCEPT MEDIUM ISLANDS, AND CENTERLINES TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT). ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". MEDIUM ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT.
 - ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", LATEST EDITIONS AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS AND CITY OF PORTLAND STANDARDS.
 - SEE DETAILS FOR PARKING STALL MARKINGS, HANDICAP SYMBOLS, SIGNS AND SIGN POSTS.
 - STOP BARS SHALL BE 12" WIDE.
 - PAINTED ISLANDS SHALL BE 4" WIDE DIAGONAL LINES @ 3"-0" O.C. BORDERED BY 4" WIDE LINES.
 - CROSSWALKS SHALL BE 8" WIDE LINES @ 6"-0" O.C.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND, MAINE TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.



OVERALL SITE PLAN

MDOT Traffic Movement Permit Standards

Maine Department of Transportation (MDOT) Traffic Movement Permit Standards:

1. **Design and operation.** In determining whether the developer has made adequate provision for traffic movement of all types into and out of the development area, and in the vicinity of the development area, the Department shall consider all relevant evidence to that effect, to ensure the safe and efficient flow of traffic. On-site design and operations are subject to review, to the extent necessary, to ensure that the development will not cause any delay, interference or cause safety problems with the operation of adjacent roadways, adjacent driveways, or pedestrian walkways. The development must be located and designed so that the roads and intersections in the vicinity of the proposed development will have the ability to safely and efficiently handle the traffic increase attributable to the development at the time the development becomes fully operational.

Applicant's Position: The traffic studies have shown repeatedly that the surrounding street environment will be able to safely handle the traffic increases attributable to the development at the time it becomes fully operational from a level-of-service perspective as well as a safety perspective with significant off-site improvements being made where the project impacts traffic operations.

2. **Study horizon.** The period for which the traffic impacts of a proposed development are to be assessed must be the projected year of build-out and full occupancy. If the proposed development is a multi-phase project with a projected build-out date of more than five (5) years after the year of the study, MDOT may require a study of both the year of the opening of the first major phase and the year of build-out and full occupancy.

Applicant's Position: The project's study horizon year was set at 2007 and agreed to as part of the Scoping Meeting held between the City and applicant on September 15, 2005.

3. **Unreasonable congestion.** Level of Service D, as determined from a capacity analysis, is considered the minimum level of service needed to provide safe and convenient traffic movement. Where a road, intersection, or any approach lane to the specific intersection or intersections being evaluated in the vicinity of the proposed development is determined to operate at LOS E or LOS F in the horizon year, the proposed development is considered to result in unreasonable congestion, unless: Improvements will be

made to raise the level of service of the road or intersection to D or above, except as otherwise provided in one or more of the paragraphs below.

- a. The level of service of the road or intersection will be raised to D or above through transportation demand management techniques.
- b. The Department finds that it is not reasonably possible to raise the level of service of the road or intersection to D or above by road or intersection improvements or by transportation demand management techniques, but improvements will be made or transportation demand management techniques will be used such that the proposed development will not increase delay at a signalized or unsignalized intersection, or otherwise worsen the operational condition of the road or intersection in the horizon year.
- c. The Department finds that improvements cannot reasonably be made because the road or intersection is located in a business district or because implementation of the improvements will adversely affect a historic site as defined in 06-096 CMR 375(11) (Preservation of Historic Sites) and transportation demand management techniques will be implemented to the fullest extent practical.
- d. The development is located in a designated growth area, or in the compact area of an urban compact municipality in which case the Applicant shall be entitled to an exception from the level of service mitigation requirements set forth under the General Standards in this Section. This exception applies even if part or all of the traffic impacts of the proposed development will occur outside the boundaries of the designated growth area. This exception does not exempt the development from meeting safety standards, and greater mitigation measures may be required than otherwise provided in the subsection if needed to address safety issues. The required improvements are limited only to those necessary to mitigate the impacts of the project (which means the Applicant is only responsible for returning all approaches to an intersection or piece of a roadway to the current level of service).
- e. In the case of unsignalized intersections, if traffic with the development in place would not meet the warrant criteria for signalization or auxiliary turning lanes, as set forth in the edition of Federal Highway Administration's "Manual on Uniform Traffic Control Devices" shown on MDOT's Fact Sheets and set forth in HRR #211 - "Volume Warrants for Left-Turn Lanes at Unsignalized Intersections", (Right-Turn lanes are covered in the edition of the Highway Design Guide referenced on the MDOT Fact Sheet) then the Department may reduce the mitigation requirement for those measures so long as the resulting traffic conditions provide for safe traffic movement.
- f. The development is located in an area designated as a growth area in a local growth management plan that has been found by the State to be consistent with the growth management program in MRSA Title 30 - A, Chapter 187, or if a project is located within the compact area of an urban compact municipality or if a project is on a former military base pursuant to MRSA Title 38, Section 488, Subsection 15, and

when the project consists of conversion of an existing facility and the project does not have an entrance or exit on a federally classified arterial highway, the required improvement are limited only to the entrances and exits of the project.

Applicants Position: All movements at all signalized intersections operate at level of service D or better under the post-build conditions with the project's mitigation in place. At all unsignalized intersections where the level-of-service is at E or F, the applicant has provided suggested improvements aimed at alleviating the existing deficiencies and improving the intersection operations from both a delay and safety perspective – including the provision of a detailed transportation demand management program for the project site.

Furthermore, based on bullet 'd' of the MDOT conditions, because this project lies entirely within the Urban Compact Limits of the City of Portland, the applicant is exempt from this standard with respect to the MDOT Traffic Movement Permit.

4. **Unsafe conditions.** Road segments, intersections, or development entrances and exits may be deemed as unsafe when traffic encounters conditions such as, inadequate turning radii, poor geometrics, limited sight distance or high accident locations. High accident locations are road segments or intersections where eight (8) or more accidents have occurred over the most recent three- (3) year period, and the "critical lane factor" is greater than one (1.0). The Applicant shall submit a proposal to improve or eliminate the unsafe conditions if they exist or if they are determined to be created or exacerbated by the proposed development.

Applicants Position: The applicant has provided to the Planning Board proposals to improve and/or eliminate the unsafe conditions at all high crash locations identified in the study area.

5. **Vicinity for over 200 passenger car equivalents developments.** The vicinity of the proposed development, for projects generating more than 200 PCEs, is the area including and bordered by:
 - a. The development entrance(s) or exit(s);
 - b. The first major intersection in either direction from the development entrance(s) and exit(s) unless waved by the Engineer of Traffic or his/her designee at the scoping meeting; and
 - c. 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.

Generally, the vicinity as defined by the above criteria would be limited to a radius of two miles from the site unless the Department, at the scoping meeting, determines that the proposed development will impair the safe and efficient flow of traffic beyond a two-mile radius due to the development's scale, location, or nature.

Applicants Position: The applicant and City agreed to a pre-determined study area as part of the Project Scoping meeting held in September 2005. The study area referenced in the traffic study submitted to the planning board includes all agreed upon intersections.

6. **Off-site traffic study requirements.** A study of roads and intersections in the vicinity of the proposed development must be conducted and submitted in report form if the development is expected to generate 200 or more PCEs during its peak hour of traffic generation or if determined necessary under Section 5(A)(2). In addition, the Department may require, that a traffic study be conducted because of traffic safety or capacity deficiencies in the vicinity of the proposed development, such as the following:
 - a. **Current traffic problems.** Current traffic problems have been identified such as a high-accident location, inadequate intersection, an intersection in need of a traffic signal, or inadequate storage lane capacity for turning vehicles;
 - b. **Unsatisfactory level of service.** The current or projected level of service of the roadway system adjacent to the development is unsatisfactory; or
 - c. **Other problems identified.** Other specific problems or deficiencies have been clearly identified and documented by the Department or the municipality and may be affected by the proposed development or affect the ability of the development to be satisfactorily accommodated.

Applicants Position: The applicant submitted a traffic study inclusive of all identified issues noted by the MDOT requirements. When requested, the applicant has continued to provide additional information to the City about other topics not initially covered by the traffic study, including, but not limited to, information on train crossings, pedestrian and bicycle amenities, access management topics, and parking summaries.

7. **Capacity analysis.** A capacity analysis must be performed to determine the level of service for each road and intersection in the vicinity of the proposed development. Capacity calculations must be made for the estimated 30th highest hour of traffic during the build-out year, or any other appropriate design hour approved by the Department. Where it is shown that the capacity analysis methodology will not accurately measure operating conditions at a road or intersection, the Department may require an applicant to analyze operating conditions of an intersection or road using another methodology acceptable to the Department. In the case where a particular intersection being evaluated is part of an interconnected signal system the Applicant may, at the discretion of the Department, be required to include the analysis of the interconnected system in the evaluation.

The Department recognizes that the level of service of some roads and intersections cannot be accurately determined using only the standard capacity analysis method. In such cases, the appropriate analytical technique will be determined in consultation with the Department.

Applicants Position: The applicant has provided standard Highway Capacity Manual-based intersection analysis to the City and has reviewed and updated it as requested. In addition, the City has requested that the applicant also submit traffic capacity assessments based on other analytical techniques (SimTraffic). This information has been also submitted to the City for review and concurrence. In each case, the information submitted to the City highlights that the post-build traffic conditions in the Morrill's Crossing area will be better than or similar to the current traffic operating conditions.

8. **Recommendations.** If the study analyses indicate that unsatisfactory levels of services or unsafe conditions exist or will occur at intersections or on roads in the vicinity of the proposed development, a description of the measures proposed to remedy the deficiencies, including the following:
 - a. **Recommended improvements.** A description and diagram of the location, nature, and extent of recommended improvements to roads and intersection in the vicinity of the proposed development. Of the recommended improvements, identify those proposed for implementation.
 - b. **Capacity analysis after improvement.** A description of the anticipated results of making these improvements.
 - c. **Section 3d exception.** If the proposed development is entitled to an exception under Section 3d, the descriptions provided pursuant to 8a and 8b may be limited to the improvements necessary to provide safe conditions and the level of service required under Section 3d.
 - d. **Section 3e exception.** If the proposed development is entitled to an exception under Section 3e, the descriptions provided pursuant to 8a and 8b may be limited to the improvements necessary to provide safe conditions and the level of service required under Section 3e.
 - e. **Section 3f exception.** If the proposed development is entitled to an exception under Section 3f, the descriptions provided pursuant to 8a and 8b may be limited to the improvements necessary to provide safe conditions and the level of service required under Section 3f.

Applicants Position: The applicant has provided all necessary detailed roadway improvement plans which have been reviewed by both the City and MDOT. These include designs along Forest Avenue and at all unsignalized intersections.

From: Thomas Errico [mailto:terrico@wilbursmith.com]
Sent: Friday, April 28, 2006 2:12 PM
To: Nagi, Robert
Cc: 'Sarah Hopkins '; 'James Carmody'
Subject: Morrill's Crossing -- Traffic Review

Rob—

I am in the middle of reviewing the data submitted in your April 20, 2006 package. A few items that are still outstanding that I would like to resolve before the workshop.

- Can you provide me with a simulation of the Morrill's Corner intersection with no adjustment to the Peak Hour Factors. Please provide in tabular form Level of Service, Delay, and Queuing information (format similar to that provided recently).
- During our meeting at my office in March, I had a few comments about the simulation that I would like you to formally respond to. I believe we are all set on these issues. If not please make the appropriate adjustments.
 - The lanes approaching and departing the Forest/Warren intersection from Forest Avenue to the west should reflect current lane configurations.
 - The right-turn lane on Allen Avenue at Forest seems longer than what exists in the field.
 - The phase for the left-turn entry into McDonald's from outbound Forest should be protected only.
 - The right-turn lane on outbound Forest onto Allen should match that on the improvement plan.
 - The Steven Avenue approach should reflect conditions that existing today (the length of the two approach lanes).
 - Allen's Corner should be modeled to reflect existing lane-drop conditions on Washington Avenue or will lane additions begin when approaching the intersection.
- Please provide a formal response on allowing right-turn-on-red movements from outbound Forest Avenue onto Allen Avenue. It is my understanding that the analyses allow for right-turn-on-red movements. Please provide documentation or a statement of opinion that this will operate safely. If not, please revise the analyses such that right-turn movements are prohibited.
- Also, as requested at our meeting a few weeks ago, I would like to see your response to CME comments. It would be helpful if I could see something before the upcoming workshop.

If you have any questions, please feel free to give me a call. I also will prepare a formal response to your comments dated April 20th in the next few days.

Enjoy the weekend.

Thomas A. Errico, P.E.
Senior Transportation Engineer
Wilbur Smith Associates

59 Middle Street
Portland, Maine 04101
(207) 871-1785 Phone
(207) 871-5825 Fax

From: Thomas Errico [mailto:terrigo@wilbursmith.com]
Sent: Friday, April 28, 2006 3:03 PM
To: Nagi, Robert
Cc: 'Sarah Hopkins '; 'James Carmody'
Subject: FW: Morrill's Crossing -- Traffic Review

Rob—

Can you also please summarize delay data from SimTraffic for the Morrill's Corner intersections for Existing and Build with Mitigation scenario's. I don't believe you have provided that information.

Thanks

Thomas A. Errico, P.E.
Senior Transportation Engineer
Wilbur Smith Associates
59 Middle Street
Portland, Maine 04101
(207) 871-1785 Phone
(207) 871-5825 Fax

From: Thomas Errico [mailto:terrigo@wilbursmith.com]
Sent: Friday, April 28, 2006 1:12 PM
To: 'Nagi, Robert'
Cc: 'Sarah Hopkins '; 'James Carmody'
Subject: Morrill's Crossing -- Traffic Review

Rob—

I am in the middle of reviewing the data submitted in your April 20, 2006 package. A few items that are still outstanding that I would like to resolve before the workshop.

- Can you provide me with a simulation of the Morrill's Corner intersection with no adjustment to the Peak Hour Factors. Please provide in tabular form Level of Service, Delay, and Queuing information (format similar to that provided recently).
- During our meeting at my office in March, I had a few comments about the simulation that I would like you to formally respond to. I believe we are all set on these issues. If not please make the appropriate adjustments.
 - The lanes approaching and departing the Forest/Warren intersection from Forest Avenue to the west should reflect current lane configurations.
 - The right-turn lane on Allen Avenue at Forest seems longer than what exists in the field.
 - The phase for the left-turn entry into McDonald's from outbound Forest should be protected only.
 - The right-turn lane on outbound Forest onto Allen should match that on the improvement plan.

- The Steven Avenue approach should reflect conditions that existing today (the length of the two approach lanes).
- Allen's Corner should be modeled to reflect existing lane-drop conditions on Washington Avenue or will lane additions begin when approaching the intersection.
- Please provide a formal response on allowing right-turn-on-red movements from outbound Forest Avenue onto Allen Avenue. It is my understanding that the analyses allow for right-turn-on-red movements. Please provide documentation or a statement of opinion that this will operate safely. If not, please revise the analyses such that right-turn movements are prohibited.
- Also, as requested at our meeting a few weeks ago, I would like to see your response to CME comments. It would be helpful if I could see something before the upcoming workshop.

If you have any questions, please feel free to give me a call. I also will prepare a formal response to your comments dated April 20th in the next few days.

Enjoy the weekend.

Thomas A. Errico, P.E.
Senior Transportation Engineer
Wilbur Smith Associates
59 Middle Street
Portland, Maine 04101
(207) 871-1785 Phone
(207) 871-5825 Fax



Vanasse Hangen Brustlin, Inc.

May 9, 2006

Ref: 07334.00

Ms. Sarah Hopkins
Development Review Services Manager
Department of Planning and Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Confirmation Response
Morrill's Crossing
Portland, Maine

Dear Sarah,

In response to an e-mail from Mr. Tom Errico from Wilbur Smith Associates dated Friday April 27, 2006 to Robert Nagi, Mr. Errico requested confirmation/clarification on several aspects of our April 20, 2006 submission. With this in mind, we offer the following (Mr. Errico's comments are listed in italics and the applicant's response follows):

- *Comment: Can you provide me with a simulation of the Morrill's Corner intersection with no adjustment to the Peak Hour Factors. Please provide in tabular form Level of Service, Delay, and Queuing information (format similar to that provided recently).*

Applicant Response: In the traffic submission provided to the City on April 20, 2006 VHB provided a SimTraffic simulation and associated analysis with no adjustments to the Peak Hour Factors made. As is suggested by the SimTraffic software, if the analysis period were to be for a 15-minute period, the Peak hour factor would have been applied. Considering that this was a 60 minute analysis period – per Mr. Errico's request – the peak hour factors were not applied to the analysis. Therefore, the information provided in that April 20, 2006 submission represents the information being requested above.

In order to follow-up with the second request for Level of Service and Delay calculation similar to those provided previously, VHB has attached a summary table to this letter of the delay calculations resulting from the simulation information provided to the City. As in prior submissions, VHB has provided an analysis of the Existing conditions and the Build with Mitigation conditions for comparative purposes.

As the table shows, the calculated delays at all signalized intersections under the Build with Mitigation scenario is equal to or, in most cases, much improved over the Existing conditions.

- *Comment: During our meeting at my office in March, I had a few comments about the simulation that I would like you to formally respond to. I believe we are all set on these issues. If not please make the appropriate adjustments.*
 - *The lanes approaching and departing the Forest/Warren intersection from Forest Avenue to the west should reflect current lane configurations.*
 - *The right-turn lane on Allen Avenue at Forest seems longer than what exists in the field.*
 - *The phase for the left-turn entry into McDonald's from outbound Forest should be protected only.*
 - *The right-turn lane on outbound Forest onto Allen should match that on the improvement plan.*
 - *The Steven Avenue approach should reflect conditions that existing today (the length of the two approach lanes).*
 - *Allen's Corner should be modeled to reflect existing lane-drop conditions on Washington Avenue or will lane additions begin when approaching the intersection.*

Applicant Response: With the exception of the last comment relating to Allen's Corner, all these comments were addressed and incorporated into the SimTraffic Simulation submitted to the City on March 31, 2006.

VHB has considered the modification of Allen's Corner as suggested and found that no significant additional delays result from this minor modification.

- *Comment: Please provide a formal response on allowing right-turn-on-red movements from outbound Forest Avenue onto Allen Avenue. It is my understanding that the analyses allow for right-turn-on-red movements. Please provide documentation or a statement of opinion that this will operate safely. If not, please revise the analyses such that right-turn movements are prohibited.*

Applicant Response: VHB has reviewed the issue of permitting right turns on red from outbound Forest Avenue onto Allen Avenue. Currently, there is no right-turn-on-red permitted at this location. In reviewing the Manual on Uniform Traffic Control Devices (MUTCD), guidance is provided to restrict right-turns on red under the following conditions:

- If there is inadequate sight distance to vehicles approaching from the left.
 - VHB Opinion: In this case, there will be adequate sight distance provided for all movements on this specific intersection approach.
- If geometrics or operational characteristics of the intersection might result in unexpected conflicts.
 - VHB Opinion: In this case, it appears that the existing layout would provide for the potential for some unexpected conflicts to occur as left-turning drivers from inbound Forest Avenue would be merging into one receiving lane and conflicting with right-turning vehicles from outbound Forest Avenue. This very well may be why the right-turn-on-red is currently restricted. However,



with the revised layout of Allen Avenue proposing two receiving lanes, there will be minimal opportunities for vehicle conflict between these two movements as they will be entering their own travel lanes.

- If there is an exclusive pedestrian phase at the signal.
 - VHB Opinion: The pedestrian phases at this intersection are proposed to be concurrent pedestrian phasing on all approaches. When developing the final engineering design of the corridor, VHB will suggest that additional signage be considered at this intersection stating that, "turning traffic must yield to pedestrians" to supplement the normal signage at this location.
- If there is an unacceptable number of pedestrian conflicts with right-turn-on-red maneuvers, especially involving children, elderly, and/or persons with disabilities.
 - VHB Opinion: VHB has noted that while there is some pedestrian activity in the Morrill's Corner area, there has not been a significant number of pedestrians observed utilizing the corridor which would suggest eliminating the right-turn-on-red designation.
- If there are more than three right-turn-on-red accidents reported in a 12-month period on the particular approach.
 - VHB Opinion: In reviewing the most recent 12 months of accident information provided by the State of Maine, there have been no reported pedestrian-vehicle collisions on this particular approach.

Ultimately, it is VHB's professional opinion that permitting right-turn-on-red operation on this approach can be safely accommodated by the proposed design.

- *Comment: Also, as requested at our meeting a few weeks ago, I would like to see your response to CME comments. It would be helpful if I could see something before the upcoming workshop.*

Applicant Response: The applicant will be providing a separate response to the March 7, 2006 CME comments under separate cover.



Ms. Sarah Hopkins
Project Number: 07334.00
May 9, 2006
Page 4 of 7

I trust that this information is sufficient to clarify those outstanding questions.

Best Regards,

VANASSE HANGEN BRUSTLIN, INC.



Robert L. Nagi, PE, PTOE
Principal - Transportation Systems

Cc: Tom Errico, Wilbur Smith Associates.
Katherine Early, City of Portland



Evening Peak Hour SimTraffic Delay Results¹
Existing vs. Build with Mitigation Comparison

Location	Movement	2004 Existing	2007 Build Condition
		Condition Delay ^a	with Mitigation Delay
Newton Street and School Drive at Forest Avenue (Unsignalized)	EB L	32	37
	EB T	23	28
	EB R	13	8
	WB L	47	48
	WB R	13	16
	NB L	16	13
	SB L	12	11
	All	7	7
Forest Avenue at Warren Avenue (Signalized)	EB L	200	71
	EB T	31	29
	EB R	67	23
	WB L	136	103
	WB T	152	41
	WB R	576	12
	NB L	56	27
	NB T	72	8
	NB R	7	6
	SB L	151	172
	SB T	112	130
	SB R	71	95
	All	86	58
Forest Avenue & McDonalds Driveway at Allen Avenue (Signalized)	EB L	309	69
	EB T	250	57
	EB R	108	31
	WB L	283	90
	WB T	188	43
	WB R	147	29
	NB L	87	59
	NB T	67	42
	NB R	27	30
	SB L	72	98
	SB T	49	23
	SB R	17	16
	All	83	48
Forest Avenue at Stevens Avenue / Bishop Street (Signalized)	EB L	1637	324
	EB R	1649	351
	NB T	64	59
	SB T	33	16
	SB R	13	20
	SB T/R	10	17
	NEB L	312	218
	All	117	67

^a average delay per vehicle in seconds
 EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; NEB = Northeastbound
 L = Left; T = Through; R = Right
 n/a not applicable; movement does not exist under current condition

¹ The delays provided as a result of the SimTraffic simulation do not necessarily correspond with the standard definition of Level of Service as defined by the Highway Capacity Manual. For this reason, SimTraffic does not output LOS calculations from its model. Standard HCM analysis is only provided via the Synchro output. However, the delay calculations do provide a relative comparison between the Existing and Build with Mitigation scenarios.

**Evening Peak Hour SimTraffic Delay Results
 Existing vs. Build with Mitigation Comparison (continued)**

Location	Movement	2004 Existing Condition	2007 Build Condition with Mitigation
		Delay ^a	Delay
Morrill Street at Forest Avenue (Unsignalized)	WB L	856	n/a
	WB R	537	502
	SB L	59	39
	All	128	160
Forest Avenue at Good Will Driveway (Unsignalized)	EB L	n/a	n/a
	EB T	32	367
	EB R	7	103
	WB L	276	n/a
	WB R	318	n/a
	NB L	14	27
	SB L	16	54
	All	59	19
Bell Street at Forest Avenue (Unsignalized)	WB L	357	79
	WB R	257	262
	SB L	9	17
	All	180	34
Woodlawn Avenue at Allen Avenue (Unsignalized)	WB L	208	521
	WB R	182	232
	SB L	107	35
	All	64	17
Allen Avenue at Plymouth Street/ Northfield Green Drive (Unsignalized in Existing) (Signalized in Build)	EB L	376	17
	EB R	228	12
	WB L	243	15
	WB R	197	6
	NB L	14	19
	SB L	132	53
	All	59	16

^a average delay per vehicle in seconds
 EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; NEB = Northeastbound
 L = Left; T = Through; R = Right
 n/a not applicable; movement does not exist under current condition

Evening Peak Hour SimTraffic Delay Results
Existing vs. Build with Mitigation Comparison (continued)

		2004 Existing Condition	2007 Build Condition with Mitigation
Location	Movement	Delay ^a	Delay
Allen Avenue at Washington Avenue (Signalized)	EB L	54	40
	EB T	38	36
	EB R	31	32
	WB L	356	108
	WB T	322	87
	WB R	283	77
	NB L	337	83
	NB T	132	38
	NB R	128	31
	SB L	234	63
	SB T	241	38
SB R	287	19	
All		184	47
Warren Avenue at Hicks Street (Unsignalized)	EB L	416	10
	WB L	n/a (does not exist)	5
	NB L	289	31
	SB L	514	22
All	250	6	
Allen Avenue at proposed site drive (Unsignalized in Existing) (Signalized in Build)	EB L	n/a (does not exist)	16
	EB R	n/a (does not exist)	10
	WB L	981	41
	WB R	577	14
	NB L	n/a (does not exist)	48
	NB T	n/a (no flow)	31
	NB R	n/a (no flow)	17
	SB L	65	31
	SB T	n/a (no flow)	19
	SB R	n/a (no flow)	7
All	48	26	

^a average delay per vehicle in seconds
 EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; NEB = Northeastbound
 L = Left; T = Through; R = Right
 n/a not applicable; movement does not exist under current condition



May 22, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Ms. Sarah Hopkins
Development Review Services Manager
Department of Planning and Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: Morrills Crossing Traffic Simulation
Portland, Maine

Dear Sarah:

At the request of Mr. Thomas Errico, acting on behalf of the City of Portland, we are pleased to provide you a copy of a CD with the project's traffic files and simulations using both the Synchro and SimTraffic simulation software. From what I understand, the files on these CDs can only be opened if you have a valid version of SimTraffic or the Synchro traffic analysis software – which I believe Mr. Errico has a copy of. For this reason, I have also forwarded a copy of these CDs directly to Mr. Errico as well for his information.

The information contained on these CDs is the most recent simulation information and is the basis for our recent traffic submissions with respect to vehicle delay, queuing, and traffic analysis.

Please feel free to contact me if you have any questions on the enclosed.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.

A handwritten signature in black ink, appearing to read "Robert L. Nagi".

Robert L. Nagi, PE, PTOE
Principal - Transportation Systems

Enclosures

Cc: Thomas Errico, Wilbur Smith Associates – with Attachments



June 12, 2006

Vanasse Hangen Brustlin, Inc.

Ref: 07334.00

Sarah Hopkins
Development Review Services Manager
Department of Planning & Development
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Morrill's Crossing – Building Elevations

Dear Sarah:

The revised exterior elevations for the retail buildings, mixed-use building, and town houses prepared by Port City Architects, were submitted to you the week of May 15th, 2006. The plans had been resubmitted showing building heights for Marge Schmuckal's zoning review.

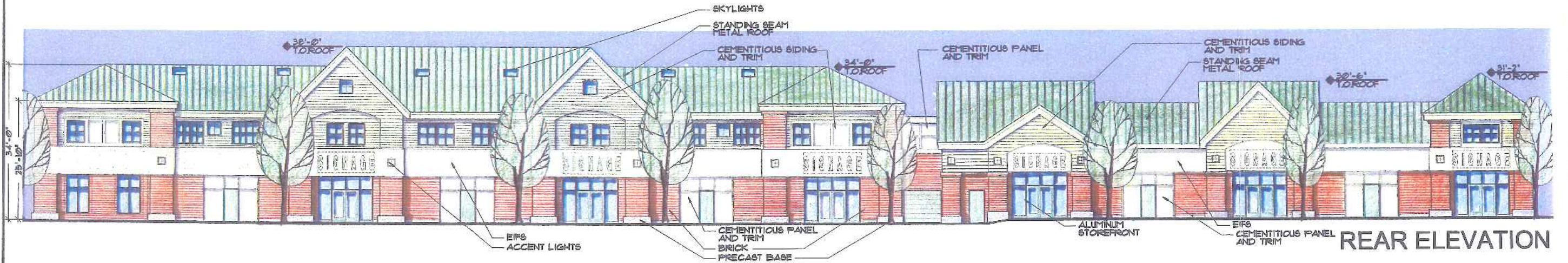
Please give me a call if you have any questions or need additional information.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.



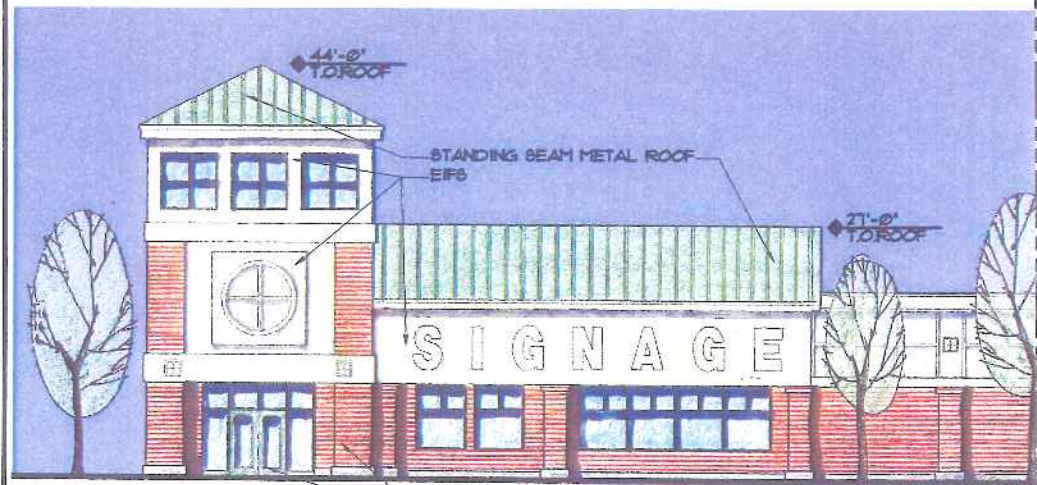
John Hession
Senior Project Manager



MORRILL'S CROSSING



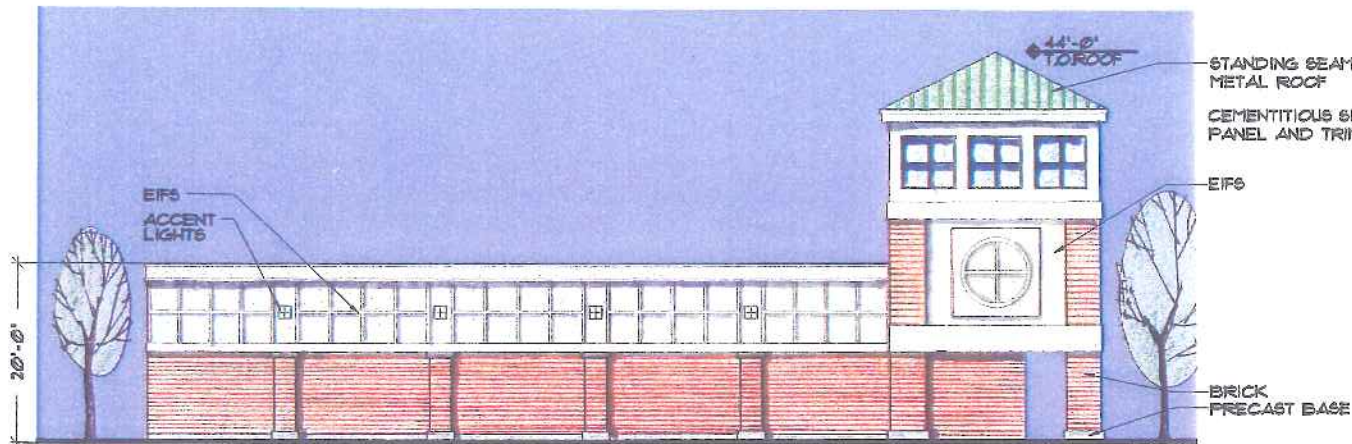
Retail A+B



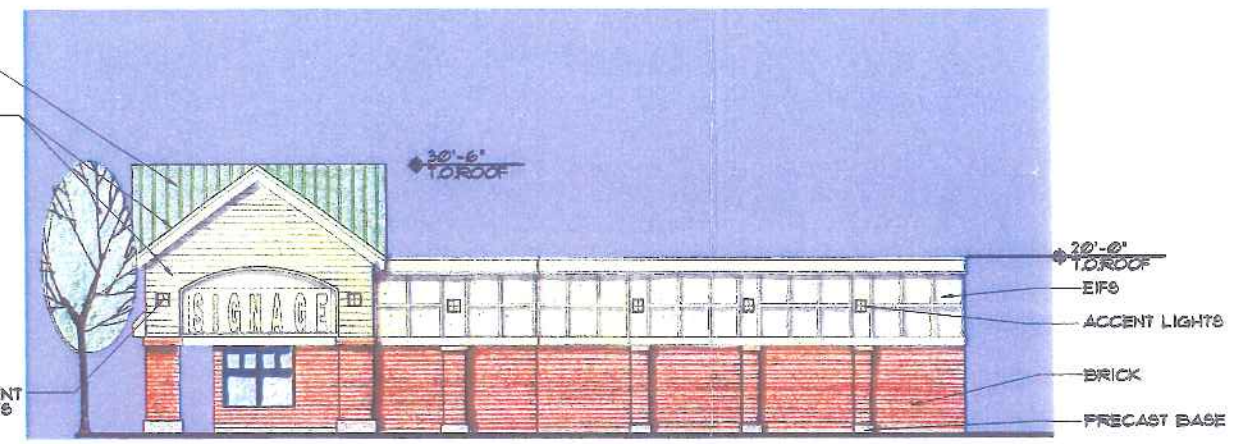
FRONT ELEVATION



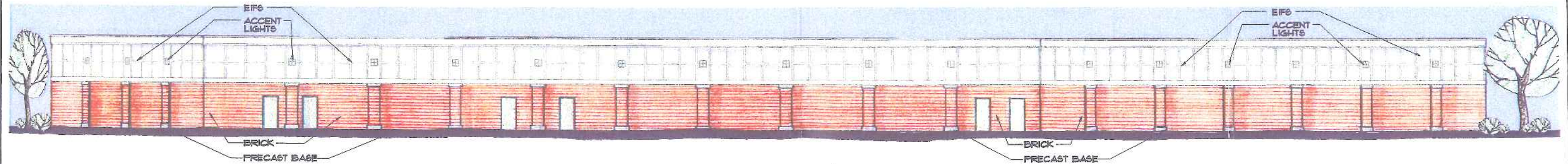
FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



REAR ELEVATION

MORRILL'S CROSSING



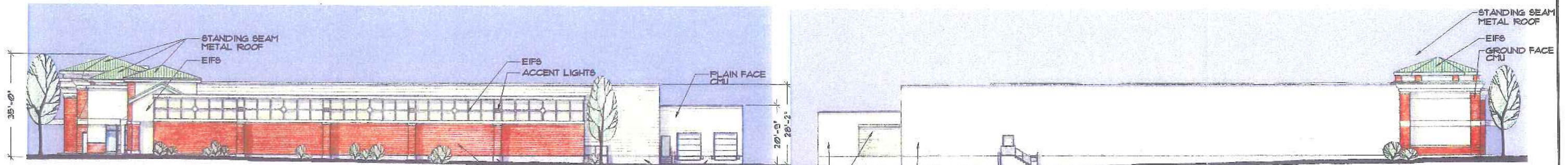
RETAIL C



FRONT ELEVATION

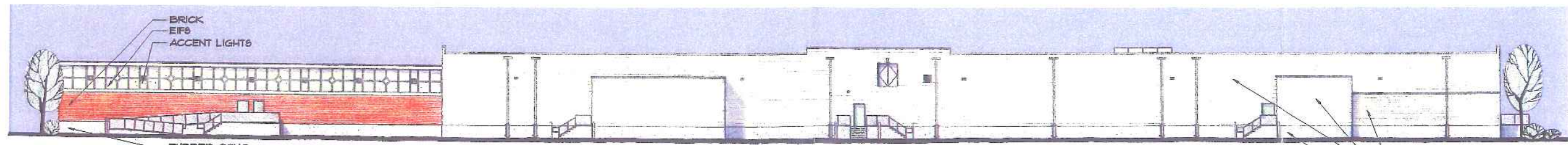
STOP & SHOP

RETAIL "D"



SIDE ELEVATION - RETAIL D

SIDE ELEVATION - STOP & SHOP



REAR ELEVATION

MORRILL'S CROSSING



Retail D+E



8 UNIT FRONT ELEVATION



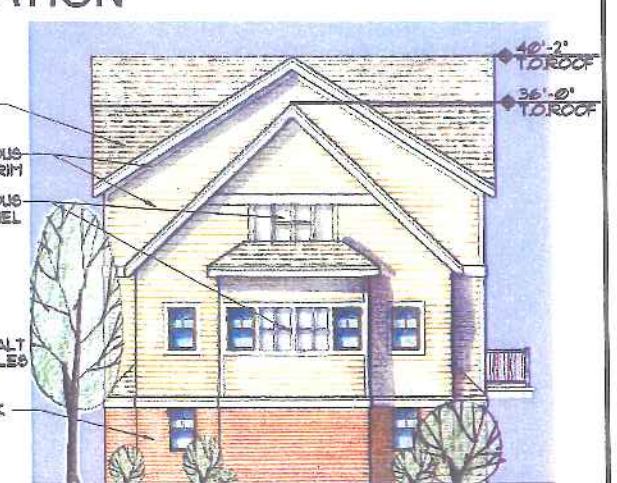
8 UNIT REAR ELEVATION



4 UNIT FRONT ELEVATION



4 UNIT REAR ELEVATION



TYPICAL END ELEVATION

MORRILL'S CROSSING



TOWN HOMES

**JENSEN BAIRD
GARDNER HENRY**

Attorneys at Law

TEN FREE STREET
P.O. BOX 4510
PORTLAND, MAINE 04112-4510
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JOSEPH H. CROFF III
F. BRUCE SLEEPER
DEBORAH M. MANN

LESLIE E. LOWRY III
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YORK COUNTY
OFFICE
11 MAIN STREET, SUITE #
KENNEBUNK, MAINE 04043
(207) 985-4676 (Phone)
(207) 985-4931 (Fax)

June 12, 2006

Sarah Hopkins
Department of Planning and Development
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Morrill's Crossing, LLC/Right, Title and Interest

Dear Sarah:

Morrill's Crossing, LLC submits the following additional agreements to supplement its prior right, title or interest documentation:

1. Memorandum of Understanding with Paul White Tile. This document demonstrates the applicant's ability to perform the necessary improvements to tie the entry drive to the Paul White Tile property into the proposed new signalized intersection that will serve the Morrill's Crossing project.

2. Agreement with Shamayel and Mohammed Kargar. The Kargars are the owners of the Allen Avenue Apartments. This Agreement provides for the granting of an easement to allow the residents and guests of Allen Avenue Apartments to access the project site drive in order to take advantage of the signalized intersection to make left turns and grants a construction easement to the developer for the purpose of making the required improvements.

Please call me if you have any questions. Thank you.

Sincerely,



Natalie L. Burns

Enclosure
cc: John Hession

MEMORANDUM OF UNDERSTANDING

WHEREAS, PACKARD DEVELOPMENT, LLC (hereinafter referred to as "Packard") is preparing to present a mixed use development project to the Portland Planning Board of certain property located on Allen Avenue, at Morrill's Corner, in Portland; and

WHEREAS, PAUL G. WHITE owns property located at 50 Allen Avenue, directly across Allen Avenue from the proposed project; and

WHEREAS, in order to develop said project it will be necessary for certain road improvements to be made, including the installation of a traffic signal on Allen Avenue at the entrance to the proposed project; and

WHEREAS, Packard and Paul G. White wish to coordinate the access to the Paul White Tile property with the proposed project's entrance so that the Paul White Tile property may utilize the proposed signalized intersection in order to increase safety and facilitate traffic movements entering and exiting the site; and

WHEREAS, Packard and Paul G. White have agreed to a plan of improvements that will, among other things, relocate the existing driveway access for the Paul White Tile property;

NOW, THEREFORE, the parties hereto do hereby agree as follows:

Subject to the approval of the City of Portland and a determination that the proposed project has received all necessary land-use approvals with all appeal periods having expired:

1. Packard will perform the work and install the improvements shown on attached Exhibit A, which is hereby incorporated as part of this Agreement.
2. Paul G. White will grant to Packard any temporary construction easements necessary for Packard or its agents or contractors to perform the work shown on Exhibit A.
3. The parties will enter into an agreement regarding the use of a staging area for construction, the sequence of construction of the improvements, and a schedule for completion of the improvement, so as to minimize the impact of the construction upon the business existing on Paul G. White's property.
4. Paul G. White will grant to Packard or to a party designated by Packard a permanent easement for the purpose of maintenance of traffic signal controls that are located on the property and required as part of the Morrill's Crossing development approval.
5. The parties may mutually agree to amend this Agreement, including Exhibit A. Any such amendment will be in writing.

This Agreement will bind the parties, their respective successors and assigns.

Dated this 11th day of June, _____, 2005.

WITNESS:

[Signature]

PACKARD DEVELOPMENT, LLC

BY: [Signature]
Its

[Signature]

BY: [Signature]
Paul G. White

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF Middlesex, ss.

June 16, 2005

Then personally appeared the above named Armen Aftandilian, of said Packard Development, LLC, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Corporation.

Before me,

Roberta Y Goto
Notary Public
Typed Name: Roberta Y Goto
My commission expires: 11/22/07
ROBERTA Y. GOTO, NOTARY PUBLIC
MY COMMISSION EXPIRES NOVEMBER 22, 2007

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

June 14, 2005

Then personally appeared the above named Paul G. White and acknowledged the foregoing instrument to be his free act and deed.

Before me,

[Signature]
Notary Public
Typed Name: Charles E. Bamis, Jr
My commission expires: 1/22/08

MEMORANDUM OF AGREEMENT

This is a memorandum of agreement for recording purposes only and is intended to provide record notice of the Agreement between the parties, identified as follows:

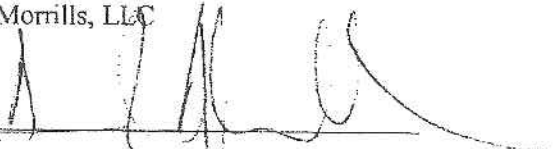
PARTIES: Developer: SS Morrills, LLC
c/o Packard Development, LLC
One Wells Avenue
Newton, Massachusetts 02459

Abutters: Mohammed I. Kargar and Shamayel Kargar
14 Muirfield Road
Falmouth, Maine 04105

PREMISES: Cross-easements for construction and access as shown on attached Exhibit A, in accordance with the terms of the Agreement between Developer and Abutters.

DATE OF AGREEMENT: _____

DEVELOPER:
SS Morrills, LLC

By: 

Its _____

ABUTTERS:

Mohammed I. Kargar

Shamayel Kargar

Commonwealth of Massachusetts
County of Middlesex, ss

July 11th, 2005

Personally appeared before me the above named Armen Aftandilian
of said SS Morrills, LLC and acknowledged the foregoing to be his/her
free act and deed in his/her said capacity and the free act and deed of said limited liability
company.

Polina Emilfarb
Notary Public
Print name:



POLINA EMILFARB
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS
MY COMMISSION EXPIRES
MAY 15, 2009

State of Maine
County of Cumberland, ss

July 6, 2005

Personally appeared before me the above named Mohammed I. Kargar and acknowledged
the foregoing to be his free act and deed.

Paul E. Thblin
Notary Public Attorney-at-law
Print name: Paul E. Thblin

PETITION FOR STREET VACATION

May 26, 2006

Sarah Hopkins, Development Review Manager
Portland City Hall
Planning Department, 4th Floor
389 Congress Street
Portland ME 04101

Dear Ms. Hopkins:

In accordance with 23 M.R.S.A. Section 3027(1), I hereby petition to have Rock Hill Street, so called and a portion of Magnolia Street, so called, both within the City of Portland, as more fully described on the attached Exhibit A, vacated by the City of Portland.

The streets were dedicated by the recording on May 18, 1923 of a Plan of Subdivision of Addition to Hawthorne Heights, in Plan Book 15, Page 19 of the Cumberland County Registry of Deeds. The streets were never accepted by the City and there are no utilities in the areas of the streets requested to be vacated.

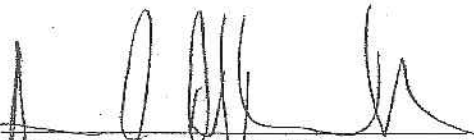
I am also enclosing, as Exhibit B hereto, a list of the names and addresses of all property owners and mortgagees in the subdivision, as well as the standard waiver and indemnification agreement provided by your office. Also enclosed is the \$2000.00 application fee. Noticing of property owners, legal ad and mortgagees will be billed separately.

I hereby request that you take all further action necessary to complete vacating the above-described streets and that you inform me should it become necessary for me to provide you with any further information, or to take any further action. I understand that the matter will be brought up before the Planning Board for a recommendation to the City Council. Final action on the street vacations will be taken by the City Council.

Sincerely,

SS MORRILLS, LLC,
a Delaware limited liability company

by MORRILLS CORNER, LLC,
a Massachusetts limited liability company,
its Managing Member

By: 
Armen Aftandilian, its Manager



APPLICATION FOR STREET VACATION
 City of Portland, Maine
 Planning and Development Department
 Portland Planning Board

1. Applicant Information:

SS MORRILLS, LLC
 Name
c/o Packard Development, LLC
One Wells Avenue
 Address
Newton, MA 02459
617-965-1966 617-965-2519
 Phone Fax

2. Address of Street Vacation:

Rock Hill Street; portion
 Address
of Magnolia Street;
Maps 435 and 152-B
 Assessor's Reference (Chart-Block-Lot)

3. Property Owner: Applicant Other

See Exhibit B
 Name

 Address

 Phone Fax

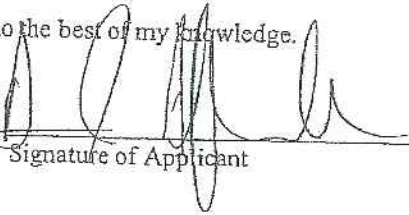
4. Application Fee: A fee for must be submitted by check payable to the City of Portland in accordance with Section 14-54 of the Municipal Code (see below). The applicant also agrees to pay all costs of publication (or advertising) of the Workshop and Public Hearing Notices as required for this application. Such amount will be billed to the applicant following the appearance of the advertisement.

- Street Vacation (\$2,000.00)
- Legal Advertisements percent of total bill
- Notices .55 cents each
 (Notices are sent for workshops and public hearings)

NOTE: Legal notices placed in the newspaper are required by State Statute and local ordinance. Applicants are billed directly by the newspaper for these notices.

5. Signature: The above information is true and accurate to the best of my knowledge.

MAY 26th 2006
Date of Filing


Signature of Applicant

WAIVER AND INDEMNIFICATION

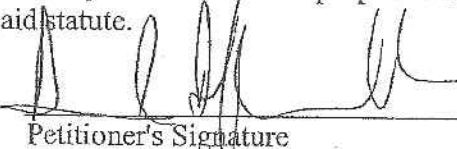
WHEREAS, SS Morrills, LLC of One Wells Avenue, Newton, Massachusetts 02459 has requested the City of Portland to vacate certain proposed town ways located in the Addition to Hawthorne Heights subdivision pursuant to 23 M.R.S.A. Section 3027 et seq.;

WHEREAS, the City of Portland as a condition precedent to any vacation of the proposed town way requires a waiver of any claims which SS Morrills, LLC may have against the City for such vacation, and further, requires indemnification against any claims of third persons arising out of or resulting from the vacation of said proposed town way;

NOW THEREFORE, in consideration of the City of Portland vacating said proposed town way, SS Morrills, LLC for itself, its successors and assigns, agrees as follows:

1. SS Morrills, LLC hereby waives any claim for damages which it may now or hereafter have against the City of Portland arising out of or resulting from any vacation of such proposed town way by the City pursuant to 23 M.R.S.A. Section 3027 et seq.;
2. SS Morrills, LLC hereby agrees to indemnify and hold harmless the City of Portland against any claims by any third person against the City of Portland for damages arising out of or resulting from any vacation of such proposed town ways by the City of Portland pursuant to said statute.

Dated: MAY 26th 2006



Petitioner's Signature

ARMEN D. APTANDILIAN

Petitioner's Printed Name

MANAGER

Petitioner's Title

EXHIBIT A
LEGAL DESCRIPTION OF STREETS TO BE VACATED

Portion of Magnolia Street: That portion of Magnolia Street, so-called, as shown on Plan of Subdivision of Addition to Hawthorne Heights, said plan being recorded in the Cumberland County Registry of Deeds on May 18, 1923 in Plan Book 15, Page 19, which is bounded northwesterly by Lots 304-307 as shown on said Plan, southeasterly by Lots 265, 266, 289, 270 and Rock Hill Street as shown on said Plan, southwestly by Maryland Street as shown on said Plan and northeasterly by the remaining portion of Magnolia Street as shown on said Plan at the extension of the northeasterly sideline of Lot 307.

Rock Hill Street: That portion of Rock Hill Street, so-called, as shown on Plan of Subdivision of Addition to Hawthorne Heights, said plan being recorded in the Cumberland County Registry of Deeds on May 18, 1923 in Plan Book 15, Page 19, which is bounded northwesterly by the southeasterly sideline of Magnolia Street, as hereinbefore described and shown on said Plan and southeasterly by the northwesterly sideline of Morrill Street as shown on said Plan, being the entire length of Rock Hill Street.

EXHIBIT B
LIST OF PROPERTY OWNERS AND MORTGAGEES

1. Allen Avenue Plaza, LLC
33 Allen Avenue
Portland, Maine

Mortgagees:

Gardiner Savings Institution, FSB
190 Water Street
Gardiner, Maine 04345

Peoples Heritage Bank (now TD Banknorth)
One Portland Square
P.O. Box 9540
Portland, Maine 04112-9540

2. City of Portland
389 Congress Street
Portland, Maine 04101
3. SS Morrills, LLC
c/o Packard Development, LLC
One Wells Avenue
Newton, Massachusetts 02459
4. White Dove Properties, LLC
33 Allen Avenue
Portland, Maine 04103

NOTICE OF PROPOSED STREET VACATION

A petition has been filed with the municipal officers of the City of Portland to vacate the following ways shown upon a subdivision plan named Plan of Subdivision of Extension of Hawthorne Heights, dated December 1921 and recorded in the Cumberland County Registry of Deeds, Plan Book 15, Page 19.

List of ways to be vacated:

1. Rock Hill Street.
2. Portion of Magnolia Street

If the municipal officers enter an order vacating these ways any person claiming an interest in these ways must, within one (1) year of the recording of the order, file a written claim thereof under oath in the Cumberland County Registry of Deeds and must, within one hundred eighty (180) days of the filing of the claim, commence an action in the Superior Court in Cumberland County in accordance with Maine Revised Statutes Title 23, Section 3027-A.

The City Council will hold a public hearing on the proposed vacations on _____ at _____ p.m. in the City Council Chambers, City Hall, 389 Congress Street, Portland.

Morrills Corner LLC

PORTLAND CTY City of Portland

DATE	INVOICE NO.	DESCRIPTION	INVOICE AMOUNT	
5-01-06	031706		2000.00	Morrills Corner LLC
CHECK DATE	5-26-06	CHECK NUMBER	34	TOTAL > 2000.00

PLEASE DETACH AND RETAIN FOR YOUR RECORDS

ORIGINAL CHECK HAS A COLORED BACKGROUND PRINTED ON CHEMICAL REACTIVE PAPER. SEE BACK FOR DETAILS

Morrills Corner LLC

One Wells Ave
Newton, MA 02459

Citizens Bank
Boston, MA

57017
2110

DATE
May 26, 2006

CHECK NO.
34

AMOUNT
\$*****2,000.00

ay. *****Two thousand dollars and no cents

BY THE
ORDER OF

City of Portland
389 Congress Street
Attn: Jeniffer Dorr, 4th Floor
Portland, ME 04101

Stephen B. Saw

⑈000000034⑈ ⑆211070175⑆ 1303229436⑈

INTEROFFICE MEMO

DATE: 5/22/2006
TO: SARAH HOPKINS
CC: DENISE CLAVETTE
FROM: THOMAS G. CIVIELLO
RE: PACKARD DEVELOPMENT

The Portland Parks and Recreation Department has reviewed the site plans for this project and are on board with the multi purpose field that is to be constructed as part of the project. Field construction specifications to include irrigation, base materials, and seed mixtures have been forwarded to Packard Development for their use in construction. A drinking fountain specification and other site amenities were also forwarded.

The Parks and Recreation Department will be administering and maintaining the field after completion as other fields in the City. Our Athletic Facilities division will be responsible for scheduling, maintenance, and programming this facility.

CARROLL ASSOCIATES

75 MARKON STREET PORTLAND, ME 04101
PHONE 857-7713 FAX 857-7714
LANDSCAPE ARCHITECTS

PROJECT MEMO: Morrill's Crossing

TO: Sarah Hopkins
FROM: Pat Carroll
DATE: May 26, 2006

RE: Final Landscape Evaluation

We have evaluated the latest response submissions from VHB regarding landscaping and lighting and offer the following comments with respect to applicable Site Plan and Subdivision Standards:

Site Plan

Sec. 14-526. Standards.

- (6) *The on-site landscaping provides adequate buffering between the development and neighboring properties so as to adequately protect each from any detrimental features of the other;*

Response:

The applicant has provided extensive additional landscaping and fencing along the easterly property line extending to Cambridge Street which should provide adequate buffering of the development from the adjacent residential neighborhood.

- (7) *The site plan minimizes, to the extent feasible, any disturbance or destruction of significant existing vegetation;*

Response:

Significant existing vegetation does not exist on the majority of the site due to past development and improvements which have occurred on the property. The applicant is preserving critical wetland vegetation along the stream at the east end of the property.

- (9) *The provision for exterior lighting will not be hazardous to motorists traveling on adjacent public streets; is adequate for the safety of occupants or users of the site; and such lighting will not cause significant glare or direct spillover onto adjacent properties and complies with the applicable specifications of the City of Portland Technical and Design Standards and Guidelines;*

Response:

The applicant has provided a site lighting plan options which provide illumination of all vehicular areas as well as most pedestrian circulation areas of the site. After reviewing the photometrics for both schemes we believe the Alternate Lighting Plan (SL-1A) utilizing 175W MH fixtures provides adequate light levels within the project and be less impact on the neighboring properties.

The lighting plan was reviewed according to the City of Portland Technical and Design Standards and Guidelines and it appears that the proposed lighting meets all standards except the uniformity and illumination levels throughout the project. However, this office believes that the proposed lighting distribution is adequate to provide safety and is close enough to meeting the standards that the applicable standards can be waived for this project.

- (27) *Development located in the B-1, B-1b, B-2, and B-2b zones shall meet the following additional standards. Where noted below, the city encourages adherence to the guidelines contained within the City's Technical and Design Standards and Guidelines, but such adherence is not mandatory in order to meet the standards otherwise set forth herein.*
- i. *Landscaping and buffers. Standard: In the B-1, B-1b, B-2 and B-2b zones buildings and associated parking areas must be screened to buffer abutting properties. A densely planted landscape buffer and/or fencing will be required to protect neighboring properties from the impacts associated with the development, including lighting, parking, traffic, noise, odor, smoke, or other incompatible uses. Where buildings are setback from the street, a landscaped area must be planted along the front yard street line.*

Response:

The applicant has provided extensive landscaping and fencing along the easterly property line extending to Cambridge Street which should provide adequate buffering of the development from the adjacent residential neighborhood to the east. Additional buffer plantings are proposed along the westerly property line adjacent to the railway which should help screen the development from views and properties along Forest Avenue. Landscaped areas are provided on Allen Avenue and Cornell Streets along the appropriate front yard street lines.

Subdivision Review: Apartments and Townhouses

- (8) *Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the department of inland fisheries and wildlife or by the city, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline. For subdivisions within historic districts designated pursuant to article IX of this chapter, the planning board shall apply the standards of section 14-651(c) of article IX. The planning board may request that the historic preservation committee prepare an evaluation of the proposed subdivision based upon the standards of section 14-651(c);*

Response:

The proposed development should not adversely affect the natural beauty of the area. The property is generally vacant land which will be improved and vitalized by the project. Significant buffers to adjacent natural areas are proposed which will protect wildlife habitat.

B2 Standards

Sec. 14-186. Other requirements.

All nonresidential uses in the B-2 and B-2b zone shall meet the requirements of division 25 (space and bulk regulations and exceptions) of this article in addition to the following requirements:

- (a) *Landscaping and screening: The site shall be suitably landscaped for parking, surrounding uses and accessory site elements, including storage and solid waste receptacles where required by article IV (subdivisions) and article V (site plan).*

Response:

The applicant has provided extensive landscaping within the parking areas, plantings and fencing along property lines, and service areas of the project. Dumpster locations are also screened with fencing and plantings. The proposed landscaping plan should provide an attractive project adequately screened and buffered from adjacent residential neighbors.

Conditional Rezoning

7. *Development Standards. All site plans in conformance with Exhibit B and Exhibit D (architectural renderings) may be approved by the Planning Board only if, in addition to the dimensional requirements of paragraph 9 and the applicable provisions of article IV (subdivisions) and article V (site plan), the development meets the following additional development standards:*

a. *Landscaping: Development proposals shall include a landscape program that is consistent with the landscaping plan shown on Exhibit B. All land areas not covered by structures, parking areas, bus facilities or circulation facilities shall be landscaped and maintained. In order to soften the visual impact of large expanses of pavement in parking lots, vegetation shall be planted or retained in islands or planting strips as shown on Exhibit B. Development proposals shall include appropriate fencing and/or berming and planting treatment of a dense and continuous nature in order to buffer parking lot visibility from adjacent properties.*

Response:

The applicant has provided extensive landscaping within the parking areas, plantings and fencing along property lines, and service areas of the project. This office believes the landscaping standard described above has been met with the proposed plan.

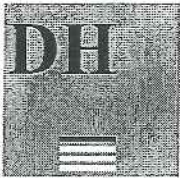
Other Considerations

In review of the latest submissions of landscaping and lighting for Morrills Crossing the applicant has responded appropriately to the previous comments and issued identified in our memos dated March 1, 2006 and March 24, 2006.

1. Additional landscaping and fencing has been proposed along the easterly property line to aid in increasing the buffer and screening of the project to the adjacent neighbors.
2. The applicant is now proposing tree cutouts and ADA compliant treegrates which are acceptable in providing adequate area for tree growth as well as accessible walkway surfaces for pedestrians.
3. The proposed phasing plan provides adequate commitment to installation of landscape buffers in the initial phase of the project in the event that the Townhomes phase is delayed.
4. Snow storage areas are indicated on the plan and, along with a commitment to excess snow removal, should provide adequate storage for small storms without compromising the landscape plantings.
5. Adequate site improvements such as benches, bike racks, trash receptacles, and drinking fountains are indicated on the plan and will enhance the pedestrian experience of the development.
6. Site lighting alternatives are presented and we would prefer the lighting scheme SL-1A as we think it provides adequate light levels, more uniformity of light distribution, less spillover, and is closer to meeting the City Standards. We are still concerned regarding the lack of site lighting along the pedestrian walkway behind the Townhouses, as we envision this area as an inviting alternative to walking adjacent to autos and other vehicles on the fronts of the units. We would

recommend that some lighting be added here, perhaps as building mounted lights, assuming they are controlled by timer or photocell and not by individual residents.

Please do not hesitate to contact me if you have any questions or concerns.



DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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

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

MEMORANDUM

DATE: June 5, 2006

TO: Sarah Hopkins, City of Portland

C: John Hession, PE VHB

FROM: Stephen R. Bushcy, P.E.

SUBJECT: Morrill's Crossing
Site Plan Review

DeLuca-Hoffman Associates, Inc. has reviewed the Stormwater Report prepared by VHB and dated May 2006. This package included only the Stormwater Management Report, erosion control narrative and Stormwater maintenance procedures. We have previously reviewed the original submission materials dated 7/01/05 and the VHB Response to Site Plan Peer Review letter dated February 17, 2006. We have not reviewed the Final drawings at this time, although it does appear that the 2/17/06 drawings substantially addressed many of our earlier comments. We offer the following comments for consideration at this time.

Grading, Drainage and Erosion Control Plans

1. The project design continues to include a closed storm drainage system consisting of catch basins, manholes and pipes. The system also includes as a major component, multiple underground storage systems and water quality treatment measures to comply with the DEP's Chapter 500 regulations pertaining to both quantity and quality control. Based on the findings of the stormwater analysis the applicant appears to have adequately designed measures to meet both the DEP and City of Portland quantity and quality control standards. We recommend that the City be copied on any correspondence between the applicant and the DEP and that applicant receive their DEP Permit order as a Condition of the City's Site Plan approval.
2. We have reviewed the approval criteria under the City's Subdivision and Site Plan standards and find that the applicant has adequately satisfied the review criteria and standards of each section. The project involves a substantial amount of drainage infrastructure for the collection, conveyance, and management of stormwater runoff, thus minimizing potential impacts to downstream conditions and properties. The infrastructure proposed by this project will substantially improve runoff conditions within this previously developed site and should provide a benefit to the overall Milliken Brook and Fall Brook watersheds. Assuming proper oversight during construction it also

appears that adequate measures are incorporated into the drawings to minimize erosion and sediment transport resulting from the proposed development activities.

3. We assume that the applicant and DEP will advise the City as to the compliance method the DEP/Applicant will agree on pertaining to the urban Impaired stream Standard associated with Fall Brook.
4. We applaud the engineer's use of the TSS removal devices but request that the sizing criteria and manufacturer's information be provided as a condition of approval and this information be placed on the Final Plans in the event that product substitutions are proposed during construction.
5. The drainage design now includes the construction of a wetpond with a gravel filter. Design details including cross sections, existing soils conditions including possible shallow rock and other details for the basin should be provided as part of the Final Site plans. The applicant should address the need for remediation of any soils contamination within the proposed wetpond excavation. This information can be worked out prior to construction.
6. Prior to construction the Engineer should provide a phased construction plan or narrative that outlines the various development activities as they are currently envisioned to occur. The plan(s) can then account for demolition, stockpile locations, temporary materials storage and other phased activities.
7. The Erosion control plans should be updated to include the Maine Department of Environmental Protection's "Stabilization measures for Wintertime activities" requirements. These have not yet been included on the drawings we have reviewed.

Based on the information supplied to date, it appears that the applicant has adequately addressed the project's needs for stormwater management and erosion and sediment control, although some final details and construction related information should be provided as a condition of approval. We trust that these comments are beneficial as the Planning Board considers the project for Final Approval.

If you have any questions please call.

Stephen Bushey, PE
Senior Engineer
DeLuca-Hoffman Associates, Inc.

We trust these comments are helpful and we look forward to continued discussions and plan revisions from the Applicant.

If you have any questions please call.

Steve Bushey, PE

Senior Engineer

DeLuca-Hoffman Associates, Inc.

From: "Thomas Errico" <terrigo@wilbursmith.com>
To: "'Sarah Hopkins '" <SH@portlandmaine.gov>
Date: 06/06/2006 10:12:04 AM
Subject: Morrill's Crossing -- Response to VHB April 20, 2006 Letter

Sarah-

The following summarizes my comments as it relates to the April 20 and May 9, 2006 letters prepared by Vanasse Hangen Brustlin. As requested, I have also provided my findings as it relates to City of Portland Site Plan and Subdivision Standards, and other traffic conditions for the project.

1. Collision Information - While I generally agree with the analysis conducted, the data does indicate that significant crashes are occurring at this busy location, even when considering the recent MaineDOT improvement project. VHB notes that reductions in crashes can be expected with the implementation of improvements in the Morrill's Corner area, particularly providing two inbound Forest Avenue through Stevens Avenue and optimizing the efficiency of the intersection. To ensure that the project improves or does not exacerbate safety conditions at Morrill's Crossing, I would suggest that the applicant conduct a post-occupancy safety study confirming the safety benefits of their off-site mitigation plan. If crash rates and patterns indicate existing problems either persist or have been exacerbated by the project, I would recommend that the applicant identify and implement other improvement strategies, as reasonable and appropriate, to be approved by the City.

2. Site Driveway Area Modification

* Allen Avenue Apartment Driveway - The proposed plan is acceptable and I have no further comment.

* Paul White Tile Layout Changes - The plan provided indicates that some on-site parking will be eliminated as part of connecting the site with the proposed traffic signal. I have no further comment other than noting that Planning Staff should determine if these changes require a Site Plan modification review (due to the loss of on-site parking).

* Pedestrian Crosswalk - I have no further comment.

3. SimTraffic Queuing Summary

* Forest Avenue at Warren Avenue - Most movements evaluated (see table below) are expected to have maximum queue lengths that will be less during the build condition as compared to existing conditions with the exception of inbound Forest Avenue. The maximum queue on the inbound approach of Forest Avenue is estimated to increase by approximately 80 feet per lane or three cars. This additional queuing is not significant and will not impact

conditions in Morrill's Corner.

Movement

Existing Queue (feet)

Build Queue (feet)

Queue Change (feet)

Warren Left/Through

515

512

-3

Warren Right

232

236

+4

Side Street

58

47

-11

Forest Northbound Left

304

187

-117

Forest Northbound Through

562

443

-119

Forest Northbound Through/Right

446

259

-187

Forest Southbound Left/Through

763

840

+77

Forest Southbound Through/Right

731

815

+84

* Forest Avenue at Allen Avenue - There are several movements (see table below) that will experience minor increases in vehicle queuing at this location. The largest queue increase is approximately six vehicles in the southbound Forest Avenue left-turn lane. To accommodate this increase the applicant is proposing increasing the length of the subject left-turn lane to accommodate the increased queue. The combined vehicle queuing length when combining the southbound Forest Avenue left onto Allen Avenue with the northbound Forest Avenue left onto Warren Avenue is 622 feet, or the approximate storage distance between Allen Avenue and Warren Avenue (stop bar to stop bar). This total combined queue is 18 feet longer than what currently exists today. The project does not significantly worsen this queue length. The applicant should provide a proposed pavement marking plan for review and approval.

Movement

Existing Queue (feet)

Build Queue (feet)

Queue Change (feet)

McDonald's Left

52

30

-22

McDonald's Through

67

61

-6

McDonald's Right

52

72

+20

Allen Avenue Left

593

530

-63

Allen Avenue Left/Through

589

556

-33

Allen Avenue Right

196

204

+12

Forest Northbound Left

72

68

-4

Forest Northbound Through

437

472

+35

Forest Northbound Through

499

565

+66

Forest Northbound Right

110

124

+14

Forest Southbound Left

300

435

+135

Forest Southbound Through

684

694

+10

Forest Southbound Through/Right

667

709

+42

* Forest Avenue at Stevens Avenue/Bishop Street - Most movements (see table below) evaluated indicates that the maximum queue length is less during the build condition as compared to existing conditions with the exception of inbound Forest Avenue. The maximum queue on the inbound approach of Forest Avenue is estimated to increase by approximately 30 feet in the through lane or one car length. This additional queuing is not significant and will not significantly degrade conditions in Morrill's Corner as compared to existing conditions.

Movement

Existing Queue (feet)

Build Queue (feet)

Queue Change (feet)

Bishop Left/Right

991

452

-539

Forest Northbound Through

361

357

-4

Forest Northbound Through

372

357

-15

Forest Southbound Through

431

461

+30

Forest Southbound Through/Right

408

401

-7

Stevens Left

384

358

-26

Stevens Left/Right

372

355

-17

* Allen Avenue at Site Driveway - Although a comparison to existing conditions is not relevant a review of queueing projections for the 2007 Build condition was reviewed. The following table summarizes the project queues estimates. The left-turn queue into the site on Allen Avenue will exceed the storage bay length and if practicable should be extended to a length that will allow access without blockage from the through lane queue. This appears

feasible, but is somewhat complicated by the Woodlawn Avenue intersection. Secondly, traffic queuing into the site will be significant, however, it will not impact the public street system. The applicant should provide a revised improvement plan with an extended left-turn lane for review and approval.

Movement

Build Queue (feet)

Paul White Tile

29

Site Left/Through

474

Site Right

226

Allen Northbound Left/Through

402

Allen Northbound Through/Right

333

Allen Southbound Left

228

Allen Southbound Through

283

Conclusion

I would suggest that the applicant conduct a post-occupancy traffic operations study confirming the proposed off-site mitigation plan does address impacts associated with the project. If significant queuing is documented following project opening, I would recommend that the applicant identify and implement other improvement strategies, as reasonable and appropriate, to be approved by the City. Examples of additional improvements should not be limited to traffic signal adjustments and may include capacity expansion.

4. SimTraffic Delay Summary

* Forest Avenue at Warren Avenue - Most movements evaluated (see table below) are expected to have delay estimates that will be less during the build condition as compared to existing conditions with the exception of inbound Forest Avenue. Delays on the inbound approach of Forest Avenue are estimated to increase by approximately 20 seconds per vehicles. Overall the delay at the intersection is expected to decline.

Movement

Existing Delay (sec./veh.)

Build Delay (sec./veh.)

Delay Change (sec./veh.)

Warren Left

200

71

-129

Warren Through

31

29

-2

Warren Right

67

23

-44

Side Street Left

138

103

-35

Side Street Through

152

41

-111

Side Street Right

576

12

-564

Forest Northbound Left

56

27

-29

Forest Northbound Through

72

8

-64

Forest Northbound Right

7

6

-1

Forest Southbound Left

151

172

+21

Forest Southbound Through

112

130

+18

Forest Southbound Right

71

95

+24

Overall

86

50

-36

* Forest Avenue at Allen Avenue - Most movements evaluated (see table below) are expected to have delay estimates that will be less during the build condition as compared to existing conditions with the exception of Forest Avenue movements. Minor delays on outbound approach of Forest Avenue are estimated, and the left-turn onto Allen Avenue is expected to increase by 26 seconds. Overall the delay at the intersection is expected to decline.

Movement

Existing Delay (sec./veh.)

Build Delay (sec./veh.)

Delay Change (sec./veh.)

McDonald's Left

309

69

-240

McDonald's Through

250

57

-193

McDonald's Right

108

31

-77

Allen Avenue Left

283

90

-193

Allen Avenue Through

188

43

-145

Allen Avenue Right

147

29

-118

Forest Northbound Left

87

59

-28

Forest Northbound Through

67

42

-25

Forest Northbound Right

27

30

+3

Forest Southbound Left

72

98

+26

Forest Southbound Through

49

23

-26

Forest Southbound Right

17

16

-1

Overall

83

48

-35

* Forest Avenue at Stevens Avenue/Bishop Street - Most movements evaluated (see table below) are expected to have delay estimates that will be less during the build condition as compared to existing conditions with the exception of inbound Forest Avenue. Delays on the inbound approach of Forest Avenue are estimated to increase by only 7 seconds per vehicles. Overall the delay at the intersection is expected to decline.

Movement

Existing Delay (sec./veh.)

Build Delay (sec./veh.)

Delay Change (sec./veh.)

Bishop Left

1637

324

-1313

Bishop Right

1649

351

-1298

Forest Northbound Through

64

59

-5

Forest Southbound Through

33

16

-17

Forest Southbound Through/Right

10

17

+7

Stevens Left

312

218

-94

Overall

117

67

-50

Conclusion

The above tables note that overall the Morrill's Corner intersections will experience reductions in delay. However, a few movements are estimated to experience a slight increase in delay. I would suggest that the applicant conduct a post-occupancy traffic operations study confirming the proposed off-site mitigation plan does address impacts associated with the project. If significant delay is documented following project opening, I would recommend that the applicant identify and implement other improvement strategies, as reasonable and appropriate, to be approved by the City. Examples of additional improvements should not be limited to traffic signal adjustments and may include capacity expansion.

5. Parking Information

The applicant provided supporting parking generation information consisting of Stop & Shop empirical information and the results of a survey conducted at Northgate Plaza. As noted in their report, Stop & Shop facilities experience parking generation rates of 2.20 parking spaces per 1,000 sf on a weekday and 2.64 parking spaces per 1,000 sf on a Saturday. For the Northgate Plaza, the applicant determined that the shopping center generates 3.5 parking spaces per 1,000 sf on a Saturday. This estimate includes the office space. Assuming the office space is not included (it is unlikely the office space generated parking demand on a Saturday before Christmas), the shopping center generated 4.0 parking spaces per 1,000 sf. The proposed project is expected to provide 666 parking spaces (inclusive of 39 parking spaces for the apartment complex) and is expected to have a parking demand of 632 parking spaces during the peak December period. This estimate is based upon use of a parking generation rate of 4.0 parking spaces per 1,000 sf. Based upon the data provided it is my professional opinion that adequate on-site parking will be provided. I would note that the applicant will be responsible (and has agreed to) for the implementation of a parking management plan during the peak season that will require retail employees to use the parking spaces located in the rear of the site.

6. The following summarizes my findings as it relates to City of Portland Site Plan and Subdivision Standards.

Site Plan Standards

(1) The provisions for vehicular loading and unloading and parking and for vehicular and pedestrian circulation on the site and onto adjacent public streets and ways; and the incremental volume of traffic will not create or aggravate any significant hazard to safety at or to and including intersections in any direction where traffic could be expected to be impacted; and will not cause traffic congestion on any street which reduces

the level of service below Level "D" as described in the 1985 Highway Capacity Manual published by the Transportation Research Board of the National Research Council, a copy of which manual is on file with the public works authority, or substantially increase congestion on any street which is already at a level of service below Level "D";

The traffic analyses provided by the applicant has documented that the proposed project will not create or aggravate existing traffic congestion or safety hazards.

(2) a. Where construction is proposed of new structures having a total floor area in excess of ten thousand (10,000) square feet but less than fifty thousand (50,000) square feet, or building additions having a total floor area in excess of five thousand (5,000) square feet, and the provisions for off*street parking under article III (zoning) do not require off*street parking or are determined to be insufficient, the site plan shall provide sufficient parking to satisfy the reasonably foreseeable demand for parking which will be generated by the proposed development;

b. Where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant, which shall be reviewed by the city traffic engineer, and upon the recommendation of the city traffic engineer.

As noted previously, it is my professional opinion that adequate on-site parking will be provided.

(11) The proposed development is designed so as to be consistent with off*premises infrastructure, existing or planned by the city;

The proposed project is consistent with City infrastructure plans.

Subdivision Ordinance

Sec. 14*497. General requirements.

(pertaining to townhouse condos, apartments over retail and rear apartments)

(5) Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highway or public roads existing or proposed;

The traffic analyses provided by the applicant has documented that the proposed project will not create or aggravate existing traffic congestion or safety hazards.

Conditional Rezoning Standards

d. Traffic improvements: PACKARD shall be responsible for the design and installation of, at minimum, the off-site traffic improvements shown on Exhibit C, which improvements shall be made at PACKARD'S sole expense, following review and approval by the CITY. Such traffic improvements may include, but not be limited to, roadway widening, signal modifications, installation of a new traffic signal, provisions for bicycle facilities, bus stops, esplanades with street trees, railroad preemption upgrades and pedestrian facilities (e.g. sidewalks, crosswalks). In addition, within twelve (12) months after issuance of the final certificate of occupancy for Phase I, PACKARD shall undertake a post-development traffic study of the unsignalized intersections identified within the scope of the MDOT traffic movement permit. In the event that this study demonstrates that the impact from traffic attributable to the development is materially different than what was approved as part of the project's MDOT traffic movement permit, the CITY may require PACKARD to fund mitigation measures to address those impacts, to the extent that such mitigation is technically and economically feasible. As well, the applicant shall be obligated to mitigate impacts created by the development, to the extent technically and economically feasible, which result in a degradation of traffic service at said intersections.

Off-site improvement plans meet the above requirements and the applicant will be required to conduct a post-development traffic study of the unsignalized intersections within the study area.

7. Forest Avenue Improvement Plan

It is my understanding that the cross-section of Forest Avenue should consist of four 11-foot travel lanes and two 3-foot shoulders. Eric Labelle should confirm these dimensions.

8. Forest Avenue/Read Street/Adelaide Street/Bell Street Improvements

I need to gain consensus from City staff on the appropriate improvement plan for the area. The applicant will be required to implement the improvement plan in its entirety. I would also note that the applicant will be asked to conduct a signal warrant study at the Forest Avenue/Bell Street intersection following build-out of the project and if traffic signals are warranted, the applicant will be required to contribute \$25,000.00 to the installation of a traffic signal.

9. Other Conditions

- * The applicant should submit, for annual review, a traffic demand management plan for City review and comment.
- * The applicant should contribute \$25,000.00 to the implementation of safety and streetscape improvements on Forest Avenue between Warren Avenue and Riverside Street.

Please contact me if you have any questions.

Best Regards,

Thomas A. Errico, P.E.

Senior Transportation Engineer

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CC: "'James Carmody'" <JPC@portlandmaine.gov>, "'Katherine Earley'"
<KAS@portlandmaine.gov>



Public Works Engineering Memorandum

Date: June 6, 2006
To: Sarah Hopkins, Development Review Services Manager
From: Eric J. Labelle, P.E., City Engineer
Sarah Hopkins, Development Review Services Manager
Re: Morrill's Crossing Development

I have reviewed Mr. Bushey memo dated on June 5, 2006, and concur with his conclusions. Having attended the meeting between Parkard Development and the Maine Department of Environmental Protection, the developer has incorporated stormwater treatment measures consistent with Chapter 500 requirements.

I would also like to provide clarification and propose the following conditions of approval as it relates to the following streets:

Princeton and Magnolia Streets

Status:

Both of these streets have been confirmed by Public Works as being "dedicated and unaccepted".

Sewer:

These streets also contain sanitary sewer servicing the area. Public Works does not recommend any work be conducted to this sewer, however, would like be assured that care will be taken in the construction to protect the sewers.

Drainage:

A culvert drains to the southerly side of the Princeton Street. Stormwater is proposed to be collected by a stormwater system to the north of the Townhouses along the property

line. The stormwater from the City right of way would be draining through the proposed development's stormwater system. It may be appropriate to request a drainage easement through the site.

Proposed Condition of Approval:

Drainage easements be provided to the City to address any offsite drainage passing through the Morrill's Corner site.

Morrill Street

Status:

Morrill Street is also a dedicated and unaccepted from University Street to Milliken Brook. It is not clear where Milliken Brook would have crossed the site prior to development of this site. Public Works would like to retain a right of way across the site in Morrill Street's current location extending the railroad property at the southern property line. The right of way would not propose building locations and could provide for future access across the railroad property.

Proposed Road:

The developer is currently proposing a 24' wide road to the Townhouses and Apartments. Since this road would become a City street to the site, the road should be constructed to the City's minimum standard and be 28' wide. A turn around also needs to be constructed at the end of the City street.

Proposed Condition of Approval:

A fifty foot wide right of way be provided to the City from University Street to the railroad property. This would be provided as a potential alternate means of access to the site for travel and utilities.

All streets proposed to be accepted by the City meet the City of Portland technical standards.

Stormwater Contribution

In 1993, the City of Portland entered in to a consent agreement with the Maine Department of Environmental Agency due to its combined sewer overflows. This agreement obligates the City to complete a series of sewer separation projects in three watersheds, Fall Brook, Capisic Brook and the Fore River. In 1997, the City began work on these projects and is expected to spend nearly one hundred million dollars by 2012.

The separation work being conducted requires the reestablishment and the widening of Fall Brook as well as the installation of addition stormdrain pipes to remove the Mona/Bernard neighborhoods from the 100 year flood planes. Morrill's Crossing

discharging into Milliken Brook and Milliken Brook being a major stormwater contributor to Fall Brook has a direct impact on these flood planes. The City must acquire drainage easements from property owners along Fall Brook upstream and downstream of Milliken Brook's entrance into Fall Brook to make the necessary improvements.

Public Works recommends one hundred thousand dollar contribution be made towards the acquisition of stormdrain easements along Fall Brook.