434-C-1
331 Veranda St.
PK. & landscaping
Martin's Point

Dufresne-Henry

22 Free Street . Portland, Maine 04101-3900 . Tel: 207.775.3211 . Fax: 207.775.6434 . E-mail. dhmaine@sgate.net

September 22, 2000

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

Re: Martin's Point Parking Lot Expansion

Dear Rick:

We have completed our review of DeLuca Hoffman's September 15, 2000 response to our comments of September 13, 2000 regarding the Martin's Point Parking Lot Expansion. Based on our review of the September 15, 2000 correspondence, we have no further comments.

If you have any questions or require further assistance, please contact Jeffrey Preble, P.E. or me.

Very Truly Yours,

DUFRESNE-HENRY, INC.

Valerie Giguere

Valerie Giguere, P.E.
Project Engineer

Dufresne-Henry

Facsimile

22 Free Street
Portland, ME 04101
(207) 775-3211
Fax: (207) 775-6434 E-Mail: portland@dufresne-henry.com

To: Rick Knowland Fax Number: 756-8258

Company: City of Portland Planning Dept.

From: Valerie Giguere Date: 9/13/00

Subject: Martin's Point Parking Lot

You should receive 2 page(s), including this cover sheet. If you do not receive all the pages, please call 207-775-3211.

Comments: Richard,

Attached please find our comments regarding the September 12, 2000 submittal for Martin's Point. If you have any questions, please contact Jeff Peble or me.

Valerie

The information contained in this facsimile transmission is proprietary and confidential. It is intended for the use of the individual or entity named herein. If the recipient of this transmission is not the intended recipient, note that any dissemination, distribution, or copying of the information contained in this transmission is prohibited. If you have received this transmission in error, please notify us immediately.

Dufresne-Henry

22 Free Street . Portland, Maine 04101-3900 . Tel: 207.775.3211 . Fax: 207.775.6434 . E-mail: dhmaine@agate.net

September 13, 2000

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

Re: Martin's Point Parking Lot Expansion

Dear Rick:

As requested, we have completed our review of DeLuca Hoffman's September 12, 2000 submittal regarding the Martin's Point Parking Lot Expansion. Based on our review of the revised plans, we have the following comment:

- It appears that the relocated sewer line will be constructed through the existing concrete block and stone walls. It appears that these walls act as retaining walls. How will the integrity of the walls be maintained/restored?

In addition to our comment above, it does not appear that the comment in our June 30, 2000 correspondence has been addressed and is provided below:

- Based on our understanding of the level lip spreader detail on Sheet 6 and the contour elevations shown on Sheet 2, it appears that stormwater exiting the stormwater quality unit would flow around the V-Notch weir (or outlet the sides of the stone) unless the stone at the ends is elevated above the lip elevation of 26.0 such that the stormwater would be directed over the V-notch weir. It may be possible to address this by adding a note to the detail on Sheet 6.

It appears that the parking lot has been revised in accordance with the meeting held on September 5, 2000. If you have any questions or require further assistance, please contact Jeffrey Preble, P.E. or me.

Very Truly Yours,

DUFRESNE-HENRY, INC.

Valerie Giguere

Valerie Giguere, P.E.
Project Engineer

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

September 12, 2000

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

Subject: Martin's Point Parking Lot

Dear Rick:

Enclosed please find revised plans for the subject project. The new plan reflects the meeting on September 5, 2000 and Sarah Marshall meeting with Jeff Tarling on site.

The new plan does not require a full retaining wall, but will have block type walls surrounding the important trees I order to save them. As we discussed, we can let vines or vegetation grow over these walls for a more natural effect.

Because the new grades are lower, some blasting and relocation of utilities will be required. I did speak with Henry Dresch, P.E., the Facilities and Property Service Manager for the Portland Public Schools, and this will require coordination with their office.

The lighting plan is being revised, but is essentially the same. The only difference is we have eliminated the lights where there were previously steps from the parking lot to the path. Sarah Marshall, ASLA, will send a landscaping plan under separate cover.

In closing, the project team thanks you for your cooperation and willingness to work with us and we look forward to any comments.

Very truly yours,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Michael J. DeLuca, P.E.
Senior Vice President

MJD/sq/JN928.01/Knowland9-12

c: Melissa McLaughlin, Martins Point
Sarah Marshall, Terrance J. DeWan and Associates

THIS IS NOT A PERMIT/CONSTRUCTION CANNOT COMMENCE UNTIL THE PERMIT IS ISSUED

All Purpose Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 331 Veranda Street		
Total Square Footage of Proposed Structure ~60 sqft	Square Footage of Lot N/A	
Tax Assessor's Chart, Block & Lot Number Chart# Block# Lot#	Owner: Martins Point Health Care 331 Veranda Street	Telephone#: Gene Gillies (207) 828-2418
Lessee/Buyer's Name (If Applicable)	Owner's/Purchaser/Lessee Address:	Cost Of Work: $ 4,000.00 Fee: $

Current use: N/A

If the location is currently vacant, what was prior use:
Approximately how long has it been vacant:

Proposed use: Equipment Foundation

Project description: Furnish and install 10' x 6' concrete pad for outdoor emergency generator. Extend existing fence approx. 28 linear feet for architectural screening.

Contractor's Name, Address & Telephone: Electronic Environments Corp. (EEC)
60 Shawmut Rd.
Canton, MA 02021 (781) 858-0591

Applicants Name, Address & Telephone: Martins Point Health Care
331 Veranda Street (207) 828-2418

Who should we contact when the permit is ready: Karen Nordstrom - Contractor
Telephone: (781) 858-0591

If you would like the permit mailed, what mailing address should we use:

Will pick up when ready

Rec'd By:

City of Portland Site Plan Application

If you or the property owner owes real estate taxes, personal property taxes or user charges on any property within the City, payment arrangements must be made before permit applications can be received by the Inspections Division.

Address of Proposed Development: 331 Veranda Street		Zone: RP and R5
Total Square Footage of Proposed Structure: 54,000 s.f. (two levels at 27,000 s.f.)	Square Footage of Lot: Lot 1 - 304,997 s.f.; Lot 5 - 199,077 s.f.	
Tax Assessor's Chart, Block & Lot: Chart# 434 Block# C Lot# 001 & 005	Property owner's mailing address: c/o Ann Tucker, Martin's Point Health Care 331 Veranda Street, Portland, ME 04104	Telephone #: 207-791-3712
Consultant/Agent, mailing address, phone # & contact person: Dwight Anderson, PE, c/o DeLuca-Hoffman Assoc., Inc., 778 Main St., Ste. 8, South Portland, ME 04106 ph: 775-1121	Applicant's name, mailing address, telephone #/Fax#/Pager#: See Owner info above Ph: 791-3712, Fax: 828-2439	Project name: Martin's Point Redevelopment Project

Fee For Service Deposit (all applications) ___X___ ($200.00)

Proposed Development (check all that apply)

_X_ New Building ___ Building Addition ___ Change of Use ___ Residential ___ Office ___ Retail
___ Manufacturing ___ Warehouse/Distribution _X_ Parking lot
___ Subdivision ($500.00) + amount of lots____ ($25.00 per lot) $_____ + major site plan fee if applicable
___ Site Location of Development ($3,000.00)
(except for residential projects which shall be $200.00 per lot_____)
_X_ Traffic Movement ($1,000.00) ___ Storm water Quality ($250.00)
___ Section 14-403 Review ($400.00 + $25.00 per lot)
___ Other_____

Major Development (more than 10,000 sq. ft.)

___ Under 50,000 sq. ft. ($500.00)
_X_ 50,000 - 100,000 sq. ft. ($1,000.00)
_X_ Parking Lots over 100 spaces ($1,000.00)
___ 100,000 - 200,000 sq. ft. ($2,000.00)
___ 200,000 - 300,000 sq. ft. ($3,000.00)
___ Over 300,000 sq. ft. ($5,000.00)
___ After-the-fact Review ($1,000.00 + applicable application fee)

Minor Site Plan Review

___ Less than 10,000 sq. ft. ($400.00)
___ After-the-fact Review ($1,000.00 + applicable application fee)

Plan Amendments

___ Planning Staff Review ($250.00)
___ Planning Board Review ($500.00)

~ Please see next page ~

5/2005

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT BY RULE NOTIFICATION FORM
(For use with DEP Regulation, Chapter 305)

PLEASE TYPE OR PRINT IN *BLACK INK ONLY*

Name of Applicant: (owner)	Martin's Point Health Care			Applicant Mailing Address:	c/o Ann Tucker 331 Veranda Street		
Town/City:	Portland			State:	Maine		
Zip Code:	04104	Daytime Telephone No: (include area code)	(207) 791-3712	Project Location: (town)	331 Veranda Street (Route 1) Portland		
County:	Cumberland	Map #: 434 C	Lot #: 001 & 005	Name of Wetland or Waterbody:	Casco Bay/ Presumpscot River		
Name of Agent:	Dwight D. Anderson, P.E. DeLuca-Hoffman Associates, Inc.			Agents Telephone No: (include area code)	(207) 775-1121		
Detailed Directions to Site:	From South: From I-95 N merge onto I-295 N via Exit 44 toward South Portland/Downtown Portland. Take ME-26 N/Washington Ave Exit – Exit 8. Stay straight to go onto Washington Ave/ME-26. Turn right onto Veranda Street. Martin's Point Health Care site is on right hand side #331 Veranda Street. From North: From I-95 S merge onto I-295 S via Exit 103 toward ME-9/Gardiner/ME-126/Brunswick. Take the US-1 Exit – Exit 9 – toward ME-26 N/Baxter Blvd/Washington Ave. Turn right. Turn slight right onto Bates Street. Bates Street becomes Veranda Street. Martin's Point Health Care site is on right hand side #331 Veranda Street.						
				UTM Northing: (if known)	——	UTM Easting: (if known)	——
Description of Project:	Phase I of the project includes demolition of two existing maintenance buildings, and renovation of the existing Marine Hospital building. No Phase I work is associated with this Permit By Rule Application. Phase II of the project includes construction of a new 27,000 square foot footprint building, construction of a parking structure, associated access drives, parking area improvements, water quality features, and miscellaneous site improvements.						
				Part of a larger project?		Yes X	No

(**CHECK ONE**) This project: does ☐ does not X involve work below mean low water.

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Rules, Chapter 305. I and my agents, if any, **have read** and will comply with all of the standards in the Sections checked below.

- X **Sec. (2) Act. Adjacent to Protected Natural Res.**
- ☐ **Sec. (3) Intake Pipes**
- ☐ **Sec. (4) Replacement of Structures**
- ☐ **Sec. (5) REPEALED**
- ☐ **Sec. (6) Movement of Rocks or Vegetation**
- X **Sec. (7) Outfall Pipes**
- X **Sec. (8) Shoreline stabilization**
- ☐ **Sec. (9) Utility Crossing**
- ☐ **Sec. (10) Stream Crossing**
- ☐ **Sec. (11) State Transportation Facilities**
- ☐ **Sec. (12) Restoration of Natural Areas**
- ☐ **Sec. (13) F&W Creation/Enhance/Water Quality Improvement**
- ☐ **Sec. (14) REPEALED**
- ☐ **Sec. (15) Public Boat Ramps**
- ☐ **Sec. (16) Coastal Sand Dune Projects**
- ☐ **Sec. (17) Transfers/Permit Extension**
- ☐ **Sec. (18) Maintenance Dredging**

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that ***this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.***

I have attached the following required submittals. **NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:**

- X ***Attach*** **a check for $55 (non-refundable) made payable to: "Treasurer, State of Maine".**
- X ***Attach*** **a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.**
- X ***Attach*** **all other required submissions as outlined in the PBR Sections checked above.**

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in the rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant:		**Date:**	6/9/06

Keep a copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection at **the appropriate regional office listed below**. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP
STATE HOUSE STATION 17
AUGUSTA, ME 04333-0017
(207)287-2111

PORTLAND DEP
312 CANCO ROAD
PORTLAND, ME 04103
(207)822-6300

BANGOR DEP
106 HOGAN ROAD
BANGOR, ME 04401
(207)941-4570

PRESQUE ISLE DEP
1235 CENTRAL DRIVE
PRESQUE ISLE, ME 04769
(207)764-0477

OFFICE USE ONLY	Ck.#		Staff	Staff	
PBR #	FP	Date	Acc. Date	Def. Date	After Photos

DEPLW0309-I2005

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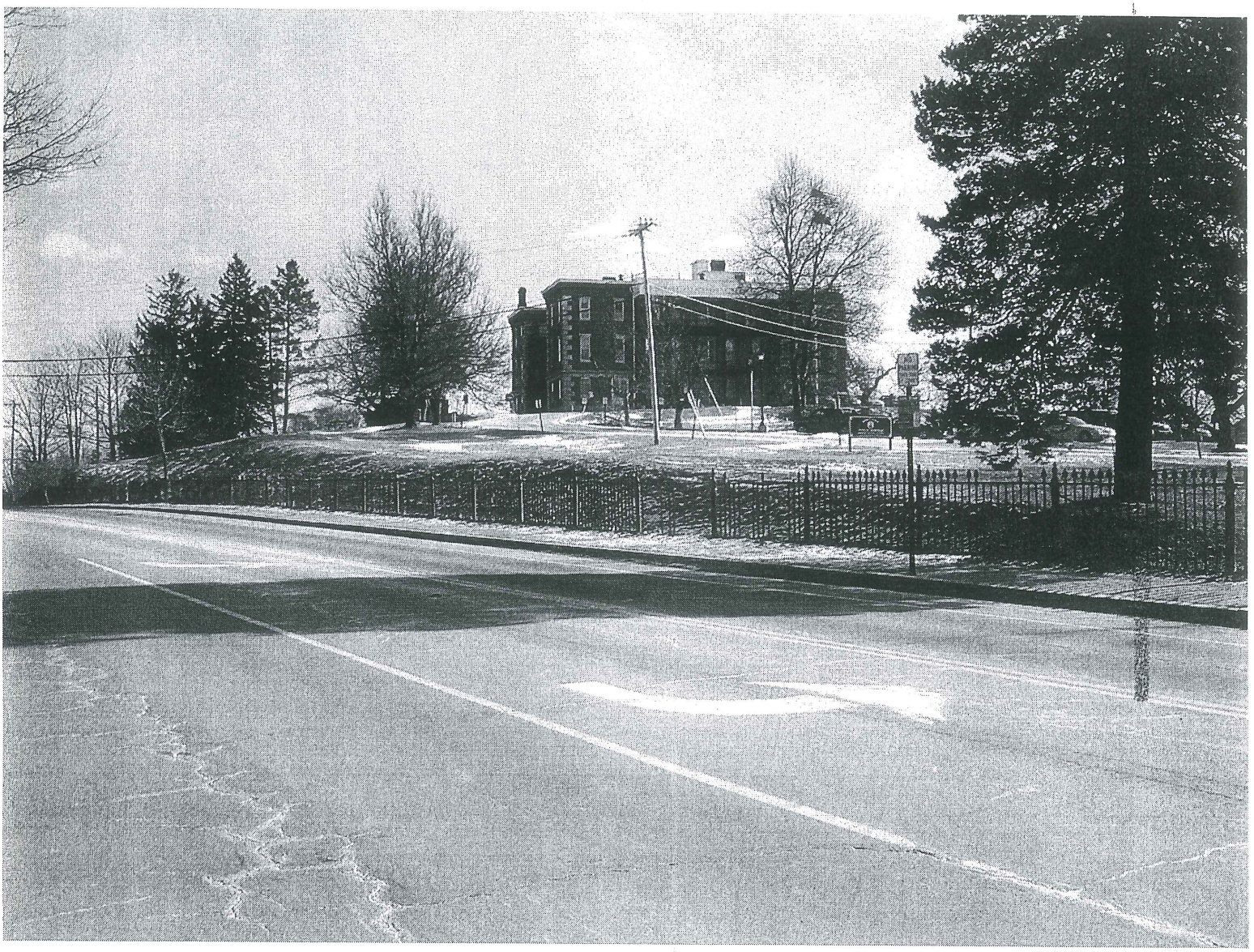

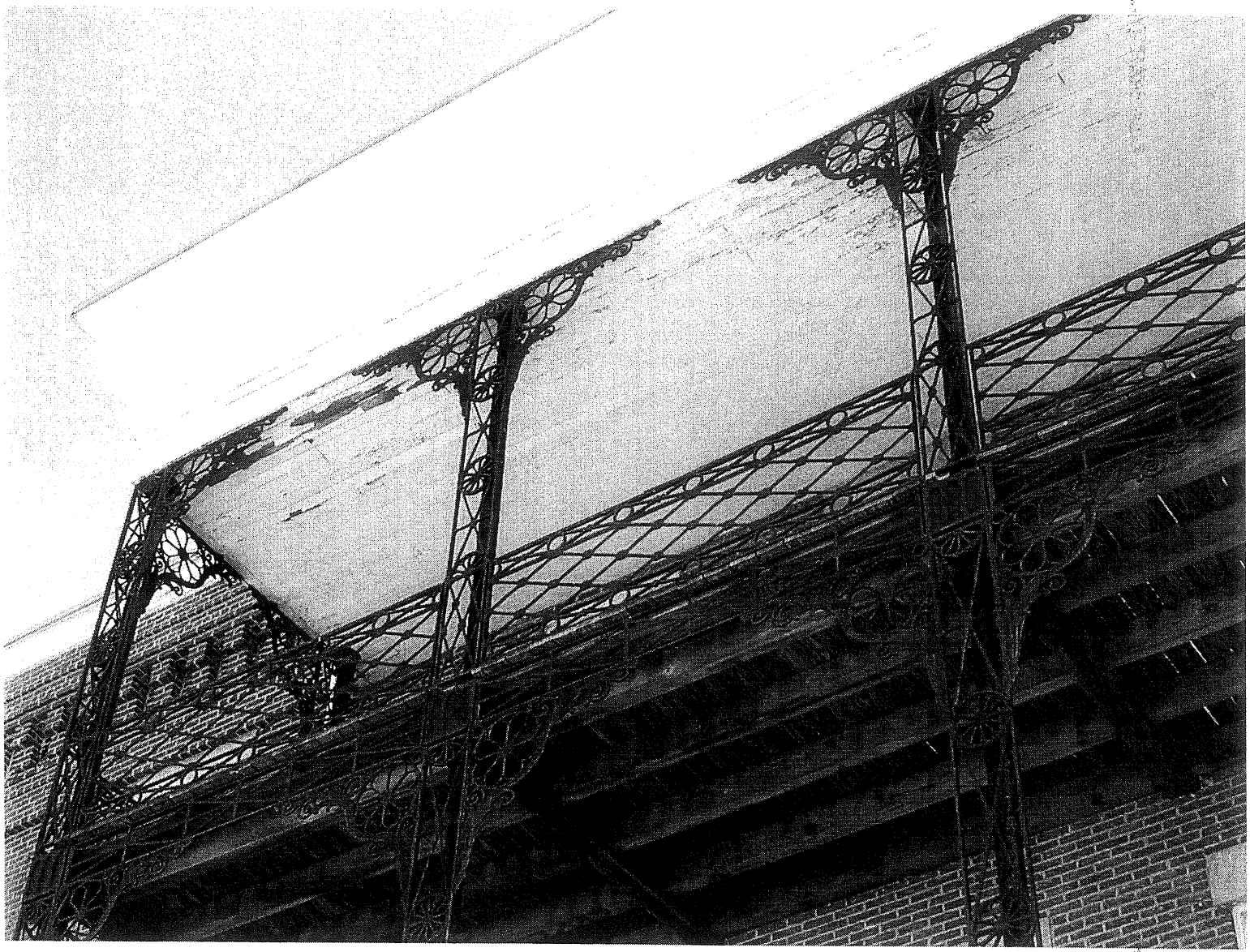

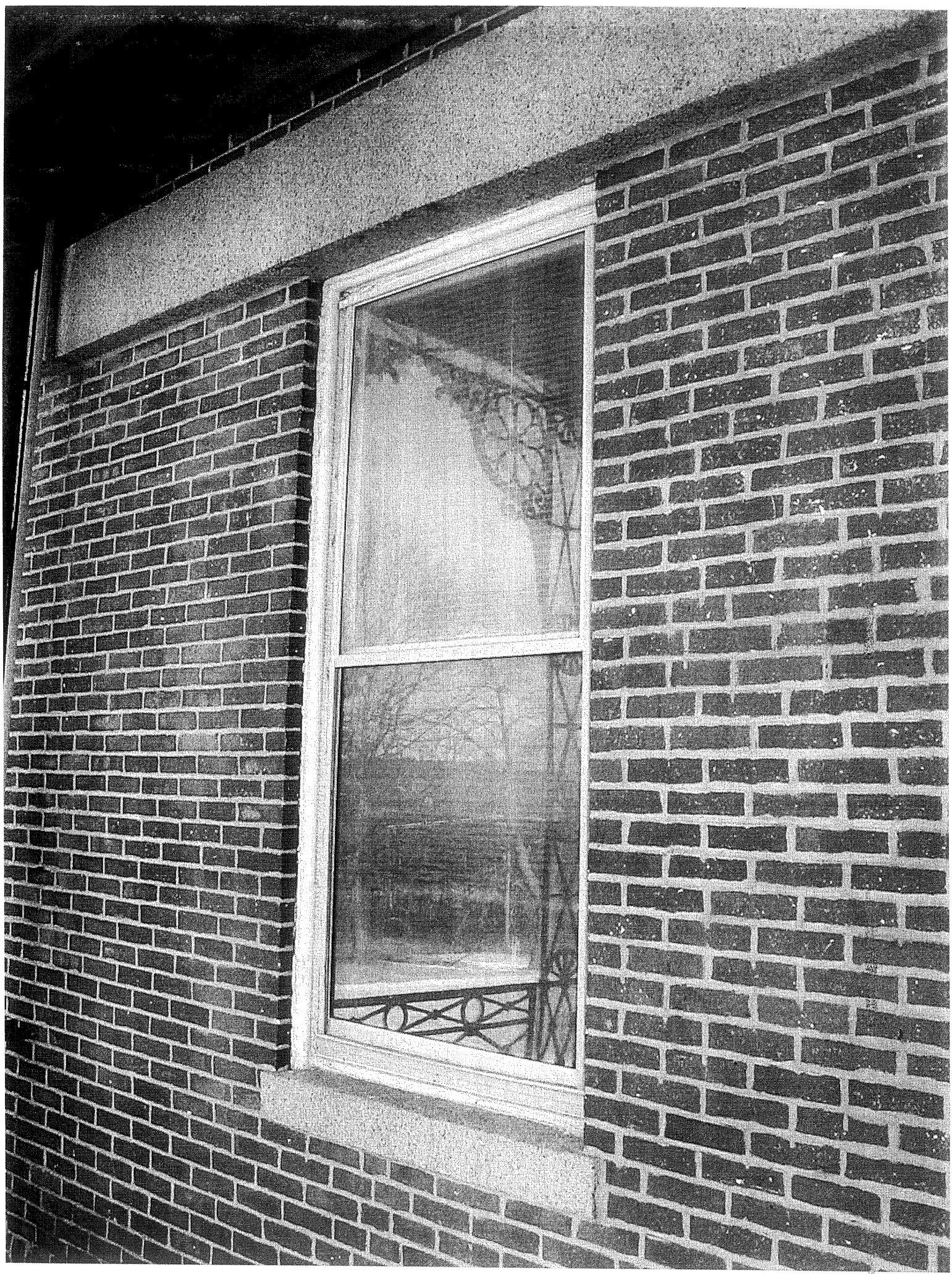

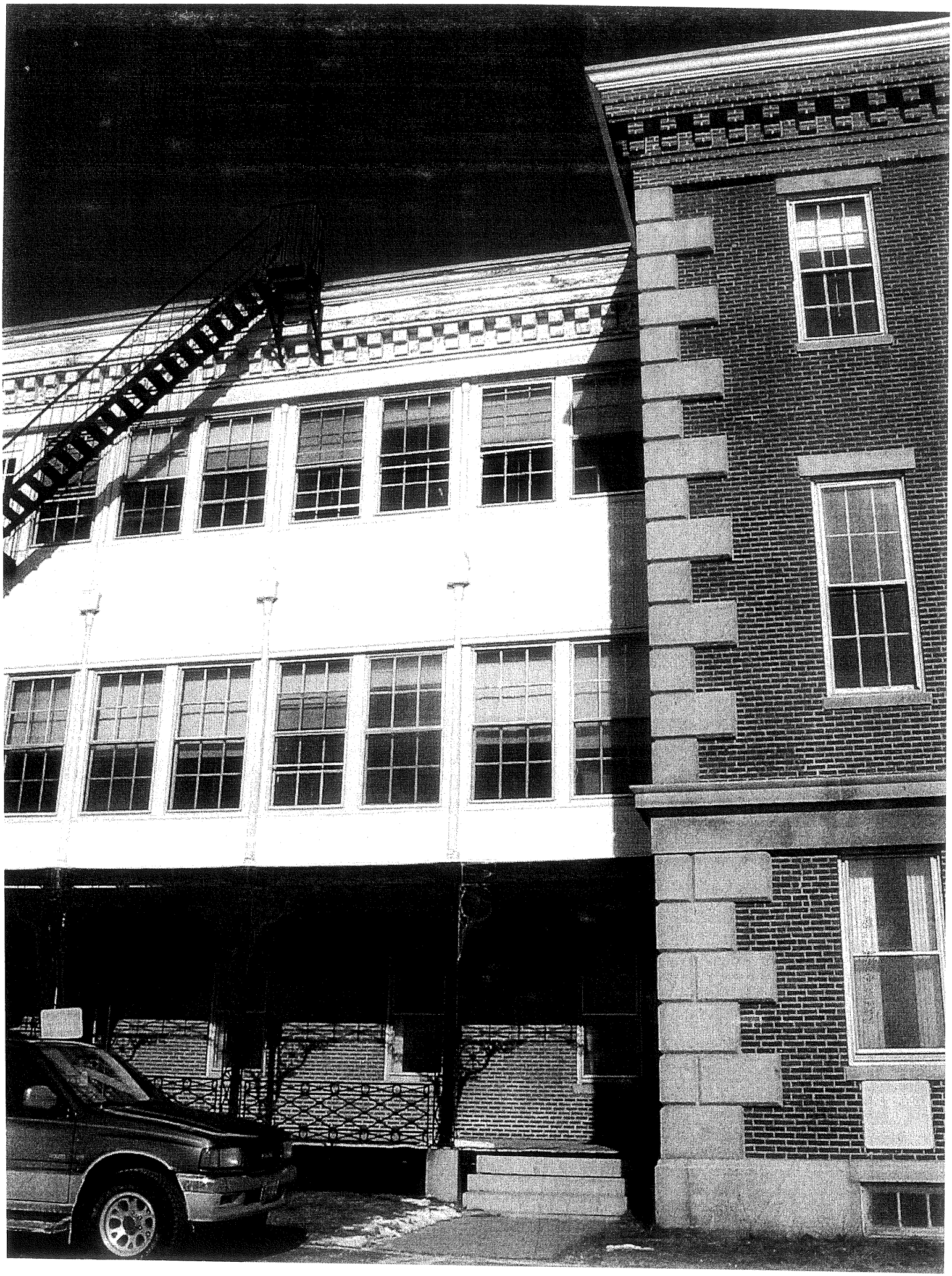

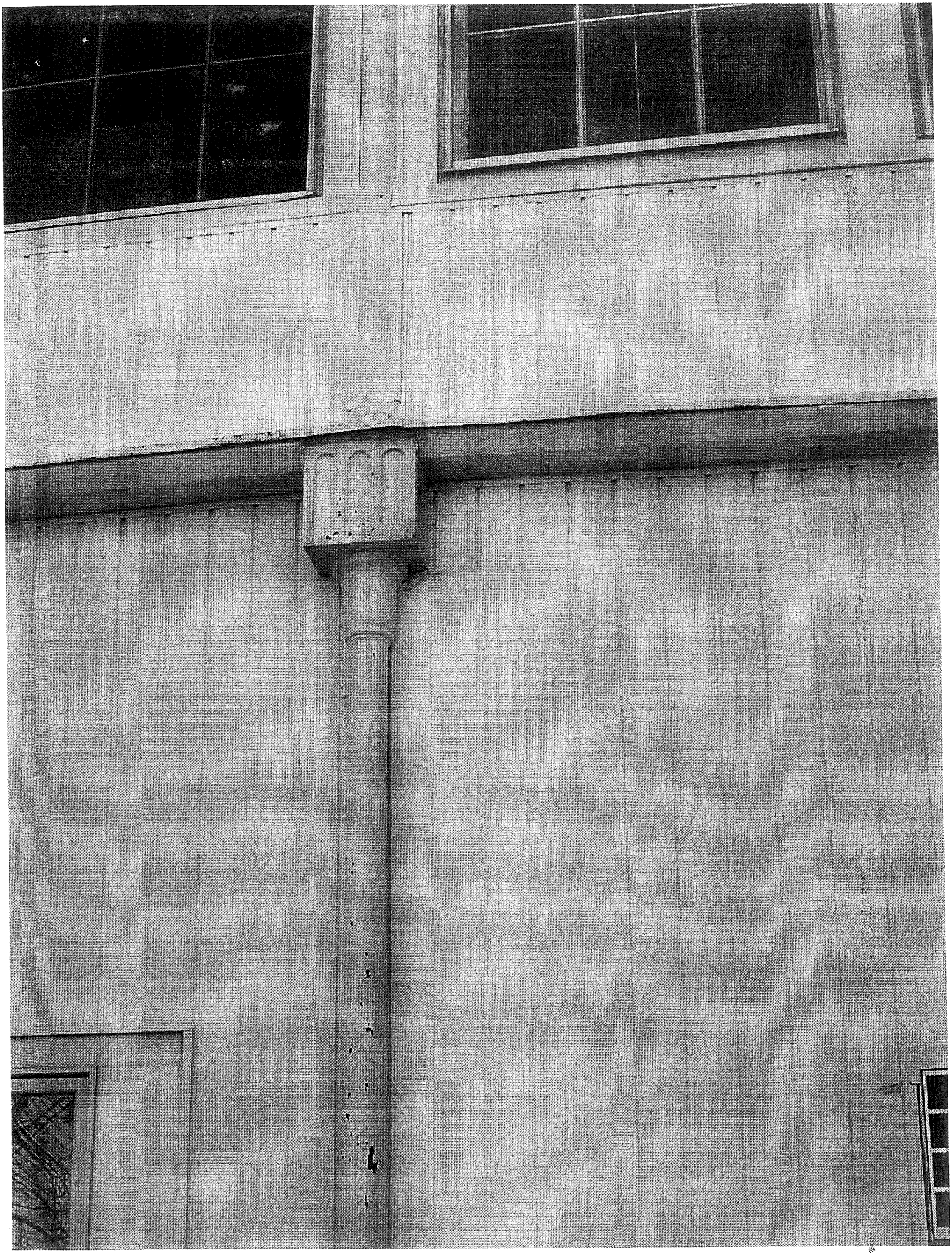

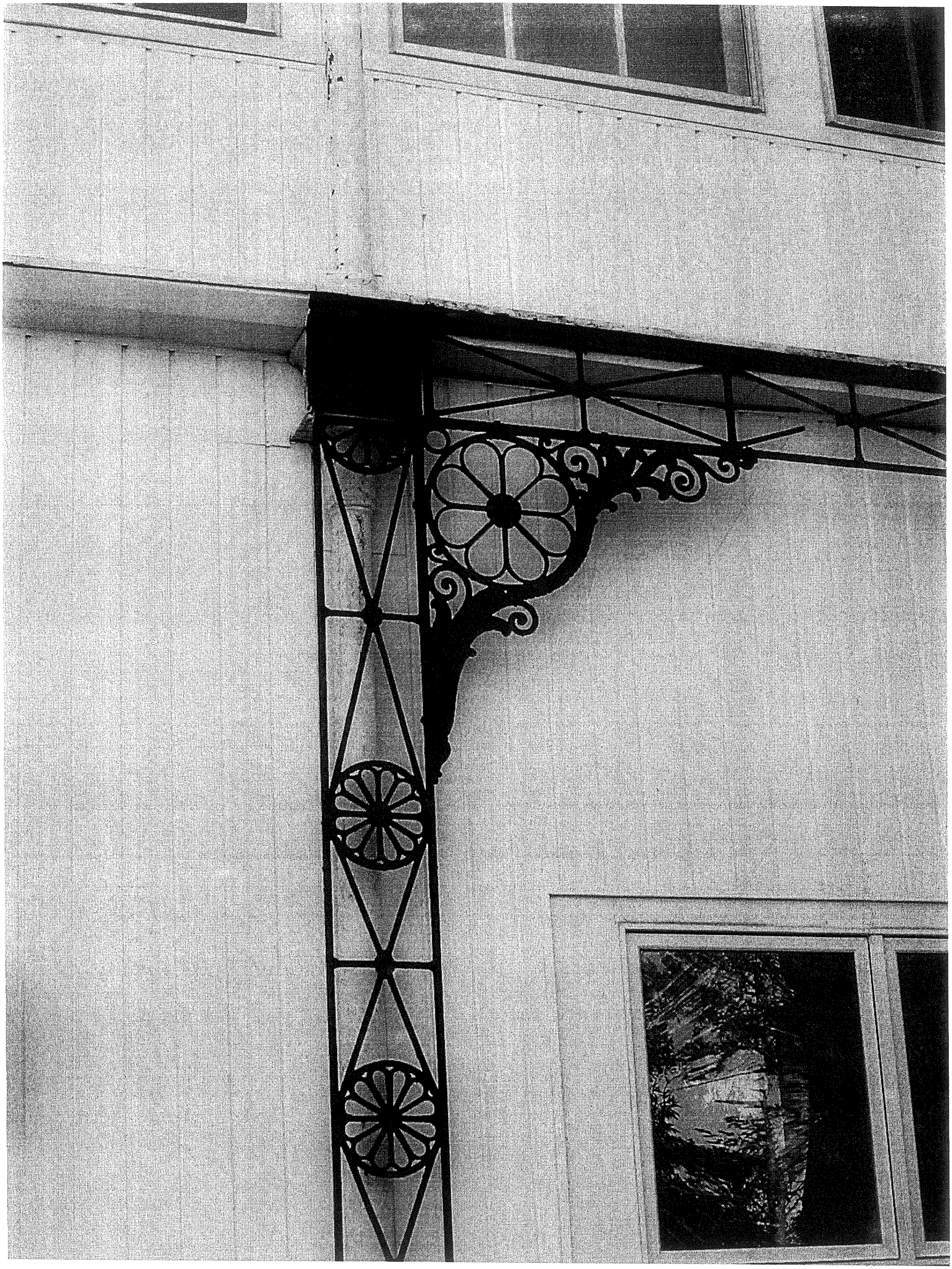

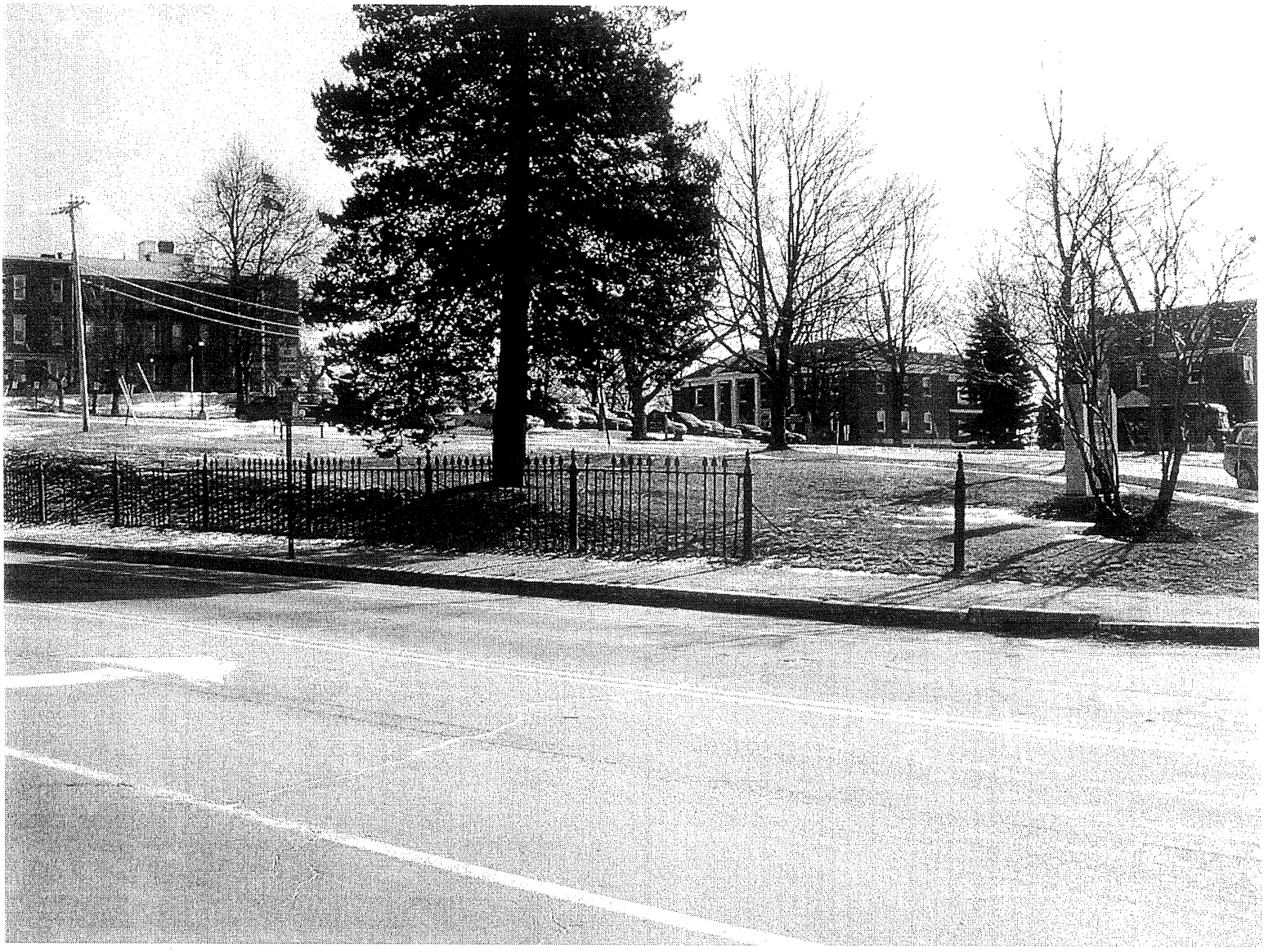

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SECTION 04901

CLAY MASONRY RESTORATION AND CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Repairing clay masonry, including replacing damaged units.
   2. Repointing mortar joints.

B. Allowances: Quantity allowances for clay masonry restoration and cleaning are specified in Division 1 Section "Allowances."

1.2 SUBMITTALS

A. Product Data: For each product indicated. Include recommendations for application and use. Include test reports and certifications substantiating that products comply with requirements.

1.3 QUALITY ASSURANCE

A. Mockups: Prepare field samples for restoration methods and cleaning procedures to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work.
   1. Locate mockups on the building where directed by Architect.
   2. Repointing: Prepare 2 separate sample areas approximately 36 inches (900 mm) high by 72 inches (1800 mm) wide for each type of repointing required; 1 for demonstrating methods and quality of workmanship expected in removing mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints.
   3. Notify Architect 7 days in advance of the dates and times when samples will be prepared.
   4. Obtain Architect's approval of mockups before starting the remainder of clay masonry restoration and cleaning.
   5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

B. Source of Materials: Obtain materials for masonry restoration from a single source for each type of material required (face brick, cement, sand, etc.) to ensure a match of quality, color, pattern, and texture.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Carefully pack, handle, and ship masonry units and accessories strapped together in suitable packs or pallets or in heavy-duty cartons.

B. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with type and name of products and manufacturers.

C. Store cementitious materials off the ground, under cover, and in a dry location.

D. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

E. Comply with manufacturer's written instructions for minimum and maximum temperature requirements for storage.

1.5 PROJECT CONDITIONS

A. Do not repoint mortar joints or repair masonry unless air temperature is between and 40 and 80 deg F (4 and 27 deg C) and will remain so for at least 48 hours after completion of Work.

B. Cold-Weather Requirements: Comply with the following procedures for masonry repair and mortar-joint pointing:
   1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
   2. When mean daily air temperature is between 25 and 40 deg F (minus 4 and 4 deg C), cover completed Work with weather-resistant, insulating blankets for 48 hours after repair and pointing.
   3. When mean daily air temperature is below 25 deg F (minus 4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 48 hours after repair and pointing.

C. Hot-Weather Requirements: Protect restoration work when temperature and humidity conditions produce excessive evaporation of water from mortar and patching materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above.

D. Prevent grout or mortar used in repointing and repair work from staining face of surrounding masonry and other surfaces. Immediately remove grout and mortar in contact with exposed masonry and other surfaces.

E. Protect sills, ledges, and projections from mortar droppings.

PART 2 - PRODUCTS

2.1 MASONRY MATERIALS

A. Face Brick and Accessories: Provide face brick and accessories, including specially molded, ground, cut, or sawed shapes where required to complete masonry restoration work.
   1. Provide units with color, surface texture, size, and shape to match existing brick work and with physical properties not less than those determined from preconstruction testing of selected existing units.

2.2 MORTAR MATERIALS

A. Portland Cement: ASTM C 150, Type I.

B. Hydrated Lime: ASTM C 207, Type S.

C. Aggregate for Mortar: ASTM C 144.
   1. Match size, texture, and gradation of existing mortar as closely as possible.

D. Water: Potable.

2.3 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious and aggregate material in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
   1. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 1 to 2 hours. Add remaining water in small portions until reaching mortar of the desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

B. Do not use admixtures of any kind in mortar, unless otherwise indicated.

C. Mortar Proportions: Mix mortar materials in the following proportions:
   1. Pointing Mortar for Brick: 1 part portland cement, 6 parts lime, and 12 parts colored- or natural-mortar aggregate.
   2. Rebuilding Mortar: Same as pointing mortar.

PART 3 - EXECUTION

3.1 BRICK REMOVAL AND REPLACEMENT

A. Carefully remove by hand, at locations indicated, bricks that are damaged, spalled, or deteriorated. Cut out full units from joint to joint and in a manner to permit replacement with full-size units without damaging surrounding masonry.

B. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

C. Salvage as many whole, undamaged bricks as possible.

D. Remove mortar, loose particles, and soil from salvaged brick by cleaning with brushes and water. Store brick for reuse.

E. Clean remaining brick at edges of removal areas by removing mortar, dust, and loose particles in preparation for replacement.

F. Install new or salvaged brick to replace removed brick. Fit replacement units into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

G. Lay replacement brick with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet clay bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g per 30 sq. in. per min. (30 g per 194 sq. cm per min.). Use wetting methods that ensure units are nearly saturated but surface dry when laid. Maintain joint width for replacement units to match existing units.
   1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
   2. Rake out mortar used for laying brick before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing masonry.

3.2 REPOINTING MASONRY

A. Rake out joints as follows:
   1. Rake out mortar from joints to depths equal to 2-1/2 times their widths, but not less than 1/2 inch (13 mm) or not less than that required to expose sound, unweathered mortar.
   2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
   3. Do not spall edges of masonry units or widen joints. Replace damaged masonry units.
      a. Use power-operated grinders for horizontal joints with Architect's written approval based on submission by Contractor of a satisfactory quality-control program and demonstrated ability of operators to use tools without damaging masonry. Cut out old mortar in vertical joints by hand with a chisel and mallet only.

B. Point joints as follows:
   1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at the time of pointing, excess water has evaporated or run off and joint surfaces are damp but free of standing water.
   2. Apply the first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch (9 mm) until a uniform depth is formed. Compact each layer thoroughly and allow it to become thumbprint hard before applying the next layer.
   3. After joints have been filled to a uniform depth, place remaining pointing mortar in 3 layers with first and second layers each filling about two-fifths of joint depth; third layer, the remaining one-fifth. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing bricks have rounded edges, slightly recess final layer from face. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
   4. When mortar is thumbprint hard, tool joints to match original appearance of joints, unless otherwise indicated. Remove excess mortar from edge of joint by brushing.
   5. Cure mortar by maintaining in a damp condition for at least 72 hours.
   6. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.3 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use stiff-nylon or -fiber brushes and clean water, spray applied at a low pressure.

B. Do not use metal scrapers or brushes.

END OF SECTION

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes sheet metal flashing and trim in the following categories:
   1. Exposed trim, gravel stops, and fasciae.
   2. Copings.
   3. Metal flashing.
   4. Reglets.

1.2 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.

B. Fabricate and install flashings at roof edges to comply with recommendations of FM Loss Prevention Data Sheet 1-49 for the following wind zone:
   1. Wind Zone 2: Wind pressures of 31 to 45 psf (1.48 to 2.15 kPa).

1.3 SUBMITTALS

A. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details.

B. Samples of sheet metal flashing, trim, and accessory items, in the specified finish. Where finish involves normal color and texture variations, include Sample sets composed of 2 or more units showing the full range of variations expected.
   1. 8-inch- (200-mm-) square Samples of specified sheet materials to be exposed as finished surfaces.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

1.5 PROJECT CONDITIONS

A. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 METALS

A. Zinc-Coated Copper: ASTM B370, H00 cold-rolled copper sheet, not less than 16 oz./sq. ft. (0.55 mm thick), both sides coated with tin-zinc not less than 0.5 mils thick using the hot-dipped process.
   1. Product: FreedomGray by Revere Copper.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Solder for Zinc-Coated Copper: ASTM B32, pure tin solder, lead free.

B. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

C. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4-mm) dry film thickness per coat.

D. Mastic Sealant: As specified in Division 7 Section "Joint Sealants".

E. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7 Section "Joint Sealants."

F. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.

G. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

H. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

2.3 FABRICATION, GENERAL

A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.
   1. Conform to SMACNA's "Architectural Sheet Metal Manual" – 5th Edition.

B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

D. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

E. Expansion Provisions: Space movement joints at maximum of 10 feet (3 m) with no joints allowed within 24 inches (610 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

G. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.

H. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.

I. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
   1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

2.4 SHEET METAL FABRICATIONS

A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.

B. Through-wall Flashing: Fabricate from the following material:
   1. Zinc-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).
   2. Conform to SMACNA figure

C. Downspouts: Fabricate from the following material:
   1. Zinc-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).
   2. Conform to SMACNA figure
   3. Hanger Design: SMACNA figure

D. Conductor Heads: Fabricate from the following material:
   1. Zinc-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).
   2. Conform to SMACNA figure 1-25F.

E. Copings: Fabricate from the following material:
   1. Zinc-Coated Copper: 24 oz./sq. ft. (0.82 mm thick).
   2. Conform to SMACNA figure
   3. Locks and Seams: SMACNA figure

C. Mockups: Prepare field sample for paint removal, restoration methods and painting procedures to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work.
   1. Locate sample on the building where directed by Architect.
   2. Obtain Architect's approval of mockup before starting the remainder of the work.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Carefully pack, handle, and ship sash and accessories removed from the site to prevent damage.

B. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with type and name of product and manufacturer.

C. Comply with manufacturer's written instructions for minimum and maximum temperature requirements for storage and use.

1.5 PROJECT CONDITIONS

A. Do not paint unless air temperature is between 50 and 80 deg F and will remain so for at least 48 hours after completion of Work.

B. Cold-Weather Requirements: Comply with the following procedures for window repair and painting:
   1. Provide enclosure and heat to maintain temperatures above 60 deg F within the enclosure for 48 hours after repair and pointing.

C. Hot-Weather Requirements: Protect restoration work when temperature and humidity conditions produce excessive rapid drying of paint and patching materials. Do not apply epoxy patches and paint to substrates with temperatures of 90 deg F and above.

D. Apply consolidation treatment only when the wood is dry and protected from rain. Immediately remove consolidation treatment in contact with exposed masonry and other surfaces.

E. Protect sills, ledges, and projections from consolidation treatment and paint.

PART 2 - PRODUCTS

2.1 APPROVED WINDOW FABRICATORS

A. Available Fabricators: Subject to compliance with requirements, companies that may be incorporated into the Work include, but are not limited to, the following:

B. Fabricators: Subject to compliance with requirements, engage one of the following:
   1. Precision Millwork, South Portland (207-761-3997)
   2. Windham Millwork, Windham (207-892-3238)
   3. Wright-Ryan, Portland (207-773-3625)

2.2 REPAIR MATERIALS

A. Epoxy Consolidant: Abatron, Inc. LiquidWood; Minwax High Performance Wood Hardener; or equal from West System, Gougeon Brothers, Inc. or Roux Laboratories.

B. Epoxy Paste Filler: Abatron, Inc. WoodEpox; Minwax High Performance Wood Filler; or equal from West System, Gougeon Brothers, Inc. or Roux Laboratories.

C. Glazing Putty: DAP 33 window glazing or equal.

D. Sealant: ASTM C920, Type S, Grade NS, Class 25; single component polyurethane.

E. Sash Weights: Reuse existing sash weights when possible. Replacement sash weights, if necessary, shall match diameter and weight of existing. New sash cord shall match the diameter of the existing.

F. Sash Cord: Cotton rope or metal chain of type and size to match existing.

G. Hardware and Pulleys: Match existing for replacement; Blaine Window Hardware, Inc., Barry Supply Company, or equal.

H. Weather Strip: Accurate Metal Weather Strip Co. or equal.

2.3 PAINT

A. Primer: Exterior, alkyd wood primer, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer.
1. Cal: Trouble-Shooter 100% Acrylic Latex Primer 45100.
2. ICI: 2000-1200, Dulux-Pro Exterior Acrylic Primer.
3. Moore: Super Spec Latex Exterior Primer #169.
4. S-W: A-100 Exterior Latex Wood Primer B42W41 Series.

B. Linseed Oil:

C. Finish Coats: Refer to Division 9 Section "Painting" for finish painting.

2.4 GLAZING

A. Glass: Manufacturer's standard factory-glazing system of Clear float glass units. Tempered where required by Code.

2.5 HARDWARE

A. Sash Lifts: If a window is to be made operable and is missing sash lifts, provide 2 sash lifts (Ives bronze lifts) per window at lowest sash rail.

PART 3 - EXECUTION

3.1 PREPARATION

A. General: Comply with paint removal manufacturer's written instructions for protecting building surfaces against damage from exposure to their products.

3.2 SASH REMOVAL AND RESTORATION

A. General: Carefully remove window components taking care not to create further damage and to keep in tact. Inspect all components for wear, damage, rot, cracks, splits and deterioration and perform the appropriate repairs to bring the window back to a "like new" condition.

B. Using the window numbering system indicated on the drawings, number each component and glass pane with the respective window number. Each component reused shall remain a part of it's original window and be returned back to the original location.

C. Stops: When the stops have been painted in place to the trim, neatly cut the joint between the stop and trim, allowing the stop to be removed without further damage to the finish.

D. Parting Beads: Carefully remove parting beads. Replace all existing parting beads with new of the same wood species and size as the original or as necessary to accommodate the reinstallation and operation of the sash. New bead is to fit snuggly into the frame rabbet.

E. Sash: Remove the sash from the window frame. Inspect each sash for damage, rot, loose joints, and other deterioration. Perform the appropriate repairs as necessary to fully restore sash.
   1. Remove all paint from the wooden sash to allow for inspection and testing of unsound areas to determine the extent of the deterioration and repairs required. Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required.
   2. Remove all glazing putty. Heat putty until soft and remove, taking care not to further damage wood surfaces. Take precautions as necessary to protect glass and wood from the heating process.
   3. Cut the embedded glazing putty at the edges and face of the glass until the glass is released from the muntin, style and/or rail and can be removed. Remove the glazing points. Heat putty until soft and remove, taking care not to further damage wood surfaces. Take precautions as necessary to protect glass and wood from the heating process. After glass has been removed remove remaining putty leaving the glazing channel clean. Store glass in a secure location for reinstallation.
   4. Stiles and Rail Repair:
      a. Face wear due to use: Rabbet our worn area creating a straight, smooth and square channel. Fill channel with a strip of wood of the same species and grain parallel with the existing style.
      b. Split or cracked edges: Thoroughly clean surfaces of crack, inject epoxy resin and securely clamp until dry.
      c. Muntins:
         1) Minor Surface Deterioration: Harden area with application of Kyanoil or epoxy consolident.
         2) Soft and Loose Wood: Consolidate area by completely saturate area with an application of epoxy resin. After saturation remove excess resin allowing to dry.

3) Eroded Surfaces: Consolidate effected area and fill with epoxy paste filler. Once dry, shape filled area to match the original plan and profile.
4) Large missing pieces of Wood: Repair with a wood Dutchman.
5) Mortise and Tenon Joint:
   a) Minor Deterioration: At minor stile and rail surface rot and/or end grain checks, consolidate by completely saturate areas with an application of epoxy resin. After saturation remove excess resin allowing to dry.
   b) Sever Deterioration: Remove fasteners and disassemble stiles, rails and muntins. Stand the rotted ends of the pieces in a container of consolident covering a minimum of 3/4 of the rotted area. Leave pieces in the consolident long enough to achieve complete saturation of the wood grain at the rotted area. When necessary to achieve saturation, drill 1/8-inch holes in the affected area. Once saturation is achieved, remove excess consolident and let dry.
   c) Missing Corners, Edges and Mortise End Closure: Replace missing corners and edges at the stiles and rails and missing mortise end closures at the stiles with a dutchman repair.
   d) Mortise Repair: Saw cut out mortise as necessary to square up mortise area. Cut and fit a Dutchman repair to fill the mortise area, glue into place. Once glue has dried, cut out a new pocket and shape to fit tenon.
   e) Tenon Repair: Saw cut tenon off flush with the end of the rail. At the location of the old tenon, saw cut a slot into the end of the rail equal in thickness of the old tenon and to a depth equal in length of the tenon. Cut a new wood tenon insert to fit snuggly into the rail slot and the new mortise at the stile. The grain of the insert is to be parallel that to the rail. Glue and pin the insert into the rail.

5. Replace all broken, cracked and missing glass with new or salvaged of like kind and clarity. Upon completion of sash repair and one application of primer on all surfaces reinstall glass. Set glass in a bed of putty in the rabbet, install glazing points, and apply glazing compound on face of glass and rabbet at an angle that conceals both rabbet faces and is flush with the rabbet edges. Cut away excess compound leaving edges straight, true and clean.

3.3 SILL, FRAME AND TRIM REPAIR

A. Dry sills and wood members. Cover loosely with polyethylene sheeting and allow to sit until low moisture level is achieved in the wood.

B. Clean out all cracks of any dust and debris using scrapers, stiff fiber brush, oil free compressed air or vacuum.

C. Apply treatment to clean, dry surfaces according to manufacturer's written instructions.

D. Minor Surface Deterioration: Harden area with application of Kyanoil. Fill holes, erosion, gouges and cracks with epoxy paste filler. Fill minor unevenness with exterior grade spackle.

E. Minor Deterioration: At minor rot, end grain checks, and surface checks, consolidate by completely saturate areas with an application of epoxy resin. After saturation remove excess resin allowing to dry. Fill erosion, holes, gouges and cracks with epoxy paste filler. Fill minor unevenness with exterior grade spackle.

F. Sever End Deterioration: Stand the rotted ends of the disassembled pieces in a container of consolidate covering a minimum of 3/4 of the rotted area. Leave pieces in the consolident long enough to achieve complete saturation of the wood grain at the rotted area. When necessary at flat surfaces, drill 1/8-inch holes in the affected area to achieve saturation. Once saturation is achieved, remove excess consolident and let dry. Fill erosion, holes, gouges and cracks with epoxy paste filler. Fill minor unevenness with exterior grade spackle.

G. Missing Corners, Edges and Sections: Replace with a dutchman repair. Fill minor unevenness with exterior grade spackle.

H. Replacement: When it is not practical to repair the wooden element. Replace with that section with new of same wood species, milled to the same dimensions and profile as the original.

3.4 WINDOW AND/OR SASH REPLACEMENT

A. Materials: Clear ponderosa pine or another suitable fine-grained lumber; kiln-dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch (0.8 mm) deep by 2 inches (51 mm) wide; water-repellent preservative treated.
   1. Sash Thickness: Match existing.
   2. Sash Construction: Corners slot and tenoned.
   3. Muntins: Match existing size and configuration.

B. Replicate existing window sashes where indicated. Provide true divided lites in configuration indicated fabricated to match profiles of existing sash.

C. Glass: Clear float glass. Tempered where required by code.

D. Prime paint prior to installation.

E. Sashes may be planned top and bottom, with a maximum 1/16 inch gap, to adjust for out-of-square conditions. Reprime and paint prior to installation.

3.5 WEATHERSTRIPPING

A. Replace all weather-stripping with new. Install weather-stripping at the head, sill, upper and lower side of the frame jamb and at the sash meeting rail providing a complete system.

B. Prepare sash as necessary to receive the new weather-stripping in accordance with the manufacturers recommendations. Where the frame and sash are worn creating excessive space between them, provide the appropriate thickness wood shims behind the weather-stripping full width of the sash pocket and full height of the frame to achieve proper clearance.

3.6 HARDWARE

A. Remove paint from existing hardware and polish before reinstallation.

B. Where hardware is missing or damaged, provide new hardware of same design and material as original hardware.

C. Install hardware after painting operations are completed.

3.7 SASH BALANCE SYSTEM

A. Replace the rope sash cords with new cotton rope of appropriate size for the pulleys. If the knot pocket on the sash is damage and does not securely hold the knot, attach the knot with an appropriate size nail. If the sash cord is chain, replace with like kind and size. Replace sash weights missing or not retrievable.

B. Pulleys: Clean pulley and lubricate the shaft. If the pulley is worn or damaged replace with new matching the existing.

3.8 CAULKING

A. Remove existing caulking at perimeter of window units. Thoroughly scrape and wire brush surfaces to remove all traces of old sealant to assure proper bond of new sealant. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

B. Apply new sealant to joints, providing proper backer rods or bond breaker to provide a watertight joint. Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply. Do not feather out sealant onto adjacent surfaces.

3.9 PAINTING

A. Provide "Wet Paint" signs to notify public and to protect newly painted finishes.

B. Surfaces to be painted shall be clean and dry, with wood repair completed and all surfaces sanded. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer.

C. Apply one coat of primer to all surfaces before reinstallation of sash. Sash shall receive one coat of primer to all surfaces of sash and muttins before reinstallation of glass. Allow primer to thoroughly dry before application of glazing putty and topcoats of paint. Allow a minimum of 48 hours for primer to cure.

D. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.10 ADJUSTING AND CLEANING

A. Test each unit for proper operation and make required adjustments.

B. Clean interior and exterior surfaces of all glass upon completion of installation.

C. Remove and dispose of all construction debris and rubbish from the work site and grounds. Remove staging, lifts and other temporary items used for the work and leave site in the same condition as it was at the start of the work.

END OF SECTION

SECTION 09215

GYPSUM VENEER PLASTER

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Patching of existing gypsum veneer plaster over masonry surfaces.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For the following products:
   1. Trim Accessories: Full-size Sample in 12-inch (300-mm) length for each trim accessory indicated.

1.3 QUALITY ASSURANCE

A. Finish Mockups: Apply mockups of at least 100 sq. ft. (9 sq. m) in surface area to demonstrate aesthetic effects and qualities of materials and execution.
   1. Apply mockups for the following applications:
      a. Walls and Partitions: Match existing finishes.
      b. Ceilings: Match existing finishes.
   2. Simulate finished lighting conditions for review of mockups.
   3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 GYPSUM VENEER PLASTER MATERIALS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   1. Two-Component Gypsum Veneer Plaster:
      a. National Gypsum Company:
         1) Base Coat: Kal-Kote Base Plaster.
         2) Smooth Finish Coat: Kal-Kote Smooth Finish.
      b. United States Gypsum Co.:
         1) Base Coat: DIAMOND Veneer Basecoat Plaster.
         2) Smooth Finish Coat: DIAMOND Interior Finish Plaster.

B. Two-Component Gypsum Veneer Plaster: Separate formulations complying with ASTM C 587; one for base coat and one for finish coat application over substrates indicated.

B. Control Joints: Install control joints at locations indicated on Drawings, if not indicated, provide joints 30 foot maximum on center with joints aligning with building elements.

3.4 GYPSUM VENEER PLASTERING

A. Gypsum Veneer Plaster Application: Comply with ASTM C 843 and veneer plaster manufacturer's written recommendations.
   1. Where gypsum veneer plaster abuts metal door frames, windows, and other units in veneer plaster, groove finish coat to eliminate spalling.
   2. Do not apply veneer plaster to gypsum base if face paper has faded from exposure to light. Before applying veneer plaster, use remedial methods to restore bonding capability to faded face paper according to manufacturer's written recommendations and as approved by Architect.
   3. Provide two coat plaster of masonry substrates.

B. Concealed Surfaces: Omit gypsum veneer plaster in the following areas where veneer plaster will be concealed from view in the completed Work, unless otherwise indicated or required to maintain fire-resistance rating. Do not omit veneer plaster behind cabinets, furniture, furnishings, and similar removable items.
   1. Above suspended ceilings.
   2. Behind wood paneling and other permanently applied wall or ceiling finishes.

C. Gypsum Veneer Plaster Finish: Smooth-troweled finish, unless otherwise indicated.

END OF SECTION

SECTION 08590

WINDOW RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Paint removal and repriming wood windows.
   2. Sash removal and reglazing.
   3. Window and Sash replacement.
   4. Epoxy patch and wood consolidation.
   5. Wood crack and check filling.
   6. Replacement of sash weights and cords.
   7. Replacement of damaged muntins.
   8. Replacement of hardware.
   9. Perimeter caulking and sealant replacement at frame and trim perimeter.

1.2 SUBMITTALS

A. Product Data: For each product specified or proposed for use. Include recommendations for application and use.

B. Submit restoration program for the restoration process, including protection of surrounding materials on the building and Project site during operations. Describe in detail the materials, methods, equipment, and sequence of operations to be used for the restoration work.
   1. If alternative materials and methods to those indicated are proposed for restoration work, provide a written description, including evidence of successful use on other comparable projects.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.3 QUALITY ASSURANCE

A. Restorer Qualifications: Engage an experienced restorer that has completed work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Restoration Specialist: Engage an experienced window restoration firm that has completed work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
   1. Field Supervision: Require restoration specialist firms to maintain a supervisor on the Project site during times that window restoration work is in progress.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.

B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Roof-Edge Flashings: Secure metal flashings at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone.

D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet (3 m) with no joints allowed within 24 inches (610 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

E. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pretinned surface would show in finished Work.
   1. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
   1. Use joint adhesive for nonmoving joints specified not to be soldered.

G. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

H. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
   1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
   2. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.

I. Install reglets to receive counterflashing according to the following requirements:
   1. Where reglets are shown in concrete, furnish reglets for installation under Division 3 Section "Cast-in-Place Concrete."
   2. Where reglets are shown in masonry, furnish reglets for installation under Division 4 Section "Unit Masonry."

J. Through-wall Flashing: Completely soldered lap joints except at brick veneer control joints. At these locations, separate the flashing at the control joint turned up ends 2 inches to form a pan. Lap the rear leg of the through-wall flashing 3 inches onto the adjacent piece and sealed with mastic. Set the gap between the ends of the two pans in the field according to the temperature at the time of installation. A gap of 1/8 inch at 100 degrees F., 1/4 inch at 50 degrees F., 3/8 inch at 0 degrees F. Install a cover piece over the top of the abutting pans, covering the gap, and soldered to the vertical face of the flashing.

K. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inches (50 mm) and bed with sealant.

3.2 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION

SECTION 08212

STILE AND RAIL WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Exterior stile and rail wood doors with raised panels.

1.2 SUBMITTALS

A. Product Data: For each type of door. Include details of construction and glazing.
   1. Include factory-finishing specifications.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data, including those for stiles, rails, panels, and moldings (sticking); and other pertinent data.
   1. Indicate dimensions and locations of mortises and holes for hardware.
   2. Indicate requirements for veneer matching.
   3. Indicate doors to be factory finished and finish requirements.

C. Samples for Initial Selection: Color charts consisting of actual materials in small sections for faces of factory-finished doors with transparent finish. Show the full range of colors available for stained finishes.

D. Samples for Verification: Corner sections of doors approximately 8 by 10 inches (200 by 250 mm) showing edges, faces, joinery, and material qualities of typical stile, rail, molding, and panel for each species and door type.
   1. Finish sample with same materials proposed for factory-finished doors.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain stile and rail wood doors through one source from a single manufacturer.

B. Quality Standard: Comply with the following standard:
   1. AWI Quality Standard: AWI's "Architectural Woodwork Quality Standards" for grade of door, construction, finish, and other requirements.

C. Safety Glass: Provide products complying with ANSI Z97.1 and testing requirements of 16 CFR, Part 1201, for Category II materials, unless those of Category I are expressly indicated and permitted.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standard and manufacturer's written instructions.
   1. Individually package doors in plastic bags or cardboard cartons.
   2. Individually package doors in cardboard cartons and wrap bundles of doors in plastic sheeting.

B. Mark each door with individual opening numbers used on Shop Drawings. Use removable tags or concealed markings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Custom Stile and Rail Doors:
      a. A. E. Sampson (207-273-4000)
      b. Precision Millwork (207-761-3997)

2.2 MATERIALS

A. General: Use only materials that comply with referenced quality standards unless more stringent requirements are specified.
   1. Assemble exterior doors and sidelites, including components, with wet-use adhesives complying with ASTM D 5572 for finger joints and ASTM D 5751 for joints other than finger joints.

2.3 CUSTOM STILE AND RAIL DOORS WITH GLASS LITES

A. Exterior Doors and Transom Lights: Assemble with wet-use adhesives and comply with the following requirements:

B. Construction, General: Comply with the following requirements:
   1. Grade of Doors for Painted Finish: Custom.
   2. Wood Species and Cut for painted Finish: Paint grade mahogany, plain sawed.
   3. Stile and Rail Construction for Opaque Finish: Clear mahogany; may be edge glued for width or finger jointed.

C. Exterior Doors: Comply with the following requirements:
   1. Stile and Rail Widths: Manufacturer's standard, but not less than the following:
      a. Stiles, Top and Intermediate Rails: 5-3/8 inches (137 mm).
      b. Bottom Rails: 11-3/8 inches (289 mm).
   2. Molding Profile: Manufacturer's standard square.
   3. Glass for Openings: Uncoated, insulating-glass units made from two lites of 3.0-mm-thick, clear, fully tempered glass with 1/4-inch (6.4-mm) airspace.

2.4 FABRICATION

A. Fabricate stile and rail wood doors in sizes indicated for Project site fitting.

B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels, unless otherwise indicated:
   1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/2 inch (13 mm) from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 3/8 inch (10 mm) from bottom of door to top of threshold.
   2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.

C. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
   1. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.

D. Glazed Openings: Trim openings indicated for glazing with solid wood moldings of profile indicated, with one side removable.

E. Transom and Side Panels: Fabricate panels to match adjoining doors in materials, finish, and quality of construction.

F. Exterior Doors: Factory treat exterior doors after fabrication with water repellent to comply with NWWDA I.S.4. Flash top of outswinging doors with manufacturer's standard metal flashing.

2.5 SHOP PRIMING

A. Doors for Opaque Finish: Shop prime exposed portions of doors for paint finish with one coat of wood primer specified in Division 9 Section "Painting."

B. Transparent Finish: Shop seal faces and edges of doors for transparent finish with stain (if required), other required pretreatments, and first coat of finish as specified in the following:
   1. Division 9 Section "Painting."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine installed door frames before hanging doors.
   1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
   2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Division 8 Section "Door Hardware."

B. Manufacturer's Written Instructions: Install wood doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated.
   1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.

C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

D. Field-Finished Doors: Refer to the following for finishing requirements:
   1. Division 9 Section "Painting."
   2. Division 9 Section "Exterior Wood Stains."

3.3 ADJUSTING AND PROTECTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Refinish or replace doors damaged during installation.

C. Protect doors as recommended by door manufacturer to ensure that wood doors are without damage or deterioration at the time of Substantial Completion.

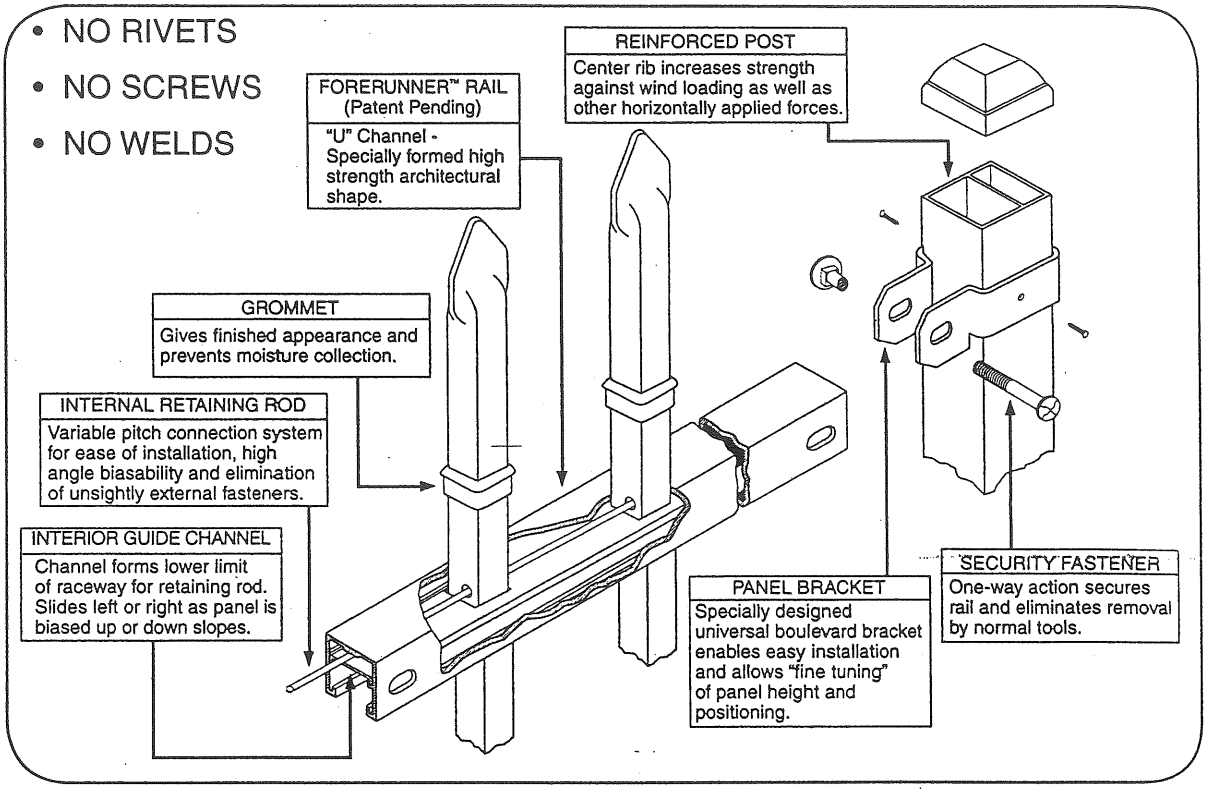
END OF SECTION

Echelon II™

The Higher Level of Aluminum Fences

Echelon II™ - A revolutionary fence system of aluminum posts, framework and mounting accessories that is ea assembled to form an attractive "good neighbor" appearance with no exposed fasteners. Any truly great produ must have a defining feature that sets it apart from all others; Ameristar's Echelon II™ fence has the re : utiona ForeRunner™ rail.

- NO RIVETS
- NO SCREWS
- NO WELDS



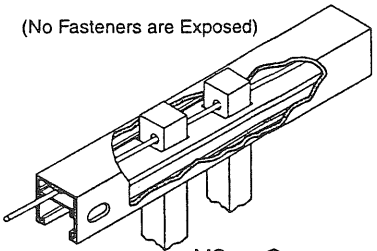
AMERISTAR® ECHELON II™ WITH FORERUNNER™ RAIL & RETAINING ROD

SECURITY

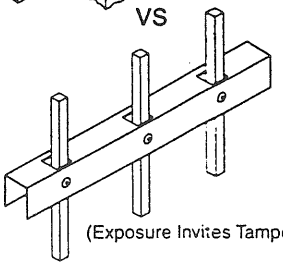
ForeRunner™ Rail with Enclosed Retaining Rod

Attachment cannot be compromised.

(No Fasteners are Exposed)



VS



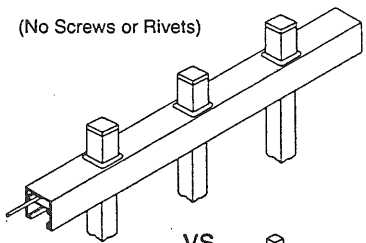
(Exposure Invites Tampering)

BEAUTY

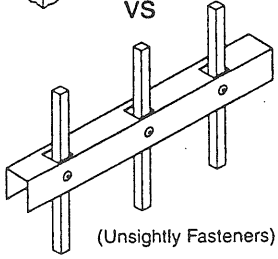
"Good Neighbor Design" Rod Follows ForeRunner™ Centerline

Clean uninterrupted look.

(No Screws or Rivets)



VS

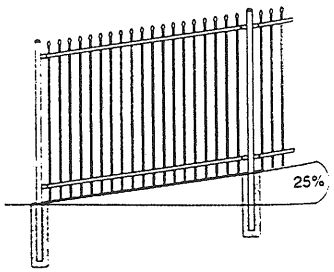


(Unsightly Fasteners)

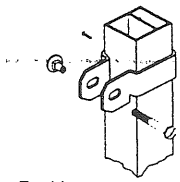
FUNCTIONALITY

Biasability a minimum of 25%

Does not require special assembly.



Universal mounting bracket

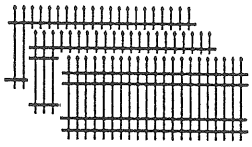


Enables accurate adjustment during installation

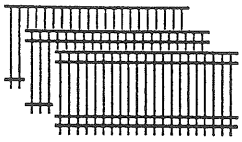
COMPONENT SIZES

System	Pickets	Rails	Posts
Echelon II™ Industrial	1" x 1"	1-3/4" x 1-3/4"	2-1/2" x 2-1/2"

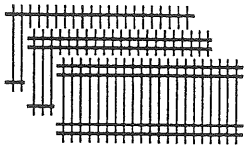
STYLES



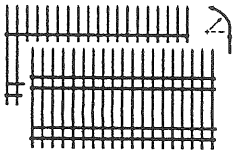
CLASSIC™
Style C2 (2-Rail)
Style C3 (3-Rail)
Style C4 (4-Rail)



MAJESTIC™
Style M2 (2-Rail)
Style M3 (3-Rail)
Style M4 (4-Rail)



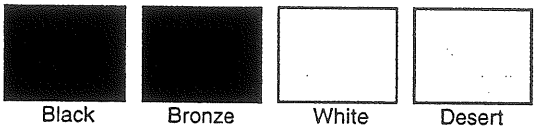
GENESIS™
Style G2 (2-Rail)
Style G3 (3-Rail)
Style G4 (4-Rail)



INVINCIBLE™
Style I3 (3-Rail)
Style I4 (4-Rail)

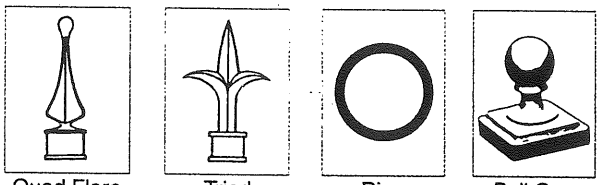
COLORS

Request Color Chip samples for actual color

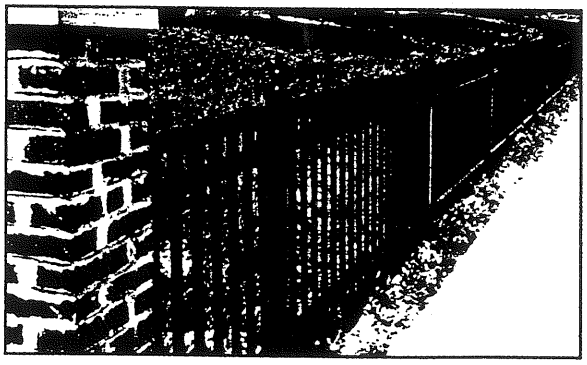


Black | Bronze | White | Desert Sand

ADORNMENTS



Quad Flare | Triad | Ring | Ball Cap



GATES

Gate information is provided in the Swing Gate Section (Pages 34-37) and the TransPort™ Cantilever Gate Section (Pages 38-39).

WIND LOADING

Height (FT)	Rail Length	Post Size	Echelon II™ Wind Load Capacity Factor (PSF)	Typical Wind Load Capacity (mph)
4	6	2-1/2" Square	112	206
		3" Square	213	285
	8	2-1/2" Square	84	178
		3" Square	160	
5	6	2-1/2" Square	76	
		3" Square	145	235
	8	2-1/2" Square	57	147
		3" x Square	109	203
6	6	2-1/2" Square	52	141
		3" Square	99	194
	8	2-1/2" Square	40	123
		3" Square	76	171
7	6	2-1/2" Square	38	120
		3" Square	73	166
	8	2-1/2" Square	28	
		3" Square	55	
8	6	2-1/2" Square	29	105
		3" x Square	56	145
	8	2-1/2" Square	22	91
		3" Square	42	126
		4" Square	78	172
9	6	4" Square	82	176
10	6	4" Square	66	159

Note: Mph calculated using ANSI/ASCE 7-98, "American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures" Exposure Category C (open terrain with scattered obstructions having lengths generally less than 30 feet). For wind loads applicable to a particular specification, consult the appropriate Building Code.

AVAILABILITY

Shipping

Echelon II™ Industrial Ornamental Fence components (e.g., pickets, rails, etc.) and TransPort™ Cantilever Gates are carefully packaged in heavy duty cardboard boxes to ensure the most economical damage-free shipping.

Ordering Information

To order, simply specify the fence or gate design series, color and height desired. Then figure and provide the quantities needed. Contact Ameristar® for the nearest distributor or if any other assistance is needed.

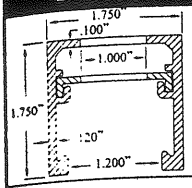
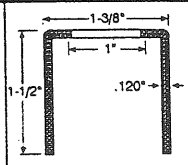
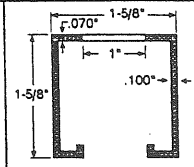
WARRANTY

A written lifetime limited warranty is extended on Ameristar's Echelon II™ fence systems. Call Ameristar for a copy.

MAINTENANCE

Little or no maintenance is required for the fence and gate systems supplied by Ameristar®. The yes coated aluminum in Echelon II™ will remain corrosion free for years to come. If pickets or rails are damaged by accidental impact, the affected components can be easily replaced. Damages to coated surfaces can be readily covered with Ameristar's matching custom finishes (either spray or paint pen application).

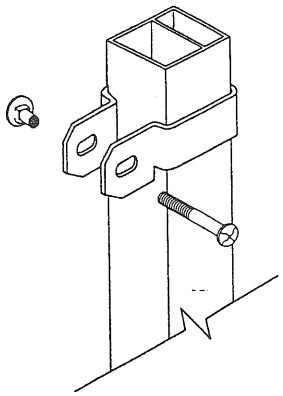
RAIL STRENGTH

ForeRunner™ (Aluminum) Echelon II™	Structural Parameters			U-Channel (Steel)	U-Channel (Aluminum)
	Profile of the Architectural Shape of the Rail *Vertical Design Loads are per rail; for capacity of fence panel, multiply by number of rails.				
.120/.100	T_{eff} = Effective Wall Thickness (IN)			.120	.100/.070
.2370	S_v = Section Modulus (IN) Vertical			.0938	.1350
.421	S_h = Section Modulus (IN) Horizontal			.210	.260
418#	6' Span	Vertical Load Data PV_f = Ultimate Vertical	6' Span	-----	262#
314#	8' Span		8' Span	229#	-----
742#	6' Span	Horizontal Load Data PH_f = Ultimate Horizontal	6' Span	-----	482#
556#	8' Span		8' Span	438#	-----
276#	6' Span	* Vertical Load Data PV_d = Vertical Design Load @ .66 F	6' Span	-----	157#
207#	8' Span		8' Span	151#	-----
490#	6' Span	* Horizontal Load Data PH_d = Horizontal Design Load @ .66 F	6' Span	-----	303#
367#	8' Span		8' Span	289#	-----

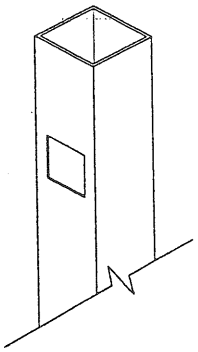
* RECOMMENDED LOAD VALUE FOR SAFE STRUCTURAL DESIGN (Allowable Strength = $.66F_y$).

POST STRENGTH & SECURITY

A comparison of the Echelon II™ reinforced post with standard punched posts used by other aluminum fence manufacturers shows several Echelon II™ advantages.



- The Echelon II™ post is made stronger by the reinforcing web; the conventional post is weakened by removing material from it's cross-section.
- Echelon II™ requires only one non-punched post; the punched system requires four different posts (line, end, corner, and gate).

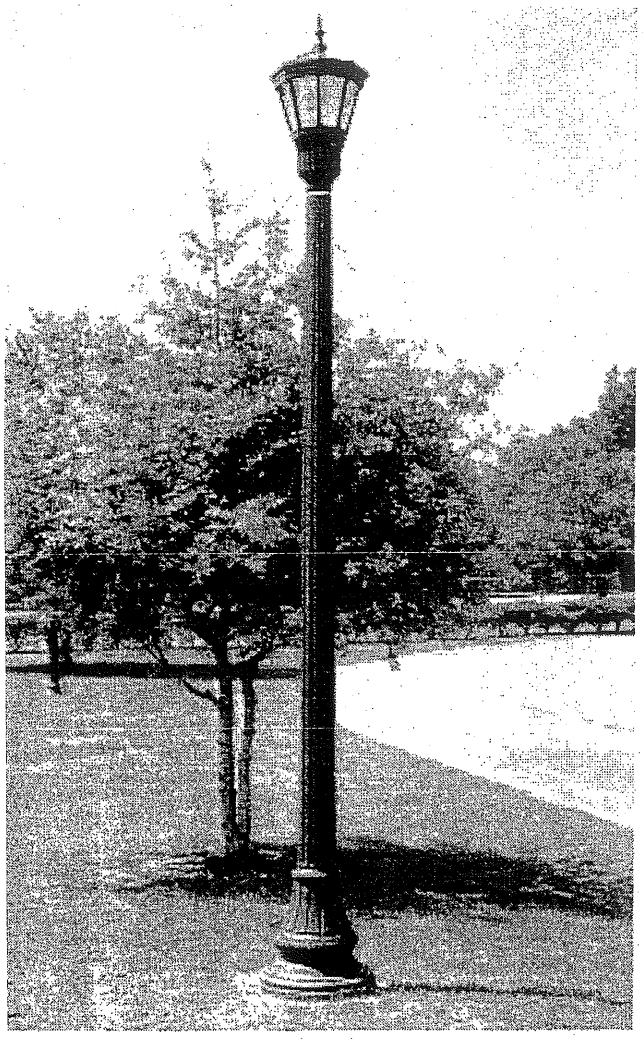


- Punched holes allow moisture build-up and potential freeze expansion.
- Echelon II™ boulevard brackets allow for fine tuning of fence alignment.
- The wrap-around bracket, secured to the rail with Ameristar's tamperproof fastener, ensures far greater security than the single screw in punched posts.

SUPERIOR FINISH

Ameristar's production facilities include a state-of-the-art polyester powder coating system providing Echelon II™ fences with a finish that is far superior to other coatings in durability and scratch-resistance. Powder coating has become the fastest growing form of finishing technology. It does not emit hazardous volatile organic compounds as is the case with wet paints. The Echelon II™ fence components can endure over 1,000 hours of salt spray testing; proving the claim of long-lasting durability. With Echelon II™ Industrial Aluminum, a maintenance-free, enviromentally-friendly fence is guaranteed.

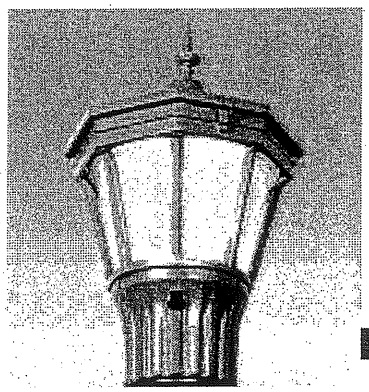
Utility Arlington®, Jefferson®, and Postop®



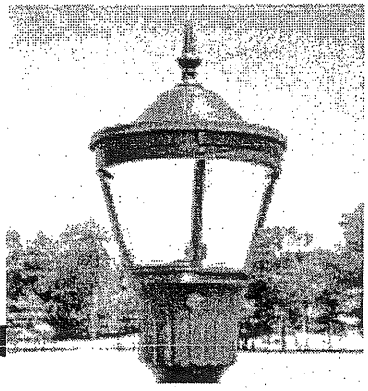
Since the 1920's, luminaires incorporating the graceful symmetry of the eight sided lantern have enhanced urban streets and parks throughout North America. The Utility Arlington and Jefferson luminaires blend this elegant design with precision optics and state-of-the-art lamp technology to create a series which is aesthetically pleasing and provides superior performance.

The timeless styling of the Utility Postop provides a versatile solution to any street or area lighting project. In combination with a traditional style post, the Postop effortlessly adapts to a historic setting. Mount this luminaire on a contemporary pole and it will complement even the most modern architecture.

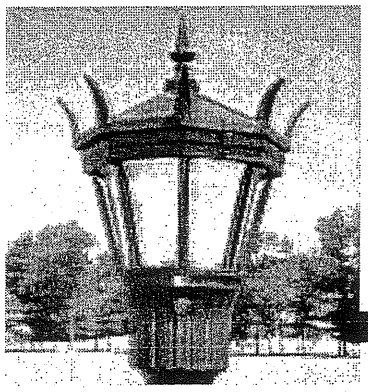
The photo on the left features the Utility Arlington® on an ornamental concrete post.



Utility Arlington



Utility Postop



Utility Jefferson

UTILITY SERIES

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrands Company

AEL American Electric Lighting
An AcuityBrands Company

Jim Bailey
489 Lewiston Road
W. Gardiner, ME 04345-3301
+1 (207) 582-5106 FAX: +1 (207) 582-8088
JBailey@Holophane.com

Quote To: **Lighting Quotations**
Holophane Distributor
,
US
FAX:

Quote Date: 2/3/2006
Quote #: **Q206-1969-01**
Quote Name: Martin's Point- 2/3/06
Holophane Project #: P206-364
Project Name: City of Portland
Customer Project #:
Project Location: Portland, ME U S A - United States of
Bid Date:

Type	Qty	Description
	1	**PTU70DMH12BA5S S-64547** Utility Postop, 70 Watt Metal Halide Medium Base, 120 Volts U.L. CUL, Painted Standard Holophane Black Finish, Symmetric Distribution Acrylic Refractor, Spike Finial, with Sylvania (MP70/U/MED/SHROUDED) 70MH Clear Medium Base "O" Pulse Start, ProtectedLamp
	1	**NY12S417CABKH** North Yorkshire, Extruded, Cast Aluminum Post, 12 feet height; 4 inch diameter, Black Pole Finish.

Lead Time: 6 weeks

Notes

Quote Number Must Be Written On Purchase Order.

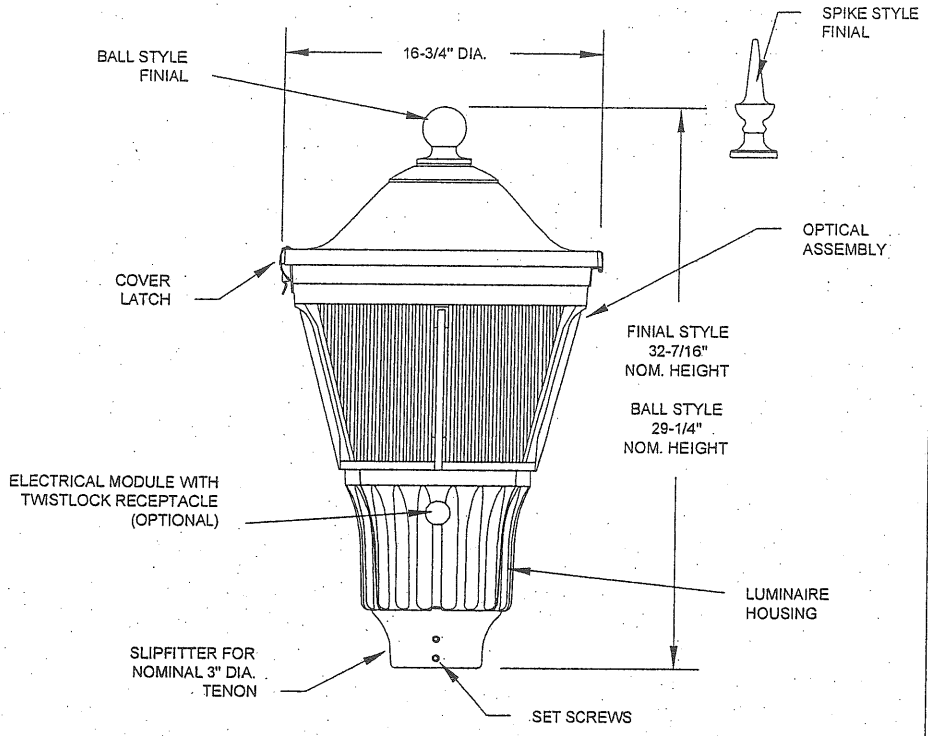
Terms

HOLOPHANE: This quote is valid for 30 calendar days from date of quote. Shipment lead times begin the day after the order is released and are based on working days only. Shipments are FOB Shipping Point on all orders. Holophane shall pay the freight on orders of $2,000 or more ($500 for replacement ballast kits) to all points in the continental United States and Canada. Upon release of your order, poles and non-standard material cannot be cancelled or returned. Terms are subject to revision.

Utility Postop® Series Luminaire

Maximum weight - 47 lbs

Maximum effective projected area - 1.38 sq. ft.



ORDERING INFORMATION

EXAMPLE: *PTU 070HP 12 B G3 B*

PTU

BALLAST TYPE (MOGUL BASE)
050HP = 50W HPS
070HP = 70W HPS
100HP = 100W HPS
15AHP = 150W 55V HPS
175MH = 175W MH
100MV = 100W MV
175MV = 175W MV
250MV = 250W MV (G3 ONLY)

VOLTAGE
12 = 120 VOLT
20 = 208 VOLT
24 = 240 VOLT
27 = 277 VOLT
34 = 347 VOLT (C.U.L.)
48 = 480 VOLT
MT = MULTITAP (120, 208, 240, 277 VOLT)

COLOR
B = BLACK
Z = BRONZE
N = GREEN
A = AS SPEC.

OPTICS
G3 = ASYMMETRIC GLASS REFRACTOR
A3 = ASYMMETRIC ACRYLIC REFRACTOR (not avail. w/250MV)
A5 = SYMMETRIC ACRYLIC REFRACTOR (not avail. w/250MV)
P3 = ASYMMETRIC POLYCARBONATE REFRACTOR (not avail. w/250MV)
P5 = SYMMETRIC POLYCARBONATE REFRACTOR (not avail. w/250MV)

BALLAST TYPE (MEDIUM BASE)
50DHP = 50W HPS
70DHP = 70W HPS
10DHP = 100W HPS
15DHP = 150W 55V HPS
70DMH = 70W MH (NOT AVAIL. W/ 480V)
10DMH = 100W MH (NOT AVAIL. W/ 480V)
15DMH = 150W MH (NOT AVAIL W/ 480V)
17DMH = 175W MH

FINIAL TYPE
B = BALL STYLE
S = SPIKE STYLE

OPTIONS
C = IES CUTOFF
P = PROTECTED STARTER FOR HPS UNITS ONLY
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE (DOES NOT INCLUDE PHOTOCONTROL)
T = BOTH NEMA TWISTLOCK RECEPTACLE AND PROTECTED STARTER TOGETHER (HPS UNITS ONLY)

ACCESSORIES
LAMP = SHIP APPROPRIATE LAMP AS A LINE ITEM. SEE LAMP SHEET

Specifications

GENERAL DESCRIPTION

The Utility Post Top is designed for ease of maintenance with the plug-in electrical module common to each of the luminaires in Holophane's utility Luminaire Series. A precision optical system maximizes post spacings while maintaining uniform illumination.

OPTICAL SYSTEM

The optical system consists of a precisely molded refractor operating in conjunction with a formed anodized aluminum reflector located in the top cover. Positive pressure from three coiled springs backing the reflector and gaskets at the top and bottom of the refractor create a sealed optical compartment. Refractors designed to provide an I. E. S. Type III distribution are available molded from thermal resistant borosilicate glass and acrylic or polycarbonate plastic. Type V refractors are available in acrylic or polycarbonate only. An IES cutoff option is available.

LUMINAIRE HOUSING

The luminaire housing, cast of aluminum, cradles the refractor and provides an enclosure for the plug-in electrical module. The nickel plated lamp grip socket and the three station incoming line terminal block are pre-wired to a five conductor receptacle for ease in connecting the electrical module. A slipfitter will accept a 3" high by 2-7/8" to 3-1/8" O.D. pole tenon.

LUMINAIRE HOUSING / DOOR

Cast of aluminum, the housing / door is removable without the use of tools and is retained by a stainless steel aircraft cable. For units with an E.E.I.-N.E.M.A. twist lock photocell receptacle, the door contains an acrylic "window" to allow light to reach the cell.

ELECTRICAL MODULE

The ballast components are mounted on a steel plate that is removable without the use of tools. A matching five conductor plug connects to the receptacle in the luminaire housing to complete the wiring. Where a starting aid is required, it is provided with a separate plug-in connector and can be replaced without the use of tools. For photoelectric operation, the electrical module is provided with an E.E.I.-N.E.M.A. twist lock photocell receptacle.

TOP COVER

The cover, cast of aluminum, is attached to the top ring of the luminaire housing by a painted stainless steel piano hinge and latched by an overcenter positive action stainless steel latch which allows tool-less entry to the lamp chamber for relamping. Both pointed and ball finials are available.

BALLASTS

(Refer to Ballast Data Sheet for specific operation characteristics)

50 watt 120 volt High Pressure Sodium (HPS) ballasts are High Power Factor Reactor type. All other HPS ballast are High Power Factor Autotransformer type.

175 watt Metal Halide (MH) ballasts are Peak Lead Autotransformer type. 70 and 100 watt MH units are available only with High Power Factor High Reactance type ballast.

All Mercury Vapor (MV) ballasts are High Power Factor Constant Wattage Autotransformer (CWA) type.

FINISH

The luminaire is finished with polyester powder paint applied after a seven stage pretreatment precess to insure maximum durability.

ARCHITECTURAL OUTDOOR ORDER #:

TYPE:

DRAWING NO: US-2583

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED.

THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTRESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

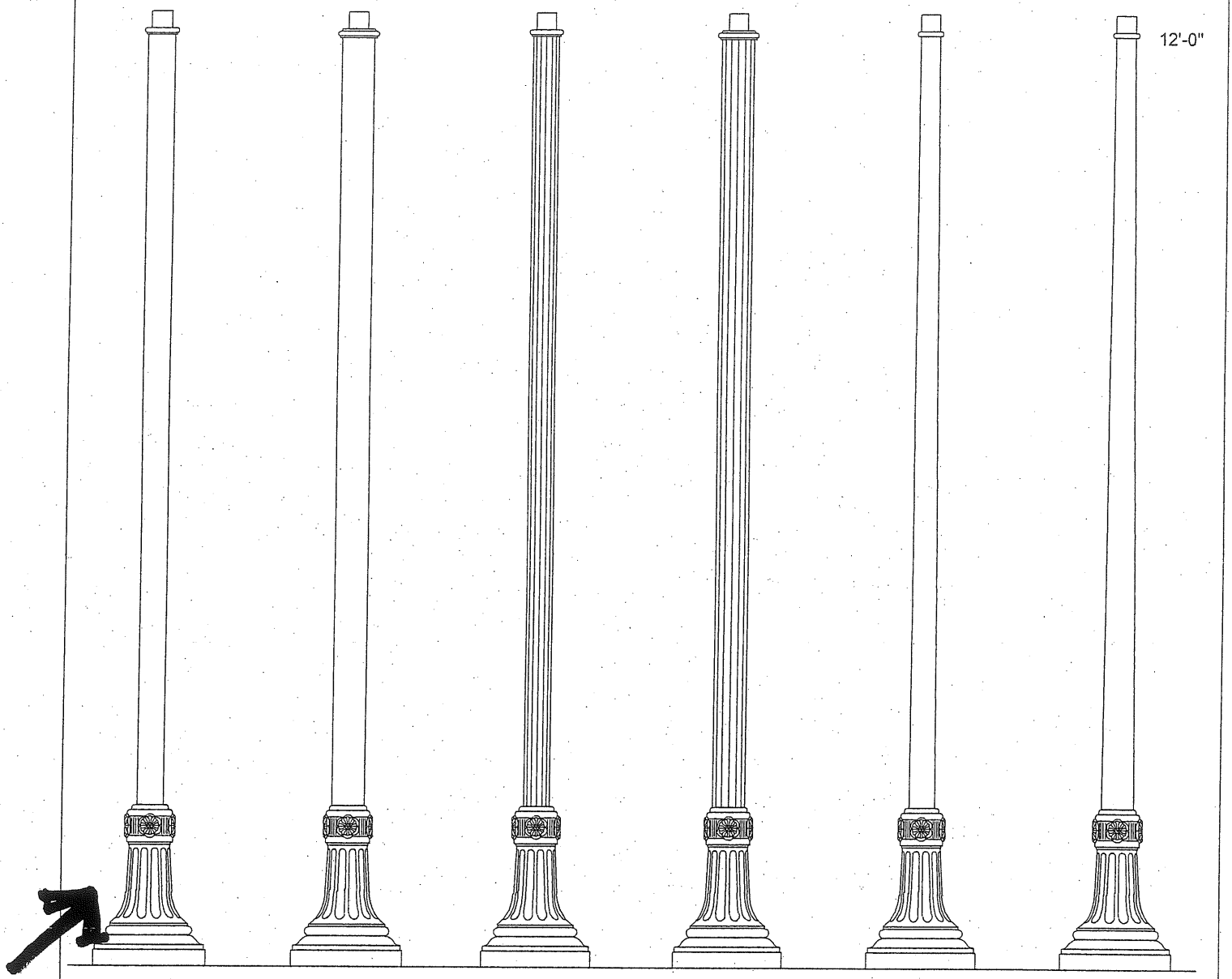
HOLOPHANE
LEADER IN LIGHTING SOLUTIONS
Holophane
214 OAKWOOD AVENUE - NEWARK, OHIO 43055

SCALE: N/A
DRAWN: RAF
APP'D:
DATE: 12-12-01

Cast Aluminum Posts extruded shafts

NORTH YORKSHIRE Series

17" dia. base



NY12S4/17-CA/*finish*
4" dia. smooth shaft
8',10',12',14'

NY12S5/17-CA/*finish*
5" dia. smooth shaft
10',12',14',16'

NY12F4/17-CA/*finish*
4" dia. fluted shaft
8',10',12',14'

NY12F5/17-CA/*finish*
5" dia. fluted shaft
10',12',14',16'

NY12T4/17-CA/*finish*
3"-4" dia. tapered shaft
8',10',12',14'

NY12T5/17-CA/*finish*
3"-5" dia. tapered shaft
10',12',14',16'

SPECIFICATIONS

DESCRIPTION The lighting post shall be all aluminum, one-piece construction, with a classic tapered and fluted base design. The shaft shall be _____.(insert shaft options from back page) The post shall be Holophanes' catalog number NYXXXX/17-CA/finish.

MATERIALS The base shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B-179-95a or ASTM B26-95. The straight shafts shall be extruded from luminum, ASTM 6061 alloy, heat treated to a T6 temper. The tapered shaft shall be extruded from aluminum, ASTM 6063 alloy, spun to a tapered shape, then heat treated to a T6
temper. All hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.

CONSTRUCTION The shaft shall be double welded to the base casting and shipped as one piece for maximum structural integrity. The shaft shall be circumferentially welded inside the base casting at the top of the access door, and externally where the shaft exits the base. All exposed welds below 8' shall be ground smooth. All welding shall be per ANSI/AWS D1.2-90. All welders shall be certified per Section 5 of ANSI/AWS D1.2-90.

DIMENSIONS The post shall be X'- XX" in height with a 17" diameter base. The shaft diameter shall be XX". (see back page) At the top of the post, an integral 3" O.D. tenon with a transitional donut shall be provided for luminaire
mounting.

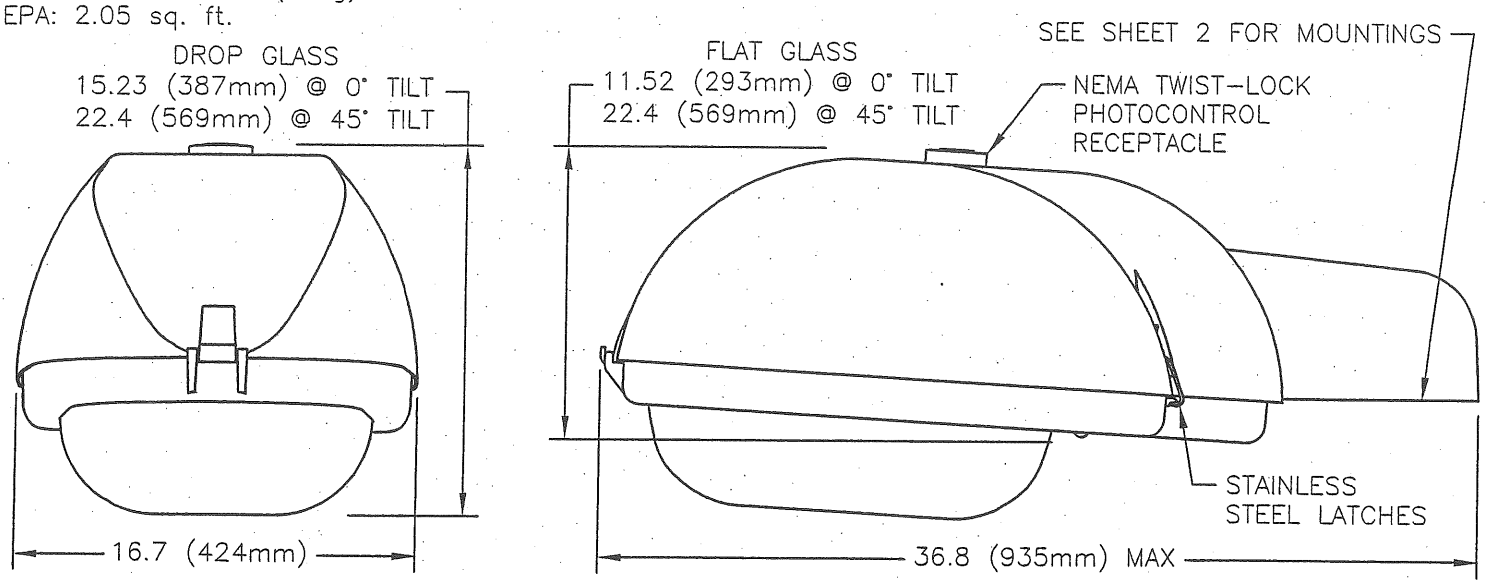
INSTALLATION The post shall be provided with four, hot dip galvanized L-type anchor bolts to be installed on a 12" diameter bolt circle. A door shall be provided in the base for anchorage and wiring access. A grounding screw
shall be provided inside the base opposite the door.

For finish specifications and color options, see " **Finish**" section in catalog.

HOLOPHANE An AcuityBrandsCompany
LEADER IN LIGHTING SOLUTIONS 214 OAKWOOD AVENUE - NEWARK, OHIO 43055

MONGOOSE®

UL/CUL LISTED
MAX AMBIENT: 40°C
MAX WEIGHT: 50lbs (23kg)
EPA: 2.05 sq. ft.



G

CATALOG NUMBER

SOURCE AND WATTAGE

- ☐ **100HP** 100W HPS
- ☐ **15AHP** 150W HPS
- ☐ **250HP** 250W HPS
- ☐ **400HP** 400W HPS
- ☐ **175MH** 175W MH
- ☐ **250MH** 250W MH
- ☐ **400MH** 400W MH

VOLTAGE

- ☐ **12** 120V
- ☐ **20** 208V
- ☐ **24** 240V
- ☐ **27** 277V
- ☐ **48** 480V
- ☐ **34** 347V
- ☐ **MT** MULTIVOLT 120, 208, 240 & 277V
- ☐ **MA** MULTIVOLT PRE-WIRED TO 120V
- ☐ **MB** MULTIVOLT PRE-WIRED TO 208V
- ☐ **MC** MULTIVOLT PRE-WIRED TO 240V
- ☐ **MD** MULTIVOLT PRE-WIRED TO 277V
- ☐ **VT** MULTIVOLT 120, 277 & 347V
  250HP, 400HP, 250MH, 400MH ONLY

TILT RANGE

- ☐ **L** LOW TILT, 0°-18°
- ☐ **H** HIGH TILT, 27°-45°

OPTICS

- ☐ **DC** MEDIUM ROADWAY, CLEAR DROP GLASS, (H) TILT ONLY
- ☐ **DR** MEDIUM ROADWAY, GLASS REFRACTOR, (H) TILT ONLY
- ☐ **FC** FORWARD THROW, CLEAR DROP GLASS, (L) TILT ONLY
- ☐ **FF** FORWARD THROW, FLAT GLASS, (L) TILT ONLY
- ☐ **NC** NARROW ROADWAY, CLEAR DROP GLASS
- ☐ **ND** NARROW FLOOD, (H) TILT ONLY
- ☐ **NF** NARROW ROADWAY, FLAT GLASS, (L) TILT ONLY
- ☐ **NR** NARROW ROADWAY, GLASS REFRACTOR
- ☐ **SC** SQUARE, CLEAR DROP GLASS, (L) TILT ONLY
- ☐ **SF** SQUARE, FLAT GLASS, (L) TILT ONLY
- ☐ **WC** WIDE ROADWAY, CLEAR DROP GLASS
- ☐ **WD** WIDE FLOOD, (H) TILT ONLY
- ☐ **WF** WIDE ROADWAY, FLAT GLASS, (L) TILT ONLY
- ☐ **WR** WIDE ROADWAY, GLASS REFRACTOR

MOUNTING

- ☐ **A** ARCHITECTURAL
- ☐ **H** HORIZONTAL
- ☐ **V** VERTICAL

FINISH

- ☐ **G** GRAY
- ☐ **K** BLACK
- ☐ **N** GREEN
- ☐ **W** WHITE
- ☐ **Z** BRONZE

OPTIONS

- ☐ **B** TERMINAL BLOCK & NEMA DECAL (N/A WITH OPTION C)
- ☐ **C** NEMA DECAL (N/A WITH OPTION B)
- ☐ **P** PROTECTED STARTER (HPS ONLY)
- ☐ **R** NEMA TWIST-LOCK PHOTOCONTROL RECEPTACLE
- ☐ **T** SPADE TERMINATION FOR BALLAST LEADS
  (MT, MA, MB, MC, MD & VT VOLTAGE ONLY)
- ☐ **3** 3" TO 2" TENON ADAPTER
- ☐ **6** 6' PIGTAIL

ACCESSORIES

- ☐ **F1** SINGLE FUSING (120, 240, 277 & 347V)
- ☐ **F2** DOUBLE FUSING (208, 240 & 480V)
- ☐ **LAMP**
- ☐ **BKT-5-G** GALVANIZED WOOD POLE BRACKET
- ☐ **BR-1091-XX** 3" TO 2" TENON ADAPTER

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS

ORDER NO: _____

TYPE: _____

DRAWING NO. _____
CAD MODEL: MONGOOSE.DWG
DATE: 9-11-03

Martin's Point Parking Summary - Revised 4-11-06

Based upon Staff and Patient Counts

Proposed Conditions

	Rentable Area	Space/ 1000 required	Parking Required	Proposed Use	Source of Required Parking Numbers
Marine Hospital	20,000	3.44	69	*Administrative*	ITE Land Use Code
Maintenance Plant LL			0	*Demolished*	
Maintenance Plant UL			0	*Demolished*	
Admin 1	3,000	3.50	11	*Administrative*	11 employees to work in Admin 1
Admin 2 and 3	4,800	3.70	18	*Administrative*	18 employees to work in Admin 2/3
			0		
Carriage House	5,000	3.50	18	*Administrative*	15 employees + 3 spaces for patient education
Existing Clinic	22,000	3.44	76	*Administrative*	ITE Land Use Code
New Space LL*	20,500	3.44	71	*Administrative*	ITE Land Use Code
New Space UL	27,000	5.91	160	*Clinical*	Based upon current ratio of Existing Clinic
Totals	102,300		423		
Total Administrative Space	75,300				
Total Medical Space	27,000				

Existing Clinic	Parking Spaces Required
91 employees	91
30 exam rooms	30
2 Blood Testing Areas	2
3 Bone Density/Radiology Areas	3
Waiting Area and Vendors	4
	130
Spaces per 1,000 Square Feet	**5.91**

Notes:

** 27,000 SF less 4,000 for cafeteria and 2,500 for Tel/Data room*

Engineer's Comments:

1) Based upon the summary above an 11 space parking deficiency is proposed . This is to be addressed by encouraging staff to car pool and use public transportation. It represents approximately 2 percent of the total parking spaces provided.

2) The City of Portland's Technical Design Standards and Guidelines state that any parking lot may be designed with a maximum allowance of 35 percent compact spaces over and above the required minimum number of spaces by the zoning ordinance.

3) Approximately 20% of the parking spaces in the above summary are compact in size. (8.5 feet X 18 feet vs. 9 X 19 feet - minimal reduction)

The following notes have been provided by Ann Tucker of Martin's Point

a) Only one employee is riding a bike to work during the summer.
b) No one is car pooling or using public transportation that Ann is aware of.
c) Numbers provided above for required parking for the existing clinic were provided by Ann. The proposed Clinic is expected to require the same number of parking spaces per 1,000 square feet of building as the existing clinic.
d) Parking numbers provided for Admin 1, Admin 2/3 and the Carriage House are based upon actual employee counts.
e) Parking ratios for proposed new administrative space is based upon ITE rates.

Martin's Point
HEALTH CARE™

April 26, 2006

Rick Knowland
Development Review Program
City of Portland
389 Congress Street
Portland, Maine 04101

Dear Rick,

I would like to thank you for all of your input and feedback during the last eighteen months as we worked to develop a master site plan for a difficult location. Your insight and guidance has been invaluable during the process.

We look forward to our continuing partnership as we navigate through the phases of the project.

Regards,

Ann Tucker

Ann Tucker
Director, Support Services
Martin's Point Health Care

Administration
331 Veranda Street
PO Box 9746
Portland, ME 04104-5040
207 774 5801
800 322 0280

Operations
891 Washington Avenue
PO Box 9746
Portland, ME 04104-5040
207 774 5801
800 322 0280

Brunswick
Health Care Center
6 Farley Road
Brunswick, ME 04011
207 725 8079
800 479 8079

Portland
Health Care Center
331 Veranda Street
PO Box 9746
Portland, ME 04104-5040
207 828 2402
800 897 1957

Portsmouth
Health Care Center
Pease International Tradeport
161 Corporate Drive
Portsmouth, NH 03801
603 431 5154
800 222 5154

Albany Office
21 Aviation Road
Albany, NY 12205
518 438 2251
800 240 9129

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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

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

January 25, 2006

Ms. Linda Kokemuller
Maine Department of Environmental Protection
312 Canco Road
Portland, ME 04103

Subject: **Martin's Point Redevelopment Project**
Pre-Application Meeting Request

Dear Ms. Kokemuller:

From recent discussions with Sarah Hopkins and Rick Knowland with the City of Portland, our office understands that the City may no longer have full-delegated review authority for Site Location of Development projects or Stormwater projects. Our understanding is that this change has developed as a result of the new Maine Department of Environmental Protection (MeDEP) stormwater rules effective November 16, 2005, which the City's current local stormwater ordinance does not address; therefore, on behalf of Martin's Point, DeLuca-Hoffman Associates, Inc. is requesting a Pre-Application Meeting with the MeDEP and the City if available to discuss the project.

The following five drawings are included with this letter:

I-1 – 1975 Existing Impervious Area Plan
I-2 – Net New Proposed Impervious Area Plan
C-3 – Existing Conditions and Demolition Plan
C-4 – Proposed Layout Plan
C-5 – Proposed Grading and Drainage Plan

The following figures are included with this letter to help familiarize you with the site:

Figure A – Year 2001 Aerial Photograph with Structure I.D.
Figure B – Year 1976 Aerial Photograph with Structure I.D.
Figure 1 – DeLorme Location Map
Figure 2 – USGS Topographic Map

As shown, the net new proposed impervious area since 1975 is approximately 3.08 acres; therefore, reductions of the proposed plan to below 3 acres of net new impervious could eliminate the need for a Site Location Permit depending upon the MeDEP's interpretation as well. A Stormwater Permit will be needed for the project as over 1 acre of new impervious area since 1997 will result from the project.

From the discussion you and I had earlier today, our office understands that the MeDEP will only be reviewing the stormwater section and any NRPA permit applications for this project, as the City still has authority to review other aspects of the project. Our office has had limited discussions regarding water quality treatment options for this site with Marianne Hubert of the Department.

As this is a redevelopment project on a site with steep slopes and shallow bedrock, infiltration and vegetated swales are unlikely to be viable water quality treatment methods and manufactured water quality treatment units will be proposed. Focus will be applied to treating pavement areas. Stormwater detention will not be required as the site discharges directly to Casco Bay.

Our office is in receipt of an email dated January 24, 2006 from Michael Morse with the MeDEP regarding the Coastal Wetland Delineation for the project along a portion of the southeasterly shoreline of Martin's Point. A copy of this email and Normandeau Associate's wetland delineation summary letter dated November 17, 2005 are attached to this letter. Mr. Morse's email notes that only a 4 or 5-foot horizontal measurement difference may result from a second opinion of the resource boundary. Our office is requesting that, if warranted after review of Normandeau's letter, the second opinion be obtained as soon as possible and that our office and Normandeau Associates be notified of the date of the fieldwork. Even a relatively small shift in this resource boundary could result in a shift of the proposed building location therefore it is important that this matter be resolved quickly.

Please contact our office to indicate when we could meet to discuss permitting of the project.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Dwight D. Anderson, P.E.
Senior Engineer

DDA/smk/JN2344.03/Kokemuller1-25-06

Attachments:
- Email from Michael Morse dated January 24, 2006
- Letter from Normandeau Associates, Inc. dated November 17, 2005
- Five drawings as listed above
- Figures A, B, 1 & 2

c: Ann Tucker – Martin's Point (with attachments)
David Webster – PDT Architects (w/o attachments)
Paul Ureneck – The Boulos Company (w/o attachments)
Rick Knowland – City of Portland (with attachments)
Sarah Hopkins – City of Portland (w/o attachments)
Jennifer West – Normandeau Associates (copy of resource info. only)

From: "Dwight Anderson" <danderson@DelucaHoffman.com>
To: "Rick Knowland " <RWK@portlandmaine.gov>
Date: 04/13/2006 1:01:33 PM
Subject: Parking Demand at Martin's Point

Rick,
Space planning for the new clinic is not complete however MP would expect the same ratio of current use to parking in the existing clinic as for the new clinic. That is what our numbers were based on in the most recent parking demand summary.

Dwight D. Anderson, P.E.
DeLuca-Hoffman Associates, Inc.
778 Main Street Suite 8
South Portland, Maine 04106
Phone 207.775.1121
Facsimile 207.879.0896

CC: <terrico@wilbursmith.com>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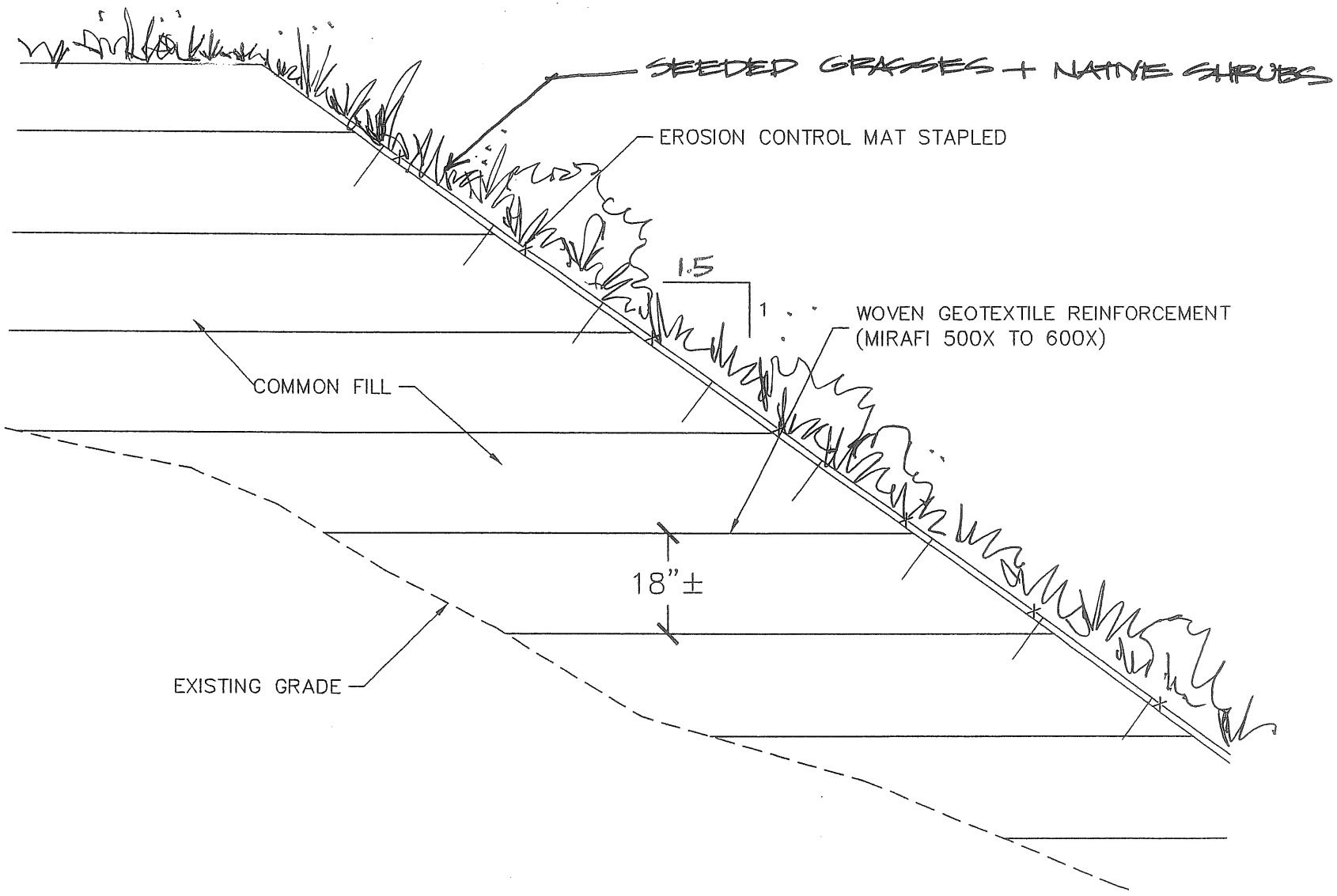
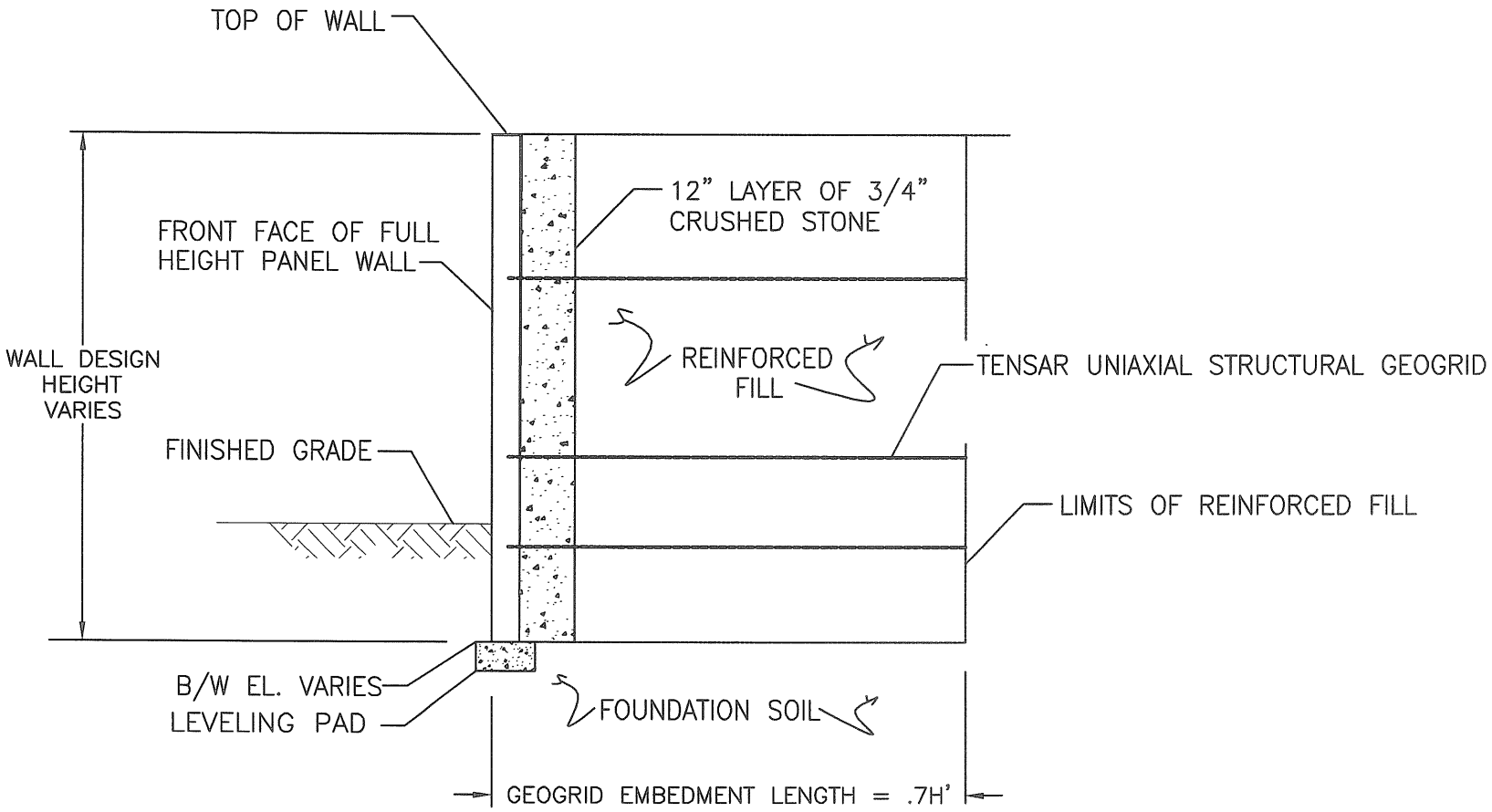


FILL WITH REINFORCEMENT SECTION

N.T.S.



TYPICAL WALL PROFILE

Martin's Point Parking Summary

Based upon Staff and Patient Counts

Proposed Conditions

	Rentable Area	Space/ 1000 required	Parking Required	Space/ 1000 provided	Parking Provided	Proposed Use
Marine Hospital	20,000	3.0	60	3.0	60	*Administrative*
Maintenance Plant LL						*Demolished*
Maintenance Plant UL						*Demolished*
Admin 1	3,000	3.7	11	3.7	11	*Administrative*
Admin 2 and 3	4,800	5.2	25	5.2	25	*Administrative*
Carriage House	5,000	3.0	15	3.0	15	*Administrative*
Existing Clinic	22,000	4.0	88	4.0	88	*Administrative*
New Space LL**	20,500	4.8	98	4.8	98	*Administrative - from Washington A*
New Space UL	27,000	5.0	135	5.1	139	*Clinical* *** *(includes 27 spaces near CP; does not include 36 CP spaces)*
Totals	102,300		432		436	
Total Administrative Space	75,300					*Note: Ground Level Parking expanded by 15 spaces*
Total Medical Space	27,000					Curret site plan 421 + 15 = 436

Existing Conditions

	Rentable Area	Space/ 1000	Parking Provided	Existing Use
Marine Hospital	20,000	3.0	60	*Administrative*
Maintenance Plant LL	4,000	1.0	4	*Maintenance*
Maintenance Plant UL	2,000	1.0	2	*Maintenance*
Admin 1	3,000	3.7	11	*Administrative*
Admin 2 and 3	4,800	5.2	25	*Administrative*
Carriage House	5,000	3.0	15	*Administrative* *
Existing Clinic	22,000	4.3	95	*Clinical*
Additional Parking Spaces			58	
Totals	60,800		270	*(includes 27 spaces near CP; does not include 36 CP spaces)* ***
Total Administrative Space	32,800			
Total Medical Space	22,000			
Total Maintenance	6,000			

Notes:

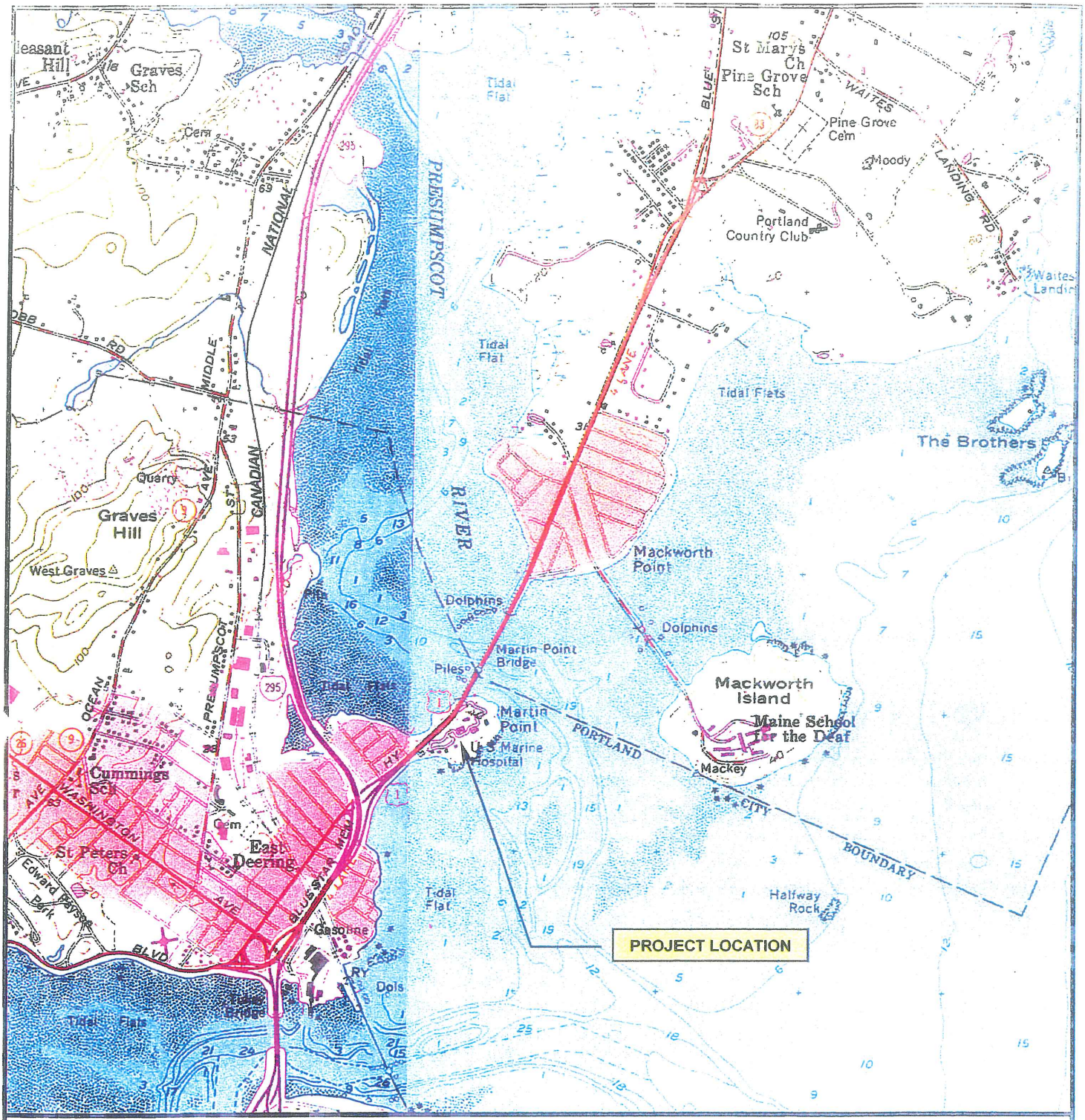
* *Non-standard layout*

** *27,000 SF less 4,000 for cafeteria and 2,500 for Tel/Data room*

*** *Includes 27 spaces near CP; does not include 36 CP spaces. CP spaces non-standard layout.*

1) The City of Portland's Technical Design Standars and Guidelines state that any parking lot may be designed with a maximum allowance of 35 percent compact spaces over and above the required minimum number of spaces by the zoning ordinance.

2) Approximately 20% of the parking spaces in the above summary are compact in size. (8.5 feet X 18 feet vs. 9 X 19 feet - minimal reduct



USGS TOPOGRAPHIC MAP

Martin's Point– Portland, Maine

SOURCE: TOPOSCOUT; Coastal Maine CD-ROM; USGS Martin's Point Quadrangle, 7.5 Minute Series (Topographic)

NORTH

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778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

DESIGNED	WGH	DATE	APRIL 2003
DRAWN	CMD	SCALE	1"=2000'
CHECKED	WGH	JOB NO.	2344

FIGURE 2

PERMIT BY RULE STATEMENT
Marin's Point Redevelopment

With regard to the MeDEP Permit By Rule Notification Form please note that portions of Water Quality Treatment Systems (WQTS) 3 and 4 are located within the 75 ft resource setback. WQTS 3 was placed within this setback (approximately 52 ft from the high water level at its closest point) to allow for connection to an existing Water Quality Treatment Unit (WQTU). The inclusion of the existing WQTU will allow for pretreatment of stormwater entering WQTS 3 and will improve the quality of water being released onto the coastline. The areas where the WQTS will be within the 75 ft setback exist as maintained lawn areas and the surrounding area will be maintained as such in the future.

Erosion at catch basin 9 and 11 will be addressed during Phase II construction.

This project is being completed in phases with Phase I including only building renovation of the Marine Hospital and demolition of the two maintenance buildings noted on sheet C-3. Limited utility work and a pavement overlay are also included in Phase I; however, less than half an acre of area is disturbed as part of Phase I work; therefore, this submission is provided for review of work proposed as part of Phase II. Phase II work includes redevelopment of the site including a proposed 27,000 square foot footprint building, parking deck structure, stormwater controls and other site improvements.

Work of Phase II includes disturbance of over 1 acre of area and activities within 75 feet of a natural resource; therefore, a MeDEP Permit By Rule Notification Form and Maine Construction General Permit are required for Phase II work.

Phase I work is scheduled for completion this summer and Phase II work is scheduled to begin next year.

Sheets C-5B, C-7, LS-3 are included with this submission. Photos have been provided at the locations noted on sheet C-5B.

PHOTO 1

PHOTO 2

DH

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Martin's Point Redevelopment
Portland, Maine

PHOTO 3

PHOTO 4

DH

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PHOTO 5

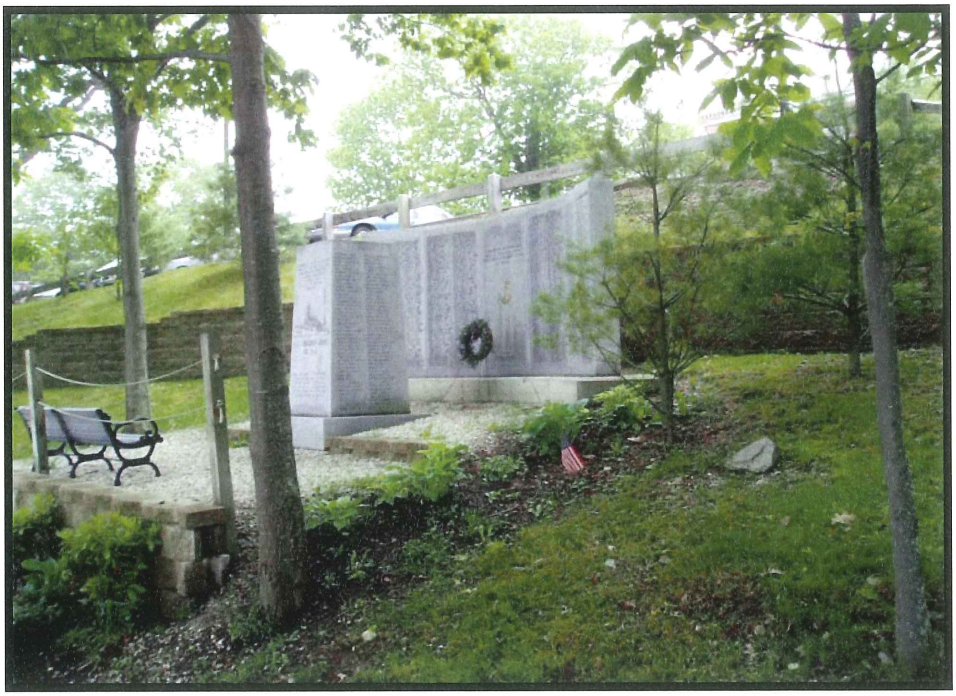

PHOTO 6

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PHOTO 7

PHOTO 8

DH

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PHOTO 9

PHOTO 10

DH

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POINT OF INTEREST #1

DH

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Martin's Point Redevelopment
Portland, Maine

POINT OF INTEREST #3

DH
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FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Traffic Impact Study
Martin's Point Health Care Expansion
Portland, Maine

February 2006

Prepared for:

Martin's Point Health Care
331 Veranda Street
Portland, Maine 04104

Prepared by:

Casey & Godfrey Engineers
263 Water Street
Gardiner, Maine 04345

Introduction

The purpose of this summary report is to assess the traffic and safety impacts of a proposed expansion of Martin's Point Health facility in Portland, Maine. The existing facilities are located on the easterly side of Route 1 (Veranda Street), just south of the Martin's Point Bridge, as shown in Figure 1.

The site is currently occupied by existing health care facilities, including clinical space, administrative offices and maintenance facilities. The proposed expansion consists of a new 54,000 S.F. building, which is expected to be evenly divided between medical office and administrative office space. The expansion is expected to be completed in 2007 so 2007 was used as the study year for traffic analysis purposes.

Trip Generation

Trip generation for the proposed expansion was obtained using the Institute of Transportation Engineers (ITE) "Trip Generation, 7th Edition" report. The calculations were based upon 54,000 square feet of space, equally divided between medical office use and general administrative offices. The calculations were performed using Land Use Codes 710 – General Office and 720 – Medical-Dental Office Building. The results are summarized below:

	PROJECTED TRIP GENERATION		
Time Period	General	Medical	Total
Weekday	392	932	1324
AM Peak Hour – Generator	54	98	152
Entering	48	65	113
Exiting	6	33	39
PM Peak Hour – Adj. Street	74	100	174
Entering	13	28	41
Exiting	61	72	133
PM Peak Hour - Generator	74	120	194
Entering	13	48	61
Exiting	61	72	133

The trips were assigned to the existing Route 1 site drive based upon the recorded traffic patterns, obtained during turning movement counts conducted at the site drive and also at the back access drive, which will be closed by the proposed project. The resulting trip assignments for the PM peak hour of Martin's Point are shown in Figure 2.

Traffic Volumes

Turning movement counts were conducted at the study area intersections on the dates noted below:

Intersection Description	Count Date	Period
Route 1 and Main Drive	11/1/05	PM Peak
Route 1 and Main Drive	1/26/06	Mid-Day
Route 1 and Main Drive	2/14/06	Late AM
Route 1 and Main Drive	2/24/06	Early AM
Route 1 and Back Access Drive	11/8/06	PM Peak
Veranda Street and I-295 Southbound On Ramp	2/22/06	PM Peak
Veranda Street and I-295 Northbound Off Ramp	2/22/06	PM Peak

The above counts were factored to 30th highest hour conditions, the hourly volumes used for design and traffic analysis purposes, using published MDOT group mean factors. These 30th highest hour volumes generally occur during the PM peak hour under peak summer (late July/early August) conditions in Maine. The raw count summaries are included in the appendix of this report.

Existing average annual daily traffic (AADT) data for the area was obtained from "Traffic Volume Counts, 2004, 2001 and 1998 Annual Reports", prepared by MDOT. This data is summarized below:

	Average Annual Daily Traffic					
	1995	1997	1999	2001	2002	2003
Falmouth-Portland Town Line at Martins Point Bridge	15360	14860	16180	15570	16060	15140

As can be seen above, traffic volumes in the vicinity of Martin's Point have increased at an annual rate of less than 1 % during the period 1995 to 2003. Based upon this data, a 1 % growth rate was used to project the 2005 and 2006 volumes to 2007 conditions. No other development projects were identified at the scoping meeting that need to be considered in the future volume projections. The resulting 2007 no-build volumes are shown in Figure 3. The projected build volumes, with the expansion fully occupied, are shown in Figure 4.

Traffic Analysis

Traffic operations are evaluated in terms of level of service (LOS). Level of service is a qualitative measure that describes operations by letter designation. The levels range from A - very little delay to F - extreme delays. Level of service "D" is considered generally acceptable in urban locations while LOS "E" is generally considered the capacity of a facility and the minimum tolerable level. The level of service for unsignalized intersections is based upon average control delay per vehicle for each minor, opposed movement, as defined in the following table:

Unsignalized Intersection Level of Service

LOS	Delay Range
A	< = 10.0 seconds
B	> 10.0 and <= 15.0
C	> 15.0 and <= 25.0
D	> 25.0 and <= 35.0
E	> 35.0 and <= 50.0
F	> 50.0

The level of service for signalized intersections is based upon average control delay per vehicle, as defined below:

Signalized Intersection Level of Service

LOS	Control Delay per Vehicle
A	< = 10.0 seconds
B	> 10.0 and <= 20.0
C	> 20.0 and <= 35.0
D	> 35.0 and <= 55.0
E	> 55.0 and <= 80.0
F	> 80.0

Unsignalized Intersections

The level of service was calculated for the study area intersections for projected 2007 no-build and build conditions to assure that there is adequate capacity to accept the projected new trips. The results for the PM peak hour are shown with the level of service followed by the delay in seconds in parentheses below:

Veranda Street and I-295 Southbound On Ramp
PM Peak Hour Level of Service

Intersection Movement	2007 No-Build	2007 Build
Northbound Veranda Street Throughs	C (19.2)	C (22.4)
Northbound Veranda Streets Rights	B (12.9)	B (13.9)
Northbound Veranda Street Overall	C (18.2)	C (21.1)

Veranda Street and I-295 Northbound Off Ramp

Intersection Movement	2007 No-Build	2007 Build
Northbound Veranda Street Lefts onto I-295 NB	D (29.7)	D (32.3)

As can be seen in the preceding table, there are no capacity constraints projected at the off-site study area intersections during the PM peak hour period. All intersection movements are expected to operate at LOS "D" or better under projected 2007 build volumes.

Level of service was also calculated for the site drive for projected conditions. The results are summarized below:

	AM Peak Hour Level of Service		
Route 1 and Martin's Point Drive	Existing 2006	No-Build 2007	Build 2007
Westbound Right Turns onto Route 1	B (11.8)	B (11.9)	B (12.5)
Westbound Left Turns onto Route 1	E (36.7)	E (37.3)	F (76.0)
Drive Overall	D (31.0)	D (31.4)	F (61.4)
Southbound Left Turns into Martin's Point	A (8.7)	A (8.7)	A (9.2)
	PM Peak Hour Level of Service		
Route 1 and Martin's Point Main Drive	Existing 2006	No-Build 2007	Build 2007
Westbound Right Turns onto Route 1	C (20.1)	C (20.3)	C (24.)
Westbound Left Turns onto Route 1	F (143.9)	F (161.5)	F (776.9)
Drive Overall	F (111.5)	F (124.4)	F (590.6)
Southbound Left Turns into Martin's Point	B (10.6)	B (10.7)	B (11.0)

As can be seen above, there are existing capacity constraints at the Martin's Point Drive during the PM peak hour periods. Constraints are anticipated during the AM peak hour periods as well after expansion. The only improvement action that could be expected to significantly improve the level of service for the exit drive would be signalization, since the majority of exits are left turns onto Route 1. Given this, traffic signal warrants were evaluated, as requested at the scoping meeting. The projected 2007 drive volumes were obtained based upon the proportional increase expected in AM and PM peak hour volumes. These volume projections are included in the appendix of this report.

Traffic Signal Warrant Analysis

Traffic signal installations are controlled by the warrants in the "Manual on Uniform Traffic Control Devices, for Streets and Highway, 2003 Edition" (MUTCD). One or more warrants must be met in order to justify the installation of a signal. Meeting a warrant alone does not justify the placement of a signal. It must also be shown, through engineering studies, that the signal will either improve safety or traffic operations.

The most common traffic signal warrants are based upon traffic volumes. The volume warrants are defined in terms of an average day, described as volumes which are normally and repeatedly found. In general, most volume warrants are based upon

overall delay at an intersection. A traffic signal will introduce delay to the major street traffic where there is none now. A signal will also result in lost time, yellow and/or all red periods, where no vehicle can move. Because the goal of a signal is to improve operations, the delay experienced by the minor side street traffic must generally be extensive, and for many vehicles, before it warrants interrupting and delaying the major street traffic.

Three of the warrants are based upon traffic volumes, which were evaluated for Martin's Point drive. These warrants are #1 - eight-hour vehicular volume, # 2 - four-hour vehicular volume and #3 - peak hour. The analyses are included in the appendix of this report and the results are summarized below:

1 – Eight-Hour Vehicular Volume - It appears that this warrant will be met for seven of the eight hours.

2 - Four-Hour Vehicular Volume – Based upon the projected 2007 volumes this warrant will be met.

#3 - Peak Hour – This warrant will also be met based upon the projected volumes.

Synchro and SimTraffic was used to evaluate the level of service at the Route 1 intersection under signal control. The results are summarized below:

	Peak Hour Level of Service Build 2007 Conditions	
	AM	PM
Westbound Left Turns onto Route 1	C (20.3)	C (24.7)
Westbound Right Turns onto Route 1	A (9.9)	C(19.2)
Northbound Route 1 Throughs-Rights	B (10.2)	C (21.3)
Southbound Left Turns into Martin's Point	C (15.9)	C (21.5)
Southbound Through Movements	A (8.4)	A (6.4)
Overall Intersection	A (9.5)	C (16.4)

As can be seen above, the intersection of Route 1 and the site drive will operate at LOS "A" during the AM peak hour and LOS "C" during the PM peak hour under projected build volumes. Based upon the queue analysis, the Martin's Point drive should be widened to two lanes, separate right and left turn lanes, for 100 feet. Based upon the signal warrants and capacity analysis results, it is recommended that a traffic signal be installed at the intersection of Martins Point drive and Route 1 to facilitate traffic entering and exiting the site.

Safety Analysis
Accident Review

The Maine Department of Transportation uses two criteria to determine high accident locations. The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher than expected accident rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must *also* be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must occur over the three-year study period for the location to be considered a high accident location. Accident data was obtained from MDOT for the most recent period, 2002 to 2004, for Summit Street in the vicinity of the project. The number of accidents, their locations and CRF are summarized in the following table:

Location Description	# of Acc.	CRF
Intersection of I-295 Southbound and Veranda Street Ramp	2	0.26
Intersection of Route 1 SB and Veranda Street Ramp	**10**	**2.60**
Intersection of Route 1 SB and Wordsworth	2	0.60
Route 1 SB between Oregon and Olympia Streets	1	0.17
Intersection of I-295 Northbound and Route 1 NB/Veranda Street	4	0.55
Route 1 NB between I-295 and Olympia Street	1	0.10
Intersection of Route 1 NB and Olympia Street in Portland	3	0.55
Route 1 NB between Olympia Street and Falmouth Town Line	4	0.11
Intersection of Route 1 and Oregon Street in Portland	1	0.37
Route 1 between Portland-Falmouth Line and Bayshore Drive	2	0.11
Route 1 between Bayshore Drive and Rec-Roc Road	1	0.09
Intersection of Route 1, Anderson and Greenway in Falmouth	3	0.43
Intersection of Route 1 and Winslow Road in Falmouth	1	0.16
Route 1 between Hammond Road and 0.06 mile north	3	0.55
Route 1 between 0.06 mile north of Hammond and Brown Street	2	0.12
Intersection of Route 1 and Brown Street in Falmouth	1	0.16
Route 1 between Brown Street and Route 88	2	0.11
Intersection of Route 1 and Route 88 in Falmouth	1	0.09

As can be seen above, there is only one location within the vicinity of the proposed expansion that meets the high crash criteria, the intersection of Route 1 southbound and the I-295 Southbound on ramp at Veranda Street. A collision diagram was prepared to determine if there are accident patterns or trends evident that indicate an intersection deficiency that may be potentially correctable.

There was one accident reported in 2002, six in 2003 and three in 2004. One accident was a rear-end on Veranda Street northbound approach. There was one angle accident at the right-turn slip to the on ramp, attributed to icy conditions. There was one angle collision involving a southbound Route 1 vehicle and an eastbound Veranda Street vehicle. The remaining seven collisions were angles between northbound Veranda Street vehicles and southeast bound Veranda Street vehicles entering I-295 southbound. This constitutes a pattern of collisions.

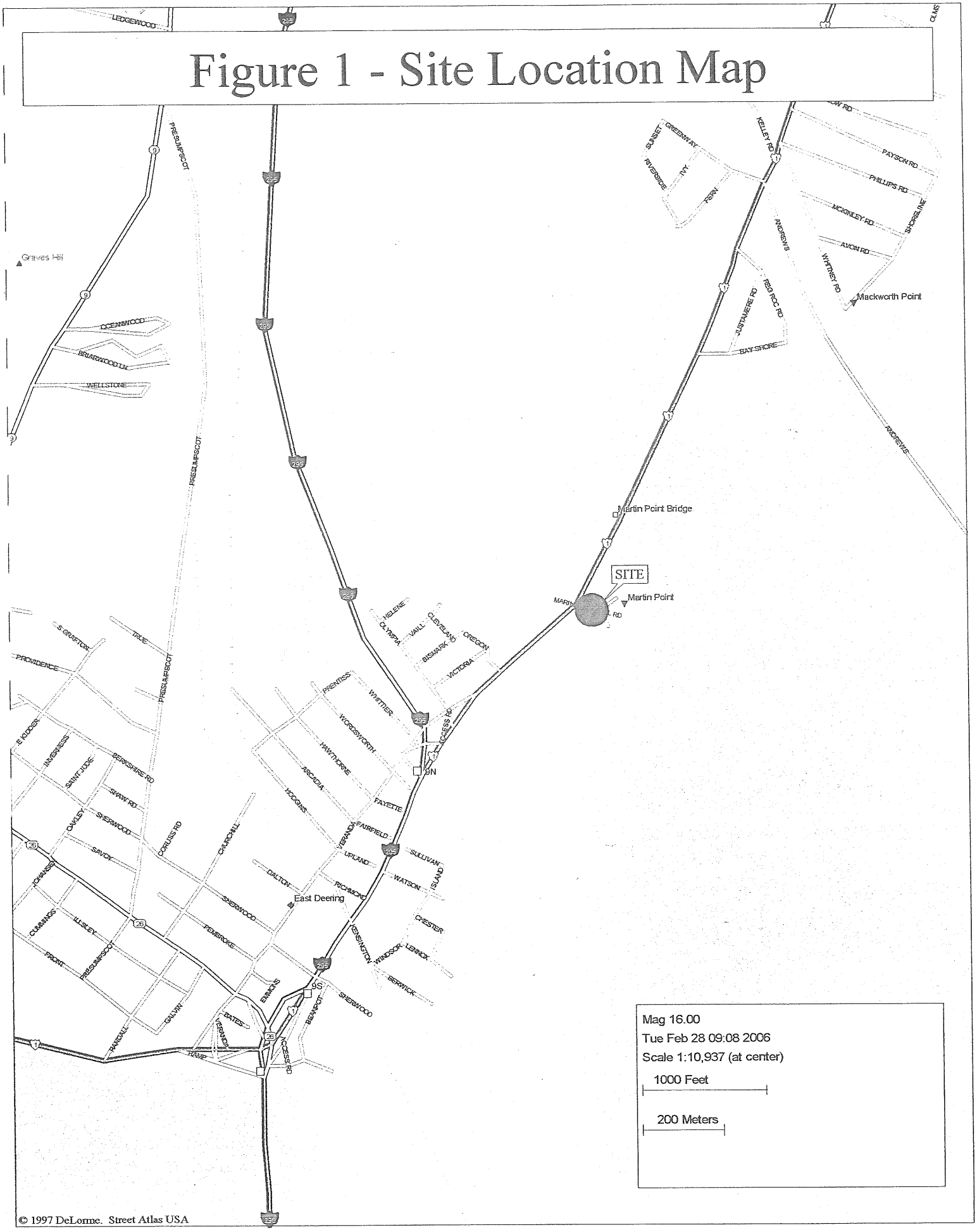
A field review was conducted to determine if there are any apparent intersection deficiencies contributing to the accident pattern. The stop signs are visible on the northbound Veranda Street approach at the intersection but the approach does curve after a long tangent just prior to the stop, limiting advance notice of the required stop. Two of the seven collisions actually failed to stop, which may be indicative of inadequate notice. It is recommended that a "Stop Ahead" sign be installed on this approach. The speed limit is posted at 30 mph but it did appear that many southeast bound Veranda Street vehicles, entering the on ramp, were exceeding this speed so excessive speed may also be contributing to the accident problem. The City of Portland should consider enforcement if the accident pattern continues after installation of the "Stop Ahead" sign.

SUMMARY

To summarize, the proposed expansion is expected to generate 152 one-way trips during the AM peak hour period and 194 new trips during the PM peak hour. No off-site level of service concerns were identified by the capacity analysis. The site drive currently operates at LOS "F" during PM peak hours and would be expected to significantly worsen with the expansion. Traffic signal warrant analysis indicates that a traffic signal will be warranted at the site drive under projected build volumes. As a result, it is recommended that a traffic signal be installed at the intersection of Route 1 and the site drive.

In terms of safety, one high crash location was identified within the vicinity of Martin's Point, the intersection of Veranda Street and the I-295 southbound on ramps. Based upon the pattern of angle collisions identified, and the findings of a field review, a "Stop Ahead" is recommended on the northbound Veranda Street approach. If the accident pattern continues after installation of this sign then the City should consider speed enforcement in this area since it appears that speeds may also be contributing to the problem.

Figure 1 - Site Location Map



Mag 16.00
Tue Feb 28 09:08 2006
Scale 1:10,937 (at center)
1000 Feet
200 Meters

© 1997 DeLorme. Street Atlas USA

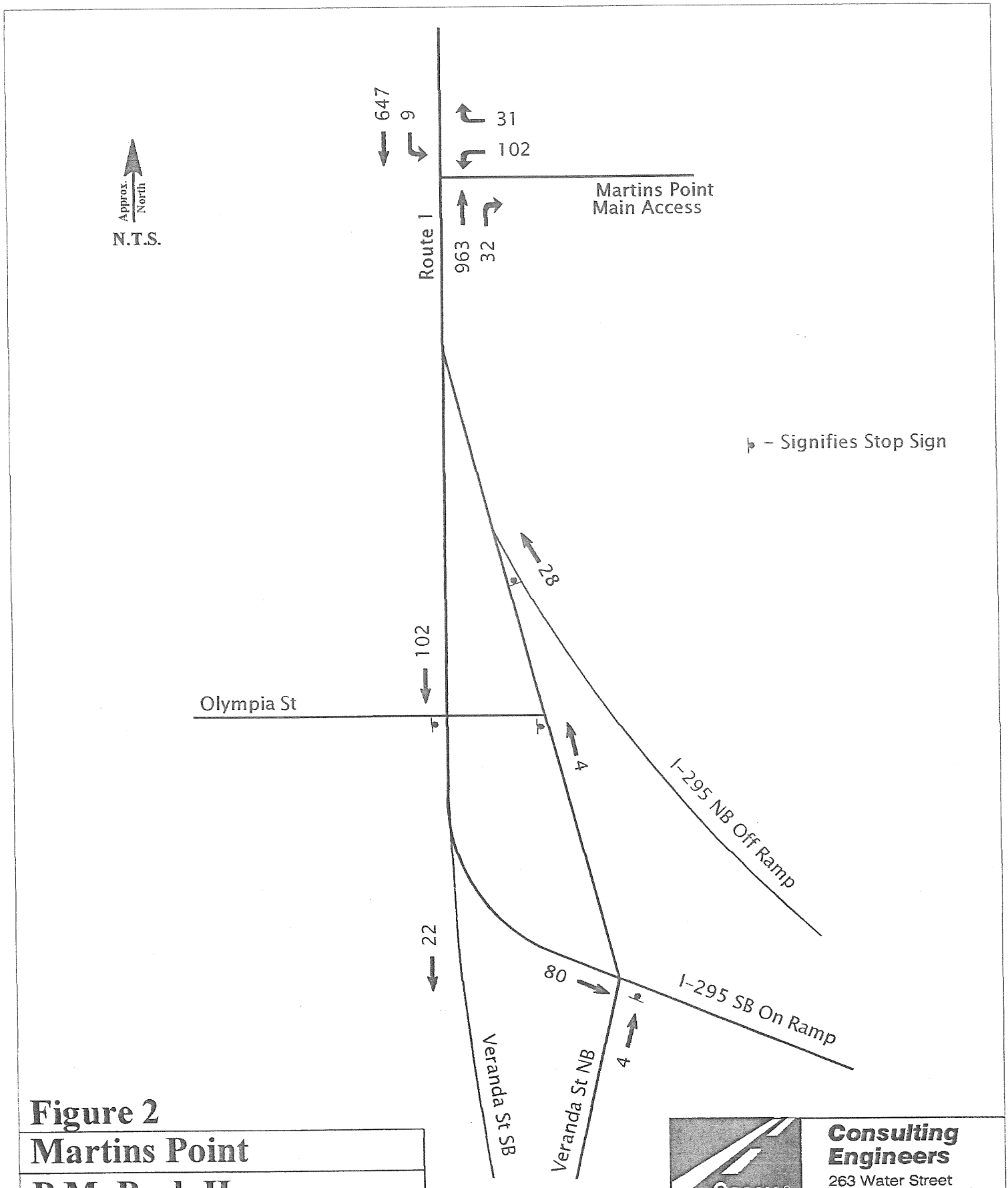


Figure 2
Martins Point
P.M. Peak Hour
Trip Assignments

Casey & Godfrey
Consulting Engineers
263 Water Street
Gardiner, Maine 04345
tel: (207) 582-4526
fax: (207) 582-8526
e-mail: cge@ime.net

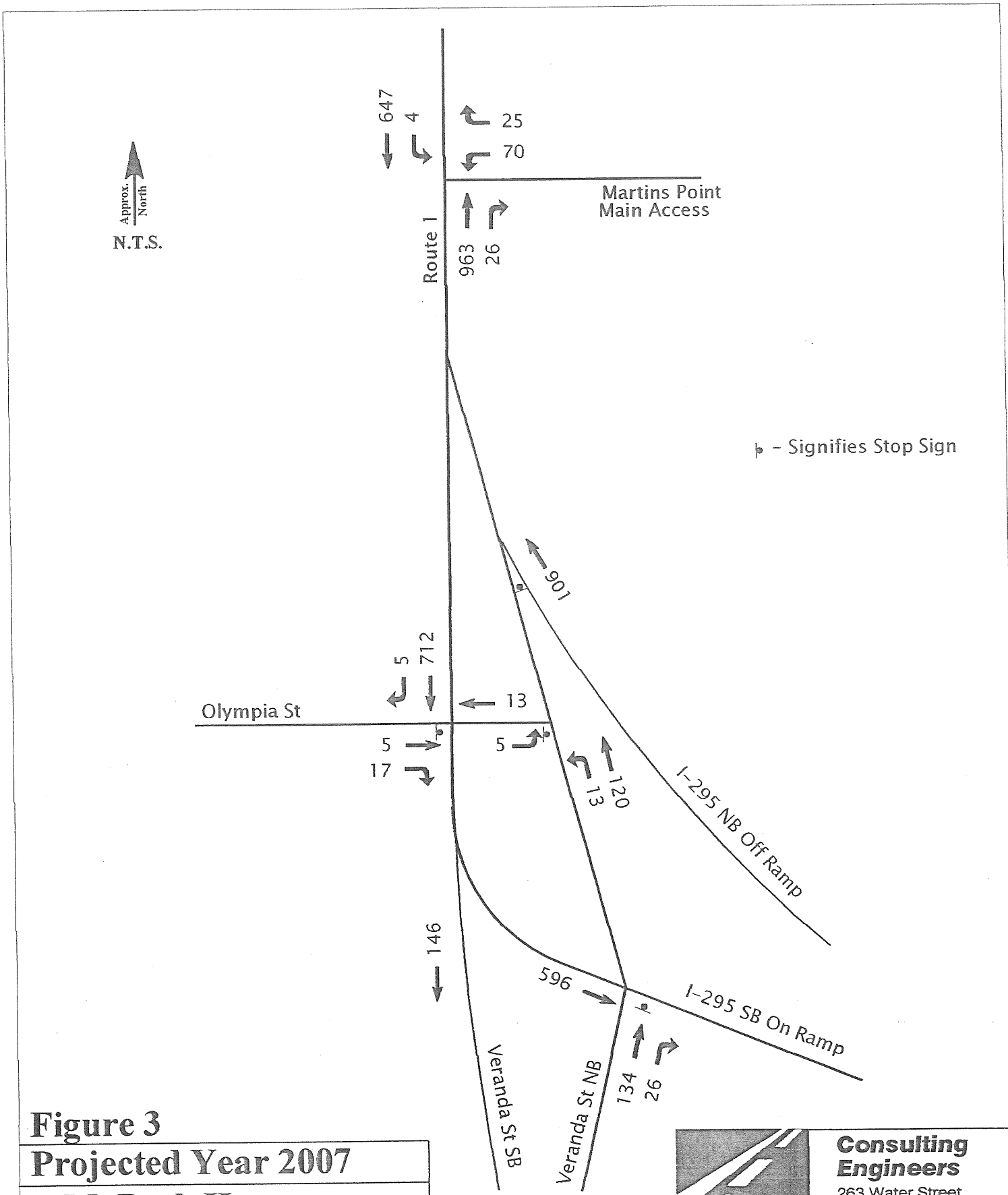


Figure 3

Projected Year 2007

P.M. Peak Hour

No Build Volumes

Casey & Godfrey
Consulting Engineers
263 Water Street
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e-mail: cge@ime.net

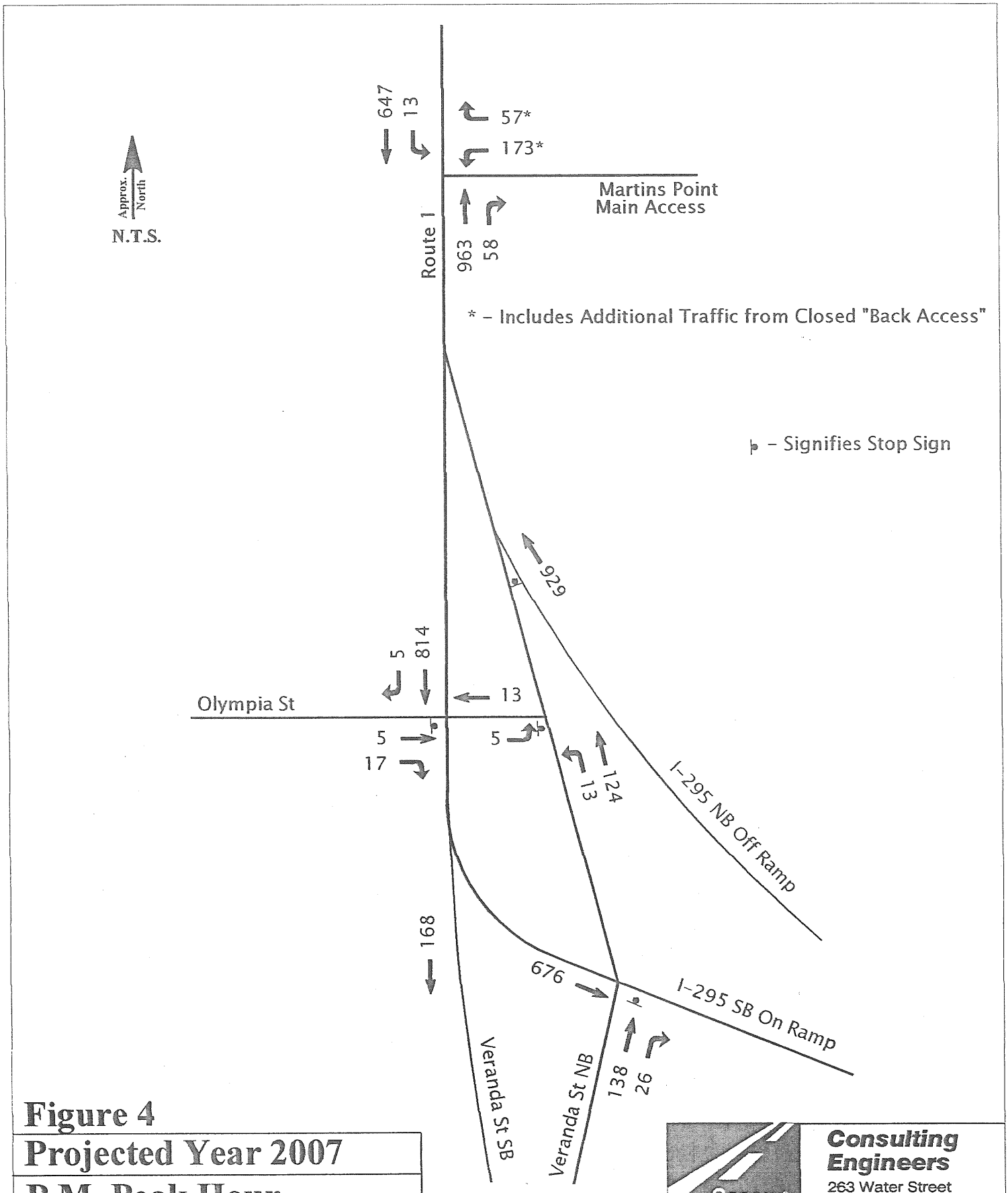

Figure 4
Projected Year 2007
P.M. Peak Hour
Build Volumes

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APPENDIX

Turning Movement Counts

Capacity Analysis

Traffic Signal Warrants

Casey & Godfrey Engineers
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Gardiner, Maine 04345
(207) 582-4526

Route 1 & Martins Point
Portland
Counter: JE
Weather: Clear

File Name : martins4
Site Code : 44444444
Start Date : 02/24/2006
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Route 1 From North					Martins Point From East					Route 1 From South					From West							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
07:00 AM	0	89	2	0	91	0	0	2	0	2	17	46	0	0	63	0	0	0	0	0	0	156	156
07:15 AM	0	128	11	0	139	2	0	4	0	6	22	73	0	0	95	0	0	0	0	0	0	240	240
07:30 AM	0	155	3	0	158	1	0	5	0	6	22	94	0	0	116	0	0	0	0	0	0	280	280
07:45 AM	0	178	6	0	184	1	0	7	0	8	16	110	0	0	126	0	0	0	0	0	0	318	318
Total	0	550	22	0	572	4	0	18	0	22	77	323	0	0	400	0	0	0	0	0	0	994	994
08:00 AM	0	162	6	0	168	3	0	7	0	10	13	96	0	0	109	0	0	0	0	0	0	287	287
08:15 AM	0	149	4	0	153	2	0	12	0	14	20	80	0	0	100	0	0	0	0	0	0	267	267
08:30 AM	0	138	2	0	140	2	0	10	0	12	9	88	0	0	97	0	0	0	0	0	0	249	249
08:45 AM	0	136	3	0	139	2	0	5	0	7	20	109	0	0	129	0	0	0	0	0	0	275	275
Total	0	585	15	0	600	9	0	34	0	43	62	373	0	0	435	0	0	0	0	0	0	1078	1078
Grand Total	0	1135	37	0	1172	13	0	52	0	65	139	696	0	0	835	0	0	0	0	0	0	2072	2072
Apprch %	0.0	96.8	3.2			20.0	0.0	80.0			16.6	83.4	0.0			0.0	0.0	0.0					
Total %	0.0	54.8	1.8		56.6	0.6	0.0	2.5		3.1	6.7	33.6	0.0		40.3	0.0	0.0	0.0		0.0	0.0	100.0	

	Route 1 From North				Martins Point From East				Route 1 From South				From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	0	644	19	663	7	0	31	38	71	380	0	451	0	0	0	0	1152
Percent	0.0	97.1	2.9		18.4	0.0	81.6		15.7	84.3	0.0		0.0	0.0	0.0		
07:45 Volume	0	178	6	184	1	0	7	8	16	110	0	126	0	0	0	0	318
Peak Factor																	0.906
High Int.	07:45 AM				08:15 AM				07:45 AM				6:45:00 AM				
Volume	0	178	6	184	2	0	12	14	16	110	0	126					
Peak Factor				0.901				0.679				0.895					
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
By Approach	07:30 AM				07:45 AM				07:30 AM				07:00 AM				
Volume	0	644	19	663	8	0	36	44	71	380	0	451	0	0	0	0	
Percent	0.0	97.1	2.9		18.2	0.0	81.8		15.7	84.3	0.0		-	-	-		
High Int.	07:45 AM				08:15 AM				07:45 AM				-				
Volume	0	178	6	184	2	0	12	14	16	110	0	126	-	-	-	-	
Peak Factor				0.901				0.786				0.895				-	

PHF = 1.04/0.87 = 1.195

Casey & Godfrey Engineers
263 Water Street
Gardiner, Maine 04345
(207) 582-4526

Route 1 & Martins Point
Portland
Counter: SK
Weather: Clear

File Name : martins3
Site Code : 00000424
Start Date : 02/14/2006
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Route 1 From North				Martins Point From East				Route 1 From South						
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0				
09:00 AM	135	9	0	144	12	4	0	16	5	134	0	139	0	299	299
09:15 AM	169	10	0	179	8	6	0	14	2	145	0	147	0	340	340
09:30 AM	160	8	0	168	15	3	0	18	1	132	0	133	0	319	319
09:45 AM	180	6	0	186	9	5	0	14	1	152	0	153	0	353	353
Total	644	33	0	677	44	18	0	62	9	563	0	572	0	1311	1311
10:00 AM	152	5	0	157	12	4	0	16	3	136	0	139	0	312	312
10:15 AM	177	4	0	181	8	6	0	14	4	161	0	165	0	360	360
10:30 AM	167	8	0	175	14	8	0	22	2	144	0	146	0	343	343
10:45 AM	189	7	0	196	10	7	0	17	1	146	0	147	0	360	360
Total	685	24	0	709	44	25	0	69	10	587	0	597	0	1375	1375
11:00 AM	169	12	0	181	9	8	0	17	2	136	0	138	0	336	336
11:15 AM	186	5	0	191	9	6	2	15	3	124	0	127	2	333	335
11:30 AM	178	3	0	181	11	6	0	17	4	134	0	138	0	336	336
11:45 AM	153	4	0	157	6	5	0	11	2	136	0	138	0	306	306
Total	686	24	0	710	35	25	2	60	11	530	0	541	2	1311	1313
Grand Total	2015	81	0	2096	123	68	2	191	30	1680	0	1710	2	3997	3999
Apprch %	96.1	3.9			64.4	35.6			1.8	98.2					
Total %	50.4	2.0		52.4	3.1	1.7		4.8	0.8	42.0		42.8	0.1	99.9	

	Route 1 From North			Martins Point From East			Route 1 From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour From 09:00 AM to 11:45 AM - Peak 1 of 1										
Intersection	10:15 AM									
Volume	702	31	733	41	29	70	9	587	596	1399
Percent	95.8	4.2		58.6	41.4		1.5	98.5		
10:45 Volume	189	7	196	10	7	17	1	146	147	360
Peak Factor										0.972
High Int.	10:45 AM			10:30 AM			10:15 AM			
Volume	189	7	196	14	8	22	4	161	165	
Peak Factor			0.935			0.795			0.903	
Peak Hour From 09:00 AM to 11:45 AM - Peak 1 of 1										
By Approach	10:45 AM			10:30 AM			09:45 AM			
Volume	722	27	749	42	29	71	10	593	603	
Percent	96.4	3.6		59.2	40.8		1.7	98.3		
High Int.	10:45 AM			10:30 AM			10:15 AM			
Volume	189	7	196	14	8	22	4	161	165	
Peak Factor			0.955			0.807			0.914	

Group I = 1.09/0.87 = 1.253

Casey & Godfrey Engineers
263 Water Street
Gardiner, Maine 04345
(207) 582-4526

Route 1 & Martins Point
Portland
Counter: JE
Weather: Clear

File Name : martins2
Site Code : 11111111
Start Date : 01/26/2006
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Route 1 From North				Martins Point From East				Route 1 From South						
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0				
12:00 PM	129	5	0	134	13	16	0	29	9	163	0	172	0	335	335
12:15 PM	143	5	0	148	10	14	0	24	9	143	0	152	0	324	324
12:30 PM	145	4	0	149	5	7	0	12	12	153	0	165	0	326	326
12:45 PM	149	10	0	159	2	8	0	10	13	139	0	152	0	321	321
Total	566	24	0	590	30	45	0	75	43	598	0	641	0	1306	1306
01:00 PM	122	6	0	128	3	9	0	12	11	138	0	149	0	289	289
01:15 PM	126	8	0	134	8	6	0	14	11	157	0	168	0	316	316
01:30 PM	138	2	0	140	2	10	0	12	12	152	0	164	0	316	316
01:45 PM	108	3	0	111	5	10	0	15	16	145	0	161	0	287	287
Total	494	19	0	513	18	35	0	53	50	592	0	642	0	1208	1208
02:00 PM	129	6	0	135	3	12	0	15	9	143	0	152	0	302	302
02:15 PM	137	3	0	140	4	13	2	17	12	125	0	137	2	294	296
02:30 PM	132	4	0	136	3	13	0	16	16	140	0	156	0	308	308
02:45 PM	134	4	0	138	1	9	0	10	11	167	0	178	0	326	326
Total	532	17	0	549	11	47	2	58	48	575	0	623	2	1230	1232
03:00 PM	129	3	0	132	1	20	0	21	11	138	0	149	0	302	302
03:15 PM	156	1	0	157	7	11	0	18	11	174	0	185	0	360	360
Grand Total	1877	64	0	1941	67	158	2	225	163	2077	0	2240	2	4406	4408
Apprch %	96.7	3.3			29.8	70.2			7.3	92.7					
Total %	42.6	1.5		44.1	1.5	3.6		5.1	3.7	47.1		50.8	0.0	100.0	

	Route 1 From North			Martins Point From East			Route 1 From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour From 12:00 PM to 03:15 PM - Peak 1 of 1										
Intersection	12:00 PM									
Volume	566	24	590	30	45	75	43	598	641	1306
Percent	95.9	4.1		40.0	60.0		6.7	93.3		
12:00 Volume	129	5	134	13	16	29	9	163	172	335
Peak Factor										0.975
High Int.	12:45 PM			12:00 PM			12:00 PM			
Volume	149	10	159	13	16	29	9	163	172	
Peak Factor			0.928			0.647			0.932	
Peak Hour From 12:00 PM to 03:15 PM - Peak 1 of 1										
By Approach	12:00 PM			12:00 PM			02:30 PM			
Volume	566	24	590	30	45	75	49	619	668	
Percent	95.9	4.1		40.0	60.0		7.3	92.7		
High Int.	12:45 PM			12:00 PM			03:15 PM			
Volume	149	10	159	13	16	29	11	174	185	
Peak Factor			0.928			0.647			0.903	

Group I = 1.06/0.87 = 1.218

Casey & Godfrey Engineers
263 Water Street
Gardiner, Maine 04345
(207) 582-4526

Martins Point & Route 1
Portland
Counter: SK
Weather: Clear, Sunny

File Name : martinspt
Site Code : 00004422
Start Date : 11/01/2005
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Route 1 From North				Martins Point From East				Route 1 From South						
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0				
03:15 PM	147	3	0	150	7	12	1	19	10	179	0	189	1	358	359
03:30 PM	149	1	0	150	5	19	0	24	10	152	0	162	0	336	336
03:45 PM	153	2	0	155	4	15	0	19	10	191	0	201	0	375	375
Total	449	6	0	455	16	46	1	62	30	522	0	552	1	1069	1070
04:00 PM	142	1	0	143	9	22	0	31	8	155	0	163	0	337	337
04:15 PM	154	1	0	155	4	11	0	15	8	190	0	198	0	368	368
04:30 PM	151	2	0	153	3	22	0	25	10	186	0	196	0	374	374
04:45 PM	156	2	0	158	6	13	0	19	8	224	0	232	0	409	409
Total	603	6	0	609	22	68	0	90	34	755	0	789	0	1488	1488
05:00 PM	129	0	0	129	9	20	0	29	4	195	0	199	0	357	357
05:15 PM	139	0	0	139	7	15	0	22	4	250	0	254	0	415	415
05:30 PM	124	1	0	125	6	10	0	16	2	176	0	178	0	319	319
05:45 PM	128	0	0	128	4	8	0	12	2	164	0	166	0	306	306
Total	520	1	0	521	26	53	0	79	12	785	0	797	0	1397	1397
Grand Total	1572	13	0	1585	64	167	1	231	76	2062	0	2138	1	3954	3955
Apprch %	99.2	0.8			27.7	72.3			3.6	96.4					
Total %	39.8	0.3		40.1	1.6	4.2		5.8	1.9	52.1		54.1	0.0	100.0	

	Route 1 From North			Martins Point From East			Route 1 From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour From 03:15 PM to 05:45 PM - Peak 1 of 1										
Intersection	04:30 PM									
Volume	575	4	579	25	70	95	26	855	881	1555
Percent	99.3	0.7		26.3	73.7		3.0	97.0		
05:15 Volume	139	0	139	7	15	22	4	250	254	415
Peak Factor										0.937
High Int.	04:45 PM			05:00 PM			05:15 PM			
Volume	156	2	158	9	20	29	4	250	254	
Peak Factor			0.916			0.819			0.867	
Peak Hour From 03:15 PM to 05:45 PM - Peak 1 of 1										
By Approach	04:00 PM			04:30 PM			04:30 PM			
Volume	603	6	609	25	70	95	26	855	881	
Percent	99.0	1.0		26.3	73.7		3.0	97.0		
High Int.	04:45 PM			05:00 PM			05:15 PM			
Volume	156	2	158	9	20	29	4	250	254	
Peak Factor			0.964			0.819			0.867	

GROUP I = 0.97/0.87 = 1.115 x 1.01 (ANN. GROWTH TO 2006) = 1.126

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*SK*
Agency/Co.	*CGE*
Date Performed	*2/23/06*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Rte 1/I-295 SB Ramp & Veranda*
Jurisdiction	*Portland*
Analysis Year	*2007*

Project Description *Projected Year 2007 - No Build*

East/West Street: *Rte 1/I-295 SB On Ramp* | North/South Street: *Veranda Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*596*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.95*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*627*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*T*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*134*		*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.90*	*0.90*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*148*	*28*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*3*	*3*	*0*	*0*	*0*
Percent grade (%)	*0*			*0*		
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*1*			*0*
Lanes	*0*	*1*	*1*	*0*	*0*	*0*
Configuration		*T*	*R*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration				*T*	*R*			
Volume, v (vph)				*148*	*28*			
Capacity, c_m (vph)				*399*	*482*			
v/c ratio				*0.37*	*0.06*			
Queue length (95%)				*1.68*	*0.18*			
Control Delay (s/veh)				*19.2*	*12.9*			
LOS				*C*	*B*			
Approach delay (s/veh)	–	–	*18.2*					
Approach LOS	–	–	*C*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	SK
Agency/Co.	CGE
Date Performed	2/23/06
Analysis Time Period	PM Peak

Site Information

Intersection	Rte 1/I-295 SB Ramp & Veranda
Jurisdiction	Portland
Analysis Year	2007

Project Description: *Projected Year 2007 - Build*

East/West Street: *Rte 1/I-295 SB On Ramp* | North/South Street: *Veranda Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	676	0	0	0	0
Peak-hour factor, PHF	1.00	0.95	1.00	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	0	711	0	0	0	0
Proportion of heavy vehicles, P_{HV}	0	–	–	0	–	–
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	0	0
Configuration		T				
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	138	26	0	0	0
Peak-hour factor, PHF	1.00	0.90	0.90	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	0	153	28	0	0	0
Proportion of heavy vehicles, P_{HV}	0	3	3	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			1			0
Lanes	0	1	1	0	0	0
Configuration		T	R			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration				T	R			
Volume, v (vph)				153	28			
Capacity, c_m (vph)				357	431			
v/c ratio				0.43	0.06			
Queue length (95%)				2.08	0.21			
Control Delay (s/veh)				22.4	13.9			
LOS				C	B			
Approach delay (s/veh)	–	–	21.1					
Approach LOS	–	–	C					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	SK
Agency/Co.	CGE
Date Performed	2/23/06
Analysis Time Period	PM Peak

Site Information

Intersection	Rte 1/I-295 NB Ramp & Veranda
Jurisdiction	Portland
Analysis Year	2007

Project Description: Projected Year 2007 - No Build

East/West Street: Rte 1/I-295 NB Off Ramp | North/South Street: Veranda Street

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	0	901	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	0.95	1.00
Hourly Flow Rate (veh/h)	0	0	0	0	948	0
Proportion of heavy vehicles, P_{HV}	0	–	–	0	–	–
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	0	0	0	1	0
Configuration					T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	125	0	0	0	0	0
Peak-hour factor, PHF	0.85	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	147	0	0	0	0	0
Proportion of heavy vehicles, P_{HV}	2	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	1	0	0	0	0	0
Configuration	L					

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration			L					
Volume, v (vph)			147					
Capacity, c_m (vph)			289					
v/c ratio			0.51					
Queue length (95%)			2.70					
Control Delay (s/veh)			29.7					
LOS			D					
Approach delay (s/veh)	–	–	29.7					
Approach LOS	–	–	D					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*SK*
Agency/Co.	*CGE*
Date Performed	*2/23/06*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Rte 1/I-295 NB Ramp & Veranda*
Jurisdiction	*Portland*
Analysis Year	*2007*

Project Description *Projected Year 2007 - Build*

East/West Street: *Rte 1/I-295 NB Off Ramp* | North/South Street: *Veranda Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*0*	*929*	*0*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*0.95*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*0*	*977*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*129*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.85*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*151*	*0*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*2*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*1*	*0*	*0*	*0*	*0*	*0*
Configuration	*L*					

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration			*L*					
Volume, v (vph)			*151*					
Capacity, c_m (vph)			*278*					
v/c ratio			*0.54*					
Queue length (95%)			*3.00*					
Control Delay (s/veh)			*32.3*					
LOS			*D*					
Approach delay (s/veh)	–	–	*32.3*					
Approach LOS	--	–	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	SK	Intersection	Rte 1 & Martins Pt Main Access
Agency/Co.	CGE	Jurisdiction	Portland
Date Performed	2/28/06	Analysis Year	2006
Analysis Time Period	AM Peak		

Project Description	Existing Year 2006 - Rte 1 & Martins Point Main Access-AM
East/West Street:	Martins Point Main Access
North/South Street:	Route 1
Intersection Orientation:	North-South
Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	446	73	26	744	0
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR	0	495	81	28	826	0
Percent Heavy Vehicles	0	–	–	2	–	–
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	23	0	7	0	0	0
Peak-Hour Factor, PHF	0.75	1.00	0.75	1.00	1.00	1.00
Hourly Flow Rate, HFR	30	0	9	0	0	0
Percent Heavy Vehicles	7	0	7	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		28	30		9			
C (m) (vph)		997	143		535			
v/c		0.03	0.21		0.02			
95% queue length		0.09	0.76		0.05			
Control Delay		8.7	36.7		11.8			
LOS		A	E		B			
Approach Delay	–	–	31.0					
Approach LOS	–	–	D					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*SK*	Intersection	*Rte 1 & Martins Pt Main Access*
Agency/Co.	*CGE*	Jurisdiction	*Portland*
Date Performed	*2/28/06*	Analysis Year	*2007*
Analysis Time Period	*AM Peak*		

Project Description	*Year 2007 No Build - AM*
East/West Street:	*Martins Point Main Access*
North/South Street:	*Route 1*
Intersection Orientation:	*North-South*
Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*450*	*73*	*26*	*751*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR	*0*	*500*	*81*	*28*	*834*	*0*
Percent Heavy Vehicles	*0*	–	–	*2*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*23*	*0*	*7*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*30*	*0*	*9*	*0*	*0*	*0*
Percent Heavy Vehicles	*7*	*0*	*7*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*28*	*30*		*9*			
C (m) (vph)		*993*	*141*		*532*			
v/c		*0.03*	*0.21*		*0.02*			
95% queue length		*0.09*	*0.77*		*0.05*			
Control Delay		*8.7*	*37.3*		*11.9*			
LOS		*A*	*E*		*B*			
Approach Delay	–	–	*31.4*					
Approach LOS	–	–	*D*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*SK*	Intersection	*Rte 1 & Martins Pt Main Access*
Agency/Co.	*CGE*	Jurisdiction	*Portland*
Date Performed	*2/28/06*	Analysis Year	*2007*
Analysis Time Period	*AM Peak*		
Project Description	*Year 2007 Build - AM*		
East/West Street:	*Martins Point Main Access*	North/South Street:	*Route 1*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*450*	*156*	*56*	*751*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR	*0*	*500*	*173*	*62*	*834*	*0*
Percent Heavy Vehicles	*0*	–	–	*2*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*53*	*0*	*16*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*70*	*0*	*21*	*0*	*0*	*0*
Percent Heavy Vehicles	*7*	*0*	*7*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*62*	*70*		*21*			
C (m) (vph)		*918*	*115*		*501*			
v/c		*0.07*	*0.61*		*0.04*			
95% queue length		*0.22*	*3.03*		*0.13*			
Control Delay		*9.2*	*76.0*		*12.5*			
LOS		*A*	*F*		*B*			
Approach Delay	–	–	*61.4*					
Approach LOS	–	–	*F*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	SK	Intersection	Rte 1 & Martins Pt Main Access
Agency/Co.	CGE	Jurisdiction	Portland
Date Performed	2/28/06	Analysis Year	2006
Analysis Time Period	PM Peak		

Project Description	Existing Year 2006 - Rte 1 & Martins Point Main Access
East/West Street:	Martins Point Main Access
North/South Street:	Route 1
Intersection Orientation:	North-South
Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	953	26	4	642	0
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.95	0.95	1.00
Hourly Flow Rate, HFR	0	1058	28	4	675	0
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	70	0	25	0	0	0
Peak-Hour Factor, PHF	0.85	1.00	0.85	1.00	1.00	1.00
Hourly Flow Rate, HFR	82	0	29	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		4	82		29			
C (m) (vph)		646	93		268			
v/c		0.01	0.88		0.11			
95% queue length		0.02	4.90		0.36			
Control Delay		10.6	143.9		20.1			
LOS		B	F		C			
Approach Delay	--	--	111.5					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	SK	Intersection	Rte 1 & Martins Pt Main Access
Agency/Co.	CGE	Jurisdiction	Portland
Date Performed	2/23/05	Analysis Year	2007 No Build
Analysis Time Period	PM Peak		

Project Description	Year 2007 - No Build - Rte 1 & Martins Point Main Access
East/West Street:	Martins Point Main Access
North/South Street:	Route 1
Intersection Orientation:	North-South
Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	963	26	4	647	0
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.96	0.96	1.00
Hourly Flow Rate, HFR	0	1070	28	4	673	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	70	0	25	0	0	0
Peak-Hour Factor, PHF	0.80	1.00	0.80	1.00	1.00	1.00
Hourly Flow Rate, HFR	87	0	31	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		4	87		31			
C (m) (vph)		636	92		266			
v/c		0.01	0.95		0.12			
95% queue length		0.02	5.41		0.39			
Control Delay		10.7	161.5		20.3			
LOS		B	F		C			
Approach Delay	--	--	124.4					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*SK*	Intersection	*Rte 1 & Martins Pt Main Access*
Agency/Co.	*CGE*	Jurisdiction	*Portland*
Date Performed	*2/23/05*	Analysis Year	*2007 Build*
Analysis Time Period	*PM Peak*		

Project Description	*Year 2007 - Build - Rte 1 & Martins Point Main Access*
East/West Street: *Martins Point Main Access*	North/South Street: *Route 1*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*963*	*58*	*13*	*647*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.96*	*0.96*	*1.00*
Hourly Flow Rate, HFR	*0*	*1070*	*64*	*13*	*673*	*0*
Percent Heavy Vehicles	*0*	–	–	*2*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*173*	*0*	*57*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.80*	*1.00*	*0.80*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*216*	*0*	*71*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*13*	*216*		*71*			
C (m) (vph)		*616*	*87*		*260*			
v/c		*0.02*	*2.48*		*0.27*			
95% queue length		*0.06*	*20.15*		*1.08*			
Control Delay		*11.0*	*776.9*		*24.0*			
LOS		*B*	*F*		*C*			
Approach Delay	--	--	*590.6*					
Approach LOS	--	--	*F*					

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Existing Year 2006

	SB Rte 1		Martins		NB Rte 1				
	T	L	R	L	R	T			
	30th					30th	Hourly Martins Lefts	Hourly Route 1 Both	Total
7:00	106	2	0	2	17	55			
	153	11	2	4	22	87			
	185	3	1	5	22	112			
	213	6	1	7	16	131	18	1142	1160
8:00	194	6	3	7	13	115	23	1289	1312
	178	4	2	12	20	96	31	1314	1345
	165	2	2	10	9	105	36	1272	1308
	163	3	2	5	20	130	34	1222	1256
9:00	169	9	12	4	5	168	31	1246	1277
	212	10	8	6	2	182	25	1353	1378
	200	8	15	3	1	165	18	1447	1465
	226	6	9	5	1	190	18	1554	1572
10:00	190	5	12	4	3	170	18	1572	1590
	222	4	8	6	4	202	18	1598	1616
	209	8	14	8	2	180	23	1623	1646
	237	7	10	7	1	183	25	1628	1653
11:00	212	12	9	8	2	170	29	1655	1684
	233	5	9	6	3	155	29	1620	1649
	223	3	11	6	4	168	27	1618	1645
	192	4	6	5	2	170	25	1559	1584
12:00	157	5	13	16	9	199	33	1532	1565
	174	5	10	14	9	174	41	1498	1539
	177	4	5	7	12	186	42	1479	1521
	181	10	2	8	13	169	45	1485	1530
1:00	149	6	3	9	11	168	38	1449	1487
	153	8	8	6	11	191	30	1450	1480
	168	2	2	10	12	185	33	1438	1471
	132	3	5	10	16	177	35	1392	1427
2:00	157	6	3	12	9	174	38	1404	1442
	167	3	4	13	12	152	45	1375	1420
	161	4	3	13	16	171	48	1359	1407
	163	4	1	9	11	203	47	1413	1460
3:00	157	3	1	20	11	168	55	1406	1461
	190	1	7	11	11	212	53	1486	1539
	168	1	5	19	10	169	59	1483	1542
	172	2	4	15	10	215	65	1501	1566
4:00	160	1	9	22	8	175	67	1505	1572
	173	1	4	11	8	214	67	1487	1554
	170	2	3	22	10	209	70	1531	1601
	176	2	6	13	8	252	68	1569	1637
5:00	145	0	9	20	4	220	66	1595	1661
	157	0	7	15	4	282	70	1640	1710
	140	1	6	10	2	198	58	1590	1648
	144	0	4	8	2	185	53	1482	1535