

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

2003-0225

Application I. D. Number

10/17/2003

Application Date

Amendment to Plan - University Park

Project Name/Description

Wescott & Payson II

Applicant

240 Harvard St , Portland, ME 04103

Applicant's Mailing Address

Yale St, Portland, Maine

Address of Proposed Site

436 A009001

Assessor's Reference: Chart-Block-Lot

Consultant/Agent

Agent Ph:

Agent Fax:

Applicant or Agent Daytime Telephone, Fax

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

Proposed Building square Feet or # of Units

Acreage of Site

R3

Zoning

Check Review Required:

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Site Plan
(major/minor) | <input type="checkbox"/> Subdivision
of lots _____ | <input type="checkbox"/> PAD Review | <input type="checkbox"/> 14-403 Streets Review |
| <input type="checkbox"/> Flood Hazard | <input type="checkbox"/> Shoreland | <input type="checkbox"/> Historic Preservation | <input type="checkbox"/> DEP Local Certification |
| <input type="checkbox"/> Zoning Conditional
Use (ZBA/PB) | <input type="checkbox"/> Zoning Variance | | <input type="checkbox"/> Other _____ |

Fees Paid: Site Plan _____ Subdivision _____ Engineer Review _____ Date _____

Planning Approval Status:

Reviewer _____

- Approved Approved w/Conditions
See Attached Denied

Approval Date _____ Approval Expiration _____ Extension to _____ Additional Sheets
Attached

OK to Issue Building Permit _____
signature date

Performance Guarantee Required* Not Required

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

- | | | | |
|---|----------------|--|-----------------|
| <input type="checkbox"/> Performance Guarantee Accepted | _____ | _____ | _____ |
| | date | amount | expiration date |
| <input type="checkbox"/> Inspection Fee Paid | _____ | _____ | |
| | date | amount | |
| <input type="checkbox"/> Building Permit Issue | _____ | | |
| | date | | |
| <input type="checkbox"/> Performance Guarantee Reduced | _____ | _____ | _____ |
| | date | remaining balance | signature |
| <input type="checkbox"/> Temporary Certificate of Occupancy | _____ | <input type="checkbox"/> Conditions (See Attached) | _____ |
| | date | | expiration date |
| <input type="checkbox"/> Final Inspection | _____ | _____ | |
| | date | signature | |
| <input type="checkbox"/> Certificate Of Occupancy | _____ | | |
| | date | | |
| <input type="checkbox"/> Performance Guarantee Released | _____ | _____ | |
| | date | signature | |
| <input type="checkbox"/> Defect Guarantee Submitted | _____ | _____ | _____ |
| | submitted date | amount | expiration date |
| <input type="checkbox"/> Defect Guarantee Released | _____ | _____ | |
| | date | signature | |

City of Portland Site Plan Application

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

Address of Construction: Yale Street, Portland		Zone: R-3
Total Square Footage of Proposed Structure: Residential Subdivision- To be determined		Square Footage of Lots: Total Area= 1.86 Acres
Tax Assessor's Chart, Block & Lot Chart# Block# Lot#	Property owner, mailing address: Wescott & Payson II Yale Street Portland, ME 04103	Telephone: 882-4350 772-2829 (fax)
Consultant/Agent, mailing address phone & contact person : Land Use Consultants, Inc. Attn: David Kamila, P.E. 966 Riverside Street Portland, ME 04103 (207)878-3313	Applicant name, mailing address & telephone: Same as above	Project name: Minor field First Amended Subdivision Plan Plan of Lots at University Park
<p>Proposed Development (check all that apply) <input type="checkbox"/> New Building <input type="checkbox"/> Building Addition <input type="checkbox"/> Change of Use</p> <p><input checked="" type="checkbox"/> Residential <input type="checkbox"/> Office <input type="checkbox"/> Retail <input type="checkbox"/> Manufacturing <input type="checkbox"/> Warehouse/Distribution <input type="checkbox"/> Parking lot</p> <p><input type="checkbox"/> Subdivision, amount of lots _ @ \$25.00 per lot= _</p> <p><input type="checkbox"/> Site Location of Development \$3,000, except for residential lots which are then \$200 per lot _____</p> <p><input type="checkbox"/> Traffic Movement \$1,000 <input type="checkbox"/> Stormwater Quality \$250.00 <input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> After the fact review - Major project \$1,500.00 <input type="checkbox"/> After the fact review - Minor project \$1,200.00</p> <p>Major Development <input type="checkbox"/> \$500.00 Minor Development <input type="checkbox"/> \$400.00</p> <p>Plan Amendments: <input type="checkbox"/> Board review \$200.00 <input checked="" type="checkbox"/> Staff review \$100.00 = \$250.00 TOTAL FEE</p>		
Who billing will be sent to: Michael Payson Mailing address: 240 Harvard Street State and Zip: Portland, ME 04103 Contact person: David A. Kamila, P.E. Phone: (207)878-3313		

Submittals shall include (9) separate folded packets of the following:

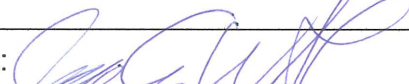
- a. copy of application
- b. cover letter stating the nature of the project
- c. site plan containing the information found in the attached sample plans check list

Amendment to Plans: Amendment applications should include 6 separate packets of the above (a, b, and c)

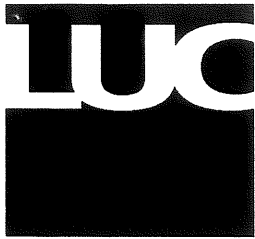
ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM

Section 14-522 of the Zoning Ordinance outlines the process, copies are available at the counter at .50 per page (8.5 x11) you may also visit the web site: ci.portland.me.us.chapter14

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this applications issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: 	Date: 10/17/03
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This application is for site review ONLY, a building Permit application and associated fees will be required prior to construction.



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

October 16, 2003

4080

e n g i n e e r s
p l a n n e r s
l a n d s c a p e
a r c h i t e c t s

Sarah Hopkins
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

Yale Court PRUD: request for administrative review of minor field changes at Yale Court PRUD:

Dear Ms. Hopkins;

At the request of Jay Reynolds, Development Review Coordinator, Land Use Consultants is submitting an application amendment and request for minor changes to the approved Grading Plan for Yale Court (Sheet C-9), on behalf of the Applicant, Yale Court Limited Partners. This request is a result of minor grading changes around the buildings required to clarify grading directly around each unit and coordinate the typical grading indicated on structural foundation details with the approved Grading Plan. Initially, construction sketches were issued to the contractor as a field directive for revisions at each unit. However, Mr. Reynolds has indicated that these revisions must be reviewed by the City as an amendment to the approved Site Plan. No changes were made which would alter or revise drainage, drainage patterns, drainage calculations, stormwater management, water quality treatment, impervious areas or other permit compliance issues. It is our understanding these changes may be considered diminutive in scope and can be reviewed at the administrative level. The following revisions are proposed:

1. Revised grading at entrances, patios and around foundations of each building.
2. Raised grade slightly along curb and sidewalk in front of Building "C".

As per my recent telephone conversation with Mr. Reynolds, LUC is providing plan sheet C-9 (grading plan) only, for review.

Land Use Consultants will deliver ten (10) copies of this application to the City Planning Office in Portland for your use and staff review. Please call if you need any more information.

Sincerely:

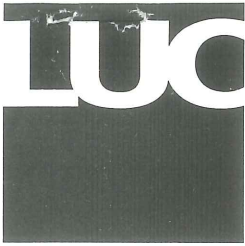
Patrick L. Clark, PE

Cc: Mike Payson, Yale Court LP
Ben Walter, CWS

Encl: Check # _____, Wescott & Payson to City of Portland, \$250.00
Site Plan Application
Grading, drainage & Erosion Controls Plan (sheet C-9), revised

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PORTLAND, MAINE 04103

Voice (207) 878 · 3313
Fax (207) 878 · 0201
landuse@landuseinc.net



Land Use Consultants, Inc.

Nov 37

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

November 19, 2002

4080

p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s

Jonathan Spence, Planner
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

Final Plans - Yale Court PRUD and Amended Subdivision Plan of University Park

Dear Jonathan:

I am pleased to submit the attached Final Plans and documentation for Yale Court on behalf of Yale Court Development Co., LLC. I am also submitting Final Plans and documentation for the proposed Amendment to University Park Subdivision on behalf of Wescott & Payson II. These two projects were presented at the October 22, 2002 Planning Board Workshop. We have revised the plans and provided additional documentation as requested by the Planning Board at that meeting and during follow-up discussions and review with staff as follows:

Yale Court - PRUD

- The two proposed handicap accessible units have been relocated westerly and are now directly in front of the proposed handicap parking stalls.
- Each dwelling unit has a back yard patio space that is dedicated to their exclusive use and a privacy screen is located between the abutting unit.
- A playground for young children is located behind the community center.
- Additional details and notes for preservation of existing trees within the 35 foot buffer have been added along with some new plantings and fencing to enhance the screening where grading occurs near the project boundary.
- Details of the dumpster enclosure have been added to the plans and a letter from Waste Management regarding estimated quantities is attached.
- The Emergency Access to the Woodwinds is detailed on the plans and a plan showing the routing through Woodwinds to Harvard Street is

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included in the plan set. A crash gate is also proposed to control this access.

- A note was added to the Recording Plat that states the City will not provide any services to the project for road maintenance, trash removal and snow plowing.
- A stonedust walk was added to provide access to the end of Chesley Street and the sidewalk was extended along the south side of the westerly entrance drive from Yale Street to allow better pedestrian access to Yale Street and University Park.
- Additional stormwater treatment has been provided by adding a pre-treatment swale and increasing the size of the detention basin. The details are included on the plans and revised calculations are attached.
- A narrative is attached which explains how we have addressed the specific PRUD standards contained in the Ordinance.
- Draft legal documents addressing the real estate transfers, various easements and tenant rights and responsibilities will be submitted under separate cover.

University Park Lots

- A plan showing proposed grading for the 10 individual house lots is included in the plan set.
- The conceptual grading for lot 1 does not exceed 4300 square feet of wetlands impact and therefore does not require a DEP permit.
- Proposed design guidelines for the individual lots are attached.

General

- Utility company letters regarding availability of services have been requested and are attached or will be submitted under separate cover when we receive them.
- A proposed Blasting Plan has been prepared for this project, which will incorporate the new City Blasting Ordinance if and when it is adopted and is attached.



- Typical design sections for Yale Street, the Access Drive to the PRUD and the Emergency Access Drive to Woodwinds have been added to the plans.
- A Lighting Plan with photometrics is being prepared by Bennett Engineering and will be submitted under separate cover.
- Architectural Plans prepared by Ben Walter of CWS Architects are attached.
- A neighborhood meeting was held on November 13, 2002 at Andover College to discuss the project and the revisions we have made to the plans.

Plans & Documents:

This submission includes the following documents (9copies):

- Revised Drainage Study by Land Use Consultants, Inc. (9 copies of the revised Report are attached along with 1 copy of the revised calculations, 1 copy of the revised Report and calculations was also submitted directly to Jim Seymour for his peer review)
- Proposed Design Guidelines for single-family homes on the individual lots.
- A narrative explaining how we have met the PRUD standards of the Ordinance.
- Letter from Waste Management regarding projected volumes of household waste expected.
- Letters from the various utility companies regarding ability to serve the project.
- Proposed Blasting Plan.
- Soils Report by Mark Hampton Associates, Inc.

This submission also includes the following plans prepared by LUC unless noted otherwise (9 copies):

1. Cover Sheet.
2. Existing Conditions and Soils (Mark Hampton Associates)
- 1 of 1. Standard boundary Survey (Titcomb Associates).
- 1 of 1. Recording Plat PRUD,(sealed by Rex Croteau, PLS, Titcomb Associates)
- 1 of 1. Recording Plat of Amendment to University Park, (sealed by Croteau)
6. Yale Street Plan/Profile
7. Yale Street Plan/Profile



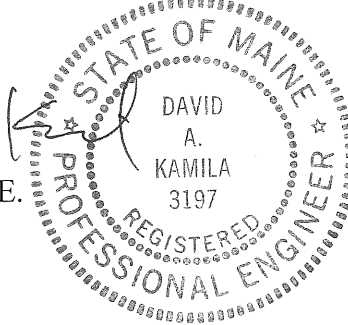
8. Layout & Utilities
9. Grading, Drainage & Erosion Controls
10. Landscaping & Lighting (81/2x11 lighting fixture detail attached)
11. Pre-Development Drainage Plan
12. Post-Development Drainage Plan
13. Vicinity Drainage Plan
14. Details
15. Details
16. Details

Plans of individual buildings prepared by CWS Architects are also attached.

I trust you will find this application to be complete and look forward to meeting with you and the Planning Board at their next available meeting. In the meantime, please call me with any questions or requests for additional information.

Sincerely,

David A. Kamila, P.E.
President



DAK;dak

Enclosures

- Cc: Mike Payson, Owner
Jim Wescott, Owner
Ben Walter, CWS Architects
Ed Marsh, MSHA
Rex Croteau, Titcomb Associates

Suggested Guidelines

A. Streetscape - note street tree plantings are covered under subdivision requirements.

- Esplanade with Street Trees at 35' O.C. or two per lot min.
- "Front" of homes should face the street.
- Front yard should have improvements compatible with neighborhood.

B. Lot Layout

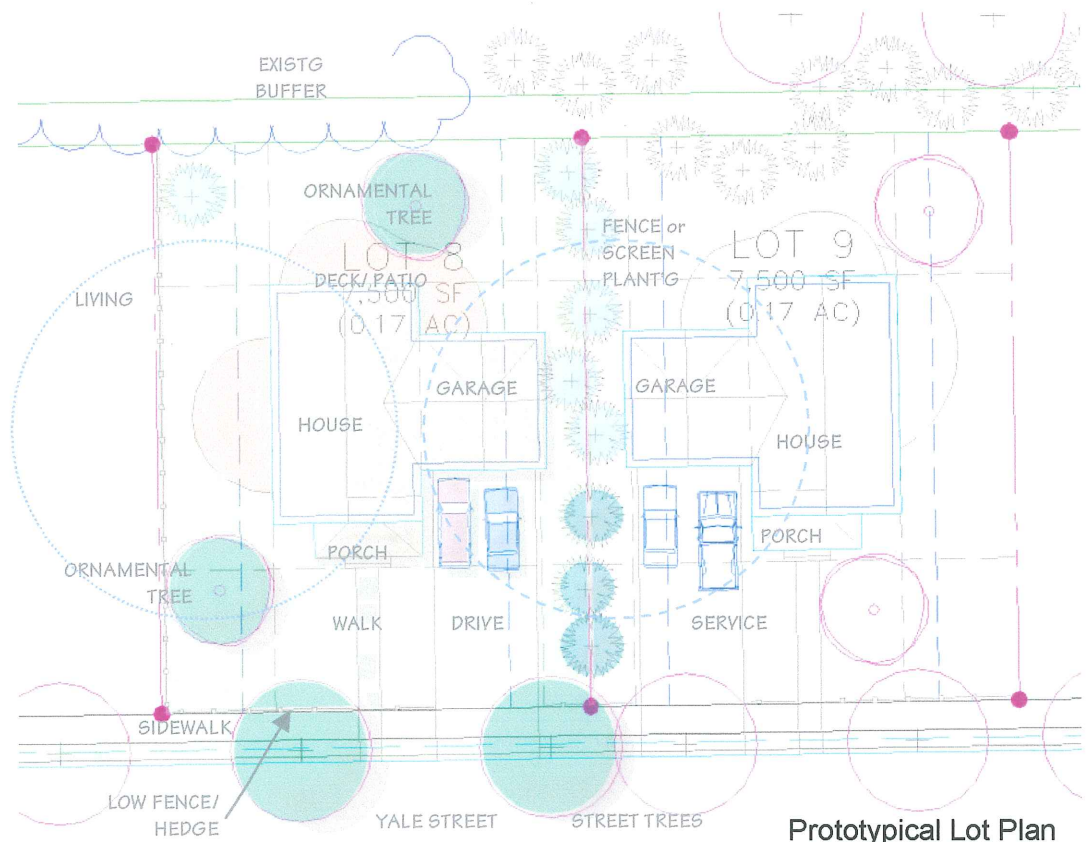
- Note 25 ft front and rear yard set back required limit flexibility of traditional detached garage located near rear lot line.
- Orient house forward of garage
- Orient houses to maximize solar exposure for building and outdoor living spaces. Utilize side yard reduction to maximize solar gain.
- Orient service side to service side and living spaces to living spaces on adjacent lots.
- Provide walkway from main entrance to public sidewalk or visible from sidewalk.

C. Site Improvements

- Paved Drive & paved front walk (stones, asphalt, brick)
- Private open space
- Landscaping traditional shade tree, privet hedge, and lilac hedge.
- Post lamp or wall mounted lamp

D. House design

- Footprint and massing in scale to neighborhood.
- Design - emphasis on good building and fenestration proportions. Contemporary interpretations of vernacular forms encouraged. Well proportioned trim where used.
- Orientation to street – porch and front steps/ stoop/ or door visible from the public street.
- Building Height shall be proportion with neighborhood. Roof Pitch 6:12 min.
- Exterior Materials natural or high quality vinyl clapboard and shingle materials.
- Garage in scale to house. If the garage must be forward of house, provide an entry element forward of the garage such as an arbor or the fence with gate.



Prototypical Lot Plan



November 19, 2002

4080

Yale Court PRUD Narrative

The following narrative provides a summary of the proposed design for Yale Court PRUD and compliance with Section 14-526, (14) PRUD Standards for R-3, R-5, or R-5A residential zones.

a. Design Relationship to the site:

The project layout and design of buildings, roadways, parking areas, open space, recreation amenities, landscaping, drainage facilities and control mechanisms and other site improvements have been organized and designed comprehensively to complement the natural topography, vegetation, wetlands, and solar orientation, where practicable. Where this is not practicable, planning, design and engineering measures have been employed to comply with the standards and guidelines.

- *The Project Architect, Landscape Architect and Civil Engineer have worked closely to coordinate building design and site layout.*
- *The Project Civil Engineers and Landscape Architects have coordinated closely in the layout and design of the site.*
- *The layout of the roadways and parking areas meet two principal planning criteria:*
 - 1) *The roadways are designed to recall traditional neighborhood streets with sidewalks and street trees on each side. On private roads, the Applicant would prefer to place street trees within esplanades where space permits to more closely reflect a traditional streetscape.*
 - 2) *Building Organization: The buildings are linked to each other and the streetscape through a cohesive system of tree-lined sidewalks; tree-shaded, parking lots with sidewalks and landscaped "front walks" provided to the units. This layout, as presented at workshop, provides optimal open space and daylight to each building.*

The Community Building (building "D") is the focal point when entering Yale Court. It is sited prominently at the main entrance intersection. The building architecture, porch with landscaped lawn, seating area, and enclosed play area provide an attractive

entrance amenity. The building houses a computer center, community room, management office, and laundry room with adjacent enclosed tot lot. This building will be the physical and functional focus of Yale Court with the residential buildings fanning out from there.

- *Topography and Drainage: The proposed site improvements and buildings have been located on higher ground away from the site perimeter. The low point of the site at the north end is used for storm water detention and treatment. Part of the storm water treatment system, a shallow swale behind buildings “D” & “E” is carefully designed with natural topographic shape and landscape stones accenting the edges to blend form and function into the landscape.*
- *A small wetland area at the west end of the Yale Court site has not been disturbed. There are no streams on the property.*
- *The site vegetation includes some large overstory trees, but the wooded site is comprised primarily of successional growth including red oak, white oak, with some beech and pine. In an effort to design a compact, neighborhood on challenging soils, most of the existing vegetation within the site to be graded will be removed. Existing vegetation is part of the perimeter buffer particularly on the northeast, easterly, south easterly, and northwesterly portions of the site. Where grading is required inside the 35 ft. buffer for storm water treatment/overland flow, a buffer is proposed in conformance with the City of Portland Arboricultural and Landscape Guidelines. The planting of new trees, shrubs and groundcovers in accordance with the PRUD Standards and Guidelines will mitigate the loss of existing vegetation.*
- *Solar Orientation: The proposed buildings are laid out on a north-south/ east-west grid. The orientation assures several different solar orientations including:*
 - *Front of buildings facing south.*
 - *Back of buildings facing south.*
 - *Front and back of buildings facing east and west.*
 - *North facing elevations will have early morning and late evening direct light during summer months.*
- *The layout of the buildings and open spaces will provide several options for solar orientation for the prospective tenants dependent upon user preference. Public spaces will receive generous sunlight and are oriented north south to minimize the impact of solar glare on play.*

- b. Internal design character and relationship to surrounding neighborhood:
The design and layout of the development and buildings exhibit a cohesive design character and complement existing development in the surrounding neighborhood by virtue of such features as architectural style, height, scale, massing, character of exterior facades and roofs, circulation, open space, landscaping, and the transition of scale and massing to the surrounding neighborhood. The residential buildings are designed so that a pair (2) of townhouse units are joined to provide a massing similar in scale and detail to a single-family residence. Also, buildings with more than two (2) dwelling units or greater than forty (40) feet in length provide variation in roof and façade character through changes in façade setback, roof configuration, and projecting or recessed building elements so that they retain this character.

- *The buildings have been designed by CWS Architects, Portland. Ben Walter, Project Architect has extensive project experience in the design of this building type in Maine and throughout New England and in working with the City of Portland.*
- *The development and buildings will exhibit cohesiveness through the use of streetscape elements including sidewalks, prominent front building entry focus, esplanades, shade trees, and project landscaping. Such unifying, foreground elements allow the building architecture to both formally greet and informally recede and blend with the site and minimize any difference in style with the adjacent neighborhoods.*
- *The buildings are planned in small clusters. The buildings are short enough to allow stepped foundations where needed. Each detached building is divided into two smaller attached buildings. A set of paired, mirror-imaged townhouse units make up each half of the detached buildings. Unlike townhouses laid out in continuous row house manner, Yale Court emphasizes the smaller scale of the paired townhouses. The maximum number of units per building is four (4). The building scale and mass is designed to echo its neighbors. Each building is offset horizontally near the middle. The two story building mass is further scaled down by use of prominent front porches, lower roofs and dormers. Fenestration is proportioned appropriately with the building elevation to compliment the overall building character and to provide cohesiveness with the abutting single family and multifamily neighborhoods.*
- *Exterior facades are clad in horizontal siding with appropriately scaled corner trim, cornice and rake end trim, and window trim.*
- *The building mass, as described above is offset, the façade is further modulated with porch elements, front entrances, and individual*

exterior entrances to provide individuality and reflect traditional town house and single family “front door” characteristics.

- *Buildings are set back more than the 35 ft. required providing additional opportunity for buffering and open space. Where grading is required within the 35 ft. buffer, additional plantings are proposed to comply with the Arboricultural Guidelines for PRUD perimeter buffers.*

c. Recreation and Open space:

All open space on the site shall be integrated into the development and designated on the site plan. Each development shall have the following features:

1. External Buffers: An “effective and permanent screening” from neighboring properties and roadways.

- *As noted above, all buildings have been set back farther than the 35’ perimeter setback. Similar or more intensive multifamily development abuts the Yale Court site on the south easterly and northwesterly boundaries. A perimeter buffer will employ several devices:*
 - *Preserving the existing vegetation within the 35 ft. setback. See northwesterly, easterly and southeasterly boundaries;*
 - *Infill and new buffer planting in compliance with Sec. 5.2 of the City’s Arboricultural Standards and guidelines. This buffer will include mixed deciduous trees and mixed evergreens, irregularly spaced to establish a naturalized, woodland effect.*
 - *“Mechanical methods” Earthwork/ Grading is required along the back of the parcel near the end of Chesley Street for construction of a detention basin and a swale to provide both storm water detention and treatment values. A combination of a landscape buffer and a 6 ft. height stockade fence is proposed where the landscape buffer is less than 35 ft. This includes the westerly lot line of Nappi, the westerly and southerly lot lines of “Designated Properties” and the southerly lot line of Coates.*

2. Internal Buffers: Areas planted, maintained and located in such a manner as to provide privacy between units and buildings and paved areas and screening of parking, utilities, roadways, waste collection facilities and storage facilities.

- *The Landscape Plan provides for both perimeter and interior landscaping. Interior landscaping includes street trees, mixed evergreen trees for screening and contrast, two (2) shade trees per*

unit, and deciduous, evergreen, and broadleaf evergreen shrub mix. There are two (2) dumpsters on-site. Each has a fenced enclosure as is also screened with a planting of evergreen shrubs and trees.

3. Passive recreational open space: Open spaces, designated and improved with such features as gardens, picnic areas, walking trails, benches and lawn and seating areas.
 - *The perimeter of the site provides the predominant, passive open space with each housing unit enjoying ample open space and light beyond the private rear yard open space. Sidewalks are provided which interconnect the development and extend to Chesley Street. Additionally, a seating area and green space is provided outside the Community Building. The primary passive open space for this project will be the adjacent University Park that is linked to Yale Court by public sidewalks.*
4. Active recreational open space: Open spaces designated and improved for active recreational use with facilities such as tennis courts, basketball courts, multipurpose game fields, swimming pools, and children's playgrounds.
 - *Yale Court has a "Community Open space" located at the easterly end of the property. Sec.14-90 (n) requires 300 sq. ft. per dwelling unit of common open space for recreation purposes. With 30 DU, Yale Court is required to provide 9,000 sq. ft. of recreation open space. We have provided two areas. An area of approximately 7,300 sq. ft. includes a graded area 50 ft. x 60 ft. for use, as a multipurpose field is located on the easterly end of the site. A second open space area of approximately 6,800 sq. ft. is provided at the northwesterly end of the site. These areas are set a minimum of twenty-five (25) ft. from the nearest dwelling unit. A tot lot is provided next to the Community Building in a fenced area. We believe that the other active recreational uses suggested above are out of scale with the proposed development. Public basketball courts are not recommended for this scale of development. Public parks and school properties serve to meet that need.*
5. Private open spaces: Open spaces designated for the individualized use of unit owners such as yards, decks, and patios.

- *Each unit has a front yard and porch. For more private uses, units will have a rear patio area 6 ft. x 8 ft. with stone aggregate and a privacy fence 8 ft. long, with height transition from 3 or 4 ft. up to 6 ft. The accessible units will have rear patio areas concrete surfacing with rustication joints. The proposed units are slab on grade construction with floor elevations too close to grade to allow for construction of wood decks.*

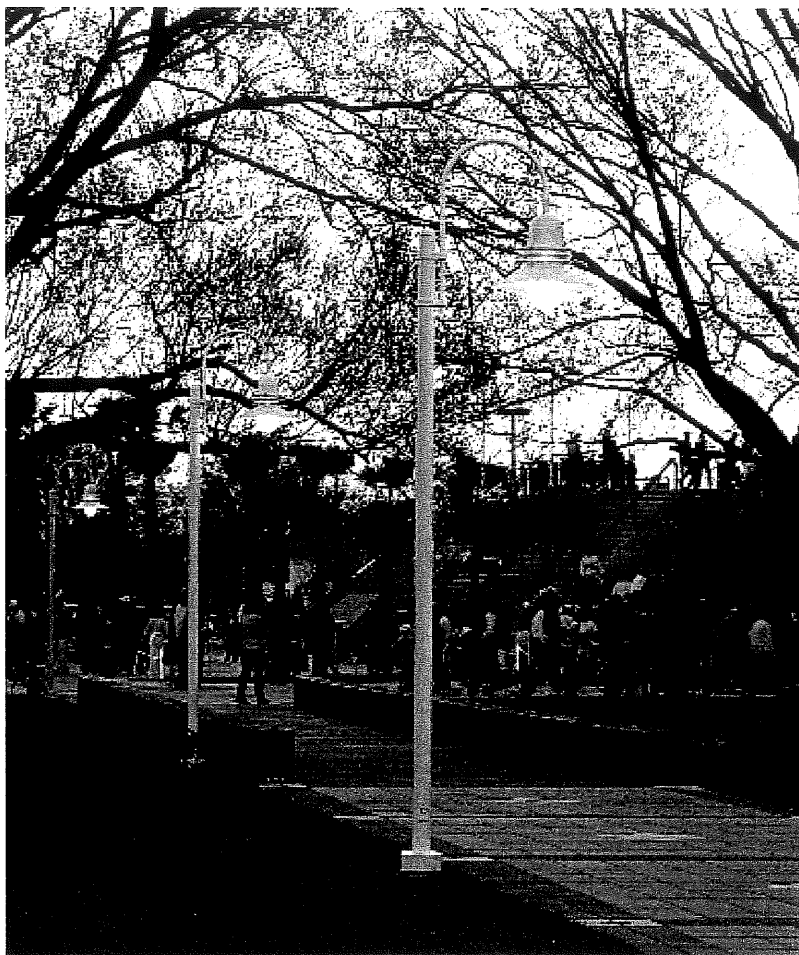
Other Miscellaneous Sec 14-90 items (g) – (l).

- *(g) Buildings are two story and do not exceed the 35 ft. maximum height.*
- *(h) 1. Maximum number of units permitted is six (6). The proposed development has a maximum of four (4) units per building.*
- *(h) 2. Does not apply site is greater than 5-acres.*
- *(i) Maximum average number of units in a building (PRUD of 5 acres or more) is five (5) units. Yale Court maximum average is four (4) units per building.*
- *(j) Maximum length of building (PRUD) is 100 ft. without garages. The proposed 4-unit buildings do not have garages. Length varies depending upon 2-bedroom townhouse buildings and 3-bedroom townhouse buildings. The maximum length of the proposed buildings is 92 ft. including four (4) 3-bedroom townhouses and an attached boiler room.*
- *(k) 2. Minimum building setback for four (4) or more DU in a building is 35 ft. One building corner of building “G” is set at the 35 ft setback line. All other buildings exceed 35 ft with some set back more than 50 ft.*
- *(l) Minimum distance required between detached PRUD dwelling units is sixteen (16) feet. Sixteen (16) feet separation is provided at Yale Court. In some cases a boiler room provides heat to two detached buildings.*
- *(n) Recreation Open Space area requirements. See item 4. above with discussion Active Recreation Open Space under PRUD standards.*

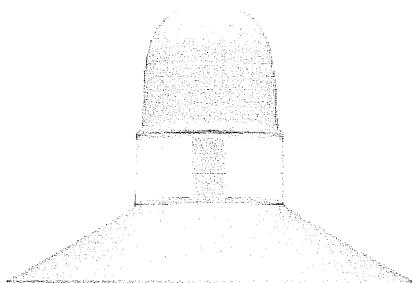


One of four modular, luminous elements can be added to softly illuminate the shade and add visual interest to the overall design.

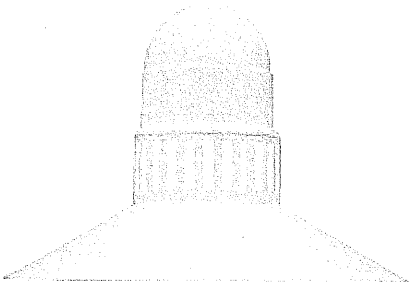
The opal lens model on the right is well suited for low mounting heights to softly illuminate general pedestrian areas.



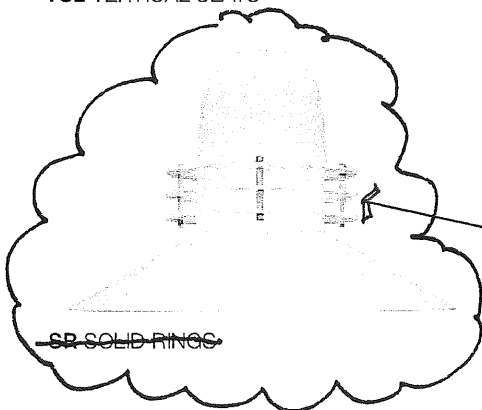
UCM LUM BL STR OAL SLA4 PR4-4R10



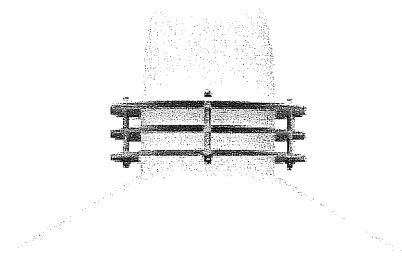
WND 4 WINDOWS



VSL VERTICAL SLATS



SR SOLID RINGS



LUM LUMINOUS RINGS

The luminous ring (LUM) comes standard with a diffused inner lens. An optional colored lens adds edge lit color to the rings when illuminated.

-  BL BLUE
-  RD RED
-  GN GREEN
-  MG MAGENTA

NO RINGS

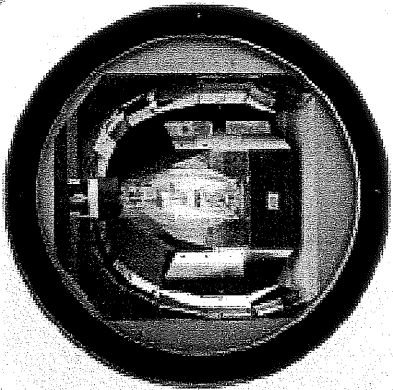
⊗ ARCHITECTURAL AREA LIGHTING



Effective Illumination



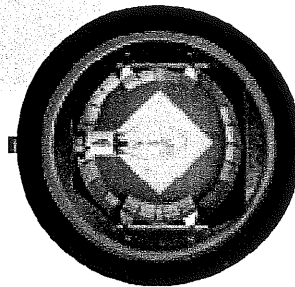
- Metal halide + HPS lamps
150 to 400 watts
- Optics rotate on 90° centers



UCM

- Metal halide + HPS lamps
50 to 175 watts
- Optics rotate on 90° centers

T6 ceramic metal halide lamps can be used to insure color accuracy and consistency. Electronic ballasts are also available to improve lamp color stability.



Four horizontal reflector systems are available for the Medium and Large scale Universe fixtures.

FOUR LIGHT PATTERNS

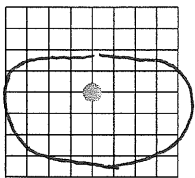
These provide maximum flexibility to precisely illuminate pedestrian areas, streets, and complete project site lighting. The horizontal re-

flector system is available in four light distributions for maximum efficiency and precise placement of

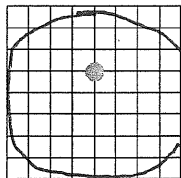
the light. The reflector

systems meet IES standards for cutoff type optics to address requirements for glare control, light trespass and light pollution. Light trespass is eliminated with the use of an optional factory installed house side shield.

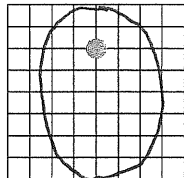
FOUR LIGHT PATTERNS



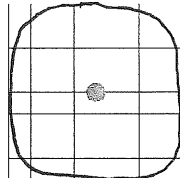
TYPE 2



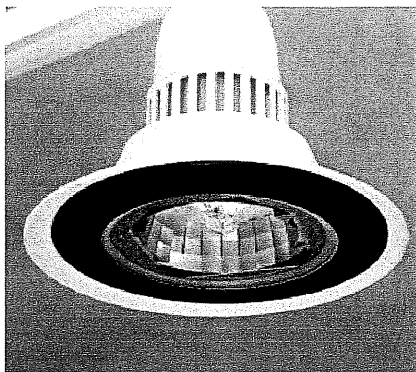
TYPE 3



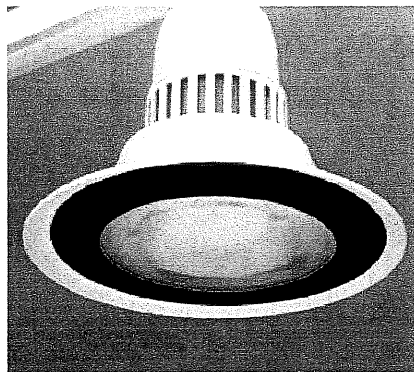
TYPE 4



TYPE 5



Optional flat tempered glass lens on the UCM (FTG option).

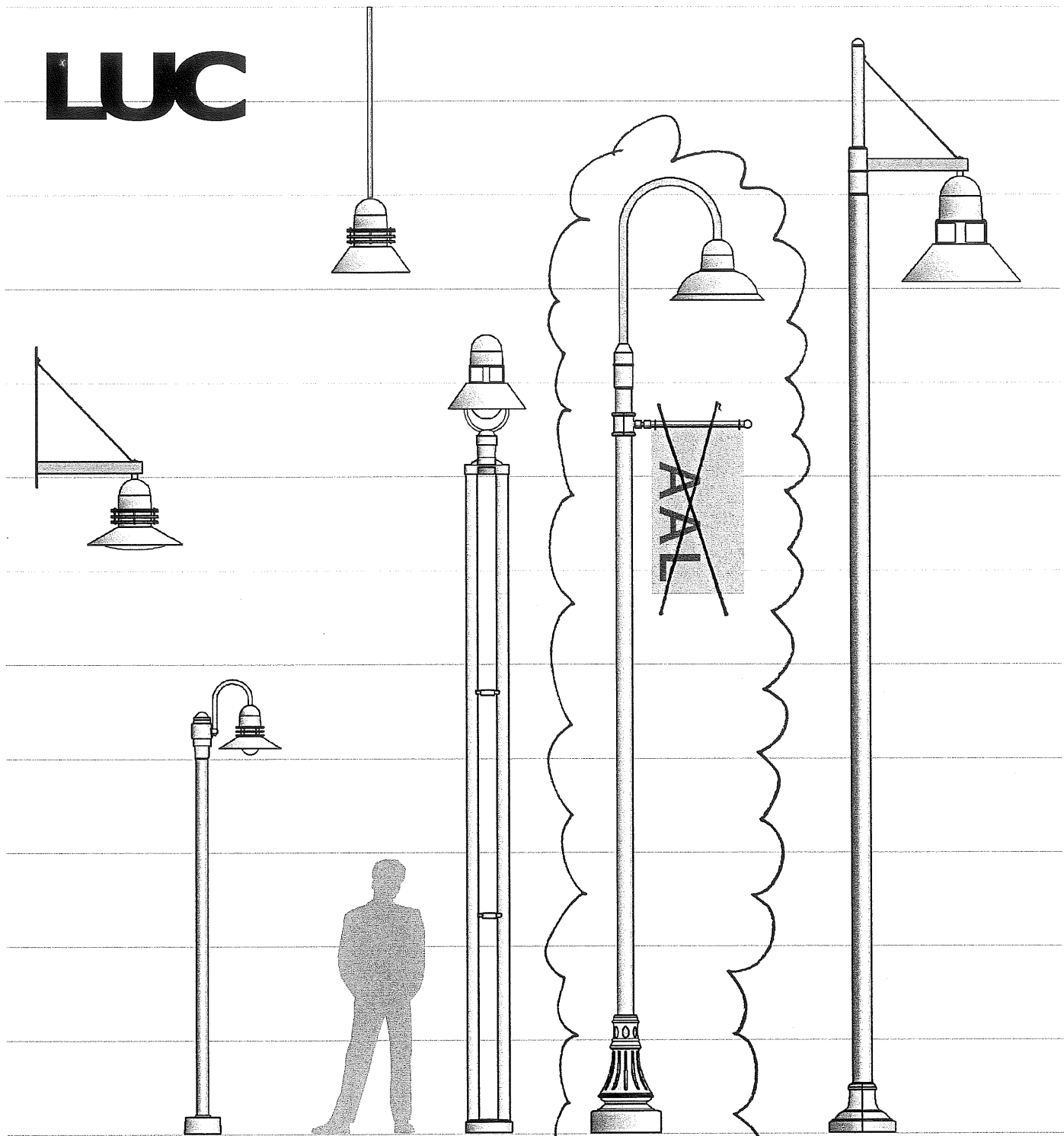


Optional flat tempered lightly diffused glass lens on the UCM (FLD option).

FLAT LENS

OPTIONAL LDL LENS

When direct viewing of the reflector or a low mounting height is present, an optional LDL lightly diffused lens is available to greatly reduce the brightness from the lamp and reflector.



UCM	UCS	UCM	UCM	UCM	UCL	HEAD
LUM	SR	LUM	WND	•	WND	LUMINOUS
STR	STR	ANG	ANG	BEL	ANG	HOOD
WMA17	PCVS	PMS	PM	SLA7	SLA17	ARM
•	PR3-3R8	•	2P-14	DB3-4R16,BBS4-24	PR5-5R20, BC6-5	POLE

16 ARCHITECTURAL AREA LIGHTING



WASTE MANAGEMENT

2000 Forest Ave.
Portland, Maine 04103
(207) 797-8129
(207) 797-8129 Fax

October 24, 2002

Mr. Jim Wescott
Wescott and Payson
240 Harvard Street
Portland, Maine 04101

Re: Solid waste generations for Yale Court

Mr. Wescott:

The total solid wastes generated by the proposed property at Yale Court should not exceed 16 cubic yards per week. The two pads planned for the site can accommodate the containers necessary to collect the material on site. Once the containers are delivered they will be placed on a weekly pick up schedule for collection and final disposition at Regional Waste Systems in Portland, Maine, the licensed disposal facility for the City of Portland.

I hope this letter is sufficient for your needs, if there is any further information or documentation you require, please do not hesitate to call me directly at 797-6206 ext.107 or on my cell at 603-321-0316.

Sincerely,

Geoff Matt
Account Representative
Waste Management of Maine



Portland Water District

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

(207) 774-5961
FAX (207) 761-8307
www.pwd.org

November 14, 2002

Mr. Patrick L. Clark, P.E.
Land Use Consultants, Inc.
966 Riverside Street
Portland, Maine 04103

Re: Yale Court: Yale St, Portland

Dear Sir:

The Portland Water District has a 20" water main in Yale Street, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 99 psi; pito pressure 46 psi; with a flow of 1138 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

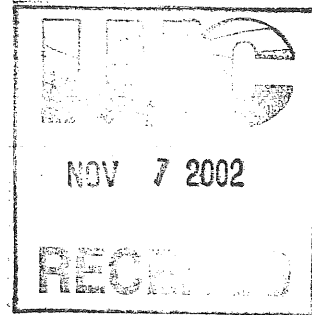
With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

David W. Coffin, PLS
Engineering Supervisor

2001 Governor's Award for Environmental Excellence



November 5, 2002

Mr. Pat Clark
C/O Land Use Consultants
966 Riverside Street
Portland, Maine 04103

RE: Yale Court, Portland

Dear Mr. Clark,

This letter is to advise you that Central Maine Power has sufficient single phase or three phase electrical capacity in the area to serve the subject project.

In discussing your plans Central Maine Power will feed this facility off Allen Avenue, Portland.

Once the project is accepted from the City of Portland, the owner will need to call our Customer Service Center at 1-800-565-3181 to sign up for a New Account and a Work Request Order so we may start a cost estimate.

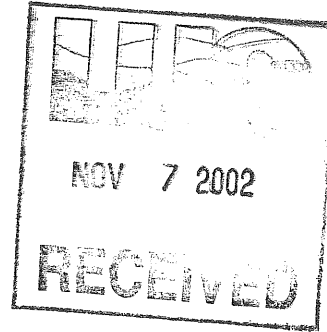
If you have any questions please feel free to call me at 828-2882.

Sincerely,

Paul DuPerre
Technical Advisor

Verizon
Engineering Dept.
5 Davis Farm Road
Portland, Maine 04103

Mr. Patrick L. Clark
Land Use Consultants
966 Riverside Street
Portland, Maine 04103



Dear Mr. Clark,

This letter is to inform you that sufficient telephone facilities exist to serve the proposed 30 unit development and 10 house lots in the vicinity of Yale Street in the city of Portland.

Sincerely,

Timothy L. Layton
Engineer
Verizon

YALE COURT BLASTING PLAN

1. Assessment

1.1 Introduction

The proposed development will require the excavation and removal of earthen material where ledge conditions may be encountered. The following report sets guidelines for the blasting of ledge during the construction of this project. It is the contractor's responsibility to review and abide by any City of Portland blasting ordinances in effect at the time of blasting which may exceed the standards set forth in this report or the attached rock excavation specifications.

1.2 Site Conditions

Currently, the proposed site for development consists of light woods with several rock-outcroppings. Abutting parcels of land are developed as mostly residential neighborhoods. The site is approximately five acres with blasting expected at various locations within the site. All utility companies with services within 500 feet must be notified of blasting within three (3) business days prior to blasting.

1.3 Proposed Blasting

Blasting will be required for the construction of roadways, buildings, stormwater management structures and utilities. Special considerations have been made during the design process to minimize the amount of blasting to the greatest extent possible. All blasting areas shall be kept to the minimum dimensions, depths and requirements as required for complete construction of all utilities, roads, walks and structures as specified on the plans.

1.4 Pre Blast Survey

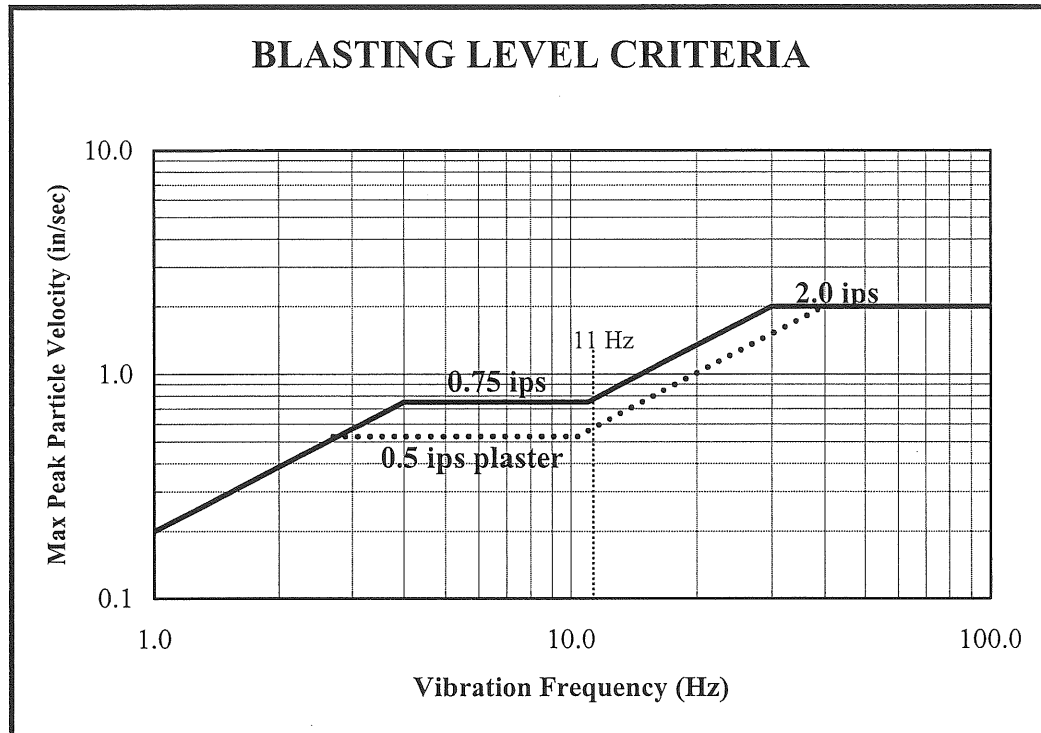
The pre blast survey will document the conditions of existing appropriate notice and permission, the contractor's qualified inspector shall examine the interior and exterior of structures within the study area. The study area shall include all structures within 500 feet of the blasting zone. Conditions shall be documented using photos, videotape and written descriptions. The pre-blast survey shall be completed by a licensed professional engineer or licensed specialized consultant.

2. Blasting Procedure

2.1 Monitoring and Instrumentation

The blasting contractor shall retain an independent firm to provide a seismograph to be set up at the nearest structure to any blasting activity. The seismograph equipment to be used onsite shall have been calibrated

The following table displays limits for the maximum peak ground particle velocities.



REFERENCE: OSM alternative blasting criteria (Modified from figure B-1, Bureau of Mines, RI 8507)

2.4 Blasting Procedures

1. Blasting operations shall be conducted only when all personnel and property are clear and traffic control is in place.
2. Access to the blasting area shall be regulated to protect the public from the effects of blasting. Access to the blasting area shall be controlled to prevent unauthorized entry at least ten minutes before each blast and until the blasting supervisor has inspected and given the *All Clear* signal that is safe to enter the blasting zone.
3. Areas in which charged holes are waiting firing shall be guarded, barricaded and posted, or flagged against unauthorized entry.
4. All blasts shall be made in the direction of the stress relieved face previously marked out, or previously blasted.
5. All stemming shall be minimum as specified using clean, dry 3/8" crushed stone.
6. The blasting contractor shall insure that extra safety and judgment is exercised by his blaster to prevent the simultaneous blasting of numerous holes where the accumulative additive poundage of explosives resulting from the detonation of like millisecond delays may exceed the desired scaled distance.

SECTION 02229 - ROCK EXCAVATION**PART 1 - GENERAL****1.01 GENERAL PROVISIONS:**

- A. Documents affecting Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, are hereby made a part of this Section
- B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- C. The Standard Specifications referred to herein is the book entitled "*Standard Specifications, Highways and Bridges*" published by the State of Maine Department of Transportation dated April, 1995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index Of Payment Items Included In Each Section.

Those Sections of the aforementioned *Standard Specifications* which are cited herein are applicable to the Work of this Contract as they may be modified, amplified, or added to by this Section.

- D. Reference is made to the latest Erosion and Sedimentation Control Plan (report) and erosion controls and Details included in the Drawing set for this project. Strict adherence to this Plan and Drawings must be followed in order to prevent adverse downstream impacts from erosion and sedimentation, originating from on site construction activity.
- E. Reference is also made to the U.S. Department of Interior "Blasting Guidance Manual"; N.F.P.A. 495-"Code for Explosive Materials"; Maine State "Rules for Manufacture, Transportation, Storage and Use of Explosives" (MRSA Title 25, Section 2441); and Maine DOT "Safety Specifications", Section 107.12, "Use of Explosives."

1.02 DESCRIPTION OF WORK:

- A. Provide all labor, material, equipment and services required to complete all rock excavation as indicated on the Drawings, and/or as required to complete the Work, including both trench rock and open rock.
- B. Provide all necessary shielding and covering, and undertake all measures necessary to protect the Work and assure the safety of workers, adjacent property utilities, and the public.

PART 2 - PRODUCTS**2.01 MATERIALS:**

- A. Explosives: As recommended by the blasting contractor based on seismic survey, and as permitted by NFPA 495 and the Maine State Fire Marshall.
- B. Delay Device: As recommended by the blasting contractor and as permitted by NFPA 495, and the Maine State Fire Marshall.
- C. Blast Mat Materials: As recommended by the blasting contractor.

PART 3 - EXECUTION

4. The Architect/Engineer shall provide to the Contractor a letter of authorization to proceed with excavation of material claimed as rock, which shall indicate the agreed upon Quantity and Price for the entire process of blasting, excavation, hauling and disposal.

C. Blasting:

1. The blasting contractor shall conduct a Pre-Blast Survey, including photographs, of all structures within the blasting area, and shall provide the Architect/Engineer with a written report of the survey. A Pre-Blast Survey shall be performed for all structures within 500 feet of any blast site. The Pre-Blast Survey shall encompass and reflect the U.S. Department of Interior, "Rules for Pre-Blast Surveys", cited in the Site Location of Development Law of the State of Maine.
2. All drilling equipment will be equipped with suitable dust control apparatus, which must be kept in operation and used during all drilling operations.
3. All blasting operations, including the transport, handling, and storage of explosives, shall be conducted in full compliance with all Federal and State laws and regulations and all local ordinances, and with all possible care so as to avoid injury to persons and property. Contractor shall limit ground vibrations to less than 1.9 in. per sec. peak particle velocity, and peak air over pressures to less than 0.018 psi, measured at the location of the nearest structure. Contractor shall provide protection against flying rock; the rock shall be well covered, and sufficient warning shall be given to all persons in the vicinity of the Work before blasting. Care shall be taken to avoid injury to all utilities, above and below ground, to other buildings (including foundations) and structures, and to private property. The Contractor, in addition to observing all state and municipal ordinances relating to the storage and handling of explosives, shall also conform to any further regulations which the Owner or Architect/Engineer shall deem necessary. Responsibility for all damages to persons or property shall rest with the Contractor. Only personnel qualified in the use of explosives shall be employed for blasting.
4. Blasting shall be performed only after approval has been given by the Owner for such operation.
5. All transportation, storage and handling of explosives, and all drilling and blasting operations shall be performed in accordance with M.R.S.A. Title 25, Section 2442, and all pertinent provisions of: the "Manual of Accident Prevention in Construction", issued by the Associated General Contractors of America, Inc.; the "Construction Safety Rules and Regulations", as adopted by the State Board of Construction Safety, Augusta, Maine; the Maine Department of Transportation "Safety Specifications", Section 107.12, "Use of Explosives"; and the U.S. Dept. of Interior "Blasting Guidance Manual."
6. Any site where electric blasting caps are located, or where explosive charges are being placed or have been placed, shall be designated as a "Blasting Area."
7. Bring explosives to the Work site only as needed and in small quantities.
8. A "Blasting Area" within three hundred (300) feet of any traveled way shall be marked in both directions by approved signs, with information similar to the following:

"BLASTING AREA. TURN OFF TRANSMITTERS"

and on the reverse side:

"END OF BLASTING AREA"

9. Notify each public utility company having structures in proximity to the site of the Work of the impending use of explosives, and give such notice sufficiently in advance to enable each company to

The total amount of rock excavation will be based upon the volume of rock excavated below the cross-sectioned ledge surface and within and/or above the lines referred to below as "Payment Lines." The Payment Lines are only to be used as a basis of Payment, and are not necessarily to be used as limits of excavation. Limits of excavation are as shown on the Drawings and/or as otherwise specified herein.

F. Payment Lines for Rock Excavation:

1. Open Rock:

- a) Payment Lines for columns and wall footings shall be a vertical line one-foot from the toe of the footings, or 2 feet outside of foundation walls. The depth shall be measured at 6 inches below the bottom elevations shown on the Drawings for foundations that do not bear directly on ledge, or at the pressured rock face for foundations bearing directly on ledge. Payment lines for walls to be damp-proofed shall be a vertical line 2 feet outside the walls.
- b) Payment lines for rock excavation under slabs on grade shall be 6 inches below the bottom elevation of the specified base material.
- c) Payment lines for rock excavation at paved areas and lawns shall be 6 inches below respective subgrade materials, as detailed and specified.

2. Trench Rock:

- a) Payment lines for manholes and catch basins shall be one foot outside of the outer walls, and 6 inches below subgrade beneath the structure.
- b) Payment lines for rock excavation under pipes within the building and for utility trenches outside the building lines shall in no case be calculated as greater in width than the outside diameter of the pipe plus 2 feet for pipes up to 18 inches. For pipes 18 inches and larger, payment lines shall in no case be calculated as greater in width than the outside diameter of the pipe plus 3 feet. Payment lines at bottom of all pipe and utility trenches shall be 6 inches below subgrade for pipe bearing.
- c) Payment lines for spot ledge excavation for small structures such as bollards, light pole bases, transformer pads, etc., shall be 6" below the bottom of the structure, and 12" outside the exterior vertical face of the structure.
- d) Payment for rock excavation at tree and shrub beds shall be full depth of required excavation for bed, or a minimum of 4 feet, whichever is greater, and 6" beyond vertical edge of beds.

G. Payment:

The Bidder agrees to the following Add or Deduct Unit Prices for rock excavation in excess of or below the quantity of rock excavation noted below, regardless of its location on the site or the depth of excavation required. See Item F. above for classification of open rock and trench rock; the volume of trench rock shall be computed after the volume of any overlying open rock has been deducted. Unit Prices are net, and include all labor, materials, overhead, supervision, insurance, profit, and taxes.

Open Rock/Structure Excavation:

Base Bid quantities for open rock excavation have ___(not)___ been estimated by the Architect/Engineer. The Base Bid shall include the cost for ___(0)___ cubic yards of open rock. Final Payment shall be made based upon actual field measured quantities and the following adjustment to the Base Bid:

Add _____ per cubic yard overrun.



MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

881

**Yale Street
Wescott & Payson
Soil Narrative
June 2002**

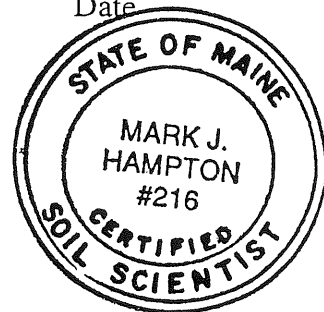
DATE: Soil Profiles observed on May 30, 2002

BASE MAP: Base plan prepared and provided by Titcomb Associates
Scale 1"=100 feet and 2.0 foot contour intervals.

GROUND CONTROL: Soil survey boundaries and test pit locations by Mark
Hampton Associates, Inc.

The accompanying soil profile descriptions, soil maps, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists. The soil map meets the minimum requirements for a Class B high intensity soil survey.

Mark J. Hampton C.S.S. #216, L.S.E. #263 June 3, 2002
Mark J. Hampton Date





MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

881
Wescott & Payson
Yale Street
Portland, Maine

**LYMAN-TUNBRIDGE COMPLEX
SETTING**

PARENT MATERIAL: Loamy glacial outwash
LANDFORM: Glaciated uplands
POSITION IN LANDSCAPE: Uppermost locations, sideslopes, shoulders and crests
SLOPE GRADIENT RANGES: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Excessively well drained Lyman (10-20 inches to bedrock) and Tunbridge (20-40 inches to bedrock)
These soils occur in a nonrepeating pattern with exposed bedrock outcrops and cannot be separated.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Reddish brown fine loamy sand, 0-4 inches
<u>Subsurface Layer:</u>	Red brown sandy loam 4-12"
<u>Subsoil Layer:</u>	Dark red sandy loam 12-18"
<u>Substratum:</u>	Brown sandy loam 18-36"

HYDROLOGIC GROUP: Group C/D
PERMEABILITY: Slow to rapid, depending on slope and bedrock outcrops.
DEPTH TO BEDROCK: Shallow (Lyman 10-20 inches) to moderately deep (Tunbridge 20-40 inches).
HAZARD TO FLOODING: None

**INCLUSIONS
(Within Mapping Unit)**

CONTRASTING: Brayton

USE AND MANAGEMENT

Development: The limiting factor for building site development is depth to bedrock which ranges from 0 to 40 inches within this complex. Tunbridge and Lyman (deeper than 11 inches) soils are suitable for subsurface wastewater disposal.



MARK HAMPTON ASSOCIATES, INC.

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881

Wescott & Payson
Yale Street
Portland, Maine

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL: Derived from dense glacial till
LANDFORM: Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE: Lower positions on landform
SLOPE GRADIENT RANGES: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Dk gray brown, fine sandy loam 0-5"
<u>Subsurface Layer:</u>	Gray Brown fine sandy loam, 5-15"
<u>Subsoil Layer:</u>	Olive gray, fine sandy loam, 15-24"
<u>Substratum:</u>	Olive fine sandy loam, 24-65"

HYDROLOGIC GROUP: Group D
SURFACE RUNOFF: Moderate to moderately slow
PERMEABILITY: Moderate and moderately slow
DEPTH TO BEDROCK: Greater than 65 inches
HAZARD TO FLOODING: None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Lyman-Tunbridge Complex

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Gale Street Applicant Name: Wescott & Payson Project Location (municipality): Portland

Exploration Symbol: TS Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
0-6" <u>Sandy loam</u>	<u>fr. stle</u>	<u>Dark Brown</u>	
6-12" <u>Sandy loam</u>	<u>fr. stle</u>	<u>Brown</u>	<u>lime</u>
12-18" XXXX		XXXX	
18-24" XXXX		XXXX	
24-30" <u>ledge</u>			
30-36" <u>ledge</u>			
36-42" <u>ledge</u>			
42-48" <u>ledge</u>			

soil data by S.E. >> Soil Profile: 2 Classification Condition: A Slope Percent: 2 Limiting Factor Depth: 18 Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Lyman-Turbridge Hydric Non-hydric Hydrologic Soil Group: _____

Exploration Symbol: TP6 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
0-6" <u>Sandy loam</u>	<u>fr. stle</u>	<u>Dark Brown</u>	
6-12" XXXX		XXXX	XXXX
12-18" XXXX		XXXX	
18-24" <u>ledge</u>			
24-30" <u>ledge</u>			
30-36" <u>ledge</u>			
36-42" <u>ledge</u>			
42-48" <u>ledge</u>			

soil data by S.E. >> Soil Profile: 2 Classification Condition: A Slope Percent: 4 Limiting Factor Depth: 5 Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Lyman-Turbridge Hydric Non-hydric Hydrologic Soil Group: _____

Exploration Symbol: TP7 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
0-6" <u>Sandy loam</u>	<u>fr. stle</u>	<u>Black</u>	
6-12" <u>Sandy loam</u>	<u>fr. stle</u>	<u>gray</u>	<u>Common Distinct</u>
12-18" <u>loam</u>	<u>fr. to firm</u>		
18-24" <u>loam</u>	<u>fr. to firm</u>		
24-30" <u>loam</u>	<u>fr. to firm</u>		
30-36" <u>loam</u>	<u>fr. to firm</u>		
36-42" <u>loam</u>	<u>fr. to firm</u>		
42-48" <u>loam</u>	<u>fr. to firm</u>		

soil data by S.E. >> Soil Profile: 2/3 Classification Condition: E Slope Percent: 0 Limiting Factor Depth: 6 Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Briarton Hydric Non-hydric Hydrologic Soil Group: _____

Exploration Symbol: TP8 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
0-6" <u>Sandy loam</u>	<u>fr. stle</u>	<u>Black</u>	
6-12" <u>sandy loam</u>	<u>fr. stle</u>	<u>gray</u>	<u>Common Distinct</u>
12-18" <u>loam</u>	<u>fr. to firm</u>		
18-24" <u>loam</u>	<u>fr. to firm</u>		
24-30" <u>loam</u>	<u>fr. to firm</u>		
30-36" <u>loam</u>	<u>fr. to firm</u>		
36-42" <u>loam</u>	<u>fr. to firm</u>		
42-48" <u>loam</u>	<u>fr. to firm</u>		

soil data by S.E. >> Soil Profile: 2/3 Classification Condition: E Slope Percent: 0 Limiting Factor Depth: 4 Groundwater Restrictive Layer Bedrock

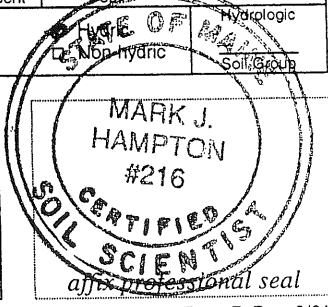
soil data by S.S. >> Soil series/phase name: Briarton Hydric Non-hydric Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 6/3/02

Name Printed/typed: MARK J. HAMPTON Cert/Lic/Reg. # 216

Title: Licensed Site Evaluator Certified Soil Scientist Other:



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Yule Street Applicant Name: Wescott & Payson Project Location (municipality): Portland

Exploration Symbol: TP1 Test Pit Boring

" Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	friable	Dark brown	
6				
12	Sandy loam	Friable	Brown	None
18				Noted
24				
30	XXXX			
36	ledge			
42				
48				

soil data by S.E. \gg Soil Profile: Z Classification: A Slope: 2 Limiting Factor: 20 Groundwater Restrictive Layer Bedrock

soil data by S.S. \gg Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group: _____

Exploration Symbol: TP2 Test Pit Boring

" Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	Friable	Dark brown	
6				
12	Sandy loam	Friable	Brown	None
18				Noted
24				
30	XXXX			
36	ledge			
42				
48				

soil data by S.E. \gg Soil Profile: Z Classification: A Slope: 2 Limiting Factor: 22 Groundwater Restrictive Layer Bedrock

soil data by S.S. \gg Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group: _____

Exploration Symbol: TP3 Test Pit Boring

" Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	Friable	Dark brown	
6				
12	Sandy loam	Friable	Brown	None
18				Noted
24				
30	XXXX			
36	ledge			
42				
48				

soil data by S.E. \gg Soil Profile: Z Classification: A Slope: 2 Limiting Factor: 20 Groundwater Restrictive Layer Bedrock

soil data by S.S. \gg Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group: _____

Exploration Symbol: TP4 Test Pit Boring

" Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	Friable	Dark brown	
6				
12	Sandy loam	Friable	Brown	None
18				Noted
24				
30	XXXX			
36	ledge			
42				
48				

soil data by S.E. \gg Soil Profile: Z Classification: A Slope: 6 Limiting Factor: 13 Groundwater Restrictive Layer Bedrock

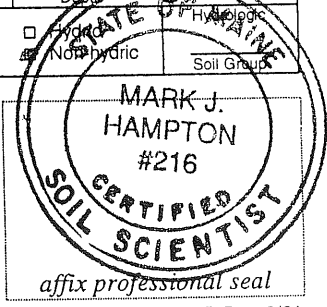
soil data by S.S. \gg Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 6/3/02

Name Printed/typed: MARK J. HAMPTON Cert/Lic/Reg. # 216

Title: Licensed Site Evaluator Certified Soil Scientist Other:





Land Use Consultants, Inc.

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October 1, 2002
(revised 11/19/02)

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**STORMWATER SITE ANALYSIS
ENGINEERING REPORT
YALE COURT
PRUD AND SUBDIVISION
Portland, Maine**

INTRODUCTION

Land Use Consultants, Inc. has evaluated the proposed Yale Court development site to determine stormwater runoff rates and potential impacts which may occur as a result of the development. The 10 acre ± parcel is located in Portland, Maine near the intersection of Allen Avenue and Harvard Street (west). The site includes frontage on the existing undeveloped Yale Street right-of-way and is completely wooded with well established forested areas. Proposed access to the Planned Residential Unit Development (PRUD) site is via a new driveway from Yale Street, which will be constructed for approximately 1,150 feet in the existing City of Portland Right-of-way. The newly constructed Yale street will also provide frontage for ten single family house lots to be reconfigured from a portion of the undeveloped University Park Subdivision as approved in the late 1930's.

The present site is undeveloped, wooded land, adjacent to medium density rural residential housing development along Chesley Avenue and Berry Avenue which dead-end adjacent to the property along the easterly boundary, high density-multi-family attached dwellings to the north (Northfield Green) and south (Woodwinds Apartments) and undeveloped land (University Park) along the westerly boundary. The site is situated along a locally predominant, high ridge, generally running east to west through the site near the center of the property. Due to this localized topography and existing neighborhood development, the runoff from the site generally exits the property in five locations around the perimeter. Each of these areas are described via individual small subcatchment areas for the pre-development and post development conditions so that the peak discharge rates at these locations can be compared and evaluated with regards to stormwater impacts. Brief descriptions are provided below. All of the runoff from the site ultimately finds its way via existing swales ditches and city streets to public storm sewers or to Fall Brook near Washington Avenue.

The area near Mona Road, just to the north of the project and the region around Fall Brook is known to be subject to historical flooding following significantly large storms. The Fall Brook region is apparently located within a 100-year flood elevation indicated as Zone AE on the FIRM flood map for this area.

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watersheds and to model the culvert as a pond to determine the extent of ponding at the inlet. Therefore an additional large watershed area (SC #200) was added to the hydrologic model to the predevelopment and postdevelopment plans. In this manner it is possible to realistically evaluate the potential impacts or increased flows to downstream reaches. An additional plan entitled "Vicinity Drainage plan" was added to the plan set showing this large area of Northfield Green draining to the culvert.

Subcatchment #2 also drains to the culvert (modeled as Pond #102) via Reach #100. The proposed detention pond will be located in this vicinity and will collect most of the runoff from the new development. The runoff from this subcatchment also combines with a contribution from a small 3 acre ± off-site area including the west end of Chesley Avenue (SC #100) which also drains to the existing ditch and existing pond.

Subcatchment #3 includes a small interior portion of the site and drains naturally to the rear of the lots along the south side of Chesley Street. This subcatchment runoff passes through the off-site Subcatchment #100 which includes the residential neighborhood and ultimately drains to the drainage ditch and existing pond. The discharge point from this small subcatchment (R30) is not evaluated as a major study point but is a significant point for comparison of pre and post development runoff since it drains to an existing residential area.

Subcatchment #4 includes a small interior portion near the center of the site and drains naturally to the west end of Berry Avenue. This subcatchment includes a very small area and does not include any large swales ditches or distinctive drainage features. Runoff drains through the neighborhood, apparently along Berry Avenue, and eventually into Fall Brook, downstream from the Mona Road area. The discharge point from this small area is evaluated as **Study Point #2** for comparison to the developed site conditions.

Subcatchment #5 is situated at the southeasterly corner of the property on the opposite side of the ridge near Berry Avenue and drains towards the Woodwind Apartments development. This area drains towards Fall Brook and Washington Avenue between Harvard Street and Berry Avenue. The discharge point from this small area is evaluated as **Study Point #3** for comparison to the developed site conditions.

Subcatchment #6 is a small 2 acre subcatchment area which drains to the south end of Yale Street towards Harvard Street. The discharge point from this small area is evaluated as **Study Point #4** for comparison to the developed site conditions.

These drainage areas are defined in our Stormwater Model as shown on the Pre-Development Drainage Plan and HydroCAD diagram. Refer to the drainage plan, existing condition stormwater calculations, HydroCAD diagrams and report for modeling assumptions, subcatchments, flowpaths, drainage reaches, etc. Runoff calculations were performed for the 2 year, 10 year, and 25 year storm events in accordance with the City of Portland and DEP Stormwater Permit requirements. Fall Brook flows through Portland to the Back Bay near Payson Park. These Study Points and subcatchment #3 (R30) are evaluated for the pre and post development conditions and represent the primary points for comparing the results of the

Subcatchment #30 is reduced to only 0.27 acres (formerly SC#3, 0.98 ac) and drains to the rear of the lots along the south side of Chesley Street similar to the existing site. The runoff from this subcatchment is routed through off-site subcatchment SC#100 to the existing drainage ditch. Runoff from this small area is not considered as a major study point but is compared to the existing conditions at Reach R30 to evaluate the impacts at the residential property line. Runoff at this point is reduced by more than 60%.

Subcatchment #40 is reduced to 0.62 acres (formerly SC#4, 0.91 ac). This area drains to the west end of Berry Avenue and eventually to Fall Brook.

Subcatchment #50 is reduced to 0.49 acres (formerly SC#5, 0.82 ac) and continues to drain towards the Woodwinds Apartments development.

Subcatchment #60 is reduced to 1.67 acres (formerly SC#6, 2.01 ac) and is substantially unchanged except for a small area of the proposed PRUD near the southerly corner which includes the back of a few new units and back yards of open lawn area.

Subcatchments #100 and #200 (existing off-site) remain unchanged for the developed conditions.

For the developed site, the majority of the stormwater from the new PRUD is collected in storm drains and conveyed to the new detention pond. The controlled discharge from pond #20 is routed to the existing drainage ditch at the outfall from the site and combined with the runoff from subcatchments #10, #30 and off-site areas at the existing culvert (pond #102) which is the combined point of discharge for the majority of the site and evaluated as Study Point #1 at which the comparison is made to the existing peak flow rates representing total combined runoff to the existing culvert and detention pond in Northfield Green. Refer to the Summary Table for better comparison of the results of this study.

CALCULATIONS AND RESULTS

Results of the pre-development and post-development calculations are indicated in the Summary Table below. Complete printouts for stormwater calculations, modeling assumptions and HydroCAD reports are attached for the Pre-Development and Post-Development conditions for each of the 2 year, 10 year and 25 year rainfall amounts. All of the Study Points evaluated and Reach #R30 (SC#3-pre and SC#30-post) result in equal or less runoff for all design storms. One of the more significant evaluation points is Study point #1 since this point receives the majority of the runoff from the site. The total combined peak flow rates evaluated at the existing culvert (pond #102) are 13.1 cfs, 27.3 cfs, 33.4 cfs for the three design storms analyzed for the existing site conditions. The controlled runoff rates released to this existing culvert are limited to the existing rates for each of the design storm events. Results of the analysis at Study point #1 for the developed conditions are 13.1 cfs, 27.4 cfs and 33.5 cfs for the three design storms respectively.

**TABLE 1
YALE COURT DEVELOPMENT
STORMWATER QUALITY ANALYSIS**

IMPERVIOUS AREA	DESCRIPTION	BMP	HSG SOILS	BUFFER LENGTH (ft)	SLOPE (ft/ft)	% TSS BMP REMOVAL EFFICIENCY (%)	IMPERVIOUS AREA (ac)	NET BMP %TSS REMOVAL (%)
		WQI				10%		
		DS				76%		
AREA A	SC # 21	VS	D			25%	0.93	36.9%
		P20	D	-	-	10%		
AREA B	SC# 20	WQI				10%	0.67	12.2%
		VS	-	-	-	25%		
		P1	D	-	-	10%		
AREA C	Untreated Residential Units, & Yale St	SB/WQI	D	25	0.100	10%	0.55	2.6%
PROJECT TOTALS							2.15	52%
<p>KEY <u>Impervious Areas</u> WQI = Water Quality Inlet (Casco trap) P = Impervious areas, parking lot, community buildings, etc. R = Residential Units A, B, C = Treatment areas</p> <p><u>BMP's</u> VS = Vegetated Swale SB = Seeded Buffer P = Det Pond</p>		<p>SAMPLE CALCULATIONS <u>Parallel Treatment - Impervious Area PA</u> Net BMP %TSS Removal = (seeded buffer %TSS removal) * (impervious area / total project impervious area) = (0.10) * {(0.45 ac) / (1.82 ac)} = 2.5%</p> <p><u>Series Treatment - Impervious Area Rb</u> Net BMP %TSS Removal = [1 - {(1 - seeded buffer %TSS removal <i>see note 1</i>) * (1 - vegetative swale %TSS removal) * (1 - det pond %TSS removal)}] * (impervious area / total project impervious area) = [1 - {(1 - 0.10) * (1 - 0.25) * (1 - 0.10)}] * (0.22 ac / 1.82 ac) = 4.7%</p>						
<p><u>Notes:</u> 1) All residential Units were assumed to have a 10% TSS treatment credit for lawn areas. This credit is associated with a worst case scenario of a 25' seeded buffer in Hydrologic Group 'D' Soils with 15-30% slopes. Roads and pavement are assumed to drain to a CB with a water quality inlet (Casco Trap) = 10%.</p>								

PART II

EROSION AND SEDIMENTATION CONTROL

The following plan for controlling sedimentation and erosion from this project is based upon sound conservation practices such as those outlined in the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices by the Cumberland County Soil and Water Conservation District, and the Maine Department of Environmental Protection, dated March, 1991 (as revised). Please refer to these sources and the Erosion Control Plan and Details included within the plan set.

A. INTRODUCTION

1. **General** – Wescott & Payson II is proposing to construct a 30 unit PRUD housing development. The project will include construction of new parking areas including and a stormwater collection and detention system.

The accompanying Site Plans and Stormwater Management Report describe in detail the project scope.

2. **Site Topography and Cover Complex** – The existing site includes approximately 10 acres which includes the individual house lots adjacent to the park. Slopes on the site area are between 2% and 10%. All areas are well vegetated with tree growth. The westerly portion of the site drains to an existing drainage ditch to an existing detention pond.
3. **Soils and Wetlands** - The soils on the site have been identified as Lyman – Tunbridge and Brayton. These soils are from Hydrologic Soils Group (HSG) type C/D, with small areas of (HSG) type D soils occurring in the wetland areas.

B. CONSTRUCTION CALENDAR

1. **Definitions** – The following definitions are terms commonly used throughout this report.

- a) Seasons - The following dates define the seasons as referred to herein:

<u>Seasons</u>	<u>Dates</u>
Winter	November 1st to March 15th
Mud-Season	March 16th to April 30th *
Spring	May 1st to June 14th *
Summer	June 15th to September 15th *
Fall	September 16th to October 30th

scheduling of activities to be conducted or restricted during the various construction seasons as herein defined above.

- a) Sensitive Areas - work proposed in the defined sensitive areas may be conducted all year, preferably during periods of dry weather, during the summer, fall and winter seasons, as defined herein. All work adjacent to or in areas which drain to, sensitive areas shall be protected with appropriate erosion controls to prevent erosion or sedimentation of the identified sensitive areas at all times during construction until the areas under construction are stable.
- b) Erosion & Sedimentation Controls Installation - erosion control installation may occur all year long, except that such measures shall be installed prior to commencement of disturbance activities related to each erosion control measure. However, to the extent practical, erosion control measures should be installed during Summer or Fall in advance of construction anticipated or scheduled in the winter and mud season. See Drawings and Details for locations and installation procedures.
- c) Clearing - clearing may occur all year long except during "mud season".
- d) Road and Parking Lot Construction - This construction may occur in the spring, summer and fall seasons. It may be allowed in the winter season, in which case the winter construction schedule must be followed (see Section D.1.).
- e) Pond Construction - all pond construction shall occur, when practicable, during the spring, summer or early fall season. All final grading, seeding and mulching must be completed by October 15th. Work after October 15th shall be subject to winter protection measures as defined herein.

C. EROSION CONTROL MEASURES

1. **General** – The construction of this project may require or incorporate the following measures or practices as needed or applicable. Such measures, where indicated on plans shall be implemented as shown or required herein. Additional measures not shown on plans may be required as specified herein or requested by the Engineer, as needed, in order to ensure the protection of resources or off-site properties.
 - a) Vegetative Buffers - have been used where practical to provide visual screening, improve erosion control and provide stormwater treatment. These buffers help filter runoff as it flows through and are most effective when the runoff through the buffer is shallow sheet flow. The contractor must take care in leaving the buffer strips in their natural state and assure that runoff does not channelize through the buffer to the extent possible. Skidder trails or equipment ruts shall be smoothed or regraded. Construction activities and equipment shall be restricted in areas to remain as buffers or not otherwise scheduled for construction.

- g) Inlet Protection - **all culvert inlets shall be protected** as noted on the rip-rap headwall detail. The rip-rap shall be the same size as that specified at the outlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- h) Outlet Protection - Rip-rap outlets (aprons or plunge pools) **shall be installed at all culvert outlets** as detailed on the plans to prevent scouring at the pipe outlet. The rip-rap shall be the same size as that specified at the inlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- i) Stone Check Dams - stone check dams shall be installed in existing and proposed swales or at culvert inlets as shown on the plans. These check dams serve to reduce flow velocities in swales thus helping to reduce rilling. Check dams shall be constructed of 2 in. to 3 in. stone.
- j) Dust Control – Contractor shall take necessary steps to prevent blowing and airborne movement of dust from exposed soil surfaces. Maintaining natural or temporary vegetation and or mulching shall be used where practical. Mechanical sweepers or washing of pavement shall be used where necessary to prevent and remove dust buildup on paved surfaces. All exposed soil surfaces shall be maintained to minimize dust by periodically moistening bare areas with adequate water to prevent dust. Calcium Chloride solution spray should be used in areas experiencing significant dust problems and to reduce frequency of watering. Repetitive treatment shall be applied as necessary to accomplish adequate dust control (refer to Section 17.0 in the “*Maine Erosion and Sediment control Handbook for Construction: Best Management practices*” manual).

D. EROSION CONTROL EXECUTION

1. **General Construction Phase** - the following general practices will be used to prevent erosion during construction of this project.

NOTE: Locations of silt fence/hay-bale barriers are shown for general purposes on drawings. Final locations should be modified based on actual field conditions and as site conditions warrant. Such field changes or modifications shall be approved by the Engineer.

- a) Following clearing only those areas under active construction shall be left in an untreated or unvegetated condition.
- b) Erosion Control Installation - prior to the start of construction, silt fence and/or haybales, erosion control mix berms, and stone check dams shall be installed around catch basins, at the toe of slopes and in areas as shown on Plans or as otherwise required to protect against any construction related erosion. Immediately following construction of culverts and swales, stone check dams shall be installed, as shown on the Plans.

is understood that immediately means within 5 days of the completion of work. See seeding specifications for permanent seeding requirements.

- f) Culverts will be protected with stone rip-rap headwalls ($D_{50} = 6$ in. unless otherwise specified) at inlets and outlets as shown on Plans.
- g) Construction traffic - will be directed over the construction entrances and proposed roads. Any areas subject to rutting will be stabilized immediately. The crushed stone construction entrances shall be maintained by the addition of more crushed stone as needed as the voids become filled. The public roadway shall be swept daily should mud be tracked onto it.
- h) Erosion Controls for Detention Pond - the following practices and schedule shall be adhered to while constructing ponds and/or basins:
 - (1) The construction of the ponds or basins shall only take place as described in Section B – Construction Calendar of this report.
 - (2) The construction of the ponds or basins shall commence during a period of minimal flow with a dry short-range weather forecast. Once under construction, the pond shall be completed within 30 days.
 - (3) If the construction of the pond should be hampered by rain and excessive runoff all of the externally draining areas of the ponds must be stabilized by mulching and tacking with a photodegradable netting. Internal slopes of the detention basin shall be seeded immediately after shaping with perennial rye and stabilized with mulch to prevent soil loss from the basin itself. If rilling occurs matting shall be applied in such areas. Erosion control matting shall be used where indicated.
 - (4) The sequence for the construction of the ponds and sedimentation basins shall be as follows:
 - i Clear area required for pond or basin construction.
 - ii Install erosion controls.
 - iii Commence with grubbing and earthwork.
 - iv The contractor shall plan the excavation so the proposed pond or basin captures any runoff, thereby, serving as a temporary sediment basin throughout the construction.
 - v The contractor shall monitor and inspect the operation and function of the sedimentation ponds on a weekly basis to ensure proper working conditions. The contractor shall inspect during and immediately following significant

- i) Culvert Installation - The following methods shall be used to install culverts.
- (1) The construction shall only take place during an expected dry period.
 - (2) Install silt fence and hay bales and other measures as shown on plans.
 - (3) For installations in wet conditions a temporary diversion shall be constructed to divert the flow around the construction area (refer to: "*Maine Erosion and Sediment Control Handbook for Construction: Best Management practices*" manual, Sections 42.0 43.0 and 44.0), unless waived by the Engineer.
 - (4) The pipe bedding area shall be excavated, bedding put in place, and pipe installed with rip-rap aprons on both ends. This work shall be completed as expeditiously as possible.
 - (5) Remove diversion (if installed).
 - (6) Place remaining fill with rip-rap headwalls at pipe inlets and outlets. Geotextile fabric shall not be used as bedding for rip-rap in stream installations.
 - (7) All disturbed areas to be vegetated shall be loamed, fertilized, seeded and covered with matting within 7 days of completion of earthwork.
- j) Winter Construction - For any work proposed during the winter season, the contractor shall adhere to the following practices:
- (1) A plan and schedule of activities shall be submitted to the Engineer and approved prior to any work being done.
 - (2) The interim period for any exposed area shall be limited to 7 calendar days.
 - (3) The contractor may not expose more than 3 acres at any one time.
 - (4) Where required and approved by Engineer, installation of silt fence may be modified from detail on plans to substitute 6 inches of clean gravel over the bottom of the silt fence in lieu of trenching and backfilling fabric to allow for installation in ledge areas or significant tree roots.
 - (5) Mulching and seeding rates shall adhere to the Temporary Seeding and Mulching Schedule, (Section D.l.d.). *Note that all mulching rates shall be doubled as shown in Note 1, (Section D.l.d.1). And, shall follow the sensitive area schedule.*
- k) Monitoring Schedule - The contractor shall be responsible for installing, monitoring, maintaining, repairing, replacing and/or removing all of the erosion and

- (2) Take appropriate corrective measures to prevent sediment from entering stream (i.e. mulching, matting, silt fence, etc.).

2. Permanent Seeding and Mulching Plan - The following general practices will be used to re-establish final vegetation.

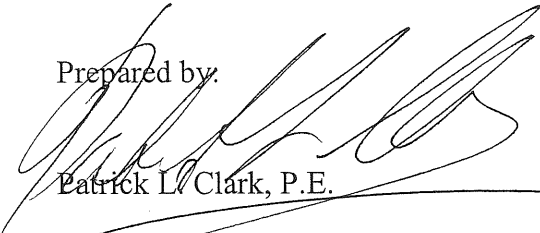
- a) Loaming - A minimum of 4 inches of loam will be spread over disturbed areas and graded to a uniform depth and a natural appearance. All loam shall be as specified or approved by the Engineer.
- b) Final Seeding: - All final seeding shall be completed immediately (within 7 days) following final grading. All final fertilizing and seeding shall adhere to the specifications unless otherwise approved by the Engineer.
- c) Mulching: - Any area shall be mulched after it has been seeded unless deemed unnecessary by the Engineer. Mulching shall consist of hay mulch, hydro-mulch or any suitable substitute deemed acceptable by the Engineer.
 - (1) Straw mulch shall be applied at the rate of 2 tons per acre (90 lbs. or 2 bales/1,000 sq. ft.).
 - (2) Hydro-mulch shall consist of a mixture of asphalt, wood fiber or paper fiber and water sprayed over a seeded area. Hydro-mulch shall not be used during the fall, winter or mud season.
 - (3) Mulching shall be monitored according to the monitoring schedule (Section D.1.k.). Should mulching prove to be ineffective, then netting or matting shall be used in its place.
- d) Dormant Seeding: - Construction shall be planned to eliminate the need for seeding during the fall, winter or mud season. Should seeding be necessary between these dates, the following procedure shall be followed:
 - (1) Only unfrozen loam shall be used.
 - (2) Loaming, seeding and mulching will not be done over snow cover. If snow exists, it must be removed prior to placement of seed.
 - (3) No permanent seeding will be done during fall, winter or mud season unless specifically approved by the Engineer. If attempted, the normal seed application rate shall be doubled. Reseeding in spring will be required in all areas with insufficient growth.
 - (4) Where temporary seeding is required, the rates specified in the Temporary Seeding and Mulching Schedule (Section D.1.d.) shall be adhered to.

- e) Once all the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be loamed (if necessary), fertilized, seeded and mulched in accordance with the rates previously stated.

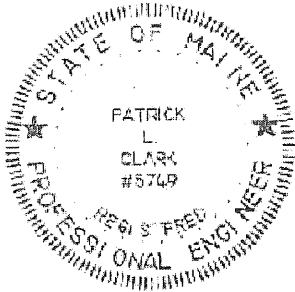
E. CONCLUSION

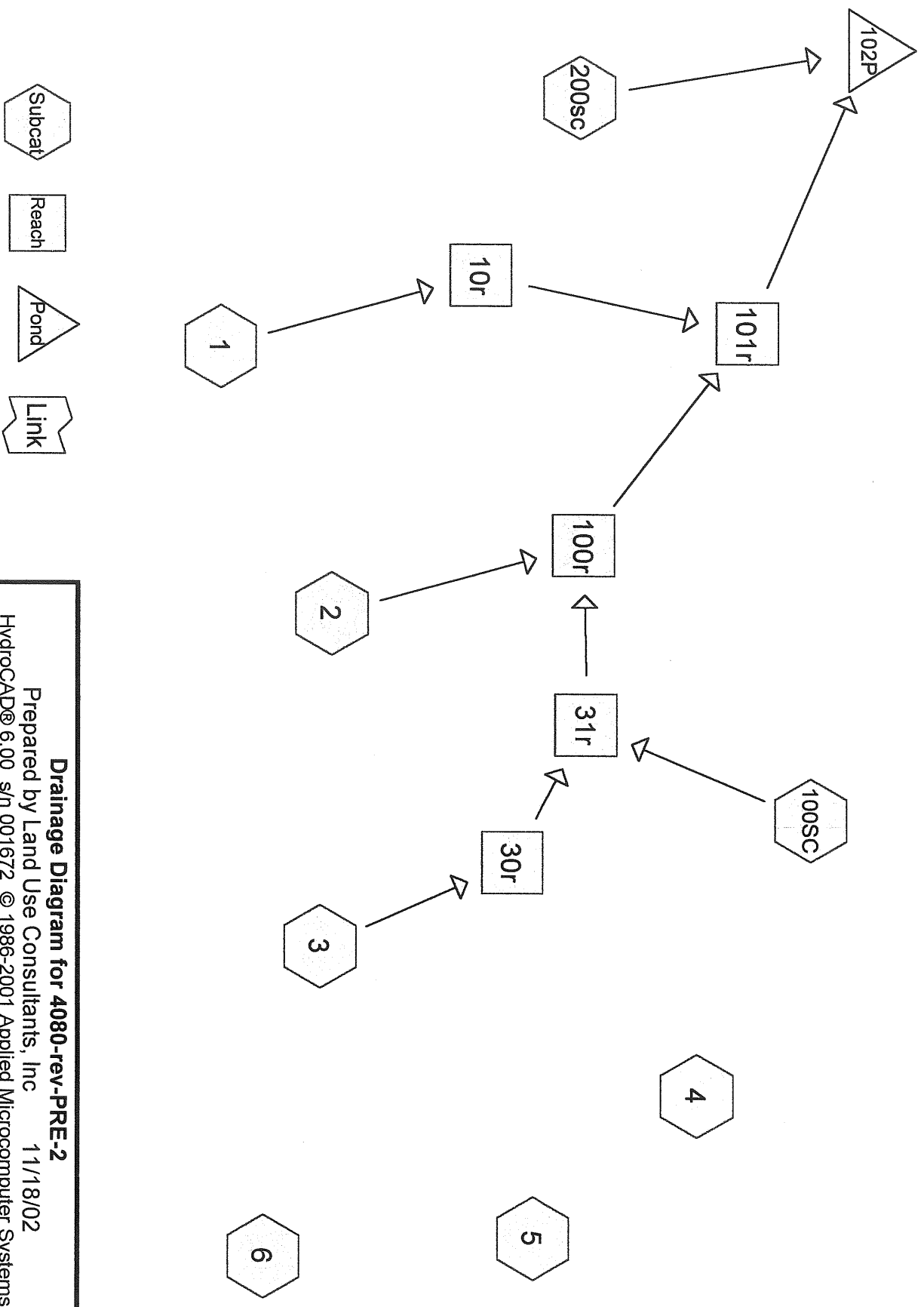
- 1. The construction of Yale Court, if constructed in conformance with the project plans and the Erosion and Sedimentation Control Report, should not result in any significant erosion or sedimentation either on or off the site.

Prepared by:



Patrick L. Clark, P.E.





Drainage Diagram for 4080-rev-PRE-2

Prepared by Land Use Consultants, Inc 11/18/02

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Area (ac)	CN	Description
0.980	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	50	0.0300	0.0		Sheet Flow, 3A-3B Woods: Dense underbrush n= 0.800 P2= 3.00"
2.8	80	0.0375	0.5		Shallow Concentrated Flow, 3B-3C Forest w/Heavy Litter Kv= 2.5 fps
1.8	120	0.0500	1.1		Shallow Concentrated Flow, 3C-R30 Woodland Kv= 5.0 fps
23.5	250	Total			

Subcatchment 4: SC4

Runoff = 0.76 cfs @ 12.27 hrs, Volume= 0.063 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0800	0.1		Sheet Flow, 4A-4B Woods: Dense underbrush n= 0.800 P2= 3.00"
3.8	100	0.0300	0.4		Shallow Concentrated Flow, 4B-4C Forest w/Heavy Litter Kv= 2.5 fps
2.1	150	0.0550	1.2		Shallow Concentrated Flow, 4C-4D Woodland Kv= 5.0 fps
18.6	300	Total			

Subcatchment 5: SC5

Runoff = 0.60 cfs @ 12.40 hrs, Volume= 0.056 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Subcatchment 200sc: SC200-offsite area

Runoff = 7.24 cfs @ 12.51 hrs, Volume= 0.774 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
4.800	79	50-75% Grass cover, Fair, HSG C
2.300	70	Woods, Good, HSG C
2.000	98	Paved roads w/curbs & sewers
9.100	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	150	0.0300	0.1		Sheet Flow, 200A-200B
					Grass: Dense n= 0.240 P2= 3.00"
7.1	300	0.0100	0.7		Shallow Concentrated Flow, 200B-200C
					Short Grass Pasture Kv= 7.0 fps
11.1	1,000	0.0100	1.5		Shallow Concentrated Flow, 200C-R102
					Grassed Waterway Kv= 15.0 fps
35.5	1,450	Total			

Reach 10r: Reach 10-Existing DitchInflow = 2.26 cfs @ 12.59 hrs, Volume= 0.256 af
Outflow = 2.24 cfs @ 12.64 hrs, Volume= 0.253 af, Atten= 1%, Lag= 2.8 minRouting by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.4 fps, Min. Travel Time= 3.6 min
Avg. Velocity = 0.8 fps, Avg. Travel Time= 6.5 minPeak Depth= 0.36'
Capacity at bank full= 205.17 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/'
Side Slope Z-value= 4.0 '/'**Reach 30r: Reach 30**Inflow = 0.74 cfs @ 12.35 hrs, Volume= 0.067 af
Outflow = 0.73 cfs @ 12.39 hrs, Volume= 0.067 af, Atten= 2%, Lag= 2.3 minRouting by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.0 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.0 minPeak Depth= 0.12'
Capacity at bank full= 16.72 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.045 Length= 180.0' Slope= 0.0250 '/'

Peak Elev= 75.60' Storage= 1,464 cf

Plug-Flow detention time= 1.7 min calculated for 1.602 af (100% of inflow)

Elevation (feet)	Cum.Store (cubic-feet)
74.00	0
75.00	350
76.00	2,200
77.00	6,300
80.00	42,000

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	74.00'	36.0" x 50.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 73.00' S= 0.0200 '/' n= 0.025 Cc= 0.900

Subcatchment 1: SC1

Runoff = 5.20 cfs @ 12.55 hrs, Volume= 0.594 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
3.810	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.8	100	0.0300	0.1		Sheet Flow, 1A-1B Woods: Dense underbrush n= 0.800 P2= 3.00"
4.7	140	0.0400	0.5		Shallow Concentrated Flow, 1B-1C Forest w/Heavy Litter Kv= 2.5 fps
2.7	160	0.0400	1.0		Shallow Concentrated Flow, 1C-1D Woodland Kv= 5.0 fps
40.2	400	Total			

Subcatchment 2: SC2

Runoff = 2.40 cfs @ 12.82 hrs, Volume= 0.344 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
2.260	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	50	0.0600	0.1		Sheet Flow, 2A-2B Woods: Dense underbrush n= 0.800 P2= 3.00"
39.0	80	0.0125	0.0		Sheet Flow, 2B-2C Woods: Dense underbrush n= 0.800 P2= 3.00"
5.8	170	0.0380	0.5		Shallow Concentrated Flow, 2C-2D Forest w/Heavy Litter Kv= 2.5 fps
3.2	180	0.0350	0.9		Shallow Concentrated Flow, 2D-R100 Woodland Kv= 5.0 fps
62.3	480	Total			

Subcatchment 3: SC3

Runoff = 1.71 cfs @ 12.33 hrs, Volume= 0.155 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=4.70"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	50	0.0600	0.1		Sheet Flow, 5A-5B Woods: Dense underbrush n= 0.800 P2= 3.00"
9.4	200	0.0200	0.4		Shallow Concentrated Flow, 5B-5C Forest w/Heavy Litter Kv= 2.5 fps
2.2	120	0.0330	0.9		Shallow Concentrated Flow, 5C-5D Woodland Kv= 5.0 fps
25.9	370	Total			

Subcatchment 6: SC6

Runoff = 3.10 cfs @ 12.44 hrs, Volume= 0.316 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	50	0.0200	0.0		Sheet Flow, 6A-6B Woods: Dense underbrush n= 0.800 P2= 3.00"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 6B-6C Woodland Kv= 5.0 fps
5.2	170	0.0120	0.5		Shallow Concentrated Flow, 6C-6D Woodland Kv= 5.0 fps
3.0	150	0.0270	0.8		Shallow Concentrated Flow, 6D-6E Woodland Kv= 5.0 fps
31.2	420	Total			

Subcatchment 100SC: SC100-OFFSITE AREA

Runoff = 9.37 cfs @ 12.18 hrs, Volume= 0.716 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	110	0.0400	0.2		Sheet Flow, 100A-100B Grass: Dense n= 0.240 P2= 3.00"
1.2	180	0.0300	2.6		Shallow Concentrated Flow, 100B-R31 Grassed Waterway Kv= 15.0 fps
13.3	290	Total			

Reach 31r: Reach 31

Inflow = 10.51 cfs @ 12.19 hrs, Volume= 0.871 af
 Outflow = 10.47 cfs @ 12.20 hrs, Volume= 0.869 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.9 fps, Min. Travel Time= 0.9 min
 Avg. Velocity = 1.2 fps, Avg. Travel Time= 2.2 min

Peak Depth= 0.47'
 Capacity at bank full= 58.07 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 160.0' Slope= 0.0394 '/'
 Side Slope Z-value= 10.0 '/'

Reach 100r: Reach 100-Existing Swale

Inflow = 11.15 cfs @ 12.20 hrs, Volume= 1.213 af
 Outflow = 11.07 cfs @ 12.22 hrs, Volume= 1.210 af, Atten= 1%, Lag= 1.2 min

Routing by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.8 fps, Min. Travel Time= 1.4 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 3.1 min

Peak Depth= 0.66'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/'
 Side Slope Z-value= 10.0 '/'

Reach 101r: Reach 101-Existing Drainage Ditch

Inflow = 13.46 cfs @ 12.25 hrs, Volume= 1.800 af
 Outflow = 13.45 cfs @ 12.26 hrs, Volume= 1.798 af, Atten= 0%, Lag= 0.5 min

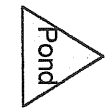
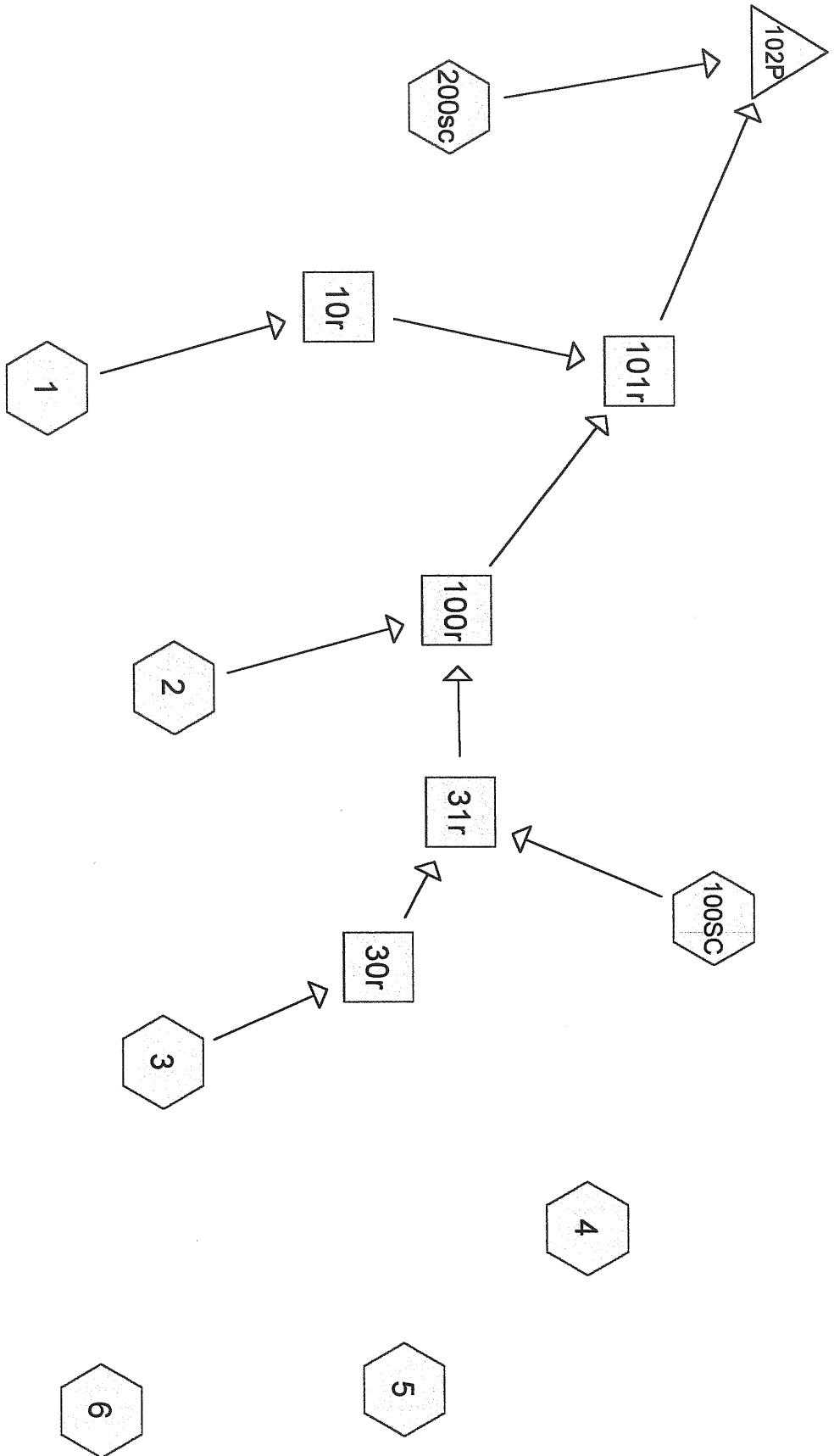
Routing by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 1.3 min

Peak Depth= 0.90'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/'
 Side Slope Z-value= 4.0 '/'

Pond 102P: (new node)

Inflow = 27.80 cfs @ 12.47 hrs, Volume= 3.463 af
 Outflow = 27.29 cfs @ 12.54 hrs, Volume= 3.458 af, Atten= 2%, Lag= 4.3 min
 Primary = 27.29 cfs @ 12.54 hrs, Volume= 3.458 af

Routing by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs



Drainage Diagram for 4080-rev-PRE-25

Prepared by Land Use Consultants, Inc 11/18/02

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Area (ac)	CN	Description
0.980	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	50	0.0300	0.0		Sheet Flow, 3A-3B Woods: Dense underbrush n= 0.800 P2= 3.00"
2.8	80	0.0375	0.5		Shallow Concentrated Flow, 3B-3C Forest w/Heavy Litter Kv= 2.5 fps
1.8	120	0.0500	1.1		Shallow Concentrated Flow, 3C-R30 Woodland Kv= 5.0 fps
23.5	250	Total			

Subcatchment 4: SC4

Runoff = 2.26 cfs @ 12.26 hrs, Volume= 0.188 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=5.50"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0800	0.1		Sheet Flow, 4A-4B Woods: Dense underbrush n= 0.800 P2= 3.00"
3.8	100	0.0300	0.4		Shallow Concentrated Flow, 4B-4C Forest w/Heavy Litter Kv= 2.5 fps
2.1	150	0.0550	1.2		Shallow Concentrated Flow, 4C-4D Woodland Kv= 5.0 fps
18.6	300	Total			

Subcatchment 5: SC5

Runoff = 1.77 cfs @ 12.35 hrs, Volume= 0.168 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=5.50"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Subcatchment 200sc: SC200-offsite area

Runoff = 19.12 cfs @ 12.50 hrs, Volume= 2.120 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=5.50"

Area (ac)	CN	Description
4.800	79	50-75% Grass cover, Fair, HSG C
2.300	70	Woods, Good, HSG C
2.000	98	Paved roads w/curbs & sewers
9.100	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	150	0.0300	0.1		Sheet Flow, 200A-200B
					Grass: Dense n= 0.240 P2= 3.00"
7.1	300	0.0100	0.7		Shallow Concentrated Flow, 200B-200C
					Short Grass Pasture Kv= 7.0 fps
11.1	1,000	0.0100	1.5		Shallow Concentrated Flow, 200C-R102
					Grassed Waterway Kv= 15.0 fps
35.5	1,450	Total			

Reach 10r: Reach 10-Existing Ditch

Inflow = 6.70 cfs @ 12.55 hrs, Volume= 0.772 af
 Outflow = 6.65 cfs @ 12.59 hrs, Volume= 0.768 af, Atten= 1%, Lag= 2.2 min

Routing by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.9 fps, Min. Travel Time= 2.7 min
 Avg. Velocity= 0.9 fps, Avg. Travel Time= 5.4 min

Peak Depth= 0.64'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/
 Side Slope Z-value= 4.0 '/

Reach 30r: Reach 30

Inflow = 2.20 cfs @ 12.33 hrs, Volume= 0.202 af
 Outflow = 2.19 cfs @ 12.35 hrs, Volume= 0.201 af, Atten= 1%, Lag= 1.7 min

Routing by Stor-Ind method, Time Span= 6.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.3 fps, Min. Travel Time= 2.2 min
 Avg. Velocity= 0.6 fps, Avg. Travel Time= 5.0 min

Peak Depth= 0.20'
 Capacity at bank full= 16.72 cfs
 20.00' x 0.50' deep Parabolic Channel, n= 0.045 Length= 180.0' Slope= 0.0250 '/

Peak Elev= 77.05' Storage= 6,882 cf

Plug-Flow detention time= 2.2 min calculated for 4.402 af (100% of inflow)

Elevation (feet)	Cum.Store (cubic-feet)
74.00	0
75.00	350
76.00	2,200
77.00	6,300
80.00	42,000

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	74.00'	36.0" x 50.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 73.00' S= 0.0200 '/' n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 2.78 cfs @ 12.50 hrs, Volume= 0.343 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
1.290	87	1/4 acre lots, 38% imp, HSG D
0.220	80	>75% Grass cover, Good, HSG D
1.890	77	Woods, Good, HSG D
0.035	98	Paved parking & roofs
3.435	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0300	0.1		Sheet Flow, 10A-10B Woods: Light underbrush n= 0.400 P2= 3.00"
19.4	60	0.0400	0.1		Sheet Flow, 10B-10C Woods: Dense underbrush n= 0.800 P2= 3.00"
2.1	150	0.0300	1.2		Shallow Concentrated Flow, 10C-10D Short Grass Pasture Kv= 7.0 fps
1.9	90	0.0250	0.8		Shallow Concentrated Flow, 10D-R10 Woodland Kv= 5.0 fps
34.2	350	Total			

Subcatchment 20SC: SC20

Runoff = 2.46 cfs @ 12.35 hrs, Volume= 0.265 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.290	87	1/4 acre lots, 38% imp, HSG D
0.740	80	>75% Grass cover, Good, HSG D
0.560	98	Paved parking & roofs
0.680	77	Woods, Good, HSG D
2.270	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.0	70	0.0100	0.1		Sheet Flow, 20A-20B Woods: Light underbrush n= 0.400 P2= 3.00"
0.9	70	0.0200	1.2		Sheet Flow, 20B-20C Smooth surfaces n= 0.011 P2= 3.00"
2.3					Direct Entry, 20B-2P (PIPE FLOW-2 FPS-270 FT)
25.2	140	Total			

Area (ac)	CN	Description
0.340	77	Woods, Good, HSG D
0.250	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.620	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0600	0.2		Sheet Flow, 40A-40B Grass: Dense n= 0.240 P2= 3.00"
1.2	50	0.0800	0.7		Shallow Concentrated Flow, 40B-40C Forest w/Heavy Litter Kv= 2.5 fps
1.5	90	0.0400	1.0		Shallow Concentrated Flow, 40C-40D Woodland Kv= 5.0 fps
8.2	190	Total			

Subcatchment 50SC: SC50

Runoff = 0.55 cfs @ 12.17 hrs, Volume= 0.045 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	60	0.0200	0.1		Sheet Flow, 50A-50B Grass: Dense n= 0.240 P2= 3.00"
1.0	60	0.0220	1.0		Shallow Concentrated Flow, 50B-50C Short Grass Pasture Kv= 7.0 fps
1.2	60	0.0300	0.9		Shallow Concentrated Flow, 50C-50D Woodland Kv= 5.0 fps
12.0	180	Total			

Subcatchment 60SC: SC60

Runoff = 1.20 cfs @ 12.45 hrs, Volume= 0.143 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=3.00"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	150	0.0300	0.1		Sheet Flow, 200A-200B Grass: Dense n= 0.240 P2= 3.00"
7.1	300	0.0100	0.7		Shallow Concentrated Flow, 200B-200C Short Grass Pasture Kv= 7.0 fps
11.1	1,000	0.0100	1.5		Shallow Concentrated Flow, 200C-R102 Grassed Waterway Kv= 15.0 fps
35.5	1,450	Total			

Reach 10R: Reach 10-Existing Ditch

Inflow = 2.78 cfs @ 12.50 hrs, Volume= 0.343 af
 Outflow = 2.75 cfs @ 12.53 hrs, Volume= 0.342 af, Atten= 1%, Lag= 2.1 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.5 fps, Min. Travel Time= 3.4 min
 Avg. Velocity = 0.7 fps, Avg. Travel Time= 7.3 min

Peak Depth= 0.41'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/
 Side Slope Z-value= 4.0 '/

Reach 20R: GRASS SWALE

Inflow = 2.18 cfs @ 12.34 hrs, Volume= 0.084 af
 Outflow = 2.16 cfs @ 12.36 hrs, Volume= 0.084 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.9 fps, Min. Travel Time= 1.3 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 3.1 min

Peak Depth= 0.26'
 Capacity at bank full= 81.52 cfs
 3.00' x 1.50' deep channel, n= 0.045 Length= 150.0' Slope= 0.0300 '/
 Side Slope Z-value= 5.0 '/

Reach 21R: NEW CULVERT

Inflow = 2.16 cfs @ 12.36 hrs, Volume= 0.084 af
 Outflow = 2.16 cfs @ 12.36 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.6 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.3 min

Reach 101R: Reach 101-Existing Drainage Ditch

Inflow = 6.64 cfs @ 12.27 hrs, Volume= 1.055 af
 Outflow = 6.64 cfs @ 12.28 hrs, Volume= 1.054 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.9 fps, Min. Travel Time= 0.7 min
 Avg. Velocity= 0.9 fps, Avg. Travel Time= 1.4 min

Peak Depth= 0.64'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/'
 Side Slope Z-value= 4.0 '/'

Pond 1P: DRY-SWALE

Inflow = 2.91 cfs @ 12.23 hrs, Volume= 0.267 af
 Outflow = 2.43 cfs @ 12.34 hrs, Volume= 0.267 af, Atten= 16%, Lag= 7.0 min
 Discarded = 0.25 cfs @ 11.47 hrs, Volume= 0.183 af
 Primary = 2.18 cfs @ 12.34 hrs, Volume= 0.084 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs

Peak Elev= 91.21' Storage= 2,434 cf
 Plug-Flow detention time= 52.0 min calculated for 0.267 af (100% of inflow)
 Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.50	100	0	0
90.00	1,150	313	313
91.00	2,035	1,593	1,905
92.00	3,125	2,580	4,485

Discarded OutFlow (Free Discharge)
 ↑ 2=Exfiltration

Primary OutFlow (Free Discharge)
 ↑ 1=OVERFLOW BERM

#	Routing	Invert	Outlet Devices
1	Primary	91.00'	10.0' long x 5.0' breadth OVERFLOW BERM Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.66
2	Discarded	0.00'	0.25 cfs Exfiltration at all elevations

Elevation (feet)	Cum.Store (cubic-feet)
74.00	0
75.00	350
76.00	2,200
77.00	6,300
80.00	42,000

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	74.00'	36.0" x 50.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 73.00' S= 0.0200 '/ n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 5.82 cfs @ 12.47 hrs, Volume= 0.721 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
1.290	87	1/4 acre lots, 38% imp, HSG D
0.220	80	>75% Grass cover, Good, HSG D
1.890	77	Woods, Good, HSG D
0.035	98	Paved parking & roofs
3.435	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0300	0.1		Sheet Flow, 10A-10B Woods: Light underbrush n= 0.400 P2= 3.00"
19.4	60	0.0400	0.1		Sheet Flow, 10B-10C Woods: Dense underbrush n= 0.800 P2= 3.00"
2.1	150	0.0300	1.2		Shallow Concentrated Flow, 10C-10D Short Grass Pasture Kv= 7.0 fps
1.9	90	0.0250	0.8		Shallow Concentrated Flow, 10D-R10 Woodland Kv= 5.0 fps
34.2	350	Total			

Subcatchment 20SC: SC20

Runoff = 4.87 cfs @ 12.35 hrs, Volume= 0.528 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
0.290	87	1/4 acre lots, 38% imp, HSG D
0.740	80	>75% Grass cover, Good, HSG D
0.560	98	Paved parking & roofs
0.680	77	Woods, Good, HSG D
2.270	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.0	70	0.0100	0.1		Sheet Flow, 20A-20B Woods: Light underbrush n= 0.400 P2= 3.00"
0.9	70	0.0200	1.2		Sheet Flow, 20B-20C Smooth surfaces n= 0.011 P2= 3.00"
2.3					Direct Entry, 20B-2P (PIPE FLOW-2 FPS-270 FT)
25.2	140	Total			

Area (ac)	CN	Description
0.340	77	Woods, Good, HSG D
0.250	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.620	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0600	0.2		Sheet Flow, 40A-40B Grass: Dense n= 0.240 P2= 3.00"
1.2	50	0.0800	0.7		Shallow Concentrated Flow, 40B-40C Forest w/Heavy Litter Kv= 2.5 fps
1.5	90	0.0400	1.0		Shallow Concentrated Flow, 40C-40D Woodland Kv= 5.0 fps
8.2	190	Total			

Subcatchment 50SC: SC50

Runoff = 1.20 cfs @ 12.17 hrs, Volume= 0.097 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=4.70"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	60	0.0200	0.1		Sheet Flow, 50A-50B Grass: Dense n= 0.240 P2= 3.00"
1.0	60	0.0220	1.0		Shallow Concentrated Flow, 50B-50C Short Grass Pasture Kv= 7.0 fps
1.2	60	0.0300	0.9		Shallow Concentrated Flow, 50C-50D Woodland Kv= 5.0 fps
12.0	180	Total			

Subcatchment 60SC: SC60

Runoff = 2.69 cfs @ 12.42 hrs, Volume= 0.316 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=4.70"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	150	0.0300	0.1		Sheet Flow, 200A-200B Grass: Dense n= 0.240 P2= 3.00"
7.1	300	0.0100	0.7		Shallow Concentrated Flow, 200B-200C Short Grass Pasture Kv= 7.0 fps
11.1	1,000	0.0100	1.5		Shallow Concentrated Flow, 200C-R102 Grassed Waterway Kv= 15.0 fps
35.5	1,450	Total			

Reach 10R: Reach 10-Existing Ditch

Inflow = 5.82 cfs @ 12.47 hrs, Volume= 0.721 af
 Outflow = 5.79 cfs @ 12.51 hrs, Volume= 0.719 af, Atten= 1%, Lag= 2.3 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.8 fps, Min. Travel Time= 2.8 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 6.2 min

Peak Depth= 0.60'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/
 Side Slope Z-value= 4.0 '/

Reach 20R: GRASS SWALE

Inflow = 4.98 cfs @ 12.26 hrs, Volume= 0.257 af
 Outflow = 4.96 cfs @ 12.27 hrs, Volume= 0.257 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.5 fps, Min. Travel Time= 1.0 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 2.6 min

Peak Depth= 0.40'
 Capacity at bank full= 81.52 cfs
 3.00' x 1.50' deep channel, n= 0.045 Length= 150.0' Slope= 0.0300 '/
 Side Slope Z-value= 5.0 '/

Reach 21R: NEW CULVERT

Inflow = 4.96 cfs @ 12.27 hrs, Volume= 0.257 af
 Outflow = 4.96 cfs @ 12.27 hrs, Volume= 0.257 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 7.1 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 3.0 fps, Avg. Travel Time= 0.3 min

Reach 101R: Reach 101-Existing Drainage Ditch

Inflow = 13.44 cfs @ 12.25 hrs, Volume= 2.216 af
 Outflow = 13.43 cfs @ 12.25 hrs, Volume= 2.214 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 1.2 min

Peak Depth= 0.90'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/'
 Side Slope Z-value= 4.0 '/

Pond 1P: DRY-SWALE

Inflow = 5.34 cfs @ 12.22 hrs, Volume= 0.500 af
 Outflow = 5.23 cfs @ 12.26 hrs, Volume= 0.487 af, Atten= 2%, Lag= 2.1 min
 Discarded = 0.25 cfs @ 10.39 hrs, Volume= 0.231 af
 Primary = 4.98 cfs @ 12.26 hrs, Volume= 0.257 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs

Peak Elev= 91.34' Storage= 2,795 cf
 Plug-Flow detention time= 40.5 min calculated for 0.487 af (97% of inflow)
 Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.50	100	0	0
90.00	1,150	313	313
91.00	2,035	1,593	1,905
92.00	3,125	2,580	4,485

Discarded OutFlow (Free Discharge)
 ↑2=Exfiltration

Primary OutFlow (Free Discharge)
 ↑1=OVERFLOW BERM

#	Routing	Invert	Outlet Devices
1	Primary	91.00'	10.0' long x 5.0' breadth OVERFLOW BERM Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.66
2	Discarded	0.00'	0.25 cfs Exfiltration at all elevations

Elevation (feet)	Cum.Store (cubic-feet)
74.00	0
75.00	350
76.00	2,200
77.00	6,300
80.00	42,000

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	74.00'	36.0" x 50.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 73.00' S= 0.0200 '/ n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 7.33 cfs @ 12.47 hrs, Volume= 0.912 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=5.50"

Area (ac)	CN	Description
1.290	87	1/4 acre lots, 38% imp, HSG D
0.220	80	>75% Grass cover, Good, HSG D
1.890	77	Woods, Good, HSG D
0.035	98	Paved parking & roofs
3.435	81	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0300	0.1		Sheet Flow, 10A-10B Woods: Light underbrush n= 0.400 P2= 3.00"
19.4	60	0.0400	0.1		Sheet Flow, 10B-10C Woods: Dense underbrush n= 0.800 P2= 3.00"
2.1	150	0.0300	1.2		Shallow Concentrated Flow, 10C-10D Short Grass Pasture Kv= 7.0 fps
1.9	90	0.0250	0.8		Shallow Concentrated Flow, 10D-R10 Woodland Kv= 5.0 fps
34.2	350	Total			

Subcatchment 20SC: SC20

Runoff = 6.03 cfs @ 12.35 hrs, Volume= 0.659 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Type III 24-hr Rainfall=5.50"

Area (ac)	CN	Description
0.290	87	1/4 acre lots, 38% imp, HSG D
0.740	80	>75% Grass cover, Good, HSG D
0.560	98	Paved parking & roofs
0.680	77	Woods, Good, HSG D
2.270	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.0	70	0.0100	0.1		Sheet Flow, 20A-20B Woods: Light underbrush n= 0.400 P2= 3.00"
0.9	70	0.0200	1.2		Sheet Flow, 20B-20C Smooth surfaces n= 0.011 P2= 3.00"
2.3					Direct Entry, 20B-2P (PIPE FLOW-2 FPS-270 FT)
25.2	140	Total			

Area (ac)	CN	Description
0.340	77	Woods, Good, HSG D
0.250	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.620	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0600	0.2		Sheet Flow, 40A-40B Grass: Dense n= 0.240 P2= 3.00"
1.2	50	0.0800	0.7		Shallow Concentrated Flow, 40B-40C Forest w/Heavy Litter Kv= 2.5 fps
1.5	90	0.0400	1.0		Shallow Concentrated Flow, 40C-40D Woodland Kv= 5.0 fps
8.2	190	Total			

Subcatchment 50SC: SC50

Runoff = 1.53 cfs @ 12.17 hrs, Volume= 0.123 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=5.50"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	60	0.0200	0.1		Sheet Flow, 50A-50B Grass: Dense n= 0.240 P2= 3.00"
1.0	60	0.0220	1.0		Shallow Concentrated Flow, 50B-50C Short Grass Pasture Kv= 7.0 fps
1.2	60	0.0300	0.9		Shallow Concentrated Flow, 50C-50D Woodland Kv= 5.0 fps
12.0	180	Total			

Subcatchment 60SC: SC60

Runoff = 3.45 cfs @ 12.41 hrs, Volume= 0.405 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr Rainfall=5.50"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	150	0.0300	0.1		Sheet Flow, 200A-200B Grass: Dense n= 0.240 P2= 3.00"
7.1	300	0.0100	0.7		Shallow Concentrated Flow, 200B-200C Short Grass Pasture Kv= 7.0 fps
11.1	1,000	0.0100	1.5		Shallow Concentrated Flow, 200C-R102 Grassed Waterway Kv= 15.0 fps
35.5	1,450	Total			

Reach 10R: Reach 10-Existing Ditch

Inflow = 7.33 cfs @ 12.47 hrs, Volume= 0.912 af
 Outflow = 7.29 cfs @ 12.51 hrs, Volume= 0.909 af, Atten= 0%, Lag= 2.3 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.9 fps, Min. Travel Time= 2.6 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 5.9 min

Peak Depth= 0.67'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/
 Side Slope Z-value= 4.0 '/

Reach 20R: GRASS SWALE

Inflow = 6.12 cfs @ 12.25 hrs, Volume= 0.349 af
 Outflow = 6.11 cfs @ 12.27 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.6 fps, Min. Travel Time= 1.0 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 2.4 min

Peak Depth= 0.45'
 Capacity at bank full= 81.52 cfs
 3.00' x 1.50' deep channel, n= 0.045 Length= 150.0' Slope= 0.0300 '/
 Side Slope Z-value= 5.0 '/

Reach 21R: NEW CULVERT

Inflow = 6.11 cfs @ 12.27 hrs, Volume= 0.349 af
 Outflow = 6.11 cfs @ 12.27 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 7.5 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 3.1 fps, Avg. Travel Time= 0.3 min

Reach 101R: Reach 101-Existing Drainage Ditch

Inflow = 17.13 cfs @ 12.31 hrs, Volume= 2.812 af
 Outflow = 17.12 cfs @ 12.31 hrs, Volume= 2.810 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.4 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.2 fps, Avg. Travel Time= 1.1 min

Peak Depth= 1.01'
 Capacity at bank full= 205.17 cfs
 3.00' x 3.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 4.0 '/

Pond 1P: DRY-SWALE

Inflow = 6.49 cfs @ 12.22 hrs, Volume= 0.613 af
 Outflow = 6.37 cfs @ 12.25 hrs, Volume= 0.591 af, Atten= 2%, Lag= 1.8 min
 Discarded = 0.25 cfs @ 9.84 hrs, Volume= 0.242 af
 Primary = 6.12 cfs @ 12.25 hrs, Volume= 0.349 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs

Peak Elev= 91.39' Storage= 2,916 cf
 Plug-Flow detention time= 36.0 min calculated for 0.591 af (96% of inflow)
 Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.50	100	0	0
90.00	1,150	313	313
91.00	2,035	1,593	1,905
92.00	3,125	2,580	4,485

Discarded OutFlow (Free Discharge)
 ↑2=Exfiltration

Primary OutFlow (Free Discharge)
 ↑1=OVERFLOW BERM

#	Routing	Invert	Outlet Devices
1	Primary	91.00'	10.0' long x 5.0' breadth OVERFLOW BERM Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.66
2	Discarded	0.00'	0.25 cfs Exfiltration at all elevations

Elevation (feet)	Cum.Store (cubic-feet)
74.00	0
75.00	350
76.00	2,200
77.00	6,300
80.00	42,000

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	74.00'	36.0" x 50.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 73.00' S= 0.0200 '/' n= 0.025 Cc= 0.900

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Caron and Members of the Portland Planning Board

FROM: Jonathan Spence, Planner

DATE: December 3, 2002

SUBJECT: Yale Court, 30-Unit PRUD , vicinity of Yale Street
and
University Park, 10-lot Subdivision, vicinity of Yale Street

Due to scheduling difficulties and shortened workweeks as a result of the Thanksgiving Holiday, Planning Board Report #74-02 (misabeled #37-02) requires a supplement. This supplement addresses materials unavailable at the time the report was written and potential conditions of approval as a result. The applicant has also reviewed the report and found two minor errors. The PRUD applicant is Wescott & Payson II", not "Payson & Wescott II" and in Section V.5.Traffic it should be "Woodwinds" not "Wind Woods".

A summary of the proposed conditions of approval and revised motions with these conditions is provided below.

Stormwater Management -PRUD and University Park Subdivision

A final review memo from Engineering Review Consultant Jim Seymour is included as attachment 1. This memo outlines additional detail oriented changes that must be made to the plans. A potential condition of approval is:

-that the plans be amended to address the items contained in Jim Seymour's 12-03-2002 memo.

Roadway Design -University Park Subdivision

As mentioned in the Planning Board Report, Public Works has requested that the Roadway design plans be modified. A potential condition of approval is:

-that the plans be amended to address the comments contained in the Public Works memo included in Planning Board Report #74-02 as attachment 14.

Sewer Capacity -PRUD and University Park Subdivision

-that a sewer capacity letter be obtained from Public Works prior to the issuance of any building permit or the commencement of any site work.

Blasting Plan - PRUD and University Park Subdivision

-that a Blasting Plan be submitted for review and approval by the Fire Department and City Staff Works prior to the issuance of any building permit or the commencement of any site work.

Sewer Detail-PRUD

Public Works has requested that the proposed sewer plan tie up in Chesley Street be modified. A potential condition of approval is:

- that the plans specify the installation of a "flexible fitting" when connecting the new 8 inch PVC sanitary sewer main into the existing manhole in Chesley Avenue.

Design Guidelines- University Park Subdivision

As mentioned in the Planning Board Report, design guidelines for the construction of the single-family homes has been jointly generated by the planning staff and the applicant. A working draft of these guidelines is included as attachment 2. Staff anticipates that final guidelines will be worked out between the staff and the applicant in the coming days. A potential condition of approval is:

-that the design guidelines, when finalized, be recorded as covenants to the deeds of the individual single-family lots.

Dimensional Requirements-PRUD

A zoning analysis completed by Marge Schmuckal has indicated that the required setbacks are not met in a few instances and that the net land calculations need to be refined. A potential condition of approval is:

-that the plans will be amended to address the concerns outlined by the Zoning Administrator in the memo dated 12-03-2002

Dimensional Requirements-University Park Subdivision

The building envelope shown for lot #10 does not take into account the required "side to a street" setback, which is 20 feet. A potential condition of approval is:

-that the building envelope for Lot #10 be modified to be representative of the required setback.

Lighting- PRUD

As mentioned in the Planning Board Report, staff requests additional information concerning the project's proposed lighting. A potential condition of approval is:

-that the applicant submit details for the wall mounted individual-unit lighting fixtures and the illumination level for the pole mounted lights be provided to staff for review and approval.

Access and Drainage Easement Deeds-PRUD

The applicant's attorney has been working closely with Corporation Counsel regarding the creation of easements related to public and emergency access. In addition, staff would like the opportunity to review the drainage easement that the applicant possesses to discharge into the Northfield Greens drainage system. A potential condition of approval is:

-that the applicant provide for review and approval easements concerning public and emergency access to the site and the existing drainage easement with the abutting property.

Landscaping- PRUD and University Park Subdivision

As expressed in the Planning Board Report, Jeff Tarling has had the opportunity to review the proposed landscape plan and has relayed his general approval. In a memo included as attachment 6, he has indicated that additional language concerning the tree save area is required. A potential condition of approval is:

-that the plans be modified to include the language recommended in Jeff Tarling's 12-03-2002 memo.

MOTIONS FOR THE BOARD TO CONSIDER

On the basis of plans and material submitted by the applicant and on the basis of information contained in Planning Report #74-02 relevant to the standards of Site Plan and Subdivision Review, the Planning Board finds:

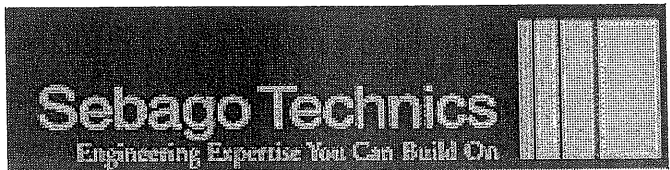
- i. That the proposed PRUD development is/is not in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions:
 1. *-that the plans be amended to address the items contained in Jim Seymour's 12-03-2002 memo.*
 2. *-that the plans specify the installation of a "flexible fitting" when connecting the new 8 inch PVC sanitary sewer main into the existing manhole in Chesley Avenue.*
 3. *-that a Blasting Plan be submitted for review and approval by the Fire Department and City Staff Works prior to the issuance of any building permit of the commencement of any site work.*
 4. *-that a sewer capacity letter be obtained from Public Works prior to the issuance of any building permit of the commencement of any site work.*

5. *-that the applicant provide for review and approval easements concerning public and emergency access to the site and the existing drainage easement with the abutting property.*
 6. *-that the plans will be amended to address the concerns outlined by the Zoning Administrator in the memo dated 12-03-2002*
 7. *-that the plans be modified to include the language recommended in Jeff Tarling's 12-03-2002 memo.*
- ii. That the proposed PRUD development meets/does not meet the standards for the issuance of a DEP Stormwater Permit under delegated authority.
- iii. That the proposed PRUD development is/is not in conformance with the Site Plan Ordinance of the Land Use Code with the following conditions:
1. *-that the applicant submit details for the wall mounted individual-unit lighting fixtures and the illumination level for the pole mounted lights be provided to staff for review and approval.*
- iv. That the proposed 10-lot University Park Subdivision is/is not in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions:
1. *-that the plans be amended to address the items contained in Jim Seymour's 12-03-2002 memo.*
 2. *-that the design guidelines be recorded as covenants to the deeds of the individual single-family lots.*
 3. *-that a Blasting Plan be submitted for review and approval by the Fire Department and City Staff Works prior to the issuance of any building permit of the commencement of any site work.*
 4. *-that the plans be amended to address the comments contained in the Public Works memo included in Planning Board Report #74-02 as attachment 14.*
 5. *-that a sewer capacity letter be obtained from Public Works prior to the issuance of any building permit of the commencement of any site work.*
 6. *-that the building envelope for Lot #10 be modified to be representative of the required setback.*
 7. *-that the plans be modified to include the language recommended in Jeff Tarling's 12-03-2002 memo.*
- v. That the proposed 10-lot University Park Subdivision is granted/not granted an exception to the curb and sidewalk requirement so as to construct Yale Street with curb only along University Park.

Attachments:

1. Jim Seymour's Review Comments, 12-03-2002
2. Draft Design Guidelines (3rd)
3. Neighborhood Meeting Minutes and Attendance Sheet
4. Marge Schmuckal's Zoning Review Memo, 12-03-2002
5. Public Works Engineering Review for PRUD
6. Jeff Tarling's Landscape Memo, 12-03-2002

A#1



02P121

TO: Jonathan Spence – Planner
FROM: Jim Seymour – Development Review Coordinator, Sebago Technics, Inc.
RE: Yale Court PRUD – Yale Street
DATE: December 3, 2002

Sebago Technics has reviewed the revised Site Plan Package and supporting documentation for the proposed Yale Court PRUD located at Yale Street. The following comments are submitted in outline format:

1. Stormwater Management

- A. The “sheet flow” segments for the subcatchment flow path should be lengthened from 50 feet to 100 feet or more to more realistically represent field conditions. These shorter lengths will underestimate precondition time of concentration or “Tc” values. The lengths of flow for SC-5 & 6 still seem to be too short.
- B. The proposed stormwater detention pond shown on plans does not include a conventional riprap emergency spillway. The plans show a structural catch basin with an oversized pipe to be the overflow. This design may pose problems from obstructions blocking the orifices used for the outlet control. The design notes a grate to be used as the trash rack but no detail has been shown for the grate or the size of the openings. The concern is that the grates could be a maintenance issue for clogging of debris. The higher orifice models as a 24” orifice when the actual grate will restrict the flows far less. If these orifices do plug then the pond could permanently have a wet bottom. We suggest installing a riprap spillway on the NE end of the pond, and either keep or eliminate the grate atop the outlet structure.
- C. The detention pond shall have a typical cross section to show riprap section and design stage elevations for the 2, 10, and 25 yr storms.
- D. Due to the potential for a permanent water or saturated pond bottom, the pond shall be constructed with either a vegetative or structural barrier to keep children or pedestrians from accessing the pond contents.

2. Road Access/Circulation

- A. Street section detail shown on sheet 6 calls for two 16-foot wide lanes. This seems excessive for this project. These wider lanes will invite higher vehicle speeds. The road width will require reviewing, by the City’s Traffic Engineer. Elimination or reduction to 24 ft instead of 32 ft of paving will reduce vehicle

speeding, environmental impacts, and cost. However, without knowing the all of the traffic concern this decision should be left to Public Works.

- B. All of the Catch Basin connections to the Storm Drain shall be done with the installation of a Drain Manhole and not by direct wyes.
- C. On all of the internal roads, the curb type shall be vertical where the sidewalk is immediately adjacent to the curb, or no esplanade separates the sidewalk and curb.
- D. The radius and terminus of the private driveway shall be reviewed by the Fire department to assure that proper turning movements are possible for Fire Truck access. Cluster 1 may be the most difficult to turn around in.
- E. A guardrail or barrier should be installed across the end of Yale Street to discourage recreational vehicles from using the Right-of Way and causing soil disturbance.
- F. The Fire Access Lane cutting through to the adjacent development should be reviewed by the Fire Department. It may be an improvement to place a reinforced geo-textile of matting to further stabilize the grass surface and eliminate any tire rutting that can occur with the weight of a fire truck.

3. Grading/Erosion Control

- A. The stormwater quality standards appear to have been met. The proposed stormwater dry swale infrastructure system will address the majority of the quality issues. I disagree with the assumption however to use the Yard areas as treatment seeded buffers. Seeded buffers are allowed to grow naturally and are not mowed frequently as will yards. The Calculation shall be modified accordingly. We feel that the development still will have met the Standard 40% TSS removal efficiency, but it shall be documented.
- B. Sidewalk slope for proposed 3-bedroom townhouse unit near roadway station 8+00 approaches 10%, which is excessive.
- C. Inlet protection devices other than haybales need to be added to all basins adjacent to paved surfaces. An example would be a Silt Sac[®].
- D. All of the detention pond, dry swale, and ditches leading to or from either need to be incorporated into a drainage easement. Also a maintenance plan needs to be submitted discussing maintenance and inspection required and the responsible party to enforce these requirements.

4. Utility Installation/Location

- A. There appears to be a conflict with the pipe connection between CB4 and SD#3 and SS#3.
- B. Foundation drainage provisions need to be added to the PRUD units or a note added discussing how this will be addressed.
- C. The Sewer Pipe Schedule on sheet 9 should be either removed or added so that it is clear to what is supposed to be on the plans.

5. General

- A. Single unit lot lines on subdivision plan should include estimated finish floor elevations.

- B. The single-family lots should include erosion control measures and shall provide a drainage easement across the rear of all of the lots equal in width to the setback. This easement may need to continue onto the PRUD projects land to assure that the natural drainage course is maintained.
- C. Gravel walkways should be shown to connect or provide pedestrian access from the internal road to each of the Community open spaces. This may be difficult on the open space behind Cluster "3".
- D. The Subdivision plan shall have a filled in recording block added for the Registry of Deeds (blank- plan book and page). The subdivision plans shall list the Record owner and address within the Title Block. Also the plans need to be Crimped and signed by a Maine Licensed Land Surveyor.

6. Details

- A. BMP detail for inlet protection on the paved surface (such as Silt Sac[®]) should be included.
- B. Need pavement saw cut detail.
- C. All revisions to stormwater outlet controls should be revised in detail.
- D. Pond cross sections are needed, along with the detail for the dry swale.
- E. A vertical bit. Curb detail needs to be added.
- F. A riprap spillway detail shall be added to the plans.

Based on my conversations with Land Use Consultants many of these revisions can be made as conditions of approval. Some of the comments we have suggested will need some Public Works input. I have not reviewed or sent for peer review the Blasting Plan since the City is still reviewing standards on this topic.

Overall we believe that these stormwater runoff and capacity issues have been or can be with revisions adequately addressed. We hope these comments help you in your discussions with the Board tonight. Please contact our office with any questions.

TS:ts/??

Yale Street Single Family Lots Design Guidelines

AH
2

[3rd Revision 12-03-02]

A. Streetscape - note street tree layout is controlled by City subdivision requirements.

1. "Front" of homes should face/ orient the street and University Park.
2. Front yard should have improvements compatible with neighborhood.

B. Lot Layout

1. The 25 ft. front and rear yard set backs limit flexibility of traditional detached garage located near rear lot line.
2. Set principal façade of the house forward of the garage façade a minimum of 4 feet.
3. Orient houses to maximize solar exposure for each building and associated outdoor living spaces. Utilize side yard reduction to maximize solar gain when not adversely impacting solar access to an adjacent lot.
4. Orient service side to service side of dwelling and living spaces to living spaces of dwelling on adjacent lots.

C. Site Improvements

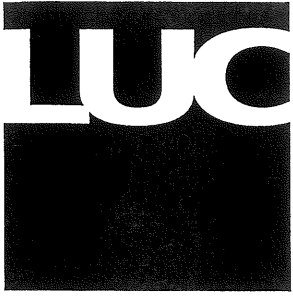
1. Paved driveway and front walk (stones, asphalt, brick)
2. Provide walkway from main entrance to public sidewalk or visible from public sidewalk.
3. Provide private yard space at side and/ or rear of lot.
4. Provide traditional landscaping including shade trees, hedges. Provide seasonal interest.
5. Provide Post lamp or wall-mounted lamp for private illumination and to supplement streetlights.

D. House design

1. Provide an overall unifying architectural theme that **may** incorporate such features as multi-gable mass and roof form, articulation of windows with well proportioned trim detail, cornice and eave overhang, porches, ells, box bay or angle bay, or other features appropriate to the style selected.
2. Provide front entrance/ porch proportional to the overall building and reinforcing the streetscape. (Orient to the public spaces.)
3. The principal mass of the house shall not be less than 1-1/2 stories. Minimum Roof Pitch shall be 7:12 (v:h).
4. Exterior Materials such as, natural wood, high quality vinyl clapboard, shingle materials, painted cementitious clapboard or the like should be used.
5. Where a garage must be forward of house, due to physical limitations of the lot (i.e. topography, ledge or vegetation), an entry element forward of the garage, such as an arbor or the fence with gate, shall be provided.

E. Design Review

1. A proposed architectural design theme for the subdivision that complies with these guidelines must be submitted by the current applicant for review and approval by the Planning Authority prior final approval.
2. The approved design theme will become a covenant on the land and registered at the Cumberland County Registry of Deeds.
3. At the time a building permit application is submitted to the City for each house lot, an individual design review will be conducted to ensure compliance with the approved design theme and covenant.

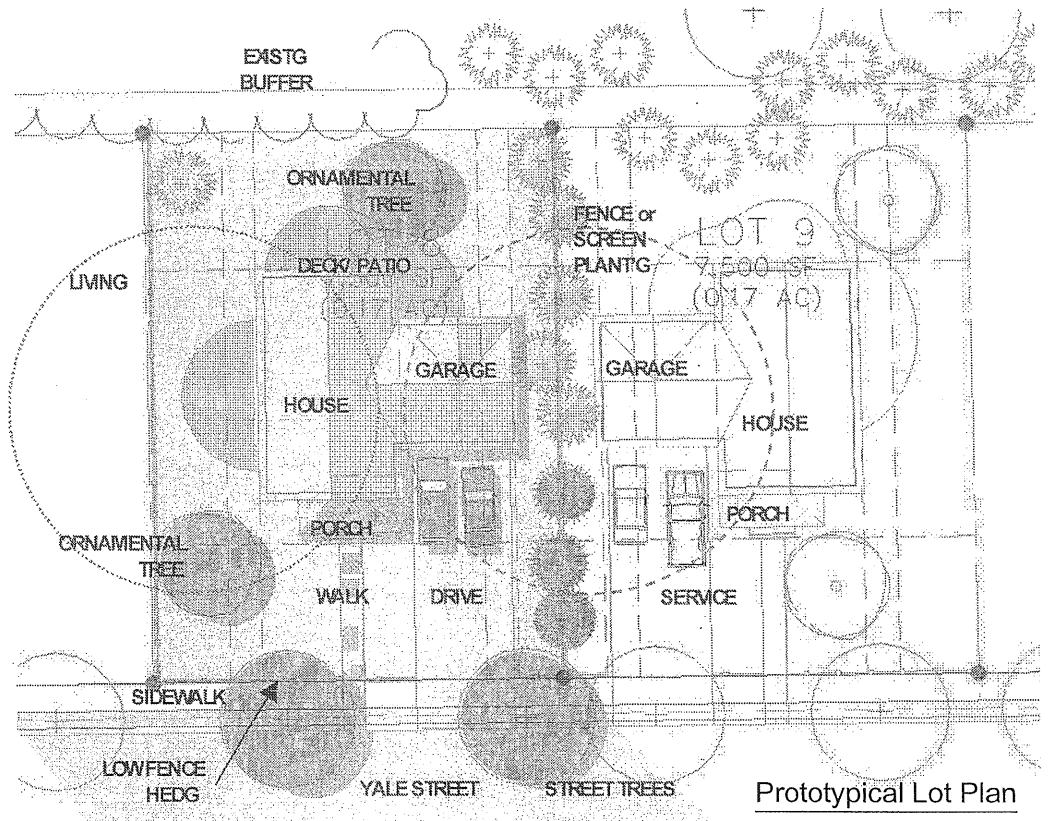


Land Use Consultants, Inc.

Yale Street Single Family Lots Design Guidelines

December 03, 2002 jn 4080

engineers
planners
landscape
architects



966 RIVERSIDE STREET

Voice (207) 878 • 3313
fax (207) 878 • 0201
www.landuse@gwi.net

AH 3

MINUTES OF NEIGHBORHOOD MEETING

A second neighborhood meeting was held at Andover College, Room 9 on November 13, 2002 at 7 p.m. In addition to approximately 17 residents were Michael Payson, James Wescott and Dave Camilla, representative from LUC.

Mike opened the meeting by explaining the changes to the original plans, 45 units to 30 units and the change in the entrance from Chelsey or Berry St. to an entrance off of Allen Ave.. An emergency exit only will access the existing Woodwinds complex. Ten house lots with individually owned, market base homes would be on Yalc Street.

A public hearing Planning Board meeting is tentatively scheduled for December 10th. We are hoping to get approval at that meeting. Construction will start sometime in March. City funding will assist in the building of the new road from Allen Avenue into the complex. The affordable housing aspect will be 50 to 60% of the median income which will be \$25 to \$35 thousand a year income. This will basically assist the working force in Portland to afford good housing.

The meeting was turned over to the public for questions.

Questions were asked regarding the blasting and the safety of their homes and foundations. There were assured that the blasting company doing the work would be a reliable firm and that they would have the proper insurance in place for any potential problems.

Sewer questions included where the drainage would go from our project. It was explained how we would have a holding reservoir on our property and run offs would occur at a slow rate as not to create flooding. Sewer pipe will be extended and connected to one on Chelsey St.

Questions were asked regarding the house lots. They will be approximately 75 feet by 100 and everything will conform to the codes of the City of Portland regarding the houses built and lot sizes.

The plan calls for a sidewalk connecting Chelsey St. to the project allowing access from Chelsey to University Park. Some residents were not in favor if this as they felt it would give access to people cutting through their yards to get where they wanted to go. The sidewalk was a request of the City and if objections were made to the Planning Board and accepted changes can and would be made in our plans.

Buffer zones were discussed, as again the neighbors were concerned about children, etc. cutting through the woods and their lawns to get to Allen Ave. or Washington Ave. rather than taking the long way around. A 35-foot buffer of natural trees is part of the plan and the individual homeowners could install fences if they desired, but it was felt that the 35-foot natural buffer would work and not create any problems for the abutters.

Questions were raised about Phase 2 and the exchange of land in University Park. That is not going to be developed in the near future and will be addressed by the Planning Board, Park Commission and councilors. There will be meetings regarding this in the future wherein people can express their feelings at that time.

The meeting was adjourned at 8:10 p.m.

Post-it® Fax Note	7671	Date	11/14	# of pages	1
To	Mike Payson	From	PAT CARTER		
Co./Dept:		Co.			
Phone #		Phone #			
Fax #		Fax #			

NAMES AND ADDRESSES OF ATTENDEES AT 11/13/02 MEETING

R. F. Emery	29 Berry Ave.
Cheryl Leeman	37 Savoy Street
Roberta & Richard Coates	94 Chesley Ave.
Warren & Janet Fifield	298 Harvard St.
Harriet Pasquine	46 Harvard Commons
Bruce Hyman	68 EdgewoodAve.
Jacqueline & David Dennison	158 Woodlawn Ave.
Elena Emery	29 Berry Ave.
Illegible Name	33 Woodlawn Ave.
Roland Gagne	45 Chesley Ave.
Terry Guerette	32 Woodlawn Ave.
Jim & Cora Banks, Sr.	21 Chesley Ave.
Tom Jewell	18 Bayview Drive

AH 4

From: Marge Schmuckal
To: Jonathan Spence
Date: Tue, Dec 3, 2002 12:27 PM
Subject: Yale Court PRUD & Subdivision Plan of University Park

Jonathan,

Subdivision Plan of University Park:

LOT #10: The given envelope must be revised to meet the R-3 zoning for a side yard setback on a side street which is 20 feet. The current envelope is only showing a regular setback as if it were adjoining another piece of property instead of a street. Although envelopes are not even mentioned within the zoning ordinance, this depiction may confuse and hinder future owners and contractors.

Yale Court PRUD:

A) The revised plans adds decks to Bldgs "A" & "G". This is a problem because the ordinance says that recreation areas shall be located at least twenty-five (25) feet from dwelling units. An attached structure (deck) to a dwelling unit is part of that dwelling unit. Bldg. "A" is as close as 18.5' and Bldg "G" is as close as 20'. **This zoning conflict must be resolved.** The entire dwelling structure, including the decks shall be a minimum of 25 feet from the recreation areas.

B) The Net area calcs shown on the subdivision plan **is still not specifically showing** the 20% general reduction figure. The 20% is actually taken off if you work out the figures, but it is not detailed in the calculations. **This should be depicted on the plans** so that it will not cause confusion later on by thinking it was improperly calculated.

All other Zoning requirements are being met.

Marge Schmuckal
Zoning Administrator
12/03/02

CC: Sarah Hopkins

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

2002-0121

Application I. D. Number

5/14/02

Application Date

Yale Court

Project Name/Description

AH 5

Applicant: Court Development, LLC

Applicant

Address: 100 North Street, Portland, ME 04101

Applicant's Mailing Address

Consultant/Agent

Applicant Ph: (207) 822-4350 Applicant Fax: (207) 772-2829

Applicant or Agent Daytime Telephone, Fax

Yale Street, Portland, Maine

Address of Proposed Site

436 A009001

Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply): New Building Building Addition Change Of Use Residential Office Retail

Manufacturing Warehouse/Distribution Parking Lot

Other (specify) 30-Unit PRUD

45 sq. Ft.

R-3

Proposed Building square Feet or # of Units

Acres of Site

Zoning

Check Review Required:

Site Plan (major/minor) Subdivision # of lots PAD Review 14-403 Streets Review

Flood Hazard Shoreland Historic Preservation DEP Local Certification

Zoning Conditional Use (ZBA/PB) Zoning Variance Other

Fees Paid: Site Plan \$500.00 Subdivision Engineer Review Date 5/15/02

Engineering Comments

PUBLIC WORKS ENGINEERING REVIEW...5/21/02

Public Works has reviewed the application and "conceptual" plan dated 5/14/02. However, at this point, there is not enough detailed design to offer much in the way of comment.

PUBLIC WORKS ENGINEERING REVIEW #2...10/17/02

Public Works has reviewed the plans and application dated 9/02 and offer the following comments:

1. Public Works understands the roadway, storm drain and sanitary sewer within the proposed PRUD to be private. As a result, the City will not maintain any of the referenced infrastructure within the boundaries of the proposed developments. 2. The applicant is advised to contact Carol Merritt regarding the permits and fees associated with connecting into the City's combined sewer in the Chesley Street right of way.

PUBLIC WORKS ENGINEERING REVIEW....11/21/02

Public Works has reviewed the plans and submittals dated 11/19/02 and offer the following additional comment:

1. Public Works is requesting that the plans specify the installation of a "flexible fitting" when connecting the new 8 inch PVC sanitary sewer main into the existing manhole in Chesley Avenue.

Performance Guarantee Required* Not Required

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

Performance Guarantee Accepted _____ date _____ amount _____ expiration date

Inspection Fee Paid _____ date _____ amount

Att6

From: Jeff Tarling
To: Jonathan Spence
Date: Tue, Dec 3, 2002 3:34 PM
Subject: Re: yale PRUD

Jonathan,

The proposed landscape plan, including tree planting for the Yale Street PRUD is acceptable as proposed with the following condition: that the proposed tree save area be clearly defined on final plan. The 'tree save' area descriptive language should include: locating boundaries in the field prior to cutting, prohibiting the storage of equipment and materials within the 'tree save' area.

I would be willing to meet with the development team to review planting locations and / or types.

Jeff Tarling
City Arborist

PLANNING BOARD REPORT #74-02A

YALE COURT, 30-UNIT PRUD
AND
UNIVERSITY PARK, 10-LOT SUBDIVISION

VICINITY OF YALE STREET

YALE COURT L.P. AND WESCOTT AND PAYSON II

RESPECTIVE APPLICANTS

Submitted to:

Portland Planning Board
Portland, Maine

January 14, 2003

I. INTRODUCTION

David Kamila of Land Use Consultants, Inc. has requested a public hearing before the Planning Board to present a project known as Yale Court, located in the vicinity of Yale Street. Mr. Kamila is representing the property owner, Yale Court L.P. and its principals, Michael Payson and James Wescott. Originally, this project was proposed as a 45-unit Planned Residential Unit Development (PRUD) with a mix of market rate and affordable units to be accessed off of Chesley Avenue. Because of traffic concerns, this project has been reconfigured as a 30-unit, 100% affordable PRUD with access from Allen Avenue via the to-be-constructed Yale Street. The construction of Yale Street will also provide access to lots under common ownership, which are part of the University Park Subdivision. These lots do not meet current zoning requirements and are to be reconfigured as a tandem project. The ten single-family lots will be market rate and it is the intent of the applicant to present these together as a mix of subsidized and market-rate housing type.

The PRUD project site is approximately 6.42 acres in size and is located at the southerly end of Chesley Street and Berry Avenue, both dead end streets off of Washington Avenue. The University Park Subdivision parcels are approximately 7,500 square feet each and border Yale Street to a depth of 50 feet. The property as a whole is a moderately treed parcel with slopes ranging from 1 to 20%. The site generally slopes to the southwest where an existing drainage swale directs flows onto the abutting property.

II. PREVIOUS ACTION/CLARIFICATIONS

On December 3, 2002 the Planning Board voted 6-0 to table these projects to the January 14th Meeting. The cause for the tabling was three-fold; the property boundaries of the PRUD project were unclear and as a result, dimensional calculations were difficult to interpret, items planned to be depicted on the plan were not included and a lengthy list of potential conditions of approval questioned the readiness of the project for its final hearing. In the interim, staff has worked diligently with the applicants and their representatives to remove any of the before mentioned confusion and eliminate many of the potential conditions of approval.

Project Ownership-Currently, the entity of Wescott and Payson II possesses title to property identified for the 6.42 acre PRUD, the flag appendage attached to the PRUD property, the adjacent Woodwind Apartments complex, and lots 159-195 of the University Park Subdivision. This ownership is graphically identified on the survey included in the plan packet. From this ownership, the 6.42-acre PRUD site will be removed and conveyed to the Yale Court L.P. The flag appendage will be merged with the existing Woodwinds property. The University Park lots, with the exception of 5,042 sq.ft. that is to be conveyed to Yale Court L.P. for the access drive into the PRUD, will remain under the ownership of Wescott and Payson II. This includes the University Park lots that are to be reconfigured into ten (10) new single-family lots as a component of this application.

III. SUMMARY OF FINDINGS

YALE COURT/PRUD

Zone:	R-3 Residential
Parcel Size:	6.42 acres
Number of Units:	30 units
Number of Parking Spaces	70
New Impervious Surface	1.96 acres
Adjacent Land Use:	Residential

UNIVERSITY PARK SUBDIVISION

Zone:	R-3 Residential
Parcel Size:	1.9 acres
Number of Lots:	10
Adjacent Land Use:	Residential

IV. PROPOSED DEVELOPMENT

The Yale Court PRUD consists of seven 4-unit buildings designed in the townhouse style with parking available in front. The buildings are made up of mirror-imaged pairs of individual unit types connected together, offset 4', and are either 2 or 3 bedroom units. One handicap accessible duplex is also included for a total of nine buildings with one containing a community center including laundry facilities. Elevations and floor plans have been included as attachment.

A requirement of the funding for the street construction from the City of Portland is that the single-family lots be constructed consistent with an approved set of design guidelines. These guidelines, to be deed restrictions (covenants) to ensure compliance, were formulated jointly by the applicant and City Staff and are included as attachment 15. The applicant will be working to provide illustrations to graphically demonstrate the chosen architectural theme.

V. STAFF REVIEW

The Yale Court Planned Residential Unit Development will be reviewed for compliance with the Site Plan and Subdivision Ordinances and for a DEP Stormwater Permit through delegated review authority. The reconfiguration of the University Park Subdivision will be reviewed for compliance with the Subdivision Ordinance only. The plan has been reviewed by the Inspections, Traffic, Fire, Public Works and the Planning Department.

VI. SUBDIVISION REVIEW/PRUD

1. Water and Air Pollution

The development is not anticipated result in undue water or air pollution.

2/3. Water

An existing 20" water main located in Yale Street has sufficient capacity to meet the fire protection and domestic water service demands of the project. A capacity letter is included as attachment .

4. Soil Erosion

The applicant has included a sedimentation and erosion control plan with the proposed development. The Engineering Consultant has reviewed this plan and finds it to be acceptable.

5. Traffic

The access for the project is proposed directly from Yale Street (to be constructed) with secondary emergency access through the adjacent Wind Woods Development. Yale Street is to be built to City standards by the applicant with the exception that sidewalks are only proposed for one side of the street (curbing on both sides). Staff is supportive of the request to limit the sidewalk to one side, as the programmatic future of University Park is uncertain at this time.

The PRUD will be serviced by a 24' private drive with bituminous curbing and sidewalks. Seventy (70) parking spaces are demonstrated on the site plan broken into numerous small lots.

Pedestrian circulation is enabled through sidewalks within the PRUD. The applicant has included a pedestrian connection to Chesley Avenue providing public access through the site to University Park and also providing PRUD residents non-vehicular access to Washington Avenue. An easement over the sidewalks and pathways within the PRUD enabling nonresidents to pass through to access University Park has been included.

The applicant has submitted a traffic report produced by John Murphy outlining the impact of the proposals on the area traffic network. Data used for the analysis considered the construction of 30 apartments and 23 single-family lots in contrast to what is currently proposed. The traffic report concludes that anticipated delays entering Allen Avenue will be less than 1 minute, that adequate site distances exist at Allen Avenue and that no high accident locations are in the project's vicinity. Larry Ash has reviewed this traffic analysis. His comments concurring with the report's conclusions are included as attachment 3.

6. Sanitary/Stormwater

Sanitary- The PRUD will tie into the existing 8' sanitary sewer line in Chesley Street and the to-be-constructed 8" line in Yale Street. A capacity letter from the Public Works Department is anticipated. Offered as a potential condition of approval is;

-that the applicant obtain a sewer capacity from the Public Works Department.

Stormwater- The PRUD project will create approximately 1.9 acres of new impervious surface and will require a Stormwater Permit issued under delegated authority. The project is anticipated to manage stormwater through a system of catch basins, swales, culverts and pipes with flow directed towards a proposed detention basin located in the northwest corner of the site. This detention basin will discharge to an existing drainage swale into the Northfield Green property and eventually into their detention basin. The applicant possesses an easement from Northfield Green to utilize and alter drainage on the Northfield Site. Jim Seymour has reviewed the stormwater management plan and finds it to be acceptable.

7. Solid Waste Disposal

A refuse analysis concerning solid waste was performed by the applicant that indicated that waste generated by the project would not exceed 16 cubic yards per week, The two containers proposed emptied weekly should be sufficient. These dumpsters are to be screened with a wooden enclosure.

8. Scenic Beauty

This development will not cause an undue adverse effect on the scenic or natural beauty of the area aesthetics, historic sites, significant wildlife habitat or rare and irreplaceable natural area.

9. Comprehensive Plan

This development is compatible with the City of Portland Comprehensive Plan.

10. Financial Capability

The applicant has provided an analysis of this projects funding which includes significant funding from the Maine State Housing Authority in the form of low-income housing credits, subsidies and loans, Additional funding from the City of Portland has been pledged through allocation of federal housing funds. The third source of funding is contributions provided by the developer from funds generated by the sale of the house lots. Construction financing and equity syndication proposals from Peoples Heritage Bank and the Maine State Housing Authority are on file with the City of Portland Housing Office.

11. Groundwater

The development as proposed will not adversely affect the quality or quantity of groundwater.

12. Flood Hazard/Shoreline

The site is not located in the flood hazard or shoreland zones.

13. Easements

Numerous easements are proposed as components of this project. They include utility easements, emergency access easements, drainage easements and pedestrian easements. The applicant's legal counsel has met with Corporation Counsel to review these easements. There is a clear understanding on the location, intent and necessity of all easements shown on the submitted plans. Corporation Counsel is currently reviewing the easement language. A potential condition of approval is:

-that Corporation Counsel will review and approve all proposed easements.

VII. SITE PLAN REVIEW/PRUD

1/2. Traffic

The traffic comments have been consolidated in the subdivision review section.

3. Proposed Buildings

The Yale Court PRUD consists of seven 4-unit buildings designed in the townhouse style with parking available in front. The buildings are made up of mirror-imaged pairs of individual unit types connected together, offset 4', and are either 2 or 3 bedroom units. One handicap accessible duplex is also included for a total of nine buildings with one containing a community center including laundry facilities.

4. Sewer, Storm Drain and Water

The sewer, storm drain and water comments have been consolidated in the subdivision review section.

5. Landscaping/Existing Vegetation

The proposed landscape plan includes significant quantities of plantings of a variety of species. The plan also includes a treed buffer area of 35' that rings the entire development. In areas where this buffer is inadequate it has been supplemented with additional plantings. The City Arborist, Jeff Tarling, has worked closely with the applicant to develop the plan and has approved of it as presented. The applicant has incorporated Mr. Tarling's requested language regarding the tree save are on the landscape plan.

6. Soils and Drainage

Soils and drainage have been consolidated in the subdivision review section.

7. Exterior Lighting

The applicant has provided staff with catalog cuts for 16' pole mounted fixtures that are in

compliance with the City's guidelines. In addition the applicant has provided a detailed photometric plan that is also in conformance.

8. Fire

Lt. MacDougal of the Fire Department has conditionally approved the project. His approval comments are included as attachment 6.

9. City Infrastructure

The proposed development will not place any strain on the City infrastructure as previously discussed in the traffic and stormwater section.

10. Neighborhood Meeting

The applicant has held a neighborhood meeting in accordance with the ordinance. Meeting minutes and an attendance sheet are included as attachment .

11. Planned Residential Unit Development Review

A. Design Relationship to Site

The roadways are designed to recall traditional neighborhood streets with sidewalks and street trees. The buildings are linked to each other and the streetscape through the extensive sidewalk network. The buildings have been placed in consideration of the natural topography and solar orientation.

B. Internal Design Character and Relationship to Surrounding Neighborhoods

The residential buildings are designed so that each pair of units is joined to provide massing and scale similar to single-family homes. Prominent front porches and the use of dormers work to establish a unified theme compatible with neighboring properties.

C. Recreation and Open Space

1. External Buffers

All buildings are setback more than 35' feet and are buffered through the preservation and augmentation of existing vegetation.

2. Internal Buffers

The landscaping plan for the interior of the property provides adequate buffers between units and roadways while preserving safety.

3. Passive Open Space

Passive open space is available to residents in the form of the perimeter buffer, the extensive sidewalk system and the seating area/green space provided near the community center. The adjacent University Park, linked to this project via public sidewalks, provides extensive opportunities for passive recreation.

4. Active Recreational Open Space

The PRUD regulations require 300 square feet of active recreation space per dwelling unit, with a minimum 6,000 square feet required. The applicant is proposing 14,100 square feet of recreational area. The recreational space includes a multi-purpose playfield of 3,000 square feet located on the easterly end of the site. These open space locations are accessible via stone-dust sidewalks, which were not included on the previous plans.

4. Private Open Space

Each unit, in addition to a front yard and porch, has a rear patio (6' X 8'), which is given privacy through the placement of a fence transitioning from 6' to 3-4'. This patio is proposed to be constructed out of compacted gravel. Staff offers as a potential condition of approval that:

-the individual unit rear patios be constructed out of a hard material such as concrete pavers or flagstone.

VIII. SUBDIVISION REVIEW/UNIVERSITY PARK

1. Water and Air Pollution

The development is not anticipated to result in undue water or air pollution.

2/3. Water

An existing 20" water main located in Yale Street has sufficient capacity to meet the fire protection and domestic water service demands of the project. A capacity letter is included as attachment 13.

4. Soil Erosion

The applicant has included a sedimentation and erosion control plan with the proposed development. Jim Seymour has reviewed the plans and found them to be acceptable. To ensure proper drainage, the applicant has included sample grading plans for all of the individual lots and has designated a 15' private drainage easement that forbids the placement of any structures or any re-grading. This restrictive easement will be included on all individual lot deeds.

5. Traffic

The traffic volumes generated by the ten-lot subdivision have been included in the traffic report included as attachment 2. No significant detrimental effects are anticipated on any affected intersections. Public Works has reviewed the roadway construction plans as submitted and requested minor modifications that have been included in this plan set.

6. Sanitary/Stormwater

Sanitary- The individual house lots tie into a sanitary sewer line to be constructed in Yale Street. A capacity letter from the Public Works Department is anticipated. Offered as a potential condition of approval is;

-that the applicant obtain a sewer capacity from the Public Works Department.

Stormwater- Most of the individual lot stormwater will sheet flow to the street where it will be collected in the City sewer system. Stormwater near the rear of the lots will flow westerly within the designated easement and deposit in a wetland on the abutting property (easement provided).

7. Solid Waste Disposal

Solid waste removal will be provided by the City of Portland.

8. Scenic Beauty

This development will not cause an undue adverse effect on the scenic or natural beauty of the area aesthetics, historic sites, significant wildlife habitat or rare and irreplaceable natural area.

9. Comprehensive Plan

This development is compatible with the City of Portland Comprehensive Plan.

10. Financial Capability

The applicant has provided an analysis of this projects funding which includes significant funding from the Maine State Housing Authority in the form of low-income housing credits, subsidies and loans, Additional funding from the City of Portland has been pledged through allocation of federal housing funds. The third source of funding is contributions provided by the developer from funds generated by the sale of the house lots. Construction financing and equity syndication proposals from Peoples Heritage Bank and the Maine State Housing Authority are on file with the City of Portland Housing Office.

11. Groundwater

The development as proposed will not adversely affect the quality or quantity of

groundwater.

12. Flood Hazard/Shoreline

The site is not located in the flood hazard or shoreland zones.

VIII. BLASTING

As a result of community concerns related to blasting, the City Council recently considered a moratorium on all blasting until the ordinance was revised to offer increased protection for nearby residents. As opposed to adopting the moratorium, the Council instead directed staff to produce a revised ordinance within the next 2 to 3 months with the expectation that no other projects that included blasting were anticipated. Contrary to that belief, three projects (including Yale Court) have emerged in the interim. The Department of Planning and Development has adopted an interim blasting policy that includes a requirement of a 1000' radius for pre-blast surveys and notification. The 1000' requirement will be in place until a formal blasting ordinance is adopted by the City Council. The applicant has expressed considerable concern related 1000' requirement and has only included a 500' radius in the submitted blasting report. As the other two approved projects have also had to extend the radius to 1000' (Ocean Ridge, True Street), staff recommends the following condition of approval:

*-that the applicant submit a blasting plan consistent with those previously approved for the True Street and Ocean Ridge projects including a 1000' pre-blast survey radius, an independent monitor and the use of three seismographs **or** that a blasting plan consistent with the Blasting Ordinance after it has been adopted by the Portland City Council be submitted, for review and approval prior to any blasting occurring on the site.*

IX. MOTIONS FOR THE BOARD TO CONSIDER

On the basis of plans and material submitted by the applicant and on the basis of information contained in Planning Report #74-02A relevant to the standards of Site Plan and Subdivision Review, the Planning Board finds:

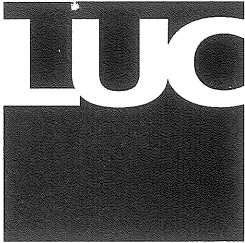
- i. That the proposed PRUD development is/is not in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions of approval:
 1. *that the applicant obtain a sewer capacity from the Public Works Department.*
 2. *that Corporation Counsel will review and approve all proposed easements.*
 3. *that the applicant submit a blasting plan consistent with those previously approved for the True Street and Ocean Ridge projects including a 1000' pre-blast survey radius, an independent monitor and the use of three seismographs **or** that a blasting plan consistent with the Blasting Ordinance after it has been adopted by the Portland City Council be submitted, for review and approval prior to any blasting occurring on the site.*

- ii. That the proposed PRUD development meets/does not meet the standards for the issuance of a DEP Stormwater Permit under delegated authority.
- iii. That the proposed PRUD development is/is not in conformance with the Site Plan Ordinance of the Land Use Code with the following conditions of approval:
 - 1. *the individual unit rear patios be constructed out of a hard material such as concrete pavers or flagstone.*
- iv. That the proposed 10-lot University Park Subdivision is/is not in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions of approval:
 - 1. *that the applicant obtain a sewer capacity from the Public Works Department.*
 - 2. *that the applicant submit a blasting plan consistent with those previously approved for the True Street and Ocean Ridge projects including a 1000' pre-blast survey radius, an independent monitor and the use of three seismographs **or** that a blasting plan consistent with the Blasting Ordinance after it has been adopted by the Portland City Council be submitted, for review and approval prior to any blasting occurring on the site.*
- v. That the proposed 10-lot University Park Subdivision is granted/not granted an exception to the curb and sidewalk requirement so as to construct Yale Street with curb only along University Park.

Attachments:

- 1. Applicants' Submittal
- 2. Traffic Report, John Murphy, P.E., 9-12-2002
- 3. Memo from Larry Ash, 10-16-2002
- 4. Memo from Tony Lombardo, 10-17-2002
- 5. Memo from Jim Seymour, 10-16-2002
- 6. Conditional Approval from Lt. MacDougal, 10-08-2002
- 7. Financial Capacity summary, 9-30-2002

8. Wetland and Soil Delineations, 12-08-2001
9. Stormwater Summary
10. Additional Materials including PRUD Narrative, 11-19-2002
11. Catalog Cuts
12. Solid Waste Generation
13. Capacity Letter, PWD
14. Jim Seymour's Review Comments, 12-03-2002
15. Draft Design Guidelines
16. Neighborhood Meeting Minutes and Attendance Sheet
17. Marge Schmuckal's Zoning Review Memo, 12-03-2002
18. Public Works Engineering Review for PRUD
19. Jeff Tarling's Landscape Memo, 12-03-2002
20. Applicants' revised submittal including responses to Mr. Seymour's 12-03-2002 comments
21. Blasting Plan
22. Jim Seymour final memo, 1-10-2003
23. Plans



Land Use Consultants, Inc.

Att 1

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

October 1, 2002

4080

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

Jonathan Spence, Planner
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

Yale Court PRUD and Amended Subdivision Plan of University Park

Dear Jonathan:

I am pleased to submit the attached Major Site Plan Application for Yale Court on behalf of Yale Court Development Co., LLC. I am also submitting a Major Subdivision Application for an Amendment to the existing University Park Subdivision on behalf of Wescott & Payson II. Yale Court Development Co., LLC and Wescott & Payson II are separate companies controlled by the same Principal Owners Mike Payson and Jim Wescott. The two projects are being developed concurrently, however due to the different funding methods they are under separate ownership. The site that these two projects will occupy is essentially the same area that we presented as a 45-unit PRUD at the May 28, 2002 Workshop.

Yale Court is now scaled back to a 30-unit, 100% affordable PRUD, which is funded through the Maine State Housing Authority. The 10 individual lots are reconfigured from some of the existing lots in the University Park Subdivision, which includes Yale Street, a paper street.

Wescott & Payson II will be constructing Yale Street to provide access to the 30-unit PRUD as well as providing frontage and access to the 10 house lots. The 10 house lots and 30 town houses, when viewed together, provide a mix of subsidized and market rate housing types.

The following narrative describes the site and the proposed development in relation to the ordinance requirements:

Existing Site:

The project site is located at the westerly end of Chesley Street and Berry Avenue, which are both dead end streets off of Washington Avenue. Both Chesley Street and Berry Avenue are developed with detached single-family

966 RIVERSIDE STREET
PORTLAND, MAINE 04103

voice (207) 878 3313
fax (207) 878 0201
www.landuse@gwi.net



homes. The property is also bounded by Yale Street (a paper street) to the south; Woodwind Apartments to the east and Northfield Green Apartments to the north. In general the site is wooded with mixed growth forest. Slopes range from 1 to 20 % and the site generally slopes to the southwest, where an existing drainage swale flows onto the abutting Northfield Green site. Soils are generally shallow to bedrock and will require blasting for site grading and utility installation.

A boundary and topographic survey has been completed by Titcomb Associates and includes some small areas of wetlands, which were delineated by Mark Hampton Associates, Inc.

Zoning & Density:

The site is zoned R-3, which permits 1 dwelling unit per 6,500 square feet of net residential area, 50 feet of road frontage and 75 feet minimum lot width.

The 10 single-family house lots generally contain 7,500 square feet because they were reconfigured from existing 50' by 100' lots in the University Park Subdivision. In order to meet current zoning with 75' width, 2 lots measuring 75' by 100' were created from each 3 existing lots. The lots will also be subject to some design guidelines to insure a consistent level of quality and a sense of neighborhood that relates to the adjacent townhouses.

The 30 townhouses are designed according to the PRUD standards, which require a minimum lot size of 3 acres, a maximum of 6 dwelling units in one building and a maximum average of 5 dwelling units per building in the overall project. The property line setback is 35 feet for buildings with 4 or more dwelling units. The maximum building length is 100 feet without garages. The zone also requires a minimum of 300 square feet of recreation open space per dwelling.

The PRUD site contains approximately 363,643 square feet (8.3 acres) in total. After deducting 163,274 square feet (2.6 acres) for the following: inaccessible areas (84,168 s.f.), 20% for roads (50,092 s.f.), stormwater detention area (21,000 s.f.) and wetlands (8,041 s.f.) yields 200,369 square feet of net developable area. Dividing 200,369 square feet by 6,500 square feet per dwelling unit yields 30.8 units allowed.



Project Layout, Access and Parking:

The project is a reflection of the surrounding neighborhood by fronting buildings on the access roads to create a townhouse feeling. The buildings consist of a mix of two and three bedroom townhouses and single level accessible flats.

The main access to the site has been changed from Chesley Street to Yale Street, which the developers will construct to City standards (50' ROW, 32' pavement, granite curbs, 4' esplanade with street trees, 5' bituminous sidewalk on one side). Emergency access will be provided by a gravel driveway to the neighboring Woodwind Apartments, which are also owned by Wescott & Payson.

The access drive to the PRUD will be 24 feet wide with bituminous curbs, an esplanade, bituminous sidewalks and street trees on both sides. Additional trees will also be planted in the front yards, which typically are set back 25 feet from the edge of roads or parking.

Parking is provided on the basis of 2 spaces per each dwelling unit and 1 additional space for every 6 dwelling units for visitors parking. This results in a total of 65 spaces required. We are providing 70 spaces.

A community building with a rental office, laundry and fenced play area is located near the entrance from Yale Street. The building will provide for parking and pedestrian access and connect with the open space.

Pedestrian circulation consists of sidewalks along the streets and building entrances and connecting with the city owned University Park located across Yale Street. A sidewalk and pedestrian easement could also connect with Chesley Street and provide public access through the site to University Park as well as provide residents access to Washington Avenue. We would like to discuss this issue with the Board and will follow their recommendation.

Buffers and Open Space:

The proposed project has a hierarchy of open space starting with the 35 foot wide buffer around the project perimeter and transitioning through the front, rear and side yards of the dwelling units to consolidated areas of designated open space located around the site and including the large areas of community open space in the northeast and northwest corners. An area in the north corner of the site is also designated for a stormwater detention basin which is designed as a dry basin, whereby it only fills with stormwater during heavy rainstorms.



Building Design:

The buildings are being designed by Ben Walter the Project Architect of CWS Architects. In general the buildings are made up of mirror-imaged pairs of individual unit types connected together to form 4-unit townhouses. The attached pairs are offset 4 feet horizontally to create a more interesting façade. We have proposed 7, 4-unit building clusters and 1 duplex building with both units handicap accessible. 12 of the units will be 2-bedrooms and 18 of the units will be 3-bedrooms. There will also be a community building.

Utilities:

Both projects will be provided with water, sewer, natural gas and underground power, telephone and cable television service.

A 20 inch water main is currently located in the Yale Street right of way. There is also a 4 inch water main in Chesley Street. We are proposing to serve individual lots with $\frac{3}{4}$ inch services from the 20 inch main in Yale Street. We will also extend an 8 inch main from Yale Street into the PRUD and serve each building cluster with a 2 inch service. We are also proposing to connect the 8 inch main to the 4 inch main in Chesley Street to enhance the overall water system in the neighborhood. One new hydrant is proposed on Yale Street and 2 new hydrants will be installed within the PRUD.

A 15 inch combined sewer main is located in Chesley Street. We are proposing to extend an 8 inch sanitary sewer from Chesley Street to serve the PRUD and the 10 individual lots in Yale Street.

Electric, telephone and cable television service will be extended from the existing overhead service at the end of Harvard Street off Allen Avenue. We will install a riser pole near the beginning of Yale Street and extend utilities underground to the house lots and into the PRUD to service the townhouses. Street lights are located along Yale Street and throughout the PRUD for convenience and safety.

Natural gas is available from Allen Avenue and will be extended via Yale Street to serve the PRUD.

Two trash receptacles are proposed on both ends of the PRUD site and will be serviced by a private hauler. The individual lots will use curbside trash pick-up.



Storm Drainage:

The PRUD will create approximately 1.9 acres of new impervious surfaces. This requires a Stormwater Permit from DEP, however, the City has Delegated Review Authority so the Stormwater Permit is incorporated within the normal Site Plan review process.

We are planning to collect the majority of the PRUD site's stormwater within a system of swales, culverts, catch-basins and storm drain pipes and direct the flow to a proposed detention basin in the northerly corner of the site near the end of Chesley Street. The detention basin will discharge to an existing drainage swale that flows onto Northfield Green and eventually to their detention basin near Mona Road. We have an easement from Northfield Green Associates which permits us to drain to this swale and detention basin and alter them if necessary for this drainage.

The Federal Flood Maps identify the vicinity of Mona Road, which receives the outflow from the Northfield Green detention basin as a 100-year flood plain. The city has a long-range plan to make improvements to the drainage infrastructure in this general neighborhood as part of their overall plan to improve the Fall Brook Watershed and eliminate combined sewer overflows and the potential for flooding. One phase of that plan is the installation of a separated storm drain in Chesley Street to eliminate the existing combined sewer.

We will provide for the future connection of our detention basin outlet to the separated storm drain when it becomes available. The detention basin will be designed to provide the maximum amount of detention practicable on our site to minimize any potential adverse impact to the downstream flooding near Mona Road in the interim period until it is connected to the separated storm drain planned for Chesley Street..

Yale Street drainage will be collected by curb inlets and a storm drain that will discharge through an easement between lots 3 and 4 to the same swale on the Northfield Green site that we are draining the PRUD site to.

Plans & Documents:

This submission includes the following documents (9copies):

- City of Portland Site Plan Application for the 10 lot Amended Subdivision of University Park signed by applicant. (An application was previously



filed in May 2002 for a 45-unit PRUD, we are submitting these plans for a 30-unit PRUD under that previous application)

- Application fee of \$750.00 for the 10-lot subdivision amendment.
- Letter of Financial Capability for Wescott & Payson II and Yale Court Development Company LLC.
- Traffic Impact Study prepared by John L. Murphy, P.E.
- Wetlands Report by Mark Hampton Associates, Inc.
- Soils Report by Mark Hampton associates, Inc.
- Drainage Study by Land Use Consultants, Inc.
- Erosion & Sediment Control Plan by Land Use Consultants, Inc.
- Deeds (will be submitted under separate cover)

This submission also includes the following plans prepared by LUC unless noted otherwise (9 copies):

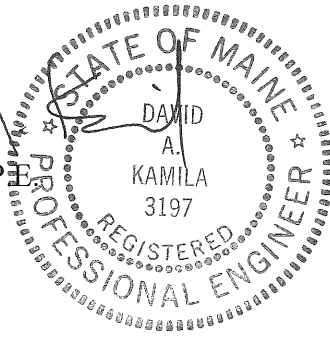
1. Cover sheet.
2. Existing Conditions / Standard boundary Survey (Titcomb Associates).
3. Recording Plat PRUD.
4. Recording Plat of Amendment to University Park.
5. Yale Street Plan/Profile
6. Yale Street Plan/Profile
7. Layout & Utilities
8. Grading, drainage & Erosion Controls
9. Landscaping & Lighting
10. Pre-Development Drainage Plan
11. Post-Development
12. Details
13. Details
14. Details
- A1. Typical Unit Plans (CWS)
- A2. Typical Building Plans and Elevations (CWS)



I trust you will find this application complete and look forward to meeting with you and the Planning Board at their workshop meeting on October 22. In the meantime, please call me with any questions or requests for additional information.

Sincerely,

David A. Kamila, PE
President



DAK;dak

Enclosures

Cc: Mike Payson, Owner
Jim Wescott, Owner
Ben Walter, AIA
Ed Marsh, MSHA

AH 2

JOHN L. MURPHY, P.E.

Civil Engineer
Traffic Engineer

221 BROWN ROAD
WEST BALDWIN, MAINE 04091
207-625-8222

Traffic Impact Wescott & Payson Project Harvard Street, Portland

Introduction

Wescott and Payson proposes to construct 30 apartment units and 23 single family homes at the end of Harvard Street. Harvard Street currently is a short dead-end street that serves the Seventh Day Adventist Church. Harvard Street connects to Allen Avenue between Forest Avenue and Washington Avenue.

PM Peak Hour Base Conditions

The weekday PM peak hour has the heaviest hourly flow on Allen Avenue. A manual count of PM peak hour traffic at Harvard Street and Allen Avenue was conducted on Tuesday, June 11, 2002. The resultant base 2002 PM peak hour is presented in Figure 1.

Project Impact

The latest edition of the Institute of Transportation Engineers' publication "Trip Generation" was used as a reference to estimate the expected impact of the 30 apartment units and 23 single family homes as follows:

	In	Out	Total
Weekday (24 hours)	210	210	420
AM Peak Hour (7 - 9 AM)	10	25	35
PM Peak Hour (4 - 6 PM)	27	17	44

The trip distribution at Allen Avenue is shown as Figure 2 and the traffic assignment (build 2002 condition) is Figure 3.

Impact Analysis

I have attached capacity analysis output showing estimated average delays for future traffic at Harvard Street and Allen Avenue. All delays are acceptable, as they do not exceed intersection capacity and are estimated to be less than a minute.

Existing Conditions - Intersection Sight Distance

Allen Avenue at Harvard Street is 44 feet in width, which permits a through vehicle to bypass left turn traffic waiting to enter Harvard Street. Allen Avenue is posted for 35 miles per hour at Harvard Street. This requires intersection sight distance of 350 feet. Harvard Street has 385 feet of sight distance to the north and 620 feet of sight distance to the south. Thus, the minimum requirements of the Maine Department of Transportation (MDOT) for the level of traffic to be expected at this intersection are exceeded.

Existing Conditions - Accident History

The MDOT Accident Records section provided a summary printout of accidents that occurred in the vicinity of the project during the most recent three years of record (1999 - 2001). No high accident locations were identified at any intersection or any length of roadway between Woodlawn Avenue and Plymouth Street. The reported accident numbers over the three year period were as follows:

	Number	Critical Rate Factor
Allen Avenue/Woodlawn Avenue	3	0
Woodlawn Avenue to Harvard Street	4	0
Allen Avenue/Harvard Street	2	0
Harvard Street to Plymouth Street	4	0
Allen Avenue/Plymouth Street	<u>10</u>	<u>0</u>
Total	23	0.69

MDOT identifies a high accident location as having at least eight accidents in a three year period, with a critical rate factor exceeding 1.0. If over 1.0, this critical rate factor would statistically indicate that more accidents are occurring at a location than would be expected due to random occurrence.

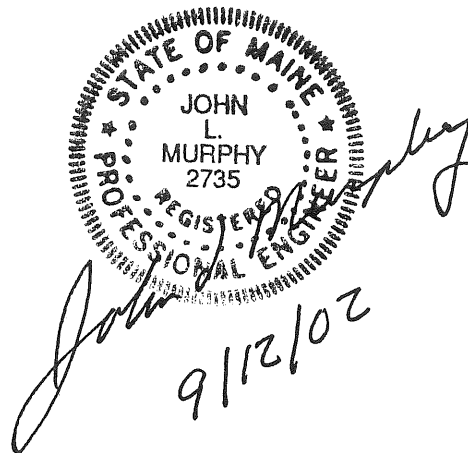
Conclusions

1. Future traffic will not experience or cause excessive delays in the vicinity of the project.

2. The Harvard Street/Allen Avenue intersection sight distance exceeds the minimum required by MDOT for the expected traffic volumes with a 35 mile per hour speed limit on the major street.

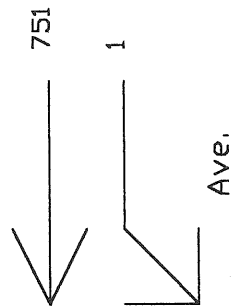
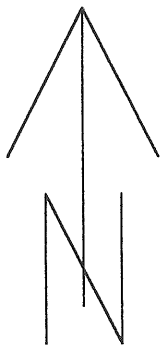
3. There is no high accident location in the vicinity of the project.

4. The expected volumes from this project are too low to require an MDOT Traffic Movement Permit. (Peak hour volume is less than 100 trips.)

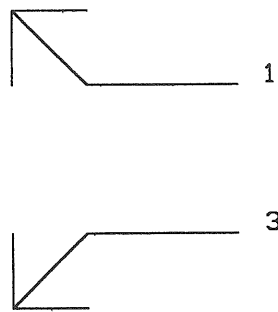


STATE OF MAINE
JOHN
L.
MURPHY
2735
REGISTERED
PROFESSIONAL ENGINEER

John L. Murphy
9/12/02



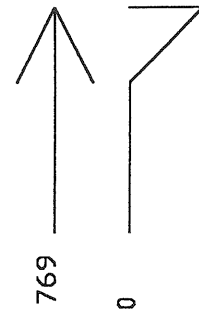
Ave.



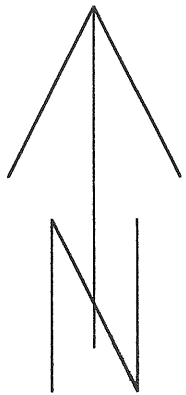
Harvard St.

No Build
2002 Peak Hour
Fig. 1

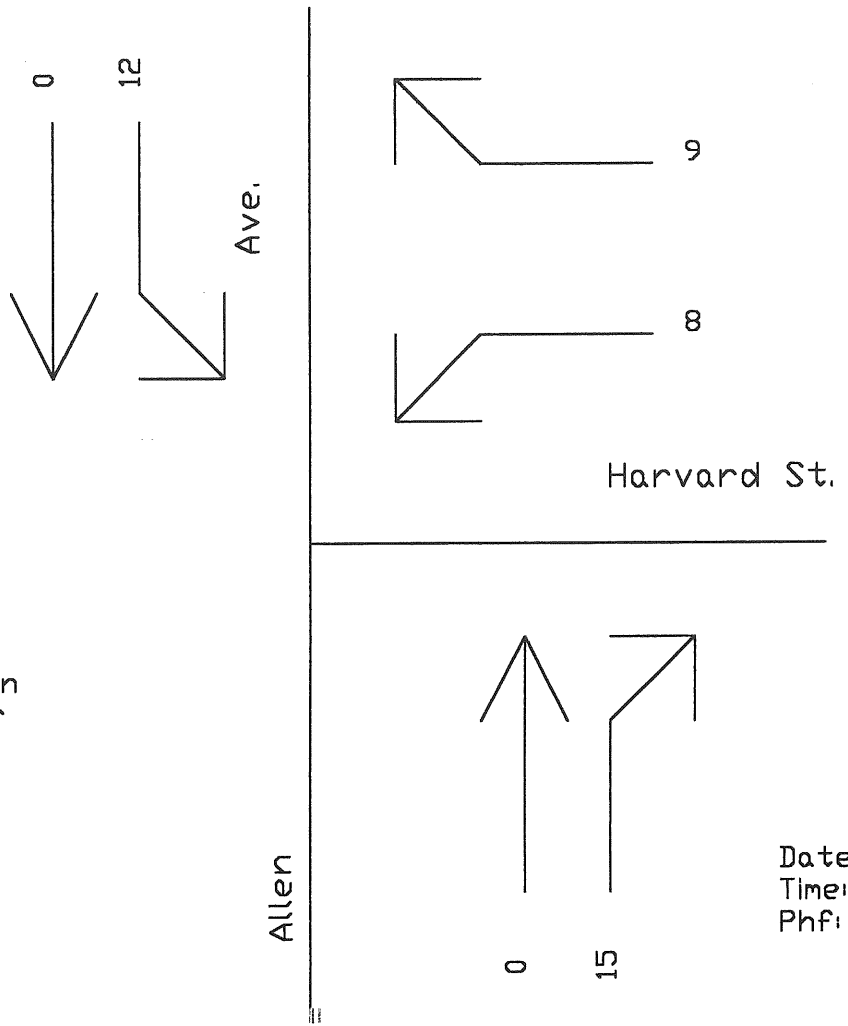
Allen



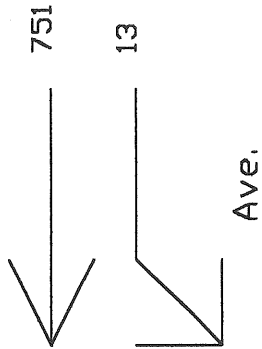
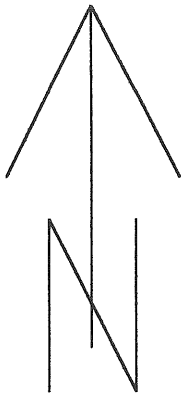
Date: 6-11-02
Time: 16:30-17:30
Phf: .94



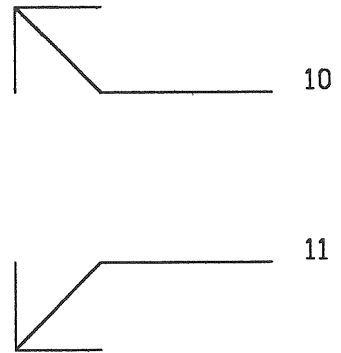
Trip Distribution
2002 Peak Hour
Fig. 2



Date: 2002
Time: PMPk.Hr.
Ph: .94

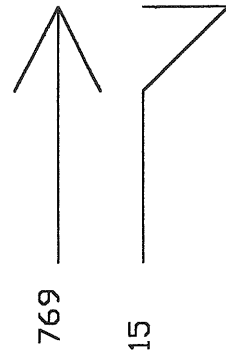


Ave.



Harvard St.

Allen



Build 45 Units
2002 Peak Hour
Fig. 3

Date: 2002
Time: PMPk.Hr.
Phf: .94

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	J. Murphy			Intersection	Allen/Harvard			
Agency/Co.	John L. Murphy P. E.			Jurisdiction	Portland			
Date Performed	06/14/02			Analysis Year	2002			
Analysis Time Period	PM Peak Hour							
Project Description <i>Build 2002 PM PkHr. Fig.3</i>								
East/West Street: <i>Harvard St.</i>				North/South Street: <i>Allen Ave.</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	10	769	15	13	751	0		
Peak-Hour Factor, PHF	0.90	0.94	0.94	0.94	0.94	0.90		
Hourly Flow Rate, HFR	0	818	15	13	798	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	11	751	10	0	367	39		
Peak-Hour Factor, PHF	0.94	0.90	0.94	0.90	0.90	0.90		
Hourly Flow Rate, HFR	11	0	10	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	11		10			
C (m) (vph)		804	108		375			
v/c		0.02	0.10		0.03			
95% queue length		0.05	0.33		0.08			
Control Delay		9.6	42.1		14.9			
LOS		A	E		B			
Approach Delay	-	-	29.1					
Approach LOS	-	-	D					

>

AH.3

From: Larry Ash
To: Jonathan Spence
Date: Wed, Oct 16, 2002 3:04 PM
Subject: University Park, Yale Street

Jonathan: I have reviewed jack Murphy's traffic assessment for this proposed development. As with other developments off a busy arterial, there will be delays upon egress onto Allen Ave. However, sight distances are adequate and I do not have any traffic issues which would prohibit the further development of this project.

AH4

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

2002-0215
Application I. D. Number
9/30/02
Application Date
University Park
Project Name/Description

Wescott & Payson II
Applicant
Yale Street, Portland, ME 04103
Applicant's Mailing Address

Consultant/Agent
Applicant Ph: (207) 882-4350 Applicant Fax: (207) 772-2829
Applicant or Agent Daytime Telephone, Fax

Yale Street, Portland, Maine
Address of Proposed Site
153A A002001
Assessor's Reference: Chart-Block-Lot

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

Proposed Building square Feet or # of Units _____ Acreage of Site _____ Zoning **R-3**

Check Review Required:

Site Plan (major/minor) Subdivision # of lots 10 PAD Review 14-403 Streets Review
 Flood Hazard Shoreland Historic Preservation DEP Local Certification
 Zoning Conditional Use (ZBA/PB) Zoning Variance Other _____

Fees Paid: Site Plan \$500.00 Subdivision _____ Engineer Review _____ Date 10/3/02

Engineering Comments

PUBLIC WORKS ENGINEERING REVIEW....10/17/02

I have reviewed the plans and application dated 9/30/02 and offer the following comments:

1. The plan & profile drawings for the proposed construction of Yale Street need to specify the following:
 - a. Underdrain in the plan view
 - b. Underdrain inverts on drainage structure schedule
 - c. Storm drain laterals for each of the ten (10) building lots extended to the property line.
 - d. Water service laterals for each of the lots
 - e. Sanitary laterals for each of the proposed lots
 - f. Curb cuts for each proposed driveway entrance need to be specified on the plans.
2. Public Works is requesting that the applicant specify in the Utility Easement description, for the easement connecting Yale Street with Yale Court, that the City may use this roadway for the purpose of backing during winter operations and maintenance of Yale Street.

Performance Guarantee Required* Not Required

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

Performance Guarantee Accepted _____ date _____ amount _____ expiration date
 Inspection Fee Paid _____ date _____ amount
 Building Permit Issue _____ date
 Performance Guarantee Reduced _____ date _____ remaining balance _____ signature

A# 5



02P121

TO: Jonathan Spence – Planner
FROM: Jim Seymour – Development Review Coordinator, Sebago Technics, Inc.
RE: Yale Court PRUD – Yale Street
DATE: October 16, 2002

Sebago Technics has reviewed the Site Plan Package and supporting documentation for the proposed Yale Court PRUD located at Yale Street. The following comments are submitted in outline format:

1. Stormwater Management

- A. The stormwater analyses must be revised using the accepted 24-hour SCS rainfall duration values (2-, 10- and 25-year values) and storm “type III” designation.
- B. The “sheet flow” segments for the subcatchment flow path should be lengthened from 50 feet to 100 feet or more to more realistically represent field conditions. These shorter lengths will underestimate precondition time of concentration or “Tc” values.
- C. A soils map should be included with the report, ideally superimposed on the drainage plans.
- D. Culverts such as the 36-inch CMP Reach 101 should be modeled as a pond rather than a reach to determine the extent of ponding, which may occur behind the culvert.
- E. Due to the sensitivity of the project area to flooding we feel that the applicant must provide stormwater calculations that show no increase for 2-year storm in addition to the 10- and 25-year storm events.
- F. The proposed stormwater detention pond shown on plans does not include an emergency spillway. There must be a minimum of 1 foot of freeboard in pond when spillway is flowing for design storm.
- G. The stormwater pond does not include an outlet apron, or temporary stabilization as shown on plan sheet 8.
- H. Recommend that outlet control structure design be modified to include an internal weir/structure due to the relatively small 3-inch diameter orifice’ susceptibility to plugging. Recommended design would include a 12” inlet pipe with trash rack, for example.
- I. Please specify granular material size to be place around outlet control structure.
- J. We believe that “bleeder” pipe specified on outlet control structure is too small and therefore susceptible to plugging.

2. Road Access/Circulation

- A. Street section detail shown on sheet 6 calls for two 16-foot wide lanes. This seems excessive for this project. These wider lanes will invite higher vehicle speeds.

3. Grading/Erosion Control

- A. It is not clear how stormwater quality standards will be met by the proposed stormwater infrastructure system.
- B. Sidewalk slope for proposed 3-bedroom townhouse unit near roadway station 8+00 approaches 10%, which is excessive.
- C. Inlet protection devices other than haybales need to be added to all basins adjacent to paved surfaces. An example would be a Silt Sac[®].
- D. Plan set indicates two line types for silt fence (cover sheet and sheet 7).

4. Utility Installation/Location

- A. There appears to be a conflict with the pipe connection between CB4 and SD#3 and SS#3.
- B. Invert "in" value is 0.83' lower than invert "out" value for 8-inch SS#8 pipe listed on sewer pipe schedule on sheet 7. Text is half tone, but in plan view it appears to be a new pipe.

5. General

- A. Single unit lot lines on subdivision plan should include bearings and distances.
- B. Ownership of 7 foot-wide strip of land between single unit lots and townhouse parcel must be resolved.

6. Details

- A. BMP detail for inlet protection on the paved surface (such as Silt Sac[®]) should be included.
- B. Appropriate utility trench details should be added for electric feeds to proposed light poles.
- C. Need pavement saw cut detail.
- D. Outlet control structure detail #7 on plan sheet 14 does not match implied structure on plan sheet 8 (no label identifying structure) or information used in stormwater model (invert elevations do not agree).

Please contact our office with any questions.

TS:ts/??

A#6

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

2002-0215

Application I. D. Number

9/30/02

Application Date

University Park

Project Name/Description

Wescott & Payson II

Applicant

Yale Street, Portland, ME 04103

Applicant's Mailing Address

Consultant/Agent

Applicant Ph: (207) 882-4350 Applicant Fax: 2077722829

Applicant or Agent Daytime Telephone, Fax

Yale Street, Portland, Maine

Address of Proposed Site

153A A002001

Assessor's Reference: Chart-Block-Lot

Approval Conditions of Fire

- 1 applicant shall provide a detail of the new hydts

- 2 applicant shall provide a detail of the fire access lane

- 3 applicants shall show hydts placed within 800' path of travel

- 4 street names must be approved by Jon Giles (engineering)

AH-7

Wescott & Payson II
Yale Court Development Company LLC
240 Harvard Street
Portland, Maine 04103
Tel: (207)797-4380
Fax: (207)878-5216

To: City of Portland
From: Mike Payson, General Partner and Manager
Re: Financial capability, Yale Court PRUD and single family subdivision
Date: September 30, 2002

The financing for Yale Court is comprised of a number of components. The majority of the financing will come from the Maine State Housing Authority (MSHA) in the form of low income housing tax credits, subsidy, and loans. MSHA completed a thorough review of the project and its financial capability as part of its funding allocation process, and has issued a "Notice to Proceed" evidencing its preliminary decision to provide funding.

It is anticipated that the City of Portland will provide additional funding for Yale Court via an allocation of its federal housing funds. On September 18, 2002 the Housing Committee voted 3-0 in favor of providing these funds.

The third source for permanent financing is a contribution by the developer of funds derived from the sale of the land. The developer currently owns the land with no debt, and therefore has the capability to meet its funding obligation.

The developer's application for MSHA funding, including more information on the above sources, as well as construction financing and equity syndication proposals from Peoples Heritage Bank and the Maine Housing Investment Fund respectively, are on file with the City of Portland Housing Office. Mark Adelson is familiar with the project, and may be able to provide further information and clarification if necessary.

Sincerely,



Mike Payson
General Partner, Manager

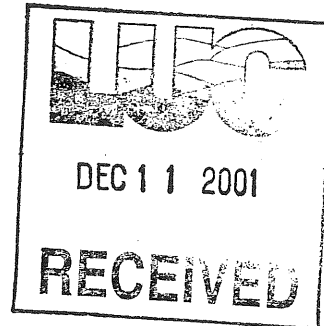
MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

881

December 8, 2001

Mr. David Kamila
Land Use Consultants, Inc.
966 Riverside Street
Portland, ME 04103



Re: Wetland Delineation, 12+ acre parcel, Harvard Street, Portland

Dear David,

On December 4, 2001 I completed a wetland delineation of a 12+-acre parcel located on Harvard Street in Portland, ME. The wetland delineation was completed in accordance with the 1987 U. S. Army Corps of Engineers Wetland Delineation Manual. This manual requires the positive presence of three parameters, wetland vegetation, hydric soils, and wetland hydrology. The wetland boundary was flagged with yellow flagging. The flagging was labeled in an alphanumeric sequence. The flags were located with GPS backpack equipment to an accuracy of less than 3.0 feet.

The wetland data points were then plotted on the base map provided by you. I have enclosed the base map for your information. The wetlands delineated are closed-depressional wetlands and drainage swales on the parcel. The wetlands are forested wetlands and the drainage swales do not meet the requirements of a stream. The wetlands would not be considered wetlands of special significance under the Maine Department of Environmental Protection Rules.

If you have any questions or require additional information please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

Enc.



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881

**Yale Street
Wescott & Payson
Soil Narrative
June 2002**



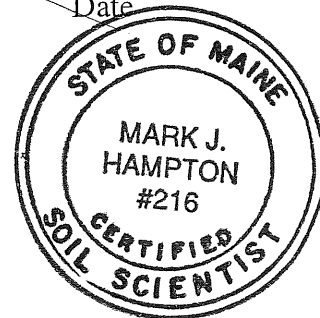
DATE: Soil Profiles observed on May 30, 2002

BASE MAP: Base plan prepared and provided by Titcomb Associates
Scale 1"=100 feet and 2.0 foot contour intervals.

GROUND CONTROL: Soil survey boundaries and test pit locations by Mark
Hampton Associates, Inc.

The accompanying soil profile descriptions, soil maps, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists. The soil map meets the minimum requirements for a Class B high intensity soil survey.

Mark J. Hampton C.S.S. #216, L.S.E. #263 June 3, 2002
 Mark J. Hampton Date





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881
Wescott & Payson
Yale Street
Portland, Maine

LYMAN-TUNBRIDGE COMPLEX SETTING

PARENT MATERIAL: Loamy glacial outwash
LANDFORM: Glaciated uplands
POSITION IN LANDSCAPE: Uppermost locations, sideslopes, shoulders and crests
SLOPE GRADIENT RANGES: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Excessively well drained Lyman (10-20 inches to bedrock) and Tunbridge (20-40 inches to bedrock)
These soils occur in a nonrepeating pattern with exposed bedrock outcrops and cannot be separated.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Reddish brown fine loamy sand, 0-4 inches
<u>Subsurface Layer:</u>	Red brown sandy loam 4-12"
<u>Subsoil Layer:</u>	Dark red sandy loam 12-18"
<u>Substratum:</u>	Brown sandy loam 18-36"

HYDROLOGIC GROUP: Group C/D
PERMEABILITY: Slow to rapid, depending on slope and bedrock outcrops.
DEPTH TO BEDROCK: Shallow (Lyman 10-20 inches) to moderately deep (Tunbridge 20-40 inches).
HAZARD TO FLOODING: None

INCLUSIONS (Within Mapping Unit)

CONTRASTING: Brayton

USE AND MANAGEMENT

Development: The limiting factor for building site development is depth to bedrock which ranges from 0 to 40 inches within this complex. Tunbridge and Lyman (deeper than 11 inches) soils are suitable for subsurface wastewater disposal.



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881

Wescott & Payson
Yale Street
Portland, Maine

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL: Derived from dense glacial till
LANDFORM: Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE: Lower positions on landform
SLOPE GRADIENT RANGES: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Dk gray brown, fine sandy loam 0-5"
<u>Subsurface Layer:</u>	Gray Brown fine sandy loam, 5-15"
<u>Subsoil Layer:</u>	Olive gray, fine sandy loam, 15-24"
<u>Substratum:</u>	Olive fine sandy loam, 24-65"

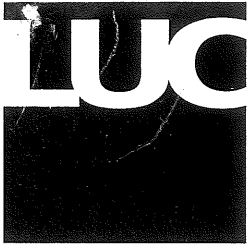
HYDROLOGIC GROUP: Group D
SURFACE RUNOFF: Moderate to moderately slow
PERMEABILITY: Moderate and moderately slow
DEPTH TO BEDROCK: Greater than 65 inches
HAZARD TO FLOODING: None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Lyman-Tunbridge Complex

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

449

October 1, 2002

4080

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

**PRELIMINARY SITE ANALYSIS
ENGINEERING REPORT
YALE COURT
PRUD AND SUBDIVISION
Portland, Maine**

INTRODUCTION

Land Use Consultants, Inc. has evaluated the proposed Yale Court development site to determine stormwater runoff rates and potential impacts which may occur as a result of the development. The 10 acre ± parcel is located in Portland, Maine near the intersection of Allan Avenue and Harvard Street (west). The site includes frontage on the existing undeveloped Yale Street right-of-way and is completely wooded with well established forested areas. Proposed access to the Planned Residential Unit Development (PRUD) site is via a new driveway from Yale Street, which will be constructed for approximately 1,150 feet in the existing City of Portland Right-of-way. The newly constructed Yale street will also provide frontage for ten single family house lots to be reconfigured from a portion of the undeveloped University Park Subdivision as approved in the late 1930's.

The present site is undeveloped, wooded land, adjacent to medium density rural residential housing development along Chesley Avenue and Berry Avenue which dead-end adjacent to the property along the easterly boundary, high density-multi-family attached dwellings to the north (Northfield Green) and south (Woodwind Apartments) and undeveloped land (University Park) along the westerly boundary. The site is situated along a locally predominant, high ridge, generally running east to west through the site near the center of the property. Due to this localized topography and existing neighborhood development, the runoff from the site generally exits the property in five locations around the perimeter. Each of these areas are described via individual small subcatchment areas for the pre-development and post development conditions so that the peak discharge rates at these locations can be compared and evaluated with regards to stormwater impacts. Brief descriptions are provided below. All of the runoff from the site ultimately finds its way via existing swales ditches and city streets to public storm sewers or to Fall Brook near Washington Avenue.

The area near Mona Road, just to the north of the project and the region around Fall Brook is known to be subject to historical flooding. The Fall Brook region is apparently located within a 100-year flood elevation indicated as Zone AE on the FIRM flood map for this area.

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The proposed development will create approximately 2.00 acres of new impervious surfaces. This site is not located in the direct watershed of a *waterbody most at risk* or in a *sensitive or threatened watershed* and is not required to meet the stormwater quality standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500, Section 4.A.(1).(c). However, this project includes more than one acre of new impervious area, and is therefore subject to the stormwater quantity standards set forth in Chapter 500, Section 3. The project must also meet the requirements of the City of Portland “Technical and Design Standards and Guidelines” which requires that projects with parking facilities greater than 25 cars provide on-site treatment.

The proposed project includes a new storm drain system with a detention pond as shown on the plans. The proposed drainage improvements will reduce the peak flow rates from the site to existing rates or below at each of the five study points. The proposed stormwater and detention measures will control and decrease the flows to Fall Brook and downstream properties for the developed site except for a slight increase for the two year storm event for flow into the existing Northfield Green detention pond.

As previously mentioned, a portion of this project is an amendment of the existing University Park subdivision.

METHODOLOGY

We used the S. C. S. method for computing peak runoff rates. This method accounts for soil types, existing land use, topography, vegetative cover and proposed land use for the developed portions of the property. For this study, a derivative of the S. C. S. TR-20 computer modeling method was used within HydroCAD 6.00 software. We evaluated the pre-development and post-development conditions for the proposed site. These present and future conditions were analyzed using data for a Type III, 24 hour, storm distribution, with a design frequency of occurrence of 2 years, 10 years and 25 years. All supporting data and calculations are submitted with this report.

EXISTING SITE CONDITIONS

Existing drainage from the site is divided into five small subcatchment areas. Refer to the Pre-Development Drainage Plan included with this report for a further description of the various subcatchment areas.

Subcatchment #1 includes Yale Street right-of-way and individual lots with frontage on Yale Street and is situated on the western half of the site. This area drains to an existing drainage ditch just off of the property, which conveys runoff to an existing man-made pond within the Northfield Green project near Mona Road. This is the largest subcatchment area and includes approximately half of the site. The proposed detention pond will be located in this vicinity to collect most of the runoff from the development. The outlet from this existing small pond eventually drains to Fall Brook. The runoff from this subcatchment also combines with a contribution from a small 3 acre ± off-site area including the west end of Chesley Avenue (SC #100) which drains directly to the existing ditch into the pond.

size except for Subcatchment #1 which now contains almost the entire developed site and conveys runoff to the detention pond. This new subcatchment (SC#11) combines with subcatchment #10 (formerly SC#1) and represents the combined runoff (controlled and uncontrolled) to the existing drainage ditch at Northfield Green. The developer has an agreement with Northfield Green which prescribes the rights to drain stormwater to the existing ditch and detention pond. The peak stormwater runoff rates are reduced to all of the areas and study points for the developed site.

Subcatchment #10 for the developed site (formerly SC#1) will be limited to the small strip of land along Yale Street near the westerly corner of the property and includes about 3.6 acres which will continue to drain directly to the existing drainage ditch similar to the existing condition. This area includes the single family house lots.

Subcatchment #11 includes approximately 3.8 acres located near the center of the PRUD site. Runoff from this subcatchment will be collected in a new storm drain and conveyed to the proposed detention pond (pond #1). Outflow from the detention Pond #1 will be combined with the runoff from SC#10 and will be drain to the existing detention pond in Northfield Green prior to release to Fall Brook. This combined runoff rate is the total discharge to the drainage ditch and is the point of comparison to the pre-development runoff

Subcatchment #20 is reduced to only 0.38 acres (formerly SC#2, 0.93 ac) and drains to the rear of the lots along the south side of Chesley Street similar to the existing site. The runoff from this subcatchment is routed through off-site subcatchment SC#100 to the existing drainage ditch.

Subcatchment #30 is reduced to 0.71 acres (formerly SC#3, 0.91 ac). This area drains to the west end of Berry Avenue and eventually to Fall Brook.

Subcatchment #40 is reduced to 0.49 acres (formerly SC#4, 0.82 ac) and continues to drain towards the Woodwind Apartments development.

Subcatchment #50 is reduced to 1.80 acres (formerly SC#5, 2.01 ac) and is substantially unchanged except for a small area of the proposed PRUD near the southerly corner which includes the back of a few new units and back yards of open lawn area.

Subcatchment #100 (existing off-site) remains unchanged for the developed conditions.

For the developed site, the majority of the stormwater from the new PRUD is collected in storm drains and conveyed to the new detention pond. The controlled discharge from pond #1 is routed to the existing drainage ditch at the outfall from the site and combined with the runoff from subcatchments #10, #20 and #100 (off-site) at reach #102 which is the point of discharge for the entire site and the evaluation point at which the comparison is made to the existing peak flow rates representing total runoff to the existing detention pond in Northfield Green. Refer to the Summary Table for better comparison of the results of this study.

CALCULATIONS AND RESULTS

Results of the pre-development and post-development calculations are indicated in the Summary Table below. Complete printouts for stormwater calculations, modeling assumptions and HydroCAD reports are attached for the Pre-Development and Post-Development conditions for each of the 2 year, 10 year and 25 year rainfall amounts. All of the smaller subcatchment areas (SC#2-Sc#20; SC#3-SC#30; SC#4-SC#40; and SC#5-SC#50) result in equal or less runoff due to the significant reductions in drainage area for all design storms. One of the more significant study points is reach #102 since this point receives the majority of the runoff from the site. The total combined peak flow rates evaluated at the existing drainage ditch (reach #102) are 10.61 cfs, 26.66 cfs, 34.70 cfs for the three design storms respectively for the existing site conditions. The controlled runoff rates released to this ditch are reduced to the existing rates or less for each of the design storm events except for the two year storm which will result in a slight increase of only 0.80 cfs. Since all of the subcatchment areas each eventually flow to Fall Brook a short distance down stream from the site, this small increase associated with the two year storm is effectively offset by a corresponding reduction of -0.56 cfs (combined) from the smaller subcatchment areas. The runoff from this location drains through an undeveloped area directly into the drainage ditch and into the existing detention pond and will have minimal impacts associated with only the two year storm and will not increase or contribute to flooding or ponding. Since the ten year and twenty five year peak rates are significantly reduced in all subcatchment areas for the developed site, the net downstream impacts will remain basically unchanged or slightly improved as a result of the new storm drain system, detention ponds and controlled runoff from the development.

No significant adverse impacts are expected as a result of the slight increase produced by the two year storm since the existing drainage swales and stream channels are stable and more than adequate to receive the relatively small amounts of flow occurring during the two year storm. This slight increase occurs over an undevelopable parcel of land over which the applicant has already obtained a drainage easement. The major concern in this area is the potential for downstream flooding and significant ponding associated with the larger storm events to relieve the existing problem with historical flooding in the vicinity of Mona road and Fall Brook. Since stormwater runoff from the larger storms and the developed condition peak flow rates are significantly reduced to below existing rates for the 10 and 25 year storm we feel that the small increase occurring from the 2 year storm is not significant. Furthermore, the small increase can not reasonably be avoided by design, due to the nature and extent of the proposed storm drain and detention pond. Placing flow restrictions in the system small enough to completely control the two year rate would severely restrict the capacity of the drainage system to effectively pass the larger storms. Therefore, the applicant respectfully requests an allowance for an insignificant increase for the two year storm event.

SUMMARY TABLE						
PRE-DEVELOPMENT (cfs)				POST-DEVELOPMENT (cfs)		
Watershed (node)	2-year	10-year	25-year	2-year	10-year	25-year
Subcatchment #2 (#20-post)	0.84	2.58	3.51	0.50 (-0.34)	1.30 (- 1.28)	1.70 (- 1.81)
Subcatchment #3 (#30-post)	1.07	3.05	4.07	1.10 (+ 0.03)	2.90 (- 0.15)	3.81 (-0.26)
Subcatchment #4 (#40-post)	0.84	2.41	3.23	0.65 (- 0.19)	1.73 (- 0.68)	2.28 (- 0.95)
Subcatchment #5 (#50-post)	1.85	5.37	7.21	1.79 (- 0.06)	5.01 (- 0.36)	6.67 (- 0.54)
Subcatchment #1 (Pond #1-post)	6.02	17.25	23.10	6.16 in 3.99 out	12.93 in 5.72 out	16.15 in 6.20 out
Reach #102 COMBINED TOTAL	10.61	26.66	34.70	11.41 (+ 0.80)	26.20 (- 0.46)	33.19 (- 1.51)

STORMWATER QUALITY BEST MANAGEMENT PRACTICES

Refer to the attached Water Quality Treatment and BMP Table (Table #1) for stormwater treatment measures and BMP's for the proposed impervious surfaces and estimated total TSS removal efficiencies for the developed site. Based on our calculations we can achieve an overall areally weighted treatment factor of 25% TSS removals for treating the new impervious areas with a combination of vegetative swales, seeded buffers and detention pond calculated in series and in parallel in accordance with Section 5.4 of the *Stormwater Management for Maine, Best Management Practices* manual.

The proposed development meets the standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500.

SUMMARY AND CONCLUSION

Based on the results of our calculations, it is our conclusion that the proposed detention pond and drainage improvements will provide adequate control of stormwater runoff from the site for storms up to and including the 25 year rainfall without producing significant adverse impacts to the site or downstream reaches. The Stormwater Best Management Practices (BMP's) utilized for the development will provide a Total suspended Solids (TSS) removal efficiency of 25%. We feel that the proposed drainage and erosion control measures, if properly constructed and maintained, will reduce runoff to adjacent properties and help improve existing drainage in the vicinity of the site without degradation of existing water quality. The applicant is requesting an allowance for an insignificant increase for the two year

storm due to the impracticality of further controlling the peak flow rate which would require unreasonable design changes.

TABLE 1
YALE COURT DEVELOPMENT
STORMWATER QUALITY ANALYSIS

IMPERVIOUS AREA	DESCRIPTION	BMP	HSG SOILS	BUFFER LENGTH (ft)	SLOPE (ft/ft)	% TSS BMP REMOVAL EFFICIENCY (%)	IMPERVIOUS AREA (ac)	NET BMP %TSS REMOVAL (%)
RA	Residential units	SB	D	25	0.100	10%	0.10	1.0%
		P1	D	-	-	10%		
RB	Residential Area	SB	D	25	0.100	10%	0.22	4.7%
		VS	-	-	-	25%		
		P1	D	-	-	10%		
RC	Residential Units	SB	D	25	0.100	10%	0.17	0.9%
PA	Roads, Parking	P1	D	-	-	10%	0.45	2.5%
PB	Roads, Parking	VS	-	-	-	25%	0.88	15.7%
		P1	D	-	-	10%		
PROJECT TOTALS							1.82	25%

KEY
Impervious Areas

P = Impervious areas, parking lot, community buildings, etc.
R = Residential Units
A, B, C = Treatment areas

BMP's

VS = Vegetated Swale
SB = Seeded Buffer
P = Det Pond

SAMPLE CALCULATIONS

Parallel Treatment - Impervious Area PA

Net BMP %TSS Removal
= (seeded buffer %TSS removal) * (impervious area / total project impervious area)
= (0.10) * ((0.45 ac) / (1.82 ac)) = **2.5%**

Series Treatment - Impervious Area Rb

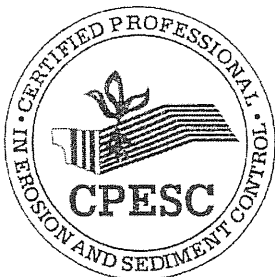
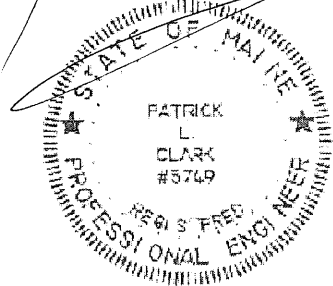
Net BMP %TSS Removal
= [1 - ((1 - seeded buffer %TSS removal *see note 1*) * (1 - vegetative swale %TSS removal) * (1 - det pond %TSS removal))] * (impervious area / total project impervious area)
= [1 - ((1 - 0.10) * (1 - 0.25) * (1 - 0.10))] * (0.22 ac / 1.82 ac) = **4.7%**

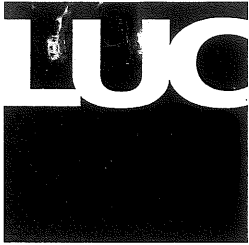
Notes:

1) All residential Units were assumed to have a 10% TSS treatment credit for lawn areas.
This credit is associated with a worst case scenario of a 25' seeded buffer in Hydrologic Group 'D' Soils with 15-30% slopes.

Prepared by:

Patrick L. Clark, PE





Land Use Consultants, Inc.

A410

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

November 19, 2002

4080

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

Jonathan Spence, Planner
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

Final Plans - Yale Court PRUD and Amended Subdivision Plan of University Park

Dear Jonathan:

I am pleased to submit the attached Final Plans and documentation for Yale Court on behalf of Yale Court Development Co., LLC. I am also submitting Final Plans and documentation for the proposed Amendment to University Park Subdivision on behalf of Wescott & Payson II. These two projects were presented at the October 22, 2002 Planning Board Workshop. We have revised the plans and provided additional documentation as requested by the Planning Board at that meeting and during follow-up discussions and review with staff as follows:

Yale Court - PRUD

- The two proposed handicap accessible units have been relocated westerly and are now directly in front of the proposed handicap parking stalls.
- Each dwelling unit has a back yard patio space that is dedicated to their exclusive use and a privacy screen is located between the abutting unit.
- A playground for young children is located behind the community center.
- Additional details and notes for preservation of existing trees within the 35 foot buffer have been added along with some new plantings and fencing to enhance the screening where grading occurs near the project boundary.
- Details of the dumpster enclosure have been added to the plans and a letter from Waste Management regarding estimated quantities is attached.
- The Emergency Access to the Woodwinds is detailed on the plans and a plan showing the routing through Woodwinds to Harvard Street is

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included in the plan set. A crash gate is also proposed to control this access.

- A note was added to the Recording Plat that states the City will not provide any services to the project for road maintenance, trash removal and snow plowing.
- A stonedust walk was added to provide access to the end of Chesley Street and the sidewalk was extended along the south side of the westerly entrance drive from Yale Street to allow better pedestrian access to Yale Street and University Park.
- Additional stormwater treatment has been provided by adding a pre-treatment swale and increasing the size of the detention basin. The details are included on the plans and revised calculations are attached.
- A narrative is attached which explains how we have addressed the specific PRUD standards contained in the Ordinance.
- Draft legal documents addressing the real estate transfers, various easements and tenant rights and responsibilities will be submitted under separate cover.

University Park Lots

- A plan showing proposed grading for the 10 individual house lots is included in the plan set.
- The conceptual grading for lot 1 does not exceed 4300 square feet of wetlands impact and therefore does not require a DEP permit.
- Proposed design guidelines for the individual lots are attached.

General

- Utility company letters regarding availability of services have been requested and are attached or will be submitted under separate cover when we receive them.
- A proposed Blasting Plan has been prepared for this project, which will incorporate the new City Blasting Ordinance if and when it is adopted and is attached.



- Typical design sections for Yale Street, the Access Drive to the PRUD and the Emergency Access Drive to Woodwinds have been added to the plans.
- A Lighting Plan with photometrics is being prepared by Bennett Engineering and will be submitted under separate cover.
- Architectural Plans prepared by Ben Walter of CWS Architects are attached.
- A neighborhood meeting was held on November 13, 2002 at Andover College to discuss the project and the revisions we have made to the plans.

Plans & Documents:

This submission includes the following documents (9copies):

- Revised Drainage Study by Land Use Consultants, Inc. (9 copies of the revised Report are attached along with 1 copy of the revised calculations, 1 copy of the revised Report and calculations was also submitted directly to Jim Seymour for his peer review)
- Proposed Design Guidelines for single-family homes on the individual lots.
- A narrative explaining how we have met the PRUD standards of the Ordinance.
- Letter from Waste Management regarding projected volumes of household waste expected.
- Letters from the various utility companies regarding ability to serve the project.
- Proposed Blasting Plan.
- Soils Report by Mark Hampton Associates, Inc.

This submission also includes the following plans prepared by LUC unless noted otherwise (9 copies):

1. Cover Sheet.
2. Existing Conditions and Soils (Mark Hampton Associates)
- 1of 1. Standard boundary Survey (Titcomb Associates).
- 1of 1. Recording Plat PRUD,(sealed by Rex Croteau, PLS, Titcomb Associates)
- 1of 1. Recording Plat of Amendment to University Park, (sealed by Croteau)
6. Yale Street Plan/Profile
7. Yale Street Plan/Profile

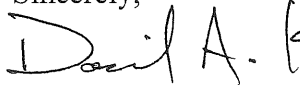


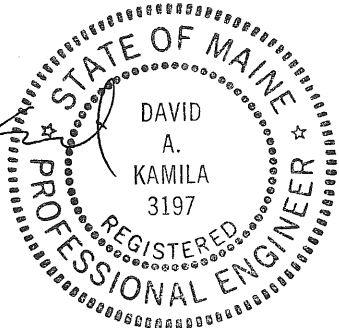
- 8. Layout & Utilities
- 9. Grading, Drainage & Erosion Controls
- 10. Landscaping & Lighting (81/2x11 lighting fixture detail attached)
- 11. Pre-Development Drainage Plan
- 12. Post-Development Drainage Plan
- 13. Vicinity Drainage Plan
- 14. Details
- 15. Details
- 16. Details

Plans of individual buildings prepared by CWS Architects are also attached.

I trust you will find this application to be complete and look forward to meeting with you and the Planning Board at their next available meeting. In the meantime, please call me with any questions or requests for additional information.

Sincerely,


David A. Kamila, P.E.
President



DAK;dak

Enclosures

- Cc: Mike Payson, Owner
- Jim Wescott, Owner
- Ben Walter, CWS Architects
- Ed Marsh, MSHA
- Rex Croteau, Titcomb Associates



November 19, 2002

4080

Yale Court PRUD Narrative

The following narrative provides a summary of the proposed design for Yale Court PRUD and compliance with Section 14-526, (14) PRUD Standards for R-3, R-5, or R-5A residential zones.

a. Design Relationship to the site:

The project layout and design of buildings, roadways, parking areas, open space, recreation amenities, landscaping, drainage facilities and control mechanisms and other site improvements have been organized and designed comprehensively to complement the natural topography, vegetation, wetlands, and solar orientation, where practicable. Where this is not practicable, planning, design and engineering measures have been employed to comply with the standards and guidelines.

- *The Project Architect, Landscape Architect and Civil Engineer have worked closely to coordinate building design and site layout.*
- *The Project Civil Engineers and Landscape Architects have coordinated closely in the layout and design of the site.*
- *The layout of the roadways and parking areas meet two principal planning criteria:*
 - 1) *The roadways are designed to recall traditional neighborhood streets with sidewalks and street trees on each side. On private roads, the Applicant would prefer to place street trees within esplanades where space permits to more closely reflect a traditional streetscape.*
 - 2) *Building Organization: The buildings are linked to each other and the streetscape through a cohesive system of tree-lined sidewalks; tree-shaded, parking lots with sidewalks and landscaped "front walks" provided to the units. This layout, as presented at workshop, provides optimal open space and daylight to each building.*

The Community Building (building "D") is the focal point when entering Yale Court. It is sited prominently at the main entrance intersection. The building architecture, porch with landscaped lawn, seating area, and enclosed play area provide an attractive

entrance amenity. The building houses a computer center, community room, management office, and laundry room with adjacent enclosed tot lot. This building will be the physical and functional focus of Yale Court with the residential buildings fanning out from there.

- *Topography and Drainage: The proposed site improvements and buildings have been located on higher ground away from the site perimeter. The low point of the site at the north end is used for storm water detention and treatment. Part of the storm water treatment system, a shallow swale behind buildings “D” & “E” is carefully designed with natural topographic shape and landscape stones accenting the edges to blend form and function into the landscape.*
- *A small wetland area at the west end of the Yale Court site has not been disturbed. There are no streams on the property.*
- *The site vegetation includes some large overstory trees, but the wooded site is comprised primarily of successional growth including red oak, white oak, with some beech and pine. In an effort to design a compact, neighborhood on challenging soils, most of the existing vegetation within the site to be graded will be removed. Existing vegetation is part of the perimeter buffer particularly on the northeast, easterly, south easterly, and northwesterly portions of the site. Where grading is required inside the 35 ft. buffer for storm water treatment/overland flow, a buffer is proposed in conformance with the City of Portland Arboricultural and Landscape Guidelines. The planting of new trees, shrubs and groundcovers in accordance with the PRUD Standards and Guidelines will mitigate the loss of existing vegetation.*
- *Solar Orientation: The proposed buildings are laid out on a north-south/ east-west grid. The orientation assures several different solar orientations including:*
 - *Front of buildings facing south.*
 - *Back of buildings facing south.*
 - *Front and back of buildings facing east and west.*
 - *North facing elevations will have early morning and late evening direct light during summer months.*
- *The layout of the buildings and open spaces will provide several options for solar orientation for the prospective tenants dependent upon user preference. Public spaces will receive generous sunlight and are oriented north south to minimize the impact of solar glare on play.*

b. Internal design character and relationship to surrounding neighborhood:

The design and layout of the development and buildings exhibit a cohesive design character and complement existing development in the surrounding neighborhood by virtue of such features as architectural style, height, scale, massing, character of exterior facades and roofs, circulation, open space, landscaping, and the transition of scale and massing to the surrounding neighborhood. The residential buildings are designed so that a pair (2) of townhouse units are joined to provide a massing similar in scale and detail to a single-family residence. Also, buildings with more than two (2) dwelling units or greater than forty (40) feet in length provide variation in roof and façade character through changes in façade setback, roof configuration, and projecting or recessed building elements so that they retain this character.

- *The buildings have been designed by CWS Architects, Portland. Ben Walter, Project Architect has extensive project experience in the design of this building type in Maine and throughout New England and in working with the City of Portland.*
- *The development and buildings will exhibit cohesiveness through the use of streetscape elements including sidewalks, prominent front building entry focus, esplanades, shade trees, and project landscaping. Such unifying, foreground elements allow the building architecture to both formally greet and informally recede and blend with the site and minimize any difference in style with the adjacent neighborhoods.*
- *The buildings are planned in small clusters. The buildings are short enough to allow stepped foundations where needed. Each detached building is divided into two smaller attached buildings. A set of paired, mirror-imaged townhouse units make up each half of the detached buildings. Unlike townhouses laid out in continuous row house manner, Yale Court emphasizes the smaller scale of the paired townhouses. The maximum number of units per building is four (4). The building scale and mass is designed to echo its neighbors. Each building is offset horizontally near the middle. The two story building mass is further scaled down by use of prominent front porches, lower roofs and dormers. Fenestration is proportioned appropriately with the building elevation to compliment the overall building character and to provide cohesiveness with the abutting single family and multifamily neighborhoods.*
- *Exterior facades are clad in horizontal siding with appropriately scaled corner trim, cornice and rake end trim, and window trim.*
- *The building mass, as described above is offset, the façade is further modulated with porch elements, front entrances, and individual*

exterior entrances to provide individuality and reflect traditional town house and single family “front door” characteristics.

- *Buildings are set back more than the 35 ft. required providing additional opportunity for buffering and open space. Where grading is required within the 35 ft. buffer, additional plantings are proposed to comply with the Arboricultural Guidelines for PRUD perimeter buffers.*

c. Recreation and Open space:

All open space on the site shall be integrated into the development and designated on the site plan. Each development shall have the following features:

1. External Buffers: An “effective and permanent screening” from neighboring properties and roadways.

- *As noted above, all buildings have been set back farther than the 35’ perimeter setback. Similar or more intensive multifamily development abuts the Yale Court site on the south easterly and northwesterly boundaries. A perimeter buffer will employ several devices:*
 - *Preserving the existing vegetation within the 35 ft. setback. See northwesterly, easterly and southeasterly boundaries;*
 - *Infill and new buffer planting in compliance with Sec. 5.2 of the City’s Arboricultural Standards and guidelines. This buffer will include mixed deciduous trees and mixed evergreens, irregularly spaced to establish a naturalized, woodland effect.*
 - *“Mechanical methods” Earthwork/ Grading is required along the back of the parcel near the end of Chesley Street for construction of a detention basin and a swale to provide both storm water detention and treatment values. A combination of a landscape buffer and a 6 ft. height stockade fence is proposed where the landscape buffer is less than 35 ft. This includes the westerly lot line of Nappi, the westerly and southerly lot lines of “Designated Properties” and the southerly lot line of Coates.*

2. Internal Buffers: Areas planted, maintained and located in such a manner as to provide privacy between units and buildings and paved areas and screening of parking, utilities, roadways, waste collection facilities and storage facilities.

- *The Landscape Plan provides for both perimeter and interior landscaping. Interior landscaping includes street trees, mixed evergreen trees for screening and contrast, two (2) shade trees per*

unit, and deciduous, evergreen, and broadleaf evergreen shrub mix. There are two (2) dumpsters on-site. Each has a fenced enclosure as is also screened with a planting of evergreen shrubs and trees.

3. Passive recreational open space: Open spaces, designated and improved with such features as gardens, picnic areas, walking trails, benches and lawn and seating areas.
 - *The perimeter of the site provides the predominant, passive open space with each housing unit enjoying ample open space and light beyond the private rear yard open space. Sidewalks are provided which interconnect the development and extend to Chesley Street. Additionally, a seating area and green space is provided outside the Community Building. The primary passive open space for this project will be the adjacent University Park that is linked to Yale Court by public sidewalks.*
4. Active recreational open space: Open spaces designated and improved for active recreational use with facilities such as tennis courts, basketball courts, multipurpose game fields, swimming pools, and children's playgrounds.
 - *Yale Court has a "Community Open space" located at the easterly end of the property. Sec.14-90 (n) requires 300 sq. ft. per dwelling unit of common open space for recreation purposes. With 30 DU, Yale Court is required to provide 9,000 sq. ft. of recreation open space. We have provided two areas. An area of approximately 7,300 sq. ft. includes a graded area 50 ft. x 60 ft. for use, as a multipurpose field is located on the easterly end of the site. A second open space area of approximately 6,800 sq. ft. is provided at the northwesterly end of the site. These areas are set a minimum of twenty-five (25) ft. from the nearest dwelling unit. A tot lot is provided next to the Community Building in a fenced area. We believe that the other active recreational uses suggested above are out of scale with the proposed development. Public basketball courts are not recommended for this scale of development. Public parks and school properties serve to meet that need.*
5. Private open spaces: Open spaces designated for the individualized use of unit owners such as yards, decks, and patios.

- *Each unit has a front yard and porch. For more private uses, units will have a rear patio area 6 ft. x 8 ft. with stone aggregate and a privacy fence 8 ft. long, with height transition from 3 or 4 ft. up to 6 ft. The accessible units will have rear patio areas concrete surfacing with rustication joints. The proposed units are slab on grade construction with floor elevations too close to grade to allow for construction of wood decks.*

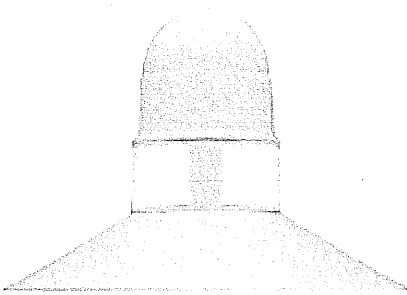
Other Miscellaneous Sec 14-90 items (g) – (l).

- *(g) Buildings are two story and do not exceed the 35 ft. maximum height.*
- *(h) 1. Maximum number of units permitted is six (6). The proposed development has a maximum of four (4) units per building.*
- *(h) 2. Does not apply site is greater than 5-acres.*
- *(i) Maximum average number of units in a building (PRUD of 5 acres or more) is five (5) units. Yale Court maximum average is four (4) units per building.*
- *(j) Maximum length of building (PRUD) is 100 ft. without garages. The proposed 4-unit buildings do not have garages. Length varies depending upon 2-bedroom townhouse buildings and 3-bedroom townhouse buildings. The maximum length of the proposed buildings is 92 ft. including four (4) 3-bedroom townhouses and an attached boiler room.*
- *(k) 2. Minimum building setback for four (4) or more DU in a building is 35 ft. One building corner of building “G” is set at the 35 ft setback line. All other buildings exceed 35 ft with some set back more than 50 ft.*
- *(l) Minimum distance required between detached PRUD dwelling units is sixteen (16) feet. Sixteen (16) feet separation is provided at Yale Court. In some cases a boiler room provides heat to two detached buildings.*
- *(n) Recreation Open Space area requirements. See item 4. above with discussion Active Recreation Open Space under PRUD standards.*

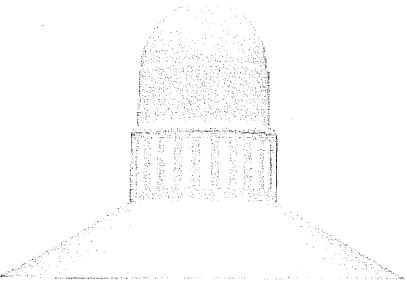
LUC on Effects

One of four modular, luminous elements can be added to softly illuminate the shade and add visual interest to the overall design.

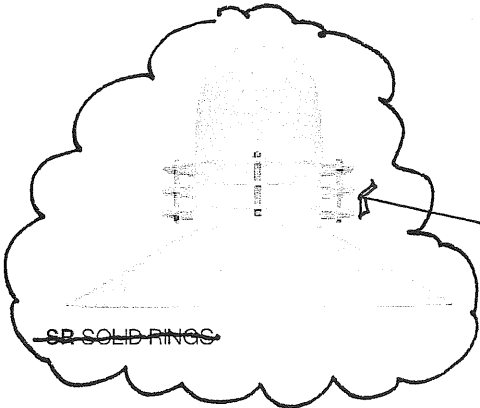
The opal lens model on the right is well suited for low mounting heights to softly illuminate general pedestrian areas.



WND 4 WINDOWS



VSL VERTICAL SLATS



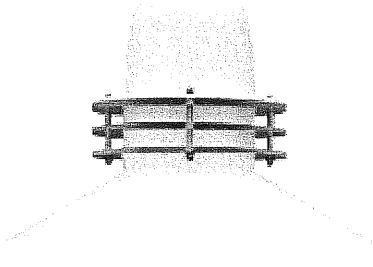
SR SOLID RINGS

8 ARCHITECTURAL AREA LIGHTING



UCM LUM BL STR OAL SLA4 PR4-4R10

Att 11



LUM LUMINOUS RINGS

The luminous ring (LUM) comes standard with a diffused inner lens. An optional colored lens adds edge lit color to the rings when illuminated.

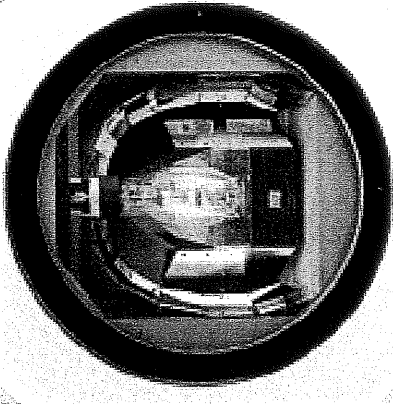
-  BL BLUE
-  RD RED
-  GN GREEN
-  MG MAGENTA

NO RINGS

Effective Illumination



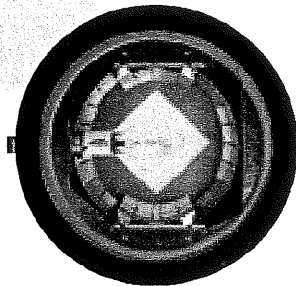
- Metal halide + HPS lamps
150 to 400 watts
- Optics rotate on 90° centers



UCM

- Metal halide + HPS lamps
50 to 175 watts
- Optics rotate on 90° centers

T6 ceramic metal halide lamps can be used to insure color accuracy and consistency. Electronic ballasts are also available to improve lamp color stability.

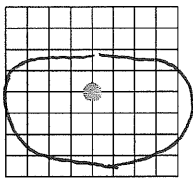


Four horizontal reflector systems are available for the Medium and Large scale Universe fixtures.

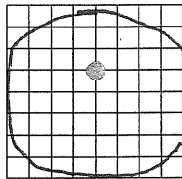
FOUR LIGHT PATTERNS

These provide maximum flexibility to precisely illuminate pedestrian areas, streets, and complete project site lighting. The horizontal reflector system is available in four light distributions for maximum efficiency and precise placement of the light. The reflector systems meet IES standards for cutoff type optics to address requirements for glare control, light trespass and light pollution. Light trespass is eliminated with the use of an optional factory installed house side shield.

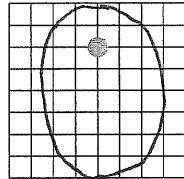
FOUR LIGHT PATTERNS



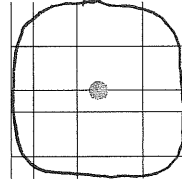
TYPE 2



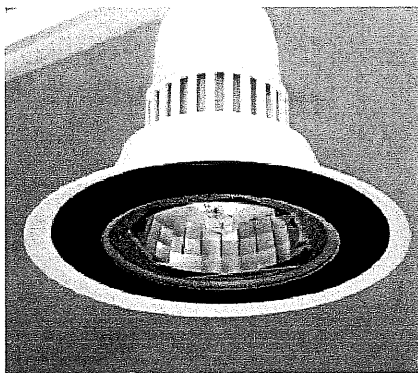
TYPE 3



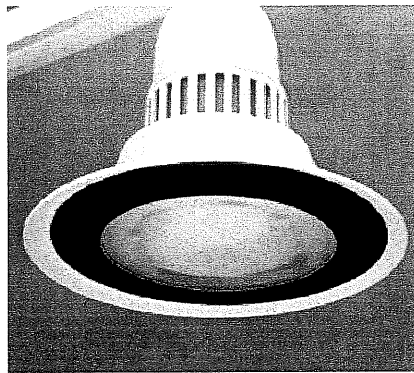
TYPE 4



TYPE 5



Optional flat tempered glass lens on the UCM (FTG option).



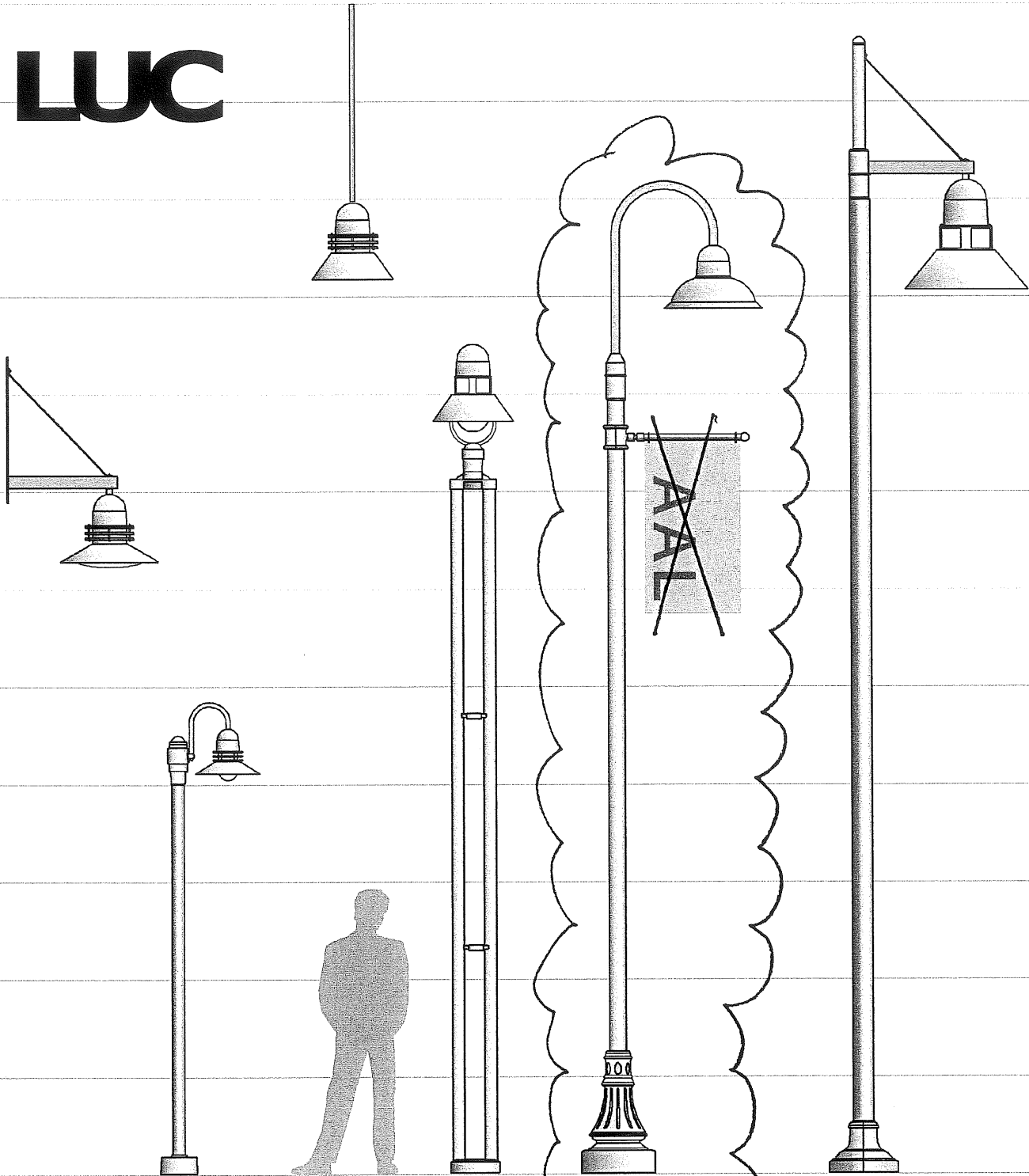
Optional flat tempered lightly diffused glass lens on the UCM (FLD option).

FLAT LENS

OPTIONAL LDL LENS

When direct viewing of the reflector or a low mounting height is present, an optional LDL lightly diffused lens is available to greatly reduce the brightness from the lamp and reflector.

LUC



UCM	UCS	UCM	UCM	UCM	UCL	HEAD
LUM	SR	LUM	WND	•	WND	LUMINOUS
STR	STR	ANG	ANG	BEL	ANG	HOOD
WMA17	PCVS	PMS	PM	SLA7	SLA17	ARM
•	PR3-3R8	•	2P-14	DB3-4R16, BBS4-24	PR5-5R20, BC6-5	POLE

16 ARCHITECTURAL AREA LIGHTING

AH
1



WASTE MANAGEMENT

2000 Forest Ave.
Portland, Maine 04103
(207) 797-8290
(207) 797-8129 Fax

October 24, 2002

Mr. Jim Wescott
Wescott and Payson
240 Harvard Street
Portland, Maine 04101

Re: Solid waste generations for Yale Court

Mr. Wescott:

The total solid wastes generated by the proposed property at Yale Court should not exceed 16 cubic yards per week. The two pads planned for the site can accommodate the containers necessary to collect the material on site. Once the containers are delivered they will be placed on a weekly pick up schedule for collection and final disposition at Regional Waste Systems in Portland, Maine, the licensed disposal facility for the City of Portland.

I hope this letter is sufficient for your needs, if there is any further information or documentation you require, please do not hesitate to call me directly at 797-6206 ext.107 or on my cell at 603-321-0316.

Sincerely,

Geoff Holt
Account Representative
Waste Management of Maine



Portland Water District

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

(207) 774-5961
FAX (207) 761-8307
www.pwd.org

November 14, 2002

Mr. Patrick L. Clark, P.E.
Land Use Consultants, Inc.
966 Riverside Street
Portland, Maine 04103

Re: Yale Court: Yale St, Portland

Dear Sir:

The Portland Water District has a 20" water main in Yale Street, Portland, near the proposed site. A test on a nearby hydrant produced the following results: static pressure 99 psi; pito pressure 46 psi; with a flow of 1138 gpm. With these results in mind, the District feels we have sufficient capacity available to serve this proposed project and meet all normal fire protection and domestic water service demands. **Please notify your plumber of these results so that they can design your system to best fit the available pressure.**

With certification by the developer that all required permits have been received, we look forward to serving this project.

Sincerely,

PORTLAND WATER DISTRICT

David W. Coffin, PLS
Engineering Supervisor

A#14



02P121

TO: Jonathan Spence – Planner
FROM: Jim Seymour – Development Review Coordinator, Sebago Technics, Inc.
RE: Yale Court PRUD – Yale Street
DATE: December 3, 2002

Sebago Technics has reviewed the revised Site Plan Package and supporting documentation for the proposed Yale Court PRUD located at Yale Street. The following comments are submitted in outline format:

1. Stormwater Management

- A. The “sheet flow” segments for the subcatchment flow path should be lengthened from 50 feet to 100 feet or more to more realistically represent field conditions. These shorter lengths will underestimate precondition time of concentration or “Tc” values. The lengths of flow for SC-5 & 6 still seem to be too short.
- B. The proposed stormwater detention pond shown on plans does not include a conventional riprap emergency spillway. The plans show a structural catch basin with an oversized pipe to be the overflow. This design may pose problems from obstructions blocking the orifices used for the outlet control. The design notes a grate to be used as the trash rack but no detail has been shown for the grate or the size of the openings. The concern is that the grates could be a maintenance issue for clogging of debris. The higher orifice models as a 24” orifice when the actual grate will restrict the flows far less. If these orifices due plug then the pond could permanently have a wet bottom. We suggest installing a riprap spillway on the NE end of the pond, and either keep or eliminate the grate atop the outlet structure.
- C. The detention pond shall have a typical cross section to show riprap section and design stage elevations for the 2,10, and 25 yr storms.
- D. Due to the potential for a permanent water or saturated pond bottom, the pond shall be constructed with either a vegetative or structural barrier to keep children or pedestrians from accessing the pond contents.

2. Road Access/Circulation

- A. Street section detail shown on sheet 6 calls for two 16-foot wide lanes. This seems excessive for this project. These wider lanes will invite higher vehicle speeds. The road width will require reviewing, by the City’s Traffic Engineer. Elimination or reduction to 24 ft instead of 32 ft of paving will reduce vehicle

speeding, environmental impacts, and cost. However, without knowing the all of the traffic concern this decision should be left to Public Works.

- B. All of the Catch Basin connections to the Storm Drain shall be done with the installation of a Drain Manhole and not by direct wyes.
- C. On all of the internal roads, the curb type shall be vertical where the sidewalk is immediately adjacent to the curb, or no esplanade separates the sidewalk and curb.
- D. The radius and terminus of the private driveway shall be reviewed by the Fire department to assure that proper turning movements are possible for Fire Truck access. Cluster 1 may be the most difficult to turn around in.
- E. A guardrail or barrier should be installed across the end of Yale Street to discourage recreational vehicles from using the Right-of Way and causing soil disturbance.
- F. The Fire Access Lane cutting through to the adjacent development should be reviewed by the Fire Department. It may be an improvement to place a reinforced geo-textile of matting to further stabilize the grass surface and eliminate any tire rutting that can occur with the weight of a fire truck.

3. Grading/Erosion Control

- A. The stormwater quality standards appear to have been met. The proposed stormwater dry swale infrastructure system will address the majority of the quality issues. I disagree with the assumption however to use the Yard areas as treatment seeded buffers. Seeded buffers are allowed to grow naturally and are not mowed frequently as will yards. The Calculation shall be modified accordingly. We feel that the development still will have met the Standard 40% TSS removal efficiency, but it shall be documented.
- B. Sidewalk slope for proposed 3-bedroom townhouse unit near roadway station 8+00 approaches 10%, which is excessive.
- C. Inlet protection devices other than haybales need to be added to all basins adjacent to paved surfaces. An example would be a Silt Sac[®].
- D. All of the detention pond, dry swale, and ditches leading to or from either need to be incorporated into a drainage easement. Also a maintenance plan needs to be submitted discussing maintenance and inspection required and the responsible party to enforce these requirements.

4. Utility Installation/Location

- A. There appears to be a conflict with the pipe connection between CB4 and SD#3 and SS#3.
- B. Foundation drainage provisions need to be added to the PRUD units or a note added discussing how this will be addressed.
- C. The Sewer Pipe Schedule on sheet 9 should be either removed or added so that it is clear to what is supposed to be on the plans.

5. General

- A. Single unit lot lines on subdivision plan should include estimated finish floor elevations.

- B. The single-family lots should include erosion control measures and shall provide a drainage easement across the rear of all of the lots equal in width to the setback. This easement may need to continue onto the PRUD projects land to assure that the natural drainage course is maintained.
- C. Gravel walkways should be shown to connect or provide pedestrian access from the internal road to each of the Community open spaces. This may be difficult on the open space behind Cluster "3".
- D. The Subdivision plan shall have a filled in recording block added for the Registry of Deeds (blank- plan book and page). The subdivision plans shall list the Record owner and address within the Title Block. Also the plans need to be Crimped and signed by a Maine Licensed Land Surveyor.

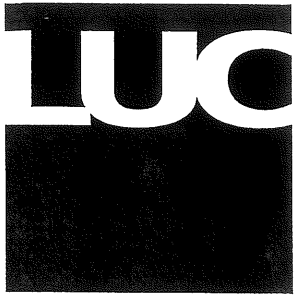
6. Details

- A. BMP detail for inlet protection on the paved surface (such as Silt Sac[®]) should be included.
- B. Need pavement saw cut detail.
- C. All revisions to stormwater outlet controls should be revised in detail.
- D. Pond cross sections are needed, along with the detail for the dry swale.
- E. A vertical bit. Curb detail needs to be added.
- F. A riprap spillway detail shall be added to the plans.

Based on my conversations with Land Use Consultants many of these revisions can be made as conditions of approval. Some of the comments we have suggested will need some Public Works input. I have not reviewed or sent for peer review the Blasting Plan since the City is still reviewing standards on this topic.

Overall we believe that these stormwater runoff and capacity issues have been or can be with revisions adequately addressed. We hope these comments help you in your discussions with the Board tonight. Please contact our office with any questions.

TS:ts/??

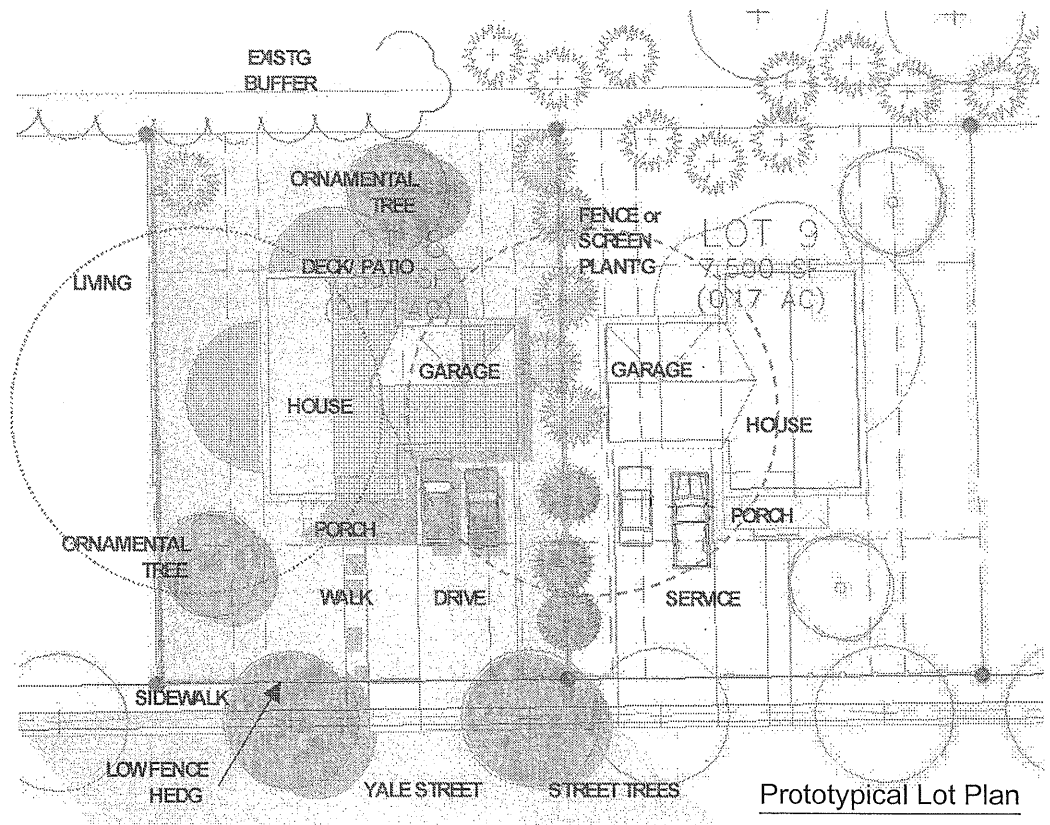


Land Use Consultants, Inc.

Yale Street Single Family Lots Design Guidelines

December 03, 2002 jn 4080

engineers
planners
landscape
architects



Prototypical Lot Plan

966 RIVERSIDE STREET

Voice (207) 878 • 3313
fax (207) 878 • 0201
www.landuse@gwi.net

Yale Street Single Family Lots Design Guidelines - 4th Revision
(As revised by Portland Planning Staff on 12-02-02 & Applicant on 12-11-02)

Suggested Guidelines

- A. Streetscape - note street tree layout is controlled by City subdivision requirements.
 1. "Front" of homes should face/ orient the street and University Park.
 2. Front yard should have improvements compatible with neighborhood.
- B. Lot Layout
 1. The 25 ft. front and rear yard set backs limit flexibility of traditional detached garage located near rear lot line.
 2. Set principal façade of the house forward of the garage facade a minimum of 4 feet.
 3. Orient houses to maximize solar exposure for each building and associated outdoor living spaces. Utilize side yard reduction to maximize solar gain when not adversely impacting solar access to an adjacent lot.
 4. Orient service side to service side of dwelling and living spaces to living spaces of dwelling on adjacent lots.
- C. Site Improvements
 1. Paved driveway and front walk (stones, asphalt, brick)
 2. Provide walkway from main entrance to public sidewalk or visible from public sidewalk.
 3. Provide private yard space at side and/ or rear of lot.
 4. Provide traditional landscaping including shade trees, hedges. Provide seasonal interest.
 5. Provide Post lamp or wall-mounted lamp for private illumination and to supplement streetlights.
- D. House design
 1. The overall unifying architectural theme will be "New England Vernacular" and will incorporate such features as multi-gable mass and roof form, articulation of windows with well proportioned trim detail, cornice and eave overhang, porches or other features appropriate to the style selected.
 2. Provide front entrance/ porch proportional to the overall building and reinforcing the streetscape. (Orient to the public spaces.)
 3. The principal mass of the house shall not be less than 1-1/2 stories. Minimum Roof Pitch shall be 7:12 (v:h).
 4. Exterior Materials such shall be natural wood, high quality vinyl clapboard, shingle materials, painted cementitious clapboard or the like.
 5. Where a garage must be forward of house, due to physical limitations of the lot (i.e. topography, ledge [or vegetation], an entry element forward of the garage, such as an arbor or the fence with gate, shall be provided.
- E. Design Review
 1. The approved design theme will become a covenant on the land and registered at the Cumberland County Registry of Deeds. The covenant will be extinguished with issuance of the initial occupancy permit.
 2. At the time a building permit application is submitted to the City for each house lot, an individual design review will be conducted by the Planning Authority to ensure compliance with the approved design theme and covenant.

Note: Underlines reflect changes/ additions by City Staff 12-03-02. Bold italics and strikethroughs indicate revisions by Applicant 12-11-02.

AH 36

MINUTES OF NEIGHBORHOOD MEETING

A second neighborhood meeting was held at Andover College, Room 9 on November 13, 2002 at 7 p.m. In addition to approximately 17 residents were Michael Payson, James Wescott and Dave Camilla, representative from LUC.

Mike opened the meeting by explaining the changes to the original plans, 45 units to 30 units and the change in the entrance from Chelsey or Berry St. to an entrance off of Allen Ave.. An emergency exit only will access the existing Woodwinds complex. Ten house lots with individually owned, market base homes would be on Yalc Street.

A public hearing Planning Board meeting is tentatively scheduled for December 10th. We are hoping to get approval at that meeting. Construction will start sometime in March. City funding will assist in the building of the new road from Allen Avenue into the complex. The affordable housing aspect will be 50 to 60% of the median income which will be \$25 to \$35 thousand a year income. This will basically assist the working force in Portland to afford good housing.

The meeting was turned over to the public for questions.

Questions were asked regarding the blasting and the safety of their homes and foundations. There were assured that the blasting company doing the work would be a reliable firm and that they would have the proper insurance in place for any potential problems.

Sewer questions included where the drainage would go from our project. It was explained how we would have a holding reservoir on our property and run offs would occur at a slow rate as not to create flooding. Sewer pipe will be extended and connected to one on Chelsey St.

Questions were asked regarding the house lots. They will be approximately 75 feet by 100 and everything will conform to the codes of the City of Portland regarding the houses built and lot sizes.

The plan calls for a sidewalk connecting Chelsey St. to the project allowing access from Chelsey to University Park. Some residents were not in favor if this as they felt it would give access to people cutting through their yards to get where they wanted to go. The sidewalk was a request of the City and if objections were made to the Planning Board and accepted changes can and would be made in our plans.

Buffer zones were discussed, as again the neighbors were concerned about children, etc. cutting through the woods and their lawns to get to Allen Ave. or Washington Ave. rather than taking the long way around. A 35-foot buffer of natural trees is part of the plan and the individual homeowners could install fences if they desired, but it was felt that the 35-foot natural buffer would work and not create any problems for the abutters.

Questions were raised about Phase 2 and the exchange of land in University Park. That is not going to be developed in the near future and will be addressed by the Planning Board, Park Commission and councilors. There will be meetings regarding this in the future whercin people can express their feelings at that time.

The meeting was adjourned at 8:10 p.m.

Post-it® Fax Note	7671	Date	11/14	# of pages	1
To	Mike Payson	From	Pat Carter		
Co./Dept:		Co.			
Phone #		Phone #			
Fax #		Fax #			

NAMES AND ADDRESSES OF ATTENDEES AT 11/13/02 MEETING

R. F. Emery
Cheryl Leeman
Roberta & Richard Coates
Warren & Janet Fifield
Harriet Pasquine
Bruce Hyman
Jacqueline & David Dennison
Elena Emery
Illegible Name
Roland Gagne
Terry Guerette
Jim & Cora Banks, Sr.
Tom Jewell

29 Berry Ave.
37 Savoy Street
94 Chesley Ave.
298 Harvard St.
46 Harvard Commons
68 Edgewood Ave.
158 Woodlawn Ave.
29 Berry Ave.
33 Woodlawn Ave.
45 Chesley Ave.
32 Woodlawn Ave.
21 Chesley Ave.
18 Bayview Drive

AH 17

From: Marge Schmuckal
To: Jonathan Spence
Date: Tue, Dec 3, 2002 12:27 PM
Subject: Yale Court PRUD & Subdivision Plan of University Park

Jonathan,

Subdivision Plan of University Park:

LOT #10: The given envelope must be revised to meet the R-3 zoning for a side yard setback on a side street which is 20 feet. The current envelope is only showing a regular setback as if it were adjoining another piece of property instead of a street. Although envelopes are not even mentioned within the zoning ordinance, this depiction may confuse and hinder future owners and contractors.

Yale Court PRUD:

A) The revised plans adds decks to Bldgs "A" & "G". This is a problem because the ordinance says that recreation areas shall be located at least twenty-five (25) feet from dwelling units. An attached structure (deck) to a dwelling unit is part of that dwelling unit. Bldg. "A" is as close as 18.5' and Bldg "G" is as close as 20'. **This zoning conflict must be resolved.** The entire dwelling structure, including the decks shall be a minimum of 25 feet from the recreation areas.

B) The Net area calcs shown on the subdivision plan **is still not specifically showing** the 20% general reduction figure. The 20% is actually taken off if you work out the figures, but it is not detailed in the calculations. **This should be depicted on the plans** so that it will not cause confusion later on by thinking it was improperly calculated.

All other Zoning requirements are being met.

Marge Schmuckal
Zoning Administrator
12/03/02

CC: Sarah Hopkins

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

118

2002-0121

Application I. D. Number

5/14/02

Application Date

Yale Court

Project Name/Description

3 Court Development, LLC

Applicant

100 Hanforth Street, Portland, ME 04101

Applicant's Mailing Address

Yale Street, Portland, Maine

Address of Proposed Site

436 A009001

Assessor's Reference: Chart-Block-Lot

Applicant/Agent

Applicant Ph: (207) 822-4350 Applicant Fax: (207) 772-2829

Applicant or Agent Daytime Telephone, Fax

Proposed Development (check all that apply): New Building Building Addition Change Of Use Residential Office Retail

Manufacturing Warehouse/Distribution Parking Lot

Other (specify) **30-Unit PRUD**

45 sq. Ft.

Proposed Building square Feet or # of Units

Acres of Site

R-3

Zoning

Check Review Required:

Site Plan (major/minor)

Subdivision # of lots _____

PAD Review

14-403 Streets Review

Flood Hazard

Shoreland

Historic Preservation

DEP Local Certification

Zoning Conditional Use (ZBA/PB)

Zoning Variance

Other _____

Fees Paid: Site Plan \$500.00 Subdivision _____ Engineer Review _____ Date 5/15/02

Engineering Comments

PUBLIC WORKS ENGINEERING REVIEW...5/21/02

Public Works has reviewed the application and "conceptual" plan dated 5/14/02. However, at this point, there is not enough detailed design to offer much in the way of comment.

PUBLIC WORKS ENGINEERING REVIEW #2...10/17/02

Public Works has reviewed the plans and application dated 9/02 and offer the following comments:

1. Public Works understands the roadway, storm drain and sanitary sewer within the proposed PRUD to be private. As a result, the City will not maintain any of the referenced infrastructure within the boundaries of the proposed developments. 2. The applicant is advised to contact Carol Merritt regarding the permits and fees associated with connecting into the City's combined sewer in the Chesley Street right of way.

PUBLIC WORKS ENGINEERING REVIEW....11/21/02

Public Works has reviewed the plans and submittals dated 11/19/02 and offer the following additional comment:

1. Public Works is requesting that the plans specify the installation of a "flexible fitting" when connecting the new 8 inch PVC sanitary sewer main into the existing manhole in Chesley Avenue.

Performance Guarantee Required* Not Required

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

Performance Guarantee Accepted _____ date _____ amount _____ expiration date

Inspection Fee Paid _____ date _____ amount _____

AH 19

From: Jeff Tarling
To: Jonathan Spence
Date: Tue, Dec 3, 2002 3:34 PM
Subject: Re: yale PRUD

Jonathan,

The proposed landscape plan, including tree planting for the Yale Street PRUD is acceptable as proposed with the following condition: that the proposed tree save area be clearly defined on final plan. The 'tree save' area descriptive language should include: locating boundaries in the field prior to cutting, prohibiting the storage of equipment and materials within the 'tree save' area.

I would be willing to meet with the development team to review planting locations and / or types.

Jeff Tarling
City Arborist



Land Use Consultants, Inc.

AA 20

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

December 20, 2002

4080

p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s

Jonathan Spence, Planner
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

Revised Final Plans - Yale Court PRUD and Amended Subdivision Plan of Lots at University Park

Dear Jonathan:

I am pleased to submit the attached Revised Final Plans and Documentation for Yale Court on behalf of Yale Court L.P. I am also submitting Revised Final Plans and Documentation for the proposed Amendment to University Park Subdivision on behalf of Wescott & Payson II. These two projects were presented at the December 3, 2002 Planning Board meeting. We have revised the plans and provided additional documentation as requested by the Planning Board at that meeting and also during follow-up discussions and review with staff as follows:

Yale Court - PRUD

- We have corrected the Recording Plat to identify the Record Owner as Yale Court L.P. instead of Yale Court Development Co., LLC the developer.
- We removed the flag lot from the plan and it will become a part of the adjacent Woodwinds Apartments where it will continue to provide overflow parking as it has in the past.
- We have added the full definition of Subdivision from the City Land Use Ordinance to the Plat.
- We removed all notes and data from the Recording Plat which related to the adjacent 10 Lot Subdivision that was not relevant to the PRUD.
- The plan includes a note providing the right for the City maintenance vehicles to be able to use the entrance driveway from Yale Street to back up and turn around. The easement deeds also include this language.

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- We have added a drainage easement around the entire drainage system including the Detention Basin, swale and pre-detention swale. We also added a 4' high wood picket fence around the detention basin and prepared a Drainage Maintenance Agreement prescribing the practices to be followed by the owner to keep the system functioning as designed.
- We added 5' walkways to the two Open Space/Recreation areas and dimensioned the required 25' set-back from nearby structures.
- We have revised our Blasting Plan to incorporate the changes recommended by Lt. McDougall with the notable exception that we have not increased the radius for the pre-blast survey. Lt. McDougall has asked us to increase the radius from 500 feet to 1000 feet in anticipation of the City adopting its own Blasting Regulations, which we understand are being drafted to include a 1000 foot inspection radius. We have begun to research this issue and have determined the typical cost is \$50 to \$100 per dwelling to perform these surveys. We feel it is an unreasonable requirement, based on the number of dwellings in this neighborhood. Our preliminary estimate of extra costs is in the ball park of \$100,000 and we feel this is excessive. We are planning to be involved in the debate over this proposal at the City Council, and will abide by the City Regulations if and when they go into effect and have stated so in our Blasting Plan. We will provide additional information at the Planning Board meeting to support our position.
- We have revised our Drainage Calculations and made several revisions and added several details to the Road and Utility Plans to address concerns of City staff and their peer reviewer Jim Seymour.
- A Lighting Photometrics Plan has been prepared by Bennett Engineering and is included with the Plan Set.
- We have added more notes and delineated the areas requiring tree preservation to make it clear where we propose to save existing trees and what the restrictions in those areas are.

University Park Lots

- We have added the full definition of Subdivision from the City Land Use Ordinance to the Plat.



- We removed all notes and data, which related to the adjacent PRUD that were not relevant to the 10-Lot Subdivision.
- We increased the side lot setback on Lot 10, adjacent to the PRUD driveway, to 20’.
- We added a 15’ wide Drainage Easement along the rear of all the lots and added a note prohibiting any obstructions within the easement which might impede flow. We also prepared a detailed grading plan to assure positive drainage from each lot.
- We have finalized the proposed Single Family Lot Design Guidelines in consultation with city staff. These will be incorporated into a recordable document
- We have added prescribed minimum sill elevations and lowest opening elevations for dwellings on each lot on the Recording Plat.

Plans & Documents:

This submission includes the following documents (2 copies). We have also delivered 1 copy directly to the City Peer Reviewer, Jim Seymour:

- Revised Drainage Study by Land Use Consultants, Inc. (LUC), (2 copies of the revised Report and calculations are attached)
- Revised Design Guidelines for single-family homes on the individual lots.
- Revised Blasting Plan.
- Draft legal documents will be prepared by Paul Bulger Esq. and submitted under separate cover.

This submission also includes the following plans prepared by LUC unless noted otherwise (9 copies):

1. Cover Sheet.
2. Existing Conditions and Soils (Mark Hampton Associates)
- 1 of 1. Standard boundary Survey (Titcomb Associates).
- 1 of 1. Recording Plat PRUD,(sealed by Rex Croteau, PLS, Titcomb Associates)
- 1 of 1. Recording Plat of Amendment to Plan of Lots at University Park, (sealed by Croteau)



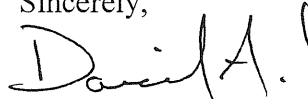
6. Yale Street Plan/Profile
7. Yale Street Plan/Profile
8. Layout & Utilities
9. Grading, Drainage & Erosion Controls
10. Landscaping Plan
11. Lighting Plan (Bennett engineering)
12. Pre-Development Drainage Plan
13. Post-Development Drainage Plan
14. Vicinity Drainage Plan
15. Details
16. Details
17. Details
18. Details
19. Details

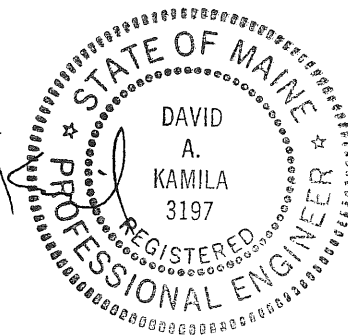
Plans of individual buildings prepared by CWS Architects are also attached.

I trust you will find this application to be complete and look forward to meeting with you and the Planning Board at their next meeting on January 14th, 2003. In the meantime, please call me with any questions or requests for additional information.

Enjoy the Holidays!

Sincerely,


David A. Kamila, P.E.
President



DAK;dak

Enclosures

Cc: Mike Payson, Owner
Jim Wescott, Owner
Paul Bulger, Esq.
Ben Walter, CWS Architects
Ed Marsh, MSHA
Rex Croteau, Titcomb Associates



Land Use Consultants, Inc.

p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

December 20, 2002

4080

Jim Seymour
Development Review Coordinator
City of Portland
% Sebago Technics, Inc.
One Chabot Street
PO Box 1339
Westbrook, Maine 04098-1339

Yale Court Development, Yale Street, Portland, Maine, Response to Technical Review Comments, December 3, 2002:

Dear Jim:

The following responses to your technical review comments, dated 12/03/02 are provided in the same order and sequence as issued in your memo.

1 Stormwater Management

- A. The sheet flow components of the T_c flowpaths for SC #5 and SC #6 have been increased to more realistically represent field conditions. However, we used a value of 80 feet rather than 100 feet as suggested. Increasing this segment to 100 feet resulted in a sheet flow time increase from approximately 20 minutes to 40 minutes for the first 100 feet. This much longer value seems even more unrealistic. Therefore, as a compromise we used a value of 80 feet resulting in approximately 30 minutes of sheet flow.
- B. The stormwater detention pond has been revised to include an emergency overflow spillway through the berm, in addition to the oversized principal spillway and overflow structure. The grate used for the original design is a special "stool-type" grate, which, as a function of its unique style offers the benefit of a full 24-inch horizontal orifice, as well as a grate to protect from debris. This grate structure will act as a horizontal weir under normal low head conditions. The grate has sufficient free area and has been sized to easily accommodate the through the berm 25 year flows with less than 4 inches of head. A copy of the capacity calculations and detail of the grate is attached.
- C. Sheet #19 has been added to the plan set to include the detention pond cross section and dry-swale details.
- D. A perimeter fence has been added to the detention pond as requested.

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2 **Road Access/Circulation**

- A. As per our subsequent conversations, the road width for Yale Street will remain 32 feet.
- B. The storm drains and catch basins in Yale Street have been redesigned to eliminate wye connections to the storm drain system. The drainage and structure tables have been revised accordingly.
- C. The internal roads and drives have been revised to include vertical bituminous curbs throughout. The Cape Cod curbs have been deleted.
- D. No technical response.
- E. A guard rail has been added to the end of Yale Street as requested.
- F. Road base stabilization fabric has added to the emergency access drive detail.

3. **Grading/Erosion Control**

- A. I disagree with your characterization of “seeded buffers” as being allowed to grow naturally and unmowed. Although this would describe a “non-wooded” buffer, which has different treatment factors in Table 6-1 of the Stormwater BMP manual, “seeded buffers”, by definition, include mowed lawns. Page #73 of the BMP manual is attached which includes the definitions of “non-wooded” and “seeded” buffers. However, as a conservative measure, I removed the TSS treatment credit factor of 10% from the stormwater quality analysis and calculations resulting in a revised net TSS removal efficiency of 49% for the project.
- B. The proposed grading near the residential units adjacent to station 8+00 has been revised as requested.
- C. Drop inlet protection devices (Silt-sack) and details have been added. Since there is no paved areas on the existing site, the hay bale barriers will be used during initial construction and grading phases of the development. The “Silt-sacks” can be added to the CB’s at an interim construction point after the base pavement has been placed.
- D. A drainage easement has been added to include the detention pond, dry-swale and ditches. A stormwater maintenance plan is attached.

4. **Utility Installation/Location**

- A. The pipe conflict between CB#4 lateral and SS#3 has been resolved.

- B. Foundation drains have been added to the plans for the PRUD units.
- C. The sewer pipe schedules have been removed from Sheet #9.

5. **General**

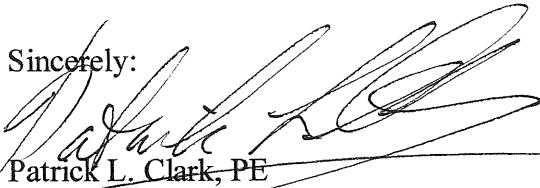
- A. Estimated finish floor elevations have been added to the single family lots. Refer to Grading and Drainage Plan and notes on Subdivision Plan
- B. Typical erosion control measures have been added to the Grading, Drainage & Erosion Controls Plan for the house lots. A drainage easement has been added to the rear of the house lots.
- C. Gravel walkways have been added to access the community recreational spaces.
- D. The subdivision plans include a registry block to provide a space for the registry to affix their stamp indicating book/page. The record owner and address has been added to the recording plans.

6. **Details**

- A. Details for Silt-sack have been added.
- B. A pavement cut/splice detail has been added.
- C. Stormwater outlet controls and structures have been detailed.
- D. Pond cross-section has been added. A detail for the dry-swale has been added.
- E. A vertical bituminous curb detail has been added to replace the Cape Cod curb detail.
- F. A riprap spillway detail has been added.

Please call if you have any questions.

Sincerely:



Patrick L. Clark, PE

Attach: Neenah grate details and calcs.
Page 73, BMP manual
Stormwater maintenance plan

YALE COURT BLASTING PLAN

1. Assessment

1.1 Introduction

The proposed development will require the excavation and removal of earthen material where ledge conditions may be encountered. The following report sets guidelines for the blasting of ledge during the construction of this project. **It is the contractor's responsibility to review and abide by any City of Portland blasting ordinances or requirements in effect at the time of blasting which may exceed the standards set forth in this report or the attached rock excavation specifications.**

1.2 Site Conditions

Currently, the proposed site for development consists of light woods with several rock-outcroppings. Abutting parcels of land are developed as mostly residential neighborhoods. The site is approximately five acres with blasting expected at various locations within the site. All utility companies with services within 500 feet must be notified of blasting within three (3) business days prior to blasting.

1.3 Proposed Blasting

Blasting will be required for the construction of roadways, buildings, stormwater management structures and utilities. Special considerations have been made during the design process to minimize the amount of blasting to the greatest extent possible. All blasting areas shall be kept to the minimum dimensions, depths and requirements as required for complete construction of all utilities, roads, walks and structures as specified on the plans.

1.4 Pre-Blast Survey

The pre-blast survey will document the existing conditions, proof of notice and whether the survey was accepted or rejected by each building owner. The contractor shall submit the notification document for review by the City of Portland before mailing or distributing such notice. The contractor's qualified inspector shall examine the interior and exterior of structures within the study area. The study area shall include all structures within 500 feet of the blasting zone. Conditions shall be documented using photos, videotape and written descriptions. The pre-blast survey shall also include an assessment of any water supply wells in the study area.

The pre-blast survey shall be completed by a licensed professional engineer or licensed specialized consultant in the State of Maine. Copies

of the pre-blast survey shall be supplied to the City of Portland two weeks prior to the commencement of any blasting.

2. Blasting Procedure

A Professional (licensed in the State of Maine) blasting contractor will be employed to conduct any blasting work in accordance with applicable State and local laws.

The blasting contractor will be required to prepare and submit a blasting plan as detailed in the attached Specifications prior to construction. Such a plan should include sketches of the proposed drill patterns, detailed blasting procedures, safety procedures and should conform with the additional requirements of this report.

2.1 Monitoring and Instrumentation

The blasting contractor shall retain an independent firm to provide a seismograph to be set up at the nearest structure to any blasting activity. The seismograph equipment to be used onsite shall have been calibrated within the previous six (6) months to a standard which is traceable to the National Bureau of Standards. Daily blast and seismic reports shall be submitted within seven working days to the Owner's Representative and the City of Portland.

If a nearby property owner submits a complaint regarding alleged blasting related damages during construction, the independent seismologist or blasting consultant shall conduct a second survey of the property within 48 hours of receiving the complaint to identify any changes in the property conditions. A condition report summary shall be submitted to the Engineer, and copied to the City of Portland, within two weeks after the second survey is completed.

2.2 Blasting Procedures

1. Blasting operations shall be conducted only when all personnel and property are clear and traffic control is in place.
2. Access to the blasting area shall be regulated to protect the public from the effects of blasting. Access to the blasting area shall be controlled to prevent unauthorized entry at least ten minutes before each blast and until the blasting supervisor has inspected and given the *All Clear* signal that is safe to enter the blasting zone.
3. Areas in which charged holes are waiting firing shall be guarded, barricaded and posted, or flagged against unauthorized entry.
4. All blasts shall be made in the direction of the stress relieved face previously marked out, or previously blasted.
5. All stemming shall be minimum as specified using clean, dry 3/8" crushed stone.

6. The blasting contractor shall insure that extra safety and judgment is exercised by his blaster to prevent the simultaneous blasting of numerous holes where the accumulative additive poundage of explosives resulting from the detonation of like millisecond delays may exceed the desired scaled distance.
7. All shots will be fired as soon as possible after loading is completed. Blasts will be scheduled so that exposure time of a loaded shot is kept to a minimum. A standard procedure to clear the blast area of all personnel and equipment, block roads and post guards to access ways into the blast area will be enforced. A blast warning signal. Audible within ¼ mile will be used. (Normally three horns at 5 minutes pre blast, two horns at 1 minute pre blast and one immediately following the shot for an all clear). The road leading to the site will be marked with warning signs showing that blasting operations are being conducted.
8. Rubber blasting mats with a specific size and weight designed for work of this type will be utilized at the discretion of the blasting foreman.
9. Blasting shall only occur as needed and shall be limited to the hours of **9:00 am to 4:00 pm daily, Monday through Friday**. Explosives shall be delivered to the job site on a daily basis. Only that amount necessary for the day's work shall be brought to the site. Explosives shall be transported and stored in approved magazines when not in use. No overnight storage of explosives shall be permitted on site.
10. Contractor shall provide written notice to the City of Portland Office of Code Enforcement in advance of anticipated blasting work including estimated schedules and dates of blasting activities. **Blasting contractor shall request written authorization from City of Portland to proceed with blasting activities. Such written authorization shall be obtained prior to commencement of blasting activities.**

2.3 Blasting Records

A record for each blast, including seismograph reports shall be kept for at least three years. The record shall include the following data:

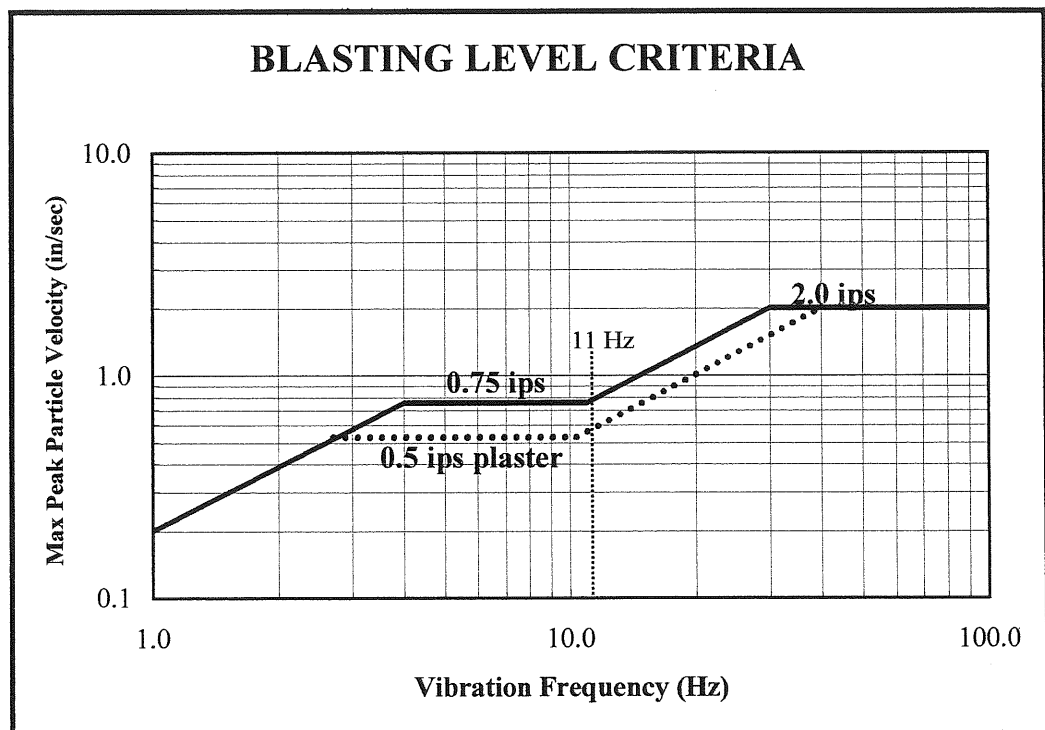
1. Name of permittee, address and phone number of operator or other person conducting the blast
2. Location, dates and time of blast
3. Name, signature and license number of blaster in charge
4. Direction and distance, in feet, to nearest dwelling, school, Church or commercial or institutional building or other structure
5. Weather conditions
6. Type of material blasted
7. Number of holes, depth of hole, burden, spacing and stemming
8. Diameter of holes
9. Types of explosives
10. Total weight of explosives used
11. Maximum weight of explosives detonated within any eight (8) millisecond period

12. Method of firing and type of circuit
13. Type of method of stemming
14. Mats or other protections used
15. Type of delay detonator used and delay periods
16. Comments or recommendations by blaster
17. Seismograph record including
 - a. Seismograph recording at exact location of seismograph and its distance from the blast
 - b. Name of person taking the seismograph reading

2.4 Blasting Limits

To monitor ground vibrations and wave frequency, seismographs which measure peak ground particle velocities in the three special components of vertical, longitudinal and transverse directions along with their correlative dominant frequencies will be used. Velocities will be measured in inches per second (IPS), and the frequency is measured in hertz (Hz). These measurements are recorded with a range of 0.01 IPS to 5.00 IPS and 2 Hz to 150 Hz. The air overpressure is measured in decibels (dB), within range of 100-142 dB. The locations of the seismographs will be determined in the field by the blasting contractor but should include the nearest structure to any blasting activity.

The following table displays limits for the maximum peak ground particle velocities.



REFERENCE: OSM alternative blasting criteria (Modified from figure B-1, Bureau of Mines, RI 8507)

November 19, 2002
Revised December 20, 2002
Portland, Maine

Yale Court

#4080.0

The maximum PPV of ground vibrations for structures and underground utilities will not be allowed to exceed 2.0 IPS. If information obtained from the pre-blast surveys indicates lower limits are required at certain structures, the independent seismologist or blasting consultant will identify the lower limits applicable to a specific structure, and the blasting contractor will incorporate such provisions in the features of the blasting plan applicable to this site area.

2.5

Penalties and Violations

Contractor shall comply with the terms of the Agreement between the owner as Developer and the City of Portland regarding blasting, and the Contractor acknowledges the terms of the said agreement reading as follows:

“In the event that the blasting contractor fails to comply with the Plan, as it may be amended from time to time, DEVELOPER shall be subject to the following penalties:

1 st Offense	\$250.00
2 nd Offense	\$500.00
Subsequent Offenses	\$500.00

In the event that there are more than three documented violations of the Plan, the City of Portland shall have the right to issue a **“STOP WORK ORDER”** on the development. Developer shall then be required to obtain City approval of a revised Blasting Plan. Work shall not be allowed to continue on Development until the revised Plan is approved.”

Contractor shall indemnify and hold owner harmless from such penalties and shall pay such amounts directly to the City.

In the event that the City of Portland issues a stop work order which results in an amendment to the Blasting Plan, then the Contractor shall agree to comply with such amendments at no cost to Owner.

SECTION 02229 - ROCK EXCAVATION**PART 1 - GENERAL****1.01 GENERAL PROVISIONS:**

- A. Documents affecting Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, are hereby made a part of this Section
- B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- C. The Standard Specifications referred to herein is the book entitled "*Standard Specifications, Highways and Bridges*" published by the State of Maine Department of Transportation dated April, 1995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index Of Payment Items Included In Each Section.

Those Sections of the aforementioned *Standard Specifications* which are cited herein are applicable to the Work of this Contract as they may be modified, amplified, or added to by this Section.

- D. Reference is made to the latest Erosion and Sedimentation Control Plan (report) and erosion controls and Details included in the Drawing set for this project. Strict adherence to this Plan and Drawings must be followed in order to prevent adverse downstream impacts from erosion and sedimentation, originating from on site construction activity.
- E. Reference is also made to the U.S. Department of Interior "Blasting Guidance Manual"; N.F.P.A. 495-"Code for Explosive Materials"; Maine State "Rules for Manufacture, Transportation, Storage and Use of Explosives" (MRSA Title 25, Section 2441); and Maine DOT "Safety Specifications", Section 107.12, "Use of Explosives."

1.02 DESCRIPTION OF WORK:

- A. Provide all labor, material, equipment and services required to complete all rock excavation as indicated on the Drawings, and/or as required to complete the Work, including both trench rock and open rock.
- B. Provide all necessary shielding and covering, and undertake all measures necessary to protect the Work and assure the safety of workers, adjacent property utilities, and the public.

PART 2 - PRODUCTS**2.01 MATERIALS:**

- A. Explosives: As recommended by the blasting contractor based on seismic survey, and as permitted by NFPA 495 and the Maine State Fire Marshall.
- B. Delay Device: As recommended by the blasting contractor and as permitted by NFPA 495, and the Maine State Fire Marshall.
- C. Blast Mat Materials: As recommended by the blasting contractor.

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Verify site conditions under provisions of Section 02000- Site Special Conditions.
- B. Verify site conditions and note any subsurface irregularities affecting Work of this Section. Refer to Section 02010-Subsurface Investigation.
- C. Identify required lines, levels, contours, and datum.
- D. Notify "Dig-Safe" (1-800 225 4977) at least 3 days prior to beginning any excavation or blasting Work.
- E. Accurately locate any existing utilities before beginning drilling or blasting; contact local utility companies.
- F. Check for conflict with underground utilities or structures. The blasting contractor shall notify the General Contractor of any and all apparent conflicts or potentially hazardous conditions before proceeding with the Work.

3.02 ROCK EXCAVATION (Blasting Method):

Rock excavation may be required at this site. Rock excavation shall be defined as: All rock, ledge, or boulders in undisturbed soil that cannot be removed by a mechanical scarifier and power shovel of 1.0 cubic yards capacity, and/or D-8 Bulldozer with ripper, without use of line drilling or explosives. Boulders 2 cubic yards or smaller shall be considered to be unclassified material regardless of location. Concrete and cut stone encountered in excavations in excess of 2 cubic yards will be considered as "rock" as herein defined.

A. Uncovering of Rock:

When, during the process of excavation, rock is encountered, the Contractor shall notify the Architect/Engineer before proceeding further. The Contractor shall not proceed with the excavation of material claimed as rock until such material has been classified by the Architect/Engineer. Failure on the part of the Contractor to notify the Architect/Engineer for the purpose of taking Cross-Sections, etc., will forfeit the Contractor's right-of-claim to any Credits or Allowance for Rock Excavation.

B. Cross-Sections:

The Contractor shall employ and pay for a Professional Civil Engineer or Professional Land Surveyor, acceptable to the Architect/Engineer, to take cross-sections of rock and to provide computations of quantities within the limit of excavation lines. No material claimed as rock shall be drilled, blasted or removed until the following procedures have been performed:

1. The Contractor shall, by independent party as described above, quantify all rock excavation based on the design grades shown on the Drawings, and the pay limits for rock excavation specified herein (SS 3.02 F), and shall provide the Architect/Engineer with quantities, sections and/or profiles for review, prior to excavation.
2. The Architect/Engineer shall review cross sections and/or profiles, and shall either approve quantities or propose revisions to design of footings, trenches, layout and general grading, to minimize rock excavation if possible or necessary.
3. The Contractor shall confirm any proposed revisions and resultant rock quantity changes.

4. The Architect/Engineer shall provide to the Contractor a letter of authorization to proceed with excavation of material claimed as rock, which shall indicate the agreed upon Quantity and Price for the entire process of blasting, excavation, hauling and disposal.

C. Blasting:

1. The blasting contractor shall conduct a Pre-Blast Survey, including photographs, of all structures within the blasting area, and shall provide the Architect/Engineer with a written report of the survey. A Pre-Blast Survey shall be performed for all structures within 500 feet of any blast site. The Pre-Blast Survey shall encompass and reflect the U.S. Department of Interior, "Rules for Pre-Blast Surveys", cited in the Site Location of Development Law of the State of Maine.
2. All drilling equipment will be equipped with suitable dust control apparatus, which must be kept in operation and used during all drilling operations.
3. All blasting operations, including the transport, handling, and storage of explosives, shall be conducted in full compliance with all Federal and State laws and regulations and all local ordinances, and with all possible care so as to avoid injury to persons and property. Contractor shall limit ground vibrations to less than 1.9 in. per sec. peak particle velocity, and peak air over pressures to less than 0.018 psi, measured at the location of the nearest structure. Contractor shall provide protection against flying rock; the rock shall be well covered, and sufficient warning shall be given to all persons in the vicinity of the Work before blasting. Care shall be taken to avoid injury to all utilities, above and below ground, to other buildings (including foundations) and structures, and to private property. The Contractor, in addition to observing all state and municipal ordinances relating to the storage and handling of explosives, shall also conform to any further regulations which the Owner or Architect/Engineer shall deem necessary. Responsibility for all damages to persons or property shall rest with the Contractor. Only personnel qualified in the use of explosives shall be employed for blasting.
4. Blasting shall be performed only after approval has been given by the Owner for such operation.
5. All transportation, storage and handling of explosives, and all drilling and blasting operations shall be performed in accordance with M.R.S.A. Title 25, Section 2442, and all pertinent provisions of: the "Manual of Accident Prevention in Construction", issued by the Associated General Contractors of America, Inc.; the "Construction Safety Rules and Regulations", as adopted by the State Board of Construction Safety, Augusta, Maine; the Maine Department of Transportation "Safety Specifications", Section 107.12, "Use of Explosives"; and the U.S. Dept. of Interior "Blasting Guidance Manual."
6. Any site where electric blasting caps are located, or where explosive charges are being placed or have been placed, shall be designated as a "Blasting Area."
7. Bring explosives to the Work site only as needed and in small quantities.
8. A "Blasting Area" within three hundred (300) feet of any traveled way shall be marked in both directions by approved signs, with information similar to the following:

"BLASTING AREA. TURN OFF TRANSMITTERS"

and on the reverse side:

"END OF BLASTING AREA"

9. Notify each public utility company having structures in proximity to the site of the Work of the impending use of explosives, and give such notice sufficiently in advance to enable each company to

take such steps as it may deem necessary to protect their property from injury. Such notice shall not relieve the Contractor of responsibility for any damage resulting from his blasting operations.

10. The Contractor shall be liable for all damages to persons or property caused by blasting or explosions, or arising from neglect to properly guard and protect the excavations and all portions of the Work, and the Contractor shall wholly indemnify the Owner against claims on such account.
11. No compensation will be allowed the Contractor in any event, or under any circumstances, for loss incurred by the Contractor or arising from the Contractor's neglect to fully comply with these or other applicable requirements.
12. Provide the Architect/Engineer with a Blasting Log for the Work, containing the following information:
 - a) Location
 - b) Time and Date
 - c) Number of holes
 - d) Amount and type of explosives used per hole
 - e) Measurement of peak particle velocity and frequency, at nearest structure.
 - f) Air-blast monitoring results.
 - g) The names of persons, companies, corporations, or public utilities contracting, owning, leasing or occupying property or structures in proximity to the site of the blasting Work.
13. Copies of blasting records, together with an explanatory narrative of the blasting, shall be submitted to the Architect/Engineer, with a copy for submission to the Department of Environmental Protection.

D. Excavation:

1. All disturbed, broken or shattered rock fragments shall be excavated and removed from the final subgrade prior to placement of structural fill or foundations. Under footings, foundation bases, or retaining walls, fill over-excavated areas by extending indicated bottom elevation of footing or base to clean excavation bottom. When acceptable to the Architect/Engineer, concrete fill may be used to bring elevations to proper position.
2. Use of Excavated Materials: Excavated rock suitable for use as embankment fill, rip-rap, or other use, as shown on the Drawings or as directed by the Architect/Engineer, shall be immediately utilized for such use where possible. Where excess quantities or scheduling conflicts make such immediate use impossible, the materials shall be removed from the area and properly disposed of off-site, or stored for later use at a location as directed by the Architect/Engineer. (See also Section 02220-Excavation, Backfill and Compaction, SS 2.01 A.3).
3. Unsuitable Excavated Materials: All non-salvageable rock, unsuitable subsurface material, refuse, and debris which accumulates as a result of Work under this Section shall become the property of the Contractor and shall be removed from the site. No refuse or debris of any nature shall be allowed to accumulate to the detriment of the Work or to the good appearance of the site. All such materials shall be gathered and disposed of at frequent, regular intervals in a legal manner.

E. Basis of Payment:

The total amount of rock excavation will be based upon the volume of rock excavated below the cross-sectioned ledge surface and within and/or above the lines referred to below as "Payment Lines." The Payment Lines are only to be used as a basis of Payment, and are not necessarily to be used as limits of excavation. Limits of excavation are as shown on the Drawings and/or as otherwise specified herein.

F. Payment Lines for Rock Excavation:

1. Open Rock:

- a) Payment Lines for columns and wall footings shall be a vertical line one-foot from the toe of the footings, or 2 feet outside of foundation walls. The depth shall be measured at 6 inches below the bottom elevations shown on the Drawings for foundations that do not bear directly on ledge, or at the pressured rock face for foundations bearing directly on ledge. Payment lines for walls to be damp-proofed shall be a vertical line 2 feet outside the walls.
- b) Payment lines for rock excavation under slabs on grade shall be 6 inches below the bottom elevation of the specified base material.
- c) Payment lines for rock excavation at paved areas and lawns shall be 6 inches below respective subgrade materials, as detailed and specified.

2. Trench Rock:

- a) Payment lines for manholes and catch basins shall be one foot outside of the outer walls, and 6 inches below subgrade beneath the structure.
- b) Payment lines for rock excavation under pipes within the building and for utility trenches outside the building lines shall in no case be calculated as greater in width than the outside diameter of the pipe plus 2 feet for pipes up to 18 inches. For pipes 18 inches and larger, payment lines shall in no case be calculated as greater in width than the outside diameter of the pipe plus 3 feet. Payment lines at bottom of all pipe and utility trenches shall be 6 inches below subgrade for pipe bearing.
- c) Payment lines for spot ledge excavation for small structures such as bollards, light pole bases, transformer pads, etc., shall be 6" below the bottom of the structure, and 12" outside the exterior vertical face of the structure.
- d) Payment for rock excavation at tree and shrub beds shall be full depth of required excavation for bed, or a minimum of 4 feet, whichever is greater, and 6" beyond vertical edge of beds.

G. Payment:

The Bidder agrees to the following Add or Deduct Unit Prices for rock excavation in excess of or below the quantity of rock excavation noted below, regardless of its location on the site or the depth of excavation required. See Item F. above for classification of open rock and trench rock; the volume of trench rock shall be computed after the volume of any overlying open rock has been deducted. Unit Prices are net, and include all labor, materials, overhead, supervision, insurance, profit, and taxes.

Open Rock/Structure Excavation:

Base Bid quantities for open rock excavation have ___(not)___ been estimated by the Architect/Engineer. The Base Bid shall include the cost for ___(0)___ cubic yards of open rock. Final Payment shall be made based upon actual field measured quantities and the following adjustment to the Base Bid:

Add _____ per cubic yard overrun.

Deduct _____ per cubic yard under-run.

Trench Rock Excavation:

Base Bid quantities for trench rock excavation have ___(not)___ been estimated by the Architect/Engineer. The Base Bid shall include the cost for ___(0)___ cubic yards of trench rock. Final Payment shall be based upon actual field measured quantities and the following adjustment to the Base Bid:

Add _____ per cubic yard overrun.

Deduct _____ per cubic yard under-run

END OF SECTION

A#22



02P121

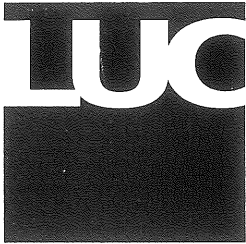
TO: Jonathan Spence – Planner
FROM: Jim Seymour – Development Review Coordinator, Sebago Technics, Inc.
RE: Yale Court PRUD – Yale Street
DATE: January 10, 2003

Sebago Technics has reviewed the revised Site Plan Package and supporting documentation for the proposed Yale Court PRUD located at Yale Street. Based on the plans and supporting documentation dated December 20, 2002, we believe that the applicant has submitted the requested information to approve the PRUD and subdivision. The only exemptions to our review are as follows:

1. We did not review any of the wetland filling areas. We suggest that as part of approvals, that the applicant, submit copies of any filings or findings, if exempt, from the MEDEP. Wetlands are classified differently and even filling adjacent to sensitive or emergent wetland could warrant permitting. Although I don't foresee a problem with this project, we should be assured that the applicant is aware of their responsibility. I believe that if other applications to state or federal agencies are necessary then they are required to be copied to the city.
2. The blasting plan shall be reviewed by the Fire Department.
3. The landscaping plan shall be reviewed by the City Arborist.

Please call if you have any questions or need further assistance.

JRS/JRS



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

March 11, 2003

4080

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

Sarah Hopkins (e-mail, 3/11/03, sh@ci.portland.me.us)

Senior Planner

Department of Planning & Urban Development

City Hall

289 Congress Street

Portland, Maine 04101

Value Engineering Options at Yale Street and Yale Court PRUD, Yale Street, Portland:

Land Use Consultants, Inc. attended a meeting jointly with representatives from CWS Architects, Ledgewood, Inc., MSHA and Yale Court Limited Partners on Thursday, March 6, 2003 to discuss potential value engineering and cost reductions relating to the construction of Yale Street and Yale Court PRUD project. Significant cost reductions are required due to budgetary constraints and financing issues. A list of 39 items were identified as value engineering options and discussed. Several of these items regard minor changes to site design and technical related issues. A brief summary of the site related issues discussed is as follows:

1.0 YALE STREET

Revise the proposed storm drain within Yale Street Right of way. Revisions include:

- 1.01 Elimination of the storm drain laterals to the storm drain for single family house lots 1 – 10. Provide gravity foundation and footing drains (groundwater) for each house lot which will outlet to daylight, away from the road.
- 1.02 As a result of the elimination of the lateral drains (stub-outs), it will be possible to raise the elevations and grade of the proposed storm drain in Yale Street. This will significantly reduce the trenching and ledge removal cost to construct the storm sewer.
- 1.03 Eliminate the short stub (SD#6) at the end of the proposed Yale Street. This drain is located near the crest of the roadway profile to accommodate future single family lot development beyond the proposed construction and would only serve one or two additional (future) house lots. This storm drain capability can be included in the future extension of Yale Street which would drain in the opposite direction, away from the project.
- 1.04 Substitute HDPE (smooth bore) pipe for PVC storm drains and underdrains.

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www.landuse@gwi.net



2.0 YALE COURT PRUD

- 2.01 Revise the proposed storm drain within the Yale Court PRUD site. Substitute HDPE (smooth bore) pipe for PVC storm drains and foundation drains.
- 2.02 Substitute bituminous curbing for granite curb beyond the radius curbing at the project entrance.
- 2.03 Substitute natural cedar wood fencing for vinyl fencing at dumpsters and between units.
- 2.04 Substitute an equivalent, shoe box type of site light fixture and pole for the decorative ones as proposed.

All of those present felt that these changes could be made with relative ease and would represent diminimus changes with regard to permitting issues. However, final determination will need to be made by City of Portland Planning Authority.

- 3.00 One additional item not discussed but offered as an option which could yield substantial cost savings is the reduction of Yale street from a 32 foot wide roadway to a 24 foot wide roadway. This requirement meets Portland minimum design standards for a Minor Residential Street.

As a reminder, the applicant had also asked, prior to bidding, that minor revisions be made to the site plans for Yale court PRUD, regarding comments from MSHA. The dual sidewalks to the units were combined to reduce the number of walks and amount of pavement. Also, a few parking spaces were relocated to better serve the units and handicap accessibility. These minor changes have been made subsequent to discussions with Portland Planning Staff, since it was agreed that they are diminimus and will not significantly impact function, design or review of the project.

All of the options above regarding public works improvements were discussed with Tony Lombardo of City Engineering. Mr. Lombardo is prepared to support the proposed minor changes, including the reduction in road width, provided that he has the opportunity to review revised plans showing the changes.

The applicant proposes that the minor revisions will not significantly alter the impacts or findings associated with the approved site and is requesting that the City of Portland Planning Staff would consider these changes administratively, if the determination is made that they are to be considered diminimus in scope. If any of the proposed revisions should be deemed substantive, and in the opinion of City of Portland Planning Staff



require further review by the Planning Board, the applicant would consider deleting, such proposed changes. Due to conditions relating to financing, scheduling and construction deadlines, timing of the issues at hand is critical to the steady progress of the project. Any significant delays, resulting from planning board schedules and uncertain outcome of additional review will be detrimental. Please indicate at your earliest convenience, if these revisions can be reviewed administratively.

Thank you for your prompt considerations of these issues. Please call Dave Kamila or myself if you have any questions (878-3313).

Respectfully:



Patrick L. Clark, PE, CPESC

Cc: Mike Payson, Yale Court LP
Tony Lombardo, Portland (e-mailed, 3/10/03, awl@ci.portland.me.us)
Ben Walter, RA, CWS
Dave Kamila, LUC
Tom Emery, LUC

March 11, 2003

4080

Sarah Hopkins (e-mail, 3/11/03, sh@ci.portland.me.us)
Senior Planner
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, Maine 04101

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- 1.04 Substitute HDPE (smooth bore) pipe for PVC storm drains and underdrains.

*Maybe -
depending on how
high the houses are*

depending on

*long?
demonstrate
storm drain capacity
in other direction.*

2.0 YALE COURT PRUD

2.01 Revise the proposed storm drain within the Yale Court PRUD site. Substitute HDPE (smooth bore) pipe for PVC storm drains and foundation drains.

Keep PVC.
ok

2.03 Substitute bituminous curbing for granite curb beyond the radius curbing at the project entrance.

2.04 Substitute natural cedar wood fencing for vinyl fencing at dumpsters and between units.

no
↑

2.05 Substitute an equivalent, shoe box type of site light fixture and pole for the decorative ones as proposed.

↓ ok

ok

or Holbrook.

pick anything
Hollbrook

All of those present felt that these changes could be made with relative ease and would represent diminimus changes with regard to permitting issues. However, final determination will need to be made by City of Portland Planning Authority.

3.0 One additional item not discussed but offered as an option which could yield substantial cost savings is the reduction of Yale street from a 32 foot wide roadway to a 24 foot wide roadway. This requirement meets Portland minimum design standards for a Minor Residential Street.

28' ←

As a reminder, the applicant had also asked, prior to bidding, that minor revisions be made to the site plans for Yale court PRUD, regarding comments from MSHA. The dual sidewalks to the units were combined to reduce the number of walks and amount of pavement. Also, a few parking spaces were relocated to better serve the units and handicap accessibility. These minor changes have been made subsequent to discussions with Portland Planning Staff, since it was agreed that they are diminimus and will not significantly impact function, design or review of the project.

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The applicant proposes that the minor revisions will not significantly alter the impacts or findings associated with the approved site and is requesting that the City of Portland Planning Staff would consider these changes administratively, if the determination is made that they are to be considered diminimus in scope. If any of the proposed revisions

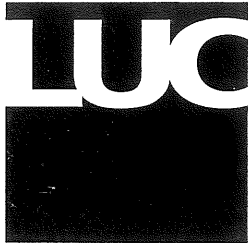
should be deemed substantive, and in the opinion of City of Portland Planning Staff require further review by the Planning Board, the applicant would consider deleting, such proposed changes. Due to conditions relating to financing, scheduling and construction deadlines, timing of the issues at hand is critical to the steady progress of the project. Any significant delays, resulting from planning board schedules and uncertain outcome of additional review will be detrimental. Please indicate at your earliest convenience, if these revisions can be reviewed administratively.

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Respectfully:

Patrick L. Clark, PE, CPESC

Cc: Mike Payson, Yale Court LP
Tony Lombardo, Portland (e-mailed, 3/10/03, awl@ci.portland.me.us)
Ben Walter, AIA, CWS
Dave Kamila, LUC
Tom Emery, LUC



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

April 14, 2003

4080

Sarah Hopkins
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s

Yale Court PRUD: request for administrative review of minor changes at Yale Court PRUD and Yale Street:

Dear Ms. Hopkins;

On behalf of the Applicant, Yale Court Limited Partners, Land Use Consultants is submitting an application amendment and request for minor changes to the approved plans for Yale Court. Per our previous discussions, these changes may be considered diminutive in scope and can be reviewed at the administrative level. The following revisions are proposed:

1. Remove and relocate five parking stalls as illustrated on attached *Sketch LSK-1-Revised Parking Layout*. This change was discussed with the City planning staff prior to bid and was issued to bidders in the sketch plan format.
2. Revise the bituminous walkways to the individual units as shown on the attached *Sketch Plan-LSK-2-Typical Unit Landscaping-Shrubs & Perennials*. This revision eliminates the double walkways to each unit pair and combines to a single walkway and split entry walks to each double unit as shown on the sketch. This change was discussed with the City planning staff prior to bid and was issued to bidders in the sketch plan format.
3. Substitute High Density Polyethylene (double wall) pipe for PVC pipe as approved for storm drains within Yale Street. This substitution involves a material change for approximately 1,370 LF of 15" PVC, 50 LF of 12" PVC and 1980 LF of 6" PVC UD pipe with HDPE pipe. This change does not require any substantive design changes and will provide an equivalent system.
4. Substitute High Density Polyethylene (double wall) pipe for PVC pipe as approved for storm drains within Yale Court PRUD. This substitution involves a material change for approximately 382 LF of 12" PVC and 2300 LF of PVC UD foundation drainage pipe with HDPE pipe. This change does not require any substantive design changes and will provide an equivalent system.

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5. Substitute shoe-box style site lighting fixtures and poles within the Yale Court PRUD development for the architectural style lighting as approved. The proposed fixture will be Medallion as manufactured by Spaulding Lighting. This change does not require any substantive design changes and will provide an equivalent system. Catalogue cuts for this fixture are attached.

As per our recent telephone conversation, LUC is providing the proposed site changes on 8-1/2" x 11" sketch plan format. Catalogue cuts are provided for the proposed lighting fixtures. Please indicate if these minor changes will need to be added to the full size drawings and recording plat following City approvals.

Land Use Consultants will deliver ten (10) copies of this application to the City Planning Office in Portland on Tuesday, April 15, 2003 for your use and staff review. Please call if you need any more information.

Sincerely:


Patrick L. Clark, PE

Cc: Mike Payson, Yale Court LP
Ben Walter, CWS

Encl: Check #1887, Wescott & Payson to City of Portland, \$100.00
Site Plan Application
Sketch Plan LSK-1-Revised Parking Layout
Sketch Plan LSK-2-Typical Unit Landscaping-Shrubs & Perennials
Catalogue cut for "Medallion" light by Spaulding (2 pages)

City of Portland Site Plan Application

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

Address of Construction: Yale Street, Portland		Zone: R-3
Total Square Footage of Proposed Structure: 30 affordable housing units in 8 attached buildings and a community center, 35,000 +- sq. ft. (PRUD)		Square Footage of Lots: Total Area= 6.42 Acres
Tax Assessor's Chart, Block & Lot Chart#153 Block# AA Lot# 002	Property owner, mailing address: Wescott & Payson II 240 Harvard Street Portland, ME 04103	Telephone: 882-4350 772-2829 (fax)
Consultant/Agent, mailing address phone & contact person : Land Use Consultants, Inc. Attn: David Kamila, P.E. 966 Riverside Street Portland, ME 04103 (207)878-3313	Applicant name, mailing address & telephone: Same as above	Project name: Yale Court
<p>Proposed Development (check all that apply) <input type="checkbox"/> New Building <input type="checkbox"/> Building Addition <input type="checkbox"/> Change of Use</p> <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Office <input type="checkbox"/> Retail <input type="checkbox"/> Manufacturing <input type="checkbox"/> Warehouse/Distribution <input type="checkbox"/> Parking lot <p>Subdivision, amount of lots _ @ \$25.00 per lot=</p> <input type="checkbox"/> Site Location of Development \$3,000, except for residential lots which are then \$200 per lot _____ <input type="checkbox"/> Traffic Movement \$1,000 <input type="checkbox"/> Stormwater Quality \$250.00 <input type="checkbox"/> Other _____ <input type="checkbox"/> After the fact review - Major project \$1,500.00 <input type="checkbox"/> After the fact review - Minor project \$1,200.00 <p>Major Development <input type="checkbox"/> \$500.00 Minor Development <input type="checkbox"/> \$400.00</p> <p>Plan Amendments: <input type="checkbox"/> Board review \$200.00 <input checked="" type="checkbox"/> Staff review \$100.00 = \$100.00 TOTAL FEE</p>		
Who billing will be sent to: Michael Payson Mailing address: 240 Harvard Street State and Zip: Portland, ME 04103 Contact person: David A. Kamila, P.E. Phone: (207)878-3313		

Submittals shall include (9) separate folded packets of the following:

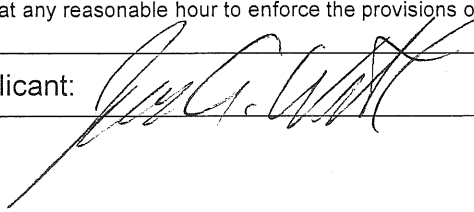
- a. copy of application
- b. cover letter stating the nature of the project
- c. site plan containing the information found in the attached sample plans check list

Amendment to Plans: Amendment applications should include 6 separate packets of the above (a, b, and c)

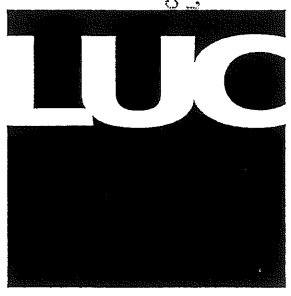
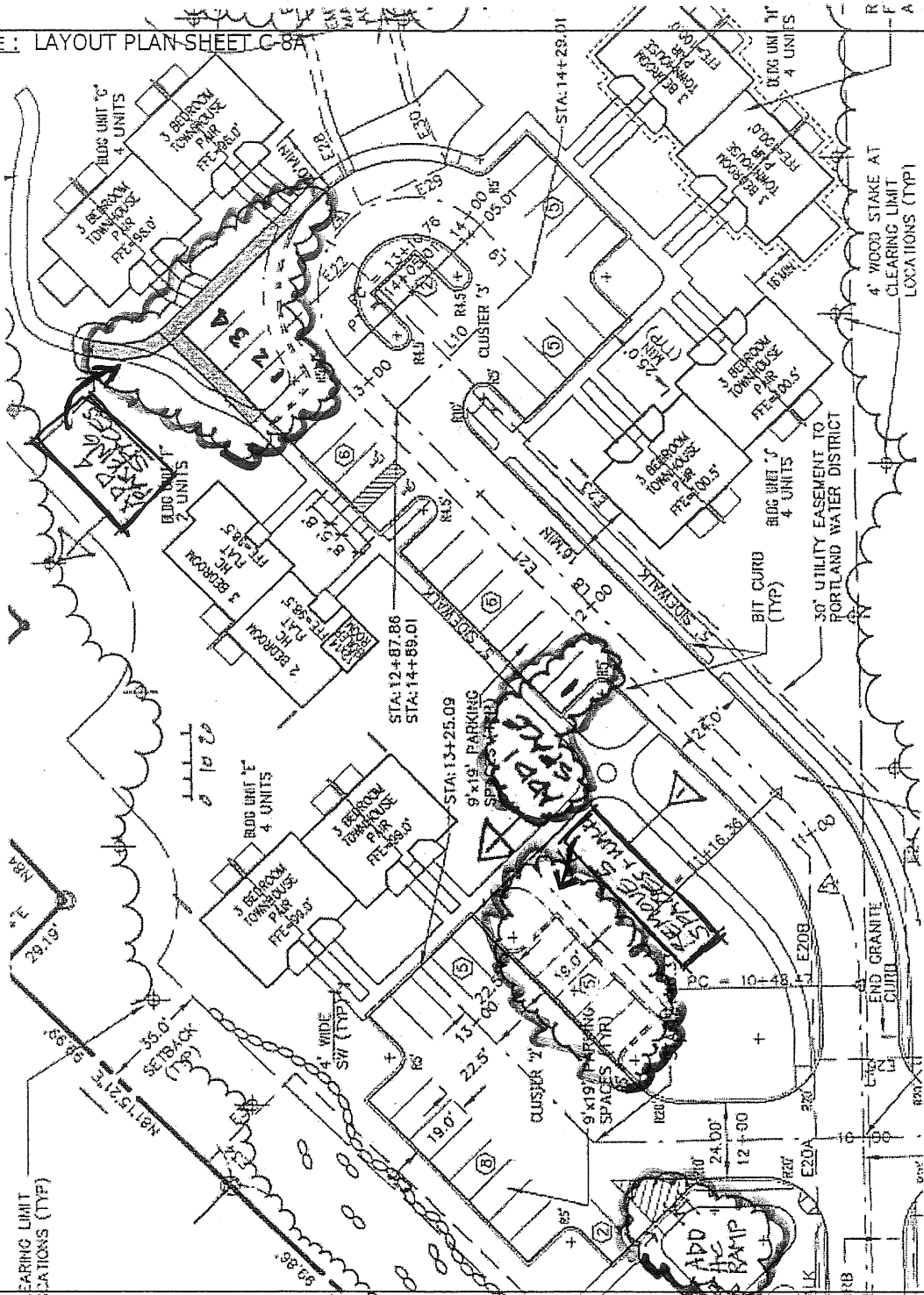
ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM

Section 14-522 of the Zoning Ordinance outlines the process, copies are available at the counter at .50 per page (8.5 x11) you may also visit the web site: [ci.portland.me.us.chapter 14](http://ci.portland.me.us.chapter14)

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this applications issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: 	Date: 4/14/03
---	---------------

REFERENCE: LAYOUT PLAN SHEET C-8A



Land Use Consultants, Inc.

PREPARED FOR:
Yale Court ADDENDA-1

TITLE:
REVISED PARKING LAYOUT

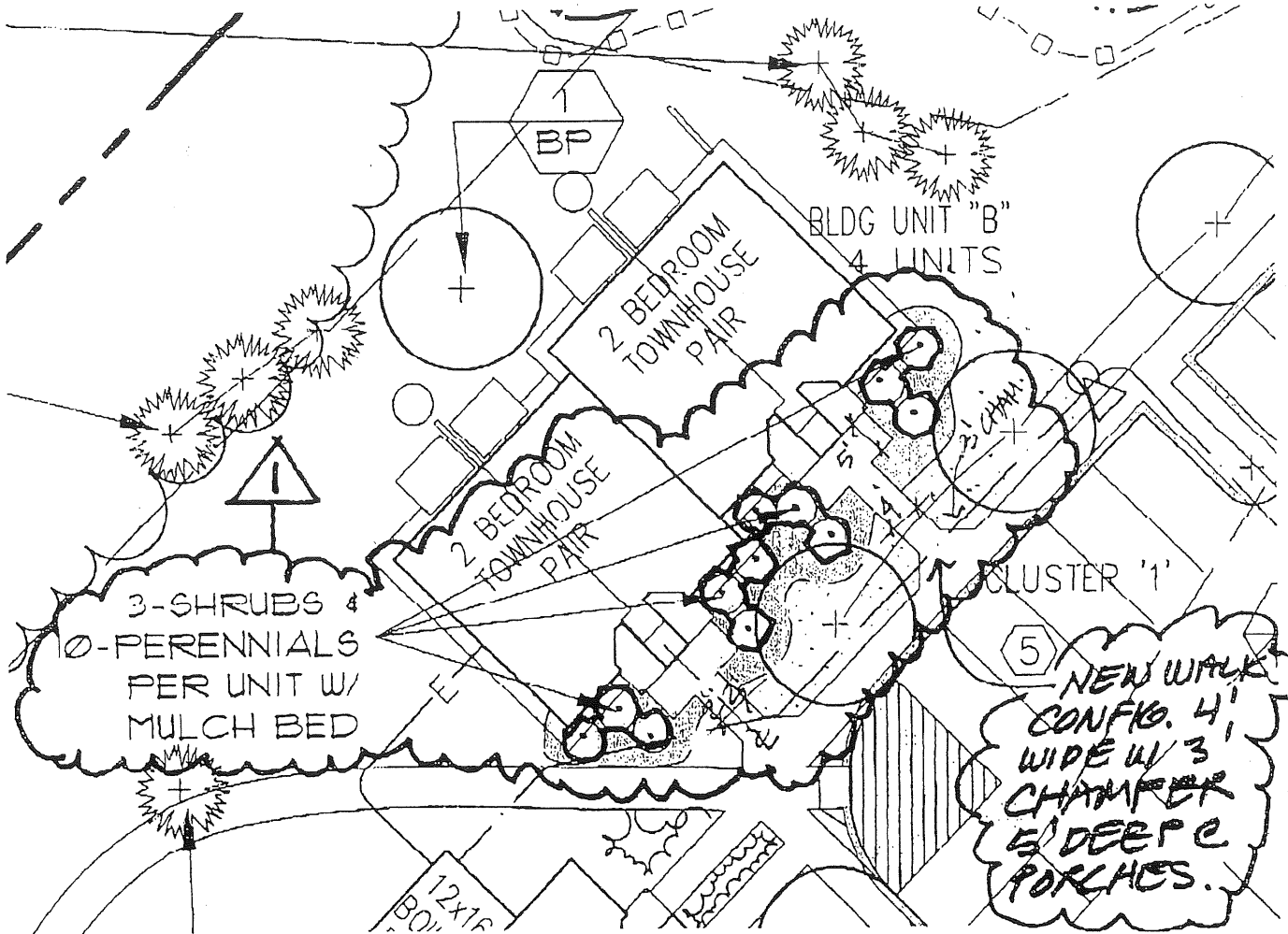
DATE:
FEB 12, 2003

Scale AS NOTED

JOB NO: 4080

LSK-1

REFERENCE: LANDSCAPE PLAN SHEET C-10



PREPARED FOR:
Yale Court ADDENDA-1

TITLE:
TYPICAL UNIT
LANDSCAPING-
SHRUBS & PERENNIALS

DATE:
FEB 12, 2003

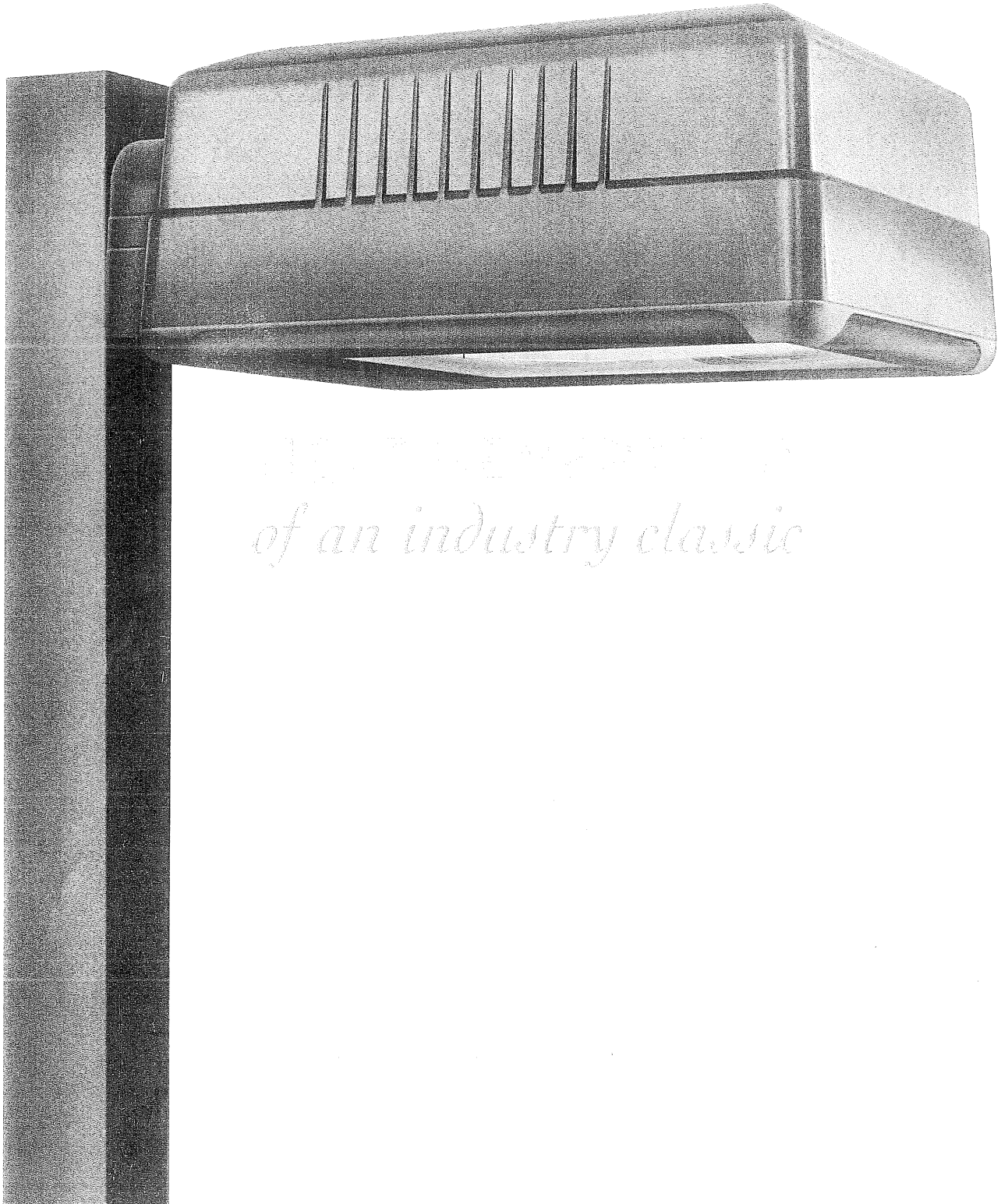
Scale AS NOTED

JOB NO: 4080

LSK-2



CAMBRIDGE

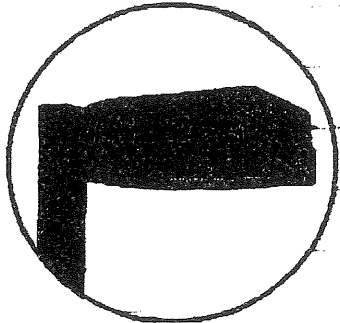


RE-INTERPRETATION
of an industry classic

MEDALLION

Catalog Number

Type



Specification luminaire provides outstanding uniformity for parking areas, entrances, office parks, schools, walkways, and parks.

Features

- Architectural, one-piece die-cast aluminum housing with nominal .125" wall thickness. Contour lines and radius corners complete unique design.
- Die-cast aluminum door hinges to housing and secures with two, captive screws. Clear, flat or convex, tempered glass lens seals to door and housing with one-piece silicone gasketing.
- Specular, anodized aluminum reflectors for horizontal lamp, provide Type II, III, IV, or V square light patterns, and for vertical lamp provide Type IV or V square light patterns. Horizontal Type II, Type III, and vertical Type VS reflectors feature unique, multi-faceted designs. IESNA Full Cutoff lighting classification achieved with vertical lamp and flat lens.
- Die-cast aluminum arm for pole mount features access door to facilitate installation. Wall mount with cast aluminum bracket and arm. Mast arm mount with cast aluminum slipfitter.
- Mogul porcelain socket, pulse-rated, with spring loaded, nickel plated center contact and reinforced lamp grip screw shell. Medium base for ED-17 lamp.
- CWA type, HPF ballast, starting rated at -20°F (-40°F for HPS).
- TGIC thermoset polyester powder paint finish with choice of six standard, and four premium standard colors.
- UL and CUL listed for wet locations.
- Patent pending on multi-faceted reflector designs.

Ordering Information

Order No.

Example CM - PMS - M400 - III - MT - ~~PR~~ - SGB

① Model

- CM - horizontal lamp with flat lens (Type II, III, IV, or VS reflector)
- CM-VLC - vertical lamp with convex lens (Type IV or VS reflector only)
- CM-VLF¹ - vertical ED-17 lamp with flat lens (Type IV or VS reflector only)

② Mounting Mode

- PMS - 5" arm mount
- PM10 - 10" arm mount, required for any 90° configurations
- WB - wall bracket
- MAF - mast arm fitter for 2 1/4" OD arm

③ Lamp Types/Watts

- METAL HALIDE**
- M175 (ED-28)²
 - M250 (ED-28)
 - M400 (ED-28)
- SUPER METAL HALIDE**
- M175MS (ED-28)³
 - M250MS (ED-28)
 - M400MS (ED-28)

PULSE START METAL HALIDE

- M100PS (ED-17)
 - M125PS (ED-17)
 - M150PS (ED-28)⁴
 - M175PS (ED-28)^{4,5}
 - M200PS (ED-28)⁴
- HIGH PRESSURE SODIUM**
- S100 (ED-23 1/2)¹
 - S150 (ED-23 1/2)¹
 - S250 (ED-18)
 - S400 (ED-18)

④ Reflector

- II - narrow asymmetric
- III - asymmetric
- IV - forward throw
- VS - symmetric square

⑤ Voltage

- MT - multi-tap⁶ (120/208/240/277v)
- 347
- 480⁶

⑥ Options

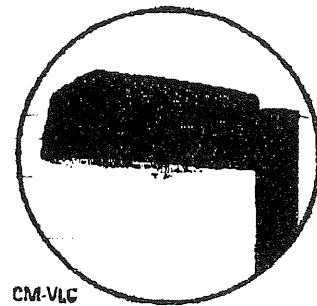
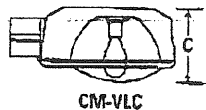
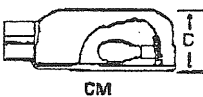
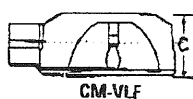
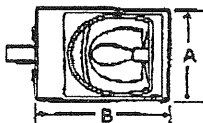
- PR - photo receptacle (less cell)
- PRC - photo receptacle with cell
- PE - photoelectric button cell (120-277v)
- FS - fusing (specify voltage)
- RP - removable ballast panel
- TL - tool-less door and reflector panel
- QZ - quartz standby time delay (D.C. bayonet base lamp included)
- VG - polycarbonate vandal guard with CM and CM-VLF
- CS - internal house-side cutoff shield with CM and CM-VLF

⑦ Color

- STANDARD**
- DBZ - dark bronze
 - SGB - black
 - SWT - white
 - PRG - gray
 - PLS - platinum silver
 - FGP - forest green
- PREMIUM STANDARD**
- MBZ - medium bronze
 - BGE - beige
 - LIV - light ivory
 - GMB - burgundy

¹Available with medium base, ED-17 lamps up to 200w Metal Halide and 150w HPS.
²Must use medium base, ED-17 lamp for vertical orientation with flat lens.
³Vertical lamp orientation only.
⁴Factory wired for 277 volt unless specified.
⁵Not available with 100w Pulse Start Metal Halide.

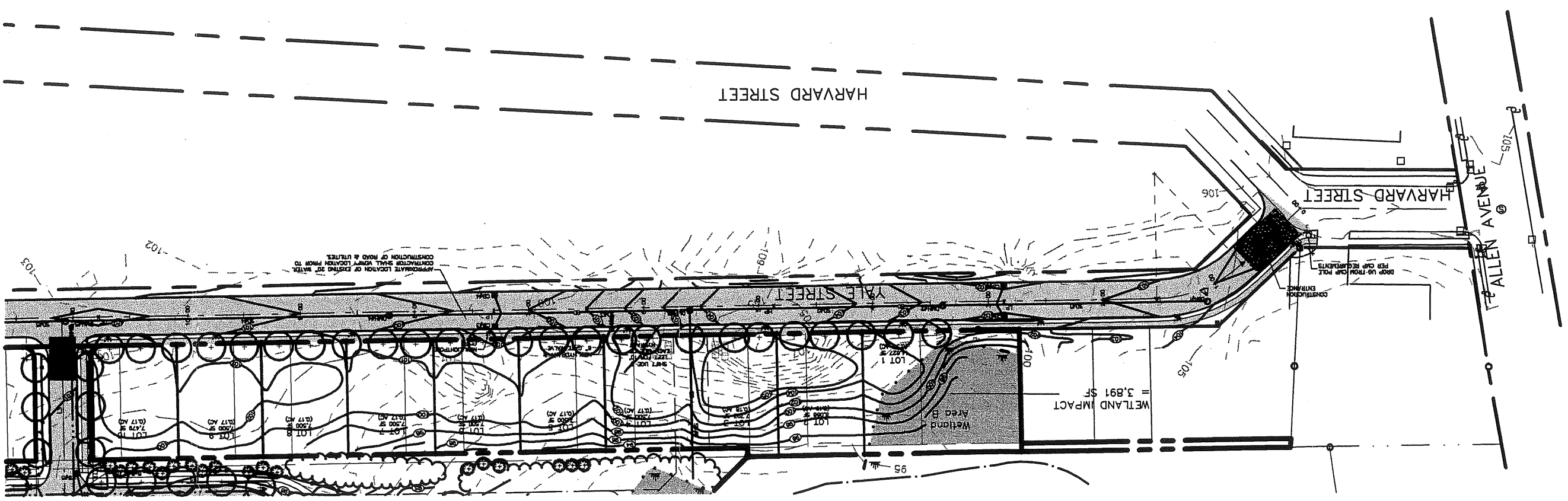
Dimensions



	A	B	C	EPA	Wt./Lbs.
CM	18"	21.75"	10"	1.9	39
CM-VLC	16"	21.75"	13.25"	2.0	41
CM-VLF	16"	21.75"	10"	1.9	39

SPAULDING

▲ REFERENCE:



▲ TITLE:

CONCEPTUAL GRADING
UNIVERSITY PARK
(PHASE ONE)

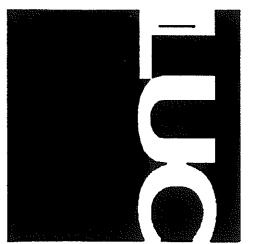
▲ PREPARED FOR:

WESCOTT & PAYSON
YALE STREET STREET, PORTLAND MAINE
LOTS 1 TO 10

▲ SCALE: 1" = 100'

▲ DATE: 11-14-02

JOB # 4080



Land Use Consultants, Inc.

engineers
planners
landscape
architects
966 RIVERSIDE STREET
PORTLAND, MAINE 04103

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February 14, 2003

Page 1 of 5

Curtis Walter Stewart

A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Addendum 01

Date: February 14, 2003

To: All Bidding General Contractors and Registered Plan Holders

From: Ben Walter, CWS Architects

Regarding: **Yale Court PRUD and University Park – Bidding Documents**

Subject: **Addendum 01**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

General Notes:

1. Refer to attached "Memo to Bidding General Contractors 01 2-13-2003" (attached) for additional communications information.
2. Work on this project is NOT exempt from sales tax.
3. LUC has site files in electronic format (AutoCad) available to sitework bidders. LUC strongly cautions against relying on electronic data or information for the purpose of preparing bids and provides the data at the bidding contractors own risk. Information contained in the data files may not be compatible with third party software and/or may not be suitable for quantity takeoffs derived from electronic data. Contact Patrick Clark at LUC (207) 878-3313 to arrange pick-up of site drawing data on CD.

Modify the Contract Documents including 1) the Project Manual and Specifications dated January 29, 2003 and 2) the Drawings dated January 29, 2003 as follows:

Bidding and Contract Documents and Basic Requirements:

1. Bid Date – Modify INVITATION TO BID to read: "Sealed bids are due at the Portland office of **CWS Architects** no later than **2:00 PM on Wednesday, February 26, 2003** at which time they will be opened and read aloud. Refer to "Instructions to Bidders" in the Project Manual for additional bidding information." to accommodate bidder's school vacation plans.
2. Completion Date – Modify INSTRUCTION TO BIDDERS, section 10. SPECIAL CONSIDERATIONS, Item A. to read: "Yale Court L.P. anticipates a construction start date of between **March 17, 2003** and **April 15, 2003**. The units in Buildings F, G, H and J shall be delivered for occupancy (with a certificate of occupancy) no later than **December 30, 2003**. The spaces and units in Buildings A, B, C, D, and E, shall be delivered for tenant occupancy (with a certificate of occupancy) no later than **February 29, 2004**. The remainder of **the project**, including all sitework and landscaping shall be substantially complete by **April 30, 2004**. Liquidated Damages of **\$35 per unit per day** will be charged if **tenant occupancy** is not achieved by the occupancy dates indicated. Additional liquidated damages of **\$100 per day** will

- be charged if the project is not **substantially complete** (all work completed) by the date indicated. General Contractor should assume winter conditions at the construction site based on this schedule.”
3. Modify Specification Section 00300, Information Available to Bidders to add Item 1.5: Test Pit Data (attached, Revised Addendum 01). Test Pit Data indicated on Drawing C-2 was prepared by Mark Hampton Associates for the purpose of identifying and mapping soils at the site. The test pit logs are attached, as well as the Soil Narrative for the site. The bidder should be aware that the locations indicated on the plans are approximate, only, and have not been accurately located by survey. The purpose of these test pits is for planning and permitting, specifically, to identify and map general soil types and boundaries within the property and should not be relied upon for the purpose of preparing bids and the use of such information shall not bind the owner to the accuracy of the information provided.
 4. Modify Specification Section 01001 – BASIC REQUIREMENTS Item 1.7.D.2 to read “Permanent Project Signage (including design, manufacturing, handling, deliver and installation) \$5,000.00”.
 5. Modify Section 01001 – BASIC REQUIREMENTS, 1.11 ALTERNATES, C. Schedule of Alternates to add item: “4. Alternate No. 2: MODIFY BLASTING PLAN SURVEY RADIUS FROM 500 FEET (BASE BID) TO 600 FEET as an ADD alternate.”
 6. Revise the Proposal Form for General Contractors (attached, Revised Addendum 01) as follows:
 - Change the first Paragraph of section A. to read, “All bids must be presented on this completed form. Bids must bear the handwritten signature of a duly authorized member or employee of the organization making the bid. All work specified in the contract documents and identified as an Alternate "DEDUCT" **shall be** included in the Base Bid. All work identified as an Alternate “ADD”, and **shall not be** included in the Base Bid amount. If any alternate is accepted by the owner, it will be added or deducted as appropriate to arrive at a contract amount.”
 - Modify section C. Subcontractors List and section F. Schedule of Values to include a separate price and breakdown of the electrical work between “Yale Street” and “Yale Court PRUD” (see electrical items below).
 - Add “**Alternate No.4: INCREASE BLASTING SURVEY RADIUS FROM 500 FEET (BASE BID) TO 600 FEET \$_____ (ADD)**”

Civil and Site Items:

7. Add note to Drawing C-10 adjacent to Building “C” that reads: “Re: Detail C1 on Drawing A1.5 for location and placement of (2) stone retaining walls at building floor elevation steps, both front and back, provided by the sitework contractor.”
8. Please refer to Drawing C-8B Utilities and Materials. Benches are indicated near the front entrance of the Community Building. Two benches required.
9. Dumpster enclosure posts. Fence posts shall be Commercial grade vinyl, 5”x5” heavy walled vinyl per manufacturer’s recommendations with “H”-shape aluminum post stiffener. Post or post supports shall be installed to depths shown on the details per manufacturer’s recommendation.
10. Fence posts shall be Commercial grade vinyl, 5”x5” heavy walled vinyl per manufacturer’s recommendations with “H”-shape aluminum post stiffener. Post or post supports shall be installed to depths shown on the details. Note the fence panel will be 8 ft. long, rather than the 6 ft. shown. (6 ft panel is for the dumpster enclosure only). Privacy Fence is Norfolk-1 by Bufftech, commercial grade.

11. Dumpster Enclosure Pad - Provide 8” concrete exterior slab on grade with 12”x 12” thickened perimeter haunches. Provide #5 steel rebar nosing and #5 @ 12” c/c each way at center of slab at dumpster enclosure concrete pad.
12. Modify driveway, parking and sidewalk layout as per LUC LSK-1 (attached). Coordinate with other drawings and trades.
13. Modify all unit entry sidewalks from a “parallel pair” to a single entrance walk as per LSK-2.
14. Refer to LUC LSK-2 dated 2-12-03 (attached) showing typical unit shrub plantings. Each unit shall have 3 shrubs 18” HT. and 10 perennials in a continuous 3” deep mulch bed. Each pair of units shall have matching plantings. Shrubs may include PJM Rhododendron or, in full sun, Rosa Rugosa or Andorra Juniper. Perennials will be Mixed Daylilies, Siberian Iris or var. and Hosta var. All plantings shall be outside the 24” wide drip edge.
15. Add drawing C-19 “Details” which is referenced on Drawing C-1 Index Sheet and was inadvertently omitted from the printed set. One (1) copy of this sheet has been provided to each of the four bidding general contractors at the pre-bid meeting and the drawings has been delivered to Am-at-ure Services for inclusion in future sets. General Contractors should ensure that all bidding site work subcontractors have a copy of this drawing.
16. Locations of privacy fencing on site civil drawing are inconsistent from building to building and sheet to sheet. Ignore the locations of privacy fencing indicated on the site drawings and provide the following: (1) privacy fences as per detail 9 on Drawing 18 between each abutting unit’s rear back yard space and at end locations as directed by the landscape architect, for a total of (28) privacy fences on the site.
17. Delete the following details and references shown on site/civil drawings which refer to electrical and mechanical equipment and/or installations. The details referred to below shall be omitted and provided as per details and information provided within Electrical and Mechanical Drawings and Specifications. The site subcontractor, under Division 2 Specifications, shall be responsible for providing all excavation, trenching and backfill for the installation of all such appurtenances and concrete bases, fixtures, etc., as required. Refer to Electrical Drawings for locations, layout and sizes of electrical equipment and fixtures. Contractor shall coordinate with Electrical Drawings and Specifications for final construction Details, Specifications and requirements for all electrical installations and appurtenances as required to complete site work installations.
 - Detail #1/Drawing 16-Light Pole (Yale Street)
 - Detail #2/Drawing 17-Cable Trench-Primary Services
 - Detail #3/Drawing 17-Electric Pull Box
 - Detail #4/Drawing 17-Transformer Pad Detail
 - Detail #11/Drawing 18-Concrete Light Pole Base
 - Mech./Elec. connections between Buildings (Re: Piping Trench Schematic, M3.1)
18. Sitework contractor shall provide all trenching and backfilling for the installation of gas service piping (by Northern Utilities) to the various building and service locations.

Architectural Items:

19. Delete all references to partition tags indicated on wall types schedule. No wall tags were placed on the drawings as the location of wall types is self-evident as per the descriptions in the wall type schedule.
20. There is a discrepancy in the concrete design mixes between the drawings and specification. Provide the following concrete design mixes: Footings @ 3000psi, Walls and Piers @ 3500psi, Interior Slab on Grade @ 3000psi, and Exterior Slab on Grade @ 3500psi w/ 5-7% air entrainment.

21. Delete Item No. 3, Insulated Foundation System from Detail 2 on Drawing F1.4. Insulated Foundation Systems are not to be used on this project.
22. Revise Specification Section 06913, part 1.3 paragraph A. to read “42/lbs.sq/ft top cord live load”
23. Replace Detail C/A6.1 with SKA-1 (attached).
24. On the foundation drawings (see plans and Detail C&D/A6.1) a short foundation wall is indicated between unit pairs at both level and stepped conditions. This detail was designed to allow the framing of the building without requiring slab placement, as it was anticipated that foundation work would take place in winter. Whereas this may not be the case, alternative “slab bearing” details (SK2, Sheets 1, 2 and 3 of 3) have been provided to allow the contractor to take advantage of this system if they feel it is to their cost benefit. Bidding General Contractors may choose between either of these two (concrete foundation wall or slab) approved bearing systems.
25. As specified on the Door Schedule, provide a soldered copper pan below all exterior doors, set on a bed of asphalt adhesive, in accordance with detail SKA-3, attached.
26. Provide 2x6 P.T. plates and interior walls at revised locations of mechanical and plumbing entrances to buildings from boiler rooms in adjacent buildings. (Re: SKM-1 and SKM-2)
27. Bidding General Contractors can, at their choice, either panelize or conventionally frame wood frame wall systems. If a panelized system is chosen, it is the responsibility of the general contractor to coordinate design, dimensions and delivery of wall panels on site without the review and approval of the architect.
28. Modify Specification Section 07311 ASPHALT SHINGLES, 2.1 B. to read “Asphalt Shingles: ASTM D255 Type III ASTM E 108 Class C Factory Mutual Listed Class C, organic felt base, mineral granule surfaced type, 250 lb/100 sq. ft. weight, self sealing type, three-tab, color as selected. IKO, Aristocrat or equal.”
29. Modify Specifications Section 12370 – Residential Casework Part 2, Products, Item 2.1.D to read: “Cabinet Style: IXL “Coronet” solid plantation hardwood raised panel-in-frame design, honey finish.”
30. Modify Specification Section 09650 – RESILIENT FLOORING, 2.1 SHEET MATERIALS A. to read “Residential Felt Backed, Patterned, Double-cut seam with seam cleaner and coating, .060 Gauge ASTM F 1303, Type 1, Grade 3, Class A backing; Armstrong Initiator, or equal as per list of acceptable alternate manufacturers.”
31. Provide carpet pad as specified at all carpeted locations except: a) Community Building, b) handicapped units type 2HC and 3HC, and c) the first floor of unit type 3HCTH.
32. Provide VCT flooring at all Half-Baths located below townhouse type unit stairs.

Mechanical

33. Relocate Mechanical and Plumbing Entrance to buildings without boiler rooms as per Details SKM-1 and SKM-2 Attached.
34. Install 1-1/2” ductwrap and seal with foil skim kraft tape on all kitchen, bathroom, and restroom exhaust ductwork located within heated building space.
35. Install 3” ductwrap and seal with foil skim kraft tape on all ductwork for the make-up air system located in the community building.
36. See attached sketch SKM-3 for elimination of kickspace heaters (KSH-1) in the 3HCTH unit and all 2BRTH units kitchens; and installation of fintube in those same kitchens.
37. See attached sketch SKM-4 for revised pump selections for indirect fired water heaters.

Electrical Items:

38. See attached sketches SKE-1 and SKE2 for revised meter stack locations on buildings A, G and H.
39. E.C. shall provide (2) 4” stubs from each of 4 Electric splice pits located along Yale Street for future residential electric services. Extend the stubs a distance of 6’ underground in the opposite direction from the street and stub up 6” above grade.
40. Drawing E1.1: Light fixture type B, the pole shall be 14'-4" long aluminum town and country pole, tapered shaft with black finish supplied and installed by Electrical Contractor. All wiring and conduit shall be as indicated. The light fixture itself will be supplied by CMP but installed by the Electrical Contractor. Terminations for the lighting circuit at the transformer shall be by CMP.
41. Drawing E1.1: Electrical site work shall be priced in two parts: Yale Court Prud and Yale Street. The line of demarcation is indicated on the civil drawings C-8A through C-10. Any splice pits that fall on the line of demarcation shall be part of the Yale Street price. See the instruction to bidders section of the specification and the revised bid sheet included in this addendum for further information.
42. Drawing E2.1: Delete electrical wiring for kick space heater in the two bed room townhouse unit.
43. Drawing E2.3: Delete electrical wiring for kick space heater in the handicapped three-bedroom unit townhouse.
44. Drawing E2.4: Add two type D light fixtures mounted above the mailboxes, wire to existing lighting circuit. See drawing A1.3. 1.

End of Addendum 01

Attachments: Memo to Bidding General Contractors 01 2-13-2003
 Specification Section 00300 INFORMATION AVAILABLE TO BIDDERS, Rev.
 Addendum 01
 YALE STREET – Soil Narrative dated June 3, 2002
 Proposal Form for General Contractors, Rev. Addendum 01
 LSK-1, Revised Parking Layout, dated 2-12-03
 LSK-2, Typical Unit Landscaping – Shrubs & Perennials dated 2-12-03
 SKA-1, Common Wall Reinforcement
 SKA-2, sheet 1 of 3, Common Wall Haunch
 SKA-2, sheet 2 of 3, Common Found. Building C
 SKA-2, sheet 3 of 3, Building C Foundation
 SKA-3, Sill Pan Detail
 SKM-1, Building B Mechanical and Plumbing Entrance
 SKM-2, Building C, E and J Mechanical and Plumbing Entrance
 SKM-3, Mechanical Plan – 3HCTH and 2BRTH
 SKM-4, Revised Pump Performance Schedule
 SKE-1, Relocated Electric Meter Stack Locations
 SKE-2, Relocated Electric Meter Stack Locations

Yale Court PRUD and University Park – Bidding Documents

Memo to Bidding General Contractors 01

February 13, 2003

Curtis Walter Stewart

A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Memo to Bidding General Contractors 01

Date: February 13, 2003

To: All Bidding General Contractors

From: Ben Walter, CWS Architects

Regarding: **Yale Court PRUD and University Park – Bidding Documents**

Subject: **Memo to Bidding General Contractors 01**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

1. As of 12-10-2003, Wright-Ryan has declined to bid on this project. It remains important to the owner that we maintain four (4) bidders for this project in the case that one bidder does not submit a bid. Therefore, Yale Court LP has invited H.E. Callahan of Auburn, Maine to bid in Wright-Ryan's place. We apologize in advance for any inconvenience this might cause you and thank you for your work on bidding this project.
2. The four bidding General Contractors are now: Payton Construction, Zachau Construction, Inc. Ledgewood, Inc. and H.E. Callahan.
3. The bid date will be changed in Addendum 01, to be issued in the next day or two, from February 19, 2003 to February 26, 2003 at 2:00pm to accommodate the bidders school vacation plans.

End of Memo to Bidding General Contractors 01

cc: Mike Payson, Wescott & Payson
Jim Wescott, Wescott & Payson
Ed Marsh, MSHA
Bill Shanahan, MHIF
Tom Emery, LUC
Will Bennett, Bennett Engineering

SECTION 00300

INFORMATION AVAILABLE TO BIDDERS

1.1 LEDGE PROBE PLAN

- A. See Drawing A-LP

1.2 BLASTING PLAN

- A. See section 02229 – Rock Excavation Appendix 2A, Yale Court Blasting Plan

1.3 DAVIS-BACON WAGE DETERMINATIONS

- A. A copy of the current wage determinations as applicable to the Davis Bacon Act is attached hereto and titles as follows:

GENERAL DECISION ME020013 03/01/2002 ME 13 - Residential

GENERAL DECISION ME020003 03/01/2002 ME 3 - Highway

1.4 RADON MITIGATION STANDARDS

- A. A copy of the Radon Mitigation Standards is provided for use with alternate (see Alternate No. 4)

1.5 TEST PIT DATA

- A. Test Pit Data indicated on Drawing C-2 was prepared by Mark Hampton Associates for the purpose of identifying and mapping soils at the site. The test pit logs are attached, as well as the Soil Narrative for the site. The bidder should be aware that the locations indicated on the plans are approximate, only, and have not been accurately located by survey. The purpose of these test pits is for planning and permitting, specifically, to identify and map general soil types and boundaries within the property and should not be relied upon for the purpose of preparing bids and the use of such information shall not bind the owner to the accuracy of the information provided.

... END OF SECTION

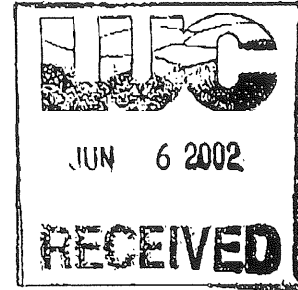


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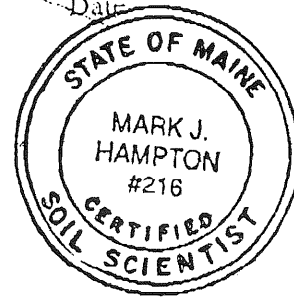
Yale Street
Wescott & Payson
Soil Narrative
June 2002



- DATE: Soil Profiles observed on May 30, 2002
- BASE MAP: Base plan prepared and provided by Titcomb Associates
Scale 1"=100 feet and 2.0 foot contour intervals.
- GROUND CONTROL: Soil survey boundaries and test pit locations by Mark
Hampton Associates, Inc.

The accompanying soil profile descriptions, soil maps, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists. The soil map meets the minimum requirements for a Class B high intensity soil survey.

Mark J. Hampton C.S.S. #216, L.S.E. #263 June 3, 2002
Mark J. Hampton Date





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881
Wescott & Payson
Yale Street
Portland, Maine

LYMAN-TUNBRIDGE COMPLEX SETTING

PARENT MATERIAL: Loamy glacial outwash
LANDFORM: Glaciated uplands
POSITION IN LANDSCAPE: Uppermost locations, sideslopes, shoulders and crests
SLOPE GRADIENT RANGES: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Excessively well drained Lyman (10-20 inches to bedrock) and Tunbridge (20-40 inches to bedrock)
These soils occur in a nonrepeating pattern with exposed bedrock outcrops and cannot be separated.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Reddish brown fine loamy sand, 0-4 inches
<u>Subsurface Layer:</u>	Red brown sandy loam 4-12"
<u>Subsoil Layer:</u>	Dark red sandy loam 12-18"
<u>Substratum:</u>	Brown sandy loam 18-36"

HYDROLOGIC GROUP: Group C/D
PERMEABILITY: Slow to rapid, depending on slope and bedrock outcrops.
DEPTH TO BEDROCK: Shallow (Lyman 10-20 inches) to moderately deep (Tunbridge 20-40 inches).
HAZARD TO FLOODING: None

INCLUSIONS (Within Mapping Unit)

CONTRASTING: Brayton

USE AND MANAGEMENT

Development: The limiting factor for building site development is depth to bedrock which ranges from 0 to 40 inches within this complex. Tunbridge and Lyman (deeper than 11 inches) soils are suitable for subsurface wastewater disposal.



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Wescott & Payson
Yale Street
Portland, Maine

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL: Derived from dense glacial till
LANDFORM: Teroslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE: Lower positions on landform
SLOPE GRADIENT RANGES: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Dk gray brown, fine sandy loam 0-5"
<u>Subsurface Layer:</u>	Gray Brown fine sandy loam, 5-15"
<u>Subsoil Layer:</u>	Olive gray, fine sandy loam, 15-24"
<u>Substratum:</u>	Olive fine sandy loam, 24-65"

HYDROLOGIC GROUP: Group D
SURFACE RUNOFF: Moderate to moderately slow
PERMEABILITY: Moderate and moderately slow
DEPTH TO BEDROCK: Greater than 65 inches
HAZARD TO FLOODING: None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Lyman-Tunbridge Complex

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Yale Street Applicant Name: Wescott & Pappas Project Location (municipality): Portland

Exploration Symbol: TP5 Test Pit Boring

Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	frable	Brown	
6	Sandy loam	frable	Brown	None
12				loam
18				
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 2 Limiting Factor: 1B Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Lynn-Tenbridge Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol: TP6 Test Pit Boring

Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	frable	Brown	
6				
12				
18				
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 4 Limiting Factor: 5 Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Lynn-Tenbridge Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol: TP7 Test Pit Boring

Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	frable	Black	
6				
12	Sandy loam	frable	gray	Common
18				Dispersed
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2/3 Classification: E Slope: 0 Limiting Factor: 6 Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Brayton Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol: TP8 Test Pit Boring

Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	frable	Black	
6				
12	Sandy loam	frable	Gray	Common
18				Dispersed
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2/3 Classification: E Slope: 0 Limiting Factor: 4 Groundwater Restrictive Layer Bedrock

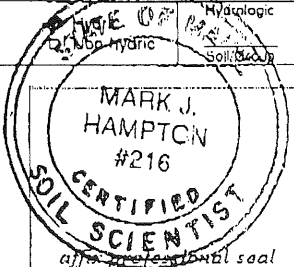
soil data by S.S. >> Soil series/phase name: Brayton Hydric Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 6/3/02

Name Printed/typed: MARK J. HAMPTON Cert/Lic/Reg. # 216

Title: Licensed Site Evaluator Certified Soil Scientist Other:



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Yell Street

Applicant Name: Wescott, Payson

Project Location (municipality): Portland

Exploration Symbol: XP1 Test Pit Boring

" Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
Sandy loam	fr. st. to fr.	Dark brown	
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Brown	None
Sandy loam	fr. st.	Brown	Noted
XXXX			
XXXX			
ledge			

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 2 Limiting Factor: 20 Depth: _____

soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric

Exploration Symbol: XP2 Test Pit Boring

" Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Brown	None
Sandy loam	fr. st.	Brown	Noted
XXXX			
XXXX			
ledge			

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 2 Limiting Factor: 22 Depth: _____

soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric

Exploration Symbol: XP3 Test Pit Boring

" Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Brown	None
Sandy loam	fr. st.	Brown	Noted
XXXX			
XXXX			
ledge			

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 2 Limiting Factor: 20 Depth: _____

soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric

Exploration Symbol: XP4 Test Pit Boring

" Organic horizon thickness Ground surface elev. _____

Texture	Consistency	Color	Mottling
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Dark brown	
Sandy loam	fr. st.	Brown	None
Sandy loam	fr. st.	Brown	Noted
XXXX			
XXXX			
ledge			

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 6 Limiting Factor: 13 Depth: _____

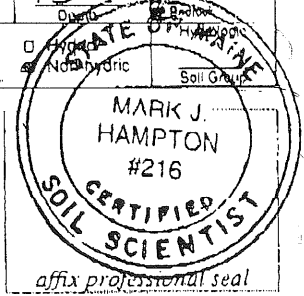
soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 6/3/02

Name Printed/typed: MARK J. HAMPTON Cert/Lic/Reg. # 216

Title: Licensed Site Evaluator Certified Soil Scientist Other:



Yale Court Apartments

Revised Addendum 01

PROPOSAL FORM FOR GENERAL CONTRACTOR

BIDDER: Company _____

Address _____

Contact Name: _____

Telephone Number: _____

TO

Yale Court L.P.
c/o Bennedict Walter
CWS Architects
434 Cumberland Ave.
Portland, ME 04101

- A. All bids must be presented on this completed form. Bids must bear the handwritten signature of a duly authorized member or employee of the organization making the bid. All work specified in the contract documents and identified as an Alternate "DEDUCT" shall be included in the Base Bid. All work identified as an Alternate "ADD", and shall not be included in the Base Bid amount. If any alternate is accepted by the owner, it will be added or deducted as appropriate to arrive at a contract amount.

Having carefully examined the Form of Contract, General Conditions, and Plans and Specifications prepared by CWS Architects for Construction of Yale Court Apartments as well as the premises and conditions affecting the work, we the undersigned propose to furnish all labor, equipment and materials necessary for and reasonably incidental to the construction and completion of this proposal for the amount of:

TOTAL BASE BID: \$ _____

Total Base Bid Written: _____ Dollars

Alternate No.1: INCREASE BLASTING SURVEY RADIUS FROM 500 FEET (BASE BID)

TO 750 FEET \$ _____ (ADD)

Alternate No.2: INCREASE BLASTING SURVEY RADIUS FROM 500 FEET (BASE BID)

TO 1,000 FEET \$ _____ (ADD)

Alternate No.3: DESIGN AND PROVIDE COMPLETE BELOW SLAB RADON

MITIGATION SYSTEM \$ _____ (ADD)

Alternate No.4: INCREASE BLASTING SURVEY RADIUS FROM 500 FEET (BASE BID)

TO 600 FEET \$ _____ (ADD)

Yale Court Apartments

Revised Addendum 01

Unit Prices: All ledge removal and disposal is included in the base bid. However, in the event changes in scope are requested, the following unit prices are required (to be used if changes in scope are requested):

- 1. Open ledge removal and back fill: _____ \$\$/cubic yards
- 2. Trench ledge removal and back fill: _____ \$\$/cubic yards

B. This proposal includes the following addenda to the Plans and Specifications:

Addendum #__, Dated _____; Addendum #__, Dated _____

Addendum #__, Dated _____; Addendum #__, Dated _____

Addendum #__, Dated _____; Addendum #__, Dated _____

Addendum #__, Dated _____; Addendum #__, Dated _____

C. SUBCONTRACTORS LIST for the proposed contract for construction is as follows (To be completed by any candidates for apparent low bidder and FAXED to CWS Architects (207-774-4016) within 24 hours of submitting of Bid) Note: Write N/A where the trade does not apply:

TRADE	NAME OF SUBCONTRACTOR
1. Sitework (Yale Street)	_____
2. Sitework (Yale Court PRUD)	_____
3. Concrete Foundations	_____
4. Steel Supplier	_____
5. Steel Erector	_____
6. Masonry	_____
7. Drywall	_____
8. Doors, Frames and Hardware	_____
9. Millwork	_____
10. Windows	_____
11. Flooring	_____
12. Acoustical Ceilings	_____
13. Painting	_____
14. Elevator	_____
15. HVAC	_____
16. Plumbing	_____
17. Electrical (Yale Street)	_____
18. Electrical (Yale Court PRUD)	_____
19. Sprinkler (Design/Build)	_____
20. Telecommunication	_____

Yale Court Apartments

Revised Addendum 01

- D. The undersigned agrees, if this proposal is accepted, to sign a contract and deliver it, along with the bonds and affidavits of all insurance specified, within twelve (12) calendar days after the date of notification of such acceptance, except if the 12th day falls on a holiday, a Saturday or Sunday, then the conditions will be fulfilled if the required documents are received before 12 o'clock noon on the day following the holiday, or the Monday following the Saturday or Sunday.

The undersigned agrees, if awarded the Contract, to complete the work within the specified number of calendar days from the notice to proceed.

- E. TIME FOR COMPLETION

The undersigned guarantees all work performed under this contract will be done in accordance with the specifications and in good and workmanlike manner, and to renew or repair any workmanship prior to the date of final completion and acceptance by the owner except for specific manufacturer's warranties.

The Undersigned hereby certifies that this Bid Proposal is genuine, and not a sham or collusive, or made in the interest of or in behalf of any person not herein named, and that the Undersigned has not directly or indirectly induced or solicited any other Bidder to submit a sham bid, or any other person, firm or corporation to refrain from bidding, and that the Undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder.

Yale Court L.P. reserves the right to reject any or all bids.

Having reviewed all documents and having made a Site Visit and being otherwise familiar with existing site conditions, the estimated number of calendar days following issuance of Notice to Proceed to Substantial Completion of the Contract for Construction is:

Number of Calendar Days (Base Bid) : _____

Page Break...

Yale Court Apartments

Revised Addendum 01

F. SCHEDULE OF VALUES for the proposed contract, the sum of which must equal the Total Base Bid, are as follows (To be completed by any candidates for apparent low bidder and FAXED to CWS Architects (207-774-4016) within 24 hours of submitting of Bid):

Division 1 – General Requirements	\$ _____
Division 2A – Sitework (Yale Street)	\$ _____
Division 2B – Sitework (Yale Court PRUD)	\$ _____
Division 3 – Concrete	\$ _____
Division 5 – Metals	\$ _____
Division 6 – Wood & Plastics	\$ _____
Division 7 – Thermal & Moisture Protection	\$ _____
Division 8 – Doors & Windows	\$ _____
Division 9 – Finishes	\$ _____
Division 10 – Specialties	\$ _____
Division 11 – Equipment	\$ _____
Division 12 – Furnishings	\$ _____
Division 13 – Special Construction	\$ _____
Division 14 – Conveying Equipment	\$ _____
Division 15 – Mechanical	\$ _____
Division 16 – Electrical (Yale Street)	\$ _____
Division 16 – Electrical (Yale Court PRUD)	\$ _____

G. The owner will NOT entertain REQUESTS FOR SUBSTITUTIONS in the initial bid process. Should addition cost savings and value engineering be required after bids are received, the owner may solicit Requests for Substitutions with the apparent low bidder with the intent of arriving at an acceptable contract sum and execution of a construction contract. In such a case, a Requests for Substitutions form will be issued to the apparent low bidder and should be accompanied (attached) by Catalog Cuts and Specifications and a statement by the manufacturer that the proposed products meet or exceed the specifications or accompanied by a statement identifying variances from the specification. Failure to meet the project's specification or identify variances in the specifications may result in disqualification of the substitution request. Whereas product aesthetics and performance are important to the owner, the submission of Requests for Substitution in no way obliges the owner to accept such requests in evaluating substitution requests.

H. The undersigned agrees, if this proposal is accepted, to sign a contract and deliver it, along with the bonds and affidavits of all insurance specified, within twenty (20) calendar days after the date of notification of such acceptance, except if the 20th day falls on a holiday, a Saturday or Sunday, then the conditions will be fulfilled if the required documents are received before 12 o'clock noon on the day following the holiday, or the Monday following the Saturday or Sunday.

Yale Court Apartments

Revised Addendum 01

The Owner may use this authorization and information obtained with it to administer and enforce the contract documents and review credentials and credit of individuals, partnerships and or corporations involved in the bid process. Any individuals or organizations including public or private may be asked to release information including but not limited to financial institutions, suppliers, insurance companies, credit investigating agencies, law enforcement agencies, local, state and federal agencies.

The undersigned agrees, if awarded the Contract, to complete the work within the specified number of calendar days from the notice to proceed.

This proposal includes the full cost of all bonds and permits required for the completion of this work.

Signed: _____

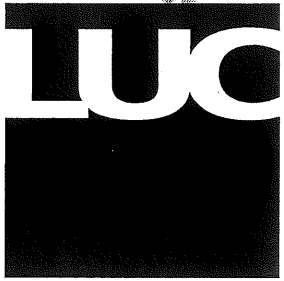
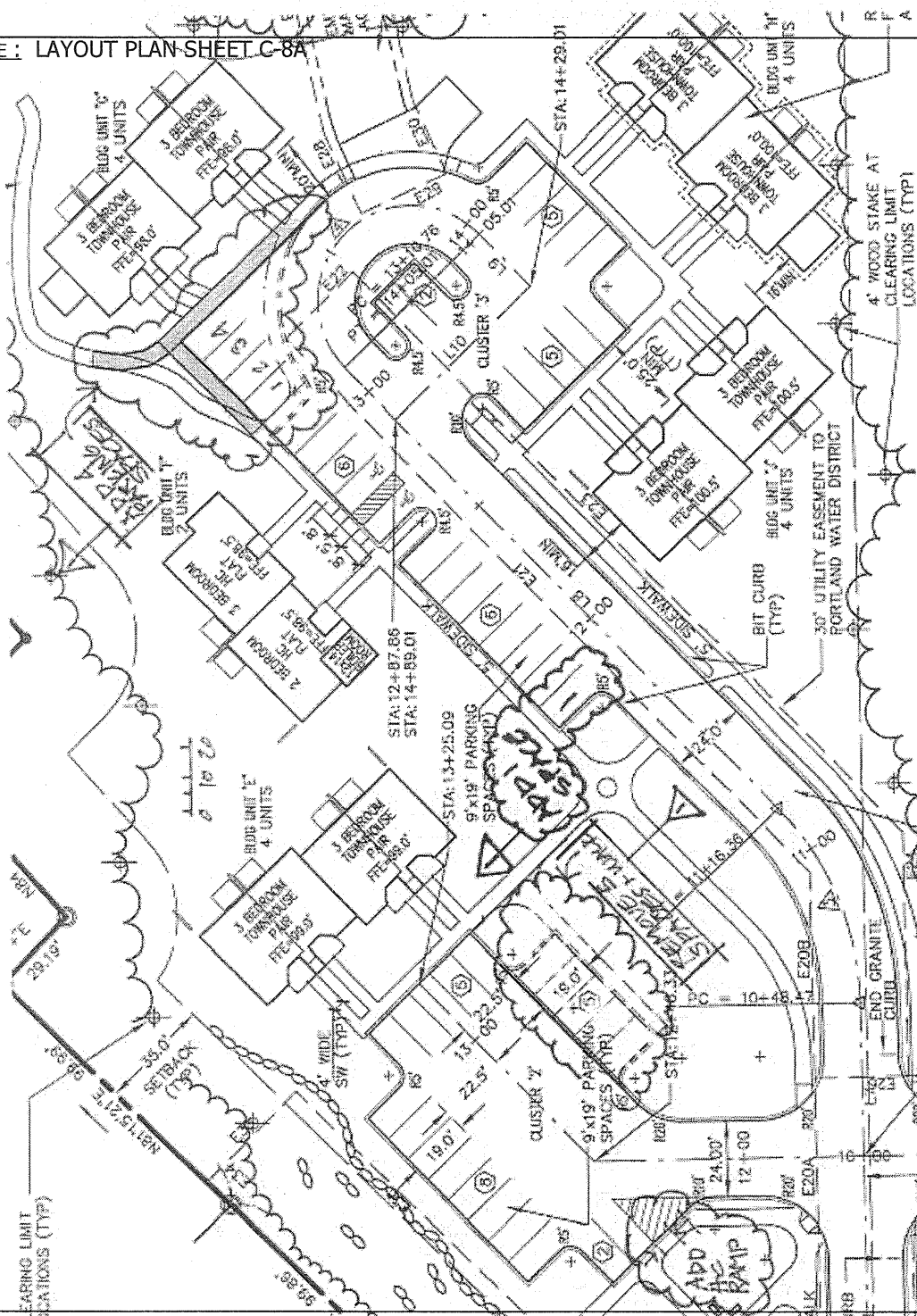
By: _____

Address: _____

If Bidder is a corporation, write State of incorporation, and if a partnership, give full name of all partners in the spaces provided below:

...END OF PROPOSAL FORM

REFERENCE : LAYOUT PLAN-SHEET C-8A



Land Use Consultants, Inc.

PREPARED FOR:
Yale Court ADDENDA-1

DATE:
FEB 12, 2003

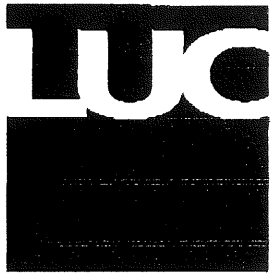
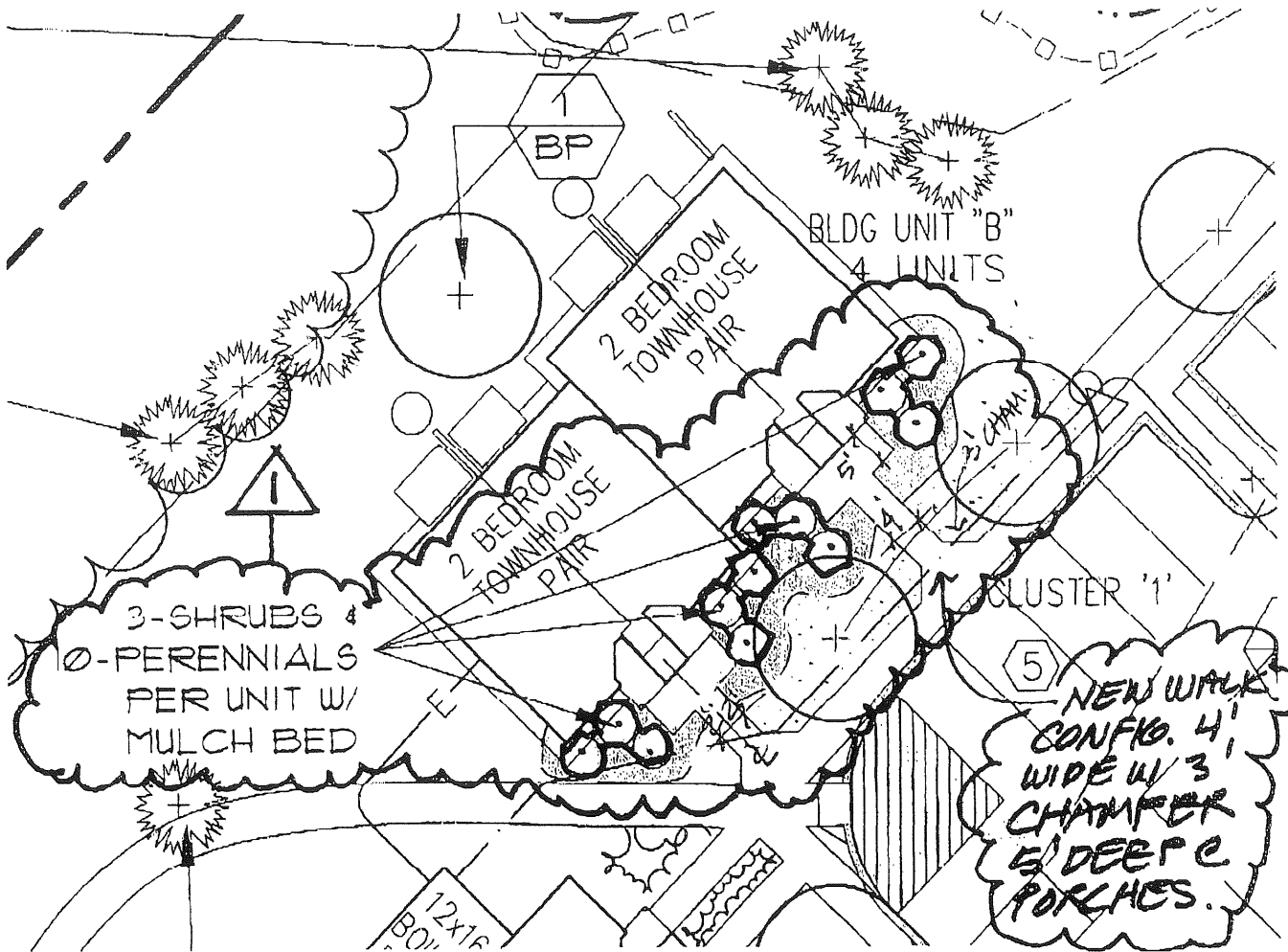
Scale AS NOTED

TITLE:
REVISED PARKING LAYOUT

JOB NO: 4080

LSK-1

REFERENCE : LANDSCAPE PLAN SHEET C-10



Land Use Consultants, Inc.

PREPARED FOR:
Yale Court ADDENDA-1

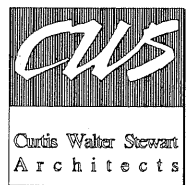
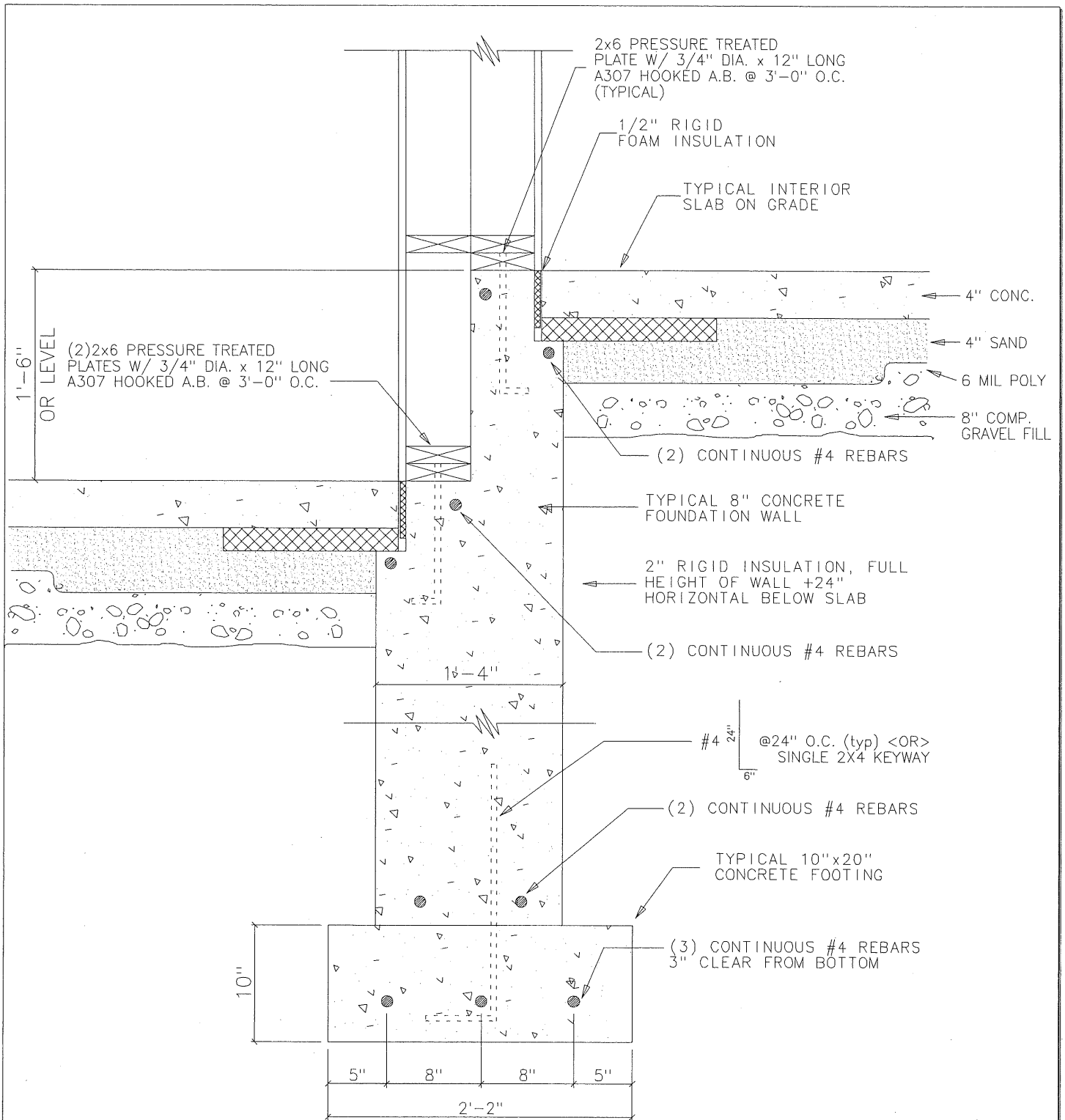
DATE:
FEB 12, 2003

Scale AS NOTED

TITLE:
TYPICAL UNIT
LANDSCAPING-
SHRUBS & PERENNIALS

JOB NO: 4080

LSK-2



434 Cumberland Avenue
Portland, ME 04101
Phone: (207)774-4441
Fax: (207)774-4016

www.CWSarch.com

Owner:
Yale Court LP.
c/o Yale Court Development
Company, LLC
Portland, ME

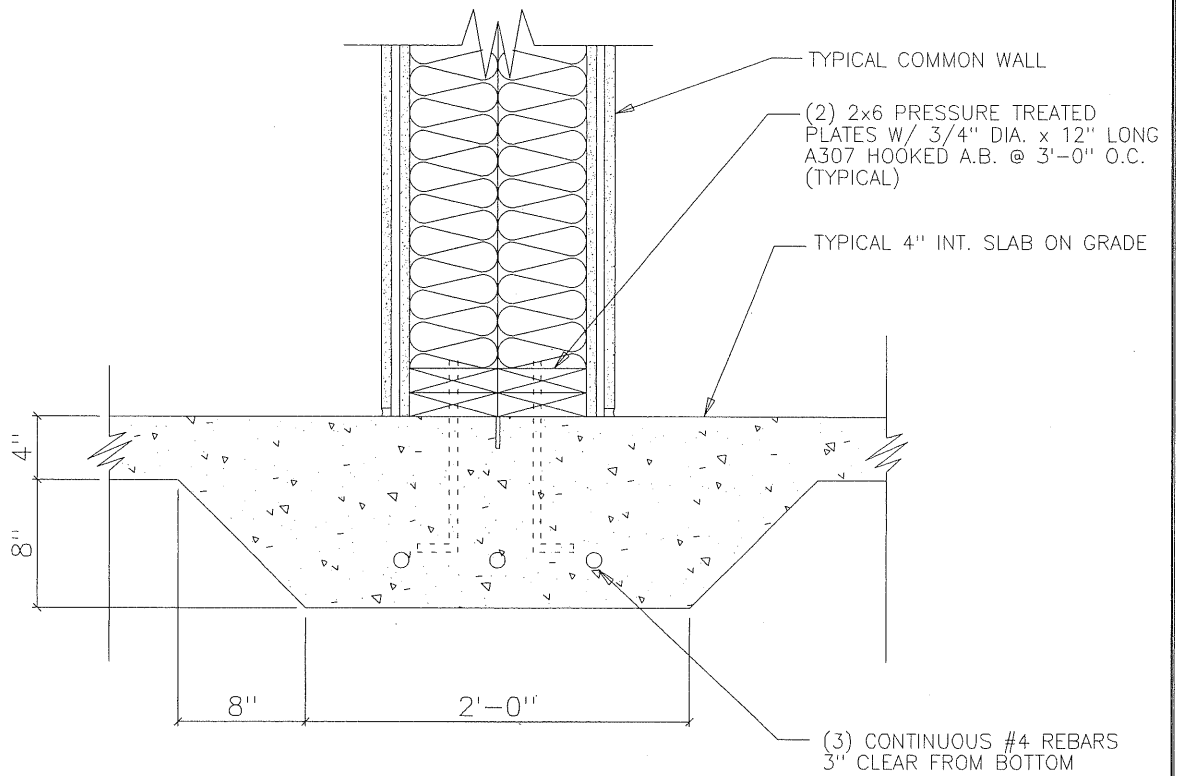
Project:
**YALE COURT
APARTMENTS**
Yale Court,
Portland ME

Project No: 02.405

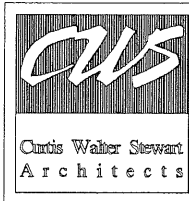
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**COMMON
WALL REINF.**

Scale: 1" = 1' - 0"
Date: 02/14/03
Revised:

Drawing Number:
SKA-1



PROVIDE AT ALL COMMON WALL LOCATIONS
IN LIEU OF DETAIL SHOWN AT D / A6.1



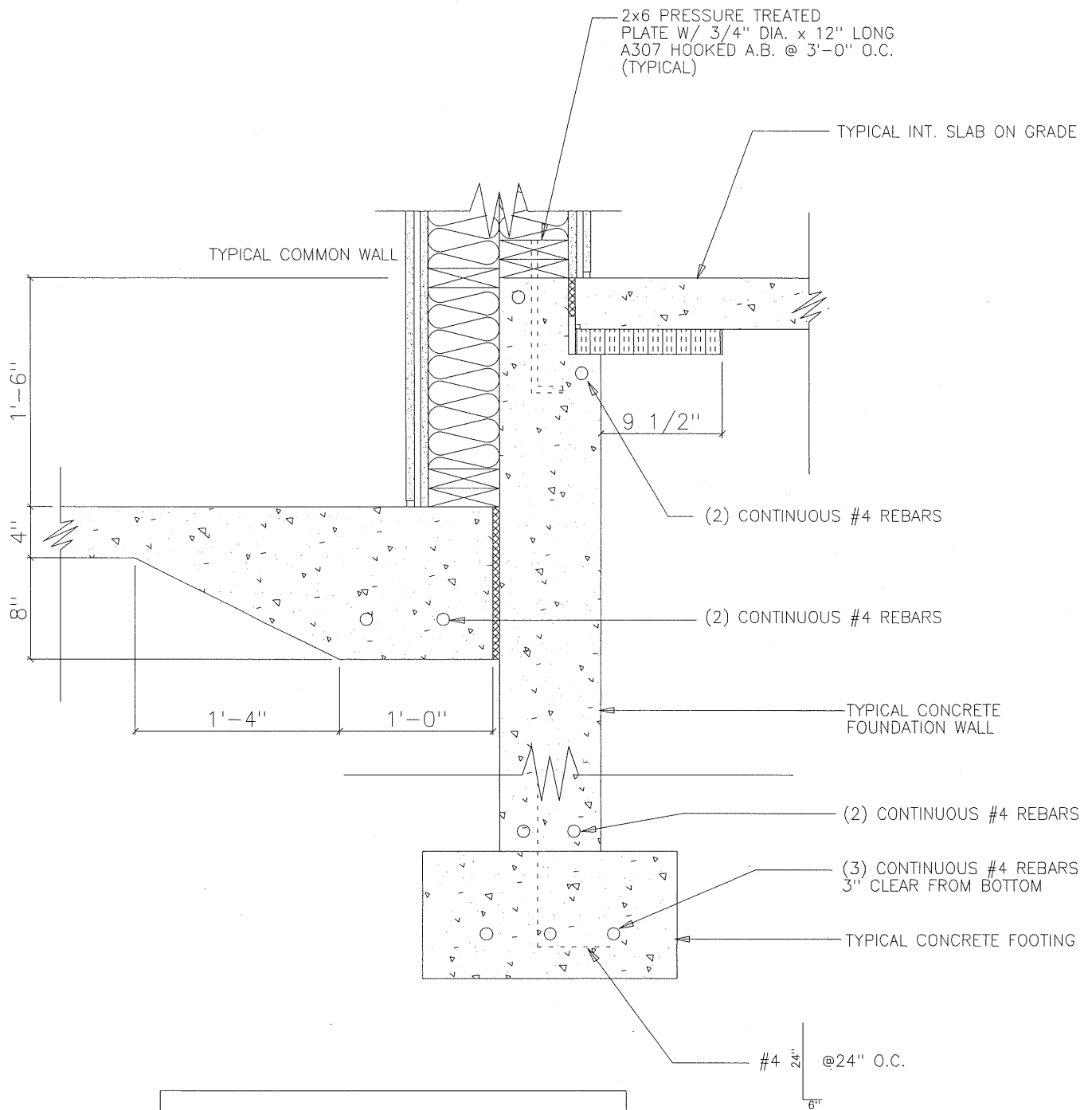
434 Cumberland Avenue
Portland, ME 04101
Phone: (207)774-4441
Fax: (207)774-4016
www.CWSarch.com

Owner:
Yale Court LP.
C/O Yale Court Development
Company, LLC
Portland, ME

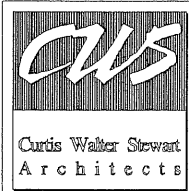
Project:
**YALE COURT
APARTMENTS**
Yale Court,
Portland ME
Project No: 02405

Drawing Title:
**COMMON
WALL HAUNCH**
Scale: 1" = 1'-0"
Date: 02/14/03
Revised:

Drawing Number:
SKA-2
PAGE 1 OF 3



PROVIDE AT COMMON WALL LOCATION AT BUILDING "C"
IN LIEU OF DETAIL SHOWN AT C / A6.1



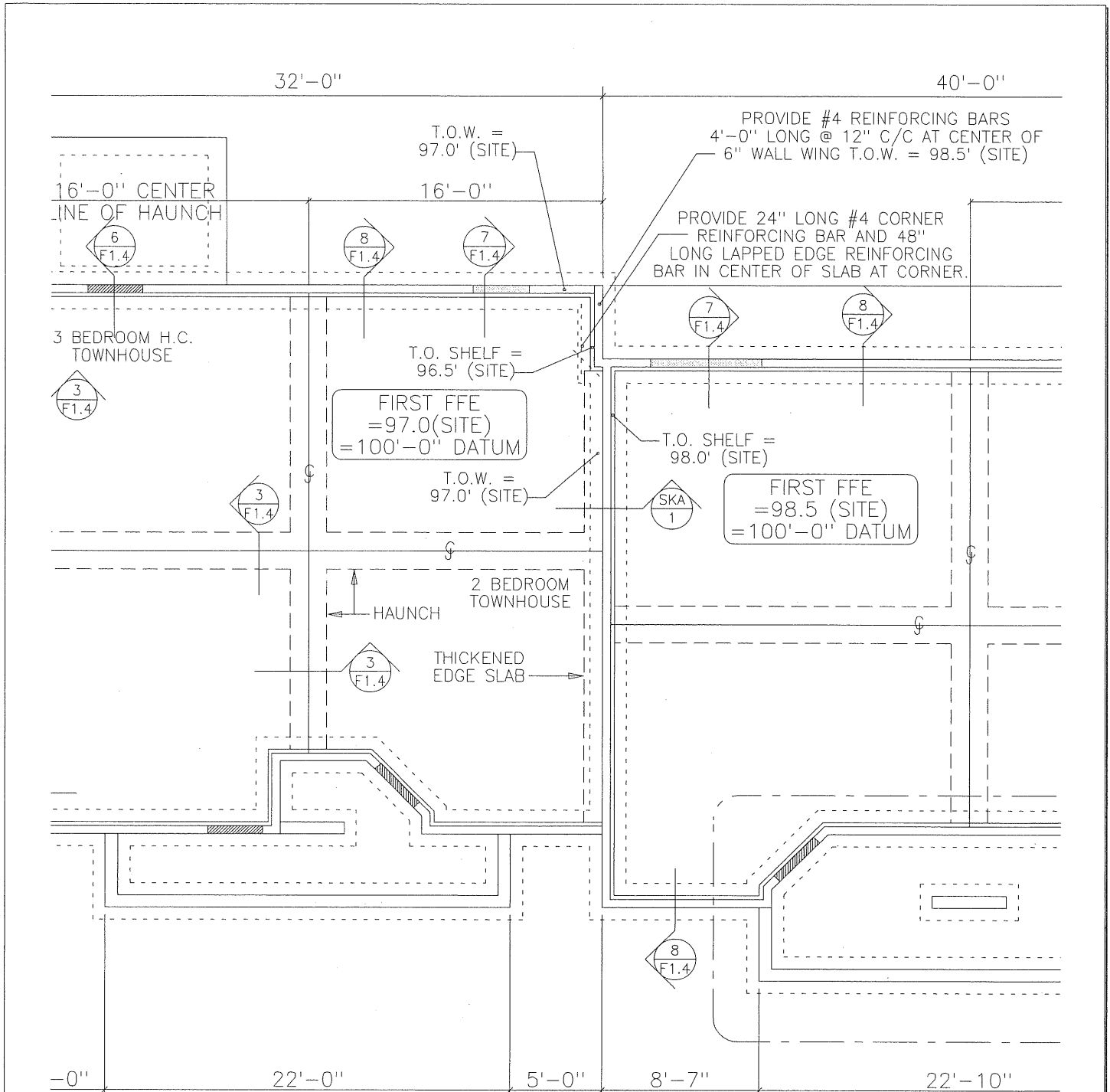
434 Cumberland Avenue
Portland, ME 04101
Phone: (207)774-4441
Fax: (207)774-4016
www.CWSarch.com

Owner:
Yale Court LP.
C/O Yale Court Development
Company, LLC
Portland, ME

Project:
**YALE COURT
APARTMENTS**
Yale Court,
Portland ME
Project No. 02.405

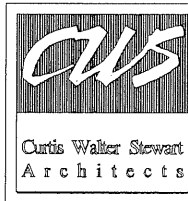
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**COMMON FDN.
BUILDING "C"**
Scale: 1" = 1'-0"
Date: 02/14/03
Revised:

Drawing Number:
SKA-2
PAGE 2 OF 3



C FOUNDATION PLAN - BLDG. C

SCALE: 1/8" = 1'-0"



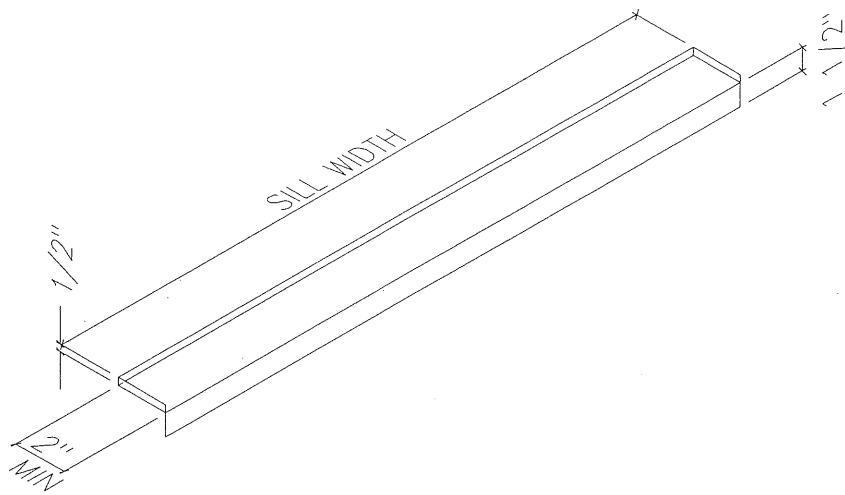
434 Cumberland Avenue
 Portland, ME 04101
 Phone: (207)774-4441
 Fax: (207)774-4016
 www.CWSarch.com

Owner:
 Yale Court LP.
 C/O Yale Court Development
 Company, LLC
 Portland, ME

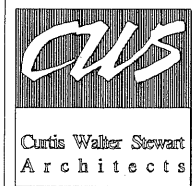
Project:
YALE COURT APARTMENTS
 Yale Court,
 Portland ME
 Project No. 02405

Drawing Title:
BUILDING "C" FOUNDATION
 Scale: 1/8" = 1'-0"
 Date: 02/14/03
 Revised:

Drawing Number:
SKA-2
 SHEET 3 OF 3



COORDINATE PANNING WITH DOOR SILLS
TO ENSURE REAR PAN SECTION TURNS UP
TO FORM A WATERTIGHT SYSTEM.



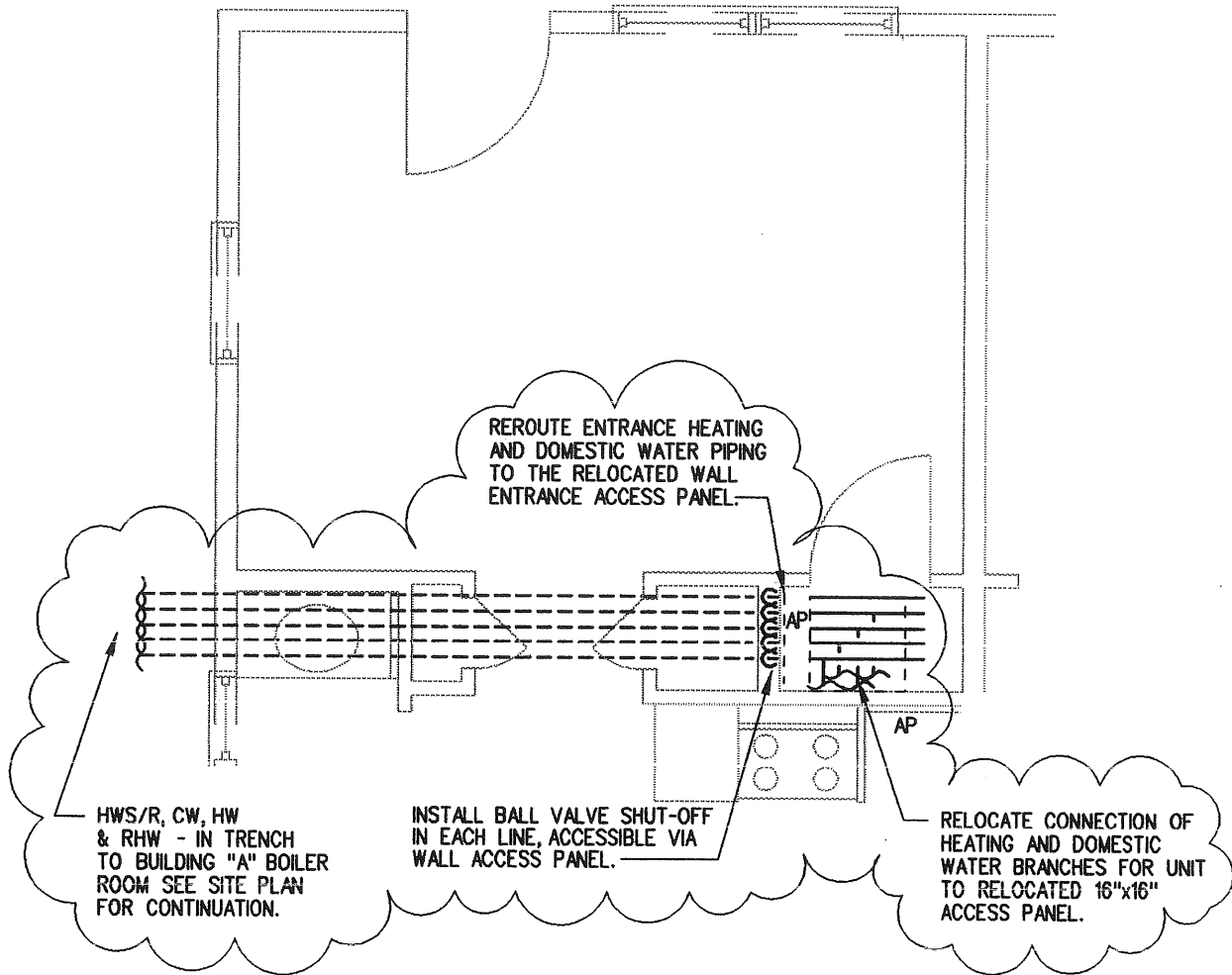
434 Cumberland Avenue
 Portland, ME 04101
 Phone: (207)774-4441
 Fax: (207)774-4016
 www.CWSarch.com

Owner:
 Yale Court LP,
 C/O Yale Court Development
 Company, LLC
 Portland, ME

Project:
**YALE COURT
 APARTMENTS**
 Yale Court,
 Portland ME
 Project No: 02405

Drawing Title:
**SILL PAN
 DETAIL**
 Scale: NTS
 Date: 02/14/03
 Revised:

Drawing Number:
SKA-3



BUILDING B MECHANICAL AND PLUMBING ENTRANCE

NTS



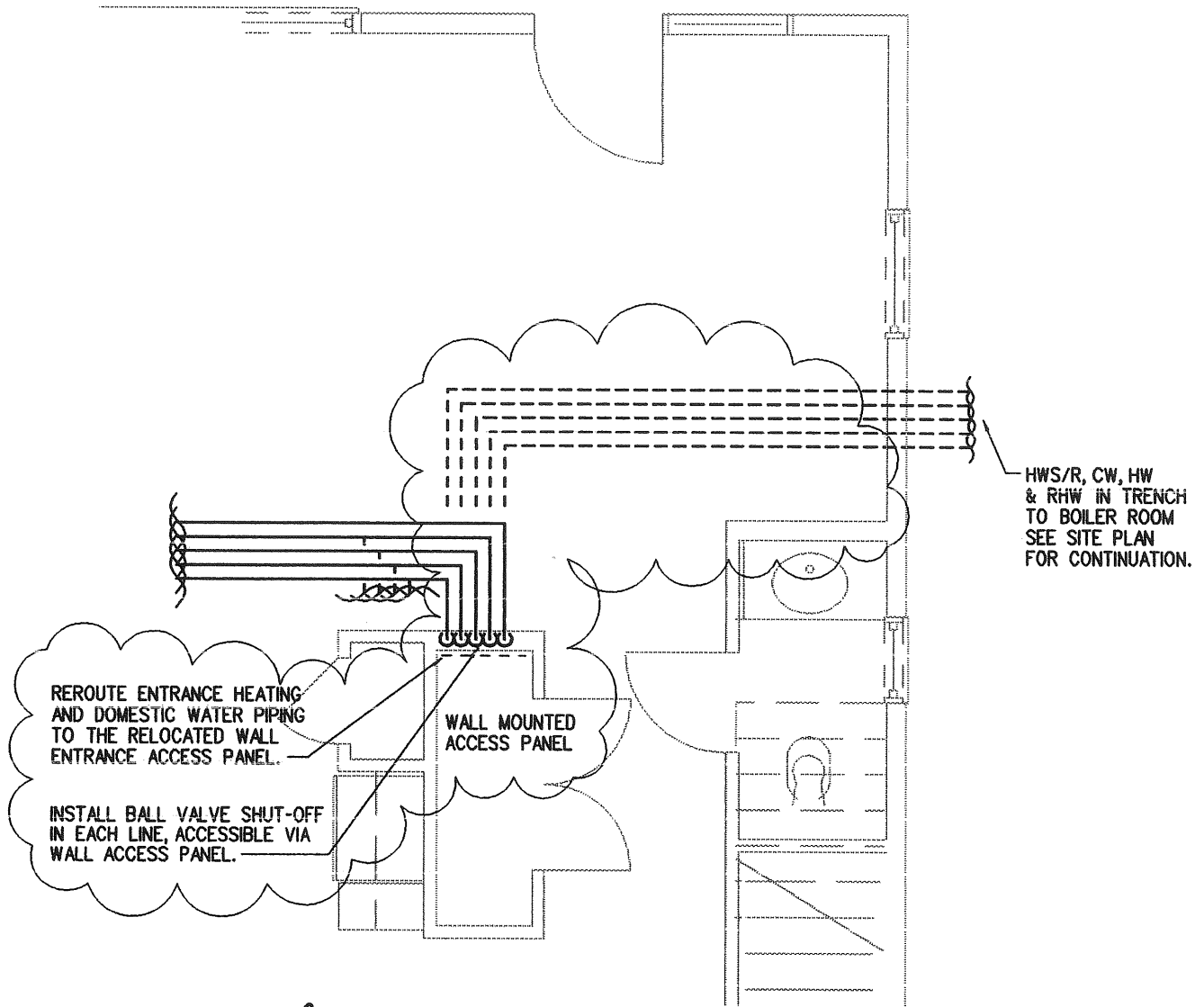
**BENNETT
ENGINEERING**
CONSULTING ENGINEERS
BENNETT ROAD P.O. BOX 297
FREEPORT, MAINE 04032
(207) 865-9475

JOB: YALE COURT APARTMENTS

DESIGNED BY: RNC DATE: 06 FEB 2003

CHECKED BY: SPD DATE: 06 FEB 2003

SCALE: NTS PAGE: 2185SKM2



C
BUILDING E AND J MECHANICAL AND PLUMBING ENTRANCE
NTS



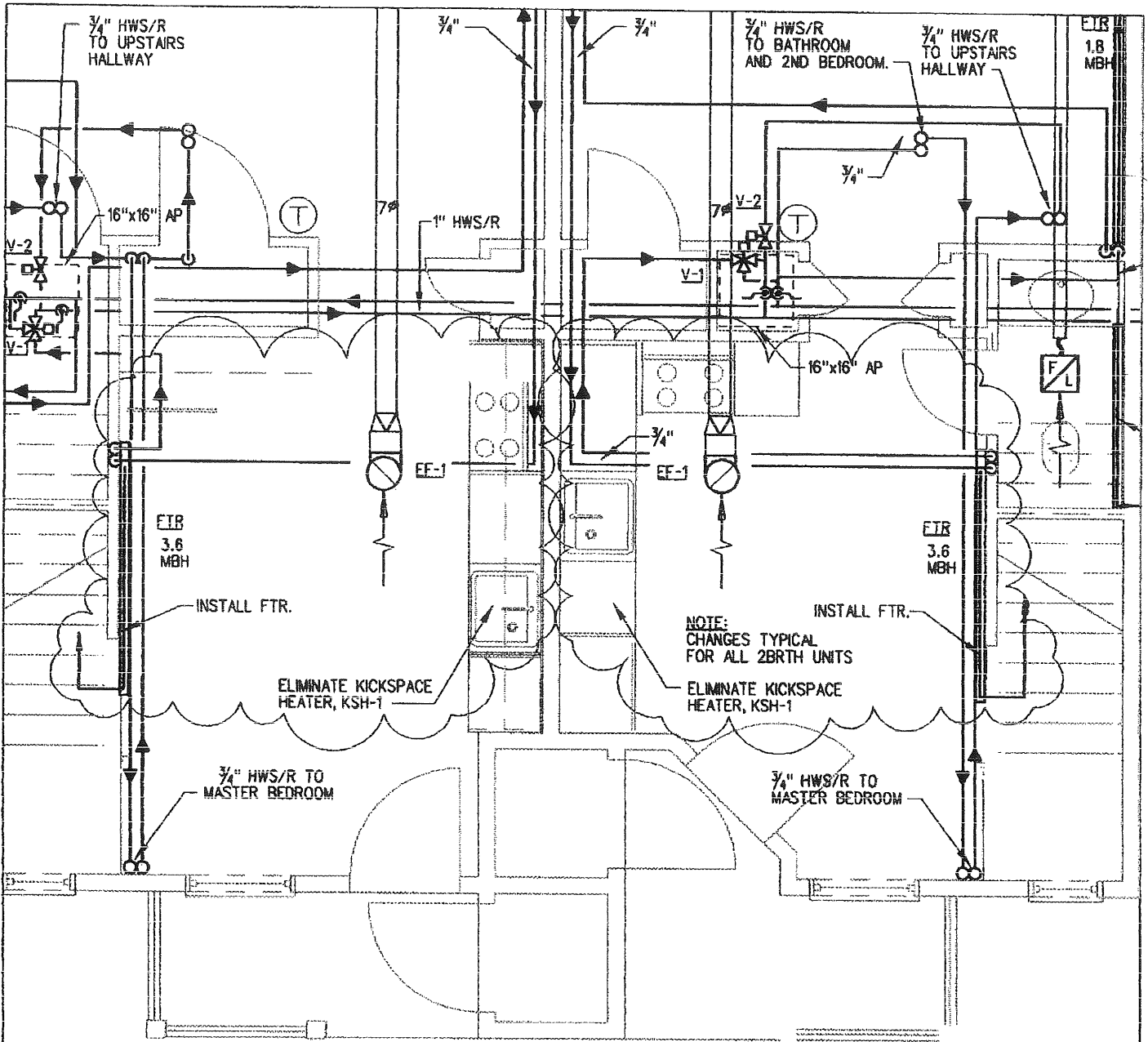
CONSULTING ENGINEERS
BENNETT ROAD P.O. BOX 297
FREEPORT, MAINE 04032
(207) 865-9475

JOB YALE COURT APARTMENTS

DESIGNED BY RNC DATE 13 FEB 03

CHECKED BY SPD DATE 13 FEB 03

SCALE 1/4" = 1'-0" PAGE 2185SKM3



3HCTH

2BRTH

3HCTH/TH 3BR H.C. TOWNHOUSE/ 2BR TOWNHOUSE FIRST FLOOR
SCALE: 1/4"=1'-0"

MECHANICAL PLAN - 3HCTH AND 2BRTH

SCALE: 1/4" = 1'-0"



CONSULTING ENGINEERS
 BENNETT ROAD P.O. BOX 297
 FREEPORT, MAINE 04032
 (207) 865-9475

DESIGNED BY RNC DATE 13 FEB 03
 CHECKED BY SPD DATE 13 FEB 03
 SCALE 1/4" = 1'-0" PAGE 2185SKM4

PUMP PERFORMANCE SCHEDULE

TAG	FLOW RATE (GPM)	HEAD (FT. WG)	IMPEL. SIZE	RPM	EFF %	ELECTRICAL REQUIREMENTS				BASIS OF DESIGN: TACO			
						HP	BHP	WATTS	AMPS	V/PH/Hz	SERVICE	ARRANGEMENT	MODEL
CP1-A	34	35	6.1	1760	52	0.75	-	-	-	240/1/60	BLDG A HWS/R	CARTRIDGE	1615
CP2-A	34	35	6.1	1760	52	0.75	-	-	-	240/1/60	BLDG A HWS/R	CARTRIDGE	1615
CP3-A	10	16	-	3250	-	0.125	-	-	-	120/1/60	BLDG A IFWH	CARTRIDGE	IL0014
CP4-A*	4	20	-	3250	-	0.07	-	-	-	120/1/60	BUILDING A RHW	CARTRIDGE	IL9096
CP1-D	24	35	5.9	3250	46	0.5	-	-	-	120/1/60	BLDG D HWS/R	CARTRIDGE	1615
CP2-D	24	35	5.9	3250	46	0.5	-	-	-	120/1/60	BLDG D HWS/R	CARTRIDGE	1615
CP3-D	10	16	-	3250	-	0.125	-	-	-	120/1/60	BLDG D IFWH	CARTRIDGE	IL0014
CP4-D*	4	20	-	3250	-	0.07	-	-	-	120/1/60	BUILDING D RHW	CARTRIDGE	IL9096
CP1-F	26	40	6.3	3250	43	0.75	-	-	-	240/1/60	BLDG F HWS/R	CARTRIDGE	1615
CP2-F	26	40	6.3	1760	43	0.75	-	-	-	240/1/60	BLDG F HWS/R	CARTRIDGE	1615
CP3-F	10	16	-	3250	-	0.125	-	-	-	120/1/60	BLDG F IFWH	CARTRIDGE	IL0014
CP4-F*	4	20	-	3250	-	0.07	-	-	-	120/1/60	BUILDING F RHW	CARTRIDGE	IL9096
CP1-G	18	35	5.8"	1760	40	0.5	-	-	-	120/1/60	BLDG G HWS/R	CARTRIDGE	1615
CP2-G	18	35	5.8"	3250	40	0.5	-	-	-	120/1/60	BLDG G HWS/R	CARTRIDGE	1615
CP3-G	10	16	-	3250	-	0.125	-	-	-	120/1/60	BLDG G IFWH	CARTRIDGE	IL0014
CP4-G*	4	20	-	3250	-	0.07	-	-	-	120/1/60	BUILDING G RHW	CARTRIDGE	IL9096
CP1-H	34	40	6.5	1760	46	0.75	-	-	-	240/1/60	BLDG H HWS/R	CARTRIDGE	1619
CP2-H	34	40	6.5	1760	46	0.75	-	-	-	240/1/60	BLDG H HWS/R	CARTRIDGE	1619
CP3-H	10	16	-	3250	-	0.125	-	-	-	120/1/60	BLDG H IFWH	CARTRIDGE	IL0014
CP4-H*	4	20	-	3250	-	0.07	-	-	-	120/1/60	BUILDING H RHW	CARTRIDGE	IL9096

* ALL BRONZE CONSTRUCTION



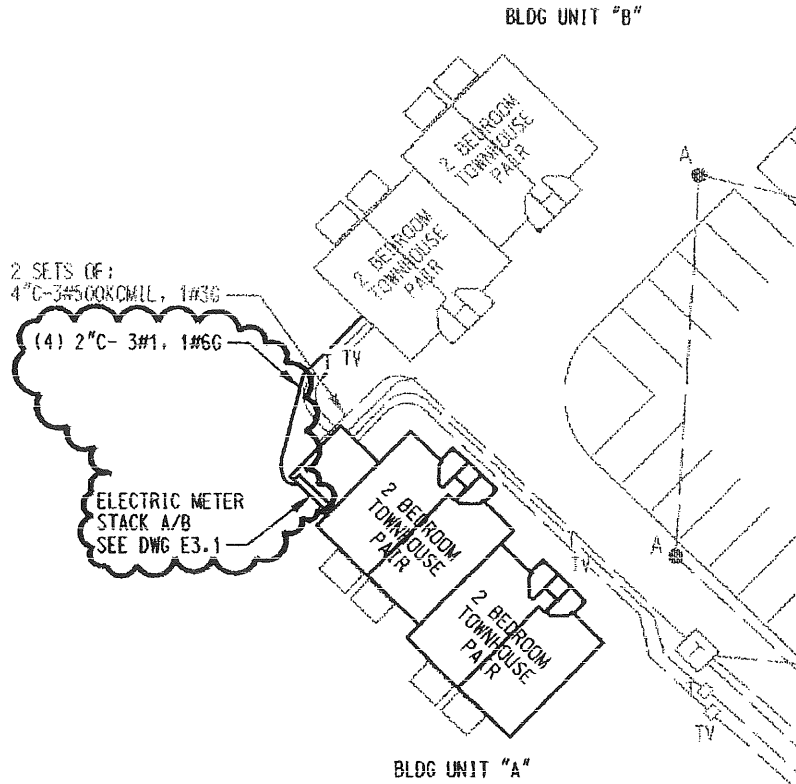
CONSULTING ENGINEERS
BENNETT ROAD P.O. BOX 297
FREEPORT, MAINE 04032
(207) 865-9475

JOB: BEI*2185 - YALE COURT APARTMENTS

DESIGNED BY: WSBJR DATE: 13 FEB 2003

CHECKED BY: WSBJR DATE: 13 FEB 2003

SCALE: 1" = 40'-0" PAGE: SKE1



NOTE:

REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER DETAIL.



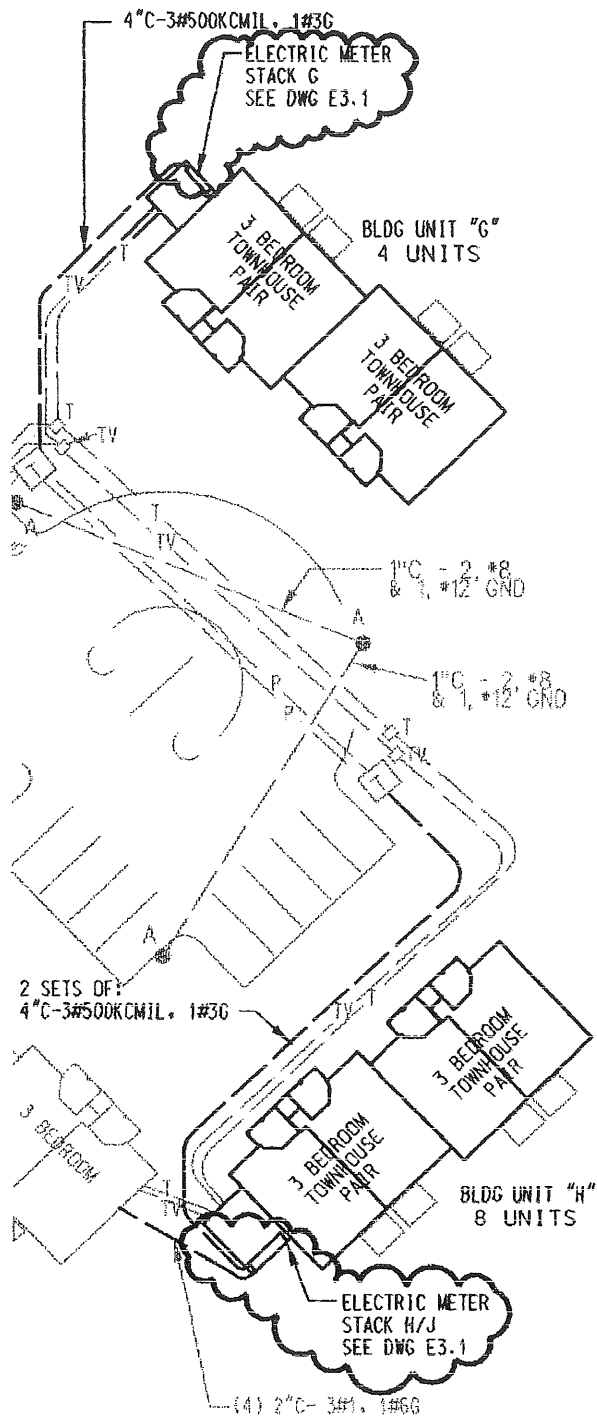
CONSULTING ENGINEERS

BENNETT ROAD P.O. BOX 297
FREEPORT, MAINE 04032
(207) 865-9475

DESIGNED BY: WSBJR DATE: 13 FEB 2003

CHECKED BY: WSBJR DATE: 13 FEB 2003

SCALE: 1" = 40'-0" PAGE: SKE2



NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER DETAIL.

Yale Court PRUD and University Park – Bidding Documents
February 21, 2003
Page 1 of 2

Addendum 02

Curtis Walter Stewart
A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Addendum 02

Date: February 21, 2003

To: All Bidding General Contractors and Registered Plan Holders

From: Ben Walter, CWS Architects

Regarding: **Yale Court PRUD and University Park – Bidding Documents**

Subject: **Addendum 02**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

Modify the Contract Documents including 1) the Project Manual and Specifications dated January 29, 2003 and 2) the Drawings dated January 29, 2003 and Addendum 01 dated February 14, 2003 as follows:

1. Modify the fifth sentence of item number 2. on Addendum 01 to read “Liquidated Damages of **\$35 per unit per day** will be charged if **certificates of occupancy** are not delivered to the owner by the occupancy dates indicated.”
2. Delete note referring to Superpave in Sections 2.01.A and 2.01.B. This requirement refers to MDOT projects only.
3. Modify Specification Section 06670 – PVC Fabrications 2.2.A to add the text “Provide white painted head stainless steel fasteners”.
4. Do not paint the solid PVC exterior trim as indicated in Specification Section 06670 – PVC Fabrications 2.3.A., items 2 and 3.
5. Modify drawings and Specifications Section 07311 – Asphalt Shingles 2.2 Sheet Materials to read “widths” instead of “layers” at valleys, eaves and rakes. Provide Ice-and-Water shield as indicated at all rakes (not shown on drawings). On FRONT building elevations where symbol “B” is indicated where top-of-roof meets vertical walls, aluminum flashing should not be “stepped”.
6. Vinyl Fence Clarification: 1. All fence posts at the dumpster enclosure will be thick walled and have stiffeners. 2. All fence posts at units, detention pond and Community bldg will be thick walled and have stiffeners. 3. The fences at the detention basin and C Bldg tot lot will be the same.
7. Clarification: Vinyl Pull Shades as specified in 12511 – Window Treatments are to be 12 oz. 4-ply vinyl coated fiberglass. Curtain rods specified shall be regular-duty c-shaped split-draw traverse rods; ball baring hinges not required.

End of Addendum 02

Yale Court PRUD and University Park – Bidding Documents
February 21, 2003
Page 2 of 2

Addendum 02

Attachments: None

Yale Court PRUD and University Park – Bidding Documents

Addendum 03

February 24, 2003

Page 1 of 1

Curtis Walter Stewart
A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Addendum 03

Date: February 24, 2003

To: All Bidding General Contractors and Registered Plan Holders
From: Ben Walter, CWS Architects
Regarding: **Yale Court PRUD and University Park – Bidding Documents**
Subject: **Addendum 02**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

Modify the Contract Documents including 1) the Project Manual and Specifications dated January 29, 2003 and 2) the Drawings dated January 29, 2003 and Addendum 01 dated February 14, 2003 as follows:

1. Delete Item No. 2 on the Room Finish Schedule following Specification Section 09900 – Painting in the Project Manual. Provide only eggshell painted ceilings.
2. Modify Item No. 18 of Addendum 01 to read: “Sitework contractor shall provide all trenching and backfilling for the installation of gas service piping (by Northern Utilities) **WITHIN YALE STREET ONLY**. Northern Utilities will provide trenching for gas service piping on the Yale Court PRUD site to the various building and service locations.”

End of Addendum 03

Attachments: None

Yale Court PRUD and University Park – Bidding Documents

Addendum 04

February 25, 2003

Page 1 of 2

Curtis Walter Stewart

A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Addendum 04

Date: February 25, 2003

To: All Bidding General Contractors and Registered Plan Holders

From: Ben Walter, CWS Architects

Regarding: **Yale Court PRUD and University Park – Bidding Documents**

Subject: **Addendum 04**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

Modify the Contract Documents including 1) the Project Manual and Specifications dated January 29, 2003 and 2) the Drawings dated January 29, 2003 and Addendum 01 dated February 14, 2003, Addendum 02 dated February 21, 2003 and Addendum 03 dated February 24, 2003 as follows:

1. On Addendum 03, modify the Subject line to read “Addendum 03”.
2. Site work contractor shall not carry the cost of a permit for installation of the gas line.
3. All site work contractors shall carry the cost of a) installing the 8” water meter and meter pit at the Yale Court PRUD property line and b) Portland Water District inspection fees for installing the (10) services on Yale Street.
4. The owner shall carry the cost of all City of Portland site inspection fees.
5. Modify Item “Q” on the “Exterior Elevations Legend” on Drawing A3.1 to read “Cedar Rail System as per Detail SKA-4, Solid Body Stain: White” (see detail below, N.T.S.)

End of Addendum 04

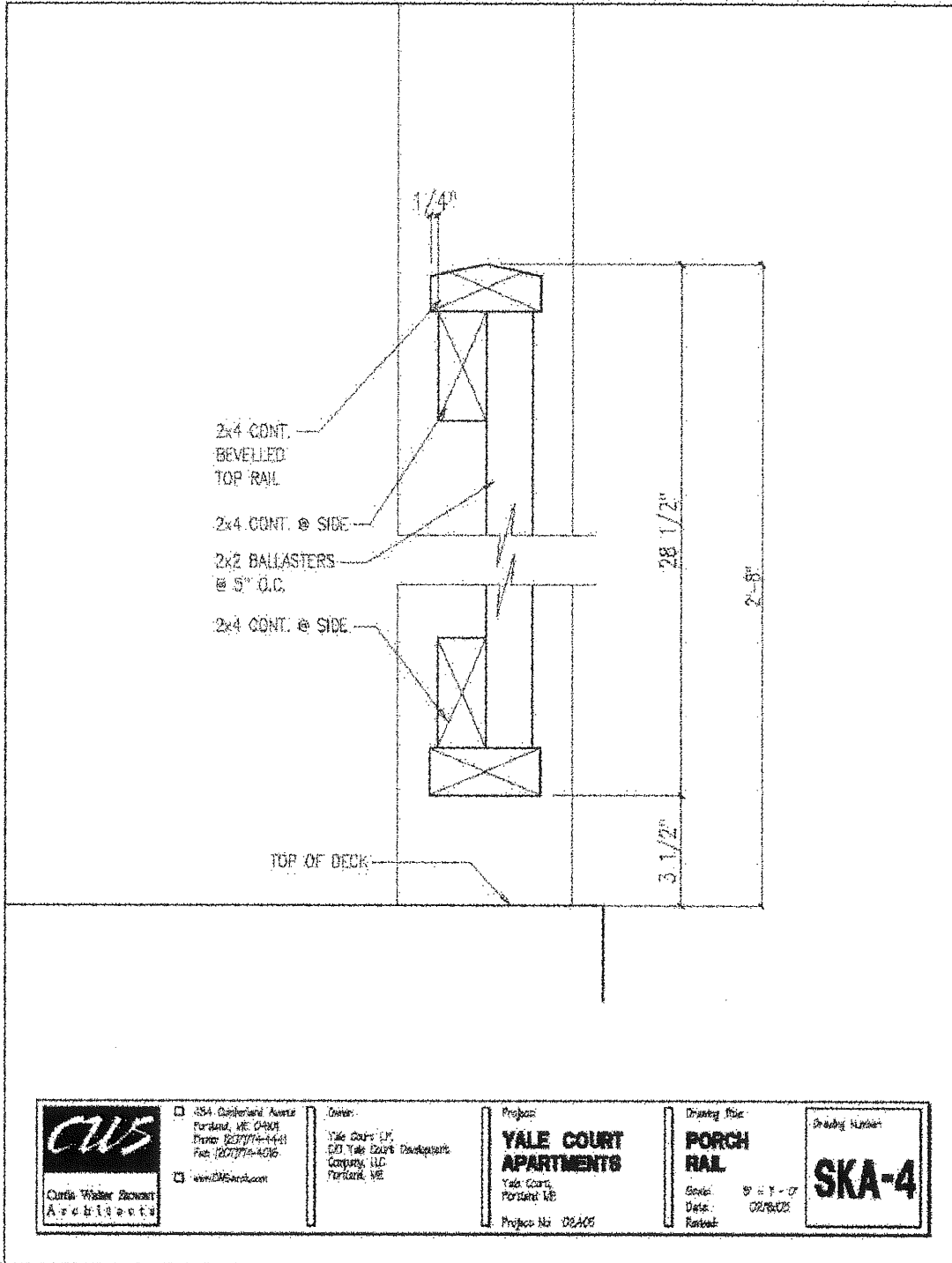
Attachments: SKA-4 Porch Rail (Attached)

Yale Court PRUD and University Park – Bidding Documents

February 25, 2003

Page 2 of 2

Addendum 04



Yale Court PRUD and University Park – Bidding Documents

Addendum 06

February 25, 2003

Page 1 of 1

Curtis Walter Stewart

A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Addendum 06

Date: February 25, 2003

To: All Bidding General Contractors and Registered Plan Holders

From: Ben Walter, CWS Architects

Regarding: **Yale Court PRUD and University Park – Bidding Documents**

Subject: **Addendum 06**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

Modify the Contract Documents including 1) the Project Manual and Specifications dated January 29, 2003 and 2) the Drawings dated January 29, 2003 and Addendum 01 dated February 14, 2003, Addendum 02 dated February 21, 2003, Addendum 03 dated February 24, 2003, Addendum 04 dated February 25, 2003 and Addendum 05 dated February 5, 2003 as follows:

1. Provide Foundation Perimeter Drains as specified in specification Section 02710 – SUBDRAINAGE SYSTEMS, item 2.01 A.1. at the perimeter of all building foundations.
2. There is no requirement to use the Floor Slab Underdrains as specified in Section 02710 – SUBDRAINAGE SYSTEMS, item 2.01 A.2 below any of the building slabs.
3. There is no requirement to use the Foundation Drainage Medium as specified in Section 02710 – SUBDRAINAGE SYSTEMS, item 2.01 G on any of the building foundations.

End of Addendum 06

Attachments: None

Yale Court PRUD and University Park – Bidding Documents

Addendum 05

February 25, 2003

Page 1 of 1

Curtis Walter Stewart
A r c h i t e c t s

434 Cumberland Avenue
Portland ME 04101-2325

Phone: 207.774.4441
Fax: 207.774.4016

Addendum 05

Date: February 25, 2003

To: All Bidding General Contractors and Registered Plan Holders
From: Ben Walter, CWS Architects
Regarding: **Yale Court PRUD and University Park – Bidding Documents**
Subject: **Addendum 05**

The following addendum items apply to the project known as the **Yale Court PRUD and University Park** located in Portland, Maine.

Modify the Contract Documents including 1) the Project Manual and Specifications dated January 29, 2003 and 2) the Drawings dated January 29, 2003 and Addendum 01 dated February 14, 2003, Addendum 02 dated February 21, 2003, Addendum 03 dated February 24, 2003 and Addendum 04 dated February 25, 2003 as follows:

1. Modify Item 5 in Addendum 04 to read: “Modify Item. “Q” on the “Exterior Elevations Legend” on Drawings A3.1, **A3.2, A3.3, A3.4 and A3.5** to read “Cedar Rail System as per Detail SKA-4, Solid Body Stain: White” (see detail below, N.T.S.)”.

End of Addendum 05

Attachments: None



Strengthening a Remarkable City, Building a Community for Life www.portlandmaine.gov

Finance Department
Duane G. Kline, Director

October 13, 2005

Thomas Lea
Maine Bank & Trust
467 Congress Street
P.O. Box 619
Portland, ME 04104-0619

Re: Yale Court/University Park project
Letter of Credit No. 0101008886

Dear Mr. Lea:

This is to inform you that I am authorizing the release of the above-named letter of credit by \$107,158.00, which leaves a zero balance. Enclosed please find the original letter of credit.

If you require any further information, please let me know.

Sincerely,

Duane G. Kline
Finance Director

DGK:mmma
Enclosure

pc: Jay Reynolds, Development Review Coordinator



PORTLAND MAINE

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Planning and Development Department
Lee D. Urban, Director

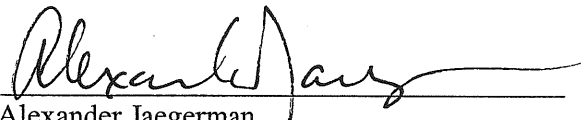
Planning Division
Alexander Jaegerman, Director

TO: Duane Kline, Finance Department
FROM: Alexander Jaegerman, Planning Division Director
DATE: October 6, 2005
SUBJECT: Request for Release of Defect Guarantee
Yale Court/University Park
(ID#2002-0121) (Lead CBL#436A009)

Please release the Letter of Credit account #101008886 for the Yale Court/University Park project.

Remaining Sum \$ 107,158.00

Approved:


Alexander Jaegerman
Planning Division Director

cc: Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator

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PORTLAND MAINE

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Planning and Development Department
Lee D. Urban, Director

Planning Division
Alexander Jaegerman, Director

September 26, 2005

Mr. Michael Payson
Mr. James Wescott
Wescott and Payson II
31 Old Campus Drive
Portland, ME 04103

RE: ~~Performance~~ ^{Defect} Guarantee for Yale Court/University Park

Dear Mr. Wescott and Mr. Payson:

The City has received notification from your bank with regards to the above stated project. Although Mr. Lea's letter was not providing the required 60-day notice, this notification states that your bank elects not to extend letter of credit #0101008886 beyond October 15, 2005.

Upon an inspection, it was verified that a number of defects exist. They are as follows:

1. Landscaping: A number of trees have died since their installation.
2. Loam and Seed: A number of areas around sidewalks, curb islands, etc., do not have sufficient grass growth.

Because your letter of credit is due to expire on October 15, 2005, the City must receive notice that all of the above-stated defects are corrected no later than October 8, 2005. Otherwise, the City will be forced to place a call on the guarantee and complete the work as required.

Sincerely,

Alexander Jaegerman
Planning Division Director

MAINE BANK & TRUST
• a maine bank for maine people •

September 7, 2005

Jay Reynolds
City of Portland
389 Congress Street
Portland, Maine 04101

Re: DEFECT GUARANTEE / LETTER OF CREDIT No.0101008886

Dear Jay:

On August 30th, 2004, Maine Bank & Trust issued the above captioned defect bond to the City in connection with a one year warranty period for Yale Court's public improvements.

Since the one year period is approaching on October 15th, Maine Bank & Trust hereby informs you that it does not intend to renew the Letter of Credit #0101008886.

Therefore we would appreciate the City returning our Letter Credit at its earliest convenience.

Please call the undersigned if you have any questions.

Respectfully yours,



Thomas N Lea
Vice President
Commercial Real Estate



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Finance Department
Duane G. Kline, Director

September 15, 2004

Maine Bank & Trust
P.O. Box 619
Portland, Maine 04104

Re: Yale Court LP for Yale Court Family Housing
Letter of Credit No. 1766 dated March 23, 2004

This is to inform you that I am authorizing the release and return of the above-named letter of credit, in the amount of \$107,158.00.

If you require any further information, please let me know.

Sincerely,

Duane G. Kline
Finance Director

DGK.jlb

pc: Jay Reynolds, Development Review Coordinator

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning


John N. Lufkin
Economic Development

TO: Duane Kline, Finance Department
FROM: Alexander Jaegerman, Planning Division Director
DATE: September 8, 2004
SUBJECT: Request for Release of Performance Guarantee
Yale Court/University Park
(ID#2002-0121) (Lead CBL#436A009)

Please release the Letter of Credit account #1766 for the Yale Court/University Park project.

Remaining Sum \$ 107,158.00

Approved:


Alexander Jaegerman
Planning Division Director

cc: Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator
Todd Merkle, Public Works
File

O:\PLAN\CORRESP\DR\C\PERFORM\YALECOURT4.DOC

Yale Street Single Family Lots Design Guidelines - 4th *Revision*
(As revised by Portland Planning Staff on 12-02-02 & Applicant on 12-11-02)

Suggested Guidelines

A. Streetscape - note street tree layout is controlled by City subdivision requirements.

1. "Front" of homes should face/ orient the street and University Park.
2. Front yard should have improvements compatible with neighborhood.

B. Lot Layout

1. The 25 ft. front and rear yard set backs limit flexibility of traditional detached garage located near rear lot line.
2. Set principal façade of the house forward of the garage facade a minimum of 4 feet.
3. Orient houses to maximize solar exposure for each building and associated outdoor living spaces. Utilize side yard reduction to maximize solar gain when not adversely impacting solar access to an adjacent lot.
4. Orient service side to service side of dwelling and living spaces to living spaces of dwelling on adjacent lots.

C. Site Improvements

1. Paved driveway and front walk (stones, asphalt, brick)
2. Provide walkway from main entrance to public sidewalk or visible from public sidewalk.
3. Provide private yard space at side and/ or rear of lot.
4. Provide traditional landscaping including shade trees, hedges. Provide seasonal interest.
5. Provide Post lamp or wall-mounted lamp for private illumination and to supplement streetlights.

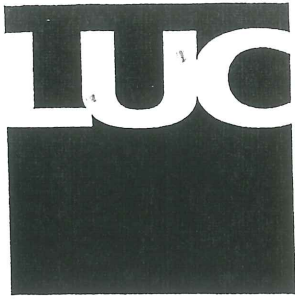
D. House design

1. The overall unifying architectural theme will be "New England Vernacular" and will incorporate such features as multi-gable mass and roof form, articulation of windows with well proportioned trim detail, cornice and eave overhang, porches or other features appropriate to the style selected.
2. Provide front entrance/ porch proportional to the overall building and reinforcing the streetscape. (Orient to the public spaces.)
3. The principal mass of the house shall not be less than 1-1/2 stories. Minimum Roof Pitch shall be 7:12 (v:h).
4. Exterior Materials such shall be natural wood, high quality vinyl clapboard, shingle materials, painted cementitious clapboard or the like.
5. Where a garage must be forward of house, due to physical limitations of the lot (i.e. topography, ledge [or vegetation], an entry element forward of the garage, such as an arbor or the fence with gate, shall be provided.

E. Design Review

1. The approved design theme will become a covenant on the land and registered at the Cumberland County Registry of Deeds. The covenant will be extinguished with issuance of the initial occupancy permit.
2. At the time a building permit application is submitted to the City for each house lot, an individual design review will be conducted by the Planning Authority to ensure compliance with the approved design theme and covenant.

Note: Underlines reflect changes/ additions by City Staff 12-03-02. Bold italics and strikethroughs indicate revisions by Applicant 12-11-02.

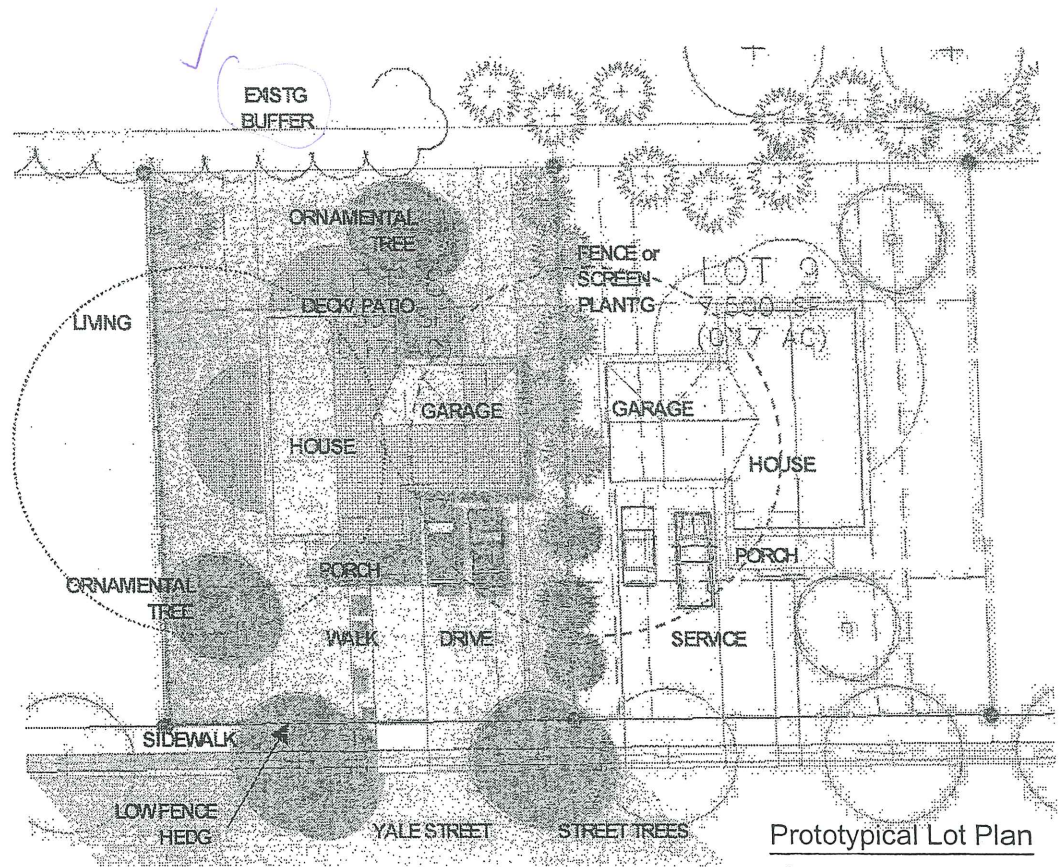


Land Use Consultants, Inc.

Yale Street Single Family Lots Design Guidelines

December 03, 2002 jn 4080

engineers
planners
landscape
architects

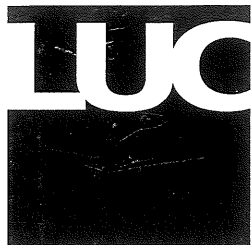


966 RIVERSIDE STREET

Voice (207) 878 * 3313
fax (207) 878 * 0201
www.landuse@gwi.net

Yale Ct.

- check
- * ① Check ROS Areas (2) ✓
 - * ② Check for 5' Sidewalks (Around Bldg G + Between Bldg A+B) ✓
 - * ③ Change in Curb/Ramp into Parking space
 - ④ Plan shows planed end @ outfall? w/ loadwall?
 - ⑤ outlet Rip-Rap needs fixing
 - ⑥ 18" Culvert Inlet needs Repairs (Rocks inside pipe + Rip Rap needs to be added, Lt+S)
 - ⑦ Grade stakes in 2 CS's
 - ⑧ Replace numerous dead trees.
 - ⑨ Reseed areas
 - ⑩ Vacuum pumps
- Public Works...
- ⑩ Excavations??



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

April 14, 2003

4080

Sarah Hopkins
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s

Yale Court PRUD: request for administrative review of minor changes at Yale Court PRUD and Yale Street:

Dear Ms. Hopkins;

On behalf of the Applicant, Yale Court Limited Partners, Land Use Consultants is submitting an application amendment and request for minor changes to the approved plans for Yale Court. Per our previous discussions, these changes may be considered diminutive in scope and can be reviewed at the administrative level. The following revisions are proposed:

1. Remove and relocate five parking stalls as illustrated on attached *Sketch LSK-1-Revised Parking Layout*. This change was discussed with the City planning staff prior to bid and was issued to bidders in the sketch plan format.
2. Revise the bituminous walkways to the individual units as shown on the attached *Sketch Plan-LSK-2-Typical Unit Landscaping-Shrubs & Perennials*. This revision eliminates the double walkways to each unit pair and combines to a single walkway and split entry walks to each double unit as shown on the sketch. This change was discussed with the City planning staff prior to bid and was issued to bidders in the sketch plan format.
3. Substitute High Density Polyethylene (double wall) pipe for PVC pipe as approved for storm drains within Yale Street. This substitution involves a material change for approximately 1,370 LF of 15" PVC, 50 LF of 12" PVC and 1980 LF of 6" PVC UD pipe with HDPE pipe. This change does not require any substantive design changes and will provide an equivalent system.
4. Substitute High Density Polyethylene (double wall) pipe for PVC pipe as approved for storm drains within Yale Court PRUD. This substitution involves a material change for approximately 382 LF of 12" PVC and 2300 LF of PVC UD foundation drainage pipe with HDPE pipe. This change does not require any substantive design changes and will provide an equivalent system.

966 RIVERSIDE STREET
PORTLAND, MAINE 04103

voice (207) 878 3313
f a x (207) 878 0201
www.landuse@gwi.net



5. Substitute shoe-box style site lighting fixtures and poles within the Yale Court PRUD development for the architectural style lighting as approved. The proposed fixture will be Medallion as manufactured by Spaulding Lighting. This change does not require any substantive design changes and will provide an equivalent system. Catalogue cuts for this fixture are attached.

As per our recent telephone conversation, LUC is providing the proposed site changes on 8-1/2" x 11" sketch plan format. Catalogue cuts are provided for the proposed lighting fixtures. Please indicate if these minor changes will need to be added to the full size drawings and recording plat following City approvals.

Land Use Consultants will deliver ten (10) copies of this application to the City Planning Office in Portland on Tuesday, April 15, 2003 for your use and staff review. Please call if you need any more information.

Sincerely:


Patrick L. Clark, PE

Cc: Mike Payson, Yale Court LP
Ben Walter, CWS

Encl: Check #1887, Wescott & Payson to City of Portland, \$100.00
Site Plan Application
Sketch Plan LSK-1-Revised Parking Layout
Sketch Plan LSK-2-Typical Unit Landscaping-Shrubs & Perennials
Catalogue cut for "Medallion" light by Spaulding (2 pages)

City of Portland Site Plan Application

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

Address of Construction: Yale Street, Portland		Zone: R-3
Total Square Footage of Proposed Structure: 30 affordable housing units in 8 attached buildings and a community center, 35,000 +- sq. ft. (PRUD)		Square Footage of Lots: Total Area= 6.42 Acres
Tax Assessor's Chart, Block & Lot Chart#153 Block# AA Lot# 002	Property owner, mailing address: Wescott & Payson II 240 Harvard Street Portland, ME 04103	Telephone: 882-4350 772-2829 (fax)
Consultant/Agent, mailing address phone & contact person : Land Use Consultants, Inc. Attn: David Kamila, P.E. 966 Riverside Street Portland, ME 04103 (207)878-3313	Applicant name, mailing address & telephone: Same as above	Project name: Yale Court
<p>Proposed Development (check all that apply) <input type="checkbox"/> New Building <input type="checkbox"/> Building Addition <input type="checkbox"/> Change of Use</p> <p><input checked="" type="checkbox"/> Residential <input type="checkbox"/> Office <input type="checkbox"/> Retail <input type="checkbox"/> Manufacturing <input type="checkbox"/> Warehouse/Distribution <input type="checkbox"/> Parking lot</p> <p>Subdivision, amount of lots _ @ \$25.00 per lot=</p> <p><input type="checkbox"/> Site Location of Development \$3,000, except for residential lots which are then \$200 per lot _____</p> <p><input type="checkbox"/> Traffic Movement \$1,000 <input type="checkbox"/> Stormwater Quality \$250.00 <input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> After the fact review - Major project \$1,500.00 <input type="checkbox"/> After the fact review - Minor project \$1,200.00</p> <p>Major Development <input type="checkbox"/> \$500.00 Minor Development <input type="checkbox"/> \$400.00</p> <p>Plan Amendments: <input type="checkbox"/> Board review \$200.00 <input checked="" type="checkbox"/> Staff review \$100.00 = \$100.00 TOTAL FEE</p>		
Who billing will be sent to: Michael Payson Mailing address: 240 Harvard Street State and Zip: Portland, ME 04103 Contact person: David A. Kamila, P.E. Phone: (207)878-3313		

Submittals shall include (9) separate folded packets of the following:

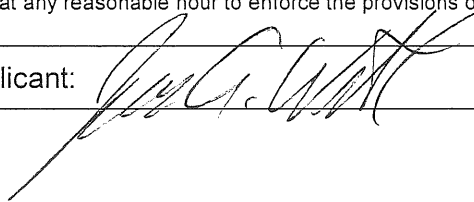
- a. copy of application
- b. cover letter stating the nature of the project
- c. site plan containing the information found in the attached sample plans check list

Amendment to Plans: Amendment applications should include 6 separate packets of the above (a, b, and c)

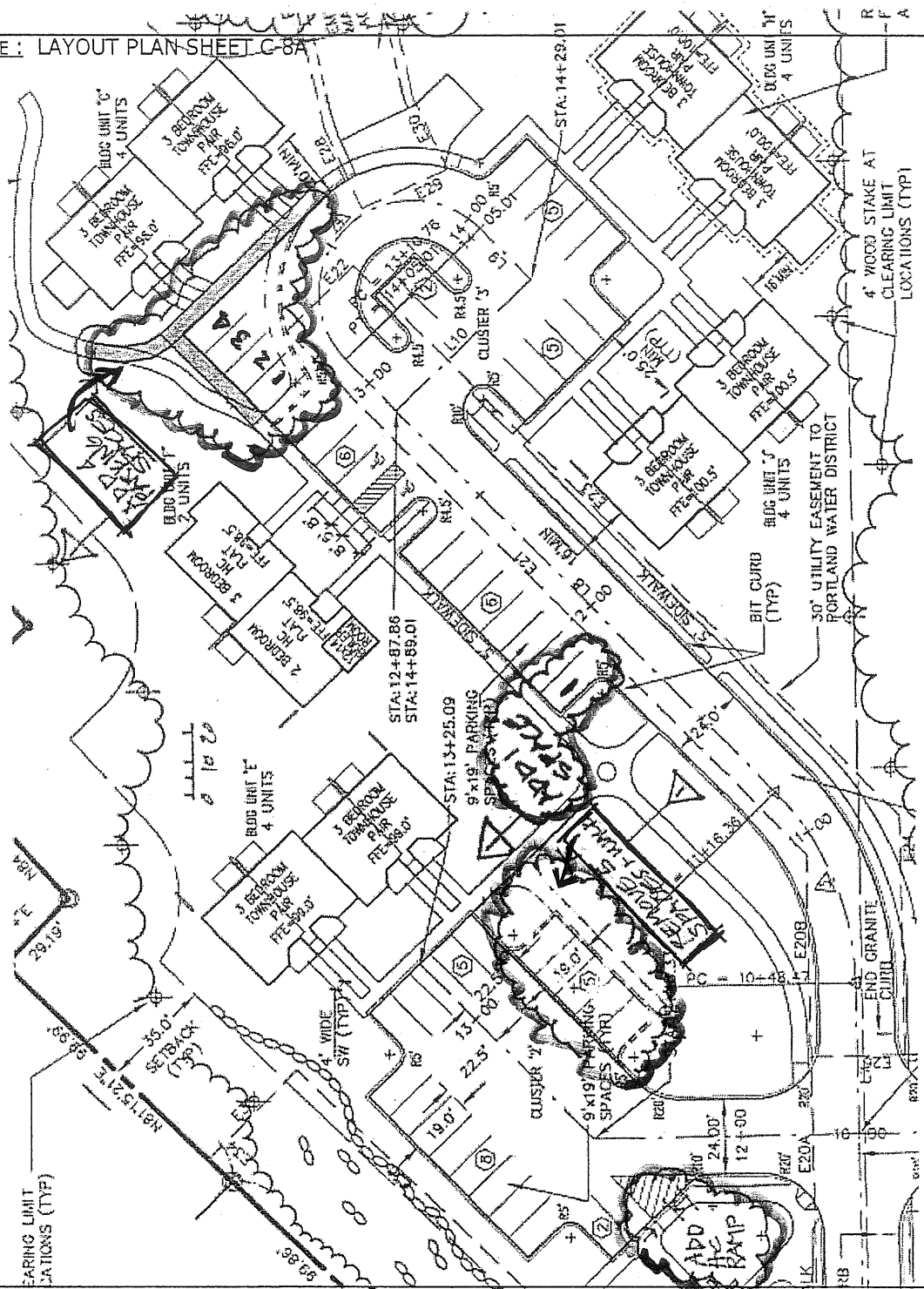
ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM

Section 14-522 of the Zoning Ordinance outlines the process, copies are available at the counter at .50 per page (8.5 x11) you may also visit the web site: [ci.portland.me.us.chapter 14](http://ci.portland.me.us.chapter14)

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this applications issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: 	Date: 4/14/03
---	---------------

REFERENCE: LAYOUT PLAN SHEET C-8A



Land Use Consultants, Inc.

PREPARED FOR:
Yale Court ADDENDA-1

TITLE:
REVISED PARKING LAYOUT

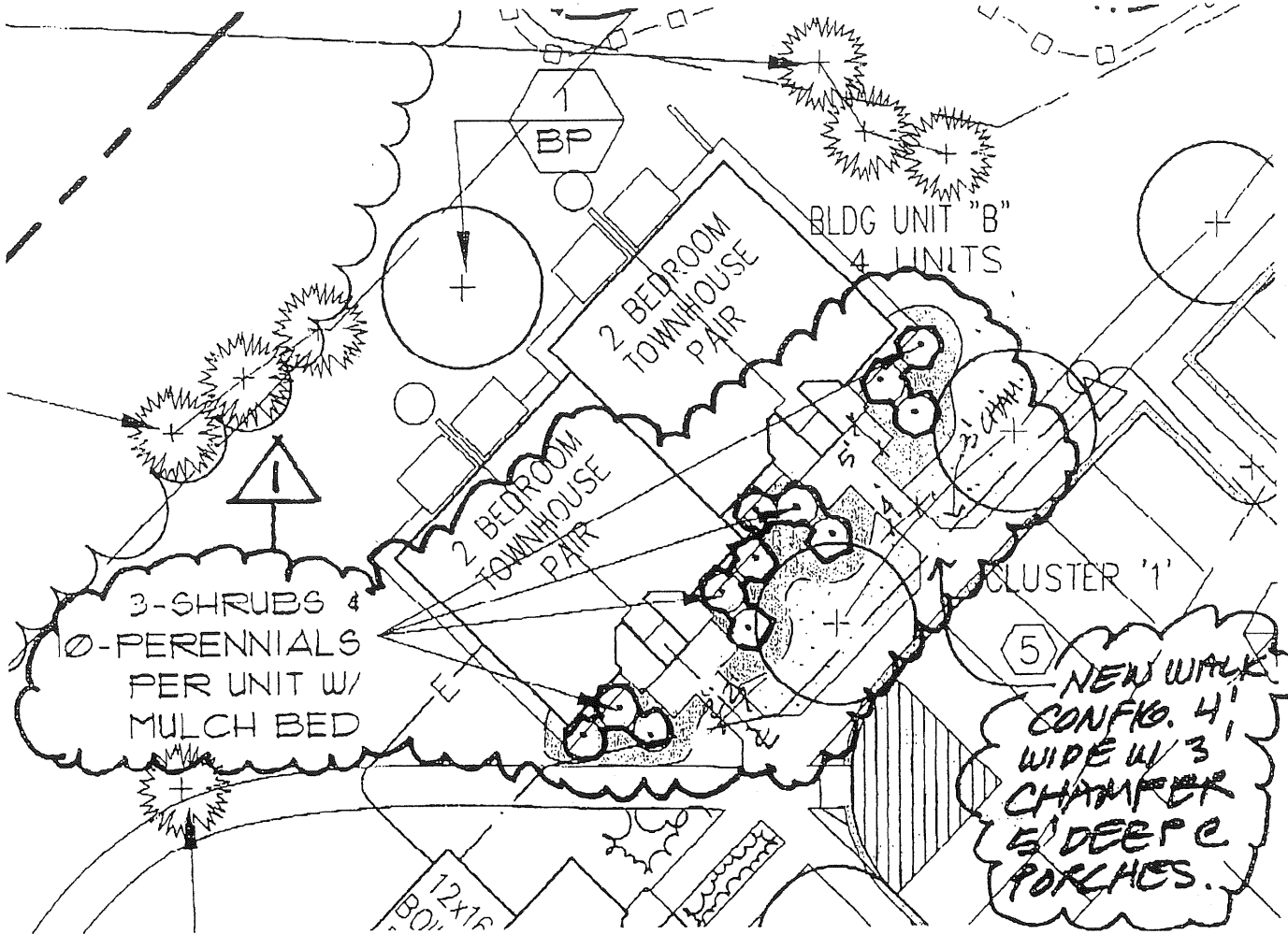
DATE:
FEB 12, 2003

Scale AS NOTED

JOB NO: 4080

LSK-1

REFERENCE: LANDSCAPE PLAN SHEET C-10



Land Use Consultants, Inc.

PREPARED FOR:
Yale Court ADDENDA-1

DATE:
FEB 12, 2003

Scale AS NOTED

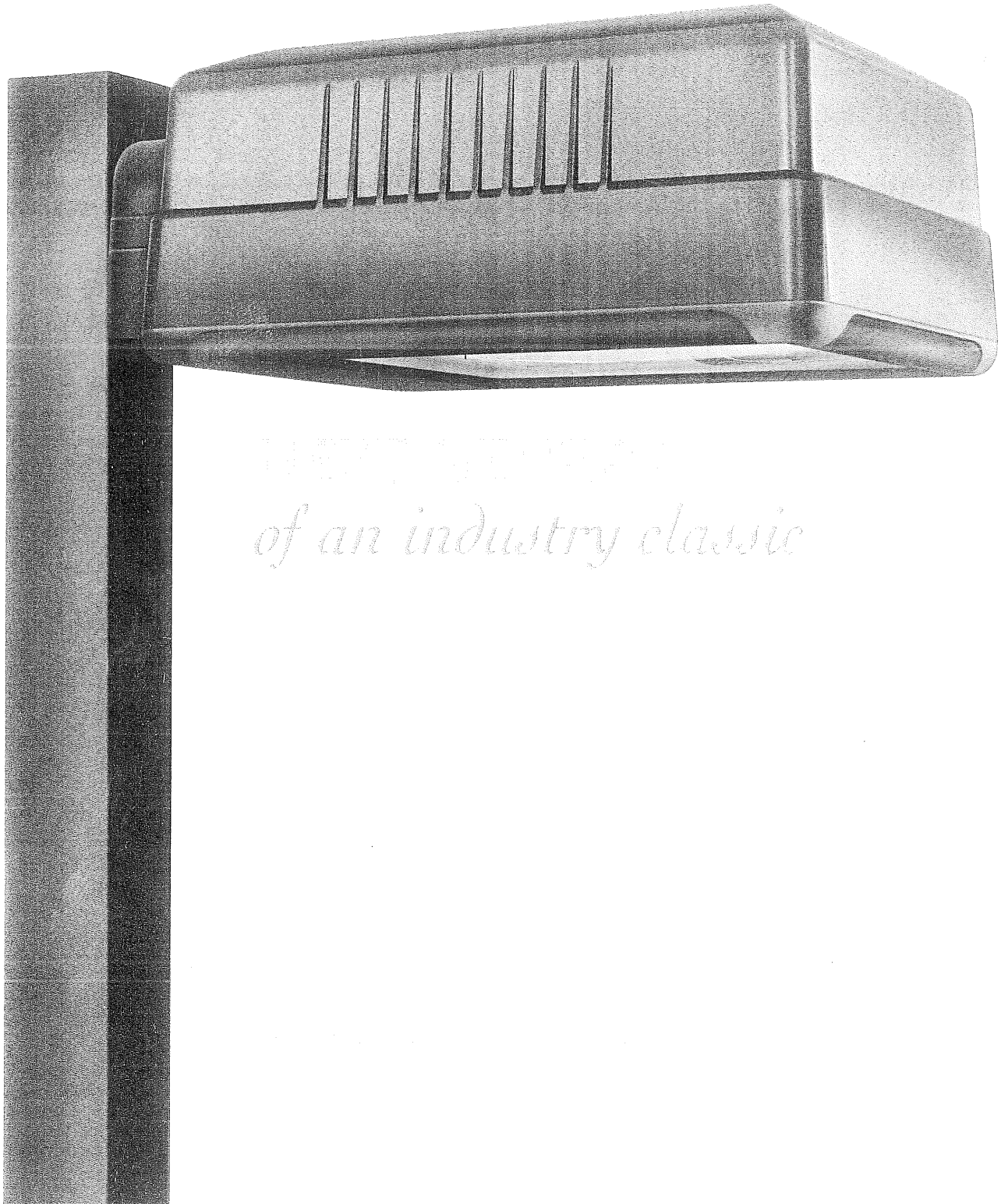
TITLE:
TYPICAL UNIT
LANDSCAPING-
SHRUBS & PERENNIALS

JOB NO: 4080

LSK-2



CAMBRIDGE

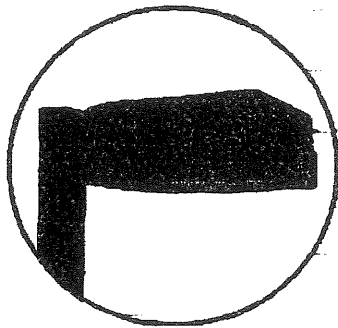


*NEW DESIGN
of an industry classic*

MEDALLION

Catalog Number

Type



Specification luminaire provides outstanding uniformity for parking areas, entrances, office parks, schools, walkways, and parks.

Features

- Architectural, one-piece die-cast aluminum housing with nominal .125" wall thickness. Contour lines and radius corners complete unique design.
- Die-cast aluminum door hinges to housing and secures with two, captive screws. Clear, flat or convex, tempered glass lens seals to door and housing with one-piece silicone gasketing.
- Specular, anodized aluminum reflectors for horizontal lamp, provide Type II, III, IV, or V square light patterns, and for vertical lamp provide Type IV or V square light patterns. Horizontal Type II, Type III, and vertical Type VS reflectors feature unique, multi-faceted designs. IESNA Full Cutoff lighting classification achieved with vertical lamp and flat lens.
- Die-cast aluminum arm for pole mount features access door to facilitate installation. Wall mount with cast aluminum bracket and arm. Mast arm mount with cast aluminum slipfitter.
- Mogul porcelain socket, pulse-rated, with spring loaded, nickel plated center contact and reinforced lamp grip screw shell. Medium base for ED-17 lamp.
- CWA type, HPF ballast, starting rated at -20°F (-40°F for HPS).
- TGIC thermoset polyester powder paint finish with choice of six standard, and four premium standard colors.
- UL and CUL listed for wet locations.
- Patent pending on multi-faceted reflector designs.

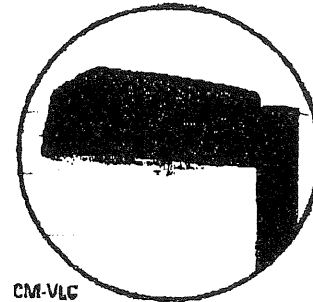
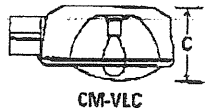
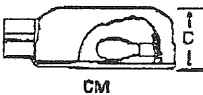
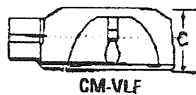
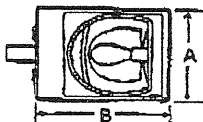
Ordering Information

Order No. Example **1** **2** **3** **4** **5** **6** **7**
CM - PMS - M400 - III - MT - R - SGB

- 1 Model**
CM - horizontal lamp with flat lens (Type II, III, IV, or VS reflector)
CM-VLC - vertical lamp with convex lens (Type IV or VS reflector only)
CM-VLF¹ - vertical ED-17 lamp with flat lens (Type IV or VS reflector only)
- 2 Mounting Mode**
PM6 - 5" arm mount
PM10 - 10" arm mount, required for any 90° configurations
WB - wall bracket
MAF - mast arm fitter for 2 1/2" OD arm
- 3 Lamp Types/Watts**
METAL HALIDE
M175 (ED-28)²
M250 (ED-28)
M400 (ED-28)
SUPER METAL HALIDE
M175MS (ED-28)¹
M250MS (ED-28)
M400MS (ED-28)
- 4 Reflector**
II - narrow asymmetric
III - asymmetric
IV - forward throw
VS - symmetric square
- 5 Voltage**
MT - multi-tap⁴
 347
 480⁵
- 6 Options**
PR - photo receptacle (less cell)
PRC - photo receptacle with cell
PE - photoelectric button cell (120-277v)
FS - fusing (specify voltage)
RP - removable ballast panel
TL - tool-less door and reflector panel
QZ - quartz standby time delay (D.C. bayonet base lamp included)
VG - polycarbonate vandal guard with **CM** and **CM-VLF**
CS - internal house-side cutoff shield with **CM** and **CM-VLF**
- 7 Color**
STANDARD **PREMIUM STANDARD**
DBZ - dark bronze **MBZ** - medium bronze
SGB - black **BGE** - beige
SWT - white **LIV** - light ivory
PRG - gray **CMB** - burgundy
PLS - platinum silver
FGP - forest green

¹Available with medium base, ED-17 lamp up to 200w Metal Halide and 150w HPS.
²Must use medium base, ED-17 lamp for vertical orientation with flat lens.
³Vertical lamp orientation only.
⁴Factory wired for 277 volt unless specified.
⁵Not available with 100w Pulse Start Metal Halide.

Dimensions



	A	B	C	EPA	Wt./Lbs.
CM	18"	21.75"	10"	1.9	39
CM-VLC	16"	21.75"	13.25"	2.0	41
CM-VLF	16"	21.75"	10"	1.9	39

SPAULDING

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

July 19, 2004

Christopher Ballard, Inc.
7 Terra Way
Falmouth, ME 04105

RE: Yale Street Subdivision; Amended Site Plan Application

Dear Mr. Ballard,

This letter is to confirm the revision to the approved plan of the Yale Court project located on Yale Street. The approved revisions include the revised grading plan to address drainage and the installation of daylight foundations. The revision has been approved with the following condition generated by the City's engineering review consultant:

To further assist new home construction and prevent damage from flooded or saturated basements, we suggest that any home that is built with a finish floor within 2 feet of the "calculate or agreed" 100 yr flood elevation be equipped with provisions for a sump pump to drain the basement and foundation. Based on that idea, we suggest that lots 5,6,7,8, and 9 be constructed with means of pumping groundwater away from the home foundation, if additional lots do not have provisions for positive gravity foundation drains via pipe to either a storm drain or by daylight, that they be required to install a sump pump provision.

The revised plan has been reviewed and approved by the project review staff including representatives of the Planning, Public Works, Building Inspections, Fire and Parks Departments.

If you have any questions regarding the revision please contact Jay Reynolds at 874-8632.

Sincerely,

Alexander Jaegerman
Planning Division Director

cc: Lee D. Urban, Planning and Development Department Director
Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator
Marge Schmuckal, Zoning Administrator
Inspections Division
Michael Bobinsky, Public Works Director
Traffic Division
Eric Labelle, City Engineer
Jeff Tarling, City Arborist
Penny Littell, Associate Corporation Counsel
Lt. Gaylen McDougall, Fire Prevention
Assessor's Office
Approval Letter File

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

February 26, 2004

Christopher Ballard, Inc.
7 Terra Way
Falmouth, ME 04105

RE: Yale Street Subdivision, Lots 2, 4, and 5

Dear Mr. Ballard,

After meeting on site to look at the buildout of lots 2 and 5 of the Yale Street Subdivision, it was noticed that the buildout does not match the approved site plans. As discussed, the daylight basement features on lots 2 and 5 are not indicated on the site plan. As a result, the approved grading plans are not being constructed as proposed.

At this time, the City requests that you apply for a minor site plan amendment to the Yale Street Subdivision plan. In particular, this amendment should show new/proposed topography and a revision to sheet #9 (grading and drainage) is requested. Also, we had met previously to discuss the swale behind the lots and the effort to conserve some of the existing trees. Tree preservation may make it difficult, or perhaps impossible, to construct the swale. Please address this within your amendment.

Currently lot 4's building permit application shows the same, building plans that do not match the grading/site plan. As I understand, you will be re-submitting to address this lot as well.

Sincerely,

Jay Reynolds
Development Review Coordinator

CC: Alexander Jaegerman, Planning Division Director
Sarah Hopkins, Development Review Services Manager
Todd Merkle, Public Works Department
Mike Nugent, Inspection Services Manager
Marge Schmuckal, Zoning Administrator



04P086

TO: JayReynolds – Development Review Coordinator/Planner
FROM: Jim Seymour PE–Development Review Coordinator, Sebago Technics, Inc.
RE: Yale Court Lots 1-10– Yale Street
DATE: June 23, 2004

Sebago Technics has reviewed the revised Grading Plan and supporting stormwater calculations for the proposed Yale Court single-family subdivision lots 1-10 located on Yale Street. The following comments are submitted in outline format:

1. Stormwater Management

- A. Based on the calculations submitted it appears that the stormwater elevations in the swale for the 100 yr. storm have been estimated, and it appears that the elevations of the basements are higher than the swale's peak elevation for the 100 yr storm. The concern is that the calculations seem to be short on the watershed area contributing to the swale and its associated wetlands. The area will likely be substantially larger if we look at the overall impact to that swale from land west of the subdivision's lot 5 and along Yale Street. However, the swale appears to have a large capacity when full, (near 6 CFS). Our suggestion is to hold the top of bank elevation 94.0+ as the maximum flood/risk elevation, due to the likelihood of debris damming the flows, or poor maintenance causing negative impacts and elevating the flood elevation higher than those calculated.
- B. To further assist new home construction and prevent damage from flooded or saturated basements, we suggest that any home that is built with a finish floor within 2 feet of the "calculate or agreed" 100 yr flood elevation be equipped with provisions for a sump pump to drain the basement and foundation. Based on that idea, we suggest that lots 5,6,7,8, and 9 be constructed with means of pumping groundwater away from the home foundation, if additional lots do not have provisions for positive gravity foundation drains via pipe to either a storm drain or by daylight, that they be required to install a sump pump provision.
- C. Where concentrated flows due to grading occur between lots along the property line, we suggest that an easement be created equal to the two setback requirements. This will enable drainage to be maintained between the properties without impacting one lot more than the other. Also, it would be best to keep the common channel right on the property line.

2. Easement Access/ Restrictions

- A. The storm drain easement between Lots 3 and 4 shall add a note, that any plantings within the easement are done at the owners risk and responsibility, and if any repairs are deemed necessary by the City, they will not be responsible for their replacement if damaged during repairs or maintenance.

3. Grading/Erosion Control

- A. Lot 1 appears to be filling and developing within the wetlands. The house looks like it can be shifted to the east to give more useable land around the house and keep the house itself nearly out of the wetlands.
- B. Due to the steep slopes to accommodate daylight basements it may be more practical to use retaining walls for slope/elevation differences. The steep grades as shown, are much too difficult to maintain and mow. Some portions of lots 1,2,3,4, and 5 may be considered.
- C. A spot grade on lot 6 near or on the deck, is too low, and will pond water at the deck location. This needs to be brought up at least two feet.

4. Utility Installation/Location

- A. Foundation drainage provisions need to be added to the lots or a note added discussing how this will be addressed for each specific lot.

5. General

- A. The single-family lots should include erosion control measures such as check dams and silt fencing at each intersection of channel flow, and a bark mulch berm or fencing shall protect the rear swale until all homes are constructed and fully vegetated.

6. Details

- A. A landscape swale buffer detail shall be added to the plans. We are concerned that landscaping may interfere with drainage between the lots if placed in the center of the swale.

Based on my review of these revisions, we can make conditions of approval. Some of the comments we have suggested will need some detailed input. Overall we believe that the stormwater runoff and capacity issues can be adequately addressed with raising the home basement elevations and/or include provisions for foundation/sump pumps. We hope these comments help you in your discussions with the applicant. Please contact our office with any questions.

JRS:jrs

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

2003-0225

Application I. D. Number

10/17/2003

Application Date

Amendment to Plan - University Park

Project Name/Description

Wescott & Payson II

Applicant

240 Harvard St , Portland, ME 04103

Applicant's Mailing Address

Yale St, Portland, Maine

Address of Proposed Site

436 A009001

Assessor's Reference: Chart-Block-Lot

Consultant/Agent

Agent Ph: _____ **Agent Fax:** _____

Applicant or Agent Daytime Telephone, Fax

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

Proposed Building square Feet or # of Units _____ Acreage of Site _____ Zoning **R3**

Check Review Required:

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> Site Plan (major/minor) | <input type="checkbox"/> Subdivision # of lots _____ | <input type="checkbox"/> PAD Review | <input type="checkbox"/> 14-403 Streets Review |
| <input type="checkbox"/> Flood Hazard | <input type="checkbox"/> Shoreland | <input type="checkbox"/> Historic Preservation | <input type="checkbox"/> DEP Local Certification |
| <input type="checkbox"/> Zoning Conditional Use (ZBA/PB) | <input type="checkbox"/> Zoning Variance | | <input type="checkbox"/> Other _____ |

Fees Paid: Site Plan _____ Subdivision _____ Engineer Review _____ Date _____

DRC Approval Status:

Reviewer _____

- Approved** **Approved w/Conditions See Attached** **Denied**

Approval Date _____ Approval Expiration _____ Extension to _____ Additional Sheets Attached

Condition Compliance _____ signature _____ date _____

Performance Guarantee **Required*** **Not Required**

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

- | | | | |
|---|----------------------------|--|-----------------------------|
| <input type="checkbox"/> Performance Guarantee Accepted | _____ date _____ | _____ amount _____ | _____ expiration date _____ |
| <input type="checkbox"/> Inspection Fee Paid | _____ date _____ | _____ amount _____ | |
| <input type="checkbox"/> Building Permit Issue | _____ date _____ | | |
| <input type="checkbox"/> Performance Guarantee Reduced | _____ date _____ | _____ remaining balance _____ | _____ signature _____ |
| <input type="checkbox"/> Temporary Certificate of Occupancy | _____ date _____ | <input type="checkbox"/> Conditions (See Attached) | _____ expiration date _____ |
| <input type="checkbox"/> Final Inspection | _____ date _____ | _____ signature _____ | |
| <input type="checkbox"/> Certificate Of Occupancy | _____ date _____ | | |
| <input type="checkbox"/> Performance Guarantee Released | _____ date _____ | _____ signature _____ | |
| <input type="checkbox"/> Defect Guarantee Submitted | _____ submitted date _____ | _____ amount _____ | _____ expiration date _____ |
| <input type="checkbox"/> Defect Guarantee Released | _____ date _____ | _____ signature _____ | |

City of Portland Site Plan Application

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

Address of Construction: Yale Street, Portland		Zone: R-3
Total Square Footage of Proposed Structure: Residential Subdivision- To be determined		Square Footage of Lots: Total Area= 1.86 Acres
Tax Assessor's Chart, Block & Lot Chart# Block# Lot#	Property owner, mailing address: Wescott & Payson II Yale Street Portland, ME 04103	Telephone: 882-4350 772-2829 (fax)
Consultant/Agent, mailing address phone & contact person : Land Use Consultants, Inc. Attn: David Kamila, P.E. 966 Riverside Street Portland, ME 04103 (207)878-3313	Applicant name, mailing address & telephone: Same as above	Project name: Minor field First Amended Subdivision Plan Plan of Lots at University Park
<p>Proposed Development (check all that apply) <input type="checkbox"/> New Building <input type="checkbox"/> Building Addition <input type="checkbox"/> Change of Use</p> <p><input checked="" type="checkbox"/> Residential <input type="checkbox"/> Office <input type="checkbox"/> Retail <input type="checkbox"/> Manufacturing <input type="checkbox"/> Warehouse/Distribution <input type="checkbox"/> Parking lot</p> <p><input type="checkbox"/> Subdivision, amount of lots __ @ \$25.00 per lot= __</p> <p><input type="checkbox"/> Site Location of Development \$3,000, except for residential lots which are then \$200 per lot _____</p> <p><input type="checkbox"/> Traffic Movement \$1,000 <input type="checkbox"/> Stormwater Quality \$250.00 <input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> After the fact review - Major project \$1,500.00 <input type="checkbox"/> After the fact review - Minor project \$1,200.00</p> <p>Major Development <input type="checkbox"/> \$500.00 Minor Development <input type="checkbox"/> \$400.00</p> <p>Plan Amendments: <input type="checkbox"/> Board review \$200.00 <input checked="" type="checkbox"/> Staff review \$100.00 = \$250.00 TOTAL FEE</p>		
Who billing will be sent to: Michael Payson Mailing address: 240 Harvard Street State and Zip: Portland, ME 04103 Contact person: David A. Kamila, P.E. Phone: (207)878-3313		

Submittals shall include (9) separate folded packets of the following:

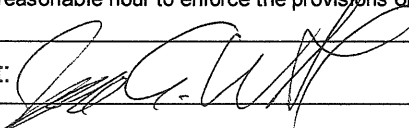
- a. copy of application
- b. cover letter stating the nature of the project
- c. site plan containing the information found in the attached sample plans check list

Amendment to Plans: Amendment applications should include 6 separate packets of the above (a, b, and c)

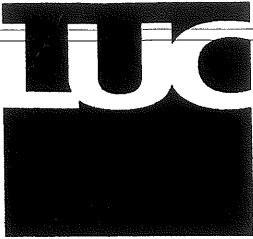
ALL PLANS MUST BE FOLDED NEATLY AND IN PACKET FORM

Section 14-522 of the Zoning Ordinance outlines the process, copies are available at the counter at .50 per page (8.5 x11) you may also visit the web site: ci.portland.me.us.chapter 14

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this applications issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: 	Date: 10/17/03
---	----------------

This application is for site review ONLY, a building Permit application and associated fees will be required prior to construction.



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

October 16, 2003

4080

Sarah Hopkins
Department of Planning & Urban Development
City Hall
289 Congress Street
Portland, ME 04101

e n g i n e e r s
p l a n n e r s
l a n d s c a p e
a r c h i t e c t s

Yale Court PRUD: request for administrative review of minor field changes at Yale Court PRUD:

Dear Ms. Hopkins;

At the request of Jay Reynolds, Development Review Coordinator, Land Use Consultants is submitting an application amendment and request for minor changes to the approved Grading Plan for Yale Court (Sheet C-9), on behalf of the Applicant, Yale Court Limited Partners. This request is a result of minor grading changes around the buildings required to clarify grading directly around each unit and coordinate the typical grading indicated on structural foundation details with the approved Grading Plan. Initially, construction sketches were issued to the contractor as a field directive for revisions at each unit. However, Mr. Reynolds has indicated that these revisions must be reviewed by the City as an amendment to the approved Site Plan. No changes were made which would alter or revise drainage, drainage patterns, drainage calculations, stormwater management, water quality treatment, impervious areas or other permit compliance issues. It is our understanding these changes may be considered diminutive in scope and can be reviewed at the administrative level. The following revisions are proposed:

1. Revised grading at entrances, patios and around foundations of each building.
2. Raised grade slightly along curb and sidewalk in front of Building "C".

As per my recent telephone conversation with Mr. Reynolds, LUC is providing plan sheet C-9 (grading plan) only, for review.

Land Use Consultants will deliver ten (10) copies of this application to the City Planning Office in Portland for your use and staff review. Please call if you need any more information.

Sincerely:

Patrick L. Clark, PE

Cc: Mike Payson, Yale Court LP
Ben Walter, CWS

Encl: Check # _____, Wescott & Payson to City of Portland, \$250.00
Site Plan Application
Grading, drainage & Erosion Controls Plan (sheet C-9), revised

966 RIVERSIDE STREET
PORTLAND, MAINE 04103

Voice (207) 878-3313
Fax (207) 878-0201
landuse@landuseinc.net

Finance Department



Duane G. Kline
Director

CITY OF PORTLAND

April 1, 2004

Maine Bank & Trust
P.O. Box 619
Portland, ME 04104

Re: Yale Court Family Housing
Letter of Credit #1750, dated April 16, 2003

This is to inform you that I am authorizing the release and return of the above-named letter of credit, which has a balance remaining of \$146,183.

If you require any further information, please let me know.

Sincerely,

Duane G. Kline
Finance Director

DGK.jlb

pc: Jay Reynolds, Development Review Coordinator

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

TO: Duane Kline, Finance Department
FROM: Alexander Jaegerman, Planning Division Director
DATE: March 30, 2004
SUBJECT: Request for Release of Performance Guarantee
Yale Court/University Park
(ID#2002-0121) (Lead CBL#436A009)

Please release the Letter of Credit account #1750 for the Yale Court/University Park project. A replacement letter of credit (#1766) has been submitted.

Remaining Sum \$ 146,183.00

Approved:



Alexander Jaegerman
Planning Division Director

cc: Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator
Todd Merkle, Public Works
Code Enforcement
File

O:\PLAN\CORRESP\DR\PERFORM\YALECOURT3.DOC

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

February 26, 2004

Christopher Ballard, Inc.
7 Terra Way
Falmouth, ME 04105

RE: Request to Clear, Excavate, and Blast
Lots 1,3,4,6,8,9, and 10 Yale Street Subdivision

Dear Mr. Ballard,

Thank you for your written request to clear, excavate, and blast on the remaining vacant lots on Yale Street prior to issuance of building permits.

Please consider this letter your approval to clear, excavate, and blast these lots. This approval is based on the approved subdivision plan. As part of this approval, all erosion control measures shall be installed prior to any soil disturbance.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jay Reynolds', is written over a horizontal blue line.

Jay Reynolds
Development Review Coordinator

CC: Sarah Hopkins, Development Review Services Manager
Todd Merkle, Public Works Department
Mike Nugent, Inspection Services Manager
Marge Schmuckal, Zoning Administrator

CITY OF PORTLAND, MAINE
Planning Department Billing and Payment Report
Date Range From Mar 1, 2001 Through Mar 1, 2004

Appl. ID	App. Date	Inv. No.	Inv. Date	Pay. Date	Fees Description	Billed	Deposit	Paid	Inv. Balance
20020121	05/14/02	5403	05/14/02	05/15/02	Major Site Plan 10,000 -	\$500.00	\$0.00	\$500.00	\$0.00
					Invoice Total	\$500.00	\$0.00	\$500.00	\$0.00
20020121	05/14/02	5404	05/15/02	06/13/02	Receipt of Application No	\$85.60	\$0.00	\$85.60	\$0.00
					Invoice Total	\$85.60	\$0.00	\$85.60	\$0.00
20020121	05/14/02	5845	06/21/02	07/12/02	Legal Advertisements	\$19.33	\$0.00	\$19.33	\$0.00
					Notices	\$85.60	\$0.00	\$85.60	\$0.00
					Invoice Total	\$104.93	\$0.00	\$104.93	\$0.00
20020121	05/14/02	7241	10/17/02	07/21/03	Stormwater Quality Perm	\$250.00	\$0.00	\$250.00	\$0.00
					Invoice Total	\$250.00	\$0.00	\$250.00	\$0.00
20020121	05/14/02	7380	10/25/02	11/01/02	Neighborhood Meeting L	\$11.00	\$0.00	\$11.00	\$0.00
					Invoice Total	\$11.00	\$0.00	\$11.00	\$0.00
20020121	05/14/02	7839	12/13/02	01/03/03	Legal Advertisements	\$38.00	\$0.00	\$38.00	\$0.00
					Notices	\$122.80	\$0.00	\$122.80	\$0.00
					Invoice Total	\$160.80	\$0.00	\$160.80	\$0.00
20020121	05/14/02	7847	12/13/02	01/03/03	Legal Advertisements	\$20.67	\$0.00	\$20.67	\$0.00
					Invoice Total	\$20.67	\$0.00	\$20.67	\$0.00
20020121	05/14/02	8307	02/13/03	03/14/03	Engineer Review	\$1,250.00	\$0.00	\$1,250.00	\$0.00
					Administrative Costs Eng	\$7.89	\$0.00	\$7.89	\$0.00
					Public Works Review	\$131.25	\$0.00	\$131.25	\$0.00
					Invoice Total	\$1,389.14	\$0.00	\$1,389.14	\$0.00
20020121	05/14/02	8915	04/15/03	06/24/03	Engineer Review	\$1,020.00	\$0.00	\$1,020.00	\$0.00
					Administrative Costs Eng	\$4.20	\$0.00	\$4.20	\$0.00
					Invoice Total	\$1,024.20	\$0.00	\$1,024.20	\$0.00
20020121	05/14/02	9032	04/22/03	04/22/03	Deposit Inspection	\$0.00	\$12,296.14	\$0.00	\$0.00
					Public Works Inspection	\$9,135.46	\$0.00	\$9,135.46	\$0.00
					Invoice Total	\$9,135.46	\$12,296.14	\$9,135.46	\$0.00
20020121	05/14/02	9292	03/31/03	07/21/03	Engineer Review	\$42.50	\$0.00	\$42.50	\$0.00
					Invoice Total	\$42.50	\$0.00	\$42.50	\$0.00
20020121	05/14/02	10309	07/14/03	10/21/03	Engineer Review	\$85.00	\$0.00	\$85.00	\$0.00
					Invoice Total	\$85.00	\$0.00	\$85.00	\$0.00
					Report Total	\$12,809.30	\$12,296.14	\$12,809.30	\$0.00

*2-4-04 Insp.
 1 hr.
 45.00*

(2003-0072)

TO: Inspections Department
FROM: Jay Reynolds, Development Review Coordinator *J.R.*
DATE: February 20, 2004
RE: C. of O.'s for Buildings B, C, and D, Yale Court Development
(CBL 335G008) (ID 2002-0121)

After visiting the site, I have the following comments:

Site work incomplete:

1. Loam and Seed.
2. Landscaping.
3. Final paving and striping.
4. Misc. Sitework and cleanup
5. Final Building Numbering

I anticipate this work can be completed by **July 1, 2004**.

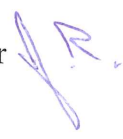
For buildings B, C, and D, **I recommend issuing a temporary Certificate of Occupancy.**

Please contact me if you have any questions or comments.

Cc: Sarah Hopkins, Development Review Services Manager
Mike Nugent, Inspection Services Manager

File: O:\plan\drc\yalecourt2.doc

TO: Inspections Department

FROM: Jay Reynolds, Development Review Coordinator 

DATE: January 6, 2004

RE: C. of O.'s for units 1-14, Yale Court Development
(CBL 335G008) (ID 2002-0121)

After visiting the site, I have the following comments:

site work incomplete:

1. Loam and Seed.
2. Landscaping.
3. Final paving and striping.
4. Misc. Sitework and cleanup

I anticipate this work can be completed by **July 1, 2004**.

For units 1 through 14, **I recommend issuing a temporary Certificate of Occupancy.**

Please contact me if you have any questions or comments.
Thank You.

Cc: Sarah Hopkins, Development Review Services Manager
Mike Nugent, Inspection Services Manager

File: O:\plan\drc\yalecourt1.doc

Finance Department



Duane G. Kline
Director

CITY OF PORTLAND

February 6, 2004

Maine Bank & Trust
P.O. Box 619
Portland, Maine 04104

Re: Yale Court Family Housing
Letter of Credit No. 1750, dated April 16, 2003

This is to inform you that I am authorizing a reduction in the above-named letter of credit by the amount of \$584,102, which should leave a balance remaining of \$146,183.

If you require any further information, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Kline', is written over the word 'Sincerely,'.

Duane G. Kline
Finance Director

DGK,jlb

pc: Jay Reynolds, Development Review Coordinator

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

TO: Duane Kline, Finance Department
FROM: Alexander Jaegerman, Planning Division Director
DATE: February 4, 2004
SUBJECT: Request for Reduction in Performance Guarantee
Yale Court/University Park
(ID#2002-0121) (Lead CBL#436A009)

Please reduce the Letter of Credit account #1750 for the Yale Court/University Park project.

Original Sum	\$ 1,071,580.00
First Reduction	\$ 341,295.00
<u>Reduction Amount</u>	<u>\$ 584,102.00</u>
Remaining Sum	\$ 146,183.00

This is the second reduction for the project.

Approved:


Alexander Jaegerman
Planning Division Director

cc: Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator
Todd Merkle, Public Works
Code Enforcement
File

O:\PLAN\CORRESP\DRC\PERFORM\YALECOURT2.DOC

PROJECT :YALE COURT CONDOMINIUMS in Portland
 BID DATE: FEBRUARY 25, 2003
 CLIENT: LEDGEWOOD

SCHEDULE OF VALUES ON CITY FORM

	UNIT	PUBLIC IMPROVEMENTS			PRIVATE IMPROVEMENTS		
		QUANTITY	UNIT COST	AMOUNT	QUANTITY	UNIT COST	AMOUNT
1. STREET/SIDEWALK							
ROAD	SY	4,100.00	\$10.00	\$41,000.00	5,285.00	\$8.00	\$42,280.00
GRANITE CURBING	LF	1,940.00	\$23.00	\$44,620.00	240.00	\$25.00	\$6,000.00
SIDEWALKS	SY	850.00	\$10.00	\$8,500.00	1,735.00	\$10.00	\$17,350.00
ESPLANADES	SY	480.00	\$3.00	\$1,440.00			\$0.00
MONUMENTS	EA			\$0.00			\$0.00
STREET LIGHTING	LUMP	1.00	\$8,400.00	\$8,400.00	1.00	\$31,415.00	\$31,415.00
CONCRETE BASES	EA	12.00	\$500.00	\$6,000.00	12.00	\$500.00	\$6,000.00
STREET OPENING REPAIRS	SY	75.00	\$14.00	\$1,050.00	195.00	\$14.00	\$2,730.00
OTHER							
CLEARING AND STUMPING	LUMP	1.00	\$16,000.00	\$16,000.00	1.00	\$26,000.00	\$26,000.00
EARTHWORK FOR ELECT SERVICE	LUMP	1.00	\$12,000.00	\$12,000.00	1.00	\$12,000.00	\$12,000.00
EARTHWORK FOR GAS SERVICE	LUMP	1.00	\$5,895.00	\$5,895.00			\$0.00
2. EARTH WORK							
CUT	CY	4,000.00	\$8.00	\$32,000.00	11,000.00	\$6.00	\$66,000.00
FILL	CY	1,200.00	\$10.00	\$12,000.00	7,000.00	\$10.00	\$70,000.00
3. SANITARY SEWER							
MANHOLES	EA	5.00	\$2,000.00	\$10,000.00	6.00	\$2,000.00	\$12,000.00
PIPING				\$0.00			\$0.00
CONNECTIONS	EA	10.00	\$100.00	\$1,000.00	9.00	\$100.00	\$900.00
MAIN LINE PIPING	LF	1,025.00	\$29.00	\$29,725.00	1,140.00	\$29.00	\$33,060.00
HOUSE SERVICE PIPING	LF	350.00	\$19.00	\$6,650.00	570.00	\$19.00	\$10,830.00
PUMP STATIONS				\$0.00			\$0.00
OTHER				\$0.00			\$0.00
TRENCH ROCK EXCAVATION	CY	550.00	\$60.00	\$33,000.00	700.00	\$60.00	\$42,000.00
4. WATER MAINS							
TRENCH ROCK EXCAVATION	LUMP	1.00	\$22,000.00	\$22,000.00	1.00	\$53,076.00	\$53,076.00
	CY	80.00	\$60.00	\$4,800.00	400.00	\$60.00	\$24,000.00
5. STORM DRAINAGE							
MANHOLES	EA	6.00	\$2,000.00	\$12,000.00			\$0.00
CATCH BASINS	EA	4.00	\$2,300.00	\$9,200.00	8.00	\$2,100.00	\$16,800.00
PIPING	LF	1,580.00	\$30.00	\$47,400.00	1,000.00	\$30.00	\$30,000.00
DETENTION BASINS	LUMP			\$0.00	1.00	\$15,000.00	\$15,000.00
STORM WATER QUALITY UNITS				\$0.00			\$0.00
OTHER				\$0.00			\$0.00
6in UNDERDRAIN	LF	1,980.00	\$12.00	\$23,760.00			\$0.00
TRENCH ROCK EXCAVATION	CY	300.00	\$60.00	\$48,000.00	300.00	\$60.00	\$18,000.00
7. EROSION CONTROL							
SILT FENCE	LF	600.00	\$3.00	\$1,800.00	2,000.00	\$3.00	\$6,000.00
CHECK DAMS				\$0.00			\$0.00
PIPE INLET/OUTLET PROTECTION	SY	20.00	\$25.00	\$500.00	20.00	\$25.00	\$500.00
LEVEL LIP SPREADER				\$0.00	1.00	\$650.00	\$650.00
SLOPE STABILIZATION	SY			\$0.00	1,500.00	\$2.00	\$3,000.00
GEOTEXTILE				\$0.00		\$2.00	\$0.00
HAY BALE BARRIERS	EA	25.00	\$6.00	\$150.00	25.00	\$6.00	\$150.00
CATCH BASIN INLET PROTECTION	EA	4.00	\$50.00	\$200.00	8.00	\$50.00	\$400.00
8. RECREATION AND OPEN SPACE AMENITIES							
9. LANDSCAPING							
LUMP		1.00		\$11,233.00			\$42,865.00
LOAM AND SEED	SY	3,000.00	\$2.15	\$6,450.00	12,000.00	\$2.15	\$25,800.00
10. MISCELLANEOUS							
							\$0.00
TOTAL				\$456,773.00			\$614,807.00

ITEMS IN THE SCHEDULE OF VALUES ARE SUBJECT TO ALL QUALIFICATIONS AND EXCLUSIONS AS NOTED IN Q1 \$1,071,580.00

2% Inspection fee = \$9,135.96 / \$12,286.14 = \$21,431.60

OK 4-15-03
P.R.

Dept. of Planning & Development
Planning Division



CITY OF PORTLAND

Jay Reynolds
Development Review
Coordinator

Yale St.

2nd Revision
2-4-01

Public → total 10% = 45,677

Private → total:

① 1/2 of Road = 21,140

② erosion = 10,700

③ P.S. = 42,866

④ LTS = 25,800

* add \$146,183

from \$730,288

Release \$584,102.00

TO: Duane Kline, Finance Department
FROM: Alexander Jaegerman, Planning Division Director
DATE: September 22, 2003
SUBJECT: Request for Reduction in Performance Guarantee
Yale Court/University Park
(ID#2002-0121) (Lead CBL#436A009)

Please reduce the Letter of Credit account #1750 for the Yale Court/University Park project.

Original Sum	\$ 1,071,580.00
Reduction Amount	\$ 341,295.00
Remaining Sum	\$ 730,285.00

This is the first reduction for the project.

Approved:

Alexander Jaegerman
Planning Division Director

cc: Sarah Hopkins, Development Review Services Manager
Jay Reynolds, Development Review Coordinator
Todd Merkle, Public Works
Code Enforcement
File

From: Todd Merkle
To: Alex Jaegerman; Jay Reynolds; Sarah Hopkins
Date: Mon, Oct 20, 2003 7:25 AM
Subject: Re: Incident Report-Flooded Basement

Further investigation showed that his foundation drain goes across the street out behind the detention pond for Yale Ct. The pipe is draining but not very fast. The contractor said he hit the pipe in the road and repaired it in the road. He also said he would not dig anything until someone finds out where the plug is and basically put it on the homeowner to prove it was him.

When I left the homeowner Friday he was going to call a plumber and find out where the blockage was. I did explain to him his foundation drain did go onto private property and he may be required to move it if the developer of Yale Ct. does not want his drain going across his property. The water coming out of the foundation had no sewerage or phosphates in it.

I am sure we will hear more.

Todd

>>> Jay Reynolds 10/17 10:06 AM >>>

I received a frantic call yesterday from a tenant of #106 Chesley Avenue, which abuts the YALE COURT development. Their basement had 2 inches in water in it, which allegedly, had never happened.

I looked at Yale Court's storm drain infrastructure, which handled the 2" of rain perfectly, as designed. I met with the homeowner(tan), tenant(ingrid), and Tom Leary of the Public Works Dept., to assess the situation.

This does not appear to be a result of the Yale Court Construction. It appears this may be a plugged sewer, broken water service, washer machine malfunction, or other plumbing related problem.

A water sample was taken to determine it's origin (portland water, sewer, etc.).

If I receive any more information, I will keep you posted.

Jay

CC: Mike Nugent; Thomas Leary

From: Todd Merkle
To: Alex Jaegerman ; Jay Reynolds; Sarah Hopkins
Date: Mon, Oct 20, 2003 2:29 PM
Subject: Re: Incident Report-Flooded Basement

This foundation drain apparently is also connected to a french drain from the neighbors house and crosses Chesley St. onto the private property of Yale Court.

The contractor is repairing the crushed section of the pipe right now and has been told by me to excavate in the street and fix the pipe out there Thursday. The repair today is letting the water flow so there should be no back up but there is a bad connection out in the street as discribed by Roto-Router report.

The homeowner wants it hooked into the sewer and has asked for a price from Gorham Sand & Gravel. I will keep all informed on progress.

Todd

>>> "Alex Jaegerman " <AQJ@portlandmaine.gov> 10/20 9:17 AM >>>

We try to protect any private drain systems that we know about (e.g.Campbell Rd) and require developers to fold foundation drains into their stormwater systems. I don't want Yale Court to be uncooperative in this matter, since stormwater was of concern all along and their plan was not to have any negative stormwater impacts on neighbors. We should encourage Yale Court to remedy the problem if it was caused by their development. If there is any way to require it, we should. Lets review the plans and approvals, and check for any leverage we may have.

Alex.

>>> "Todd Merkle" <Todd@portlandmaine.gov> 10/20 7:25 AM >>>

Further investigation showed that his foundation drain goes across the street out behind the detention pond for Yale Ct. The pipe is draining but not very fast. The contractor said he hit the pipe in the road and repaired it in the road. He also said he would not dig anything until someone finds out where the plug is and basically put it on the homeowner to prove it was him.

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A water sample was taken to determine it's origin (portland water, sewer, etc.).

If I receive any more information, I will keep you posted.

Jay

CC: Charlie Lane; Lee Urban; Mike Nugent ; Thomas L...

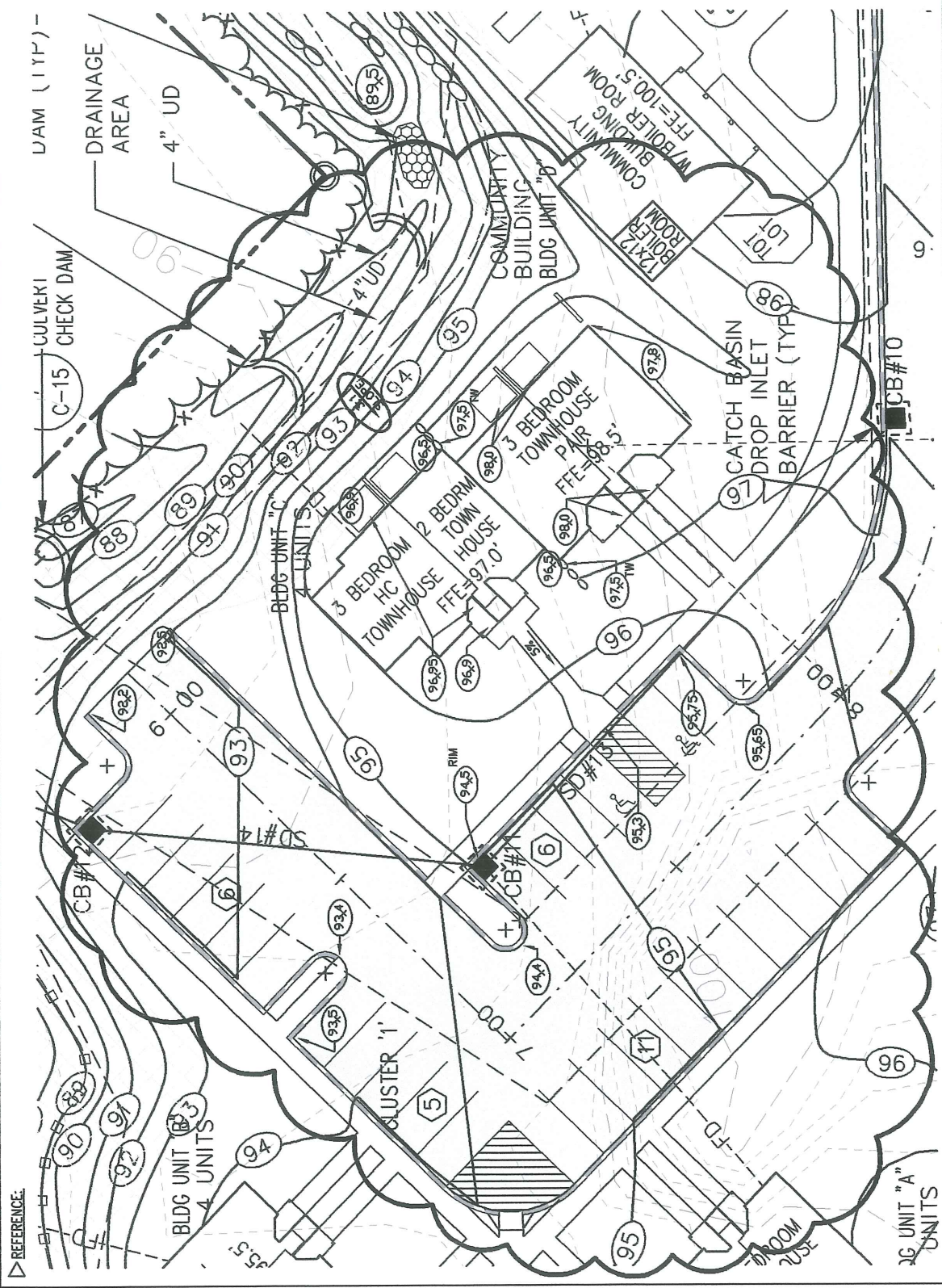
Yale Court
Changes
10/1/03

mc
 Land Use Consultants, Inc.
 966 RIVERSIDE STREET
 PORTLAND, MAINE 04103
 Tel: (207) 978-0201
 Fax: (207) 978-0201
 mclanduse@mcwll.com

YALE COURT
 YALE STREET, PORTLAND MAINE
 YALE COURT LP.
 PREPARED FOR:

9K-C3
 CONCEPTUAL GRADING
 YALE COURT PRUD
 BUILDING UNIT "C"
 SCALE: 1"=20'
 DATE: 09-11-03

JOB #: 4080



REFERENCE:

Re: Yale Court Construction Traffic

August 8, 2003

Dear Harvard Street Neighbors:

The Planning Division has received several complaints from neighbors living on Harvard Street regarding the number of construction vehicles associated with the Yale Court project, using Harvard Street as their main point of access and egress. As you know from previous correspondence, the Planning Division has directed the owner and contractors of the University Park and Yale Court Development to discontinue the use of the Woodwinds Apartment complex and Harvard Street and route traffic to Allen Avenue.

This afternoon, representatives from Public Works and Planning met with the owner of the project, Jim Wescott, as well as representatives from Ledgewood Construction and Gorham Sand and Gravel to work out a reasonable timeframe to make the Yale Street route passable in order to redirect traffic to Allen Avenue.

In order to construct Yale Street to a passable condition, the Northern Utilities gas line and CMP service have to be installed. These installations were originally scheduled early on in the construction phasing, but were postponed by the utility companies. The gas line is scheduled to be installed next week, and CMP will come out when the weather improves (!).

The contractors anticipate installing the base coat of pavement during the last week of August (or earlier if CMP and Northern Utilities can complete their work sooner). Once the base coat is down, the roadway will be usable for all vehicles. (A later application of final pavement will be the only time when the road will be temporarily unusable.)

Once the base coat has been applied, only the subcontractors' personal vehicles will be allowed to park at Woodwinds. All other delivery and other commercial vehicles will use the Allen Avenue entrance.

We anticipate a parking lot within Yale Court will be ready for use between middle- to late-September for use by the subcontractors' personal vehicles. At this time, the fire gate will be locked and no further access, other than emergency access, will be allowed to pass through.

The owner and contractors are aware of the neighborhood's concerns and frustration with the traffic. They have agreed to remind all their subcontractors to drive with courtesy and to obey the speed limit.

I will continue to update you as the construction continues.

Please don't hesitate to call if you have any questions.

Sincerely,

Sarah Hopkins

Development Review Services Manager

cc.: Lee Urban, Director of Planning and Development
Alexander Jaegerman, Planning Division Director
Michael Bobinsky, Director of Public Works
Larry Ash, City Traffic Engineer
Todd Merkle, Public Works
Lt. Gaylen McDougall, Fire Prevention
Councilor Leeman
Correspondence File

Jim Wescott

Wescott and Payson II
Yale Court L.P.
240 Harvard Street
Portland, ME 04103

Joseph Bump

Ledgewood Construction
27 Main St.
South Portland, ME 04106

Jim Shaw

Gorham Sand & Gravel
939 Parker Farm Road
Buxton, ME 04093

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

August 5, 2003

Jim Wescott
Wescott and Payson II
Yale Court L.P.
240 Harvard Street
Portland, ME 04103

Joseph Bump
Ledgewood Construction
27 Main St.
South Portland, ME 04106

Jim Shaw
Gorham Sand & Gravel
939 Parker Farm Road
Buxton, ME 04093

Re: Yale Court Construction Traffic
(Applications #2002-0121 and #2002-0215, CBLs 436 A009001 and 153A A002001)

Dear Mr. Wescott; Mr. Bump; and Mr. Shaw:

The Planning Division has received several complaints from neighbors living on Harvard Street regarding the number of construction vehicles associated with the Yale Court project, using Harvard Street as their main point of access and egress.

Now that the access to Allen Avenue is available, via Yale Street, we require that all commercial and construction traffic be routed along Yale Street from Allen Avenue. No further use of Harvard Street through the Woodwinds apartment is acceptable, except for emergency access, as approved by the Planning Board.

Further use of the Woodwinds and Harvard Street will result in a **STOP WORK ORDER** placed on all construction activities at Yale Court.

Please notify your subcontractors immediately.

Thank you for your attention to this matter.

Sincerely,

Alexander Jaegerman
Planning Division Director

Yale Ct.

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Class

Help Wanted

Page 4

Announcements

Page 5

Service Directory

Page 6

Real Estate for Rent

Page 6

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LEGAL ADVERTISEMENT

**STATE OF MAINE
DEPARTMENT OF
TRANSPORTATION**

NOTICE TO CONSULTANTS
The Maine Department of Transportation (Department) seeks to prequalify Design Consultants to assist the Department in the design of the Calais-St. Stephen Area International Border Crossing Federal Project Number - NCPD/CBI-8483(320)X. At a later date, the prequalified consultants will be invited to submit design proposals and bids for the project. Award of the contract is tentatively scheduled for September 2003.

The Calais-st. Stephen Area International Border Crossing is a joint development effort between the Federal Highway Administration (FHWA), the U.S. General Services Administration (GSA), the Maine Department of Transportation (MDOT), the New Brunswick Department of Transportation (NBDOT) and the Canadian Customs and Revenue Agency (CCRA). The project is located in and near the Calais Industrial Park in Calais, Maine. The MDOT portion of the project will include improvements to existing US Route 1 in Calais, a newly designed intersection, connector road, access road for the Industrial Park, and grade separated rail crossings. Substantial coordination between MDOT and NBDOT as well as...

LEGAL ADVERTISEMENT

The MaineCare Drug Utilization Review Committee will meet on Tuesday, May 13, 2003 in Conference Room 1A&B, at the Department of Human Services/Bureau of Medical Services Offices, 442 Civic Center Drive, Augusta, Maine, from 6:00 to 8:00 p.m. A public comment period will begin at 6:00 p.m.
1262769

LEGAL ADVERTISEMENT

Gorham Sand and Gravel has been contracted to install the infrastructure to Yale Court condominiums. The infrastructure includes construction of Yale Street to the Yale Court Condos. There will be blasting the entire length of Yale Street. Drilling & Blasting Rock Specialist has been contracted to do the blasting. As required by the City Ordinance, prior to any blasting, neighbors within 600 feet of the blast, should be notified in writing of the blast and will be qualified to have a pre-blast survey completed of their structure. Blasting is scheduled to begin on the 26th of May. Any questions of the blasting or the pre-blast surveys, please contact Drilling & Blasting Rock Specialist, 1-207-582-1391 or Lt. McDougal, Fire Prevention, 874-8405. Pre-blast surveys will be conducted by BECC Co. during the next 2 weeks.
1265414

LEGAL ADVERTISEMENT

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ME?**



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\$25 an hour
with no
cold calling!**

Do you have prior sales or telesales experience? American Media Partners, a national marketing company in Westbrook is expanding our sales force. This is not outbound telemarketing. Our customers will call you to order our products. And you can make more money than you ever

Sales & Marketing

★ ★ ★
SALES MANAGER - seeking an organized dynamic individual to work with category managers, buyers and vendors to promote retail chain and vendors. Requires sales, marketing, and communication skills. Must be able to multi task, prioritize and be goal oriented along with be outgoing, creative and open minded to learn and grow with a team environment. Grocery and or sales experience and degree preferred. EOE. Mail/fax resume to SPI, 8940 Main St., Clarence, NY 14031, or fax 716-633-3737.

★ ★ ★

SALES MANAGER
Ralling Pro, a division of Class Pro, is looking for a full-time Sales Manager. A degree in marketing and at least 2 years outside sales experience is required. Computer proficiency in Excel, Word and Adobe are necessary. Knowledge of AutoCAD and estimating are a plus. We offer competitive salary and a bonus program, benefits including health insurance and 401K plan. Forward resume and

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May 20, 2003

Blasting Plan

This Blasting Plan is provided at the request of the City of Portland as a general description of the blasting program for excavation of bedrock at the proposed Yale Court Apartments & University Park Subdivision. This document includes a description of existing conditions and anticipated rock removal requirements, and a general summary of blasting procedures. Detailed blasting procedures, monitoring and other requirements are contained in the construction specifications for the project (Section 02202, ROCK REMOVAL), included as Attachment A.

General Project Description

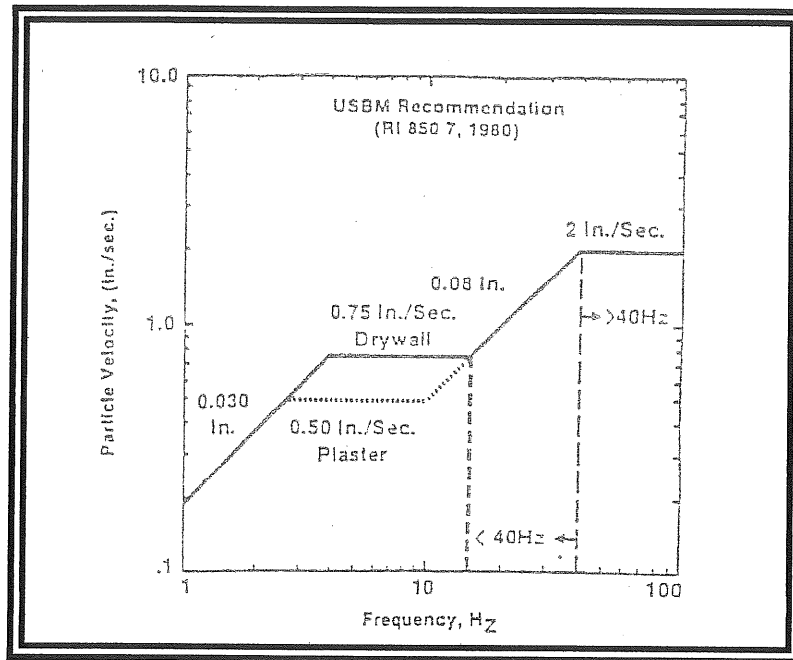
There are some outcrops of bedrock visible throughout the project area. Blasting is expected for the road, building and utility construction. The roadway profile has been designed to reduce potential blasting requirements as much as possible. No existing utilities follow the roadway layout. Any underground utilities will require separate blasting. If the bedrock cannot feasibly be removed by the use of rippers or other mechanical means, blasting may become necessary. If blasting does become necessary, it would include primarily contour blasting. Upon beginning the initial excavation the Site Contractor encountered unexpected ledge, the Site Contractor has decided to implement a "worst case scenario", that is, there could be a elements of ledge (that can only be removed by blasting) the entire length of the newly constructed Yale Street.

A professional (licensed in the State of Maine) blasting contractor will be employed to conduct any blasting work in accordance with applicable State and local laws. At a minimum, the blasting contractor shall conduct his work in accordance with the criteria stated in the specifications, Section 02200, Part 3.02A.

The blasting contractor will be required to prepare and submit a blasting plan as detailed in Section 02200, 3.02.F prior to construction. At a minimum, the plan shall outline his proposal for monitoring of blasts, sequencing of blasts, sketches of proposed drill patterns, and specified field procedures, including the hours of operation, use of blasting mats, safety procedures, security measures in the work zone, and warning sequences. Blasting mats or earth cover shall be used to limit peak air overpressures and to protect against uncontrolled blast rock. Blasting vibrations, frequencies and overpressures shall not exceed the limits established by State or local codes. The

BECC COMPANY INC
PO Box 257 Yarmouth, Me. 04096

maximum Peak Particle Velocity (PPV) shall be based on the following figure from the U.S. Bureau of Mines RI 8507:



The Contractor shall design his charges using the Scaled Distance Equation as follows:

$$W = (D/D_s)^2$$

Where:

- W = Maximum allowable weight of explosives per delay of 8 milliseconds or greater.
- D = The shortest distance between the blast area and any inhabitable structure not owned or controlled by the developer.
- D_s = 70 ft./lb^{1/2}

The maximum PPV of ground vibrations for non-residential structures and underground utilities will not be allowed to exceed 2.0 in/s. Deteriorated structures or utilities that are sensitive to vibrations may require lower PPV limits than those indicated above. If information obtained from the pre-blast surveys indicates lower limits are required at certain structures, the independent seismologist or blasting consultant will identify the lower limits applicable to a specific structure, and the blasting contractor will incorporate such provisions in the features of the blasting plan applicable to this site area.

BECC COMPANY INC
PO Box 257 Yarmouth, Me. 04096

As stated in the project specifications (Section 02200, 3.02.A and B) the contractor will be required to meet local and State blasting criteria to conduct and submit a pre-blast survey prior to initiating any blasting work. The pre-blast survey will document the conditions of existing dwellings and structures within a minimum of 600 feet from the limit of blasting work. With appropriate notice and permission, the contractor's qualified inspector shall examine the interior and exterior of structures within the study area. Conditions shall be documented using videotapes with verbal documents. The pre-blast survey shall also include an assessment of water supply wells in the study area. The pre-blast survey shall be completed by a Maine licensed professional engineer or experienced specialized Pre-Blast Condition Survey, Seismographic Consultant. During blasting, operation monitoring shall be conducted to evaluate compliance with respect to vibration and over-pressures. A list of the pre-blast survey structures and monitoring reports will be provided to the City.

If a nearby property owner submits a complaint regarding alleged blasting-related damages during construction, the blasting contractor shall submit a copy of the insurance claim report to the city within 48 hours of receiving the complaint therefore the insurance company may complete an unbiased report.

As stated in the specifications (Section 02200, 3.02.G) the contractor shall prepare and submit a blasting schedule, which shall be presented to the owner and the City prior to blasting. This schedule shall, at a minimum, include the following:

- Name, address and phone number of blaster;
- Identification of specific blasting areas;
- Dates and times of blasts;
- Methods to restrict access in the blast area and warning whistle announcements;
- All blasting work shall be the responsibility of the blasting contractor.

As stated in the specifications (Section 02200, 3.02.M) the blasting contractor shall maintain accurate and current-blasting records, which shall be submitted to the owner the City on a weekly basis during blasting operations. These records shall contain, at a minimum:

- General location of the blast
- Depth and number of drill holes
- Type and quantity of explosives used
(Including sizing calculations based on the scaled distance equation)
- Time of blast
- Seismographic record of each blast taken within 300' of the blast area

As stated in the specifications (Section 02200, 3.02.K) the blasting contractor shall retain an independent firm to conduct blast monitoring. Seismographs shall have a Seismic Frequency Range of 2 to 150 Hertz and a sound frequency range of 1-500 Hz. Seismographs shall be capable of recording longitudinal, transverse, and vertical peak

BECC COMPANY INC
PO Box 257 Yarmouth, Me. 04096

particle motion and frequency. The following information shall be printed out for each blast:

- Instrument Type
- Instrument Calibration Date
- Date and Time of Blast
- Instrument Location
- Distance to Blast
- Resultant Peak Particle Velocity (in/sec)
- Longitudinal, Vertical and Transverse Peak Particle Velocity (in/sec)
- Frequency (Hz)
- Seismograph Operator
- Airblast (dB)
- Stratum Directly Beneath Geophone

The seismographs shall be used to determine the air blast and peak particle velocity of each shot in the area where the seismograph is set. Peak particle velocities recorded with a 300' radius which exceed the Frequency-Peak Particle Velocity Curve (Figure B from Appendix B of the U.S. Bureau of Mines RI 8507) shall be documented and reported by the blaster to the Owner's representative and a copy forwarded to the City within 7 days of the record becoming available.

Vibration and Airblast control requirements are stated in the specifications (Section 02200, 3.02.N).

Condition surveys will be conducted during construction as stated in the specifications (Section 02200, 3.02.O).

Site observation and geotechnical evaluation of blasted rock slopes will be conducted if conditions of the blasted rock face deviate from design or if unexpected conditions are encountered during construction (see Specifications, Section 02200, 3.02.P).

BECC COMPANY INC
PO Box 257 Yarmouth, Me. 04096

All persons within 600 feet of the site shall be notified of "Warning" and "All-Clear" signals through notices left in mailboxes and signs posted in the area. During the blasting operation, the blasting contractor shall be responsible for control of access in and around the general blast area. Equipment and traffic shall be stopped far enough away to ensure work area safety and shall not be released until the blast foreman issues the "all clear signal". Warning signals shall be issued prior to every shot as follows:

- 3 whistles at 5 minutes prior to blast
- 2 whistles at 1 minute prior to blast
- Once the shot has been checked for any misfires, one whistle will issue the "all clear"

Blasting shall only occur as needed during the hours of 9:00 A.M. to 4:00 P.M. daily, Monday through Friday. Explosives shall be delivered to the job site on a daily basis. Only that amount necessary for the day's work shall be brought to the site. Explosives shall be transported and stored in approved magazines when not in use. No overnight storage of explosives on the site shall be permitted.

Prepared by:



D.C. Blakeman President / Professional ISSE Seismologist
Becc Co., Inc
President

Attachments.

ATTACHMENT A

ROCK REMOVAL
SECTION 02202

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Furnish the labor, materials and equipment necessary to identify and remove bedrock within the proposed excavation limits in accordance with the requirements of this Section, including the following:
1. Rock Removal - All rock blasting and rock removal using drill and blast techniques, including blasting for roadways, parking areas, building foundations, and trench blasting for utilities. The blasting shall be performed in accordance with the requirements of this Section. The Contractor shall employ controlled blasting procedures in order to maintain ground vibrations and air blast overpressures below the maximum levels specified in this Section and to minimize stressing and fracturing of the rock beyond the limits of the excavations, footing elevation sub grades, and utility trenches shown on the Drawings. The Contractor's proposed blasting methods, procedures, sequence and data to show compliance with these specifications shall be described in a blasting plan submitted prior to blasting operations and meeting the requirements of subsection 3.02.
 2. Condition Surveys - The Contractor shall perform pre-blast condition surveys of all structures and improvements of adjoining properties within at least 1000 feet of any blast as described in subsection 3.01.A. If a complaint of alleged blasting related damage is made by a nearby property owner during construction, the Contractor shall perform additional condition surveys as described in subsection 3.01.B.
 3. Test Blasts - Prior to commencement of production blasting, the Contractor shall, using small charges and the required monitoring instruments, establish a site specific relationship between charge weight, distance and response in accordance with the requirements of subsection 3.04.F.2.
 4. Blast Monitoring - A monitoring program of blasting vibrations shall be performed by the Contractor during construction in accordance with the requirements of subsections 1.06.C.3 and 3.07.
 5. Blasting Records - A blasting log summarizing the details of the round as shot, weather conditions, blast proximity to nearby structures, location of monitoring instruments and measured vibration data shall be maintained and reported in accordance with the requirements of subsections 1.06.C.2 and 3.06.
- B. Disposal of blasted rock and cleaning of exposed bedrock surfaces.

1.02 RELATED SECTIONS AND INFORMATION

- A. Information Available to Bidders: None.

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- B. Unit prices for rock removal work.
- C. Section 02211 - Rough Grading.
- D. Section 02222 - Excavation.
- E. Section 02223 - Backfilling: Backfill materials.
- F. Section 02225 - Trenching: Trenching and backfilling for utilities.
- G. Geotechnical Report for exploration locations and findings of subsurface materials and conditions.
- H. Construction Drawings.

1.03 UNIT PRICES

- A. Rock Quantity: Determined by quantity of rock indicated in the Contract Documents.
- B. Adjustments in Contract Price will be made due to changes in quantity of rock, based on unit prices established in the Agreement for rock removal.
- C. Determination of Unit Measurements: Identified by site measurements and verified by the owner's representative.

1.04 COMPLIANCE WITH STANDARDS

- A. Comply with the provisions of all applicable safety codes including without limitation the following Codes and Standards:
 - 1. National Fire Protection Association (NFPA): 495 Code for the Manufacture, Transportation, Storage and Use of Explosive Materials.
 - 2. "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc.
 - 3. "Construction Safety Rules and Regulations" as adopted by the State Board of Construction Safety, Augusta, Maine.
 - 4. Section 107.12 (Use of Explosives) of the "Standard Specifications" prepared by the Maine Department of Transportation.
 - 5. Occupational Safety and Health Act of 1970 (Public Law 91-596 of the United States, 29 USC Section 651 et.seq.)
 - 6. Applicable provisions of laws, rules, ordinances, and regulations of Federal, State and the City of Portland governing the transportation, storage, handling and use of explosives.
- B. In case of conflict between regulations or between regulations and the requirements of this Specification, the Contractor shall comply with the strictest applicable codes, regulations or Specifications.

1.05 DEFINITIONS

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- A. Site Rock: Solid mineral material with a volume in excess of 1/3 cu yd. loose rock removable by hammer or over excavation shall not be designated as site rock.
- B. Trench Rock: Solid mineral material with a volume in excess of ¼ cu yd or solid material that cannot be removed with a backhoe without drilling or blasting. Rock removable by hammer shall not be designated as trench rock.
- C. Peak Particle Velocity: Peak Particle Velocity shall mean the greatest of three peak velocity components (inches per second units) measured at any point, with the three components being measured in the vertical and mutually perpendicular horizontal directions.

1.06 SUBMITTALS AND NOTIFICATIONS

- A. Submit under provisions of Section 01300.
 - B. Advance Submittals and Notifications
1. Qualifications: Qualifications in accordance with the provisions of Section 1.07 shall be submitted for the blasting contractor conducting blasting operations and for the independent seismologist or blasting consultant performing pre-blast surveys and vibration monitoring.
 - a. Blasting Contractor - At least two weeks prior to commencing drilling and blasting operations written evidence of the licensing, experience, and qualifications of the blaster who shall be responsible for the loading and firing of each shot shall be submitted to the Engineer. If different, the name and qualifications of the person responsible for designing and directing the blasting operation shall also be submitted to the Project Engineer and City of Portland.
 - b. Seismologist or Blasting Consultant - Prior to the performance of pre-blast surveys the name and resume of qualifications of the independent seismologist or blasting consultant proposed for use in conducting pre-blast condition surveys and monitoring blast vibrations shall be submitted to the Project Engineer and City of Portland. In the event a different seismologist or blasting consultant is proposed for use in monitoring blast vibrations only, the name and resume of qualifications of this individual shall be submitted to the Engineer prior to commencing any drilling and blasting operations. A sample of a previous vibration analysis or report shall be included with the qualifications.
 2. Notification of Pre-Blast Surveys and Blasting Schedule: Prior to commencement of any pre-blast surveys, the Contractor shall provide documentation to the Engineer and the City listing building owners within 600 ft. of the anticipated blasting areas (from Tax Map records), that the subject building owners were notified of the pre-blast survey work and the blasting schedule, and the offer to conduct a pre-blast survey was either accepted or rejected by each building owner.¹
 3. Pre-Blast Condition Surveys: Written verification that all pre-blast condition surveys and related reports were completed in accordance with the requirements of Section 3.01 shall be

¹ A list of the building owners that have been mailed and lettered is attached to this plan.

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submitted to the Engineer and the City of Portland at least two weeks prior to commencing any drilling and blasting operations.

4. **Blasting Plan:** At least two weeks prior to commencing drilling and blasting operations the Contractor shall submit to the Engineer and the City for review a blasting plan providing complete details of his proposed blasting and construction operations in accordance with the blasting plan requirements described in Section 3.02.
5. **Blasting Schedule:** The blasting contractor shall prepare and submit a blasting schedule in accordance with the requirements of Section 3.03 to the Engineer and the City (fire, police, emergency agencies and Codes Enforcement personnel) at least one week prior to commencing blasting operations.
6. **Certificate of Insurance:** Prior to commencing any drilling and blasting operations, the Contractor shall submit a Certificate of Insurance in accordance with the requirements of Section 1.10.

C. Submittals and Notifications During Blasting Operations

1. **Notification of Individual Blasts:** During construction the blasting contractor shall coordinate the blasting schedule with the Engineer and the City (fire, police, emergency agencies and Codes Enforcement personnel) when requested. A minimum of 24 hours in advance, the blasting contractor will notify the Engineer and the City by telephone of the start of blasting in any new area. At least 24 hours prior to any blast, the blasting contractor shall inform by telephone all property owners who have requested to be so informed, of the impending blast.
2. **Blasting Log:** A blasting log summarizing details of the round as shot, weather conditions, proximity of the blast location to nearest structures, exact locations of monitoring instruments, and the results of blast monitoring at each instrument location shall be maintained daily for every blast. Specific information to be included on the log is described in Section 3.06. The blasting log shall be available for inspection on-site, shall be submitted in writing to the Engineer within 24 hours following each blast, and shall be submitted to the City on a weekly basis.
3. **Blast Monitoring Reports:** Blast monitoring data obtained by the independent seismologist or blasting consultant shall be available for inspection on-site, shall be submitted in writing to the Engineer (as part of the blasting log) within 24 hours following each blast, and shall be submitted to the City on a weekly basis. In the event a ground vibration or airblast limit is exceeded, the blasting contractor shall notify the Engineer by telephone immediately following the blast.
4. **Condition Surveys:** If a nearby property owner submits a complaint regarding alleged blasting related damages during construction, the independent seismologist or blasting consultant shall conduct a second survey of the property within 48 hours of receiving the complaint to identify any changes in the property conditions. A condition report summary shall be submitted to the Engineer, and copied to the City, within two weeks after the second survey is conducted.

1.07 QUALIFICATIONS

- A. The Blasting Contractor shall be a company specializing in explosives for disintegration of rock, with at least five years documented experience in controlled blasting techniques.
- B. Seismologist or Blasting Consultant: The Contractor will be required to retain an independent seismologist or blasting consultant to perform condition surveys prior to and during blasting operations, and to monitor, record, analyze, and report the seismic vibrations and air blast pressures being caused by blasting activities. The seismologist or blasting consultant shall have at least five years of documented experience conducting condition surveys for blasting operations, and shall be experienced in the subject of vibrations emanating from construction activities. The seismologist or blasting consultant shall not be an employee of the Contractor, subcontractor, explosives manufacturer, or explosives distributor.
The seismologist or blasting consultant shall be present at the site of the blasting during all blasts. The seismologist or blasting consultant shall provide and use all necessary equipment to observe and record vibrations to ascertain that acceptable levels of vibrations are not exceeded. The seismologist or blasting consultant shall monitor, report findings, and submit recommendations to the Engineer in accordance with the requirements of this Specification.

1.08 REGULATORY REQUIREMENTS

- A Conform to applicable code for explosive disintegration of rock and to NFPA 495 for handling explosive materials.
- B Obtain permits from authorities having jurisdiction before explosives are brought to site or drilling is started.

SAFETY PRECAUTIONS AND WARNING SIGNALS

- A. During the blasting operation the blasting contractor shall be responsible for control of access in and around the general blast area.
- B. All persons within 600 ft. of the blasting area will be notified of "warning" and "all-clear" signals through notices left in mailboxes and signs posted in the area.
- C. Equipment and traffic shall be stopped far enough away to ensure work area safety and shall not be released until the blasting foreman issues the "all-clear" signal.
- D. A series of air horn warnings shall be issued to warn of an imminent blast as follows: 3 horn signals at 5 minutes prior to blast; 2 horn signals at 1 minute prior to blast; 1 horn signal after the blast to signal "all-clear" conditions once the shot has been checked for any misfires.
- E. Explosives shall be stored, handled and employed in accordance with federal, state and local regulations and in accordance with NFPA 495, except where stricter requirements are contained elsewhere herein, such requirements shall govern.
- F. No explosives, caps, detonators, and fuses shall be stored on the site during non-working hours.
- G. The Contractor shall notify each public utility company having structures in the proximity to the work site, of the impending use of explosives and give sufficient advance notice to enable the companies to take such steps as they deem necessary to protect their property from injury.

1.09 RESPONSIBILITY FOR BLASTING OPERATIONS

A Review of the Contractor's blasting submittals by the Engineer or the City will not relieve the Contractor of its responsibility for the accuracy, adequacy, and safety of the blasting; for exercising proper supervision and field judgment; for preventing damage to structures; and for producing results in accordance with this Specification and the regulations and ordinances of the City of Portland. The Contractor shall be solely and completely responsible for the safety of all persons and property during the performance of its work. The Contractor shall take whatever measures it deems necessary, in addition to the requirements herein, to protect the safety of persons and property, both at the construction site and away from the site. The Contractor

shall have full and complete responsibility for the handling, discharging, or settling of any and all damage or annoyance claims resulting from the blasting activities on the project. Any monitoring and/or review of the Contractor's procedures and performance conducted by the Engineer or the City shall not relieve the Contractor of its responsibility for safety at and away from the site, or for preventing damage to adjacent structures or property. The Blasting Contractor shall carry liability insurance coverage (XCU) in an amount no less than \$2,000,000. A certificate of insurance documenting the coverage and naming the owner, owner's representative, Engineer, and their consultants as additional insured shall be submitted prior to commencing any drilling and blasting operations.

1.10 INDEMNITY

A. The Contractor shall hold harmless the Owner, Owner's representative, Engineer and their consultants from any costs, liens, charges, claims or suits, including the costs of defense arising from any direct or indirect damage, real or alleged, from blasting.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Explosives: Type recommended by explosive firm following seismic survey and required by authorities having jurisdiction.
- B. Delay Device: Type recommended by explosive firm.
- C. Blast Mat Materials: Type recommended by explosives firm.

PART 3 - EXECUTION

3.01 CONDITION SURVEYS

- A. **Pre-Blast Condition Surveys:** The pre-blast survey shall document the conditions of existing buildings within at least 1000 ft. of the limit of blasting work. The pre-blast survey shall be completed by the independent seismologist or blasting consultant. The survey shall include documentation of interior subgrade and above grade accessible walls, ceilings, floors, roof, and visible exterior as viewed from the grade level. It shall detail the existing structural, cosmetic, plumbing, and electrical condition, and shall include all walls, and not be limited to areas in buildings showing existing damage. Where significant cracks or damage exist, or for defects too complicated to describe in words, photographs shall be taken. A good quality videotape survey with appropriate audio description of locations, conditions, and defects can be used. Notes and sketches may be made to highlight or enhance the photographic documentation. The condition report shall present engineering notes and photographs or video records. The report shall also summarize the condition of each building and define areas of concern, including deteriorated structures or utilities, structures housing sensitive equipment, and/or manufacturing processes that are sensitive to vibrations.
- B. **Condition Surveys During Construction:** If a nearby property owner submits a complaint regarding alleged blasting-related damages during construction, the blasting contractor shall submit a copy of the insurance claim report to the city within 48 hours of receiving the complaint therefore the insurance company may complete an unbiased report.

3.02 BLASTING PLAN

- A. The blasting contractor shall be required to submit a drilling pattern and loading plan, referred herein as a blasting plan, in accordance with the schedule described in Section 1.06.B.4. The blasting plan shall be submitted to the Engineer and the City for review, and shall contain details of the proposed rock excavation and blasting operations. No drilling or blasting shall take place until approval is received from the Engineer. The blasting plan shall include the following:
1. The sequence and schedule of blasting rounds, including the general approach for developing each bedrock excavation area.
 2. A diagrammatic description of the typical blast pattern to be used, including presplitting pattern if presplitting is required.
 3. Diameter, spacing, burden, depth and orientation of each drill hole relative to the "free face", along with details of the delay pattern.
 4. A diagrammatic description of the loading plan for a typical production hole and, if presplitting is required on the project, for a typical presplit hole. This description shall include:

- a. Diameter, spacing, burden depth and orientation of each drill hole.
 - b. Type and nomenclature of detonators and delay pattern.
 - c. Type, nomenclature and weight per cartridge of explosives to be used, and weight and distribution of charge to be used within each hole, as well as total weight of explosive charge on each delay, and the total weight for the blast round.
 - d. Type and distribution of stemming to be used in each hole
5. Estimation of ground vibration levels at nearest adjacent structures.
 6. Methods of matting the blast area to prevent flyrock and excessive air blast pressure.
 7. Written evidence of the licensing, experience, and qualifications of the blaster who will be directly responsible for the loading and firing of each shot.
 8. A listing of instrumentation which the Contractor and/or the independent seismologist or blasting consultant proposes to use to monitor vibrations and, together with performance specifications and users manual supplied by the manufactures, and a recent calibration (within the previous six months).
 9. A description of the criteria to be used for locating vibration monitoring instrumentation for each blast.
 10. A copy of the blasting permit obtained to conduct blasting on the site.

B. The blasting plan shall form the basis for all blasting operations on the project.

If, in the judgment of either the Engineer or the Contractor, changes in the plan appear to be necessary, drilling or blasting operations shall be suspended and a revised plan shall be submitted to the Engineer reflecting the proposed changes.

3.03 BLASTING SCHEDULE

- A. The blasting contractor shall prepare and submit a projected project blasting schedule to the Engineer and the City (fire, police, emergency agencies and Codes Enforcement personnel) at least one week prior to commencing blasting operations. The schedule shall, at a minimum, include the following:

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1. Name, address and phone number of blaster.
 2. Identification of specific blasting areas.
 3. Projected dates and times of blasts.
 4. Methods to restrict access in the blast area and warning whistle announcements.
- B. During construction the blasting contractor shall coordinate the actual blasting schedule with the Engineer and the City (fire, police, emergency agencies and Codes Enforcement personnel) when requested. A minimum of 24 hours in advance, the blasting contractor shall notify by telephone the Engineer and, if requested, the City, of the estimated time of blast. At least 24 hours prior to any blast, the blasting contractor shall inform by telephone all property owners who have requested to be so informed, of the impending blast.

3.04 EXCAVATION METHODS

- A. General: Rock excavation shall be accomplished by blasting, cutting, wedging, barring, hammering, mechanical ripping, or a combination thereof. The Contractor shall select and be responsible for methods and procedures to be used, except as hereinafter provided.
- B. Scaling and Final Rock Slope Stability: Rock scaling may be required on all or part of the exposed face following rock excavation. All loose and unstable material, all breakage, and all potentially unstable rock slides, even if located beyond the payment lines, shall be removed or stabilized to the Engineer's satisfaction during or upon completion of the excavation. Permanent rock cut slopes deviating from the design grades or exhibiting unexpected conditions shall be inspected by the Engineer, or their qualified geotechnical engineering sub consultant, concerning the long-term stability of the slopes. Written documentation shall be prepared by the Engineer, or their sub consultant, and copied to the City, regarding the long-term stability of the rock cut slopes, including, if appropriate, any remedial actions considered necessary to provide slopes with a suitable factor of safety against post-construction movements.
- C. Rock Excavation Limits and Over blast Mitigation: All necessary precautions shall be taken in blasting operations to preserve the rock outside the lines of excavation in the soundest possible condition. Blasting shall be done only to the lines and grades shown on the Drawings or approved by the Engineer. Where overblasting occurs at footing locations or other project structures, the overblasted rock shall be completely removed to the satisfaction of the Engineer, and the over-excavated area backfilled with 2500 psi concrete, crushed stone, or in accordance with backfilling and compaction requirements of Section 02223 as determined by the Engineer.
- D. Excavations for Buried Utilities: In utility trenches, excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.
- E. Cleaning of Rock Surfaces: The Contractor shall, in areas designated by the Engineer, clean rock surfaces exposed during excavation to permit a thorough inspection and assessment of the rock by the Engineer. Cleaning of rock surfaces shall consist of the

removal of all organic materials, soil, and loose rock. Cleaning may be done with high pressure air jets, water jets, brooms or by any other method acceptable to the Engineer.

F. Blasting Procedures:

1. Hours of Blasting: Blasting shall be limited to the hours of 9:00 AM and 4:00 PM, Monday through Friday.
2. Test Blast(s): Prior to the commencement of production blasting, the Contractor shall, using small charges and the required monitoring instruments, establish a site specific relationship between charge weight, distance and response. The Contractor shall develop site specific scaled distance relationships from the test blast rounds to determine the allowable charge weight of explosives to be detonated per delay which will result in a minimum of overbreak, a minimum of shattering or loosening of rock beyond the excavation limits, and which will produce sound and reasonably uniform surfaces in the completed excavations.. The scaled distance (D_s) shall be the distance from the charge to the recording seismograph (D), divide by the square root of the explosive charge ($W^{0.5}$).
3. Controlled Perimeter Blasting: When blasting near existing structures, production blasting shall start as far as possible from the existing structures so that blast vibrations and bedrock conditions can be evaluated as blasting approaches the structures. For blasting located within 65 ft. of existing structures, controlled perimeter blasting techniques may be required along the excavation perimeter to assist in obtaining a stable, undisturbed rock face and mitigate offsite impacts. Controlled blasting refers to the controlled use of explosives and blasting accessories in carefully spaced and aligned drill holes, to produce a smooth, free surface, or shear plane, in the rock along the specified back slope. Acceptable controlled blasting techniques include presplitting, cushion blasting, line drilling, and smooth-wall blasting. Smaller blast rounds may also be desirable as blasting approaches nearby structures to minimize explosive charge weights and mitigate impacts in the event normally sized charges do not produce expected results.
4. Fly Rock Control: Before the firing of any blast, the rock to be blasted shall be covered with blasting mats, as approved by the Engineer. Mats shall be placed for every blast over the entire loaded area and shall restrict all fly rock from leaving the site. If blasted rock is permitted to escape the blasting mats, all blast-related activities shall be stopped. The Contractor shall prepare a report describing why rock was allowed to be ejected, and how such events will be prevented in the future. This report shall be submitted to the Engineer and, if requested, the City. In order to proceed with any further blast related activity, written permission shall be obtained from the engineer. These provisions do not relieve the Contractor from all responsibility for the safety of his own personnel, the safety of the general public, as well as damage to structures.
5. Overbreak Control at Perimeter Areas: When blasting at the perimeter of the excavations, care shall be taken at the excavation limits to minimize overbreak and

fracturing of remaining rock. If necessary, presplitting or cushion blasting shall be utilized at such locations.

3.05 VIBRATION AND AIRBLAST LIMITS

A. Ground Vibration: Ground vibration from all blasting operations shall be measured in terms peak particle velocity (inches per second), I any of the three mutually perpendicular components of particle velocity, and frequency (Hertz)...

1. Residential Structures: The permissible maximum ground vibration at existing nearby above-ground residential structures shall not exceed the following limits:

Ground Vibration Limits for Residential Structures

<i>Type of Structure</i>	<i>Maximum PPV (in/s)</i>	
	<i>Frequencies Below 40 HZ</i>	<i>Frequencies 40Hz or Greater</i>
Modern Homes – Drywall Interiors	0.75	2.0
Older Homes – Plaster on Wood Lath for Interior Walls	0.50	2.0

2. Non-residential Structures: The maximum peak particle velocity (PPV) of ground vibrations for non-residential structures shall not exceed 2.0 in/s.
3. Underground Utilities: The maximum PPV of ground vibrations for underground utilities shall not exceed 2.0 in/s. Buried pipelines and other utilities owned by private utility companies are sometimes subject to lower limiting values imposed by the owner. The Contractor shall verify the maximum allowable PPV of ground vibrations allowed by the individual utilities.
4. Deteriorated structures or utilities, structures housing sensitive equipment, and/or manufacturing processes that are sensitive to vibrations may require lower PPV limits than those indicated above. If information obtained from the pre-blast surveys indicates lower limits are required at certain structures, the independent seismologist or blasting consultant will identify the lower limits applicable to a specific structure, and the blasting contractor shall incorporate such provisions in the features of the blasting plan applicable to this site area.

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- B. Airblast Overpressure: The peak airblast overpressure at any inhabited building not owned or controlled by the developer will not be allowed to exceed 133 decibels (linear) when measured by an instrument with a high pass system and a lower frequency limit of 2 Hz. The equivalent maximum allowable airblast overpressure is 0.013 pounds per square inch (psi).
- C. In the event the blasting contractor's blasting round results in ground vibrations or airblast overpressures approaching the stated limits, the Engineer may require the blasting contractor to modify the blasting operations to reduce ground vibrations/overpressures. In the event the blasting contractor's blasting round results in ground vibrations or airblast overpressures exceeding the stated limits at structures, the blasting contractor shall cease all blasting activities and submit a written report to the Engineer, and copied to the City. This report shall discuss the corrective action to be taken on the next shot, and the next shot shall not be loaded until the Engineer acknowledges, in writing, that a design change is being attempted

3.06 BLASTING RECORDS

A. A blasting log summarizing details of every blast round as shot shall be maintained daily. The blasting log shall include detailed information concerning the specific drilling and loading for each blast as well as the results of blast monitoring by the independent seismologist or blasting consultant. Blast monitoring requirements are described in Section 3.07. The blasting log must be available for inspection on-site, shall be submitted in writing to the Engineer within 24 hours following each blast, and shall be submitted to the City on a weekly basis. Specific information to be included on the log includes:

1. Name of blasting company and blaster responsible for the blast.
2. Location, date and time of the blast.
3. Weather conditions including such factors as wind direction and cloud cover.
4. Number and spacing of drill holes and depth of burden or stemming.
5. Diameter and depth of drill holes.
6. Type of explosives used.
7. Total amount of explosives used.
8. Maximum amount of explosives used per delay period of 8 milliseconds or greater.
9. Maximum number of holes per delay period of 8 milliseconds or greater.
10. Method of firing and type of circuit.
11. Type of detonators used and delay periods used.
12. Height or length of stemming.
13. Distance and direction to nearest structure.
14. Scale distance to nearest structure.
15. The exact location and approximate elevation of each seismograph and the distance from each seismograph to the blast.
16. Vibration and airblast overpressure data from each seismograph, including a strip chart (or other permanent record of velocity/time waveform) with the calibration and monitoring record marked with the date, time and location of the blast, including: resultant PPV (in/s); longitudinal, vertical and transverse PPV (in/s); frequency (Hz); and peak airblast overpressure (dBI).
17. The name and signature of the person operating each seismograph.
18. The name of the person and firm analyzing the seismograph record.

3.07 BLAST MONITORING

- A. Blast monitoring and analysis shall be conducted by the independent seismologist or blasting consultant. A minimum of three (3) seismograph instruments shall be used to monitor vibrations and airblast overpressures for each blast. Seismograph locations for each blast shall comply with the criteria described in the blasting plan.
- B. All vibration monitoring instruments used on the project shall comply with the following requirements:
 - 1. Measure, display, and provide a permanent record on a strip chart of particle velocity components.
 - 2. Measure the three mutually perpendicular components of particle velocity in directions vertical, radial, and perpendicular to the vibration source.
 - 3. Have a velocity (seismic) frequency response of 2 Hz to 150 Hz, a sound frequency range of 1 Hz to 500 Hz, and be capable of measuring PPV's up to 10 in/s.
 - 4. All seismographs used on the project shall display the date of the most recent calibration.
 - 5. Calibration must have been performed within the last six (6) months and must be performed to a standard traceable to the National Institute of Standards and Technology.
- C. Blast monitoring data obtained by the independent seismologist or blasting consultant shall be available for inspection on-site, shall be submitted in writing to the Engineer as part of the blasting log (Section 3.06) within 24 hours following each blast, and shall be submitted to the City on a weekly basis. In the event a ground vibration or airblast limit is exceeded, the blasting contractor shall notify the Engineer by telephone immediately following the blast.

END OF SECTION

Attachment B

Yale Court Apartments

Address list of Preblast Surveys

Page	Parcel	OWNER'S NAME	NUMBER	STREET
	7	BRIGATI JOSEPH	70	ALLEN AVE
	6	WHITE MAUREEN	64	ALLEN AVE
	50	ISRAELSON MATTHEW	75	ALLEN AVE
	51	THAYER JAMES	79	ALLEN AVE
	20	CADY STEPHEN	82	ALLEN AVE
	61	N.N.E.C. 7th ADVENTIST INC	83	ALLEN AVE
	9	DEVILLENEUVE GAIL	88	ALLEN AVE
435	1-2-3	N.N.E.C. 7th ADVENTIST INC	89	ALLEN AVE
	11	COPPERSMITH PAULA	94	ALLEN AVE
	13	CHANDLER CHARLES	102	ALLEN AVE
436	1	N.N.E.C. 7th ADVENTIST INC	107	ALLEN AVE
	19	ASALI ALBERT	108	ALLEN AVE
	3	MCCARTHY RICHARD	117	ALLEN AVE
	14	ASALI ALBERT	120	ALLEN AVE
	16	RABINE TIMOTHY	124	ALLEN AVE
	16	LAPP DONNA	125	ALLEN AVE
	17	RISBARA CANDITA	130	ALLEN AVE
342	3	SMALL IRVING	134	ALLEN AVE
	19	LAPP ROBERT	137	ALLEN AVE
	21	MCDONALD MEGAN	137	ALLEN AVE
	4	DYER LAURIE	144	ALLEN AVE
	24	SCOTT JOHN	49	BERRY AVE
	6	SCOTT GEORGE	59	BERRY AVE
	8	BRENNAN ELIZABETH	65	BERRY AVE
	17	BRUNI JAMES	69	BERRY AVE
439D	23	GAGNE ROLAND	45	CHESLEY AVE
439E	1	DIBIASE DAVID	48	CHESLEY AVE
	10	FLAHERTY JOHN	55	CHESLEY AVE
	5	HODGDON MARY JOAN	58	CHESLEY AVE
	13	HIRTLE MARGARET	65	CHESLEY AVE
439C	1	YOUNG JANE	66	CHESLEY AVE
	15	KANE MARIANNE	71	CHESLEY AVE
	10	MARLEY MARCIA	74	CHESLEY AVE
	17	DIBIASE JOHN	77	CHESLEY AVE
	9	VINCENT JEFFERY	80	CHESLEY AVE
	13	AYER ELIZABETH	86	CHESLEY AVE
	14	DONGO GERALDINE	90	CHESLEY AVE
439 A	3	VANCE THOMAS	91	CHESLEY AVE
	18	COATES RICHARD	94	CHESLEY AVE
	20	NAPPI SABATINO	101	CHESLEY AVE
	19	DESIGNATED PROPERTIES	102	CHESLEY AVE
437	27	WALTON NORMAN	59	EDGEWOOD AVE
	28	SEARWAY RUTH	65	EDGEWOOD AVE
	4	HYMN BRUCE	68	EDGEWOOD AVE
	30	GRIBBIN ERLA	71	EDGEWOOD AVE
	2	ADAMS GEORGE	76	EDGEWOOD AVE
	32	PARKER CHRISTOPHER	77	EDGEWOOD AVE
	28	LIBBY FRANK	79	EDGEWOOD AVE

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439B	1	LINDSAY WILBUR	80	EDGEWOOD AVE
	41	LIBBY BARBARA	185	HARVARD ST
	B01	CITY OF PORTLAND	18	HAVARD ST
	12	N.N.E.C. 7th ADVENTIST INC	53	HARVARD ST
	21	SHACKLEY JAMES	12	PLYMOUTH ST
151	1	KENNEDY JOANNE	2	UNIVERSITY ST
	49	DELANEY MARIE	14	UNIVERSITY ST
	47	STULTS NANCY	24	WOODLAWN
	60	FLAHERTY COLEEN	8	WOODLAWN AVE
	49	TYREE ANDREW	14	WOODLAWN AVE
	46	SEAVEY SCOTT	26	WOODLAWN AVE
	45	WASS THELMA	30	WOODLAWN AVE
	43	DAVIES TAMIKO	32	WOODLAWN AVE
	41	KLIMKO DENNIS	42	WOODLAWN AVE
	37	KELLEY LEE	50	WOODLAWN AVE
	35	GRIFFETH MARGARET	60	WOODLAWN AVE
	34	DERICE ANDREW	64	WOODLAWN AVE
	31	STEELE JOSHUA	70	WOODLAWN AVE
	30	NEUMYER RALPH	76	WOODLAWN AVE
	27	REED PHILIP	78	WOODLAWN AVE
	25	NORTON NANCY	92	WOODLAWN AVE
438	16	DAY JOHN M	100	WOODLAWN AVE
	2	GRASSI LOUIS JR	101	WOODLAWN AVE
	19	FINCH MARIE	106	WOODLAWN AVE
	4	MARR JOHN F	109	WOODLAWN AVE
	21	PAJANEN JASON	116	WOODLAWN AVE
	6	L'HEUREUX MELISSA	118	WOODLAWN AVE
	8	KOMBAKIS STEVEN	121	WOODLAWN AVE
	23	VINCENT CHRISTOPHER	122	WOODLAWN AVE
	10	GARITO HEIDI	125	WOODLAWN AVE
	25	MINOTT MARGARET	126	WOODLAWN AVE
	27	HOURAN AMY	134	WOODLAWN AVE
	13	STUBBS MARY	137	WOODLAWN AVE
	29	GORMAN JOHN	142	WOODLAWN AVE
	15	LE TAM C & LE N TRAN	147	WOODLAWN AVE
	33	THOMPSON JOHN	158	WOODLAWN AVE

ATTACHMENT C

BECC COMPANY INC
PO Box 257 Yarmouth, Me. 04096

BECC CO.
GEOTECHNICAL FIRM

May 8, 2003
NOTICE TO AREA RESIDENTS

RE: YALE COURT CONDOMINIUMS

Wescott & Payson II, project owners, have contracted Gorham Sand & Gravel to install the infrastructure (utility pipes), site work and construct Yale Street. Yale Court Condominium will be constructed off of the newly constructed Yale Street. The initial clearing has begun; however, there will be ledge removal conducted by blasting. The blasting contractor is Drilling and Blasting Rock Specialists. The blasting will begin last week of May .

The City of Portland, Maine has requested that all residents within 600 feet of the potential blast area be notified and given an opportunity for a Pre-Blast Condition Survey .

Drilling & Blasting Rock Specialists, Inc. (the blasting contractor) has hired an Independent Geotechnical Firm (Becc Company) to complete the "Pre-Blast Condition Survey" (PBS). A PBS consists of a video document of the interior and exterior of your dwelling. These Pre-Blast Surveys are considered confidential and will be treated as such. They will be kept in the safes of the Geotechnical Firm unless needed for claim resolution. There will be NO COST to the property owner.

Following the drilling of the rock the blasting company will be using the international blasting warning system:

3 signals 2 signals 1 signal	5 minutes prior to blast ready to blast all clear
------------------------------------	---

General Site Work Contractor

GORHAM SAND & GRAVEL

1-207-839-2442

JIM SHAW

BLASTING FIRM

DRILLING & BLASTING
ROCK SPECIALISTS

1-207-582-5484

TIM PURINGTON

GEOTECHNICAL FIRM

BECC COMPANY

1-207-846-9268

CHUCK BLAKEMAN

Please contact Becc Company (anytime day or night) to schedule an appointment for the completion of the pre-blast survey.

From: Lee Urban
To: "cal4161@yahoo.com"@Portland.gwgwia
Date: Wed, Apr 23, 2003 10:06 AM
Subject: Re: Chesley St-Payson Project

Here's the latest, Cheryl:

Jay Reynolds informs me that there is a pre-construction meeting scheduled today at 1:00. He was unaware of the developer's intention to use Chesley Street. The proposed vehicular access is off Allen Ave. and using Chesley is not appropriate. Jay will clearly convey that to the developer.

As for the trees, Jay will raise the issue at the 1:00 meeting. Jeff Tarling will be there as well. At this point, we think this is just an ugly rumor but we'll know more at the meeting. I'll keep you posted.

>>> c leeman <cal4161@yahoo.com> 04/23 7:26 AM >>>
Rec'd phone calls from residents last night.
Construction crew has been out at the site and informed some of the residents that the trees at the end of the street were coming down and Chesley Street would be the access for construction of this project. Construction trucks would be using Chesley for the next year or so. IS THIS TRUE?? Not what the neighborhood was told. Entry was to be from Allen Avenue and trees at the end of the street would remain. This is currently dead end street with little traffic and lots of kids. If this is true, it is not acceptable and other arrangements need to be made. Ask the Harvard Street residents about their experience. Please let me know. Thanks.

Do you Yahoo!?
The New Yahoo! Search - Faster. Easier. Bingo
<http://search.yahoo.com>

CC: Alex Jaegerman ; Jay Reynolds; Joe Gray

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

April 16, 2003

Patrick Clark
Land Use Consultants
966 Riverside Street
Portland, ME 04103

RE: Yale Court PRUD Revisions

CBL: (Applications #2002-0121 and #2002-0215, CBLs 436 A009001 and 153A A002001)

Dear Mr. Clark:

This letter is to confirm the revision to the approved plan of the Yale Court project located on Yale Street. The approved revisions include the relocation of five parking spaces, the substitution of shoebox lights, the change to bituminous walkways to the units, and the substitution of High Density Polyethylene pipe for PVC pipe for the storm drains in the Yale Court project. **The substitution of HDP pipe within the City Yale Street right-of-way was not approved due to the City's concern with performance of the material and the tendency the pipe has for "squatting" upon installation.**

The revised plan has been reviewed and approved by the project review staff including representatives of the Planning, Public Works, Building Inspections, Fire and Parks Departments.

If you have any questions regarding the revision please contact Sarah Hopkins at 874-8720.

Sincerely,

Alexander Jaegerman
Planning Division Director

cc: Lee D. Urban, Planning and Development Department Director

O:\PLAN\DEVREV\WYALE COURT-UNIVERSITY PARK\REVISIONLETTER.DOC

Department of Planning & Development
Lee D. Urban, Director



CITY OF PORTLAND

Division Directors
Mark B. Adelson
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP
Planning

John N. Lufkin
Economic Development

April 16, 2003

Wescott and Payson II
Yale Court L.P.
240 Harvard Street
Portland, ME 04103

Re: Yale Court PRUD and University Park 10-Lot Subdivision, vicinity of Yale Street
(Applications #2002-0121 and #2002-0215, CBLs 436 A009001 and 153A A002001)

Dear Mr. Wescott and Mr. Payson:

You requested a clarification as to which reviews would be required for the construction of the single-family homes along Yale Street. Any single family home that is constructed in the City of Portland is required to submit a "minor-minor" site plan application. This application includes a survey of the lot (or recently recorded subdivision plat), proposed grades, finished floor elevation and sediment and erosion control.

The lots along Yale Street have an additional requirement as part of the subdivision approval that requires a determination that the layout and design of the buildings on the lot to meets the approved Yale Street design guidelines. This determination will be made during the "minor-minor" review of each single family home application.

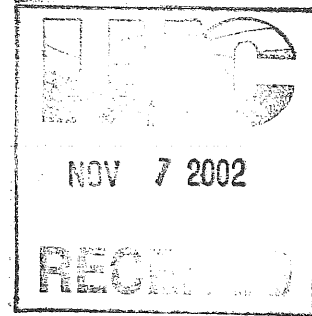
Please call if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Sarah Hopkins', is written over a horizontal line.

Sarah Hopkins
Development Review Program Manager

O:\PLANDEVREVWYALE COURT-UNIVERSITY PARK\REVIEW CLARIFICATION.DOC



November 5, 2002

Mr. Pat Clark
C/O Land Use Consultants
966 Riverside Street
Portland, Maine 04103

RE: Yale Court, Portland

Dear Mr. Clark,

This letter is to advise you that Central Maine Power has sufficient single phase or three phase electrical capacity in the area to serve the subject project.

In discussing your plans Central Maine Power will feed this facility off Allen Avenue, Portland.

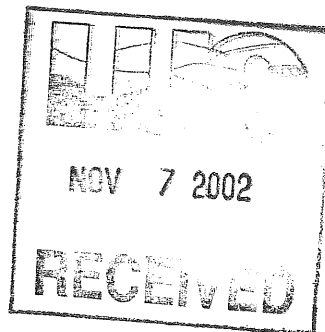
Once the project is accepted from the City of Portland, the owner will need to call our Customer Service Center at 1-800-565-3181 to sign up for a New Account and a Work Request Order so we may start a cost estimate.

If you have any questions please feel free to call me at 828-2882.

Sincerely,

Paul DuPerre
Technical Advisor

Verizon
Engineering Dept.
5 Davis Farm Road
Portland, Maine 04103



Mr. Patrick L.Clark
Land Use Consultants
966 Riverside Street
Portland, Maine 04103

Dear Mr. Clark,

This letter is to inform you that sufficient telephone facilities exist to serve the proposed 30 unit development and 10 house lots in the vicinity of Yale Street in the city of Portland.

Sincerely,

Timothy L. Layton
Engineer
Verizon

YALE COURT BLASTING PLAN

1. Assessment

1.1 Introduction

The proposed development will require the excavation and removal of earthen material where ledge conditions may be encountered. The following report sets guidelines for the blasting of ledge during the construction of this project. It is the contractor's responsibility to review and abide by any City of Portland blasting ordinances in effect at the time of blasting which may exceed the standards set forth in this report or the attached rock excavation specifications.

1.2 Site Conditions

Currently, the proposed site for development consists of light woods with several rock-outcroppings. Abutting parcels of land are developed as mostly residential neighborhoods. The site is approximately five acres with blasting expected at various locations within the site. All utility companies with services within 500 feet must be notified of blasting within three (3) business days prior to blasting.

1.3 Proposed Blasting

Blasting will be required for the construction of roadways, buildings, stormwater management structures and utilities. Special considerations have been made during the design process to minimize the amount of blasting to the greatest extent possible. All blasting areas shall be kept to the minimum dimensions, depths and requirements as required for complete construction of all utilities, roads, walks and structures as specified on the plans.

1.4 Pre Blast Survey

The pre blast survey will document the conditions of existing appropriate notice and permission, the contractor's qualified inspector shall examine the interior and exterior of structures within the study area. The study area shall include all structures within 500 feet of the blasting zone. Conditions shall be documented using photos, videotape and written descriptions. The pre-blast survey shall be completed by a licensed professional engineer or licensed specialized consultant.

2. Blasting Procedure

2.1 Monitoring and Instrumentation

The blasting contractor shall retain an independent firm to provide a seismograph to be set up at the nearest structure to any blasting activity. The seismograph equipment to be used onsite shall have been calibrated

within the previous six (6) months to a standard which is traceable to the National Bureau of Standards. Daily blast and seismic reports shall be submitted within seven working days to the Owner's Representative and the City of Portland.

2.2 Blasting Records

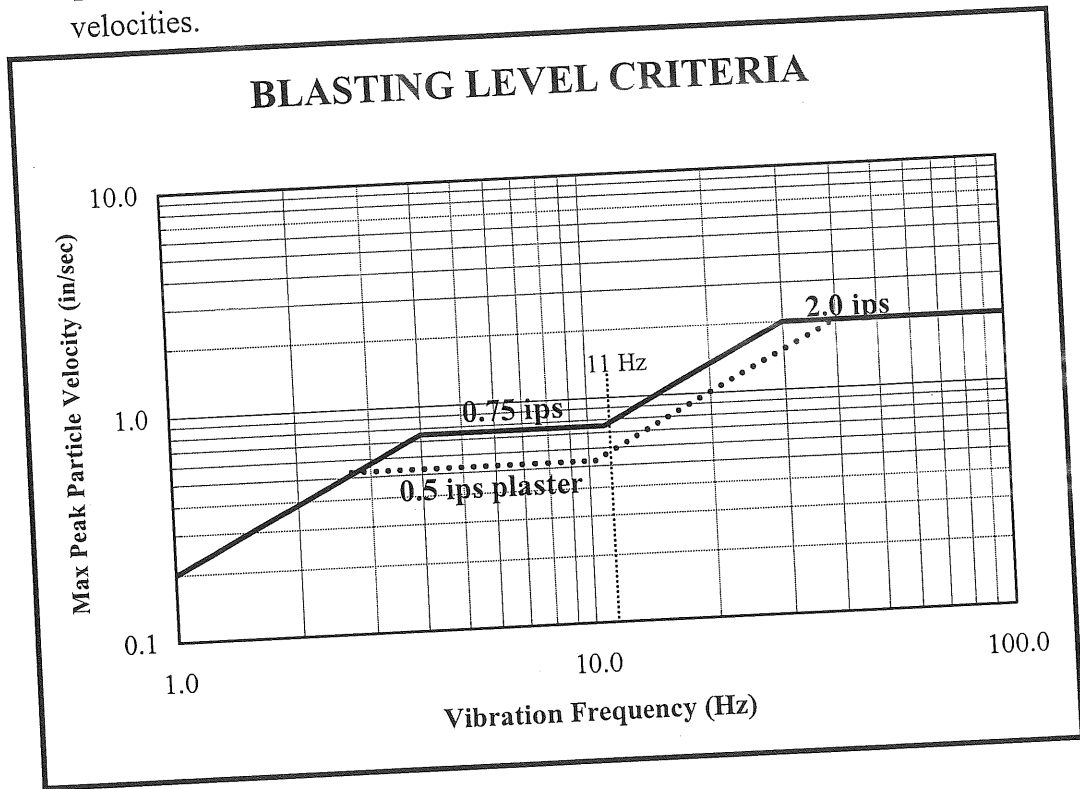
A record for each blast, including seismograph reports shall be kept for at least three years. The record shall include the following data:

1. Name of permittee, operator or other person conducting the blast
2. Location, dates and time of blast
3. Name, signature and license number of blaster in charge
4. Direction and distance, in feet, to nearest dwelling, school, Church or commercial or institutional building or other structure
5. Weather conditions
6. Type of material blasted
7. Number of holes, depth of hole, burden, spacing and stemming
8. Diameter of holes
9. Types of explosives
10. Total weight of explosives used
11. Maximum weight of explosives detonated within any eight (8) millisecond period
12. Method of firing and type of circuit
13. Type of method of stemming
14. Mats or other protections used
15. Type of delay detonator used and delay periods
16. Comments or recommendations by blaster
17. Seismograph record including
 - a. Seismograph recording at exact location of seismograph and its distance from the blast
 - b. Name of person taking the seismograph reading

2.3 Blasting Limits

To monitor ground vibrations and wave frequency, seismographs which measure peak ground particle velocities in the three special components of vertical, longitudinal and transverse directions along with their correlative dominant frequencies will be used. Velocities will be measured in inches per second (IPS), and the frequency is measured in hertz (Hz). These measurements are recorded with a range of 0.01 IPS to 5.00 IPS and 2 Hz to 150 Hz. The air is measured in decibels (dB), within range of 100-142 dB. The locations of the seismographs will be determined in the field by the blasting contractor but should include the nearest structure to any blasting activity.

The following table displays limits for the maximum peak ground particle velocities.



REFERENCE: OSM alternative blasting criteria (Modified from figure B-1, Bureau of Mines, RI 8507)

2.4

Blasting Procedures

1. Blasting operations shall be conducted only when all personnel and property are clear and traffic control is in place.
2. Access to the blasting area shall be regulated to protect the public from the effects of blasting. Access to the blasting area shall be controlled to prevent unauthorized entry at least ten minutes before each blast and until the blasting supervisor has inspected and given the *All Clear* signal that is safe to enter the blasting zone.
3. Areas in which charged holes are waiting firing shall be guarded, barricaded and posted, or flagged against unauthorized entry.
4. All blasts shall be made in the direction of the stress relieved face previously marked out, or previously blasted.
5. All stemming shall be minimum as specified using clean, dry 3/8" crushed stone.
6. The blasting contractor shall insure that extra safety and judgment is exercised by his blaster to prevent the simultaneous blasting of numerous holes where the accumulative additive poundage of explosives resulting from the detonation of like millisecond delays may exceed the desired scaled distance.

7. All shots will be fired as soon as possible after loading is completed. Blasting shall be scheduled so that exposure time of a loaded shot is kept to a minimum. A standard procedure to clear the blast area of all personnel and equipment, block roads and post guards to access ways into the blast area shall be enforced. A blast warning signal. Audible within ¼ mile will be used. Normally three horns at 5 minutes pre blast, two horns at 1 minute pre blast and one immediately following the shot for an all clear). The road leading to the site will marked with warning signs showing that blasting operations are being conducted.
8. Rubber matting mats with a specific size and weight designed for work of this type will be utilized at the discretion of the blasting foreman.
9. Blasting shall only occur as needed and shall be limited to the hours of **9:00 am to 4:00 pm daily, Monday through Friday**. Explosives shall be delivered to the job site on a daily basis. Only that amount necessary for the days work shall be brought to the site. Explosives shall be transported and stored in approved magazines when not in use. No overnight storage of explosives shall be permitted on site.

SECTION 02229 - ROCK EXCAVATION**PART 1 - GENERAL****1.01 GENERAL PROVISIONS:**

- A. Documents affecting Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, are hereby made a part of this Section
- B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.
- C. The Standard Specifications referred to herein is the book entitled "*Standard Specifications, Highways and Bridges*" published by the State of Maine Department of Transportation dated April, 1995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index Of Payment Items Included In Each Section.

Those Sections of the aforementioned *Standard Specifications* which are cited herein are applicable to the Work of this Contract as they may be modified, amplified, or added to by this Section.

- D. Reference is made to the latest Erosion and Sedimentation Control Plan (report) and erosion controls and Details included in the Drawing set for this project. Strict adherence to this Plan and Drawings must be followed in order to prevent adverse downstream impacts from erosion and sedimentation, originating from on site construction activity.
- E. Reference is also made to the U.S. Department of Interior "Blasting Guidance Manual"; N.F.P.A. 495-"Code for Explosive Materials"; Maine State "Rules for Manufacture, Transportation, Storage and Use of Explosives" (MRSA Title 25, Section 2441); and Maine DOT "Safety Specifications", Section 107.12, "Use of Explosives."

1.02 DESCRIPTION OF WORK:

- A. Provide all labor, material, equipment and services required to complete all rock excavation as indicated on the Drawings, and/or as required to complete the Work, including both trench rock and open rock.
- B. Provide all necessary shielding and covering, and undertake all measures necessary to protect the Work and assure the safety of workers, adjacent property utilities, and the public.

PART 2 - PRODUCTS**2.01 MATERIALS:**

- A. Explosives: As recommended by the blasting contractor based on seismic survey, and as permitted by NFPA 495 and the Maine State Fire Marshall.
- B. Delay Device: As recommended by the blasting contractor and as permitted by NFPA 495, and the Maine State Fire Marshall.
- C. Blast Mat Materials: As recommended by the blasting contractor.

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Verify site conditions under provisions of Section 02000- Site Special Conditions.
- B. Verify site conditions and note any subsurface irregularities affecting Work of this Section. Refer to Section 02010-Subsurface Investigation.
- C. Identify required lines, levels, contours, and datum.
- D. Notify "Dig-Safe" (1-800 225 4977) at least 3 days prior to beginning any excavation or blasting Work.
- E. Accurately locate any existing utilities before beginning drilling or blasting; contact local utility companies.
- F. Check for conflict with underground utilities or structures. The blasting contractor shall notify the General Contractor of any and all apparent conflicts or potentially hazardous conditions before proceeding with the Work.

3.02 ROCK EXCAVATION (Blasting Method):

Rock excavation may be required at this site. Rock excavation shall be defined as: All rock, ledge, or boulders in undisturbed soil that cannot be removed by a mechanical scarifier and power shovel of 1.0 cubic yards capacity, and/or D-8 Bulldozer with ripper, without use of line drilling or explosives. Boulders 2 cubic yards or smaller shall be considered to be unclassified material regardless of location. Concrete and cut stone encountered in excavations in excess of 2 cubic yards will be considered as "rock" as herein defined.

A. Uncovering of Rock:

When, during the process of excavation, rock is encountered, the Contractor shall notify the Architect/Engineer before proceeding further. The Contractor shall not proceed with the excavation of material claimed as rock until such material has been classified by the Architect/Engineer. Failure on the part of the Contractor to notify the Architect/Engineer for the purpose of taking Cross-Sections, etc., will forfeit the Contractor's right-of-claim to any Credits or Allowance for Rock Excavation.

B. Cross-Sections:

The Contractor shall employ and pay for a Professional Civil Engineer or Professional Land Surveyor, acceptable to the Architect/Engineer, to take cross-sections of rock and to provide computations of quantities within the limit of excavation lines. No material claimed as rock shall be drilled, blasted or removed until the following procedures have been performed:

1. The Contractor shall, by independent party as described above, quantify all rock excavation based on the design grades shown on the Drawings, and the pay limits for rock excavation specified herein (SS 3.02 F), and shall provide the Architect/Engineer with quantities, sections and/or profiles for review, prior to excavation.
2. The Architect/Engineer shall review cross sections and/or profiles, and shall either approve quantities or propose revisions to design of footings, trenches, layout and general grading, to minimize rock excavation if possible or necessary.
3. The Contractor shall confirm any proposed revisions and resultant rock quantity changes.

Mark B. Adelson, Director
Division of Housing &
Neighborhood Services



Department of Planning and
Urban Development

CITY OF PORTLAND

October 28, 2002

Yale Court, LP
Michael Payson, James Westcott
C/O Westcott & Payson
240 Harvard Street
Portland, Maine 04103

Dear Mike and Jim,

The City of Portland is pleased to provide Yale Court, LP with a letter of financial commitment for the development of rental housing on Yale Street in Portland. As proposed, this development will consist of 30 units of low-income rental housing. Ten single-family market rate house lots will be developed on adjacent property owned by your company. The City will commit a total of \$350,000 of HUD funds to this project. This commitment was approved by the Portland City Council at their meeting on October 21, 2002, Council Order # 76-02/03.

Description of Project

The project is substantially as described in the proposal to the City Council Housing Committee on September 3, and September 18, 2002 and application for site plan/subdivision approval submitted to the Portland Planning Board, October 22, 2002. These documents are on file at City Hall in the Division of Housing and Neighborhood Services. Changes to the proposal can include items that address concerns identified during the City's review process, as well as those required to receive local planning approvals and all financing commitments. Any substantial change in the project or its funding is subject to written approval by the City.

The 30 units of rental housing (Yale Court, LP) will be located at:

Yale Street – as identified on the attached map (attachment #1)

Term of Commitment

This commitment of funding will remain in place for a period of six months from the date accepted by the Borrower.

Construction Start

Construction of the project must begin within twelve months of the approval by the Portland City Council, on or before October 21, 2003. The development of the single-family home sites will be concurrent with the development of Yale Court.

Sources and Amounts of Funding

The City is committing a total of \$350,000 to this project from sources and in the amounts listed below:

HUD HOME Program	\$150,000
City of Portland, Housing Development Fund	\$200,000

Use of Funds

The Borrower understands that the City's financing will be used for development costs that are eligible under the regulations governing the HUD HOME and Community Development Block Grant (CDBG) programs. Specifically for this project, the HDF funds must be used for off-site roadway, sidewalk and utility construction. The HOME funds will be used for on-site construction related activities.

Neighborhood Involvement

The Borrower agrees to continue to work with neighborhood groups and individuals throughout the planning, construction and occupancy of the project, to seek their input on plans and address concerns that may arise.

Tenant Income Requirements and Rent Levels

For the 30-unit Yale Court project, rent levels and income requirements include:

- 5 two-bedroom units occupied by households at or below 50% median income
- 5 two-bedroom units occupied by households at or below 60% median income
- 13 three-bedroom units occupied by households at or below 50% median income
- 7 three-bedroom units occupied by households at or below 60% median income

Rent levels for these tenants must not exceed the maximum rents for the unit size as determined by HUD regulations and promulgated annually by MSHA

The Borrower is required to certify eligibility of tenant income prior to occupancy and annually. The City reserves the right to conduct a review of tenant incomes and rent levels on an annual basis. Reporting forms as required by MSHA to document compliance will be accepted by the City.

Term of Affordability

The Borrower agrees to maintain the affordability restrictions on all 30 units in perpetuity. The affordability restrictions will be secured by covenant restrictions and conditions and will survive repayment of City funds.

Loan Amount, Interest Rate, Term

Funds under this commitment in the amount of \$350,000 are to be provided to the Borrower in the form of a loan.

Terms of the loan to Yale Court LP for the 30 unit development are as follows:

40 year term; payment deferred for the first 10 years; payments to begin at year 11; 1% interest accruing in year 11; balloon payment at year 40 The loan will be non-recourse to the borrower. Annual payments not to exceed 60% of audited cash surplus. The loan will be subordinate to the MSHA loan, no lower than 3rd position.

10% or a minimum of \$5,000 from the proceeds of each single-family lot sold will be paid to the City and credited toward the loan principal. In the event lots remain unsold at the end of ten years, \$5,000 X the number of unsold lots will be paid to the City and credited toward the loan principal.

Security Position

Borrower will provide the City a mortgage(s) on the property for the full amount of the City's financial commitment. The City will negotiate in good faith the priority of its lien position among other lenders required to finance the project, recognizing that construction and permanent lenders will require a first mortgage.

Complete Financing

The City's financial commitment is contingent upon the Borrower obtaining additional financing adequate to complete the development of the project as presented to the City Council. Other funding sources may include, but are not

limited to, the Maine State Housing Authority, the Low Income Housing Tax Credit Program, and private lending institutions.

Building Codes and Specifications

The construction of this project will be carried out in accordance with approved specifications and plans as prepared by the project architect, Ben Walter, Curtis, Walter, Stewart Architects and approved by appropriate city departments and boards. The construction will comply with all applicable federal, state, and municipal building, life safety and land use codes.

Trails Through the Yale Court Development

The site design will include pedestrian trails, by public easement, across the Yale Court property to allow public access to University Park from the surrounding neighborhood.

Single-family Home Design

The single-family lots developed on Yale Street will be constructed consistent with City approved design guidelines with covenants to ensure compliance. The design guidelines will be approved during the site plan review process.

Property Taxes

Borrower is a private limited partnership responsible for paying full property taxes on this project. In the future, if the project or a portion of the project changes to non-profit ownership with 501(c)(3) organization status, the City will require the new owner to make payment-in-lieu of taxes in an amount equal to the accessed property taxes. The Borrower will notify any new potential owner of this requirement. This condition will be secured by a restriction on the deed from the City.

Method of Disbursement

Disbursement of City funds will be made at the time eligible costs for the City's funding are incurred.

Federal Labor Standards

Davis-Bacon wage rates will apply to the Yale Street road, sidewalk and utility construction project.

Insurance

The Borrower will provide the City, prior to commencement of construction, with evidence that the contractor is covered with builder's risk and liability insurance applicable to the project. These insurances are to be in amounts and form satisfactory to the City. Borrower will maintain property insurance listing the City as a loss payee, as its interest may appear.

Accounts and Records

The Borrower agrees to keep segregated records of disbursement of City funds as required by federal, state and City law or regulation.

Partnership Documentation

The Borrower shall provide evidence of a partnership vote authorizing this borrowing and a legal opinion that the debt is the binding obligation of the partnership.

Governing Law

This commitment is subject to and shall be interpreted in accordance with State of Maine and Federal law, as they may be amended, and any rules and regulation adopted there under.

Signage

Project signs erected on site during construction will specifically identify participation by the City of Portland and the U.S. Dept. of Housing and Urban Development.

Non-Assignability

This commitment is made to the Borrower solely and may not be assigned, transferred, conveyed or otherwise disposed of in any fashion, in whole or in part, without prior written approval of the City.

Obligations of Commitment

It is agreed that the terms and conditions provided and incorporated herein are established solely for the protection of the City as potential lender, and that the City shall have no liability to the Borrower or any other person in damages hereunder or otherwise for any failure or delay on its part to explain, administer, or otherwise enforce any such requirements. The sole remedy of the Borrower for any unreasonable failure or delay on the part of the City to explain,

Mike Payson, Jim Westcott
October 28, 2002
Page 6

administer, or otherwise enforce any of the terms, and as a direct result of which failure or delay the Borrower may have lost time or suffered damages, shall be an extension of the commitment expiration date set forth below for the period of such unreasonable failure or delay, without commitment extension fee. This The City may terminate commitment at any time prior to the commencement of construction upon discovery by the City of a material adverse change in or any misrepresentations of erroneous statements about the proposed project or in or about the Borrower's position with respect to solvency, credit worthiness, ability to carry out the proposed project, government regulations, or any other substantial factor. Such termination shall become effective upon the mailing of notice of termination by the City by certified first-class mail, postage per-paid, to Borrower at the address shown on the commitment.

Acceptance of Commitment

Borrower must accept, in writing, the provisions of this commitment no later than December 2, 2002. Please return a signed original of this letter to the City's Division of Housing and Neighborhood Services. Retain one for your records.

If accepted this letter becomes part of the closing documents and the terms of this letter remain in effect for the life of the loan. Upon the City's learning of any adverse financial or credit status changes or indications of change concerning the Borrower, the Commitment Letter becomes null and void at the sole discretion of the City prior to the time of the closing.

The City of Portland looks forward to working with you on this project. Please call me if you have any questions regarding this commitment.

Sincerely,

Mark B. Adelson, Director
Division of Housing & Neighborhood Services

Cc: Penny Littell
Aaron Shapiro

Mike Payson, Jim Westcott
October 28, 2002
Page 7

Yale Court, LP hereby accepts and agrees with the terms and conditions of the City of Portland's commitment as outlined above.

Date: _____

By: Yale Court, LP

By: _____
Michael Payson

By: _____
James Westcott

CITY OF PORTLAND, MAINE
MEMORANDUM

Chesley Ped Connection
Need agreement
w/ North End

TO: Chair Caron and Members of the Portland Planning Board
FROM: Jonathan Spence, Planner
DATE: October 22, 2002
SUBJECT: Yale Court, 30-Unit PRUD, vicinity of Yale Street
and
University Park, 10-lot Subdivision, vicinity of Yale Street

Building envelopes
E-access through
Woodwinds

Introduction

David Kamila of Land Use Consultants, Inc. has requested a workshop session before the Planning Board to re-introduce a project known as Yale Court, located in the vicinity of Yale Street. Mr. Kamila is representing the property owner, Yale Court Development LLC. and its principals, Michael Payson and James Wescott. Originally, this project was proposed as a 45-unit Planned Residential Unit Development (PRUD) with a mix of market rate and affordable units to be accessed off of Chesley Avenue. Because of traffic concerns, this project has been reconfigured as a 30-unit, 100% affordable PRUD with access from Allen Avenue via the to-be-constructed Yale Street. The construction of Yale Street will also provide access to lots under common ownership, which are part of the University Park Subdivision. These lots do not meet current zoning requirements and are to be reconfigured as a tandem project. The ten single-family lots will be market rate and it is the intent of the applicant to present these together as a mix of subsidized and market rate housing type.

The PRUD project site is approximately 8.3 acres in size and is located at the southerly end of Chesley Street and Berry Avenue, both dead end streets off of Washington Avenue. The University Park Subdivision parcels are approximately 7,500 square feet total and border Yale Street to a depth of 50 feet. The property as a whole is a moderately treed parcel with slopes ranging from 1 to 20%. The site generally slopes to the southwest where an existing drainage swale directs flows onto the abutting property. The boundary survey and proposed site/subdivision plans shows a 7' strip of land present between the single-family lots and the PRUD site. The applicant has indicated that ownership issues surrounding this strip have been addressed. Prior to the next workshop, staff requests a revised boundary survey, deeds and plans.

The applicant has held preliminary neighborhood meetings in an effort to actively incorporate neighborhood ideas and concerns. The applicant will be able to elaborate on the results of these meetings.

Review

The Yale Court Planned Residential Unit Development will be reviewed for compliance with the Site Plan and Subdivision Ordinances and for a DEP Stormwater Permit through delegated review authority. The reconfiguration of the University Park Subdivision will be reviewed for compliance with the Subdivision Ordinance only.

Site and Building Design (PRUD)

The applicant is proposing seven 4-unit buildings designed in the townhouse style with parking available in front. The buildings are made up of mirror-imaged pairs of individual unit types connected together, offset 4', and are either 2 or 3 bedroom units. One handicap accessible duplex is also included for a total of nine buildings with one containing a community center including laundry facilities. Preliminary elevations and floor plans have been included with this submission and are included as attachment .

Staff requests that the applicant review the proposed site design with respect to the PRUD design standards of the site plan ordinance.

Access/Circulation/Parking

The access for the project is proposed directly from Yale Street (to be constructed) with secondary emergency access through the adjacent Wind Woods Development. Yale Street is proposed to be built to City standards by the applicant with the exception that sidewalks are only proposed for one side of the street. The street section detail included in the application demonstrates a sidewalk on both sides of Yale Street while the plans and the narrative suggest construction only on one side.

The PRUD will be serviced by a 24' private drive with bituminous curbing and sidewalks. Seventy (70) parking spaces are demonstrated on the site plan broken into numerous small lots.

Pedestrian circulation is enabled through sidewalks within the PRUD. The applicant is considering a pedestrian connection to Chesley Avenue providing public access through the site to University Park and also providing PRUD residents non-vehicular access to Washington Avenue. The applicant would like to be sensitive to the existing neighborhoods and is concerned about the impact of such a connection. Staff strongly supports this pedestrian connection. Staff also recommends that the applicant consider a sidewalk along the southerly side of the access drive connecting Building Unit 'A' with the sidewalk leading in from Yale Street.

The applicant has submitted a traffic report produced by John Murphy outlining the impact of the proposals on the area traffic network. Data used for the analysis considered the construction of 30 apartments and 23 single-family lots in contrast to what is currently proposed. The traffic report concludes that anticipated delays entering Allen Avenue will be less than 1 minute, that adequate site distances exist at Allen Avenue and that no high accident locations are in the project's vicinity. Larry Ash has reviewed this traffic analysis. His comments concurring with the report's conclusions are included as attachment .

Utilities

The site has multiple water and sewer lines in the vicinity. The plan proposes to tie into existing water, sewer and stormdrain lines in Chesley Avenue and an existing water main in Yale Street. Electric, telephone and cable service will be extended underground to the individual lots and the PRUD from existing overhead service at Allen Avenue. Capacity letters from all applicable utilities will be required prior to the scheduling of a public hearing.

The applicant proposes two on site dumpsters for the PRUD residents. Staff requests a quantity analysis of anticipated solid waste to confirm that two dumpsters are sufficient. In addition, staff requests a detail of the dumpster enclosure.

Drainage/Grading/Stormwater Management

The PRUD project will create approximately 1.9 acres of new impervious surface and will require a Stormwater Permit issued under delegated authority. The project is anticipated to manage stormwater through a system of catch basins, swales, culverts and pipes with flow directed towards a proposed detention basin located in the northwest corner of the site. This detention basin will discharge to an existing drainage swale into the Northfield Green property and eventually into their detention basin. The applicant possesses an easement from Northfield Green to utilize and alter drainage on the Northfield Site. Jim Seymour is currently reviewing the provided stormwater management report. Substantial use of incorrect data as relayed in Mr. Seymour's October 18th memo will require additional revised submittals. In addition, the stormwater report does not include information related to water quality as required by the City of Portland standards.

Prior to the next workshop, staff requests that the bulk of comments from Mr. Seymour and Mr. Lombardo be addressed.

Drainage and stormwater management will be paramount concerns throughout the review of these two projects. Staff will pay careful attention to the projects proximity to the Mona Road floodzone and the impact of the proposals on the entire watershed.

Landscaping

The conceptual landscape plan illustrating numerous street trees and other plantings has been included with this application. A buffer is also illustrated on the plan. Further details about the treed buffer including preservation measures and dimensions are needed. Staff also requests the applicant provide a detailed landscape plan including specie types for proposed plantings for review and approval by the City Arborist.

Lighting

Streetlights are proposed for Yale Street and throughout the PRUD. Staff requests that a lighting plan including catalog cuts and photometrics be provided including information on building mounted fixtures.

Fire Safety

The applications have been reviewed by the Fire Department. Lt. MacDougal's comments are included as attachment .

Financing

The applicant has provided an analysis of this projects funding which includes significant funding from the Maine State Housing Authority in the form of low-income housing credits, subsidies and loans, Additional funding is anticipated from the City of Portland through allocation of federal housing funds. The Portland City Council is holding a public hearing regarding these funds on Monday, October 21, 2002. The third source of funding is contributions provided by the developer from funds generated by the sale of the house lots. Construction financing and equity syndication proposals from Peoples Heritage Bank and the Maine State Housing Authority are on file with the City of Portland Housing Office.

Planned Residential Unit Development Standards

The site plan ordinance contains specific standards for PRUDs. These standards relate to design relationship to site, internal design character and relationship to surrounding neighborhoods and recreation and open space. Staff requests that the applicant address each of these standards and how they will be met by this proposed development. Staff requests that the applicant pay particular attention to the private open space requirement. The addition of decks to the units may be problematic due to setback requirements. Staff encourages the applicant to consider shifting some of the buildings further from the property perimeter or from designated open space and/or slightly shift designated open space areas to accommodate private decks.

Staff encourages the applicant to investigate enhanced recreational amenities beyond simply a multi-purpose field. These amenities could include basketball and/or tennis courts, play yards, tot-lots etc.

Homeowner Documents

Homeowner documents for review and approval by Corporation Counsel will be required prior to a Public Hearing before the Planning Board.

Concerns

The following concerns have been identified through the projects' review to date:

1. Although the two projects are being reviewed in tandem, they are individual discreet projects. The inclusion of the single-family house lots does not, in itself, provide a mix of incomes or housing types within the PRUD. The location of the PRUD behind the single-family lots, its designation as 100% affordable, its repetitious architectural style and the siting of parking in front of units does not lend itself to active integration into the existing or proposed (Yale Street) neighborhood.
2. The stormwater management plan must be updated to include correct data and address issues of stormwater quality in addition to quantity
3. The proposed PRUD development must meet the specific standards related to PRUDs in the Site Plan Ordinance.
4. One of the reconfigured lots of University Park Subdivision is covered almost entirely by designated wetlands. Permits obtained through the Maine DEP will be required prior to a public hearing.
5. Significant blasting will be required for the construction of both of these projects as the site contains visible ledge and depth to bedrock is minimal in many areas. A complete blasting plan compatible with City regulations will be required.
6. The proposed handicap accessible flat is located the greatest distance of any building from available parking. Swapping this building with another located closer to a handicap parking space should be considered.

7. Both of the recording plats must include all essential information outlined in the subdivision ordinance. The plat for the Yale Court PRUD must also include a note regarding the in-availability of city services.

Attachments:

1. Applicants Submittal
2. Traffic Report, John Murphy, P.E., 9-12-2002
3. Memo from Larry Ash, 10-16-2002
4. Memo from Tony Lombardo, 10-17-2002
5. Memo from Jim Seymour, 10-16-2002
6. Comments from Lt. MacDougal, 10-08-2002
7. Financial Capacity summary, 9-30-2002
8. Wetland and Soil Delineations, 12-08-2001
9. Stormwater Summary
10. Plans

4. The Architect/Engineer shall provide to the Contractor a letter of authorization to proceed with excavation of material claimed as rock, which shall indicate the agreed upon Quantity and Price for the entire process of blasting, excavation, hauling and disposal.

C. Blasting:

1. The blasting contractor shall conduct a Pre-Blast Survey, including photographs, of all structures within the blasting area, and shall provide the Architect/Engineer with a written report of the survey. A Pre-Blast Survey shall be performed for all structures within 500 feet of any blast site. The Pre-Blast Survey shall encompass and reflect the U.S. Department of Interior, "Rules for Pre-Blast Surveys", cited in the Site Location of Development Law of the State of Maine.
2. All drilling equipment will be equipped with suitable dust control apparatus, which must be kept in operation and used during all drilling operations.
3. All blasting operations, including the transport, handling, and storage of explosives, shall be conducted in full compliance with all Federal and State laws and regulations and all local ordinances, and with all possible care so as to avoid injury to persons and property. Contractor shall limit ground vibrations to less than 1.9 in. per sec. peak particle velocity, and peak air over pressures to less than 0.018 psi, measured at the location of the nearest structure. Contractor shall provide protection against flying rock; the rock shall be well covered, and sufficient warning shall be given to all persons in the vicinity of the Work before blasting. Care shall be taken to avoid injury to all utilities, above and below ground, to other buildings (including foundations) and structures, and to private property. The Contractor, in addition to observing all state and municipal ordinances relating to the storage and handling of explosives, shall also conform to any further regulations which the Owner or Architect/Engineer shall deem necessary. Responsibility for all damages to persons or property shall rest with the Contractor. Only personnel qualified in the use of explosives shall be employed for blasting.
4. Blasting shall be performed only after approval has been given by the Owner for such operation.
5. All transportation, storage and handling of explosives, and all drilling and blasting operations shall be performed in accordance with M.R.S.A. Title 25, Section 2442, and all pertinent provisions of: the "Manual of Accident Prevention in Construction", issued by the Associated General Contractors of America, Inc.; the "Construction Safety Rules and Regulations", as adopted by the State Board of Construction Safety, Augusta, Maine; the Maine Department of Transportation "Safety Specifications", Section 107.12, "Use of Explosives"; and the U.S. Dept. of Interior "Blasting Guidance Manual."
6. Any site where electric blasting caps are located, or where explosive charges are being placed or have been placed, shall be designated as a "Blasting Area."
7. Bring explosives to the Work site only as needed and in small quantities.
8. A "Blasting Area" within three hundred (300) feet of any traveled way shall be marked in both directions by approved signs, with information similar to the following:

"BLASTING AREA. TURN OFF TRANSMITTERS"

and on the reverse side:

"END OF BLASTING AREA"

9. Notify each public utility company having structures in proximity to the site of the Work of the impending use of explosives, and give such notice sufficiently in advance to enable each company to

The total amount of rock excavation will be based upon the volume of rock excavated below the cross-sectioned ledge surface and within and/or above the lines referred to below as "Payment Lines." The Payment Lines are only to be used as a basis of Payment, and are not necessarily to be used as limits of excavation. Limits of excavation are as shown on the Drawings and/or as otherwise specified herein.

F. Payment Lines for Rock Excavation:

1. Open Rock:

- a) Payment Lines for columns and wall footings shall be a vertical line one-foot from the toe of the footings, or 2 feet outside of foundation walls. The depth shall be measured at 6 inches below the bottom elevations shown on the Drawings for foundations that do not bear directly on ledge, or at the pressured rock face for foundations bearing directly on ledge. Payment lines for walls to be damp-proofed shall be a vertical line 2 feet outside the walls.
- b) Payment lines for rock excavation under slabs on grade shall be 6 inches below the bottom elevation of the specified base material.
- c) Payment lines for rock excavation at paved areas and lawns shall be 6 inches below respective subgrade materials, as detailed and specified.

2. Trench Rock:

- a) Payment lines for manholes and catch basins shall be one foot outside of the outer walls, and 6 inches below subgrade beneath the structure.
- b) Payment lines for rock excavation under pipes within the building and for utility trenches outside the building lines shall in no case be calculated as greater in width than the outside diameter of the pipe plus 2 feet for pipes up to 18 inches. For pipes 18 inches and larger, payment lines shall in no case be calculated as greater in width than the outside diameter of the pipe plus 3 feet. Payment lines at bottom of all pipe and utility trenches shall be 6 inches below subgrade for pipe bearing.
- c) Payment lines for spot ledge excavation for small structures such as bollards, light pole bases, transformer pads, etc., shall be 6" below the bottom of the structure, and 12" outside the exterior vertical face of the structure.
- d) Payment for rock excavation at tree and shrub beds shall be full depth of required excavation for bed, or a minimum of 4 feet, whichever is greater, and 6" beyond vertical edge of beds.

G. Payment:

The Bidder agrees to the following Add or Deduct Unit Prices for rock excavation in excess of or below the quantity of rock excavation noted below, regardless of its location on the site or the depth of excavation required. See Item F. above for classification of open rock and trench rock; the volume of trench rock shall be computed after the volume of any overlying open rock has been deducted. Unit Prices are net, and include all labor, materials, overhead, supervision, insurance, profit, and taxes.

Open Rock/Structure Excavation:

Base Bid quantities for open rock excavation have ___(not)___ been estimated by the Architect/Engineer. The Base Bid shall include the cost for ___(0)___ cubic yards of open rock. Final Payment shall be made based upon actual field measured quantities and the following adjustment to the Base Bid:

Add _____ per cubic yard overrun.



MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

881

**Yale Street
Wescott & Payson
Soil Narrative
June 2002**

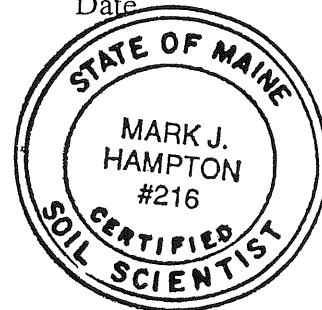
DATE: Soil Profiles observed on May 30, 2002

BASE MAP: Base plan prepared and provided by Titcomb Associates
Scale 1"=100 feet and 2.0 foot contour intervals.

GROUND CONTROL: Soil survey boundaries and test pit locations by Mark
Hampton Associates, Inc.

The accompanying soil profile descriptions, soil maps, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists. The soil map meets the minimum requirements for a Class B high intensity soil survey.

Mark J. Hampton C.S.S. #216, L.S.E. #263 June 3, 2002
Mark J. Hampton Date





MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

881
Wescott & Payson
Yale Street
Portland, Maine

LYMAN-TUNBRIDGE COMPLEX SETTING

PARENT MATERIAL: Loamy glacial outwash
LANDFORM: Glaciated uplands
POSITION IN LANDSCAPE: Uppermost locations, sideslopes, shoulders and crests
SLOPE GRADIENT RANGES: (A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Excessively well drained Lyman (10-20 inches to bedrock) and Tunbridge (20-40 inches to bedrock)
These soils occur in a nonrepeating pattern with exposed bedrock outcrops and cannot be separated.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Reddish brown fine loamy sand, 0-4 inches
<u>Subsurface Layer:</u>	Red brown sandy loam 4-12"
<u>Subsoil Layer:</u>	Dark red sandy loam 12-18"
<u>Substratum:</u>	Brown sandy loam 18-36"

HYDROLOGIC GROUP: Group C/D
PERMEABILITY: Slow to rapid, depending on slope and bedrock outcrops.
DEPTH TO BEDROCK: Shallow (Lyman 10-20 inches) to moderately deep (Tunbridge 20-40 inches).
HAZARD TO FLOODING: None

INCLUSIONS (Within Mapping Unit)

CONTRASTING: Brayton

USE AND MANAGEMENT

Development: The limiting factor for building site development is depth to bedrock which ranges from 0 to 40 inches within this complex. Tunbridge and Lyman (deeper than 11 inches) soils are suitable for subsurface wastewater disposal.



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881

Wescott & Payson
Yale Street
Portland, Maine

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL: Derived from dense glacial till
LANDFORM: Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE: Lower positions on landform
SLOPE GRADIENT RANGES: (A) 0-3%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

<u>Surface Layer:</u>	Dk gray brown, fine sandy loam 0-5"
<u>Subsurface Layer:</u>	Gray Brown fine sandy loam, 5-15"
<u>Subsoil Layer:</u>	Olive gray, fine sandy loam, 15-24"
<u>Substratum:</u>	Olive fine sandy loam, 24-65"

HYDROLOGIC GROUP: Group D
SURFACE RUNOFF: Moderate to moderately slow
PERMEABILITY: Moderate and moderately slow
DEPTH TO BEDROCK: Greater than 65 inches
HAZARD TO FLOODING: None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Lyman-Tunbridge Complex

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Gale Street Applicant Name: Wescott & Payson Project Location (municipality): Portland

Exploration Symbol: TP5 Test Pit Boring
 " Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	friable	Dark Brown	
6	Sandy loam	Friable	Brown	lime
12				lots
18				
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 2 Percent Limiting Factor: 18 Depth. Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Lynn-Tunbridge Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol: TP6 Test Pit Boring
 " Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	Friable	Dark Brown	
6				
12				
18				
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2 Classification: A Slope: 4 Percent Limiting Factor: 5 Depth. Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Lynn-Tunbridge Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol: TP7 Test Pit Boring
 " Organic horizon thickness _____ Ground surface elev. _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	Friable	Black	
6				
12	Sandy loam	Friable	gray	Common
18		Fine to Fin		Dissect
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2/3 Classification: E Slope: 0 Percent Limiting Factor: 6 Depth. Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Blyden Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol: TP8 Test Pit Boring
 " Organic horizon thickness _____ Ground surface elev. _____

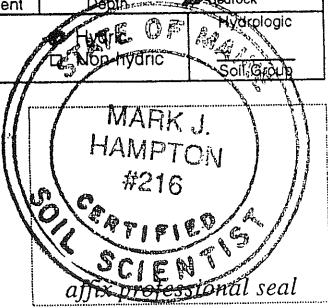
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	Friable	Black	
6				
12	Sandy loam	Fin	Gray	Common
18				Dissect
24				
30				
36				
42				
48				

soil data by S.E. >> Soil Profile: 2/3 Classification: E Slope: 0 Percent Limiting Factor: 4 Depth. Groundwater Restrictive Layer Bedrock

soil data by S.S. >> Soil series/phase name: Blyden Hydric Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 6/3/02
 Name Printed/typed: MARK J. HAMPTON Cert/Lic/Reg. # 216
 Title: Licensed Site Evaluator Certified Soil Scientist
 Certified Geologist Other:



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Yale Street Applicant Name: Wescott & Payson Project Location (municipality): Portland

Exploration Symbol: XP1 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____
 Texture Consistency Color Mottling
 0 Sandy loam Friable Dark brown
 6
 12 Sandy loam Friable Brown None
 18
 24
 30
 36
 42
 48
 Depth below mineral soil surface (inches)
 Soil data by S.E. >> Soil Profile Z Classification Condition A Slope Percent 2 Limiting Factor Depth 28 Groundwater Restrictive Layer Bedrock
 Soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group _____

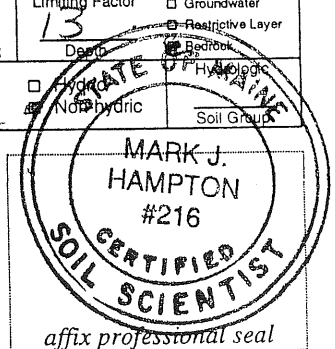
Exploration Symbol: XP2 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____
 Texture Consistency Color Mottling
 0 Sandy loam Friable Dark brown
 6
 12 Sandy loam Friable Brown None
 18
 24
 30
 36
 42
 48
 Depth below mineral soil surface (inches)
 Soil data by S.E. >> Soil Profile Z Classification Condition A Slope Percent 2 Limiting Factor Depth 22 Groundwater Restrictive Layer Bedrock
 Soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group _____

Exploration Symbol: XP3 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____
 Texture Consistency Color Mottling
 0 Sandy loam Friable Dark brown
 6
 12 Sandy loam Friable Brown None
 18
 24
 30
 36
 42
 48
 Depth below mineral soil surface (inches)
 Soil data by S.E. >> Soil Profile Z Classification Condition A Slope Percent 2 Limiting Factor Depth 20 Groundwater Restrictive Layer Bedrock
 Soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group _____

Exploration Symbol: XP4 Test Pit Boring
 " Organic horizon thickness Ground surface elev. _____
 Texture Consistency Color Mottling
 0 Sandy loam Friable Dark brown
 6
 12 Sandy loam Friable Brown None
 18
 24
 30
 36
 42
 48
 Depth below mineral soil surface (inches)
 Soil data by S.E. >> Soil Profile Z Classification Condition A Slope Percent 6 Limiting Factor Depth 13 Groundwater Restrictive Layer Bedrock
 Soil data by S.S. >> Soil series/phase name: Lyman-Tunbridge Hydric Non-hydric Hydrologic Soil Group _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 6/3/02
 Name Printed/typed: MARK J. HAMPTON Cert/Lic/Reg. # 216
 Title: Licensed Site Evaluator Certified Soil Scientist Other:





Land Use Consultants, Inc.

2
David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

October 1, 2002
(revised 11/19/02)

4080

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

**STORMWATER SITE ANALYSIS
ENGINEERING REPORT
YALE COURT
PRUD AND SUBDIVISION
Portland, Maine**

INTRODUCTION

Land Use Consultants, Inc. has evaluated the proposed Yale Court development site to determine stormwater runoff rates and potential impacts which may occur as a result of the development. The 10 acre ± parcel is located in Portland, Maine near the intersection of Allen Avenue and Harvard Street (west). The site includes frontage on the existing undeveloped Yale Street right-of-way and is completely wooded with well established forested areas. Proposed access to the Planned Residential Unit Development (PRUD) site is via a new driveway from Yale Street, which will be constructed for approximately 1,150 feet in the existing City of Portland Right-of-way. The newly constructed Yale street will also provide frontage for ten single family house lots to be reconfigured from a portion of the undeveloped University Park Subdivision as approved in the late 1930's.

The present site is undeveloped, wooded land, adjacent to medium density rural residential housing development along Chesley Avenue and Berry Avenue which dead-end adjacent to the property along the easterly boundary, high density-multi-family attached dwellings to the north (Northfield Green) and south (Woodwinds Apartments) and undeveloped land (University Park) along the westerly boundary. The site is situated along a locally predominant, high ridge, generally running east to west through the site near the center of the property. Due to this localized topography and existing neighborhood development, the runoff from the site generally exits the property in five locations around the perimeter. Each of these areas are described via individual small subcatchment areas for the pre-development and post development conditions so that the peak discharge rates at these locations can be compared and evaluated with regards to stormwater impacts. Brief descriptions are provided below. All of the runoff from the site ultimately finds its way via existing swales ditches and city streets to public storm sewers or to Fall Brook near Washington Avenue.

The area near Mona Road, just to the north of the project and the region around Fall Brook is known to be subject to historical flooding following significantly large storms. The Fall Brook region is apparently located within a 100-year flood elevation indicated as Zone AE on the FIRM flood map for this area.

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PORTLAND, MAINE 04103

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f a x (207) 878 0201
www.landuse@gwi.net

The proposed development will create approximately 2.00 acres of new impervious surfaces. This site is not located in the direct watershed of a *waterbody most at risk* or in a *sensitive or threatened watershed* and is not required to meet the stormwater quality standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500, Section 4.A.(1).(c). However, this project includes more than one acre of new impervious area, and is therefore subject to the stormwater quantity standards set forth in Chapter 500, Section 3. The project must also meet the requirements of the City of Portland “Technical and Design Standards and Guidelines” which requires that projects with parking facilities greater than 25 cars provide on-site treatment.

The proposed project includes a new storm drain system with a detention pond as shown on the plans. The proposed drainage improvements will reduce the peak flow rates from the site to existing rates or below at each of the study points. The proposed stormwater and detention measures will control the flows to adjacent and downstream properties for the developed site and will ultimately decrease the flows to Fall Brook slightly.

METHODOLOGY

We used the S. C. S. method for computing peak runoff rates. This method accounts for soil types, existing land use, topography, vegetative cover and proposed land use for the developed portions of the property. For this study, a derivative of the S. C. S. TR-20 computer modeling method was used within HydroCAD 6.00 software. We evaluated the pre-development and post-development conditions for the proposed site. These present and future conditions were analyzed using data for a Type III, 24 hour, storm distribution, with a design frequency of occurrence of 2 years, 10 years and 25 years. All supporting data and calculations are submitted with this report.

EXISTING SITE CONDITIONS

Existing drainage from the site is divided into several small subcatchment areas. Refer to the Pre-Development Drainage Plan included with this report for a further description of the various subcatchment areas.

Subcatchment #1 includes Yale Street right-of-way and individual lots with frontage on Yale Street and is situated on the western half of the site. This area drains to an existing drainage ditch just off of the property, which conveys runoff to an existing 36 inch culvert which discharges to an existing man-made pond within the Northfield Green project near Mona Road. The outlet from this existing detention pond eventually drains to Fall Brook.

The existing culvert in the drainage ditch is modeled as a culvert in response to preliminary comments by Jim Seymour, Development Review Coordinator. This culvert is also **Study Point #1** used to evaluate and compare predevelopment and postdevelopment peak flow rates since it represents the point where downstream impacts can be determined and reflects all of the combined runoff from the westerly half of the site including the contributions from two offsite subcatchments SC #100 and SC #200 as shown on the drainage plans. In order to characterize the drainage at this culvert it was necessary to include all of the contributing

watersheds and to model the culvert as a pond to determine the extent of ponding at the inlet. Therefore an additional large watershed area (SC #200) was added to the hydrologic model to the predevelopment and postdevelopment plans. In this manner it is possible to realistically evaluate the potential impacts or increased flows to downstream reaches. An additional plan entitled "Vicinity Drainage plan" was added to the plan set showing this large area of Northfield Green draining to the culvert.

Subcatchment #2 also drains to the culvert (modeled as Pond #102) via Reach #100. The proposed detention pond will be located in this vicinity and will collect most of the runoff from the new development. The runoff from this subcatchment also combines with a contribution from a small 3 acre ± off-site area including the west end of Chesley Avenue (SC #100) which also drains to the existing ditch and existing pond.

Subcatchment #3 includes a small interior portion of the site and drains naturally to the rear of the lots along the south side of Chesley Street. This subcatchment runoff passes through the off-site Subcatchment #100 which includes the residential neighborhood and ultimately drains to the drainage ditch and existing pond. The discharge point from this small subcatchment (R30) is not evaluated as a major study point but is a significant point for comparison of pre and post development runoff since it drains to an existing residential area.

Subcatchment #4 includes a small interior portion near the center of the site and drains naturally to the west end of Berry Avenue. This subcatchment includes a very small area and does not include any large swales ditches or distinctive drainage features. Runoff drains through the neighborhood, apparently along Berry Avenue, and eventually into Fall Brook, downstream from the Mona Road area. The discharge point from this small area is evaluated as **Study Point #2** for comparison to the developed site conditions.

Subcatchment #5 is situated at the southeasterly corner of the property on the opposite side of the ridge near Berry Avenue and drains towards the Woodwind Apartments development. This area drains towards Fall Brook and Washington Avenue between Harvard Street and Berry Avenue. The discharge point from this small area is evaluated as **Study Point #3** for comparison to the developed site conditions.

Subcatchment #6 is a small 2 acre subcatchment area which drains to the south end of Yale Street towards Harvard Street. The discharge point from this small area is evaluated as **Study Point #4** for comparison to the developed site conditions.

These drainage areas are defined in our Stormwater Model as shown on the Pre-Development Drainage Plan and HydroCAD diagram. Refer to the drainage plan, existing condition stormwater calculations, HydroCAD diagrams and report for modeling assumptions, subcatchments, flowpaths, drainage reaches, etc. Runoff calculations were performed for the 2 year, 10 year, and 25 year storm events in accordance with the City of Portland and DEP Stormwater Permit requirements. Fall Brook flows through Portland to the Back Bay near Payson Park. These Study Points and subcatchment #3 (R30) are evaluated for the pre and post development conditions and represent the primary points for comparing the results of the

calculations for each storm event for existing and developed site conditions. Refer to the Summary Table for a more convenient comparison of the results.

DEVELOPED SITE CONDITIONS

The developed site includes a new 30 unit PRUD housing project of attached dwellings. Most of the buildings are four-unit complexes arranged in small clusters. The new driveway into the site will be constructed from Yale Street. The detention basin (pond #20) near the northwesterly corner will be constructed as shown. The construction of Yale Street in the existing public right-of-way will also provide frontage for ten single family house lots.

The post-development site drainage patterns are similar to the existing site. The most significant differences are the changes to the subcatchment boundaries due to the site improvements. The post-development site is divided into several subcatchments as shown on the Post-Development Drainage Plan in addition to Subcatchments #100 and #200 (off-site). These subcatchment areas generally correspond to the pre-development subcatchments except that an additional area SC #21 is added (combined) to SC #20 (formerly SC #2), and represents the portion of the developed site which drains the proposed water quality treatment swale prior to draining to the new detention pond. All of the pre-development subcatchment areas are significantly reduced in size except for Subcatchment #2 which now contains almost the entire developed site (SC #20 and SC#21) and conveys runoff to the new detention pond. The outflow from the new detention pond combines with subcatchments #10 and #30 (formerly SC#1 and SC #3) and represents the combined runoff from the site to the existing drainage ditch which combines with the offsite drainage from SC# 100 and SC# 200 evaluated at Study Point #1 at the existing culvert (pond #102). The developer has an agreement with Northfield Green which prescribes the rights to drain stormwater to the existing ditch and detention pond. The peak stormwater runoff rates are maintained at existing rates or reduced to all of the areas and study points for the developed site.

Subcatchment #10 for the developed site (formerly SC#1) will be limited to the small strip of land along Yale Street near the westerly corner of the property and includes about 3.6 acres which will continue to drain directly to the existing drainage ditch similar to the existing condition. This area includes the single family house lots.

Subcatchment #20 includes approximately 2.3 acres located near the center of the PRUD site and collects runoff from a substantial amount of new impervious area. Drainage from this subcatchment will be collected in a new storm drain and conveyed to the proposed detention pond (pond #20). Outflow from the detention Pond #20 will be combined with the runoff from SC#10, SC#30 and the offsite areas and will drain to the existing culvert and detention pond in Northfield Green prior to release to Fall Brook. This combined runoff rate is the total discharge to the drainage ditch and existing culvert (pond #102) and is the point of comparison to the pre-development runoff evaluated as Study Point #1.

Subcatchment #21 includes approximately half of the developed site and impervious areas. The runoff from this subcatchment is routed through the stormwater quality treatment swale and into the new detention pond (pond #20).

Subcatchment #30 is reduced to only 0.27 acres (formerly SC#3, 0.98 ac) and drains to the rear of the lots along the south side of Chesley Street similar to the existing site. The runoff from this subcatchment is routed through off-site subcatchment SC#100 to the existing drainage ditch. Runoff from this small area is not considered as a major study point but is compared to the existing conditions at Reach R30 to evaluate the impacts at the residential property line. Runoff at this point is reduced by more than 60%.

Subcatchment #40 is reduced to 0.62 acres (formerly SC#4, 0.91 ac). This area drains to the west end of Berry Avenue and eventually to Fall Brook.

Subcatchment #50 is reduced to 0.49 acres (formerly SC#5, 0.82 ac) and continues to drain towards the Woodwinds Apartments development.

Subcatchment #60 is reduced to 1.67 acres (formerly SC#6, 2.01 ac) and is substantially unchanged except for a small area of the proposed PRUD near the southerly corner which includes the back of a few new units and back yards of open lawn area.

Subcatchments #100 and #200 (existing off-site) remain unchanged for the developed conditions.

For the developed site, the majority of the stormwater from the new PRUD is collected in storm drains and conveyed to the new detention pond. The controlled discharge from pond #20 is routed to the existing drainage ditch at the outfall from the site and combined with the runoff from subcatchments #10, #30 and off-site areas at the existing culvert (pond #102) which is the combined point of discharge for the majority of the site and evaluated as Study Point #1 at which the comparison is made to the existing peak flow rates representing total combined runoff to the existing culvert and detention pond in Northfield Green. Refer to the Summary Table for better comparison of the results of this study.

CALCULATIONS AND RESULTS

Results of the pre-development and post-development calculations are indicated in the Summary Table below. Complete printouts for stormwater calculations, modeling assumptions and HydroCAD reports are attached for the Pre-Development and Post-Development conditions for each of the 2 year, 10 year and 25 year rainfall amounts. All of the Study Points evaluated and Reach #R30 (SC#3-pre and SC#30-post) result in equal or less runoff for all design storms. One of the more significant evaluation points is Study point #1 since this point receives the majority of the runoff from the site. The total combined peak flow rates evaluated at the existing culvert (pond #102) are 13.1 cfs, 27.3 cfs, 33.4 cfs for the three design storms analyzed for the existing site conditions. The controlled runoff rates released to this existing culvert are limited to the existing rates for each of the design storm events. Results of the analysis at Study point #1 for the developed conditions are 13.1 cfs, 27.4 cfs and 33.5 cfs for the three design storms respectively.

The outflow from this culvert drains through an undeveloped area directly into the existing detention pond and will have no significant impacts and will not increase or contribute to flooding or ponding. Since the peak rates are reduced at the other Study Points for the developed site, the net downstream impacts to Fall Brook will remain basically unchanged or slightly improved as a result of the new storm drain system, detention ponds and controlled runoff from the development.

The major concern in this area is the potential for downstream flooding and significant ponding associated with the larger storm events to relieve the existing problem with historical flooding in the vicinity of Mona road and Fall Brook. Since the developed condition peak flow rates are equal or slightly reduced to below existing rates the proposed development will not impact downstream reaches.

SUMMARY TABLE						
PRE-DEVELOPMENT (cfs)				POST-DEVELOPMENT (cfs)		
Watershed (node)	2-year	10-year	25-year	2-year	10-year	25-year
Study Point #1 (pond #102)	13.07	27.29	33.44	13.14	27.42	33.48
Study Point #2 (SC4, 40-post)	0.76	1.76	2.26	0.78	1.71	2.18
Study Point #3 (SC5, 50-post)	0.60	1.37	1.77	0.55	1.20	1.53
Study Point #4 (SC6, 60-post)	1.35	3.10	3.99	1.20	2.69	3.45
Subcatchment #3, #30 post (Reach R30)	0.73	1.70	2.19	0.25	0.56	0.71

STORMWATER QUALITY BEST MANAGEMENT PRACTICES

Refer to the attached Water Quality Treatment and BMP Table (Table #1) for stormwater treatment measures and BMP's for the proposed impervious surfaces and estimated total TSS removal efficiencies for the developed site. Based on our calculations we can achieve an overall areally weighted treatment factor of 52% TSS removals for treating the new impervious areas with a combination of Dry Swale, vegetative swales, seeded buffers and detention pond calculated in series and in parallel in accordance with Section 5.4 of the *Stormwater Management for Maine, Best Management Practices* manual.

The proposed development meets the standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500.

**TABLE 1
YALE COURT DEVELOPMENT
STORMWATER QUALITY ANALYSIS**

IMPERVIOUS AREA	DESCRIPTION	BMP	HSG SOILS	BUFFER LENGTH (ft)	SLOPE (ft/ft)	% TSS BMP REMOVAL EFFICIENCY (%)	IMPERVIOUS AREA (ac)	NET BMP %TSS REMOVAL (%)
		WQI				10%		
		DS				76%		
AREA A	SC # 21	VS	D			25%	0.93	36.9%
		P20	D	-	-	10%		
AREA B	SC# 20	WQI				10%	0.67	12.2%
		VS	-	-	-	25%		
		P1	D	-	-	10%		
AREA C	Untreated Residential Units, & Yale St	SB/WQI	D	25	0.100	10%	0.55	2.6%
PROJECT TOTALS							2.15	52%

KEY

Impervious Areas

WQI = Water Quality Inlet (Casco trap)

P = Impervious areas, parking lot, community buildings, etc.

R = Residential Units

A, B, C = Treatment areas

BMP's

VS = Vegetated Swale

SB = Seeded Buffer

P = Det Pond

SAMPLE CALCULATIONS

Parallel Treatment - Impervious Area PA

Net BMP %TSS Removal

$$= (\text{seeded buffer \%TSS removal}) * (\text{impervious area} / \text{total project impervious area})$$

$$= (0.10) * \{(0.45 \text{ ac}) / (1.82 \text{ ac})\} = \mathbf{2.5\%}$$

Series Treatment - Impervious Area Rb

Net BMP %TSS Removal

$$= [1 - \{(1 - \text{seeded buffer \%TSS removal see note 1}) * (1 - \text{vegetative swale \%TSS removal}) * (1 - \text{det pond \%TSS removal})\}] * (\text{impervious area} / \text{total project impervious area})$$

$$= [1 - \{(1 - 0.10) * (1 - 0.25) * (1 - 0.10)\}] * (0.22 \text{ ac} / 1.82 \text{ ac}) = \mathbf{4.7\%}$$

Notes:

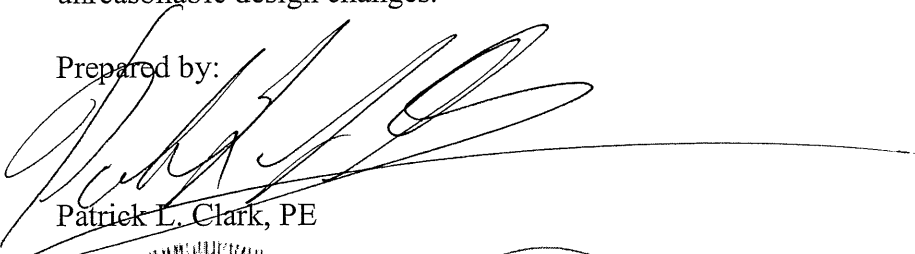
1) All residential Units were assumed to have a 10% TSS treatment credit for lawn areas.

This credit is associated with a worst case scenario of a 25' seeded buffer in Hydrologic Group 'D' Soils with 15-30% slopes. Roads and pavement are assumed to drain to a CB with a water quality inlet (Casco Trap) = 10%.

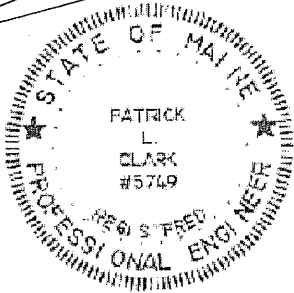
SUMMARY AND CONCLUSION

Based on the results of our calculations, it is our conclusion that the proposed detention pond and drainage improvements will provide adequate control of stormwater runoff from the site for storms up to and including the 25 year rainfall without producing significant adverse impacts to the site or downstream reaches. The Stormwater Best Management Practices (BMP's) utilized for the development will provide a Total suspended Solids (TSS) removal efficiency of 52%. We feel that the proposed drainage and erosion control measures, if properly constructed and maintained, will reduce runoff to adjacent properties and help improve existing drainage in the vicinity of the site without degradation of existing water quality. The applicant is requesting an allowance for an insignificant increase for the two year storm due to the impracticality of further controlling the peak flow rate which would require unreasonable design changes.

Prepared by:



Patrick L. Clark, PE



PART II

EROSION AND SEDIMENTATION CONTROL

The following plan for controlling sedimentation and erosion from this project is based upon sound conservation practices such as those outlined in the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices by the Cumberland County Soil and Water Conservation District, and the Maine Department of Environmental Protection, dated March, 1991 (as revised). Please refer to these sources and the Erosion Control Plan and Details included within the plan set.

A. INTRODUCTION

1. **General** – Wescott & Payson II is proposing to construct a 30 unit PRUD housing development. The project will include construction of new parking areas including and a stormwater collection and detention system.

The accompanying Site Plans and Stormwater Management Report describe in detail the project scope.

2. **Site Topography and Cover Complex** – The existing site includes approximately 10 acres which includes the individual house lots adjacent to the park. Slopes on the site area are between 2% and 10%. All areas are well vegetated with tree growth. The westerly portion of the site drains to an existing drainage ditch to an existing detention pond.
3. **Soils and Wetlands** - The soils on the site have been identified as Lyman – Tunbridge and Brayton. These soils are from Hydrologic Soils Group (HSG) type C/D, with small areas of (HSG) type D soils occurring in the wetland areas.

B. CONSTRUCTION CALENDAR

1. **Definitions** – The following definitions are terms commonly used throughout this report.

- a) Seasons - The following dates define the seasons as referred to herein:

<u>Seasons</u>	<u>Dates</u>
Winter	November 1st to March 15th
Mud-Season	March 16th to April 30th *
Spring	May 1st to June 14th *
Summer	June 15th to September 15th *
Fall	September 16th to October 30th

*Seasonal dates may vary according to weather. Any changes in these dates must be approved by the Engineer.

- b) Sensitive Areas - This erosion and sedimentation control plan is designed to protect all downstream channels from degradation. However, there are certain "sensitive areas" on or adjacent to the site which must be monitored during construction in order to prevent any adverse impacts. These areas are generally defined as follows:
 - (1) The existing drainage ditch at Northfield Green.
 - (2) Residential areas surrounding the site. Protection of the surrounding homes and properties from on-site activities adjacent to property lines will be limited to careful construction practices and ensuring that on-site erosion control measures are properly installed and maintained.
 - c) Erosion & Sedimentation Controls - are defined as the installation of silt fence, hay bales, drop inlet barriers, rip-rap, mulching, or erosion control matting or netting, and any other measures required herein.
 - d) Clearing - includes cutting and removing of over-story vegetative cover. It does not include grubbing. Limited clearing and other clearing restrictions may apply to areas where saving existing large trees may be desirable.
 - e) Grubbing - is the removal of grass, stumps, roots and scrub required to begin earthwork.
 - f) Interim Period - a period of time that an unvegetated area sits unworked, awaiting the next phase of work.
 - g) Earthwork - consists of the movement of soil by mechanical means including excavation, grading, shaping and general construction.
 - h) Temporary - as used herein shall refer to the use or placement of erosion or sedimentation controls, seeding or other measures intended to be either removed, replaced or followed with permanent measures.
 - i) Permanent or Final - as used herein shall refer to the use or placement of erosion or sedimentation controls, seeding or other measures which will remain after final project completion.
 - j) Engineer – as used herein shall mean a representative of Land Use Consultants, Inc. or and engineer designated by the City of Portland as the Construction Site Engineer.
2. **Schedule of Activities** – The following activities, erosion control measures, or other items are required for the construction of this project or require specific measures or

scheduling of activities to be conducted or restricted during the various construction seasons as herein defined above.

- a) Sensitive Areas - work proposed in the defined sensitive areas may be conducted all year, preferably during periods of dry weather, during the summer, fall and winter seasons, as defined herein. All work adjacent to or in areas which drain to, sensitive areas shall be protected with appropriate erosion controls to prevent erosion or sedimentation of the identified sensitive areas at all times during construction until the areas under construction are stable.
- b) Erosion & Sedimentation Controls Installation - erosion control installation may occur all year long, except that such measures shall be installed prior to commencement of disturbance activities related to each erosion control measure. However, to the extent practical, erosion control measures should be installed during Summer or Fall in advance of construction anticipated or scheduled in the winter and mud season. See Drawings and Details for locations and installation procedures.
- c) Clearing - clearing may occur all year long except during "mud season".
- d) Road and Parking Lot Construction - This construction may occur in the spring, summer and fall seasons. It may be allowed in the winter season, in which case the winter construction schedule must be followed (see Section D.1.).
- e) Pond Construction - all pond construction shall occur, when practicable, during the spring, summer or early fall season. All final grading, seeding and mulching must be completed by October 15th. Work after October 15th shall be subject to winter protection measures as defined herein.

C. EROSION CONTROL MEASURES

1. **General** – The construction of this project may require or incorporate the following measures or practices as needed or applicable. Such measures, where indicated on plans shall be implemented as shown or required herein. Additional measures not shown on plans may be required as specified herein or requested by the Engineer, as needed, in order to ensure the protection of resources or off-site properties.
 - a) Vegetative Buffers - have been used where practical to provide visual screening, improve erosion control and provide stormwater treatment. These buffers help filter runoff as it flows through and are most effective when the runoff through the buffer is shallow sheet flow. The contractor must take care in leaving the buffer strips in their natural state and assure that runoff does not channelize through the buffer to the extent possible. Skidder trails or equipment ruts shall be smoothed or regraded. Construction activities and equipment shall be restricted in areas to remain as buffers or not otherwise scheduled for construction.

- b) Straw Bales - shall be installed along the contours in the locations and as detailed on the plans. Straw bales may be required in addition to silt fencing or other measures in areas as shown on plans.
- c) Silt Fence - shall be installed along the contours in the locations and as detailed on the plans. Silt fence may be required in addition to straw bales or other measures in sensitive areas as shown on plans).
- d) Double Protection Straw Bale/Silt Fence - shall consist of silt fence reinforced with straw bales. It shall be installed along the contours in the locations and as detailed on the plans.
- e) Mulching - shall consist of spreading of straw mulch over bare or disturbed areas. It shall be applied at the rates described herein. It will be substituted by matting where necessary or as specified herein. Alternate mulch materials or methods such as hydro-seeding may be used only when approved by the Engineer.
- f) Matting - shall consist of straw, coconut or excelsior sandwiched between photodegradable netting. Matting may be substituted with sod where desired. **Netting over straw mulch may be substituted when approved.** (Except in swales.) Matting shall be used as follows:
 - (1) Where indicated on drawings.
 - (2) In the base of swales with greater than 5% pitch.
 - (3) On steep slopes where rilling may occur.
 - (4) In any sensitive areas subject to erosion or as indicated on plans.
 - (5) On any disturbed or newly graded slopes steeper than 25% (4.H: 1V) and located within 100 feet of a perennial or intermittent stream or other sensitive area provided that runoff from the area contributes directly to the stream or sensitive area.
 - (6) Where straw mulch has been determined to be ineffective based on observations made in the field or as directed by the Engineer.
- e) Construction Entrance - A crushed stone construction entrance will be installed wherever construction traffic will enter the public road system. The size, type and locations of these shall be as shown and detailed in the plan set.
- f) Rip-Rap - shall be used in swales, steep slopes, pond outlets, etc. as shown on plans to protect soils from excessive flow velocities. It shall be of the size and depths specified on the plans. A minimum rip-rap size of $D_{50} = 6$ in. shall be used if not otherwise indicated on plans.

- g) Inlet Protection - **all culvert inlets shall be protected** as noted on the rip-rap headwall detail. The rip-rap shall be the same size as that specified at the outlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- h) Outlet Protection - Rip-rap outlets (aprons or plunge pools) **shall be installed at all culvert outlets** as detailed on the plans to prevent scouring at the pipe outlet. The rip-rap shall be the same size as that specified at the inlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- i) Stone Check Dams - stone check dams shall be installed in existing and proposed swales or at culvert inlets as shown on the plans. These check dams serve to reduce flow velocities in swales thus helping to reduce rilling. Check dams shall be constructed of 2 in. to 3 in. stone.
- j) Dust Control – Contractor shall take necessary steps to prevent blowing and airborne movement of dust from exposed soil surfaces. Maintaining natural or temporary vegetation and or mulching shall be used where practical. Mechanical sweepers or washing of pavement shall be used where necessary to prevent and remove dust buildup on paved surfaces. All exposed soil surfaces shall be maintained to minimize dust by periodically moistening bare areas with adequate water to prevent dust. Calcium Chloride solution spray should be used in areas experiencing significant dust problems and to reduce frequency of watering. Repetitive treatment shall be applied as necessary to accomplish adequate dust control (refer to Section 17.0 in the “*Maine Erosion and Sediment control Handbook for Construction: Best Management practices*” manual).

D. EROSION CONTROL EXECUTION

1. **General Construction Phase** - the following general practices will be used to prevent erosion during construction of this project.

NOTE: Locations of silt fence/hay-bale barriers are shown for general purposes on drawings. Final locations should be modified based on actual field conditions and as site conditions warrant. Such field changes or modifications shall be approved by the Engineer.

- a) Following clearing only those areas under active construction shall be left in an untreated or unvegetated condition.
- b) Erosion Control Installation - prior to the start of construction, silt fence and/or haybales, erosion control mix berms, and stone check dams shall be installed around catch basins, at the toe of slopes and in areas as shown on Plans or as otherwise required to protect against any construction related erosion. Immediately following construction of culverts and swales, stone check dams shall be installed, as shown on the Plans.

- c) Topsoil will be stockpiled when necessary in areas which have minimum potential for erosion and will be kept as far as possible from existing drainage areas and adjacent residential properties. All stockpiles expected to remain longer than 15 days shall be:
- (1) Treated with mulch, and,
 - (2) Stockpiles expected to remain longer than 3 days shall be encircled with haybales or silt fence at the downgradient toe of the pile.
- d) Temporary Seeding and Mulching Schedule - During construction, all disturbed areas shall adhere to the schedule specified below: (Note: refer to Section D.2 for permanent seeding and mulching requirements.)
- (1) The contractor shall be responsible for monitoring daily weather reports. Contractor shall adjust the work schedule in anticipation of rains and shall stabilize the site as required.

TEMPORARY SEEDING AND MULCHING SCHEDULE

Work Area	Expected Interim Period (Calendar Days)	No Treatment	Temporary Mulching (1)	Seeding (2) And Mulching
Sensitive Area (3)	<7	X		
	7-30		X	
	>30			X
Non Sensitive Area	<30	X		
	30-45		X	
	.45			X

<u>Date</u>	<u>Seed</u>	<u>Rates lbs/1,000 s.f.</u>
4/1 to 7/1	Annual Rye Grass	0.90
7/1 to 8/15	Sudan Grass	0.90
8/15 to 10/15	Winter Rye	2.00
10/16 to 3/31	Annual Rye Grass	1.8

- (1) Mulching shall be applied at a rate of 90 lbs/1,000 sq. ft. (180 lbs/1000 sq. ft. for winter construction).
- (2) Temporary seeding rates shall be as follows:
- (3) The time limit for mulching in sensitive areas may be overridden by the most current weather forecast. All exposed soils in sensitive areas shall be mulched prior to every anticipated storm event.

- e) Grading will be held to a maximum 3:1 slope where practical. Steeper slopes may be used in ledge cut. All slopes shall be stabilized with permanent seeding and mulching immediately after final grading is complete. If final grading will not be completed immediately, refer to the Temporary Seeding and Mulching Schedule. It

is understood that immediately means within 5 days of the completion of work. See seeding specifications for permanent seeding requirements.

- f) Culverts will be protected with stone rip-rap headwalls ($D_{50} = 6$ in. unless otherwise specified) at inlets and outlets as shown on Plans.
- g) Construction traffic - will be directed over the construction entrances and proposed roads. Any areas subject to rutting will be stabilized immediately. The crushed stone construction entrances shall be maintained by the addition of more crushed stone as needed as the voids become filled. The public roadway shall be swept daily should mud be tracked onto it.
- h) Erosion Controls for Detention Pond - the following practices and schedule shall be adhered to while constructing ponds and/or basins:
 - (1) The construction of the ponds or basins shall only take place as described in Section B – Construction Calendar of this report.
 - (2) The construction of the ponds or basins shall commence during a period of minimal flow with a dry short-range weather forecast. Once under construction, the pond shall be completed within 30 days.
 - (3) If the construction of the pond should be hampered by rain and excessive runoff all of the externally draining areas of the ponds must be stabilized by mulching and tacking with a photodegradable netting. Internal slopes of the detention basin shall be seeded immediately after shaping with perennial rye and stabilized with mulch to prevent soil loss from the basin itself. If rilling occurs matting shall be applied in such areas. Erosion control matting shall be used where indicated.
 - (4) The sequence for the construction of the ponds and sedimentation basins shall be as follows:
 - i Clear area required for pond or basin construction.
 - ii Install erosion controls.
 - iii Commence with grubbing and earthwork.
 - iv The contractor shall plan the excavation so the proposed pond or basin captures any runoff, thereby, serving as a temporary sediment basin throughout the construction.
 - v The contractor shall monitor and inspect the operation and function of the sedimentation ponds on a weekly basis to ensure proper working conditions. The contractor shall inspect during and immediately following significant

rainfall (>1.0 inch in a 24 hour period) in addition to scheduled maintenance inspections. Any evidence which suggests that the outlet is clogged or pond level does not significantly drawdown within 24 hours after rainfall event requires immediate attention or emergency measures. In the event these conditions are encountered or if the pond level rises to within one foot of top of berm dewatering shall be required followed by replacement of all filters and filter materials.

vi Should dewatering be necessary during construction, the following methods may be required:

01. The Engineer shall be contacted immediately.

02. A temporary level lip spreader shall be constructed where a mildly sloping well-vegetated buffer area exists, a minimum of 100 ft. from the nearest drainageway or resource. This area shall serve as a buffer area to filter any sediment that may be suspended in the pond water. The Engineer shall approve the location of the level lip spreader prior to construction.

03. Fifty feet downgradient and parallel to the level lip spreader, a row of triple protection silt fence and hay bales and erosion control mix (or sand) shall be installed to further filter the water.

04. The pond water shall be pumped into a stone lined plunge pool with a channel directing the runoff to the aforementioned level spreader. The pump shall be operated at such a rate as to not channelize the flow out of the spreader.

05. During pumping, the downstream runoff shall be periodically inspected by the contractor to check for cloudy appearance. Should cloudiness still be prevalent in the water, the contractor shall stop pumping and contact the Engineer.

vii During excavation, topsoil, silts and clays that may be later used for the final grading or pond lining shall be stockpiled upstream from the pond. These stockpiles shall be mulched immediately and encircled with hay bales at the toe of the pile. Where possible suitable stripped loam free of rocks, roots and other objectionable materials be placed directly on finished graded areas but shall be approved by Engineer prior to placement.

viii Should pond construction be hampered by rain, refer to the Emergency Protection Procedures (Section D.1.1.) of this report for corrective measures.

ix Loam, fertilize, seed and mulch the disturbed areas the same day final grades are reached.

- i) Culvert Installation - The following methods shall be used to install culverts.
- (1) The construction shall only take place during an expected dry period.
 - (2) Install silt fence and hay bales and other measures as shown on plans.
 - (3) For installations in wet conditions a temporary diversion shall be constructed to divert the flow around the construction area (refer to: "*Maine Erosion and Sediment Control Handbook for Construction: Best Management practices*" manual, Sections 42.0 43.0 and 44.0), unless waived by the Engineer.
 - (4) The pipe bedding area shall be excavated, bedding put in place, and pipe installed with rip-rap aprons on both ends. This work shall be completed as expeditiously as possible.
 - (5) Remove diversion (if installed).
 - (6) Place remaining fill with rip-rap headwalls at pipe inlets and outlets. Geotextile fabric shall not be used as bedding for rip-rap in stream installations.
 - (7) All disturbed areas to be vegetated shall be loamed, fertilized, seeded and covered with matting within 7 days of completion of earthwork.
- j) Winter Construction - For any work proposed during the winter season, the contractor shall adhere to the following practices:
- (1) A plan and schedule of activities shall be submitted to the Engineer and approved prior to any work being done.
 - (2) The interim period for any exposed area shall be limited to 7 calendar days.
 - (3) The contractor may not expose more than 3 acres at any one time.
 - (4) Where required and approved by Engineer, installation of silt fence may be modified from detail on plans to substitute 6 inches of clean gravel over the bottom of the silt fence in lieu of trenching and backfilling fabric to allow for installation in ledge areas or significant tree roots.
 - (5) Mulching and seeding rates shall adhere to the Temporary Seeding and Mulching Schedule, (Section D.1.d.). *Note that all mulching rates shall be doubled as shown in Note 1, (Section D.1.d.1). And, shall follow the sensitive area schedule.*
- k) Monitoring Schedule - The contractor shall be responsible for installing, monitoring, maintaining, repairing, replacing and/or removing all of the erosion and

sedimentation controls as specified herein or directed by the Engineer, or appointing a qualified subcontractor to do so.

- (1) Maintenance measures will be performed as needed during the entire construction cycle. After each rainfall, a visual inspection will be made by the Contractor to insure their continuing function as designed.
 - i Stone check dams, hay bale barriers, erosion control mix berms, silt fence and mulch shall be inspected and repaired once a week or immediately following any significant rainfall. Sediment trapped behind these barriers shall be removed when it reaches a depth of 6 inches (or 1/2 the height of the dam for check dams) and redistributed to areas undergoing final grading.
 - ii Sedimentation basins and perforated riser pipes shall be visually inspected once a week or immediately after each significant rainfall, and cleaned and repaired as needed. Sediment trapped at the bottom of the basins shall be removed once it attains a depth of 12 inches unless otherwise specified. The sediment removed shall be transported to an upslope area undergoing final grading, or removed from the site. The sediment and the removal thereof shall be handled in a manner which does not promote erosion or sedimentation.
- 1) Emergency Protection Procedures - Should construction be hampered by excessive runoff and sediment entering downstream channels, then the contractor shall employ the following procedures to remediate the situation. Note that the contractor is not limited to these measures and may propose other measures based upon experience, subject to the approval and/or direction of the Engineer.
 - a) Problem: Rilling:
Solution:
 - (1) Fill rills with rip-rap.
 - (2) Mulch and or use matting.
 - (3) Install sod strips across flow path in fairways or roughs.
 - (4) Place double protection hay bales and silt fence along the contours.
 - (5) Divert upstream runoff from exposed area into stable area.
 - b) Problem: Erosion in channels:
Solution:
 - (1) Rip-rap channel with channel with check dams.
 - (2) Place matting in swale.
 - (3) Re-grade channel, revegetate and install stone check dams.
 - c) Problem: Siltation in stream or river:
Solution:
 - (1) Walk up-stream to determine where sediment is entering the channel.

- (2) Take appropriate corrective measures to prevent sediment from entering stream (i.e. mulching, matting, silt fence, etc.).

2. Permanent Seeding and Mulching Plan - The following general practices will be used to re-establish final vegetation.

- a) Loaming - A minimum of 4 inches of loam will be spread over disturbed areas and graded to a uniform depth and a natural appearance. All loam shall be as specified or approved by the Engineer.
- b) Final Seeding: - All final seeding shall be completed immediately (within 7 days) following final grading. All final fertilizing and seeding shall adhere to the specifications unless otherwise approved by the Engineer.
- c) Mulching: - Any area shall be mulched after it has been seeded unless deemed unnecessary by the Engineer. Mulching shall consist of hay mulch, hydro-mulch or any suitable substitute deemed acceptable by the Engineer.
 - (1) Straw mulch shall be applied at the rate of 2 tons per acre (90 lbs. or 2 bales/1,000 sq. ft.).
 - (2) Hydro-mulch shall consist of a mixture of asphalt, wood fiber or paper fiber and water sprayed over a seeded area. Hydro-mulch shall not be used during the fall, winter or mud season.
 - (3) Mulching shall be monitored according to the monitoring schedule (Section D.1.k.). Should mulching prove to be ineffective, then netting or matting shall be used in its place.
- d) Dormant Seeding: - Construction shall be planned to eliminate the need for seeding during the fall, winter or mud season. Should seeding be necessary between these dates, the following procedure shall be followed:
 - (1) Only unfrozen loam shall be used.
 - (2) Loaming, seeding and mulching will not be done over snow cover. If snow exists, it must be removed prior to placement of seed.
 - (3) No permanent seeding will be done during fall, winter or mud season unless specifically approved by the Engineer. If attempted, the normal seed application rate shall be doubled. Reseeding in spring will be required in all areas with insufficient growth.
 - (4) Where temporary seeding is required, the rates specified in the Temporary Seeding and Mulching Schedule (Section D.1.d.) shall be adhered to.

- (5) Fertilizing, seeding and mulching shall be done on loam the same day the loam is spread. Winter mulch rates shall apply as specified in the temporary seeding and mulching schedule (Section D.1.d.).
- (6) On slopes greater than 3:1, straw matting or excelsior matting will be substituted for mulch, except that biodegradable netting over mulch may be used where approved by the Engineer.
- e) Inspection: - Following final seeding, the site will be inspected every 30 days until 80% cover has been established. Reseeding and mulching shall be carried in areas of inadequate catch until an adequate catch is established in all seeded areas, as agreed upon by the Owner and Engineer. The Contractor may be required to reseed during the following spring following winter or fall construction and seeding in order to provide 80% vegetative cover as required for acceptance by Owner.

3. Erosion Control Removal – Removal of temporary erosion control measures shall be the responsibility of the contractor. All erosion controls shall remain in place and maintained by the contractor until all related construction is complete and the area is stable.

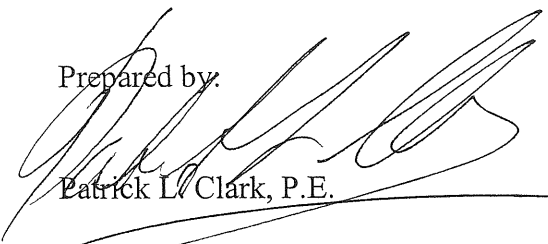
- a) An area is considered stable if:
 - (1) An 80% cover of grass has been established.
 - (2) It is paved.
- b) Haybales and silt fence shall be removed once the areas upstream are stable. The haybales and silt fence shall be disposed of legally and properly off-site. All sediment trapped behind these controls shall be:
 - (1) Distributed to an area undergoing final grading.
 - (2) Graded in an aesthetic manner to conform to the topography, and fertilized, seeded and mulched in accordance with the rates previously stated.
- c) The sediment trapped behind/around/in stone check dams, haybale barriers and sedimentation/detention basins, shall be removed and transported off-site, or to an upslope area undergoing final grading. The sediment trapped by these devices shall not be regraded locally since they exist in drainage ways.
- d) The rip-rap and stone from the check dams and risers may be either:
 - (1) Removed, or
 - (2) Regraded in an aesthetic manner that does not inhibit flow or create erosion.

- e) Once all the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be loamed (if necessary), fertilized, seeded and mulched in accordance with the rates previously stated.

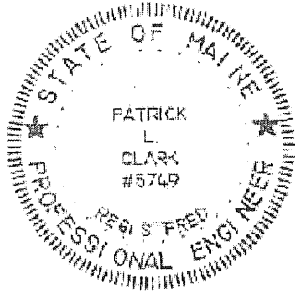
E. CONCLUSION

- 1. The construction of Yale Court, if constructed in conformance with the project plans and the Erosion and Sedimentation Control Report, should not result in any significant erosion or sedimentation either on or off the site.

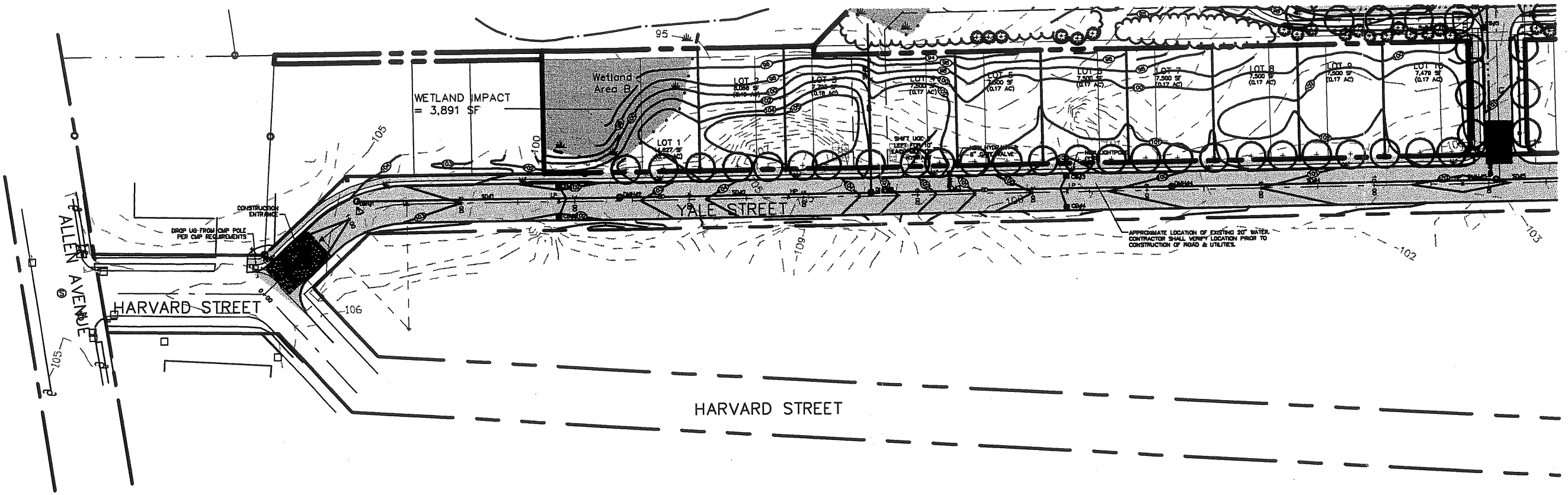
Prepared by:



Patrick L. Clark, P.E.



REFERENCE:

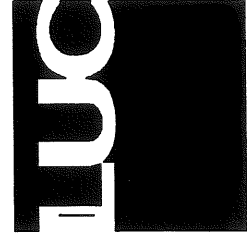


TITLE:

CONCEPTUAL GRADING
UNIVERSITY PARK
(PHASE ONE)

PREPARED FOR:

WESCOTT & PAYSON
YALE STREET STREET, PORTLAND MAINE
LOTS 1 TO 10



engineers
planners
landscapers
architects

966 RIVERSIDE STREET
PORTLAND, MAINE 04103

Voice (207) 878 - 3313
Fax (207) 878 - 0201
Portland @ gwlnet

SCALE: 1" = 100' DATE: 11-14-02

JOB #: 4080

Land Use Consultants, Inc.

11/25/02

Yale Court / University Park

Alex, Mark, Aaron, Ben Walter, Mike Fayson, Jim Wescott
Tom Emery

Design Standards

- Mission for single families not necessarily affordability.
- Market Driven (niche market) \$180 - 200,000
- Elements? Architectural palette
- Who will GC the job - spec, Fayson + Wescott? lots for sale?

Control Issue

- sell in bulk
- package deals.

- porch on street
- secondary ^(recessed) garage
- roof pitch?
- fenestration
- compatible materials.
- corner boards

City will provide photos of styles
they will respond.

Schedule?

Conditions of Approval:

Architectural theme? design to be worked out w/ Planning Staff.

Suggested Guidelines

A. Streetscape - note street tree plantings are covered under subdivision requirements.

- Esplanade with Street Trees at 35' O.C. or two per lot min.
- "Front" of homes should face the street.
- Front yard should have improvements compatible with neighborhood.

B. Lot Layout

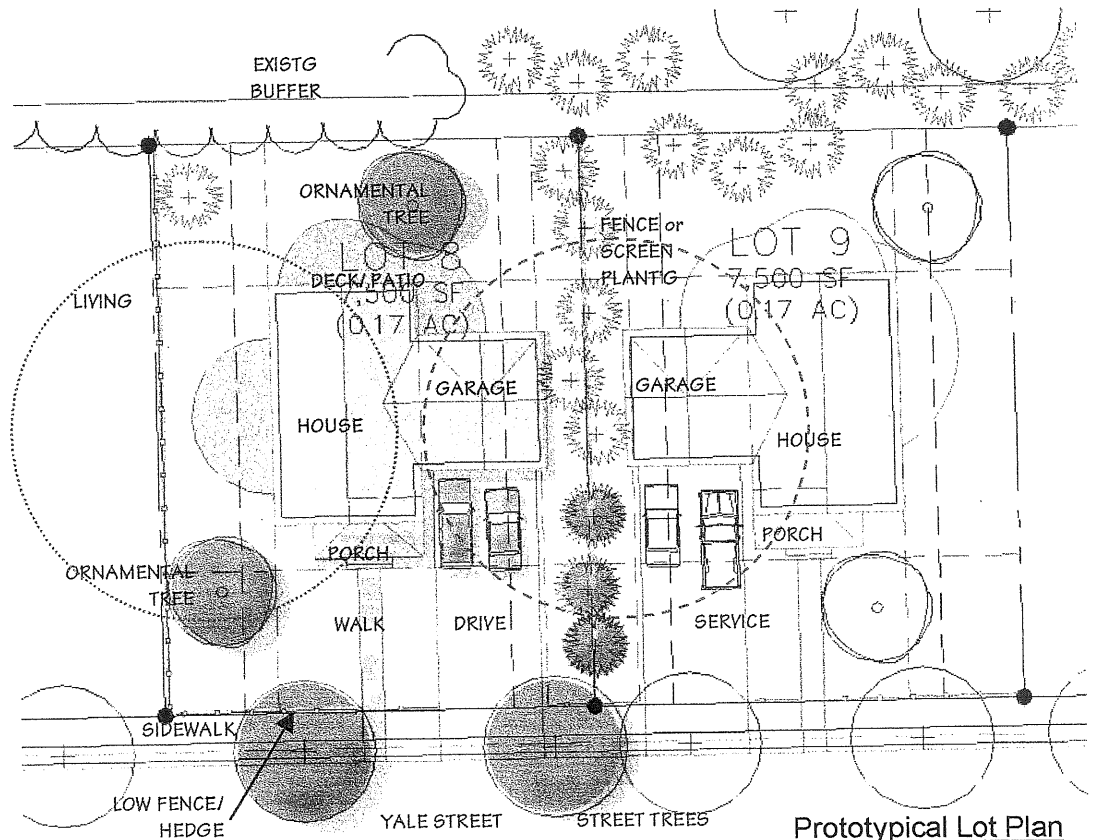
- Note 25 ft front and rear yard set back required limit flexibility of traditional detached garage located near rear lot line.
- Orient house forward of garage
- Orient houses to maximize solar exposure for building and outdoor living spaces. Utilize side yard reduction to maximize solar gain.
- Orient service side to service side and living spaces to living spaces on adjacent lots.
- Provide walkway from main entrance to public sidewalk or visible from sidewalk.

C. Site Improvements

- Paved Drive & paved front walk (stones, asphalt, brick)
- Private open space
- Landscaping traditional shade tree, privet hedge, and lilac hedge.
- Post lamp or wall mounted lamp

D. House design

- Footprint and massing in scale to neighborhood.
- Design - emphasis on good building and fenestration proportions. Contemporary interpretations of vernacular forms encouraged. Well proportioned trim where used.
- Orientation to street - porch and front steps/ stoop/ or door visible from the public street.
- Building Height shall be proportion with neighborhood. Roof Pitch 6:12 min.
- Exterior Materials natural or high quality vinyl clapboard and shingle materials.
- Garage in scale to house. If the garage must be forward of house, provide an entry element forward of the garage such as an arbor or the fence with gate.



>>> Alex Jaegerman 11/20 2:16 PM >>>

To strengthen the design covenant as per the condition on financing imposed by the Housing Committee, we discussed the following concepts:

1 1/2 stories
MINIMUM

Houses built within the subdivision shall conform to the following design requirements:

1. Shall include a covered front porch with minimum length and width of six feet;
2. ~~principal residential mass of 2-stories minimum height;~~
3. Garage facade shall be set back a minimum of 6 feet from the principal facade of the residence;
4. Minimum roof pitch of 7 in 12; *consistent architectural features*
5. Architectural style shall be of the ~~shingle or craftsman style~~; incorporating such features as multi gable mass and roof form, articulation of windows with well proportioned trim details, cornice and eave overhang, and multifaceted massing of the building form through use of such architectural elements as gables, porches, ells, box bay or angle bay, or other features ~~reminiscent of the cottage or shingle style~~ of architecture.

← add to Tom's

If the developer wants to revise the requirements to reflect a different architectural style or character, a revised proposed architectural program, with generally equivalent or more precise specification may be submitted for review and approval by the Planning Authority. Any question or disagreement about the sufficiency of the covenant to achieve the City Council's intent as a condition of financing assistance shall be referred to the Housing Committee for resolution. The Housing Committee may request a recommendation from the staff or the Planning Board.

CC: William Needleman
Appropriate sized porch
"Unified architectural theme." instead
of a specific style.

[Tom will amend his page to incorporate.]
We can include the design description w/ the report.

CONDITION OF APPROVAL

"Draft" covenant to be agreed upon between Planning Staff
And applicants prior to ~~issue of~~ commencement
of site work.
[Illegible signature]

Building Permit Issue

Performance Guarantee Reduced

Temporary Certificate of Occupancy

Final Inspection

Certificate Of Occupancy

Performance Guarantee Released

Defect Guarantee Submitted

Defect Guarantee Released

date

date

date

date

date

date

submitted date

date

remaining balance

Conditions (See Attached)

signature

signature

amount

signature

signature

expiration date

expiration date

REAL ESTATE PURCHASE AND SALE AGREEMENT

AGREEMENT made this 22 day of November, 2002 by and between Wescott & Payson II, a Maine general partnership with a mailing address of 240 Harvard Street, Portland, Maine 04103 ("Seller"), and Yale Court, L.P., a Maine limited partnership, with a mailing address of c/o Yale Court Development Company, LLC, c/o Michael Payson, 50 Thornhurst Road, Falmouth, Maine, 04105 its General Partner ("Buyer"), as follows:

1. **Purchase and Sale.** For good and valuable consideration, Seller agrees to sell and Buyer agrees to buy, on the terms and conditions set forth herein, the real and personal property described below, together with all easements, rights and appurtenances benefiting such parcel (the "Premises"):

A certain lot or parcel of land, with the buildings thereon, situated located northerly of Yale Street and easterly of Allen Avenue, in the City of Portland, County of Cumberland, and State of Maine, and being part of the property as described in a deed to Seller recorded in the Cumberland County Registry of Deeds, Book 17365, Pages 289 and 291.

The Premises include, without limitation, all pending applications, permits and approvals, benefits and burdens of such permits and approvals, pending with or issued by the City of Portland, together with all appurtenances and appurtenant rights in the project known as Yale Court, a 30-unit planned residential unit development (hereinafter the "PRUD") and more particularly described in a Plan for Yale Court by Land Use Consultants dated _____, 2002 (the "Plan"). The grantee herein shall assume all of the obligations of Wescott & Payson II as owner and as applicant for the PRUD pursuant to the terms of this Agreement except as specifically set forth herein. A reduced copy of the Plan is attached hereto as Exhibit A.

The parties acknowledge that the description of the PRUD is subject to modification for the addition of common appurtenances, location of utilities, sidewalks, and the location of points of emergency and non-emergency ingress and egress during the review phase of the project. Seller is bound by this Agreement to cooperate fully to the extent possible to consent to and deliver all documents necessary for the successful completion of the PRUD and appurtenances related to the PRUD, provided the additional rights created do not materially alter or diminish the value of Seller's contiguous property.

2. **Purchase Price.**

however, to the requirement that Seller contribute the sum of Two Hundred Fifty Thousand Dollars (\$250,000) toward the cost of the Yale Street engineering costs and road improvements to be completed as a condition under the terms for the permits and approvals for the PRUD.

As additional consideration, Wescott & Payson II shall convey an easement for gated public emergency access to the City of Portland to be located on Wescott & Payson II property lying over an area immediately easterly of the PRUD, known as the Woodwinds, a multi-unit

housing project, and running in a generally easterly direction over the Woodwinds to a private drive for the Woodwinds, and then by said drive to Harvard Street, subject to the conditions of approval for the PRUD and such other conditions as the parties may establish, including but not limited to, limitations on use, improvements to the shared access way, maintenance and security. Prior to closing, the meters and bounds description for the location of the emergency access way shall be established by mutual agreement of the parties and in accordance with the conditions of approval.

3. **Title.** Seller shall convey the Premises to Buyer at the closing in fee simple, with good and marketable title, subject only to utility easements serving only the Premises, or like matters of record. In the event that Seller is unable to convey title as aforesaid, Seller shall be given a reasonable period of time, not to exceed thirty (30) days, in which to remedy any title defects. In the event that said defects cannot be corrected or remedied within said time period, or in the event that Seller elects not to remedy the same, then this Agreement will terminate. Buyer may, at Buyer's option, elect to close notwithstanding such defects as may exist.

4. **Closing.** The closing of this transaction shall take place, on or before March 1, 2003, at the offices of Lambert Coffin, 477 Congress Street, 14th floor, Portland, Maine (the "Closing"), or at other such time and place as may be mutually agreed upon by Buyer and Seller. At the Closing, Seller shall execute and deliver to Buyer, against payment as set forth in this Agreement, a quit claim deed to the premises in the usual form according to Maine practice (the "Deed"), and a bill of sale transferring all contract rights, engineering plans and architectural renderings, survey plans, and permits and approvals and related realty and personalty of any kind that has been generated as part of the PRUD project.

5. **Adjustments, Prorations, and Closing Costs.**

a. Real estate taxes and assessments shall be prorated as of the Closing on the basis of the current municipal year.

b. Buyer and Seller shall each pay their own share of the Maine real estate transfer tax, if any.

c. The recording fee for the Deed and first mortgage shall be paid for by Buyer. The recording fee for any mortgage granted to Seller shall be paid for by Buyer.

6. **Possession.** Upon Closing, Seller shall deliver possession of the Premises to Buyer.

7. **Risk of Loss.** All risks of loss to the Premises prior to the Closing shall be on Seller.

8. **Inspection of Premises.** Intentionally omitted.

9. **Default; Remedies.** In the event that Seller fails to close hereunder for a reason other than the default of Buyer, Buyer shall retain its remedies at law and in equity.

10. **Seller's Representations.** Seller represents and warrants that all provisions of all

applicable zoning or other state or municipal laws, ordinances or regulations have been complied with. Seller further warrants that all material defects existing in the Premises which are known to Seller have been disclosed to Buyer.

11. **Hazardous Waste Representations.** Intentionally omitted.

12. **Allocation of Purchase Price.** Intentionally omitted.

13. **Miscellaneous.**

a. **Entire Agreement.** This Agreement constitutes the entire agreement between Seller and Buyer, and there are no agreements, understandings, warranties, or representations between them except as set forth herein and in the listing sheets and income and expense statements for the Premises furnished by Seller or Seller's broker and which are made a part of this Agreement by reference.

b. **Binding Effect.** This Agreement will inure to the benefit and bind the respective successors and assigns of Seller and Buyer.

c. **Identical Counterparts.** This Agreement may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original but all of which together shall constitute one and the same instrument.

d. **Construction.** As used in this Agreement, the singular number shall include the plural, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed and construed in accordance with the laws of the State of Maine. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

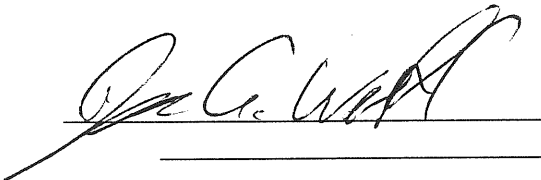
e. **Effective Date.** This Agreement shall become effective on the date when any offer or counter-offer is accepted without any change whatsoever.

IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement as of the date first written above.

WITNESS:

SELLER:

WESCOTT & PAYSON II

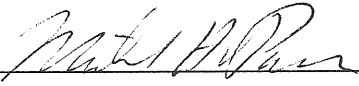


By: 

Michael H. Payson

Its: 

WITNESS:



BUYER:

YALE COURT, L.P.

BY: YALE COURT DEVELOPMENT
COMPANY, LLC

Its: General Partner

By: 

Name: Jimi Wescott

Its: Gen. Partner

EASEMENT DEED

In consideration of the payment of one dollar, Wescott & Payson II, a Maine general Partnership, with a mailing address at 240 Harvard St., Portland, Maine, 04103 ("Grantor"), hereby grants to CITY OF PORTLAND, a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine 04101 ("Grantee") a perpetual easement over a strip of land (the "Easement Area") twenty-five feet in width running in an easterly direction from the easterly side of the Yale Court project as depicted on a Plan of Yale Court, Cumberland County Registry of Deeds plan book _____ page _____ and then in an easterly direction over property of Wescott & Payson II known as the Woodwinds, formerly Ammerdown Place, to a cul-de-sac and then continuing easterly by said cul-de-sac and private drive to Harvard St. which Easement Area and property are more particularly described in Schedule A, attached hereto and incorporated herein by reference. This easement is for the purpose of emergency access (fire, police, etc.) purposes to the Yale Court development.

Together with and hereby granting to Grantee the perpetual right in its discretion to maintain, replace, relocate and repair within the Easement Area an area, paved or unpaved, capable of serving as an emergency access by motorized vehicles.

Together with and hereby granting to Grantee the perpetual right within the Easement Area to periodically trim trees and to remove dead, diseased or fallen trees (including "leaners") and to selectively clear undergrowth and make plantings to (1) prevent erosion, (2) provide for the safe passage of municipal vehicles, and (3) provide for public safety, all in accordance with good forestry and landscaping management practices.

Grantor reserves the right to restrict access by providing a gate and electronic or keyed access between the Woodwinds project, so-called, described in a deed to Wescott & Payson II and the Yale Court project described in the Cumberland County Registry of Deeds Book _____ Page _____.

Both Grantor and Grantee acknowledge that this easement is being granted without claim for damages and provided to Grantee for use by municipal vehicles without charge.

To have and to hold the said Easement and all rights granted hereunder to the said Grantee and their successors and assigns forever.

IN WITNESS WHEREOF, Grantor has caused this easement to be executed by _____, its duly authorized _____, this _____ day of _____, 2002.

WITNESS:

By: _____
Its: _____
Print Name: _____

State of _____
County of _____, ss. _____, 2002

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

Before me,

Notary Public/Attorney-at-Law



Land Use Consultants, Inc.

e n g i n e e r s
p l a n n e r s
l a n d s c a p e
a r c h i t e c t s

October 24, 2002

4080

Yale Court Single Family Lots

Suggested Design Guidelines (from TNE)

Comment: The proposed 75x100 ft lots have a building window of 47 ft x 50 ft. due to, what I feel, is an excessive 25 ft rear yard setback for an accessory structure larger than a garden shed. A traditional cape cod style home or two story "colonial" with two car garage, has the following spatial requirements:

Home 26 x 36 Garage 24 x 24 (20 to 26 typical range). One can easily see that a moderately sized home, 36 ft wide with a 24 ft wide garage (allows for two cars and some recycling bins and trash barrels) is 60 ft wide. If the house is turned 90 degrees to the front lot line, the 26 ft wide home with 24 ft garage is 50 ft. wide. Again, greater than the 47 ft width available (if 2-storey house). The latter arrangement is typical for Greek revival style homes.

1. Items to Address in Guidelines

- A. Streetscape
- B. Lot layout
- C. Site Improvements
- D. House Design

2. Suggested Guidelines (outline)

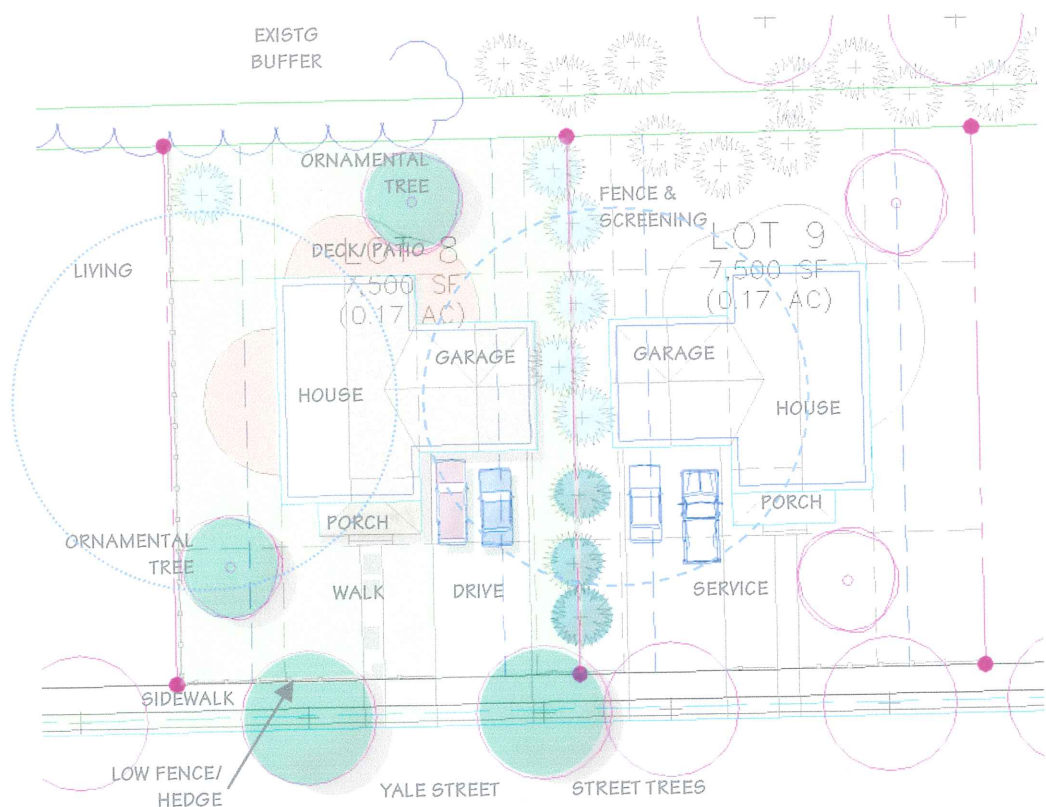
- A. Streetscape - note street tree plantings are covered under subdivision.
 - Esplanade with Street Trees at 35' O.C. or two per lot min.
 - "Front" of home should face the street. Porch and steps.
 - Front yard should have improvements compatible with neighborhood.
- B. Lot Layout
 - (Note 25 ft front and rear yard set back required limit flexibility of traditional detached garage located near rear lot line.)
 - House should address the street (not garage – avoid "snout forward")
 - Orient houses to maximize solar exposure for building and outdoor living spaces. This may include taking advantage of increasing side setback on southerly side of lot and reducing on northerly side.
 - Service side to service side and living spaces to living spaces
 - No parking in front yard within building line
 - Walk from main entrance to public sidewalk
 - Garden sheds
- C. Site Improvements
 - Paved Drive
 - Paved front walk (stones, asphalt, brick)
 - 3' ht wood fence or hedge along back of sidewalk – (no chain link except for pet enclosure in rear yard).
 - 6 ft ht stockade or ornamental wood fence in absence of existing or new landscaping.
 - Private open space – deck or patio.
 - Landscaping traditional shade tree, privet hedge, lilac hedge.
 - Post lamp or wall mounted lamp

966 RIVERSIDE STREET
PORTLAND, MAINE 04103

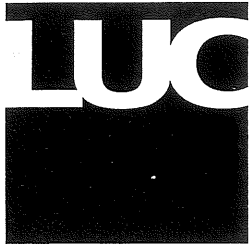
Voice (207) 878 · 3313
fax (207) 878 · 0201
www.landuse@gwi.net

D. House design

- Footprint
- Design - avoid “non-architecture” architecture. Traditional regional forms, vernacular or contemporary interpretations thereof with emphasis on good proportions and fenestration.
- Orientation to street – porch and front steps/ stoop
- Scale (no telescoping Mac mansion)
- Height and Roof Pitch 6:12 min, 8:12 preferred
- Exterior Materials natural would be great but high quality vinyl clapboard and shingle may be acceptable
- Garage in scale to house, if forward of house, have an entry element forward of the garage such as an arbor or the like.
- Sylvan Acres South Portland houses are all from a family of forms and materials, but are not copies of each other.



Lot Concept Site Plan



Land Use Consultants, Inc.

David A. Kamila PE
Frederic J. Licht PE
Thomas N. Emery RLA
J. David Haynes RLA

October 1, 2002

4080

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

**PRELIMINARY SITE ANALYSIS
ENGINEERING REPORT
YALE COURT
PRUD AND SUBDIVISION
Portland, Maine**

INTRODUCTION

Land Use Consultants, Inc. has evaluated the proposed Yale Court development site to determine stormwater runoff rates and potential impacts which may occur as a result of the development. The 10 acre ± parcel is located in Portland, Maine near the intersection of Allan Avenue and Harvard Street (west). The site includes frontage on the existing undeveloped Yale Street right-of-way and is completely wooded with well established forested areas. Proposed access to the Planned Residential Unit Development (PRUD) site is via a new driveway from Yale Street, which will be constructed for approximately 1,150 feet in the existing City of Portland Right-of-way. The newly constructed Yale street will also provide frontage for ten single family house lots to be reconfigured from a portion of the undeveloped University Park Subdivision as approved in the late 1930's.

The present site is undeveloped, wooded land, adjacent to medium density rural residential housing development along Chesley Avenue and Berry Avenue which dead-end adjacent to the property along the easterly boundary, high density-multi-family attached dwellings to the north (Northfield Green) and south (Woodwind Apartments) and undeveloped land (University Park) along the westerly boundary. The site is situated along a locally predominant, high ridge, generally running east to west through the site near the center of the property. Due to this localized topography and existing neighborhood development, the runoff from the site generally exits the property in five locations around the perimeter. Each of these areas are described via individual small subcatchment areas for the pre-development and post development conditions so that the peak discharge rates at these locations can be compared and evaluated with regards to stormwater impacts. Brief descriptions are provided below. All of the runoff from the site ultimately finds its way via existing swales ditches and city streets to public storm sewers or to Fall Brook near Washington Avenue.

The area near Mona Road, just to the north of the project and the region around Fall Brook is known to be subject to historical flooding. The Fall Brook region is apparently located within a 100-year flood elevation indicated as Zone AE on the FIRM flood map for this area.

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The proposed development will create approximately 2.00 acres of new impervious surfaces. This site is not located in the direct watershed of a *waterbody most at risk* or in a *sensitive or threatened watershed* and is not required to meet the stormwater quality standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500, Section 4.A.(1).(c). However, this project includes more than one acre of new impervious area, and is therefore subject to the stormwater quantity standards set forth in Chapter 500, Section 3. The project must also meet the requirements of the City of Portland “Technical and Design Standards and Guidelines” which requires that projects with parking facilities greater than 25 cars provide on-site treatment.

The proposed project includes a new storm drain system with a detention pond as shown on the plans. The proposed drainage improvements will reduce the peak flow rates from the site to existing rates or below at each of the five study points. The proposed stormwater and detention measures will control and decrease the flows to Fall Brook and downstream properties for the developed site except for a slight increase for the two year storm event for flow into the existing Northfield Green detention pond.

As previously mentioned, a portion of this project is an amendment of the existing University Park subdivision.

METHODOLOGY

We used the S. C. S. method for computing peak runoff rates. This method accounts for soil types, existing land use, topography, vegetative cover and proposed land use for the developed portions of the property. For this study, a derivative of the S. C. S. TR-20 computer modeling method was used within HydroCAD 6.00 software. We evaluated the pre-development and post-development conditions for the proposed site. These present and future conditions were analyzed using data for a Type III, 24 hour, storm distribution, with a design frequency of occurrence of 2 years, 10 years and 25 years. All supporting data and calculations are submitted with this report.

EXISTING SITE CONDITIONS

Existing drainage from the site is divided into five small subcatchment areas. Refer to the Pre-Development Drainage Plan included with this report for a further description of the various subcatchment areas.

Subcatchment #1 includes Yale Street right-of-way and individual lots with frontage on Yale Street and is situated on the western half of the site. This area drains to an existing drainage ditch just off of the property, which conveys runoff to an existing man-made pond within the Northfield Green project near Mona Road. This is the largest subcatchment area and includes approximately half of the site. The proposed detention pond will be located in this vicinity to collect most of the runoff from the development. The outlet from this existing small pond eventually drains to Fall Brook. The runoff from this subcatchment also combines with a contribution from a small 3 acre ± off-site area including the west end of Chesley Avenue (SC #100) which drains directly to the existing ditch into the pond.

Subcatchment #2 includes a small interior portion of the site and drains naturally to the rear of the lots along the south side of Chesley Street. This subcatchment runoff passes through the off-site Subcatchment #100 which includes the residential neighborhood and ultimately drains to the drainage ditch and pond.

Subcatchment #3 includes a small interior portion of the site and drains naturally to the west end of Berry Avenue. This subcatchment includes a very small area and does not include any large swales ditches or distinctive drainage features. Runoff drains through the neighborhood, apparently along Berry Avenue, and eventually into Fall Brook, downstream from the Mona Road area.

Subcatchment #4 is situated at the southeasterly corner of the property on the opposite side of the ridge near Berry Avenue and drains towards the Woodwind Apartments development. This area drains towards Fall Brook and Washington Avenue between Harvard Street and Berry Avenue.

Subcatchment #5 is a small 2 acre subcatchment area which drains to the south end of Yale Street towards Harvard Street.

These drainage areas are defined in our Stormwater Model as shown on the Pre-Development Drainage Plan and HydroCAD diagram. Refer to the drainage plan, existing condition stormwater calculations, HydroCAD diagrams and report for modeling assumptions, subcatchments, flowpaths, drainage reaches, etc. Runoff calculations were performed for the 2 year, 10 year, and 25 year storm events in accordance with the City of Portland and DEP Stormwater Permit requirements. Fall Brook flows through Portland to the Back Bay near Payson Park. These five drainage subcatchments are evaluated for the pre and post development conditions and represent the primary study points for comparing the results of the calculations for each storm event for existing and developed site conditions. Refer to the Summary Table for a more convenient comparison of the results.

DEVELOPED SITE CONDITIONS

The developed site includes a new 30 unit PRUD housing project of attached dwellings. Most of the buildings are four-unit complexes arranged in small clusters. The new driveway into the site will be constructed from Yale Street. The detention basin (pond #1) near the northwesterly corner will be reconstructed as shown. The construction of Yale Street in the existing public right-of-way will provide frontage for ten single family house lots.

The post-development site drainage patterns are similar to the existing site. The most significant differences are the changes to the subcatchment boundaries due to the site improvements. The post-development site is divided into 6 subcatchments as shown on the Post-Development Drainage Plan in addition to Subcatchment #100 (off-site). These subcatchment areas correspond to the five pre-development subcatchments except that an additional area is included which represents the portion of the site which drains to the new detention pond. All of the pre-development subcatchment areas are significantly reduced in

size except for Subcatchment #1 which now contains almost the entire developed site and conveys runoff to the detention pond. This new subcatchment (SC#11) combines with subcatchment #10 (formerly SC#1) and represents the combined runoff (controlled and uncontrolled) to the existing drainage ditch at Northfield Green. The developer has an agreement with Northfield Green which prescribes the rights to drain stormwater to the existing ditch and detention pond. The peak stormwater runoff rates are reduced to all of the areas and study points for the developed site.

Subcatchment #10 for the developed site (formerly SC#1) will be limited to the small strip of land along Yale Street near the westerly corner of the property and includes about 3.6 acres which will continue to drain directly to the existing drainage ditch similar to the existing condition. This area includes the single family house lots.

Subcatchment #11 includes approximately 3.8 acres located near the center of the PRUD site. Runoff from this subcatchment will be collected in a new storm drain and conveyed to the proposed detention pond (pond #1). Outflow from the detention Pond #1 will be combined with the runoff from SC#10 and will be drain to the existing detention pond in Northfield Green prior to release to Fall Brook. This combined runoff rate is the total discharge to the drainage ditch and is the point of comparison to the pre-development runoff

Subcatchment #20 is reduced to only 0.38 acres (formerly SC#2, 0.93 ac) and drains to the rear of the lots along the south side of Chesley Street similar to the existing site. The runoff from this subcatchment is routed through off-site subcatchment SC#100 to the existing drainage ditch.

Subcatchment #30 is reduced to 0.71 acres (formerly SC#3, 0.91 ac). This area drains to the west end of Berry Avenue and eventually to Fall Brook.

Subcatchment #40 is reduced to 0.49 acres (formerly SC#4, 0.82 ac) and continues to drain towards the Woodwind Apartments development.

Subcatchment #50 is reduced to 1.80 acres (formerly SC#5, 2.01 ac) and is substantially unchanged except for a small area of the proposed PRUD near the southerly corner which includes the back of a few new units and back yards of open lawn area.

Subcatchment #100 (existing off-site) remains unchanged for the developed conditions.

For the developed site, the majority of the stormwater from the new PRUD is collected in storm drains and conveyed to the new detention pond. The controlled discharge from pond #1 is routed to the existing drainage ditch at the outfall from the site and combined with the runoff from subcatchments #10, #20 and #100 (off-site) at reach #102 which is the point of discharge for the entire site and the evaluation point at which the comparison is made to the existing peak flow rates representing total runoff to the existing detention pond in Northfield Green. Refer to the Summary Table for better comparison of the results of this study.

CALCULATIONS AND RESULTS

Results of the pre-development and post-development calculations are indicated in the Summary Table below. Complete printouts for stormwater calculations, modeling assumptions and HydroCAD reports are attached for the Pre-Development and Post-Development conditions for each of the 2 year, 10 year and 25 year rainfall amounts. All of the smaller subcatchment areas (SC#2-Sc#20; SC#3-SC#30; SC#4-SC#40; and SC#5-SC#50) result in equal or less runoff due to the significant reductions in drainage area for all design storms. One of the more significant study points is reach #102 since this point receives the majority of the runoff from the site. The total combined peak flow rates evaluated at the existing drainage ditch (reach #102) are 10.61 cfs, 26.66 cfs, 34.70 cfs for the three design storms respectively for the existing site conditions. The controlled runoff rates released to this ditch are reduced to the existing rates or less for each of the design storm events except for the two year storm which will result in a slight increase of only 0.80 cfs. Since all of the subcatchment areas each eventually flow to Fall Brook a short distance down stream from the site, this small increase associated with the two year storm is effectively offset by a corresponding reduction of -0.56 cfs (combined) from the smaller subcatchment areas. The runoff from this location drains through an undeveloped area directly into the drainage ditch and into the existing detention pond and will have minimal impacts associated with only the two year storm and will not increase or contribute to flooding or ponding. Since the ten year and twenty five year peak rates are significantly reduced in all subcatchment areas for the developed site, the net downstream impacts will remain basically unchanged or slightly improved as a result of the new storm drain system, detention ponds and controlled runoff from the development.

No significant adverse impacts are expected as a result of the slight increase produced by the two year storm since the existing drainage swales and stream channels are stable and more than adequate to receive the relatively small amounts of flow occurring during the two year storm. This slight increase occurs over an undevelopable parcel of land over which the applicant has already obtained a drainage easement. The major concern in this area is the potential for downstream flooding and significant ponding associated with the larger storm events to relieve the existing problem with historical flooding in the vicinity of Mona road and Fall Brook. Since stormwater runoff from the larger storms and the developed condition peak flow rates are significantly reduced to below existing rates for the 10 and 25 year storm we feel that the small increase occurring from the 2 year storm is not significant. Furthermore, the small increase can not reasonably be avoided by design, due to the nature and extent of the proposed storm drain and detention pond. Placing flow restrictions in the system small enough to completely control the two year rate would severely restrict the capacity of the drainage system to effectively pass the larger storms. Therefore, the applicant respectfully requests an allowance for an insignificant increase for the two year storm event.

SUMMARY TABLE						
PRE-DEVELOPMENT (cfs)				POST-DEVELOPMENT (cfs)		
Watershed (node)	2-year	10-year	25-year	2-year	10-year	25-year
Subcatchment #2 (#20-post)	0.84	2.58	3.51	0.50 (-0.34)	1.30 (- 1.28)	1.70 (- 1.81)
Subcatchment #3 (#30-post)	1.07	3.05	4.07	1.10 (+ 0.03)	2.90 (- 0.15)	3.81 (-0.26)
Subcatchment #4 (#40-post)	0.84	2.41	3.23	0.65 (- 0.19)	1.73 (- 0.68)	2.28 (- 0.95)
Subcatchment #5 (#50-post)	1.85	5.37	7.21	1.79 (- 0.06)	5.01 (- 0.36)	6.67 (- 0.54)
Subcatchment #1 (Pond #1-post)	6.02	17.25	23.10	6.16 in 3.99 out	12.93 in 5.72 out	16.15 in 6.20 out
Reach #102 COMBINED TOTAL	10.61	26.66	34.70	11.41 (+ 0.80)	26.20 (- 0.46)	33.19 (- 1.51)

STORMWATER QUALITY BEST MANAGEMENT PRACTICES

Refer to the attached Water Quality Treatment and BMP Table (Table #1) for stormwater treatment measures and BMP's for the proposed impervious surfaces and estimated total TSS removal efficiencies for the developed site. Based on our calculations we can achieve an overall areally weighted treatment factor of 25% TSS removals for treating the new impervious areas with a combination of vegetative swales, seeded buffers and detention pond calculated in series and in parallel in accordance with Section 5.4 of the *Stormwater Management for Maine, Best Management Practices* manual.

The proposed development meets the standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500.

SUMMARY AND CONCLUSION

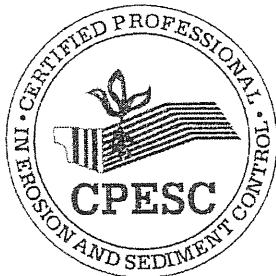
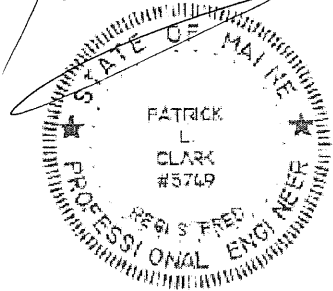
Based on the results of our calculations, it is our conclusion that the proposed detention pond and drainage improvements will provide adequate control of stormwater runoff from the site for storms up to and including the 25 year rainfall without producing significant adverse impacts to the site or downstream reaches. The Stormwater Best Management Practices (BMP's) utilized for the development will provide a Total suspended Solids (TSS) removal efficiency of 25%. We feel that the proposed drainage and erosion control measures, if properly constructed and maintained, will reduce runoff to adjacent properties and help improve existing drainage in the vicinity of the site without degradation of existing water quality. The applicant is requesting an allowance for an insignificant increase for the two year

storm due to the impracticality of further controlling the peak flow rate which would require unreasonable design changes.

TABLE 1 YALE COURT DEVELOPMENT STORMWATER QUALITY ANALYSIS								
IMPERVIOUS AREA	DESCRIPTION	BMP	HSG SOILS	BUFFER LENGTH (ft)	SLOPE (ft/ft)	% TSS BMP REMOVAL EFFICIENCY (%)	IMPERVIOUS AREA (ac)	NET BMP %TSS REMOVAL (%)
RA	Residential units	SB	D	25	0.100	10%	0.10	1.0%
		P1	D	-	-	10%		
RB	Residential Area	SB	D	25	0.100	10%	0.22	4.7%
		VS	-	-	-	25%		
		P1	D	-	-	10%		
RC	Residential Units	SB	D	25	0.100	10%	0.17	0.9%
PA	Roads, Parking	P1	D	-	-	10%	0.45	2.5%
PB	Roads, Parking	VS	-	-	-	25%	0.88	15.7%
		P1	D	-	-	10%		
PROJECT TOTALS							1.82	25%
KEY <u>Impervious Areas</u> P = Impervious areas, parking lot, community buildings, etc. R = Residential Units A, B, C = Treatment areas BMP's VS = Vegetated Swale SB = Seeded Buffer P = Det Pond		SAMPLE CALCULATIONS <u>Parallel Treatment - Impervious Area PA</u> Net BMP %TSS Removal = (seeded buffer %TSS removal) * (impervious area / total project impervious area) = (0.10) * {(0.45 ac) / (1.82 ac)} = 2.5% <u>Series Treatment - Impervious Area Rb</u> Net BMP %TSS Removal = [1 - {(1 - seeded buffer %TSS removal see note 1) * (1 - vegetative swale %TSS removal) * (1 - det pond %TSS removal)}] * (impervious area / total project impervious area) = [1 - {(1 - 0.10) * (1 - 0.25) * (1 - 0.10)}] * (0.22 ac / 1.82 ac) = 4.7%						
Notes: 1) All residential Units were assumed to have a 10% TSS treatment credit for lawn areas. This credit is associated with a worst case scenario of a 25' seeded buffer in Hydrologic Group 'D' Soils with 15-30% slopes.								

Prepared by:

Patrick L. Clark, PE



PART II

EROSION AND SEDIMENTATION CONTROL

The following plan for controlling sedimentation and erosion from this project is based upon sound conservation practices such as those outlined in the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices by the Cumberland County Soil and Water Conservation District, and the Maine Department of Environmental Protection, dated March, 1991 (as revised). Please refer to these sources and the Erosion Control Plan and Details included within the plan set.

A. INTRODUCTION

1. **General** – Wescott & Payson II is proposing to construct a 30 unit PRUD housing development. The project will include construction of new parking areas including and a stormwater collection and detention system.

The accompanying Site Plans and Stormwater Management Report describe in detail the project scope.

2. **Site Topography and Cover Complex** – The existing site includes approximately 10 acres which includes the individual house lots adjacent to the park. Slopes on the site area are between 2% and 10%. All areas are well vegetated with tree growth. The westerly portion of the site drains to an existing drainage ditch to an existing detention pond.
3. **Soils and Wetlands** - The soils on the site have been identified as Lyman – Tunbridge and Brayton. These soils are from Hydrologic Soils Group (HSG) type C/D, with small areas of (HSG) type D soils occurring in the wetland areas.

B. CONSTRUCTION CALENDAR

1. **Definitions** – The following definitions are terms commonly used throughout this report.

- a) Seasons - The following dates define the seasons as referred to herein:

<u>Seasons</u>	<u>Dates</u>
Winter	November 1st to March 15th
Mud-Season	March 16th to April 30th *
Spring	May 1st to June 14th *
Summer	June 15th to September 15th *
Fall	September 16th to October 30th

*Seasonal dates may vary according to weather. Any changes in these dates must be approved by the Engineer.

- b) Sensitive Areas - This erosion and sedimentation control plan is designed to protect all downstream channels from degradation. However, there are certain "sensitive areas" on or adjacent to the site which must be monitored during construction in order to prevent any adverse impacts. These areas are generally defined as follows:
 - (1) The existing drainage ditch at Northfield Green.
 - (2) Residential areas surrounding the site. Protection of the surrounding homes and properties from on-site activities adjacent to property lines will be limited to careful construction practices and ensuring that on-site erosion control measures are properly installed and maintained.
 - c) Erosion & Sedimentation Controls - are defined as the installation of silt fence, hay bales, drop inlet barriers, rip-rap, mulching, or erosion control matting or netting, and any other measures required herein.
 - d) Clearing - includes cutting and removing of over-story vegetative cover. It does not include grubbing. Limited clearing and other clearing restrictions may apply to areas where saving existing large trees may be desirable.
 - e) Grubbing - is the removal of grass, stumps, roots and scrub required to begin earthwork.
 - f) Interim Period - a period of time that an unvegetated area sits unworked, awaiting the next phase of work.
 - g) Earthwork - consists of the movement of soil by mechanical means including excavation, grading, shaping and general construction.
 - h) Temporary - as used herein shall refer to the use or placement of erosion or sedimentation controls, seeding or other measures intended to be either removed, replaced or followed with permanent measures.
 - i) Permanent or Final - as used herein shall refer to the use or placement of erosion or sedimentation controls, seeding or other measures which will remain after final project completion.
 - j) Engineer – as used herein shall mean a representative of Land Use Consultants, Inc. or and engineer designated by the City of Portland as the Construction Site Engineer.
2. **Schedule of Activities** – The following activities, erosion control measures, or other items are required for the construction of this project or require specific measures or

scheduling of activities to be conducted or restricted during the various construction seasons as herein defined above.

- a) Sensitive Areas - work proposed in the defined sensitive areas may be conducted all year, preferably during periods of dry weather, during the summer, fall and winter seasons, as defined herein. All work adjacent to or in areas which drain to, sensitive areas shall be protected with appropriate erosion controls to prevent erosion or sedimentation of the identified sensitive areas at all times during construction until the areas under construction are stable.
- b) Erosion & Sedimentation Controls Installation - erosion control installation may occur all year long, except that such measures shall be installed prior to commencement of disturbance activities related to each erosion control measure. However, to the extent practical, erosion control measures should be installed during Summer or Fall in advance of construction anticipated or scheduled in the winter and mud season. See Drawings and Details for locations and installation procedures.
- c) Clearing - clearing may occur all year long except during "mud season".
- d) Road and Parking Lot Construction - This construction may occur in the spring, summer and fall seasons. It may be allowed in the winter season, in which case the winter construction schedule must be followed (see Section D.1.).
- e) Pond Construction - all pond construction shall occur, when practicable, during the spring, summer or early fall season. All final grading, seeding and mulching must be completed by October 15th. Work after October 15th shall be subject to winter protection measures as defined herein.

C. EROSION CONTROL MEASURES

1. **General** – The construction of this project may require or incorporate the following measures or practices as needed or applicable. Such measures, where indicated on plans shall be implemented as shown or required herein. Additional measures not shown on plans may be required as specified herein or requested by the Engineer, as needed, in order to ensure the protection of resources or off-site properties.
 - a) Vegetative Buffers - have been used where practical to provide visual screening, improve erosion control and provide stormwater treatment. These buffers help filter runoff as it flows through and are most effective when the runoff through the buffer is shallow sheet flow. The contractor must take care in leaving the buffer strips in their natural state and assure that runoff does not channelize through the buffer to the extent possible. Skidder trails or equipment ruts shall be smoothed or regraded. Construction activities and equipment shall be restricted in areas to remain as buffers or not otherwise scheduled for construction.

- b) Straw Bales - shall be installed along the contours in the locations and as detailed on the plans. Straw bales may be required in addition to silt fencing or other measures in areas as shown on plans.
- c) Silt Fence - shall be installed along the contours in the locations and as detailed on the plans. Silt fence may be required in addition to straw bales or other measures in sensitive areas as shown on plans).
- d) Double Protection Straw Bale/Silt Fence - shall consist of silt fence reinforced with straw bales. It shall be installed along the contours in the locations and as detailed on the plans.
- e) Mulching - shall consist of spreading of straw mulch over bare or disturbed areas. It shall be applied at the rates described herein. It will be substituted by matting where necessary or as specified herein. Alternate mulch materials or methods such as hydro-seeding may be used only when approved by the Engineer.
- f) Matting - shall consist of straw, coconut or excelsior sandwiched between photodegradable netting. Matting may be substituted with sod where desired. **Netting over straw mulch may be substituted when approved.** (Except in swales.) Matting shall be used as follows:
 - (1) Where indicated on drawings.
 - (2) In the base of swales with greater than 5% pitch.
 - (3) On steep slopes where rilling may occur.
 - (4) In any sensitive areas subject to erosion or as indicated on plans.
 - (5) On any disturbed or newly graded slopes steeper than 25% (4.H: 1V) and located within 100 feet of a perennial or intermittent stream or other sensitive area provided that runoff from the area contributes directly to the stream or sensitive area.
 - (6) Where straw mulch has been determined to be ineffective based on observations made in the field or as directed by the Engineer.
- e) Construction Entrance - A crushed stone construction entrance will be installed wherever construction traffic will enter the public road system. The size, type and locations of these shall be as shown and detailed in the plan set.
- f) Rip-Rap - shall be used in swales, steep slopes, pond outlets, etc. as shown on plans to protect soils from excessive flow velocities. It shall be of the size and depths specified on the plans. A minimum rip-rap size of $D_{50} = 6$ in. shall be used if not otherwise indicated on plans.

- g) Inlet Protection - **all culvert inlets shall be protected** as noted on the rip-rap headwall detail. The rip-rap shall be the same size as that specified at the outlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- h) Outlet Protection - Rip-rap outlets (aprons or plunge pools) **shall be installed at all culvert outlets** as detailed on the plans to prevent scouring at the pipe outlet. The rip-rap shall be the same size as that specified at the inlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- i) Stone Check Dams - stone check dams shall be installed in existing and proposed swales or at culvert inlets as shown on the plans. These check dams serve to reduce flow velocities in swales thus helping to reduce rilling. Check dams shall be constructed of 2 in. to 3 in. stone.
- j) Dust Control – Contractor shall take necessary steps to prevent blowing and airborne movement of dust from exposed soil surfaces. Maintaining natural or temporary vegetation and or mulching shall be used where practical. Mechanical sweepers or washing of pavement shall be used where necessary to prevent and remove dust buildup on paved surfaces. All exposed soil surfaces shall be maintained to minimize dust by periodically moistening bare areas with adequate water to prevent dust. Calcium Chloride solution spray should be used in areas experiencing significant dust problems and to reduce frequency of watering. Repetitive treatment shall be applied as necessary to accomplish adequate dust control (refer to Section 17.0 in the “*Maine Erosion and Sediment control Handbook for Construction: Best Management practices*” manual).

D. EROSION CONTROL EXECUTION

1. **General Construction Phase** - the following general practices will be used to prevent erosion during construction of this project.

NOTE: Locations of silt fence/hay-bale barriers are shown for general purposes on drawings. Final locations should be modified based on actual field conditions and as site conditions warrant. Such field changes or modifications shall be approved by the Engineer.

- a) Following clearing only those areas under active construction shall be left in an untreated or unvegetated condition.
- b) Erosion Control Installation - prior to the start of construction, silt fence and/or haybales, erosion control mix berms, and stone check dams shall be installed around catch basins, at the toe of slopes and in areas as shown on Plans or as otherwise required to protect against any construction related erosion. Immediately following construction of culverts and swales, stone check dams shall be installed, as shown on the Plans.

c) Topsoil will be stockpiled when necessary in areas which have minimum potential for erosion and will be kept as far as possible from existing drainage areas and adjacent residential properties. All stockpiles expected to remain longer than 15 days shall be:

- (1) Treated with mulch, and,
- (2) Stockpiles expected to remain longer than 3 days shall be encircled with haybales or silt fence at the downgradient toe of the pile.

d) Temporary Seeding and Mulching Schedule - During construction, all disturbed areas shall adhere to the schedule specified below: (Note: refer to Section D.2 for permanent seeding and mulching requirements.)

- (1) The contractor shall be responsible for monitoring daily weather reports. Contractor shall adjust the work schedule in anticipation of rains and shall stabilize the site as required.

TEMPORARY SEEDING AND MULCHING SCHEDULE

Work Area	Expected Interim Period (Calendar Days)	Temporary Seeding (2) And Mulching		
		No Treatment	Mulching (1)	
Sensitive Area (3)	<7	X		
	7-30		X	
	>30			X
Non Sensitive Area	<30	X		
	30-45		X	
	.45			X

<u>Date</u>	<u>Seed</u>	<u>Rates lbs/1,000 s.f.</u>
4/1 to 7/1	Annual Rye Grass	0.90
7/1 to 8/15	Sudan Grass	0.90
8/15 to 10/15	Winter Rye	2.00
10/16 to 3/31	Annual Rye Grass	1.8

- (1) Mulching shall be applied at a rate of 90 lbs/1,000 sq. ft. (180 lbs/1000 sq. ft. for winter construction).
- (2) Temporary seeding rates shall be as follows:
- (3) The time limit for mulching in sensitive areas may be overridden by the most current weather forecast. All exposed soils in sensitive areas shall be mulched prior to every anticipated storm event.

e) Grading will be held to a maximum 3:1 slope where practical. Steeper slopes may be used in ledge cut. All slopes shall be stabilized with permanent seeding and mulching immediately after final grading is complete. If final grading will not be completed immediately, refer to the Temporary Seeding and Mulching Schedule. It

is understood that immediately means within 5 days of the completion of work. See seeding specifications for permanent seeding requirements.

- f) Culverts will be protected with stone rip-rap headwalls ($D_{50} = 6$ in. unless otherwise specified) at inlets and outlets as shown on Plans.
- g) Construction traffic - will be directed over the construction entrances and proposed roads. Any areas subject to rutting will be stabilized immediately. The crushed stone construction entrances shall be maintained by the addition of more crushed stone as needed as the voids become filled. The public roadway shall be swept daily should mud be tracked onto it.
- h) Erosion Controls for Detention Pond - the following practices and schedule shall be adhered to while constructing ponds and/or basins:
 - (1) The construction of the ponds or basins shall only take place as described in Section B – Construction Calendar of this report.
 - (2) The construction of the ponds or basins shall commence during a period of minimal flow with a dry short-range weather forecast. Once under construction, the pond shall be completed within 30 days.
 - (3) If the construction of the pond should be hampered by rain and excessive runoff all of the externally draining areas of the ponds must be stabilized by mulching and tacking with a photodegradable netting. Internal slopes of the detention basin shall be seeded immediately after shaping with perennial rye and stabilized with mulch to prevent soil loss from the basin itself. If rilling occurs matting shall be applied in such areas. Erosion control matting shall be used where indicated.
 - (4) The sequence for the construction of the ponds and sedimentation basins shall be as follows:
 - i Clear area required for pond or basin construction.
 - ii Install erosion controls.
 - iii Commence with grubbing and earthwork.
 - iv The contractor shall plan the excavation so the proposed pond or basin captures any runoff, thereby, serving as a temporary sediment basin throughout the construction.
 - v The contractor shall monitor and inspect the operation and function of the sedimentation ponds on a weekly basis to ensure proper working conditions. The contractor shall inspect during and immediately following significant

rainfall (>1.0 inch in a 24 hour period) in addition to scheduled maintenance inspections. Any evidence which suggests that the outlet is clogged or pond level does not significantly drawdown within 24 hours after rainfall event requires immediate attention or emergency measures. In the event these conditions are encountered or if the pond level rises to within one foot of top of berm dewatering shall be required followed by replacement of all filters and filter materials.

- vi Should dewatering be necessary during construction, the following methods may be required:
 - 01. The Engineer shall be contacted immediately.
 - 02. A temporary level lip spreader shall be constructed where a mildly sloping well-vegetated buffer area exists, a minimum of 100 ft. from the nearest drainageway or resource. This area shall serve as a buffer area to filter any sediment that may be suspended in the pond water. The Engineer shall approve the location of the level lip spreader prior to construction.
 - 03. Fifty feet downgradient and parallel to the level lip spreader, a row of triple protection silt fence and hay bales and erosion control mix (or sand) shall be installed to further filter the water.
 - 04. The pond water shall be pumped into a stone lined plunge pool with a channel directing the runoff to the aforementioned level spreader. The pump shall be operated at such a rate as to not channelize the flow out of the spreader.
 - 05. During pumping, the downstream runoff shall be periodically inspected by the contractor to check for cloudy appearance. Should cloudiness still be prevalent in the water, the contractor shall stop pumping and contact the Engineer.
- vii During excavation, topsoil, silts and clays that may be later used for the final grading or pond lining shall be stockpiled upstream from the pond. These stockpiles shall be mulched immediately and encircled with hay bales at the toe of the pile. Where possible suitable stripped loam free of rocks, roots and other objectionable materials be placed directly on finished graded areas but shall be approved by Engineer prior to placement.
- viii Should pond construction be hampered by rain, refer to the Emergency Protection Procedures (Section D.1.1.) of this report for corrective measures.
- ix Loam, fertilize, seed and mulch the disturbed areas the same day final grades are reached.

sedimentation controls as specified herein or directed by the Engineer, or appointing a qualified subcontractor to do so.

- (1) Maintenance measures will be performed as needed during the entire construction cycle. After each rainfall, a visual inspection will be made by the Contractor to insure their continuing function as designed.
 - i Stone check dams, hay bale barriers, erosion control mix berms, silt fence and mulch shall be inspected and repaired once a week or immediately following any significant rainfall. Sediment trapped behind these barriers shall be removed when it reaches a depth of 6 inches (or 1/2 the height of the dam for check dams) and redistributed to areas undergoing final grading.
 - ii Sedimentation basins and perforated riser pipes shall be visually inspected once a week or immediately after each significant rainfall, and cleaned and repaired as needed. Sediment trapped at the bottom of the basins shall be removed once it attains a depth of 12 inches unless otherwise specified. The sediment removed shall be transported to an upslope area undergoing final grading, or removed from the site. The sediment and the removal thereof shall be handled in a manner which does not promote erosion or sedimentation.
- 1) Emergency Protection Procedures - Should construction be hampered by excessive runoff and sediment entering downstream channels, then the contractor shall employ the following procedures to remediate the situation. Note that the contractor is not limited to these measures and may propose other measures based upon experience, subject to the approval and/or direction of the Engineer.
 - a) Problem: Rilling:
Solution:
 - (1) Fill rills with rip-rap.
 - (2) Mulch and or use matting.
 - (3) Install sod strips across flow path in fairways or roughs.
 - (4) Place double protection hay bales and silt fence along the contours.
 - (5) Divert upstream runoff from exposed area into stable area.
 - b) Problem: Erosion in channels:
Solution:
 - (1) Rip-rap channel with channel with check dams.
 - (2) Place matting in swale.
 - (3) Re-grade channel, revegetate and install stone check dams.
 - c) Problem: Siltation in stream or river:
Solution:
 - (1) Walk up-stream to determine where sediment is entering the channel.

- (2) Take appropriate corrective measures to prevent sediment from entering stream (i.e. mulching, matting, silt fence, etc.).

2. Permanent Seeding and Mulching Plan - The following general practices will be used to re-establish final vegetation.

- a) Loaming - A minimum of 4 inches of loam will be spread over disturbed areas and graded to a uniform depth and a natural appearance. All loam shall be as specified or approved by the Engineer.
- b) Final Seeding: - All final seeding shall be completed immediately (within 7 days) following final grading. All final fertilizing and seeding shall adhere to the specifications unless otherwise approved by the Engineer.
- c) Mulching: - Any area shall be mulched after it has been seeded unless deemed unnecessary by the Engineer. Mulching shall consist of hay mulch, hydro-mulch or any suitable substitute deemed acceptable by the Engineer.
 - (1) Straw mulch shall be applied at the rate of 2 tons per acre (90 lbs. or 2 bales/1,000 sq. ft.).
 - (2) Hydro-mulch shall consist of a mixture of asphalt, wood fiber or paper fiber and water sprayed over a seeded area. Hydro-mulch shall not be used during the fall, winter or mud season.
 - (3) Mulching shall be monitored according to the monitoring schedule (Section D.1.k.). Should mulching prove to be ineffective, then netting or matting shall be used in its place.
- d) Dormant Seeding: - Construction shall be planned to eliminate the need for seeding during the fall, winter or mud season. Should seeding be necessary between these dates, the following procedure shall be followed:
 - (1) Only unfrozen loam shall be used.
 - (2) Loaming, seeding and mulching will not be done over snow cover. If snow exists, it must be removed prior to placement of seed.
 - (3) No permanent seeding will be done during fall, winter or mud season unless specifically approved by the Engineer. If attempted, the normal seed application rate shall be doubled. Reseeding in spring will be required in all areas with insufficient growth.
 - (4) Where temporary seeding is required, the rates specified in the Temporary Seeding and Mulching Schedule (Section D.1.d.) shall be adhered to.

- (5) Fertilizing, seeding and mulching shall be done on loam the same day the loam is spread. Winter mulch rates shall apply as specified in the temporary seeding and mulching schedule (Section D.1.d.).
- (6) On slopes greater than 3:1, straw matting or excelsior matting will be substituted for mulch, except that biodegradable netting over mulch may be used where approved by the Engineer.
- e) Inspection: - Following final seeding, the site will be inspected every 30 days until 80% cover has been established. Reseeding and mulching shall be carried in areas of inadequate catch until an adequate catch is established in all seeded areas, as agreed upon by the Owner and Engineer. The Contractor may be required to re-seed during the following spring following winter or fall construction and seeding in order to provide 80% vegetative cover as required for acceptance by Owner.

3. Erosion Control Removal – Removal of temporary erosion control measures shall be the responsibility of the contractor. All erosion controls shall remain in place and maintained by the contractor until all related construction is complete and the area is stable.

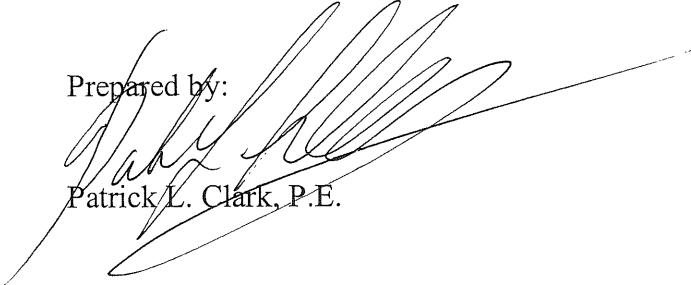
- a) An area is considered stable if:
 - (1) An 80% cover of grass has been established.
 - (2) It is paved.
- b) Haybales and silt fence shall be removed once the areas upstream are stable. The haybales and silt fence shall be disposed of legally and properly off-site. All sediment trapped behind these controls shall be:
 - (1) Distributed to an area undergoing final grading.
 - (2) Graded in an aesthetic manner to conform to the topography, and fertilized, seeded and mulched in accordance with the rates previously stated.
- c) The sediment trapped behind/around/in stone check dams, haybale barriers and sedimentation/detention basins, shall be removed and transported off-site, or to an upslope area undergoing final grading. The sediment trapped by these devices shall not be regraded locally since they exist in drainage ways.
- d) The rip-rap and stone from the check dams and risers may be either:
 - (1) Removed, or
 - (2) Regraded in an aesthetic manner that does not inhibit flow or create erosion.

- e) Once all the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be loamed (if necessary), fertilized, seeded and mulched in accordance with the rates previously stated.

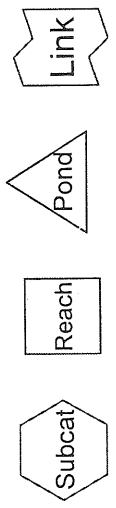
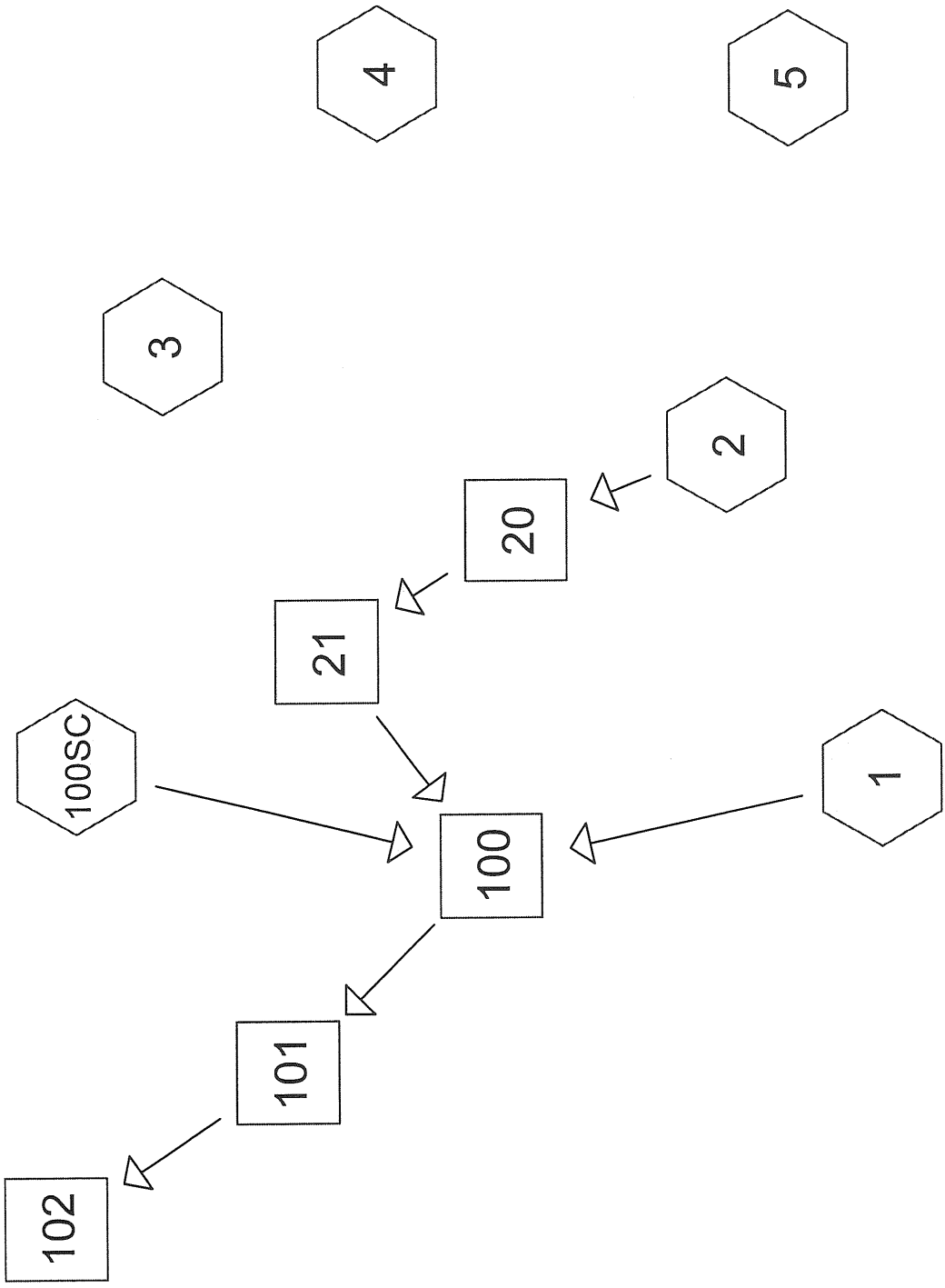
E. CONCLUSION

- 1. The construction of Yale Court, if constructed in conformance with the project plans and the Erosion and Sedimentation Control Report, should not result in any significant erosion or sedimentation either on or off the site.

Prepared by:


Patrick L. Clark, P.E.





Drainage Diagram for 4080-PRE-2
 Prepared by Land Use Consultants, Inc 10/4/02
 HydroCAD@6.00 s/n 001672 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1: SC1

Runoff = 6.02 cfs @ 12.07 hrs, Volume= 0.289 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
5.750	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 2: SC2

Runoff = 0.84 cfs @ 12.07 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.890	77	Woods, Good, HSG D
0.040	30	Woods, Good, HSG A
0.930	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
0.6	120	0.0500	3.4		Shallow Concentrated Flow, 2B-R20 Grassed Waterway Kv= 15.0 fps
13.6	250	Total			

Subcatchment 3: SC3

Runoff = 1.07 cfs @ 12.03 hrs, Volume= 0.046 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0800	0.1		Sheet Flow, 3A-3B Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	100	0.0300	0.9		Shallow Concentrated Flow, 3B-3C Woodland Kv= 5.0 fps
0.7	150	0.0550	3.5		Shallow Concentrated Flow, 3C-3D Grassed Waterway Kv= 15.0 fps
10.5	300	Total			

Subcatchment 4: SC4

Runoff = 0.84 cfs @ 12.07 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 4A-4B Woods: Light underbrush n= 0.400 P2= 2.60"
4.7	200	0.0200	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
14.2	370	Total			

Subcatchment 5: SC5

Runoff = 1.85 cfs @ 12.10 hrs, Volume= 0.101 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.7	170	0.0120	1.6		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.0	150	0.0270	2.5		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.2	420	Total			

Subcatchment 100SC: SC10

Runoff = 9.43 cfs @ 11.90 hrs, Volume= 0.294 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 20: 20

Inflow = 0.84 cfs @ 12.07 hrs, Volume= 0.041 af
Outflow = 0.80 cfs @ 12.15 hrs, Volume= 0.040 af, Atten= 5%, Lag= 4.7 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.1 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.0 min

Peak Depth= 0.12'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 'f'

Reach 21: 21

Inflow = 0.80 cfs @ 12.15 hrs, Volume= 0.040 af
Outflow = 0.78 cfs @ 12.21 hrs, Volume= 0.040 af, Atten= 3%, Lag= 3.9 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.3 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 4.8 min

Peak Depth= 0.13'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 'f'
Side Slope Z-value= 10.0 'f'

Reach 100: 100-EXISTING SWALE

Inflow = 11.52 cfs @ 11.90 hrs, Volume= 0.623 af
 Outflow = 10.80 cfs @ 11.94 hrs, Volume= 0.621 af, Atten= 6%, Lag= 2.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 1.4 min
 Avg. Velocity = 0.7 fps, Avg. Travel Time= 3.6 min

Peak Depth= 0.65'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/'
 Side Slope Z-value= 10.0 '/'

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 10.80 cfs @ 11.94 hrs, Volume= 0.621 af
 Outflow = 10.65 cfs @ 11.96 hrs, Volume= 0.619 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 0.8 min
 Avg. Velocity = 0.7 fps, Avg. Travel Time= 1.9 min

Peak Depth= 0.65'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/'
 Side Slope Z-value= 10.0 '/'

Reach 102: EX 36" CMP

Inflow = 10.65 cfs @ 11.96 hrs, Volume= 0.619 af
 Outflow = 10.61 cfs @ 11.97 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.3 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.5 min

Peak Depth= 1.14'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/'

Subcatchment 1: SC1

Runoff = 17.25 cfs @ 12.06 hrs, Volume= 0.845 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
5.750	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 2: SC2

Runoff = 2.58 cfs @ 12.06 hrs, Volume= 0.126 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.890	77	Woods, Good, HSG D
0.040	30	Woods, Good, HSG A
0.930	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
0.6	120	0.0500	3.4		Shallow Concentrated Flow, 2B-R20 Grassed Waterway Kv= 15.0 fps
13.6	250	Total			

Subcatchment 3: SC3

Runoff = 3.05 cfs @ 12.03 hrs, Volume= 0.134 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0800	0.1		Sheet Flow, 3A-3B Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	100	0.0300	0.9		Shallow Concentrated Flow, 3B-3C Woodland Kv= 5.0 fps
0.7	150	0.0550	3.5		Shallow Concentrated Flow, 3C-3D Grassed Waterway Kv= 15.0 fps
10.5	300	Total			

Subcatchment 4: SC4

Runoff = 2.41 cfs @ 12.07 hrs, Volume= 0.120 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 4A-4B Woods: Light underbrush n= 0.400 P2= 2.60"
4.7	200	0.0200	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
14.2	370	Total			

Subcatchment 5: SC5

Runoff = 5.37 cfs @ 12.10 hrs, Volume= 0.295 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.7	170	0.0120	1.6		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.0	150	0.0270	2.5		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.2	420	Total			

Subcatchment 100SC: SC10

Runoff = 20.00 cfs @ 11.90 hrs, Volume= 0.665 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 20: 20

Inflow = 2.58 cfs @ 12.06 hrs, Volume= 0.126 af
 Outflow = 2.53 cfs @ 12.11 hrs, Volume= 0.125 af, Atten= 2%, Lag= 3.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.5 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 0.6 fps, Avg. Travel Time= 5.2 min

Peak Depth= 0.20'
 Capacity at bank full= 18.81 cfs
 20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 2.53 cfs @ 12.11 hrs, Volume= 0.125 af
 Outflow = 2.49 cfs @ 12.16 hrs, Volume= 0.124 af, Atten= 2%, Lag= 2.8 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.9 fps, Min. Travel Time= 1.6 min
 Avg. Velocity = 0.7 fps, Avg. Travel Time= 4.1 min

Peak Depth= 0.24'
 Capacity at bank full= 54.74 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
 Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 28.11 cfs @ 11.90 hrs, Volume= 1.634 af
 Outflow = 26.98 cfs @ 11.93 hrs, Volume= 1.630 af, Atten= 4%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 2.6 min

Peak Depth= 0.97'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 26.98 cfs @ 11.93 hrs, Volume= 1.630 af
 Outflow = 26.76 cfs @ 11.95 hrs, Volume= 1.627 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 1.4 min

Peak Depth= 0.96'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 26.76 cfs @ 11.95 hrs, Volume= 1.627 af
 Outflow = 26.66 cfs @ 11.96 hrs, Volume= 1.626 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.4 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.98'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Subcatchment 1: SC1

Runoff = 23.10 cfs @ 12.06 hrs, Volume= 1.148 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
5.750	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 2: SC2

Runoff = 3.51 cfs @ 12.06 hrs, Volume= 0.173 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.890	77	Woods, Good, HSG D
0.040	30	Woods, Good, HSG A
0.930	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
0.6	120	0.0500	3.4		Shallow Concentrated Flow, 2B-R20 Grassed Waterway Kv= 15.0 fps
13.6	250	Total			

Subcatchment 3: SC3

Runoff = 4.07 cfs @ 12.02 hrs, Volume= 0.182 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0800	0.1		Sheet Flow, 3A-3B Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	100	0.0300	0.9		Shallow Concentrated Flow, 3B-3C Woodland Kv= 5.0 fps
0.7	150	0.0550	3.5		Shallow Concentrated Flow, 3C-3D Grassed Waterway Kv= 15.0 fps
10.5	300	Total			

Subcatchment 4: SC4

Runoff = 3.23 cfs @ 12.06 hrs, Volume= 0.164 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 4A-4B Woods: Light underbrush n= 0.400 P2= 2.60"
4.7	200	0.0200	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
14.2	370	Total			

Subcatchment 5: SC5

Runoff = 7.21 cfs @ 12.10 hrs, Volume= 0.400 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.7	170	0.0120	1.6		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.0	150	0.0270	2.5		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.2	420	Total			

Subcatchment 100SC: SC100

Runoff = 25.03 cfs @ 11.90 hrs, Volume= 0.847 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 20: 20

Inflow = 3.51 cfs @ 12.06 hrs, Volume= 0.173 af
 Outflow = 3.45 cfs @ 12.11 hrs, Volume= 0.172 af, Atten= 2%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 1.8 min
 Avg. Velocity= 0.6 fps, Avg. Travel Time= 5.0 min

Peak Depth= 0.23'
 Capacity at bank full= 18.81 cfs
 20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 3.45 cfs @ 12.11 hrs, Volume= 0.172 af
 Outflow = 3.40 cfs @ 12.15 hrs, Volume= 0.171 af, Atten= 1%, Lag= 2.5 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.0 fps, Min. Travel Time= 1.5 min
 Avg. Velocity= 0.8 fps, Avg. Travel Time= 4.0 min

Peak Depth= 0.28'
 Capacity at bank full= 54.74 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
 Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 36.49 cfs @ 11.90 hrs, Volume= 2.166 af
 Outflow = 35.09 cfs @ 11.93 hrs, Volume= 2.160 af, Atten= 4%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 2.4 min

Peak Depth= 1.09'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 35.09 cfs @ 11.93 hrs, Volume= 2.160 af
 Outflow = 34.81 cfs @ 11.95 hrs, Volume= 2.157 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 1.3 min

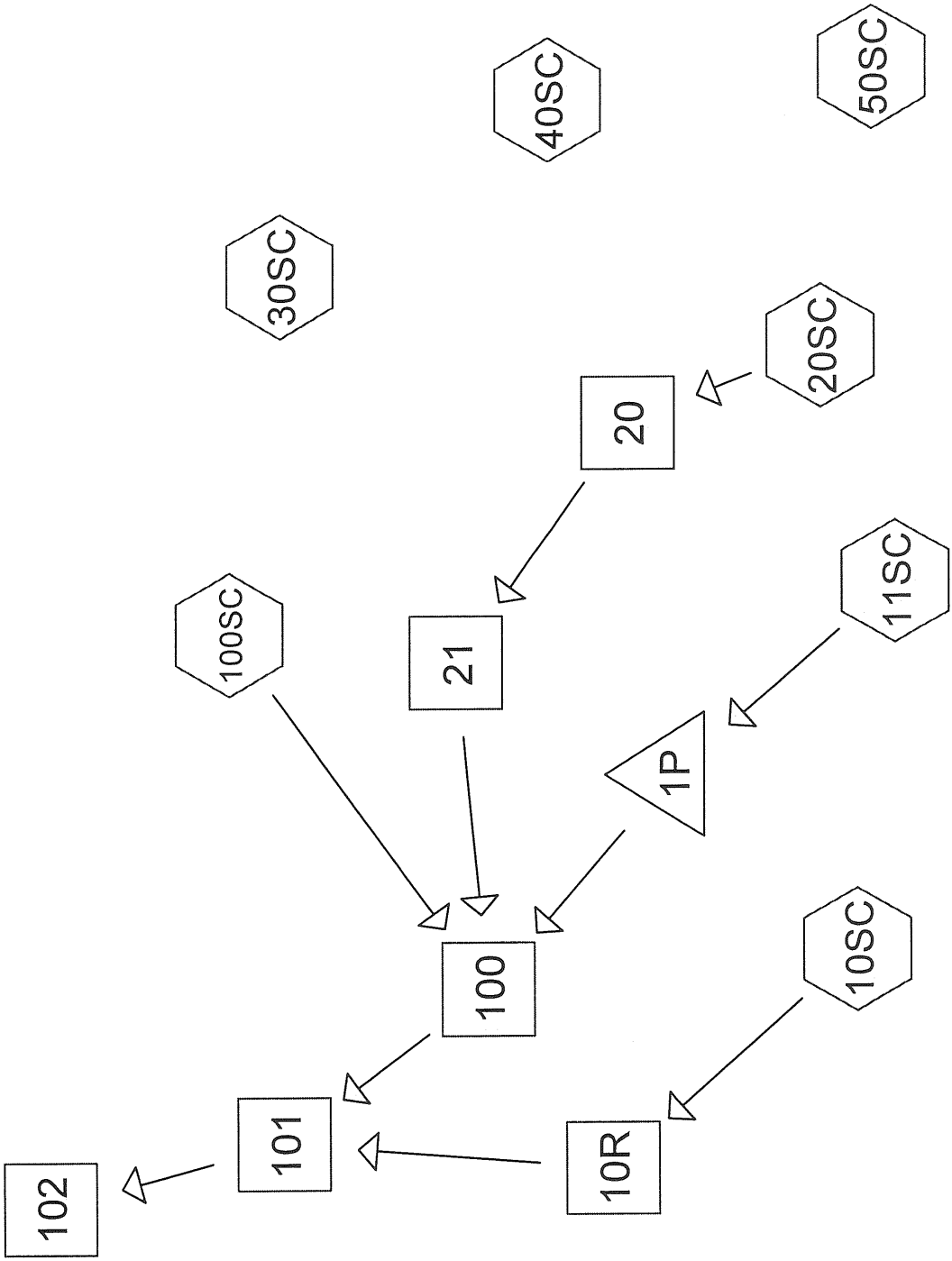
Peak Depth= 1.08'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 34.81 cfs @ 11.95 hrs, Volume= 2.157 af
 Outflow = 34.70 cfs @ 11.96 hrs, Volume= 2.156 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.6 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.3 min

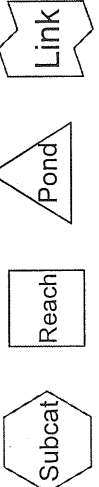
Peak Depth= 2.47'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/



Drainage Diagram for 4080-POST-2

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Subcatchment 10SC: SC10

Runoff = 5.95 cfs @ 12.06 hrs, Volume= 0.290 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
2.460	87	1/4 acre lots, 38% imp, HSG D
0.240	80	>75% Grass cover, Good, HSG D
0.940	77	Woods, Good, HSG D
0.040	98	Paved parking & roofs
3.680	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 11SC: SC11

Runoff = 6.16 cfs @ 12.14 hrs, Volume= 0.393 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.630	87	1/4 acre lots, 38% imp, HSG D
1.580	80	>75% Grass cover, Good, HSG D
1.560	98	Paved parking & roofs
3.770	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	70	0.0100	0.1		Sheet Flow, 11A-11B Grass: Dense n= 0.240 P2= 2.60"
1.3	100	0.0200	1.2		Sheet Flow, 11B-11C Smooth surfaces n= 0.011 P2= 2.60"
3.7					Direct Entry, PIPE FLOW-2 FPS-450 FT
1.1	150	0.0250	2.4		Shallow Concentrated Flow, 11D-P1 Grassed Waterway Kv= 15.0 fps
21.8	320	Total			

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Type II 24-hr Rainfall=2.60"

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Subcatchment 20SC: SC20

Runoff = 0.50 cfs @ 12.06 hrs, Volume= 0.023 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.230	77	Woods, Good, HSG D
0.120	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.380	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
13.0	130	Total			

Subcatchment 30SC: SC30

Runoff = 1.10 cfs @ 11.99 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.390	77	Woods, Good, HSG D
0.280	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
0.710	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0600	0.1		Sheet Flow, 30A-30B Grass: Dense n= 0.240 P2= 2.60"
0.6	50	0.0800	1.4		Shallow Concentrated Flow, 30B-30C Woodland Kv= 5.0 fps
0.5	90	0.0400	3.0		Shallow Concentrated Flow, 30C-30D Grassed Waterway Kv= 15.0 fps
7.0	190	Total			

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Type II 24-hr Rainfall=2.60"

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10/1/02**Subcatchment 40SC: SC40**

Runoff = 0.65 cfs @ 12.04 hrs, Volume= 0.028 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0500	0.1		Sheet Flow, 40A-40B
					Grass: Dense n= 0.240 P2= 2.60"
4.0	180	0.0220	0.7		Shallow Concentrated Flow, 4B-4C
					Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D
					Grassed Waterway Kv= 15.0 fps
11.0	350	Total			

Subcatchment 50SC: SC50

Runoff = 1.79 cfs @ 12.10 hrs, Volume= 0.097 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
1.620	77	Woods, Good, HSG D
0.140	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
1.800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B
					Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C
					Woodland Kv= 5.0 fps
1.4	150	0.0150	1.8		Shallow Concentrated Flow, 5C-5D
					Grassed Waterway Kv= 15.0 fps
1.2	150	0.0200	2.1		Shallow Concentrated Flow, 5D-5E
					Grassed Waterway Kv= 15.0 fps
17.1	400	Total			

Subcatchment 100SC: SC10

Runoff = 9.43 cfs @ 11.90 hrs, Volume= 0.294 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 10R: EXISTING DITCHInflow = 5.95 cfs @ 12.06 hrs, Volume= 0.290 af
Outflow = 5.59 cfs @ 12.15 hrs, Volume= 0.287 af, Atten= 6%, Lag= 5.7 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.5 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 8.1 minPeak Depth= 0.48'
Capacity at bank full= 440.49 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/'
Side Slope Z-value= 10.0 '/'**Reach 20: 20**Inflow = 0.50 cfs @ 12.06 hrs, Volume= 0.023 af
Outflow = 0.47 cfs @ 12.15 hrs, Volume= 0.023 af, Atten= 6%, Lag= 5.5 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.9 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.4 fps, Avg. Travel Time= 7.8 minPeak Depth= 0.09'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'**Reach 21: 21**Inflow = 0.47 cfs @ 12.15 hrs, Volume= 0.023 af
Outflow = 0.45 cfs @ 12.22 hrs, Volume= 0.023 af, Atten= 4%, Lag= 4.5 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.1 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.3 minPeak Depth= 0.10'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 10.75 cfs @ 11.90 hrs, Volume= 0.709 af
 Outflow = 10.04 cfs @ 11.94 hrs, Volume= 0.707 af, Atten= 7%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 1.5 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 3.3 min

Peak Depth= 0.63'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/'
 Side Slope Z-value= 10.0 '/'

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 11.59 cfs @ 11.94 hrs, Volume= 0.993 af
 Outflow = 11.44 cfs @ 11.96 hrs, Volume= 0.991 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.8 fps, Min. Travel Time= 0.8 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 1.6 min

Peak Depth= 0.67'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/'
 Side Slope Z-value= 10.0 '/'

Reach 102: EX 36" CMP

Inflow = 11.44 cfs @ 11.96 hrs, Volume= 0.991 af
 Outflow = 11.41 cfs @ 11.97 hrs, Volume= 0.991 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.4 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.19'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/'

Pond 1P: POND 1

Inflow = 6.16 cfs @ 12.14 hrs, Volume= 0.393 af
 Outflow = 3.99 cfs @ 12.31 hrs, Volume= 0.392 af, Atten= 35%, Lag= 10.2 min
 Primary = 3.99 cfs @ 12.31 hrs, Volume= 0.392 af

Routing by Stor-Ind method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs

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Type II 24-hr Rainfall=2.60"

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Peak Elev= 85.09' Storage= 2,937 cf
 Plug-Flow detention time= 7.2 min calculated for 0.392 af (100% of inflow)
 Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.50	10	0	0
83.00	270	70	70
84.00	1,250	760	830
85.00	2,400	1,825	2,655
86.00	3,725	3,063	5,718
87.00	5,350	4,538	10,255
88.00	8,300	6,825	17,080
89.00	10,000	9,150	26,230

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	82.50'	12.0" x 20.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 82.40' S= 0.0050 '/' n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 13.96 cfs @ 12.05 hrs, Volume= 0.708 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
2.460	87	1/4 acre lots, 38% imp, HSG D
0.240	80	>75% Grass cover, Good, HSG D
0.940	77	Woods, Good, HSG D
0.040	98	Paved parking & roofs
3.680	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 11SC: SC11

Runoff = 12.93 cfs @ 12.14 hrs, Volume= 0.850 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.630	87	1/4 acre lots, 38% imp, HSG D
1.580	80	>75% Grass cover, Good, HSG D
1.560	98	Paved parking & roofs
3.770	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	70	0.0100	0.1		Sheet Flow, 11A-11B Grass: Dense n= 0.240 P2= 2.60"
1.3	100	0.0200	1.2		Sheet Flow, 11B-11C Smooth surfaces n= 0.011 P2= 2.60"
3.7					Direct Entry, PIPE FLOW-2 FPS-450 FT
1.1	150	0.0250	2.4		Shallow Concentrated Flow, 11D-P1 Grassed Waterway Kv= 15.0 fps
21.8	320	Total			

Subcatchment 20SC: SC20

Runoff = 1.30 cfs @ 12.05 hrs, Volume= 0.063 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.230	77	Woods, Good, HSG D
0.120	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.380	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B
					Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B
					Woodland Kv= 5.0 fps
13.0	130	Total			

Subcatchment 30SC: SC30

Runoff = 2.90 cfs @ 11.99 hrs, Volume= 0.114 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.390	77	Woods, Good, HSG D
0.280	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
0.710	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0600	0.1		Sheet Flow, 30A-30B
					Grass: Dense n= 0.240 P2= 2.60"
0.6	50	0.0800	1.4		Shallow Concentrated Flow, 30B-30C
					Woodland Kv= 5.0 fps
0.5	90	0.0400	3.0		Shallow Concentrated Flow, 30C-30D
					Grassed Waterway Kv= 15.0 fps
7.0	190	Total			

Subcatchment 40SC: SC40

Runoff = 1.73 cfs @ 12.03 hrs, Volume= 0.078 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0500	0.1		Sheet Flow, 40A-40B
					Grass: Dense n= 0.240 P2= 2.60"
4.0	180	0.0220	0.7		Shallow Concentrated Flow, 4B-4C
					Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D
					Grassed Waterway Kv= 15.0 fps
11.0	350	Total			

Subcatchment 50SC: SC50

Runoff = 5.01 cfs @ 12.10 hrs, Volume= 0.275 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
1.620	77	Woods, Good, HSG D
0.140	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
1.800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B
					Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C
					Woodland Kv= 5.0 fps
1.4	150	0.0150	1.8		Shallow Concentrated Flow, 5C-5D
					Grassed Waterway Kv= 15.0 fps
1.2	150	0.0200	2.1		Shallow Concentrated Flow, 5D-5E
					Grassed Waterway Kv= 15.0 fps
17.1	400	Total			

Subcatchment 100SC: SC10

Runoff = 20.00 cfs @ 11.90 hrs, Volume= 0.665 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 10R: EXISTING DITCH

Inflow = 13.96 cfs @ 12.05 hrs, Volume= 0.708 af
Outflow = 13.40 cfs @ 12.13 hrs, Volume= 0.702 af, Atten= 4%, Lag= 4.6 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.8 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.8 fps, Avg. Travel Time= 6.5 min

Peak Depth= 0.72'
Capacity at bank full= 440.49 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/'
Side Slope Z-value= 10.0 '/'

Reach 20: 20

Inflow = 1.30 cfs @ 12.05 hrs, Volume= 0.063 af
Outflow = 1.25 cfs @ 12.12 hrs, Volume= 0.063 af, Atten= 3%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.2 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.4 fps, Avg. Travel Time= 6.8 min

Peak Depth= 0.14'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 1.25 cfs @ 12.12 hrs, Volume= 0.063 af
Outflow = 1.23 cfs @ 12.17 hrs, Volume= 0.062 af, Atten= 2%, Lag= 3.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.5 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 5.5 min

Peak Depth= 0.17'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 22.79 cfs @ 11.90 hrs, Volume= 1.576 af
 Outflow = 21.75 cfs @ 11.93 hrs, Volume= 1.572 af, Atten= 5%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.1 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 2.5 min

Peak Depth= 0.88'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 26.54 cfs @ 11.93 hrs, Volume= 2.274 af
 Outflow = 26.30 cfs @ 11.95 hrs, Volume= 2.271 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 1.2 min

Peak Depth= 0.96'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 26.30 cfs @ 11.95 hrs, Volume= 2.271 af
 Outflow = 26.20 cfs @ 11.96 hrs, Volume= 2.270 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.4 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.3 min

Peak Depth= 1.95'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Pond 1P: POND 1

Inflow = 12.93 cfs @ 12.14 hrs, Volume= 0.850 af
 Outflow = 5.72 cfs @ 12.40 hrs, Volume= 0.849 af, Atten= 56%, Lag= 15.4 min
 Primary = 5.72 cfs @ 12.40 hrs, Volume= 0.849 af

Routing by Stor-Ind method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs

4080-POST-10

Type II 24-hr Rainfall=4.50"

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Peak Elev= 86.87' Storage= 9,675 cf

Plug-Flow detention time= 14.6 min calculated for 0.847 af (100% of inflow)

Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.50	10	0	0
83.00	270	70	70
84.00	1,250	760	830
85.00	2,400	1,825	2,655
86.00	3,725	3,063	5,718
87.00	5,350	4,538	10,255
88.00	8,300	6,825	17,080
89.00	10,000	9,150	26,230

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	82.50'	12.0" x 20.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 82.40' S= 0.0050 '/' n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 17.88 cfs @ 12.05 hrs, Volume= 0.918 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
2.460	87	1/4 acre lots, 38% imp, HSG D
0.240	80	>75% Grass cover, Good, HSG D
0.940	77	Woods, Good, HSG D
0.040	98	Paved parking & roofs
3.680	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 11SC: SC11

Runoff = 16.15 cfs @ 12.14 hrs, Volume= 1.072 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.630	87	1/4 acre lots, 38% imp, HSG D
1.580	80	>75% Grass cover, Good, HSG D
1.560	98	Paved parking & roofs
3.770	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	70	0.0100	0.1		Sheet Flow, 11A-11B Grass: Dense n= 0.240 P2= 2.60"
1.3	100	0.0200	1.2		Sheet Flow, 11B-11C Smooth surfaces n= 0.011 P2= 2.60"
3.7					Direct Entry, PIPE FLOW-2 FPS-450 FT
1.1	150	0.0250	2.4		Shallow Concentrated Flow, 11D-P1 Grassed Waterway Kv= 15.0 fps
21.8	320	Total			

Subcatchment 20SC: SC20

Runoff = 1.70 cfs @ 12.05 hrs, Volume= 0.084 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.230	77	Woods, Good, HSG D
0.120	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.380	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B
					Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B
					Woodland Kv= 5.0 fps
13.0	130	Total			

Subcatchment 30SC: SC30

Runoff = 3.81 cfs @ 11.98 hrs, Volume= 0.152 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.390	77	Woods, Good, HSG D
0.280	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
0.710	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0600	0.1		Sheet Flow, 30A-30B
					Grass: Dense n= 0.240 P2= 2.60"
0.6	50	0.0800	1.4		Shallow Concentrated Flow, 30B-30C
					Woodland Kv= 5.0 fps
0.5	90	0.0400	3.0		Shallow Concentrated Flow, 30C-30D
					Grassed Waterway Kv= 15.0 fps
7.0	190	Total			

Subcatchment 40SC: SC40

Runoff = 2.28 cfs @ 12.03 hrs, Volume= 0.105 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0500	0.1		Sheet Flow, 40A-40B Grass: Dense n= 0.240 P2= 2.60"
4.0	180	0.0220	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
11.0	350	Total			

Subcatchment 50SC: SC50

Runoff = 6.67 cfs @ 12.10 hrs, Volume= 0.371 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
1.620	77	Woods, Good, HSG D
0.140	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
1.800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.4	150	0.0150	1.8		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.2	150	0.0200	2.1		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.1	400	Total			

Subcatchment 100SC: SC10

Runoff = 25.03 cfs @ 11.90 hrs, Volume= 0.847 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 10R: EXISTING DITCHInflow = 17.88 cfs @ 12.05 hrs, Volume= 0.918 af
Outflow = 17.25 cfs @ 12.12 hrs, Volume= 0.912 af, Atten= 4%, Lag= 4.3 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.0 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.8 fps, Avg. Travel Time= 5.9 minPeak Depth= 0.80'
Capacity at bank full= 440.49 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/
Side Slope Z-value= 10.0 '/**Reach 20: 20**Inflow = 1.70 cfs @ 12.05 hrs, Volume= 0.084 af
Outflow = 1.65 cfs @ 12.11 hrs, Volume= 0.083 af, Atten= 3%, Lag= 3.7 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.3 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.1 minPeak Depth= 0.16'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/**Reach 21: 21**Inflow = 1.65 cfs @ 12.11 hrs, Volume= 0.083 af
Outflow = 1.62 cfs @ 12.16 hrs, Volume= 0.083 af, Atten= 2%, Lag= 3.1 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.7 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 5.0 minPeak Depth= 0.20'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/
Side Slope Z-value= 10.0 '/

Reach 100: 100-EXISTING SWALE

Inflow = 28.32 cfs @ 11.90 hrs, Volume= 2.000 af
 Outflow = 27.06 cfs @ 11.93 hrs, Volume= 1.995 af, Atten= 4%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 2.3 min

Peak Depth= 0.97'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 33.59 cfs @ 11.93 hrs, Volume= 2.907 af
 Outflow = 33.28 cfs @ 11.95 hrs, Volume= 2.903 af, Atten= 1%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.2 fps, Avg. Travel Time= 1.1 min

Peak Depth= 1.06'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 33.28 cfs @ 11.95 hrs, Volume= 2.903 af
 Outflow = 33.19 cfs @ 11.95 hrs, Volume= 2.902 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.6 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.3 min

Peak Depth= 2.36'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Pond 1P: POND 1

Inflow = 16.15 cfs @ 12.14 hrs, Volume= 1.072 af
 Outflow = 6.20 cfs @ 12.43 hrs, Volume= 1.070 af, Atten= 62%, Lag= 17.6 min
 Primary = 6.20 cfs @ 12.43 hrs, Volume= 1.070 af

Routing by Stor-Ind method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs

4080-POST-25

Type II 24-hr Rainfall=5.40"

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Peak Elev= 87.49' Storage= 13,580 cf

Plug-Flow detention time= 18.5 min calculated for 1.070 af (100% of inflow)

Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.50	10	0	0
83.00	270	70	70
84.00	1,250	760	830
85.00	2,400	1,825	2,655
86.00	3,725	3,063	5,718
87.00	5,350	4,538	10,255
88.00	8,300	6,825	17,080
89.00	10,000	9,150	26,230

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	82.50'	12.0" x 20.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 82.40' S= 0.0050 '/' n= 0.025 Cc= 0.900



Land Use Consultants, Inc.

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October 1, 2002

4080

**PRELIMINARY SITE ANALYSIS
ENGINEERING REPORT
YALE COURT
PRUD AND SUBDIVISION
Portland, Maine**

*p l a n n e r s
e n g i n e e r s
l a n d s c a p e
a r c h i t e c t s*

INTRODUCTION

Land Use Consultants, Inc. has evaluated the proposed Yale Court development site to determine stormwater runoff rates and potential impacts which may occur as a result of the development. The 10 acre ± parcel is located in Portland, Maine near the intersection of Allan Avenue and Harvard Street (west). The site includes frontage on the existing undeveloped Yale Street right-of-way and is completely wooded with well established forested areas. Proposed access to the Planned Residential Unit Development (PRUD) site is via a new driveway from Yale Street, which will be constructed for approximately 1,150 feet in the existing City of Portland Right-of-way. The newly constructed Yale street will also provide frontage for ten single family house lots to be reconfigured from a portion of the undeveloped University Park Subdivision as approved in the late 1930's.

The present site is undeveloped, wooded land, adjacent to medium density rural residential housing development along Chesley Avenue and Berry Avenue which dead-end adjacent to the property along the easterly boundary, high density-multi-family attached dwellings to the north (Northfield Green) and south (Woodwind Apartments) and undeveloped land (University Park) along the westerly boundary. The site is situated along a locally predominant, high ridge, generally running east to west through the site near the center of the property. Due to this localized topography and existing neighborhood development, the runoff from the site generally exits the property in five locations around the perimeter. Each of these areas are described via individual small subcatchment areas for the pre-development and post development conditions so that the peak discharge rates at these locations can be compared and evaluated with regards to stormwater impacts. Brief descriptions are provided below. All of the runoff from the site ultimately finds its way via existing swales ditches and city streets to public storm sewers or to Fall Brook near Washington Avenue.

The area near Mona Road, just to the north of the project and the region around Fall Brook is known to be subject to historical flooding. The Fall Brook region is apparently located within a 100-year flood elevation indicated as Zone AE on the FIRM flood map for this area.

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The proposed development will create approximately 2.00 acres of new impervious surfaces. This site is not located in the direct watershed of a *waterbody most at risk* or in a *sensitive or threatened watershed* and is not required to meet the stormwater quality standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500, Section 4.A.(1).(c). However, this project includes more than one acre of new impervious area, and is therefore subject to the stormwater quantity standards set forth in Chapter 500, Section 3. The project must also meet the requirements of the City of Portland “Technical and Design Standards and Guidelines” which requires that projects with parking facilities greater than 25 cars provide on-site treatment.

The proposed project includes a new storm drain system with a detention pond as shown on the plans. The proposed drainage improvements will reduce the peak flow rates from the site to existing rates or below at each of the five study points. The proposed stormwater and detention measures will control and decrease the flows to Fall Brook and downstream properties for the developed site except for a slight increase for the two year storm event for flow into the existing Northfield Green detention pond.

As previously mentioned, a portion of this project is an amendment of the existing University Park subdivision.

METHODOLOGY

We used the S. C. S. method for computing peak runoff rates. This method accounts for soil types, existing land use, topography, vegetative cover and proposed land use for the developed portions of the property. For this study, a derivative of the S. C. S. TR-20 computer modeling method was used within HydroCAD 6.00 software. We evaluated the pre-development and post-development conditions for the proposed site. These present and future conditions were analyzed using data for a Type III, 24 hour, storm distribution, with a design frequency of occurrence of 2 years, 10 years and 25 years. All supporting data and calculations are submitted with this report.

EXISTING SITE CONDITIONS

Existing drainage from the site is divided into five small subcatchment areas. Refer to the Pre-Development Drainage Plan included with this report for a further description of the various subcatchment areas.

Subcatchment #1 includes Yale Street right-of-way and individual lots with frontage on Yale Street and is situated on the western half of the site. This area drains to an existing drainage ditch just off of the property, which conveys runoff to an existing man-made pond within the Northfield Green project near Mona Road. This is the largest subcatchment area and includes approximately half of the site. The proposed detention pond will be located in this vicinity to collect most of the runoff from the development. The outlet from this existing small pond eventually drains to Fall Brook. The runoff from this subcatchment also combines with a contribution from a small 3 acre ± off-site area including the west end of Chesley Avenue (SC #100) which drains directly to the existing ditch into the pond.

Subcatchment #2 includes a small interior portion of the site and drains naturally to the rear of the lots along the south side of Chesley Street. This subcatchment runoff passes through the off-site Subcatchment #100 which includes the residential neighborhood and ultimately drains to the drainage ditch and pond.

Subcatchment #3 includes a small interior portion of the site and drains naturally to the west end of Berry Avenue. This subcatchment includes a very small area and does not include any large swales ditches or distinctive drainage features. Runoff drains through the neighborhood, apparently along Berry Avenue, and eventually into Fall Brook, downstream from the Mona Road area.

Subcatchment #4 is situated at the southeasterly corner of the property on the opposite side of the ridge near Berry Avenue and drains towards the Woodwind Apartments development. This area drains towards Fall Brook and Washington Avenue between Harvard Street and Berry Avenue.

Subcatchment #5 is a small 2 acre subcatchment area which drains to the south end of Yale Street towards Harvard Street.

These drainage areas are defined in our Stormwater Model as shown on the Pre-Development Drainage Plan and HydroCAD diagram. Refer to the drainage plan, existing condition stormwater calculations, HydroCAD diagrams and report for modeling assumptions, subcatchments, flowpaths, drainage reaches, etc. Runoff calculations were performed for the 2 year, 10 year, and 25 year storm events in accordance with the City of Portland and DEP Stormwater Permit requirements. Fall Brook flows through Portland to the Back Bay near Payson Park. These five drainage subcatchments are evaluated for the pre and post development conditions and represent the primary study points for comparing the results of the calculations for each storm event for existing and developed site conditions. Refer to the Summary Table for a more convenient comparison of the results.

DEVELOPED SITE CONDITIONS

The developed site includes a new 30 unit PRUD housing project of attached dwellings. Most of the buildings are four-unit complexes arranged in small clusters. The new driveway into the site will be constructed from Yale Street. The detention basin (pond #1) near the northwesterly corner will be reconstructed as shown. The construction of Yale Street in the existing public right-of-way will provide frontage for ten single family house lots.

The post-development site drainage patterns are similar to the existing site. The most significant differences are the changes to the subcatchment boundaries due to the site improvements. The post-development site is divided into 6 subcatchments as shown on the Post-Development Drainage Plan in addition to Subcatchment #100 (off-site). These subcatchment areas correspond to the five pre-development subcatchments except that an additional area is included which represents the portion of the site which drains to the new detention pond. All of the pre-development subcatchment areas are significantly reduced in

size except for Subcatchment #1 which now contains almost the entire developed site and conveys runoff to the detention pond. This new subcatchment (SC#11) combines with subcatchment #10 (formerly SC#1) and represents the combined runoff (controlled and uncontrolled) to the existing drainage ditch at Northfield Green. The developer has an agreement with Northfield Green which prescribes the rights to drain stormwater to the existing ditch and detention pond. The peak stormwater runoff rates are reduced to all of the areas and study points for the developed site.

Subcatchment #10 for the developed site (formerly SC#1) will be limited to the small strip of land along Yale Street near the westerly corner of the property and includes about 3.6 acres which will continue to drain directly to the existing drainage ditch similar to the existing condition. This area includes the single family house lots.

Subcatchment #11 includes approximately 3.8 acres located near the center of the PRUD site. Runoff from this subcatchment will be collected in a new storm drain and conveyed to the proposed detention pond (pond #1). Outflow from the detention Pond #1 will be combined with the runoff from SC#10 and will be drain to the existing detention pond in Northfield Green prior to release to Fall Brook. This combined runoff rate is the total discharge to the drainage ditch and is the point of comparison to the pre-development runoff

Subcatchment #20 is reduced to only 0.38 acres (formerly SC#2, 0.93 ac) and drains to the rear of the lots along the south side of Chesley Street similar to the existing site. The runoff from this subcatchment is routed through off-site subcatchment SC#100 to the existing drainage ditch.

Subcatchment #30 is reduced to 0.71 acres (formerly SC#3, 0.91 ac). This area drains to the west end of Berry Avenue and eventually to Fall Brook.

Subcatchment #40 is reduced to 0.49 acres (formerly SC#4, 0.82 ac) and continues to drain towards the Woodwind Apartments development.

Subcatchment #50 is reduced to 1.80 acres (formerly SC#5, 2.01 ac) and is substantially unchanged except for a small area of the proposed PRUD near the southerly corner which includes the back of a few new units and back yards of open lawn area.

Subcatchment #100 (existing off-site) remains unchanged for the developed conditions.

For the developed site, the majority of the stormwater from the new PRUD is collected in storm drains and conveyed to the new detention pond. The controlled discharge from pond #1 is routed to the existing drainage ditch at the outfall from the site and combined with the runoff from subcatchments #10, #20 and #100 (off-site) at reach #102 which is the point of discharge for the entire site and the evaluation point at which the comparison is made to the existing peak flow rates representing total runoff to the existing detention pond in Northfield Green. Refer to the Summary Table for better comparison of the results of this study.

CALCULATIONS AND RESULTS

Results of the pre-development and post-development calculations are indicated in the Summary Table below. Complete printouts for stormwater calculations, modeling assumptions and HydroCAD reports are attached for the Pre-Development and Post-Development conditions for each of the 2 year, 10 year and 25 year rainfall amounts. All of the smaller subcatchment areas (SC#2-Sc#20; SC#3-SC#30; SC#4-SC#40; and SC#5-SC#50) result in equal or less runoff due to the significant reductions in drainage area for all design storms. One of the more significant study points is reach #102 since this point receives the majority of the runoff from the site. The total combined peak flow rates evaluated at the existing drainage ditch (reach #102) are 10.61 cfs, 26.66 cfs, 34.70 cfs for the three design storms respectively for the existing site conditions. The controlled runoff rates released to this ditch are reduced to the existing rates or less for each of the design storm events except for the two year storm which will result in a slight increase of only 0.80 cfs. Since all of the subcatchment areas each eventually flow to Fall Brook a short distance down stream from the site, this small increase associated with the two year storm is effectively offset by a corresponding reduction of -0.56 cfs (combined) from the smaller subcatchment areas. The runoff from this location drains through an undeveloped area directly into the drainage ditch and into the existing detention pond and will have minimal impacts associated with only the two year storm and will not increase or contribute to flooding or ponding. Since the ten year and twenty five year peak rates are significantly reduced in all subcatchment areas for the developed site, the net downstream impacts will remain basically unchanged or slightly improved as a result of the new storm drain system, detention ponds and controlled runoff from the development.

No significant adverse impacts are expected as a result of the slight increase produced by the two year storm since the existing drainage swales and stream channels are stable and more than adequate to receive the relatively small amounts of flow occurring during the two year storm. This slight increase occurs over an undevelopable parcel of land over which the applicant has already obtained a drainage easement. The major concern in this area is the potential for downstream flooding and significant ponding associated with the larger storm events to relieve the existing problem with historical flooding in the vicinity of Mona road and Fall Brook. Since stormwater runoff from the larger storms and the developed condition peak flow rates are significantly reduced to below existing rates for the 10 and 25 year storm we feel that the small increase occurring from the 2 year storm is not significant. Furthermore, the small increase can not reasonably be avoided by design, due to the nature and extent of the proposed storm drain and detention pond. Placing flow restrictions in the system small enough to completely control the two year rate would severely restrict the capacity of the drainage system to effectively pass the larger storms. Therefore, the applicant respectfully requests an allowance for an insignificant increase for the two year storm event.

SUMMARY TABLE						
PRE-DEVELOPMENT (cfs)				POST-DEVELOPMENT (cfs)		
Watershed (node)	2-year	10-year	25-year	2-year	10-year	25-year
Subcatchment #2 (#20-post)	0.84	2.58	3.51	0.50 (-0.34)	1.30 (- 1.28)	1.70 (- 1.81)
Subcatchment #3 (#30-post)	1.07	3.05	4.07	1.10 (+ 0.03)	2.90 (- 0.15)	3.81 (-0.26)
Subcatchment #4 (#40-post)	0.84	2.41	3.23	0.65 (- 0.19)	1.73 (- 0.68)	2.28 (- 0.95)
Subcatchment #5 (#50-post)	1.85	5.37	7.21	1.79 (- 0.06)	5.01 (- 0.36)	6.67 (- 0.54)
Subcatchment #1 (Pond #1-post)	6.02	17.25	23.10	<i>6.16 in</i> 3.99 out	<i>12.93 in</i> 5.72 out	<i>16.15 in</i> 6.20 out
Reach #102 COMBINED TOTAL	10.61	26.66	34.70	11.41 (+ 0.80)	26.20 (- 0.46)	33.19 (- 1.51)

STORMWATER QUALITY BEST MANAGEMENT PRACTICES

Refer to the attached Water Quality Treatment and BMP Table (Table #1) for stormwater treatment measures and BMP's for the proposed impervious surfaces and estimated total TSS removal efficiencies for the developed site. Based on our calculations we can achieve an overall areally weighted treatment factor of 25% TSS removals for treating the new impervious areas with a combination of vegetative swales, seeded buffers and detention pond calculated in series and in parallel in accordance with Section 5.4 of the *Stormwater Management for Maine, Best Management Practices* manual.

The proposed development meets the standards of the Maine Stormwater Management Law pursuant to 38 M.R.S.A. § 420-D.1, *Standards*, and Chapter 500.

SUMMARY AND CONCLUSION

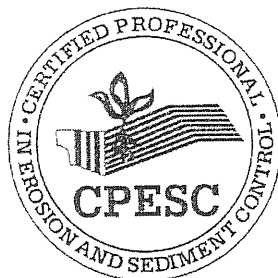
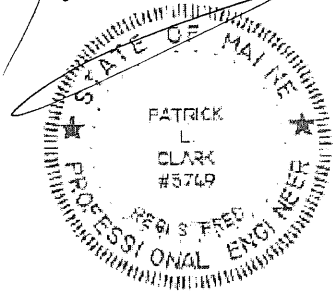
Based on the results of our calculations, it is our conclusion that the proposed detention pond and drainage improvements will provide adequate control of stormwater runoff from the site for storms up to and including the 25 year rainfall without producing significant adverse impacts to the site or downstream reaches. The Stormwater Best Management Practices (BMP's) utilized for the development will provide a Total suspended Solids (TSS) removal efficiency of 25%. We feel that the proposed drainage and erosion control measures, if properly constructed and maintained, will reduce runoff to adjacent properties and help improve existing drainage in the vicinity of the site without degradation of existing water quality. The applicant is requesting an allowance for an insignificant increase for the two year

storm due to the impracticality of further controlling the peak flow rate which would require unreasonable design changes.

TABLE 1 YALE COURT DEVELOPMENT STORMWATER QUALITY ANALYSIS								
IMPERVIOUS AREA	DESCRIPTION	BMP	HSG SOILS	BUFFER LENGTH (ft)	SLOPE (ft/ft)	% TSS BMP REMOVAL EFFICIENCY (%)	IMPERVIOUS AREA (ac)	NET BMP %TSS REMOVAL (%)
RA	Residential units	SB	D	25	0.100	10%	0.10	1.0%
		P1	D	-	-	10%		
RB	Residential Area	SB	D	25	0.100	10%	0.22	4.7%
		VS	-	-	-	25%		
		P1	D	-	-	10%		
RC	Residential Units	SB	D	25	0.100	10%	0.17	0.9%
PA	Roads, Parking	P1	D	-	-	10%	0.45	2.5%
PB	Roads, Parking	VS	-	-	-	25%	0.88	15.7%
		P1	D	-	-	10%		
PROJECT TOTALS							1.82	25%
KEY <u>Impervious Areas</u> P = Impervious areas, parking lot, community buildings, etc. R = Residential Units A, B, C = Treatment areas <u>BMP's</u> VS = Vegetated Swale SB = Seeded Buffer P = Det Pond		SAMPLE CALCULATIONS <u>Parallel Treatment - Impervious Area PA</u> Net BMP %TSS Removal = (seeded buffer %TSS removal) * (impervious area / total project impervious area) = (0.10) * ((0.45 ac) / (1.82 ac)) = 2.5% <u>Series Treatment - Impervious Area Rb</u> Net BMP %TSS Removal = [1 - ((1 - seeded buffer %TSS removal <i>see note 1</i>) * (1 - vegetative swale %TSS removal) * (1 - det pond %TSS removal))] * (impervious area / total project impervious area) = [1 - ((1 - 0.10) * (1 - 0.25) * (1 - 0.10))] * (0.22 ac / 1.82 ac) = 4.7%						
Notes: 1) All residential Units were assumed to have a 10% TSS treatment credit for lawn areas. This credit is associated with a worst case scenario of a 25' seeded buffer in Hydrologic Group 'D' Soils with 15-30% slopes.								

Prepared by:

Patrick L. Clark, PE



PART II

EROSION AND SEDIMENTATION CONTROL

The following plan for controlling sedimentation and erosion from this project is based upon sound conservation practices such as those outlined in the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices by the Cumberland County Soil and Water Conservation District, and the Maine Department of Environmental Protection, dated March, 1991 (as revised). Please refer to these sources and the Erosion Control Plan and Details included within the plan set.

A. INTRODUCTION

1. **General** – Wescott & Payson II is proposing to construct a 30 unit PRUD housing development. The project will include construction of new parking areas including and a stormwater collection and detention system.

The accompanying Site Plans and Stormwater Management Report describe in detail the project scope.

2. **Site Topography and Cover Complex** – The existing site includes approximately 10 acres which includes the individual house lots adjacent to the park. Slopes on the site area are between 2% and 10%. All areas are well vegetated with tree growth. The westerly portion of the site drains to an existing drainage ditch to an existing detention pond.
3. **Soils and Wetlands** - The soils on the site have been identified as Lyman – Tunbridge and Brayton. These soils are from Hydrologic Soils Group (HSG) type C/D, with small areas of (HSG) type D soils occurring in the wetland areas.

B. CONSTRUCTION CALENDAR

1. **Definitions** – The following definitions are terms commonly used throughout this report.

- a) Seasons - The following dates define the seasons as referred to herein:

<u>Seasons</u>	<u>Dates</u>
Winter	November 1st to March 15th
Mud-Season	March 16th to April 30th *
Spring	May 1st to June 14th *
Summer	June 15th to September 15th *
Fall	September 16th to October 30th

*Seasonal dates may vary according to weather. Any changes in these dates must be approved by the Engineer.

- b) Sensitive Areas - This erosion and sedimentation control plan is designed to protect all downstream channels from degradation. However, there are certain "sensitive areas" on or adjacent to the site which must be monitored during construction in order to prevent any adverse impacts. These areas are generally defined as follows:
 - (1) The existing drainage ditch at Northfield Green.
 - (2) Residential areas surrounding the site. Protection of the surrounding homes and properties from on-site activities adjacent to property lines will be limited to careful construction practices and ensuring that on-site erosion control measures are properly installed and maintained.
 - c) Erosion & Sedimentation Controls - are defined as the installation of silt fence, hay bales, drop inlet barriers, rip-rap, mulching, or erosion control matting or netting, and any other measures required herein.
 - d) Clearing - includes cutting and removing of over-story vegetative cover. It does not include grubbing. Limited clearing and other clearing restrictions may apply to areas where saving existing large trees may be desirable.
 - e) Grubbing - is the removal of grass, stumps, roots and scrub required to begin earthwork.
 - f) Interim Period - a period of time that an unvegetated area sits unworked, awaiting the next phase of work.
 - g) Earthwork - consists of the movement of soil by mechanical means including excavation, grading, shaping and general construction.
 - h) Temporary - as used herein shall refer to the use or placement of erosion or sedimentation controls, seeding or other measures intended to be either removed, replaced or followed with permanent measures.
 - i) Permanent or Final - as used herein shall refer to the use or placement of erosion or sedimentation controls, seeding or other measures which will remain after final project completion.
 - j) Engineer – as used herein shall mean a representative of Land Use Consultants, Inc. or and engineer designated by the City of Portland as the Construction Site Engineer.
2. **Schedule of Activities** – The following activities, erosion control measures, or other items are required for the construction of this project or require specific measures or

scheduling of activities to be conducted or restricted during the various construction seasons as herein defined above.

- a) Sensitive Areas - work proposed in the defined sensitive areas may be conducted all year, preferably during periods of dry weather, during the summer, fall and winter seasons, as defined herein. All work adjacent to or in areas which drain to, sensitive areas shall be protected with appropriate erosion controls to prevent erosion or sedimentation of the identified sensitive areas at all times during construction until the areas under construction are stable.
- b) Erosion & Sedimentation Controls Installation - erosion control installation may occur all year long, except that such measures shall be installed prior to commencement of disturbance activities related to each erosion control measure. However, to the extent practical, erosion control measures should be installed during Summer or Fall in advance of construction anticipated or scheduled in the winter and mud season. See Drawings and Details for locations and installation procedures.
- c) Clearing - clearing may occur all year long except during "mud season".
- d) Road and Parking Lot Construction - This construction may occur in the spring, summer and fall seasons. It may be allowed in the winter season, in which case the winter construction schedule must be followed (see Section D.1.).
- e) Pond Construction - all pond construction shall occur, when practicable, during the spring, summer or early fall season. All final grading, seeding and mulching must be completed by October 15th. Work after October 15th shall be subject to winter protection measures as defined herein.

C. EROSION CONTROL MEASURES

1. **General** – The construction of this project may require or incorporate the following measures or practices as needed or applicable. Such measures, where indicated on plans shall be implemented as shown or required herein. Additional measures not shown on plans may be required as specified herein or requested by the Engineer, as needed, in order to ensure the protection of resources or off-site properties.
 - a) Vegetative Buffers - have been used where practical to provide visual screening, improve erosion control and provide stormwater treatment. These buffers help filter runoff as it flows through and are most effective when the runoff through the buffer is shallow sheet flow. The contractor must take care in leaving the buffer strips in their natural state and assure that runoff does not channelize through the buffer to the extent possible. Skidder trails or equipment ruts shall be smoothed or regraded. Construction activities and equipment shall be restricted in areas to remain as buffers or not otherwise scheduled for construction.

- b) Straw Bales - shall be installed along the contours in the locations and as detailed on the plans. Straw bales may be required in addition to silt fencing or other measures in areas as shown on plans.
- c) Silt Fence - shall be installed along the contours in the locations and as detailed on the plans. Silt fence may be required in addition to straw bales or other measures in sensitive areas as shown on plans).
- d) Double Protection Straw Bale/Silt Fence - shall consist of silt fence reinforced with straw bales. It shall be installed along the contours in the locations and as detailed on the plans.
- e) Mulching - shall consist of spreading of straw mulch over bare or disturbed areas. It shall be applied at the rates described herein. It will be substituted by matting where necessary or as specified herein. Alternate mulch materials or methods such as hydro-seeding may be used only when approved by the Engineer.
- f) Matting - shall consist of straw, coconut or excelsior sandwiched between photodegradable netting. Matting may be substituted with sod where desired. **Netting over straw mulch may be substituted when approved.** (Except in swales.) Matting shall be used as follows:
 - (1) Where indicated on drawings.
 - (2) In the base of swales with greater than 5% pitch.
 - (3) On steep slopes where rilling may occur.
 - (4) In any sensitive areas subject to erosion or as indicated on plans.
 - (5) On any disturbed or newly graded slopes steeper than 25% (4.H: 1V) and located within 100 feet of a perennial or intermittent stream or other sensitive area provided that runoff from the area contributes directly to the stream or sensitive area.
 - (6) Where straw mulch has been determined to be ineffective based on observations made in the field or as directed by the Engineer.
- e) Construction Entrance - A crushed stone construction entrance will be installed wherever construction traffic will enter the public road system. The size, type and locations of these shall be as shown and detailed in the plan set.
- f) Rip-Rap - shall be used in swales, steep slopes, pond outlets, etc. as shown on plans to protect soils from excessive flow velocities. It shall be of the size and depths specified on the plans. A minimum rip-rap size of $D_{50} = 6$ in. shall be used if not otherwise indicated on plans.

- g) Inlet Protection - **all culvert inlets shall be protected** as noted on the rip-rap headwall detail. The rip-rap shall be the same size as that specified at the outlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- h) Outlet Protection - Rip-rap outlets (aprons or plunge pools) **shall be installed at all culvert outlets** as detailed on the plans to prevent scouring at the pipe outlet. The rip-rap shall be the same size as that specified at the inlet. A $D_{50} = 6$ in shall be used if not otherwise specified.
- i) Stone Check Dams - stone check dams shall be installed in existing and proposed swales or at culvert inlets as shown on the plans. These check dams serve to reduce flow velocities in swales thus helping to reduce rilling. Check dams shall be constructed of 2 in. to 3 in. stone.
- j) Dust Control – Contractor shall take necessary steps to prevent blowing and airborne movement of dust from exposed soil surfaces. Maintaining natural or temporary vegetation and or mulching shall be used where practical. Mechanical sweepers or washing of pavement shall be used where necessary to prevent and remove dust buildup on paved surfaces. All exposed soil surfaces shall be maintained to minimize dust by periodically moistening bare areas with adequate water to prevent dust. Calcium Chloride solution spray should be used in areas experiencing significant dust problems and to reduce frequency of watering. Repetitive treatment shall be applied as necessary to accomplish adequate dust control (refer to Section 17.0 in the “*Maine Erosion and Sediment control Handbook for Construction: Best Management practices*” manual).

D. EROSION CONTROL EXECUTION

1. **General Construction Phase** - the following general practices will be used to prevent erosion during construction of this project.

NOTE: Locations of silt fence/hay-bale barriers are shown for general purposes on drawings. Final locations should be modified based on actual field conditions and as site conditions warrant. Such field changes or modifications shall be approved by the Engineer.

- a) Following clearing only those areas under active construction shall be left in an untreated or unvegetated condition.
- b) Erosion Control Installation - prior to the start of construction, silt fence and/or haybales, erosion control mix berms, and stone check dams shall be installed around catch basins, at the toe of slopes and in areas as shown on Plans or as otherwise required to protect against any construction related erosion. Immediately following construction of culverts and swales, stone check dams shall be installed, as shown on the Plans.

- c) Topsoil will be stockpiled when necessary in areas which have minimum potential for erosion and will be kept as far as possible from existing drainage areas and adjacent residential properties. All stockpiles expected to remain longer than 15 days shall be:
- (1) Treated with mulch, and,
 - (2) Stockpiles expected to remain longer than 3 days shall be encircled with haybales or silt fence at the downgradient toe of the pile.
- d) Temporary Seeding and Mulching Schedule - During construction, all disturbed areas shall adhere to the schedule specified below: (Note: refer to Section D.2 for permanent seeding and mulching requirements.)
- (1) The contractor shall be responsible for monitoring daily weather reports. Contractor shall adjust the work schedule in anticipation of rains and shall stabilize the site as required.

TEMPORARY SEEDING AND MULCHING SCHEDULE

Work Area	Expected Interim Period (Calendar Days)	No Treatment	Temporary Mulching (1)	Seeding (2) And Mulching
Sensitive Area (3)	<7	X		
	7-30		X	
	>30			X
Non Sensitive Area	<30	X		
	30-45		X	
	.45			X

Date	Seed	Rates lbs/1,000 s.f.
4/1 to 7/1	Annual Rye Grass	0.90
7/1 to 8/15	Sudan Grass	0.90
8/15 to 10/15	Winter Rye	2.00
10/16 to 3/31	Annual Rye Grass	1.8

- (1) Mulching shall be applied at a rate of 90 lbs/1,000 sq. ft. (180 lbs/1000 sq. ft. for winter construction).
- (2) Temporary seeding rates shall be as follows:
- (3) The time limit for mulching in sensitive areas may be overridden by the most current weather forecast. All exposed soils in sensitive areas shall be mulched prior to every anticipated storm event.

- e) Grading will be held to a maximum 3:1 slope where practical. Steeper slopes may be used in ledge cut. All slopes shall be stabilized with permanent seeding and mulching immediately after final grading is complete. If final grading will not be completed immediately, refer to the Temporary Seeding and Mulching Schedule. It

is understood that immediately means within 5 days of the completion of work. See seeding specifications for permanent seeding requirements.

- f) Culverts will be protected with stone rip-rap headwalls ($D_{50} = 6$ in. unless otherwise specified) at inlets and outlets as shown on Plans.
- g) Construction traffic - will be directed over the construction entrances and proposed roads. Any areas subject to rutting will be stabilized immediately. The crushed stone construction entrances shall be maintained by the addition of more crushed stone as needed as the voids become filled. The public roadway shall be swept daily and mud should be tracked onto it.
- h) Erosion Controls for Detention Pond - the following practices and schedule shall be adhered to while constructing ponds and/or basins:
 - (1) The construction of the ponds or basins shall only take place as described in Section B – Construction Calendar of this report.
 - (2) The construction of the ponds or basins shall commence during a period of minimal flow with a dry short-range weather forecast. Once under construction, the pond shall be completed within 30 days.
 - (3) If the construction of the pond should be hampered by rain and excessive runoff all of the externally draining areas of the ponds must be stabilized by mulching and tacking with a photodegradable netting. Internal slopes of the detention basin shall be seeded immediately after shaping with perennial rye and stabilized with mulch to prevent soil loss from the basin itself. If rilling occurs matting shall be applied in such areas. Erosion control matting shall be used where indicated.
 - (4) The sequence for the construction of the ponds and sedimentation basins shall be as follows:
 - i Clear area required for pond or basin construction.
 - ii Install erosion controls.
 - iii Commence with grubbing and earthwork.
 - iv The contractor shall plan the excavation so the proposed pond or basin captures any runoff, thereby, serving as a temporary sediment basin throughout the construction.
 - v The contractor shall monitor and inspect the operation and function of the sedimentation ponds on a weekly basis to ensure proper working conditions. The contractor shall inspect during and immediately following significant

rainfall (>1.0 inch in a 24 hour period) in addition to scheduled maintenance inspections. Any evidence which suggests that the outlet is clogged or pond level does not significantly drawdown within 24 hours after rainfall event requires immediate attention or emergency measures. In the event these conditions are encountered or if the pond level rises to within one foot of top of berm dewatering shall be required followed by replacement of all filters and filter materials.

vi Should dewatering be necessary during construction, the following methods may be required:

01. The Engineer shall be contacted immediately.

02. A temporary level lip spreader shall be constructed where a mildly sloping well-vegetated buffer area exists, a minimum of 100 ft. from the nearest drainageway or resource. This area shall serve as a buffer area to filter any sediment that may be suspended in the pond water. The Engineer shall approve the location of the level lip spreader prior to construction.

03. Fifty feet downgradient and parallel to the level lip spreader, a row of triple protection silt fence and hay bales and erosion control mix (or sand) shall be installed to further filter the water.

04. The pond water shall be pumped into a stone lined plunge pool with a channel directing the runoff to the aforementioned level spreader. The pump shall be operated at such a rate as to not channelize the flow out of the spreader.

05. During pumping, the downstream runoff shall be periodically inspected by the contractor to check for cloudy appearance. Should cloudiness still be prevalent in the water, the contractor shall stop pumping and contact the Engineer.

vii During excavation, topsoil, silts and clays that may be later used for the final grading or pond lining shall be stockpiled upstream from the pond. These stockpiles shall be mulched immediately and encircled with hay bales at the toe of the pile. Where possible suitable stripped loam free of rocks, roots and other objectionable materials be placed directly on finished graded areas but shall be approved by Engineer prior to placement.

viii Should pond construction be hampered by rain, refer to the Emergency Protection Procedures (Section D.1.1.) of this report for corrective measures.

ix Loam, fertilize, seed and mulch the disturbed areas the same day final grades are reached.

- i) Culvert Installation - The following methods shall be used to install culverts.
- (1) The construction shall only take place during an expected dry period.
 - (2) Install silt fence and hay bales and other measures as shown on plans.
 - (3) For installations in wet conditions a temporary diversion shall be constructed to divert the flow around the construction area (refer to: "*Maine Erosion and Sediment Control Handbook for Construction: Best Management practices*" manual, Sections 42.0 43.0 and 44.0), unless waived by the Engineer.
 - (4) The pipe bedding area shall be excavated, bedding put in place, and pipe installed with rip-rap aprons on both ends. This work shall be completed as expeditiously as possible.
 - (5) Remove diversion (if installed).
 - (6) Place remaining fill with rip-rap headwalls at pipe inlets and outlets. Geotextile fabric shall not be used as bedding for rip-rap in stream installations.
 - (7) All disturbed areas to be vegetated shall be loamed, fertilized, seeded and covered with matting within 7 days of completion of earthwork.
- j) Winter Construction - For any work proposed during the winter season, the contractor shall adhere to the following practices:
- (1) A plan and schedule of activities shall be submitted to the Engineer and approved prior to any work being done.
 - (2) The interim period for any exposed area shall be limited to 7 calendar days.
 - (3) The contractor may not expose more than 3 acres at any one time.
 - (4) Where required and approved by Engineer, installation of silt fence may be modified from detail on plans to substitute 6 inches of clean gravel over the bottom of the silt fence in lieu of trenching and backfilling fabric to allow for installation in ledge areas or significant tree roots.
 - (5) Mulching and seeding rates shall adhere to the Temporary Seeding and Mulching Schedule, (Section D.1.d.). *Note that all mulching rates shall be doubled as shown in Note 1, (Section D.1.d.1). And, shall follow the sensitive area schedule.*
- k) Monitoring Schedule - The contractor shall be responsible for installing, monitoring, maintaining, repairing, replacing and/or removing all of the erosion and

sedimentation controls as specified herein or directed by the Engineer, or appointing a qualified subcontractor to do so.

- (1) Maintenance measures will be performed as needed during the entire construction cycle. After each rainfall, a visual inspection will be made by the Contractor to insure their continuing function as designed.
 - i Stone check dams, hay bale barriers, erosion control mix berms, silt fence and mulch shall be inspected and repaired once a week or immediately following any significant rainfall. Sediment trapped behind these barriers shall be removed when it reaches a depth of 6 inches (or 1/2 the height of the dam for check dams) and redistributed to areas undergoing final grading.
 - ii Sedimentation basins and perforated riser pipes shall be visually inspected once a week or immediately after each significant rainfall, and cleaned and repaired as needed. Sediment trapped at the bottom of the basins shall be removed once it attains a depth of 12 inches unless otherwise specified. The sediment removed shall be transported to an upslope area undergoing final grading, or removed from the site. The sediment and the removal thereof shall be handled in a manner which does not promote erosion or sedimentation.
- l) Emergency Protection Procedures - Should construction be hampered by excessive runoff and sediment entering downstream channels, then the contractor shall employ the following procedures to remediate the situation. Note that the contractor is not limited to these measures and may propose other measures based upon experience, subject to the approval and/or direction of the Engineer.
 - a) Problem: Rilling:
Solution:
 - (1) Fill rills with rip-rap.
 - (2) Mulch and or use matting.
 - (3) Install sod strips across flow path in fairways or roughs.
 - (4) Place double protection hay bales and silt fence along the contours.
 - (5) Divert upstream runoff from exposed area into stable area.
 - b) Problem: Erosion in channels:
Solution:
 - (1) Rip-rap channel with channel with check dams.
 - (2) Place matting in swale.
 - (3) Re-grade channel, revegetate and install stone check dams.
 - c) Problem: Siltation in stream or river:
Solution:
 - (1) Walk up-stream to determine where sediment is entering the channel.

- (2) Take appropriate corrective measures to prevent sediment from entering stream (i.e. mulching, matting, silt fence, etc.).

2. Permanent Seeding and Mulching Plan - The following general practices will be used to re-establish final vegetation.

- a) Loaming - A minimum of 4 inches of loam will be spread over disturbed areas and graded to a uniform depth and a natural appearance. All loam shall be as specified or approved by the Engineer.
- b) Final Seeding: - All final seeding shall be completed immediately (within 7 days) following final grading. All final fertilizing and seeding shall adhere to the specifications unless otherwise approved by the Engineer.
- c) Mulching: - Any area shall be mulched after it has been seeded unless deemed unnecessary by the Engineer. Mulching shall consist of hay mulch, hydro-mulch or any suitable substitute deemed acceptable by the Engineer.
 - (1) Straw mulch shall be applied at the rate of 2 tons per acre (90 lbs. or 2 bales/1,000 sq. ft.).
 - (2) Hydro-mulch shall consist of a mixture of asphalt, wood fiber or paper fiber and water sprayed over a seeded area. Hydro-mulch shall not be used during the fall, winter or mud season.
 - (3) Mulching shall be monitored according to the monitoring schedule (Section D.1.k.). Should mulching prove to be ineffective, then netting or matting shall be used in its place.
- d) Dormant Seeding: - Construction shall be planned to eliminate the need for seeding during the fall, winter or mud season. Should seeding be necessary between these dates, the following procedure shall be followed:
 - (1) Only unfrozen loam shall be used.
 - (2) Loaming, seeding and mulching will not be done over snow cover. If snow exists, it must be removed prior to placement of seed.
 - (3) No permanent seeding will be done during fall, winter or mud season unless specifically approved by the Engineer. If attempted, the normal seed application rate shall be doubled. Reseeding in spring will be required in all areas with insufficient growth.
 - (4) Where temporary seeding is required, the rates specified in the Temporary Seeding and Mulching Schedule (Section D.1.d.) shall be adhered to.

- (5) Fertilizing, seeding and mulching shall be done on loam the same day the loam is spread. Winter mulch rates shall apply as specified in the temporary seeding and mulching schedule (Section D.1.d.).
- (6) On slopes greater than 3:1, straw matting or excelsior matting will be substituted for mulch, except that biodegradable netting over mulch may be used where approved by the Engineer.
- e) Inspection: - Following final seeding, the site will be inspected every 30 days until 80% cover has been established. Reseeding and mulching shall be carried in areas of inadequate catch until an adequate catch is established in all seeded areas, as agreed upon by the Owner and Engineer. The Contractor may be required to re-seed during the following spring following winter or fall construction and seeding in order to provide 80% vegetative cover as required for acceptance by Owner.

3. Erosion Control Removal – Removal of temporary erosion control measures shall be the responsibility of the contractor. All erosion controls shall remain in place and maintained by the contractor until all related construction is complete and the area is stable.

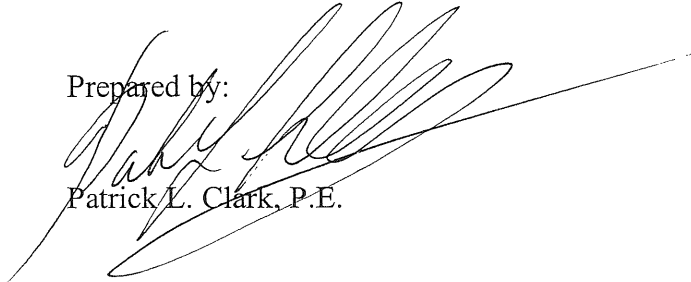
- a) An area is considered stable if:
 - (1) An 80% cover of grass has been established.
 - (2) It is paved.
- b) Haybales and silt fence shall be removed once the areas upstream are stable. The haybales and silt fence shall be disposed of legally and properly off-site. All sediment trapped behind these controls shall be:
 - (1) Distributed to an area undergoing final grading.
 - (2) Graded in an aesthetic manner to conform to the topography, and fertilized, seeded and mulched in accordance with the rates previously stated.
- c) The sediment trapped behind/around/in stone check dams, haybale barriers and sedimentation/detention basins, shall be removed and transported off-site, or to an upslope area undergoing final grading. The sediment trapped by these devices shall not be regraded locally since they exist in drainage ways.
- d) The rip-rap and stone from the check dams and risers may be either:
 - (1) Removed, or
 - (2) Regraded in an aesthetic manner that does not inhibit flow or create erosion.

- e) Once all the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be loamed (if necessary), fertilized, seeded and mulched in accordance with the rates previously stated.

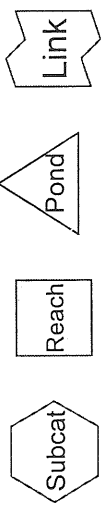
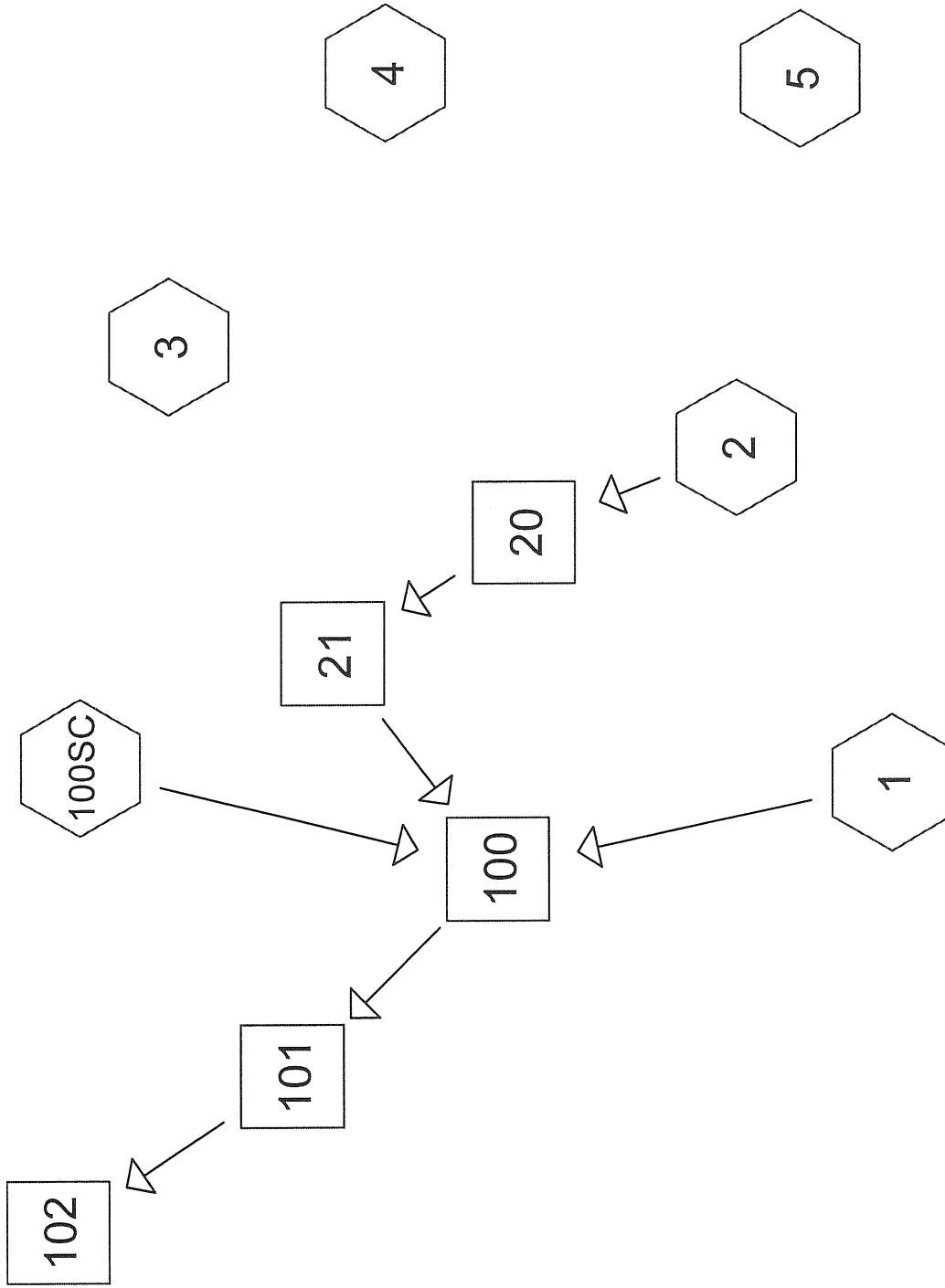
E. CONCLUSION

- 1. The construction of Yale Court, if constructed in conformance with the project plans and the Erosion and Sedimentation Control Report, should not result in any significant erosion or sedimentation either on or off the site.

Prepared by:


Patrick L. Clark, P.E.





Drainage Diagram for 4080-PRE-2
 Prepared by Land Use Consultants, Inc 10/4/02
 HydroCAD® 6.00 s/n 001672 © 1986-2001 Applied Microcomputer Systems

Subcatchment 1: SC1

Runoff = 6.02 cfs @ 12.07 hrs, Volume= 0.289 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
5.750	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 2: SC2

Runoff = 0.84 cfs @ 12.07 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.890	77	Woods, Good, HSG D
0.040	30	Woods, Good, HSG A
0.930	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
0.6	120	0.0500	3.4		Shallow Concentrated Flow, 2B-R20 Grassed Waterway Kv= 15.0 fps
13.6	250	Total			

Subcatchment 3: SC3

Runoff = 1.07 cfs @ 12.03 hrs, Volume= 0.046 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0800	0.1		Sheet Flow, 3A-3B Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	100	0.0300	0.9		Shallow Concentrated Flow, 3B-3C Woodland Kv= 5.0 fps
0.7	150	0.0550	3.5		Shallow Concentrated Flow, 3C-3D Grassed Waterway Kv= 15.0 fps
10.5	300	Total			

Subcatchment 4: SC4

Runoff = 0.84 cfs @ 12.07 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 4A-4B Woods: Light underbrush n= 0.400 P2= 2.60"
4.7	200	0.0200	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
14.2	370	Total			

Subcatchment 5: SC5

Runoff = 1.85 cfs @ 12.10 hrs, Volume= 0.101 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.7	170	0.0120	1.6		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.0	150	0.0270	2.5		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.2	420	Total			

Subcatchment 100SC: SC10

Runoff = 9.43 cfs @ 11.90 hrs, Volume= 0.294 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 20: 20

Inflow = 0.84 cfs @ 12.07 hrs, Volume= 0.041 af
Outflow = 0.80 cfs @ 12.15 hrs, Volume= 0.040 af, Atten= 5%, Lag= 4.7 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.1 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.0 min

Peak Depth= 0.12'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 0.80 cfs @ 12.15 hrs, Volume= 0.040 af
Outflow = 0.78 cfs @ 12.21 hrs, Volume= 0.040 af, Atten= 3%, Lag= 3.9 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.3 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 4.8 min

Peak Depth= 0.13'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 11.52 cfs @ 11.90 hrs, Volume= 0.623 af
 Outflow = 10.80 cfs @ 11.94 hrs, Volume= 0.621 af, Atten= 6%, Lag= 2.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 1.4 min
 Avg. Velocity = 0.7 fps, Avg. Travel Time= 3.6 min

Peak Depth= 0.65'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 10.80 cfs @ 11.94 hrs, Volume= 0.621 af
 Outflow = 10.65 cfs @ 11.96 hrs, Volume= 0.619 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 0.8 min
 Avg. Velocity = 0.7 fps, Avg. Travel Time= 1.9 min

Peak Depth= 0.65'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 10.65 cfs @ 11.96 hrs, Volume= 0.619 af
 Outflow = 10.61 cfs @ 11.97 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.3 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.5 min

Peak Depth= 1.14'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Subcatchment 1: SC1

Runoff = 17.25 cfs @ 12.06 hrs, Volume= 0.845 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
5.750	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 2: SC2

Runoff = 2.58 cfs @ 12.06 hrs, Volume= 0.126 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.890	77	Woods, Good, HSG D
0.040	30	Woods, Good, HSG A
0.930	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
0.6	120	0.0500	3.4		Shallow Concentrated Flow, 2B-R20 Grassed Waterway Kv= 15.0 fps
13.6	250	Total			

Subcatchment 3: SC3

Runoff = 3.05 cfs @ 12.03 hrs, Volume= 0.134 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0800	0.1		Sheet Flow, 3A-3B Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	100	0.0300	0.9		Shallow Concentrated Flow, 3B-3C Woodland Kv= 5.0 fps
0.7	150	0.0550	3.5		Shallow Concentrated Flow, 3C-3D Grassed Waterway Kv= 15.0 fps
10.5	300	Total			

Subcatchment 4: SC4

Runoff = 2.41 cfs @ 12.07 hrs, Volume= 0.120 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 4A-4B Woods: Light underbrush n= 0.400 P2= 2.60"
4.7	200	0.0200	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
14.2	370	Total			

Subcatchment 5: SC5

Runoff = 5.37 cfs @ 12.10 hrs, Volume= 0.295 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.7	170	0.0120	1.6		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.0	150	0.0270	2.5		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.2	420	Total			

Subcatchment 100SC: SC10

Runoff = 20.00 cfs @ 11.90 hrs, Volume= 0.665 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 20: 20

Inflow = 2.58 cfs @ 12.06 hrs, Volume= 0.126 af
Outflow = 2.53 cfs @ 12.11 hrs, Volume= 0.125 af, Atten= 2%, Lag= 3.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.5 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 5.2 min

Peak Depth= 0.20'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 2.53 cfs @ 12.11 hrs, Volume= 0.125 af
Outflow = 2.49 cfs @ 12.16 hrs, Volume= 0.124 af, Atten= 2%, Lag= 2.8 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.9 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.7 fps, Avg. Travel Time= 4.1 min

Peak Depth= 0.24'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 28.11 cfs @ 11.90 hrs, Volume= 1.634 af
 Outflow = 26.98 cfs @ 11.93 hrs, Volume= 1.630 af, Atten= 4%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 2.6 min

Peak Depth= 0.97'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 26.98 cfs @ 11.93 hrs, Volume= 1.630 af
 Outflow = 26.76 cfs @ 11.95 hrs, Volume= 1.627 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 1.4 min

Peak Depth= 0.96'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 26.76 cfs @ 11.95 hrs, Volume= 1.627 af
 Outflow = 26.66 cfs @ 11.96 hrs, Volume= 1.626 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.4 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.98'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Subcatchment 1: SC1

Runoff = 23.10 cfs @ 12.06 hrs, Volume= 1.148 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
5.750	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 2: SC2

Runoff = 3.51 cfs @ 12.06 hrs, Volume= 0.173 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.890	77	Woods, Good, HSG D
0.040	30	Woods, Good, HSG A
0.930	75	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
0.6	120	0.0500	3.4		Shallow Concentrated Flow, 2B-R20 Grassed Waterway Kv= 15.0 fps
13.6	250	Total			

Subcatchment 3: SC3

Runoff = 4.07 cfs @ 12.02 hrs, Volume= 0.182 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.910	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0800	0.1		Sheet Flow, 3A-3B Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	100	0.0300	0.9		Shallow Concentrated Flow, 3B-3C Woodland Kv= 5.0 fps
0.7	150	0.0550	3.5		Shallow Concentrated Flow, 3C-3D Grassed Waterway Kv= 15.0 fps
10.5	300	Total			

Subcatchment 4: SC4

Runoff = 3.23 cfs @ 12.06 hrs, Volume= 0.164 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.820	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 4A-4B Woods: Light underbrush n= 0.400 P2= 2.60"
4.7	200	0.0200	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
14.2	370	Total			

Subcatchment 5: SC5

Runoff = 7.21 cfs @ 12.10 hrs, Volume= 0.400 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
2.010	77	Woods, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.7	170	0.0120	1.6		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.0	150	0.0270	2.5		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.2	420	Total			

Subcatchment 100SC: SC100

Runoff = 25.03 cfs @ 11.90 hrs, Volume= 0.847 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 20: 20

Inflow = 3.51 cfs @ 12.06 hrs, Volume= 0.173 af
Outflow = 3.45 cfs @ 12.11 hrs, Volume= 0.172 af, Atten= 2%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.7 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 5.0 min

Peak Depth= 0.23'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 3.45 cfs @ 12.11 hrs, Volume= 0.172 af
Outflow = 3.40 cfs @ 12.15 hrs, Volume= 0.171 af, Atten= 1%, Lag= 2.5 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.0 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.8 fps, Avg. Travel Time= 4.0 min

Peak Depth= 0.28'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 36.49 cfs @ 11.90 hrs, Volume= 2.166 af
 Outflow = 35.09 cfs @ 11.93 hrs, Volume= 2.160 af, Atten= 4%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 2.4 min

Peak Depth= 1.09'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 35.09 cfs @ 11.93 hrs, Volume= 2.160 af
 Outflow = 34.81 cfs @ 11.95 hrs, Volume= 2.157 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 1.3 min

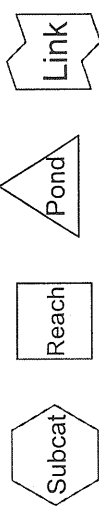
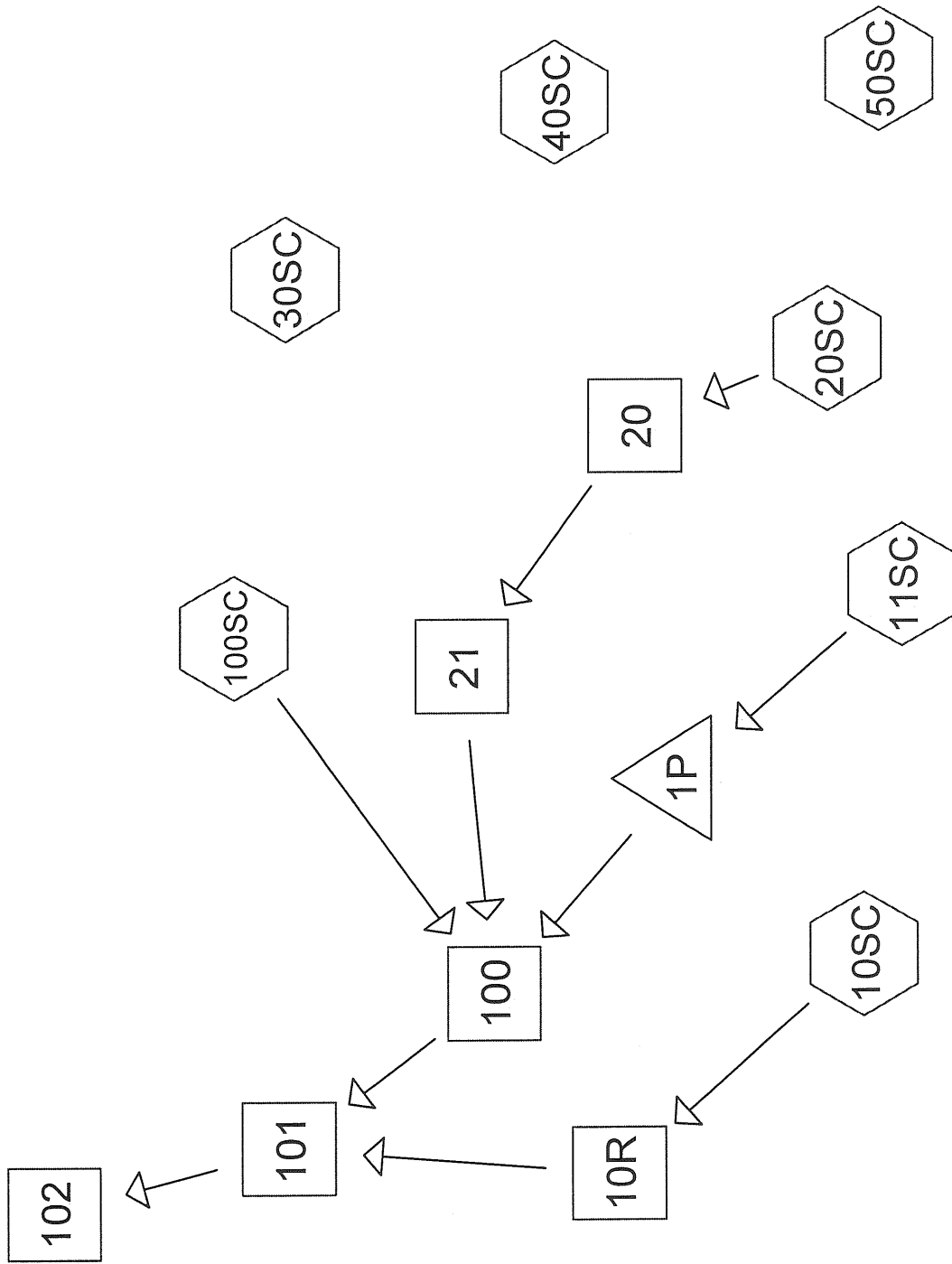
Peak Depth= 1.08'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 34.81 cfs @ 11.95 hrs, Volume= 2.157 af
 Outflow = 34.70 cfs @ 11.96 hrs, Volume= 2.156 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.6 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.3 min

Peak Depth= 2.47'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/



Drainage Diagram for 4080-POST-2
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Type II 24-hr Rainfall=2.60"

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10/1/02**Subcatchment 10SC: SC10**

Runoff = 5.95 cfs @ 12.06 hrs, Volume= 0.290 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
2.460	87	1/4 acre lots, 38% imp, HSG D
0.240	80	>75% Grass cover, Good, HSG D
0.940	77	Woods, Good, HSG D
0.040	98	Paved parking & roofs
3.680	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100 Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 11SC: SC11

Runoff = 6.16 cfs @ 12.14 hrs, Volume= 0.393 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.630	87	1/4 acre lots, 38% imp, HSG D
1.580	80	>75% Grass cover, Good, HSG D
1.560	98	Paved parking & roofs
3.770	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	70	0.0100	0.1		Sheet Flow, 11A-11B Grass: Dense n= 0.240 P2= 2.60"
1.3	100	0.0200	1.2		Sheet Flow, 11B-11C Smooth surfaces n= 0.011 P2= 2.60"
3.7					Direct Entry, PIPE FLOW-2 FPS-450 FT
1.1	150	0.0250	2.4		Shallow Concentrated Flow, 11D-P1 Grassed Waterway Kv= 15.0 fps
21.8	320	Total			

Subcatchment 20SC: SC20

Runoff = 0.50 cfs @ 12.06 hrs, Volume= 0.023 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.230	77	Woods, Good, HSG D
0.120	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.380	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
13.0	130	Total			

Subcatchment 30SC: SC30

Runoff = 1.10 cfs @ 11.99 hrs, Volume= 0.041 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.390	77	Woods, Good, HSG D
0.280	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
0.710	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0600	0.1		Sheet Flow, 30A-30B Grass: Dense n= 0.240 P2= 2.60"
0.6	50	0.0800	1.4		Shallow Concentrated Flow, 30B-30C Woodland Kv= 5.0 fps
0.5	90	0.0400	3.0		Shallow Concentrated Flow, 30C-30D Grassed Waterway Kv= 15.0 fps
7.0	190	Total			

Subcatchment 40SC: SC40

Runoff = 0.65 cfs @ 12.04 hrs, Volume= 0.028 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0500	0.1		Sheet Flow, 40A-40B
					Grass: Dense n= 0.240 P2= 2.60"
4.0	180	0.0220	0.7		Shallow Concentrated Flow, 4B-4C
					Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D
					Grassed Waterway Kv= 15.0 fps
11.0	350	Total			

Subcatchment 50SC: SC50

Runoff = 1.79 cfs @ 12.10 hrs, Volume= 0.097 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
1.620	77	Woods, Good, HSG D
0.140	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
1.800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B
					Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C
					Woodland Kv= 5.0 fps
1.4	150	0.0150	1.8		Shallow Concentrated Flow, 5C-5D
					Grassed Waterway Kv= 15.0 fps
1.2	150	0.0200	2.1		Shallow Concentrated Flow, 5D-5E
					Grassed Waterway Kv= 15.0 fps
17.1	400	Total			

Subcatchment 100SC: SC10

Runoff = 9.43 cfs @ 11.90 hrs, Volume= 0.294 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=2.60"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 10R: EXISTING DITCH

Inflow = 5.95 cfs @ 12.06 hrs, Volume= 0.290 af
Outflow = 5.59 cfs @ 12.15 hrs, Volume= 0.287 af, Atten= 6%, Lag= 5.7 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.5 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 8.1 min

Peak Depth= 0.48'
Capacity at bank full= 440.49 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/'
Side Slope Z-value= 10.0 '/'

Reach 20: 20

Inflow = 0.50 cfs @ 12.06 hrs, Volume= 0.023 af
Outflow = 0.47 cfs @ 12.15 hrs, Volume= 0.023 af, Atten= 6%, Lag= 5.5 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.9 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.4 fps, Avg. Travel Time= 7.8 min

Peak Depth= 0.09'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 0.47 cfs @ 12.15 hrs, Volume= 0.023 af
Outflow = 0.45 cfs @ 12.22 hrs, Volume= 0.023 af, Atten= 4%, Lag= 4.5 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.1 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.3 min

Peak Depth= 0.10'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 10.75 cfs @ 11.90 hrs, Volume= 0.709 af
 Outflow = 10.04 cfs @ 11.94 hrs, Volume= 0.707 af, Atten= 7%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.7 fps, Min. Travel Time= 1.5 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 3.3 min

Peak Depth= 0.63'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 11.59 cfs @ 11.94 hrs, Volume= 0.993 af
 Outflow = 11.44 cfs @ 11.96 hrs, Volume= 0.991 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.8 fps, Min. Travel Time= 0.8 min
 Avg. Velocity = 0.8 fps, Avg. Travel Time= 1.6 min

Peak Depth= 0.67'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 11.44 cfs @ 11.96 hrs, Volume= 0.991 af
 Outflow = 11.41 cfs @ 11.97 hrs, Volume= 0.991 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.4 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.19'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Pond 1P: POND 1

Inflow = 6.16 cfs @ 12.14 hrs, Volume= 0.393 af
 Outflow = 3.99 cfs @ 12.31 hrs, Volume= 0.392 af, Atten= 35%, Lag= 10.2 min
 Primary = 3.99 cfs @ 12.31 hrs, Volume= 0.392 af

Routing by Stor-Ind method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs

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Type II 24-hr Rainfall=2.60"

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Peak Elev= 85.09' Storage= 2,937 cf

Plug-Flow detention time= 7.2 min calculated for 0.392 af (100% of inflow)

Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.50	10	0	0
83.00	270	70	70
84.00	1,250	760	830
85.00	2,400	1,825	2,655
86.00	3,725	3,063	5,718
87.00	5,350	4,538	10,255
88.00	8,300	6,825	17,080
89.00	10,000	9,150	26,230

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	82.50'	12.0" x 20.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 82.40' S= 0.0050 ' / ' n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 13.96 cfs @ 12.05 hrs, Volume= 0.708 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
2.460	87	1/4 acre lots, 38% imp, HSG D
0.240	80	>75% Grass cover, Good, HSG D
0.940	77	Woods, Good, HSG D
0.040	98	Paved parking & roofs
3.680	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B
					Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C
					Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D
					Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100
					Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 11SC: SC11

Runoff = 12.93 cfs @ 12.14 hrs, Volume= 0.850 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.630	87	1/4 acre lots, 38% imp, HSG D
1.580	80	>75% Grass cover, Good, HSG D
1.560	98	Paved parking & roofs
3.770	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	70	0.0100	0.1		Sheet Flow, 11A-11B
					Grass: Dense n= 0.240 P2= 2.60"
1.3	100	0.0200	1.2		Sheet Flow, 11B-11C
					Smooth surfaces n= 0.011 P2= 2.60"
3.7					Direct Entry, PIPE FLOW-2 FPS-450 FT
1.1	150	0.0250	2.4		Shallow Concentrated Flow, 11D-P1
					Grassed Waterway Kv= 15.0 fps
21.8	320	Total			

Subcatchment 20SC: SC20

Runoff = 1.30 cfs @ 12.05 hrs, Volume= 0.063 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.230	77	Woods, Good, HSG D
0.120	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.380	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B Woodland Kv= 5.0 fps
13.0	130	Total			

Subcatchment 30SC: SC30

Runoff = 2.90 cfs @ 11.99 hrs, Volume= 0.114 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.390	77	Woods, Good, HSG D
0.280	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
0.710	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0600	0.1		Sheet Flow, 30A-30B Grass: Dense n= 0.240 P2= 2.60"
0.6	50	0.0800	1.4		Shallow Concentrated Flow, 30B-30C Woodland Kv= 5.0 fps
0.5	90	0.0400	3.0		Shallow Concentrated Flow, 30C-30D Grassed Waterway Kv= 15.0 fps
7.0	190	Total			

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Type II 24-hr Rainfall=4.50"

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Subcatchment 40SC: SC40

Runoff = 1.73 cfs @ 12.03 hrs, Volume= 0.078 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0500	0.1		Sheet Flow, 40A-40B
					Grass: Dense n= 0.240 P2= 2.60"
4.0	180	0.0220	0.7		Shallow Concentrated Flow, 4B-4C
					Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D
					Grassed Waterway Kv= 15.0 fps
11.0	350	Total			

Subcatchment 50SC: SC50

Runoff = 5.01 cfs @ 12.10 hrs, Volume= 0.275 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
1.620	77	Woods, Good, HSG D
0.140	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
1.800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B
					Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C
					Woodland Kv= 5.0 fps
1.4	150	0.0150	1.8		Shallow Concentrated Flow, 5C-5D
					Grassed Waterway Kv= 15.0 fps
1.2	150	0.0200	2.1		Shallow Concentrated Flow, 5D-5E
					Grassed Waterway Kv= 15.0 fps
17.1	400	Total			

Subcatchment 100SC: SC10

Runoff = 20.00 cfs @ 11.90 hrs, Volume= 0.665 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=4.50"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 10R: EXISTING DITCH

Inflow = 13.96 cfs @ 12.05 hrs, Volume= 0.708 af
Outflow = 13.40 cfs @ 12.13 hrs, Volume= 0.702 af, Atten= 4%, Lag= 4.6 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.8 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.8 fps, Avg. Travel Time= 6.5 min

Peak Depth= 0.72'
Capacity at bank full= 440.49 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/'
Side Slope Z-value= 10.0 '/'

Reach 20: 20

Inflow = 1.30 cfs @ 12.05 hrs, Volume= 0.063 af
Outflow = 1.25 cfs @ 12.12 hrs, Volume= 0.063 af, Atten= 3%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.2 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.4 fps, Avg. Travel Time= 6.8 min

Peak Depth= 0.14'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/'

Reach 21: 21

Inflow = 1.25 cfs @ 12.12 hrs, Volume= 0.063 af
Outflow = 1.23 cfs @ 12.17 hrs, Volume= 0.062 af, Atten= 2%, Lag= 3.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.5 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 5.5 min

Peak Depth= 0.17'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/'
Side Slope Z-value= 10.0 '/'

Reach 100: 100-EXISTING SWALE

Inflow = 22.79 cfs @ 11.90 hrs, Volume= 1.576 af
 Outflow = 21.75 cfs @ 11.93 hrs, Volume= 1.572 af, Atten= 5%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.1 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 1.0 fps, Avg. Travel Time= 2.5 min

Peak Depth= 0.88'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 26.54 cfs @ 11.93 hrs, Volume= 2.274 af
 Outflow = 26.30 cfs @ 11.95 hrs, Volume= 2.271 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 1.2 min

Peak Depth= 0.96'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 26.30 cfs @ 11.95 hrs, Volume= 2.271 af
 Outflow = 26.20 cfs @ 11.96 hrs, Volume= 2.270 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.4 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.3 min

Peak Depth= 1.95'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Pond 1P: POND 1

Inflow = 12.93 cfs @ 12.14 hrs, Volume= 0.850 af
 Outflow = 5.72 cfs @ 12.40 hrs, Volume= 0.849 af, Atten= 56%, Lag= 15.4 min
 Primary = 5.72 cfs @ 12.40 hrs, Volume= 0.849 af

Routing by Stor-Ind method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs

4080-POST-10

Type II 24-hr Rainfall=4.50"

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10/1/02

Peak Elev= 86.87' Storage= 9,675 cf

Plug-Flow detention time= 14.6 min calculated for 0.847 af (100% of inflow)

Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.50	10	0	0
83.00	270	70	70
84.00	1,250	760	830
85.00	2,400	1,825	2,655
86.00	3,725	3,063	5,718
87.00	5,350	4,538	10,255
88.00	8,300	6,825	17,080
89.00	10,000	9,150	26,230

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	82.50'	12.0" x 20.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 82.40' S= 0.0050 '/' n= 0.025 Cc= 0.900

Subcatchment 10SC: SC10

Runoff = 17.88 cfs @ 12.05 hrs, Volume= 0.918 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
2.460	87	1/4 acre lots, 38% imp, HSG D
0.240	80	>75% Grass cover, Good, HSG D
0.940	77	Woods, Good, HSG D
0.040	98	Paved parking & roofs
3.680	84	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0600	0.1		Sheet Flow, 1A-1B
					Woods: Light underbrush n= 0.400 P2= 2.60"
3.0	90	0.0100	0.5		Shallow Concentrated Flow, 1B-1C
					Woodland Kv= 5.0 fps
0.7	170	0.0650	3.8		Shallow Concentrated Flow, 1C-1D
					Grassed Waterway Kv= 15.0 fps
1.1	180	0.0330	2.7		Shallow Concentrated Flow, 1D-R100
					Grassed Waterway Kv= 15.0 fps
13.6	490	Total			

Subcatchment 11SC: SC11

Runoff = 16.15 cfs @ 12.14 hrs, Volume= 1.072 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.630	87	1/4 acre lots, 38% imp, HSG D
1.580	80	>75% Grass cover, Good, HSG D
1.560	98	Paved parking & roofs
3.770	89	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	70	0.0100	0.1		Sheet Flow, 11A-11B
					Grass: Dense n= 0.240 P2= 2.60"
1.3	100	0.0200	1.2		Sheet Flow, 11B-11C
					Smooth surfaces n= 0.011 P2= 2.60"
3.7					Direct Entry, PIPE FLOW-2 FPS-450 FT
1.1	150	0.0250	2.4		Shallow Concentrated Flow, 11D-P1
					Grassed Waterway Kv= 15.0 fps
21.8	320	Total			

Subcatchment 20SC: SC20

Runoff = 1.70 cfs @ 12.05 hrs, Volume= 0.084 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.230	77	Woods, Good, HSG D
0.120	80	>75% Grass cover, Good, HSG D
0.030	98	Paved parking & roofs
0.380	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	50	0.0300	0.1		Sheet Flow, 2A-2B
					Woods: Light underbrush n= 0.400 P2= 2.60"
1.4	80	0.0375	1.0		Shallow Concentrated Flow, 2B-3B
					Woodland Kv= 5.0 fps
13.0	130	Total			

Subcatchment 30SC: SC30

Runoff = 3.81 cfs @ 11.98 hrs, Volume= 0.152 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.390	77	Woods, Good, HSG D
0.280	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
0.710	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0600	0.1		Sheet Flow, 30A-30B
					Grass: Dense n= 0.240 P2= 2.60"
0.6	50	0.0800	1.4		Shallow Concentrated Flow, 30B-30C
					Woodland Kv= 5.0 fps
0.5	90	0.0400	3.0		Shallow Concentrated Flow, 30C-30D
					Grassed Waterway Kv= 15.0 fps
7.0	190	Total			

Subcatchment 40SC: SC40

Runoff = 2.28 cfs @ 12.03 hrs, Volume= 0.105 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
0.280	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking & roofs
0.490	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0500	0.1		Sheet Flow, 40A-40B Grass: Dense n= 0.240 P2= 2.60"
4.0	180	0.0220	0.7		Shallow Concentrated Flow, 4B-4C Woodland Kv= 5.0 fps
0.7	120	0.0330	2.7		Shallow Concentrated Flow, 4C-4D Grassed Waterway Kv= 15.0 fps
11.0	350	Total			

Subcatchment 50SC: SC50

Runoff = 6.67 cfs @ 12.10 hrs, Volume= 0.371 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
1.620	77	Woods, Good, HSG D
0.140	80	>75% Grass cover, Good, HSG D
0.040	98	Paved parking & roofs
1.800	78	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	50	0.0200	0.1		Sheet Flow, 5A-5B Woods: Light underbrush n= 0.400 P2= 2.60"
0.8	50	0.0400	1.0		Shallow Concentrated Flow, 5B-5C Woodland Kv= 5.0 fps
1.4	150	0.0150	1.8		Shallow Concentrated Flow, 5C-5D Grassed Waterway Kv= 15.0 fps
1.2	150	0.0200	2.1		Shallow Concentrated Flow, 5D-5E Grassed Waterway Kv= 15.0 fps
17.1	400	Total			

Subcatchment 100SC: SC10

Runoff = 25.03 cfs @ 11.90 hrs, Volume= 0.847 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.40"

Area (ac)	CN	Description
3.110	87	1/4 acre lots, 38% imp, HSG D

Reach 10R: EXISTING DITCHInflow = 17.88 cfs @ 12.05 hrs, Volume= 0.918 af
Outflow = 17.25 cfs @ 12.12 hrs, Volume= 0.912 af, Atten= 4%, Lag= 4.3 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.0 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.8 fps, Avg. Travel Time= 5.9 minPeak Depth= 0.80'
Capacity at bank full= 440.49 cfs
3.00' x 3.00' deep channel, n= 0.045 Length= 300.0' Slope= 0.0100 '/
Side Slope Z-value= 10.0 '/**Reach 20: 20**Inflow = 1.70 cfs @ 12.05 hrs, Volume= 0.084 af
Outflow = 1.65 cfs @ 12.11 hrs, Volume= 0.083 af, Atten= 3%, Lag= 3.7 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.3 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 6.1 minPeak Depth= 0.16'
Capacity at bank full= 18.81 cfs
20.00' x 0.50' deep Parabolic Channel, n= 0.040 Length= 180.0' Slope= 0.0250 '/**Reach 21: 21**Inflow = 1.65 cfs @ 12.11 hrs, Volume= 0.083 af
Outflow = 1.62 cfs @ 12.16 hrs, Volume= 0.083 af, Atten= 2%, Lag= 3.1 minRouting by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.7 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.6 fps, Avg. Travel Time= 5.0 minPeak Depth= 0.20'
Capacity at bank full= 54.74 cfs
3.00' x 1.00' deep channel, n= 0.045 Length= 180.0' Slope= 0.0350 '/
Side Slope Z-value= 10.0 '/

Reach 100: 100-EXISTING SWALE

Inflow = 28.32 cfs @ 11.90 hrs, Volume= 2.000 af
 Outflow = 27.06 cfs @ 11.93 hrs, Volume= 1.995 af, Atten= 4%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.2 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 1.1 fps, Avg. Travel Time= 2.3 min

Peak Depth= 0.97'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 150.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 101: 101-EXISTING DRAINAGE DITCH

Inflow = 33.59 cfs @ 11.93 hrs, Volume= 2.907 af
 Outflow = 33.28 cfs @ 11.95 hrs, Volume= 2.903 af, Atten= 1%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.3 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.2 fps, Avg. Travel Time= 1.1 min

Peak Depth= 1.06'
 Capacity at bank full= 29.26 cfs
 3.00' x 1.00' deep channel, n= 0.045 Length= 80.0' Slope= 0.0100 '/
 Side Slope Z-value= 10.0 '/

Reach 102: EX 36" CMP

Inflow = 33.28 cfs @ 11.95 hrs, Volume= 2.903 af
 Outflow = 33.19 cfs @ 11.95 hrs, Volume= 2.902 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.6 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.3 min

Peak Depth= 2.36'
 Capacity at bank full= 34.68 cfs
 36.0" Diameter Pipe n= 0.025 Length= 50.0' Slope= 0.0100 '/

Pond 1P: POND 1

Inflow = 16.15 cfs @ 12.14 hrs, Volume= 1.072 af
 Outflow = 6.20 cfs @ 12.43 hrs, Volume= 1.070 af, Atten= 62%, Lag= 17.6 min
 Primary = 6.20 cfs @ 12.43 hrs, Volume= 1.070 af

Routing by Stor-Ind method, Time Span= 8.00-16.00 hrs, dt= 0.01 hrs

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Type II 24-hr Rainfall=5.40"

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Peak Elev= 87.49' Storage= 13,580 cf

Plug-Flow detention time= 18.5 min calculated for 1.070 af (100% of inflow)

Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.50	10	0	0
83.00	270	70	70
84.00	1,250	760	830
85.00	2,400	1,825	2,655
86.00	3,725	3,063	5,718
87.00	5,350	4,538	10,255
88.00	8,300	6,825	17,080
89.00	10,000	9,150	26,230

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	82.50'	12.0" x 20.0' long Culvert CMP, projecting, no headwall, Ke= 0.900 Outlet Invert= 82.40' S= 0.0050 ' n= 0.025 Cc= 0.900

CITY OF PORTLAND, MAINE

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January 17, 2003

Wescott and Payson II
Yale Court L.P.
240 Harvard Street
Portland, ME 04103

Re: Yale Court PRUD and University Park 10-Lot Subdivision, vicinity of Yale Street
(Applications #2002-0121 and #2002-0215, CBLs 436 A009001 and 153A A002001)

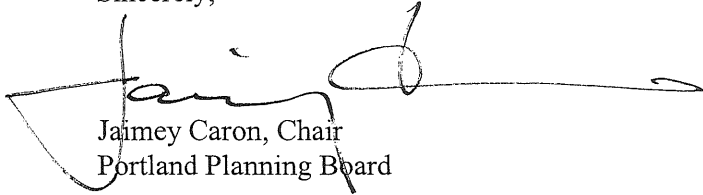
Dear Mr. Wescott and Mr. Payson:

At a public hearing held on January 14, 2003, the Planning Board voted unanimously 5-0:

- i. That the proposed PRUD development is in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions of approval:
 1. *that Corporation Counsel will review and approve all proposed easements.*
 2. *that the applicant submit a blasting plan consistent with those previously approved for the True Street and Ocean Ridge projects including a 1000' pre-blast survey radius unless a lesser distance is approved in writing by the Planning Authority, an independent monitor and the use of three seismographs **OR** that a blasting plan consistent with the Blasting Ordinance after it has been adopted by the Portland City Council be submitted, for review and approval prior to any blasting occurring on the site.*
- ii. That the proposed PRUD development meets the standards for the issuance of a DEP Stormwater Permit under delegated authority.
- iii. That the proposed PRUD development is in conformance with the Site Plan Ordinance of the Land Use Code with the following conditions of approval:
 1. *the individual unit rear patios be constructed out of a hard material such as concrete pavers or flagstone.*
- iv. That the proposed 10-lot University Park Subdivision is in conformance with the Subdivision Ordinance of the Land Use Code with the following conditions of approval:
 1. *that the applicant submit a blasting plan consistent with those previously approved for the True Street and Ocean Ridge projects including a 1000' pre-blast survey radius unless a lesser distance is approved in writing by the Planning Authority, an independent monitor and the use of three seismographs **OR** that a blasting plan*

The approval is based on the submitted application, site plan, and stated conditions. If there are any questions, please contact the planning staff.

Sincerely,



Jaimey Caron, Chair
Portland Planning Board

cc: Lee D. Urban, Planning and Development Department Director
Alexander Jaegerman, Planning Division Director
Sarah Hopkins, Development Review Program Manager
✓ Jonathan Spence, Planner
Jay Reynolds, Development Review Coordinator
Marge Schmuckal, Zoning Administrator
Jodine Adams, Inspections
William Bray, Director of Public Works
Larry Ash, Traffic Engineer
Tony Lombardo, Project Engineer
Eric Labelle, City Engineer
Jeff Tarling, City Arborist
Penny Littell, Associate Corporation Counsel
Lee Urban, Director of Economic Development
Lt. Gaylen McDougall, Fire Prevention
Don Hall, Appraiser, Assessor's Office
Susan Doughty, Assessor's Office
Approval Letter File
Correspondence File



**PHASE I
ENVIRONMENTAL SITE ASSESSMENT
YALE COURT
YALE STREET
PORTLAND, MAINE**

Prepared for:

Michael Payson,

Jim Wescott,

Wescott & Payson II, and

Yale Court Development Company LLC

Prepared by:

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.

640 Main Street

Lewiston, Maine 04240

November 21, 2002

Project 3632

**PHASE I
ENVIRONMENTAL SITE ASSESSMENT
YALE COURT
YALE STREET
PORTLAND, MAINE**

1.0 EXECUTIVE SUMMARY

Summit Environmental Consultants, Inc. (Summit) completed a Phase I Environmental Site Assessment (ESA) for an undeveloped parcel of land (Site) off of Yale Street in Portland, Maine. The Cumberland County Tax Assessor identifies the 8.05 acre parcel as Map 153A, Block A, Lot 1. The primary objective of the ESA was to evaluate the Site for evidence of past, existing, or material threat of future releases of hazardous substances and petroleum products.

Summit conducted historical research, reviewed State and City records, conducted a site visit, and interviewed city officials having knowledge of the Site to determine whether the property has recognized environmental conditions, as defined by the American Society for Testing and Materials (ASTM) Standard E 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

The parcel is approximately 8.05 acres of land located off of Yale Street. The Site is bounded by residential properties to the north, a residential condominium to the east, Yale Street and a City park to the south and residential property to the west. The Site is in the City of Portland Residential Zone R3. Wescott & Payson II is the current owner of the Site.

Interviews with the local officials, a review of State records, and Summit's observations did not indicate evidence of underground storage tanks (USTs), or above ground storage tanks (ASTs) at the Site. The City of Portland did not have records of any registered USTs and ASTs, the licensed storage of hazardous materials, and any hazardous waste sites, sources, and/or facilities at or in the immediate vicinity of the Site.

The database search did not identify any spill incidents at the Site, but identified 37 spill incidents within a 1/2-mile radius of the Site. Based upon information obtained at the DEP regarding remedial status, and/or hydraulic location relative to the Site, and the fact that public water supply serves the Site, the properties identified by the database search do not likely pose a material threat of release of petroleum products and/or other hazardous materials to the Site.

The database search identified two state-listed hazardous waste locations within one mile of the Site, and one CERCLIS listing location within 1/2-miles of the Site. Due to regulatory status and/or distance from the Site, the locations identified by the database search do not likely pose an environmental liability to the Site.

Summit has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00 for the undeveloped parcel off of Yale Street in Portland, Maine and designated by the City of Portland tax Assessor as Map 153A, Block A, Lot 1. This assessment has revealed no evidence of recognized environmental conditions in connection with the property.

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**PHASE I
ENVIRONMENTAL SITE ASSESSMENT
YALE COURT
YALE STREET
PORTLAND, MAINE**

2.0 INTRODUCTION

This Report describes the Phase I Environmental Site Assessment (ESA) performed by Summit Environmental Consultants, Inc. (Summit) for an undeveloped parcel of land (Site) off of Yale Street in Portland, Maine. The Cumberland County Tax Assessor identifies the 8.05 acre parcel as Map 153A, Block A, Lot 1. Refer to Figure 1 for a Site location map and Existing Conditions & Soils figure prepared by Land Use Consultants, Inc. dated September 30, 2002. Ms. Carrie R. Fichter of Summit conducted the Site inspection on November 14, 2002 and authored the following report. The report was reviewed by Michael A. Deyling of Summit. Summit conducted this work at the request of Mike Payson, Jim Wescott, Wescott & Payson II, and Yale Court Development Company, LLC (the Clients), who authorized this project on November 1, 2002.

2.1 PURPOSE

The purpose of the Phase I ESA was to identify potential evidence of an existing or past release or a material threat of a future release of hazardous substances or petroleum products at or in the immediate vicinity of the Site (i.e., recognized environmental conditions, as defined by ASTM).

2.2 DETAILED SCOPE OF SERVICES

Summit performed the following activities in general accordance with the guidelines set forth in ASTM E 1527-00:

1. Conducted a database search of government environmental records on November 6, 2002 in order to identify Federal- or State-listed sites within the search radii specified in the ASTM E 1527-00 standard.
2. Reviewed an aerial photograph of the Site and vicinity at the Maine Geological Survey Offices in Augusta, Maine on November 7, 2002.
3. Reviewed State records on file at the Maine Department of Environmental Protection (MEDEP) on November 7, 2002 to research recognized environmental conditions identified by the database search and/or within the City of Portland.
4. Reviewed records on file at the City of Portland Tax Assessor's office, on November 14, 2002 to obtain information relative to environmental conditions and current and past use of the property.
5. Reviewed City of Portland Fire Prevention records on November 14, 2002 to obtain information relative to environmental conditions and current and past use of the property.
6. Reviewed readily available local records on file at the City of Portland Public Library on November 14, 2002 in order to ascertain prior Site and vicinity uses and history.
7. Conducted a Site visit on November 14, 2002 to observe environmental conditions at the Site and adjacent properties.

8. Interviewed Mr. Jim Wescott, Site Owner, on November 14, 2002. Mr. Wescott was interviewed in order to obtain information relative to environmental conditions and current and past use of the property.
9. Reviewed available property transaction records in the form of Deeds at the Cumberland County Registry of Deeds in Portland on November 14, 2002 (Summit's review of Deed's does not constitute a legal title search for the property).

2.3 SIGNIFICANT ASSUMPTIONS

Summit did not make significant assumptions while conducting the Phase I ESA on the subject property.

2.4 LIMITATIONS AND EXCEPTIONS

Lead paint and asbestos surveys are outside the scope of services for this Phase I ESA. However, no structures are currently present on the Site.

This report has been prepared for the exclusive use of the Clients and should not be reproduced or disseminated without the written approval of Summit or the Clients. Summit has retained a copy of this report. No additions or deletions are authorized without the written consent of Summit. Use of this report in whole or in part by parties other than the Clients or his/her authorized agent is prohibited.

2.5 USER RELIANCE

The recommendations and conclusions discussed herein are based solely and in reliance upon information collected as a result of the activities delineated above in the Scope of Services. Summit neither attests nor renders an opinion as to the accuracy or comprehensiveness of the statements of the individuals interviewed, available governmental records, environmental reports conducted by other consultants, analytical results, or the database search results provided by the database contractor.

3.0 SITE DESCRIPTION

3.1 SITE LOCATION AND LEGAL DESCRIPTION

The Site is located off of Yale Street. The Cumberland County Tax Assessor identifies the 8.05 acre parcel as Map 153A, Block A, Lot 1. The Registry of Deeds in Portland has legal descriptions of the Site recorded in Book 173651, Page 293. Wescott & Payson II is the current owner of the Site.

3.2 SITE AND VICINITY GENERAL CHARACTERISTICS

The Site is currently undeveloped woodland. Refer to Appendix A for photographs of the Site. The adjacent properties are residential. The Site is in the City of Portland Residential Zone R3.

3.3 CURRENT USE OF THE PROPERTY

The Site is currently undeveloped woodlands.

3.4 DESCRIPTION OF STRUCTURES, ROADS, AND OTHER IMPROVEMENTS

3.4.1 Structures

No structures are located on the Site.

3.4.2 Parking Areas and Roads

Currently Site access is via an unpaved street (Yale Street).

3.4.3 Heating and Air Conditioning

The Site currently does not have any on-site sources for heating (i.e., natural gas, fuel oil, etc.).

3.4.4 Sewer

The Site is not connected to a municipal sewer or a private septic system/leaching field. Municipal sewer is available along Yale Street.

3.4.5 Water

The Site is currently not connected to municipal water or a private drinking water well. Municipal water is available along Yale Street.

3.4.6 Electricity

The Site is currently not connected to electrical service. Electric service will be brought to the Site along Yale Street.

3.4.7 Zoning

The City of Portland zoning map indicates the Site is located in the Residential R3 zone.

3.5 CURRENT USE OF ADJOINING PROPERTIES

North Residential.

South Unpaved Yale Street and beyond a City Park.

East Residential (Condominiums).

West Residential.

4.0 USER PROVIDED INFORMATION**4.1 PROPERTY TRANSACTION RECORDS**

Property transaction records, in the form of deeds, were reviewed at the City of Portland Tax Assessor's Office on November 14, 2002. Information from this review is summarized in Table 1. The compiled information was used to evaluate historical property ownership and land use and does not represent a legal title search. Evidence of industrial or other high-risk uses with respect to environmental liabilities was not evident in the property transaction records.

Table 1: Past Ownership

Owner	Book/Page	Transaction Date
Wescott & Payson II	17365/293	12/18/01
Thomas Realty Associates	6538/49	8/7/84
FIGI Corporation	6295/14	9/30/83
Great Bay Company	3014/823	10/4/67

4.2 PREVIOUS ENVIRONMENTAL SITE ASSESSMENTS

Summit was not provided with, nor discovered, any previous Environmental Site Assessment reports for the Site during the preparation of this ESA.

4.3 INFORMATION REPORTED BY USER REGARDING ENVIRONMENTAL LIENS

Summit did not identify any evidence, nor was made aware by the Client or Site Representatives of any environmental liens relating to current or past violations of environmental laws with respect to the Site.

4.4 ENVIRONMENTAL PERMITS AND/OR VIOLATIONS

Summit did not discover any environmental permits or violations for the Site at any of the municipal or State offices contacted during the preparation of this ESA.

4.5 INFORMATION FROM SITE REPRESENTATIVE

Summit interviewed Mr. Jim Wescott of Wescott & Payson II, for his knowledge of environmental issues relating to the Site. Mr. Wescott was not aware of any environmental liens, permits, USTs, or releases of hazardous substance or petroleum products on the Site.

5.0 RECORDS REVIEW

5.1 FEDERAL ENVIRONMENTAL RECORD SOURCES

Summit obtained radius searches of the Federal and State environmental regulatory databases in accordance with ASTM E 1527 standards. Pertinent information is presented in the following sections. The database search report (including databases searched, radius search distances, and detailed information regarding listed properties) is presented as Appendix B.

5.1.1 National Priority List Sites

The database search did not identify any National Priority List (i.e., Superfund) sites within a one-mile radius of the Site.

5.1.2 CERCLIS Listings

The database search identified one Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) listing within a 1/2-mile radius of the Site. A CERCLIS listing is a property under investigation by the MEDEP or United States Environmental Protection Agency (EPA) as a potential Superfund site. The Burt Company, located 0.24 miles southwest of the Site, is designated as a federal Brownfield Site. The Burt Company was a manufacturer of billiard balls and poker chips. A fire destroyed the building and an investigation following the fire revealed drums of unknown substances. Involvement of the MEDEP and USEPA resulted in the removal of 180 overpacked drums. Due to the removal of materials from the Site and regulatory oversight, the Burt Company site does not pose a material threat to the Site.

5.1.3 RCRA Facilities

The database search did not identify the Site or any adjoining properties as Resource Conservation and Recovery Act (RCRA) hazardous waste generator facilities.

The database search did not identify any RCRA Corrective Action (CORRACTS) facilities within a one-mile radius of the Site.

The database search did not identify any RCRA non-CORRACTS treatment, storage, and disposal facilities within a 1/2-mile radius of the Site.

5.1.4 ERNS Sites

The database search did not identify any Emergency Response Notification System (ERNS) sites within a 1/4-mile radius of the Site.

5.2 STATE ENVIRONMENTAL RECORD SOURCES

5.2.1 State-Listed Sites

The database search did not identify the Site as a state-listed hazardous waste site; however, two state-listed hazardous waste sites were identified within a one-mile radius of the Site.

- Murray Street Site (located 0.47 miles southeast of the Site) was a disposal site for automotive battery casings. Toxicity Characteristic Leaching Procedure (TCLP) testing of a sample of soil below the casings showed a lead concentration of 120 parts per million. Impacted soils were excavated and transported offsite for disposal. No further remedial actions are scheduled for the Site. It is unlikely that this site poses an environmental liability to the Site due to the involvement of the MEDEP, distance from the Site, removal of contaminated soil, topographic features, and the fact that public water supply serves the Site.
- Merrill Transport Site (located 0.65 miles southwest of the Site) was a trucking terminal that operated a truck washing station. Cleaning solvents and residual petroleum products were discharged to the ground in the early 1960's. Based on the results of an environmental field study, approximately 300 cubic yards of impacted soil and approximately 60 gallons of free product on ground water were removed from the Site. Ground water data from monitoring wells downgradient of the former holding tank have shown decreases in volatile organic compounds (VOCs). Ground water monitoring activities are still ongoing. It is unlikely that this site poses an environmental liability to the Site due to the involvement of the MEDEP, distance from the Site, ongoing remediation activities, topographic features, and the fact that public water supply serves the Site.

5.2.2 Registered Underground Storage Tanks (USTs)

The database search did not identify any state-registered UST locations within a 0.15-mile radius of the Site.

5.2.3 Leaking USTs (LUSTs)

The MEDEP does not maintain a separate listing of LUST sites. Therefore, LUSTs are included in the State and Spill site databases discussed in Sections 5.2.1 and 5.2.5, respectively.

5.2.4 Solid Waste Facilities/Landfills

The database search did not identify any solid waste facilities and/or landfills within a 1/2-mile radius of the Site.

5.2.5 Spill Sites

The database search did not identify any spill incidents at the Site; however, the database search identified 37 spill incidents within a 1/2-mile radius of the Site. Refer to Appendix B for a summary of state spill incidents within a 1/2-mile radius of the Site. Summit conducted a file review for selected spills in the immediate vicinity of the Site at the MEDEP offices in Augusta.

Records obtained from the MEDEP during Summit's file review are presented in Appendix C. It is unlikely that these spills pose an environmental liability to the Site or health risk to receptors at the Site due to the limited amount of substance spilled, distance from the Site, topographic features, and the fact that public water supply serves the Site.

5.3 DATABASE SEARCH OF UNMAPPED PROPERTIES

Unmapped spill sites located in the general vicinity of the Site are included in the database search. However, due to inaccurate or missing information provided by the appropriate governmental agency, the database search contractor was unable to definitively plot the location of these spill sites.

Summit reviewed the unmapped spill site list in an attempt to definitively locate these spills. Summit determined that neither the Site nor any adjacent properties were identified on the list of unmapped sites. Refer to Appendix B for information on unmapped sites.

5.4 LOCAL ENVIRONMENTAL RECORD SOURCES

City of Portland Fire Prevention Department personnel were interviewed in an attempt to identify any registered USTs and ASTs, the licensed storage of hazardous materials, and any hazardous waste sites, sources, and/or facilities at or in the immediate vicinity of the Site. Summit reviewed the tax card for the Site at the City of Portland office on November 14, 2002. Results of the research are discussed below:

5.4.1 Sewer Authority

The Site is currently undeveloped and not connected to municipal sewer or a private septic system/leaching field. Municipal sewer service is available along Yale Street.

5.4.2 Water Authority

The Site is currently undeveloped and not connected to municipal water or a private drinking water well. Municipal water service is available along Yale Street. City of Portland Water Department obtains water for the Site from Sebago Lake located approximately 12 miles northwest of the Site.

5.4.3 Code Enforcement Office

Records were reviewed at the City of Portland Code Enforcement Office. The Code Enforcement Office did not have any records regarding USTs and/or ASTs, or releases of hazardous substances and petroleum products at the Site or adjacent properties.

5.4.4 Fire Department

City of Portland Fire Prevention Department personnel were unaware of and did not have any records regarding USTs, ASTs, flammable storage permits, or releases of hazardous substances and petroleum products at the Site or adjacent properties.

5.5 PHYSICAL DESCRIPTION

5.5.1 Topography

According to the United States Geological Survey Portland West 7.5 Minute Topographic Quadrangle Map, the Site is at an approximate elevation of 100 feet above mean sea level (Figure 1). The Site and vicinity of the Site slopes gently downward toward the east.

5.5.2 Geology

The Surficial Geology Map of the Portland West Quadrangle, Maine indicates the Site is underlain by the Presumpscot Formation. The Presumpscot Formation is identified as silt, clay, and minor sand deposited on the sea floor during the late-glacial marine submergence.

Summit observed bedrock outcrops in the northeastern portion of the Site. According to the Bedrock Geology Map of Portland Quadrangle (Hussey, 1998), the Site is underlain by Hutchens Corner Formation. The Hutchens Corner Formation is identified as bluish to purplish-gray, biotite-quartz-plagioclase granofels with thin interbeds of greenish-gray calc-silicate granofels. Pegmatite layers may conform to bedding where migmatitic and may contain minor pelitic schist layers in unmappable amounts.

5.5.3 Hydrology

5.5.3.1 Surface Water

Summit observed a delineated wetlands area located in the southwest corner of the Site.

5.5.3.2 Flood Zone

The Site is located in Flood Zone Hazard X, an area determined to be outside the 500-year floodplain.

5.5.3.3 Hydrogeology

Summit infers that local groundwater flow mimics Site vicinity topography and that groundwater flows easterly toward the Fall Brook located 2,000 feet east of the Site. The Maine Geologic Survey Significant Sand and Gravel Aquifer Map (Portland West Quadrangle, Maine: Craig D. Neil and Daniel B. Locke, dated 1999.) indicate that the Site is not located within a mapped Significant Sand and Gravel Aquifer. The closest mapped significant sand and gravel aquifer is located approximately 3.0 miles southeast of the Site. Summit did not observe any water supply wells at the Site.

5.6 HISTORICAL USE INFORMATION

5.6.1 Sanborn Fire Insurance Rate Maps

Summit reviewed 1954 Sanborn Fire Insurance Rate Maps (Sanborn) of Portland at the City of Portland Public Library on November 14, 2002. The 1954 Sanborn map did not provide coverage of the Site and vicinity.

5.6.2 Aerial Photographs

Summit reviewed 1964 and 1980 aerial photographs of the Site and vicinity. Copies of the aerial photographs are provided in Appendix D. The 1964 and 1980 aerial photographs show the Site undeveloped and wooded.

5.6.3 Historical Atlases

Historical Atlases were not available for review at the City of Portland Public Library.

5.6.4 City Directories

Summit reviewed 1940, 1950, 1960, 1970, 1980, 1990, and 2000 historical city directories for the Site at the City of Portland Public Library on November 14, 2002. The city directories had no listings for Yale Street. Listings along Chesley Avenue, Berry Avenue, and Harvard Street were residential dwellings.

6.0 ENVIRONMENTAL SITE RECONNAISSANCE

Summit conducted a visual reconnaissance of the Site on November 14, 2002. Summit's reconnaissance consisted of a traverse of the Site to visually observe Site improvements and grounds.

6.1 UNDERGROUND STORAGE TANKS (USTS)

Summit did not observe visual evidence of USTs at the Site. The database search did not identify the Site or adjoining properties as state-registered UST locations.

6.2 ABOVEGROUND STORAGE TANKS (ASTS)

Summit did not observe any visual evidence of ASTs at the Site.

6.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

Summit did not note evidence of a release of hazardous substances or petroleum products, such as staining, stressed vegetation or odors, at the Site.

6.4 POLYCHLORINATED BIPHENYLS (PCBS)

Summit did not observe visual evidence any transformers, capacitors or other hydraulic equipment labeled as containing PCBs at the Site.

6.5 SOLID WASTE DISPOSAL

Summit did not observe evidence of any solid waste disposal areas in the vicinity of the Site.

6.6 UNDERGROUND STRUCTURES

Summit did not observe visual evidence of underground structures at the Site.

7.0 INTERVIEWS

7.1 INTERVIEW WITH SITE REPRESENTATIVE

Summit interviewed Mr. Jim Wescott, Site Owner, for his knowledge of environmental issues relating to the Site. Mr. Wescott was not aware of any environmental liens, permits, USTs, or releases of hazardous substance or petroleum products on the Site.

8.0 FINDINGS

Summit did not identify evidence of a significant release, or threat of releases, of hazardous substances or petroleum products on the Site.

The database search did not identify any spill incidents at the Site, but identified 37 spill incidents within a 1/2-mile radius of the Site. Based upon information obtained at the DEP regarding remedial status, and/or hydraulic location relative to the Site, and the fact that public water supply serves the Site, the properties identified by the database search do not likely pose a material threat of release of petroleum products and/or other hazardous materials to the Site.

The database search identified two state-listed hazardous waste locations within one mile of the Site, and one CERCLIS listing location within 1/2-mile of the Site. Due to regulatory status and/or distance from the Site, the locations identified by the database search do not likely pose an environmental liability to the Site.

9.0 OPINION

It is Summit's professional opinion that no evidence of recognized environmental conditions exist at the Site (as defined by ASTM).

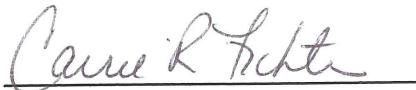
10.0 CONCLUSION

Summit has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00 for an undeveloped parcel of land (Site) off of Yale Street in Portland, Maine. The Cumberland County Tax Assessor identifies the 8.05 acre parcel as Map 153A, Block A, Lot 1. Any exceptions to, or deletions from, this practice are described in Section 2.4. This assessment has revealed no evidence of recognized environmental conditions in connection with the property. Additional assessments are not recommended.

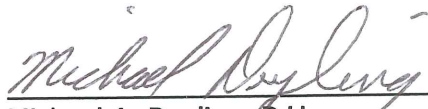
11.0 SIGNATURE AND QUALIFICATIONS OF SUMMIT ENVIRONMENTAL PROFESSIONAL (S)

Summit performed services in a manner consistent with the guidelines set forth in the American Society for Testing and Materials (ASTM) E 1527-00 (Standard Practices for Environmental Site Assessments: Phase I Environmental Site Assessment Process).

The following Summit personnel possess sufficient training and experience necessary to conduct a site reconnaissance, interviews, and other activities in accordance with this practice, and from the information generated by such activities, have the ability to develop opinions and conclusions regarding recognized environmental conditions in connection with the property in question.



Carrie R. Fichter
Project Engineer



Michael A. Deyling, P.Hg.
Principle Hydrogeologist

12.0 REFERENCES

State of Maine:

Department of Environmental Protection, records reviewed November 7, 2002.
Geological Survey, records reviewed November 7, 2002.

City of Portland:

Tax Assessor's Office; records reviewed November 14, 2002.
Code Enforcement Office; records reviewed November 14, 2002.
Public Library; records reviewed November 14, 2002.
Fire Prevention Office, records reviewed November 14, 2002.

Cumberland County:

Registry of Deed; records reviewed November 14, 2002.

Interviews:

Mr. Jim Wescott, Site Owner; interviewed November 14, 2002.

Database Search:

DataMap Technology Corporation, "Environmental FirstSearch™ Report," November 6, 2002.

Resources:

United States Geological Survey; Portland West 7.5-minute series topographic quadrangle, photo revised 1978.
Maine Geological Survey; Bedrock Geology of the Portland 1:100,000 Quadrangle, Maine and New Hampshire, edited by Henry N. Berry IV and Arthur M. Hussey II, dated 1998.
Maine Geological Survey; Surficial Geology of the Portland West Quadrangle, by Woodrow B. Thompson, dated 1997.
Maine Geological Survey; Significant Sand and Gravel Aquifers, Portland West Quadrangle, compiled by Craig D. Neil, dated 1999.
Federal Emergency Management Agency Flood Insurance Rate Map Community Panel #230051-0007, dated December 8, 1998.



Name: PORTLAND WEST
 Date: 11/21/2002
 Scale: 1 inch equals 2000 feet

Location: 043° 41' 33.8" N 070° 17' 07.0" W
 Caption: FIGURE 1
 SITE LOCATION
 YALE COURT
 PORTLAND MAINE

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

June 30, 2005

Jim Wescott
Wescott & Payson II, LLC
31 Old Campus Road
Portland, Maine 04103

RE: Yale Street Subdivision
Application ID #2005-0079
CBL: 438 A012031

Dear Jim:

On June 14, 2005, the Portland Planning Board voted unanimously to approve the above referenced subdivision application. The approval was granted for the project by the following motion, subject to the following conditions:

On the basis of plans submitted by the applicant and on the basis of information contained in Planning Report #37-05 relevant to standards of the subdivision ordinance, and other findings:

1. That the plan is in conformance with the subdivision standards of the land use code.

Conditions of Approval:

- i. Prior to issuance of a building permit, the applicant shall revise the plans so as to satisfy the concerns of the City's consulting development review engineer as outlined in a May 26, 2005 memo from Jim Seymour, P.E. subject to final review and approval by the Planning Authority.
- ii. The applicant shall either (a) rebuild the storm drain in Harvard

Street subject to review and approval by the Department of Public Works or (b) provide a drainage easement to Milliken Brook through Radcliffe Glenn and associated infrastructure improvements to be reviewed and approved by Public Works together with a \$2000 per lot contribution to the City of Portland for off-site stormwater improvements.

- iii. The applicant shall submit a water capacity letter from the Portland Water District prior to issuance of a building permit.
- iv. The applicant shall modify the proposed street plan to include traffic calming measures as described in a June 9, 2005 email for the City's consulting traffic engineer, Tom Errico, subject to final review and approval by Mr. Errico, the Planning Board, and the City Engineer except that the width of the new section of Yale Street shall be 28 rather than 24 feet.
- v. The applicant shall present a letter from the Maine Department of Environmental Protection confirming that no wetland permit is required prior to the issuance of a building permit.
- vi. The applicant shall prepare and submit to Corporation Counsel for review and approval proposed drainage easements in customary form prior to the sale of any lots or the occupancy of any buildings.

The approval includes a 15-lot residential subdivision on an accepted, undeveloped portion of Yale Street.

The approval is based on the submitted site plan and the findings related to subdivision review standards as contained in Planning Report #37-05, which is attached.

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

1. Where submission drawings are available in electronic form, the applicant shall submit any available electronic Autocad files (*.dwg), release 14 or greater, with seven (7) sets of the final plans.
2. A performance guarantee covering the site improvements as well as an inspection fee payment of 2.0% of the guarantee amount and 7 final sets of plans must be submitted to and approved by the Planning Division and Public Works prior to the release of the building permit. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.

3. The site plan approval will be deemed to have expired unless work in the development has commenced within one (1) year of the approval or within a time period agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the expiration date.
4. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
5. Prior to construction, a pre-construction meeting shall be held at the project site with the contractor, development review coordinator, Public Work's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.
6. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

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

If there are any questions, please contact Ethan Boxer-Macomber at 756-8083 or ebm@portlandmaine.gov.

Sincerely,



Lee Lowry III, Chair
Portland Planning Board

cc: Lee D. Urban, Planning and Development Department Director
Alexander Jaegerman, Planning Division Director
Sarah Hopkins, Development Review Services Manager
Ethan Boxer-Macomber, Planner

Jay Reynolds, Development Review Coordinator
Marge Schmuckal, Zoning Administrator
Inspections Division
Michael Bobinsky, Public Works Director
Traffic Division
Eric Labelle, City Engineer
Jeff Tarling, City Arborist
Penny Littell, Associate Corporation Counsel
Fire Prevention
Assessor's Office
Approval Letter File

Appendix A

Site Photographs



Photograph 1:
Ledge that was pushed onto the Site when the abutting condominium complex was built.



Photograph 2:
View of wetland area in the southwest corner of the Site.



Photograph 3:
View of wetland area in the southwest corner of the Site.

Appendix B

Environmental FirstSearch™ Report

FirstSearch Technology Corporation

Environmental FirstSearch™ Report

TARGET PROPERTY:

NORTH DEERING ME 04103

Job Number: 3632

PREPARED FOR:

11-06-02



Tel: (781) 320-3720

Fax: (781) 320-3715

Environmental FirstSearch Search Summary Report

Target Site:

NORTH DEERING ME 04103

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	09-10-02	1.00	0	0	0	0	0	0	0
CERCLIS	Y	09-10-02	0.50	0	0	1	0	-	0	1
NFRAP	Y	07-08-02	0.15	0	0	0	-	-	0	0
RCRA TSD	Y	08-08-02	0.50	0	0	0	0	-	0	0
RCRA COR	Y	08-08-02	1.00	0	0	0	0	0	0	0
RCRA GEN	Y	08-08-02	0.15	0	0	0	-	-	0	0
ERNS	Y	12-31-01	0.15	0	0	0	-	-	0	0
State Sites	Y	09-02-02	1.00	0	0	1	1	1	0	3
Spills-1990	Y	12-07-01	0.50	0	0	3	25	-	12	40
Spills-1980	Y	06-07-01	0.50	0	0	0	9	-	5	14
SWL	Y	08-08-01	0.50	0	0	0	0	-	0	0
REG UST/AST	Y	09-09-02	0.15	0	0	0	-	-	4	4
- TOTALS -				0	0	5	35	1	21	62

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to FirstSearch Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in FirstSearch Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

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**Environmental FirstSearch
Site Information Report**

Request Date: 11-06-02
Requestor Name: Carrie Fichter
Standard: ASTM

Search Type: COORD
Job Number: 3632

TARGET ADDRESS:

NORTH DEERING ME 04103

Demographics

Sites: 62	Non-Geocoded: 21	Population: NA
Radon: 0.6 - 15.5 PCI/L		

Site Location

	<u>Degrees (Decimal)</u>	<u>Degrees (Min/Sec)</u>		<u>UTMs</u>
Longitude:	-70.287501	-70:17:15	Easting:	396239.841
Latitude:	43.69198	43:41:31	Northing:	4838252.207
			Zone:	19

Comment

Comment: PHASE I ESA

Additional Requests/Services

Adjacent ZIP Codes: 0 Mile(s)	Services:																																		
<table border="1"> <thead> <tr> <th>ZIP Code</th> <th>City Name</th> <th>ST</th> <th>Dist/Dir</th> <th>Sel</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ZIP Code	City Name	ST	Dist/Dir	Sel						<table border="1"> <thead> <tr> <th></th> <th>Requested?</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Sanborns</td> <td>No</td> <td></td> </tr> <tr> <td>Aerial Photographs</td> <td>No</td> <td></td> </tr> <tr> <td>Topographical Maps</td> <td>No</td> <td></td> </tr> <tr> <td>City Directories</td> <td>No</td> <td></td> </tr> <tr> <td>Title Search</td> <td>No</td> <td></td> </tr> <tr> <td>Municipal Reports</td> <td>No</td> <td></td> </tr> <tr> <td>Online Topos</td> <td>No</td> <td></td> </tr> </tbody> </table>		Requested?	Date	Sanborns	No		Aerial Photographs	No		Topographical Maps	No		City Directories	No		Title Search	No		Municipal Reports	No		Online Topos	No	
ZIP Code	City Name	ST	Dist/Dir	Sel																															
	Requested?	Date																																	
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Topographical Maps	No																																		
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Online Topos	No																																		

Environmental FirstSearch Sites Summary Report

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

TOTAL: 62 **GEOCODED:** 41 **NON GEOCODED:** 21 **SELECTED:** 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
23	SPILLS	RENTAL PROPERTY P11294	30 CHESLEY AVE. PORTLAND ME 04103	0.16 NE	19
20	SPILLS	MARTHA WILLABEE P11994	111 WOODLAWN PORTLAND ME 04103	0.18 SW	17
31	SPILLS	WILHELMI, MARK P32293	119 UNIVERSITY AVENUE PORTLAND ME 04103	0.20 SW	21
2	STATE	BURT COMPANY ME060/ACTIVE	PORTLAND ME 04103	0.24 SW	1
1	CERCLIS	BURT COMPANY MED985468024/NOT PROPOSED	1 CAMBRIDGE STREET PORTLAND ME 04103	0.24 SW	1
41	SPILLS80	P41688	PORTLAND ME 04103	0.26 SW	29
35	SPILLS80	HEAT OIL SPILL P9186	APT. BLDG. PORTLAND ME 04103	0.26 SW	23
18	SPILLS	HERSEY RES. P4920	#5 - 237 ALLEN AVE PORTLAND ME	0.30 NW	15
30	SPILLS	TEAM AUTO BODY/ NE TOWING P35895	24 MORRILL PORTLAND ME 04103	0.32 SW	4
32	SPILLS	YANKEE BINGO BUILDING P64998	33 ALLEN AVE. PORTLAND ME 04103	0.32 SW	22
37	SPILLS80	RESIDENTIAL SPILL P2789	PORTLAND ME 04103	0.35 SE	25
9	SPILLS	CARPENTER, CHRISTINA P8421	9 LORING AVENUE PORTLAND ME 04103	0.37 NE	9
5	SPILLS	BEU P73599	312 CANCO ROAD PORTLAND ME 04103	0.39 SE	7
6	SPILLS	BEU PROP. P38291	312 CANCO RD. PORTLAND ME 04103	0.39 SE	7
13	SPILLS	DIVISION OF MOTOR VEHICLES P19694	312 CANCO ROAD PORTLAND ME 04103	0.39 SE	7
7	SPILLS	BIG APPLE P17590	6 ALLEN AVE & FOREST AVE. PORTLAND ME 04103	0.39 SW	8
8	SPILLS	BIG APPLE GAS P44190	6 ALLEN AVE & FOREST PORTLAND ME 04103	0.39 SW	8
33	SPILLS80	BIG APPLE GAS STA. P63489	ALLEN AVE @ MORRILS CORNER PORTLAND ME 04103	0.39 SW	8
21	SPILLS	MARTINS POINT HEALTH CARE P2890	331 VERANDA STREET PORTLAND ME 04103	0.39 SW	8
12	SPILLS	CUDDLEDOWN P38399	312 CANCO ROAD PORTLAND ME 04103	0.41 SE	11

Environmental FirstSearch Sites Summary Report

TARGET SITE:

NORTH DEERING ME 04103

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PHASE I ESA

TOTAL: 62 **GEOCODED:** 41 **NON GEOCODED:** 21 **SELECTED:** 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
17	SPILLS	FILL-IT-UP-PLEASE P59293	1185 FOREST AVE. PORTLAND ME 04103	0.41 SW	14
40	SPILLS80	P8685	PORTLAND ME 04103	0.44 NW	28
25	SPILLS	SELTZER & RYDHOLM (PEPSI) P61292	CANCO RD. PORTLAND ME 04103	0.44 SE	5
26	SPILLS	SELTZER AND RYDHOLM P19798	250 CANCO ROAD PORTLAND ME 04103	0.44 SE	5
28	SPILLS	SELTZER AND RYDHOLM, INC. P71191	250 CANCO ROAD PORTLAND ME 04103	0.44 SE	5
27	SPILLS	SELTZER AND RYDHOLM, INC. P74696	250 CANCO ROAD PORTLAND ME 04103	0.44 SE	5
36	SPILLS80	MEINEKE MUFFLER (FORMER GAS STA.) P30186	FOREST AVE @ MORRIL S CNR PORTLAND ME 04103	0.44 SW	24
14	SPILLS	DIXON ASSOC. (FORMER AMOCO) P43791	1170 FOREST & STEVENS PORTLAND ME 04103	0.45 SW	12
15	SPILLS	DIXON ASSOC. (FORMER AMOCO) P4540	1170 FOREST & STEVENS PORTLAND ME 04103	0.45 SW	12
19	SPILLS	M.L. BREWER FINE WOODWORKING INC. P48795	91 BELL STREET PORTLAND ME 04103	0.45 SW	16
22	SPILLS	RENTAL PROPERTY P68495	308 ALAN AVE. PORTLAND ME 04103	0.47 NW	18
4	STATE	MURRAY STREET SITE ME430/DEL	MURRAY STREET PORTLAND ME 04103	0.47 SE	6
29	SPILLS	SPILL INVEST. P33492	MURREY ST. PORTLAND ME 04103	0.47 SE	6
38	SPILLS80	TRUCK ACCIDENT P42689	PORTLAND ME 04103	0.47 SE	26
39	SPILLS80	P11183	PORTLAND ME 04103	0.47 SW	27
16	SPILLS	DIXON, FRANK P49292	168 BROOK ROAD PORTLAND ME 04103	0.47 SW	13
34	SPILLS80	FORMER GAS STA. (SUSAN S FISH) P73889	1127 FOREST AVE PORTLAND ME 04103	0.48 SW	20
24	SPILLS	RICE PROPERTY P33190	1335 FOREST AVE. PORTLAND ME 04103	0.48 SW	20
10	SPILLS	CASCO NORTHERN PROP. P9192	844 STEVENS AVE PORTLAND ME 04103	0.49 SW	3
11	SPILLS	CMP POLE 17 P20896	BISHOP ST PORTLAND ME 04103	0.49 SW	10

*Environmental FirstSearch
Sites Summary Report*

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

TOTAL: 62

GEOCODED: 41

NON GEOCODED: 21

SELECTED: 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
3	STATE	MERRILL TRANSPORT COMPANY ME033/ACTIVE	PORTLAND ME 04103	0.65 SW	2

Environmental FirstSearch Sites Summary Report

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

TOTAL: 62 **GEOCODED:** 41 **NON GEOCODED:** 21 **SELECTED:** 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
58	SPILLS80	P16284	PORTLAND ME 04103	NON GC	
53	SPILLS	P85090	PORTLAND ME 04103	NON GC	
57	SPILLS80	P29384	PORTLAND ME 04103	NON GC	
42	SPILLS	BACK BAY P4660	OFF OCEAN BLVD PORTLAND ME 04103	NON GC	
43	SPILLS	HAZ MAT INCIDENT P48292	PORTLAND ME 04103	NON GC	
59	UST	MOORE TRANS SYSTEMS 06042	INDUSTRIAL PARKWAY PORTLAND ME 04103	NON GC	
44	SPILLS	MORRILLS CORNER, AND BEYOND P75196	FOREST AVE TO RAND RD. PORTLAND ME 04103	NON GC	
45	SPILLS	MOTHER HOUSE P5110	605 STEVENS & WALTON PORTLAND ME 04103	NON GC	
46	SPILLS	MYSTERY P45091	SKY LARK ROAD PORTLAND ME 04103	NON GC	
47	SPILLS	MYSTERY GASO. SPILL P23690	PORTLAND ME 04103	NON GC	
48	SPILLS	NORTHEAST PET. TERMINAL P73892	1 CLARK RD. PORTLAND ME 04103	NON GC	
60	UST	O M S 1 14331	STEVENS AVE PORTLAND ME 04103	NON GC	
54	SPILLS80	OIL TRUCK LEAK P16185	PORTLAND ME 04103	NON GC	
49	SPILLS	POLE #5.2 P87699	ALLEN AVENUE PORTLAND ME 04103	NON GC	
50	SPILLS	POLE #6 P78395	PINE TREE INDUSTRIAL PKWY PORTLAND ME 04103	NON GC	
61	UST	PORTLAND RS 12170	MORSE ST PORTLAND ME 04103	NON GC	
51	SPILLS	ROADSIDE P58296	ALBA STREET PORTLAND ME 04103	NON GC	
52	SPILLS	ROADWAY P6461	WILLIAMS ST PORTLAND ME 04103	NON GC	
55	SPILLS80	TANK TRUCK SPILL P27387	I-295 PORTLAND ME 04103	NON GC	
56	SPILLS80	VANDALISM P68389	WALDRON WAY PORTLAND ME 04103	NON GC	

***Environmental FirstSearch
Sites Summary Report***

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

TOTAL: 62

GEOCODED: 41

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SELECTED: 0

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
62	UST	WINDE MCCORMICK HDWE SPEC INC 00968	INDUSTRIAL PARKWAY PORTLAND ME 04103	NON GC	

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 23

DIST/DIR: 0.16 NE

MAP ID: 19

NAME: RENTAL PROPERTY
ADDRESS: 30 CHESLEY AVE.
PORTLAND ME

REV: 12/7/01
ID1: P11294
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: SANCHEZ, CINDY
NOTIFIER S ADDRESS: APT 1, 30 CHESLEY AVE.
PORTLAND ME
NOTIFIER PHONE: 2078788093

DATE OF RELEASE:
CAUSE OF SPILL: CORROSION (TANK)
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - ODOR/VAPOR/MIST
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 10
UNITS: G
SPILL SOURCE: RESIDENTIAL- MULTIFAMILY
MEDIUM AFFECTED: NONE
TANKS INVOLVED:
NUMBER OF WELLS AT RISK:
NUMBER OF WELLS IMPACTED:

METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED: 5 G

SPILL INVESTIGATED BY: FLANNERY, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632
PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 20

DIST/DIR: 0.18 SW

MAP ID: 17

NAME: MARTHA WILLABEE
ADDRESS: 111 WOODLAWN
PORTLAND ME 04103

REV: 12/7/01
ID1: P11994
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ANONYMOUS
NOTIFIER S ADDRESS: PORTLAND ME
NOTIFIER PHONE:

DATE OF RELEASE:
CAUSE OF SPILL: UNKNOWN
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - OTHER
PRODUCT REPORTED SPILLED: UNKNOWN SUBSTANCE
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: .99
UNITS: G
SPILL SOURCE: RESIDENTIAL- SINGLE FAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: THOMPSON, NATHAN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632
PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 31

DIST/DIR: 0.20 SW

MAP ID: 21

NAME: WILHELMI, MARK
ADDRESS: 119 UNIVERSITY AVENUE
PORTLAND ME 04103

REV: 12/7/01
ID1: P32293
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ANONYMOUS
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE: 20-MAY-1993
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: ANONYMOUS - OTHER
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED:

UNITS:
SPILL SOURCE: RESIDENTIAL- SINGLE FAMILY
MEDIUM AFFECTED: NONE
TANKS INVOLVED:
NUMBER OF WELLS AT RISK:
NUMBER OF WELLS IMPACTED:

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: GORDON, JOHN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SITE			
SEARCH ID: 2	DIST/DIR: 0.24 SW	MAP ID: 1	
NAME: BURT COMPANY		REV: 9/01/02	
ADDRESS: PORTLAND ME		ID1: ME060	
		ID2:	
CONTACT:		STATUS: ACTIVE	
		PHONE:	
 <u>SITE INFORMATION</u>			
STATE STATUS:	BROWNFIELD SITE ASSESSMENT COMPLETED		
FEDERAL STATUS:	CERCLIS		

CERCLIS SITE			
SEARCH ID: 1	DIST/DIR: 0.24 SW	MAP ID: 1	
NAME: BURT COMPANY		REV: 9/10/02	
ADDRESS: 1 CAMBRIDGE STREET PORTLAND ME 04103 CUMBERLAND		ID1: MED985468024	
		ID2: 0102158	
CONTACT: MARY ELLEN STANTON		STATUS: NOT PROPOSED	
		PHONE: 6179181256	
 DESCRIPTION:			
ACTION/QUALITY	AGENCY/RPS	START/RAA	END
SITE REASSESSMENT Low	EPA Fund-Financed		08-02-2001
DISCOVERY	State, Fund Financed		06-25-1990
PRELIMINARY ASSESSMENT High	State, Fund Financed		02-06-1991
REMOVAL ASSESSMENT	EPA Fund-Financed Primary	04-05-1991	04-05-1991
SITE INSPECTION High	EPA Fund-Financed		02-23-1993

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 41

DIST/DIR: 0.26 SW

MAP ID: 29

NAME:
ADDRESS: PORTLAND ME

REV: 6/07/01
ID1: P41688
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: BREZINSKI, S.G.
NOTIFIER S ADDRESS: MAINE DEP
SOUTH PORTLAND ME 04106
NOTIFIER PHONE: 2077674761

DATE OF RELEASE: 14-NOV-1988
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: DEP PERSONNEL - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 0
UNITS: G
SPILL SOURCE: GOVERNMENT- NA
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS: 500
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: 16-20 YEARS
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS: 1000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: 16-20 YEARS
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 35

DIST/DIR: 0.26 SW

MAP ID: 23

NAME: HEAT OIL SPILL
ADDRESS: APT. BLDG.
PORTLAND ME

REV: 6/07/01
ID1: P9186
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: MSO - CASS, PO
NOTIFIER S ADDRESS: COMMERCIAL ST.
PORTLAND ME

NOTIFIER PHONE:

DATE OF RELEASE: 26-MAR-1986
CAUSE OF SPILL: ACCIDENT OTHER
METHOD OF SPILL DETECTION: SPILLER - OTHER
PRODUCT REPORTED SPILLED: HEATING OIL
ACTUAL PRODUCT SPILLED: HEATING OIL
AMOUNT SPILLED: 20
UNITS: G
SPILL SOURCE: RESIDENTIAL- MULTIFAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: ANTZ, EDGAR
SPILL INVESTIGATED BY: BRANN, FRED

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 18

DIST/DIR: 0.30 NW

MAP ID: 15

NAME: HERSEY RES.
ADDRESS: #5 - 237 ALLEN AVE
PORTLAND ME

REV: 12/7/01
ID1: P4920
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: HERSEY, TRACY
NOTIFIER S ADDRESS: 237 ALLEN AVE
PORTLAND ME
NOTIFIER PHONE: 2078787897

DATE OF RELEASE:
CAUSE OF SPILL: POOR WORKMANSHIP
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - ODOR/VAPOR/MIST
PRODUCT REPORTED SPILLED: #1 FUEL OIL - KEROSENE
ACTUAL PRODUCT SPILLED: #1 FUEL OIL - KEROSENE
AMOUNT SPILLED: .99
UNITS: G
SPILL SOURCE: RESIDENTIAL- MULTIFAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED: ABOVE GROUND TANKS INVOLVED
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED: .99 G

SPILL INVESTIGATED BY: DORAN, LINDA

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 30

DIST/DIR: 0.32 SW

MAP ID: 4

NAME: TEAM AUTO BODY/ NE TOWING
ADDRESS: 24 MORRILL
PORTLAND ME 04103

REV: 12/7/01
ID1: P35895
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ANONYMOUS
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE:

CAUSE OF SPILL:

NONE -NO CAUSE

METHOD OF SPILL DETECTION:

ANONYMOUS - SURFACE BREAKOUT

PRODUCT REPORTED SPILLED:

GASOLINE UNSPECIFIED

ACTUAL PRODUCT SPILLED:

NONE

AMOUNT SPILLED:

UNITS:

SPILL SOURCE:

TRANSPORTATION- TRUCK

MEDIUM AFFECTED:

LAND AND GROUNDWATER

TANKS INVOLVED:

NUMBER OF WELLS AT RISK:

NUMBER OF WELLS IMPACTED:

METHOD OF SPILL RECOVERY:

NONE

AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY:

BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 32

DIST/DIR: 0.32 SW

MAP ID: 22

NAME: YANKEE BINGO BUILDING
ADDRESS: 33 ALLEN AVE.
PORTLAND ME

REV: 12/7/01
ID1: P64998
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ERSKINE, GEORGE JR.
NOTIFIER S ADDRESS: ERSKINE CONST.
SOUTH PORTLAND ME
NOTIFIER PHONE: 2077993612

DATE OF RELEASE:
CAUSE OF SPILL: CORROSION (TANK)
METHOD OF SPILL DETECTION: CONTRACTOR - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: .99
UNITS: U
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: LAND AND GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER: 2
SIZE OF TANK IN GALLONS: 6350
TANK MATERIAL:
PIPE MATERIAL:
AGE OF TANK:
TANK STATUS:

TANK NUMBER: 1
SIZE OF TANK IN GALLONS: 4000
TANK MATERIAL:
PIPE MATERIAL:
AGE OF TANK:
TANK STATUS:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 37

DIST/DIR: 0.35 SE

MAP ID: 25

NAME: RESIDENTIAL SPILL
ADDRESS: PORTLAND ME

REV: 6/07/01
ID1: P2789
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: DOC HARRIS
NOTIFIER S ADDRESS: SAME
SOUTH PORTLAND ME
NOTIFIER PHONE:

DATE OF RELEASE: 18-JAN-1989
CAUSE OF SPILL: OVERFILL (TANK OR VESSEL)
METHOD OF SPILL DETECTION: SPILLER - SURFACE BREAKOUT
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 250
UNITS: G
SPILL SOURCE: RESIDENTIAL- SINGLE FAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 250 G

SPILL INVESTIGATED BY: GORDON, JOHN
SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 9

DIST/DIR: 0.37 NE

MAP ID: 9

NAME: CARPENTER, CHRISTINA
ADDRESS: 9 LORING AVENUE
PORTLAND ME

REV: 12/7/01
ID1: P8421
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: CARPENTER, CHRISTINA
NOTIFIER S ADDRESS: 9 LORING AVENUE
PORTLAND ME 04103
NOTIFIER PHONE: 2078785443

DATE OF RELEASE: 12-OCT-2001
CAUSE OF SPILL: CORROSION (TANK)
METHOD OF SPILL DETECTION: SPILLER - ODOR/VAPOR/MIST
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 2
UNITS: G
SPILL SOURCE: RESIDENTIAL- SINGLE FAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED: ABOVE GROUND TANKS INVOLVED
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: PUMPS
METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 2 G

SPILL INVESTIGATED BY: CYR, SCOTT
SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 5

DIST/DIR: 0.39 SE

MAP ID: 7

NAME: BEU
ADDRESS: 312 CANCO ROAD
PORTLAND ME

REV: 12/7/01
ID1: P73599
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: DYER, JANET
NOTIFIER S ADDRESS: CMP
AUGUSTA ME
NOTIFIER PHONE: 2072933695

DATE OF RELEASE: 22-OCT-1999
CAUSE OF SPILL: OTHER KNOWN CAUSE
METHOD OF SPILL DETECTION: SPILLER - OTHER
PRODUCT REPORTED SPILLED: TRANSFORMER OIL NON PCB (UNDER 50 PPM)
ACTUAL PRODUCT SPILLED: NONE
AMOUNT SPILLED: 0
UNITS: G
SPILL SOURCE: UTILITY- POWER
MEDIUM AFFECTED: NONE
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: DORAN, LINDA

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 6

DIST/DIR: 0.39 SE

MAP ID: 7

NAME: BEU PROP.
ADDRESS: 312 CANCO RD.
PORTLAND ME

REV: 12/7/01
ID1: P38291
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: PORTLAND PUMP CO
NOTIFIER S ADDRESS: MUSSEY RD.
SCARBOROUGH ME
NOTIFIER PHONE: 2078834317

DATE OF RELEASE:
CAUSE OF SPILL: PIPING OR HOSING FAILURE
METHOD OF SPILL DETECTION: CONTRACTOR - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: #6 FUEL OIL
ACTUAL PRODUCT SPILLED: #6 FUEL OIL
AMOUNT SPILLED: 5.99
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 4.9 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS: 2000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: GALVANIZED STEEL
AGE OF TANK: 26-30 YEARS
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS: 10000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: GALVANIZED STEEL
AGE OF TANK: 26-30 YEARS
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 13

DIST/DIR: 0.39 SE

MAP ID: 7

NAME: DIVISION OF MOTOR VEHICLES
ADDRESS: 312 CANCO ROAD
PORTLAND ME 04103

REV: 12/7/01
ID1: P19694
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ROUTINE OBSERVATION
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE: 04-APR-1994
CAUSE OF SPILL: OVERFILL (TANK OR VESSEL)
METHOD OF SPILL DETECTION: DEP PERSONNEL - SURFACE BREAKOUT
PRODUCT REPORTED SPILLED: UNLEADED GASOLINE
ACTUAL PRODUCT SPILLED: UNLEADED GASOLINE
AMOUNT SPILLED: 4.99
UNITS: G
SPILL SOURCE: TRANSPORTATION- PRIVATE VEHICLE
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK:
NUMBER OF WELLS IMPACTED:

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 7

DIST/DIR: 0.39 SW

MAP ID: 8

NAME: BIG APPLE
ADDRESS: 6 ALLEN AVE & FOREST AVE.
PORTLAND ME

REV: 12/7/01
ID1: P17590
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: MOORE, KEN
NOTIFIER S ADDRESS: 6 ALLEN AVE.
PORTLAND ME
NOTIFIER PHONE: 2077439212

DATE OF RELEASE: 20-MAR-1990
CAUSE OF SPILL: OVERFILL (TANK OR VESSEL)
METHOD OF SPILL DETECTION: SPILLER - SURFACE BREAKOUT
PRODUCT REPORTED SPILLED: UNLEADED GASOLINE
ACTUAL PRODUCT SPILLED: UNLEADED GASOLINE
AMOUNT SPILLED: 4
UNITS: G
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED: 3.5 G

SPILL INVESTIGATED BY: HAHN, BRADFORD

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 8

DIST/DIR: 0.39 SW

MAP ID: 8

NAME: BIG APPLE GAS
ADDRESS: 6 ALLEN AVE & FOREST
PORTLAND ME

REV: 12/7/01
ID1: P44190
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ANDREW PIERSON
NOTIFIER S ADDRESS: C.N. BROWN
S. PARIS ME
NOTIFIER PHONE: 277439212

DATE OF RELEASE: 01-MAY-1990
CAUSE OF SPILL: LOOSE FITTING
METHOD OF SPILL DETECTION: SPILLER - SURFACE BREAKOUT
PRODUCT REPORTED SPILLED: UNLEADED GASOLINE
ACTUAL PRODUCT SPILLED: UNLEADED GASOLINE
AMOUNT SPILLED: 1300.99
UNITS: G
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: OTHER
METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 1000.9 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN
SPILL INVESTIGATED BY: HAHN, BRADFORD

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS: 6000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: 26-30 YEARS
TANK STATUS: ACTIVE

TANK NUMBER:
SIZE OF TANK IN GALLONS: 4000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: 26-30 YEARS
TANK STATUS: ACTIVE

TANK NUMBER:
SIZE OF TANK IN GALLONS: 6000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED

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Environmental FirstSearch
Site Detail Report

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 8

DIST/DIR: 0.39 SW

MAP ID: 8

NAME: BIG APPLE GAS
ADDRESS: 6 ALLEN AVE & FOREST
PORTLAND ME

REV: 12/7/01
ID1: P44190
ID2:
STATUS:
PHONE:

CONTACT:

AGE OF TANK: 26-30 YEARS
TANK STATUS: ACTIVE

TANK NUMBER:
SIZE OF TANK IN GALLONS: 1000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS: 1000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 33

DIST/DIR: 0.39 SW

MAP ID: 8

NAME: BIG APPLE GAS STA.
ADDRESS: ALLEN AVE @ MORRILS CORNER
PORTLAND ME

REV: 6/07/01
ID1: P63489
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: BOUCHARD, SUSAN
NOTIFIER S ADDRESS: C.N.BROWN
SOUTH PARIS ME
NOTIFIER PHONE: 2077439212

DATE OF RELEASE: 04-OCT-1989
CAUSE OF SPILL: ACCIDENT OTHER
METHOD OF SPILL DETECTION: SPILLER - SURFACE BREAKOUT
PRODUCT REPORTED SPILLED: UNSPECIFIED OIL
ACTUAL PRODUCT SPILLED: UNSPECIFIED OIL
AMOUNT SPILLED: 30.99
UNITS: G
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 29.9 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632
PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 21

DIST/DIR: 0.39 SW

MAP ID: 8

NAME: MARTINS POINT HEALTH CARE
ADDRESS: 331 VERANDA STREET
PORTLAND ME

REV: 12/7/01
ID1: P2890
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: DOWN EAST ENERGY CO.
NOTIFIER S ADDRESS: MAIN ST.
SOUTH PORTLAND ME 04106
NOTIFIER PHONE: 2077995585

NOTIFIER: BREZINSKI, S.
NOTIFIER S ADDRESS: MAINE DEP
SO. PORTLAND ME
NOTIFIER PHONE:

DATE OF RELEASE: 29-FEB-2000
CAUSE OF SPILL: CORROSION OTHER (ALL OTHER CORROSION INDUCED LEAKS NOT INVOLVING PIPES)
METHOD OF SPILL DETECTION: CONTRACTOR - VISUAL PRODUCT
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 1
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: NONE
TANKS INVOLVED: ABOVE GROUND TANKS INVOLVED
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

DATE OF RELEASE:
CAUSE OF SPILL: PIPING OR HOSING FAILURE
METHOD OF SPILL DETECTION: SPILLER - TANK AND/OR PIPE TESTING
PRODUCT REPORTED SPILLED: 21
ACTUAL PRODUCT SPILLED: 21
AMOUNT SPILLED: 5.99
UNITS: G
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED:

AMOUNT OF PRODUCT RECOVERED: 1 G

SPILL INVESTIGATED BY: THOMPSON, NATHAN
SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

- Continued on next page -

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 21

DIST/DIR: 0.39 SW

MAP ID: 8

NAME: MARTINS POINT HEALTH CARE
ADDRESS: 331 VERANDA STREET
PORTLAND ME

REV: 12/7/01
ID1: P2890
ID2:
STATUS:
PHONE:

CONTACT:

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK:
TANK STATUS: ACTIVE

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK:
TANK STATUS: ACTIVE

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK:
TANK STATUS: ACTIVE

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 12

DIST/DIR: 0.41 SE

MAP ID: 11

NAME: CUDDLEDOWN
ADDRESS: 312 CANCO ROAD
PORTLAND ME

REV: 12/7/01
ID1: P38399
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: FITZGERALD, TOM
NOTIFIER S ADDRESS: DEAD RIVER
SOUTH PORTLAND ME
NOTIFIER PHONE: 2078839515

DATE OF RELEASE: 15-JUN-1999
CAUSE OF SPILL: OVERFILL (TANK OR VESSEL)
METHOD OF SPILL DETECTION: SPILLER - VISUAL PRODUCT
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 5.99
UNITS: G
SPILL SOURCE: BUSINESS- INDUSTRIAL
MEDIUM AFFECTED: LAND
TANKS INVOLVED: ABOVE GROUND TANKS INVOLVED
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED: 4.99 G

SPILL INVESTIGATED BY: DORAN, LINDA

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 17

DIST/DIR: 0.41 SW

MAP ID: 14

NAME: FILL-IT-UP-PLEASE
ADDRESS: 1185 FOREST AVE.
PORTLAND ME

REV: 12/7/01
ID1: P59293
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ROUTINE OBSERVATION
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE:
CAUSE OF SPILL: HUMAN ERROR
METHOD OF SPILL DETECTION: DEP PERSONNEL - OTHER
PRODUCT REPORTED SPILLED: UNLEADED GASOLINE
ACTUAL PRODUCT SPILLED: UNLEADED GASOLINE
AMOUNT SPILLED:
UNITS:
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

*Environmental FirstSearch
Site Detail Report*

TARGET SITE: NORTH DEERING ME 04103

JOB: 3632
PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 40	DIST/DIR: 0.44 NW	MAP ID: 28
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NAME:	REV: 6/07/01
ADDRESS: PORTLAND ME	ID1: P8685
	ID2:
	STATUS:
CONTACT:	PHONE:

NOTIFIER: OAKS, MRS.
NOTIFIER S ADDRESS: 1344 WASHINGTON AVE.
PORTLAND ME
NOTIFIER PHONE:

DATE OF RELEASE:
CAUSE OF SPILL: UNKNOWN
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - ODOR/VAPOR/MIST
PRODUCT REPORTED SPILLED: UNSPECIFIED OIL
ACTUAL PRODUCT SPILLED: UNSPECIFIED OIL
AMOUNT SPILLED:
UNITS:
SPILL SOURCE: MYSTERY- NA
MEDIUM AFFECTED: INLAND SURFACE WATER
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: ANTZ, EDGAR

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 25

DIST/DIR: 0.44 SE

MAP ID: 5

NAME: SELTZER & RYDHOLM (PEPSI)
ADDRESS: CANCO RD.
PORTLAND ME

REV: 12/7/01
ID1: P61292
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ROUTINE OBS.

NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE:

CAUSE OF SPILL: OVERFILL (TANK OR VESSEL)

METHOD OF SPILL DETECTION: DEP PERSONNEL - OTHER

PRODUCT REPORTED SPILLED: DIESEL

ACTUAL PRODUCT SPILLED: DIESEL

AMOUNT SPILLED: 1.99

UNITS: G

SPILL SOURCE: TERMINAL- SERVICE STATION

MEDIUM AFFECTED: GROUNDWATER

TANKS INVOLVED: UNDERGROUND STORAGE TANKS

NUMBER OF WELLS AT RISK: 0

NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION

AMOUNT OF PRODUCT RECOVERED: 3 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 26

DIST/DIR: 0.44 SE

MAP ID: 5

NAME: SELTZER AND RYDHOLM
ADDRESS: 250 CANCO ROAD
PORTLAND ME

REV: 12/7/01
ID1: P19798
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: DEAD RIVER COMPANY
NOTIFIER S ADDRESS: 73 PLEASANT HILL ROAD
SCARBOROUGH ME 04074
NOTIFIER PHONE: 2078839515

DATE OF RELEASE: 11-MAY-1998
CAUSE OF SPILL: OVERFILL (TANK OR VESSEL)
METHOD OF SPILL DETECTION: SPILLER - VISUAL PRODUCT
PRODUCT REPORTED SPILLED: DIESEL
ACTUAL PRODUCT SPILLED: DIESEL
AMOUNT SPILLED: 15.99
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: LAND
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: SORBENTS
METHOD OF SPILL RECOVERY: EXCAVATION
METHOD OF SPILL RECOVERY: OTHER
AMOUNT OF PRODUCT RECOVERED: 15.99 G

SPILL INVESTIGATED BY: THOMPSON, NATHAN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL:
PIPE MATERIAL:
AGE OF TANK:
TANK STATUS:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 28

DIST/DIR: 0.44 SE

MAP ID: 5

NAME: SELTZER AND RYDHOLM, INC.
ADDRESS: 250 CANCO ROAD
PORTLAND ME 04103

REV: 12/7/01
ID1: P71191
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: SELTZER AND RYHDOLM, INC.
NOTIFIER S ADDRESS: 250 CANCO ROAD
PORTLAND ME 04103
NOTIFIER PHONE: 2077734258

DATE OF RELEASE: 09-DEC-1990
CAUSE OF SPILL: HUMAN ERROR
METHOD OF SPILL DETECTION: SPILLER - OTHER
PRODUCT REPORTED SPILLED: HAZARDOUS CHEMICAL UNSPECIFIED
ACTUAL PRODUCT SPILLED: HAZARDOUS CHEMICAL UNSPECIFIED
AMOUNT SPILLED: 30
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: ATMOSPHERE
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED: 2 G

SPILL INVESTIGATED BY: GORDON, JOHN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 27

DIST/DIR: 0.44 SE

MAP ID: 5

NAME: SELTZER AND RYDHOLM, INC.
ADDRESS: 250 CANCO ROAD
PORTLAND ME 04103

REV: 12/7/01
ID1: P74696
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: LYSCARS, ALAN
NOTIFIER S ADDRESS: FIELD SERVICES INC.
PORTLAND ME
NOTIFIER PHONE:

DATE OF RELEASE:
CAUSE OF SPILL: UNKNOWN
METHOD OF SPILL DETECTION: CONTRACTOR - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: DIESEL
ACTUAL PRODUCT SPILLED: DIESEL
AMOUNT SPILLED: 9.99
UNITS: G
SPILL SOURCE: TERMINAL- OTHER
MEDIUM AFFECTED: LAND AND GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 5.99 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL:
PIPE MATERIAL:
AGE OF TANK:
TANK STATUS:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 36

DIST/DIR: 0.44 SW

MAP ID: 24

NAME: MEINEKE MUFFLER (FORMER GAS STA.)
ADDRESS: FOREST AVE @ MORRIL S CNR
PORTLAND ME

REV: 6/07/01
ID1: P30186
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ESTES, CHRIS
NOTIFIER S ADDRESS: PORTLAND ME
NOTIFIER PHONE:

DATE OF RELEASE: 27-AUG-1986
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: NONE
ACTUAL PRODUCT SPILLED: NONE
AMOUNT SPILLED: 0
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: NONE
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: DAYE, JAMES
SPILL INVESTIGATED BY: ST. GERMAIN, MARK

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS: 500
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL:
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 14

DIST/DIR: 0.45 SW

MAP ID: 12

NAME: DIXON ASSOC. (FORMER AMOCO)
ADDRESS: 1170 FOREST & STEVENS
PORTLAND ME 04103

REV: 12/7/01
ID1: P43791
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ROUTINE OBS.
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE: 09-JUL-1991
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: CONTRACTOR - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: WASTE OIL / USED MOTOR OIL
ACTUAL PRODUCT SPILLED: WASTE OIL / USED MOTOR OIL
AMOUNT SPILLED:
UNITS:
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: NONE
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER: 6
SIZE OF TANK IN GALLONS: 500
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 15

DIST/DIR: 0.45 SW

MAP ID: 12

NAME: DIXON ASSOC. (FORMER AMOCO)
ADDRESS: 1170 FOREST & STEVENS
PORTLAND ME 04103

REV: 12/7/01
ID1: P4540
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ANONYMOUS
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE:
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: ANONYMOUS - UST TANK ANOMALY
PRODUCT REPORTED SPILLED: GASOLINE UNSPECIFIED
ACTUAL PRODUCT SPILLED: NONE
AMOUNT SPILLED:
UNITS:
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: NONE
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: WITKOP, JUANITA
SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 19

DIST/DIR: 0.45 SW

MAP ID: 16

NAME: M.L. BREWER FINE WOODWORKING INC.
ADDRESS: 91 BELL STREET
PORTLAND ME 04103

REV: 12/7/01
ID1: P48795
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: BREWER, MALCOLM OF ML BREWER FINE WOODWORKING INC.
NOTIFIER S ADDRESS: 91 BELL STREET
PORTLAND ME 04103
NOTIFIER PHONE: 2077970973

DATE OF RELEASE: 09-JUN-1995
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: SPILLER - OTHER
PRODUCT REPORTED SPILLED: NONE
ACTUAL PRODUCT SPILLED: NONE
AMOUNT SPILLED: 0
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: NONE
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: VACUUM TRUCKS
AMOUNT OF PRODUCT RECOVERED: 25.99 G

SPILL INVESTIGATED BY: THOMPSON, NATHAN

TANK INFORMATION:

TANK NUMBER: 1
SIZE OF TANK IN GALLONS: 550
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: GALVANIZED STEEL
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 22

DIST/DIR: 0.47 NW

MAP ID: 18

NAME: RENTAL PROPERTY
ADDRESS: 308 ALAN AVE.
PORTLAND ME 04103

REV: 12/7/01
ID1: P68495
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: BEGELY, BECKY
NOTIFIER S ADDRESS: 308 ALAN AVE
PORTLAND ME 04103
NOTIFIER PHONE: 2077752144

DATE OF RELEASE:
CAUSE OF SPILL: PIPING CORROSION
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - OTHER
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 2.99
UNITS: G
SPILL SOURCE: RESIDENTIAL- MULTIFAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED: ABOVE GROUND TANKS INVOLVED
NUMBER OF WELLS AT RISK:
NUMBER OF WELLS IMPACTED:

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED:

SPILL INVESTIGATED BY: DORAN, LINDA

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SITE			
SEARCH ID: 4	DIST/DIR: 0.47 SE	MAP ID: 6	
NAME: MURRAY STREET SITE	REV: 05-31-95		
ADDRESS: MURRAY STREET PORTLAND ME 04103	ID1: ME430		
CONTACT:	ID2:	STATUS: DEL	
	PHONE:		
CONTENTS:	LEAD		

STATE SPILLS SITE			
SEARCH ID: 29	DIST/DIR: 0.47 SE	MAP ID: 6	
NAME: SPILL INVEST.	REV: 12/7/01		
ADDRESS: MURREY ST. PORTLAND ME	ID1: P33492		
CONTACT:	ID2:	STATUS:	
	PHONE:		
NOTIFIER:	FRANK-SHAW (SEBAGO TECHNIC)		
NOTIFIER S ADDRESS:	12 WESTBROOK COMM. WESTBROOK ME		
NOTIFIER PHONE:	2078560277		
DATE OF RELEASE:	28-MAY-1992		
CAUSE OF SPILL:	DELIBERATE DISCHARGE		
METHOD OF SPILL DETECTION:	CONTRACTOR - OTHER		
PRODUCT REPORTED SPILLED:	NONE		
ACTUAL PRODUCT SPILLED:	NONE		
AMOUNT SPILLED:	10		
UNITS:	Y		
SPILL SOURCE:	RESIDENTIAL- OTHER		
MEDIUM AFFECTED:	LAND		
TANKS INVOLVED:			
NUMBER OF WELLS AT RISK:	0		
NUMBER OF WELLS IMPACTED:	0		
METHOD OF SPILL RECOVERY:	E		
AMOUNT OF PRODUCT RECOVERED:	10 Y		
SPILL INVESTIGATED BY:	DUNLAP, JOHN		
<u>TANK INFORMATION:</u>			

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 38

DIST/DIR: 0.47 SE

MAP ID: 26

NAME: TRUCK ACCIDENT

REV: 6/07/01

ADDRESS:
PORTLAND ME

ID1: P42689

ID2:

CONTACT:

STATUS:

PHONE:

NOTIFIER: DUNLAP, JOHN DEP
NOTIFIER S ADDRESS: 21 VOCATIONAL DR.
SOUTH PORTLAND ME 04106
NOTIFIER PHONE: 2077674761

DATE OF RELEASE: 25-JUL-1989
CAUSE OF SPILL: ACCIDENT (TRAFFIC)
METHOD OF SPILL DETECTION: SPILLER - OTHER
PRODUCT REPORTED SPILLED: DIESEL
ACTUAL PRODUCT SPILLED: DIESEL
AMOUNT SPILLED: 20
UNITS: G
SPILL SOURCE: TRANSPORTATION- TRUCK
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: OTHER
AMOUNT OF PRODUCT RECOVERED: 30 G

SPILL INVESTIGATED BY: DUNLAP, JOHN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 39

DIST/DIR: 0.47 SW

MAP ID: 27

NAME:
ADDRESS: PORTLAND ME

REV: 6/07/01
ID1: P11183
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: VOGLE, TIM
NOTIFIER S ADDRESS:

NOTIFIER PHONE:

DATE OF RELEASE:
CAUSE OF SPILL: LOOSE FITTING
METHOD OF SPILL DETECTION: CITIZEN COMPLAINT - OTHER
PRODUCT REPORTED SPILLED: TRANSFORMER OIL NON PCB (UNDER 50 PPM)
ACTUAL PRODUCT SPILLED: TRANSFORMER OIL NON PCB (UNDER 50 PPM)
AMOUNT SPILLED: .34
UNITS: G
SPILL SOURCE: BUSINESS- INDUSTRIAL
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: SORBENTS
AMOUNT OF PRODUCT RECOVERED: .25 G

SPILL INVESTIGATED BY: DAYE, JAMES

TANK INFORMATION:

Environmental FirstSearch
Site Detail Report

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 16

DIST/DIR: 0.47 SW

MAP ID: 13

NAME: DIXON, FRANK
ADDRESS: 168 BROOK ROAD
PORTLAND ME 04105

REV: 12/7/01
ID1: P49292
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: PORTLAND FIRE DEPARTMENT
NOTIFIER S ADDRESS: 380 CONGRESS STREET
PORTLAND ME 04101
NOTIFIER PHONE: 2078748300

DATE OF RELEASE: 09-AUG-1992
CAUSE OF SPILL: VANDALISM
METHOD OF SPILL DETECTION: PUBLIC OFFICIAL - OTHER
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 40
UNITS: G
SPILL SOURCE: RESIDENTIAL- SINGLE FAMILY
MEDIUM AFFECTED: LAND
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 20 G

SPILL INVESTIGATED BY: GORDON, JOHN

TANK INFORMATION:

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS 80's SITE

SEARCH ID: 34

DIST/DIR: 0.48 SW

MAP ID: 20

NAME: FORMER GAS STA. (SUSAN S FISH)
ADDRESS: 1127 FOREST AVE
PORTLAND ME

REV: 6/07/01
ID1: P73889
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: BREZINSKI, S.
NOTIFIER S ADDRESS: DEP
PORTLAND ME 04103
NOTIFIER PHONE: 2078796300

DATE OF RELEASE:
CAUSE OF SPILL: UNKNOWN
METHOD OF SPILL DETECTION: DEP PERSONNEL - UST TANK ANOMALY
PRODUCT REPORTED SPILLED: GASOLINE UNSPECIFIED
ACTUAL PRODUCT SPILLED: GASOLINE UNSPECIFIED
AMOUNT SPILLED:
UNITS:
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS:
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 24

DIST/DIR: 0.48 SW

MAP ID: 20

NAME: RICE PROPERTY
ADDRESS: 1335 FOREST AVE.
PORTLAND ME

REV: 12/7/01
ID1: P33190
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: ALBERT, DIANE
NOTIFIER S ADDRESS: CLEAN HARBORS, INC.
SOUTH PORTLAND ME 04106
NOTIFIER PHONE: 2077998111

DATE OF RELEASE:
CAUSE OF SPILL: NONE -NO CAUSE
METHOD OF SPILL DETECTION: DEP PERSONNEL - UST TANK ANOMALY
PRODUCT REPORTED SPILLED: NONE
ACTUAL PRODUCT SPILLED: NONE
AMOUNT SPILLED: 0
UNITS: G
SPILL SOURCE: TERMINAL- SERVICE STATION
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: SMITH, SHERYL
SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS: 4000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS: 4000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN
TANK STATUS: ABANDONED

TANK NUMBER:
SIZE OF TANK IN GALLONS: 4000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: STEEL - BARE OR ASPHALT COATED
AGE OF TANK: UNKNOWN

- Continued on next page -

*Environmental FirstSearch
Site Detail Report*

TARGET SITE: NORTH DEERING ME 04103

JOB: 3632
PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 24

DIST/DIR: 0.48 SW

MAP ID: 20

NAME: RICE PROPERTY
ADDRESS: 1335 FOREST AVE.
PORTLAND ME

REV: 12/7/01
ID1: P33190
ID2:
STATUS:
PHONE:

CONTACT:

TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 10

DIST/DIR: 0.49 SW

MAP ID: 3

NAME: CASCO NORTHERN PROP.
ADDRESS: 844 STEVENS AVE
PORTLAND ME

REV: 12/7/01
ID1: P9192

CONTACT:

STATUS:
PHONE:

NOTIFIER: ARTHUR GRANT
NOTIFIER S ADDRESS: PORTLAND PUMP CO.
SCARBOROUGH ME
NOTIFIER PHONE: 2078834317

DATE OF RELEASE:
CAUSE OF SPILL: LOOSE FITTING
METHOD OF SPILL DETECTION: CONTRACTOR - TANK AND/OR PIPING REMOVAL
PRODUCT REPORTED SPILLED: #2 FUEL OIL
ACTUAL PRODUCT SPILLED: #2 FUEL OIL
AMOUNT SPILLED: 10.99
UNITS: G
SPILL SOURCE: BUSINESS- COMMERCIAL
MEDIUM AFFECTED: GROUNDWATER
TANKS INVOLVED: UNDERGROUND STORAGE TANKS
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: EXCAVATION
AMOUNT OF PRODUCT RECOVERED: 9.9 G

SPILL INVESTIGATED BY: BREZINSKI, STEPHEN

TANK INFORMATION:

TANK NUMBER:
SIZE OF TANK IN GALLONS: 1000
TANK MATERIAL: STEEL - BARE OR ASPHALT COATED
PIPE MATERIAL: COPPER
AGE OF TANK: 30+ YEARS
TANK STATUS: ABANDONED

**Environmental FirstSearch
Site Detail Report**

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SPILLS SITE

SEARCH ID: 11

DIST/DIR: 0.49 SW

MAP ID: 10

NAME: CMP POLE 17
ADDRESS: BISHOP ST
PORTLAND ME

REV: 12/7/01
ID1: P20896
ID2:
STATUS:
PHONE:

CONTACT:

NOTIFIER: LAGASSE, JANET (CMP)
NOTIFIER S ADDRESS: 41 ANTHONY AVE
AUGUSTA ME 04330
NOTIFIER PHONE: 2076269600

DATE OF RELEASE: 22-MAR-1996
CAUSE OF SPILL: LOOSE FITTING
METHOD OF SPILL DETECTION: SPILLER - VISUAL PRODUCT
PRODUCT REPORTED SPILLED: TRANSFORMER OIL NON PCB (UNDER 50 PPM)
ACTUAL PRODUCT SPILLED: TRANSFORMER OIL NON PCB (UNDER 50 PPM)
AMOUNT SPILLED: .1
UNITS: G
SPILL SOURCE: UTILITY- POWER
MEDIUM AFFECTED: NONE
TANKS INVOLVED:
NUMBER OF WELLS AT RISK: 0
NUMBER OF WELLS IMPACTED: 0

METHOD OF SPILL RECOVERY: NONE
AMOUNT OF PRODUCT RECOVERED: 0 G

SPILL INVESTIGATED BY: BERNARD, SHERYL

TANK INFORMATION:

***Environmental FirstSearch
Site Detail Report***

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

STATE SITE

SEARCH ID: 3

DIST/DIR: 0.65 SW

MAP ID: 2

NAME: MERRILL TRANSPORT COMPANY
ADDRESS: PORTLAND ME

REV: 9/01/02
ID1: ME033
ID2:
STATUS: ACTIVE
PHONE:

CONTACT:

SITE INFORMATION

STATE STATUS: MONITORING ACTIVITIES ONGOING

FEDERAL STATUS: CERCLIS-ARCHIVE

Environmental FirstSearch Federal Databases and Sources

NPL: National Priority List. The EPA's list of confirmed or proposed Superfund sites. Source: Environmental Protection Agency.

Updated quarterly.

CERCLIS: Comprehensive Environmental Response Compensation and Liability Information System. The EPA's database of current and potential Superfund sites currently or previously under investigation. Source: Environmental Protection Agency.

Updated quarterly.

RCRIS: Resource Conservation and Recovery Information System. The EPA's database of registered hazardous waste generators and treatment, storage and disposal facilities. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List). Source: Environmental Protection Agency.

RCRA TSD: Resource Conservation and Recovery Information System Treatment, Storage, and Disposal Facilities. The EPA's database of RCRIS sites which treat, store, dispose, or incinerate hazardous waste. This information is also reported in the standard RCRIS detailed data.

RCRA COR: Resource Conservation and Recovery Information System Corrective Action Sites. The EPA's database of RCRIS sites with reported corrective action. This information is also reported in the standard RCRIS detailed data.

RCRA GEN: Resource Conservation and Recovery Information System Large and Small Quantity Generators. The EPA's database of RCRIS sites that create more than 100kg of hazardous waste per month or meet other RCRA requirements. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List).

RCRA NLR: Resource Conservation and Recovery Information System sites No Longer Regulated. The EPA's database of RCRIS sites that create less than 100kg of hazardous waste per month or do not meet other RCRA requirements.

All RCRA databases are Updated quarterly.

ERNS: Emergency Response Notification System. The EPA's database of emergency response actions. Source: Environmental Protection Agency.

Updated quarterly.

RELEASES: Air and Surface Water Releases. A subset of the EPA's ERNS database which have impacted only air or surface water.

Updated semi-annually.

NPDES: National Pollution Discharge Elimination System. The EPA's database of all permitted facilities receiving and discharging effluents. Source: Environmental Protection Agency.

Updated semi-annually.

FINDS: The Facility Index System. The EPA's Index of identification numbers associated with a property or facility which the EPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the EPA office that may have files on the site or facility. Source: Environmental Protection Agency.

Updated semi-annually.

TRIS: Toxic Release Inventory System. The EPA's database of all facilities that have had or may be prone to toxic material releases. Source: Environmental Protection Agency.

Updated semi-annually.

ACEC: Areas of Critical Environmental Concern. This database contains state and federally designated areas of environmental concern such as endangered species habitats, protected open spaces, parks, conservation areas and wildlife preserves. It also contains contact information for threatened and endangered species. Source: U.S. Fish and Wildlife Services, Ecological Services Offices; State GIS Departments.

Updated periodically.

Floodplains: 100 year and 500 year flood zone boundaries for select counties in the United States. Source: Federal Emergency Management Agency (FEMA).

This database will be updated as new data becomes available.

Receptors: 1995 TIGER census listing of schools and hospitals that may house individuals deemed sensitive to environmental discharges due to their fragile immune systems.

Historic Sites: National Register of Historical Places Database. The nation's official list of cultural resources worthy of preservation. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. Source: National Park Service.

Updated yearly.

Wetlands: U.S. Fish and Wildlife Service produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This data is available for select areas of the United States. Source: U.S. Fish and Wildlife Service, National Wetlands Inventory.

This database will be updated as new data becomes available.

Fed Land Use: Federal Land data includes information from the following government agencies including Bureau of Indian Affairs, Bureau of Reclamation, Bureau of Land Management, Department of Defense, Forest Service, Fish and Wildlife Service, National Park Service, and the Tennessee Valley Authority. This database also contains data regarding wild and scenic rivers. Source: USGS.

Updated periodically.

Environmental FirstSearch Maine Databases and Sources

1. **State Sites:** The Inventory and Suspected Hazardous Waste Sites. The ME Department of Environmental Protection's database of inventoried and suspected sites maintained by the Bureau of Hazardous Materials and Solid Waste Control, Division of Site Investigation and Remediation.

Updated quarterly.

2. **Spills:** The ME Department of Environmental Protection's database of emergency response actions and spill releases maintained by the Bureau of Hazardous Materials and Solid Waste Control Division of Response Services.

Updated quarterly.

3. **Landfills:** The ME Department of Environmental Protection's database of active solid waste landfill facilities maintained by the Bureau of Hazardous Materials and Solid Waste Control, Division of Site Investigation and Remediation.

Updated annually.

4. **UST:** Underground Storage Tanks. The ME Department of Environmental Protection's database of registered underground storage tanks maintained by the Bureau of Hazardous Materials and Solid Waste Control, Division of Oil & Hazardous Facilities Regulation.

Updated semi-annually.

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

TARGET SITE:

NORTH DEERING ME 04103

JOB: 3632

PHASE I ESA

Street Name	Dist/Dir	Street Name	Dist/Dir
Beachwood Rd	0.06 NE		
Bernard Rd	0.16 NE		
Berry Ave	0.09 NE		
Cambridge St	0.21 SW		
Chesley Ave	0.04 NE		
Cornell St	0.24 SW		
Drake St	0.24 NE		
Edgewood Ave	0.09 NE		
Harvard St	0.06 SW		
Magnolia St	0.20 SW		
Mona Rd	0.24 NW		
Morrill St	0.16 SW		
Oakwood Rd	0.13 NE		
Princeton St	0.20 SW		
Samuel Rd	0.19 NE		
Sara Ln	0.24 NE		
University St	0.19 SW		
Washington Ave	0.24 NE		
Woodlawn Ave	0.16 SW		
Yale St	0.06 SW		



Environmental FirstSearch

1 Mile Radius
ASTM Map: NPL, RCRACOR, STATE Sites



, NORTH DEERING ME 04103



Source: 1999 U.S. Census TIGER Files

Target Site (Latitude: 43.69198 Longitude: -70.287501)



Identified Site, Multiple Sites, Receptor



NPL, Solid Waste Landfill (SWL) or Hazardous Waste



Railroads



Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius



Environmental FirstSearch






.5 Mile Radius
ASTM Map: CERCLIS, RCRATSD, SPILLS90, SWL



, NORTH DEERING ME 04103



Source: 1999 U.S. Census TIGER Files

- Target Site (Latitude: 43.69198 Longitude: -70.287501) 
 - Identified Site, Multiple Sites, Receptor  
 - NPL, Solid Waste Landfill (SWL) or Hazardous Waste 
 - Railroads 
- Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius



Environmental FirstSearch

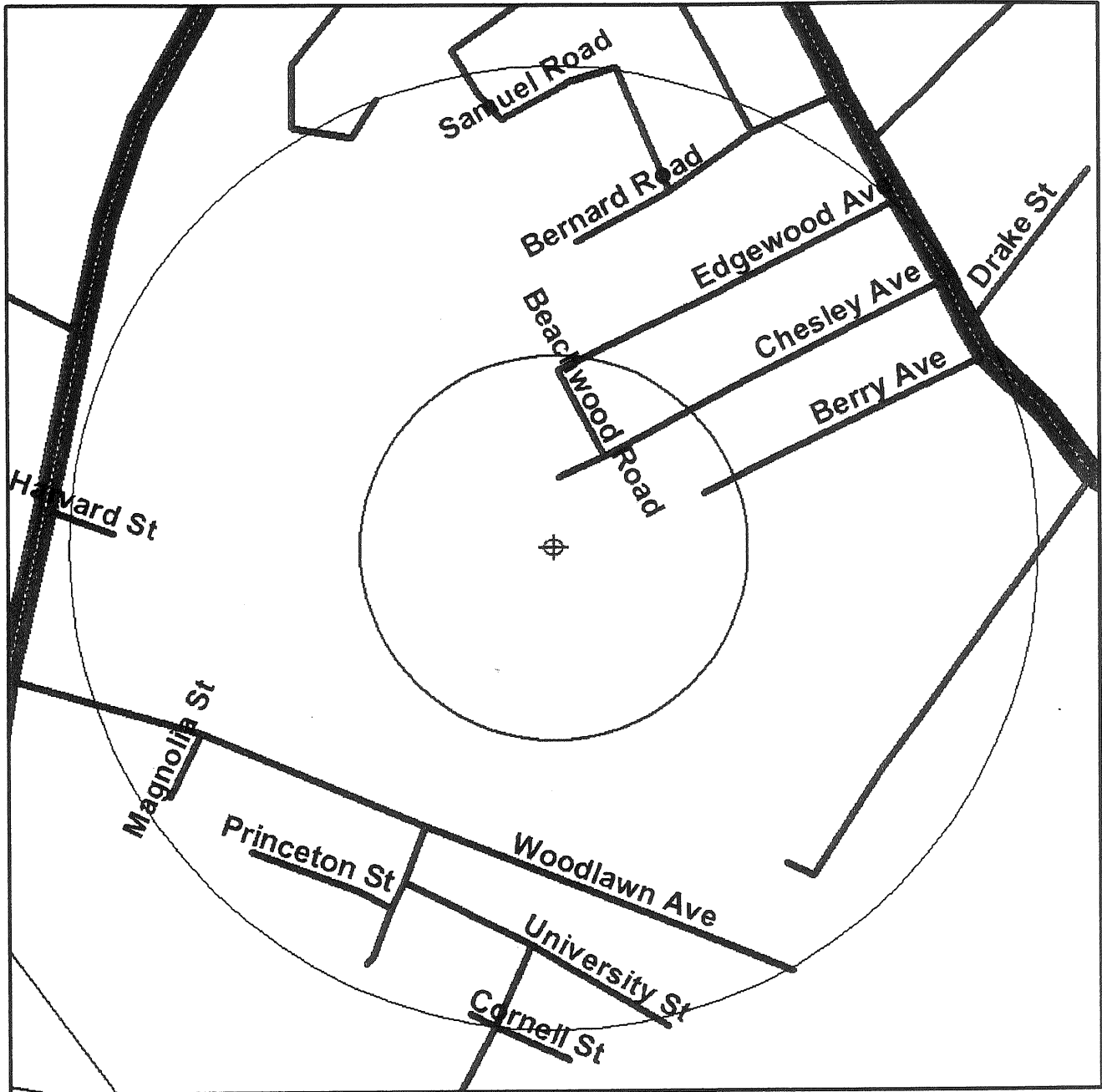
.25 Mile Radius

ASTM Map: RCRA GEN, ERNS, UST

Environmental
FIRSTSEARCH



, NORTH DEERING ME 04103



Source: 1999 U.S. Census TIGER Files

Target Site (Latitude: 43.69198 Longitude: -70.287501)



Identified Site, Multiple Sites, Receptor



NPL, Solid Waste Landfill (SWL) or Hazardous Waste



Railroads



Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Appendix C

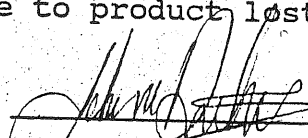
MEDEP Spill Reports

P-426-89

Starbird, William (Starbird & Sons)

On July 25, 1989, DEP Representative assisted in the clean-up of a Diesel fuel clean-up at Washington Ave.- Canco Rd., Portland. Starbird Trucking out of Dayton, ME. While traveling down Washington Ave. hit an unknown object putting a gash in one of the Saddle tanks. Approximate amount of fuel lost was 15-20 gallons. Portland Fire Dept. was called to the scene to assist.

Road was sanded due to product lost along Washington Ave.



JOHN DUNLAP
Oil & Hazardous Materials Specialist III
Bureau of Oil and Hazardous Materials

JD/mg

cc: File

FILE COPY

WASHINGTON
KAR

Oil & Hazardous Materials Report Form Spill Number: P/426/89

Subject:

Name (Last, First MI): STARBIRD, WILLIAM (ST. & SONS)
Address: _____ Town: DAYTON
State: ME Zip-code: _____ Telephone: 2079294394

Spill Information:

Location (Town): PORTLAND Spill Type: A
Amount spilled: 20.00 gals.Y cu. yds.N lbs.N bbls.N
Type of spill: 29
Date of Spill: 89/07/25 (yy/mm/dd) Time of Spill: 1300 (Military)
Date Reported: 89/07/25 (yy/mm/dd) Time Reported: 1300 (Military)
Cause: 11 Detection method: 21
Incident code: ETRL DEP response time involved: 1.0 (hours)
Number of wells at risk: 0 Number of wells impacted: 0
Investigators' names: 1. DUNLAP, JOHN
2. _____
3. _____

Person Reporting Incident:

Name (Last, First MI): DUNLAP, JOHN DEP
Address: 21 VOCATIONAL DR. Town: SOUTH PORTLAND
State: ME Zip-code: 04106 Telephone: 2077674761

Oil & Hazardous Materials Report Form
Spill Number: P/426/89 (continued)

Clean-up Information:

Total product recovered: 30.00 gals.Y cu. yds.N lbs.N bbls.N
Method: J Non-recyclable: 10.00 gals.Y bbls.N
Solids: combustible: 1.0 cu. yds.Y tonsN
non-combustible: 0.0 cu.yds.
Recyclable material: _____ gals.N cu. yds.N lbs.N bbls.N
Number of filters installed: 0 Number of aerators installed: 0
Disposal information:

Other Actions:

Reimbursement: to SF (surface water): N (Y/N)
to GF (ground water): N (Y/N)
to HWF (haz waste): N (Y/N)
Third party damage claim expected: N (Y/N)
Enforcement Referral: N (Y/N)

Date 10/4/89

DEP SPILL # P-634-89

GENERATOR C.N. Brown Company

TRANSPORTER ~~Dick Stewart, RAS Enterprises, Portland~~
C.N. Brown Co.

REFERENCE: SHIPMENT OF OIL SPILL DEBRIS

ON 4 October 1989 Stephen Brezinski OBSERVED THE
(date) (DEP representative)

clean up of oil spill debris at BIG APPLE / C.N. BROWN Co., Allan and
(location)

Forest Ave, Portland ME 761-2000

which resulted from spillage of virgin product (Actene) from
(description of incident)

punctured 55 gallon drum, approx 30 gallons lost.

This shipment consists of _____ yards
(quantity)

~~and/or~~ four _____ drums of solid contaminated with

ACTENE A; Petroleum hydrocarbon mixture, additive to #2
(contaminant)

fuel oil, (DEP treats as petroleum product like #2, diesel) Flash Pt = 145°C

Solids consist of (check as appropriate)

sand, gravel or soil

speedy-dri

sorbent

other

Driveway gravel.

(describe or lists)

Facility is (check One)

Landfill

Land Spreading Site

Asphalt Plant

Asphalt Pug Mill

other

Bulk Plant / Gas station

(describe)

Stephen Brezinski

Signature- DEP Representative

Signature-Facility Representative

white - DEP Representative
Pink - Generator

Canary - Transporter
Goldenrod - Receiving facility



P-634-89

Big Apple / C.N. Brown

Response to report of a punctured drum of actene, a #2 fuel oil additive for C.N. Brown's "Red Shield" fuel oil.

Upon arrival on scene I observed in rear of facility near parked fuel oil trucks: 1.) a punctured 55 gallon drum on its side, puncture up to stop leakage, 2.) drum was outside brick and gated pen where other barrels stored, 3.) a stream of blood-red product had flowed and pooled in a stream towards Allen Avenue.

I immediately lay down sorbent pads and with help of C.N. Brown work readily picked up free product. Lev Parker of C.N. Brown had crew from Dick Stewart / RAS Enterprises come down while I was there to dig up contaminated soil.

We bagged pads, and soil put on poly till barrels acquired. At first I was reluctant to treat as other than a hazardous waste; after reading Material Safety Data Sheet and conferring with S. Eufemia, OHMS III, I agreed that disposal as virgin petroleum spill was best recourse.

See attached "Virgin contamination debris" papers, and MSDS.

5 October, Thursday: I visited spill site at 1530 hours and believe adequately cleaned up.

S. G. Brezinski 10/23/89

STEPHEN G. BREZINSKI
OIL AND HAZARDOUS MATERIALS SPECIALIST I
BUREAU OF OIL AND HAZARDOUS MATERIALS

SGB/mg

cc: File

Oil & Hazardous Materials Report Form
Spill Number: P/634/89

Subject:

Name (Last, First MI): BIG APPLE/C. N. BROWN
Address: FOREST AND ALLEN AVE Town: PORTLAND
State: ME Zip-code: _____ Telephone: 2077612000

Spill Information:

Location (Town): PORTLAND Spill Type: A
Amount spilled: 30.90 gals.Y cu. yds.N lbs.N bbls.N
Type of spill: 80
Date of Spill: 89/10/04 (yy/mm/dd) Time of Spill: 0700 (Military)
Date Reported: 89/10/04 (yy/mm/dd) Time Reported: 1000 (Military)
Cause: 14 Detection method: 2F
Incident code: CSSL DEP response time involved: 4.0 (hours)
Number of wells at risk: 0 Number of wells impacted: 0
Investigators' names: 1. BREZINSKI, S.G. OHMS I
2. _____
3. _____

Person Reporting Incident:

Name (Last, First MI): BOUCHARD, SUSAN
Address: C.N.BROWN Town: SOUTH PARIS
State: ME Zip-code: _____ Telephone: 2077439212

Oil & Hazardous Materials Report Form

Spill Number: P/634/89 (continued)

Clean-up Information:

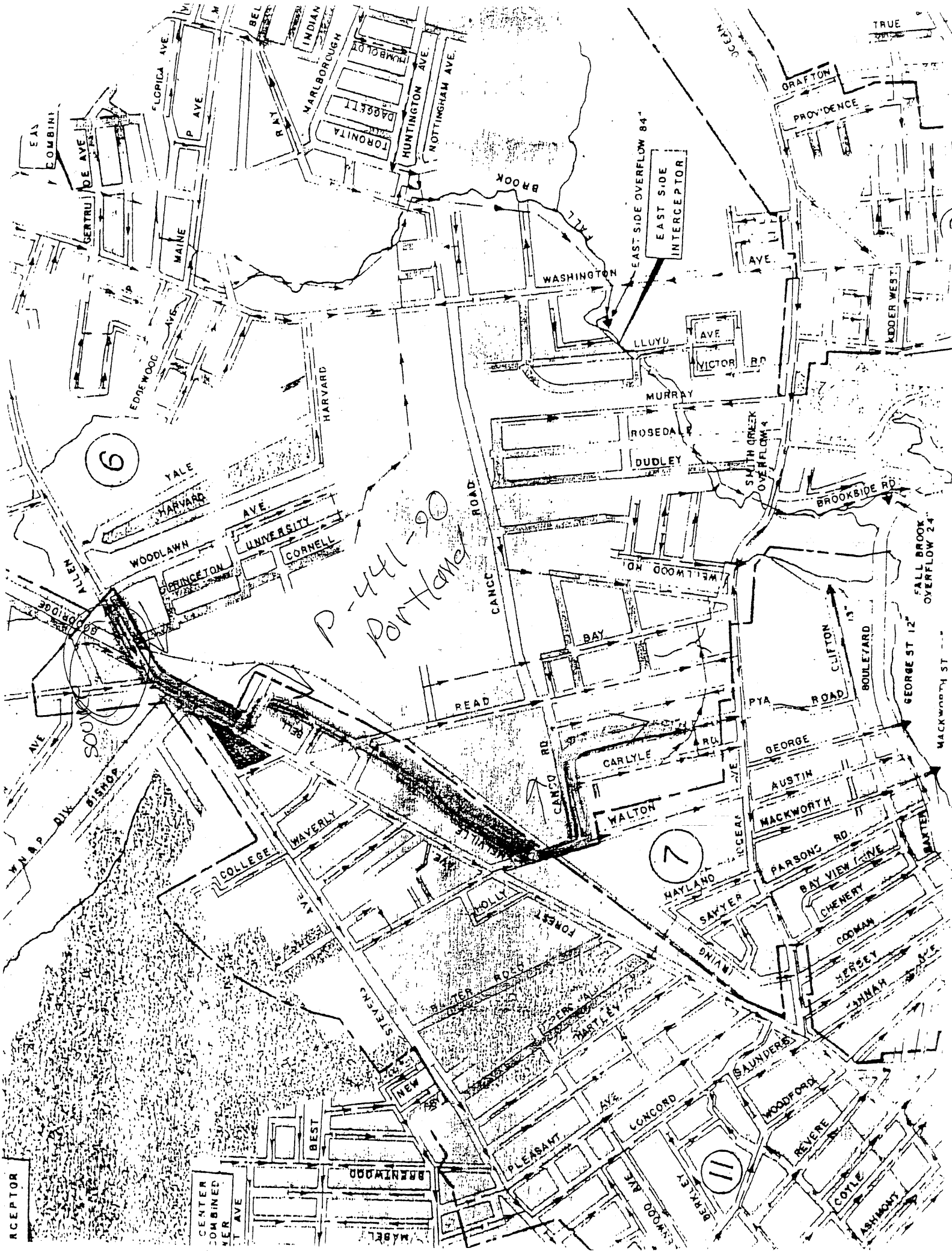
Total product recovered: 29.90 gals.Y cu. yds.N lbs.N bbls.N
Method: G Non-recyclable: 4.00 gals.Y bbls.N
Solids: combustible: 1.0 cu. yds.Y tonsN
non-combustible: 2.0 cu.yds.
Recyclable material: 0.00 gals.Y cu. yds.N lbs.N bbls.N
Number of filters installed: 0 Number of aerators installed: 0
Disposal information:

PADS TO INCINERATOR, SOIL TO LANDFILL

Other Actions:

Reimbursement: to SF (surface water): (Y/N)
to GF (ground water): N (Y/N)
to HWF (haz waste): N (Y/N)
Third party damage claim expected: N (Y/N)
Enforcement Referral: N (Y/N)





P-441-90
Portland

6

7

11

FALL BROOK
OVERFLOW 24"

EAST SIDE
OVERFLOW INTERCEPTOR

RECEPTOR

CENTER
COMBINED
SEWER

BREITWOOD

MABEL

PLEASANT

CONCORD

WOODFORD

REVERE

COYLE

ASHMONT

COLLEGE

WAVERLY

WALTON

CARLYLE

WELWOOD RD

BAY

DUDLEY

ROSEDALE

MURRAY

LLUYD

WASHINGTON

WOODLAWN

UNIVERSITY

HARVARD

YALE

HUNTINGTON

NOTTINGHAM

HUMPHREYS

TONONITA

DAGGETT

INDIAN

MARLBOROUGH

RAY

BEL

EDREWOOD

MAINE

P AVE

FLORIDA AVE

COMBINI

GERTRUDE AVE

EAS

PROVIDENCE

GRAFTON

TRU

RODER WEST

WIDER WEST

WIDER WEST

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P-441-90 Addendum

PORTLAND REGIONAL OFFICE OIL SPILL REPORT FORM

Spill Case # 128 for 1978

Spiller and Location Little Peach (Autotronics System Inc.)
 Person Reporting Spill Portland Fire Dept.
 Amount and Type of Product regular gasoline
 Date and Time of Spill Reported 10-24-78
 Cause of Spill leaking pump coupling
 Amount Recovered none P or A P
 Liquids - Recoverable -- Methods --
 Solids - Combustible -- Liquids - Non-recoverable --
 Weather Conditions variable Solids - Non-Combustible --
 Incident Code C-SS-W
 Water Course Affected Casco Bay

REMARKS - RECOMMENDATIONS

Dep. Chief Carlton Winslow _PFD
 Bob Worcester- Sewer Dist.

Dep Chief Minslow of the Portland Fire Dept. called the Portland Field Office on 10-24-78 to request assistance solving a problem of gasoline fumes in the sewer system. Fred Brann and I met with Chief Winslow and Bob Worcester of the Portland Sewer Division that morning to review the problem. After obtaining a copy of the sewer map for the portion of the city effected by the fumes, Mr. Worcester and I set out to trace the gasoline to its source.

Commencing on Wellington Pond in an area of heavy fumes we back tracked noting presence of fumes until complexity of the sewer system and unpredictable behavior of gas fumes resulted in our confusion. To overcome this we shifted to using a can on a line to obtain a sample of sewer water that we could examine more closely for the presence of gasoline. This method proved successful as we could easily see large (a 5-10%) quantities of gas in sampled water. From this point we quickly traced the gasoline upstream, checking at every manhole, until we lost the gasoline at a point just above the Little Peach convenience store on Allen Ave. We continued to backtracking into a small apartment complex which is the

last area to drain into the sewer system of that area. No product was noted above the Little Peach. At this point I spoke with Mr. John Wilson, manager of the Little Peach. Mr. Wilson informed me that a representative of Autotronics Systems Inc. had been at the store the previous day for a regular maintenance check. During the check he found a broken and badly leaking pipe coupling on the regular gas pump. The coupling was located inside the pump housing 20 feet from the street. The broken coupling was replaced and the problem noted on the maintenance man's work record given to the store manager and shown to me during the interview. Mr. Wilson was not at that time aware of any inventory losses. I then returned to the office to contact the Portland Fire Department.

Store owner: Purity Supreme
 Pump and tank owner: Autotronics Systems Inc.

See follow ups and attached map

James S Glasgow
[Signature]

EAST SIDE
 COMBING SEWER

PORTLAND REGIONAL OFFICE OIL SPILL REPORT FORM

Spill Case # P-128 for 1978

**BIG
APPLE-90
P-441-90**

Spiller and Location Little Peach Allen Ave., Portland, Maine

Person Reporting Spill Chief Winslow - Portland Fire Department

Amount and Type of Product 1200-1400 gals. (4921 L) gasoline

Date and Time of Spill unknown Reported Morning 10-24-78

Cause of Spill Leaking Fitting P or A P

Amount Recovered About 25 gals. Methods Running from hole.

Liquids - Recoverable 25 gals. Liquids - Non-recoverable 225 gals.

Solids - Combustible 0 Solids - Non-Combustible 0

Weather Conditions Clear - Cool

Incident Code C - SS (W)

Water Course Affected Portland Sewers

REMARKS - RECOMMENDATIONS

On the morning of October 25, 1978, Chief Winslow of the Portland Fire Department called our office reporting that the fumes were still a problem in the sewers in the area of the Little Peach. I met Chief Winslow at the Little Peach. Mr. Winslow had been checking receipts and had found that 1200-1400 gals. of gasoline was unaccounted for.

Mr. Winslow and I spoke with R. Bruce Wayne, District Manager of Autotronic Systems, Inc.. It was decided that a well would be put in to try to recover some of the gasoline to relieve the problem.

Les Wilson and Sons was contracted to dig the wells. Three well sites were tried. One just opposite the pumps between the sidewalk and street had product in the bottom. In the other sites, ledge prevented digging to the water table. In the one productive site a culvert was put in as a well casing. Jetline Services was contracted to pump the well to remove product collecting in it.

Vented sewer covers were put over the man holes in the area of the Little Peach to relieve fumes trapped in sewers.

I checked with Chief Winslow and the Little Peach later that week. The fumes were no longer a problem in the sewers.

On December 4, I checked with Peter Toner of Jetline. Mr. Toner advised me that the well had been pumped for about two and a half weeks. As product was no longer being recovered, the well was no longer being pumped.

P-128
Little Peach
Allen Ave.
Portland, Maine

I do not recommend any legal action in this case. The area will have to be watched this winter and next spring to ensure that a rising water table does not wash more gasoline into the sewers.

Fred S. Brann
Fred S. Brann
Environmental Services Specialist II

ADDENDUM TO

P-441-90
Portland
BIG APPLE

FILE COPY



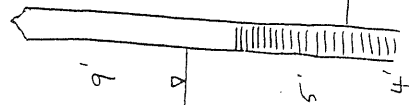
AVALANCHE SOIL EXPLORATION

463 Fort Hill Road
Gorham, Maine 04038
Tel. 839-2315

OWNER: C. N. BROWN
TOWN: SO. PORTLAND, MAINE
DATE STARTED: 7-6-90
DATE FINISHED: 7-6-90
HOLE SIZE: 3 1/4" H.S.A.
HOLE NUMBER: MW-3
DRILLER: STEVE
HELPER: JOHN
ENGINEER:

INTERVAL S# OD PEN 0-6 6-12-18-24 REC DESCRIPTION

0.0'-3.3' HS
3.5'-14.0' HS
GAS ODOR, 1.0'-14.0'
NO SAMPLE
4" ASPHALT
GREY BROWN MOIST, FIRM SAND
SOME SILT. BROWN MOIST FINE
MEDIUM SAND.
WATER LEVEL AT 12'
WELL INSTALLED AT 14.0'
SCREEN 5'
RISER 10'
PLUG, 1 THREADED
PLUG, 1 DOLLAR
ROADBOX 1
BENTONITE 25 LBS.
BENTONITE SEAL 10.9'
SAND 50 LBS.
CEMENT 1/2 BAG



Avalanche



AVALANCHE SOIL EXPLORATION

463 Fort Hill Road
Gorham, Maine 04038
Tel. 839-2315

OWNER: BIG APPLE C.N. BROWN
TOWN: PORTLAND, MAINE
DATE STARTED: 8-23-90
DATE FINISHED: 8-23-90
HOLE SIZE: 4 1/2" HSA
HOLE NUMBER: MW 4
DRILLER: SCOTT
HELPER: MERRITT
ENGINEER: PETER G.

CONTAINS VISUAL & INTERPRETIVE INFORMATION

INTERVAL S# OD PEN 0-6 6-12-18-24 REC DESCRIPTION

0'-3" ASPHALT

3"-3.5' SAND AND GRAVEL FILL

3.5'-6' MEDIUM TO COARSE SAND

6'-8' S1 2" 24" 7 9 11 13 MEDIUM TO COARSE SAND

8'-10' MEDIUM TO COARSE SAND

WATER AT 7.8'

WELL PLACED AT 10'

BENTONITE SEAL FROM 6'-5'

SCREEN 5'

RISER 10'

THREADED PLUG 1

EXPAND CAP 1

BENTONITE 25

FILTER SAND 50

ROADBOX 1

CEMENT

WATER LEVEL 7.8'

HAMMER WEIGHT 140 LBS.

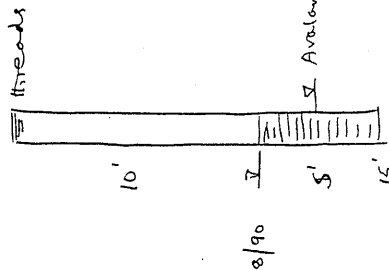


816 APPLE
Allen Ave
453 Fort Hill Road
Gorham, Maine 04038
Tel. 839-2315

OWNER: C.N. BROWN
TOWN: PORTLAND, MAINE
DATE STARTED: 7-6-90
DATE FINISHED: 7-6-90
HOLE SIZE: 3 1/2" H.S.A.
HOLE NUMBER: MW-1
DRILLER: STEVE
HELPER: JOHN
ENGINEER: JOHN

INTERVAL S# OD PEN 0-6 6-12-18-24 REC

INTERVAL	S#	OD	PEN	REC	DESCRIPTION
0.0'-0.4'	HS				5' OFF-SET
0.4'-3.0'	HS				4" ASPHALT
3.0'-10.0'	HS				BROWN-MOIST MEDIUM TO COARSE SAND, TRACE GRAVEL.
10.0'-16.5'	HS				BROWN MOIST FINE TO MEDIUM SAND.



WATER LEVEL

HAMMER WEIGHT 140 LBS.

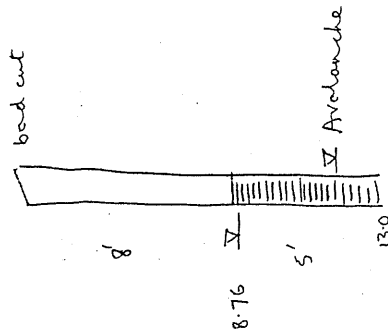


463 Fort Hill Road
Gorham, Maine 04038
Tel. 839-2315

OWNER: C.N. BROWN
TOWN: PORTLAND, MAINE
DATE STARTED: 7-6-90
DATE FINISHED: 7-6-90
HOLE SIZE: 3 1/2" H.S.A.
HOLE NUMBER: MW-2
DRILLER: STEVE
HELPER: JOHN
ENGINEER: JOHN

INTERVAL S# CD PEN 0-6 6-12-18-24 REC

INTERVAL	S#	CD	PEN	REC	DESCRIPTION
0.6'-10.0'	HS				STRONG GAS ODOR FROM 1.0'-15.0'. NO SAMPLE 6" ASPHALT GREY MOIST MEDIUM TO COARSE SAND. SOME SILT. GAS ODOR. LARGE COBBLE.
10.0'-15.0'	HS				BROWN MOIST MEDIUM TO COARSE SAND.



WATER LEVEL

HAMMER WEIGHT 140 LBS.

Mark Wilkinson, Mgr.

BIG APPLE, Allen Ave.

MW 2

MW 3

MW 4

DATE	ODOR	PETROLEUM	WATER	ODOR	PETROLEUM	WATER	ODOR	PETROLEUM	WATER
Nov. 20	Light	SKIM	Gray	VERY LIGHT	NOTHING	CLEAR	VERY LIGHT	NOTHING	CLEAR
Nov. 21	LIGHT	SKIM	GRAY	VERY LIGHT	NOTHING	CLEAR	VERY LIGHT	NOTHING	CLEAR
Nov. 22	LIGHT	LT. SKIM	LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Nov. 23	LIGHT	LT. SKIM	LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Nov. 24	Light	Lt. SKIM	Lt. Gray	Light	none	clear	very lt.	none	clear
Nov. 25	Light	Lt. SKIM	Lt. Gray	Light	none	clear	very lt.	none	clear
Nov. 26	LIGHT	LT. SKIM	1/2 LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Nov. 27	LIGHT	LT. SKIM	1/2 LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Nov. 28	LIGHT	VERY LT. SKIM	LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Nov. 29	LIGHT	NOTHING	VERY LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Nov. 30	LIGHT	NOTHING	VERY LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	1/3 LT. GRAY 2/3 CLEAR
Dec. 1	LIGHT	NOTHING	VERY LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	1/3 LT. GRAY 2/3 CLEAR
Dec. 2	LIGHT	NOTHING	VERY LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	1/3 LT. GRAY 2/3 CLEAR
Dec. 3	LIGHT	NOTHING	VERY LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Dec 4	LIGHT	NOTHING	1/3 GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Dec 5	LIGHT	NOTHING	2/3 CLEAR	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Dec 6	LIGHT	SKIM	1/3 GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	1/3 LT. GRAY 2/3 CLEAR
Dec. 7	LIGHT	NOTHING	LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	LT. GRAY
Dec. 8	VERY LIGHT	NOTHING	LT. GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	LT. GRAY
Dec 9	LIGHT	NOTHING	1/3 GRAY	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Dec, 10	LIGHT	VERY LT. SKIM	1/3 CLEAR	VERY LT.	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Dec, 11	LIGHT	VERY LT. SKIM	2/3 CLEAR	VERY LIGHT	NOTHING	CLEAR	VERY LT.	NOTHING	CLEAR
Dec. 12	LIGHT	SKIM	1/3 GRAY	VERY LIGHT	NOTHING	CLEAR	VERY LIGHT	NOTHING	CLEAR
13	LIGHT	SKIM	1/3 GRAY	VERY LIGHT	NOTHING	CLEAR	VERY LIGHT	NOTHING	CLEAR
Dec. 14	LIGHT	VERY LT. SKIM	2/3 CLEAR	VERY LIGHT	NOTHING	CLEAR	VERY LIGHT	NOTHING	CLEAR
Dec. 15	LIGHT	NOTHING	VERY LIGHT GRAY	VERY LIGHT	NOTHING	CLEAR	VERY LIGHT	NOTHING	CLEAR

State of Maine
 Department of Environmental Protection
 Laboratory Results (FINAL)

p. 441-90

Project name: BIG APPLE ALLEN AVE P-411-90
 Town/County: PORTLAND-CUMBERLAND
 Station code: TOWN15170
 Client: OIL AND HAZARDOUS MATERIALS
 Appropriation: 4535.2000

Results to: BREZINSKI
 Date sampled: 07/09/90
 Date reported: 07/19/90
 Form number: 011702
 QC Check: SM

***** Sample Information *****

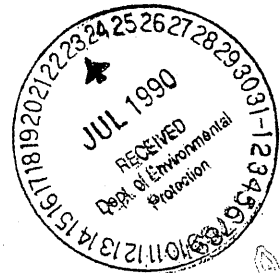
User Number	Lab Number	Matrix	Type	Dup
28136D	28136D	SOIL	GRAB	Yes
28137	28137	SOIL	GRAB	
28138	28138	WATER	GRAB	
28139D	28139D	WATER	GRAB	Yes
28140	28140	WATER	GRAB	
28141	28141	WATER	GRAB	Yes

***** Parameter Information *****

User ID	Matrix	Parameter	Conc.	Units	Prec/Acc
28136D	SOIL	GASOLINE	NA	NA	
28137	SOIL	* GASOLINE	(1)	MG/KG	
28138	WATER	* GASOLINE	1600000	UG/L	
28139D	WATER	GASOLINE	NA	NA	
28140	WATER	* GASOLINE	96000	UG/L	
28141	WATER	GASOLINE	NA	NA	

(1) DUE TO HIGH CONCENTRATION, SAMPLE #28137 WAS EXTRACTED USING THE COLD SOLVENT METHOD AND CHROMATOGRAPHED IN THE RANGE OF GASOLINE AT A CONCENTRATION OF 19000 MG/KG WHEN CALCULATED AGAINST A GASOLINE STANDARD.

J = approximately; K = less than; L = greater than; NA = not analyzed



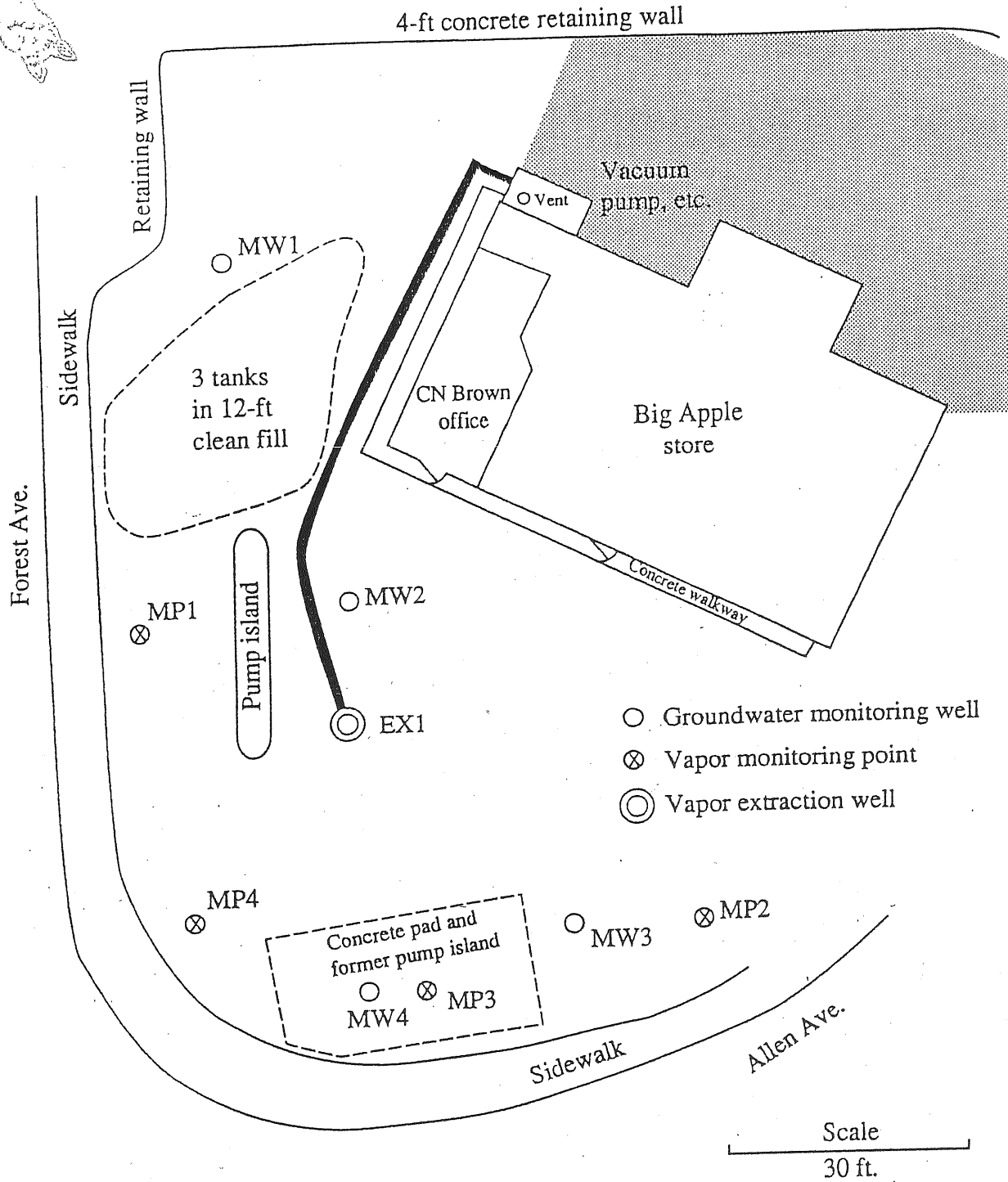


Figure 1

Note: Entire site paved with blacktop or concrete, except dirt driveway to north of store (shaded).

Emery & Garrett Groundwater, Inc.

RFD 2, Box 5115 • Eames Road
Winslow, Maine 04902

(207) 872-0511

Fax: (207) 872-0626

The Solution

a) Measuring the volume of floating product

- Dip well MW2 once per day.
- Lower a see-through bailer down to the water table, and when you hear it plop, lower it about two foot more.
- Remove the bailer.
- Measure the thickness of product.
- Note the thickness on the sheet attached.
- Dip MW4 the same way.

b) Remove the product

- Pour the product and contaminated water into a barrel stored on-site.
- Keep dipping the well until floating product thickness is reduced to less than 1/4 inch in the bailer.
- Tie a string very securely to a sorbent pad. Push that down the well, so that it lies at the water table, and leave it there.
- Next time you dip the well, pull it out by the string, and either squeeze it into the barrel, or store it for disposal with the contents of the barrel.
- Estimate the volume of oil removed from the well. Remember that it takes 75 inches of product in a 2 inch well to make up a gallon. A fully saturated sorbent pad holds about 20 times its own weight, which I estimate to be about a quart. You are more likely to discard it when it holds only a pint.

Call in the results to me after a week.
Keep the paperwork.

Questions? Just call...

Peter Garrett

Peter Garrett

Instructions for Removal of Gasoline from Groundwater Big Apple Convenience Store, Allen and Forest Avenue in Portland

The Problem

Gasoline leaked to groundwater in considerable quantity from piping between the tanks and pumps at this store. We don't know how much leaked out, but:

- a) Soils around the gasoline tanks were saturated with oil. These have been removed.
- b) Groundwater at the base of the tank excavation had dark brown gasoline product floating on the water table. This was skimmed out during the excavation for new tanks.
- c) Much contamination remains in the ground at this site, which will have to be removed by some means. Most of the contamination is in the soils above the water table. But some is floating on the water table and can be detected in monitoring wells at the site.

Monitoring well MW2 (outside the C. N. Brown office door, see map), seems to lie more or less at the center of the pool of contamination. Dipping of this well with a see-through plastic bailer has found up to 16 inches of gasoline floating on the water table. Product thickness varies greatly from day to day. Floating product has not been found in any other well, though it is possible that product may show up in MW4 (in the old pump island).

The soil contamination will be removed by a soil venting system hooked up to a blower at the back of the building. But it would be expensive and inefficient to remove all the gasoline floating on the water table in this way.



Oil & Hazardous Materials Report Form
 Spill Number: P/028/90

Subject:
 Name (Last, First MI): SIS APPLE/C.N. BROWN CO.
 Address: 1 ALLEN AVE.
 State: ME Zip-code: Telephone:

Spill Information:
 Location (Town): FORTLAND Spill Type: B
 Amount spilled: 5.90 gals.Y cu. yds.N lbs.N bbls.N
 Type of spill: 1
 Date of Spill: (yy/mm/dd) Time of Spill: (Military)
 Date Reported: 90/01/16 (yy/mm/dd) Time Reported: 1200 (Military)
 Cause: 05 Detection method: 20
 Incident code: C556U DEP response time involved: 3.0 (hours)
 Number of wells at risk: 0 Number of wells impacted: 0
 Investigators' names: 1. BREZINSKI, S. OHNS I
 2.
 3.

Person Reporting Incident:
 Name (Last, First MI): BREZINSKI, S.
 Address: MAINE DEP Town: SO. PORTLAND
 State: ME Zip-code: Telephone:
 Oil & Hazardous Materials Report Form
 Spill Number: P/028/90 (Continued)

Clean-up Information:
 Total product recovered: gals.N cu. yds.N lbs.N bbls.N
 Method: Non-recyclable: gals.N cu. yds.N lbs.N bbls.N
 Solids: Combustible: gals.N cu. yds.N tons
 non-combustible: cu. yds.N
 Recyclable material: gals.N cu. yds.N lbs.N bbls.N
 Number of filters installed: 0
 Disposal information: Number of aerators installed: 0

Other Actions:
 Reimbursement: to SF (surface water): N (Y/N)
 to SF (ground water): N (Y/N)
 to RMF (haz waste): N (Y/N)
 Third party damage claim asserted: N (Y/N)
 Enforcement Referral: N (Y/N)

P/028/9028
 Sig Apple/C.N. Brown Co.

Spotted work doing routine surveillance. Andy Pierson (C.N. Brown installer no 288) explained that regular product had questionable SIA results and failed a lime precision test. He and crew were digging up pit two to check and re-test. Some gasoline odor found around pump (pressurized system)

Andy Pierson traced leak to pit line depending on pit location (see site plan); he capped off line and then got line to test tight. System back on line with no okay.

2/1/90:
 Charlie Sheham of C.N. Brown told me over phone that product of line and any bad soil to 2/4 out within month of work. Sheham will call me before head to activity.

2/13/90:
 Andrew Pierson left a phone message that the revised installed line has been removed with no contamination found

S. S. Bygonesh 2/21/90
 STEPHEN S. BREZINSKI
 Oil & Hazardous Materials Section
 Bureau of Oil & Hazardous Materials

SSB/ml
 cc: file



DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE HOUSE STATION #17, AUGUSTA, MAINE 04333 GENERAL INFO 289-7688

Charles Sheehan

TO: Kevin Moore, Maintenance Supervisor

C. N. Brown Company

So. Paris ME

FAX: 743-8357

DATE: 26 Nov. 1990

MESSAGE: Requirements for following C.N. Brown facilities
reflecting our earlier conversations.

* BIG APPLE, Allen Ave. Portland [Dep Case No P-441-90]

- 1) Monitor all monitoring wells on site daily, and
record presence of free product on the groundwater.
- 2) Store recovered product in a drum so recovered product
can be gaged.
- 3) Activate the air stripper that is on-site.
- 4) Any further actions such as recovery of free product
are put on hold pending monitoring of the wells.
- 5) On closing of this ^{54B} ~~facility~~ remediation submit a
written report / site assessment to the Department of
Environmental Protection.
- 6) Contact me regarding any questions, problems or
changes.

BY: S. G. Breginski

Air Quality Control
289-2437

Oil & Haz. Mat. Control
289-2651

Land Quality Control
289-2111

Water Quality Control
289-3355 or 289-3901



STATE OF MAINE
Department of Environmental Protection

MAIN OFFICE: RAY BUILDING, HOSPITAL STREET, AUGUSTA
MAIL ADDRESS: STATE HOUSE, SESSION 17, AUGUSTA, 04222
207-289-7688

JOHN B. McKENNAN, JR.
GOVERNOR

F-020-00
(P-028-90)
P-441-90

September 5, 1990

Certified No. P. 437 078 542

Mr. Charles Sheehan
C.N. Brown Co.
South Paris, ME. 04281

Notice of Violation

Dear Mr. Sheehan:

This letter concerns the Department's investigation of gasoline discharge which occurred at Big Apple, 6 Allen Ave., Portland on July 2, 1990. Department staff has indicated that the leak was not reported until July 4, 1990. This is in violation of Department regulations which require that any discharge be reported to the State within 24 hours.

A tank owner or operator shall report to the Department as soon as possible but not later than within 24 hours any of the indications of a possible leak or discharge of oil including but not limited to those listed in Section 5 (B)(6), Chapter 691, Section 5(B)(7).

Review of the daily inventory revealed a loss of approximately 3% for the month of May and 5% for June. These amounts of daily inventory discrepancy are considered an indication of a possible leak cited below:

Unexplained differences in daily inventory reconciliation values which, over a 30 day period, exceed 0.5% of the product delivered. 38 M.R.S.A., 564 G(1).

Although the leak was discovered and eventually reported, the results could have been significantly minimized or prevented through compliance with Department regulations; and state statutes concerning monitoring of leak detection methods.

The Department may, if necessary, escalate enforcement action by seeking an administrative consent agreement with monetary penalties if the violations described above are repeated. I urge you to avoid this alternative by operating in compliance with Maine's oil discharge prevention laws.

REGIONAL OFFICES
Bangor
Portland
Presque Isle

If you have any questions about this letter or wish to further discuss this issue, please contact me at 289-2651.

Thank you for your cooperation.

Sincerely,

JON WOODARD
Division of Licensing and Enforcement
Bureau of Oil & Hazardous Materials Control

JW:tlj/JWSHEEHAN
UTE-209-90

cc: Stephen Brazinski, Division of Response Services, South Portland



STATE OF MAINE

Department of Environmental Protection

MAIN OFFICE: RAY BUILDING, HOSPITAL STREET, AUGUSTA
MAIL ADDRESS: State House Station 17, Augusta 04333

JOHN R. JACKERMAN, JR.
GOVERNOR

DEAN C. MERRITT
COMMISSIONER

312 CANCO ROAD, PORTLAND, MAINE 04103

Revised

August 3, 1990

Mr. Kevin Moore, Maintenance Supervisor
C. N. Brown Company
164 Main Street Ext.
South Paris, Maine 04281

CERTIFIED NO. P 278 527 360

RE: STATUS AND CLEANUP REQUIREMENTS FOR C. N. BROWN/BIG
APPLE FACILITY (DEP reg. no. 8943), 6 ALLEN AVE.,
PORTLAND, MAINE

Dear Mr. Moore:

On July 4, 1990 the Maine Department of Environmental Protection (Department) became aware of a leaking product pipe within the regular unleaded gasoline UST manway. On examining the facility inventory records, it was clear that this leak was clearly evident as early as late April to early May. Department UST regs., Chapter 691, Section 5.B.6.iii define an unexplained loss or gain of 0.5 percent of the through put of each storage system over a 30 day period, as indicated by the recording and reconciliation of daily inventory records, as evidence of a possible leak.

Evidence of a leak is required to be promptly reported as required in Chapter 691 and in Section 13, M.R.S.A. 38.

On July 11, 1990, I met with you and Steve Lawrence on site and explained to you that because of a loss of up to 1500 gallons, the Department required C. N. Brown Company to have the site excavated for remediation of the UST's removed and contamination hauled off prior to August 1, 1990.

On August 1, 1990, you informed the Department that C. N. Brown will begin work on August 6, 1990, six days after the Department's deadline.

Page 2
Mr. Moore, 8/3/90

On August 2, 1990 I sampled monitoring well 2 (MW2) and observed that there was now 3/8" of free product in the well, indicating the product is moving. The Department requires C. N. Brown to proceed with this cleanup as soon as possible and not after August 6, 1990 to impede movement of gasoline contamination off site and enlarge the amount of contaminated water and soil to be disposed of.

In addition, the Department is requiring C. N. Brown Company to:

- a) Perform a professional site assessment.
- b) Submit a plan promptly to the Department detailing any extended remediation that may be needed.
- c) Plan to send contaminated soil to a secure landfill or licensed batch plant.
- d) Make arrangements for proper disposal of free product and contaminated water; with copies of the disposal manifests sent to me at my Portland office.

As this is a case of nonreporting of a discharge, this incident will be forwarded to the BOHMC Division of Licensing & Enforcement for further possible action.

Notify either Steven Eufemia or me of any questions, problems or comments at the Department's Portland office at (207) 879-6300.

Sincerely,

S G Brynjulsh

STEPHEN G. BREZINSKI
Oil & Hazardous Materials Specialist
Bureau of Oil & Hazardous Materials Control

SGB/mj

cc: Steven Eufemia
BOHMC Licensing & Enforcement
file

7/88
~~RES-90~~
 SSB
 P-441-90

NOTICE OF INTENT
 TO ABANDON (REMOVE) AN
 UNDERGROUND OIL STORAGE FACILITY

PLEASE TYPE OR PRINT IN INK:

Name of Facility Owner: C. M. BROWN CO. Telephone No.: 743-4212
 Mailing Address: BOX 200 State: ME Zip Code: 04281
 City: SO. PARIS
 Contact Person (name, address & telephone no.):
KEVIN MOORE
 Name of Facility: BIB STORE Registration No.: 89443
 Facility Location: WILSON FOREST AVE, PORTLAND, ME

1. Identify the tanks at this location which are to be removed:

Tank Number	Age of Tank (Years)	Tank Size (Gallons)	Type of Product Most Recently Stored
A. 1		6000	NL
B. 2		6000	SUC
C. 3		4000	NLP
D.			

2. Directions to Facility (be specific):

CORNER OF FOREST & HAVEN AVE PORTLAND, ME

3. Is tank(s) used for the storage of Class I liquids (e.g. gasoline, jet fuel)? Yes No
 (IF YES, REMOVAL OF THE TANK MUST BE UNDER THE DIRECTION OF A CERTIFIED TANK INSTALLER OR PROFESSIONAL FIREFIGHTER.)

4. Name and telephone number of contractor who will do the tank removal: STEWARTS 772-9479

Certified Tank Installer Certification Number & Name (if applicable):
TODD LAVALLUE 851

Professional Firefighter Yes No (Affiliation: _____)

5. Expected date of removal: JULY 30, 1990

I hereby provide Notice that I intend to properly abandon the underground oil storage facility as described above.

Date: JULY 16, 1990
 Signature of Tank Owner or Operator
KEVIN MOORE

Printed Name and Title
KEVIN MOORE MAINT. SUPERVISOR

THIS FORM MUST BE FILED WITH THE DEPARTMENT AND LOCAL FIRE DEPARTMENT 10 DAYS PRIOR TO REMOVAL

Keep original and yellow copy to DEP; pink copy to fire dept.; retain gold copy



STATE OF MAINE

Department of Environmental Protection

MAIN OFFICE: BAY BUILDING, HOSPITAL STREET, AUGUSTA
 MAIL ADDRESS: STATE HOUSE STATION 17, AUGUSTA, 04333

JOHN S. MCKENNA, JR.
 SECRETARY

PEAR C. MARROTT
 COMMISSIONER

DATE 8-10-90 DEP JOB # P-515-90

GENERATOR C. N. BROWN P-441-90

TRANSPORTER STEWARTS + STEW'S TRUCKING

RE: SHIPMENT OF OIL SPILL DEBRIS

8-8 (date) BRADFORD HAWK (DEP Personnel) observed the clean up of oil spill debris at THE BSA APPLE ORCHARD (location)

Are Portland which resulted from A piping leak (incident)

This led to the shipment of Three hundred (quantity) 300 yards drums of solids contaminated with LIQUID (contaminant) SAFALINE

Solids consist of Slud (sand, spongy-dry, sorbent pads, etc.)

398 yards accepted
at Recycling Plant
Unity 9/10/90

Bradford Hawk
 Signature of DEP Official on Site

[Signature]
 Signature of Landfill Representative

REGIONAL OFFICES
 Bangor

Portland

TANK ABANDONMENT INFORMATION

Facility name SIG APPLE / C. N. Brown
 Address 6 Allen Ave. Portland ME.
 Phone Number 743-9212
 Contractor name C. N. Brown Co.
 Address So. Paris
 Phone number _____

Underground Tank Information
 Spill number: P/441/90

Tank	UST Reg. No.	Tank size	Tank cons.	Tank age	Piping cons.	Status
Tank 1	8943	6000	A	6	A	AC
Tank 2	8943	6000	A	6	A	AC
Tank 3	8943	4000	A	6	A	AC
Tank 4	8943	1000	A	8	A	AB
Tank 5	8943	1000	A	8	A	AB
Tank 6						
Tank 7						
Tank 8						
Tank 9						
Tank 10						
Tank 11						
Tank 12						
Tank 13						
Tank 14						
Tank 15						
Tank 16						
Tank 17						
Tank 18						
Tank 19						
Tank 20						

10 day notice provided _____ Less than 10 days provided _____
 Notice waived _____ No notice given _____

*** PLEASE CHECK (✓) APPROPRIATE FIELDS ***

Samples taken:	SOIL	GROUNDWATER	TANK CONTENTS	PHOTOGRAPHS TAKEN
Please number the tanks viewed	1	2	3	4
General Tank Information				
UST Reg. #	8943			
Size of Tank	4000	5000	4000	1000
Tank Construction (Tbl L)	A	A	A	A
Tank Age (Tbl M)	6	6	6	8
Piping Const. (Tbl L)	A	A	A	A
Status (Tbl P)	Ac	Ac	Ac	Ab
Tank Condition	N	N	N	N
Holes observed				
More than 10 holes				
Tank not observed				
Pipe Condition				
Piping not to Regulation	Y		Y	
No leaks observed				
Broken fittings		Y		
Leaking fittings				
Corrosion leaks	Y	Y	Y	Y
Piping removed				
Piping not observed				
Tank Installation Condition				
Tank on bedrock				
Tank within 3' of bedrock				
Water table seen in hole	Y	Y	Y	unk
Back filled with sand				
" w/ crushed stone				
Non standard fill used				
Soil Contamination				
No contamination observed				
Odor only noted				
Soil contaminated	Y	Y	Y	
Free product observed	Y	Y	Y	
Distance to Drinking Water				
Public supply within 1000'	N			N
Nearest private supply	N			N
within 300' not owned				
by the tank owner.				
TANK CONTENTS				
Reg. gasoline	Y	Y	Y	
Leaded gasoline				
#2 Fuel or Diesel				
#6 Oil				
Other				

11/19/90: I met Kevin Moore and Peter Garrett on site. No free product was found in MW 2; nor MW 4; I speculate that heavy autumn rains may have dissipated it off site. At this time product recovery is unfeasible. C. N. Brown is having the facility manger regularly check MW 2 check product levels.

2/12/91: At this time EEG is operating the soil venting system. A December visit by me showed the manager to be keeping good notes on the mont. wells. Peter Garrett feels there may be problems with the monitoring well in regards to the slotting levels and the wells may not actually be showing true product levels.

As of 12/18/91, Mike White of EGG has stated that the SVE blower was still operating and as of 11/7/91, the vent voc reading was 240 ppm. Garrett is contemplating further exploration work which will be covered in addendum's to this report. See the report of EGG expected to be submitted in February 1992.

Further response division action possible.

S. G. Brezinski 2/19/92
STEPHEN G. BREZINSKI
Oil & Hazardous Materials Specialist I
Bureau of Hazardous Materials & Solid
Waste Control

SGB/mj

cc: file/dblue



Pagee 3 of
P441/90SB

Free product may also be present in the tank area which won't be known with excavating and exploring the geology. Plume may be flowing towards the Wok In restaurant.

7/11/90: On site with Richard Royce and Jack Murray of Tidewater Petroleum Services (TPS) doing Acu-Test precision test on Reg. UST. Steve Lawrence, CNB area supervisor; Kevin Moore, CNB Maint. supervisor; and Tina Smith facility mgr.

I informed Moore, Lawrence and Smith that because of significant loss the Department is requiring that tank area be explored for product, or UST's removed before July's end, 1990.

He opted for removal and reinstallation. He also explained they attributed product loss to delivery error which is reason they did not react sooner. On studying Ms. Smiths inventory data I find CNB's (Sheehan and Moore's) rational weak and their inaction to their loss in the long run to be more costly. I feel C. N. Brown needs to rethink their organization and policy for dealing with suspected and confirmed discharges.

7/30/90, to present: Todd LaVallee with Stewart's trucking began removal of UST's and reinstallation of new facility; overseen by Brad Hahn (OHMS I) for DEP, BOHMC. Hahn reported that about 400 yds³ of contam. soil went to ARC/CWS for recycling (see attached letter). Seacoast Ocean Services took the free product and contaminated water; nothing to C. N. Browns stripping system in So. Paris.

Peter Garrett of Emery & Garret Groundwater (EGG) has installed more monitoring wells and a soil venting system. Because of high free product levels (up to 16") in MW 2, the venting system has not been activated.

8/2/90, Thursday: Kevin Moore reported to John Gordon they will begin work on 8/6/90, after new UST's arrive, six days after work should have started.

On site I met new manager and observed 3/8" free black product in MW2. Smpls 28126 and 28130. I called Kevin Moore and advised him to 1) have a professional assessment done, 2) arrange to have soil sent to landfill or ARC. (See letter of 8/3/90 to Moore.)

- b) Precision test system prior to 7/11/90.
- c) Have Kevin Moore or Sheehan contact me regarding facility replacement. Facility due out before 10/1/91.

Later in the afternoon I spoke with Kevin Moore who acted surprised at extent and of loss and time period problem has existed. He has well being drilled next day, Friday; and P-Test for 7/11/90.

7/6/90, Friday: I was on site approximately noon to find the three wells installed as required. Groundwater found at about 9-10 feet below grade, no ability to check for product at this time; I will return at later date to purge and sample.

At this time I recommend BOHMC enforcement action for 1) non-reporting of suspected leak, 2) non-reporting of discovered leak, 3) failure to satisfactorily respond to evidence of a leak.

This is the second incident involving non-reporting since May of this year (see P-299/90) and I feel this is a serious problem that is likely to reoccur unless addressed.

7/9/90, Monday: I checked the three monitoring wells and observed:

- * MW1; upslope of UST area near Rt. 302, no odor, discoloration or sheen observed.
- * MW2; next to dispenser island: yellow discoloration to water, sheen and odor evident. Smpls no. _____
- * MW3; downslope near Allen Ave.: yellow discoloration with sheen and gasoline odor, silty after bailing. Smpls no. _____

Manway to offending UST opened and I observed no leakage. Smpls no. _____ and taken of soil.

I met with Ms. Smith and observed that inventory for reg. tank is now balancing since coupling tightened on 7/5/90, by Piersan.

Before leaving I called Charlie Sheehan of C. N. Brown and told him of my findings with the groundwater and advised him to consider a plan for remediation, which may include facility removal, beginning before July's end.

I feel much of the contamination, up to 1300 gallons or more, may be moving off site with a brisk groundwater flow.

P441/90SB
Big Apple/C. N. Brown (Portland)

7/4/90:

Andy Piersan of C. N. Brown (installer) called me (S. Brezinski) to report he had just repaired a loose coupling leak off the submergible pump of the reg. UST. He reported it had been discovered on Monday 7/20/90, and the system shut down. On inquiring, he was not aware if it had been reported to the Department as he was not on site on 7/2/90.

On checking with Portland BOHMC staff; no record of this leak being reported as required (Chapter 691 Sec. 5.B.6 and Sec. 5.B.7).

Upon my visit that morning I observed:

- a) Manway to reg. product UST open and gasoline saturated sand around the pump and product line. (See report P028-90).
- b) Andy Piersan, and facility manager Tina Child-Smith on site.

Mr. Piersan informed me:

- 1) He was told to work on site by Charlie Sheehan of C. N. Brown Co. (CNB) on 7/2/90, about 1630 to 1700 hrs.
- 2) CNB employee "Sparky" discovered puddle product around pump and leaking coupling on Monday, 7/2/90, the system shut down until repaired after July 4th holiday.

Ms. Smith reported:

- 1) She has been having problems with missing product since April 1990, and has reported this to C. N. Brown repeatedly. She notified Trudy, who reports to Sheehan.
- 2) On my request, I was shown inventory data for April, May and June 1990. Data appears meticulously taken and shows no loss for super, and plus UST's, but potential 1500 gallon product loss for regular UST. See attached. April data may be masked by delivery errors.
- * This loss is significantly greater than 0.5% of throughput for both May and June 30 day periods and should have been reported to the Department as "evidence of a leak" as described in Chapt. 691, Sec. 5.B.6iii, and Sec. 5.B.7.
- 3) Ms. Smith claims she performed a static test (sticking tanks over a period while out-of-service) and observed no loss, then reported to CNB loss likely due to pipe leak.
- 4) CNB had pumps calibrated which made no difference in product inventory according to Ms. Smith.

I gave Piersan and Smith requirements to:

- a) Install three monitoring wells in marked locations.

Oil & Hazardous Materials Report Form
Spill Number: P/441/90

Subject:

Name (Last, First MI): BIG APPLE/C. N. BROWN
Address: 6 ALLEN AVE. Town: PORTLAND
State: ME Zip-code: _____ Telephone: 2077978734

FILE COPY

Spill Information:

Location (Town): PORTLAND Spill Type: B
Amount spilled: 1300.90 gals.Y cu. yds.N lbs.N bbls.N
Type of spill: 23
Date of Spill: 90/05/01 (yy/mm/dd) Time of Spill: _____ (Military)
Date Reported: 90/07/04 (yy/mm/dd) Time Reported: 1000 (Military)
Cause: 08 Detection method: 2F
Incident code: CSSGU DEP response time involved: 30.0 (hours)
Number of wells at risk: 0 Number of wells impacted: 0
Investigators' names: 1. BREZINSKI, S.
2. HAHN, B.
3. _____

Person Reporting Incident:

Name (Last, First MI): ANDREW PIERSON
Address: C.N. BROWN Town: S. PARIS
State: ME Zip-code: _____ Telephone: 0277439212

Oil & Hazardous Materials Report Form
Spill Number: P/441/90 (continued)

Clean-up Information:

Total product recovered: 1000.90 gals.Y cu. yds.N lbs.N bbls.N
Method: GJ Non-recyclable: _____ gals.N bbls.N
Solids: combustible: _____ cu. yds.N tonsN
non-combustible: 400.0 cu.yds.
Recyclable material: _____ gals.N cu. yds.N lbs.N bbls.N
Number of filters installed: 0 Number of aerators installed: 1
Disposal information:
ABOUT 400 YDS TO CWS LANDFILL

Other Actions:

Reimbursement: to SF (surface water): N (Y/N)
to GF (ground water): N (Y/N)
to HWF (haz waste): N (Y/N)
Third party damage claim expected: N (Y/N)
Enforcement Referral: Y (Y/N)

23

P-27-89

Robertson Residence

John Gordon received a call from Doc Harris, of Harris Oil Company, on 1-18-89 in regard to an oil spill at the residence of Ann & Peter Robertson, 1093 Washington Avenue, Portland.

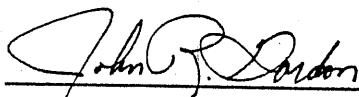
The spill occurred when a whistler pipe failed to indicate the tank was full. This was due to the pipe having been tipped over to accommodate the installation of a new deck the previous fall, and never straightened up.

Approximately 200 to 250 gallons of oil were deposited on the frozen ground behind the house before the driver became aware that a problem existed.

Mr. Gordon spoke with both Doc Harris and Ms. Robertson, and it was agreed that the soil would be excavated and taken to CWS.

Between 1-25 and 1-27, 160 cubic yards of soil were removed to Norridgewock. It is the opinion of this investigator that the oil could have been removed with a great deal less soil. The removal of the deck and back steps also was required for complete removal of the oil.

Harris Oil is to pay for the damages to the property. No further action is necessary.



JOHN GORDON
Oil and Hazardous Materials Specialist I
Bureau of Oil and Hazardous Materials

JG/mg

cc: File

SPK

FORM 357Y

Oil & Hazardous Materials Report Form
Spill Number: P/027/89

Subject:

Name (Last, First MI): HARETS OIL COMPANY
Address: 385 MAIN STREET Town: SOUTH PORTLAND
State: ME Zip-code: 04106 Telephone: _____

Spill Information:

Location (Town): PORTLAND Spill type: A
Amount spilled: 250.00 gals.Y cu. yds.N lbs.N to N
Type of spill: 02
Date of Spill: 89/01/18 (yy/mm/dd) Time of Spill: 1030 (Military)
Date Reported: 89/01/18 (yy/mm/dd) Time Reported: 1800 (Military)
Cause: 09 Detection method: 2F
Incident code: BSFL DEP response time involved: 15.0 minutes
Number of wells at risk: 0 Number of wells impacted: 0
Investigators' names: 1. GORDON, JOHN
2. BREZINSKI, STEPHEN
3. _____

Person Reporting Incident:

Name (Last, First MI): DDC HARRIS
Address: SAME Town: SOUTH PORTLAND
State: ME Zip-code: _____ Telephone: _____

Oil & Hazardous Materials Report Form
(continued)

Spill Number: P/027/89

Clean-up Information:

Total product recovered: 250.00 gals.Y cu. yds.N lbs.N
Method: 0 Non-recyclable: 250.00 gals.Y lbs.N
Solids: combustible: 0.5 cu. yds.N tonsY
non-combustible: 140.0 cu. yds.
Recyclable material: _____ gals.N cu. yds.N lbs.N
Number of filters installed: 0 Number of sorbents installed: _____
Disposal information: _____

Other Actions:

Reimbursement: to EF (surface water): N (Y/N)
to EF (ground water): N (Y/N)
to DEP (hot water): N (Y/N)
Third party damage claim expected: N (Y/N)
Enforcement Referral: N (Y/N)

PERSON REPORTING INCIDENT

Name (last, first, mi): Marine Safety Office--PO Cass Tel no. () - -
Address: MSO-Portland Town: Portland State: ME Zip: 04101

OTHER ACTIONS

Reimbursement: to SF (surface water) N (Yes or No) Third-party damage
to GF (ground water) N (Y or N) claim expected N (Y or N)
to HWF (haz waste) N (Y or N) Enforcement referral N (Y or N)

CLEAN-UP INFORMATION

Total product recovered: _____ (gals., yds³, lbs, or bbls) Method: _____ (Table K)
Non-recyclable _____ (gals., or bbls) Solids, combustible: _____ yds³ or tons
Solids, non-combustible: _____ yds³ Recyclable material: _____ (gals., yds³, lbs, bbls)
Disposal information: _____ Filter or aerator installed: (type and #)

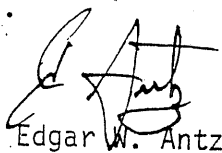
UNDERGROUND TANK INFORMATION

	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5
UST registration #:	_____	_____	_____	_____	_____
Size of tank:	_____	_____	_____	_____	_____
Tank construction: (Table L)	_____	_____	_____	_____	_____
Tank age: (Table M)	_____	_____	_____	_____	_____
Piping construction: (Table N)	_____	_____	_____	_____	_____
Active or abandoned:	_____	_____	_____	_____	_____

EMARKS / RECOMMENDATIONS / NARRATIVE:

Ed Gleason called and reported that tanks were found at the new condominium site on Chandler's Wharf in Portland. Before detected, the backhoe punctured the tank emptying the contents onto the ground. The lightly contaminated soil was beneficially reused at Thompson's Point in Portland for fill. Environmentally, as the tanks were on tidally controlled land and were filled with water, minimal additional impact from the spilled oil should result. Also pumped out other tank on 03/27/86.

I recommend no other action at this time.


Edgar W. Antz

Oil & Hazardous Materials Specialist I

:mgb

OIL & HAZARDOUS MATERIALS REPORT FORM

Spill Number P / 91 / 86

SUBJECT

Name (last, first, mi): Liberty Group Inc.--Ed Gleason

Address: 38 Preble St Town: Portland State: ME

Zip: 04101 Tel. no. () - - (optional)

SPILL INFORMATION

Location (town): Chandler's Wharf Spill type: 1 (Table A)

Amount spilled: 20 (~~gal~~, ~~xxx~~, ~~xxx~~, ~~xxx~~, ~~xxx~~) Type of oil: H 3 (Table B)

Date of spill: 86 / 03 / 26 (yy/mm/dd) Time of spill: 08:00 (Military)

Date reported: 86 / 03 / 26 (yy/mm/dd) Time reported: 08:15 (Military)

Cause: A 13 (Table C) Detection method: S 2 (Table D)

No. of wells impacted: -- No. of wells at risk: --

OTHER INFORMATION

Incident code: A-L-C (Table E) DEP response time involved: 3 (hours)

Name of investigator (last, first, mi): Antz, Edgar W./Brann, Fred S.

Investigator/Responder 1 _____ Responder 2 _____ Responder 3 _____

name of material & UN Id # _____	name of material & UN Id # _____	name of material & UN Id # _____
UN chemical class _____ (Table F)	UN chemical code _____	UN chemical class _____
Exposure level _____ (Table G)	Exposure level _____	Exposure level _____
Protection code _____ (Table H)	Protection code _____	Protection code _____
Health code _____ (Table I)	Health code _____	Health code _____
Category _____ hours _____	Category _____ hours _____	Category _____ hours _____
Category _____ hours _____	Category _____ hours _____	Category _____ hours _____
Category _____ hours _____	Category _____ hours _____	Category _____ hours _____
see Table J for training credit codes		

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12/22 cy

OIL & HAZARDOUS MATERIALS REPORT FORM
Spill Number 191/86

SUBJECT

Name (Last, First, MI): Liberty Group Inc - Ed Gleason
Address: 38 Preble Street Town: Portland State: _____
Zip: _____ Telephone Number: () - _____ (Optional)



SPILL INFORMATION

Location (Town): PORTLAND Chandlers Wharf Spill type: 1 (Table A)
Amount spilled: 20 (gals, ~~yds3~~, ~~lbs~~, ~~or bbls~~)
Type of spill: 07 (Table B)
Date of spill: 86/03/26 (Yr/Mo/Dy) Time of spill: 8:00 (Military)
Date reported: 86/03/26 (Yr/Mo/Dy) Time reported: 8:15 (Military)
Cause: A13 (Table C) Detection method: S2 (Table D)
Incident code: A-LC (Table E) DEP response time involved: 3 (Hours)
No. of wells at risk: 0 No. of wells impacted: 0
Investigators' names: 1. ANTZ EW
2. BROWN FS
3. _____

PERSON REPORTING INCIDENT

Name (Last, First, MI): PO CASS - MSO
Address: Commercial Street Town: Portland State: ME
Zip: _____ Telephone Number: () - _____ (Optional)

CLEAN-UP INFORMATION

Total product recovered: unknown (gals, yds3, lbs, or bbls)
Method: G (Table K) Non-recyclable: 0 (gals, or bbls)
Solids combustible: 0 (yds3, or tons)
Solids non-combustible 20 yds3
Recyclable material: 0 (gals, yds3, lbs, or bbls)
Number of filters installed: 0 Number of aerators installed: 0
Disposal Information: Beneficial reuse

OTHER ACTIONS

Reimbursement: to SF (surface water) N (Y or N)
to GF (ground water) N (Y or N)
to HWF (haz waste) N (Y or N)
Third party damage claim expected: N (Y or N)
Enforcement referral: N (Y or N)

REMARKS/ RECOMMENDATIONS/ NARRATIVE:

- see back -

ENTERED

III. CLEANUP

Product Reported

Cleanup DTREE

Unspecified Fuel Oil {07}

Products Found/Amount Spilled

Unspecified Fuel Oil {07} - 20 gals. ACTUAL

Material Recovered

Recovery/Treatment Method

Excavation {G}

Disposal Information

BEBEFICIAL REUSE

IV. NARRATIVE

V. ATTACHMENTS

Attachment Type

Description

File Name

MAINE DEPARTMENT OF ENVIRONMENT PROTECTION
OIL & HAZARDOUS MATERIALS REPORT

Spill Number: P-91-1986

Report Status: Final Report

MCD Town: PORTLAND

Local Name:

Primary Responder: EDGAR ANTZ

Primary Product:

Subject/Owner: LIBERTY GROUP INC/GLEASON, ED

FILE COPY

I. EVENT

Spill Info

Type Oil Incident {O}
Source
Cause Accident - Other {14}

Spill Date/Time

03/26/1986 08:00

Reporter Type/Detection Method

Type Spiller {2}
Method Other {1}

Reported Date/Time

03/26/1986 08:15

Subject/Owner

Contact LIBERTY GROUP INC/GLEASON, ED
38 PREBLE STREET
PORTLAND ME

Comment

Reporter

Contact MSO - CASS, PO
COMMERCIAL ST.
PORTLAND ME

Comment

Primary Responder and Other Employees

EDGAR ANTZ (Primary Responder)
FRED BRANN

No Further Response Action Required

II. SITE

Location

Location Type Residential - Multi Family {MF}
Name HEAT OIL SPILL
Street Address APT. BLDG.
MCD Town PORTLAND
Local Name
State/Province

Spill Point

UTM North
UTM East

Wells and Media Affected

Wells Affected 0 Wells Impacted / 0 Wells At Risk
Media Affected Land {L}

Tanks Involved

Underground Tank(s) Involved-Unregistered

5

CLEAN-UP INFORMATION

Spill Number P - 119 - 94

Total Product Recovered : 0.00 G (Gals, Yds3, Lbs or Bbls)

Method of Recovery : K

Non Recyclable : 0.99 G (Gals or Bbls)

Solids Combustible : (Yds3 or Tons)

Solids Non Combustible : Yds3

Recyclable : 0.00 G (Gals, Yds3, Lbs or Bbls)

Number Filters Installed : 0

Number Aerators Installed : 0

Disposal Information : refered to local authority, sewer receipt.

OTHER ACTIONS

Expenditure (s) - From Surface Water Fund N (Y or N)
 From Ground Water Fund N (Y or N)
 From Haz Waste Fund N (Y or N)

Third Party Damage Claim Expected N (Y or N)

Enforcement Referral N (Y or N)

Insurance Fund Claim N (Y or N)

Tech Services Referral N (Y or N)

UNDERGROUND TANKS INFORMATION

UNO/UST Site Number	Tank Number	Size Of Tank	Tank Material	Tank Age	Piping Material	Tank Status
------------------------	----------------	-----------------	------------------	-------------	--------------------	----------------

Please use separate sheets of paper, as needed, for your detailed Recommendations and Spill Narrative. Remember to include/attach directions to find spill site (with a map if possible), all observations made, clean up actions performed and photos (if taken).

Include known chemical names when report is about Hazardous Materials.

Please, document your information carefully. It may be needed for future reference or legal action.

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL & HAZARDOUS MATERIALS REPORT FORM

Spill Number P - 119 - 94

SUBJECT / OWNER OR OPERATOR

Name (Last, First, MI): MARTHA WILLABEE

Address: 111 WOODLAWN

Town: PORTLAND

State: ME Zip: 04103

Telephone:

Comments: PUMPING WATER FROM BASEMENT, MIXED WITH LIGHT #2 OIL FROM SPILL YEARS AGO LEFT
PADS REFERED TO SEWRER DIV PRTLD D. PETERSON

LOCATION / FACILITY INFORMATION

Spill Location: MARTHA WILLABEE

Address: 111 WOODLAWN

Location ID: 19291

Town: PORTLAND

Zip: 04103

Latitude N: / /

Longitude W: / /

SPILL / EVENT INFORMATION

Spill Type: A (Table A) Amount Spilled: 0.99 G (Gals, Yds3, Lbs or Bbls)

Product Reported Spilled: 12 (Table B) Product Actually Found: 02 (Table B)

Date Of Spill: Time Of Spill: (Military)

Date Reported: May. 20, 1994 Time Reported: 1345 (Military)

Cause Of Spill: 18 (Table C) Detection Method: 3 I (Table D)

Incident Code: B - SF - L - (Table E)

DEP response time involved: 1.5 Wells At Risk: 0 Wells Impacted: 0

Investigators' names : THOMPSON, NATHAN

PERSON REPORTING EVENT

Name (Last, First, MI): ANONYMOUS

Address:

Town: PORTLAND

State: ME Zip Code:

Telephone:

ENTERED

Appendix D

Aerial Photographs

5-2-64

ENM-285



Source:
Maine Geological Survey
Department of Conservation

CLIENT: Wescott & Payson II		PROJECT: Phase I ESA	
<p>SUMMIT ENVIRONMENTAL CONSULTANTS INC. 640 Main Street Lewiston, Maine 04240</p>		TITLE: 1964 AERIAL PHOTOGRAPH PORTLAND, ME	
		DRAWN: -----	SCALE: As Shown
PROJECT NO.: 3632		DESIGN: C.R.F.	DATE: 11/20/02
		APPROVED: M.A.D.	FILE NO.: -----

10-10-80

USDA

40

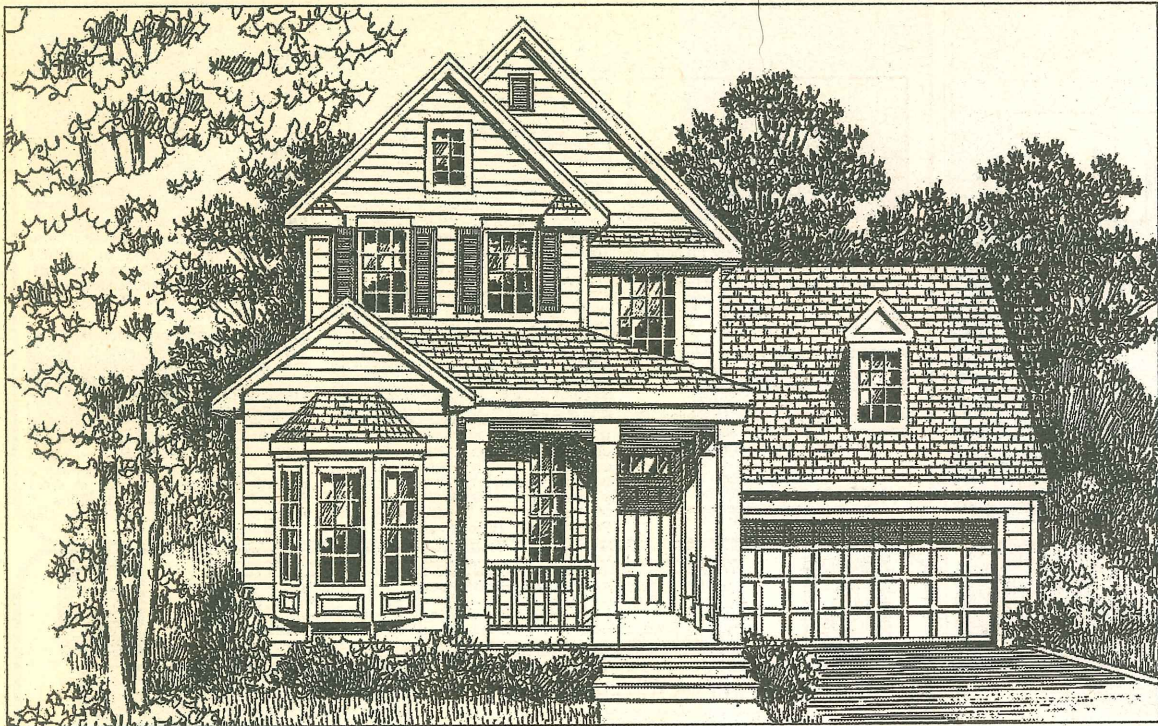
23005

979-40



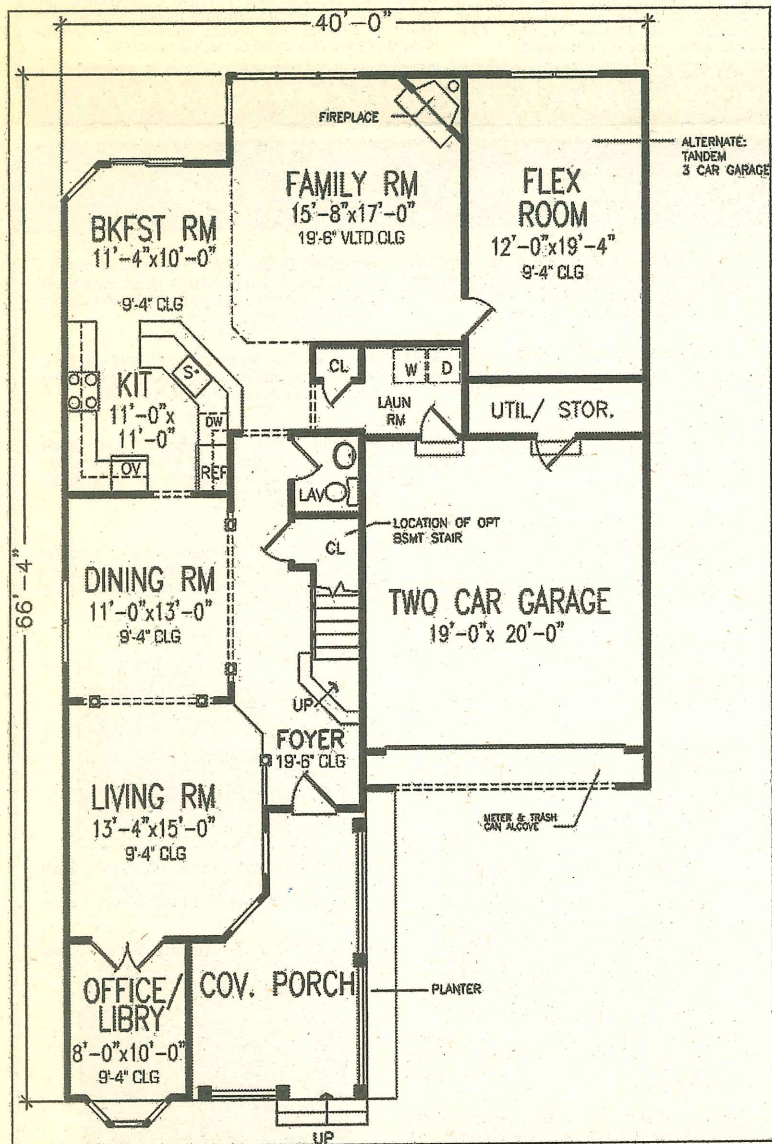
Source:
Maine Geological Survey
Department of Conservation

CLIENT: Wescott & Payson II		PROJECT: Phase I ESA	
<p>SUMMIT ENVIRONMENTAL CONSULTANTS INC. 640 Main Street Lewiston, Maine 04240</p>		TITLE: 1980 AERIAL PHOTOGRAPH PORTLAND, ME	
		DRAWN: -----	SCALE: As Shown
DESIGN: C.R.F.	DATE: 11/20/02	Figure:	
PROJECT NO.: 3632	APPROVED: M.A.D.	FILE NO.:	----



A bay window, dormers and traditional gables highlight this home's exterior.

Country-style home brings out the feeling of simpler times



Beyond a deep front porch, the foyer leads down to the casual living areas. They include a family room, bayed breakfast room and the kitchen which is fronted by a snack bar. Formal living and dining rooms are located toward the front of the home. An office-library is just off the living room. Three upper-floor bedrooms are supplemented by future expansion space and a flex room on the main floor. A two- or three-car garage with storage rounds out the plan.

● The downstairs rooms flow well together for entertaining.

By **BRUCE A. NATHAN**
For AP Newsfeatures

Country-style touches give this home, Plan K-46, by the Homestore Plans and Publications Designers Network, a look that evokes memories of a simpler time. Its floor plan has 2,599 square feet of living space.

Past the front porch, the two-story foyer opens out to the formal living and dining rooms. These spaces flow together, and thus make large-scale entertaining easy and comfortable. Double doors in the living room lead into a library or home office.

The kitchen includes a snack bar that serves the breakfast nook and the family room. A corner fireplace and many windows in the family room are focal elements of this inviting space.

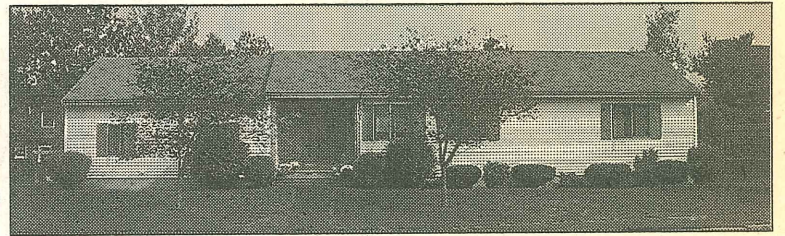
A flex room off the family room could be used as a den, guest room, children's playroom or as a tandem garage. Additional expansion space is located on the upper floor amid three sizable bedrooms.

With two walk-in closets, a tub and separate shower, two vanities and a private toilet, the master suite comes well equipped. A full bath that serves the other two bedrooms also features a dual-sink vanity.

For a study plan of this house, including general information on building costs and financing, send \$5 to House of the Week, PO Box 1562, New York, NY 10116-1562. Be sure to include the plan number. Downloadable study plans and construction blueprints for this plan and for hundreds of past Houses of the Week are available at www.houseoftheweek.com.

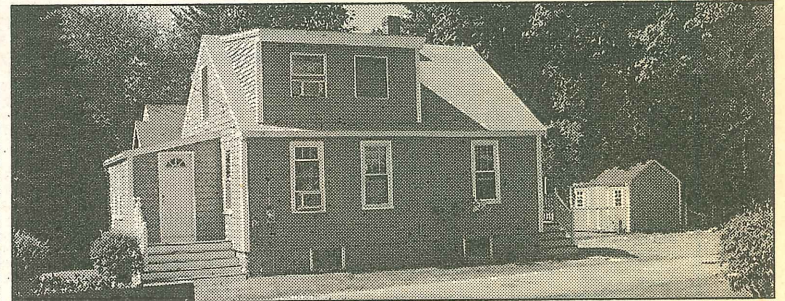
HOUSE VALUES

Portland



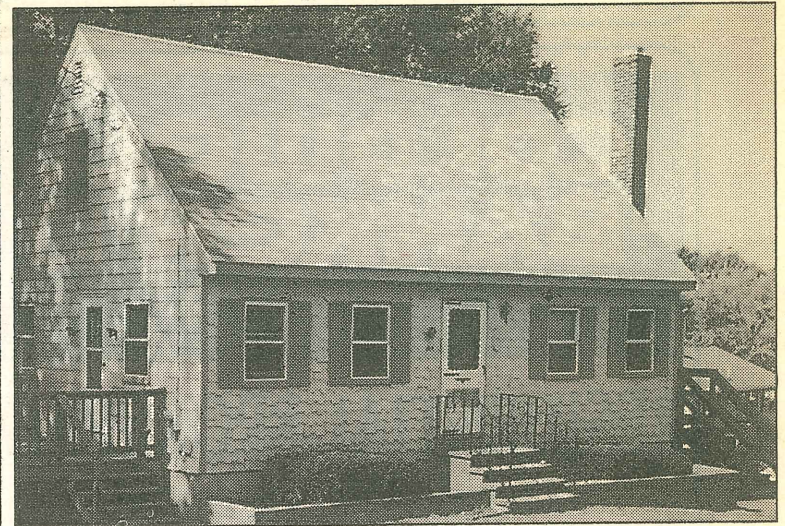
This four-bedroom home sold in November for \$254,000 after 34 days on the market. The 2½-bath home with a finished basement with two family rooms, a spacious breezeway and large yard was listed at \$259,900 by Tim Flaherty Real Estate.

Westbrook



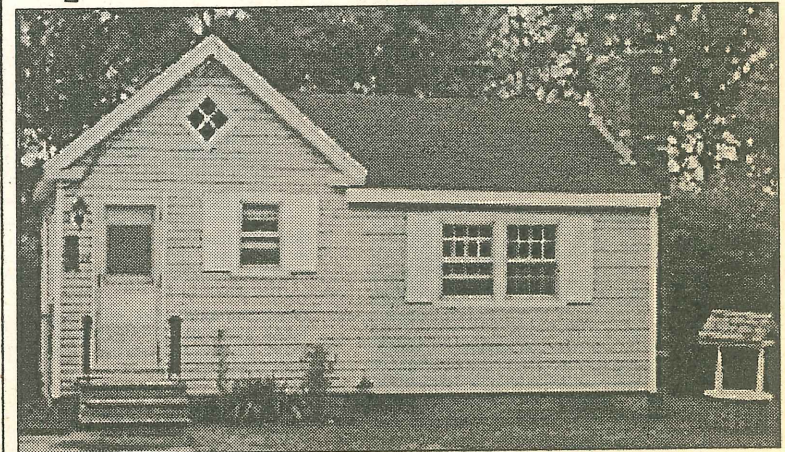
This three-bedroom home sold in October for \$153,500 after 54 days on the market. The two-bath home with enclosed sun porch, hardwood floors, large dormers and updated master bedroom and bath was listed at \$159,900 by ERA Home Sellers.

Biddeford

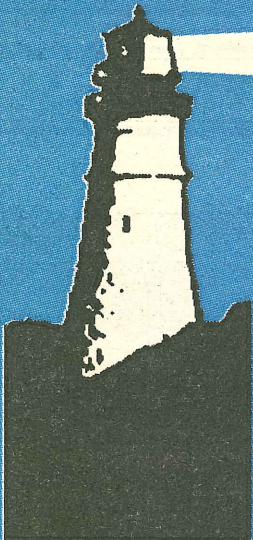


This three-bedroom home sold in October for \$145,000 after 22 days on the market. The 1½-bath home with two heated and finished rooms in the lower level, a 12-by-14-foot deck and located in a low-traffic neighborhood was listed at \$147,500 by Signature Realty.

Topsham



This one-bedroom home sold in November for \$80,500 after 20 days on the market. The well maintained one-bath home in a convenient location was listed at \$80,500 by RE/MAX Absolute Realty.



HOME SOURCE

R

Portland Board of Realtors



RE/MAX Absolute Realty

SETTING HIGH STANDARDS

1-888-429-8437 (Toll Free)
www.southernmainehomes.com
Exit 8, Portland/Westbrook
Exit 7 Scarborough



FREEPORT - Affordable and adorable 2-bedroom home on sunny 1.5 acre lot on quiet dead-end street. Lots of updates done, new roof, full basement and oil heat. It's the bargain of the week! Priced at \$129,000 for quick sale. Call LENNY, Ext. 112

FREEPORT LAND - Build your dream home on 8.3 acres, or divide it. Property priced to sell at \$124,900.

Wonderful opportunity in Flying Pt. area, lot has utility, septic design, road, stream in great setting. \$99,900.

Denise Bates
1-866-834-3669 ext 107 (toll free)
www.mainehomeguide.com



PORTLAND - Comfortable, convenient, and charming describes this 2 year old contemporary townhouse condominium. Totally independent private lifestyle. 3 BR, 2BA, \$214,900. Page Laura B 758-8000




LYMAN - Warm contemp. log home designed for passive solar heat efficiency, serenity & security. Sunny, stunning, walk-out finished daylight bsmt, fam. rm in bsmt. Oak/ceramic tile flrs, water views of Wadleigh Pond & FLOW to Roberts Pond. \$269,900 Page Laura B 758-8000



WESTBROOK - Colonial in Westbrook/W. Falmouth subdivision. Covered farmer's porch, cherry kitchen, fam rm w/tile surround flr, 2nd flr laundry, possible in-law/nanny suite w/kitchenette. Immediate occupancy avail. \$379,900. Patty Morris 856-9919 x108

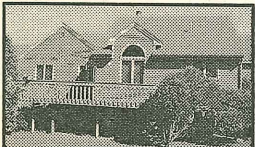


NEW LISTING/FALMOUTH - Location & curb appeal abound in this 3 bed/1.5 bath gambrel cape in West Falmouth. Wood floors, built-ins, 2 frplcs, 2 car & more. \$279,900. Call Gail or Patty x110 & x108 1140045




PAT RABIDOUX
846-4300
Ext. 106

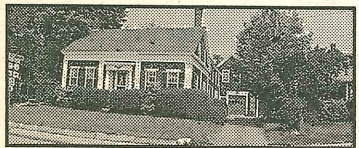
765 Route One, Yarmouth



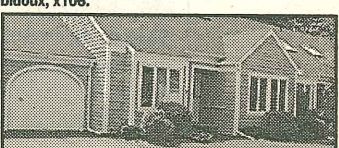
YARMOUTH - Single level living in popular "Bluffs" condominium offering up to 3BRs or 2BRs and a den, 2 baths including master with whirlpool tub, open floor plan with cathedral ceiling and fireplace in living room, full basement, 2 car garage and oil heat. \$250,000 Pat Rabidou x106




YARMOUTH - Perfect package! 2 to 3 bedroom, renovated Antique in a pretty Village setting with the bonus of a separate one-bedroom apartment for extra income. Beautiful wood floors, terrific floor plan with center island cherry country kitchen with brick hearth, built-in bookcases and lot of glass, separate office and rich decor. \$350,000. Pat Rabidou x106.



YARMOUTH - Greek Revival Cape with ell and attached barn offering yesterday's charm with a recent cherry kitchen addition. Loads of room for all your activities and guest space galore for the family and friends wanting to share a taste of true village living. Village zoning holds the potential for business or professional office use. Priced below appraisal at \$265,000. Pat Rabidou x106.




YARMOUTH-BLUEBERRY COVE CONDO-Over 1900 SF featuring an open floor plan with up to 3 BRs, 3 baths, fireplace, attached garage, huge deck and economical Monitor heat and hot water. \$275,000. Pat Rabidou x106




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Top Producer
Mike Volkernick




Top Lister
Maude Wright

* **YARMOUTH BROSIDE CONDOS** *




Gorgeous 1900 sq.ft. condo with 3BRs & 1.75 baths, FP in LR w/woodstove H.U. Lg dining area, super open kit., loft area, att. gar, private yard, tennis courts & pool available. Too many pluses to list. \$270,000. Call Maude Wright, 774-5766 x290 or cell: #232-6356.




SOUTH BRISTOL
* This charming 1830's Cape on 4 acres is just 3.5 miles from Damariscotta, with most of it's original framing exposed. 6,000 sq.ft. of living space, presently used as a 3 unit with business potential. Oversized barn. Screened in gazebo and more. \$398,000. Maude Wright 774-5766 x290 or cell: #232-6356.

* **BOOTHBAY HARBOR** *




Gorgeous 1900 sq.ft. condo with 3BRs & 1.75 baths, FP in LR w/woodstove H.U. Lg dining area, super open kit., loft area, att. gar, private yard, tennis courts & pool available. Too many pluses to list. \$270,000. Call Maude Wright, 774-5766 x290 or cell: #232-6356.



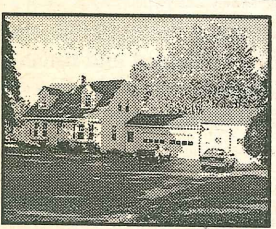
Lovely well-maintained yr round Cape, ideally situated along the Rocky Maine Coast. Boasting ocean & private beach, abutting a spacious green lawn. 5bdrms, 1.75 baths, fireplace, plus a heated 2 car garage, private boat house. Nature provides majestic, panoramic views. \$1,995,000. For private showing call Maude Wright, 774-5766 x290 or cell: 232-6356.

Call us 1st in Maine 774-5766




RESIDENTIAL BROKERAGE

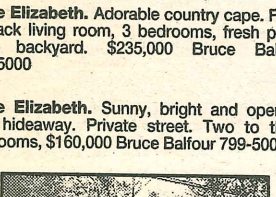
Preview Our New Listings




Portland. Investment opportunity for savvy buyer. Four plus multi unit with spacious parking for all tenants. \$259,000 Paul Emery 799-1501




Portland. Duplex cape. Quiet area 20 minutes to Portland. Good condition. Great investment property & income potential. \$185,900 Suzanne Plourde 892-1600



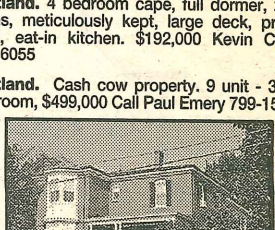
Cape Elizabeth. Adorable country cape. Front to back living room, 3 bedrooms, fresh paint. Nice backyard. \$235,000 Bruce Balfour 799-5000




Portland. Only imagination will hold you back. Multi parcels, flat, wooded on unfinished street. \$25,000. Call Dianna or Allan 775-6055



Cape Elizabeth. Sunny, bright and open. A true hideaway. Private street. Two to three bedrooms, \$160,000 Bruce Balfour 799-5000



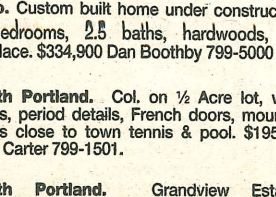
Portland. Ready & waiting for your dream home-set high and nicely wooded. Portland's most desired area-waiting for you at \$139,900 Karen Wright 781-2216



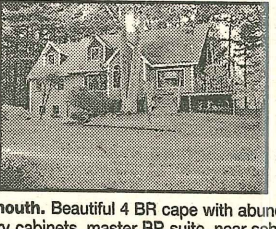
Scarborough. \$295,000-spacious (3400SF) ranch, large private yard, 4 plus bedrooms, 2 baths. Open & bright. 2 fireplaces, 2 car garage, 20x40 Ingr. pool. Dave Scheffler 799-1501



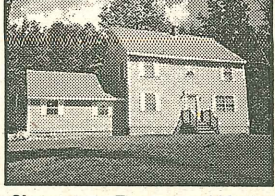
Portland. Three bedroom home in excellent condition. Full basement, Dining room, 2 car attached garage. Private yard. \$235,000 Mary T. Honan 781-2216




Saco. Custom built home under construction! 4 bedrooms, 2.5 baths, hardwoods, tile, fireplace. \$334,900 Dan Boothby 799-5000



Portland. 4 bedroom cape, full dormer, 2 full baths, meticulously kept, large deck, private yard, eat-in kitchen. \$192,000 Kevin Coyne 775-6055




South Portland. Col. on 1/2 Acre lot, wood floors, period details, French doors, mountain views close to town tennis & pool. \$195,000 Tom Carter 799-1501.




Portland. Cash cow property. 9 unit - 3 one bedroom, \$499,000 Call Paul Emery 799-1501




South Portland. Grandview Estates. Gorgeous new construction with all the bells and whistles. Over 3000 SF. Call today for details. \$479,900 Kathy Duca 799-5000




Yarmouth. Beautiful 4 BR cape with abundant cherry cabinets, master BR suite, near schools & village. Well landscaped \$319,900 Wayne Syphers 892-1600




New Gloucester. Two years old-better than new with improvements! Nicest location in New Gloucester. \$260,000. Harry Clements 233-2768. 3 BR Colonial. Hurry!



South Portland. Thornton Heights. A little TLC will go a long way. Hardwood floors, fireplace, three bedrooms. \$145,000 Frank Strout 799-5000



Topsham. Charming cape, open kitchen/family rms, formal living rm w/fireplace, great corner lot, 2c garage & more \$229,900. Janice Selig 781-2216



Portland. Western Prom. C1858 brick. Near Waynflete & Med. Ctr. River views, 5 BR, 2.5ba, FP, 2 c gar & more! \$790K Owner/Broker Bill Davisson 781-2216

www.NewEnglandMoves.com

Cape Elizabeth. Split level. 3 bedrooms, 1.5 baths, LR with fireplace. Nice FR. Corner fenced lot. Hardwood, 2 level deck. \$224,000 Broker Owned, Bruce Balfour 799-5000

Cape Elizabeth. Home on private way. Fireplaced living room, new addition, new bath, newly appliances 2001. New furnace 2000. \$289,000 Bruce Balfour 799-5000

Cumberland. This 4BR, 2.5 bath farmhouse has it all! Cozy sunporch, hardwood, private master suite & 3 car garage too! \$369,900 Kathie Hooper 799-1501

Cumberland Foreside. Spacious home. Fireplaced living room, w/wonderful views of Casco Bay-water access. 3 BR, hardwood flrs, built-ins. \$649,900 Judy Flaker 781-2216

Gray. Ranch duplex. Excellent condition. Interior is immaculate. Newly painted, new flooring, 3 sheds, playhouse. \$184,000. 1.9 acres. Suzanne Plourde 892-1600

Naples. To be built. Full domered cape 3 BR. Finished. Large wood lot. Rte. 35 Naples. \$149,900. Call Pat Reynolds 892-1600

Saco. Move-in condition! Large lot, nice location! 3 bedrooms, finished basement, home warranty! \$173,900 Dan Boothby 799-5000

Scarborough. Immaculate up-to-date 2 bedroom cottage with short walk to Higgins Beach. \$379,900. Call today to get all of the details on this property, Steve Seabury 799-5000

Scarborough. Higgins Beach cape tucked on private, rural feeling lot-this one must be seen to be appreciated-mid \$500s. Adrienne Murphy, 775-6055

South Portland. "Storybook" charm & appeal. Well maintained 2 BR, 2BA cape w/2 car garage & fenced in private yard. \$142,000 Migs Eaton 775-6055

Windham. Duplex cape. Quiet area 20 minutes to Portland. Good condition. Great investment property & income potential. \$185,900 Suzanne Plourde 892-1600

Portland. Only imagination will hold you back. Multi parcels, flat, wooded on unfinished street. \$25,000. Call Dianna or Allan 775-6055

Portland. Ready & waiting for your dream home-set high and nicely wooded. Portland's most desired area-waiting for you at \$139,900 Karen Wright 781-2216

Portland. Three bedroom home in excellent condition. Full basement, Dining room, 2 car attached garage. Private yard. \$235,000 Mary T. Honan 781-2216

www.NewEnglandMoves.com