City of Portland Site Plan Application

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

Location/Address of Construction: Temple Beth El 400 Deering Avenue		
Total Square Footage of Proposed Structure: 11,000	Square Footage of Lot: 74,272	
Tax Assessor's Chart, Block & Lot Chart# 119 Block# I Lot# 1	Property owner, mailing address: Temple Beth El, 400 Deering Avenue, Portland, ME 04103	Telephone: 774-2649
Consultant/Agent, mailing address, phone & contact person: Stephen Blatt Architects, PO Box 583, Portland, ME 04112	Applicant name, mailing address & telephone: Temple Beth El, 400 Deering Ave, Portland, ME	**Project name:** Temple Beth El Expansion/Renovation

Proposed Development (check all that applies) ___New Building _X_ Building Addition ___Change of Use
___Residential ___Office ___Retail ___Manufacturing ___Warehouse/Distribution _X_ Parking lot
___Subdivision, amount of lots_____ ___Site Plan Location ($3,000), residential $200 per lot____
___Traffic Movement $1,000 ___Stormwater Quality $250.00
___Other_____ ___After-fact Major $1,500.00 ___After-fact Minor $1,200.00

Major Development _X_ **$500.00** **Minor Development**_____ **$400.00**
Amendents: ___**Board review $200.00** ___**Staff review $100.00**

Who billing will be sent to: Stephen Blatt Architects
Mailing address: P.O. Box 583
State and Zip: Portland, ME 04112-0583 Contact person: David Matero Phone: 761-5911

Nine (9) separate packets must include the following: Amendments require six (6) separate packets

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**

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, 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 application is 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:**

This application is for site review ONLY, a building Permit application and associated fees will be required prior to construct

CITY OF PORTLAND, MAINE
SITE PLAN CHECKLIST

If a provision is not applicable, put "N/A"

Section 1. Written Statements

Section 2. Development Description

2.0 A. Narrative
1. Objectives and details
2. Total land area
3. Total floor area

2.1 B. Easements/Right-of-Way Statement
1. Location of existing
2. Location of proposed

C. Natural Resources

2.2 1. NRPA setbacks

2.3 D. Subsurface Conditions
1. USDA Medium Intensity Soils Statement
2. National Wetland Inventory Statement

2.4 E. Infrastructure
1. Sewer Availability
2. Water Availability
3. Right of Way

2.5 F. Construction Plan
1. Outline of construction sequence
2. Dates

2.6 G. Figures, Plates and Drawings

Section 3. Title, Right or Interest (copy of document)

Section 4. Financial Capacity

Att.4.1 A. Estimated costs

B. Financing

N/A 1. Letter of commitment to fund
2. Self-financing
____ a. Annual report
____ b. Bank statement

Section 5. Technical Ability (description)

5.0 A. Prior experience (statement)
Att.5.1 B. Personnel (documents)

Section 6. Unusual Natural Areas, Wildlife and Fisheries and Archaeological Sites

Section 7. Review Criteria for Site Plan Approval

Section 8. Solid Waste

8.0 A. Narrative
8.1 B. Solid wastes during construction
8.2 C. Solid wastes during operation of development
Att.8.1 D. Computations

Section 9. Surface Drainage and Runoff

9.0 A. Introduction
9.1 1. Existing conditions

SECTION 1

WRITTEN STATEMENTS

City of Portland, Maine Standards and
Requirements for Site Approval Section 14-525

1.0 A list of names and addresses of proposed parcel and estimated cost of development

Temple Beth EL located at 400 Deering Avenue in Portland, Maine owns the parcel proposed for the development. The estimated cost of the Expansion/Renovation project is $1,000,000.

1.1 A description of the proposed uses to be located on the site

A brief summary of the proposed uses for the synagogue is described in section 2 of this application. A detailed breakout of all the features of the synagogue was done by Stephen Blatt Architects and is attached to this application.

1.2 The total land area of the site and the total floor area and ground coverage of each proposed building and structure

The project site consists of a 1.69-acre lot with a total floor area of approximately 26,000 square feet. Approximately 11,000 square feet of the total floor area is the result of the expansion of the existing synagogue.

1.3 General summary of existing and proposed easements on the property

No existing or proposed easements are anticipated for the expansion/renovation project.

1.4 The types and estimated quantities of solid waste to be generated by the development

The solid wastes that are anticipated to be generated by the development are paper, cardboard, wood debris and construction debris. Ninety-five cubic yards of construction debris and three cubic yards of wood debris are anticipated during the construction of the proposed project. Twenty-five lbs/day of waste are anticipated during normal operations of the facility. Computations can be located in Attachment 8.1 of section 8 of this application.

1.5 Evidence of availability of off site facilities including sewer, water and streets

Sewer, water, electricity and gas currently serve the existing synagogue. Locations of off-site utilities are included on the survey plan done by Boundary Points Professional Land Surveying. The site is bounded on all four sides by public streets as depicted on the existing conditions sheet of the plan set.

1.6 A narrative describing the existing surface drainage on the site and a stormwater management plan

A detailed description of the surface drainage for the existing and proposed development can be found in section 8 of this application. Please see Plates 1 & 2 of this application and Sheet L-3 of the plan set for existing and proposed drainage patterns.

1.7 A construction plan outlining the anticipated sequence of construction of the major aspects of the propose project

A construction plan is located in section 1.5 of this application. An outline of erosion and control measures is summarized in section 9 of this application. See sheet L-3 of the plan set and the detail sheets for location and specifications for erosion control measures.

1.8 A list of all state and federal regulatory approvals to which the development may be subject

N/A

1.9 Evidence of financial and technical capacity to undertake and complete the development

Temple Beth El proposes to self finance the proposed development through a capital campaign and existing available funds. A statement and documentation of technical ability has been provided by Stephen Blatt Architects, Carroll Associates and DeLuca-Hoffman Associates and is included in Section 5 of this application.

1.10 Evidence of the applicants title, right and interest in the property

A copy of the applicant's title, right and interest are included in Section 3 of this application.

1.11 A narrative describing any unusual natural areas, wildlife and fisheries habitats or archaeological sites located on or near the project site

A statement has been provided in section 6 of this application

1.12 Submittal of any available electronic files

Copies of the electronic files are available upon request.

1.13 All new commercial property and industrial developments must include narrative in regards to recyclable materials generated

N/A, the project site is located in a residential zone.

SECTION 2

DEVELOPMENT DESCRIPTION

2.0 Overview

Temple Beth EL is proposing to expand/renovate their existing 15,200 square foot facility located at the crossroads of Deering Avenue, Devonshire and Wadsworth Streets in Portland. The proposed development program includes the following components:

- A 4,759 square foot classroom wing for the Levey Day School
- A 4,274 square foot expansion of the Chapel
- A 588 square foot expansion of the sanctuary/social hall
- Kitchen area modifications
- A 1,536 square foot expansion to the stage area

The development proposal also includes new parking for 10 vehicles and landscape improvements around the facility.

2.1 Existing and Proposed Easements/Rights-of-Way

There are no easements located on the existing property.

2.2 Natural Resources

There are no natural resource issues within the project site.

2.3 Subsurface Conditions

According to the Medium Intensity Soil Survey for Cumberland County, the development site consists of the following soil(s):

Wa – Walpole Fine Sandy Loam

S.W. Cole Engineering, Inc. of Gray, Maine, has done a preliminary Geotechnical evaluation of the site. S.W. Cole determined from their preliminary subsurface investigation and their understanding of the project that the use of conventional spread footings with on grade floor slabs appear feasible. A copy of the preliminary Geotechnical investigation and S.W. Cole's findings are attached to this application.

According to the National Wetland Inventory (NWI) for Portland (North), Maine, there are no wetlands delineated in the development vicinity. No wetland areas are visible on the site. Please see Figures 3 and 5 attached showing the soils and wetland areas with respect to the development location.

2.4 Infrastructure

The proposed development will include the following infrastructure modifications, as shown on Sheet 3 of the attached plan set:

- Installation of 6" sewer line off the existing 8" sewer line currently serving the synagogue.
- Installation of a new water service to tie into the existing Portland Water District water line located on Wadsworth Street.
- Reconstruction of the existing 24-foot access drive off Wadsworth Street.
- Construction of approximately 11,000 square feet of new building area for additional chapel area and classrooms for the Levey Day School.
- Construction of a new, 10-space paved parking lot off the 24-foot access drive from Wadsworth Street.

2.5 Construction Plan

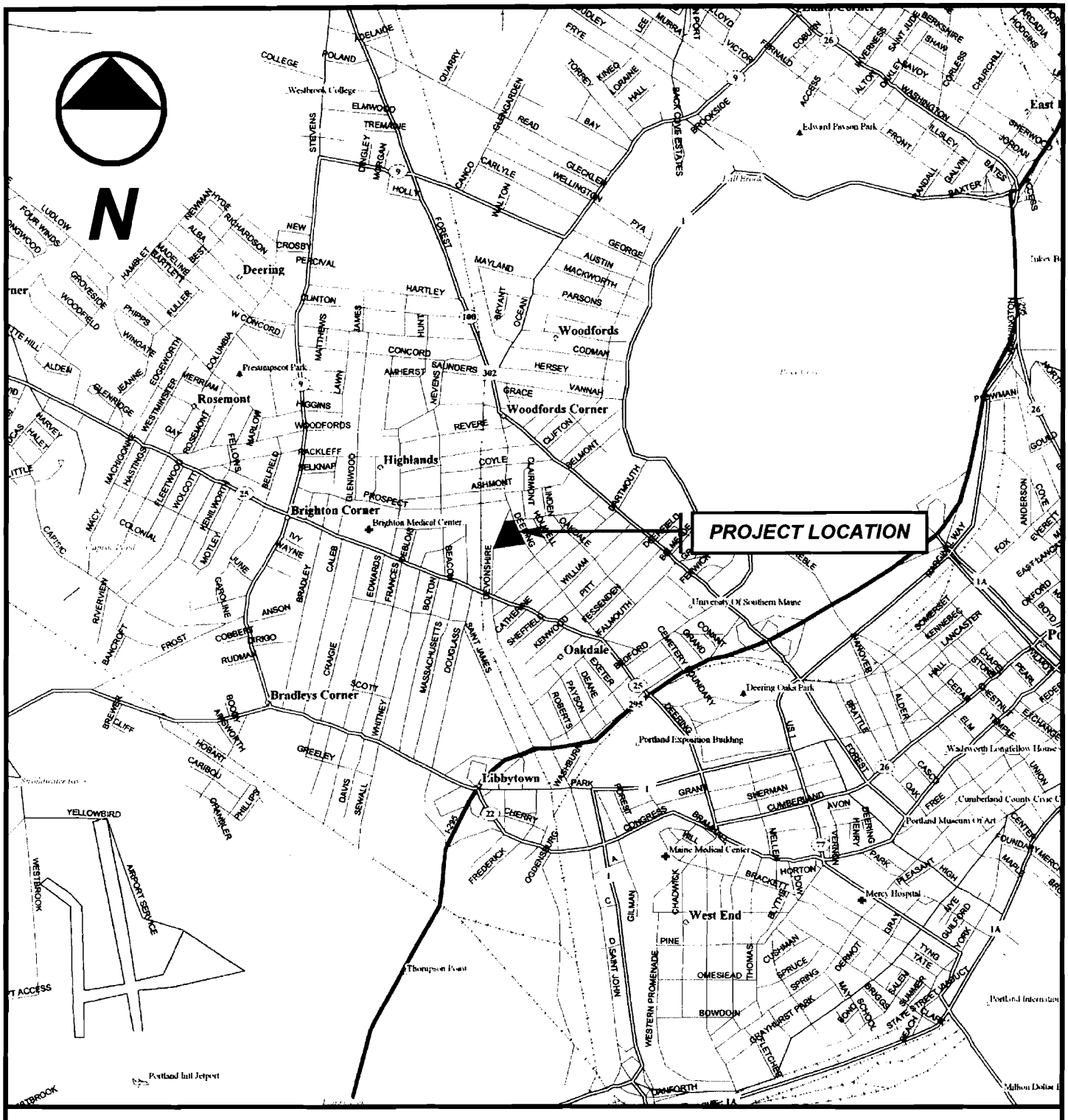
Table 1.1 – The proposed schedule developed for this project is as follows:		
Item	**Demolition/Site Work**	**Buildings**
Local Site Plan Review	February/March 2002	
Building – Hazardous Materials	N/A	
Site Work: Out to Bid Open Bid	 April 2002 May 2002	 April 2002 May 2002
Start Construction	July 2002	July 2002
Building Construction		July 2002
Complete Site Work	May 2003	
Complete Building		May 2003
Building Occupancy		June 2003

2.6 Figures, Plates and Drawings

Figure	Description
1	DeLorme Location Map
2	USGS Location Map
3	USDA Medium Intensity Soils Map
4	MGS Sand and Gravel Aquifer Map
5	National Wetland Inventory Map
6	Zoning Map
7	Tax Assessor's Map

Plates	Description
1	Predevelopment Watershed Plan
2	Postdevelopment Watershed Plan

Plan Sheets	Description
1	Boundary and Topographic Survey
L-1	Site Preparation Plan
L-2	Site Layout and Materials Plan
L-3	Site Grading and Utilities Plan
L-4	Landscape Plan
L-5	Construction Details



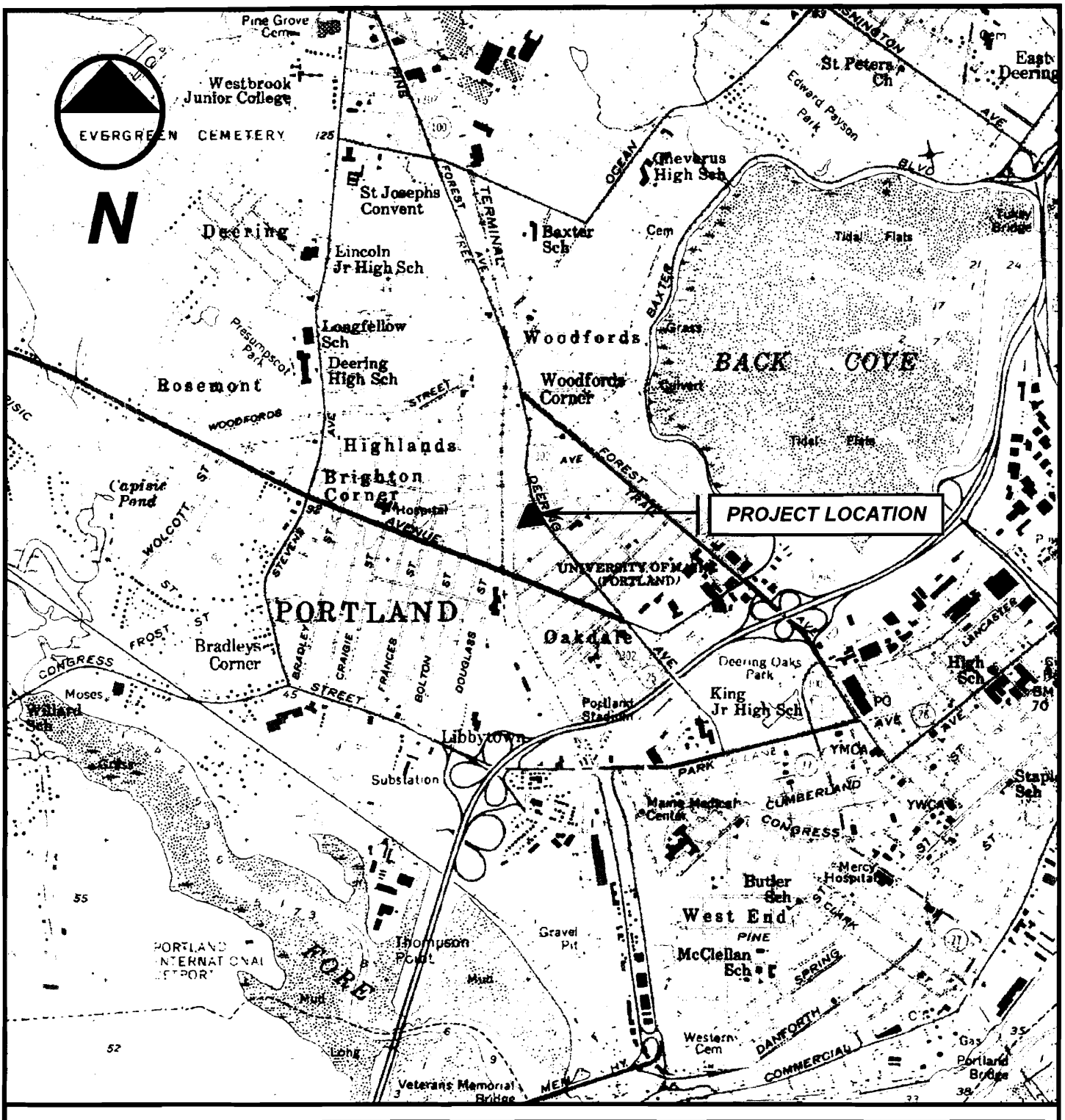
DeLORME LOCATION MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: DeLORME MAP EXPERT; **DATED:** 1993

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	1" = 2000'+-	1
CHECKED	SRB	JOB NO.	2171	



USGS TOPOGRAPHIC MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: TOPOSCOUT; Coastal Maine CD-ROM, USGS Portland West Quadrangle, 7.5 Minute Series (Topographic)

DeLUCA-HOFFMAN ASSOCIATES, INC.
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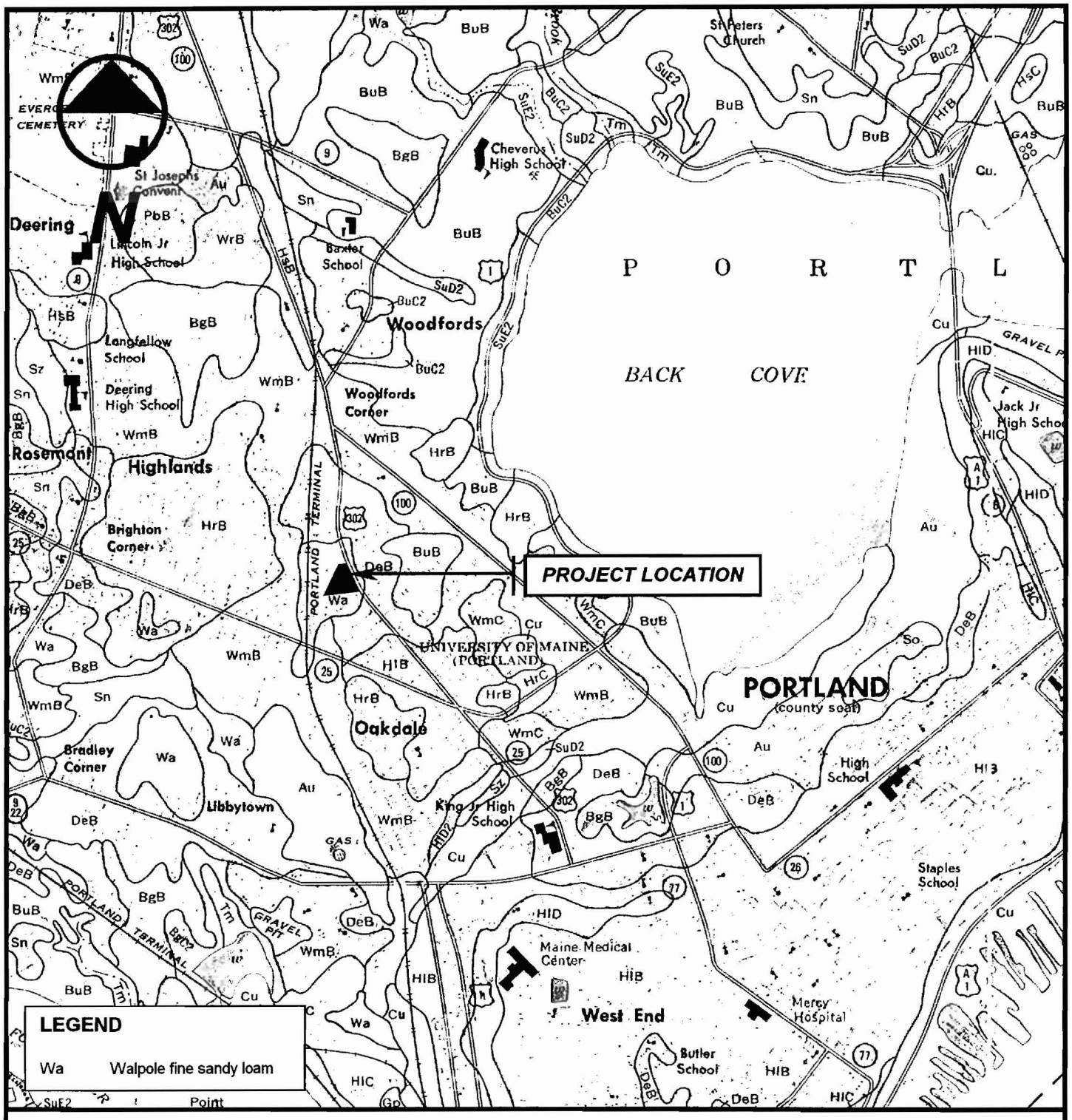
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	1" = 2000'+-	2
CHECKED	SRB	JOB NO.	2171	



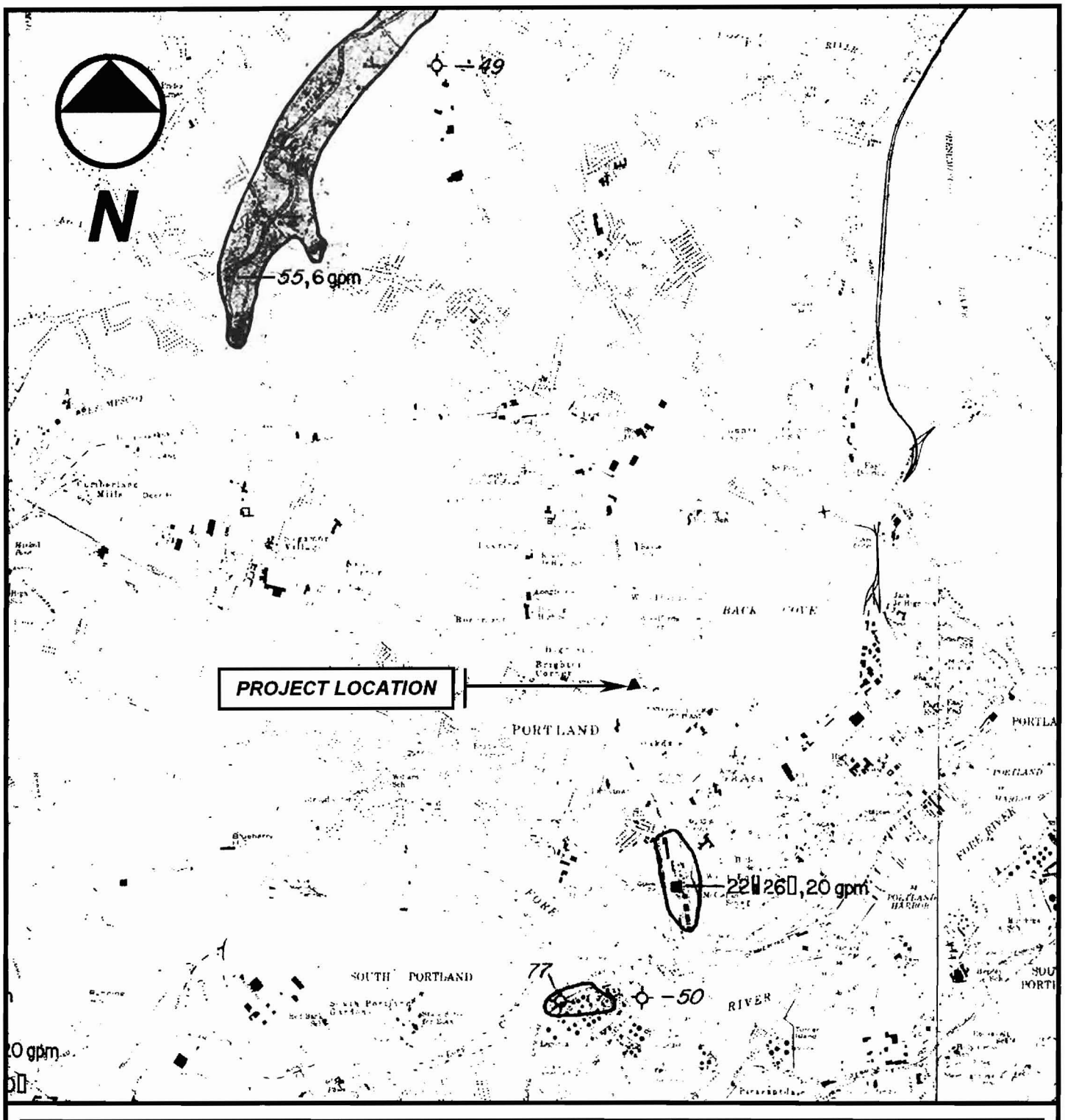
USDA SOILS MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: SOIL SURVEY, Cumberland County, Maine; **SHEET NUMBER:** 82

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	1" = 1667'+-	3
CHECKED	SRB	JOB NO.	2171	



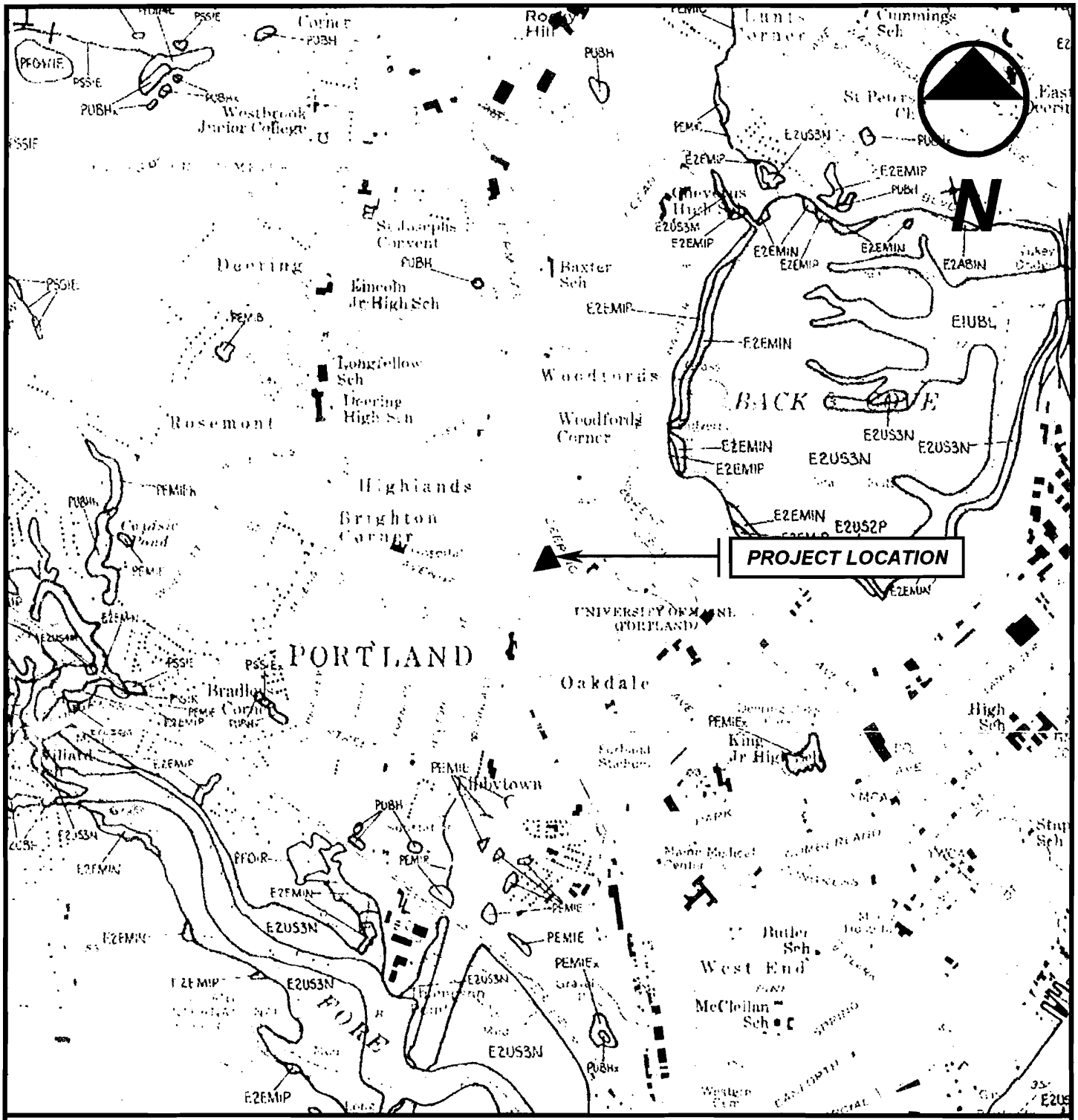
MGS SAND AND GRAVEL AQUIFER MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: MAINE GEOLOGICAL SURVEY DEPARTMENT OF CONSERVATION SAND AND GRAVEL AQUIFERS, CUMBERLAND AND YORK COUNTIES; **MAP:** 5; **DATED:** 1979

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	1" = 4167'+-	4
CHECKED	SRB	JOB NO.	2171	



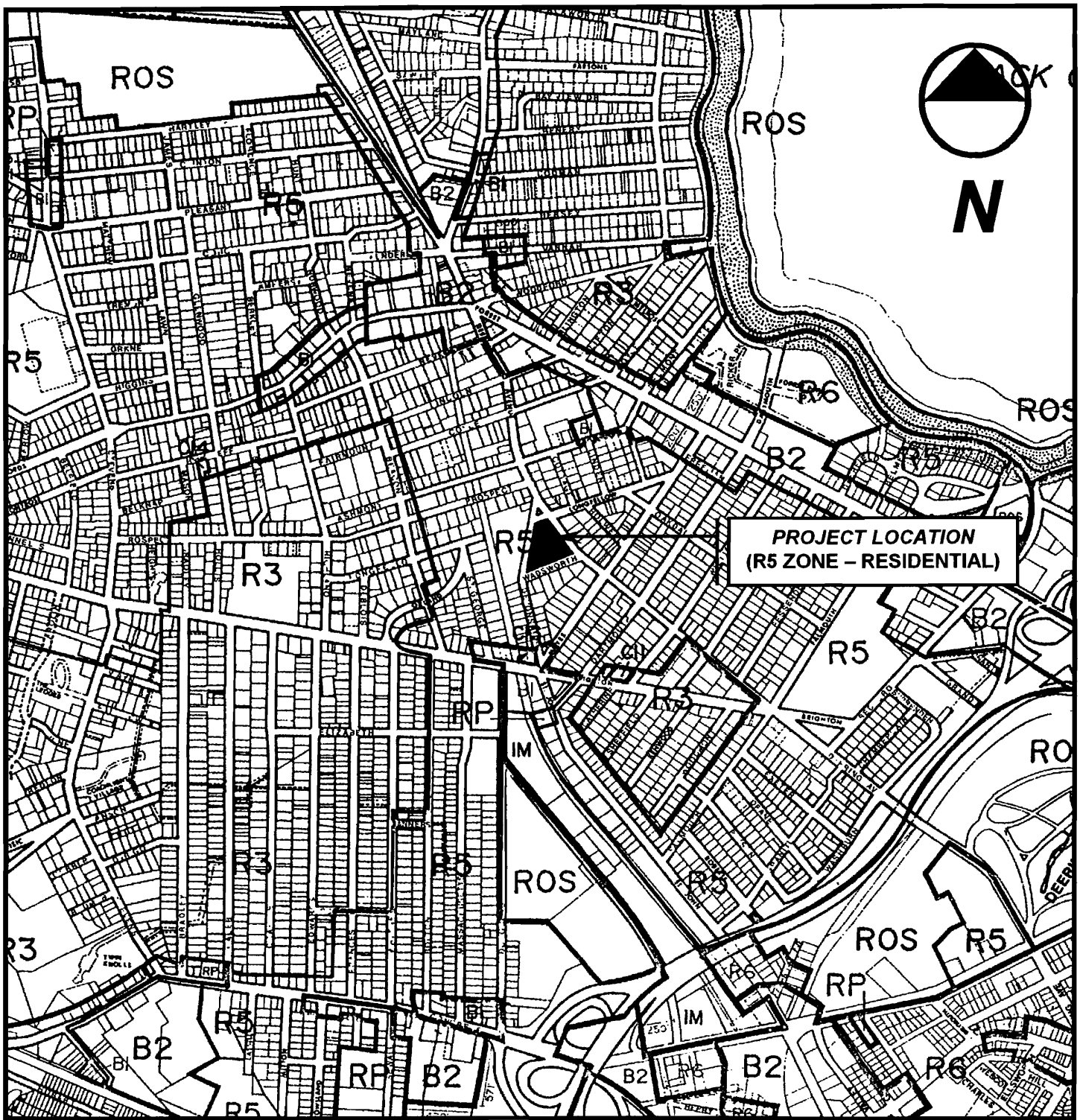
NATIONAL WETLANDS INVENTORY MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: NATIONAL WETLANDS INVENTORY; Portland West Quadrangle; **DATED:** 1992

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	1" = 2000'+-	5
CHECKED	SRB	JOB NO.	2171	



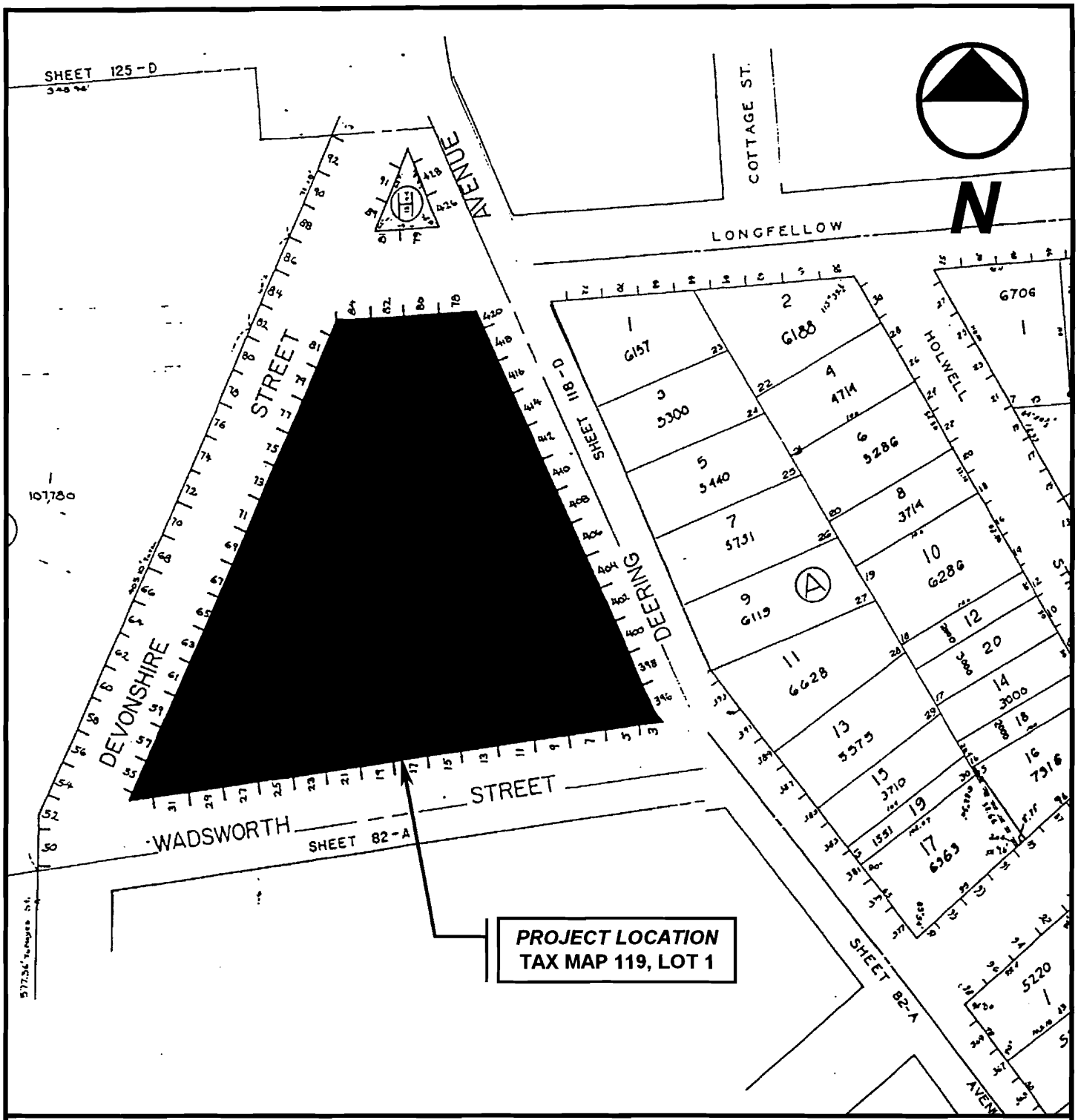
ZONING MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: CITY OF PORTLAND (Southern Section); **REVISED:** March 1997

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	1" = 1000'+-	6
CHECKED	SRB	JOB NO.	2171	



ZONING MAP

Temple Beth El Site Plan Expansion – Portland, Maine

SOURCE: CITY OF PORTLAND ASSESSORS PLAN; **MAP NO.** 119

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@deluca-hoffman.com

DESIGNED	TD	DATE	JAN. 2002	FIGURE
DRAWN	JDL	SCALE	N.T.S.	7
CHECKED	SRB	JOB NO.	2171	

SECTION 3

TITLE, RIGHT AND INTEREST

3.0 Overview

Temple Beth EL owns the lot proposed for the development. Please see attached supporting documents.

242

242

KNOW ALL MEN BY THESE PRESENTS

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RESURGAM CITY OF PORTLAND, MAINE

CITY OF PORTLAND, MAINE

Department of Building Inspections

2/8 20 02

Received from DeLUCA / HOFFMAN

Location of Work 400 DEERING AVE

Cost of Construction $ N/A

Permit Fee $ 500.00 / ST. K REVIEW

Building (IL) ___ Plumbing (I5) ___ Electrical (I2) ___ Site Plan (U2) ✓

Other _____

CBL: 119 I 001

Check #: 7102 **Total Collected** $ 500.00

THIS IS NOT A PERMIT

No work is to be started until PERMIT CARD is actually posted upon the premises. Acceptance of fee is no guarantee that permit will be granted. PRESERVE THIS RECEIPT. In case permit cannot be granted the amount of the fee will be refunded upon return of the receipt less $10.00 or 10% whichever is greater.

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy

243

243

Meaning and intending to convey all our interest as Trustees in the above described premises under the Will of said Edward D. Noyes, Jr., the widow of said Edward D. Noyes, Jr. having waived the terms of said Will.

TO HAVE AND TO HOLD the same, together with all the privileges and appurtenances thereunto belonging to the said TEMPLE BETH-EL, its successors and assigns forever. And we, the said BEATRICE M. NOYES and CANAL NATIONAL BANK, in our said capacity do hereby covenant with the said Grantee, its successors and assigns, that we are lawful Trustees under the Last Will and Testament of the said Edward D. Noyes, Jr.; that we have power under said Will to sell as aforesaid; that in making this conveyance we have in all respects acted in pursuance of the authority granted in and by said Last Will and Testament.

IN WITNESS WHEREOF, I, Beatrice M. Noyes, have hereunto set my hand and seal in my said capacity and Canal National Bank has hereunto caused this instrument to be signed in its corporate name and sealed with its corporate seal by Richard H. Hayden, its Trust Officer hereunto duly authorized this 31st day of August in the year of our Lord one thousand nine hundred and sixty four.

8-31-64

Signed, Sealed and Delivered
in presence of

L. Marion Osgood

Beatrice M. Noyes
Beatrice M. Noyes

CANAL NATIONAL BANK

L. Marion Osgood

By Richard H. Hayden
Richard H. Hayden, Trust Officer

Trustees under the Will of
Edward D. Noyes, Jr.

Noyes

to

Temple Beth-El

War

250 **Know all Men by these Presents, That**

I, BEATRICE M. NOYES of Falmouth, County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations paid by TEMPLE BETH-EL, a corporation organized and existing under the laws of the State of Maine, located at Portland, County of Cumberland and State of Maine the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

TEMPLE BETH-EL, its successors and assigns forever, a one-third (1/3) interest in common and undivided in and to a certain lot or parcel of land situated easterly of Deering Avenue, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the easterly side of said Deering Avenue at the northwesterly corner of land now or formerly of the heirs of Anna C. Davis, said point of beginning eighty (80) feet northerly of the northerly side line of Noyes Street as measured along the easterly side of Deering Avenue; thence North by the easterly side of Deering Avenue three hundred fifty-seven and two hundredths (357.02) feet, more or less, to land now or formerly of Carl Miller, et al; thence easterly by said Miller land a distance of one hundred and one tenth (100.1) feet, more or less, to land now or formerly of Ruth H. Finn; thence southerly by land of said Finn, land now or formerly of Jack Levine, land now or formerly of Molly Seigel, land now or formerly of Lewis Finberg and land now or formerly of Harry S. Modes three hundred twenty-nine and forty-one hundredths (329.41) feet, more or less, to said land now or formerly of the heirs of Anna C. Davis; thence westerly one hundred (100) feet, more or less, by land of said Davis heirs to the point of beginning.

Being a portion of the property shown on a plan of part of the Deering Estate made by E. C. Jordan & Co., July 1921 and revised in September of 1930 and being lots 118-A-3-5-7-9-11-13-15 situated easterly of Deering ... assessment plans for 1963; said parcel contains 38,553 square feet, more or less, and being a part of Lot 10 as shown on a Plan of a portion of the Deering Estate, dated January 1890 and recorded in Cumberland County Registry of Deeds, Plan Book 4, Page 25.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Temple Beth-El, its successors heirs and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances, that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, Beatrice M. Noyes, being a widow,

~~joining in this deed as Grantor, and relinquishing and conveying~~ ~~...~~ ~~parties~~ have hereunto set my hand and seal this Thirty-first day of August in the year of our Lord one thousand nine hundred and sixty-four.

Signed, Sealed and Delivered in presence of

H. [signature] Beatrice M. Noyes

8-31-64
9-4-64

State of Maine, Cumberland, ss. August 31 1964.

Personally appeared the above named Beatrice M. Noyes

and acknowledged the foregoing instrument to be her free act and deed.

MY COMMISSION EXPIRES SEPTEMBER 18, 1964

Before me, John T. Vier [signature]

Notary Public. ~~Justice of the Peace~~

STATE OF MAINE, CUMBERLAND COUNTY, SS. REGISTRY OF DEEDS

Received SEP 4 1964 at 2 o'clock 45 m P M., and recorded in BOOK 2650 PAGE 250 Attest: Samuel R. Thompson Register.

130

Know all Men by these Presents, That

I, Edward D. Noyes of Portland, in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable consideration, paid by Temple Beth-El, a corporation organized and existing under the laws of the State of Maine, and located at said Portland, the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Temple Beth-El, its successors and assigns forever, a certain lot or parcel of land situated in said Portland, and bounded and described as follows, namely; Being all that certain lot or parcel of land bounded on the North by Longfellow Street, on the East by Deering Avenue, on the South by Wadsworth Street, and on the West by Devonshire Street.

For my title to the above described premises, reference is made to the last wills and testaments of my father, Edward D. Noyes and George W. Noyes, abstracts of which are duly recorded in the Cumberland County Registry of Deeds.

U.S.I.R. $12.10 1/2/49 E.J.B.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Temple Beth-El, its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Edward D. Noyes and I, Althea G. Noyes, wife of the said Edward D. Noyes joining in this deed as Grantor and relinquishing and conveying my right by descent and all other rights in the above described premises have hereunto set our hands and seals this fourth day of January in the year of our Lord one thousand nine hundred and forty-nine.

Signed, Sealed and Delivered in presence of

Clark D. Chapman — Edward D. Noyes — Seal

Lawrence Darr Chapman — Althea G. Noyes — Seal

State of Maine, County of Cumberland, ss. January 4, 1949

Personally appeared the above named Edward D. Noyes and acknowledged the foregoing instrument to be his free act and deed.

Before me, Clark D. Chapman, Justice of the Peace.

Received January 12, 1949, at 10 o'clock 10 m. A. M., and recorded according to the original.

SECTION 5

TECHNICAL ABILITY

5.0 Overview

The applicant and Stephen Blatt Architects have subcontracted the site development design and permitting work to Carroll Associates and DeLuca-Hoffman Associates, Inc. DeLuca-Hoffman Associates, Inc. is a civil engineering firm located in South Portland, Maine. DeLuca-Hoffman Associates, Inc. was founded in 1986 and has provided engineering services to private, industrial, commercial, municipal and governmental clients for the past 15 years. Please find attached DeLuca-Hoffman Associates, Inc. qualification materials.

DELUCA-HOFFMAN ASSOCIATES, INC. SINCE 1990

City of Portland, Engineering Services, Portland, Maine:

Provided general contract administration, design and construction phase services for a 5-year contract with the City. Completed multiple infrastructure improvement projects including sewer, storm drain, combined sewer separation and culvert replacements amounting to near $5 million of construction. Responsible for overall project management, client coordination and management of subconsultants for work across multiple City departments.

Supermarket Expansions, Hannaford Bros. Co.:

Provided engineering services including design plans and supporting permitting documents for six grocery store expansions. Each involved parking lot reconfigurations, utility relocations and general site improvements. Site improvement cost exceeded $5 million.

High Stakes Bingo, Albany Township, Maine:

Succeeded in gaining State agency approval on a controversial high stakes bingo project proposed by the Passamaquoddy Indian Tribe in a semi-remote area of Maine. The project was constrained by natural resource issues, lack of utilities, and general overall perception by the community. The work involved intense public debate and hearings. Despite these pressures, the project was approved in less than 8 months.

Topsham Pilot Project, Topsham, Maine:

Performed site review and assisted with the development of "planning permit" guidelines as part of the MEDEP Pilot project for large scale industrial and commercial parks. Work included the preparation of development plans for two large tracts of land in Topsham including the estimation of all development thresholds.

Topsham Development Inc. Business Park, Topsham, Maine:

Prepared site design including geometric layout and plan design for 25-acre business park. Design included over 1,500 LF of road, water main extension, sewer pump station, and stream crossing design.

Skowhegan Middle School, Skowhegan, Maine:

Designed site layout of proposed Middle School, Athletic Fields and supporting infrastructure. Oversaw work of design team during preparation of all permit applications.

EDUCATION: BSCE - University of Maine, Orono, Maine

MBA - University of New Hampshire, Durham, New Hampshire

REGISTRATION: Registered Professional Engineer:

Maine

EXPERIENCE IN FIELD: 11 Years in Private Practice

SENIOR ENGINEER

Mr. Bushey is a Senior Engineer with DeLuca-Hoffman Associates, Inc.'s Land Design and Engineering Services Group. He directs the preparation and review of preliminary and final design as well as permit applications for a variety of civil/site engineering projects. Mr. Bushey's expertise includes an extensive background in conducting site evaluations to identify potential permitting and construction issues during the initial site assessment period.

2171/44

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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FAX 207 879 0896

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

February 6, 2002

Mr. Earle Shettleworth, Jr.
State Historic Preservation Officer
Maine Historic Preservation Commission
State House Station 65
Augusta, Maine 04333

Subject: Temple Beth El Expansion/Renovation Project
400 Deering Avenue
Portland, Maine

Dear Mr. Shettleworth:

DeLuca-Hoffman Associates, Inc. has been retained as a consultant to evaluate an approximately 1.69-acre site, owned by Temple Beth El, for a project involving the expansion/renovation of the current facility. The site is located off of Deering Avenue in Portland, Maine. The site is bounded by Wadsworth Street to the south, Longfellow Street to the north, Devonshire Street to the west, and Deering Avenue to the east. A DeLorme Location Map, a USGS Topographical Map, USDA Medium Intensity Soil Survey, and Surficial Geology mapping of the site are enclosed.

Our office is contacting you to determine if your Department has information regarding the presence of any structure or area at the site with historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

If you need additional information for your determination, please contact me.

Very truly yours,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas Doyle, E.I.T.
Design Engineer

TD/sq/JN2171/Shettleworth2-6

Enclosures

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- CONSTRUCTION ADMINISTRATION

February 6, 2002

Mr. Fred Hurley
Deputy Commissioner
Department of Inland Fisheries & Wildlife
State House Station 41
Augusta, Maine 04333

Subject: **Temple Beth El Expansion/Renovation Project**
400 Deering Avenue
Portland, Maine

Dear Mr. Hurley:

DeLuca-Hoffman Associates, Inc. has been retained as a consultant to evaluate an approximately 1.69-acre site, owned by Temple Beth El, for a project involving the expansion/renovation of the current facility. The site is located off of Deering Avenue in Portland, Maine. The site is bounded by Wadsworth Street to the south, Longfellow Street to the north, Devonshire Street to the west, and Deering Avenue to the east. A DeLorme Location Map, a USGS Topographical Map, USDA Medium Intensity Soil Survey, and Surficial Geology mapping of the site are enclosed.

Our office is contacting you to determine if your Department has information regarding possible location of any special or significant wildlife or fisheries habitats which might be impacted at the site.

If you need additional information for your determination, please contact me.

Very truly yours,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas Doyle, E.I.T.
Design Engineer

TD/sq/JN2171/Hurley2-6

Enclosures

DeLUCA-HOFFMAN ASSOCIATES, INC.
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- CONSTRUCTION ADMINISTRATION

February 6, 2002

Ms. Emily Pinkham
State of Maine Department of Conservation
159 Hospital Street
State House Station 93
Augusta, Maine 04333

Subject: Temple Beth El Expansion/Renovation Project
400 Deering Avenue
Portland, Maine

Dear Ms. Pinkham:

DeLuca-Hoffman Associates, Inc. has been retained as a consultant to evaluate an approximately 1.69-acre site, owned by Temple Beth El, for a project involving the expansion/renovation of the current facility. The site is located off of Deering Avenue in Portland, Maine. The site is bounded by Wadsworth Street to the south, Longfellow Street to the north, Devonshire Street to the west, and Deering Avenue to the east. A DeLorme Location Map, a USGS Topographical Map, USDA Medium Intensity Soil Survey, and Surficial Geology mapping of the site are enclosed.

Our office is contacting you to determine if your Department has information regarding the presence of rare, endangered, or registered critical areas which might be impacted at the site. DeLuca-Hoffman Associates, Inc. is aware of the fee structure used by the Natural Heritage Program and asks that you invoice our office with your response.

If you need additional information for your determination, please contact me.

Very truly yours,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas Doyle
Design Engineer

TD/sq/JN2171/Pinkham2-6-NatlAreas

Enclosures

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- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

February 6, 2002

Mr. Gordon Russell
U.S. Fish & Wildlife Service
Maine Field Office
1033 South Main Street
Old Town, Maine 04468

Subject: Temple Beth El Expansion/Renovation Project
400 Deering Avenue
Portland, Maine

Dear Mr. Russell:

DeLuca-Hoffman Associates, Inc. has been retained as a consultant to evaluate an approximately 1.69-acre site, owned by Temple Beth El, for a project involving the expansion/renovation of the current facility. The site is located off of Deering Avenue in Portland, Maine. The site is bounded by Wadsworth Street to the south, Longfellow Street to the north, Devonshire Street to the west, and Deering Avenue to the east. A DeLorme Location Map, a USGS Topographical Map, USDA Medium Intensity Soil Survey, and Surficial Geology mapping of the site are enclosed.

Our office is contacting you to determine if your Department has information regarding possible location of any federally listed or proposed to be listed endangered or threatened species which might be impacted by this project.

If you need additional information for your determination, please contact me.

Very truly yours,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Thomas Doyle, E.I.T.
Design Engineer

TD/sq/JN2171/Russell2-6-USF&W

Enclosures

SECTION 7

REVIEW CRITERIA

City of Portland, Maine Standards and
Requirements for Site Approval Section 14-526

7.1 Provisions for traffic and pedestrian circulation both on and off the site

Access to the site from Wadsworth Street will not aggravate or create a significant hazard to the safety of intersections in the project vicinity. The site will utilize the existing entrance to the Temple Beth EL site off of Wadsworth Street. During worship services, parking is routinely divided amongst the various streets in the project vicinity and parking made available at the Portland Center for Assisted Living facility located opposite the Synagogue across Devonshire Street. The Center for Assisted Living contains 25 parking spaces that the Temple has an agreement to use during worship services. The following parking analysis by Stephen Blatt Architects outlines the existing and proposed parking conditions for the Synagogue:

Existing Parking:

Amount of potential on-street parking spaces available in surrounding area = 358 spaces. (333 on-street parking and 25 at Portland Center for Assisted Living.)

Existing Parking Required According to Code - Grandfathered		
Existing fixed seats	262	@ 5 seats per space = 53 required parking spaces
Existing area of social hall and stage	3,035 sf	@ 25 sf per space = 122 required parking spaces
Total amount of parking spaces required according to code		175 parking spaces

Proposed Parking:

Proposed Parking Required According to Code		
Proposed fixed seats	246	@ 5 seats per spaces = 50 required parking spaces
Proposed west balcony fixed seats	66	@ 5 seats per space = 13 required parking spaces
Proposed east balcony fixed seats	69	@ 5 seats per space = 13 required parking spaces
Proposed area of social hall and stage	3,350 sf	@ 25 sf per space = 134 required parking spaces
Total amount of parking spaces required according to code		210 parking spaces

Amount of Parking Added due to Addition/Renovation:

Code Requirement: Current amount of parking spaces grandfathered = 175 spaces. Proposed amount of parking spaces (based on Portland Zoning Ordinance) = 210 spaces.

Total amount of parking spaces required by code due to addition/renovation = 35 spaces.

Amount of parking provided

Total amount of of-street parking spaces being proposed:

Main entrance parking lot	10 spaces
Portland Center for Assisted Living	25 spaces
Total parking spaces added	35 spaces

Pedestrian circulation on the Synagogue grounds is provided by numerous sidewalks that connect to the street sidewalk system on each side of the site.

7.2 Construction of new structures and parking requirements

The proposed new expansion has a total floor area of 11,000 square feet and under Article II of the Zoning Ordinance, off-street parking needs to be provided for 35 additional spaces. Ten spaces have been provided on site and 25 spaces have been provided at the Assisted Living Center across the street on Devonshire Street.

7.3 Impact of bulk, location or height of proposed buildings and structures on the neighbors

The proposed building and structures will have no adverse affects on abutting landowners. The building has been set back from the property lines as per Article III of the Portland Code. The proposed building heights for the additions will be at or near the existing rooflines therefore are considered to have no impact to neighboring properties.

7.4 Impact on value of neighboring property due to proposed buildings

The proposed building should not affect the values of abutting structures. The proposed new building will be constructed in a zone designated for residential use.

7.5 Affect of proposed project on public utilities

The proposed project will not adversely affect the public utilities of the City of Portland. Utility availability letters have been sent to the serving providers. Public water, sewer and power are currently serving the Temple.

7.6 On-site landscaping to provide a buffer with neighboring uses

The proposed development is approximately 100 feet from the nearest building. The development site contains a significant amount of mature landscaping, which include numerous maple and other types of trees along the street frontages and yard areas. Some of this landscaping will be removed for the development. New trees and landscaping measures will be provided where possible to offset any landscaping losses resulting from the project.

7.7 The site plan minimizes to the extent feasible, any disturbance or destruction of significant vegetation

The proposed project site plan minimizes the disturbance of existing vegetation as shown on sheet L-4 of the plan set. The work limits have been minimized to the extent practicable to avoid unnecessary impacts to mature trees on the site.

7.8 Site plan does not create any significant soil or drainage problems

No significant soil or drainage problems are anticipated for the proposed site. See sheet L-3 of the plan set for details and location of drainage features. The site currently sheds runoff towards the adjacent streets where it is collected and conveyed by the city's drainage systems. These drainage patterns will be maintained and runoff will continue to be shed to the street systems. No impacts to adjacent properties are expected.

7.9 Provision of appropriate exterior lighting

The planned additional exterior lighting will not be hazardous to motorists traveling on adjacent streets due to the setback of the development from Devonshire and Wadsworth Street and Deering Avenue. The lighting is adequate for users of the site and will not spillover or glare onto abutting properties.

7.10 The development will not create fire or other safety hazards and provides adequate access to the site and to the buildings on the site for emergency vehicles

A twenty-four foot ingress/egress access drive is proposed for the development off of Wadsworth Street, which will provide adequate access to the site for emergency vehicles. In addition the site is bounded on four sides by city streets and is highly accessible by emergency vehicles on any side.

7.11 The proposed development is designed so as to be consistent with off-premises infrastructure, existing or planned by the City of Portland

The development does not interfere with any or proposed city infrastructure. The city maintains sewer and drainage infrastructure in the streets adjacent the site. Any new drainage lines will be extended separately to the street in a manner that will allow for future connection to a separated storm drain system, should the city complete a separation project.

7.12 Pertaining to industrial development

N/A

7.13 Pertaining to development in R-P Zone

N/A

7.14 Pertaining to planned unit developments

N/A

7.15 Pertaining to multi-family developments

N/A

7.16 Pertaining to development in B-3 Zone

N/A

7.17 The applicant has submitted all information required by this article and the development complies with all applicable provisions of this Code

The application compiled addresses all provisions noted in this code to the best of our knowledge.

7.18 Proximity to any landmark, historic district or historic landscape district

The proposed structure is not within 100' of any landmark, historic district or historic landscape district to the best of our knowledge.

7.19 Pertaining to view corridors

N/A

7.20 No adverse affect on existing natural resources

No adverse affect on existing natural resources is anticipated from the proposed development.

7.21 Pertaining to discharge to a significant groundwater aquifer

According to the Portland west quadrangle map of the Maine Geological Survey, there is not significant aquifer in the vicinity of the project location.

7.22 Pertaining to signs

All signs proposed have been designed to complement the architectural features of the proposed facility and are sized appropriately to the existing neighborhood signs. Sign lighting has been designed to minimize glare to pedestrians and drivers of vehicles. No ingress/egress driveways are within 90 feet of an intersection.

7.23 Pertaining to denial of sign under Section 14-369.5

N/A

7.24 Pertaining to major or minor businesses

N/A

7.25 Pertaining to development in industrial zones

N/A

7.26 Pertaining to development in B-5 and B-5b zones

N/A

SECTION 8

SOLID WASTE

8.0 Overview

This section provides the estimates, the use of recycling, the transport and disposal of solid wastes, which will be generated by the construction, and operation of the proposed development.

8.1 Solid wastes generated during construction of the Site

The solid wastes generated during construction of the site are expected to consist of minor tree and stump removal.

The contractor will be permitted to dispose of trees and limbs by chipping with the biomass hauled to a biomass burner or use of the material as erosion control mix. The contractor will be provided the following options for stump disposal:

- On-site chipping – to be used for erosion control mix or landscape mulch
- Transport to Riverside Transfer Station in Portland, Maine

8.2 Solid wastes generated during the construction of the Proposed Buildings

The new buildings associated with the expansion of the current facility will generate wastes during construction.

The computed solid wastes that will be generated during construction of the expansion/renovation of the existing synagogue are as follows:

- Construction debris and waste: 95 c.y.
- Stump and Tree waste: 3 c.y.

The construction contract will include the following provisions for transport and disposal of solid wastes:

- Stumps and wood wastes will be handled in a manner outlined above.
- The contract will provide a goal for recycling of solid waste of 75%.
- The contract will require a plan for recycling and the location of recycling facilities to be identified prior to any solid waste's removal from the site.

- Unless otherwise changed, the waste will be transported and disposed of at the following locations:

Mixed Construction Material:	Riverside Recycling Facility in Portland, Maine or Waste Management in Norridgewock, Maine (Contractor option)
Separated Wood Construction Debris:	KTI Wood Recycling Facility in Lewiston, Maine.
Separated Metal/Ferrous Material:	EWS of Maine in Saco, Maine or Grimmell Industries in Topsham, Maine (Contractor option)

- The collection, transfer, disposal, and payment of all fees for solid wastes shall be the responsibility of the contractor.

Computations for anticipated solid wastes generated during construction are shown in attachment 7.1.

8.3 Solid wastes generated from the operation of the Development

Please refer to the attachment on the following page. At a rate of 1 lb./student/day plus 2 lb./staff/faculty/day, the expansion is anticipated to generate an additional 25 lbs. of waste per day based upon an additional 19 students/day and 3 staff/day. A two yard dumpster currently located in the loading area by the kitchen will provide for miscellaneous office wastes and will be hauled off by Waste Management of Maine.

Attachment 8.1

Computations of Types and Volumes of Solid Wastes for Development Project

Solid Wastes Computations and Disposal

- Type — Wood waste from tree/brush removal
- Basis of Quality Computations — Assume 5 c.y. of stumps/acre
- Site Work Construction

Area to be cleared	Volume @5 c.y. /acre
0.50 acres	3 c.y.

Existing Building Renovation: (Existing Synagogue)

Basis of Estimate: 2 c.y. / 1,500 s.f.

Area of Renovation: Approximately 15,200 s.f.

Solid Waste: 20 c.y.

New Building Expansion: (Classrooms and Chapel)

Basis of Estimate: 10 c.y. / 1,500 s.f.

Area of Expansion: Approximately 11,000 s.f.

Solid Waste: 75 c.y.

Set a goal in the construction documents to require segregation of cardboard and paper with a goal of 75%; segregation of metals with a goal of 85%.

Require Contractor to: Provide 30 c.y. Dumpster. Haul to Riverside Transfer Station in Portland, Maine with shipping manifest. The contractor should identify recycling methods and sites prior to construction.

SECTION 9

SURFACE DRAINAGE AND RUNOFF

9.0 Introduction

The following stormwater runoff analysis has been prepared for Temple Beth EL for the expansion/renovation of facilities off of Deering Avenue.

9.1 Existing Conditions

The site is located on a 1.69-acre lot off of Deering Avenue in Portland, Maine. The site consists of the existing Temple Beth EL Synagogue, numerous trees and brush and lawn areas. A paved driveway is located off Wadsworth Street. Stormwater runoff is conveyed overland to existing catch basins on Deering Avenue, Wadsworth Street and Longfellow Street.

Based on the USDA medium intensity soil survey for Cumberland County, surficial soils across the site consist of Walpole fine sandy loam. These soils tend to be poorly drained.

Based on the National Wetlands Inventory for the Portland, Maine (south) region, there are no wetlands shown in this area. Soils and wetland maps are included as Figures 2 and 3 in section 1 of this application.

9.2 Proposed Conditions

The proposed project consists of constructing an 11,000 square foot expansion for new classrooms, chapel space and 10 additional onsite parking spaces. Some areas of existing impervious will be converted to roof area while other existing sidewalks will be removed. Approximately 0.22 acres of new impervious surface will be added to the site. The runoff from the site will be collected via roof drains, a drain inlet or overland flow and discharge to the existing combined sewer system on Devonshire Street or Deering Avenue abutting the site. See sheet L-3 of the plan set for the locations of the drain inlet.

9.3 Stormwater Runoff Analysis

The SCS medium intensity survey for Cumberland County was used to delineate surficial soil conditions for onsite areas. The soils within the site were classified as hydrologic soil group (HSG) C.

Hydrological analysis for the pre-development and post development conditions have been conducted based on the methodology outlined in the Soil Conservation Service (SCS) Technical Release 20 (TR-20). The HydroCAD computer program has been used in this analysis.

The design storms used for this analysis were the 2, 10, and 25-year frequencies. Total 24-hour rainfall amounts for these storm events are 3.0, 4.7 and 5.5 inches, respectively. The rainfall distribution for this location is a Type III storm.

Land use cover, delineation of watershed subcatchments, hydraulic flow paths and hydrologic soil types were obtained using the flowing data sources:

1. Portland, WEST USGS 7.5 Minute Quadrangle
2. Sheet 82 of the SCS Medium Intensity Soil Survey for Cumberland County
3. On-site topographic survey with 1-foot contour intervals prepared by Boundary Points Professional Land Surveying of Westbrook, Maine.
4. Preliminary Geotechnical Survey done by SW Cole Engineering, Inc. of Gray, Maine.
5. Field reconnaissance by DeLuca-Hoffman, Associates, Inc.

Details of these calculations can be found in Attachment 9.1 following this section.

9.4 Conclusion

Runoff rates and peak discharge from the site have been analyzed for the proposed conditions. The peak discharge at the Point of Interest (corner of Longfellow and Deering Avenue) has been increased by 1.1 cfs based on the twenty-five year storm event. There is an existing 8" vit. combined sewer system in Deering Avenue. Catch basins in the project area tie into the combined system. The 8" vit. line ties into the 24" vit. combined sewer line on Longfellow Street and continues east towards Forest Avenue. During normal flows the combined system continues past the Forest Avenue diversion chamber to the Portland treatment plant. During high flows the combined flows are diverted at Forest Avenue towards Baxter Boulevard where there is a combined sewer overflow chamber that discharges to Back Cove and is designated as CSO 15. Tony Lombardo of the Portland Public Works engineering department has stated that in the area of a combined system it is customary to provide a dedicated line for storm water. Per the city's standards a dedicated line for stormwater from the site out to the Deering Avenue combined sewer system has been proposed for the project. The stormwater line has been designed with the capabilities of being separated from the combined system if/when the city decides to provide a separate storm drain line in the area of the proposed project. The stormwater pipes from the proposed project will include a catch basin on the southeasterly side of the proposed expansion and roof drains from the new expansion areas of the synagogue located on the eastern portion of the lot.

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JOB 2171 - Temple Beth EL
SHEET NO. 1 OF 4
CALCULATED BY TDD DATE 1/02
CHECKED BY _____ DATE _____
SCALE Stormwater Modeling

Task: Determine Predevelopment flows from site

Reference:
① Hydrocad
② TR55
③ EXISTING SURVEY PLAN 1"=30' done by Boundary Points
④ Medium Intensity Soil Survey, Cumberland County

Assumptions:

Calculations:

Step 1: Watershed Area (Contributed by Site)
2.48 Acres

Step 2: Define subcatchment Areas

Subcatchment 1 = 0.48 Acres
Subcatchment 2 = 0.23 Acres
Subcatchment 3 = 1.42 Acres
Subcatchment 4 = 0.35 Acres
Total = 2.48 Acres

Step 3: Determine Soil type.

All soils are Wa, Walpole Fine Sandy Loam HSG C

Step 4: Determine Surface Types, CN values and Areas for Subcatchments

Subcatchment 1: Open Space, CN = 74, A = 0.21 Acres
Impervious, CN = 98, A = 0.27 Acres

Subcatchment 2: Open Space, CN = 74, A = 0.17 Acres
Impervious, CN = 98, A = 0.06 Acres

Subcatchment 3: Open Space, CN = 74, A = 0.78 Acres
Impervious, CN = 98, A = 0.64 Acres

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JOB 2171
SHEET NO. 2 OF 4
CALCULATED BY TDD DATE 1/02
CHECKED BY DATE
SCALE

Step 4 Cont:

Subcatchment 4: Impervious (Roof), CN = 98, A = 0.35 Acres

Step 5: Diagram of Results

Surface	CN	ASUB1	ASUB2	ASUB3	ASUB4	Total
Open Space	74	0.21	0.17	0.78	0.00	1.16
Imperv.	98	0.27	0.06	0.64	0.35	1.32
Totals		0.48	0.23	1.42	0.35	2.48

Step 6: Determine Flow Paths (Tc)

Subcatchment 1: SF L = 30' s = 0.007
SF L = 30' s = 0.170
SCF L = 245 s = 0.0137

Subcatchment 2: SF L = 75' s = 0.0133
SF L = 10' s = 0.100
SCF L = 125' s = 0.0033

Subcatchment 3: SF L = 90' s = 0.02778
SCF L = 480' s = 0.01642
CC L = 35' s = 0.0111

Subcatchment 4: Direct Entry Tc = 2 min

Step 7: Determine Reaches

Reach 1: 30" VIT
S = 0.004
L = 262'

Reach 10: L = 15'
10" VIT
S = 0.05

Reach 20: L = 425'
10" VIT
S = 0.00682

Reach 30: L = 15'
10" VIT
S = 0.00682

Reach 40: 15" VIT
S = 0.0116
L = 140'

use n = 0.011 for VIT pipes

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JOB 2171
SHEET NO. 3 OF 4
CALCULATED BY TDD DATE 1/02
CHECKED BY DATE
SCALE

Step 8: Determine Post Development Subcatchment Areas

Subcatchment 1 = 0.47 Acres
" " 2 = 0.14 Acres
" " 3 = 1.20 Acres
" " 4 = 0.61 Acres
" " 5 = 0.06 Acres

Step 9: Determine Surface Types, CN Values and Areas

Subcatchment 1 Open Space, CN=74, A=0.21 Acres
Imp. , CN=98, A=0.26 Acres

Subcatchment 2 Open Space, CN=74, A=0.08
Imp , CN=98, A=0.06

Subcatchment 3 Open Space, CN=74, A=0.58 Acres
Gravel (Woodchips), CN=89, A=0.02 Acres
Imp , CN=98, A=0.60 Acres

Subcatchment 4: Roof (Imp), CN=98, A=0.61 Acres

Subcatchment 5: Open Space, CN=74, A=0.04 Acres
Gravel, CN=89, A=0.01 Acres
Imp, CN=98, A=0.01 Acres

Step 10: Diagram of Results, Steps 8 & 9

Surface	CN	ASUB1	ASUB2	ASUB3	ASUB4	ASUB5	Totals
Open Space	74	0.21	0.08	0.58		0.04	0.91
Gravel	89			0.02		0.01	0.03
Impervious	98	0.26	0.06	0.60	0.61	0.01	1.54
		0.47	0.14	1.20	0.61	0.06	2.48

Increase in Imp area from 1.32 acres to 1.54 acres = 0.22 Acres

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JOB 2171
SHEET NO. 4 OF 4
CALCULATED BY JDD DATE 1/02
CHECKED BY DATE
SCALE

Step 11: Determine Flow Paths (Tc)

Subcatchment 1:	SF	23'	S = 0.013
	SF	45'	S = 0.04
	SCF	135'	S = 0.0137
Subcatchment 2:	SF	40'	S = 0.075
	SCF	35'	S = 0.01
Subcatchment 3:	SF	90'	S = 0.036
	SCF	480'	S = 0.0164
	CC	35'	S = 0.0111
Subcatchment 4:	Direct Entry	2 min	
Subcatchment 5:	SF	55'	S = 0.067
	CC	58'	S = 0.0059

Step 12: Define Reaches

Reach 1: 30" V/T
S = 0.004
L = 262'

Reach 10: 10" V/T
S = 0.05
L = 15'

Reach 20: 10" V/T
S = 0.00682
L = 425'

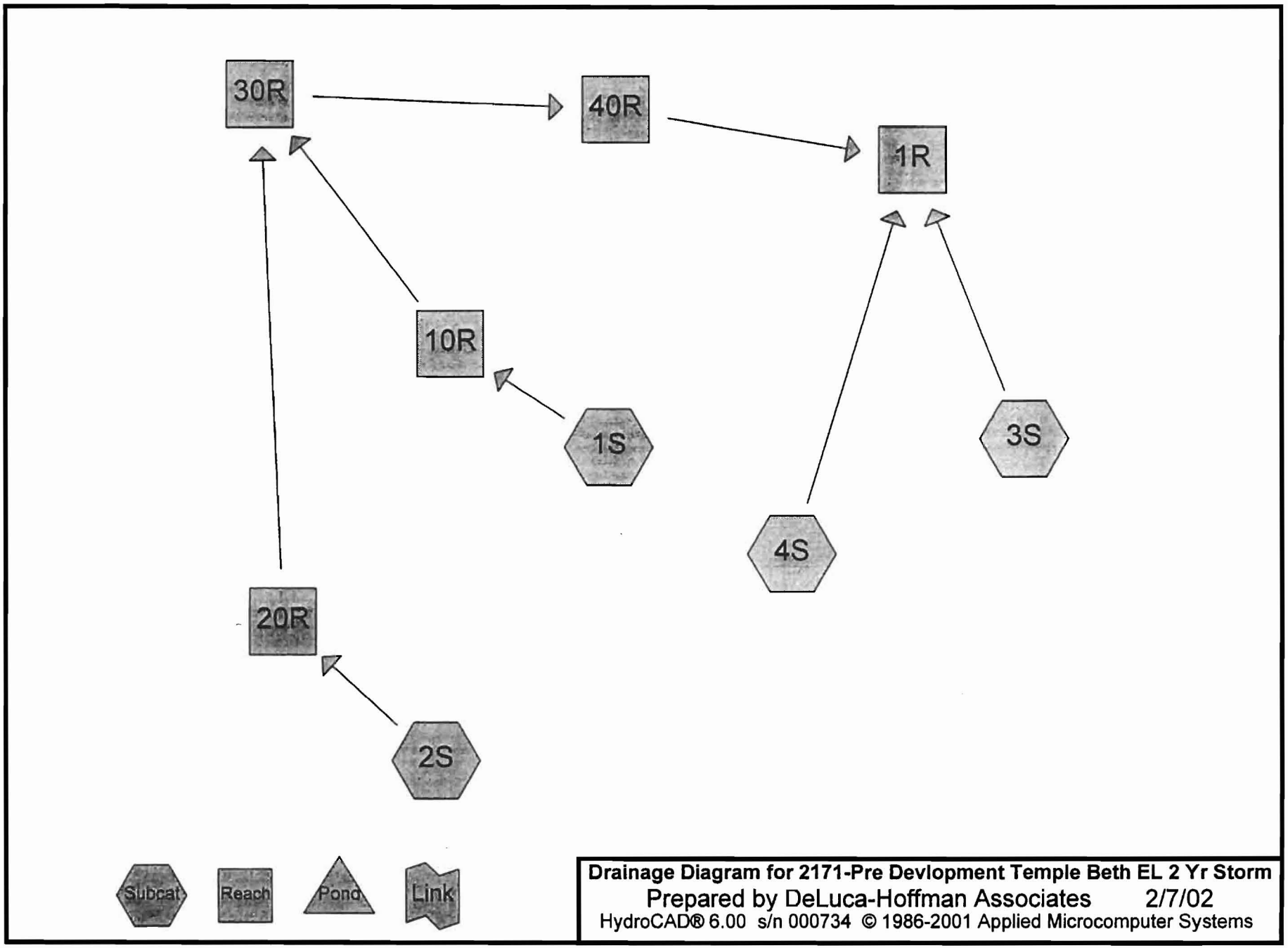
Reach 30: 10" V/T
S = 0.00682
L = 15"

Reach 40: 15" V/T
S = 0.0116
L = 140'

Reach 50: [illegible] 12" [illegible]
L = 110
S = 0.00[illegible]

Reach 60: 8" V/T
S = 0.005
L = 300'

Reach 70: 8" V/T
S = 0.0086
L = 200'



Drainage Diagram for 2171-Pre Devlopment Temple Beth EL 2 Yr Storm

Prepared by DeLuca-Hoffman Associates 2/7/02

Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=3.00"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1
Tc=9.2 min CN=87 Area=0.480 ac Runoff= 0.83 cfs 0.070 af

Subcatchment 2S: Subcatchment 2
Tc=12.1 min CN=80 Area=0.230 ac Runoff= 0.26 cfs 0.024 af

Subcatchment 3S: Subcatchment 3
Tc=10.8 min CN=85 Area=1.420 ac Runoff= 2.09 cfs 0.188 af

Subcatchment 4S: Subcatchment 4
Tc=2.0 min CN=98 Area=0.350 ac Runoff= 0.99 cfs 0.081 af

Reach 1R: Reach 1 Inflow= 3.65 cfs 0.362 af
Length= 262.0' Max Vel= 4.2 fps Capacity= 30.69 cfs Outflow= 3.52 cfs 0.362 af

Reach 10R: Reach 10 Inflow= 0.83 cfs 0.070 af
Length= 15.0' Max Vel= 7.5 fps Capacity= 5.79 cfs Outflow= 0.82 cfs 0.070 af

Reach 20R: Reach 20 Inflow= 0.26 cfs 0.024 af
Length= 425.0' Max Vel= 2.6 fps Capacity= 2.14 cfs Outflow= 0.24 cfs 0.024 af

Reach 30R: Reach 30 Inflow= 0.99 cfs 0.094 af
Length= 15.0' Max Vel= 3.8 fps Capacity= 2.11 cfs Outflow= 0.96 cfs 0.094 af

Reach 40R: Reach 40 Inflow= 0.96 cfs 0.094 af
Length= 140.0' Max Vel= 4.4 fps Capacity= 8.21 cfs Outflow= 0.94 cfs 0.094 af

Runoff Area = 2.480 ac Volume = 0.362 af Average Depth = 1.75"

Subcatchment 1S: Subcatchment 1

Runoff = 0.83 cfs @ 12.13 hrs, Volume= 0.070 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.210	74	Open Space HSG C
0.270	98	Impervious
0.480	87	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	30	0.0070	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.6	30	0.1700	0.3		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.7	245	0.0137	2.4		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.2	305	Total			

Subcatchment 2S: Subcatchment 2

Runoff = 0.26 cfs @ 12.19 hrs, Volume= 0.024 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.170	74	Open Space HSG C
0.060	98	Impervious
0.230	80	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	75	0.0133	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.8	10	0.1000	0.2		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.8	125	0.0033	1.2		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.1	210	Total			

Subcatchment 3S: Subcatchment 3

Runoff = 2.09 cfs @ 12.17 hrs, Volume= 0.188 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.780	74	Open Space HSG C
0.640	98	Impervious
1.420	85	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	15	0.0278	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.4	26	0.0278	1.2		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
3.0	26	0.0278	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.1	5	0.0278	0.8		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
2.2	18	0.0278	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
3.1	480	0.0164	2.6		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	35	0.0111	5.6	4.44	**Circular Channel (pipe),** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0
10.8	605	Total			

Subcatchment 4S: Subcatchment 4

Runoff = 0.99 cfs @ 12.02 hrs, Volume= 0.081 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr Rainfall=3.00"

Area (ac)	CN	Description
0.350	98	Impervious (Roof)

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Reach 1R: Reach 1

Inflow = 3.65 cfs @ 12.14 hrs, Volume= 0.362 af
Outflow = 3.52 cfs @ 12.18 hrs, Volume= 0.362 af, Atten= 4%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.2 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.3 fps, Avg. Travel Time= 3.3 min

Peak Depth= 0.58'
Capacity at bank full= 30.69 cfs
Inlet Invert= 33.02', Outlet Invert= 31.97'
30.0" Diameter Pipe n= 0.011 Length= 262.0' Slope= 0.0040 '/'

Reach 10R: Reach 10

Inflow = 0.83 cfs @ 12.13 hrs, Volume= 0.070 af
Outflow = 0.82 cfs @ 12.13 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs / 2
Max. Velocity= 7.5 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.21'
Capacity at bank full= 5.79 cfs
Inlet Invert= 37.30', Outlet Invert= 36.55'
10.0" Diameter Pipe n= 0.011 Length= 15.0' Slope= 0.0500 '/'

Reach 20R: Reach 20

Inflow = 0.26 cfs @ 12.19 hrs, Volume= 0.024 af
Outflow = 0.24 cfs @ 12.28 hrs, Volume= 0.024 af, Atten= 8%, Lag= 5.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.6 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 1.0 fps, Avg. Travel Time= 7.0 min

Peak Depth= 0.19'
Capacity at bank full= 2.14 cfs
Inlet Invert= 42.69', Outlet Invert= 39.80'
10.0" Diameter Pipe n= 0.011 Length= 425.0' Slope= 0.0068 '/'

Reach 30R: Reach 30

Inflow = 0.99 cfs @ 12.15 hrs, Volume= 0.094 af
Outflow = 0.96 cfs @ 12.15 hrs, Volume= 0.094 af, Atten= 3%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs / 2
Max. Velocity= 3.8 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.2 min

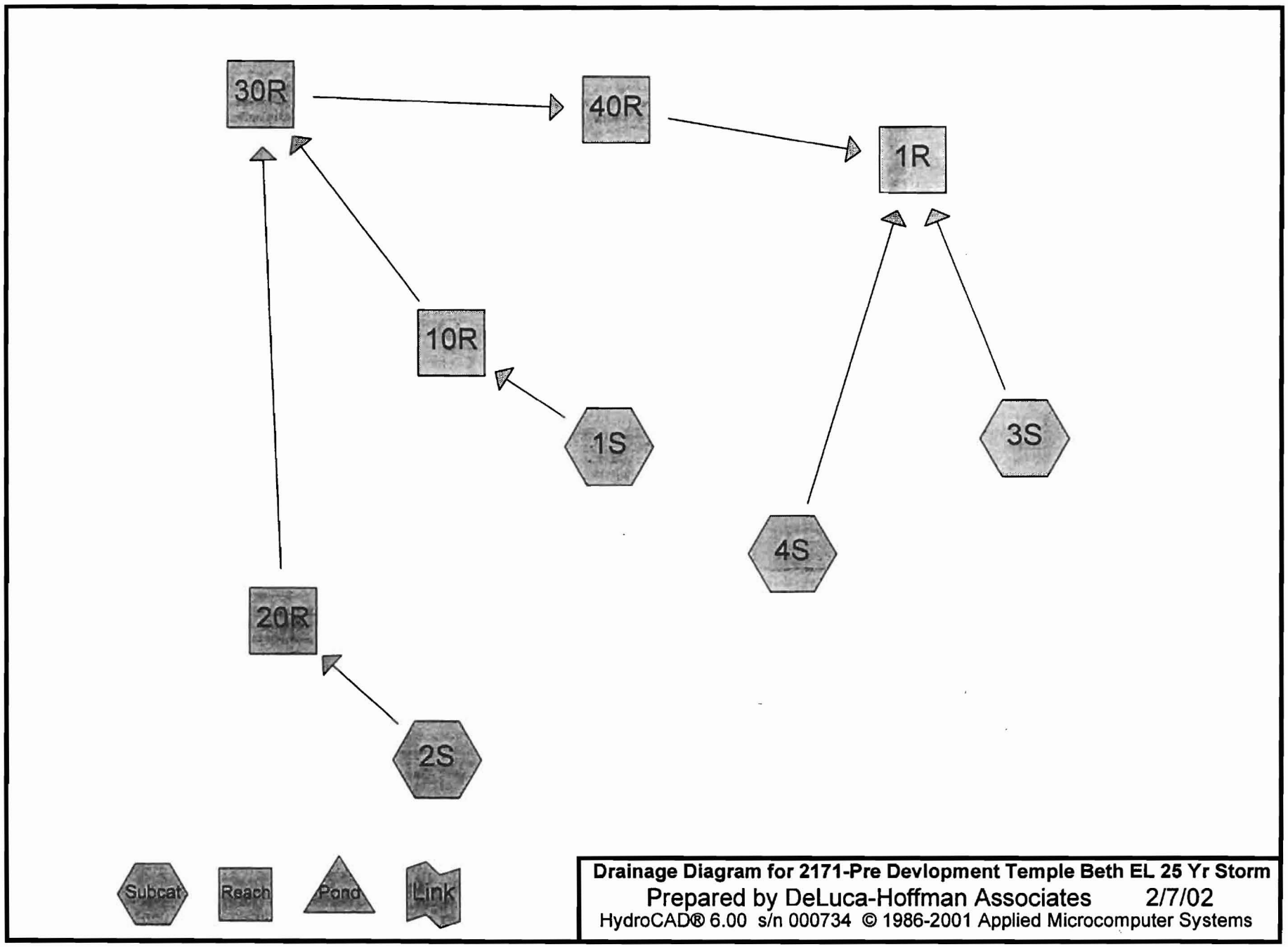
Peak Depth= 0.40'
Capacity at bank full= 2.11 cfs
Inlet Invert= 35.84', Outlet Invert= 35.74'
10.0" Diameter Pipe n= 0.011 Length= 15.0' Slope= 0.0067 '/'

Reach 40R: Reach 40

Inflow	=	0.96 cfs @	12.15 hrs, Volume=	0.094 af
Outflow	=	0.94 cfs @	12.17 hrs, Volume=	0.094 af, Atten= 3%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs / 2
Max. Velocity= 4.4 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.6 fps, Avg. Travel Time= 1.4 min

Peak Depth= 0.29'
Capacity at bank full= 8.21 cfs
Inlet Invert= 35.30', Outlet Invert= 33.68'
15.0" Diameter Pipe n= 0.011 Length= 140.0' Slope= 0.0116 '/'



Drainage Diagram for 2171-Pre Devlopment Temple Beth EL 25 Yr Storm

Prepared by DeLuca-Hoffman Associates 2/7/02

Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Type III 24-hr Rainfall=5.50"
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcatchment 1
Tc=9.2 min CN=87 Area=0.480 ac Runoff= 1.88 cfs 0.162 af

Subcatchment 2S: Subcatchment 2
Tc=12.1 min CN=80 Area=0.230 ac Runoff= 0.70 cfs 0.064 af

Subcatchment 3S: Subcatchment 3
Tc=10.8 min CN=85 Area=1.420 ac Runoff= 4.96 cfs 0.454 af

Subcatchment 4S: Subcatchment 4
Tc=2.0 min CN=98 Area=0.350 ac Runoff= 1.84 cfs 0.153 af

Reach 1R: Reach 1 Inflow= 8.30 cfs 0.833 af
Length= 262.0' Max Vel= 5.3 fps Capacity= 30.69 cfs Outflow= 8.00 cfs 0.833 af

Reach 10R: Reach 10 Inflow= 1.88 cfs 0.162 af
Length= 15.0' Max Vel= 9.4 fps Capacity= 5.79 cfs Outflow= 1.88 cfs 0.162 af

Reach 20R: Reach 20 Inflow= 0.70 cfs 0.064 af
Length= 425.0' Max Vel= 3.5 fps Capacity= 2.14 cfs Outflow= 0.66 cfs 0.064 af

Reach 30R: Reach 30 Inflow= 2.40 cfs 0.226 af
Length= 15.0' Max Vel= 4.4 fps Capacity= 2.11 cfs Outflow= 2.12 cfs 0.226 af

Reach 40R: Reach 40 Inflow= 2.12 cfs 0.226 af
Length= 140.0' Max Vel= 5.6 fps Capacity= 8.21 cfs Outflow= 2.10 cfs 0.226 af

Runoff Area = 2.480 ac Volume = 0.833 af Average Depth = 4.03"