

MS1/L11

Pine Tree Engineering, Inc.

February 23, 2007

53 Front Street
Bath, Maine 04530
(207) 443-1508
Fax (207) 442-7029
E-mail: pte@pte-maine.com

Mr. James A. Jacobsen
Environmental Specialist IV
DHS Division of Health Engineering
10 State House Station
Augusta, ME 04333-0010

**Subject: 576 Riverside Drive
Replacement Wastewater Disposal System
Augusta, Maine**

#00039

Dear Mr. Jacobsen:

Thank you for your February 6th letter and conditional approval. As requested, we are submitting the following:

- 1.A. The revised site plan with contour lines.
- 1.B. The goal of adding additional septic tanks is to result in a total in-place volume of 12,000 gallons. The goal will be achieved by:
 - Existing built in place tank 6,000 gal.
 - First new commercial tank 4,000 gal.
 - Second new commercial tank 2,000 gal.

Total: 12,000 gal.
- 1.C. Revised pg. 1 of HHE-200 form with latitude and longitude (Exhibit D).
- 1.D. The hydraulic conductivity value has been addressed separately by Albert Frick's February 20, 2007 letter to you.

The remaining conditions, 2 through 15, will be complied with as the project moves forward. Additionally, we have included revised and corrected copies of Exhibits A and E.

Please call me if you have questions concerning this information.

Very truly yours,

PINE TREE ENGINEERING, INC.

Stephen C. DeWick
Stephen C. DeWick, P.E.
Project Manager

SCD/szd
Enclosures

c: Joseph Cooper, Cooper Properties
Albert Frick, Albert Frick Associates

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Called 5/17 1:45

EXHIBIT D

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, Station 10 SHS
(207) 287-5672 FAX (207) 287-4172

PROPERTY LOCATION		>> Caution: Permit Required - Attach In Space Below <<	
City, Town, Plantation	AUGUSTA	AUGUSTA PERMIT # 5967 TOWN COPY Date Permit Issued: 5/17/07 \$1800 FEE Local Plumbing Inspector Signature: <i>[Signature]</i> L.P.I. # 1850	
Street or Road	RIVERSIDE DRIVE		
Subdivision, Lot #			
OWNER/APPLICANT INFORMATION			
Name (last, first, M.I.)	COOPER PROPERTIES LLC		
Mailing Address of	P.O. BOX 49 KASS PORTLAND, ME 04101		
Daytime Tel. #	871-7084 622-5977		
		Municipal Tax Map #	51 Lot # 11

Owner or Applicant Statement	Caution: Inspections Required
I state and acknowledge that the information submitted is correct to the best of my knowledge, and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.	I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.
Signature of Owner/Applicant: <i>[Signature]</i> Date: _____	Local Plumbing Inspector Signature: _____ (1st) Date Approved: _____
	(2nd) Date Approved: _____

PERMIT INFORMATION

TYPE OF APPLICATION	THIS APPLICATION REQUIRES	DISPOSAL SYSTEM COMPONENTS
1. <input type="checkbox"/> First Time System 2. <input type="checkbox"/> Replacement System Type Replaced: _____ Year Installed: _____ 3. <input checked="" type="checkbox"/> Expanded System a. <input checked="" type="checkbox"/> Minor Expansion b. <input type="checkbox"/> Major Expansion <input type="checkbox"/> Experimental System 3. <input type="checkbox"/> Seasonal Conversion	1. <input checked="" type="checkbox"/> No Rule Variance 2. <input type="checkbox"/> First Time System Variance a. <input type="checkbox"/> Local Plumbing Inspector Approval a. <input type="checkbox"/> State & Local Plumbing Inspector Approval 3. Replacement System Variance a. <input type="checkbox"/> Local Plumbing Inspector Approval b. <input type="checkbox"/> State & Local Plumbing Inspector Approval 4. <input type="checkbox"/> Minimum Lot Size Variance 5. <input type="checkbox"/> Seasonal Conversion Approval	1. <input type="checkbox"/> Complete Non-Engineered System 2. <input type="checkbox"/> Primitive System (graywater & alt toilet) 3. <input type="checkbox"/> Alternative Toilet, specify: _____ 4. <input type="checkbox"/> Non-Engineered Treatment Tank (only) 5. <input type="checkbox"/> Holding Tank, _____ Gallons 6. <input type="checkbox"/> Non-Engineered Disposal Field (only) 7. <input type="checkbox"/> Separated Laundry System 8. <input checked="" type="checkbox"/> Complete Engineered System (2000 gpd) 9. <input type="checkbox"/> Engineered Treatment Tank (only) 10. <input type="checkbox"/> Engineered Disposal Field (only) 11. <input type="checkbox"/> Pre-treatment, specify: _____ 12. <input type="checkbox"/> Miscellaneous components
SIZE OF PROPERTY	DISPOSAL SYSTEM TO SERVE	TYPE OF WATER SUPPLY
19.2 <input type="checkbox"/> sq. ft. <input checked="" type="checkbox"/> acres	1. <input type="checkbox"/> Single Family Dwelling Unit, No. of Bedrooms: _____ 2. <input checked="" type="checkbox"/> Multiple Family Dwelling, No. of Units: 24 3. <input type="checkbox"/> Other: _____ SPECIFY Current Use <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Year Round <input type="checkbox"/> Undeveloped	1. <input type="checkbox"/> Drilled Well 2. <input type="checkbox"/> Dug Well 3. <input type="checkbox"/> Private 4. <input checked="" type="checkbox"/> Public 5. <input type="checkbox"/> Other: _____
SHORELAND ZONING		
<input type="checkbox"/> Yes <input type="checkbox"/> No		

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK	DISPOSAL FIELD TYPE & SIZE	GARBAGE DISPOSAL UNIT	DESIGN FLOW
1. <input checked="" type="checkbox"/> Concrete a. <input checked="" type="checkbox"/> Regular b. <input type="checkbox"/> Low Profile 2. <input type="checkbox"/> Plastic 3. <input type="checkbox"/> Other: _____ CAPACITY 12,000 gallons	1. <input checked="" type="checkbox"/> Stone Bed 2. Stone Trench 3. <input type="checkbox"/> Proprietary Device a. <input type="checkbox"/> Cluster array c. <input type="checkbox"/> Linear b. <input type="checkbox"/> Regular d. <input type="checkbox"/> H-20 loaded 4. <input type="checkbox"/> Other: _____ SIZE 1728 <input checked="" type="checkbox"/> sq. ft. <input type="checkbox"/> lin. ft.	1. <input type="checkbox"/> No 3. <input type="checkbox"/> Maybe 2. <input checked="" type="checkbox"/> Yes >> Specify one below: a. <input type="checkbox"/> Multi-compartment tank b. <input checked="" type="checkbox"/> 4 tanks in series c. <input type="checkbox"/> Increase in tank capacity d. <input type="checkbox"/> Filter on tank outlet	2,800 gallons per day BASED ON: 1. <input checked="" type="checkbox"/> Table 501.1 (dwelling unit(s)) 2. <input type="checkbox"/> Table 501.2 (other facilities) SHOW CALCULATIONS - for other facilities - 3. <input checked="" type="checkbox"/> Section 503.0 (meter readings) ATTACH WATER-METER DATA
SOIL DATA & DESIGN CLASS	DISPOSAL FIELD SIZING	PUMPING	LATITUDE AND LONGITUDE
PROFILE 8 / CONDITION D/C / DESIGN 3/1 AT Observation Hole # 2 Depth N/A OF MOST LIMITING SOIL FACTOR	1. <input type="checkbox"/> Small - 2.0 sq.ft./gpd 2. <input type="checkbox"/> Medium - 2.6 sq.ft./gpd 3. <input type="checkbox"/> Medium-Large - 3.3 sq.ft./gpd 4. <input checked="" type="checkbox"/> Large - 4.1 sq.ft./gpd 5. <input type="checkbox"/> Extra-Large - 5.0 sq.ft./gpd	1. <input checked="" type="checkbox"/> Not required 2. <input type="checkbox"/> May be required 3. <input type="checkbox"/> Required >> Specify only for engineered or experimental systems: DOSE: _____ Gallons	At center of disposal area Lat. 44 d 21 m 09 s Lon. 69 d 44 m 42 s if gp.p.s., state margin of error: _____

SITE EVALUATOR STATEMENT

I certify that on 1/8/06 (date) I completed a site evaluation on this property and state that the data reported is accurate and that the proposed system is in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Site Evaluator Signature: <i>[Signature]</i> ALBERT FRICK	SE # 163 (207) 839-5563 Telephone Number 2329	Date: 12/15/2006 AFAC@MAINERR.COM E-mail Address 12-18-06 Date (207) 443-1508 Telephone Number sdewick@pte-maine.com E-mail Address
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Note: Changes to or deviations from the design should be confirmed with the Site Evaluator

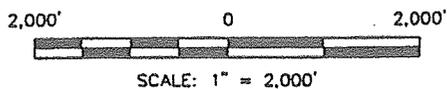
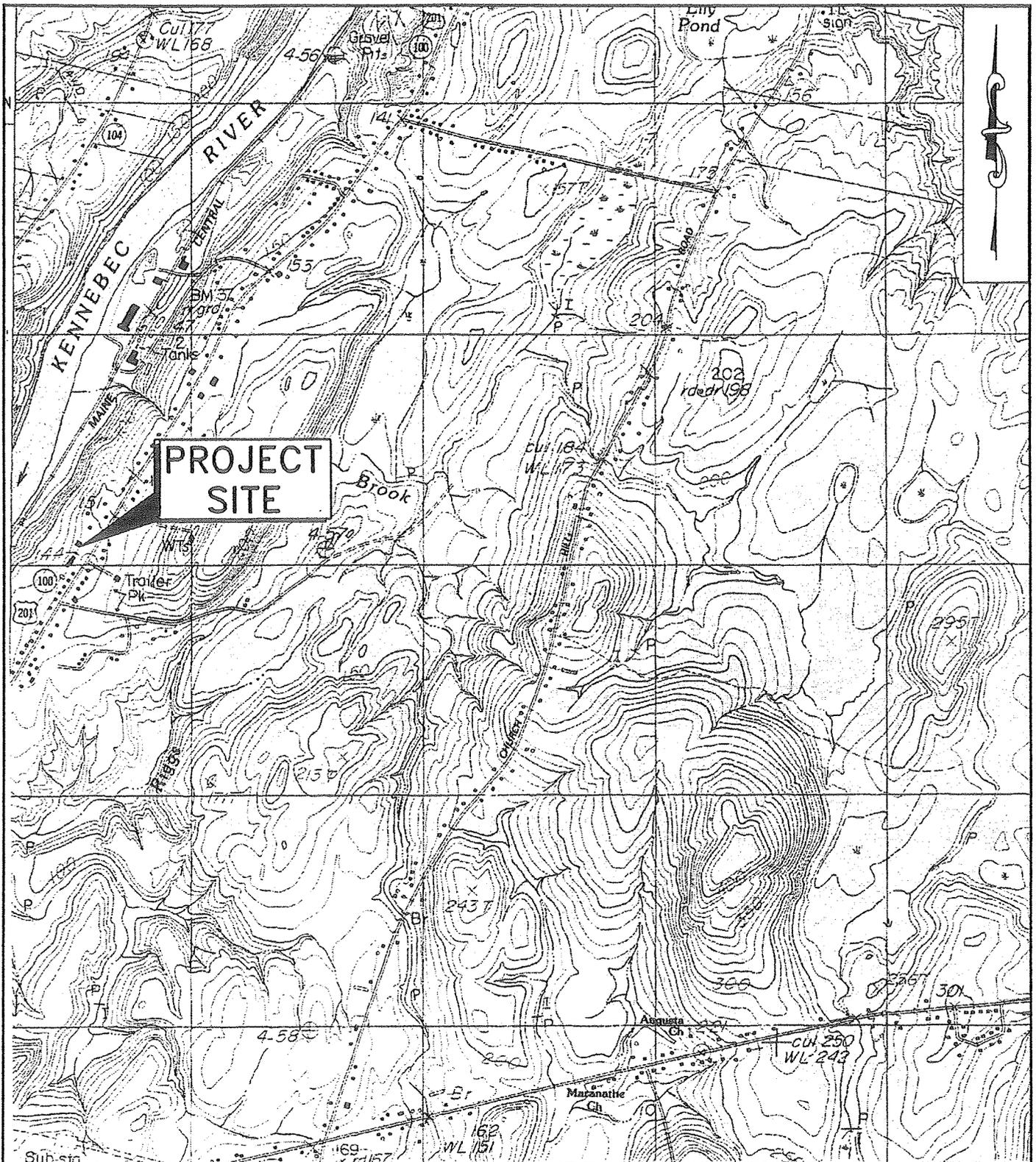


EXHIBIT A

COOPER PROPERTIES APARTMENTS
576 RIVERSIDE DRIVE AUGUSTA, MAINE
 SOURCE: U.S.G.S.
 TOGUS POND QUADRANGLE
 7.5 MINUTE SERIES

**Pine Tree
 Engineering**

41700054



John Elias Baldacci
Governor

Maine Department of Health and Human Services

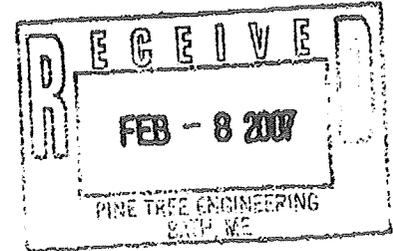
Maine Center for Disease Control and Prevention
286 Water Street, 3rd Floor
11 State House Station
Augusta, ME 04333-0011

Brenda M. Harvey,
Commissioner

Dora Anne Mills, MD, MPH
Public Health Director
Maine CDC Director

February 6, 2007

Pine Tree Engineering, Inc.
Attn.: Stephen C. DeWick, P.E.
53 Front Street
Bath, ME 04530



Subject: Approval, Cooper Properties, Inc. Property, 576 Riverside Drive, Augusta

Dear Mr. DeWick:

The Division of Environmental Health has completed a review of a design for an engineered subsurface sewage disposal system design, to serve 576 Riverside Drive. The HHE-200 Form dated 12/18/06 was prepared by you. The system was designed by Pine Tree Engineering, Inc., with a plan signed and stamped by you.

Hereafter, the term "design engineer" shall refer collectively to Pine Tree Engineering, Inc., its staff, and its representatives unless otherwise specified; and the term "owner" shall refer collectively to 576 Riverside Drive, its staff, and its representatives unless otherwise specified.

Design Flow

The design flow is 2,800 gallons per day (gpd), based upon water use records. The design flow of 2,800 gpd is approved with the notation that the suitability of the design flow is the responsibility of the design engineer.

The records and associated calculations were not included in the application.

Treatment Tank(s)

The design includes one existing 6,000 gallon septic tank according to the signed and stamped plan. However, in the application you prepared, you stated that there are two tanks with a total capacity of 6,000 gallons (question #2).

The design also includes one proposed 6,000 gallon septic tank "or equivalent" according to the signed and stamped plan. However, in the application you prepared, you stated that there will be one additional 2,000 gallon tank and one additional 4,000 gallon tank (question #2).

Disposal Areas

The proposed disposal area consists of four groups of Eljen In-Drains. Each group consists of four rows of 12 units. The proposal includes four nine foot by 48 foot stone and pipe beds, to be located between the In-Drain clusters.

The HHE-200 Form, page 1 provided in the application lacks latitude and longitude, as required by Section 401.6.1 of the Rules. (The Division's search on Google Earth shows an approximate location of 44° 21' 09" N and 69° 44' 42" W for the property upon which the system would be installed.)

Soils

The soils are shown as fill over 8-D per the Rules on the *single* test pit log prepared by Albert Frick, S.E.

Our vision is Maine people enjoying safe, healthy and productive lives

Phone: (207) 287-5695

Fax: (207) 287-3165

TTY: (207) 287-8015

Page 2 of 5; 576 Riverside Drive, Augusta

Section 1102.4.1 of the Rules requires three test pits within the footprint of each engineered disposal area. However, the Division is persuaded that since the proposal comprises an expansion, consisting of beds between existing gravel-less beds, this requirement is not significantly compromised.

Well Setback

There are no potable water supply wells reported within 300 feet of the proposal.

Mounding Analysis

The proposed system will not result in groundwater mounding sufficient to intrude into the disposal area, according to the calculations provided by the design engineer.

Site Transmission Analysis

The proposed system design demonstrates that there are sufficient soils down-gradient to prevent the effluent from surfacing within 50 feet of the disposal field, according to the calculations provided by the design engineer.

Interagency Review

The Maine Department of Environmental Protection (MDEP) has reviewed the application and stated that no reason was found to believe the proposal would cause unreasonable adverse impact on resources and uses in the area likely to be affected; the project site is located on a mapped sand and gravel aquifer; and the project site is not located in the watershed of a waterbody most at risk from development.

MDEP also provided the following specific comments: the 68.5 gpd/ft.² hydraulic conductivity (K) value used in the mounding analysis appears inappropriate, and ought to be in a range between 9.0 gpd/ft.² - 30 gpd/ft.² pursuant to N.R.C.S. values for Nicholville soils; and the site location is shown incorrectly on the USGS topographic map supplied.

Miscellaneous

No pre-application meeting with the Division took place, as required under Section 1102.1 of the Subsurface Wastewater Disposal Rules.

The plan lacks contour lines pursuant to Section 1102.6 of the Rules.

Findings

The system appears to meet and/or exceed the Rules, except as noted, therefore the design is approved with the following conditions and comments:

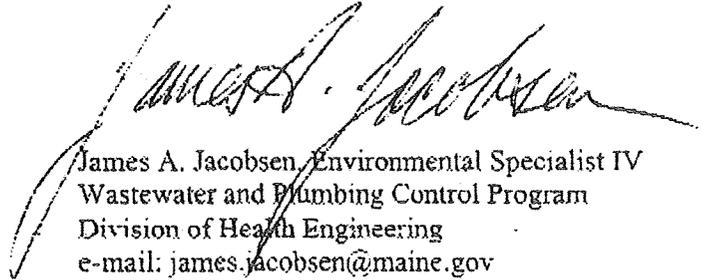
1. Prior to issuance of a permit by the Local Plumbing Inspector to install the proposed expansion, the design engineer shall:
 - A. Submit to the Division for review and approval a revised site plan with contour lines, and
 - B. Submit to the Division for review and approval either a revised site plan showing one additional 2,000 gallon septic tank and one additional 4,000 gallon septic tank; or a revised narrative description which includes one additional 6,000 gallon septic tank. The number of existing tanks shall also be verified, and
 - C. Submit to the Division for review and approval a revised page 1 of the HHE-200 Form with latitude and longitude conforming to Section 401.6.1 of the Rules, and

- D. Submit to the Division for review and approval a written justification for use of the 68.5 gpd/ ft.² hydraulic conductivity (K) value used in the mounding analysis rather than the range suggested by MDEP.
2. The owner must retain the design engineer to oversee construction. The constructed system may not be used unless all pertinent requirements of the Rules have been met.
 3. The design engineer shall provide sufficient supervision to assure that the system is constructed as designed and in accordance with the code and other regulations. Attention shall be given to site preparation, fill selection and placement, installation of pipes, mechanical and electrical systems.
 4. Construction shall not commence until the owner has obtained the necessary plumbing permit from the LPI, pursuant to Condition #1.
 5. The design engineer shall provide the owner and this office with a brief report on the construction including any unexpected conditions encountered and any changes made from the approved drawings. The LPI must not issue the Certificate of Approval until the LPI has received the aforementioned report from the design engineer.
 6. The design engineer shall test all systems prior to acceptance by the owner. The testing shall determine whether the components were correctly installed and whether they function as designed. This includes confirmation that flow dividing devices or configurations function as intended.
 7. The design engineer, with the concurrence of the LPI shall determine when the site conditions are suitable for construction.
 8. Construction shall cease whenever the design engineer determines that the site conditions, or workmanship, or materials are unacceptable.
 9. The owner and design engineer shall inform the LPI of the proposed construction schedule and shall also inform the LPI of the progress of construction. They shall cooperate fully with the LPI in scheduling any inspections and providing any equipment necessary for the inspection.
 10. The design engineer shall provide the owner with an Operations and Maintenance Manual containing written recommendations for the operation and maintenance of the system including inspection and pumping schedules and record keeping procedures.
 11. The owner shall operate the system within the requirements of Rules and the limitations of this design.
 12. The owner shall inform the LPI and the design engineer of any operational problem and/or malfunction.
 13. The LPI shall inspect the engineered disposal system in accordance with Section 111.0 of the Rules. In addition, the property owner shall retain the design engineer to inspect the construction of the system. The inspection shall be sufficient for the design engineer to determine that the system was installed as designed.
 14. This approval is only for the rules administered by this office and it does not consider other federal, state or local regulations. The owner is responsible for compliance with any other pertinent regulations.
 15. By accepting this approval and the associated plumbing permit, the owner agrees to comply fully with the conditions of approval and the Subsurface Wastewater Disposal Rules.

Page 4 of 4; 576 Riverside Drive, Augusta

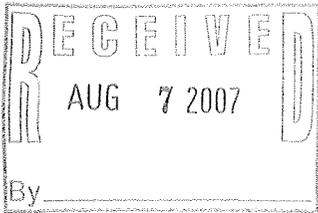
Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of the system.

Sincerely,



James A. Jacobsen, Environmental Specialist IV
 Wastewater and Plumbing Control Program
 Division of Health Engineering
 e-mail: james.jacobsen@maine.gov

xc: File
 Richard Dolby, I.P.I.
 Albert Frick, SE via e-mail
 William Noble, MDEP via e-mail



Final Inspection 576 Riverside Drive Augusta, Maine

Date: July 30, 2007 8:00 a.m.

Subject: Septic System Expansion

Present: Russ Stoddard, Cooper Properties
Paul McNaughton, McNaughton Construction
Steve DeWick, Pine Tree Engineering *SD*

These notes are intended to be a record of the inspection. Any changes that are necessary shall be reported no later than 10 days from receipt of this memorandum, which will then become a record of the inspection.

1. The final placement of loam, seed, fertilizer and mulch was completed in mid-June, 1½ weeks after start of construction.
2. The new septic tanks with covers are in place. The 4,000 gallon tank is equipped with a Zabel filter. The filters for this tank and the old tank are cleaned weekly.
3. The pump station chamber inspected. The high water alarm is situated in the basement under the north rear stairway. The pump is a Meyers Model MD3F capable of pumping 65 gpm at a head of 5 feet. Backup pumps are available from Northeast Mechanical Corp.
4. Grass was beginning to grow on all four of the new beds and was being mowed at the time of the inspection.
5. The stone filled curtain drain had performed well during recent thundershowers.
6. The attached photos show the site during this final inspection.

The inspection ended at 8:45 a.m.

c: Joseph Cooper, Cooper Properties
Russ Stoddard, Cooper Properties
Gary Fuller, LPI - Augusta
Albert Frick, Albert Frick Associates

**PINE TREE
ENGINEERING**

**Final Inspection
576 Riverside Drive
Augusta, Maine**



New bed No. 1



New bed No. 4



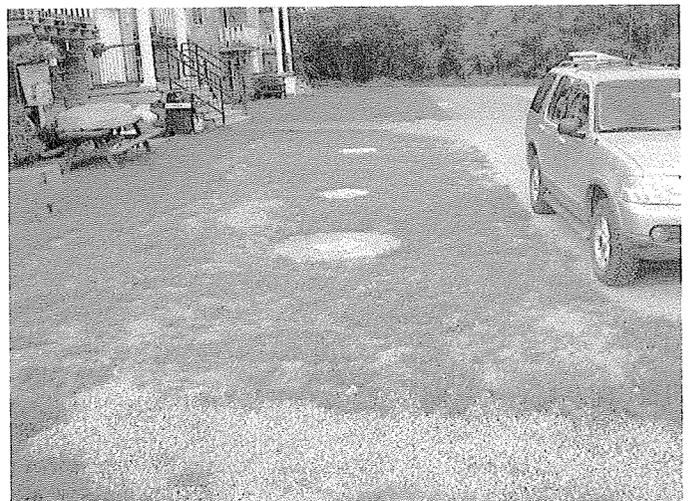
New bed No. 2



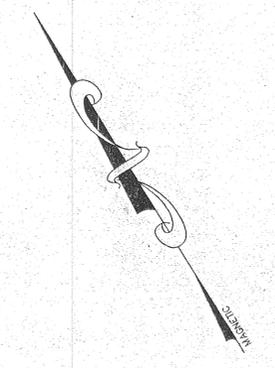
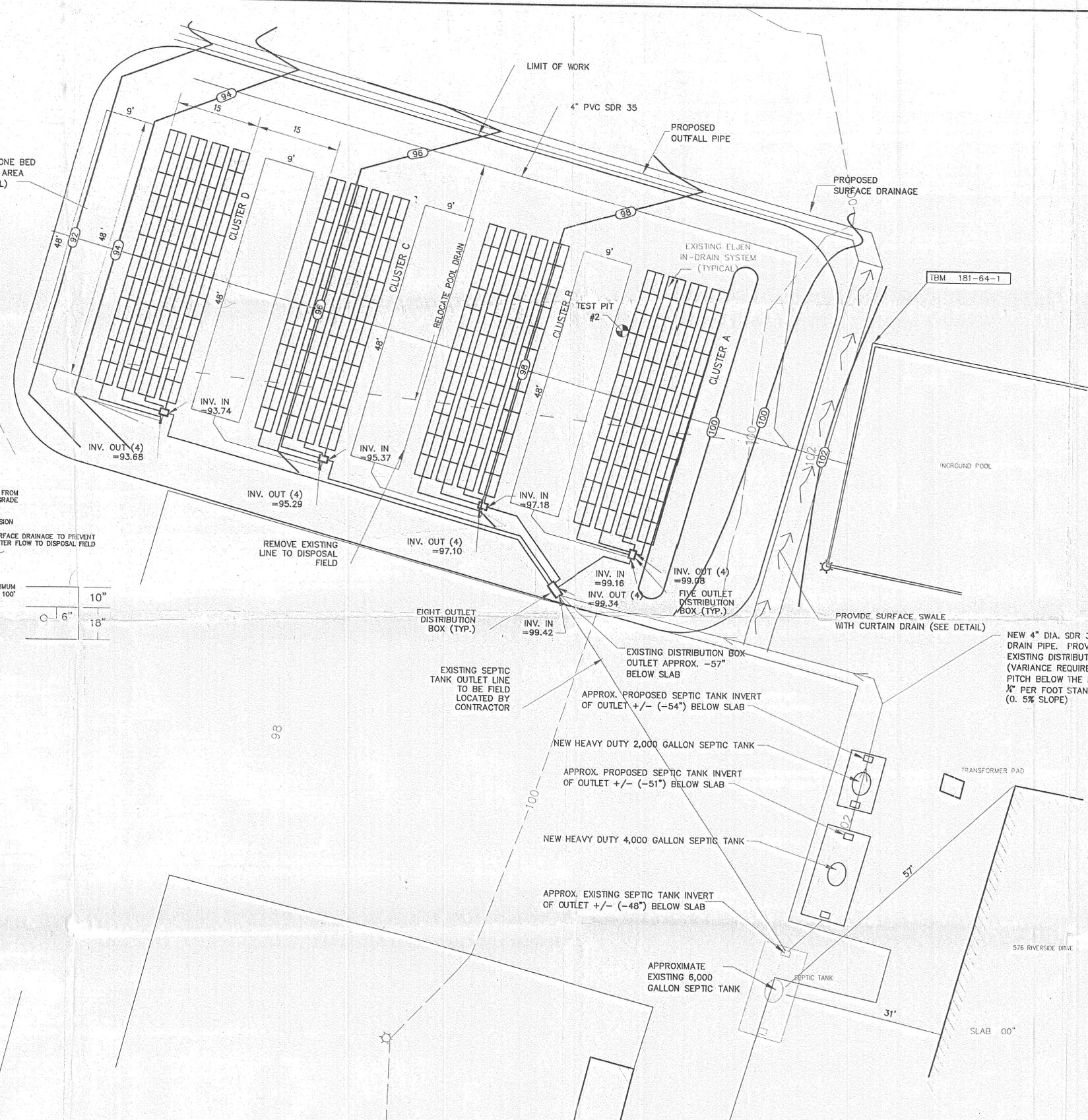
Curtain drain on north



New bed No. 3

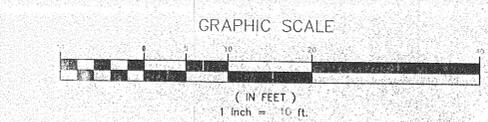
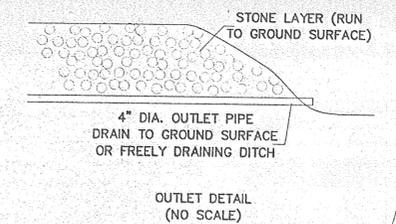
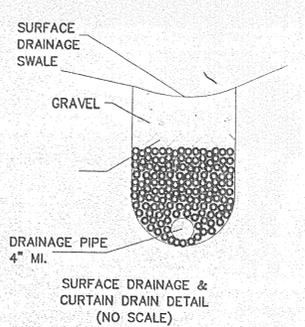
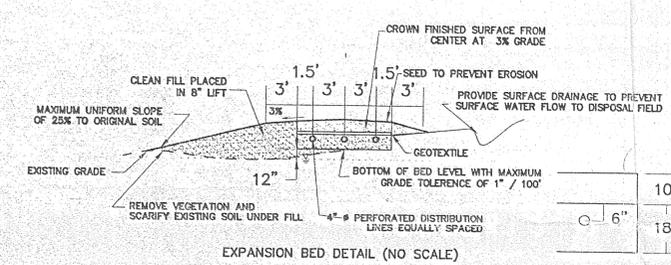


New tank covers and pump station

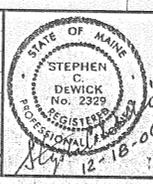


LEGEND

EXISTING	DESCRIPTION	PROPOSED
---	EDGE OF PAVEMENT	---
---	EDGE OF GRAVEL	---
---	FENCE	---
---	SILT FENCE	---
⊗ 100	SPOT ELEV	⊗ 100
⊙ TP-2	TEST PIT	⊙ TP-2
---	STORM DRAIN	---
---	GRAVITY SEWER MAIN	---
---	LIGHT POST	---
---	BUILDING/STRUCTURE	---



REV	DATE	STATUS	BY	CHKD	APPD
1	2-9-07	PROPOSED CONTOURS ADDED	ARA	CJM	SCD



DESIGNED BY: SCD
 DRAWN BY: ARA
 CHECKED BY: AF
 APPROVED BY: SCD
 DATE: 12-18-06

Pine Tree Engineering
 Civil/Environmental Engineering • Surveying
 53 Front Street
 Bath, Maine 04530
 Tel: (207) 443-1508
 Fax: (207) 442-7029

CLIENT
COOPER PROPERTIES
 P.O. BOX 491
 PORTLAND, ME 04112

PROJECT
576 RIVERSIDE DRIVE
SUBSURFACE WASTEWATER SYSTEM
 TITLE
REVISED SITE PLAN

SCALE
 1" = 10'
 PROJECT NO.
 00039
 DRAWING NO.
 00039SITE.DWG
 SHT. 1 of 1 REV. 1