DELAWARE

ON-SITE WASTEWATER SYSTEM CONSTRUCTION REPORT

Trinity Transport
Banning & Associates

AUG 25 2003
GROUND WATER

(Please Type or Print Legibly)

Permit #: 19245 3-5

Tax Map#: 1-31-11-12 site B

Installer's Name: Bryan White License #: 4175 Phone #: 629-4948

Construction Start Date: 8-11-03 Authorization #: 7905 Completion Date: 8-20-03

THIS FORM MUST BE SUBMITTED WITHIN 10 DAYS OF COMPLETION

(Please check all boxes that apply)

CF = Cap & Fill / FD = Full Depth

Type of Construction:
- [X] Replacement
- [ ] New Construction
- [ ] Component Replacement
- [ ] Repair to Existing System

System Type:
- [ ] Low Pressure Pipe (FD)
- [ ] Elevated Sand Mound
- [ ] Pressure Dose (FD)
- [ ] Holding Tank
- [ ] Gravity (FD)
- [ ] Std. Pressure Dose (FD)
- [ ] Std. Pressure Dose (CF)
- [X] Low Pressure Pipe(CF)
- [ ] Wisconsin At-Grade
- [ ] Pressure Dose (CF)
- [ ] Subsurface Micro Irrigation
- [ ] Gravity (CF)
- [ ] Other _____

- [ ] Bed or [X] Trench
- [ ] Gravelless Chamber or [X] Stone/Gravel

Sand-lined [ ] Yes [X] No

Existing System Malfunctioning [ ] Yes [ ] No [X] N/A

Pre-Treatment Units
- [ ] Bio-Clear
- [X] Septic Tank
- [ ] Other _____
- [ ] Klargester
- [ ] Recirculating Sand Filter

AS-BUILT CONSTRUCTION CHANGES

(Please describe any changes different from approved permit)

ANY LOCATION CHANGE MUST BE MARKED (USE PENCIL) ON COPY OF ORIGINAL PERMIT (PLEASE ATTACH)

[X] No Changes

I hereby affirm that the sewage disposal system for permit number 19245 3 was constructed in accordance with all requirements and conditions of the permit. I further certify that if I made any changes that the copy of the original permit (with red markings) is an accurate representation of the installation.

8-22-03 Bryan White
Date Contractor's Signature

Certificate of Satisfactory Completion

Approved By Date 10-7-03

2nd

STATE OF DELAWARE
Department of Natural Resources and Environmental Control
Groundwater Management Section

Dover Office
(302) 739 - 4761

Georgetown Office
(302) 856 - 4561

Inspection Report/Certificate of Completion

1. Permittee: Banning + Assoc Permit #: 192453 amd 7905
2. Contractor: Brian White License #: 4125 Phone #: _____
3. Date/Time of Call: 9/2/03 8:50 AM System Ready: 8/20/03
4. Property Location: E side of US 13

A. HOLDING TANK:
1. _____ size
2. _____ ft./dwelling
3. ( ) anchored
4. ( ) on gravel bed
5. ( ) manhole ext.
6. Alarms ( ) audible ( ) visual

B. SEPTIC TANK:
1. _____ size
2. ( ) concrete
3. ( ) baffles
4. ( ) 2 compt.
5. _____ ft./dwelling
6. ( ) on gravel bed
7. ( ) manhole ext.
8. ( ) inspection port

C. GREASE TRAP:
1. _____ size
2. ( ) concrete
3. ( ) multi-compt.
4. ( ) on gravel bed
5. _____ ft./dwelling

D. DIST. BOX:
1. ( ) concrete
2. ( ) baffle
3. _____ ft./tank
4. _____ # outlets
5. ( ) solid pipe
6. ( ) on gravel bed
7. ( ) cover ext.

E. DOSING CHAMBER:
1. _____ size
2. ( ) concrete
3. _____ ft./dwelling
4. _____ ft./manifold
5. Vent: _____ " diameter
   _____ " above grade
6. Pumps: ( ) simplex ( ) duplex
7. ( ) check valves
8. Alarm: ( ) audible ( ) visual ( ) separate circuit
9. Alarm location: _____

F. PRESSURE PIPING:
1. ( ) Sch. 40; ( ) SDR 26
2. _____ " dia. of trans. line
   ( ) below frostline
   ( ) on compacted soil
3. _____ " dia. manifold
4. _____ " dia. dist. laterals
   a) _____ # laterals
   b) _____ " hole size
   c) _____ " spacing of hole
5. ( ) tested

G. TILE FIELD/SERIAL DIST./ SEEPAGE BED:
1. _____ # trenches
2. _____ " width of each
3. _____ ' length of each
4. _____ X _____ S.B.
5. _____ " depth to top of stone
6. _____ " depth to top of pipe
7. _____ spacing: c/l to c/l
8. _____ dist. to watercourse
9. ( ) closed loop
   ( ) Sch. 40 pipe

H. MISCELLANEOUS:
1. ( ) untreated paper
2. ( ) filter fabric
3. ( ) joints sealed
4. _____ sealer
5. ( ) dwelling on site
6. ( ) driveway as shown
7. ( ) _____ ft./trees
8. ( ) building connected
   a) pipe size _____ "
   b) ( ) cleanout
9. ( ) check adjacent wells for compliance

I. WELL:
1. ( ) installed
2. ( ) central water
3. _____ ft./tank
4. _____ ft./seepage area
5. _____ ft./dosing chamber
6. _____ ft./grease trap
7. Well Permit #: _____

J. CAPPING FILL INSPECTIONS:
1. Pre-inspection of fill: _____
2. System Construction: _____
3. Completed cap: _____
4. Final site restoration: _____

5. Fill Material - Textures: _____ Thickness (Extent) _____
6. Disposal Site Conditions: _____
7. This Sewage Disposal System Conforms to Permit Conditions: [ ] Yes [ ] No
8. System may be Covered: [ ] Yes [ ] No
9. Comments Capped seeded 8/20/03
10. This Certificate of Satisfactory Completion is Issued: [ ] Yes [ ] No
    Violation Notice Posted (_____)
11. Inspector's Signature: _____ Date: _____
12. Authorized to Cover Without Benefit of Department Inspection By: [signature] 10-7-03
13. Contractor's Certificate of Completion Report Required: [ ] Yes [ ] No

DOC. NO. 40-08-85-08-02

COPIES: WHITE/FILE CANARY/OWNER PINK/CONTRACTOR

CITADEL ENGINEERING, INC.

Jeffrey S. Reed, P.E.
17129 Webbs Road
Ellendale, DE 19941
(302) 422-2574

CONTROL AGENCY: STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIROMENTAL CONTROL
GROUNDWATER MANAGEMENT SECTION

OFFICES:
GEORGETOWN (302)856-4561
FAX (302)856-5088
DOVER (302)739-4761
FAX (302)739-7764

PERMITTEE: BANNING & ASSOC. LLC
PROPERTY LOCATION: TRINITY TRUCKING ROUTE 13 NORTH BOUND BRIDGEVILLE
DESIGNER: JEFFREY S. REED, P.E. LIC. #2285
CONTRACTOR: BRYAN WHITE PHONE #: 745-6224
ADDRESS: 5635 NEALS SCHOOL ROAD, SEAFORD, DE 19973
DATE OF SYSTEM REVIEW: 8/18/ 03 OFFICE: 629-4848
DATE OF COVER REVIEW: DNREC FAX: 629-2538

PERMIT #192453-S
TAX MAP #1-31-11-12 SITE B
ENGINEER'S
FILE #03202
EXPIRATION DATE:4-8-05

TYPE OF SYSTEM: LPP

SEPTIC TANK:
LEVEL: YES
SIZE: PER PERMIT
BUILDING ft. WELL ft.
WATERCOURSE:
COMMENTS:

As PER PLAN

DOSE TANK:
2800 GALLON

VENT:
DIAMETER: (3") 4"
HT. ABOVE GRADE >6 in.

PUMP: PER PERMIT
SCREENED NO
CHECK VALVE PVC

ELECTRICAL:
ALARM SEP. CIRCUIT YES
WIRING COMPLETE YES
ALARM LOCATION ON POST
PRESSURE SET-YES

FLOATS: ON YES
OFF YES
ALARM YES

ISOLATION DISTANCES:
BUILDINGS ft. As
WELLS ft. PER
WATERCOURSES ft. PLAN

FILL EVALUATION:
FILL MATERIAL:
DEPTH OF FILL in.
EXTENT OF FILL ft.
DEPTH OF TOPSOIL in.
CLEAN OUTS AT GRADE YES
} TO BE DONE BY DNREC

COMMENTS: PUMPS: GOULDS PER PLAN
ALARM/TIMER: ORENCO
FLOATS: ORENCO
SEPTIC TANK FILTER: ZABLE

LPP DRAINFIELD:
WIDTH OF TRENCHES: 12" WIDE
LENGTH OF TRENCHES: PER PERMIT
DEPTH OF TRENCHES: PER PERMIT
PIPING LEVEL: YES
DAMS PER PLAN YES

ISOLATION DISTANCES:
BUILDINGS ft.
WELLS ft.
TREES ft.
PROP. LINES ft.
EASEMENTS ft.
WATERCOURSE ft.
} As PER PLAN

PIPING:
MANIFOLD LENGTH: PER PERMIT
MANIFOLD DIAMETER: PER PERMIT
TRANS. LENGTH: As PER PLAN
TRANS. DIAMETER: PER PERMIT
SCH40 PVC YES
# of LATERALS As PER PLAN
SPACING OF LATERALS 5 ft.
# of HOLES PER LATERAL, SPACING OF HOLES, AND DIAMETER OF HOLES ARE PER PERMIT

CERTIFICATE OF CONSTRUCTION:
The undersigned Class 'E' Licensee hereby attest that all construction specified in the permit and conditions have been completed using accepted construction techniques and installation practices as specified in the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Disposal Systems.

The Undersigned Class 'E' Licensee hereby attest that they presently hold a valid Class 'E' licensee with the Delaware Department of Natural Resources and Enviromental Control.

Signature of Contractor — Date 8-18-03

Jeffrey S. Reed, P.E. or Designee has examined all visible septic system components on 8/18/03, and soil cover on -/-/- and issues this Certification of Completion in belief that the system is installed in conformance with the DNREC permit. All observed deviations from the permit are noted on the as-built drawing.

This On-Site Wastewater Disposal System substantially conforms to the approved criteria.

The Certificate of Satisfactory Completion is issued BY DNREC.

Jeffrey S Reed

Representative of Citadel Engineering, INC.

DELAWARE
DIVISION OF WATER RESOURCES
Clean Water - for Today and Tomorrow

PERMIT
192453-S

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Tax Map Number: 1-31-11-12 SITE B

Pursuant to provisions of Title 7, Delaware Code, Chapter 60, permission is hereby granted to:

Banning & Associates, LLC
Attn: Mr. Ed Banning, 18119 Sussex Highway, Bridgeville, DE

to construct, operate, and maintain an on-site wastewater system.

Construction must be completed on or before 04/08/05, one year from permit issuance date. Construction must be done by a person duly licensed by the Delaware DNREC for such activity.

All current regulations governing wastewater system installation shall be followed.

All attached permit conditions shall be complied with.

The applicant is responsible for obtaining all additionally required permits and approvals.

D.N.R.E.C.
APPROVED

04/08/03

AUTHORIZED SIGNATURE — DATE

PERMIT #
SEE PERMIT CONDITIONS

DELAWARE
DIVISION OF WATER RESOURCES
Clean Water - for Today and Tomorrow

PERMIT
192453-S
Conditions

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Tax Map Number: 1-31-11-12 SITE B

This Permit may be revoked upon violation of any of the following conditions:

* The system MUST be installed by a licensed Class E contractor. The Contractor shall notify the Ground Water Discharges Section (GWDS) at (302) 739-4761 in Kent and New Castle Counties and at (302) 856-4561 in Sussex County 24 hours prior to construction start up. The contractor must have an approved permit on site during construction of this system.

* The Contractor shall notify the Design Engineer for an inspection prior to covering the installation. Approval to cover must be given from the Engineer. The Engineer shall provide as built drawings within 10 days after inspection.

* Connections or additions to the proposed system other than proposed on the plans will not be allowed without prior approval from the Ground Water Discharges Section.

* Roof downspouts, foundation drains, storm sewers, combined sewers or appurtenances thereto, or any sewer or device carrying or discharging storm water, surface water, groundwater, cooling water, oil, or water softener brine shall not be connected to the system.

* The bottom of the seepage area shall be installed according to the cross section in the design plans. Any deviation must be approved by the Designer who must also seek approval from the GWDS.

* All electrical connections shall be waterproof, corrosion resistant and explosion proof.

* There shall be no soil disturbance to the absorption area except the minimum required for installation.

* The Contractor shall install a battery in the timer.

* The owner shall connect to the county or municipal sewer system if and when such services become available. Connection shall be in accordance with County or Municipal rules and regulations. This permit becomes void unless the GWDS approves continued operation.

* This system shall be maintained in such a manner as to prevent surfacing, pooling and/or discharging of wastewater to any surface waters and abnormal odors.

* The sites of the initial and replacement absorption facilities shall not be covered by asphalt or

DELAWARE
DIVISION OF WATER RESOURCES
Clean Water - for Today and Tomorrow

PERMIT
192453-S
Conditions

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Tax Map Number: 1-31-11-12 SITE B

This Permit may be revoked upon violation of any of the following conditions:

concrete or subject to vehicular traffic or any activity which would adversely affect the soils. These sites shall be maintained so that they are free from encroachments by accessory buildings and additions to the main building.

* The Ground Water Discharges Section recommends that all trees and shrubs shall be located to prevent root intrusion into the disposal area.

* The average daily discharge of this system is restricted to 2200 gallons per day.

* The septic tank shall be pumped by a licensed liquid waste hauler at a minimum of once every 3 years. Septic tanks constructed on non-masonry materials, should be pumped only when the seasonal water table is low. In the event that the pumping must occur during wet periods the tank must be refilled immediately, by the owner.

* It is the responsibility of the Contractor to verify that all isolation distances, as noted and approved in the permit, can be maintained. Furthermore, the Contractor shall notify the Designer if field conditions exist that prohibit his/her ability to maintain the approved isolation distances and/or meet Regulation requirements.

* The battery in the timer shall be replaced at least once a year.

* System must be pressure tested by design engineer.

* Final Site Restoration must comply with Section 6.01070 of the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems.

* A Construction Report must be prepared by the System Contractor and submitted to the Department within ten (10) days from system completion. This is to include any changes which require an "As-built".

DELAWARE
DIVISION OF WATER RESOURCES
Clean Water - for Today and Tomorrow

APPLICATION - PERMIT

ON-SITE WASTEWATER SYSTEM

192453-S

RECEIVED
MAR 11 2003
GROUND WATER

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

(Please Type or Print Legibly)

OWNER'S NAME: Banning & Assoc., LLC — PHONE: 302-253-3959

ADDRESS: 18119 Sussex Highway, Bridgeville, DE 19933

PROJECT LOCATION: East side of U.S. 13 — TAX/MAP #: 1-31-11.00-12.00

APPLICATION PREPARER: Jeffrey S. Reed, P.E. — DNREC LICENSE #: 2285

PREPARER'S ADDRESS: 17129 Webbs Road, Ellendale, DE 19941 — PHONE: (302) 422-2574

JEFFREY S. REED — REGISTERED — No. 7844 — PROFESSIONAL ENGINEER — DELAWARE

I hereby affirm that the information provided on this document is accurate and complete.

Preparer's Signature: Jeffrey S. Reed Date: 3/11/03

SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

System Type: (CF = Cap & Fill / FD = Full Depth)

- ☐ Low Pressure Pipe (FD)
- ☑ Low Pressure Pipe (CF)
- ☐ Elevated Sand Mound
- ☐ Wisconsin At-Grade
- ☐ Pressure Dose (FD)
- ☐ Pressure Dose (CF)
- ☐ Holding Tank
- ☐ Subsurface Micro Irrigation
- ☐ Gravity (FD)
- ☐ Gravity (CF)
- ☐ Std. Pressure Dose (FD)
- ☐ Other
- ☐ Std. Pressure Dose (CF)

- ☐ Bed or ☑ Trench
- ☐ Gravelless Chamber or ☑ Stone/Gravel
  Sand-lined ☐ Yes ☑ No

Existing System Malfunctioning ☑ N/A ☐ No ☐ Yes

Pre-Treatment Units
- ☑ Septic Tank
- ☐ Recirculating Sand Filter
- ☐ Other _____

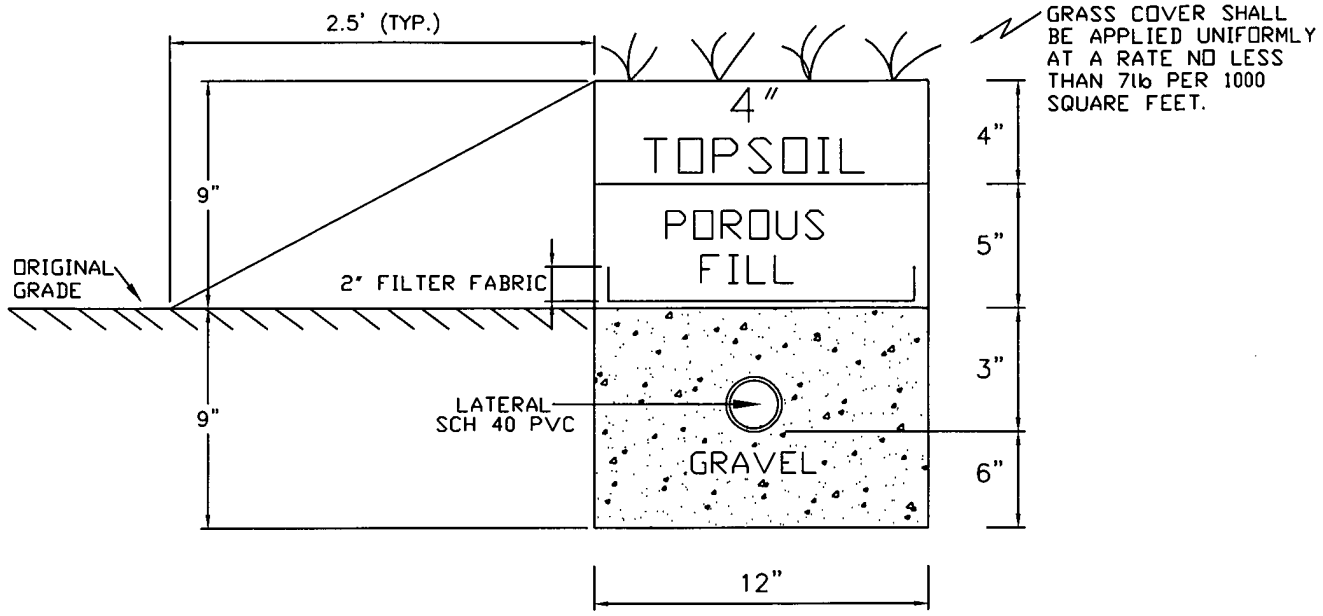
Type of Construction:
- ☑ Replacement
- ☐ New Construction
- ☐ Component Replacement
  Component:
- ☐ Repair to Existing System
  Reason:
- ☐ Authorization to Use Existing System
  Permit #
  Present Condition:
  Structure to be connected:

# of Bedrooms: N/A
Avg. Percolation Rate: 60 MPI
Gallons Per Day Flow: 2200
Minimum Sq. Ft. Req'd: 14,630
Sq. Ft. Proposed: 14,700 Total
(Existing 2,450)

Central Water Available ☐ Yes ☑ No
(If yes, please state Utility Name: _____)

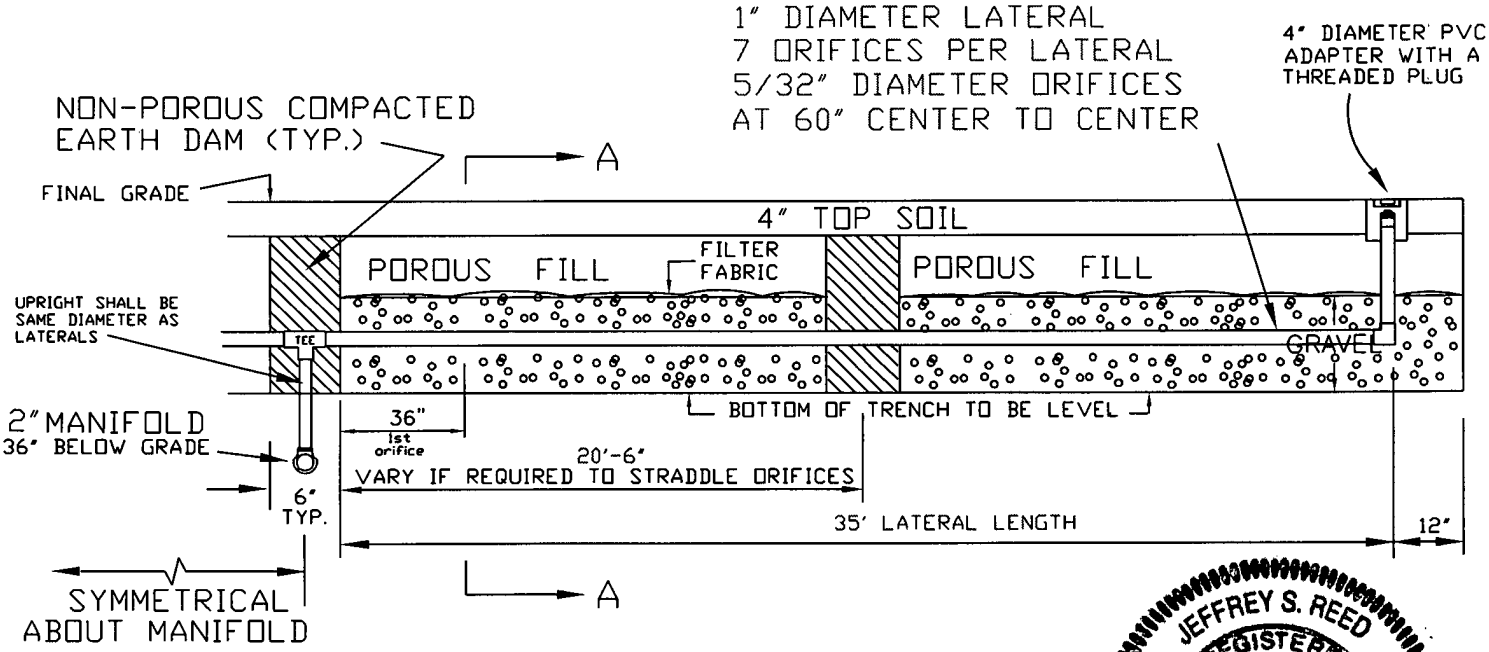
Revised 2/26//97

03-11-03 4CL2861 ENGIAPPL 115.00



SECTION A-A

NO SCALE



TYPICAL CROSS-SECTION

NO SCALE

JEFFREY S. REED
REGISTERED
No. 7854
DELAWARE
PROFESSIONAL ENGINEER

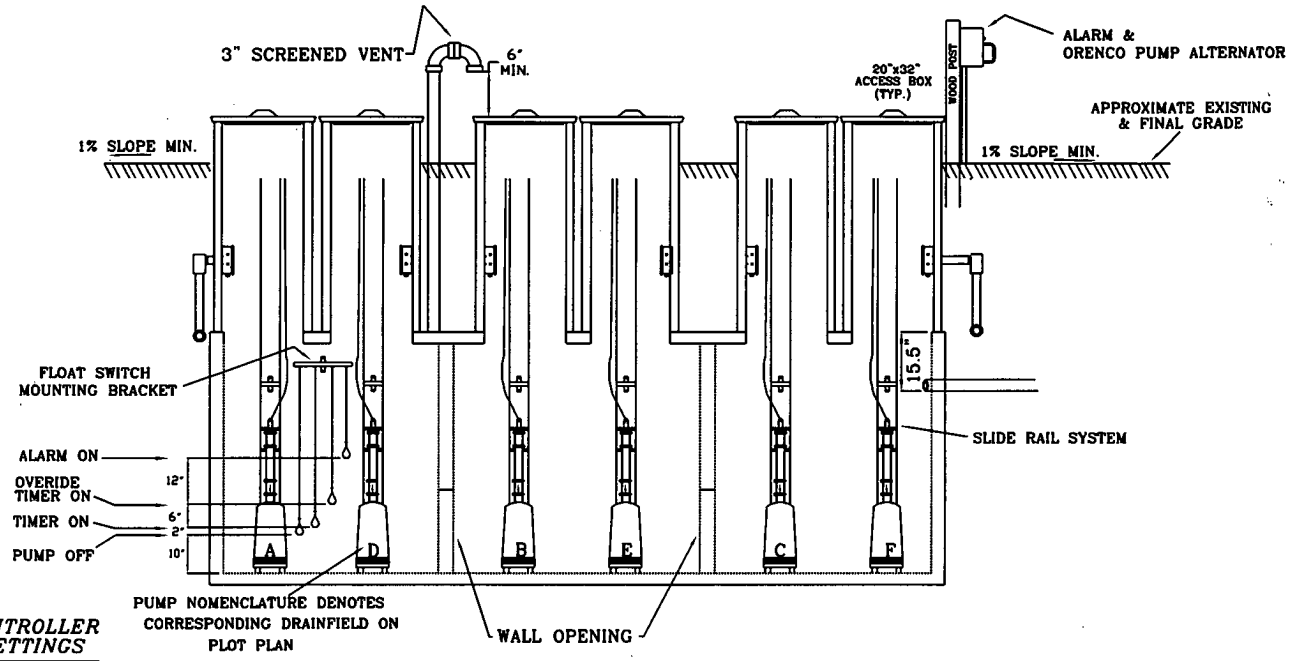
SCALE: NO SCALE
DATE : 3-10-03
SHEET: N/A
DRAWN BY: JVR
CLIENT: TRINITY
CLIENT #: 03020

LOW PRESSURE PIPE TRENCH SECTIONS

CITADEL ENGINEERING, INC.
Jeffrey S. Reed, P.E.
17129 Webbs Road
Ellendale, DE 19941
(302) 422-2574

NOTES:

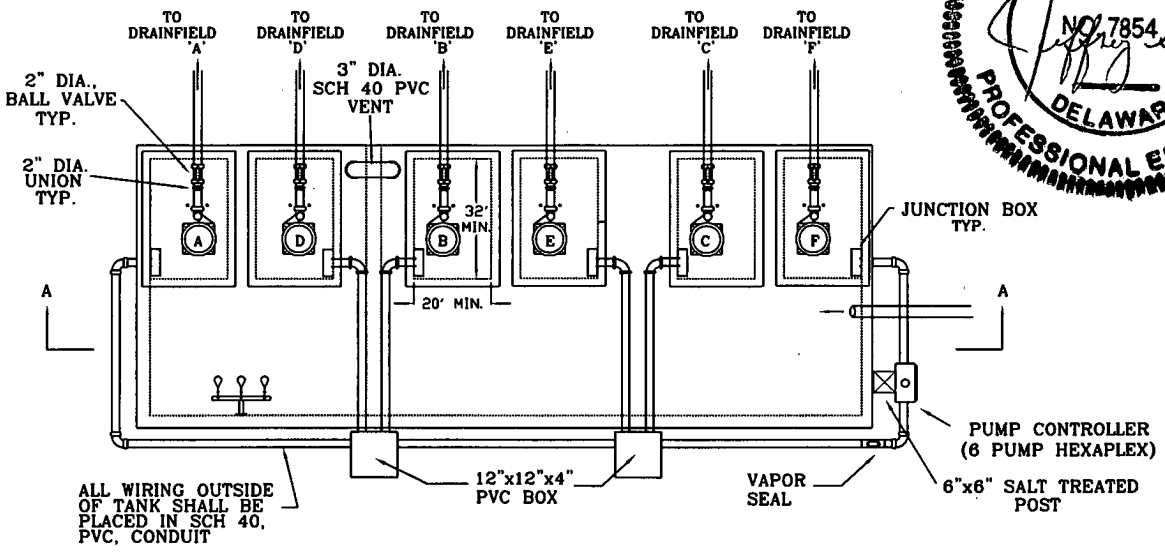
1. CONTRACTOR SHALL ENSURE ALL PUMPS MAY BE PULLED FROM SURFACE.
2. FLOATS SHALL HAVE CORD WEIGHTS AND CONTROL PUMP AS SHOWN ABOVE.
3. TANK ACCESS RISERS SHALL BE PRECAST CONCRETE.
4. USE HEXAPLEX CONTROLLER BY ORENCO.
5. TANK DIMENSIONS PROCURED FROM NATIONAL CONCRETE PRODUCTS.
6. ALL PIPING INSIDE DOSE TANK SHALL BE 2" SCH. 40 PVC UNLESS NOTED OTHERWISE.
7. ALL ELECTRICAL CONNECTIONS INSIDE TANK SHALL BE WATERPROOF, EXPLOSION PROOF, AND CORROSION RESISTANT.
8. ALL DOSING CHAMBER COMPONENTS SHALL BE FIELD TESTED FOR WATER TIGHTNESS, ACCURACY, AND PROPER OPERATION PRIOR TO ENGINEERS INSPECTION.
9. PUMP SHALL BE GOULDS (OR APPROVED BY ENGINEER) MODEL # WE0511H CAPABLE OF PRODUCING 45 GPM AT 23.3 FEET OF HEAD.



LOGIC CONTROLLER TIMER SETTINGS

DATE TIME		
B01	01:10	HH:MM
B02	02:44	MM:SS
B03	00:35	HH:MM
B04	02:44	MM:SS
B05	3	CYCLES

SECTION A-A



PLAN VIEW

(PHASE II)

JEFFREY S. REED
REGISTERED
NO. 7854
PROFESSIONAL ENGINEER
DELAWARE

REVISED: 3/27/03 PIPE SIZES

Scale: 1"=50"
Sheet: N/A
Date : 03/09/03
Drawn by: JVR
Client: TRINITY 03020

2800 GALLON DOSE TANK (6 PUMPS)

CITADEL ENGINEERING, INC.
Jeffrey S. Reed, P.E.
RD 1, Box 284A
Ellendale, DE 19941
(302) 422-2574

GOULDS PUMPS

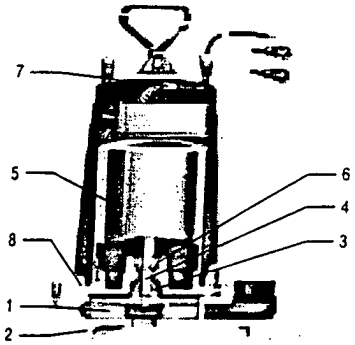
Submersible Effluent Pump

MODEL

3885

COMPONENTS

Item No.	Description
1	Impeller
2	Casing
3	Silicon carbide vs. silicon carbide Mechanical seal
4	Shaft
5	Motor
6	All Ball bearing heavy duty design
7	Power cable
8	O-ring



MODELS

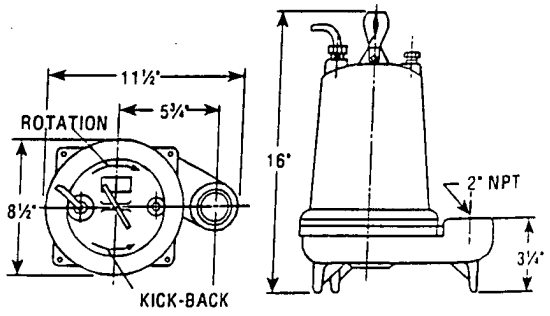
Order No.	HP	Volts*	Phase	Max. Amp.	RPM	Solids	Wt. (lbs.)	Heaters
WE0311L	⅓	115	1	9.8	1750	¾	56	N/A
WE0318L		200		5.4				
WE0312L		230		4.9				
WE0311M		115		9.8				
WE0318M		200		5.4				
WE0312M		230		4.9				
WE0511H	½	115	1	14.5	3500		60	N/A
WE0518H		200		8.1				
WE0512H		230		7.3				
WE0538H		200	3	4.1				K34
WE0532H		230		3.3				K32
WE0534H		460		1.7				K23
WE0511HH		115	1	14.5				N/A
WE0518HH		200		8.1				
WE0512HH		230		7.3				
WE0538HH		200	3	4.1				K34
WE0532HH		230		3.6				K33
WE0534HH		460		1.8				K23
WE0718H	¾	200	1	11.5			70	N/A
WE0712H		230		10.0				
WE0738H		200	3	6.2				K49
WE0732H		230		5.4				K39
WE0734H		460		2.7				K28
WE1018H	1	200	1	14.4				N/A
WE1012H		230		12.5				
WE1038H		200	3	8.1				K50
WE1032H		230		7.0				K43
WE1034H		460		3.5				K32
WE1518H	1½	200	1	14.0			50	N/A
WE1512H		230		15.7				N/A
WE1538H		200	3	10.6			80	K54
WE1532H		230		9.2				K52
WE1534H		460		4.6				K36
WE1518HH		200	1	17.5				N/A
WE1512HH		230		15.0				N/A
WE1538HH		200	3	10.6				K54
WE1532HH		230		9.2				K52
WE1534HH		460		4.6				K36
WE2012H	2	230	1	17.0			83	N/A
WE2032H		200/230	3	11.4				K55
WE2034H		460		5.7				K41

PERFORMANCE RATINGS (gallons per minute)

Total Head Feet of Water	Order No.	WE03L	WE03M	WE05H	WE07H	WE10H	WE15H	WE05HH	WE15HH	WE20H
	HP	⅓	⅓	½	¾	1	1½	½	1½	2
	RPM	1750	1750	3500	3500	3500	3500	3500	3500	3500
	5	86	–	–	–	–	–	–	–	–
	10	70	65	78	94	–	–	56	95	140
	15	58	58	70	90	103	128	53	93	138
	20	30	35	60	85	98	123	50	90	136
	25	5	15	48	76	94	117	45	87	133
	30	–	–	35	67	88	111	40	84	130
	35	–	–	23	57	82	103	35	82	126
	40	–	–	12	45	74	95	30	77	121
	45	–	–	–	35	64	86	25	74	116
	50	–	–	–	25	53	77	18	70	110
	55	–	–	–	17	42	67	12	66	104
	60	–	–	–	9	30	56	3	63	97
	65	–	–	–	–	20	46	–	58	90
	70	–	–	–	–	11	35	–	55	83
	75	–	–	–	–	4	25	–	51	75
	80	–	–	–	–	–	15	–	47	66
	90	–	–	–	–	–	–	–	37	51
	100	–	–	–	–	–	–	–	28	30
	110	–	–	–	–	–	–	–	17	10
	120	–	–	–	–	–	–	–	8	–

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



EFFLUENT EJECTOR SYSTEM

Effluent ejector system offers ease of ordering and installation. A single ordering number specifies a complete system designed for most residential and commercial sump and effluent pump applications.

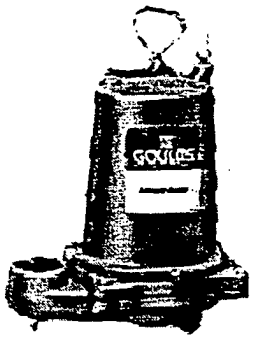
Package Includes:
Submersible Effluent Pump WE0311L, 12L or WE0311M, 12M, WE0511HH, 12HH
Mechanical Level Control Switch
A2-5 (115V), A2-6 (230V)
Basin and Cover A7-1830P
Check Valve A9-2P
Order No.: SWE0311L, SWE0312L, SWE0311M, SWE0312M, SWE0511HH, SWE0512HH.

Goulds Pumps

ITT Industries

GOULDS PUMPS

Submersible Effluent Pump



6 pumps REQD TOTAL

MODEL

3885

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump

- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

FEATURES

■ **Impeller:** Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

■ **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge adaptable for slide rail systems.

■ **Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE** sealing faces. Stainless steel metal parts. BUNA-N elastomers.

■ **Shaft:** Corrosion-resistant, 400 series stainless steel. Threaded design. Locknut on three phase models to guard against component damage on accidental reverse rotation.

■ **Fasteners:** 300 series stainless steel.

■ Capable of running dry without damage to components.

■ Designed for continuous operation when fully submerged.

MOTORS

■ Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.

■ **Class B insulation.**

Single phase:

- Built-in overload with automatic reset.
- All single phase models feature capacitor start motors for maximum starting torque.
- ⅓ and ½ HP – 16/3 SJTO with 115 V or 230 V three prong plug.
- ¾-2 HP – 14/3 STO with bare leads.

Three phase:

- Overload protection must be provided in starter unit.
- ½-2 HP – 14/4 STO with bare leads.

■ **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage.

■ **Bearings:** Upper and lower heavy duty ball bearing construction.

■ **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.

■ **O-ring:** Assures positive sealing against contaminants and oil leakage.

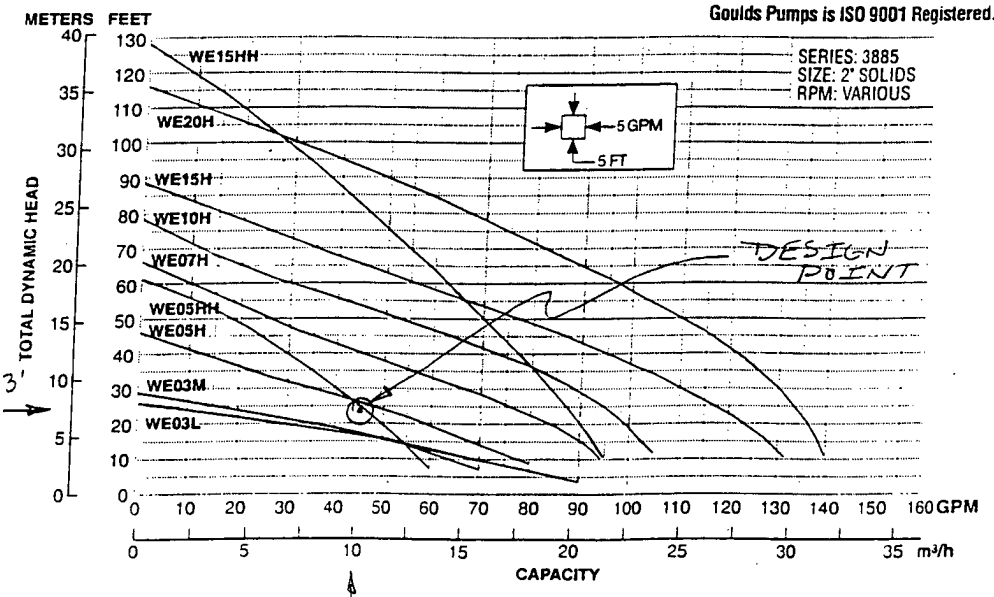
■ Consult factory for information on CSA listed models.

AGENCY LISTINGS

Canadian Standards Association File #LR38549

Underwriters Laboratories File #83318

Goulds Pumps is ISO 9001 Registered.



Goulds Pumps

ITT Industries

Effective January, 1999
B3885

Orenco Systems® Fax

Orenco Systems®
Incorporated

814 AIRWAY AVENUE
SUTHERLIN, OREGON
97479

TOLL FREE:
(800) 348-9843

TELEPHONE:
(541) 459-4449

FACSIMILE:
(541) 459-2894

Date: 03/10/03

To: Jeff Reed
Company: Citadel Engineering, Inc.
Fax #: 302-422-2574
Phone #: 302-422-2574

From: Bob Somnitz Ext. 374

Subject: Custom Control Panel Quote / Trinity Trucking

No. of Pages: 2

Please read this quote thoroughly to ensure accuracy.

Quote #: 030503S1
Panel Model: MVP-HEX1 PT RO ETM CT PRL SA PL TS
List Price: $2,790.00
Lead Time: 15 Working Days

Components Include:
- NEMA 4 Steel Enclosure
- Surge Arrestor for Controls
- 10A Controls Circuit Breaker
- 25A Circuit Breaker for each pump
- Motor Contactor rated for each **115VAC 1Ø pump (.5 Hp, 14.5 FLA)**
- HOA Switch for each pump
- Elapsed Time Meter for each pump
- Cycle Counter for each pump
- Pump Run Light for each pump
- Power Light
- High Level Alarm Light
- Manual Reset Switch for High Level Alarm
- Low Level Alarm Light
- Alarm Test Switch
- Logic Controller with Custom Programming
- Audible Alarm with Silence Switch
- Terminal Blocks
- Distribution Block
- UL 508 Listed

If you order a panel using this quote number your panel will be built to the specifications on this quote and you will be responsible for payment per Orenco's terms and conditions. Upon request we can alter the specifications on this quote and issue an amended quote number. This quote is valid for 90 days. Panels are shipped FOB, Sutherlin, OR. Freight charges are not included in this quote.
Our fax number is (541) 459-6781. If you have any trouble receiving this fax, please call (541) 459-4449.

- With the following float functions (floats not included in above List Price) :

  - **High Level Alarm / Lag Pump Enable**
  - **Override Timer On & Off**
  - **Timer On & Off**
  - **Redundant Off / Low Level Alarm**

Timer Settings:	**Unknown – (Factory Default**
	60 minutes Off
	40 Seconds On)
Override Timer Settings:	**Unknown – (Factory Default**
	30 minutes Off
	40 Seconds On)

Note: Normal operation will activate one pump at a time per cycle, alternating through all six pumps, as long as the Timer On & Off float is raised. Timing cycle will start with it's Off time.
Lag Pump Enable will also activate pump #5 and pump #6 at the Override Timer Setting cycle.
The High Level Alarm will be latched on if activated and must be manually reset by pressing the Manual Reset Switch after the High Level Alarm float is lowered.

If you order a panel using this quote number your panel will be built to the specifications on this quote and you will be responsible for payment per Orenco's terms and conditions. Upon request we can alter the specifications on this quote and issue an amended quote number. This quote is valid for 90 days. Panels are shipped FOB, Sutherlin, OR. Freight charges are not included in this quote.
Our fax number is (541) 459-6781. If you have any trouble receiving this fax, please call (541) 459-4449.

CITADEL ENGINEERING, INC.

Jeffrey S. Reed, P.E.
17129 Webbs Road
Ellendale, DE 19941
(302) 422-2574

General Notes

1.) All construction shall comply to DNREC regulations and all applicable memorandums.
2.) If any unusual or unforeseen problems arise during construction, the engineer shall be notified immediately and construction shall cease until proper authorities have been notified. This shall include, but not limited to, site soil compaction, high water table, variations in design layout, and possible wetland conflicts.
3.) All adjacent wells and septic systems located on plot plan as of the field inspection on 1-13-03. Contractor shall verify all proposed improvements and existing adjacent property improvements prior to construction/installation of proposed improvements.
4.) Contractor shall comply with all Occupational Safety and Health Act (OSHA). Design does not include any construction safety. Contractor shall be responsible for all OSHA requirements during construction.
5.) Contractor shall verify that all building sewer lines have proper grade to allow gravity flow where required. Any deviations should be coordinated with engineer/owner/building contractor, or other, as required, prior to construction.
6.) Contractor shall contact Miss Utility prior to construction and coordinate/locate any utilities not covered by Miss Utility with the owner.
7.) Contractor shall submit location drawing for any field changes in septic plot plan.
8.) All component operation maintenance manuals are to be supplied to the owner by installer.
9.) Filter fabric to be Dupont, style 3201, or equal.
10.) All easements found are shown on plot plan.
11.) All sewer lines shall be sch. 40, 4 inch diameter unless noted otherwise.
12.) All sewer lines less than 36 inches in depth under driveways or other areas subject to vehicular traffic shall be placed in a cast iron sleeve. Encasement shall extend 2 feet beyond driveway edge.
13.) The engineer shall be notified 24 hour's minimum prior requested inspection. Contractor shall verbally advise engineer of location and type of all component manufacture and model numbers. Items to be reported, but not limited to; pump (s), float (s), alarms, timers, etc..
14.) All septic tanks shall be equipped with any outlet effluent filter approved by the DNREC. The maintenance of these filters is the responsibility of the property owner and must remain in service for the life of the septic tank. This unit must be maintained in accordance with the manufacturer's service instructions.
15.) Each septic tank shall be constructed with a watertight access riser for each compartment and shall extend above grade. This riser and lid shall be made of concrete, masonry or an equivalent durable material approved by DNREC.

ATLANTIC RESOURCE MANAGEMENT, INC.
(302) 539-2029

P.O. BOX 869
OCEAN VIEW, DE 19970

SITE EVALUATION REPORT

Property Owners' Name: Banning & Associates, LLC
Attention: Mr. Ed Banning
Owners' Address: 18119 Sussex Highway
Bridgeville, DE 19933

Tax Map #: 1-31-11.00-12.00 (P/O)

Phone #: (302) 253-3900

Property Location: West side of US Route 13; Approximately 3,650' South of Route 40; near Bridgeville; Sussex County, De
Property Size: 5.76 acres net development area out of a total of 13± acres

Evaluators' Name: Lisa S. Wood • Lāf P. Erickson

License Numbers: D-2403 • D-2460
Evaluation Date: 02/03/03

Central Sewer: NA
Central Water: NA
Depth to and Type of Limiting Zones Encountered:

Soil Boring # 1: 35 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Oxyaquic Paleudult—Woodstown (variant) Series
Soil Boring # 2: 31 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Oxyaquic Hapludult—Woodstown (variant) Series
Soil Boring # 3: 27 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Aquic Hapludult—Hammonton Series
Soil Boring # 4: 35 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Oxyaquic Hapludult—Woodstown (variant) Series
Soil Boring # 5: 31 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Oxyaquic Hapludult—Woodstown Series
Soil Boring # 6: 34 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Oxyaquic Hapludult—Woodstown (variant) Series
Soil Boring # 7: 50 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Typic Hapludult—Hambrook Series
Soil Boring # 8: 40 inches to redoximorphic features as an indication of the seasonal high water table
> 72 inches to free water; Typic Hapludult—Hambrook Series

Summary of Evaluation: Soils in the evaluated area are moderately well drained to well drained with slowly (50 to 60 MPI) permeable substratum. Site conditions are suited for a Low Pressure Pipe disposal system in the vicinity of Soil Borings # 1, 2, 4, and 7 (*Design Area A*). Soils in the vicinity of Soil Borings # 3, 5, and 6 (*Design Area B*) are also suited for a Low Pressure Pipe disposal system, but with a limiting zone of 27 inches and an assigned permeability rate of 60 minutes per inch. The potential disposal areas are positioned on a summit, backslope, and footslope in an otherwise undulating agricultural landscape. Slopes are generally 1 to 4 percent in the evaluated area. See *Design Considerations and Comments* on Approval Page for property information and details on system design and installation.

For design purposes, the limiting zone for the *initial* disposal system (*Design Area A*) was assigned at **31** inches based on the depth to redoximorphic features at Soil Boring # 2. The limiting zone for the *additional* disposal area (*Design Area B*) was assigned at 27 inches based on the depth to redoximorphic features at Soil Boring # 3. Free water levels were greater than the depth of investigation (72 inches beneath the soil surface) throughout the evaluated area. Precipitation levels for the water year (October, 2002 through September, 2003) were 1.03 inches above normal through January 2003 based on data collected at the University of Delaware Research and Education Center located in Georgetown, Delaware. It should be noted that the 2001-2002 water year ended with a deficit of approximately 14.58 inches.

For design purposes, the permeability rate for the *initial* disposal system (*Design Area A*) was assigned at **50** minutes per inch based on the most hydraulically restrictive subsoil identified within the upper 60 inches of the soil profiles. In this area, the finest soil textures noted were heavy sandy clay loam and clay loam materials, found in the subsoil at Soil Borings # 1, 2, and 4 at depths ranging from 18 to greater than 60 inches beneath the soil surface. The permeability rate for the *additional* disposal system (*Design Area B*) was assigned at 60 minutes per inch. In this area, the finest soil textures noted were clay loam materials, found at Soil Borings # 5 and 6 in the substratum materials. Clay and silt content, soil structure and consistence, and seasonal saturation were factored into the assigned permeability rates.

The potential disposal area is mapped within an area of the moderately well drained, Kalmia sandy loam, (Ka) and the well drained, Sassafras sandy loam, 0 to 2 percent slopes, (SaA) mapping units in the latest published (1974) edition of the Sussex County Soil Survey--Sheet # 24. The soils in the evaluated area would correlate to the moderately well drained, Woodstown (variant) and the well drained, Hambrook Series in the current Soil Survey update.

2/10/03
Date

Lisa S. Wood
Evaluator's Signature

Atlantic Resource Management, Inc. Job # 106-DS03-SS

Note: Site evaluation information was collected for on-site wastewater disposal interpretations only. The information in this site evaluation and plot plan has been compiled from any of the following sources: tax map, deed, survey, recorded plot, or field located property corners, and may include anecdotal information supplied by property owners, adjacent residents, and/or other interested parties. Locations of wells and septic systems are by direct observation where possible, but are often based on information provided by permits, property owners, adjacent residents, and/or other interested parties. This plot plan represents the site conditions at the time of evaluation but it is not a survey. No title search has been conducted; any easements shown are from subdivision record plans or deed. Subsequent alteration of the site or adjacent properties may negate approval by the regulatory agency(ies) involved in permitting. All information should be reverified prior to purchase or use.

Property Owner/Property Location: DANNING AND ASSOCIATES, LLC

Profile #: SB# 1 Date: 02/03/03 Soil Boring ✓ or Test Pit ____

Slope: 1 - 2 % Relief: UPPER BACKSLOPE

Estimated Permeability: SLOW (50 MPI)

Depth to Limiting Zone: 35" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: OXYAQUIC PALEUDULT / WOODSTOWN VAR

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
	Ap	0 to 4	10YR 3/2	—	—	SL	1MSBK	FI *
	BE	4 to 18	10YR 5/6	—	—	SL	2MSBK	FR
	Bt	18 to 27	7.5YR 5/6	—	—	SCL	2MSBK	FR
	BC	27 to 35	7.5YR 5/6	—	—	SL	1MSBK	FR
	CB	35 to 57	10YR 6/6	10YR 6/8 10YR 7/1	F 2 D F 2 D	SCL + SL	M	FR
	2C1	57 to 67	10YR 6/4 7.5YR 6/8	10YR 7/1	M 2 D	CL + SL + LS	M	FR + FI
	2C2	67 to 72	10YR 6/4	2.5Y 6/8	C 2 D	LS	M	VFR
		to						

Free Water: > 72 Comments: * COMPACTED TO 8"

Profile #: SB# 2 Slope: 2 - 4 % Relief: BACKSLOPE

Estimated Permeability: MODERATELY SLOW (45 MPI)

Depth to Limiting Zone: 31" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: OXYAQUIC HAPLUDULT / WOODSTOWN VAR

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
	Ap	0 to 6	10YR 4/4	—	—	LS	2MGR	VFR
	BE	6 to 24	10YR 5/6	—	—	SL	2MSBK	FR
	Bt	24 to 31	7.5YR 5/6	—	—	SCL +	2MSBK	FR
	BC	31 to 38	10YR 6/6	2.5Y 6/8 10YR 7/1	C 2 D C 2 D	SL	1MSBK	FR
	C1	38 to 56	10YR 6/6	2.5Y 6/8 10YR 7/1	C 2 D C 2 D	CL + SL +	M	FI + FR
	C2	56 to 66	10YR 6/6 7.5YR 5/8	10YR 6/2	C 2 D	SL	M	FR
	C3	66 to 72	7.5YR 5/8	2.5Y 7/2	M 2 D	SL	M	FR

Free Water: > 72 Comments: ____

Site Evaluator's Signature: Susan L. Wood

Property Owner/Property Location: BANNING AND ASSOCIATES, LLC

Profile #: SB # 3 Date: 01/07/03 Soil Boring ✓ or Test Pit _____

Slope: 2-3% Relief: MIDDLE BACKSLOPE

Estimated Permeability: MODERATE (35 MPI)

Depth to Limiting Zone: 27" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: AQUIC HAPLUDULT / HAMMONTON

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
	Ap	0 to 5	10YR 4/3	—	—	LS	1MCR	VFR
	E	5 to 19	10YR 5/4	—	—	LS	1MSBK	VFR
	Bt1	19 to 27	10YR 5/6	—	—	SL	2MSBK	FR
	Bt2	27 to 46	10YR 6/6	10YR 7/2 10YR 6/8	C 2 D C 2 D	SL	1M-SBK	FR
	BC	46 to 58	10YR 6/6	10YR 6/4	C 2 F	LS	M	VFR
	2C	58 to 72	10YR 6/6	10YR 7/2 10YR 6/8	M 2 D M 2 D	CL-SL SL	M	FR
		to						
		to						

Free Water: > 72 Comments: _____

Profile #: SB # 4 Slope: 1-3% Relief: UPPER BACKSLOPE / SUMMIT

Estimated Permeability: SLOW (50 MPI)

Depth to Limiting Zone: 35" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: OXYAQUIC HAPLUDULT / WOODSTOWN VAR

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
		0 to	BORING		SIMILAR	TO	SB # 1	
		to						
		to						
		to						
		to						
		to						
		to						

Free Water: > 72 Comments: _____

Site Evaluator's Signature: Jean L. Wood

Property Owner/Property Location: BANNING AND ASSOCIATES, LLC

Profile #: SB # 5 Date: 2/3/03 Soil Boring ✓ or Test Pit ____

Slope: 2-4 % Relief: BACKSLOPE

Estimated Permeability: SLOW (60 MPI)

Depth to Limiting Zone: 31" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: OXYAQUIC HAPLUDULT / WOODSTOWN

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
	Ap	0 to 6	10YR3/2	—		SL	1MSGR	FR
	Bt	6 to 27	7.5YR5/6	10YR5/6	M2D	SCL+	2MSBK	FR
	BC	27 to 31	7.5YR5/6 10YR5/4	—	—	SL−	1FSBK	FR
	CB	31 to 45	10YR6/4	7.5YR5/6 10YR6/2	C2D F1F	LS+ SL	M	FR
	C1	45 to 56	2.5Y6/4	10YR6/8 2.5Y7/2	F2P M2D	LS+ SL	M	FR
	2C2	56 to 72	10YR7/1	2.5Y6/4 10YR6/8	C2D M3P	COCL−	M	FI
		to						
		to						

Free Water: >72" Comments: ____

Profile #: SB # 6 Slope: 2-4 % Relief: LOWER BACKSLOPE

Estimated Permeability: SLOW (60 MPI)

Depth to Limiting Zone: 34" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: OXYAQUIC HAPLUDULT / WOODSTOWN VAR

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
		0 to	PROFILE SIMILAR			TO	SB # 5	
		to						
		to						
		to						
		to						
		to						
		to						

Free Water: >72 Comments: ____

Site Evaluator's Signature: Lisa L. Wood

Property Owner/Property Location: BANNING AND ASSOCIATES, LLC

Profile #: SB # 7 Date: 07/03/03 Soil Boring ✓ or Test Pit _____

Slope: 1-2 % Relief: UPPER BACKSLOPE / SUMMIT

Estimated Permeability: SLOW (50 MPI)

Depth to Limiting Zone: 50" TO REDOXIMORPHIC FEATURES

Soil Classification/Series: TYPIC HAPLUDULT / HAMBROOK

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
	Ap	0 to 8	10YR3/2	—	—	SL	1MSBK	FR
	Bt1	8 to 15	10YR5/4,6	—	—	SL+	2MSBK	FR
	Bt2	15 to 32	7.5YR5/6	—	—	SCL+	2MSBK	FR
	Bt3	32 to 42	7.5YR5/6	—	—	SL	1MSBK	FR
	BC	42 to 50	10YR 6/6	10YR5/6	VERIAGATIONS	SL	M	VFR
	2C	50 to 72	10YR6/8	10YR6/2 10YR6/6	C2D C2F	CL-	M	FI
		to						
		to						

Free Water: > 72 Comments: _____

Profile #: SB # 8 Slope: 1-3 % Relief: SWALE

Estimated Permeability: MODERATELY SLOW (40 MPI)

Depth to Limiting Zone: 40" TO REDOXIMORPHIC FEATURES

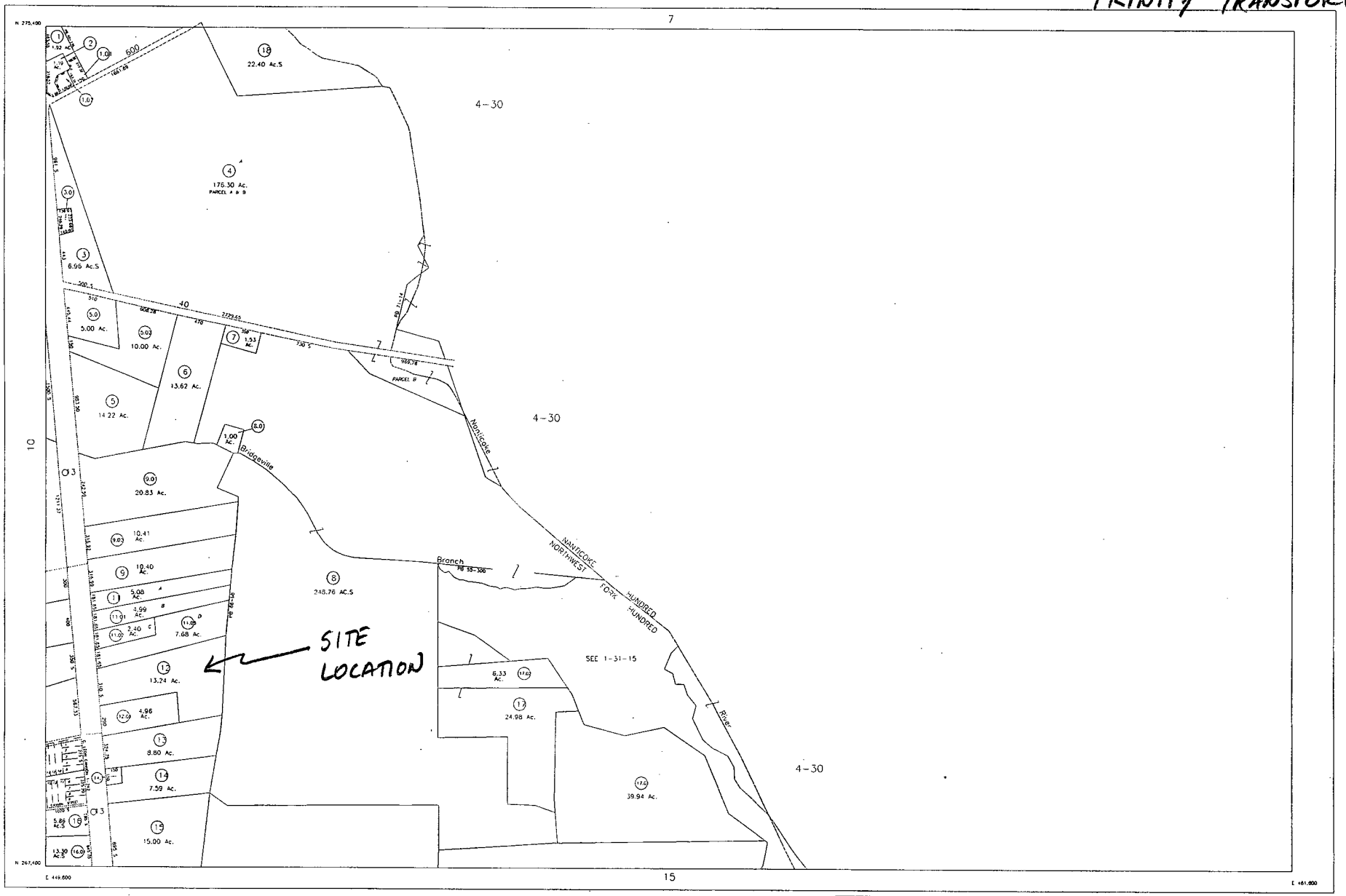
Soil Classification/Series: TYPIC HAPLUDULT / HAMBROOK

MPI	Horizon	Depth	Colors Matrix	Colors Mottles	Mottles Desc. Ab. S. Con.	Texture	Structure	Consistence
		to	SIMILAR TO SB # 7					
		to						
		to						
		to						
		to						
		to						
		to						

Free Water: > 72 Comments: _____

Site Evaluator's Signature: Lisa S. Wood

TRINITY TRANSPORT



DATE OF REVISION: 11-19-01

DATE OF COMPILATION: 3-15-74

SHEET LAYOUT BASED ON THE DELAWARE STATE PLANE COORDINATE SYSTEM

THE INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM DEED DESCRIPTIONS, IF AVAILABLE, TAX MAPS AND AERIAL PHOTOGRAPHS. THE ACTUAL BOUNDARIES CAN ONLY BE DETERMINED BY AN APPROPRIATE SURVEY.

SUSSEX COUNTY
DELAWARE

SCALE 1 INCH = 400 FEET

400 0 400 800 1200 1600 2000

LEGEND

County Line	(12) Map Parcel Number
Hundred Line	17 Original Lot Number
District Line	100 S Map Scaled Dimension
City or Borough Line	7 Denotes Same Owner
All Purpose Line	All Dimensions Shown In Feet
Orginal Lot Line	
Property Line	

MAP: 1-31-11