

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
GROUNDWATER MANAGEMENT SECTION

APPROVED
OCT 16 2000
Georgetown Office
GROUND (302) 856-4561

Dover Office
(302) 739-4761

PERMITTEE: Dual Development Corp. PERMIT #: 168803-S

PROPERTY LOCATION: NorthWest corner of US Route 13 and Su Co Rd 40

DESIGNER: Byron H. Jefferson, P.E. PHONE #: 302-422-9568 LICENSE #: 2160

CONTRACTOR: Todd Wise - Likewise Construction PHONE #: 302-398-8394 LICENSE #: 2401

SYSTEM REVIEW DATE: 9-29-00 10-10-00

TIME: 3:45 PM 11:00 AM

SEPTIC TANK

Size new 4,400 Gal

Septic tank was installed level and in accordance with permit

Comments: See as-built drawing

DOSING TANK

Size reused Gal/Size
existg 4,400 FT

Dosing tank was installed in accordance with permit

EQUIPMENT

Pump Goulds
Control floats S/F - P/B
Timer EZ T101
Alarm SJE Rhombus
Alarm location near dosing tank

SYSTEM TESTED

WIRING COMPLETE

Comments: See as-built drawing

PIPING AND MISC.

Visible piping has been installed in accordance with permit

Comments: See as-built drawing

DRAINFIELD

Type sand-lined capping fill bed

installed in accordance with permit

Comments: See as-built drawing

excavation depth checked by B. Cate
prior to sandy fill per contractor

Comments

The Engineer (or Designee) has examined all visible septic system components on 9-29-00 (dates) 10-10-00 and believes 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: Yes
 No

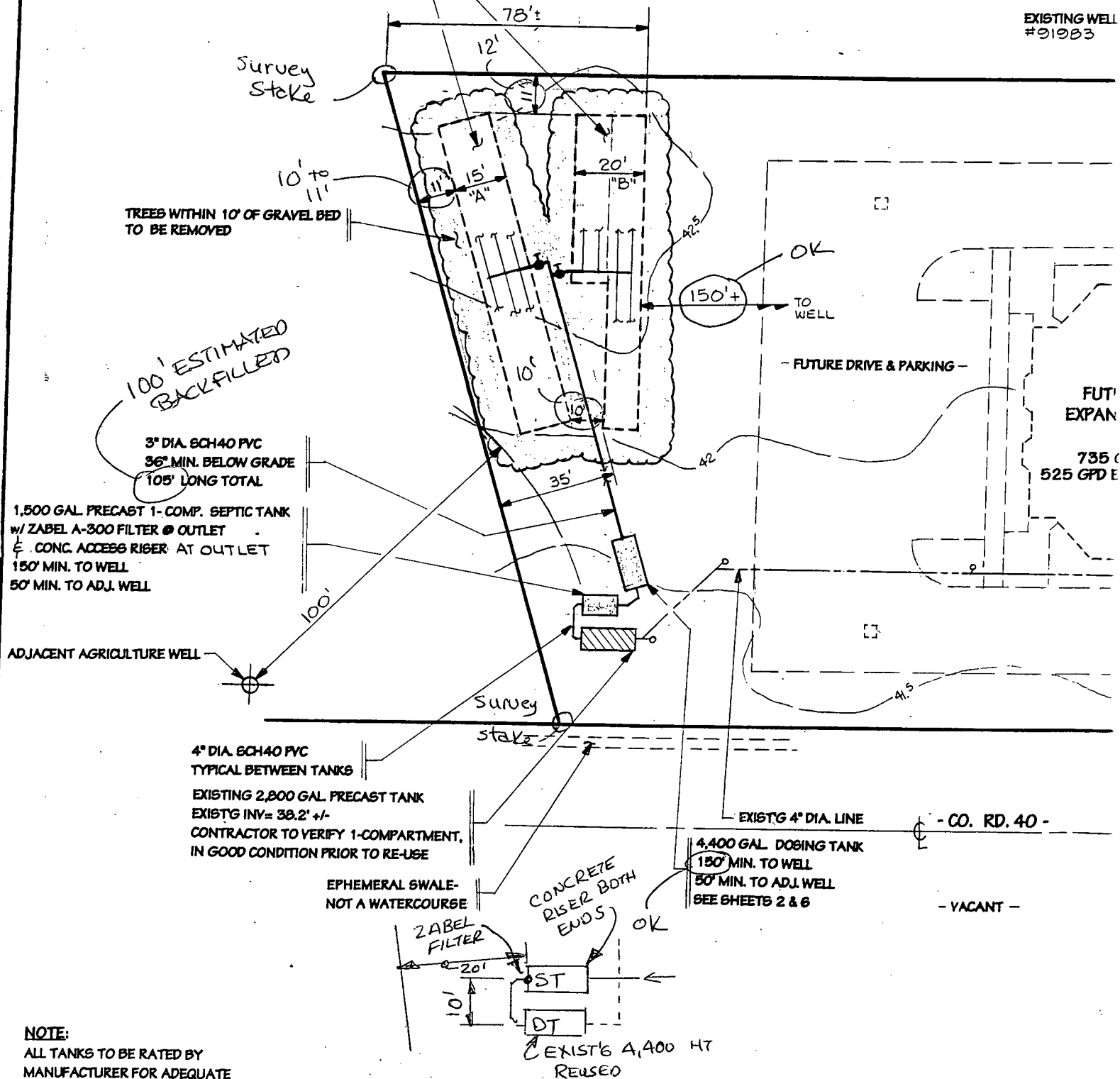
Engineer (or Designee) Signature: 

Date: 10-13-00

RECEIVED
 OCT 16 2000
 GROUND WATER
 - VACANT -

EXISTING WELL
 #21983

SAND-LINED CAPPING-FILL BED
 "A" - 15' x 94'
 "B" - 10' x 141'
 w/ 10' PERIMETER (MAX)
 SEE SHEETS 3, 4 & 5



1,500 GAL PRECAST 1-COMP. SEPTIC TANK
 w/ ZABEL A-300 FILTER @ OUTLET
 & CONC. ACCESS RISER AT OUTLET
 150' MIN. TO WELL
 50' MIN. TO ADJ. WELL

100' ESTIMATED
 BACKFILLED

3" DIA. SCH40 PVC
 36" MIN. BELOW GRADE
 105' LONG TOTAL

ADJACENT AGRICULTURE WELL

4" DIA. SCH40 PVC
 TYPICAL BETWEEN TANKS
 EXIST'G 2,800 GAL PRECAST TANK
 EXIST'G INV = 38.2' +/-
 CONTRACTOR TO VERIFY 1-COMPARTMENT,
 IN GOOD CONDITION PRIOR TO RE-USE

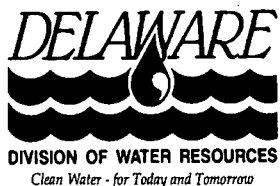
EPHEMERAL SWALE -
 NOT A WATERCOURSE

CONCRETE
 RISER BOTH
 ENDS

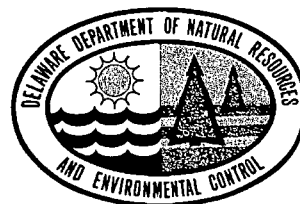
4,400 GAL DOSING TANK
 150' MIN. TO WELL
 50' MIN. TO ADJ. WELL
 SEE SHEETS 2 & 6

EXIST'G 4,400 HT
 REUSED

NOTE:
 ALL TANKS TO BE RATED BY
 MANUFACTURER FOR ADEQUATE
 STRUCTURAL STRENGTH AT
 ACTUAL INSTALLATION DEPTH



PERMIT
168803-S



Tax Map Number: 1-31-10-89.01

1 of 18 page(s)

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

Dual Development Corporation
ATTN: Chuck Rendulic, 801 Middleford Road, Seaford, DE 19973

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

Construction must be completed on or before 12/01/00, 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.

**COPY FOR LOCAL
GOVERNMENT USE**
[Handwritten Signature]

AUTHORIZED SIGNATURE
12/01/99

DATE



APPLICATION - PERMIT
ON-SITE WASTEWATER SYSTEM



RECEIVED
NOV 04 1999

168803-S

OWNER'S NAME: Dual Development Corporation
Nanticoke Memorial Hospital GROUND W629-6611 Ext. 2470

ADDRESS: Attn: Chuck Rendulic 801 Middleford Road Seaford, DE 19973

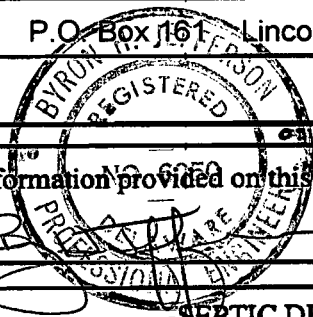
PROJECT LOCATION: NorthWest corner of intersection between Route 13 and Co Rd 40

TAX/MAP #: 1-31-10-89.01

APPLICATION PREPARER: Byron H. Jefferson, P.E. DNREC LICENSE #: 2160

PREPARER'S ADDRESS: P.O. Box 161 Lincoln, DE 19960

PHONE: (302) 422-9568



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

Preparer's Signature: [Signature] Date: 11-1-99

SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

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

CF = Cap & Fill / FD = Full Depth

- [] Low Pressure Pipe (CF)
[] Wisconsin At-Grade
[X] Pressure Dose (CF)
[] Subsurface Micro Irrigation
[] Gravity (CF)
[] Other

- [X] Bed or [] Trench Sand-lined [X] Yes [] No
[] Gravelless Chamber or [X] Stone/Gravel Existing System Malfunctioning [] Yes [] No [X] N/A

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

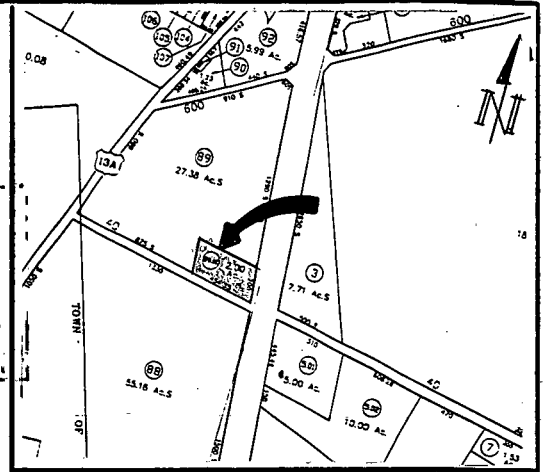
of Bedrooms: n/a
Avg. Percolation Rate: 25 MPI Assigned
Gallons Per Day Flow: 1,470 (1,050 equalized)
Minimum Sq. Ft. Rcq'd: 2,205
Sq. Ft. Proposed: 2,820

Central Water Available [] Yes [X] No
(If yes, please state Utility Name:)

- SITE PLAN & CROSS SECTION -
(INDICATE DIRECTION OF NORTH & SCALE OF SITE PLAN)

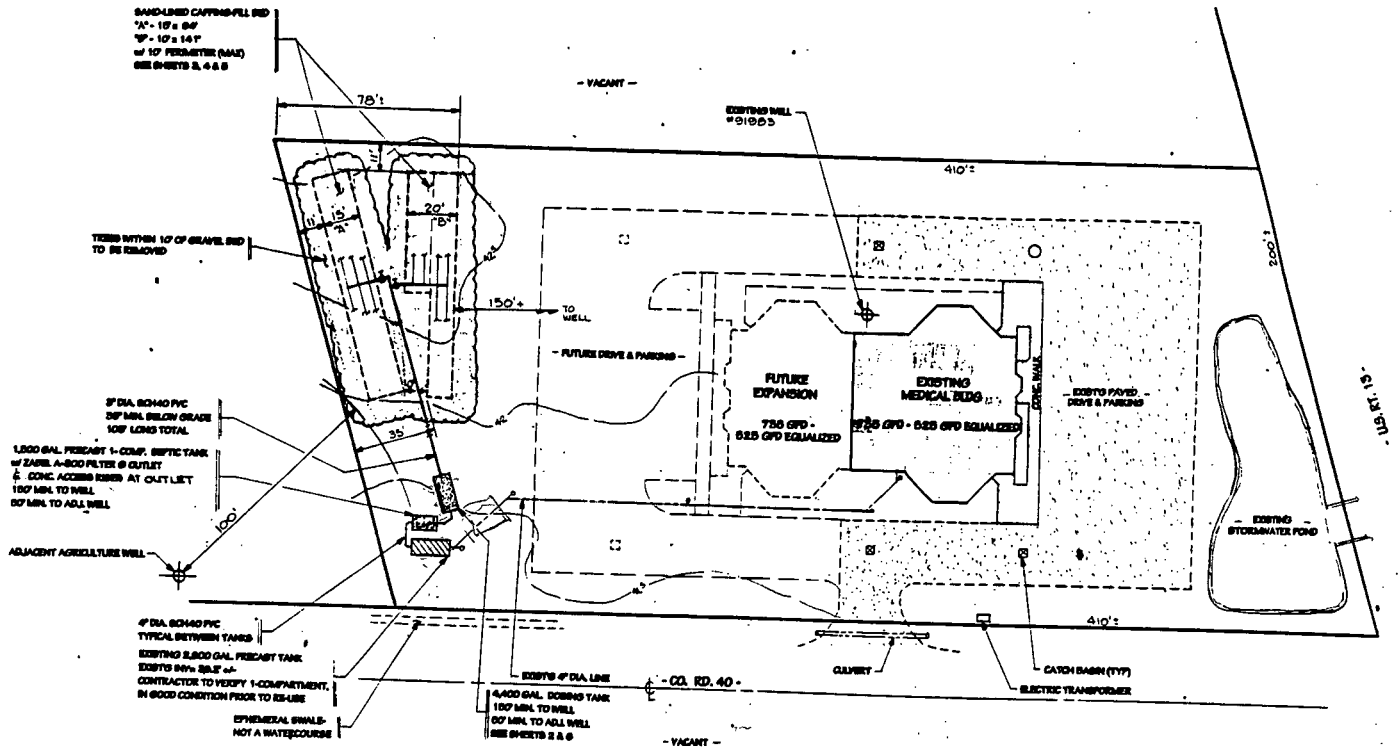
SEE SHEET 1 ATTACHED
FOR PLOT PLAN DETAILS

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GROUND WATER



DENSITY:
SITE AREA = 1.805 ACRES
IMPERVIOUS AREA DRAINS
TO STORM POND - TOTAL
EFFLUENT DISCHARGES
TO SITE LIMITED TO
1,805 GPD BY DENSITY

SPARE AREA
EXCAVATE INITIAL SYSTEM &
LOCATE SAND-LINED BED IN
SAME LOCATION AS INITIAL BEDS.



NOTE:
ALL TANKS TO BE RATED BY
MANUFACTURER FOR ADEQUATE
STRUCTURAL STRENGTH AT
ACTUAL INSTALLATION DEPTH

OWNER'S/AUTHORIZED AGENT SIGNATURE:

[Handwritten Signature]

DATE:

10-8-99

*A copy of this page must be submitted with both the septic system and well construction report(s).

GENERAL NOTES

1. DESIGN DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
2. THE CONTRACTOR SHALL LOCATE ALL BURIED UTILITIES PRIOR TO EXCAVATION. NOTIFY "MISS UTILITY" THREE (3) WORKING DAYS PRIOR TO EXCAVATION @ 1-800-282-8555.
3. DESIGN LAY-OUT IS BASED UPON INFORMATION REPORTED IN THE SITE EVALUATION, STATEMENTS BY OWNER AND INTERESTED PARTIES, AND PRE-DESIGN OBSERVATIONS ON SITE. ALL INFORMATION IS BELIEVED CORRECT; HOWEVER, NO PROPERTY SURVEY, TITLE SEARCH, OR PROPERTY LINE STAKEOUT HAS BEEN PERFORMED. THIS DESIGN MAY NO LONGER BE VALID IF SITE LAYOUT OR CONDITIONS CHANGE.
4. OWNER SHALL PROVIDE CONTRACTOR WITH ACTUAL FIELD LOCATION OF PROPERTY LINES PRIOR TO START OF CONSTRUCTION.
5. NO WETLANDS DELINEATION HAS BEEN PERFORMED. THIS PERMIT DOES NOT CONSTITUTE A PERMIT FOR CONSTRUCTION IN WETLANDS, IF PRESENT ON SITE. IF SUCH CONSTRUCTION IS ANTICIPATED, OWNER SHOULD OBTAIN NECESSARY PERMITS FROM APPROPRIATE AGENCIES PRIOR TO CONSTRUCTION.
6. IT IS VERY IMPORTANT TO AVOID SOILS COMPACTION IN DISPOSAL AREAS. OWNER AND CONTRACTOR SHALL USE ALL MEANS NECESSARY TO PREVENT SOILS COMPACTION IN DISPOSAL AREAS, INCLUDING BUT NOT NECESSARILY LIMITED TO: ROPING OFF DISPOSAL AREAS TO PREVENT CONSTRUCTION OR VEHICULAR TRAFFIC; CONDUCTING ALL LAND CLEARING SO AS TO MINIMIZE SOILS DISTURBANCE; USE OF SUCH SEPTIC CONSTRUCTION METHODS AND EQUIPMENT AS NECESSARY TO AVOID DISPOSAL AREA SOILS COMPACTION.
7. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL LAY-OUT ENTIRE SEPTIC SYSTEM ON SITE AND VERIFY THE LOCATION OF ALL ON-SITE AND ADJACENT WELLS TO ENSURE THAT ALL COMPONENTS CAN BE INSTALLED IN ACCORDANCE WITH PERMIT CONDITIONS. SHOULD ANY SITE CHANGES OR PROBLEMS AFFECTING PERMIT CONDITIONS BE NOTED, INCLUDING BUT NOT LIMITED TO SOILS COMPACTION IN DISPOSAL AREAS OR WELLS LOCATED WITHIN REQUIRED ISOLATION DISTANCES, THE CONTRACTOR SHALL NOTIFY DNREC (NEW CASTLE OR KENT CO. @ 739-4761; SUSSEX CO. @ 858-4581) AND THE ENGINEER (BYRON JEFFERSON @ 422-9588) BEFORE PROCEEDING WITH CONSTRUCTION.
8. IF HIGH WATER CONDITIONS ARE ENCOUNTERED ON SITE DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR ADDITIONAL INSTRUCTIONS REGARDING TANK INSTALLATION, TO PREVENT TANK LEAKAGE OR FLOTATION. PLACEMENT OF TANKS INTO WATER DEPTHS OF 30" OR MORE IS CAUSE FOR THIS NOTIFICATION. THIS APPLIES TO BOTH DOSING AND SEPTIC TANKS.
9. BUILDING/HOME CONTRACTOR MUST TAKE CARE WITH BUILDING/HOME PLANNING & CONSTRUCTION/ PLACEMENT TO ENSURE THAT THE SEWER LINE EXITS THE BUILDING/HOME SUFFICIENTLY HIGH TO ALLOW GRAVITY FLOW TO THE SEPTIC TANK.

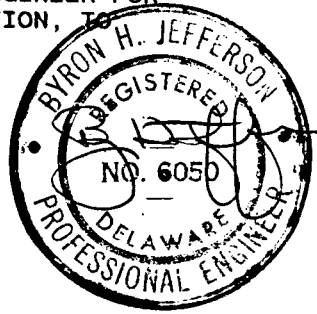
DRAWING INDEX

SHT #	REV	TITLE
1	0	SEPTIC PLOT PLAN
2	0	DOSING TANK
3	0	BED DETAIL
4	0	BED DETAIL
5	0	BED DETAILS
6	0	CONTROL DETAIL

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 GROUND WATER

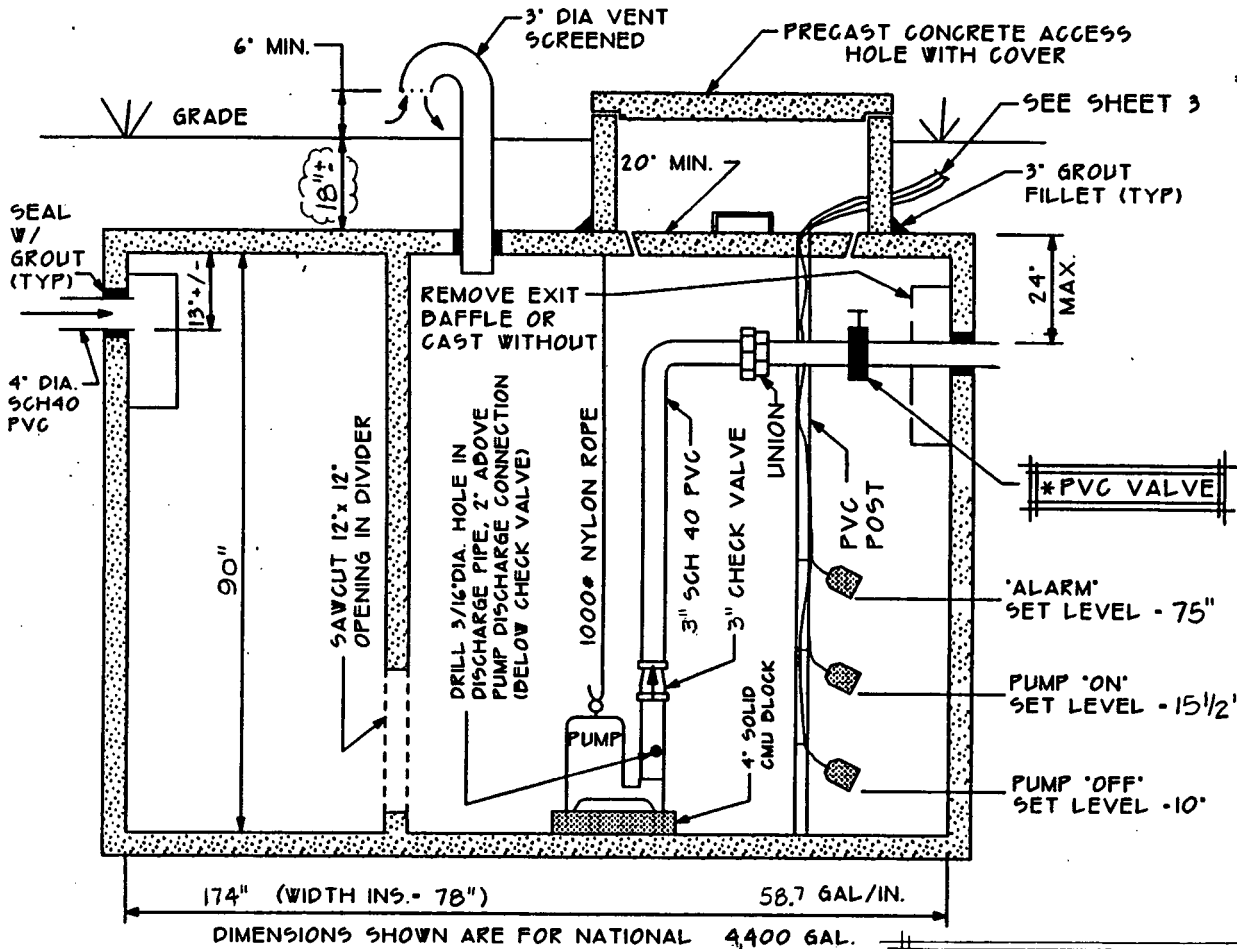
16803-5

PAGE 7 OF 18 PAGES



▶ DENOTES REVISED ITEMS

DRAWING INDEX & GENERAL NOTES	
DUAL DEVELOPMENT CORP.	
BYRON H. JEFFERSON, P.E. P.O. BOX 161 LINCOLN, DE 19960 302-422-9568	DATE: 11-1-99
	SHEET 0



174" (WIDTH INS. - 78") 58.7 GAL/IN.
 DIMENSIONS SHOWN ARE FOR NATIONAL 4400 GAL.

ELEVATION VIEW

EFFECTIVE DOSE PER CYCLE - 323 GAL

* GATE VALVE - ADJUST FOR 2.3' WATER COLUMN AT REF. PT.'s "A" & "B" SEE SHEETS 3 & 4

NOTES

1. ALL ELECTRICAL CONNECTIONS INSIDE TANK TO BE EXPLOSION PROOF, CORROSION RESISTANT AND WATERPROOF.
2. ELECTRICAL INSTALLATIONS SHALL MEET ALL REQUIREMENTS OF NEC, LATEST EDITION.
3. CONTACT ENGINEER FOR CHECK-OUT OF SYSTEM INSTALLATION AND OPERATION PRIOR TO PLACING THE DOSING TANK IN OPERATION.
4. EQUIPMENT: (SEE SHEET 6)

FLOAT SWITCHES - MERCURY TUBE TYPE SEALED IN FLOAT BALL AND RATED FOR VOLTAGE AND AMPERAGE OF SERVICE. FLOATS ARE NOT TO BE LOCATED DIRECTLY BELOW TANK INLET.

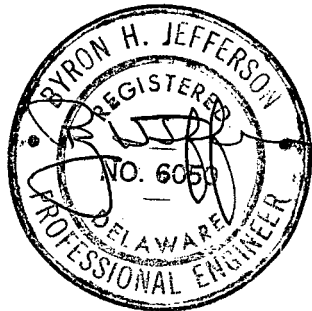
ENCLOSURES - TO BE RATED FOR MOUNTING LOCATION. NEMA-1 FOR INSIDE USE OR NEMA-3R FOR OUTSIDE USE.

HIGH LEVEL ALARM - TO OPERATE ON 115 VOLT AC. CIRCUIT ON SEPARATE FROM PUMP. ALARM TO ACTIVATE BOTH RED-LITE AND BELL OR BUZZER.

PUMP - GOULDS MODEL 3887 OR EQUAL. 3/4 HP, 230 VOLT AC, 1 PHASE, 120 GPM AT 15.9 FT., SUBMERSIBLE SEWAGE.

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 NOV 04 1999
 GROUND WATER

PAGE 2 OF 18 PAGES



▶ DENOTES REVISED ITEMS

DOSING TANK DETAIL
 DUAL DEVELOPMENT CORP.

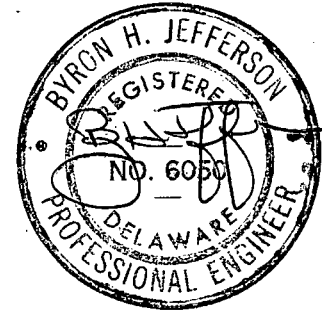
BYRON H. JEFFERSON, P. E.
 P. O. BOX 161
 LINCOLN, DE 19960
 302-422-9568

DATE: 11-1-99
 SCALE: NTS
 SHEET 2

165803-SEP0001



SEE SHEET 1
FOR ORIENTATION



REF. PT. "A" -
TEE w/ CAP TO BE USED TO
TEMPORARILY CONNECT
PRESSURE-MEASURING DEVICE

1 1/2" DIA SCH40 PVC
-NO HOLES-
(BOTH ENDS)

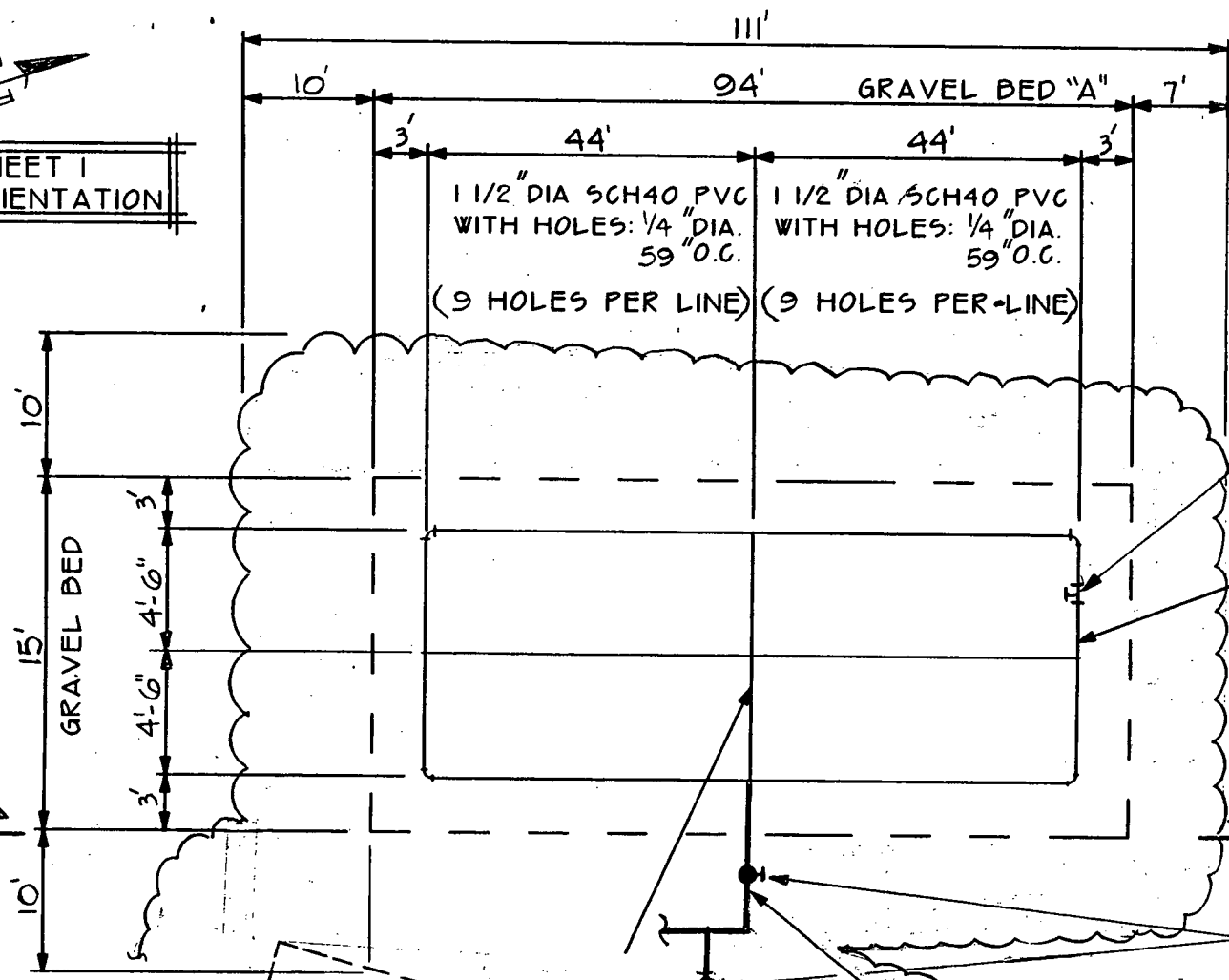
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GROUND WATER

3" GATE VALVE w/ ACCESS
TO GRADE USE TO ADJUST
PRESSURE FOR 2.3' WATER
COLUMN AT REF. PT.'s "A" & "B"

SEE SHEET 1 FOR
TRANSMISSION LINE INFORMATION

2" DIA. SCH40 PVC
MANIFOLD

PLAN VIEW



NOTE:
EDGE OF GRAVEL TO
BE 10' MINIMUM FROM
BUILDINGS, PROPERTY
LINES, AND EASEMENTS.

▶ DENOTES REVISED ITEMS

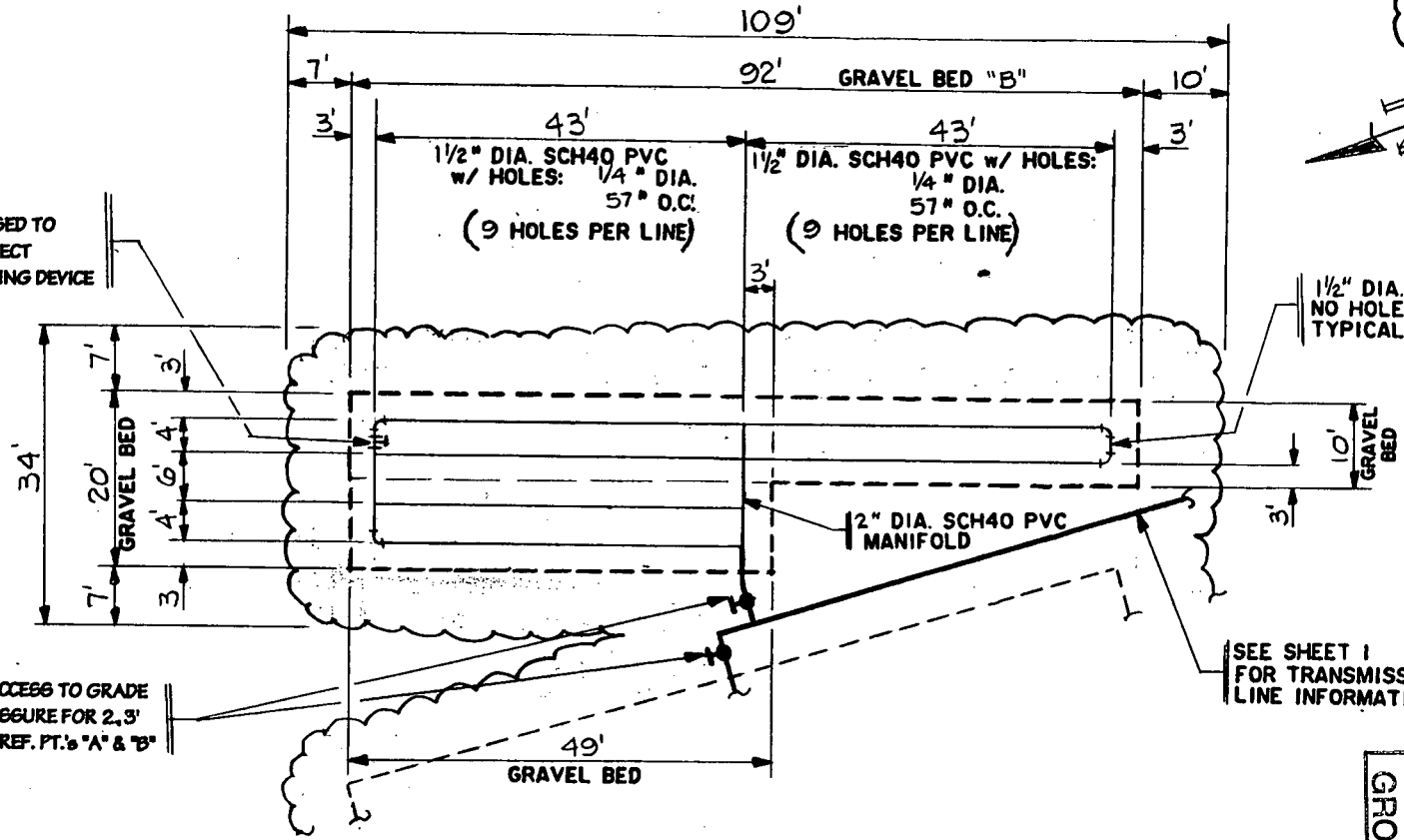
CAPPING- FILL BED "A"	
DUAL DEVELOPMENT CORP.	
BYRON H. JEFFERSON, P.E. P.O. BOX 161 LINCOLN, DE 19960 302-422-9568	DATE: 11-1-99 SCALE: NTS SHEET 3

166603-5

SEE SHEET I FOR ORIENTATION



REF. PT. "B" -
TEE w/ CAP TO BE USED TO
TEMPORARILY CONNECT
PRESSURE-MEASURING DEVICE

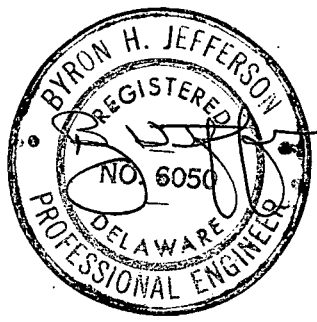


3" GATE VALVE w/ ACCESS TO GRADE
USE TO ADJUST PRESSURE FOR 2.3'
WATER COLUMN AT REF. PT.'s "A" & "B"

SEE SHEET I
FOR TRANSMISSION
LINE INFORMATION.

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 GROUND WATER

PLAN VIEW

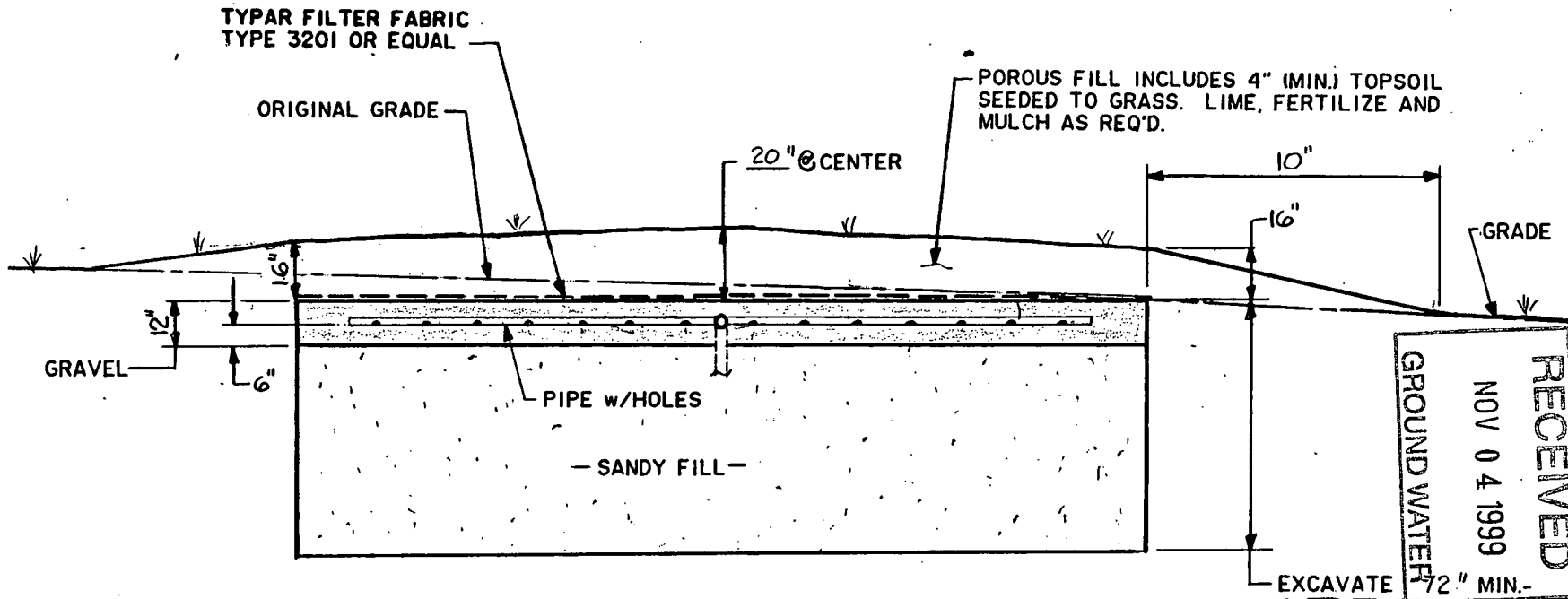


NOTE:
EDGE OF GRAVEL BED TO BE
10' MIN. FROM PROPERTY
LINES & BUILDINGS.

▶ DENOTES REVISED ITEMS

BED DETAILS - "B"	
DUAL DEVELOPM'NT CORP.	
BYRON H. JEFFERSON, P.E. P.O. BOX 161 LINCOLN, DE 19960 302-422-9568	DATE: 11-1-99
	SCALE: NTS
	SHEET 4

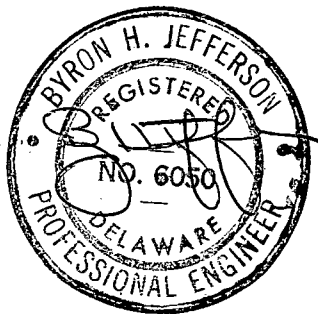
166802-5



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 GROUND WATER

EXCAVATE 72" MIN.-
 CONTACT SOIL SCIENTIST TO VERIFY CORRECT DEPTH OF EXCAVATION PRIOR TO PLACEMENT OF SANDY FILL

SECTION "A-A"



DENOTES REVISED ITEMS

BED DETAIL SAND-LINED CAPPING-FILL	
BYRON H. JEFFERSON, P.E. P.O. BOX 161 LINCOLN, DE 19960 302-422-9568	DATE: 11-1-99
	SCALE: NTS
	SHEET 5

15503-5

TANK ALERT II PLUS
TREATED 4x4 WOOD POST

NOTE:

Timer to be set for "ON" 3 times daily (at 7 AM, 3 PM, 11 PM, - AM) for 3 minutes run duration each time.

OMRON H5L-A TIME SWITCH (15 AMP) OR EQUAL

PLASTIC NEMA-3R ENCLOSURE - SHOWN w/COVER & GASKET REMOVED FOR CLARITY

TO CIRCUIT BREAKER

WEATHERPROOF DUPLEX OUTLET (TO PLUG IN PUMP CABLE)

GRADE

TO CIRCUIT BREAKER

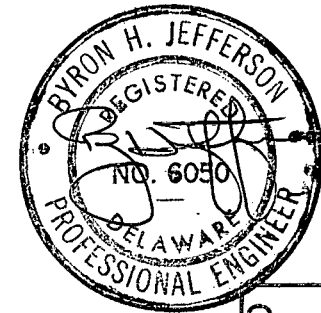
POWER CORD FROM PUMP

ALARM

PUMP "ON"

PUMP "OFF"

FLOATS IN DOSING TANK (SEE SHEET 2)



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NOV 04 1999
GROUND WATER

**CONTROL DETAIL
DUAL DEVELOPMENT CORP.**

BYRON H. JEFFERSON
P.O. BOX 161
LINCOLN, DE 19960

DATE: 11-1-99

SCALE: NTS

SHEET 6

▶ DENOTES REVISION

168803-5

Performance Curve

MODEL

3887

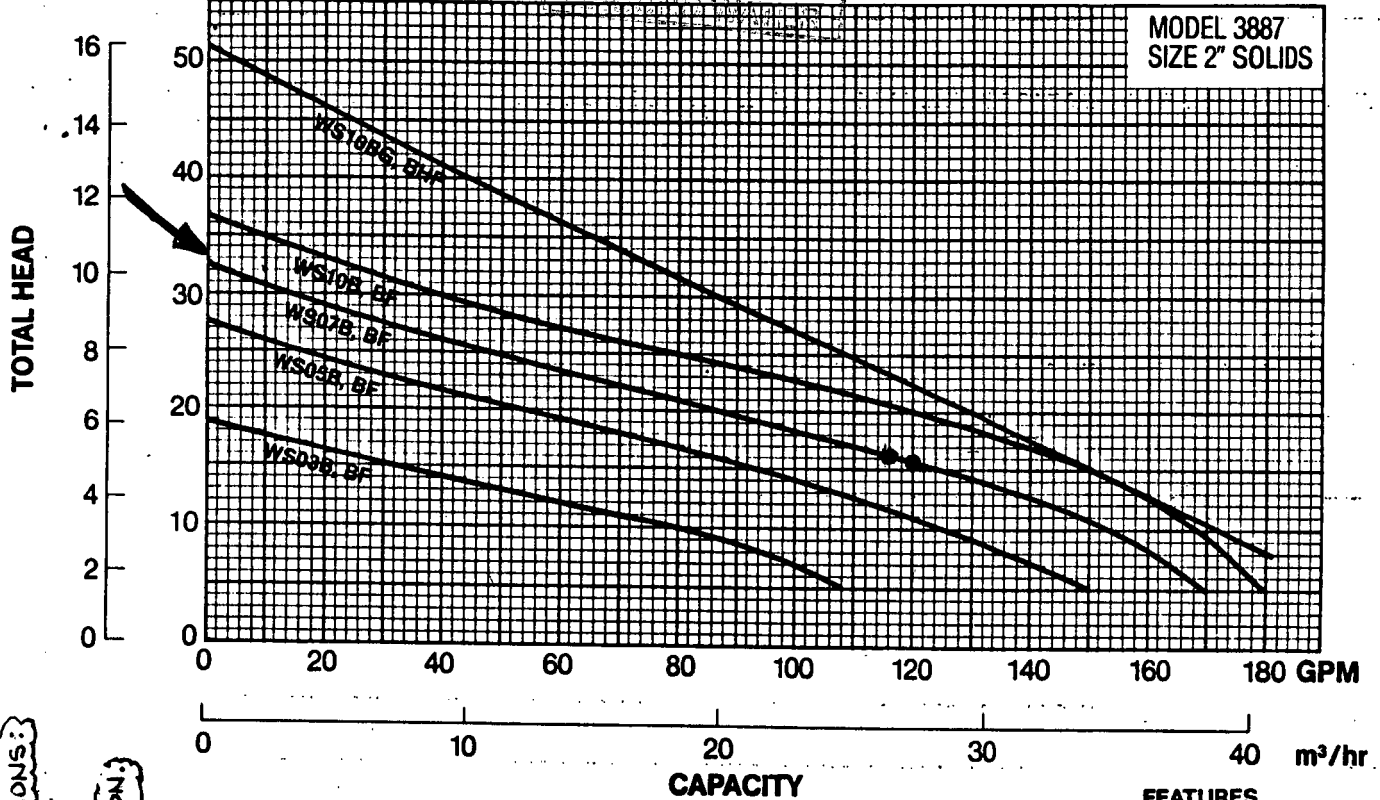
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NOV 04 1999

Submersible Sewage Pumps

1688035

METERS FEET



MODEL 3887
SIZE 2" SOLIDS

PER GOULDS INSTRUCTIONS:
DRILL 3/16" HOLE IN DISCHARGE PIPE, 2" ABOVE PUMP DISCHARGE CONNECTION.



"A" - 120 GPM @ 15.9 FT
"B" - 115 GPM @ 16.4 FT

FEATURES

- Impeller:** Cast iron — semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation.
- Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge adaptable for slide rail systems.
- Mechanical Seal:** Ceramic vs carbon sealing faces, stainless steel metal parts, Buna N elastomers.
- Shaft:** Corrosion resistant stainless steel. Threaded design. Locknut on three phase models to guard against component damage on accidental reverse rotation.
- Motor:** Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. Designed for continuous operation. All ratings are within the working limits of the motor.
- Bearings:** Upper and lower heavy duty ball bearings 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.
- O-Ring:** Assures positive sealing against contaminants and oil leakage.

SPECIFICATIONS

Pump:
Solids Handling Capabilities:
2" maximum
Capacities: Up to 180 GPM
Total Heads: Up to 49 feet TDH
Discharge types available:
2" NPT threaded casing,
2" NPT threaded companion flange — "BF" or "BHF" units.
Optional 3" NPT threaded companion flange — "BF" or "BHF" units, must order (A1-3) companion flange separately.
Mechanical Seal: Carbon rotary/ceramic stationary, 300 series: stainless steel metal parts, BUNA-N elastomers.
Temperature: 160°F (71°C) maximum.
Fasteners: 300 series stainless steel.
Capable of running dry without damage to components.

Motor:

Single Phase: 1/3-1/2 HP 115V or 230V, 60 Hz, 1750 RPM; 1 HP 230V, 60 Hz, 1750 RPM; 1 HP, 230V, 60 Hz, 3500 RPM. Built in overload with automatic reset.
Three Phase: 1/2-1 HP 208/230-460V, 60 Hz, 1750 RPM; 1 HP 208/230-460V, 60 Hz, 3500 RPM. Overload protection must be provided in starter unit.
Shaft: Threaded 400 series stainless steel.
Bearings: Ball bearings — upper and lower.
Power Cord: 15' standard (optional lengths available).
Single Phase: 1/3-1/2 HP, 16/3 SJTO with three prong plug; 1/4 and 1 HP, 14/3 STO with bare leads.
Three Phase: 1/2-1 HP 14/4 STO with bare leads.
On CSA listed models: 20' length SJTW or STW are standard.

TANK ALERT® II PLUS

ALARM SYSTEM/PUMP CONTROL

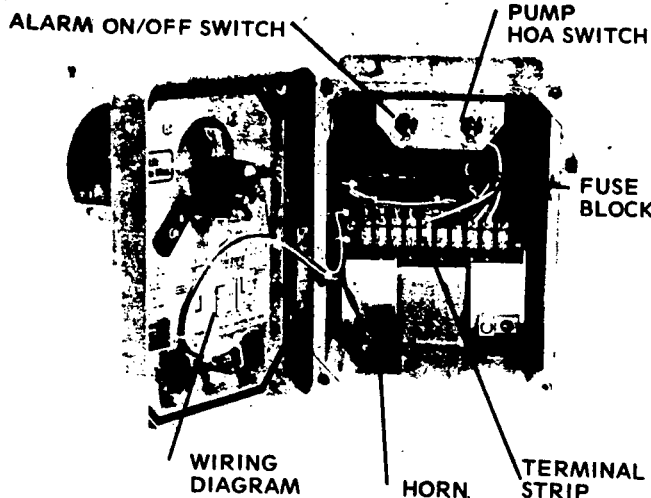
An economical, quality indoor or outdoor liquid level alarm system/pump control.

ADVANTAGES

- * Controls your pump and warns of high or low liquid level.
- * If pump should fail, pulsating horn and flashing red light are activated by a reliable alarm float.
- * The pump float assures of correct pump on-off level.
- * Mounting straps for both alarm float and pump float included with unit.
- * Both alarm float and pump float come standard with twenty feet of cable.
- * HOA switch allows for Hand (manual), Off, or Automatic pump operation.
- * Alarm on/off switch controls power to the float circuitry. This and the pump HOA switch provide an additional safety feature when servicing.
- * Green pump run light.
- * Horn silence switch has automatic reset feature.
- * Push-to-test switch assures of proper horn and light alarm operation.
- * NEMA 4X non-metallic enclosure—exposed parts are corrosion, wind and rain resistant.
- * Simple terminal strip and wiring diagram also provides for Double Float pump switch installation. (Double Float pump switch may be substituted for Super Single pump switch at a nominal extra cost. See page 4.)
- * **ENTIRE UNIT UL Listed and CSA Certified.**
- * **Two-year limited warranty.**

APPLICATION

A single control panel, plus two easily installed floats, provides residential and commercial customers with a reliable means of controlling simplex (one pump) systems in a water or sewage installation. Common applications include pump chambers, sump pump basins, irrigation systems, etc.



UL NOV 04 1999



DESCRIPTION

The Tank Alert® II Plus consists of a control panel, a pump float, and an alarm float.

CONTROL PANEL EXTERIOR: The non-corrosive, indoor and/or outdoor enclosure comes preassembled. The green pump run light, silence switch (with automatic reset feature), and alarm test switch are conveniently accessible on the front of the panel.

CONTROL PANEL INTERIOR: The interior alarm system consists of a high-quality alarm relay, a solid-state flasher, a weather-proof horn, and a standard light bulb that are all fuse protected.

A handy HOA switch allows for either Hand (manual), Off, or Automatic pump operation. A second switch is provided as an on/off for control panel alarm system. These switches are located inside the panel to protect against activation by unauthorized personnel.

PUMP FLOAT: SJE's Super Single pump switch model 20SS WOP.

ALARM FLOAT: SJE's Sensor Float model 20PC.

A terminal strip with easy-to-follow wiring diagram provides for simple installation of both alarm and pump floats.

FLASHING
ALARM LIGHT

CONTROL
PANEL

PUSH-TO-TEST
ALARM SWITCH

PUMP RUN LIGHT

SILENCE/AUTOMATIC
RESET SWITCH

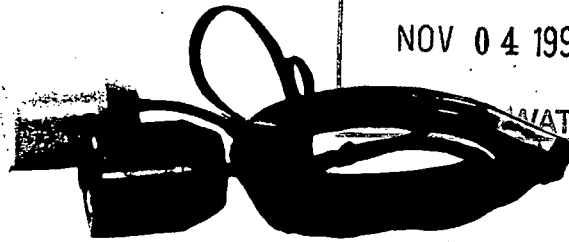
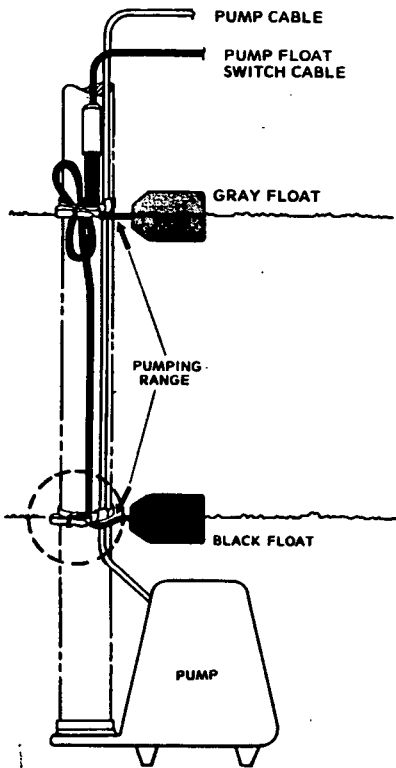


TANK ALERT® II PLUS INSTALLATION OPTIONS

DOUBLE FLOAT PUMP SWITCH

- Very accurately measures liquids in a wide pump range:
1" (2.54 cm) - 48" (121.92 cm).
- May be used with large or small pump chambers.
- Not sensitive to turbulence.

Figure A



DESCRIPTION

The Double Float pump switch consists of two floats ("on" float and "off" float), two cables, and two releasable mounting straps. The sealed floats contain heavy-duty mercury tilt switches with a holding relay sealed inside one float.

ELECTRICAL: 120V MODEL: 120V 60 Hz 1 HP-single phase
230V MODEL: 230V 60 Hz 2 HP-single phase

WARNING:

Connect 120V Double Float controls to 120 Volts only.
Connect 230V Double Float controls to 230 Volts only.

When ordering Double Float pump switch, specify 120V or 230V Model.

INSTALLATION

1. Decide the pumping range for your installation. (See Figure A). The distance between the float straps is the pumping range. Securely strap the float cables to the discharge pipe for the pump range you desire. The gray float must be the top float.
2. Allow the pump to cycle once to check your installation. (Float straps are releasable which permits readjustment.)

U.S. Patent Numbers 4262216 and 4291261

FOR ALARM

Mercury Float Switch



A2-3

- Mercury Fluid Contacts
- Normally Open Design
- 150°F (65°C) Max. Temp.
- Includes:
 - Polyurethane Foam Float
 - 15', SJO, Neoprene Cord
 - Lead Weight and Mounting Strap
- Suitable for Pilot Control Duty up to 230V Max.

CHECK VALVES

PLASTIC CHECK VALVES

- Compression Seal Connection for Easy Installation
- Swing Design Flapper Prevents Clogging
- Available for Pipe Size 1¼", 2", 3"

Pipe Size

Order No.

1¼"

A9-12P

2"

A9-2P

3"

A9-3P



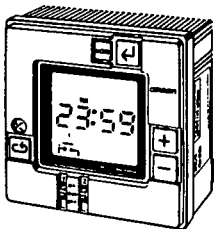
OMRON

Model H5L-A TIME SWITCH

INSTRUCTION MANUAL

Model H5L-A TIME SWITCH

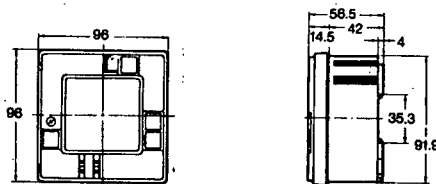
This manual primarily describes precautions required in installing, wiring and handling. When using the time switch, please refer to the pertinent catalog for detailed information.



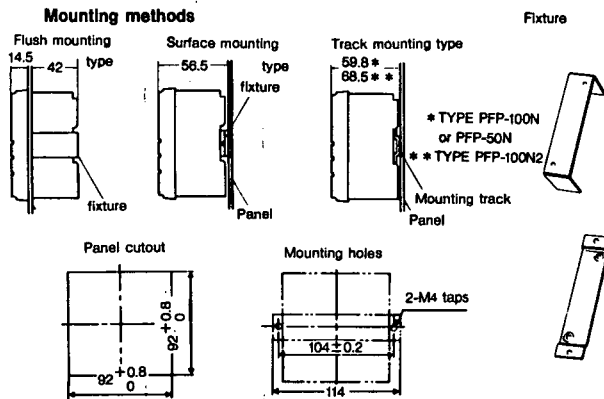
OMRON TATEISI ELECTRONICS CO.

0617439-OD

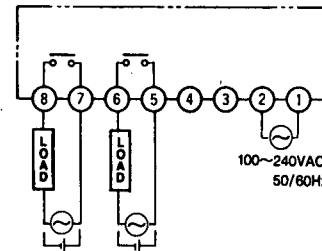
DIMENSIONS



MOUNTING METHOD and PANEL CUTOUT

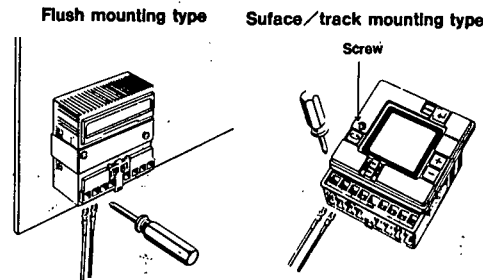


CONNECTIONS



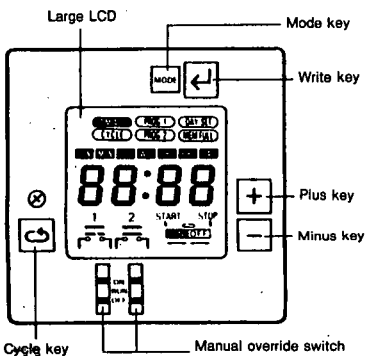
Connect the power between ① and ②, the load of circuit 2 between ⑤ and ⑥, and the load of circuit 1 between ⑦ and ⑧. The ③ and ④ should be remained vacant.

Connecting method



- ① Unfasten the screw on the surface.
- ② Slide the upper part by approx. 1.5cm.
- ③ Wire from above.
- ④ Slide the upper part to the place as before and fasten the screw.

NAMES OF RESPECTIVE PARTS



KEY OPERATIONS

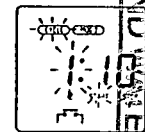
Key	Name	Function
[Mode]	Mode key	Changes program mode RUN mode → Current time setting mode → First circuit operation setting mode Second circuit weekday setting mode → Second circuit operation setting mode → First weekday setting mode
[Write]	Write key	<ul style="list-style-type: none"> ● To write the set data using [+] and/or [-] key ● Reads out the set program
[+]	Plus key	<ul style="list-style-type: none"> ● Changes "day of week" while setting day of week ● Changes "hours" or "minutes" while setting current time When [+] key is pressed continuously, the displayed digit increments continuously; when [-] key is pressed continuously, it decrements continuously.
[-]	Minus key	<ul style="list-style-type: none"> ● When specifying output. [+] key specifies output ON while [-] key, output OFF. Note that if the same key is pressed twice, the output specification becomes invalid; neither ON nor OFF is set.
[Cycle]	Cycle key	<ul style="list-style-type: none"> ● Specifies the cycle program. Pressing this key twice causes the set cycle program to be cleared.
[Manual Override]	Manual Override switch	ON: Turns ON output regardless of program RUN: Executes program OFF: Turns OFF output regardless of program First and second circuit can be operated independently.

Program Cancellation

- ① Cancellation of usual operation program (ON time / OFF time)
 Read out the program to be cancelled on LCD by pressing the [Mode] key. The output contact display (-) starts blinking. Then annul the output indication by pressing the [+] or [-] key so that the output indication may display " " (invalid) and start blinking. Press the [+] key for " " (output ON), and the [-] key for " " (output OFF). Finally, press the [Mode] key to complete cancellation.
- ② Cancellation of cycle program
 Read out cycle program to be cancelled. Then, press the [Mode] key and the [Cycle] key successively without changing the settings to cancel 4 steps simultaneously. The cycle program is cancelled though the start time display remains.

Program Error

- ① When the OFF time is set at the same hour and minute of the ON time, "hour" indication blinks twice faster than normal rate showing program error. In this case, try to set the OFF (or ON) time again.
- ② When ON/OFF program is superimposed into the cyclic period (from cycle start to cycle stop), the program error is indicated as shown below. Set the "hour" and "minute" outside the cyclic period.



- ③ When cycle program is superimposed on the existing program (ON time, OFF time, or cycle program), the program error is indicated as shown below. Change the start time or stop time of the cycle program not to overlap the other existing program.

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NOV 14 1979

GROUND WATER

ZABEL Filters Out Perform All Others!

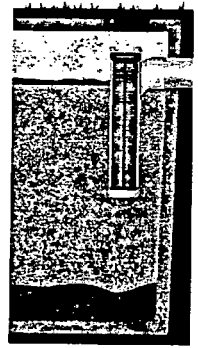
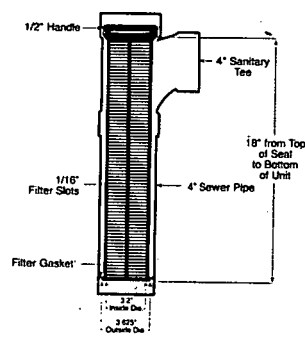
A-1800 Residential

LOWER COST: Lower cost than any other filter or screen.

FINER FILTRATION: 1/16" filtration is finest on the market.

EASIER INSTALLATION: Fits any 4" outlet T & pipe.

FLOW RATE: 800 GPD



U.S. Patent 5,382,357
5,482,621

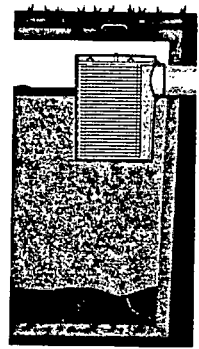
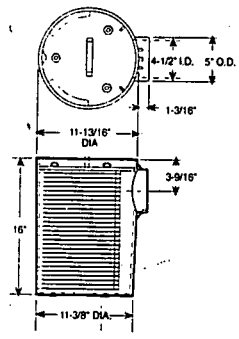
A-100 Commercial & Residential

BETTER PROTECTION: 198 Lineal feet of 1/16" filtration.

EASIER TO SERVICE: Reusable cartridge removes easily for cleaning.

PROVEN EFFECTIVE: 30 years of successful performance.

FLOW RATE: 3,000 GPD



U.S. Patent 4,710,295

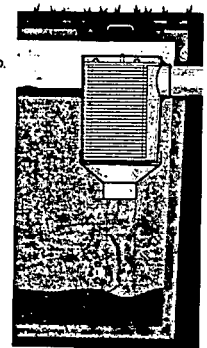
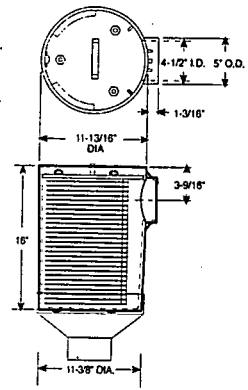
A-300 Industrial & Commercial

100's OF APPLICATIONS: Filters grease, hair, lint, flour, wastewater and more.

VERY BEST FILTRATION: 205 Lineal feet of 1/32" filtration.

HIGHEST EFFICIENCY: Removes up to 90% grease & solids and 45% BOD.

FLOW RATE: 3,000 GPD



U.S. Patent 4,710,295



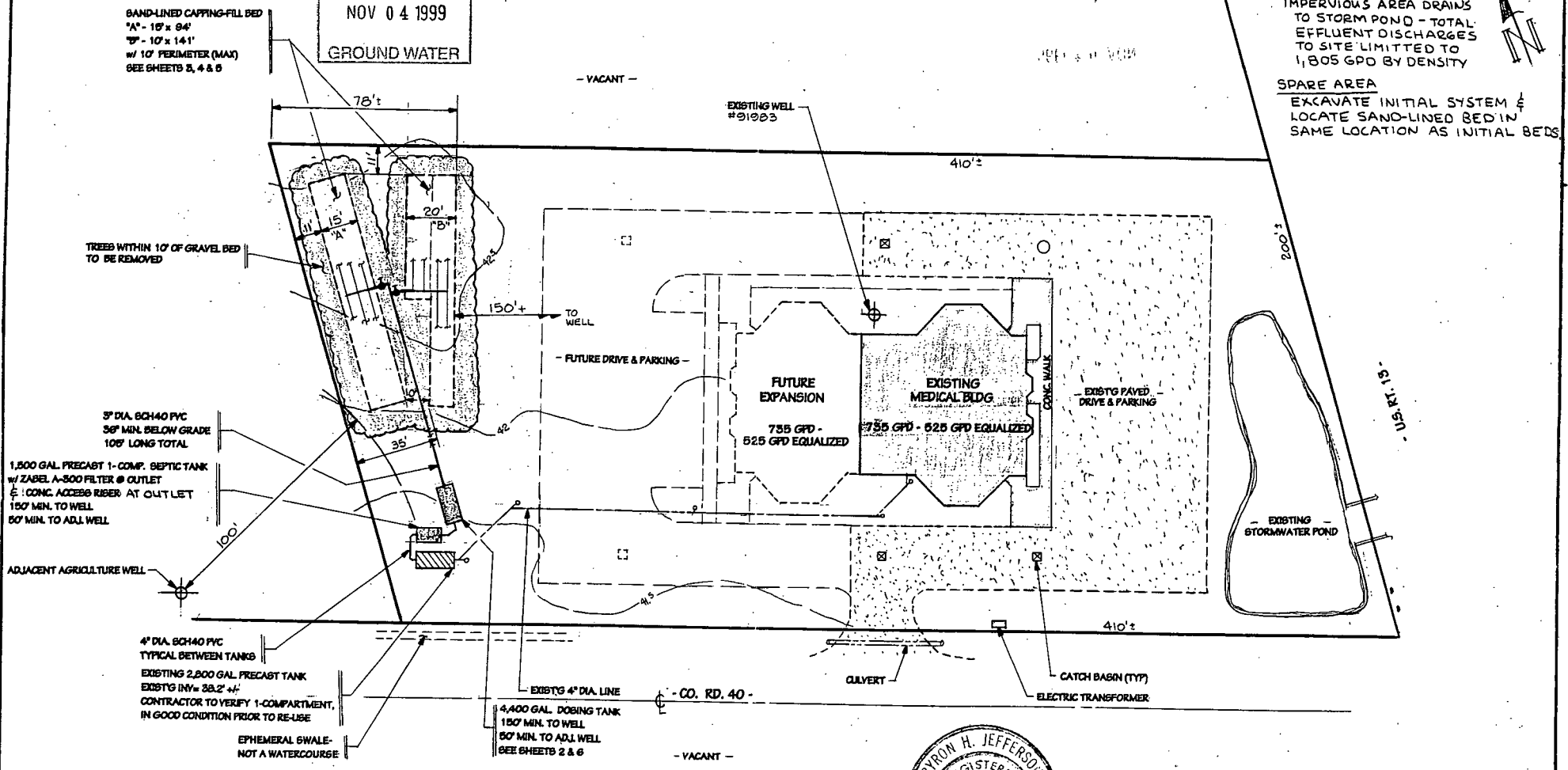
Zabel Environmental Technology
 10409 Watterson Trail
 Jeffersontown, KY 40299
 fax (502) 267-8801

Reprints available for your use.
 See Zabel pricelist page 47.

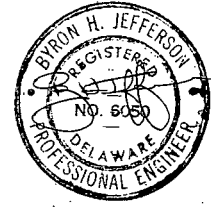
- This sheet available as:
- A handout
 - Point of sale
 - Poster

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NOV 04 1999
GROUND WATER

DENSITY:
SITE AREA = 1.805 ACRES
IMPERVIOUS AREA DRAINS
TO STORM POND - TOTAL
EFFLUENT DISCHARGES
TO SITE LIMITED TO
1,805 GPD BY DENSITY
SPARE AREA
EXCAVATE INITIAL SYSTEM &
LOCATE SAND-LINED BED IN
SAME LOCATION AS INITIAL BEDS



NOTE:
ALL TANKS TO BE RATED BY
MANUFACTURER FOR ADEQUATE
STRUCTURAL STRENGTH AT
ACTUAL INSTALLATION DEPTH

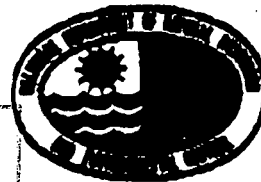


▶ DENOTES REVISED ITEMS

SEPTIC PLOT PLAN	
DUAL DEVELOPMENT CORP.	
BYRON H. JEFFERSON, P.E. P.O. BOX 161 LINCOLN, DE 19960 302-422-9568	DATE: 11-1-99
	SCALE: 1" = 40'
	SHEET 1



ON-SITE WASTEWATER SYSTEM CONSTRUCTION REPORT



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NOV 21 2000

(Please Type or Print Legibly)

GROUND WATER

Permit #: 168803-S

Tax Map#: 1-31-10-89.01

Installer's Name: Todd Wise

License #: 2401

Phone #: 398-9309

Construction Start Date: 9-22-00 Authorization #: 8246

Completion Date: 10-10-00

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:

- Replacement
New Construction
Component Replacement
Repair to Existing System
X replaced Holding Tank with drainfield

System Type:

- Low Pressure Pipe (FD)
Elevated Sand Mound
Pressure Dose (FD)
Holding Tank
Gravity (FD)
X Std. Pressure Dose (FD)
Std. Pressure Dose (CF)

Low Pressure Pipe (CF)

- Wisconsin At-Grade
Pressure Dose (CF)
Subsurface Micro Irrigation
Gravity (CF)
Other

X Bed or Trench

Gravelless Chamber or Stone/Gravel

Sand-lined Existing System Malfunctioning

X Yes No

Yes X No N/A

Pre-Treatment Units

- Bio-Clear
Klargester
X Septic Tank
Recirculating Sand Filter
Other

-AS-BUILT CONSTRUCTION CHANGES-

(Please describe any changes different from approved permit)

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

No Changes

See Engineers As BuilTs For Tank change!

I hereby affirm that the sewage disposal system for permit number 168803-S 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.

11-21-00 Date

Todd A. Wise Contractor's Signature

Certificate of Satisfactory Completion

Approved By [Signature] Date 11-22-00

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 / *2 md*

1. Permittee: Dual Dev Corp. Permit #: 168803-S 8246
 2. Contractor: Todd Wise License #: 2401 Phone #: _____
 3. Date/Time of Call: 11/21/00 9:30 System Ready: C/S 9/29/00
 4. Property Location: RT 13 & CR 40

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 _____

10. This Certificate of Satisfactory Completion is Issued: [] Yes [] No
 Violation Notice Posted (_____)

11. Inspector's Signature: _____ Date: 11-22-00
 12. Authorized to Cover Without Benefit of Department Inspection By: King McR...

13. Contractor's Certificate of Completion Report Required: [] Yes [] No

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SEP 17 1999

SITE EVALUATION
Approval Page

GROUND WATER

The soils on this site are approved when the following is completed in full and signed by the approving authority. Isolation distance requirements, limited area of suitable soils, placement of fill, removal of soil, or compaction of the evaluated area may preclude construction permit approval or modify the type of system that may be permitted. An approved report must accompany any permit application. This is not a construction permit.

Owner's Name and Address: Attn: Chuck Rendulic
Dual Development Corporation/Nanticoke Memorial Hospital
801 Middleford Road
Seaford, DE 19973

Tax Map #:
1-31-10-89.1

Initial Disposal System:

Pressurized sand-lined capping-fill seepage bed or trench disposal system. See exhibit N in the 1985 regulations. See design considerations and comments below for excavation depth.

Location of Initial Disposal System:

In the immediate vicinity of profile(s) 1, 2, 3, & 4 (hatched area on plot).

Depth to Limiting Zone:

>60"*

Replacement Disposal System:

Same as above if space permits. Otherwise, the replacement system may be sand-lined in the vicinity of the initial system.

Location of Replacement Disposal System:

In the immediate vicinity of profile(s) referred to above.

Depth to Limiting Zone:

Same as above.

Design Considerations and Comments:

Maintain all isolation distances specified in Exhibit "C" in the 1985 regulations.

The disposal system will be excavated to a depth of 72". An alternative design LPP or elevated sand mound disposal system may also be designed for soils in the hatched area on the plot with a design limiting zone of 28" and an estimated percolation rate of 90 minutes per inch.

* A capping-fill seepage bed or trench with the bottom of the aggregate at a depth of 12" is recommended to help maintain gas exchange at the soil/aggregate interface.

Instructions to Property Owner

1. Contact a Licensed Class C System Designer.
2. A permeability rate of 25 minutes per inch has been estimated for the soils on this site. These estimated rates are used to determine the required size of the disposal area. They are based on soil texture and are derived from tables developed by the DNREC. You may elect to use the estimated rate to size the disposal system or have the appropriate tests conducted. Contact the Site Evaluator at (302) 856-1853 or the DNREC at (302) 856-4561 in Sussex County, and (302) 739-4761 in Kent and New Castle Counties for testing information.
3. Read the attached site evaluation report for additional information.
4. Identify where the drainfield will be placed on the site and protect it from any vehicle overtravel or stockpiling of any construction materials. It is your responsibility to prevent soil compaction of the drainfield area!

This report has been prepared by: Bradley J. Cate 9/16/99
Eastern Shore Soil Services

License #: 2052

For Office Use Only

Field Checked no

Jan S. Wood
DNREC Reviewing Soil Scientist

9/22/99
Date

Disclaimer: Approval of a site evaluation indicates only that the site evaluation was conducted in compliance with the regulations. It is not an indication of the quality or correctness of the site evaluation.

System Replacement

Site Evaluation Report

Eastern Shore Soil Services
P.O. Box 411, Georgetown, DE 19947

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SEP 17 1999

(302) 856-1853 Fax (302) 856-2384

16-Sep-99

GROUND WATER

File #: 1959

Owner's Name and Address: Attn: Chuck Rendulic
Dual Development Corporation/Nanticoke Memorial Hospital
801 Middleford Road
Seaford, DE 19973

Telephone #: () - 0

Tax Map and Parcel #: 1-31-10-89.1 **County:** Sussex

Property Location: North side of CR 40, west side of Rt. 13

Name of Development: Bridgeville Medical Center

Lot #: N/A

Central Sewer Available: No **Central Water Available:** No

Date of Investigation: 9/9/99

Evaluated by Test Pits: Yes

Evaluated by Soil Borings: No

Profile #:	Depth to Limiting Zone:	Limiting Zone Inferred From:	Subgroup Taxon Classification:
1	23"	redoximorphic features	Aquic Hapludult
2	38"	redoximorphic features	Humic Hapludult
3	30"	redoximorphic features	Aquic Hapludult
4	34"	redoximorphic features	Aquic Hapludult

Summary of Evaluation:

This site occupies a level portion of a broad interstream divide. Depth to redoximorphic features was quite variable among pits evaluated and were associated with firm, brittle clay loam subhorizons with strongly expressed laminar bedding. These features were interpreted as evidence of differential permeability rather than a "water table". Single ring infiltrometer testing indicated an infiltration rate of .68 in/hr (88 min/in) in pits 2 & 3. Flow stopped in pit 1 and was not included in the average but helps illustrate the moderate to severe limitations of these soils. One test was conducted at a depth of 68" in pit 4 to assess permeability of the underlying coarser substratum materials. A value of 2.8 in/hr (21 min/in) was obtained. Soil profile 1 was interpreted as an anomaly with respect to redoximorphic feature depth.

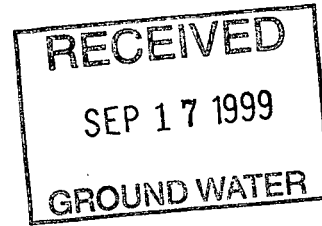
All soils evaluated meet current criteria for elevated sand mound or alternative design low pressure pipe disposal systems. Due to the restricted permeability however, sand-lining may be prudent with excavation to a depth of 72". Since the reduction is in response to differential permeability rather than a "water table", excavation will also ameliorate the limiting zone. A capping-fill seepage bed or trench is recommended however to help maintain gas exchange at the soil/aggregate interface.

Evaluated By: Bradley J. Cate
License #: 2052


Site Evaluator's Signature

Note:

Information contained in this site evaluation report and shown on the accompanying plot drawing reflects current Delaware Department of Natural Resources and Environmental Control (DNREC) policies and procedures at the time of evaluation review. Changes made to the property and to adjacent properties after the evaluation was conducted may preclude or modify on-site sewage disposal regardless of site evaluation approval. Data contained in this report may include information obtained from property owners, their agents, residents, adjacent residents, and departmental permits, when readily available. While this information is believed to be accurate it does not guarantee a septic permit and should not be construed as a survey. All information should be verified by interested parties prior to design and installation of the septic system. Interpretations made in this evaluation are intended for siting and design of a septic system only and are not suitable for other uses. Unless this report is accompanied by the review and approval page provided by the DNREC, it constitutes only a technical opinion rendered and does not constitute an approval for siting or design of any septic system on this site.



SOIL PROFILE NOTES

(302) 856-1853
FAX (302) 856-2384



EASTERN SHORE SOIL SERVICES
SITE EVALUATIONS, SOIL MAPPING & CLASSIFICATION,
LAND USE PLANNING, FEASIBILITY STUDIES

RECEIVED
 SEP 17 1999
GROUND WATER

BRADLEY CATE, CPSS/SC
Licensed Site Evaluator

P.O. BOX 411
GEORGETOWN, DE 19947

Profile #: 1
 Date of Test: 9/9/99 **GROUND WATER** or Test Pit
 Property Owner: AMH
 Property Location: MS Rt. 40, - 200' W of Rt. 13
 Site Evaluator: Bradley J. Cate, CPSS/SC License No.: 2052

Slope: 1% Relief: Level
 Estimated Permeability: Slow
 Depth to Limiting Zone: 23" to relaxation - phic features
 Soil Series Identified: Argic Hapludult

Horizon	Depth	Colors		Mottles Desc. Ab. S. Con.	Texture	Structure	Boundary/ Consistence
		Matrix	Mottles				
A	0 to 6	10YR 5/2	/		SL	img	As / u.fr
B	6 to 17	10YR 5/4	/		SL	w	CW ² / u.fr
Bt ₁	17 to 23	10YR 5/6	/		SCL *	w	gw / f
Bt ₂	23 to 40	10YR 4/6	5YR 4/6 10YR 6/1	CSP f3p	CL **	w	CF / fi
Bt ₃	40 to 67	10YR 4/6	5YR 4/6 10YR 6/1	CSP CSP	CL *	w	CW / fi
Bt ₄	67 to 74	10YR 5/6	7.5YR 5/3 10YR 6/1	f3d f3p	Stratified SL, SCL Bedding planes	(M) laminar	CW / fr
Bt _c	74 to 80	10YR 5/6	10YR 6/1	f3p	Stratified CS, SL	w	fr
	to						

Current Hydrology: > 80" ± to upper boundary of capillary fringe (or)
 "± to free water (if applicable)

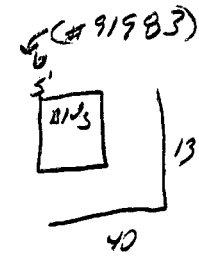
* 10% of gravel
 ** 20% fragments of 10YR 5/6 SL
 Infiltration test @ 30"

Site Evaluator's Signature

8' @ 90' up Irrig Well

165° Level
13

162°
105'

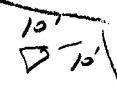


352°
207'

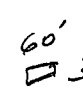
300-82' find



40'



70'



Rt. 40

Start 11:45

11:46 87 9.5
12:46 87 9 3/8
1:46 87 9 3/8
2:46 87 9 1/4
3:46 87 9.0

X wet near base of Ring

Start @ 11:30

11:43 99 9.0
12:43 99 1.0
1:48 98 9 1/4 3 3/4
2:43 98 6 1/8 3 1/8
3:48 98 3.5 2 5/8
4:43 98 0 7/8 2 5/8

X

Start 11:10

11:49 96 9 3/8
12:49 96 6 7/8
1:49 96 4 5/8
2:49 96 2 1/2 2 1/8
3:49 96 0 3/8 2 1/8

X

Start 11:20

11:50
12:50 93 3 1/8
1:50 92 5 5/8

Refill

2:04 93 10.0
2:50 93 2 5/8
3:20 92 9 7/8 4 7/8
3:50 92 5.0
4:20 92 0 1/8 4 1/8

X



SOIL PROFILE NOTES

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EASTERN SHORE SOIL SERVICES
SITE EVALUATIONS, SOIL MAPPING & CLASSIFICATION,
LAND USE PLANNING, FEASIBILITY STUDIES

SEP 17 1000
BRADLEY J. CATE, CPSS/SC
Licensed Site Evaluator

P.O. BOX 411
GEORGETOWN, DE 19947

GROUND WATER

Profile #: 2

Date of Test: 9/19/91 Soil Boring or Test Pit /

Property Owner: NH

Property Location: NB Rt. 40, ~200' W. of Rt. 13

Site Evaluator: Bradley J. Cate, CPSS/SC

License No.: 2052

Slope: 21% Relief: Level

Estimated Permeability: Slow

Depth to Limiting Zone: 39" to pedomorphologic features

Soil Series Identified: Homic Hapshistoll

Horizon	Depth	Colors		Mottles Desc. Ab. S. Con.	Texture	Structure	Boundaries / Consistence
		Matrix	Mottles				
<u>Ap</u>	<u>0 to 6</u>	<u>10YR 3/2</u>	<u>/</u>		<u>SL</u>	<u>mg</u>	<u>AS / ufr</u>
<u>Bt1</u>	<u>6 to 14</u>	<u>10YR 4/4</u>	<u>/</u>		<u>SCL *</u>	<u>—</u>	<u>cw / s</u>
<u>Bt2</u>	<u>14 to 22</u>	<u>7.5YR 4/6</u>	<u>/</u>		<u>SCLt *</u>	<u>—</u>	<u>cw / s</u>
<u>Bt3</u>	<u>22 to 30</u>	<u>10YR 4/6</u>	<u>/</u>		<u>CL *</u>	<u>10Cpr</u>	<u>cw / fi</u>
<u>Bt4</u>	<u>30 to 62</u>	<u>10YR 5/6</u>	<u>5YR 4/6 10YR 6/11</u>	<u>f3p f4p</u>	<u>SCLt +</u>	<u>—</u>	<u>cw / u. fi</u>
<u>Bt5</u>	<u>62 to 72</u>	<u>10YR 5/6</u>	<u>/</u>		<u>SCL</u>	<u>(M) laminar bedding</u>	<u>cw / fi</u>
<u>BC</u>	<u>72 to 83</u>	<u>10YR 5/6</u>	<u>/</u>		<u>Stratified LS+SL</u>	<u>—</u>	<u>/ fr</u>
	to						

Current Hydrology: > 83 "± to upper boundary of capillary fringe (or)

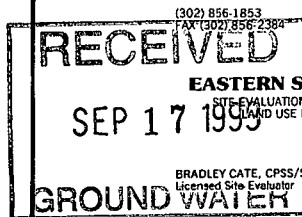
"± to free water (if applicable)

~ 5-10% fine gravel

Fertilizer test @ 34"

Site Evaluator's Signature

SOIL PROFILE NOTES



EASTERN SHORE SOIL SERVICES
 SITE EVALUATIONS, SOIL MAPPING & CLASSIFICATION,
 LAND USE PLANNING, FEASIBILITY STUDIES
 P.O. BOX 411
 GEORGETOWN, DE 19947

Profile #: 3
 Date of Test: 9/13/99 Soil Boring _____ or Test Pit
 Property Owner: NM H
 Property Location: N/2 Rt. 40, ~200' west of Rt. 13
 Site Evaluator: Bradley J. Cate, CPSS/SC License No.: 2052

Slope: 6% Relief: level
 Estimated Permeability: slow
 Depth to Limiting Zone: 30' to redoximorphic features
 Soil Series Identified: Acric Hapludult

Horizon	Depth	Colors		Mottles Desc. Ab. S. Con.	Texture	Structure	Boundary/ Consistence
		Matrix	Mottles				
<u>Ap</u>	<u>0 to 7</u>	<u>10YR 3/2</u>	<u>/</u>		<u>SL*</u>	<u>1ng</u>	<u>AS / u.f.</u>
<u>E</u>	<u>7 to 11</u>	<u>10YR 4/4</u>	<u>/</u>		<u>SL*</u>	<u>-</u>	<u>CU / L</u>
<u>Bt1</u>	<u>11 to 30</u>	<u>10YR 4/6</u>	<u>** /</u>		<u>SCLT*</u>	<u>2mp</u>	<u>CU / fi</u>
<u>Bt2</u>	<u>30 to 45</u>	<u>7.5YR 5/6</u>	<u>10YR 6/1 5YR 4/4</u>	<u>44p f3d</u>	<u>CL- Stratified</u>	<u>2ucp 1ucp</u>	<u>CU / u.fi</u>
<u>Bt3</u>	<u>45 to 74</u>	<u>7.5YR 5/6</u>	<u>10YR 7/1 5YR 4/6 #</u>	<u>c3p c3p</u>	<u>SCLCL Stratified</u>	<u>fine laminar bedding</u>	<u>CU / u.f.</u>
<u>3C</u>	<u>74 to 79</u>	<u>7.5YR 5/6</u>	<u>/</u>		<u>LSL</u>	<u>-</u>	<u>- / L</u>
	to						
	to						

Current Hydrology: > 79" ± to upper boundary of capillary fringe (or)
 "± to free water (if applicable)

- * 6-10% wk gravel
- # ft 10YR 4/4 regillons s.o.p
- # fcl 10YR 4/6 clay flows along prism faces; bedding planes
- Infiltration test @ 36"

Site Evaluator's Signature

SOIL PROFILE NOTES

(302) 856-1853
FAX (302) 856-2384



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SEP 17 1999
GROUND WATER

EASTERN SHORE SOIL SERVICES
SITE EVALUATIONS, SOIL MAPPING & CLASSIFICATION,
LAND USE PLANNING, FEASIBILITY STUDIES

BRADLEY CATE, CPSS/SC
Licensed Site Evaluator

P.O. BOX 411
GEORGETOWN, DE 19947

Profile #: 4
Date of Test: 7/9/99 Soil Boring _____ or Test Pit ✓
Property Owner: NMH
Property Location: N/S Rt. 40, ~200' W. of Rt. 13
Site Evaluator: Bradley J. Cate, CPSS/SC License No.: 2052

Slope: 1% Relief: Level
Estimated Permeability: moderately slow to slow
Depth to Limiting Zone: 34" to clayino-phic features
Soil Series Identified: Ayrie Hylphedell

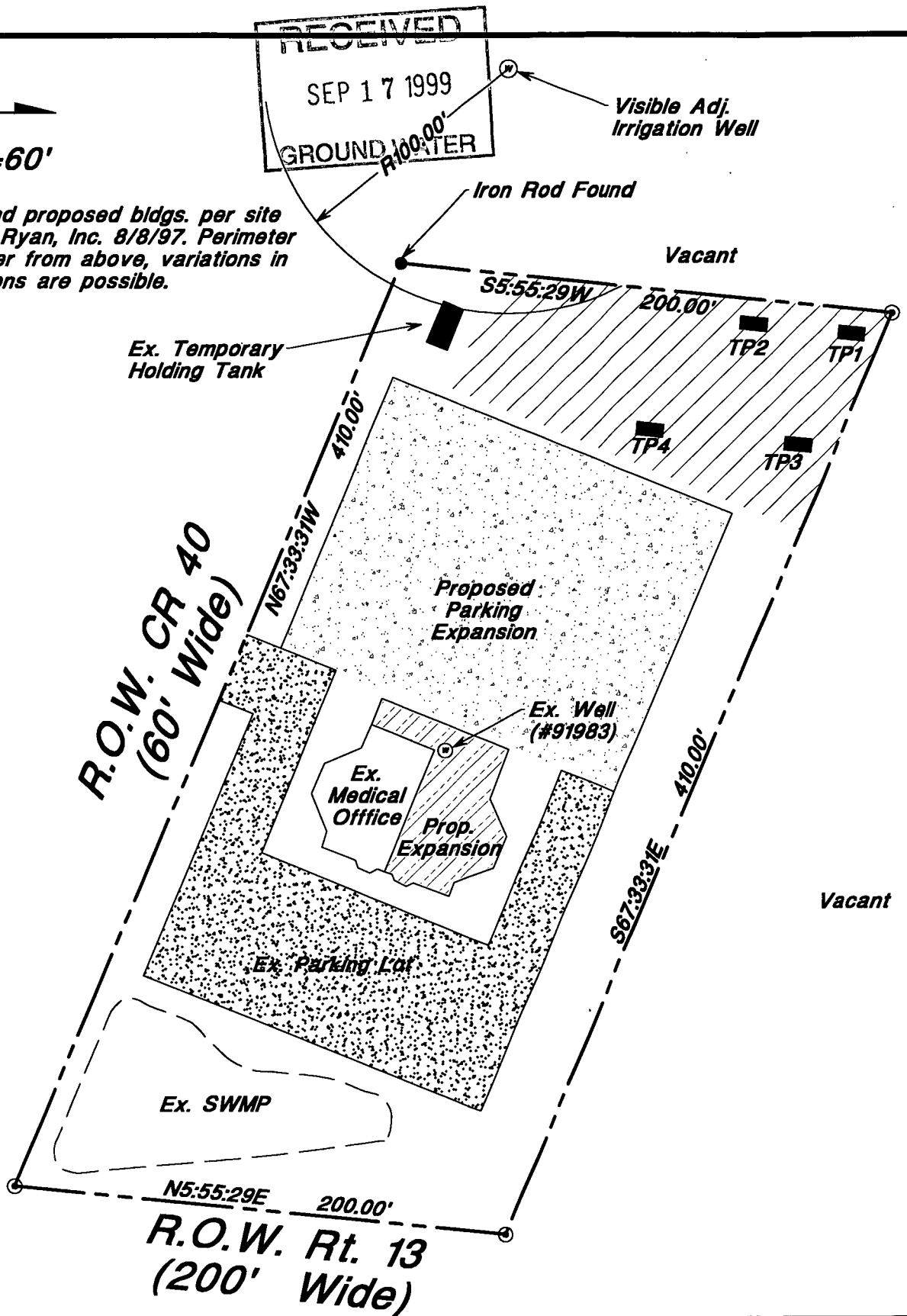
Horizon	Depth	Colors		Mottles Desc.			Texture	Structure	Boundary/ Consistence
		Matrix	Mottles	Ab.	S.	Con.			
A _p	0 to 6	1072 3/6	/				L	1/4 gr	AS / G
E	6 to 16	1072 5/4	/				L	m	CL / G
B _{t1}	16 to 23	1072 4/6	* * /				SCL * *	1/2 pr	CL / fi
B _{t2}	23 to 34	1072 5/6	* * /				SCL * *	1/4 pr	CL / u. fi
B _{t3}	34 to 49	1072 5/6	1072 6/1 1072 5/13	13P 13t			SCL * *	Limiting Bedding (m)	CL / u. fi
B _{t4}	49 to 59	1072 5/6	1072 6/1 1072 5/13	CUP 13t			SCL * *	Limiting Bedding (m)	CL / fi
BC	59 to 72	1072 5/6	1072 6/1 572 4/14	14P 14P			stratified SCL iSL	Limiting Bedding (m)	CL / G
C	72 to 83	1072 5/6	/				stratified LS iSL	Limiting Bedding (m)	1/4 G

Current Hydrology: >83" ± to upper boundary of capillary fringe (or)
"± to free water (if applicable)
* 5-10% v. gravel
* * mod 1072 4/14 argillans S.D.P.
Infiltration Test @ 69"

Site Evaluator's Signature

N
 Scale: 1"=60'

Note: Existing and proposed bldgs. per site plan by French & Ryan, Inc. 8/8/97. Perimeter configurations differ from above, variations in locations are possible.



Note: This plot is not represented as a survey. Boundary information 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 represents site conditions at the time of evaluation. Subsequent alteration of the site or adjacent properties may negate approval for land use by the regulatory agency(ies) involved in permitting. All information should be re-verified prior to purchase or use of this information. Easements shown are from subdivision record plans or deed. No title search for easements is provided or stipulated.

Eastern Shore Soil Services

Environmental Consulting:
 Soil Mapping, Land use Planning, Wetland Studies,
 Site Evaluations, Environmental Permits

P.O. Box 411, Georgetown, DE 19947
 Phone: (302) 856-1853
 Fax: (302) 856-2384

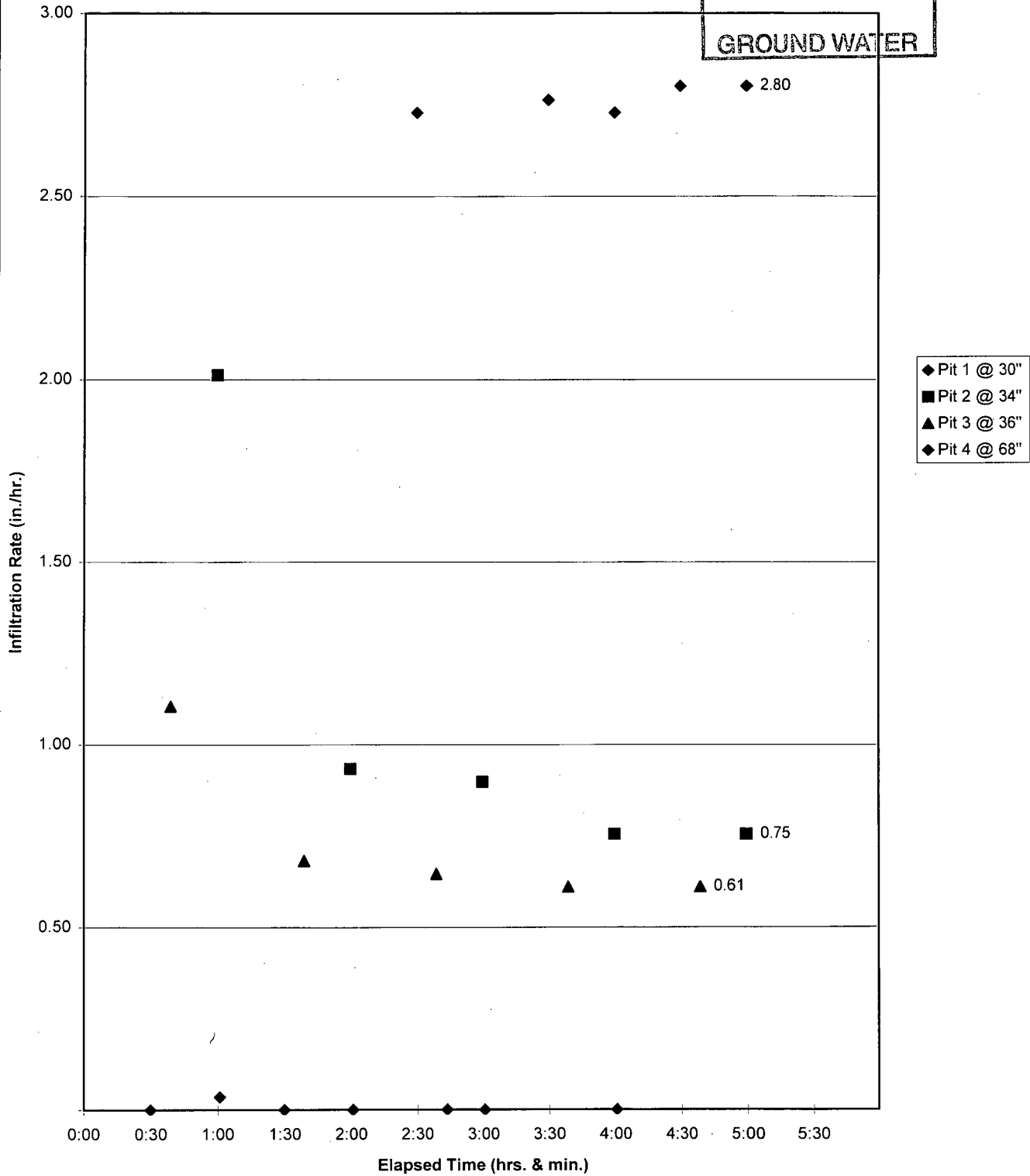


Single Ring Infiltrometer Test Data-Constant Head Method
Bridgeville Medical Center

RECEIVED

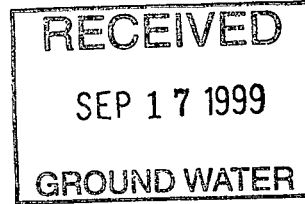
SEP 17 1999

GROUND WATER



COUNTY PLANNING & ZONING COMMISSION
OF SUSSEX COUNTY
GEORGETOWN, DELAWARE 19947

Phone (302) 855-7878



The State of Delaware
Department of Natural Resources & Environmental Control
89 Kings Highway
PO Box 1401
Dover, DE 19901
Certificate of Zoning Approval
for 7 Delaware Code, Section 6003 (c)

Property Owner's Name:

~~Ann Clark Rendatic~~ Dual Development Corp.

Property Location:

North side of CR 40, west side of Rt. 13

Nanticoke Memorial Hospital

Bridgeville Medical Center

Property Location Number:
(Tac Map Number)

1-31-10-89.1

Type of Structure:

Existing System Replacement/Repair

Zoning District:

C1

NOTE:

The applicant should be aware that this document is for zoning verification only. It does not constitute a permit for any construction, mobile home or modular home placement. The Department of Natural Resources and Environmental Control will not issue an on-site sewage disposal system or a well permit without this approved document.

I have reviewed the above information and find the proposed construction to be consistent with current zoning requirements.

Approved By:

Liz Miller
Planning & Zoning Commission

9-17-99

Date

COUNTY PLANNING & ZONING COMMISSION
OF SUSSEX COUNTY
GEORGETOWN, DELAWARE 19947