

Lisa Rodriguez

From: Jim Bettridge [jimbettridge@gmail.com]
Sent: Tuesday, December 06, 2011 2:21 PM
To: Lisa Rodriguez
Subject: Re: Record Request 2600 RR620 N

Lisa,

Did you ever call me with this one? If so, I don't remember.
Any chance I could review this one at the same time tomorrow?

Jim

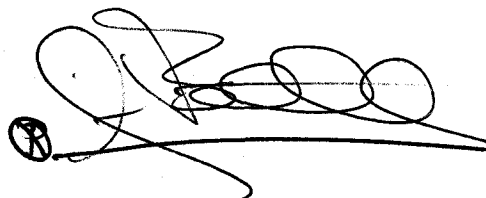
Jim Bettridge <jimbettridge@gmail.com> wrote:

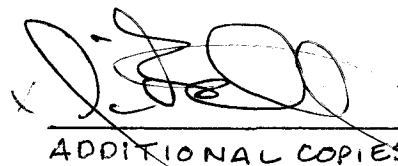
Lisa,

I am looking at a project that may require modification of the system at 2600 RR620 N.
To do so, I will need to look at the original plans and permit.
Can you let me know when they might be available to review.

Thank you,
Jim

Jim Bettridge, R.S.
128 Highlander
Austin, TX 78734
512-814-7020
512-261-0012 fax
jimbettridge@gmail.com

 12.14.11

 1.9.12
ADDITIONAL COPIES RECEIVED

Ø pages requested 15711

13 pages " 16793

8 pages " 21024

Request for Inspection and/or Reproduction of Public Information Process Checklist - On-Site Sewage Facilities Program

	OSSF Staff	Date
1. Request was received from applicant	<u>LR</u>	<u>12.6.11, 1.9.12</u>
2. Request given to BC or CJ ^{JAMES} for disclosure review	<u>JM</u>	<u>12.12.11</u>
3. Disclosure review was completed by BC or CJ ^{JAMES} and the file was cleared for viewing by requestor	<u>JM</u>	<u>12.12.11</u>
OR, file was given to _____ in Legal for review	_____	_____
4. _____ in Legal completed the disclosure review and cleared the file for viewing by requestor.	_____	_____
OR, documents were forwarded by Legal to AG's office.	_____	_____
Documents <u>were/were not</u> exempted from disclosure (list below any documents exempted from disclosure)		
5. Requestor was contacted and given OK to view file	<u>LR</u>	<u>12.12.11</u>
6. Requestor viewed file in the presence of Legal/OSSF staff	<u>WD</u>	<u>12.14.11, 1.9.12</u>
7. Copies were made for requestor	<u>WD</u>	<u>12.14.11, 1.9.12</u>
8. Copy of request was forwarded to Records & Info Mngmt. Services (M016)	<u>WD</u>	<u>12.15.11, 1.12.12</u>

This request pertains to files:

15711, 16793, 21024

The following documents were exempted from disclosure:

Copies of the following documents were made and given to the requestor:

.80
1.30
21024 - as built, letter from James, design page & soil sheet *8 pages*
16793 - perm. 7, as built & calc. *17 pages*
15711 - No pages

BC: open records process checklist 7.20.11

15711 - AS BUILT DATED 6/6/96
DESIGN (SHEET 1)

16793 - DESIGN (SHEET 1 & 2)

DAVID W COOMBS, PE LTR DATED APRIL 9, 1999 + DESIGN CALCULATIONS

21024 - NONE

(4 PGS)

TaxNetUSA: Travis County Property InformationProperty ID Number: **367037** Ref ID2 Number: **01506309120000****Owner's Name HANZLIK WILLARD M &**

Mailing Address
CORDELIA H HANZLIK
2600 RANCH ROAD 620 N
AUSTIN, TX 78734-2628

Location
2600 N RANCH RD 620 78734

Legal
ABS 2433 SUR 162 ECK L T ABS 367 SUR 470
HOFFMEISTER H ACR 49.2470 (1-D-1W)

Property Details

Deed Date
Deed Volume
Deed Page
Exemptions
Freeze Exempt
ARB Protest
Agent Code
Land Acres
Block
Tract or Lot
Docket No.
Abstract Code
Neighborhood Code

HS
F
F
0
49.2470
A2434
R/620

Value Information**2011 Certified**

Land Value 2,921,051.00
Improvement Value 4,814,540.00
AG Value 1,446,192.00
AG Productivity Value 1,392.00
Timber Value 0.00
Timber Productivity Value 0.00
Assessed Value 8,377,430.00
10% Cap Value 804,353.00
Total Value 9,181,783.00

Data up to date as of 2011-12-02

AGRICULTURAL (1-D-1) **APPOINTMENT OF AGENT FORM** **FREEDOM EXEMPTION** **HOMESTEAD EXEMPTION FORM** **PRINTER FRIENDLY REPORT** **PROTEST FORM** **RELIGIOUS EXEMPTION FORM** **PLAT MAP****Value By Jurisdiction**

Entity Code	Entity Name	2010 Tax Rate	Assessed Value	Taxable Value	Market Value	Appraised Value
0A	TRAVIS CENTRAL APP DIST		6,932,630.00	6,932,630.00	9,181,783.00	7,736,983.00
03	TRAVIS COUNTY	0.465800	6,932,630.00	5,967,329.00	9,181,783.00	7,736,983.00
07	LAKE TRAVIS ISD	1.315900	6,932,630.00	5,952,329.00	9,181,783.00	7,736,983.00
17	WCID NO 17	0.060000	6,932,630.00	6,449,979.00	9,181,783.00	7,736,983.00
2J	TRAVIS COUNTY HEALTHCARE DISTRICT	0.071900	6,932,630.00	5,967,329.00	9,181,783.00	7,736,983.00
52	TRAVIS CO ESD NO 6	0.100000	6,932,630.00	6,932,630.00	9,181,783.00	7,736,983.00

Improvement Information

Improvement ID	State Category	Description
341060		1 FAM DWELLING
771083		1 FAM DWELLING
821302		1 FAM DWELLING

Segment Information

Imp ID	Seg ID	Type Code	Description	Class	Effective Year Built	Area
341060	1961711	1ST	1st Floor	WV8+	2002	3,281
341060	2044242	2ND	2nd Floor	WV8+	2002	3,725
341060	2044243	RSBLW	Residence Below	WV8+	2002	2,084
341060	2077404	011	PORCH OPEN 1ST F	*8+	2002	1,051
341060	2077405	012	PORCH OPEN 2ND F	*8+	2002	228
341060	2077406	012	PORCH OPEN 2ND F	*8+	2002	160
341060	2077407	012	PORCH OPEN 2ND F	*8+	2002	45
341060	2077408	012	PORCH OPEN 2ND F	*8+	2002	540
341060	2077409	041	GARAGE ATT 1ST F	WV8+	2002	1,613

341060	2077410	051	CARPORT DET 1ST	*8+	2002	1,578
341060	2077411	095	HVAC RESIDENTIAL	**	2002	9,090
341060	2077412	251	BATHROOM	**	2002	1
341060	2077413	251	BATHROOM	**	2002	4
341060	2077414	447	SPA CONCRETE	*8+	2002	1
341060	2077415	477	ELEVATOR RES	3S*	2002	1
341060	2077416	522	FIREPLACE	*8+	2002	1
341060	2077417	581	STORAGE ATT	WV8	2002	308
341060	2077418	604	POOL RES CONC	*8+	2002	1
341060	2077419	612	TERRACE UNCOVERD	*8+	2002	115
341060	2077420	612	TERRACE UNCOVERD	*8+	2002	45
341060	2077421	612	TERRACE UNCOVERD	*8+	2002	221
341060	3164553	SO	Sketch Only	SO*	0	2,780
771083	3323103	1ST	1st Floor	WS4+	1996	1,380
771083	3323104	011	PORCH OPEN 1ST F	*4+	1996	200
771083	3323105	011	PORCH OPEN 1ST F	*4+	1996	840
771083	3323106	031	GARAGE DET 1ST F	WS4+	1996	1,560
771083	3323107	095	HVAC RESIDENTIAL	**	1996	1,380
771083	3323108	251	BATHROOM	**	1996	2
771083	3323109	581	STORAGE ATT	WS4+	1996	48
821302	4303634	1ST	1st Floor	WP	2010	5,612
821302	4303636	011	PORCH OPEN 1ST F	*	2010	846
821302	4303637	011	PORCH OPEN 1ST F	*	2010	45
821302	4303638	031	GARAGE DET 1ST F	WP	2010	1,352
821302	4303639	095	HVAC RESIDENTIAL	*	2010	5,612
821302	4303640	612	TERRACE UNCOVERD	*	2010	1,034
821302	4303641	612	TERRACE UNCOVERD	*	2010	733
821302	4303643	613	TERRACE COVERED	*	2010	582
821302	4303647	522	FIREPLACE	*	2010	2
821302	4303648	413	STAIRWAY EXT	A	2010	2
821302	4303653	011	PORCH OPEN 1ST F	*	2010	51
821302	4303693	613	TERRACE COVERED	*	2010	591
821302	4303694	512	DECK UNCOVERD	*	2010	317
821302	4303738	604	POOL RES CONC	*	2010	1
821302	4303745	251	BATHROOM	*	2010	6
821302	4304871	252	BEDROOMS	*	2010	5

Total Living Area 16,082

Land Information

Land ID	Type Code	SPTB Code	Homesite	Size-Acres	Front	Depth	Size-Sqft
361286	LAND	E1	T	3.095	0	0	134,818
880997	WDLF	D1	F	13.280	0	0	578,477
880998	LAND	E1	F	0.510	0	0	22,216
881001	UW	D2	F	31.362	0	0	1,366,129
888635	LAND	E1	F	1.000	0	0	43,560

show history

#15711

"Caretaker House"

10/10/97 Licensed for 2-bed / 1,300 ft²

6/6/98 Inspected 950 ft²; 750 gal S.T.; 750 gal P.T.

1' sand under trenches 4 trenches 2@ 47' & 2@ 48'

5/30/96 Permit issued John Doucet, P.E.

LPD w/ 1' SAND under trenches (rock @ 18")

2-Zones - Jandy valve

Installed by John Pate

#16793

Main House + Guest House

Originally designed by David Venhuizen, P.E.

New plans by David Coombs, P.E.

Installed by Harold Allen

Main Residence - 2 beds - 11,000 ft² 660

Guest Residence 2 beds - 1,000 ft² 180

840 gpd

4,200 ft² LPD/Mand

9/2/99 - Broken K-Rain - unable to set pressure

7/9/99 - Sanification

7/7/99 - Installer on-site Not ~~Class II~~ Class II

4/26/99 - Permit issued

Not finalized



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

ON SITE SEWAGE FACILITY LICENSE

Issued by the Lower Colorado River Authority
An Authorized Agent of the Texas Natural Resources
Conservation Commission (TNRCC)

Issued To: _____ LICENSE NO: S15711

**WILLARD HANZLIK
607 ROBIN DALE DR
AUSTIN, TX 78734**

APPLYING TO SYSTEM SERVING

Located in the WATER QUALITY zone on Lake TRAV in TRAV County Sub: LEONARD ECK
SURVEY Sec. Blk. Lot or otherwise described in Licensee's Application No. S15711

Inspection Date: Jun-06-1996

Acceptance of this license constitutes an agreement to abide by the terms and conditions
specified in Texas Natural Resource Conservation Commission and LCRA Regulations.

A construction permit must be obtained from LCRA prior to any repair work or modification
being performed to the on-site sewage disposal system.

Conditions of Approval:

1. This license was issued for a 2 bedroom home with 1300 sq. ft. of heated living area.
2. The on-site sewage disposal system on this property was reduced based on the installation of water conserving devices within the residence. Should these devices be replaced with devices of a non-conserving nature, or should they fall into disrepair which would prevent them from operating as they were designed by the manufacturer, this license will be terminated automatically. Verification of the existence and operability of these devices will be made by LCRA at the time of any private sewage disposal facility inspection.
3. This property is served by a dual bed on-site disposal system. Wastewater flow to the two beds must be alternated periodically by turning the flow diversion valve in order to prevent oversaturation of either bed.

Approved by: Burt Carter Date: 10/10/97

Valid Until: See Highland Lakes Regulations

Name: WILLARD HANZLIK

Date: 10/10/1997

License No: S15711

Page: 1 of 1



NEW INSTALLATION CERTIFICATE

Date: 6/6/96

Owner: Willard Hanzlik

Installer: John Pate

LCRA Application #: 15711

PROPERTY DESCRIPTION

Subdivision: Leonard ECK Survey Section: _____ Block: _____

Lot: _____ Other: 2606 Ranch Rd 620 North

The above referenced on-site sewerage facility was inspected on 6/6/96 for compliance with Texas Natural Resource Conservation Commission and LCRA rules and construction standards, and the data set forth within the construction permit. On the date inspected, the facility was found to conform with the requirements set forth.

This certification does not extend to the materials, workmanship or fabrication of the facility so as to express or imply to the owner or installer of the facility any warranty by or rights against the Lower Colorado River Authority, as to quality or durability of the facility nor compliance with the owner's individual specifications and requirements, but solely relates to the facility meeting the requirements of the above named regulatory bodies in effect as of this date.

Kay Young
Inspector, Clean Colorado Project
Lower Colorado River Authority



JUN 1996

Received
On-Site Wastewater
Facilities



PRIVATE SEWAGE DISPOSAL FACILITY INSTALLATION REPORT

Absorption/ET Systems

Date: 6/6/96 Trip #: 1 Application no.: 15711
Inspector: Kay Young Owner: Willard Hanzlik Installer: John Pate
New System: ✓ Modification of Existing System: If modification, is any portion of the existing system being utilized?

SEPTIC/PUMP TANKS

SEPTIC TANK Capacity: 750 gal Type: Concrete Manufacturer: Barnard
Comments:

T on outlet & rises on inlet Tank on sand pad
6' from foundation
leak ✓ O.K. O.K. To cover.

PUMP TANK Capacity: 750 Type & Model of Pump: 53-0036 .3
High Water Alarm: Electrical Manufacturer: Zoeller Comments:

no leaks ✓ alarm

Buzzer

O.K. To cover.

ABSORPTION TRENCHES/ABSORPTION BEDS

of trenches: 4 Distance between: 5' Total Sq. Footage: 950 sq'
Dimension of beds: Bed #1: Bed #2: Bed #3: Bed #4:
Total Sq.Ft.: Comments:

Trenches level ± 2 inches
1 ft of sand under trench
no leaks ✓ PSI to trenches 24"

Trenches have geotextile fabric over them
O.K. To cover.

EVAPOTRANSPIRATION BEDS

Dimensions of each bed: Bed #1: Bed #2: Bed #3: Bed #4:
Total Square Footage: Leak Detection System: Bed #1 Bed #2:
Bed #3: Bed #4: Comments:

GENERAL INFORMATION

Distance of field to nearest shoreline: 1500 ft Zone: W.Q. Low-flow devices in place? NRTC
Erosion Controls Adequate: Comments:

Final Complete Date: 6/6/96 Approved by: Kay Young

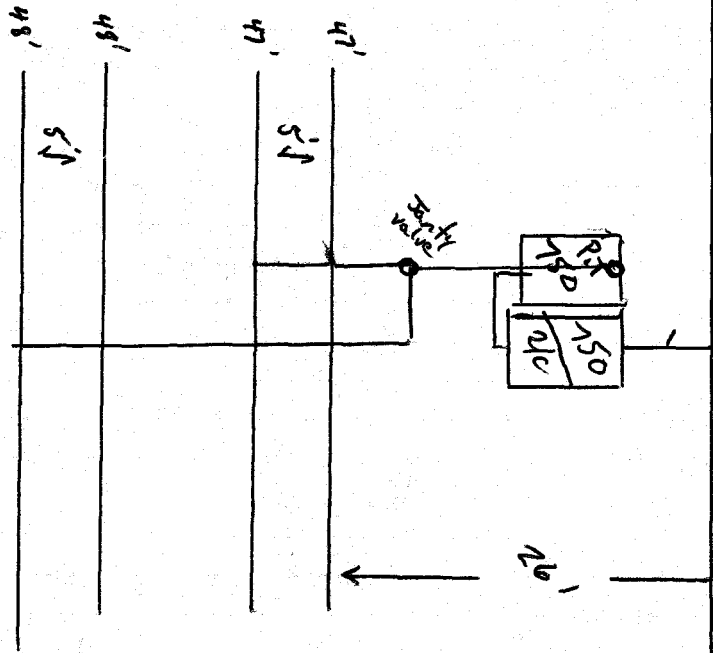
A
Received
JUN 1991
On-Site Wastewater
Facilities

15711

Cemetery

Driveway

Care Taker House



#15711 North
installed 6/6/96
By John Pate

Property line

620

THE SKETCH IS FOR LCRA USE ONLY.
LCRA DOES NOT WARRANT OR
REPRESENT THAT THIS SKETCH
DEPICTS THE ACTUAL LOCATION OR
CONFIGURATION OF THE PRIVATE
SEWAGE FACILITY SYSTEM.

JUN 1990
Received
On Site Master
Facilities



May 30, 1996

Mr. Willard Hanzlik
607 Robin Dale Dr.
Austin, TX 78734

Dear Mr. Hanzlik:

Re: Application No. 15711, Leonard Eck Survey, Caretaker's
House, 2606 RR 620 North.

I have enclosed your permit for construction of the on-site wastewater facility on the property referenced above. The permit may have some special provisions that are very important to note. During the construction of the system, inspections will be performed and the LCRA inspectors will verify that construction is proceeding in accordance with the guidelines adopted by the Lower Colorado River Authority and any special provisions noted on the permit.

The LCRA's program is designed to protect the water quality of the Highland Lakes. Your commitment to meeting the requirements of the permit is appreciated by everyone who uses and enjoys the Highland Lakes and the Colorado River. Thank you for your assistance in keeping the water clean.

Should you have questions regarding operation and maintenance of the system, please call me at 1-800-776-5272, extension 2681. The application number printed on the permit will help us answer your questions expeditiously.

Thank you again for your concern about water quality. Remember that any time you see or suspect a problem about water quality, you may call Donna Clendennen at 1-800-776-5272, extension 6843.

Sincerely,

A handwritten signature in cursive script that reads 'Burt Carter'.

Burt Carter, R.S.
On-site Wastewater Facilities Program
Environmental Protection Services



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

PRIVATE SEWAGE FACILITY CONSTRUCTION PERMIT

For New or Modified Installations of Private Sewage Disposal Systems As
Required by LCRA and the Texas Natural Resources
Conservation Commission (TNRCC)

Issued To: -----

PERMIT NO.: S15711

WILLARD HANZLIK
607 ROBIN DALE DR
AUSTIN TX 78734

----- fold -----

Legal description: LEONARD ECK SURVEY

Issuance Date: 05/30/96

Expiration Date: 11/30/96

-----GENERAL-----
LAKE.....:TRAV
LCRA ZONE.....:W
JURISDICTION...:LCRA
COUNTY.....:TRAV
DWELLING UNITS.: 1
BEDROOMS.....: 2
BATHROOMS.....: 1
KITCHENS.....: 1
HEATED AREA...: 1300 sf

-----SEPTIC TANK-----
CAPACITIES (gal)
Tank #1.....: 750
Tank #2.....: 0
Tank #3.....: 0
Pump tank...: 750
COMPARTMENTS.:2

-----DRAIN FIELD(S)-----
TYPE OF SYSTEM.....:DOS
MIN FIELD AREA....: 940 sf
FIELD AREAS.....: 2
DRAINFIELD REDUCTION?:Y
LOW-FLOW TOILETS...: 1
SHOWERHEADS.....: 1
FAUCET AERATORS...: 2

-----COMM'L/NON-RESID-----
MAXIMUM QUANTITY...: 0 gal/day
METER/TIMER?.....:N

SPECIAL PROVISIONS:

- 1) A minimum distance of 5 feet must be maintained between the septic tank and building foundation unless a waiver is submitted from the owner. Should this distance be waived, a Conditional License will be issued.
- 2) A minimum distance of 10 feet from property lines is required with all components of the on-site sewerage facility. This set-back may only be reduced through a written waiver submitted from the adjacent property owner. The waiver must be submitted prior to scheduling the first inspection and should be obtained prior to beginning construction.
- 3) The installation of low-flow toilets and showerheads as well as faucet aerators on all faucets within the house is required. Low-flow toilets allowing a flush capacity of 1.6 gallons or less and showerheads which allow a flow of 3 gallons per minute or less are required to be installed.
- 4) No portion of the system may be installed within ten (10) feet of a

NAME: WILLARD HANZLIK
DATE: 05/30/96

PERMIT NO.: S15711
PAGE.....: 1



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

water line.

- 5) Temporary erosion and sedimentation (E/S) controls must be established prior to beginning development of the private sewerage facility and residence as required by the LCRA non-point source pollution control ordinance. A system backfill and revegetation inspection will be required in addition to the standard sewerage facility inspections. The E/S controls must remain in place and be properly maintained until LCRA inspects the revegetated area and approves removal of the controls. When the revegetation is complete, call the LCRA inspector listed below.
- 6) The installer is cautioned to follow the engineer's plans which call for a minimum of one foot of clean washed sand under the low pressure dosing trench.
- 7) System design plans by Doucet and Associates Inc., dated May 28, 1996, must be followed with the addition of the above provisions.

ALL PRIVATE SEWAGE FACILITIES MUST BE INSTALLED BY A TNRCC REGISTERED INSTALLER. AN OWNER INSTALLING HIS/HER OWN SYSTEM IS EXEMPT FROM THIS REQUIREMENT; HOWEVER, THE OWNER MUST OBTAIN APPLICABLE REQUIREMENTS FROM LCRA BEFORE BEGINNING CONSTRUCTION. IT IS THE OWNER'S RESPONSIBILITY TO VERIFY AN INSTALLER IS REGISTERED PRIOR TO ALLOWING SYSTEM INSTALLATION. IT IS RECOMMENDED THAT YOU OBTAIN A MINIMUM OF THREE (3) BIDS FROM REGISTERED INSTALLERS FOR THE INSTALLATION OF YOUR SYSTEM. LCRA CAN PROVIDE THE NAMES AND PHONE NUMBERS OF QUALIFIED INSTALLERS.

To schedule inspections: For Lake Travis, call Chuck Van Cleave between 8:00 and 5:00 p.m. weekdays @ 473-3333 ext. 2566 or 1-800-776-5272, ext. 2566; for all other lakes, call for Bill Maddox at 1-800-776-5272, extension 2053 or locally at (512) 473-3333, ext. 2053. You must furnish the property owner's name, application number, property location, and name and registration # of the TNRCC registered installer, if applicable, when you call for an inspection.

Approved by:

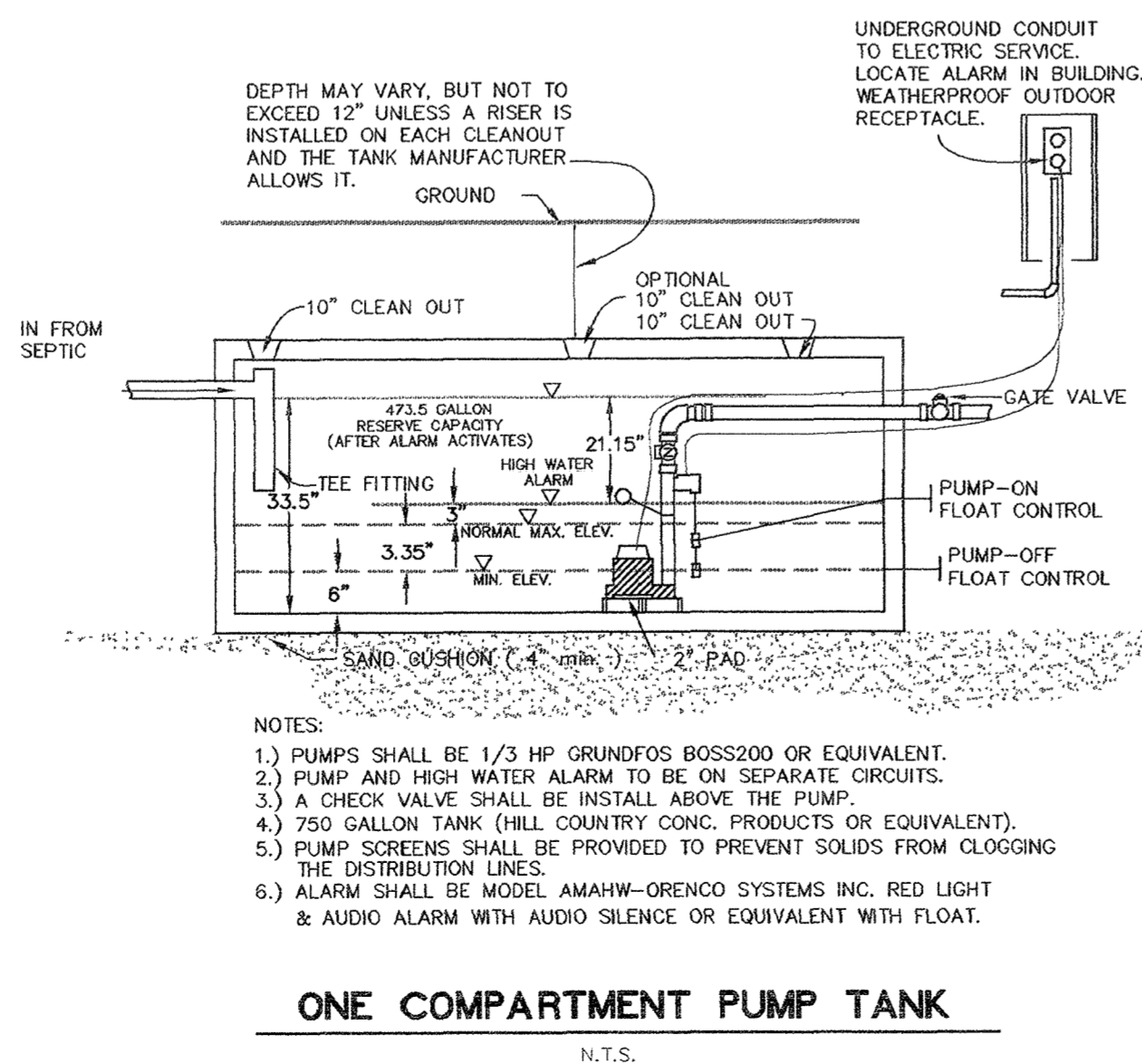
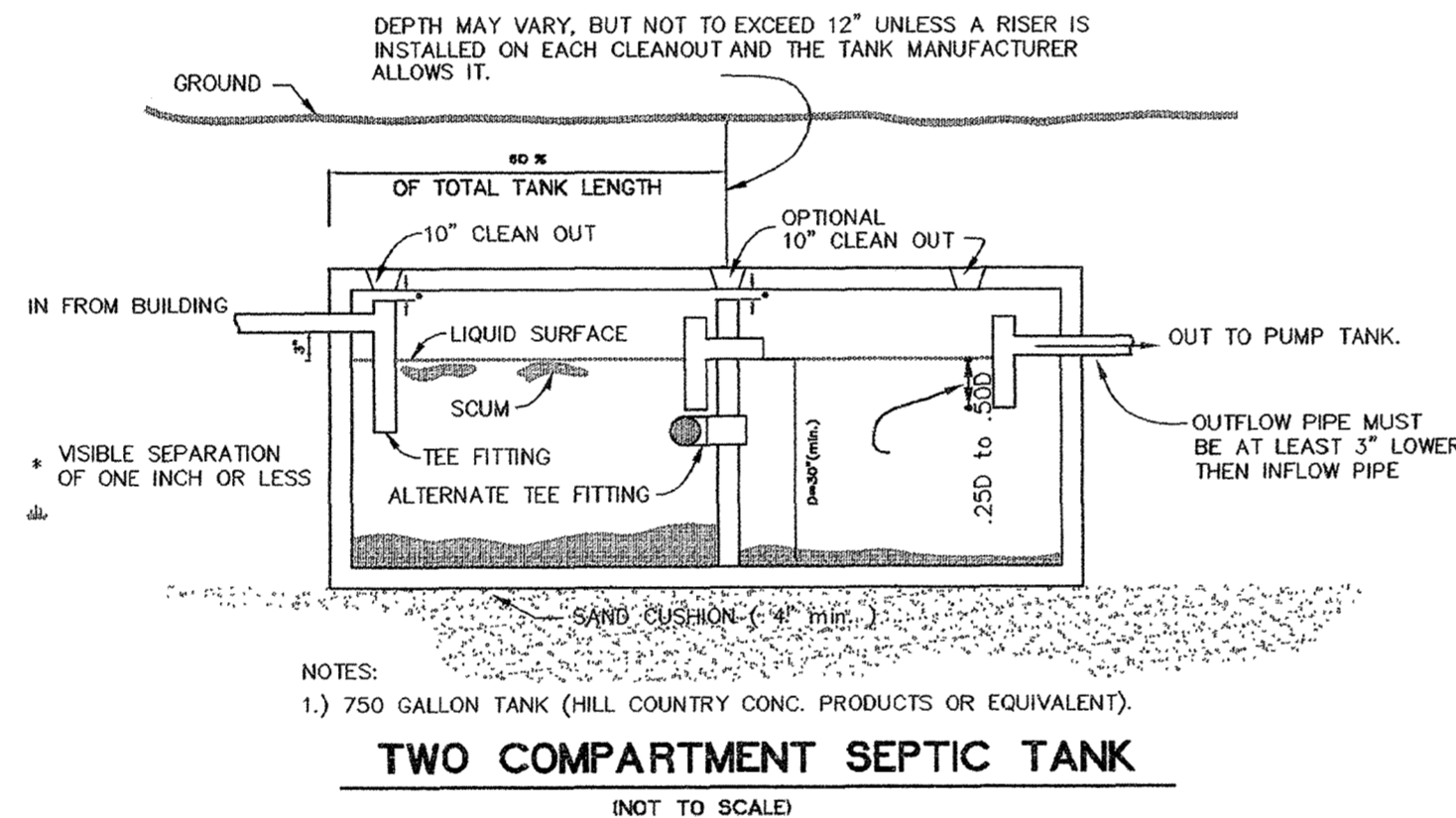
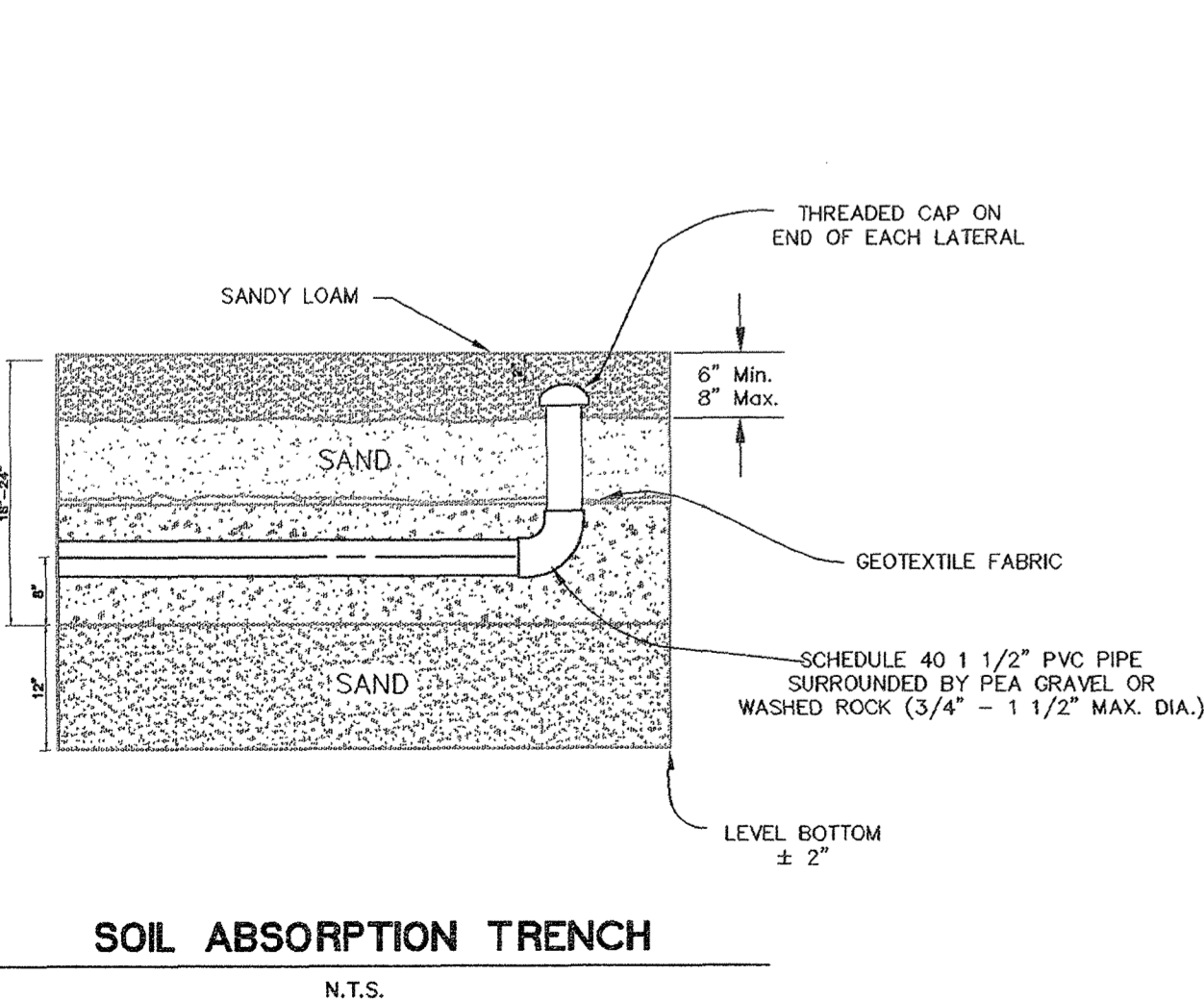
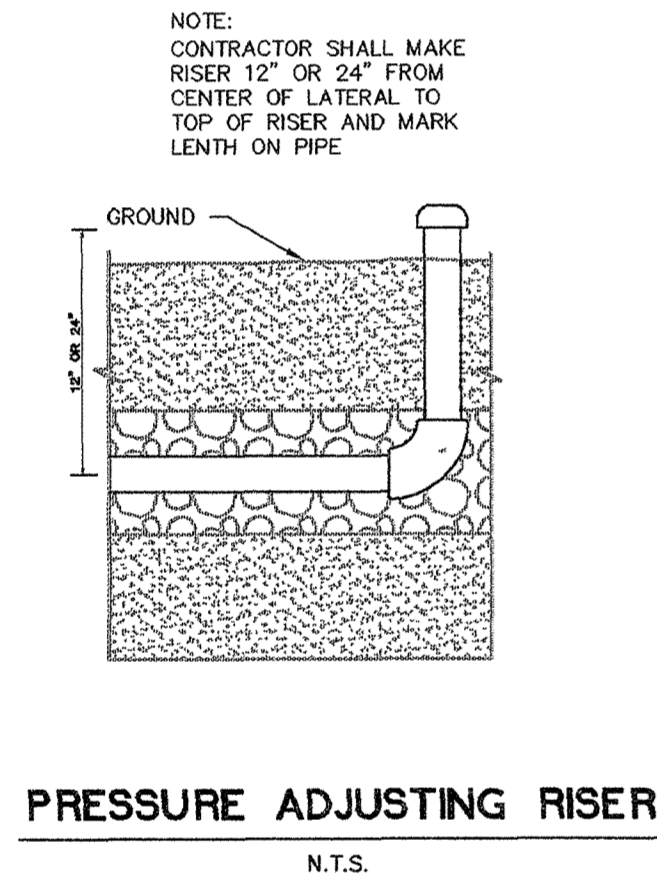
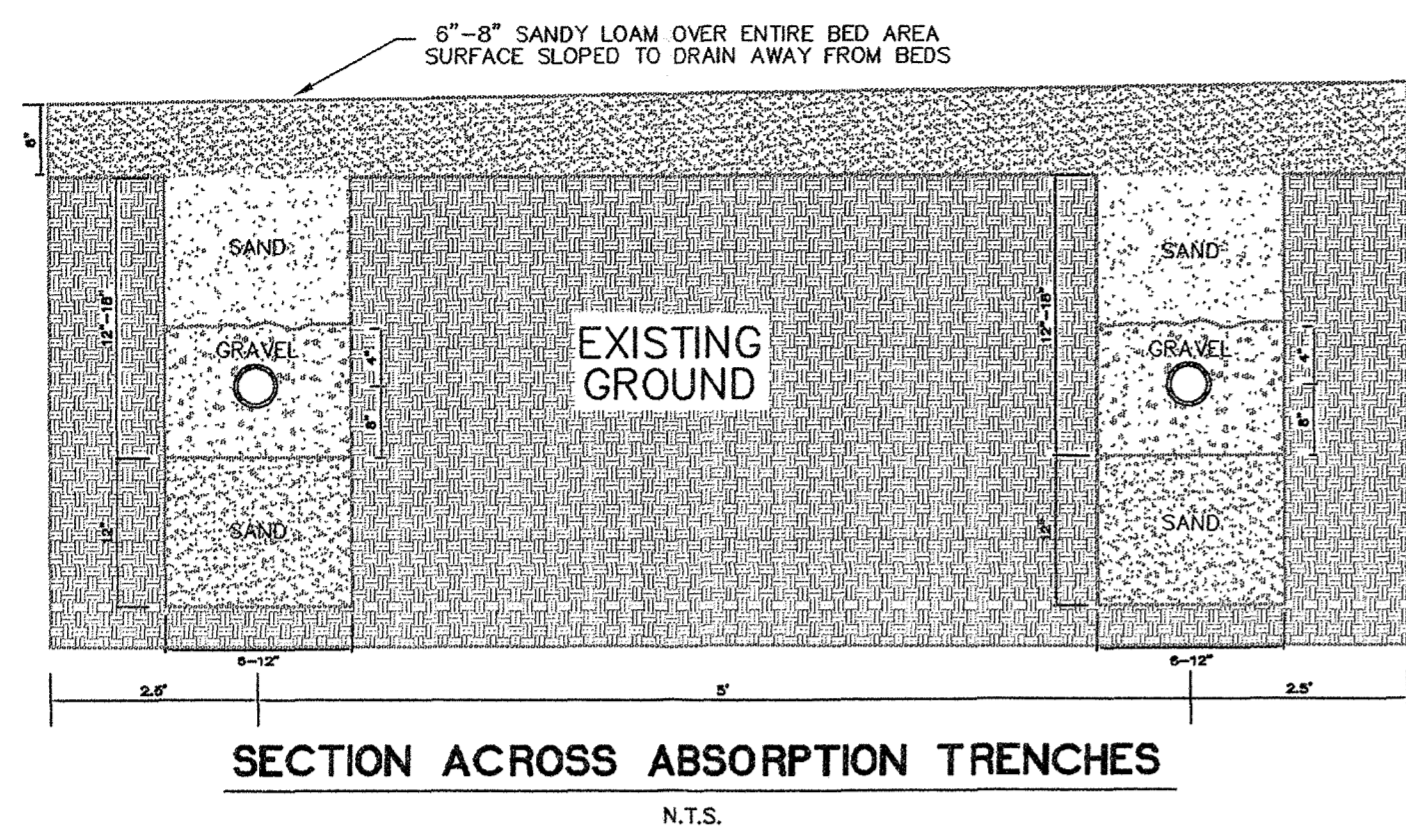
Burt Carter, R.S.
Environmental Protection Division

May 30, 1996

s_consp.txt, rev: 09-12-94

NAME: WILLARD HANZLIK
DATE: 05/30/96

PERMIT NO.: S15711
PAGE.....: 2



GENERAL NOTES

- CONSTRUCTION MATERIALS, SPECIFICATIONS, AND ALL CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE FACILITIES, LOWER COLORADO RIVER AUTHORITY, EFFECTIVE JANUARY 1, 1991.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE PROPOSED SYSTEM INSPECTED BY THE L.C.R.A. AND DESIGN ENGINEER. INSPECTIONS SHALL SCHEDULED IN ORDER TO VERIFY THAT THE SYSTEM IS INSTALLED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE FOLLOWING INSTALLATION POINTS FOR INSPECTIONS:
 - AFTER THE TRENCHES HAVE BEEN EXCAVATED, LEVELED, CLEANED AND BEFORE ANY GRAVEL IS PLACED IN THE TRENCH. AT THIS TIME, THE LATERAL PIPES SHALL BE CUT TO LENGTH, AND HOLES DRILLED AT INTERVALS IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILS IN THE PLANS. THE PIPES SHALL BE LAID OUT NEXT TO THE APPROPRIATE TRENCH INTO WHICH THEY WILL BE PLACED. THE TANK(S) SHALL HAVE BEEN PLACED ON THE SAND PAD, LEVELED AND FILLED WITH WATER FOR THIS INSPECTION.
 - AFTER THE PANELS ARE PLACED IN THE TRENCHES, AND THE PIPES PLACED IN THE GRAVEL IN THE CORRECT POSITION.
 - WHEN THE ELECTRICAL POWER IS CONNECTED TO THE PUMPS, AND THE PRESSURE HEAD IS READY TO BE SET.
 - AFTER FINAL LANDSCAPING, WHEN THE VEGETATIVE COVER HAS BEEN COMPLETED, AND THE GRASS IS ESTABLISHED.
 - AT SUCH ADDITIONAL POINTS AS MAY BE DETERMINED BY THE INSPECTOR ON ANY OF THE ABOVE SCHEDULED VISITS TO THE SITE BY THE L.C.R.A. INSPECTOR.

- THE CONTRACTOR SHALL NOT DEVIATE FROM THESE PLANS WITHOUT THE EXPRESS WRITTEN CONSENT FROM L.C.R.A. AND THE ENGINEER.

- ALL DRAINAGE SHALL BE DIRECTED AWAY FROM THE LOW PRESSURE DOSE FIELD, THE SEPTIC TANK AND THE PUMP TANK. IF SPECIFIED, STORMWATER DIVERSION BERMS SHALL BE INSTALLED IN THE LOCATIONS INDICATED ON THE SITE PLAN.

- THE OWNER SHALL PERFORM ALL NECESSARY MAINTENANCE TO SAFEGUARD AGAINST RUNNING COMMODITIES, LEAKY FAUCETS, ETC., TO PREVENT HYDRAULIC OVERLOAD OF THE DISPOSAL FIELD.

- THIS LOW PRESSURE DOSE SYSTEM HAS BEEN DESIGNED TO OPERATE PROPERLY TO THE DESIGN SPECIFICATIONS SET FORTH HEREIN. ALTERATION OF THE INSTALLED SYSTEM BY THE OWNER, INCLUDING, BUT NOT LIMITED TO LANDSCAPING AND/OR DRAINAGE CHANGES MAY CAUSE THE SYSTEM TO MALFUNCTION, AND SUCH FAILURE SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER. QUESTIONS RELATING TO THIS SYSTEM SHALL BE DIRECTED TO THE ENGINEER.

- AUTOMATIC SPRINKLER SYSTEMS SHALL NOT BE INSTALLED OVER THIS SYSTEM.

- THE CAPACITY OF THE SYSTEM TO HANDLE EFFLUENT LOADING MAY VARY IN WINTER, SPRING AND FALL MONTHS DUE TO CHANGES IN RAINFALL AND OTHER MOISTURE CONDITIONS. GENERAL WATER CONSERVATION IS STRONGLY RECOMMENDED THROUGHOUT THE YEAR.

- LOW VOLUME FLUSH TOILETS, LOW FLOW SHOWERHEADS AND FAUCETS, AND OTHER WATER CONSERVATION DEVICES SHALL BE INSTALLED FOR USE IN THE BUILDING.

- THE LIST OF INSPECTIONS ABOVE SHOWS THE MAJOR ITEMS TO BE CHECKED DURING THE INSPECTIONS. EVERY PART OF THE SYSTEM, INCLUDING GRADES, MATERIALS AND WORKMANSHIP SHALL BE OPEN TO INSPECTION AND APPROVAL.

- ALL WATER SUPPLY LINES MUST BE KEPT A MINIMUM OF TEN (10) FEET AWAY FROM ANY PART OF THE PROPOSED WASTEWATER DISPOSAL SYSTEM. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY WATER LINES WHICH HE MAY LOCATE ON THE PROPERTY, WHICH ARE NOT SHOWN ON THE PLANS.

- TREES TO BE SAVED SHALL BE DESIGNATED BY THE OWNER. THE CONTRACTOR AND OWNER SHALL COORDINATE FOR THE PRESERVATION OF DESIGNATED TREES. LATERAL LINES MAY BE ADJUSTED TO ALLOW FOR PROTECTION OF DESIGNATED TREES ONLY WITH PRIOR APPROVAL OF ENGINEER.

- PUMP NOTES:
 - THE SUBMERSIBLE PUMP(S) AND THE HIGH WATER ALARM SHALL BE PLACED ON SEPARATE CIRCUITS. THE ELECTRICAL CONNECTIONS SHALL BE HARD-WIRED EXTERNALLY TO THE PUMP TANK AND PLACED IN A WEATHER TIGHT BOX. THE ALARM CIRCUIT AND PUMP CIRCUIT SHALL BE CLEARLY MARKED IN THE ELECTRICAL PANEL BOX.
 - ALL ELECTRICAL PANELS, WIRE, WIRING AND CONDUIT SHALL BE IN ACCORDANCE WITH THE ELECTRICAL CODE OF THE LOCAL POWER SUPPLY COMPANY THAT SUPPLIES POWER TO THE SITE.
 - A SPARE PUMP SHOULD BE KEPT READILY AVAILABLE IN CASE OF PUMP FAILURE. THIS SHALL BE THE OWNER'S OPTION.
 - PUMP SCREENS SHALL BE INSTALLED TO PREVENT SOLIDS FROM CLOGGING THE DISTRIBUTION LINES.
 - THE ALARM LIGHT, OR AUDIO ALARM, WILL ACTIVATE WHENEVER EFFLUENT IN THE PUMP TANK RISES ABOVE THE ALARM LEVEL DESIGNATED ON THE PUMP TANK DETAIL.

- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOSS OF VEGETATION WHICH MAY OCCUR AS A RESULT OF THE CONSTRUCTION OF THIS SYSTEM. THE CONTRACTOR, AS LONG AS HE EXERCISES CARE IN INSTALLING THE SYSTEM, SHALL NOT BE RESPONSIBLE FOR LOSS OF VEGETATION.

- THE SYSTEM WILL NOT BE FINALLY ACCEPTED BY THE LOCAL REGULATORY AUTHORITY FOR OPERATION UNTIL THE FIELD HAS AN APPROVED GRASS COVER. IF THE CONTRACTOR ELECTS TO USE THE SEEDING OPTION METHOD OF COVER, HE SHALL BE RESPONSIBLE FOR GETTING THE GRASS GROWING TO THE POINT WHERE IT IS ACCEPTABLE BY THE REGULATORY AUTHORITY. THIS SHALL INCLUDE PERIODIC WATERING AS REQUIRED, AND RE-SEEDING IF NECESSARY. THE OWNER, AT HIS ELECTION, MAY RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY BY NOTIFYING THE REGULATORY AUTHORITY, IN WRITING, THAT HE IS RESPONSIBLE FOR THE GRASS.

- THE HIGH WATER ALARM SHALL CONSIST OF A VISUAL AND AUDIO ALARM COMPONENT.

NOTES FOR TANK(S)

- ALL SEPTIC TANKS SHALL BE SET LEVEL ON A MINIMUM FOUR (4) INCH THICK CONSOLIDATED SAND PAD. ANY OVER EXCAVATION OF THE SEPTIC TANK HOLE BENEATH THE TANK, SHALL BE FILLED WITH SAND TO THE CORRECT ELEVATION FOR THE TANK BOTTOM.

- BACKFILL AROUND THE TANKS SHALL BE GRANULAR MATERIAL, SUCH AS SANDY LOAM, SAND, OR CUTTINGS FROM A ROCK SAW IF THE DISPOSAL FIELD IS A LOW PRESSURE DOSE FIELD. IN THE CASE WHERE THE FIELD IS AN EVAPORATIVE FIELD, SAND, SANDY LOAM, OR SANDY LOAM, NO ROCKS, CLAY, STICKS, BRICKS, STONES, TRASH OR OTHER MATERIAL SHALL BE PLACED IN THE BACKFILL. THE BACKFILL SHALL BE THOROUGHLY WATERED AND COMPACTED. FINAL COVERAGE OVER THE TANK AND EXCAVATED AREAS OUTSIDE THE TANK, SHALL BE MOUND IN ORDER TO SHED STORM WATER RUN-OFF.

- A TEN (10) INCH (MINIMUM) DIAMETER INSPECTION PORT SHALL BE PROVIDED OVER EACH INLET/OUTLET TEE FITTING TO PROVIDE FOR INSPECTION, CLEANING AND MAINTENANCE.

- FOR TANKS BURIED MORE THAN TWELVE (12) INCHES DEEP, MANHOLE RISERS ARE REQUIRED. THE RISER SHALL BE REINFORCED CONCRETE PIPE OR RIGID RIBBED PVC WITH CONCRETE COVERS. THE INSIDE DIAMETER OF THE RISER MUST BE LARGE ENOUGH TO ACCOMMODATE THE EXISTING MANHOLE COVERS ON THE TANKS, AND SHOULD BE RAISED TO WITHIN SIX (6) INCHES OF THE FINISHED SURFACE GRADE.

- TANKS IN DRIVEWAYS SHALL HAVE TRAFFIC BEARING LIDS. SUCH TANKS SHALL BE FITTED WITH RISERS TO THE FINISHED DRIVEWAY SURFACE, AND SHALL HAVE STANDARD CAST IRON MANHOLE COVERS INSTALLED OVER ALL ACCESS PORTS.

- TANKS MAY BE RELOCATED FROM THE EXACT LOCATION SHOWN ON THE SITE PLAN, AT THE ENGINEER'S DISCRETION TO AVOID ADVERSE ROCK CONDITIONS, GROUNDWATER CONDITIONS, OR IN ORDER TO PRESERVE SIGNIFICANT TREES OR VEGETATION.

- THE SEPTIC TANK RISERS, AND ALL INLET AND OUTLET OPENINGS SHALL BE THOROUGHLY SEALED WITH A HYDRAULIC TYPE CEMENT SEAL TO PREVENT THE ESCAPE OF GASES AND THE ENTRANCE INTO THE TANK(S) OF SURFACE RUN-OFF, GROUND WATER, INSECTS OR TREE ROOTS. THE COVER TO THE RISER(S) AND/OR MANHOLE COVERS, MUST BE SEALED WITH MASTIC. IF GROUND WATER WILL POSSIBLY AFFECT THE TANK(S), THEN THE RISER SHALL BE BROUGHT TO A MINIMUM OF FOUR (4) INCHES ABOVE THE FINISHED GRADE, AND SECURED SO THAT IT IS INACCESSIBLE TO CHILDREN OR CASUAL REMOVAL.

- TANKS SHALL BE STAKED, FLAGGED OR OTHERWISE MARKED WHILE THE STRUCTURE ON THE LOT IS UNDER CONSTRUCTION IN ORDER TO PREVENT DAMAGE FROM TRAFFIC OR OTHER CONSTRUCTION RELATED ACTIVITY.

- THE SEWER LINE FROM THE OUTLET TO THE SEPTIC TANK SHALL BE MINIMUM SCHEDULE 40 PVC PIPE. THIS LINE SHALL HAVE NO LESS THAN 1/4" PER FOOT SLOPE FROM THE HOUSE TO THE TANK. A CLEAN OUT PLUG SHALL BE PROVIDED WITHIN THREE (3) FEET OF THE FOUNDATION, AND AT ALL 45-DEGREE BENDS. NO BENDS IN THIS PIPE SHALL BE GREATER THAN 45-DEGREES. CONNECTIONS FROM THE SEPTIC TANK TO THE PUMP TANK SHALL SLOPE AT SLOPE AT 1/8" PER FOOT MINIMUM.

- TANKS SHALL BE TESTED BY FILLING WITH WATER FOR TWENTY-FOUR HOURS PRIOR TO INSPECTION. THE WATER LEVEL SHALL BE TO THE OUTLET OVERFLOW LINE. THE TANKS SHALL BE CHECKED BY THE CONTRACTOR AND INSPECTOR FOR LEAKS AND STRUCTURAL INTEGRITY. TANKS EXHIBITING OBVIOUS DEFECTS, SHALL NOT BE INSTALLED. WHEN CONCRETE TANKS ARE USED, SWEATING OR SEEPAGE AT CONSTRUCTION JOINTS IS ACCEPTABLE. PROVIDING THE TANKS STRUCTURE CONTAINS NO OPEN CRACKS OR LARGE VOIDS. FIBERGLASS TANKS MAY BE USED IF THEY ARE "CERTIFIED WATER TESTED" TANKS FROM AN APPROVED SOURCE AND ARE EXPRESSLY APPROVED BY THE ENGINEER. IF USED, THESE TANKS SHALL BE BEDDED AND COVERED WITH SAND. THE MAXIMUM DEPTH OF COVER FOR A FIBERGLASS TANK IS TWELVE (12) INCHES.

- THE SEPTIC TANK(S) WILL REQUIRE PERIODIC PUMPING. SLUDGE AND SCUM ACCUMULATION SHALL BE CHECKED ANNUALLY BY A REPUTABLE LICENSED PUMPING CONTRACTOR, OR PLUMBER. THE RATE OF SLUDGE AND SCUM ACCUMULATION WILL VARY WITH USAGE. MOST SEPTIC TANKS REQUIRE PUMPING AT LEAST ONCE EVERY 3 TO 5 YEARS. EVERY EFFORT SHOULD BE MADE BY THE HOMEOWNER TO REDUCE THE AMOUNT OF UNNECESSARY OR NON-BIODEGRADABLE WASTES FLUSHED INTO THE SEPTIC SYSTEM, INCLUDING, BUT NOT LIMITED TO: GREASE, WAX, COLORED TISSUE OR TOILET PAPER, SANITARY NAPKINS, CIGARETTE BUTTS, EGG SHELL, COFFEE GROUNDS, OR OTHER NON-BIODEGRADABLE OBJECTS AND LARGE AMOUNTS OF SOLIDS AS GENERATED BY GARBAGE DISPOSAL GRINDERS. HEAVY USE OF A GARBAGE GRINDER CAN CAUSE A RAPID BUILD-UP OF SLUDGE AND SCUM WHICH WILL REQUIRE THE SEPTIC TANK TO BE PUMPED MORE FREQUENTLY. IF CLEANING OF THE SEPTIC TANK IS NOT DONE ON A REGULAR BASIS, SYSTEM FAILURE COULD OCCUR. DO NOT DISPOSE OF TOXIC MATERIAL SUCH AS BLEACH, AMMONIA, GASOLINE, OIL OR OTHER SUCH WASTES TO THE SEPTIC SYSTEM AS THESE SUBSTANCES CAN DAMAGE AND/OR DESTROY THE SYSTEM.

NOTES FOR BEDS AND TRENCHES

- ALL DRILLED HOLES IN THE LATERAL PIPING SHALL BE THOROUGHLY CORED OUT SO THAT THEY ARE SMOOTH AND FREE OF ALL DEBRIS BEFORE INSTALLING IN THE TRENCHES.

- WHEN INSTALLING TRENCHES NEAR SIGNIFICANT TREES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR THE METHOD OF TRENCH EXCAVATION TO MINIMIZE THE DISTURBANCE OF THE TREE ROOT SYSTEM.

- ONLY A GOOD QUALITY SANDY LOAM SHALL BE USED OVER THE FIELD BEDS. CLAY LOAM WILL CAUSE IMPROPER FUNCTIONING OF THE SYSTEM AND IS NOT ALLOWED. SANDY LOAM SHALL BE DEFINED AS SHOWN ON TABLE VII USDA SOIL TEXTURAL CLASSIFICATIONS IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE SYSTEMS, LOWER COLORADO RIVER AUTHORITY, JANUARY 1, 1991. THE LOAM WILL BE INSPECTED BY THE ENGINEER AND THE LICENSING AUTHORITY, AND EITHER MAY REJECT THE LOAM IF THE LOAM CONTAINS TOO MUCH CLAY OR SAND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE FIELD.

- PVC "TURN-UPS" WITH THREADED ADAPTERS (FOR USE AS THE CLEANOUT OF THE DRILLED LATERAL LINES) SHALL BE INSTALLED AT THE ENDS OF ALL LATERAL LINES THAT ARE NOT CONNECTED DIRECTLY TO THE SUPPLY LINE. IF A TURN-UP IS DAMAGED DURING INSTALLATION, BACKFILLING, OR AFTER THE SYSTEM HAS BEEN PLACED IN OPERATION, IT SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LOSS OF PRESSURE FROM THE SYSTEM, OR ANY SURFACING EFFLUENT.

- A MINIMUM OF ONE (1) TURN-UP SHALL SERVE AS A CONNECTION POINT FOR THE PRESSURE ADJUSTING RISER. THE RISER SHALL BE CONNECTED TO THE ADAPTER ON THE TURN-UP AND SHALL EXTEND 12 TO 24" ABOVE THE CENTER LINE OF THE LATERAL. THE SYSTEM PUMP SHALL BE STARTED, AND THE BED PRESSURE REGULATING VALVE SHALL BE ADJUSTED SO THAT THE WATER RISES TO THE TOP OF THE OPEN ENDED PRESSURE ADJUSTING RISER WITHOUT OVERFLOWING. ADJUSTMENT SHOULD BE DONE BY QUALIFIED PERSONNEL.

- ALL STRUCTURE DRAINAGE, ROADWAY DRAINAGE, OR OTHER DRAINAGE SHALL BE DIVERTED TO AVOID THE SEPTIC TANK(S), PUMP TANK AND THE DISTRIBUTION FIELD.

- THE FIELD BEDS SHALL BE HYDROSEEDING OR SODDED, OR SOME COMBINATION TO ESTABLISH PERMANENT EROSION CONTROL.

- SODDING MAY BE EITHER SOLID OR STRIP SODDING WITH CARPET GRASSES, INCLUDING BERMUDA, ST. AUGUSTINE OR TIFGREEN GRASSES OR SOME OTHER TYPE OF GRASS WHICH IS NORMALLY A HIGH WATER USING GRASS. BUFFALO OR OTHER DROUGHT RESISTANT GRASSES WILL NOT BE PERMITTED.

- HYDROMULCHING AND SEEDING SHALL BE AS FOLLOWS: USE A WOODCELLULOSE FIBER MULCH APPLIED AT A RATE OF 4,000 POUNDS PER ACRE. FERTILIZE WITH 13-13-13 ANALYSIS FERTILIZER AT A RATE OF 400 POUNDS PER ACRE. SEED SHALL BE BERMUDA AT A RATE OF 5 POUNDS PER 1,000 SQUARE FEET PLUS WINTER RYE AT A RATE OF 15 POUNDS PER 1,000 SQUARE FEET.

- UN-VEGETATED FIELDS WILL NOT BE ALLOWED AND THE SYSTEM WILL NOT BE FINALLY APPROVED UNTIL A GRASS COVER IS ESTABLISHED. ALL AREAS DISTURBED BY THE CONSTRUCTION, INCLUDING THE TANK AREA, THE FIELD SUPPLY LINE, THE FIELD AREAS AND ANY OTHER AREA THAT HAS EXPOSED EARTH IN THE VICINITY OF THE FIELD, SHALL HAVE AN APPROPRIATE GRASS COVER ESTABLISHED.

- ANY ADDITIONS TO THE SITE, INCLUDING SIDEWALKS, DRIVEWAYS, PATIOS, SWIMMING POOLS OR OTHER IMPERVIOUS COVER SHALL BE CONSTRUCTED CLEAR OF THE FIELD AREA. DRAINAGE FROM ANY IMPROVEMENTS, OR NATURAL OVERLAND FLOW SHALL BE DIVERTED AWAY FROM, OR AROUND AND AWAY FROM THE WASTEWATER DISPOSAL SYSTEM.

- SHOULD GROUND WATER BE ENCOUNTERED IN THE TRENCHES, OR TANK HOLE, WHICH WAS NOT PREVIOUSLY INDICATED ON THE PLANS, OR DISCOVERED PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LICENSING AUTHORITY AND ENGINEER.

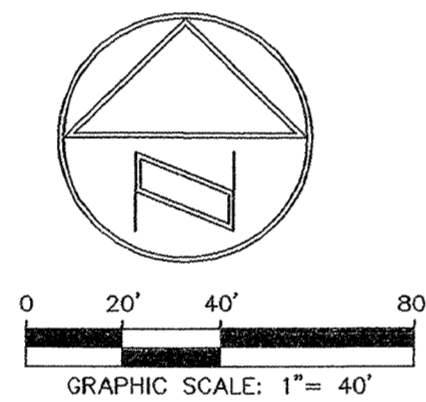
- SEE PIPE SCHEDULE FOR LATERAL LENGTH AND THE REQUIRED NUMBER, SIZE AND SPACING OF HOLES.

- THE BED FEED PIPE SHALL BE ENCASED IN MINIMUM 4" DIAMETER, SCHEDULE 40 PVC PIPE UNDER ALL DRIVES, WALKS, PATIOS, ETC.

- PIPE FOR THE SUPPLY LINE SHALL BE 2" DIAMETER, SCHEDULE 40 PVC, THE LATERALS SHALL BE 1 1/2" DIAMETER SCH. 40 PVC.

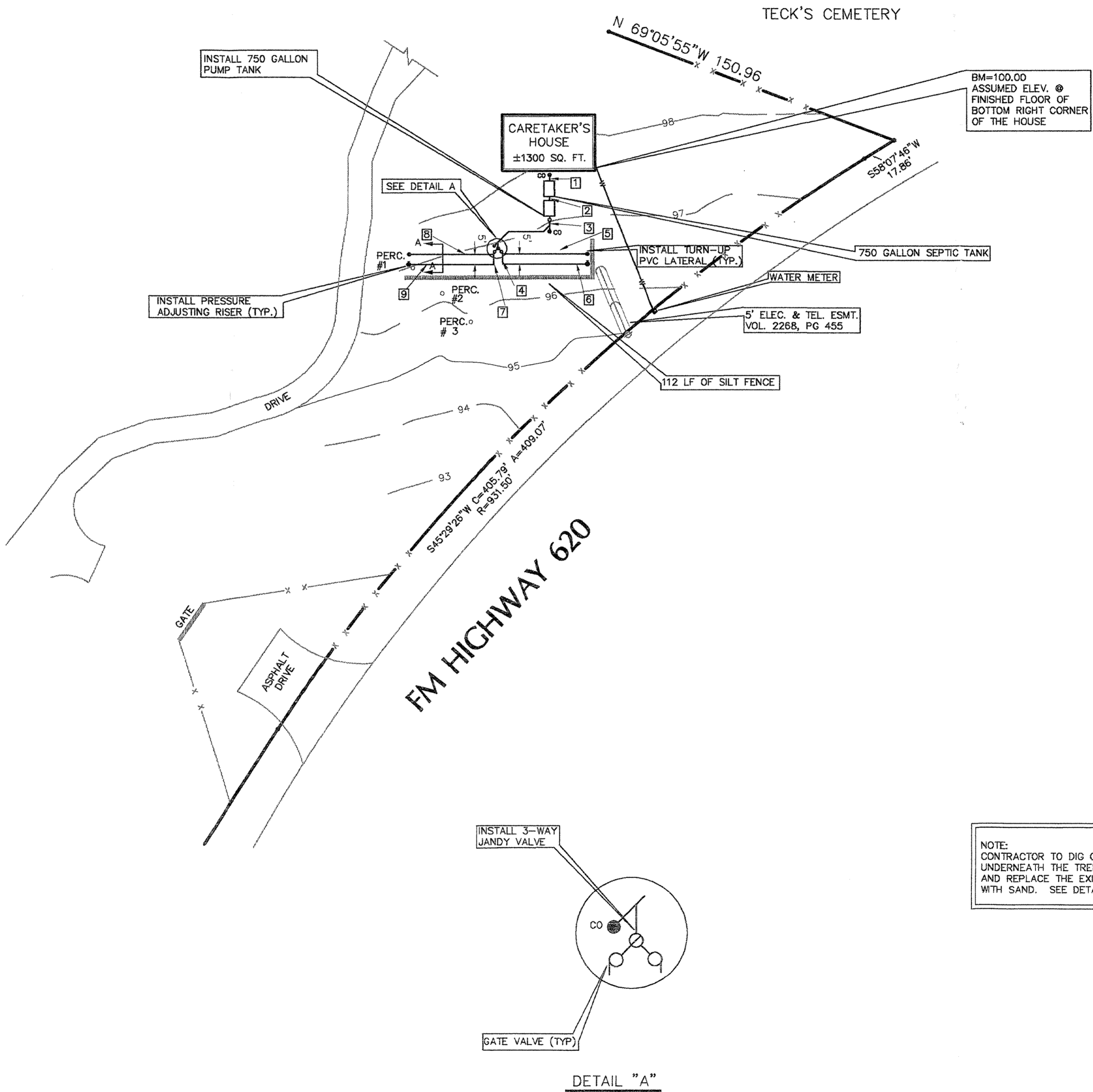
- ONE INSPECTION PORT, 4" PVC, SHALL BE INSTALLED PER TRENCH.

LEGEND	
EXISTING	PROPOSED
	TURN-UP AT THE END OF EACH LATERAL
	TURN-UP WITH PRESSURE ADJUSTING RISER
⊙	3-WAY JANDY VALVE
○	GATE VALVE
CO ○	CLEAN OUT
○	4" PVC CLEANOUT PORT
---	WIRE FENCE
---	PROPERTY LINE
⊙	POWER POLE
⊙	DOWN GUY
⊙	LIGHT POLE
⊙	WATER METER BOX
---	WATER LINE
---	WASTE WATER LINE



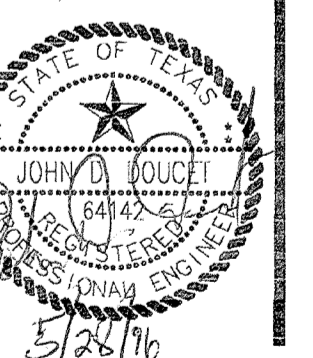
LINE NUMBER	SIZE (INCHES)	HOLE SPACING (feet)	NO. OF HOLES	HOLE SIZE (INCHES)	LENGTH (FEET)
1	4	N/A	N/A	N/A	3.5
2	4	N/A	N/A	N/A	2
3	2	N/A	N/A	N/A	32
4	2	N/A	N/A	N/A	7
5	1.5	5	8	3/16	42
6	1.5	5	8	3/16	42
7	2	N/A	N/A	N/A	7
8	1.5	5	8	3/16	42
9	1.5	5	8	3/16	42

PIPE SCHEDULE



15711
Willard Hanzlik
ON-SITE WASTEWATER
DISPOSAL FACILITY

CARETAKER'S HOUSE
2606 R.R. 620 NORTH
AUSTIN, TX 78734



Scale: 1" = 40'
Date: 2-9-96
Design: JDD
Drawn by: JS
File name: 09901S1
Approved by: JDD

SHEET
1
OF 2

Project No.:
09901.20

D&A Doucet & Associates, Inc.
1301 Capital of Texas Highway South, Bldg. B, Suite 325
Austin, Texas 78746 Phone: (512) 329-8743 Fax: (512) 329-8754

15711



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

PRIVATE SEWAGE FACILITY CONSTRUCTION PERMIT

For New or Modified Installations of Private Sewage Disposal Systems As
Required by LCRA and the Texas Natural Resources
Conservation Commission (TNRCC)

Issued To: -----

PERMIT NO.: S15711

WILLARD HANZLIK
607 ROBIN DALE DR
AUSTIN TX 78734

----- fold -----

Legal description: LEONARD ECK SURVEY

Issuance Date: 04/25/96

Expiration Date: 10/25/96

-----GENERAL-----

LAKE.....:TRAV
LCRA ZONE.....:W
JURISDICTION...:LCRA
COUNTY.....:TRAV
DWELLING UNITS.: 1
BEDROOMS.....: 2
BATHROOMS.....: 1
KITCHENS.....: 1
HEATED AREA..: 1300 sf

-----SEPTIC TANK-----

CAPACITIES (gal)
Tank #1.....: 750
Tank #2.....: 0
Tank #3.....: 0
Pump tank...: 750
COMPARTMENTS.:2

-----DRAIN FIELD(S)-----

TYPE OF SYSTEM.....:INF
MIN FIELD AREA....: 450 sf
FIELD AREAS.....: 2
DRAINFIELD REDUCTION?..:Y
LOW-FLOW TOILETS...: 1
SHOWERHEADS.....: 1
FAUCET AERATORS...: 2

-----COMM'L/NON-RESID-----

MAXIMUM QUANTITY...: 0 gal/day
METER/TIMER?.....:N

SPECIAL PROVISIONS:

- 1) A minimum of 450 square feet of Infiltrator leaching chamber area using low pressure dosing and divided into two separate drainfields must be installed.
- 2) A minimum distance of 5 feet must be maintained between the septic tank and building foundation unless a waiver is submitted from the owner. Should this distance be waived, a Conditional License will be issued.
- 3) This permit is for an Infiltrator system. The system size is based on a 40% reduction of the standard absorption trench system.
- 4) A minimum distance of 10 feet from property lines is required with all components of the on-site sewerage facility. This set-back may only be reduced through a written waiver submitted from the adjacent property owner. The waiver must be submitted prior to scheduling the first inspection and should be obtained prior to beginning construction.
- 5) The installation of low-flow toilets and showerheads as well as

NAME: WILLARD HANZLIK
DATE: 04/25/96

PERMIT NO.: S15711
PAGE.....: 1

Lower Colorado River Authority

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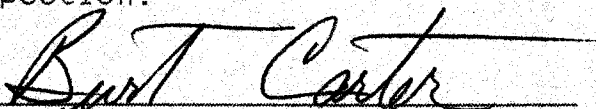
faucet aerators on all faucets within the house is required. Low-flow toilets allowing a flush capacity of 1.6 gallons or less and showerheads which allow a flow of 3 gallons per minute or less are required to be installed.

- 6) No portion of the system may be installed within ten (10) feet of a water line.
- 7) Temporary erosion and sedimentation (E/S) controls must be established prior to beginning development of the private sewerage facility and residence as required by the LCRA non-point source pollution control ordinance. A system backfill and revegetation inspection will be required in addition to the standard sewerage facility inspections. The E/S controls must remain in place and be properly maintained until LCRA inspects the revegetated area and approves removal of the controls. When the revegetation is complete, call the LCRA inspector listed below.
- 8) The installer is cautioned to follow the engineer's plans which call for a minimum of one foot of clean washed sand under the leaching chambers.
- 9) System design plans by Doucet and Associates, Inc., dated February 2, 1996, and revised April 24, 1996, must be followed with the addition of the above provisions.

ALL PRIVATE SEWAGE FACILITIES MUST BE INSTALLED BY A TNRCC REGISTERED INSTALLER. AN OWNER INSTALLING HIS/HER OWN SYSTEM IS EXEMPT FROM THIS REQUIREMENT; HOWEVER, THE OWNER MUST OBTAIN APPLICABLE REQUIREMENTS FROM LCRA BEFORE BEGINNING CONSTRUCTION. IT IS THE OWNER'S RESPONSIBILITY TO VERIFY AN INSTALLER IS REGISTERED PRIOR TO ALLOWING SYSTEM INSTALLATION. IT IS RECOMMENDED THAT YOU OBTAIN A MINIMUM OF THREE (3) BIDS FROM REGISTERED INSTALLERS FOR THE INSTALLATION OF YOUR SYSTEM. LCRA CAN PROVIDE THE NAMES AND PHONE NUMBERS OF QUALIFIED INSTALLERS.

To schedule inspections: For Lake Travis, call Chuck Van Cleave between 8:00 and 5:00 p.m. weekdays @ 473-3333 ext. 2566 or 1-800-776-5272, ext. 2566; for all other lakes, call for Bill Maddox at 1-800-776-5272, extension 2053 or locally at (512) 473-3333, ext. 2053. You must furnish the property owner's name, application number, property location, and name and registration # of the TNRCC registered installer, if applicable, when you call for an inspection.

Approved by:


Burt Carter, R.S.
Environmental Protection Division

April 25, 1996

s_consp.txt, rev: 09-12-94

NAME: WILLARD HANZLIK
DATE: 04/25/96

PERMIT NO.: S15711
PAGE.....: 2

Revised Proposal

LOW PRESSURE DOSE SYSTEM REVIEW

Appl. # 15711 Date Rec'd. _____
Owner Hanzlik Lake Travis
System Designer Doucet + Assoc. Ph. # () _____
Info Checklist: Appl. ☒ Perc Form ☒ Lot Plat _____ Floor Plans _____
System Design Plans ☒ Water Conservation Info _____ O&M Form _____
Waivers to reduce setbacks or cross streets _____.

(☒) Single family. Number of actual BR's 2 including offices, etc. Sq. ft. of heated living area _____ equals _____ equivalent BR's. Size system using _____ BR's. Lot size OK _____.
() Commercial or multi-family. GPD of flow _____. For non-residential, density is 1/2 acre per 400 gpd. Density OK _____.
Designed by P.E. if over 400 gpd? _____.

SEWER LINE & SEPTIC TANK

Sewer line spec's OK _____ Sewer line clean-out shown _____.
S. T. 1 cpcty. 750 gal. Two compartments ☒ Risers ☒.
S. T. 2 cpcty. _____ gal. Inlets & outlets OK ☒ Sand Pads ☒.

PUMP TANK

Pump Tank capacity 750 gal. Sand pad ☒ Volume above alarm OK _____. Alarm specified on separate electrical circuit ☒.
Alarm location ☒. Pump shown raised off tank bottom ☒.
Siphon hole if field is at a lower elevation NA. Duplex pumps if non-residential NA.

SETBACKS

Drainfield setback to: foundations 15' ☒, wells 150' NA, property lines 10' ☒, above Lake Travis 691' msl ☒, 200' or more from shoreline on other lakes NA, bluffs or embankments 50' NA, water lines 10' ☒. System location OK ☒.

DRAINFIELD DESIGN

Flow = 150 gpd/BR X _____ BR = _____ gal. $TNRCC = 1125 \div 4 \times .78 = 878$
Area = _____ gal./_____ gpd/sq.ft. (Ra) = _____ sq. ft. $N.C. = 300 \div .4 = 750 \times 1.25 = 938 \times .78 = 731$
Length = _____ sq. ft./5 ft. spacing = _____ linear ft. of trench Proposed 188 x 5 = 940 OK
_____ lin. ft. X _____ (% for _____ water cons. devices) = _____ lin. ft.

OTHER DRAINFIELD FACTORS

Vegetative cover specified ☒. Trench cross-section shown ☒.
Surface runoff protection is specified ☒. Profile hole information is provided ☒. Perc test rate 23 min/inch.
Trenches are set on contours ☒. If 50' setback from embankment is shown, justification is provided NA.

DOSING RATE

Determine flow rate/hole using hole size and pressure head from Table 2, page 8. For 3 ft. pressure head and 3 1/16 inch holes, flow rate = .72 gpm.
Flow rate/line = .72 gpm/hole X 9 holes/line = 6.48 gpm
Total flow rate = .72 gpm/hole X 18 holes/field = 12.96 gpm
Add 2 gpm to total flow rate if siphon breaker hole is used.
Total flow rate = 13 gpm + 2 gpm = 13 gpm.

Floodplain compliance letter ☒
or
Existing House _____

1.3 psi = 2.94'

O+M guide for owner submitted by P.E. or R.S.? No

TOTAL HEAD CALCULATION

Use length of supply manifold to estimate pipe friction, not the lateral lines, then add 20% to account for joints and fittings.

1. Elevation head = 0 ft. (height from pump to field)
2. Pressure head = 3 ft. (distribution system pressure)
3. Friction head = 1.2 X pipe friction.
Given 39 ft. long supply line with a 2 -inch diameter and a 13 gpm dosing rate.
Pipe friction = (39 ft./100 ft.) X .35 ft. friction loss per Table 3 = .13 ft. pipe friction.
Friction head = 1.2 X .13 ft. pipe friction = .16 ft. = 1

Total head = 0 ft. elev. + 3 ft. press. + 1 ft. friction = 4 ft.

Specified pump is suitable for total head and dosing rate .

DOSING VOLUME

V dose = V supply + 5 (V laterals)

To calculate volume of lines use Table 4, page 12.

1/3 HP Pump
Grundfos Boss 200

1. Supply line = 39 ft. of 2 -inch pipe.
V supply = (39/100) X 16.2 gal. = 6.3 gal. = 7
2. Lateral lines = 84 ft. of 1 1/2 -inch pipe.
V lateral = (84/100) X 9.2 gal. = 7.7 gallons = 8
3. V dose = 7 gal. + 5 (8 gal.) = 47 gallons
40 minimum

Specified dosing volume of 100 gal. is OK ✓. Maybe too much for 6" trench.

Dose 2 to 4 times/day.

If field is uphill, is a check valve specified? ✓

Permit Provisions:

Pump S.T. every 3 to 5 yrs. (Have these comments to Jay Singh)
5-22-96

(1) Need O+M guide ✓ (2) 1 1/4" lateral vs. 1 1/2" vs. 2" (3) 100 gal. a bit much for 6" trench. (4) Under Trench + Bed Notes" Note 3 refers to Leaching Chambers,

Reviewed by

Burt Carter

Date

5/22/96

lpdsr	USDA Soil Texture*	Estimated Permeability	Maximum Loading Rate**
		min/in.	gpd/ft ²
	Sand, loamy sand	20	0.50-0.40
	Sandy loam, silt loam	20-40	0.40-0.30
	Sandy clay loam, clay loam	40-60	0.30-0.20
	Silty clay loam, sandy clay	60-90	-0.20-0.10
	Silty clay, clay	90-120	0.10-0.05

*This table does not consider the effects of clay mineralogy on soil permeability. A sandy clay composed of 1:1 clays may be more permeable than a clay loam of 2:1 clays.

**These loading rates should be used only for calculating the size of LPP systems—not for other types of systems.

15711

May 20, 1996

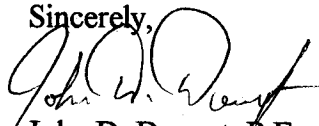
Mr. Burt Carter
Lower Colorado River Authority
P.O. Box 220
Austin, TX 78748

Re: Revised On-Site Wastewater Disposal Facility for Caretaker's
Job No. 09901

Dear Mr. Carter:

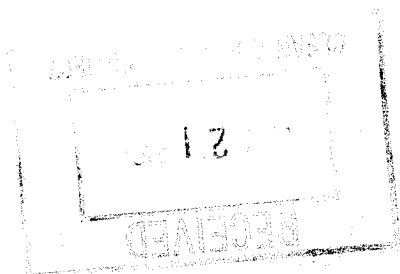
Attached, please find the revision of the septic system at Caretaker's House. We propose to use pipe and gravel in lieu of infiltrator system due to cost considerations. We have made the necessary adjustments in the design calculations. An expedited review of these plans would be greatly appreciated. If you have any further questions, feel free to call.

Sincerely,


John D. Doucet, P.E.

c:\projects\9901\hanzlic2.doc\







April 23, 1996

Mr. Burt Carter
Lower Colorado River Authority
P.O. Box 220
Austin, TX 78748

Reference: Proposed On-Site Wastewater Disposal Facility for Caretaker's

Dear Mr. Carter:

Attached, please find the changes we have made per your recommendation. The field has been adequately sized with one foot of sand underneath the trench bottom. We have also added a 3/16" hole, facing downward at the end of each line. If you have any further questions, feel free to call.

Sincerely,

A handwritten signature in cursive script that reads 'John D. Doucet'.

John D. Doucet, P.E.

Reed
4-24-96
OSWF

LCRA Appl. # 15711

~~SA/H~~
Operations & Maintenance Procedure for Caretaker's House

2606 R.R. 620 North

The following guidelines are recommended by the engineer for the proper operation and maintenance of this septic system. The longevity and efficiency of this system largely depends on how close these guidelines were followed.

1. Septic Tank: The septic tank will require periodic pumping. Sludge and scum accumulation shall be checked annually by a reputable licensed pumping contractor, or plumber. The rate of sludge and scum accumulation. Every effort should be made by the homeowner to reduce the amount of unnecessary or non-biodegradable wastes flushed into the septic system, including but not limited to: grease, wax, colored tissue or toilet paper, sanitary napkins, cigarette butts, egg shells, coffee grounds or other non-biodegradable objects and large amounts of solids as generated by garbage disposal grinders. Heavy use of garbage grinder can cause a rapid build-up of sludge and scum which will require the septic tank to be pumped more frequently. Do not dispose toxic material such as bleach, ammonia, gasoline, oil or other such wastes to the septic system as these substances can damage and/or destroy the system.

2. Pump tank: The pump tank has been provided with a capacity of at least one day after the high water alarm goes off. The system must be inspected and repaired within that period of time.

3. Pump and Level Control: A spare pump should be kept readily available in case of pump failure. Proper pump and float control operation should be checked during routine operation. In case of pump failure the PVC union in the pump tank should be unscrewed and the entire assembly to be lifted out of the tank. The power supply should be turned off before removing and replacing the pump or level control assembly.

4. PVC Turn-Ups: Turn-ups have been provided at the end of each lateral in case the lateral lines get clogged-up. In case of clogging, the cap on the turn-up should be unscrewed and the lateral should be backflushed with a garden hose. Pressure should be checked and adjusted one month after installation and annually thereafter.

5. 3 Way-Jandy Valve: This valve switches flow of wastewater from one bed to another, thus, preventing the beds from becoming oversaturated. This valve should be monitored time to time for proper functioning.

6. Gate Valve(s): The gate valve is primarily used to regulate the pressure head in the lateral lines. The gate valve is adjusted until the water level in the pressure adjusting riser reaches the desired level. *Not for owner adjustment.*

7. Other Precautions:

- a. No automatic sprinkler system shall be installed over this system.
- b. The septic field should always be kept vegetated to promote the effects of evapotranspiration.

References

Cogger Craig, Carlile, Bobby L., Osborne, Dennis: *Design and Installation of Low-Pressure Pipe Waste Treatment Systems*, North Carolina State University, Department of Soil Science, 1982.

Doucet & Associates, *Construction Plans for Caretaker's House Septic System*, Austin, Texas, 1996.

4-22-96
15711

North Carolina LPD.

$$\frac{150 \times 2}{R_a} = \frac{300}{.4} = 750 \text{ ft} \times .78 = 585 \text{ ft}$$

$$585 \text{ ft} \div 5 = 117 \text{ L.F.} \div 6.25 \text{ L.F. / chamber} \\ = 18.72 = 19 \text{ Chambers} \times 1.25 = 23.75 = 24 \text{ Chambers}$$

- * Use R_a of .4 with N.C. manual.
- * Use 25% oversize due to rock layer (fractured).
- * Use 1' sand layer under chambers.
- * Put drain hole in end of each LPD pipe.
- * "C" on calc sheet says use $3/16"$ holes, but Sheet 2 says use $5/32"$

Note - I gave these comments to Jay Singh this date.

Burt Carter



LOWER COLORADO RIVER AUTHORITY



PERCOLATION TEST CERTIFICATION

Date December 14 1995

Application No. _____

Location: (Subdivision) _____

(Section)

(Block)

(Lot)

If other than Subdivision 2606 R.R. 620

Owner: Williard Hamzik

Test Performed By: Jack H. Holt & Associates

NOTE: PERCOLATION TEST HOLES MUST BE LEFT OPEN FOR ON-SITE INSPECTION BY LCRA.

Time in minutes for water to fall one inch for each hole:

Hole No. 1 17.14 No. 2 24.00 No. 3 30.00 No. 4 _____

Average Percolation Rate in Minutes Per Inch 23.71

(To be filled in only if three or more holes are tested.)

On reverse side of this certification show lot diagram and specifications, location of test holes marked as Hole #1, #2, etc., and distance of these holes from nearest property lines. Also indicate direction of North.

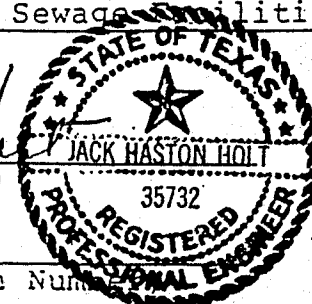
I, Jack H. Holt, a registered Engineer
(Name) (Engineer/Sanitarian)

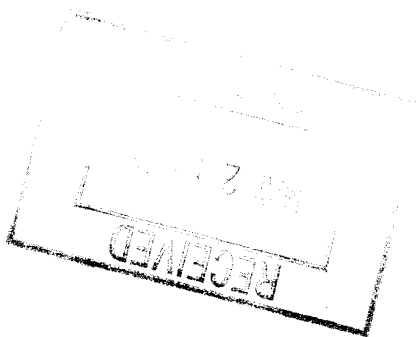
of the State of Texas, do hereby certify that the information shown hereon represents the results of percolation test performed under my supervision in accordance with the requirements specified in the Texas Department of Health Construction Standards for Private Sewage Facilities.

Jack H. Holt
(Signature)

35732

(Texas Registration Number)





**ON-SITE WASTEWATER DISPOSAL DESIGN FOR
CARETAKER'S HOUSE
AUSTIN, TEXAS 78734
May 16, 1996**

A. SIZE DISPOSAL FIELD

1. Area of disposal field necessary.

Percolation tests were performed for this site. The results of these tests are provided in Appendix A. This system was designed based on the criteria in *Design and Installation of Low-Pressure Pipe Waste Treatment Systems* (North Carolina State University, May 1982).

Length of trench necessary

$$\text{Area Required} = Q/Ra + 25\% \text{ (To account for the rocky nature of soil)} = 300\text{gpd}/0.5\text{gpd/sq. ft} \\ +25\% = 937.5 \text{ sq. ft.}$$

$$\text{Length of Trench Required} = \text{Area}/5 \text{ ft} = 187.5 \text{ L.F.}$$

Two separate beds of equal areas with two trenches each are provided. A three-way Jandy Valve will be used to distribute flow between the two beds.

Bed #1 - Two 42 LF Trenches

Bed #2 - Two 42 LF Trenches

B. SIZE TANKS

For residential properties with 2 bedrooms the L.C.R.A. requires a tank size of 750 gallon.

A 750 gallon tank will house the pump chamber

C. PRESSURE DOSING RATE

? Each chamber shall be dosed by 1.5" Sch. 40 PVC, 25' long with 3/16" holes, 5' on-center.

$$\# \text{ of holes/line} = 9$$

$$\# \text{ of lines} = 2$$

$$\text{therefore, total \# of holes} = 18 \text{ holes}$$

$$\text{Flow rate/hole} = 0.72 \text{ gpm/hole}$$

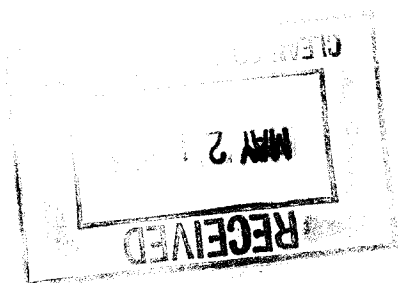
$$\text{Therefore, Total flow rate} = 12.6 \text{ gpm @ } 1.30 \text{ psi}$$

D. PUMP SELECTION

1. Total head for system

a. Friction loss

$$\text{Pipe} = 42 \text{ LF of } 2" @ 12.6 \text{ gpm} = 0.47 \text{ ft}$$



Joints/fittings (20% of pipe loss) = 0.094 ft
Total = 0.56 ft

b. Elevation head = 0 ft

c. Pressure head = 3.0 ft

Maximum Head = $0.56 + 0 + 3.0 = 3.56$ feet

Use 1/3 HP Grundfos Boss 200 effluent pump . This pump will be suitable for either bed.

E. DOSING VOLUME

1. Minimum Dosing Volume

Bed #1 or Bed #2

42 LF of 2 in Schedule 40 PVC = 6.8 gal

42 LF of 1.5 in = 3.86 gal

Minimum Dose = V supply + (5*V laterals)

Minimum Dose = 26.1 gal.

2. Select Dosing Volume

Plan for 2 to 4 doses per day

For house with 2 bedrooms 300 gallons/day (150gal/bedroom/day) sewage load is assumed.

Dose would range from 75 to 150 gallons.

Therefore, use 100 gallon dose

3. Determine tank draw down

750 gallon tank/33.5" = 22.40 gal./in.

100 gallon/22.40 gal./in = 4.46 inches

Use 5 inch draw down.

F. EMERGENCY STORAGE VOLUME

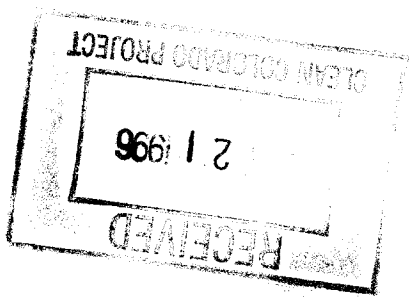
1. Required emergency storage volume

One day daily flow after the alarm is activated = 300 gallons

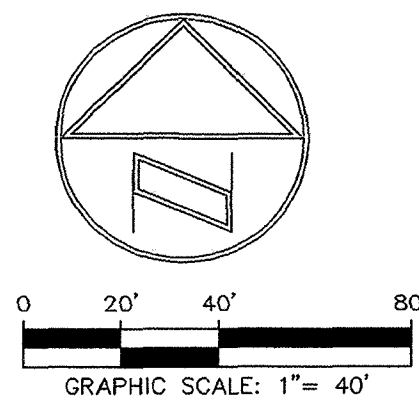
2. Provided emergency storage volume

33.5" - (6" above base + 5" pumping range + extra 3" before alarm activates) = 19.5" storage depth

19.5" * 22.40 gal./in = 437 gallons provided

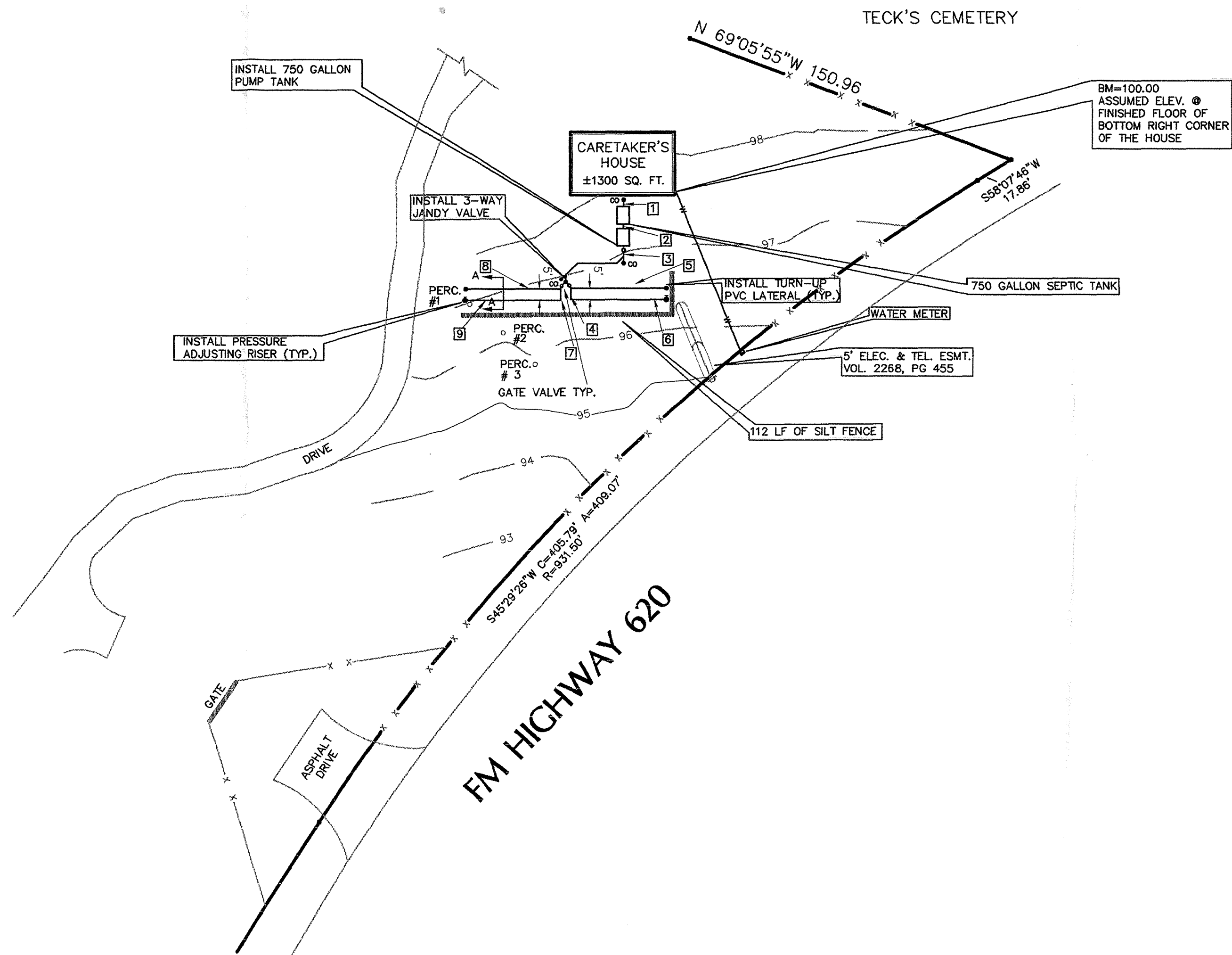


LEGEND	
EXISTING	PROPOSED
	• TURN-UP AT THE END OF EACH LATERAL
	• TURN-UP WITH PRESSURE ADJUSTING RISER
⊙	⊙ 3 WAY JANDY VALVE
⊙	⊙ GATE VALVE
⊙	⊙ CLEAN OUT
⊙	⊙ 4" PVC CLEANOUT PORT
---	--- WIRE FENCE
---	--- PROPERTY LINE
⊙	⊙ POWER POLE
⊙	⊙ DOWN GUY
⊙	⊙ LIGHT POLE
⊙	⊙ WATER METER BOX
---	--- W WATER LINE
---	--- WW WASTE WATER LINE



LINE NUMBER	SIZE (INCHES)	HOLE SPACING (feet)	NO. OF HOLES	HOLE SIZE (INCHES)	LENGTH (FEET)
1	4	N/A	N/A	N/A	3.5
2	4	N/A	N/A	N/A	2
3	2	N/A	N/A	N/A	32
4	2	N/A	N/A	N/A	7
5	1.5	5	8	3/16	42
6	1.5	5	8	3/16	42
7	2	N/A	N/A	N/A	7
8	1.5	5	8	3/16	42
9	1.5	5	8	3/16	42

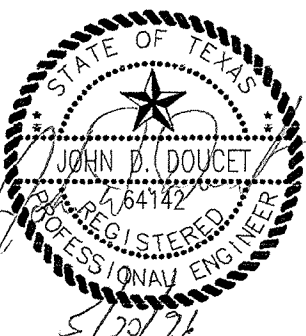
PIPE SCHEDULE



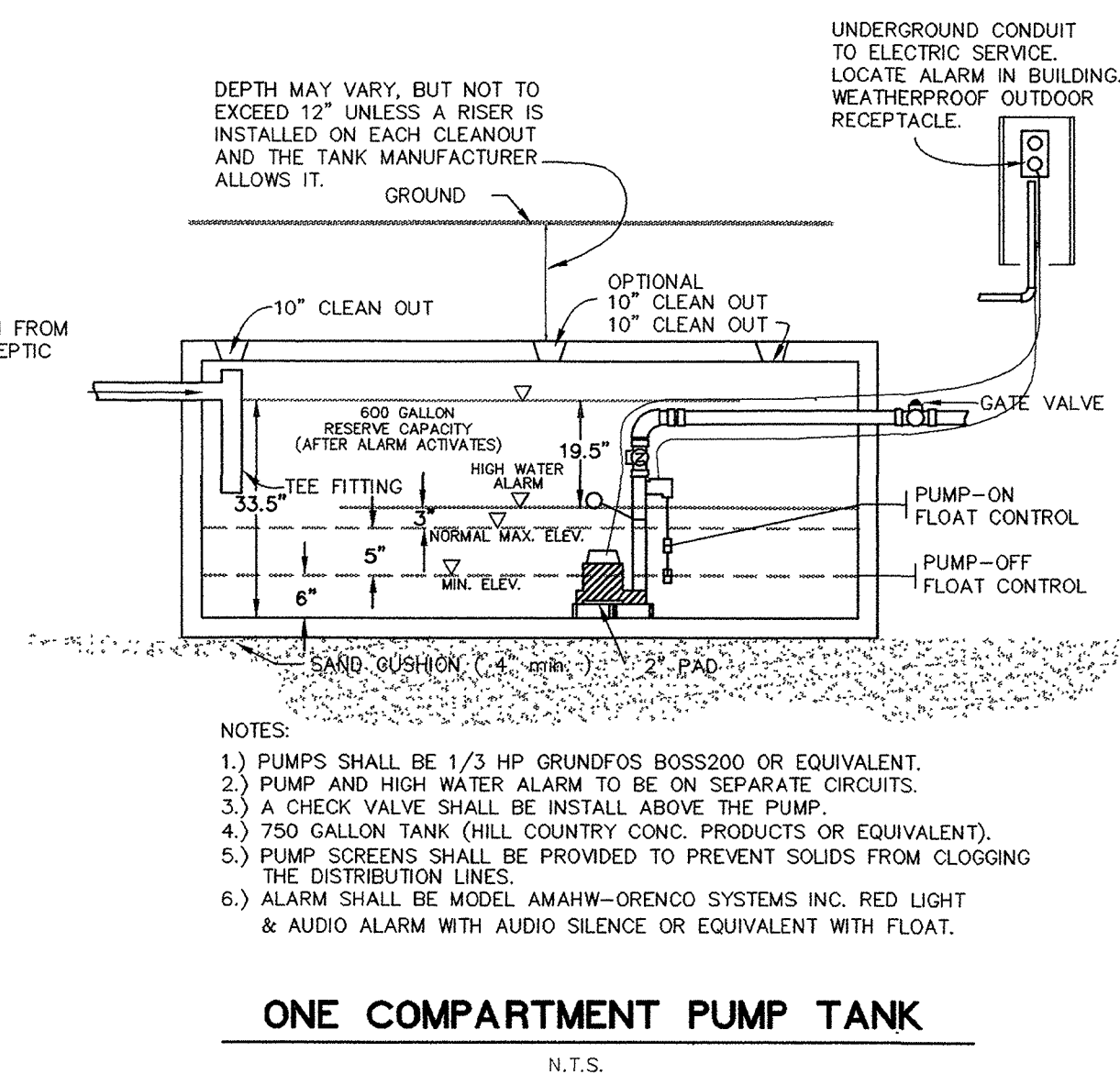
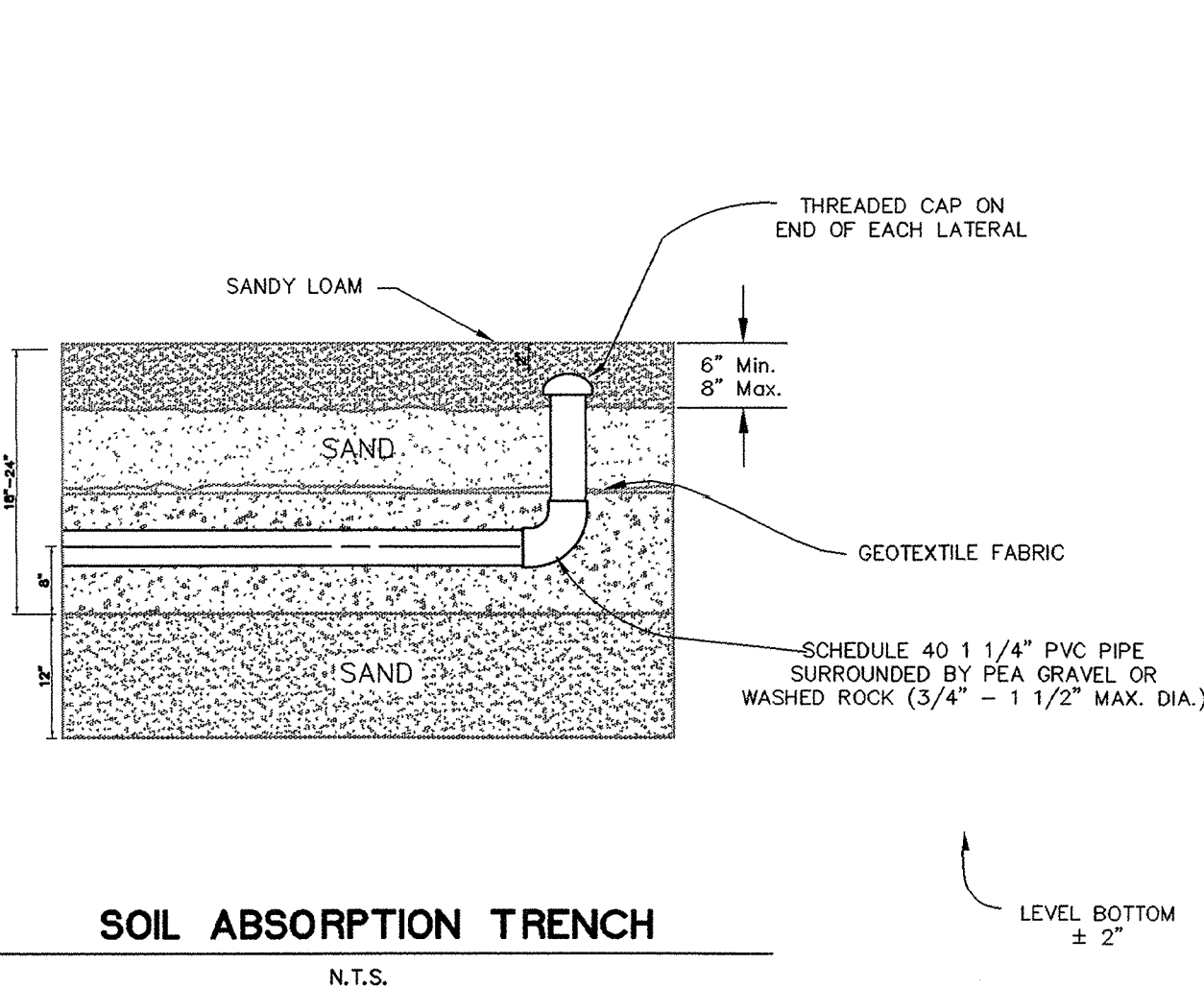
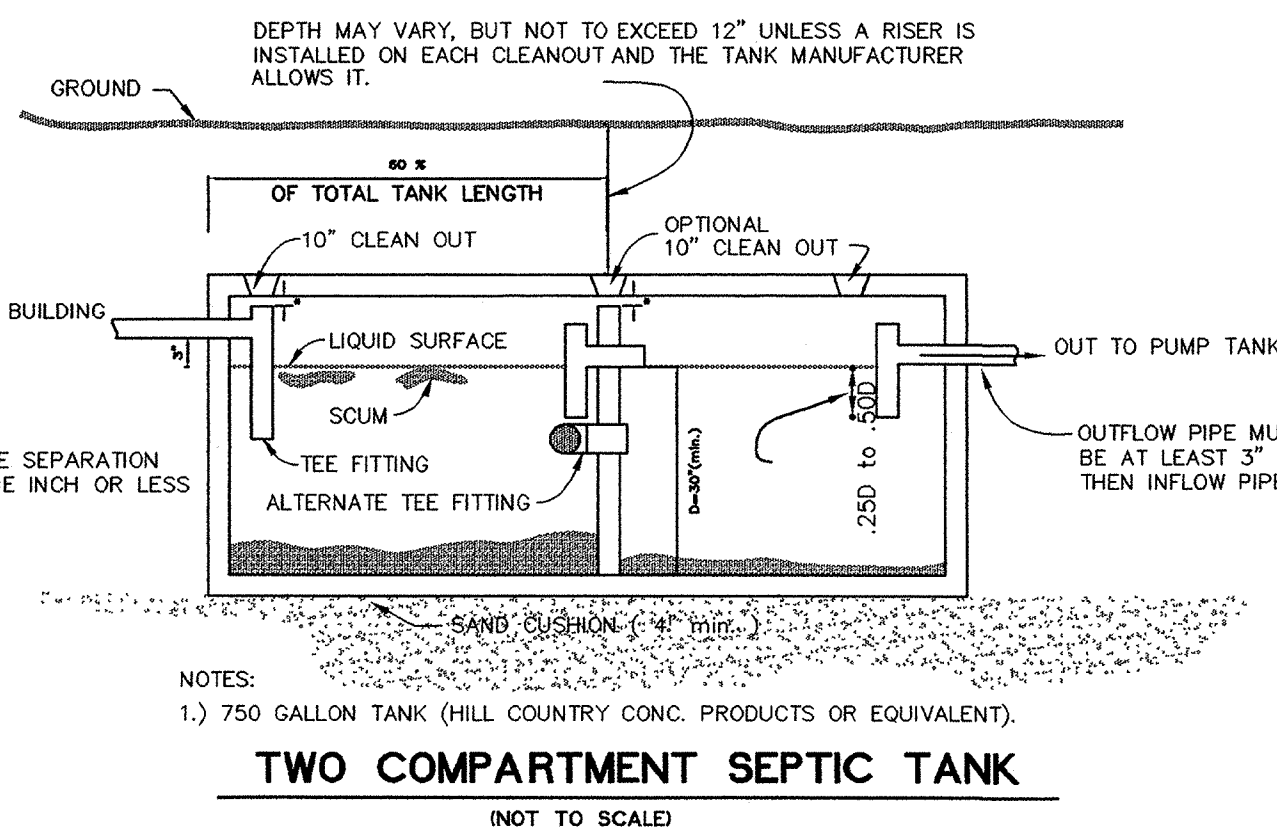
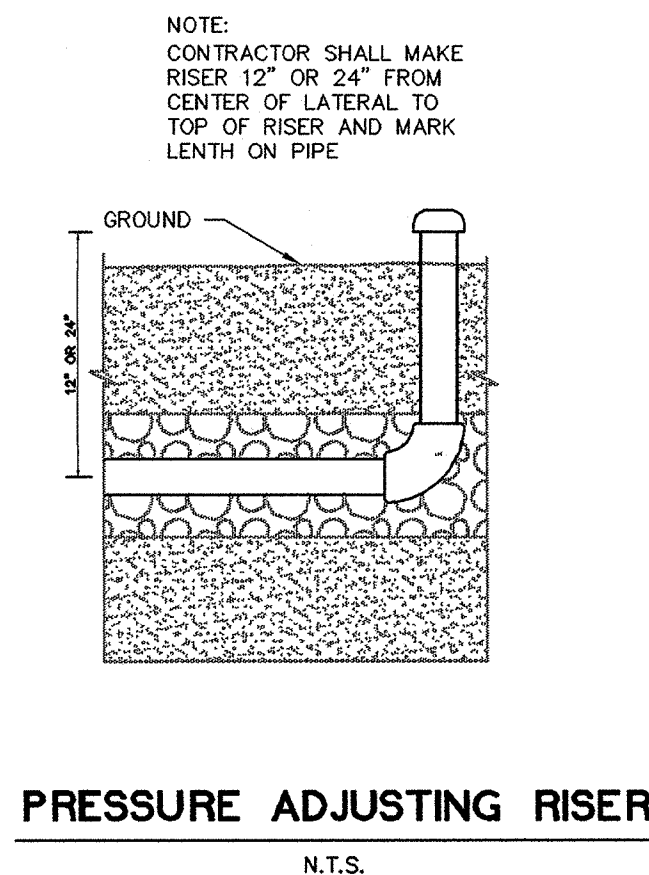
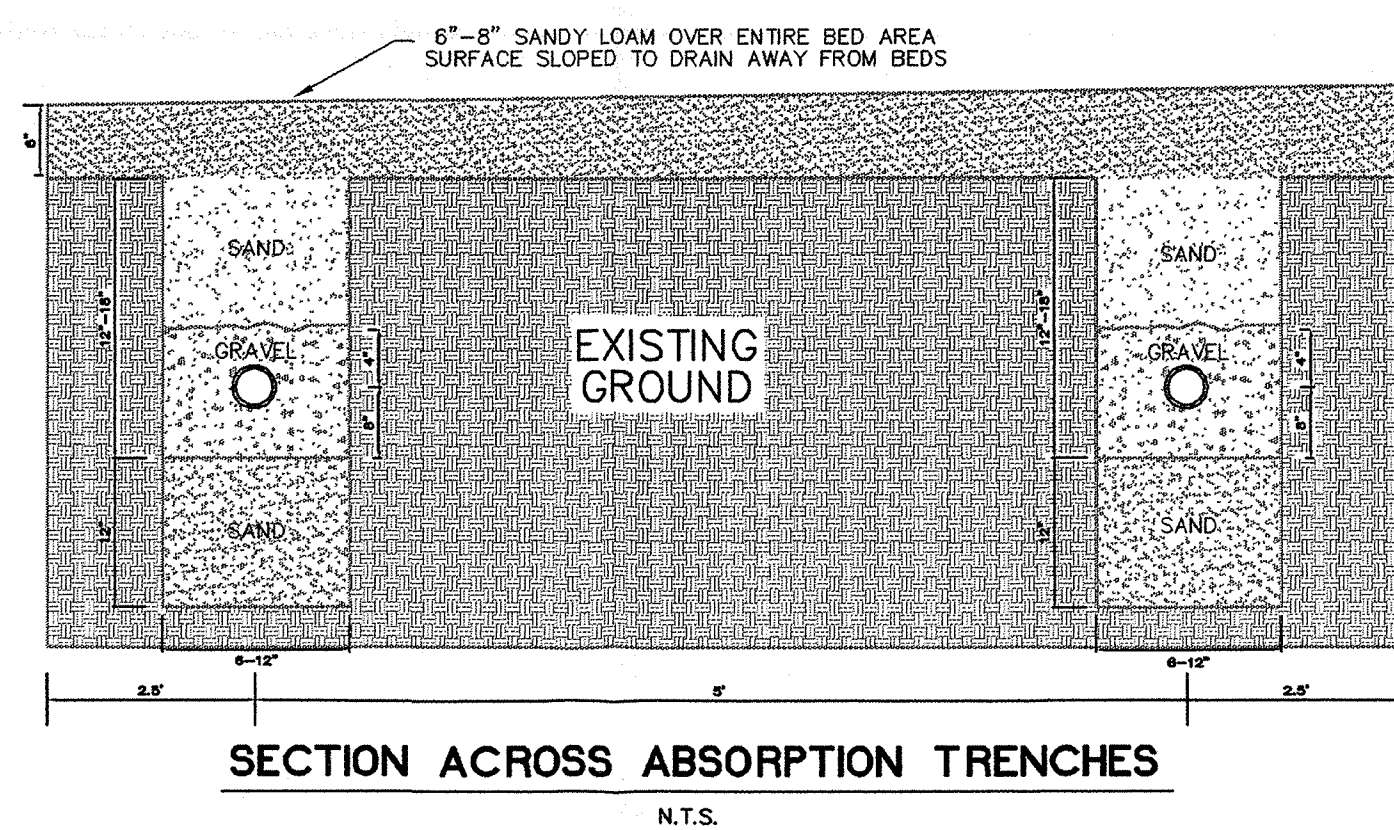
NOTE:
CONTRACTOR TO DIG ONE (1) FOOT
UNDERNEATH THE TRENCH BED BOTTOM
AND REPLACE THE EXISTING MATERIAL
WITH SAND. SEE DETAIL SHEET 2.

**ON-SITE WASTEWATER
DISPOSAL FACILITY**

**CARETAKER'S HOUSE
2606 R.R. 620 NORTH
AUSTIN, TX 78734**



Scale: 1" = 40'
Date: 2-9-96
Design: JD
Drawn by: JS
File name: 09901S1
Approved by: JDD



GENERAL NOTES

1. CONSTRUCTION MATERIALS, SPECIFICATIONS, AND ALL CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE FACILITIES, LOWER COLORADO RIVER AUTHORITY, EFFECTIVE JANUARY 1, 1991.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE PROPOSED SYSTEM INSPECTED BY THE L.C.R.A. AND DESIGN ENGINEER, INSPECTIONS SHALL SCHEDULED IN ORDER TO VERIFY THAT THE SYSTEM IS INSTALLED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE FOLLOWING INSTALLATION POINTS FOR INSPECTIONS:

- AFTER THE TRENCHES HAVE BEEN EXCAVATED, LEVELED, CLEANED AND BEFORE ANY GRAVEL IS PLACED IN THE TRENCH. AT THIS TIME, THE LATERAL PIPES SHALL BE CUT TO LENGTH, AND HOLES DRILLED AT INTERVALS IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILS IN THE PLANS. THE PIPES SHALL BE LAID OUT NEXT TO THE APPROPRIATE TRENCH INTO WHICH THEY WILL BE PLACED. THE TANK(S) SHALL HAVE BEEN PLACED ON THE SAND PAD, LEVELED AND FILLED WITH WATER FOR THIS INSPECTION.
- AFTER THE PANELS ARE PLACED IN THE TRENCHES, AND THE PIPES PLACED IN THE GRAVEL IN THE CORRECT POSITION.
- WHEN THE ELECTRICAL POWER IS CONNECTED TO THE PUMPS, AND THE PRESSURE HEAD IS READY TO BE SET.
- AFTER FINAL LANDSCAPING, WHEN THE VEGETATIVE COVER HAS BEEN COMPLETED, AND THE GRASS IS ESTABLISHED.
- AT SUCH ADDITIONAL POINTS AS MAY BE DETERMINED BY THE INSPECTOR ON ANY OF THE ABOVE SCHEDULED VISITS TO THE SITE BY THE L.C.R.A. INSPECTOR.

3. THE CONTRACTOR SHALL NOT DEViate FROM THESE PLANS WITHOUT THE EXPRESS WRITTEN CONSENT FROM L.C.R.A. AND THE ENGINEER.

4. ALL DRAINAGE SHALL BE DIRECTED AWAY FROM THE LOW PRESSURE DOSE FIELD, THE SEPTIC TANK AND THE PUMP TANK. IF SPECIFIED, STORMWATER DIVERSION BERMS SHALL BE INSTALLED IN THE LOCATIONS INDICATED ON THE SITE PLAN.

5. THE OWNER SHALL PERFORM ALL NECESSARY MAINTENANCE TO SAFEGUARD AGAINST RUNNING COMMODOES, LEAKY FAUCETS, ETC., TO PREVENT HYDRAULIC OVERLOAD OF THE DISPOSAL FIELD.

6. THIS LOW PRESSURE DOSE SYSTEM HAS BEEN DESIGNED TO OPERATE PROPERLY TO THE DESIGN SPECIFICATIONS SET FORTH HEREIN. ALTERATION OF THE INSTALLED SYSTEM BY THE OWNER, INCLUDING, BUT NOT LIMITED TO LANDSCAPING AND/OR DRAINAGE CHANGES MAY CAUSE THE SYSTEM TO MALFUNCTION, AND SUCH FAILURE SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER. QUESTIONS RELATING TO THIS SYSTEM SHALL BE DIRECTED TO THE ENGINEER.

7. AUTOMATIC SPRINKLER SYSTEMS SHALL NOT BE INSTALLED OVER THIS SYSTEM.

8. THE CAPACITY OF THE SYSTEM TO HANDLE EFFLUENT LOADING MAY VARY IN WINTER, SPRING AND FALL MONTHS DUE TO CHANGES IN RAINFALL AND OTHER MOISTURE CONDITIONS. GENERAL WATER CONSERVATION IS STRONGLY RECOMMENDED THROUGHOUT THE YEAR.

9. LOW VOLUME FLUSH TOILETS, LOW FLOW SHOWERHEADS AND FAUCETS, AND OTHER WATER CONSERVATION DEVICES SHALL BE INSTALLED FOR USE IN THE BUILDING.

10. THE LIST OF INSPECTIONS ABOVE SHOWS THE MAJOR ITEMS TO BE CHECKED DURING THE INSPECTIONS. EVERY PART OF THE SYSTEM, INCLUDING GRADES, MATERIALS AND WORKMANSHIP SHALL BE OPEN TO INSPECTION AND APPROVAL.

11. ALL WATER SUPPLY LINES MUST BE KEPT A MINIMUM OF TEN (10) FEET AWAY FROM ANY PART OF THE PROPOSED WASTEWATER DISPOSAL SYSTEM. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY WATER LINES WHICH HE MAY LOCATE ON THE PROPERTY, WHICH ARE NOT SHOWN ON THE PLANS.

12. TREES TO BE SAVED SHALL BE DESIGNATED BY THE OWNER. THE CONTRACTOR AND OWNER SHALL COORDINATE FOR THE PRESERVATION OF DESIGNATED TREES. LATERAL LINES MAY BE ADJUSTED TO ALLOW FOR PROTECTION OF DESIGNATED TREES ONLY WITH PRIOR APPROVAL OF ENGINEER.

PUMP NOTES:

- THE SUBMERSIBLE PUMP(S) AND THE HIGH WATER ALARM SHALL BE PLACED ON SEPARATE CIRCUITS. THE ELECTRICAL CONNECTIONS SHALL BE HARD-WIRED EXTERNALLY TO THE PUMP TANK AND PLACED IN A WEATHER TIGHT BOX. THE ALARM CIRCUIT AND PUMP CIRCUIT SHALL BE CLEARLY MARKED IN THE ELECTRICAL PANEL BOX.
- ALL ELECTRICAL PANELS, WIRE, WIRING AND CONDUIT SHALL BE IN ACCORDANCE WITH THE ELECTRICAL CODE OF THE LOCAL POWER SUPPLY COMPANY THAT SUPPLIES POWER TO THE SITE LOCATION.
- A SPARE PUMP SHOULD BE KEPT READILY AVAILABLE IN CASE OF PUMP FAILURE. THIS SHALL BE THE OWNER'S OPTION.
- PUMP SCREENS SHALL BE INSTALLED TO PREVENT SOLIDS FROM CLOGGING THE DISTRIBUTION LINES.
- THE ALARM LIGHT, OR AUDIO ALARM, WILL ACTIVATE WHENEVER EFFLUENT IN THE PUMP TANK RISES ABOVE THE ALARM LEVEL DESIGNATED ON THE PUMP TANK DETAIL.

14. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOSS OF VEGETATION WHICH MAY OCCUR AS A RESULT OF THE CONSTRUCTION OF THIS SYSTEM. THE CONTRACTOR, AS LONG AS HE EXERCISES CARE IN INSTALLING THE SYSTEM, SHALL NOT BE RESPONSIBLE FOR LOSS OF VEGETATION.

15. THE SYSTEM WILL NOT BE FINALLY ACCEPTED BY THE LOCAL REGULATORY AUTHORITY FOR OPERATION UNTIL THE FIELD HAS AN APPROVED GRASS COVER. IF THE CONTRACTOR ELECTS TO USE THE SEEDING OPTION METHOD OF COVER, HE SHALL BE RESPONSIBLE FOR GETTING THE GRASS GROWING TO THE POINT WHERE IT IS ACCEPTABLE BY THE REGULATORY AUTHORITY. THIS SHALL INCLUDE PERIODIC WATERING AS REQUIRED, AND RE-SEEDING IF NECESSARY. THE OWNER, AT HIS ELECTION, MAY RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY BY NOTIFYING THE REGULATORY AUTHORITY, IN WRITING, THAT HE IS RESPONSIBLE FOR THE GRASS.

16. THE HIGH WATER ALARM SHALL CONSIST OF A VISUAL AND AUDIO ALARM COMPONENT.

NOTES FOR TANKS

1. ALL SEPTIC TANKS SHALL BE SET LEVEL ON A MINIMUM FOUR (4) INCH THICK CONSOLIDATED SAND PAD. ANY OVER EXCAVATION OF THE SEPTIC TANK HOLE BENEATH THE TANK, SHALL BE FILLED WITH SAND TO THE CORRECT ELEVATION FOR THE TANK BOTTOM.

2. BACKFILL AROUND THE TANKS SHALL BE GRANULAR MATERIAL, SUCH AS SANDY LOAM, SAND, OR CUTTINGS FROM A ROCK SAW IF THE DISPOSAL FIELD IS A LOW PRESSURE DOSE FIELD. IN THE CASE WHERE THE FIELD IS AN EVAPORATIVE FIELD, FILL SHALL BE SAND OR SANDY LOAM. NO ROCKS, CLAY, STICKS, BRICKS, STONES, TRASH OR OTHER MATERIAL SHALL BE PLACED IN THE BACKFILL. THE BACKFILL SHALL BE THOROUGHLY WATERED AND COMPACTED. FINAL COVERAGE OVER THE TANK AND EXCAVATED AREAS OUTSIDE THE TANK, SHALL BE MOUND IN ORDER TO SHED STORM WATER RUN-OFF.

3. A TEN (10) INCH (MINIMUM) DIAMETER INSPECTION PORT SHALL BE PROVIDED OVER EACH INLET/OUTLET TEE FITTING TO PROVIDE FOR INSPECTION, CLEANING AND MAINTENANCE.

4. FOR TANKS BURIED MORE THAN TWELVE (12) INCHES DEEP, MANHOLE RISERS ARE REQUIRED. THE RISER SHALL BE REINFORCED CONCRETE PIPE OR RIGID RIBBED PVC WITH CONCRETE COVERS. THE INSIDE DIAMETER OF THE RISER MUST BE LARGE ENOUGH TO ACCOMMODATE THE EXISTING MANHOLE COVERS ON THE TANKS, AND SHOULD BE RAISED TO WITHIN SIX (6) INCHES OF THE FINISHED SURFACE GRADE.

5. TANKS IN DRIVEWAYS SHALL HAVE TRAFFIC BEARING LIDS. SUCH TANKS SHALL BE FITTED WITH RISERS TO THE FINISHED DRIVEWAY SURFACE, AND SHALL HAVE STANDARD CAST IRON MANHOLE COVERS INSTALLED OVER ALL ACCESS PORTS.

6. TANKS MAY BE RELOCATED FROM THE EXACT LOCATION SHOWN ON THE SITE PLAN, AT THE ENGINEER'S DISCRETION TO AVOID ADVERSE ROCK CONDITIONS, GROUNDWATER CONDITIONS, OR IN ORDER TO PRESERVE SIGNIFICANT TREES OR VEGETATION.

7. THE SEPTIC TANK RISERS, AND ALL INLET AND OUTLET OPENINGS SHALL BE THOROUGHLY SEALED WITH A HYDRAULIC TYPE CEMENT SEAL TO PREVENT THE ESCAPE OF GASES AND THE ENTRANCE INTO THE TANK(S) OF SURFACE RUN-OFF, GROUNDWATER, INSECTS OR TREE ROOTS. THE COVER TO THE RISER(S) AND/OR MANHOLE COVERS, MAY BE SEALED WITH MASTIC, IF GROUND WATER WILL POSSIBLY AFFECT THE TANK(S), THEN THEN THE RISER SHALL BE BROUGHT TO A MINIMUM OF FOUR (4) INCHES ABOVE THE FINISHED GRADE, AND SECURED SO THAT IT IS INACCESSIBLE TO CHILDREN OR CASUAL REMOVAL.

8. TANKS SHALL BE STAKED, FLAGGED OR OTHERWISE MARKED WHILE THE STRUCTURE ON THE LOT IS UNDER CONSTRUCTION IN ORDER TO PREVENT DAMAGE FROM TRAFFIC OR OTHER CONSTRUCTION RELATED ACTIVITY.

9. THE SEWER LINE FROM THE OUTLET TO THE SEPTIC TANK SHALL BE MINIMUM SCHEDULE 40 PVC PIPE. THIS LINE SHALL HAVE NO LESS THAN 1/4" PER FOOT SLOPE FROM THE HOUSE TO THE TANK. A CLEAN OUT PLUG SHALL BE PROVIDED WITHIN THREE (3) FEET OF THE FOUNDATION, AND AT ALL 45-DEGREE BENDS. NO BENDS IN THIS PIPE SHALL BE GREATER THAN 45-DEGREES. CONNECTIONS FROM THE SEPTIC TANK TO THE PUMP TANK SHALL SLOPE AT SLOPE AT 1/8" PER FOOT MINIMUM.

10. TANKS SHALL BE TESTED BY FILLING WITH WATER FOR TWENTY-FOUR HOURS PRIOR TO INSPECTION. THE WATER LEVEL SHALL BE TO THE OUTLET OVERFLOW LINE. THE TANKS SHALL BE CHECKED BY THE CONTRACTOR AND INSPECTOR FOR LEAKS AND STRUCTURAL INTEGRITY. TANKS EXHIBITING OBVIOUS DEFECTS, SHALL NOT BE INSTALLED. WHEN CONCRETE TANKS ARE USED, SWEATING OR SEEPAGE AT CONSTRUCTION JOINTS IS ACCEPTABLE PROVIDING THE TANKS STRUCTURE CONTAINS NO OPEN CRACKS OR LARGE VOIDS. FIBERGLASS TANKS MAY BE USED IF THEY ARE "CERTIFIED WATER TESTED" TANKS FROM AN APPROVED SOURCE AND ARE EXPRESSLY APPROVED BY THE ENGINEER. IF USED, THESE TANKS SHALL BE BEDDED AND COVERED WITH SAND. THE MAXIMUM DEPTH OF COVER FOR A FIBERGLASS TANK IS TWELVE (12) INCHES.

11. THE SEPTIC TANK(S) WILL REQUIRE PERIODIC PUMPING. SLUDGE AND SCUM ACCUMULATION SHALL BE CHECKED ANNUALLY BY A REPUTABLE LICENSED PUMPING CONTRACTOR, OR PLUMBER. THE RATE OF SLUDGE AND SCUM ACCUMULATION WILL VARY WITH USAGE. MOST SEPTIC TANKS REQUIRE PUMPING AT LEAST ONCE EVERY TWO (2) YEARS. EVERY EFFORT SHOULD BE MADE BY THE HOMEOWNER TO REDUCE THE AMOUNT OF UNNECESSARY OR NON-BIODEGRADABLE WASTES FLUSHED INTO THE SEPTIC SYSTEM, INCLUDING, BUT NO LIMITED TO: GREASE, WAX, COLORED TISSUE OR TOILET PAPER, SANITARY NAPKINS, CIGARETTE BUTTS, EGG SHELL, COFFEE GROUNDS, OR OTHER NON-BIODEGRADABLE OBJECTS AND LARGE AMOUNTS OF SOLIDS AS GENERATED BY GARBAGE DISPOSAL GRINDERS. HEAVY USE OF A GARBAGE GRINDER CAN CAUSE A RAPID BUILD-UP OF SLUDGE AND SCUM WHICH WILL REQUIRE THE SEPTIC TANK TO BE PUMPED MORE FREQUENTLY. IF CLEANING OF THE SEPTIC TANK IS NOT DONE ON A REGULAR BASIS, SYSTEM FAILURE COULD OCCUR. DO NOT DISPOSE OF TOXIC MATERIAL SUCH AS BLEACH, AMMONIA, GASOLINE, OIL OR OTHER SUCH WASTES TO THE SEPTIC SYSTEM AS THESE SUBSTANCES CAN DAMAGE AND/OR DESTROY THE SYSTEM.

NOTES FOR BEDS AND TRENCHES

1. ALL DRILLED HOLES IN THE LATERAL PIPING SHALL BE THOROUGHLY CORED OUT SO THAT THEY ARE SMOOTH AND FREE OF ALL DEBRIS BEFORE INSTALLING IN THE TRENCHES.

2. WHEN INSTALLING TRENCHES NEAR SIGNIFICANT TREES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR THE METHOD OF TRENCH EXCAVATION TO MINIMIZE THE DISTURBANCE OF THE TREE ROOT SYSTEM.

3. ONLY A GOOD QUALITY SANDY LOAM SHALL BE USED OVER THE LEACHING CHAMBERS. CLAY LOAM WILL CAUSE IMPROPER FUNCTIONING OF THE SYSTEM AND IS NOT ALLOWED. SANDY LOAM SHALL BE DEFINED AS SHOWN ON TABLE VII USDA SOIL TEXTURAL CLASSIFICATIONS. THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE SYSTEMS, LOWER COLORADO RIVER AUTHORITY, JANUARY 1, 1991. THE LOAM WILL BE INSPECTED BY THE ENGINEER AND THE LICENSING AUTHORITY, AND EITHER MAY REJECT THE LOAM IF THE LOAM CONTAINS TOO MUCH CLAY OR SAND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE FIELD.

4. PVC "TURN-UPS" WITH THREADED ADAPTERS (FOR USE AS THE CLEANOUT OF THE DRILLED LATERAL LINES) SHALL BE INSTALLED AT THE ENDS OF ALL LATERAL LINES THAT ARE NOT CONNECTED DIRECTLY TO THE SUPPLY LINE. IF A TURN-UP IS DAMAGED DURING INSTALLATION, BACKFILLING, OR AFTER THE SYSTEM HAS BEEN OPERATED IN OPERATION, IT SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LOSS OF PRESSURE FROM THE SYSTEM, OR ANY SURFACING EFFLUENT.

5. A MINIMUM OF ONE (1) TURN-UP SHALL SERVE AS A CONNECTION POINT FOR THE PRESSURE ADJUSTING RISER. THE RISER SHALL BE CONNECTED TO THE ADAPTER ON THE TURN-UP AND SHALL EXTEND 12 TO 24" ABOVE THE CENTER LINE OF THE LATERAL. THE SYSTEM PUMP SHALL BE STARTED, AND THE BED PRESSURE REGULATING VALVE SHALL BE ADJUSTED SO THAT THE WATER RISES TO THE TOP OF THE OPEN ENDED PRESSURE ADJUSTING RISER WITHOUT OVERFLOWING. ADJUSTMENT SHOULD BE DONE BY QUALIFIED PERSONNEL.

6. ALL STRUCTURE DRAINAGE, ROADWAY DRAINAGE, OR OTHER DRAINAGE SHALL BE DIVERTED TO AVOID THE SEPTIC TANK(S), PUMP TANK AND THE DISTRIBUTION FIELD.

7. THE FIELD BEDS SHALL BE HYDROSEEDING OR SODDED, OR SOME COMBINATION TO ESTABLISH PERMANENT EROSION CONTROL.

A. SODDING MAY BE EITHER SOLID OR STRIP SODDING WITH CARPET GRASSES, INCLUDING BERBER, ST. AUGUSTINE OR TIFGREEN GRASSES OR SOME OTHER TYPE OF GRASS WHICH IS NORMALLY A HIGH WATER USING GRASS. BUFFALO OR OTHER DROUGHT RESISTANT GRASSES WILL NOT BE PERMITTED.

B. HYDROMULCHING AND SEEDING SHALL BE AS FOLLOWS: USE A WOODCELLULOSE FIBER MULCH APPLIED AT A RATE OF 4,000 POUNDS PER ACRE. FERTILIZE WITH 13-13-13 ANALYSIS FERTILIZER AT A RATE OF 400 POUNDS PER ACRE. SEED SHALL BE BERBER AT A RATE OF 5 POUNDS PER 1,000 SQUARE FEET PLUS WINTER RYE AT A RATE OF 15 POUNDS PER 1,000 SQUARE FEET.

8. UN-VEGETATED FIELDS WILL NOT BE ALLOWED AND THE SYSTEM WILL NOT BE FINALLY APPROVED UNTIL A GRASS COVER IS ESTABLISHED. ALL AREAS DISTURBED BY THE CONSTRUCTION, INCLUDING THE TANK AREA, THE FIELD SUPPLY LINE, THE FIELD AREAS AND ANY OTHER AREA THAT HAS EXPOSED EARTH IN THE VICINITY OF THE FIELD, SHALL HAVE AN APPROPRIATE GRASS COVER ESTABLISHED.

9. ANY ADDITIONS TO THE SITE, INCLUDING SIDEWALKS, DRIVEWAYS, PATIOS, SWIMMING POOLS OR OTHER IMPERVIOUS COVER SHALL BE CONSTRUCTED CLEAR OF THE FIELD AREA. DRAINAGE FROM ANY IMPROVEMENTS, OR NATURAL OVERLAND FLOW SHALL BE DIVERTED AWAY FROM, OR AROUND AND AWAY FROM THE WASTEWATER DISPOSAL SYSTEM.

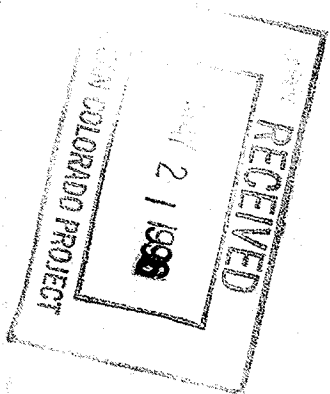
10. SHOULD GROUND WATER BE ENCOUNTERED IN THE TRENCHES, OR TANK HOLE, WHICH WAS NOT PREVIOUSLY INDICATED ON THE PLANS, OR DISCOVERED PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LICENSING AUTHORITY AND ENGINEER.

11. SEE PIPE SCHEDULE FOR LATERAL LENGTH AND THE REQUIRED NUMBER, SIZE AND SPACING OF HOLES.

11. THE BED FEED PIPE SHALL BE ENCASED IN MINIMUM 4" DIAMETER, SCHEDULE 40 PVC PIPE UNDER ALL DRIVES, WALKS, PATIOS, ETC.

12. PIPE FOR THE SUPPLY LINE SHALL BE 2" DIAMETER, SCHEDULE 40 PVC, THE LATERALS SHALL BE 1 1/2" DIAMETER SCH. 40 PVC.

14. ONE INSPECTION PORT, 4" PVC, SHALL BE INSTALLED PER TRENCH.



ET/ABSORPTION SYSTEM ON-SITE REPORT

Date: 4-16-96 Application no.: 1-5211

Inspector: G.D. Van Cleave Owner: HANZLIK W

New 1 Modification # of BRs: 2 Zone: WQ

IF MODIFICATION: (reason) BRs added _____ System failure _____ Unknown _____

Is any portion of the system to be utilized? No Yes

Portion to be utilized: _____

SOIL CONDITIONS: THIN SOIL OVER ROCK

SLOPE CONDITIONS: LEVEL THROUGHOUT

DISTANCE OF PROPOSED FIELD AREA TO SHORELINE: 500 FT

GRAVITY OR PUMP? L.P.D. WELLS WITHIN 150'? NO (show on sketch)

PROFILE HOLE CONDITIONS: SOLID ROCK AT 18 INCHES

IS PROPOSED LOCATION RECOMMENDED FOR APPROVAL? YES

CONDITIONS (check all that apply)

- ☒ Maintain 10 feet from property lines
- ☒ Maintain 15 feet from building foundations
- ☒ Profile hole required
- ☒ Maintain 10 feet from water supply lines
- ☒ Maintain 150 feet from well
- ☒ Waiver to cross roadway required
- ☒ Maintain 5' set-back between tank and foundation
- ☒ Split trench system required

OTHER CONDITIONS: C) ENGINEER MUST ADDRESS
ROCK CONDITIONS

APR 1998
Received
On Site Wastewater
Facilities

April 9, 1996

Mr. C.D. Van Cleaze
Lower Colorado River Authority
P.O. Box 220
Austin, TX 78748

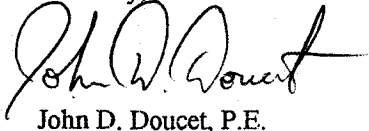
Reference: Proposed On-Site Wastewater Disposal Facility for Caretaker's

Dear Mr. Van Cleaze

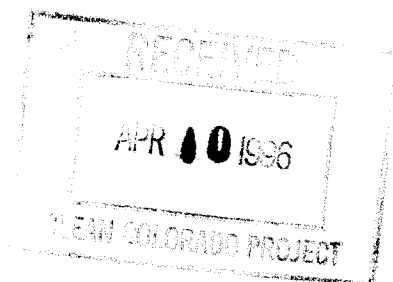
The following is the modified proposed design for on-site wastewater disposal facility for the two bedroom (1300 Sq. ft.) Caretaker's house, 2606 R.R. 620 N. belonging to Mr. Willard Hanzlik. Since, the exploratory hole shows fractured rock below the ground surface, this facility has been modified to a low-pressure dose system per your recommendation.

I have also attached the necessary calculations performed. If you have any further questions, feel free to call me.

Sincerely,



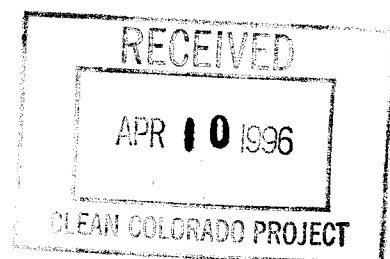
John D. Doucet, P.E.



APPENDIX

RECEIVED

RECEIVED





LOWER COLORADO RIVER AUTHORITY



PERCOLATION TEST CERTIFICATION

Date December 14 1995

Application No. _____

Location: (Subdivision) _____

(Section) _____

(Block) _____

(Lot) _____

If other than Subdivision 2606 R.R. 620

Owner: Williard Hanclic Hanzlik

Test Performed by: Jack H. Holt & Associates

NOTE: PERCOLATION TEST HOLES MUST BE LEFT OPEN FOR ON-SITE INSPECTION BY LCRA.

Time in minutes for water to fall one inch for each hole:

Hole No. 1 17.14 No. 2 24.00 No. 3 30.00 No. 4 _____

Average Percolation Rate in Minutes Per Inch 23.71

(To be filled in only if three or more holes are tested.)

On reverse side of this certification show lot diagram and specifications, location of test holes marked as Hole #1, #2, etc., and distance of these holes from nearest property lines. Also indicate direction of North.

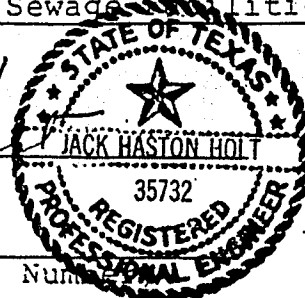
I, Jack H. Holt, a registered Engineer
(Name) (Engineer/Sanitarian)

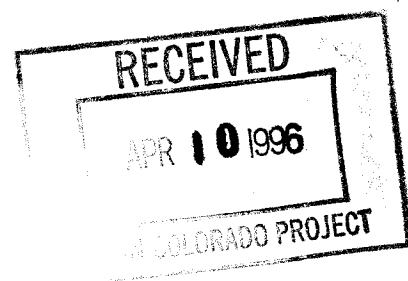
of the State of Texas, do hereby certify that the information shown hereon represents the results of percolation test performed under my supervision in accordance with the requirements specified in the Texas Department of Health Construction Standards for Private Sewage Facilities.

Jack H. Holt
(Signature)

35732

(Texas Registration Number)





**ON-SITE WASTEWATER DISPOSAL DESIGN FOR
CARETAKER'S HOUSE
AUSTIN, TEXAS 78734**

APRIL 9, 1996

A. SIZE DISPOSAL FIELD

1. Area of disposal field necessary.

Percolation tests were performed for this site. The results of these tests are provided in Appendix A. A two bedroom house with Ra of 0.5 requires 600 sq. ft. of low-pressure dose absorption field, as described in *Design and Installation of Low-Pressure Pipe Waste Treatment Systems* (North Carolina State University, May 1982). By using leaching chambers this area requirement will be reduced by 20%, thus yielding 480 Sq. ft. of total absorption area.

Length of trench necessary

$$480 \text{ sq. ft.} / 5 \text{ ft} = 96 \text{ L.F.}$$

$$\# \text{ of Panels Required} = 96 \text{ L.F.} / 6.25 \text{ L.F.} = 16 \text{ Panels}$$

Two separate beds of equal areas with two trenches each are provided. A three-way Jandy Valve will be used to distribute flow between the to beds.

Bed #1 - Two 25 LF Trenches (4 units/trench)

Bed #2 - Two 25 LF trenches (4 units/trench)

B. SIZE TANKS

For residential properties with 2 bedrooms the L.C.R.A. requires a tank size of 750 gallon.

A 750 gallon tank will house the pump chamber

C. PRESSURE DOSING RATE

Each chamber shall be dosed by 1.5" Sch. 40 PVC, 25' long with 3/16" holes, 5' on-center.

$$\# \text{ of holes/line} = 5$$

$$\# \text{ of lines} = 2$$

$$\text{therefore, total \# of holes} = 10 \text{ holes}$$

$$\text{Flow rate/hole} = 0.72 \text{ gpm/hole}$$

$$\text{Therefore, Total flow rate} = 7.2 \text{ gpm @ } 1.30 \text{ psi}$$

D. PUMP SELECTION

1. Total head for system

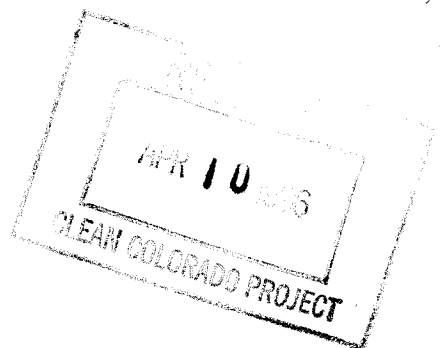
a. Friction loss

$$\text{Pipe} = 33 \text{ LF of } 2" @ 7.2 \text{ gpm} = 0.036 \text{ ft}$$

$$\text{Joints/fittings (20\% of pipe loss)} = 0.007 \text{ ft}$$

$$\text{Total} = 0.043 \text{ ft}$$

b. Elevation head = 0 ft



c. Pressure head = 3.0 ft

Maximum Head = $0.043 + 0 + 3.0 = 3.043$ feet

Use 1/3 HP Grundfos Boss 200 effluent pump . This pump will be suitable for either bed.

E. DOSING VOLUME

1. Minimum Dosing Volume

Bed #1 or Bed #2

33 LF of 2 in Schedule 40 PVC = 16.7 gal

53 LF of 1.5 in = 14.2 gal

Minimum Dose = V supply + (5*V laterals)

Minimum Dose = 30 gal.

2. Select Dosing Volume

Plan for 2 to 4 doses per day

For house with 2 bedrooms 300 gallons/day (150gal/bedroom/day) sewage load is assumed.

Dose would range from 75 to 150 gallons.

Therefore, use 100 gallon dose

3. Determine tank draw down

750 gallon tank/33.5" = 22.40 gal./in.

100 gallon/22.40 gal./in = 4.46 inches

Use 5 inch draw down.

F. EMERGENCY STORAGE VOLUME

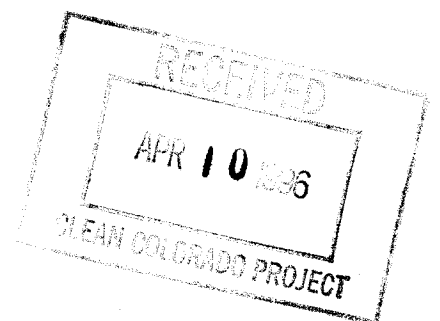
1. Required emergency storage volume

One day daily flow after the alarm is activated = 300 gallons

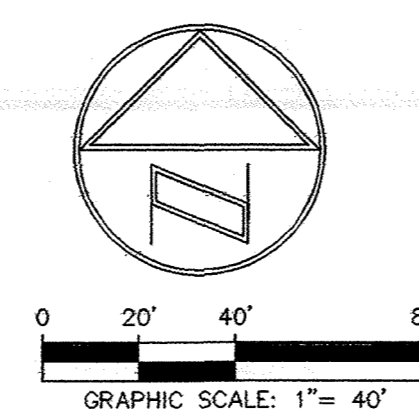
2. Provided emergency storage volume

33.5" - (6" above base + 5" pumping range + extra 3" before alarm activates) = 19.5" storage depth

19.5" * 22.40 gal./in = 437 gallons provided

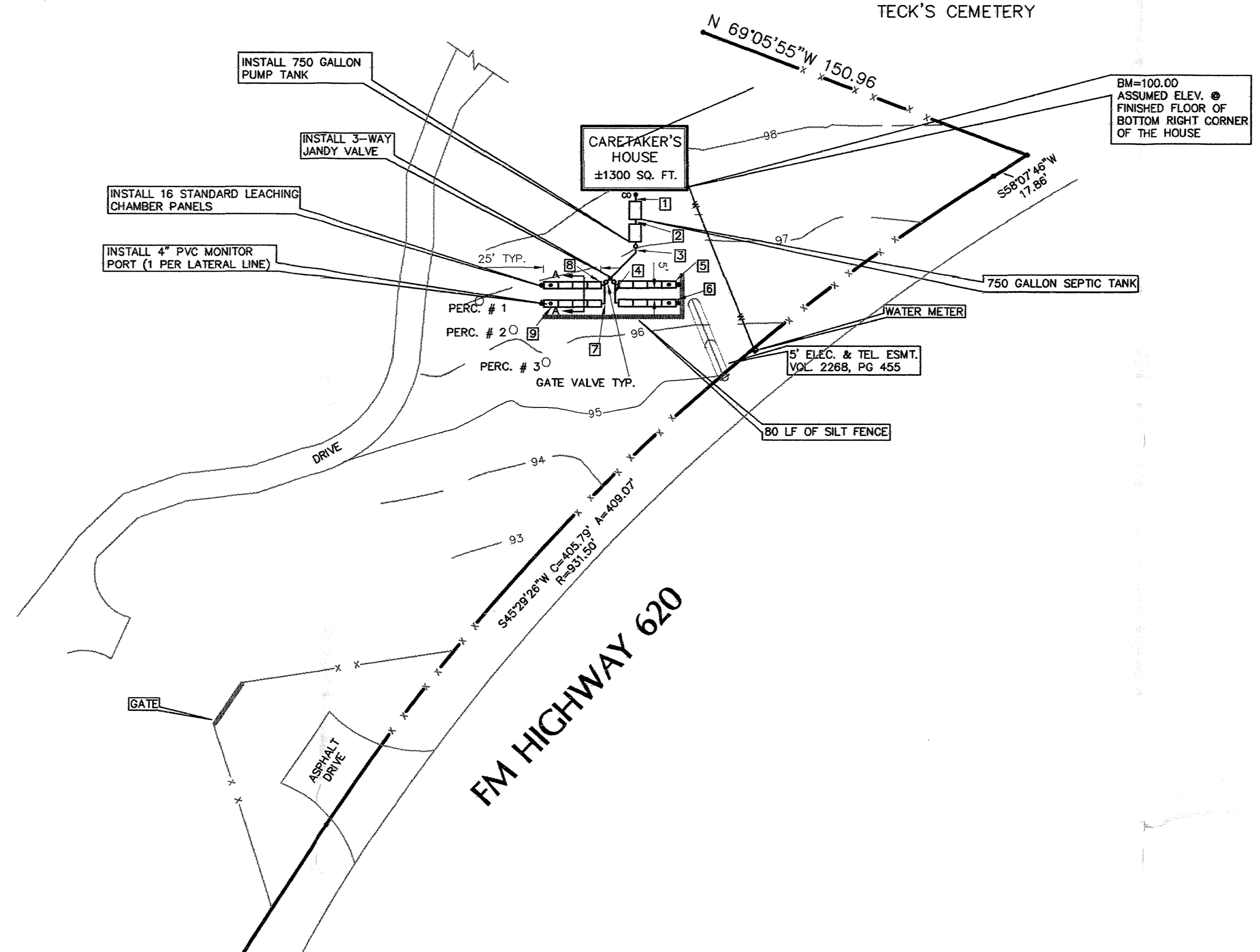


LEGEND	
EXISTING	PROPOSED
	• TURN-UP AT THE END OF EACH LATERAL
	• TURN-UP WITH PRESSURE ADJUSTING RISER
○	○ 3 WAY JANDY VALVE
○	○ GATE VALVE
○	○ CLEAN OUT
○	○ 4" PVC CLEANOUT PORT
---	--- WIRE FENCE
---	--- PROPERTY LINE
---	--- POWER POLE
---	--- DOWN GUY
---	--- LIGHT POLE
---	--- WATER METER BOX
---	--- WATER LINE
---	--- WASTE WATER LINE



LINE NUMBER	SIZE (INCHES)	HOLE SPACING (feet)	NO. OF HOLES	HOLE SIZE (INCHES)
1	4	N/A	N/A	N/A
2	4	N/A	N/A	N/A
3	2	N/A	N/A	N/A
4	2	N/A	N/A	N/A
5	1.5	5	5	3/16
6	1.5	5	5	3/16
7	2	N/A	N/A	N/A
8	1.5	5	5	3/16
9	1.5	5	5	3/16

PIPE SCHEDULE

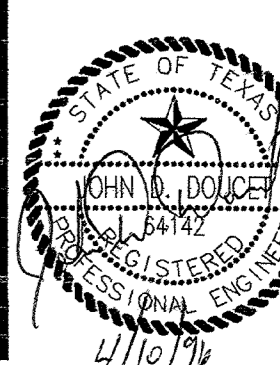


VOID
4-10-96

DA Doucet & Associates, Inc.
1307 Capital of Texas Highway South Bldg. B, Suite 325
Austin, Texas 78746, Phone : (512) 329-9743 Fax : 329-9754

ON-SITE WASTEWATER
DISPOSAL FACILITY

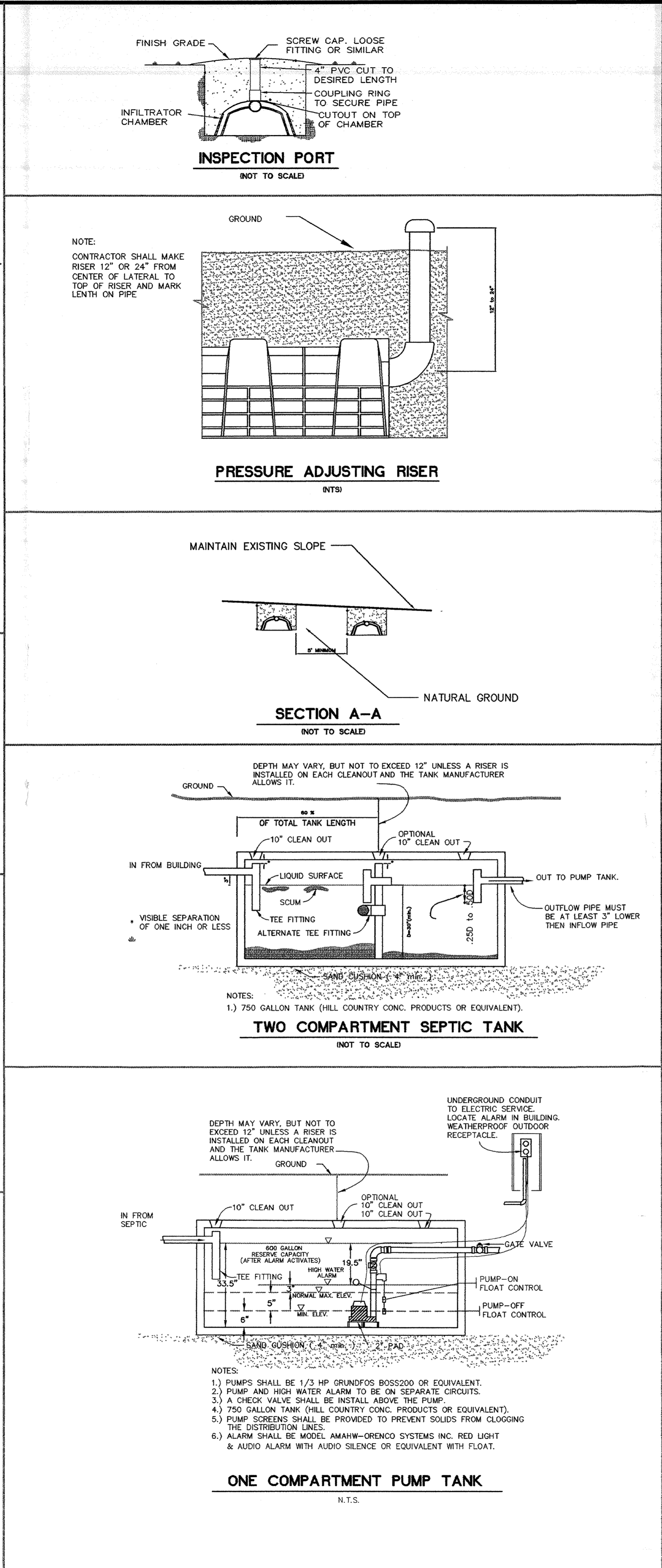
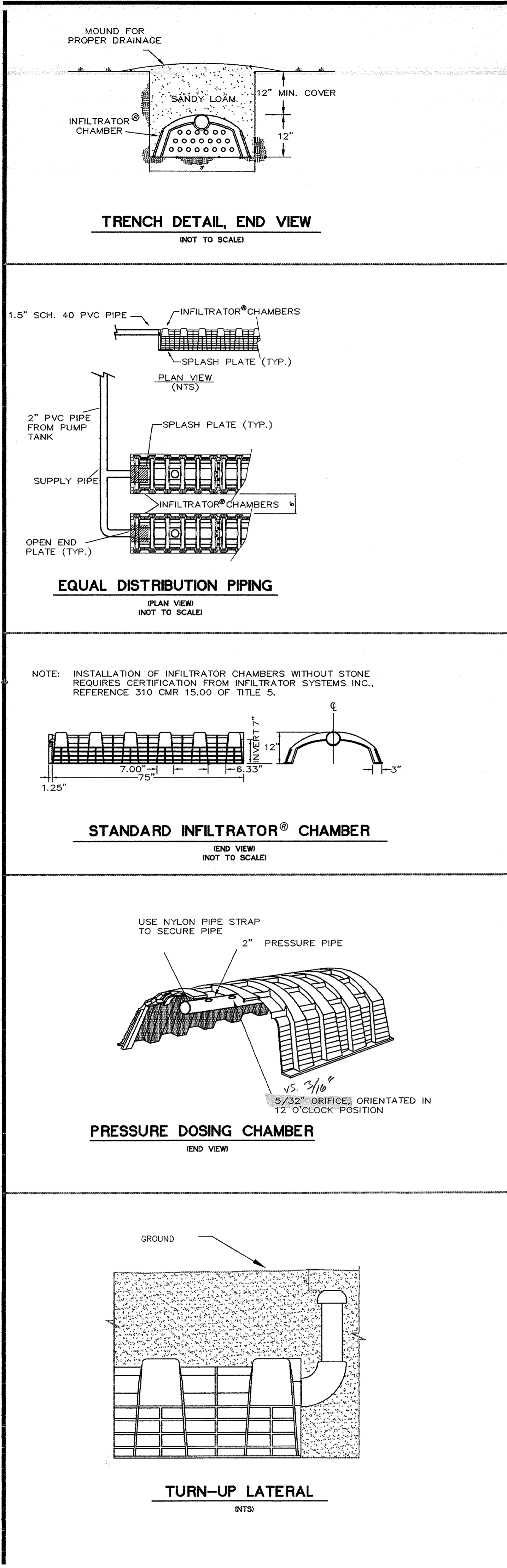
CARETAKER'S HOUSE
2606 R.R. 620 NORTH
AUSTIN, TX 78734



Scale: 1" = 40'
Date: 2-9-96
Design: JD
Drawn by: JS
File name: 09901S1
Approved by: JDD

SHEET
1
OF 1

Project No.:
09901.20



GENERAL NOTES

- CONSTRUCTION MATERIALS, SPECIFICATIONS, AND ALL CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE FACILITIES, LOWER COLORADO RIVER AUTHORITY, EFFECTIVE JANUARY 1, 1991.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE PROPOSED SYSTEM INSPECTED BY THE L.C.R.A. AND DESIGN ENGINEER. INSPECTIONS SHALL BE SCHEDULED IN ORDER TO VERIFY THAT THE SYSTEM IS INSTALLED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE FOLLOWING INSTALLATION POINTS FOR INSPECTIONS:
 - AFTER THE TRENCHES HAVE BEEN EXCAVATED, LEVELED, CLEANED AND BEFORE ANY PANELS ARE PLACED IN THE TRENCH. AT THIS TIME, THE LATERAL PIPES SHALL BE CUT TO LENGTH, AND HOLES DRILLED AT INTERVALS IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILS IN THE PLANS. THE PIPES SHALL BE LAID OUT NEXT TO THE APPROPRIATE TRENCH INTO WHICH THEY WILL BE PLACED. THE TANK(S) SHALL HAVE BEEN PLACED ON THE SAND PAD, LEVELED AND FILLED WITH WATER FOR THIS INSPECTION.
 - AFTER THE PANELS ARE PLACED IN THE TRENCHES, AND THE PIPES PLACED IN THE CHAMBER IN THE CORRECT POSITION.
 - WHEN THE ELECTRICAL POWER IS CONNECTED TO THE PUMPS, AND THE PRESSURE HEAD IS READY TO BE SET.
 - AFTER FINAL LANDSCAPING, WHEN THE VEGETATIVE COVER HAS BEEN COMPLETED, AND THE GRASS IS ESTABLISHED.
 - AT SUCH ADDITIONAL POINTS AS MAY BE DETERMINED BY THE INSPECTOR ON ANY OF THE ABOVE SCHEDULED VISITS TO THE SITE BY THE L.C.R.A. INSPECTOR.
- THE CONTRACTOR SHALL NOT DEVIATE FROM THESE PLANS WITHOUT THE EXPRESS WRITTEN CONSENT FROM L.C.R.A. AND THE ENGINEER.
- ALL DRAINAGE SHALL BE DIRECTED AWAY FROM THE LOW PRESSURE DOSE FIELD, THE SEPTIC TANK AND THE PUMP TANK. IF SPECIFIED, STORMWATER DIVERSION BERMS SHALL BE INSTALLED IN THE LOCATIONS INDICATED ON THE SITE PLAN.
- THE OWNER SHALL PERFORM ALL NECESSARY MAINTENANCE TO SAFEGUARD AGAINST RUNNING COMMODES, LEAKY FAUCETS, ETC., TO PREVENT HYDRAULIC OVERLOAD OF THE DISPOSAL FIELD.
- THIS LOW PRESSURE DOSE SYSTEM HAS BEEN DESIGNED TO OPERATE PROPERLY TO THE DESIGN SPECIFICATIONS SET FORTH HEREIN. ALTERATION OF THE INSTALLATION, INCLUDING, BUT NOT LIMITED TO, CHANGES IN LANDSCAPING AND/OR DRAINAGE CHANGES MAY CAUSE THE SYSTEM TO MALFUNCTION, AND SUCH FAILURE SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER. QUESTIONS RELATING TO THIS SYSTEM SHALL BE DIRECTED TO THE ENGINEER.
- AUTOMATIC SPRINKLER SYSTEMS SHALL NOT BE INSTALLED OVER THIS SYSTEM.
- THE CAPACITY OF THE SYSTEM TO HANDLE EFFLUENT LOADING MAY VARY IN WINTER, SPRING AND FALL MONTHS DUE TO CHANGES IN RAINFALL AND OTHER MOISTURE CONDITIONS. GENERAL WATER CONSERVATION IS STRONGLY RECOMMENDED THROUGHOUT THE YEAR.
- LOW VOLUME FLUSH TOILETS, LOW FLOW SHOWERHEADS AND FAUCETS, AND OTHER WATER CONSERVATION DEVICES SHALL BE INSTALLED FOR USE IN THE BUILDING.
- THE LIST OF INSPECTIONS ABOVE SHOWS THE MAJOR ITEMS TO BE CHECKED DURING THE INSPECTIONS. EVERY PART OF THE SYSTEM, INCLUDING GRADES, MATERIALS AND WORKMANSHIP SHALL BE OPEN TO INSPECTION AND APPROVAL.
- ALL WATER SUPPLY LINES MUST BE KEPT A MINIMUM OF TEN (10) FEET AWAY FROM ANY PART OF THE PROPOSED WASTEWATER DISPOSAL SYSTEM. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY WATER LINES WHICH HE MAY LOCATE ON THE PROPERTY, WHICH ARE NOT SHOWN ON THE PLANS.
- TREES TO BE SAVED SHALL BE DESIGNATED BY THE OWNER. THE CONTRACTOR AND OWNER SHALL COORDINATE FOR THE PRESERVATION OF DESIGNATED TREES. LATERAL LINES MAY BE ADJUSTED TO ALLOW FOR PROTECTION OF DESIGNATED TREES ONLY WITH PRIOR APPROVAL OF ENGINEER.
- PUMP NOTES:
 - THE SUBMERSIBLE PUMP(S) AND THE HIGH WATER ALARM SHALL BE PLACED ON SEPARATE CIRCUITS. THE ELECTRICAL CONNECTIONS SHALL BE HARD-WIRED EXTERNALLY TO THE PUMP TANK AND PLACED IN A WEATHER TIGHT BOX. THE ALARM CIRCUIT AND PUMP CIRCUIT SHALL BE CLEARLY MARKED IN THE ELECTRICAL PANEL BOX.
 - ALL ELECTRICAL PANELS, WIRE, WIRING AND CONDUIT SHALL BE C.A. SPARE PUMP SHOULD BE KEPT READILY AVAILABLE IN CASE OF PUMP FAILURE. THIS SHALL BE THE OWNER'S OPTION.
 - PUMP SCREENS SHALL BE INSTALLED TO PREVENT SOLIDS FROM CLOGGING THE DISTRIBUTION LINES.
 - THE ALARM LIGHT, OR AUDIO ALARM, WILL ACTIVATE WHENEVER EFFLUENT IN THE PUMP TANK RISES ABOVE THE ALARM LEVEL DESIGNATED ON THE PUMP TANK DETAIL.
- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOSS OF VEGETATION WHICH MAY OCCUR AS A RESULT OF THE CONSTRUCTION OF THIS SYSTEM. THE CONTRACTOR, AS LONG AS HE EXERCISES CARE IN INSTALLING THE SYSTEM, SHALL NOT BE RESPONSIBLE FOR LOSS OF VEGETATION.
- THE SYSTEM WILL NOT BE FINALLY ACCEPTED BY THE LOCAL REGULATORY AUTHORITY FOR OPERATION UNTIL THE FIELD HAS AN APPROVED GRASS COVER. IF THE CONTRACTOR ELECTS TO USE THE SEEDING OPTION METHOD OF COVER, HE SHALL BE RESPONSIBLE FOR GETTING THE GRASS GROWING TO THE POINT WHERE IT IS ACCEPTABLE BY THE REGULATORY AUTHORITY. THIS SHALL INCLUDE PERIODIC WATERING AS REQUIRED, AND RE-SEEDING IF NECESSARY. THE OWNER, AT HIS ELECTION, MAY RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY BY NOTIFYING THE REGULATORY AUTHORITY, IN WRITING, THAT HE IS RESPONSIBLE FOR THE GRASS.
- THE HIGH WATER ALARM SHALL CONSIST OF A VISUAL AND AUDIO ALARM COMPONENT.

NOTES FOR TANK(S)

- ALL SEPTIC TANKS SHALL BE SET LEVEL ON A MINIMUM FOUR (4) INCH THICK CONSOLIDATED SAND PAD. ANY OVER EXCAVATION OF THE SEPTIC TANK HOLE BENEATH THE TANK, SHALL BE FILLED WITH SAND TO THE CORRECT ELEVATION FOR THE TANK BOTTOM.
- BACKFILL AROUND THE TANKS SHALL BE GRANULAR MATERIAL, SUCH AS SANDY LOAM, SAND, OR CUTTINGS FROM A ROCK SAW IF THE DISPOSAL FIELD IS A LOW PRESSURE DOSE FIELD. IN THE CASE WHERE THE FIELD IS AN EVAPORATIVE FIELD, FILL SHALL BE SAND OR SANDY LOAM. NO ROCKS, CLAY, STICKS, BRICKS, STONES, TRASH OR OTHER MATERIAL SHALL BE PLACED IN THE BACKFILL. THE BACKFILL SHALL BE THOROUGHLY WATERED AND COMPACTED. FINAL COVERAGE OVER THE TANK AND EXCAVATED AREAS OUTSIDE THE TANK, SHALL BE MOUNDING IN ORDER TO SHED STORM WATER RUN-OFF.
- A TEN (10) INCH (MINIMUM) DIAMETER INSPECTION PORT SHALL BE PROVIDED OVER EACH INLET/OUTLET TEE FITTING TO PROVIDE FOR INSPECTION, CLEANING AND MAINTENANCE.
- FOR TANKS BURIED MORE THAN TWELVE (12) INCHES DEEP, MANHOLE RISERS ARE REQUIRED. THE RISER SHALL BE REINFORCED CONCRETE PIPE OR RIGID RIBBED PVC WITH CONCRETE COVERS. THE INSIDE DIAMETER OF THE RISER MUST BE LARGE ENOUGH TO ACCOMMODATE THE EXISTING MANHOLE COVERS ON THE TANKS, AND SHOULD BE RAISED TO WITHIN SIX (6) INCHES OF THE FINISHED SURFACE GRADE.
- TANKS IN DRIVEWAYS SHALL HAVE TRAFFIC BEARING LIDS. SUCH TANKS SHALL BE FITTED WITH RISERS TO THE FINISHED DRIVEWAY SURFACE, AND SHALL HAVE STANDARD CAST IRON MANHOLE COVERS INSTALLED OVER ALL ACCESS PORTS.

- TANKS MAY BE RELOCATED FROM THE EXACT LOCATION SHOWN ON THE SITE PLAN, AT THE ENGINEER'S DISCRETION TO AVOID ADVERSE ROCK CONDITIONS, GROUNDWATER CONDITIONS, OR IN ORDER TO PRESERVE SIGNIFICANT TREES OR VEGETATION.
- THE SEPTIC TANK RISERS, AND ALL INLET AN OUTLET OPENINGS SHALL BE THOROUGHLY SEALED WITH A HYDRAULIC TYPE CEMENT SEAL TO PREVENT THE ESCAPE OF GASES AND THE ENTRANCE INTO THE TANK(S) OF SURFACE RUN-OFF, GROUND WATER, INSECTS OR TREE ROOTS. THE COVER TO THE RISER(S) AND/OR MANHOLE COVERS, MAY BE SEALED WITH MASTIC. IF GROUND WATER WILL POSSIBLY AFFECT THE TANK(S), THEN THEN THE RISER SHALL BE BROUGHT TO A MINIMUM OF FOUR (4) INCHES ABOVE THE FINISHED GRADE, AND SECURED SO THAT IT IS INACCESSIBLE TO CHILDREN OR CASUAL REMOVAL.
- TANKS SHALL BE STAKED, FLAGGED OR OTHERWISE MARKED WHILE THE STRUCTURE ON THE LOT IS UNDER CONSTRUCTION IN ORDER TO PREVENT DAMAGE FROM TRAFFIC OR OTHER CONSTRUCTION RELATED ACTIVITY.
- THE SEWER LINE FROM THE OUTLET TO THE SEPTIC TANK SHALL BE MINIMUM SCHEDULE 40 PVC PIPE. THIS LINE SHALL HAVE NO LESS THAN 1/4" PER FOOT SLOPE FROM THE HOUSE TO THE TANK. A CLEAN OUT PLUG SHALL BE PROVIDED WITHIN THREE (3) FEET OF THE FOUNDATION, AND AT ALL 45-DEGREE BENDS. NO BENDS IN THIS PIPE SHALL BE GREATER THAN 45-DEGREES. CONNECTIONS FROM THE SEPTIC TANK TO THE PUMP TANK SHALL SLOPE AT SLOPE AT 1/8" PER FOOT MINIMUM.
- TANKS SHALL BE TESTED BY FILLING WITH WATER FOR TWENTY-FOUR HOURS PRIOR TO INSPECTION. THE WATER LEVEL SHALL BE TO THE OUTLET OVERFLOW LINE. THE TANKS SHALL BE CHECKED BY THE CONTRACTOR AND INSPECTOR FOR LEAKS AND STRUCTURAL INTEGRITY. TANKS EXHIBITING OBVIOUS DEFECTS, SHALL NOT BE INSTALLED. WHEN CONCRETE TANKS ARE USED, SWEATING OR SEEPAGE AT CONSTRUCTION JOINTS IS ACCEPTABLE PROVIDING THE TANKS STRUCTURE CONTAINS NO OPEN CRACKS OR LARGE VOIDS. FIBERGLASS TANKS MAY BE USED IF THEY ARE "CERTIFIED WATER TESTED" TANKS FROM AN APPROVED SOURCE AND ARE EXPRESSLY APPROVED BY THE ENGINEER. IF USED, THESE TANKS SHALL BE BEDDED AND COVERED WITH SAND. THE MAXIMUM DEPTH OF COVER FOR A FIBERGLASS TANK IS TWELVE (12) INCHES.
- THE SEPTIC TANK(S) WILL REQUIRE PERIODIC PUMPING. SLUDGE AND SCUM ACCUMULATION SHALL BE CHECKED ANNUALLY BY A REPUTABLE LICENSED PUMPING CONTRACTOR, OR PLUMBER. THE RATE OF SLUDGE AND SCUM ACCUMULATION WILL VARY WITH USAGE. MOST SEPTIC TANKS REQUIRE PUMPING AT LEAST ONCE EVERY TWO (2) YEARS. EVERY EFFORT SHOULD BE MADE BY THE HOMEOWNER TO REDUCE THE AMOUNT OF UNNECESSARY OR NON-BIODEGRADABLE WASTES FLUSHED INTO THE SEPTIC SYSTEM, INCLUDING, BUT NOT LIMITED TO: GREASE, WAX, COLORED TISSUE OR TOILET PAPER, SANITARY NAPKINS, CIGARETTE BUTTS, COFFEE GROUNDS, OR OTHER NON-BIODEGRADABLE OBJECTS AND LARGE AMOUNTS OF SOLIDS AS GENERATED BY GARBAGE DISPOSAL GRINDERS. HEAVY USE OF A GARBAGE GRINDER CAN CAUSE A RAPID BUILD-UP OF SLUDGE AND SCUM WHICH WILL REQUIRE THE SEPTIC TANK TO BE PUMPED MORE FREQUENTLY. IF CLEANING OF THE SEPTIC TANK IS NOT DONE ON A REGULAR BASIS, SYSTEM FAILURE COULD OCCUR. DO NOT DISPOSE OF TOXIC MATERIAL SUCH AS BLEACH, AMMONIA, GASOLINE, OIL OR OTHER SUCH WASTES TO THE SEPTIC SYSTEM AS THESE SUBSTANCES CAN DAMAGE AND/OR DESTROY THE SYSTEM.

NOTES FOR BEDS AND TRENCHES

- ALL DRILLED HOLES IN THE LATERAL PIPING SHALL BE THOROUGHLY CORED OUT SO THAT THEY ARE SMOOTH AND FREE OF ALL DEBRIS BEFORE INSTALLING IN THE TRENCHES.
- WHEN INSTALLING TRENCHES NEAR SIGNIFICANT TREES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR THE METHOD OF TRENCH EXCAVATION TO MINIMIZE THE DISTURBANCE OF THE TREE ROOT SYSTEM.
- ONLY A GOOD QUALITY SANDY LOAM SHALL BE USED OVER THE LEACHING CHAMBERS. CLAY LOAM WILL CAUSE IMPROPER FUNCTIONING OF THE SYSTEM AND IS NOT ALLOWED. SANDY LOAM SHALL BE DEFINED AS SHOWN ON TABLE VIII USDA SOIL TEXTURAL CLASSIFICATIONS, IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE SYSTEMS, LOWER COLORADO RIVER AUTHORITY, JANUARY 1, 1991. THE LOAM WILL BE INSPECTED BY THE ENGINEER AND THE LICENSING AUTHORITY, AND EITHER MAY REJECT THE LOAM IF THE LOAM CONTAINS TOO MUCH CLAY OR SAND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE FIELD.
- PVC "TURN-UPS" WITH THREADED ADAPTERS (FOR USE AS THE CLEANOUT OF THE DRILLED LATERAL LINES) SHALL BE INSTALLED AT THE ENDS OF ALL LATERAL LINES THAT ARE NOT CONNECTED DIRECTLY TO THE SUPPLY LINE. IF A TURN-UP IS DAMAGED DURING INSTALLATION, BACKFILLING, OR AFTER THE SYSTEM HAS BEEN PLACED IN OPERATION, IT SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LOSS OF PRESSURE FROM THE SYSTEM, OR ANY SURFACING EFFLUENT.
- A MINIMUM OF ONE (1) TURN-UP SHALL SERVE AS A CONNECTION POINT FOR THE PRESSURE ADJUSTING RISER. THE RISER SHALL BE CONNECTED TO THE ADAPTER ON THE TURN-UP AND SHALL EXTEND 12 TO 24" ABOVE THE CENTER LINE OF THE LATERAL. THE SYSTEM PUMP SHALL BE STARTED, AND THE BED PRESSURE REGULATING VALVE SHALL BE ADJUSTED SO THAT THE WATER RISES TO THE TOP OF THE OPEN ENDED PRESSURE ADJUSTING RISER WITHOUT OVERFLOWING. ADJUSTMENT SHOULD BE DONE BY QUALIFIED PERSONNEL.
- ALL STRUCTURE DRAINAGE, ROADWAY DRAINAGE, OR OTHER DRAINAGE SHALL BE DIVERTED TO AVOID THE SEPTIC TANK(S), PUMP TANK AND THE DISTRIBUTION FIELD.
- THE FIELD BEDS SHALL BE HYDROSEEDING OR SODDED, OR SOME COMBINATION TO ESTABLISH PERMANENT EROSION CONTROL.
 - SODDING MAY BE EITHER SOLID OR STRIP SODDING WITH CARPET GRASSES, INCLUDING BERMUDA, ST. AUGUSTINE OR TIFGREEN GRASSES OR SOME OTHER TYPE OF GRASS WHICH IS NORMALLY A HIGH WATER USING GRASS. BUFFALO OR OTHER DROUGHT RESISTANT GRASSES WILL NOT BE PERMITTED.
 - HYDROMULCHING AND SEEDING SHALL BE AS FOLLOWS: USE A WOODCELLULOSE FIBER MULCH APPLIED AT A RATE OF 4,000 POUNDS PER ACRE. FERTILIZE WITH 13-13-13 ANALYSIS FERTILIZER AT A RATE OF 400 POUNDS PER ACRE. SEED SHALL BE BERMUDA AT A RATE OF 5 POUNDS PER 1,000 SQUARE FEET PLUS WINTER RYE AT A RATE OF 15 POUNDS PER 1,000 SQUARE FEET.
- UN-VEGETATED FIELDS WILL NOT BE ALLOWED AND THE SYSTEM WILL NOT BE FINALLY APPROVED UNTIL A GRASS COVER IS ESTABLISHED. ALL AREAS DISTURBED BY THE CONSTRUCTION, INCLUDING THE TANK AREA, THE FIELD SUPPLY LINE, THE FIELD AREAS AND ANY OTHER AREA THAT HAS EXPOSED EARTH IN THE VICINITY OF THE FIELD, SHALL HAVE AN APPROPRIATE GRASS COVER ESTABLISHED.
- ANY ADDITIONS TO THE SITE, INCLUDING SIDEWALKS, DRIVEWAYS, PATIOS, SWIMMING POOLS OR OTHER IMPROVEMENTS SHALL BE CONSTRUCTED CLEAR OF THE FIELD AREA. DRAINAGE FROM ANY IMPROVEMENTS, OR NATURAL OVERLAND FLOW SHALL BE DIVERTED AWAY FROM, OR AROUND AND AWAY FROM THE WASTEWATER DISPOSAL SYSTEM.
- SHOULD GROUND WATER BE ENCOUNTERED IN THE TRENCHES, OR TANK HOLE, WHICH WAS NOT PREVIOUSLY INDICATED ON THE PLANS, OR DISCOVERED PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LICENSING AUTHORITY AND ENGINEER.
- SEE PIPE SCHEDULE FOR LATERAL LENGTH AND THE REQUIRED NUMBER, SIZE AND SPACING OF HOLES.
- THE BED FEED PIPE SHALL BE ENCASED IN MINIMUM 4" DIAMETER, SCHEDULE 40 PVC PIPE UNDER ALL DRIVES, WALKS, PATIOS, ETC.
- PIPE FOR THE SUPPLY LINE SHALL BE 2" DIAMETER, SCHEDULE 40 PVC, THE LATERALS SHALL BE 1 1/2" DIAMETER SCH. 40 PVC.
- ONE INSPECTION PORT, 4" PVC, SHALL BE INSTALLED PER TRENCH.



203-AM? 10-10-96 3-10-96

RECEIVED
APR 10 1996
CLEAN COLORADO PROJECT

10-10-96 3-10-96

#15711

March 27, 1996

Mr. C.D. Van Cleaze, Site-Inspector
Lower Colorado River Authority
P.O. Box 220
Austin, TX 78767-0220

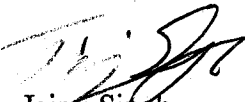
Reference: Proposed On-Site Wastewater Disposal Facility for Caretaker's House

Dear Mr. Van Cleaze:

The following is the change in design for on-site wastewater disposal facility for the two bedroom (1300 Sq. ft.) Caretaker's House belonging to Mr. Willard Hanzlik. The absorption field has been changed from a conventional absorption bed system to a Leaching Chamber Panel System for the protection of the existing trees. Due to high storage capacity of these panels, the Texas Department of Health grants 40% reduction in sizing of absorption trenches; however, to account for the rocky nature of soil only 20% reduction is applied.

I have attached the necessary information required. If you have any further questions, feel free to call me.

Sincerely,


Jairaj Singh

Enclosures



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

May 15, 1991

Mr. Bo Burroughs, President
Leaching Chamber Systems of Texas
3907 East 12th Avenue
Amarillo, Texas 79104

Subject: Approval of Infiltrator Leaching Chamber for Use
in On-site Wastewater Disposal Fields

Dear Mr. Burroughs:

We have completed a review of your testing and monitoring program for the above proprietary leaching chamber known as the "Infiltrator". This system was tested and monitored in Texas under the supervision of the Amarillo Bi-City-County Health District for a period of one year.

The results of this testing indicated that the system functioned as specified with no observed failures. You are, therefore, granted approval to continue installing these systems in Texas in accordance with our "Construction Standards For On-Site Sewerage Facilities" and the manufacturers installation procedures. We will grant you one variance to our standards as follows:

The Infiltrator units, when installed in a trench no greater than three feet in width, may be designed using sixty (60) percent of the trench bottom area as specified in Table VI of our standards. Excavations wider than three feet containing one Infiltrator chamber will be considered as a three foot wide trench for design purposes. Excavations wider than three feet containing two or more adjacent chambers (placed lengthwise next to each other) will be considered as an absorption bed for design purposes. The reduction of area (40 percent) will also apply to absorption beds following the above installation procedures.

Please note that this approval is valid until this Department's construction standards are revised to reflect chamber installations or a policy letter concerning the design and installation of chamber type drainfields is released by the Department.

Should you have any questions or comments on this matter, please advise.

Sincerely,

Sherman W. Hart, P.E., Chief
On-site Wastewater Branch
Division of Water Hygiene

SWH:re

ccs: Amarillo Bi-City-County Health District
All Public Health Regions

Standard and High Capacity Infiltrator chambers provide up to twice the infiltrative capacity of stone and pipe systems.

The **Infiltrator Chamber System** replaces old-fashioned stone and pipe leachfields with patented, high-strength polymer chambers. Two chamber sizes are available, Standard and High Capacity, both designed to fit in a standard 36" wide trench. Infiltrator chambers sit directly on the trench bottom. The patented interlocks add strength and latch the chambers together quickly, end to end, so installation takes less than half the time of a laborious stone and pipe job.

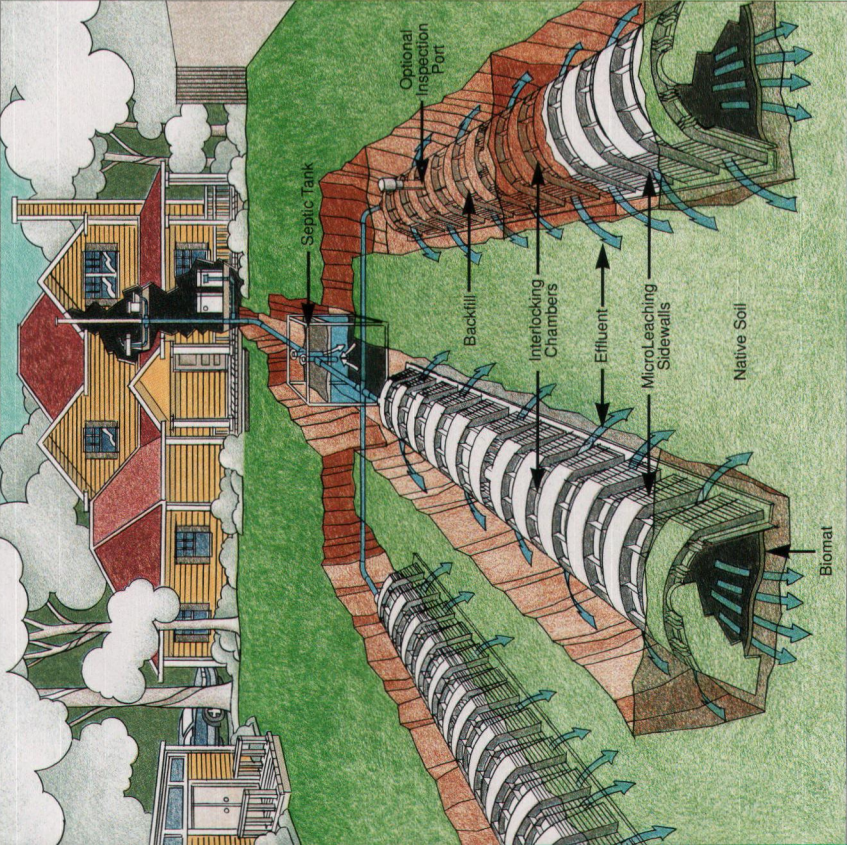
Infiltrator chambers may be used for any application that is suitable for stone and pipe. However, by offering greater infiltrative capacity per linear foot, chamber systems can require as little as half the space as conventional systems.*

Patented MicroLeaching™ sidewall.

The Infiltrator chamber has an engineered, louvered sidewall that allows effluent to pass laterally into the soil. The angled louvers prevent backfill intrusion into the chamber while 1/4" slots allow lateral leaching.



MicroLeaching sidewall



* Subject to state and local regulations.

Compare the installation and operating advantages.



Conventional stone and pipe system

- Labor-intensive, lengthy installation.
- Dump truck needed for stone delivery.
- Stone hauling adds expense and time, and increases soil compaction.
- Stone in trench reduces Long-Term Acceptance Rate by more than 50%.
- Heavy traffic across yard and spilled stone mean there is more site repair needed after installation.
- System lacks easy inspection and monitoring of leachfield without digging up the yard.

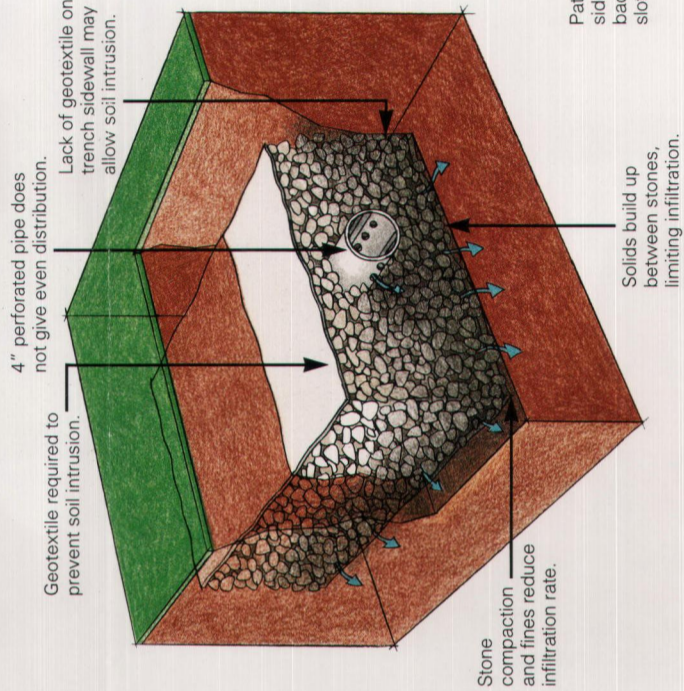
- Geotextile required on top of stone.
- Greater overall cost.



Infiltrator Chamber System

- Easy assembly and installation by two people.
- Only a backhoe and pickup truck are required.
- Lightweight chambers can be delivered in one pickup truck load and hand-carried into position.
- Entire trench bottom is open for effluent infiltration with 100% efficiency.
- There is less regrading, tree damage and landscape repair involved, and no stone cleanup.
- Inspection port is available for easy access to leachfield with no site disruption.

- Solid-topped chambers need no geotextile.
- Lower overall cost.



Open chamber bottom boosts infiltration.

The chamber bottom is completely open, promoting effluent infiltration into the soil with 100% efficiency. The open-bottom area, in combination with the MicroLeaching sidewall, provides maximum infiltrative capacity for long-term, trouble-free service.

LTAR (Long-Term Acceptance Rate).



This graph demonstrates the dramatic efficiency improvement in LTAR of Infiltrator chambers over stone and pipe trenches. The LTAR is a measure of the long-term ability of the system to pass effluent into the soil. For example, High Capacity Infiltrator chambers move up to twice the effluent of a same-size stone and pipe trench. This efficiency is recognized by many state and local jurisdictions, who in turn may allow up to 50% shorter trenches.

High-density polyethylene construction.

Infiltrator chambers are molded of high-density PolyTuff™ polyethylene. This proprietary blend, including recycled resins, is formulated for optimum strength and chemical resistance. It's impervious to wastewater constituents and is stabilized to resist ultraviolet rays. Infiltrator chambers are manufactured using an exclusive patented process to assure consistent high quality.

AASHTO H-10 and H-20 load ratings.

Infiltrator chambers have been structurally tested by a registered professional engineer. Both Standard and High Capacity chambers are available with AASHTO ratings of H-10 (16,000 lb/axle with 12" of compacted cover) or H-20 (32,000 lb/axle with 18" of compacted cover).

Nominal chamber specifications.

	Standard Chamber	High Capacity Chamber
Size, W x L x H	3' x 6-1/4' x 1'	3' x 6-1/4' x 1-1/3'
Weight	27 lb.	33 lb.
Capacity	77 gal. (10.3 cu. ft.)	122 gal. (16.3 cu. ft.)

Infiltrator Systems Inc., the industry leader in septic and stormwater chamber system technology.

Four million chambers already in service.

In just eight years, the innovative leaching chambers of Infiltrator Systems have drastically changed the technology of on-site septic and stormwater disposal. Already, 4 million chambers have been installed in 46 states, Canada and other countries, forming over 75 million square feet of chamber systems with a success rate of 99.5%. And, we're expanding at the rate of 6,000 new systems a month.

Environmentally concerned company.

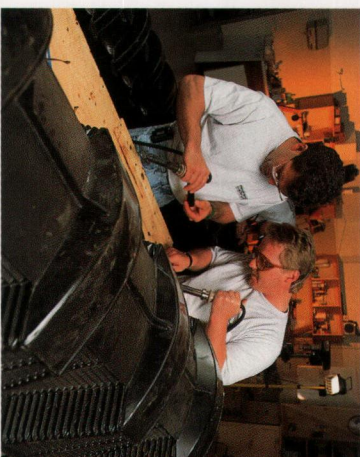
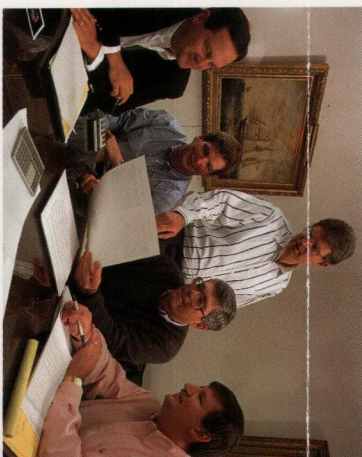
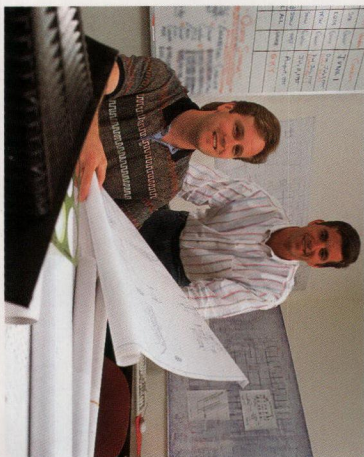
Infiltrator Systems devotes over \$500,000 a year to research and development, creating new products that operate more and more efficiently and conserve natural resources. Besides using recycled resins, Infiltrator Systems' products take better care of the environment by avoiding the mining, crushing, grading, washing and hauling of stone, as well as the environmental impact and site disruption that stone causes. That's one of our "greener" ideas for septic and stormwater disposal that just makes sense.

Infiltrator stormwater management.

Besides our septic chamber systems, Infiltrator Systems is on the leading edge of the emerging stormwater management field. Large storage and infiltrative capacities, combined with underground installation, give designers better solutions for retention or detention applications.

For more information...

Call 1-800-221-4436 for a free copy of the septic installation instructions.



Distributed By:

INFILTRATOR[®]
SYSTEMS INC.

Leading the way in septic and stormwater chamber systemsSM

4 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
800-221-4436 860-388-6639 FAX 860-388-6810

The Infiltrator[®] Chamber System for Septic Leachfields.

INFILTRATOR[®]
SYSTEMS INC.



U.S. Patents: 4,758,661; 5,107,401; 5,156,448; 5,336,017; 5,401,459; 5,401,116
Canadian Patent: 1,329,959 Other U.S., Canadian and foreign patents pending.

Infiltrator is a registered trademark, and the following are trademarks of Infiltrator Systems Inc.:
Contour, Equalizer 24, Maximizer, MicroLeaching, PolyTuff, PowerArch, SideWinder, Snaplock.

February 9, 1996

Mr. Burt Carter, R.S.
Private Sewage Liscencing Section
Lower Colorado River Authority
P.O. Box 220
Austin, TX 78767-0220

Reference: Proposed On-Site Wastewater Disposal Facility for Caretaker's House

Dear Mr. Carter:

The following is the proposed design for on-site wastewater disposal facility for the two bedroom (1300 Sq. ft.) Caretaker's House belonging to Mr. Willard Hanzlik. The average percolation rate is 23.71 Min/Inch, for which the recommended rate of application is 0.5 Ga/Sq. Ft./Day. However, to account for the rocky nature of soil a rate of application of 0.4 Ga/Sq. Ft./Day was used. There was no evidence of groundwater in the exploratory hole, and the drainfield is well above the normal lake elevation; in addition, there are no sharp slopes in proximity. The proposed system consists of two soil absorption beds of 576 Sq. Ft. each. The septic tank and the soil absorption beds locations have been marked on the job-site with stakes with orange and yellow flagging.

I have attached the necessary information required. If you have any further questions, feel free to call me.

Sincerely,


Jairaj Singh

WATER SURFACE AND SHORELINE, WB240
c/o Lower Colorado River Authority
P.O. Box 220 • Austin, TX 78767-0220

PLEASE DO NOT WRITE IN THIS BLOCK

ADDITIONAL NUMBER

1-5711.03

Re'cd: 3/7/96 By: CJ
Amount Enclosed: \$ 250.00 Ck# 3089
10.00 Ck# 148

APPLICATION FOR PRIVATE SEWERAGE FACILITY CONSTRUCTION PERMIT AND LICENSE

☒ New System - no private sewage disposal facility (PSF) currently on property.

☐ Modification - addition to or improvement of all or part of a PSF to meet current standards.

ALL INFORMATION BELOW MUST BE COMPLETED -- PLEASE TYPE OR PRINT

Property Owner's Name: HANZLIK WILLARD
(last) (first) (middle)
Permanent Mailing Address: 607 ROBIN DALE DRIVE AUSTIN TX 78734
(number and street or box) (city) (state and zip)
Telephone #s: (512) 261-3550 (512) 914-2774 N/A
(home) (business) (at lake property)

Property is on Lake: TRAVIS Property is in: TRAVIS County

Check which side of Lake: ☐ East or North Shore ☒ West or South Shore Check which LCRA Zone Location: ☐ Restricted ☒ Water Quality

If Located in a Subdivision: _____
(name of subdivision) (section no.) (block no.) (lot no.)

Street Address of Lake Property: 2606 R.R. 620 N, AUSTIN, TX 78734

If NOT in a

Subdivision: Describe location of property and attach a marked map or sketch showing access roads, landmarks and approximate distances.

The property is located approximately 8 miles North of junction of R.R. 620
& HWY 71 on R.R. 620.

PROPOSED USE OF PROPERTY

☒ Single Family (1 kitchen per single family residence) ☐ Multi-Family (a separate application is required for each unit)

☐ Other - Please Describe: _____

☐ Commercial Operation - Type of Business: _____

☐ Speculative House - License will be held, pending sale of property

Bedrooms and Potential Bedrooms (include rooms having adequate space, privacy, comfort and a closet): 2

Bathrooms: 1 Kitchens: 1

NOTE: Regulations require all permits for new construction of an on-site disposal system or modification to an existing on-site disposal system to include the installation of low-flow showerheads, low-flow toilets, and faucet aerators on all faucets.

The heated living area of the residence will be 1300 sq. ft. (Attach a floor plan showing rooms, closets, dimensions and total square footage.)

If a floor plan cannot be provided at this time, complete this statement: This application is for a system to serve one residence having no more than _____ sq. ft. of heated living area.

If commercial or non-residential, the quantity of wastewater estimated to be generated is _____ gallons/day. (If over 400 gallons/day the system must be designed by a professional engineer or professional sanitarian.)

SOURCE OF WATER SUPPLY

☐ Subdivision System (Name): _____

☐ Well

☒ Water District (Name): TRAVIS COUNTY W.C.R.A. #17

☐ Lake Pump

(SEE REVERSE SIDE)

PROPOSED TREATMENT TANK INFORMATION

Capacity of each tank: (gallons) (1) 750 (2) _____ (3) _____

Pump tank capacity: N/A

PROPOSED DRAINFIELD TYPE

☐ Trench system; give size and number of lines: (wd) _____ in. x (dp) _____ in. x (lg) _____ ft.

Number of lines _____; Distance between _____ ft.

☐ Absorption bed system: Bed 1: (wd) 24 ft. x (lg) 24 ft.

Bed 2: (wd) 24 ft. x (lg) 24 ft.

☐ Professionally designed - Specify type of system: _____

APPLICATION SUBMITTAL REQUIREMENTS

1. This form and application fee.
2. Percolation test (Form 1103), if system uses soil absorption.
3. Plat of property showing house/establishment, driveway, septic system, water wells, water lines and other permanent improvements. Show location of proposed temporary erosion and sedimentation controls.
4. Floor plan showing rooms, closets, dimensions, and total heated square footage of the house/establishment.
5. Copies of the manufacturer's information on the type of low-flow water conserving devices to be installed.
6. Waivers for property line and foundation setbacks, or street crossings, if applicable.
7. Two sets of plans if the system is professionally designed.
8. If the system is being modified, a reason for and description of the modification.
9. Map showing property location if it is not in a subdivision.
10. Survey, field notes, or subdivision plat of property.

Prior to submitting your application, you must mark the lot to show the following:

- proposed location of the septic tank and drainfield;
- lot number or owner's name to be visible from the road;
- house/establishment foundation area;
- plumbing stub-out point.

NOTE: No person may install, alter or repair an on-site sewerage facility for compensation unless he/she is registered by the Texas Department of Health. The property owner is exempt from this requirement provided he/she has contacted LCRA prior to installation, alteration or repair of the system regarding any applicable requirements.

The LCRA nonpoint source pollution control ordinance requires temporary erosion and sedimentation controls to be constructed prior to beginning development of a private sewerage facility outside of Travis County, and prior to beginning development of a private sewerage facility and residence within Travis County. Additional requirements apply to development other than single family residences.

AUTHORIZATION is hereby given to the Lower Colorado River Authority, the Texas Department of Health, and to their agents or designees, singularly or jointly, to enter upon the above described property during daylight hours for the purpose of inspecting private sewerage systems, or for any reason consistent with the private sewerage facility program of the Texas Department of Health, and the Lower Colorado River Authority. I, the undersigned, hereby certify that all information contained in this application is true and correct to the best of my knowledge and belief, and that it is in compliance with all applicable laws and regulations, and that I am the actual owner of the property described in this application.

Willard M. Hanzlik
Signature of current owner or individual with power of attorney (P.O.A.).
A copy of the P.O.A. must be submitted.

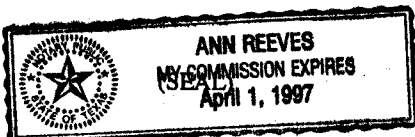
2/13
Date

19 96

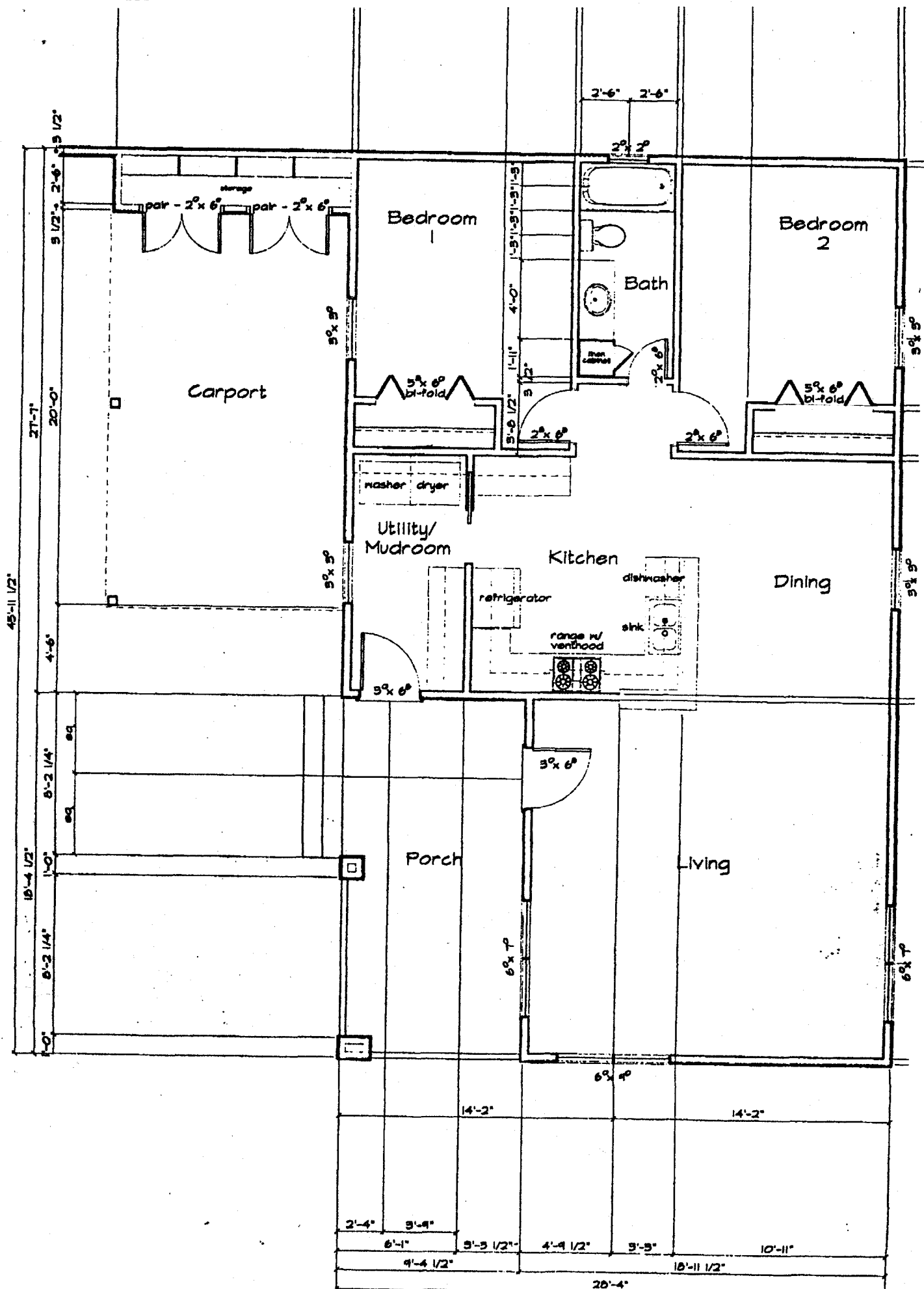
THE STATE OF TEXAS ()
COUNTY OF Travis ()
()

Before me, the undersigned authority, on this day personally appeared Willard M. Hanzlik, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 13 day of Feb, 19 96 A.D.



Ann Reeves
Notary Public Signature





LOWER COLORADO RIVER AUTHORITY



PERCOLATION TEST CERTIFICATION

Date December 14 1995 Application No. _____

Location: (Subdivision) _____

(Section)

(Block)

(Lot)

If other than Subdivision 2606 R.R. 620

Owner: Williard Hanclic Hanzlik

Test Performed By: Jack H. Holt & Associates

NOTE: PERCOLATION TEST HOLES MUST BE LEFT OPEN FOR ON-SITE INSPECTION BY LCRA.

Time in minutes for water to fall one inch for each hole:

Hole No. 1 17.14 No. 2 24.00 No. 3 30.00 No. 4 _____

Average Percolation Rate in Minutes Per Inch 23.71
(To be filled in only if three or more holes are tested.)

On reverse side of this certification show lot diagram and specifications, location of test holes marked as Hole #1, #2, etc., and distance of these holes from nearest property lines. Also indicate direction of North.

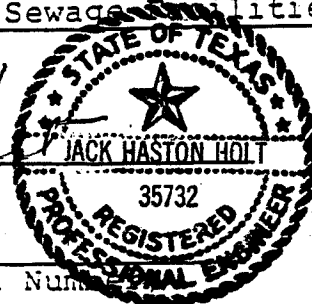
I, Jack H. Holt, a registered Engineer
(Name) (Engineer/Sanitarian)

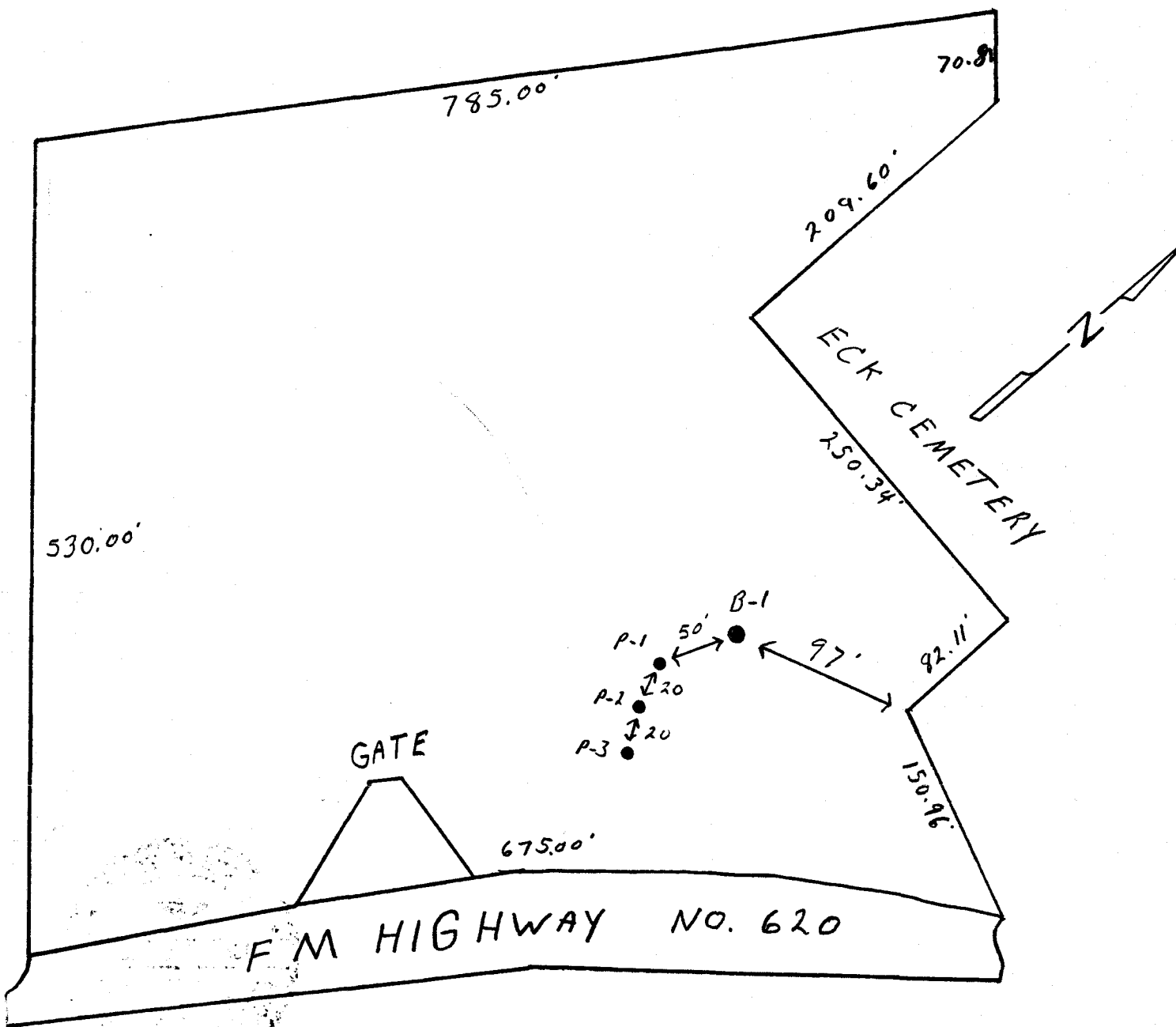
of the State of Texas, do hereby certify that the information shown hereon represents the results of percolation test performed under my supervision in accordance with the requirements specified in the Texas Department of Health Construction Standards for Private Sewage Facilities.

Jack H. Holt
(Signature)

35732

(Texas Registration Number)





95-0335

COMPLIANCE WITH FLOOD DAMAGE PREVENTION REGULATIONS
IN THE HIGHLAND LAKES AREA

On July 18, 1994, LCRA implemented a new rule which requires on-site wastewater permit applicants to show either proof of compliance with applicable flood damage prevention regulations, or proof that such regulations are not applicable to their development.

This proof must be submitted prior to an on-site wastewater facility construction permit being issued.

Therefore, this completed and signed form may be submitted to LCRA to fulfill this requirement.

Verification of Compliance or Non-Applicability

This is to verify that BRUCE S. AUPPERLE, owner of
property at the address of 2606 FM 620,
City of N/A (if applicable), in
TRAVIS County, Texas, is in compliance / is exempt
from complying with flood damage prevention regulations as
described within the National Flood Insurance Act of 1968, 82
Stat. 572, 42 U.S.C.A. as amended.

Chris Fanel For James Dulac
Floodplain Administrator

2/7/95
Date

SOURCES OF INFORMATION ON STANDARDS GOVERNING
FLOODPLAIN DEVELOPMENT

You are required by your local floodplain management agency to obtain a determination as to whether your property requires a floodplain development permit. Under the National Flood Insurance Program (NFIP), cities and towns that participate in the NFIP regulate floodplain development within their corporate boundaries while counties are responsible for regulating floodplain development within unincorporated areas. The regulations that participating communities adopt and enforce must meet certain minimum flood loss reduction standards that are established under the NFIP by the Federal Emergency Management Agency (FEMA). Information regarding the National Flood Insurance Program, floodplain management or floodplain regulations can be obtained from the following sources:

Federal Emergency Management Agency
800 North Loop 288
Denton, TX 76201
(817) 898-5127

Lower Colorado River Authority
P.O. Box 220
Austin, TX 78767-0220
(512) 473-4060 or 473-2710

Texas Natural Resource Conservation Commission
Flood Management and Ground Water Programs Section
P.O. Box 13087
Austin, TX 78711
(512) 463-8575

FLOODPLAIN ADMINISTRATORS IN HIGHLAND LAKES COMMUNITIES

BURNET COUNTY

Burnet County
The Honorable Martin McLean
Burnet County Judge
220 South Pierce
Burnet, TX 78611
(512) 756-5420

Granite Shoals
Carol Reed
City Secretary, City of Granite Shoals
410 North Phillips Ranch Rd.
Granite Shoals, TX 78654
(512) 598-2424

Meadowlakes
Paul Davis
City Building Commissioner
City of Meadowlakes
350 Columbus Street
Marble Falls, TX 78654
(512) 693-5877

Cottonwood Shores
The Honorable Kathy Griffith
Mayor, City of Cottonwood Shores
3915 Cottonwood Drive
Marble Falls, TX 78654
(512) 693-3830

Marble Falls
Ronald W. Tomison
Superintendent of Code Enforcement
City of Marble Falls
800 Third Street
Marble Falls, TX 78654
(512) 693-3615

LLANO COUNTY

Llano County
Bill Hedges
Llano County Floodplain Administrator
103 E. Main Street
Llano, TX 78643
(915) 247-3785

Sunrise Beach Village
Brent C. Seager
Floodplain Administrator
City of Sunrise Beach Village
124 Sunrise Drive
Sunrise Beach, TX 78643
(915) 388-6438

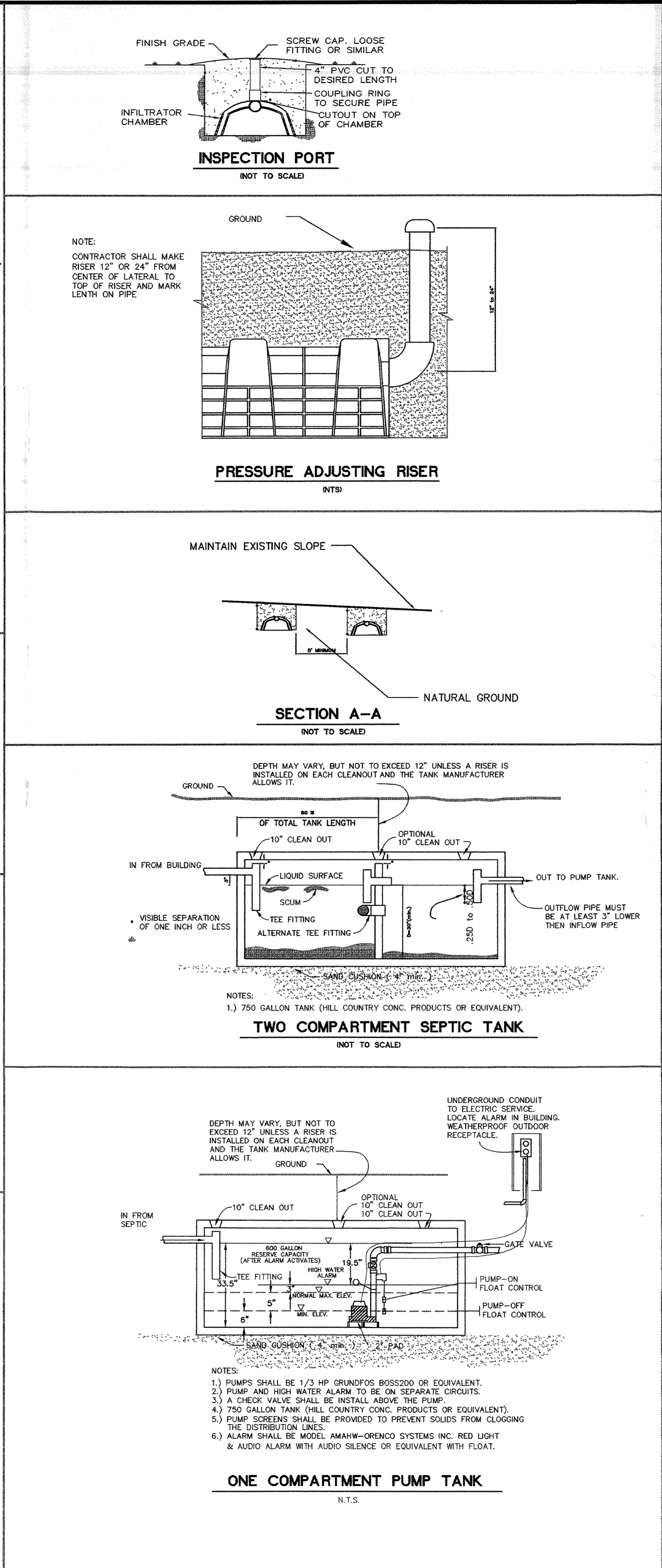
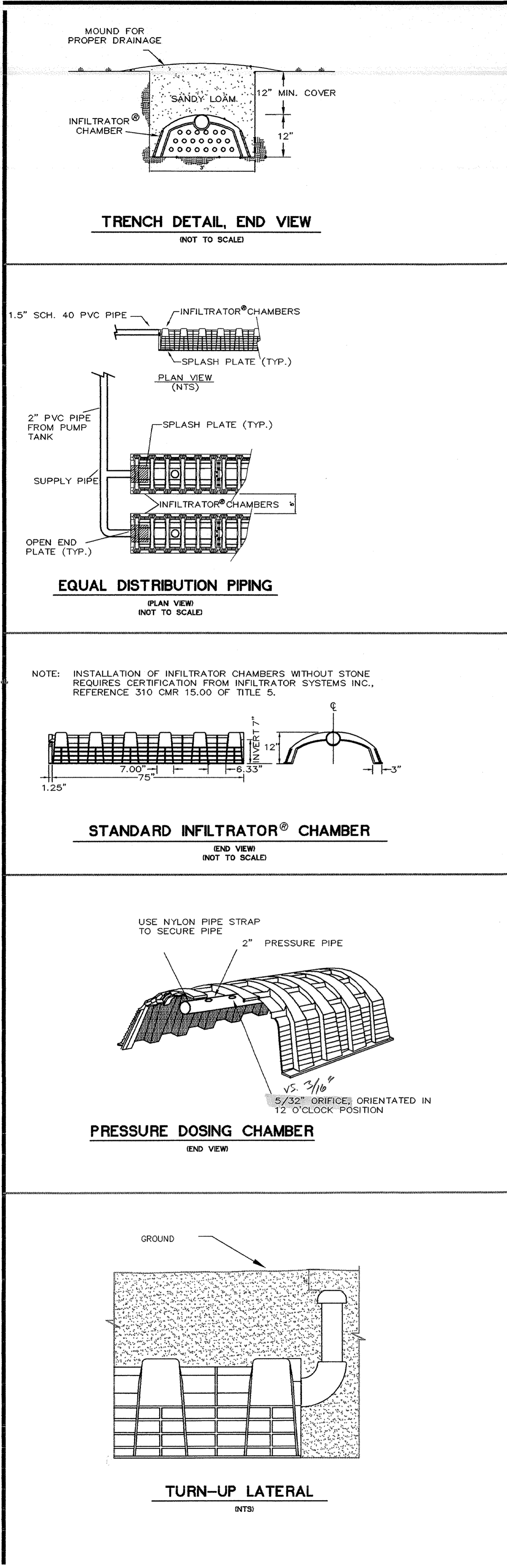
TRAVIS COUNTY

Travis County
Ruben Cantu
Floodplain Administrator
Travis County Public Improvements and Trans. Dept.
P.O. Box 1748
Austin, TX 78767
(512) 473-9383

Jonestown
Glenn Chadwick
Ordinance Enforcement Officer
City of Jonestown
P.O. Box 5023
Jonestown, TX 78645
(512) 267-3243

Lago Vista
Neil Peterson
Director of Public Works
City of Lago Vista
P.O. Box 4727
Lago Vista, TX 78645
(512) 267-3253

Lakeway
Dave Benson
City Administrator
City of Lakeway
104 Cross Creek
Austin, TX 78734
(512) 261-6098



GENERAL NOTES

- CONSTRUCTION MATERIALS, SPECIFICATIONS, AND ALL CONSTRUCTION METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE FACILITIES, LOWER COLORADO RIVER AUTHORITY, EFFECTIVE JANUARY 1, 1991.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE PROPOSED SYSTEM INSPECTED BY THE L.C.R.A. AND DESIGN ENGINEER. INSPECTIONS SHALL BE SCHEDULED IN ORDER TO VERIFY THAT THE SYSTEM IS INSTALLED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE FOLLOWING INSTALLATION POINTS FOR INSPECTIONS:
 - AFTER THE TRENCHES HAVE BEEN EXCAVATED, LEVELED, CLEANED AND BEFORE ANY PANELS ARE PLACED IN THE TRENCH. AT THIS TIME, THE LATERAL PIPES SHALL BE CUT TO LENGTH, AND HOLES DRILLED AT INTERVALS IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILS IN THE PLANS. THE PIPES SHALL BE LAID OUT NEXT TO THE APPROPRIATE TRENCH INTO WHICH THEY WILL BE PLACED. THE TANK(S) SHALL HAVE BEEN PLACED ON THE SAND PAD, LEVELED AND FILLED WITH WATER FOR THIS INSPECTION.
 - AFTER THE PANELS ARE PLACED IN THE TRENCHES, AND THE PIPES PLACED IN THE CHAMBER IN THE CORRECT POSITION.
 - WHEN THE ELECTRICAL POWER IS CONNECTED TO THE PUMPS, AND THE PRESSURE HEAD IS READY TO BE SET.
 - AFTER FINAL LANDSCAPING, WHEN THE VEGETATIVE COVER HAS BEEN COMPLETED, AND THE GRASS IS ESTABLISHED.
 - AT SUCH ADDITIONAL POINTS AS MAY BE DETERMINED BY THE INSPECTOR ON ANY OF THE ABOVE SCHEDULED VISITS TO THE SITE BY THE L.C.R.A. INSPECTOR.
- THE CONTRACTOR SHALL NOT DEVIATE FROM THESE PLANS WITHOUT THE EXPRESS WRITTEN CONSENT FROM L.C.R.A. AND THE ENGINEER.
- ALL DRAINAGE SHALL BE DIRECTED AWAY FROM THE LOW PRESSURE DOSE FIELD, THE SEPTIC TANK AND THE PUMP TANK. IF SPECIFIED, STORMWATER DIVERSION BERMS SHALL BE INSTALLED IN THE LOCATIONS INDICATED ON THE SITE PLAN.
- THE OWNER SHALL PERFORM ALL NECESSARY MAINTENANCE TO SAFEGUARD AGAINST RUNNING COMMODES, LEAKY FAUCETS, ETC., TO PREVENT HYDRAULIC OVERLOAD OF THE DISPOSAL FIELD.
- THIS LOW PRESSURE DOSE SYSTEM HAS BEEN DESIGNED TO OPERATE PROPERLY TO THE DESIGN SPECIFICATIONS SET FORTH HEREIN. ALTERATION OF THE INSTALLATION, INCLUDING, BUT NOT LIMITED TO, CHANGES IN LANDSCAPING AND/OR DRAINAGE CHANGES MAY CAUSE THE SYSTEM TO MALFUNCTION, AND SUCH FAILURE SHALL BE THE SOLE RESPONSIBILITY OF THE OWNER. QUESTIONS RELATING TO THIS SYSTEM SHALL BE DIRECTED TO THE ENGINEER.
- AUTOMATIC SPRINKLER SYSTEMS SHALL NOT BE INSTALLED OVER THIS SYSTEM.
- THE CAPACITY OF THE SYSTEM TO HANDLE EFFLUENT LOADING MAY VARY IN WINTER, SPRING AND FALL MONTHS DUE TO CHANGES IN RAINFALL AND OTHER MOISTURE CONDITIONS. GENERAL WATER CONSERVATION IS STRONGLY RECOMMENDED THROUGHOUT THE YEAR.
- LOW VOLUME FLUSH TOILETS, LOW FLOW SHOWERHEADS AND FAUCETS, AND OTHER WATER CONSERVATION DEVICES SHALL BE INSTALLED FOR USE IN THE BUILDING.
- THE LIST OF INSPECTIONS ABOVE SHOWS THE MAJOR ITEMS TO BE CHECKED DURING THE INSPECTIONS. EVERY PART OF THE SYSTEM, INCLUDING GRADES, MATERIALS AND WORKMANSHIP SHALL BE OPEN TO INSPECTION AND APPROVAL.
- ALL WATER SUPPLY LINES MUST BE KEPT A MINIMUM OF TEN (10) FEET AWAY FROM ANY PART OF THE PROPOSED WASTEWATER DISPOSAL SYSTEM. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY WATER LINES WHICH HE MAY LOCATE ON THE PROPERTY, WHICH ARE NOT SHOWN ON THE PLANS.
- TREES TO BE SAVED SHALL BE DESIGNATED BY THE OWNER. THE CONTRACTOR AND OWNER SHALL COORDINATE FOR THE PRESERVATION OF DESIGNATED TREES. LATERAL LINES MAY BE ADJUSTED TO ALLOW FOR PROTECTION OF DESIGNATED TREES ONLY WITH PRIOR APPROVAL OF ENGINEER.
- PUMP NOTES:
 - THE SUBMERSIBLE PUMP(S) AND THE HIGH WATER ALARM SHALL BE PLACED ON SEPARATE CIRCUITS. THE ELECTRICAL CONNECTIONS SHALL BE HARD-WIRED EXTERNALLY TO THE PUMP TANK AND PLACED IN A WEATHER TIGHT BOX. THE ALARM CIRCUIT AND PUMP CIRCUIT SHALL BE CLEARLY MARKED IN THE ELECTRICAL PANEL BOX.
 - ALL ELECTRICAL PANELS, WIRE, WIRING AND CONDUIT SHALL BE C.A. SPARE PUMP SHOULD BE KEPT READILY AVAILABLE IN CASE OF PUMP FAILURE. THIS SHALL BE THE OWNER'S OPTION.
 - PUMP SCREENS SHALL BE INSTALLED TO PREVENT SOLIDS FROM CLOGGING THE DISTRIBUTION LINES.
 - THE ALARM LIGHT, OR AUDIO ALARM, WILL ACTIVATE WHENEVER EFFLUENT IN THE PUMP TANK RISES ABOVE THE ALARM LEVEL DESIGNATED ON THE PUMP TANK DETAIL.
- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOSS OF VEGETATION WHICH MAY OCCUR AS A RESULT OF THE CONSTRUCTION OF THIS SYSTEM. THE CONTRACTOR, AS LONG AS HE EXERCISES CARE IN INSTALLING THE SYSTEM, SHALL NOT BE RESPONSIBLE FOR LOSS OF VEGETATION.
- THE SYSTEM WILL NOT BE FINALLY ACCEPTED BY THE LOCAL REGULATORY AUTHORITY FOR OPERATION UNTIL THE FIELD HAS AN APPROVED GRASS COVER. IF THE CONTRACTOR ELECTS TO USE THE SEEDING OPTION METHOD OF COVER, HE SHALL BE RESPONSIBLE FOR GETTING THE GRASS GROWING TO THE POINT WHERE IT IS ACCEPTABLE BY THE REGULATORY AUTHORITY. THIS SHALL INCLUDE PERIODIC WATERING AS REQUIRED, AND RE-SEEDING IF NECESSARY. THE OWNER, AT HIS ELECTION, MAY RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY BY NOTIFYING THE REGULATORY AUTHORITY, IN WRITING, THAT HE IS RESPONSIBLE FOR THE GRASS.
- THE HIGH WATER ALARM SHALL CONSIST OF A VISUAL AND AUDIO ALARM COMPONENT.

NOTES FOR TANK(S)

- ALL SEPTIC TANKS SHALL BE SET LEVEL ON A MINIMUM FOUR (4) INCH THICK CONSOLIDATED SAND PAD. ANY OVER EXCAVATION OF THE SEPTIC TANK HOLE BENEATH THE TANK, SHALL BE FILLED WITH SAND TO THE CORRECT ELEVATION FOR THE TANK BOTTOM.
- BACKFILL AROUND THE TANKS SHALL BE GRANULAR MATERIAL, SUCH AS SANDY LOAM, SAND, OR CUTTINGS FROM A ROCK SAW IF THE DISPOSAL FIELD IS A LOW PRESSURE DOSE FIELD. IN THE CASE WHERE THE FIELD IS AN EVAPORATIVE FIELD, FILL SHALL BE SAND OR SANDY LOAM. NO ROCKS, CLAY, STICKS, BRICKS, STONES, TRASH OR OTHER MATERIAL SHALL BE PLACED IN THE BACKFILL. THE BACKFILL SHALL BE THOROUGHLY WATERED AND COMPACTED. FINAL COVERAGE OVER THE TANK AND EXCAVATED AREAS OUTSIDE THE TANK, SHALL BE MOUNDING IN ORDER TO SHED STORM WATER RUN-OFF.
- A TEN (10) INCH (MINIMUM) DIAMETER INSPECTION PORT SHALL BE PROVIDED OVER EACH INLET/OUTLET TEE FITTING TO PROVIDE FOR INSPECTION, CLEANING AND MAINTENANCE.
- FOR TANKS BURIED MORE THAN TWELVE (12) INCHES DEEP, MANHOLE RISERS ARE REQUIRED. THE RISER SHALL BE REINFORCED CONCRETE PIPE OR RIGID RIBBED PVC WITH CONCRETE COVERS. THE INSIDE DIAMETER OF THE RISER MUST BE LARGE ENOUGH TO ACCOMMODATE THE EXISTING MANHOLE COVERS ON THE TANKS, AND SHOULD BE RAISED TO WITHIN SIX (6) INCHES OF THE FINISHED SURFACE GRADE.
- TANKS IN DRIVEWAYS SHALL HAVE TRAFFIC BEARING LIDS. SUCH TANKS SHALL BE FITTED WITH RISERS TO THE FINISHED DRIVEWAY SURFACE, AND SHALL HAVE STANDARD CAST IRON MANHOLE COVERS INSTALLED OVER ALL ACCESS PORTS.

- TANKS MAY BE RELOCATED FROM THE EXACT LOCATION SHOWN ON THE SITE PLAN, AT THE ENGINEER'S DISCRETION TO AVOID ADVERSE ROCK CONDITIONS, GROUNDWATER CONDITIONS, OR IN ORDER TO PRESERVE SIGNIFICANT TREES OR VEGETATION.
- THE SEPTIC TANK RISERS, AND ALL INLET AN OUTLET OPENINGS SHALL BE THOROUGHLY SEALED WITH A HYDRAULIC TYPE CEMENT SEAL TO PREVENT THE ESCAPE OF GASES AND THE ENTRANCE INTO THE TANK(S) OF SURFACE RUN-OFF, GROUND WATER, INSECTS OR TREE ROOTS. THE COVER TO THE RISER(S) AND/OR MANHOLE COVERS, MAY BE SEALED WITH MASTIC. IF GROUND WATER WILL POSSIBLY AFFECT THE TANK(S), THEN THEN THE RISER SHALL BE BROUGHT TO A MINIMUM OF FOUR (4) INCHES ABOVE THE FINISHED GRADE, AND SECURED SO THAT IT IS INACCESSIBLE TO CHILDREN OR CASUAL REMOVAL.
- TANKS SHALL BE STAKED, FLAGGED OR OTHERWISE MARKED WHILE THE STRUCTURE ON THE LOT IS UNDER CONSTRUCTION IN ORDER TO PREVENT DAMAGE FROM TRAFFIC OR OTHER CONSTRUCTION RELATED ACTIVITY.
- THE SEWER LINE FROM THE OUTLET TO THE SEPTIC TANK SHALL BE MINIMUM SCHEDULE 40 PVC PIPE. THIS LINE SHALL HAVE NO LESS THAN 1/4" PER FOOT SLOPE FROM THE HOUSE TO THE TANK. A CLEAN OUT PLUG SHALL BE PROVIDED WITHIN THREE (3) FEET OF THE FOUNDATION, AND AT ALL 45-DEGREE BENDS. NO BENDS IN THIS PIPE SHALL BE GREATER THAN 45-DEGREES. CONNECTIONS FROM THE SEPTIC TANK TO THE PUMP TANK SHALL SLOPE AT SLOPE AT 1/8" PER FOOT MINIMUM.
- TANKS SHALL BE TESTED BY FILLING WITH WATER FOR TWENTY-FOUR HOURS PRIOR TO INSPECTION. THE WATER LEVEL SHALL BE TO THE OUTLET OVERFLOW LINE. THE TANKS SHALL BE CHECKED BY THE CONTRACTOR AND INSPECTOR FOR LEAKS AND STRUCTURAL INTEGRITY. TANKS EXHIBITING OBVIOUS DEFECTS, SHALL NOT BE INSTALLED. WHEN CONCRETE TANKS ARE USED, SWEATING OR SEEPAGE AT CONSTRUCTION JOINTS IS ACCEPTABLE PROVIDING THE TANKS STRUCTURE CONTAINS NO OPEN CRACKS OR LARGE VOIDS. FIBERGLASS TANKS MAY BE USED IF THEY ARE "CERTIFIED WATER TESTED" TANKS FROM AN APPROVED SOURCE AND ARE EXPRESSLY APPROVED BY THE ENGINEER. IF USED, THESE TANKS SHALL BE BEDDED AND COVERED WITH SAND. THE MAXIMUM DEPTH OF COVER FOR A FIBERGLASS TANK IS TWELVE (12) INCHES.
- THE SEPTIC TANK(S) WILL REQUIRE PERIODIC PUMPING. SLUDGE AND SCUM ACCUMULATION SHALL BE CHECKED ANNUALLY BY A REPUTABLE LICENSED PUMPING CONTRACTOR, OR PLUMBER. THE RATE OF SLUDGE AND SCUM ACCUMULATION WILL VARY WITH USAGE. MOST SEPTIC TANKS REQUIRE PUMPING AT LEAST ONCE EVERY TWO (2) YEARS. EVERY EFFORT SHOULD BE MADE BY THE HOMEOWNER TO REDUCE THE AMOUNT OF UNNECESSARY OR NON-BIODEGRADABLE WASTES FLUSHED INTO THE SEPTIC SYSTEM, INCLUDING, BUT NOT LIMITED TO: GREASE, WAX, COLORED TISSUE OR TOILET PAPER, SANITARY NAPKINS, CIGARETTE BUTTS, COFFEE GROUND, OR OTHER NON-BIODEGRADABLE OBJECTS AND LARGE AMOUNTS OF SOLIDS AS GENERATED BY GARBAGE DISPOSAL GRINDERS. HEAVY USE OF A GARBAGE GRINDER CAN CAUSE A RAPID BUILD-UP OF SLUDGE AND SCUM WHICH WILL REQUIRE THE SEPTIC TANK TO BE PUMPED MORE FREQUENTLY. IF CLEANING OF THE SEPTIC TANK IS NOT DONE ON A REGULAR BASIS, SYSTEM FAILURE COULD OCCUR. DO NOT DISPOSE OF TOXIC MATERIAL SUCH AS BLEACH, AMMONIA, GASOLINE, OIL OR OTHER SUCH WASTES TO THE SEPTIC SYSTEM AS THESE SUBSTANCES CAN DAMAGE AND/OR DESTROY THE SYSTEM.

NOTES FOR BEDS AND TRENCHES

- ALL DRILLED HOLES IN THE LATERAL PIPING SHALL BE THOROUGHLY CORED OUT SO THAT THEY ARE SMOOTH AND FREE OF ALL DEBRIS BEFORE INSTALLING IN THE TRENCHES.
- WHEN INSTALLING TRENCHES NEAR SIGNIFICANT TREES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR THE METHOD OF TRENCH EXCAVATION TO MINIMIZE THE DISTURBANCE OF THE TREE ROOT SYSTEM.
- ONLY A GOOD QUALITY SANDY LOAM SHALL BE USED OVER THE LEACHING CHAMBERS. CLAY LOAM WILL CAUSE IMPROPER FUNCTIONING OF THE SYSTEM AND IS NOT ALLOWED. SANDY LOAM SHALL BE DEFINED AS SHOWN ON TABLE VIII USDA SOIL TEXTURAL CLASSIFICATIONS, IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE SYSTEMS, LOWER COLORADO RIVER AUTHORITY, JANUARY 1, 1991. THE LOAM WILL BE INSPECTED BY THE ENGINEER AND THE LICENSING AUTHORITY, AND EITHER MAY REJECT THE LOAM IF THE LOAM CONTAINS TOO MUCH CLAY OR SAND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE FIELD.
- PVC "TURN-UPS" WITH THREADED ADAPTERS (FOR USE AS THE CLEANOUT OF THE DRILLED LATERAL LINES) SHALL BE INSTALLED AT THE ENDS OF ALL LATERAL LINES THAT ARE NOT CONNECTED DIRECTLY TO THE SUPPLY LINE. IF A TURN-UP IS DAMAGED DURING INSTALLATION, BACKFILLING, OR AFTER THE SYSTEM HAS BEEN PLACED IN OPERATION, IT SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LOSS OF PRESSURE FROM THE SYSTEM, OR ANY SURFACING EFFLUENT.
- A MINIMUM OF ONE (1) TURN-UP SHALL SERVE AS A CONNECTION POINT FOR THE PRESSURE ADJUSTING RISER. THE RISER SHALL BE CONNECTED TO THE ADAPTER ON THE TURN-UP AND SHALL EXTEND 12 TO 24" ABOVE THE CENTER LINE OF THE LATERAL. THE SYSTEM PUMP SHALL BE STARTED, AND THE BED PRESSURE REGULATING VALVE SHALL BE ADJUSTED SO THAT THE WATER RISES TO THE TOP OF THE OPEN ENDED PRESSURE ADJUSTING RISER WITHOUT OVERFLOWING. ADJUSTMENT SHOULD BE DONE BY QUALIFIED PERSONNEL.
- ALL STRUCTURE DRAINAGE, ROADWAY DRAINAGE, OR OTHER DRAINAGE SHALL BE DIVERTED TO AVOID THE SEPTIC TANK(S), PUMP TANK AND THE DISTRIBUTION FIELD.
- THE FIELD BEDS SHALL BE HYDROSEEDING OR SODDED, OR SOME COMBINATION TO ESTABLISH PERMANENT EROSION CONTROL.
 - SODDING MAY BE EITHER SOLID OR STRIP SODDING WITH CARPET GRASSES, INCLUDING BERMUDA, ST. AUGUSTINE OR TIFGREEN GRASSES OR SOME OTHER TYPE OF GRASS WHICH IS NORMALLY A HIGH WATER USING GRASS. BUFFALO OR OTHER DROUGHT RESISTANT GRASSES WILL NOT BE PERMITTED.
 - HYDROMULCHING AND SEEDING SHALL BE AS FOLLOWS: USE A WOODCELLULOSE FIBER MULCH APPLIED AT A RATE OF 4,000 POUNDS PER ACRE. FERTILIZE WITH 13-13-13 ANALYSIS FERTILIZER AT A RATE OF 400 POUNDS PER ACRE. SEED SHALL BE BERMUDA AT A RATE OF 5 POUNDS PER 1,000 SQUARE FEET PLUS WINTER RYE AT A RATE OF 15 POUNDS PER 1,000 SQUARE FEET.
- UN-VEGETATED FIELDS WILL NOT BE ALLOWED AND THE SYSTEM WILL NOT BE FINALLY APPROVED UNTIL A GRASS COVER IS ESTABLISHED. ALL AREAS DISTURBED BY THE CONSTRUCTION, INCLUDING THE TANK AREA, THE FIELD SUPPLY LINE, THE FIELD AREAS AND ANY OTHER AREA THAT HAS EXPOSED EARTH IN THE VICINITY OF THE FIELD, SHALL HAVE AN APPROPRIATE GRASS COVER ESTABLISHED.
- ANY ADDITIONS TO THE SITE, INCLUDING SIDEWALKS, DRIVEWAYS, PATIOS, SWIMMING POOLS OR OTHER IMPROVEMENTS SHALL BE CONSTRUCTED CLEAR OF THE FIELD AREA. DRAINAGE FROM ANY IMPROVEMENTS, OR NATURAL OVERLAND FLOW SHALL BE DIVERTED AWAY FROM, OR AROUND AND AWAY FROM THE WASTEWATER DISPOSAL SYSTEM.
- SHOULD GROUND WATER BE ENCOUNTERED IN THE TRENCHES, OR TANK HOLE, WHICH WAS NOT PREVIOUSLY INDICATED ON THE PLANS, OR DISCOVERED PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LICENSING AUTHORITY AND ENGINEER.
- SEE PIPE SCHEDULE FOR LATERAL LENGTH AND THE REQUIRED NUMBER, SIZE AND SPACING OF HOLES.
- THE BED FEED PIPE SHALL BE ENCASED IN MINIMUM 4" DIAMETER, SCHEDULE 40 PVC PIPE UNDER ALL DRIVES, WALKS, PATIOS, ETC.
- PIPE FOR THE SUPPLY LINE SHALL BE 2" DIAMETER, SCHEDULE 40 PVC, THE LATERALS SHALL BE 1 1/2" DIAMETER SCH. 40 PVC.
- ONE INSPECTION PORT, 4" PVC, SHALL BE INSTALLED PER TRENCH.



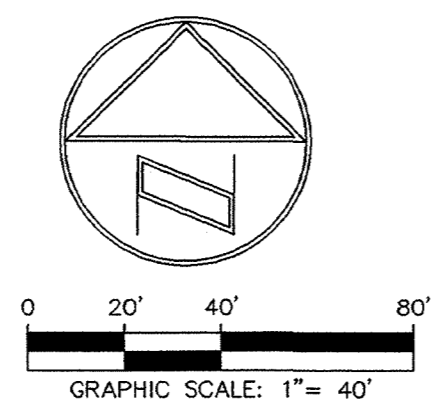
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CLEAN COLORADO PROJECT

10-10-96 3-10-96

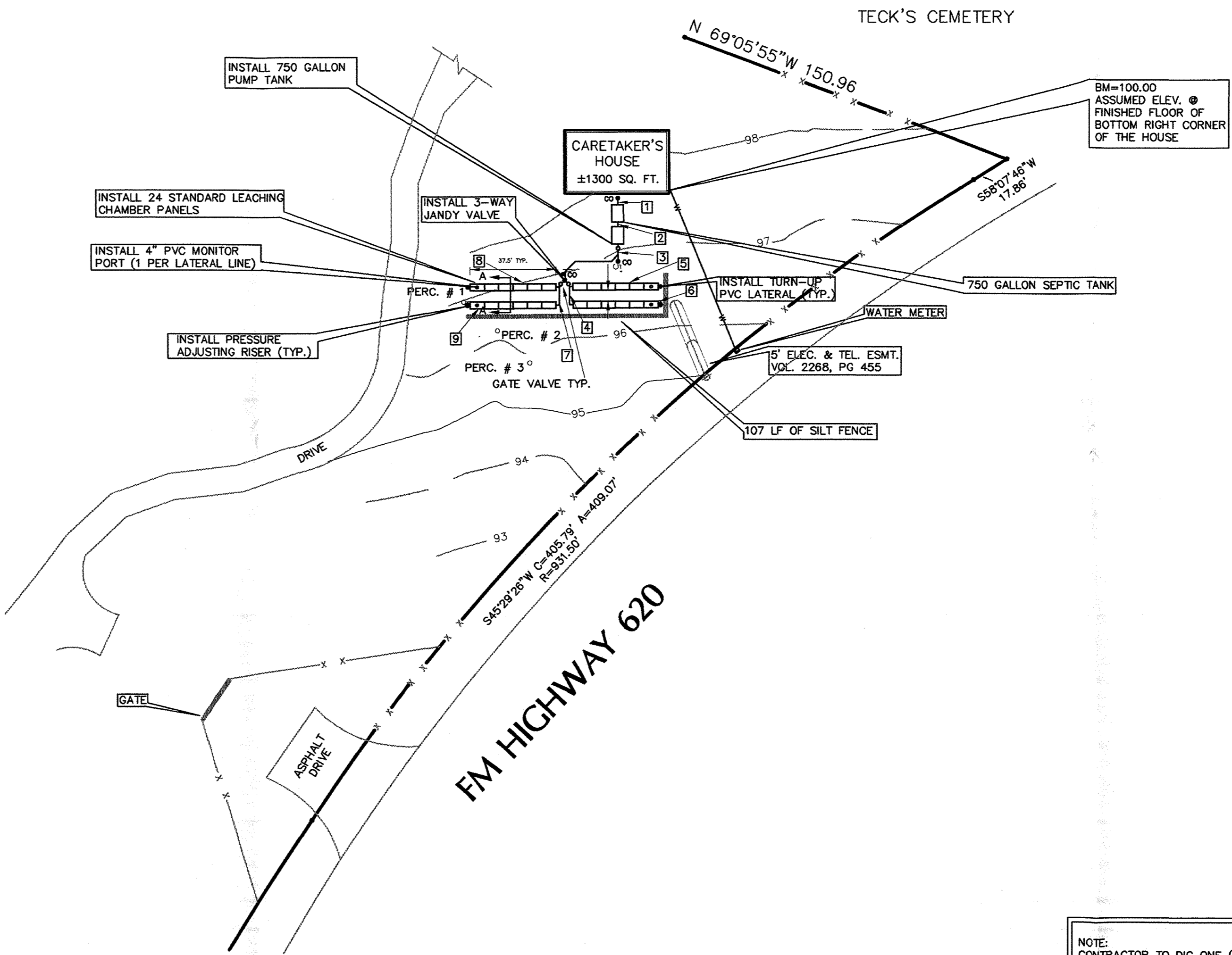
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LEGEND	
EXISTING	PROPOSED
	• TURN-UP AT THE END OF EACH LATERAL
	• TURN-UP WITH PRESSURE ADJUSTING RISER
⊙	3 WAY JANDY VALVE
○	GATE VALVE
○○○	CLEAN OUT
○○○	4" PVC CLEANOUT PORT
—*—*	WIRE FENCE
---	PROPERTY LINE
⊙	POWER POLE
⌒	DOWN GUY
⊕	LIGHT POLE
⊠	WATER METER BOX
—W—	WATER LINE
—WW—	WASTE WATER LINE



LINE NUMBER	SIZE (INCHES)	HOLE SPACING (feet)	NO. OF HOLES	HOLE SIZE (INCHES)
1	4	N/A	N/A	N/A
2	4	N/A	N/A	N/A
3	2	N/A	N/A	N/A
4	2	N/A	N/A	N/A
5	1.5	5	8	3/16
6	1.5	5	8	3/16
7	2	N/A	N/A	N/A
8	1.5	5	8	3/16
9	1.5	5	8	3/16

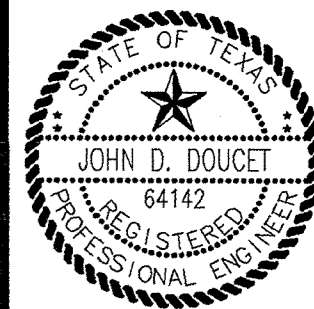
PIPE SCHEDULE



NOTE:
CONTRACTOR TO DIG ONE (1) FOOT
UNDERNEATH THE TRENCH BED BOTTOM
AND REPLACE THE EXISTING MATERIAL
WITH SAND. SEE DETAIL SHEET 2.

ON-SITE WASTEWATER
DISPOSAL FACILITY

CARETAKER'S HOUSE
2606 R.R. 620 NORTH
AUSTIN, TX 78734



Scale: 1" = 40'
Date: 2-9-96
Design: JD
Drawn by: JS
File name: 09901S1
Approved by: JDD



















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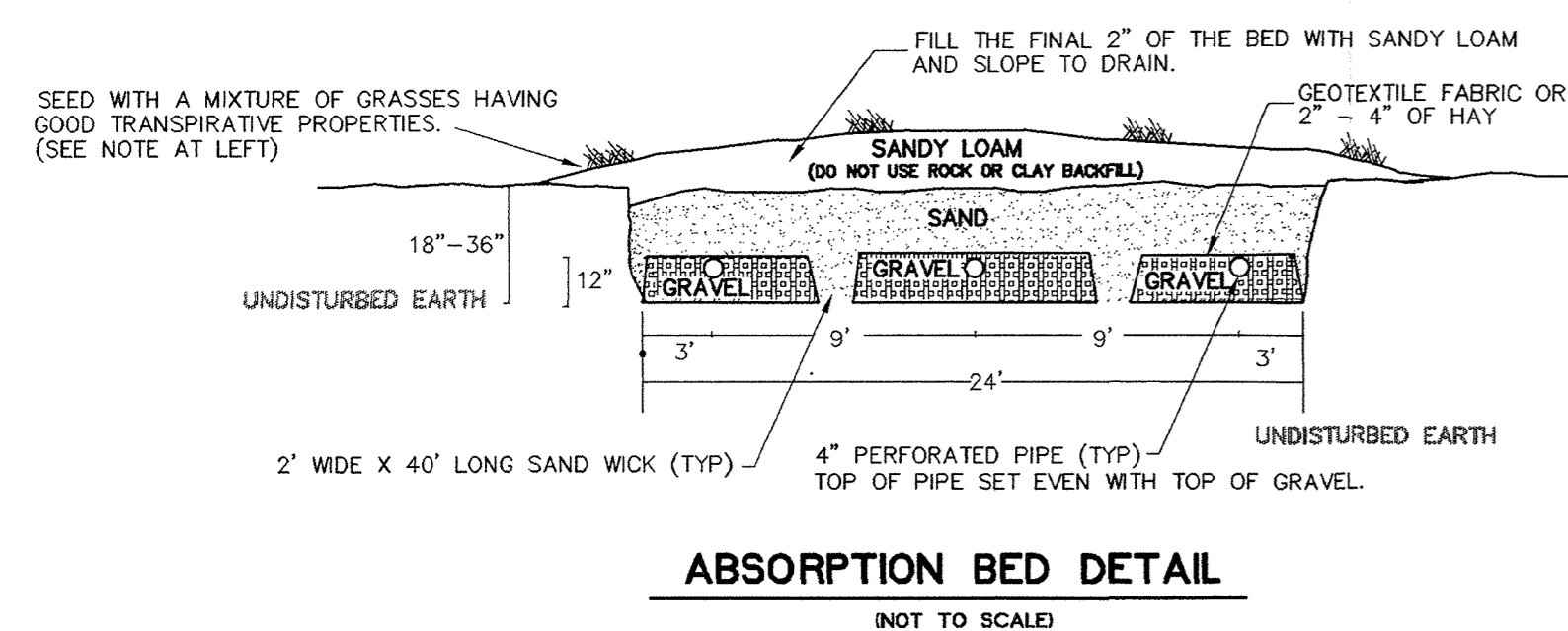
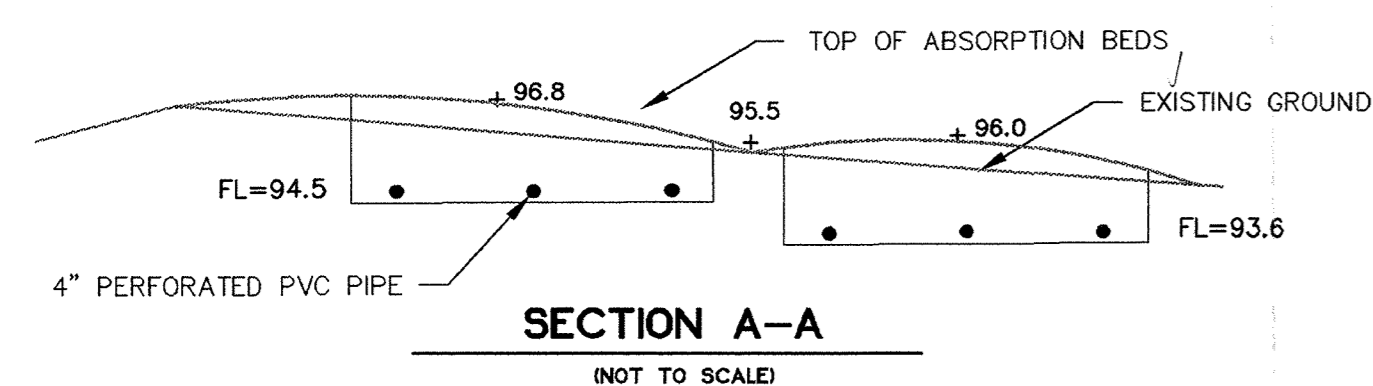
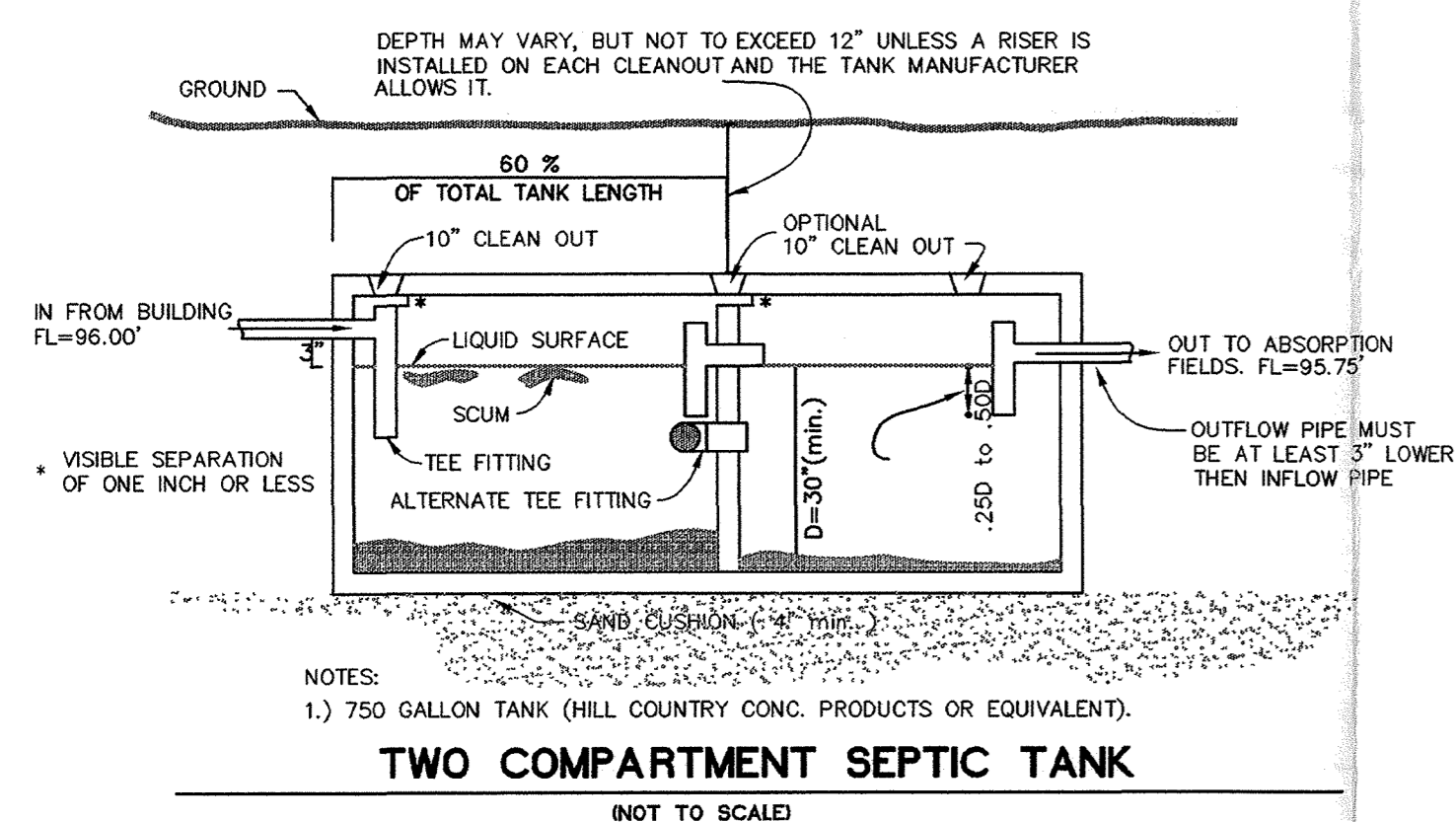
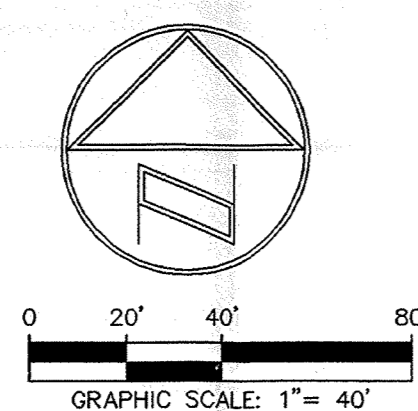
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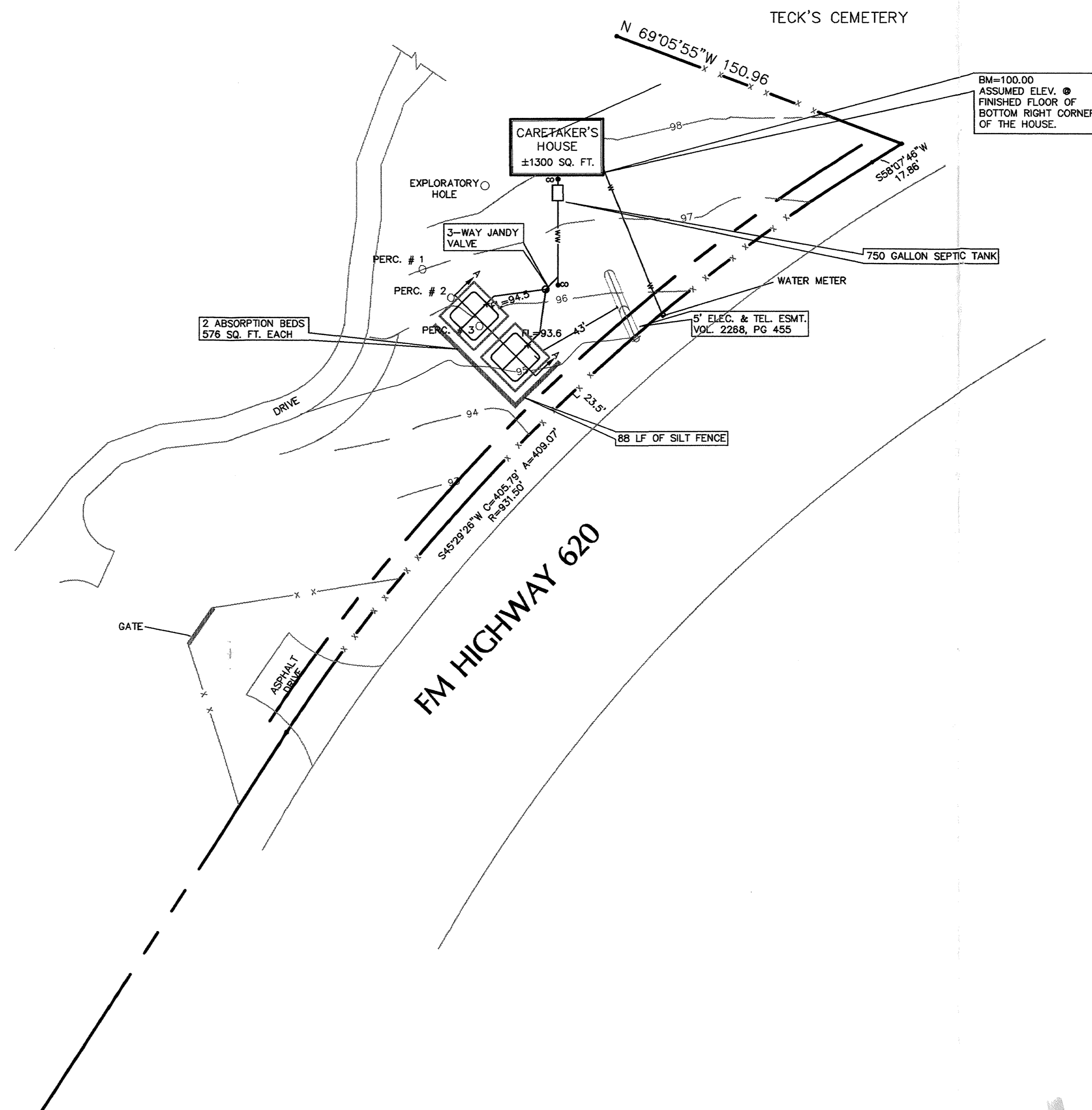
LEGEND

		3 WAY JANDY VALVE
CO G	CO ●	CLEAN OUT
		WIRE FENCE
		UNDERGROUND TELE.
		POWER POLE
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		WATER METER BOX
		WATER LINE
		WASTE WATER LINE



DESIGN NOTES

1. 2 BEDROOM HOUSE, ±1300 SQ. FT.
SEPTIC TANK REQUIRED - 750 GALLONS
2. ABSORPTION BED AREA REQUIRED
AVG. PERCOLATION RATE = 23.71, Ra = 0.5 GA/SQ. FT./DAY (L.C.R.A.'S RECOMMENDED RATE OF APPLICATION)
DUE TO THE ROCKY NATURE OF SOIL, RATE OF APPLICATION OF 0.4 GA/SQ. FT./DAY SHALL BE USED
 $A = \frac{1500(1 \pm B)}{R} = 1125$ SQ. FT.
3. AREA PROVIDED = 576 SQ. FT./BED



DA & Doucet & Associates, Inc.
1301 Capital of Texas Highway South, Bldg. B, Suite 325
Austin, Texas 78746, Phone : (512) 329-8743 Fax : 329-8754

ON-SITE WASTEWATER DISPOSAL FACILITY

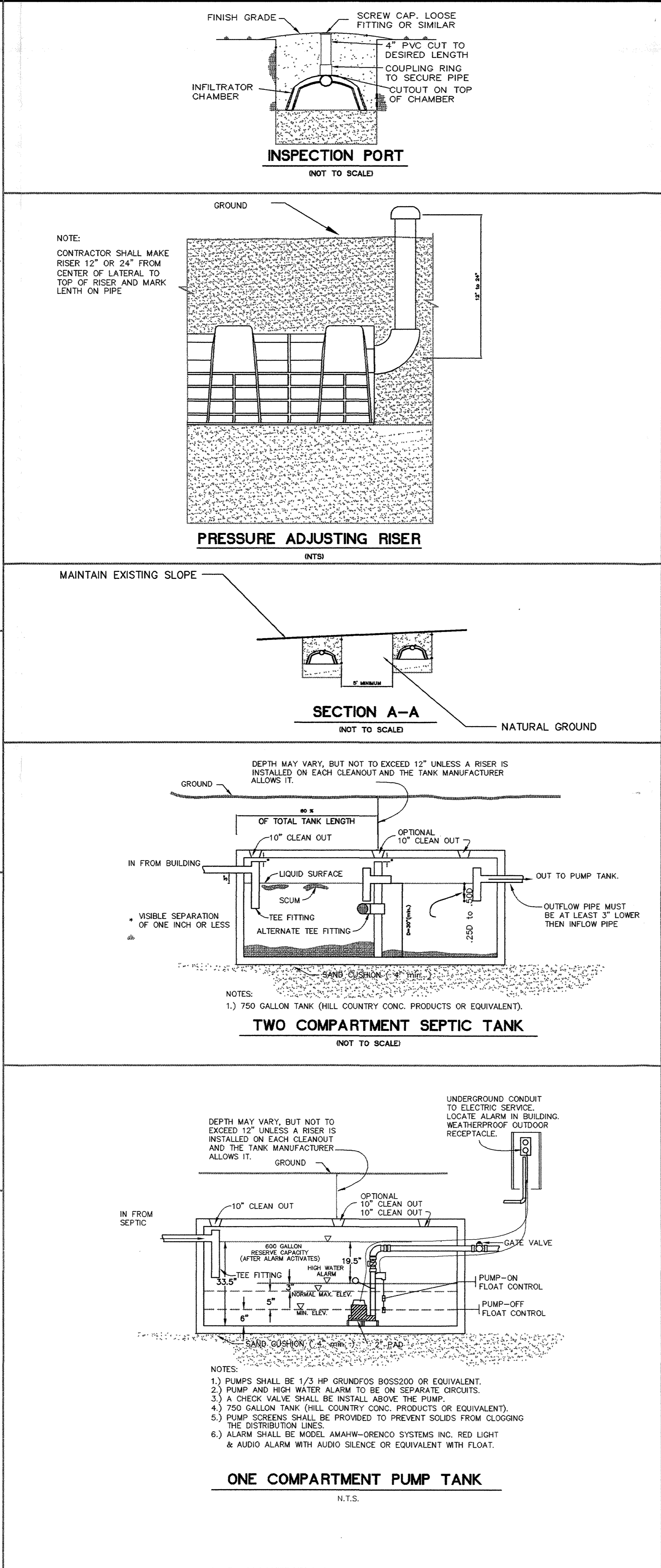
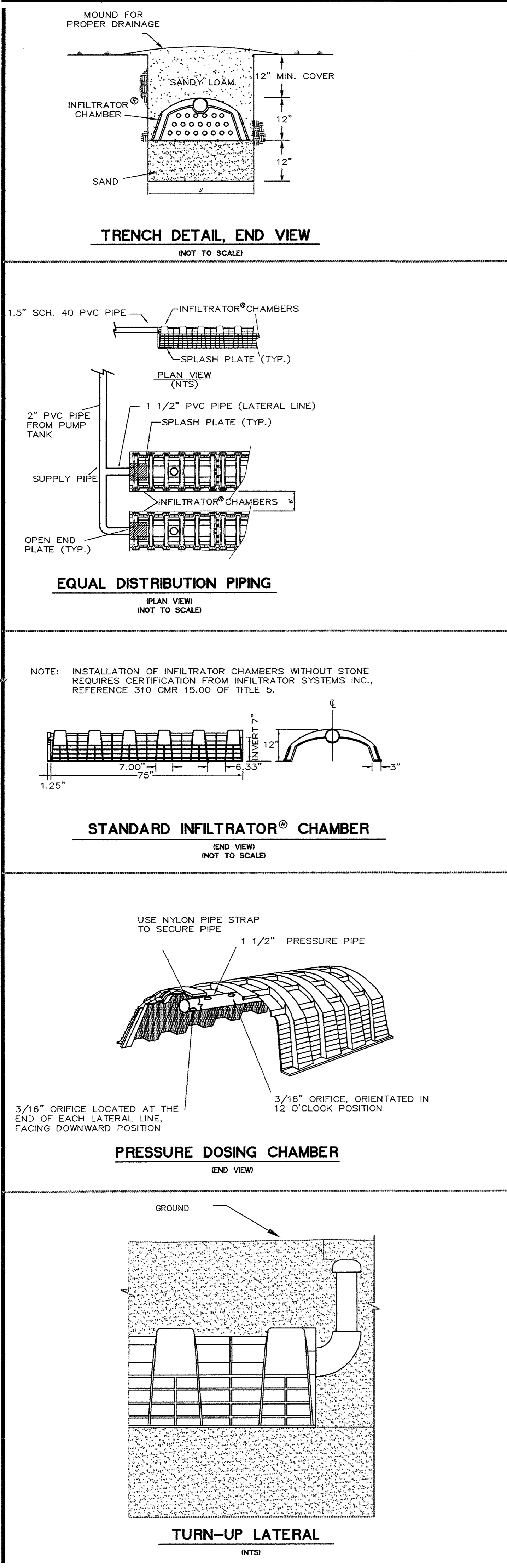
CARETAKER'S HOUSE
2606 RR 620
LAKEWAY, TEXAS

Scale: 1" = 40'
Date: 2-9-96
Design: JD
Drawn by: JS
File name: 09901S
Approved by: JDD

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OF 1

Project No.:
09901.20

Conventional 2-9-96
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- AFTER FINAL LANDSCAPING, WHEN THE VEGETATIVE COVER HAS BEEN COMPLETED, AND THE GRASS IS ESTABLISHED.
- AT SUCH ADDITIONAL POINTS AS MAY BE DETERMINED BY THE INSPECTOR ON THE ABOVE SCHEDULED VISITS TO THE SITE BY THE L.C.R.A. INSPECTOR.

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8. THE CAPACITY OF THE SYSTEM TO HANDLE EFFLUENT LOADING MAY VARY IN WINTER, SPRING AND FALL MONTHS DUE TO CHANGES IN RAINFALL AND OTHER MOISTURE CONDITIONS. GENERAL WATER CONSERVATION IS STRONGLY RECOMMENDED THROUGHOUT THE YEAR.

9. LOW VOLUME FLUSH TOILETS, LOW FLOW SHOWERHEADS AND FAUCETS, AND OTHER WATER CONSERVATION DEVICES SHALL BE INSTALLED FOR USE IN THE BUILDING.

10. THE LIST OF INSPECTIONS ABOVE SHOWS THE MAJOR ITEMS TO BE CHECKED DURING THE INSPECTIONS. EVERY PART OF THE SYSTEM, INCLUDING GRADES, MATERIALS AND WORKMANSHIP SHALL BE OPEN TO INSPECTION AND APPROVAL.

11. ALL WATER SUPPLY LINES MUST BE KEPT A MINIMUM OF TEN (10) FEET AWAY FROM ANY PART OF THE PROPOSED WASTEWATER DISPOSAL SYSTEM. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY WATER LINES WHICH HE MAY LOCATE ON THE PROPERTY, WHICH ARE NOT SHOWN ON THE PLANS.

12. TREES TO BE SAVED SHALL BE DESIGNATED BY THE OWNER. THE CONTRACTOR AND OWNER SHALL COORDINATE FOR THE PRESERVATION OF DESIGNATED TREES. LATERAL LINES MAY BE ADJUSTED TO ALLOW FOR PROTECTION OF DESIGNATED TREES ONLY WITH PRIOR APPROVAL OF ENGINEER.

13. PUMP NOTES:

- THE SUBMERSIBLE PUMP(S) AND THE HIGH WATER ALARM SHALL BE PLACED ON SEPARATE CIRCUITS. THE ELECTRICAL CONNECTIONS SHALL BE HARDWIRED EXTERNALLY TO THE PUMP TANK AND PLACED IN A WEATHER TIGHT BOX. THE ALARM CIRCUIT AND PUMP CIRCUIT SHALL BE CLEARLY MARKED IN THE ELECTRICAL PANEL BOX.
- ALL ELECTRICAL PANELS, WIRE, WIRING AND CONDUIT SHALL BE IN ACCORDANCE WITH THE ELECTRICAL CODE OF THE LOCAL POWER SUPPLY COMPANY THAT SUPPLIES POWER TO THE SITE LOCATION.
- A SPARE PUMP SHALL BE KEPT READILY AVAILABLE IN CASE OF PUMP FAILURE. THIS SHALL BE THE OWNER'S OPTION.
- PUMP SCREENS SHALL BE INSTALLED TO PREVENT SOLIDS FROM CLOGGING THE DISTRIBUTION LINES.
- THE ALARM LIGHT, OR AUDIO ALARM, WILL ACTIVATE WHENEVER EFFLUENT IN THE PUMP TANK RISES ABOVE THE ALARM LEVEL DESIGNATED ON THE PUMP TANK DETAIL.

14. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOSS OF VEGETATION WHICH MAY OCCUR AS A RESULT OF THE CONSTRUCTION OF THIS SYSTEM. THE CONTRACTOR, AS LONG AS HE EXERCISES CARE IN INSTALLING THE SYSTEM, SHALL NOT BE RESPONSIBLE FOR LOSS OF VEGETATION.

15. THE SYSTEM WILL NOT BE FINALLY ACCEPTED BY THE LOCAL REGULATORY AUTHORITY FOR OPERATION UNTIL THE FIELD HAS AN APPROVED GRASS COVER. IF THE CONTRACTOR ELECTS TO USE THE SEEDING OPTION METHOD OF COVER, HE SHALL BE RESPONSIBLE FOR GETTING THE GRASS GROWING TO THE POINT WHERE IT IS ACCEPTABLE BY THE REGULATORY AUTHORITY. THIS SHALL INCLUDE PERIODIC WATERING AS REQUIRED, AND RE-SEEDING IF NECESSARY. THE OWNER, AT HIS ELECTION, MAY RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY BY NOTIFYING THE REGULATORY AUTHORITY, IN WRITING, THAT HE IS RESPONSIBLE FOR THE GRASS.

16. THE HIGH WATER ALARM SHALL CONSIST OF A VISUAL AND AUDIO ALARM COMPONENT.

NOTES FOR TANK(S)

1. ALL SEPTIC TANKS SHALL BE SET LEVEL ON A MINIMUM FOUR (4) INCH THICK CONSOLIDATED SAND PAD. ANY OVER EXCAVATION OF THE SEPTIC TANK HOLE BENEATH THE TANK, SHALL BE FILLED WITH SAND TO THE CORRECT ELEVATION FOR THE TANK BOTTOM.

2. BACKFILL AROUND THE TANKS SHALL BE GRANULAR MATERIAL, SUCH AS SANDY LOAM, SAND, OR CUTTINGS FROM A ROCK SAW IF THE DISPOSAL FIELD IS A LOW PRESSURE DOSE FIELD. IN THE CASE WHERE THE FIELD IS AN EVAPORATIVE FIELD, FILL SHALL BE SAND OR SANDY LOAM. NO ROCKS, CLAY, STICKS, BRICKS, STONES, TRASH OR OTHER MATERIAL SHALL BE PLACED IN THE BACKFILL. THE BACKFILL SHALL BE THOROUGHLY WATERED AND COMPACTED. FINAL COVERAGE OVER THE TANK AND EXCAVATED AREAS OUTSIDE THE TANK, SHALL BE MOUNDING IN ORDER TO SHED STORM WATER RUN-OFF.

3. A TEN (10) INCH (MINIMUM) DIAMETER INSPECTION PORT SHALL BE PROVIDED OVER EACH INLET/OUTLET TEE FITTING TO PROVIDE FOR INSPECTION, CLEANING AND MAINTENANCE.

4. FOR TANKS BURIED MORE THAN TWELVE (12) INCHES DEEP, MANHOLE RISERS ARE REQUIRED. THE RISER SHALL BE REINFORCED CONCRETE PIPE OR RIGID RIBBED PVC WITH CONCRETE COVERS. THE INSIDE DIAMETER OF THE RISER MUST BE LARGE ENOUGH TO ACCOMMODATE THE EXISTING MANHOLE COVERS ON THE TANKS, AND SHOULD BE RAISED TO WITHIN SIX (6) INCHES OF THE FINISHED SURFACE GRADE.

5. TANKS IN DRIVEWAYS SHALL HAVE TRAFFIC BEARING LIDS. SUCH TANKS SHALL BE FITTED WITH RISERS TO THE FINISHED DRIVEWAY SURFACE, AND SHALL HAVE STANDARD CAST IRON MANHOLE COVERS INSTALLED OVER ALL ACCESS PORTS.

6. TANKS MAY BE RELOCATED FROM THE EXACT LOCATION SHOWN ON THE SITE PLAN, AT THE ENGINEER'S DISCRETION TO AVOID ADVERSE ROCK CONDITIONS, GROUNDWATER CONDITIONS, OR IN ORDER TO PRESERVE SIGNIFICANT TREES OR VEGETATION.

7. THE SEPTIC TANK RISERS, AND ALL INLET AND OUTLET OPENINGS SHALL BE THOROUGHLY SEALED WITH A HYDRAULIC TYPE CEMENT SEAL TO PREVENT THE ESCAPE OF GASES AND THE ENTRANCE INTO THE TANK(S) OF SURFACE RUN-OFF, GROUND WATER, INSECTS OR TREE ROOTS. THE COVER TO THE RISER(S) AND/OR MANHOLE COVERS, MAY BE SEALED WITH MASTIC. IF GROUND WATER WILL POSSIBLY AFFECT THE TANK(S), THEN THEN THE RISER SHALL BE BROUGHT TO A MINIMUM OF FOUR (4) INCHES ABOVE THE FINISHED GRADE, AND SECURED SO THAT IT IS INACCESSIBLE TO CHILDREN OR CASUAL REMOVAL.

8. TANKS SHALL BE STAKED, FLAGGED OR OTHERWISE MARKED WHILE THE STRUCTURE ON THE LOT IS UNDER CONSTRUCTION IN ORDER TO PREVENT DAMAGE FROM TRAFFIC OR OTHER CONSTRUCTION RELATED ACTIVITY.

9. THE SEWER LINE FROM THE OUTLET TO THE SEPTIC TANK SHALL BE MINIMUM SCHEDULE 40 PVC PIPE. THIS LINE SHALL HAVE NO LESS THAN 1/4" PER FOOT SLOPE FROM THE HOUSE TO THE TANK. A CLEAN OUT PLUG SHALL BE PROVIDED WITHIN THREE (3) FEET OF THE FOUNDATION, AND AT ALL 45-DEGREE BENDS. NO BENDS IN THIS PIPE SHALL BE GREATER THAN 45-DEGREES. CONNECTIONS FROM THE SEPTIC TANK TO THE PUMP TANK SHALL SLOPE AT SLOPE AT 1/8" PER FOOT MINIMUM.

10. TANKS SHALL BE TESTED BY FILLING WITH WATER FOR TWENTY-FOUR HOURS PRIOR TO INSPECTION. THE WATER LEVEL SHALL BE TO THE OUTLET OVERFLOW LINE. THE TANKS SHALL BE CHECKED BY THE CONTRACTOR AND INSPECTOR FOR LEAKS AND STRUCTURAL INTEGRITY. TANKS EXHIBITING OBVIOUS DEFECTS, SHALL NOT BE INSTALLED. WHEN CONCRETE TANKS ARE USED, SWEATING OR SEEPAGE AT CONSTRUCTION JOINTS IS ACCEPTABLE PROVIDING THE TANKS STRUCTURE CONTAINS NO OPEN CRACKS OR LARGE VOIDS. FIBERGLASS TANKS MAY BE USED IF THEY ARE "CERTIFIED WATER TESTED". TANKS FROM AN APPROVED SOURCE AND ARE EXPRESSLY APPROVED BY THE ENGINEER. IF USED, THESE TANKS SHALL BE BEDDED AND COVERED WITH SAND. THE MAXIMUM DEPTH OF COVER FOR A FIBERGLASS TANK IS TWELVE (12) INCHES.

11. THE SEPTIC TANK(S) WILL REQUIRE PERIODIC PUMPING. SLUDGE AND SCUM ACCUMULATION SHALL BE CHECKED ANNUALLY BY A REPUTABLE LICENSED PUMPING CONTRACTOR, OR PLUMBER. THE RATE OF SLUDGE AND SCUM ACCUMULATION WILL VARY WITH USAGE. MOST SEPTIC TANKS REQUIRE PUMPING AT LEAST ONCE EVERY TWO (2) YEARS. EVERY EFFORT SHOULD BE MADE BY THE HOMEOWNER TO REDUCE THE AMOUNT OF UNDESIRABLE OR NON-BIODEGRADABLE WASTES FLUSHED INTO THE SEPTIC SYSTEM, INCLUDING, BUT NOT LIMITED TO: GREASE, WAX, COLORED TISSUE OR TOILET PAPER, SANITARY NAPKINS, CIGARETTE BUTTS, EGG SHELLS, COFFEE GROUNDS, OR OTHER NON-BIODEGRADABLE OBJECTS. LARGE AMOUNTS OF SOLIDS AS GENERATED BY GARBAGE DISPOSAL GRINDERS. HEAVY USE OF A GARBAGE GRINDER CAN CAUSE A RAPID BUILD-UP OF SLUDGE AND SCUM WHICH WILL REQUIRE THE SEPTIC TANK TO BE PUMPED FREQUENTLY. IF CLEANING OF THE SEPTIC TANK IS NOT DONE ON A REGULAR BASIS, SYSTEM FAILURE COULD OCCUR. DO NOT DISPOSE OF TOXIC MATERIAL SUCH AS BLEACH, AMMONIA, GASOLINE, OIL OR OTHER SUCH WASTES TO THE SEPTIC SYSTEM AS THESE SUBSTANCES CAN DAMAGE AND/OR DESTROY THE SYSTEM.

NOTES FOR BEDS AND TRENCHES

1. ALL DRILLED HOLES IN THE LATERAL PIPING SHALL BE THOROUGHLY CORED OUT SO THAT THEY ARE SMOOTH AND FREE OF ALL DEBRIS BEFORE INSTALLING IN THE TRENCHES.

2. WHEN INSTALLING TRENCHES NEAR SIGNIFICANT TREES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR THE METHOD OF TRENCH EXCAVATION TO MINIMIZE THE DISTURBANCE OF THE TREE ROOT SYSTEM.

3. ONLY A GOOD QUALITY SANDY LOAM SHALL BE USED OVER THE LEACHING CHAMBERS. CLAY LOAM WILL CAUSE IMPROPER FUNCTIONING OF THE SYSTEM AND IS NOT ALLOWED. SANDY LOAM SHALL BE DEFINED AS SHOWN ON TABLE VII USDA SOIL TEXTURAL CLASSIFICATIONS. THE IN THE CONSTRUCTION STANDARDS FOR ON-SITE SEWERAGE SYSTEMS, LOWER COLORADO RIVER AUTHORITY, JANUARY 1, 1991. THE LOAM WILL BE INSPECTED BY THE ENGINEER AND THE LICENSING AUTHORITY, AND EITHER MAY REJECT THE LOAM IF THE LOAM CONTAINS TOO MUCH CLAY OR SAND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUALITY OF EACH LOAD OF LOAM PLACED ON THE FIELD.

4. PVC "TURN-UPS" WITH THREADED ADAPTERS (FOR USE AS THE CLEANOUT OF THE DRILLED LATERAL LINES) SHALL BE INSTALLED AT THE ENDS OF ALL LATERAL LINES THAT ARE NOT CONNECTED DIRECTLY TO THE SUPPLY LINE. IF A TURN-UP IS DAMAGED DURING INSTALLATION, BACKFILLING, OR AFTER THE SYSTEM HAS BEEN OPERATED IN SHA, IT SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LOSS OF PRESSURE FROM THE SYSTEM, OR ANY SURFACING EFFLUENT.

5. A MINIMUM OF ONE (1) TURN-UP SHALL SERVE AS A CONNECTION POINT FOR THE PRESSURE ADJUSTING RISER. THE RISER SHALL BE CONNECTED TO THE ADAPTER ON THE TURN-UP AND SHALL EXTEND 12 TO 24" ABOVE THE CENTER LINE OF THE LATERAL. THE SYSTEM PUMP SHALL BE STARTED, AND THE BED PRESSURE REGULATING VALVE SHALL BE ADJUSTED SO THAT THE WATER RISES TO THE TOP OF THE OPEN ENDED PRESSURE ADJUSTING RISER WITHOUT OVERFLOWING. ADJUSTMENT SHOULD BE DONE BY QUALIFIED PERSONNEL.

6. ALL STRUCTURE DRAINAGE, ROADWAY DRAINAGE, OR OTHER DRAINAGE SHALL BE DIVERTED TO AVOID THE SEPTIC TANK(S), PUMP TANK AND THE DISTRIBUTION FIELD.

7. THE FIELD BEDS SHALL BE HYDROSEEDED OR SODDED, OR SOME COMBINATION TO ESTABLISH PERMANENT EROSION CONTROL.

A. SODDING MAY BE EITHER SOLID OR STRIP SODDING WITH CARPET GRASSES, INCLUDING BERMUDA, ST. AUGUSTINE OR TIFGREEN GRASSES OR SOME OTHER TYPE OF GRASS WHICH IS NORMALLY A HIGH WATER USING GRASS. BUFFALO OR OTHER DROUGHT RESISTANT GRASSES WILL NOT BE PERMITTED.

B. HYDROMULCHING AND SEEDING SHALL BE AS FOLLOWS: USE A WOODCELLULOSE FIBER MULCH APPLIED AT A RATE OF 4,000 POUNDS PER ACRE. FERTILIZE WITH 13-13-13 ANALYSIS FERTILIZER AT A RATE OF 400 POUNDS PER ACRE. SEED SHALL BE BERMUDA AT A RATE OF 5 POUNDS PER 1,000 SQUARE FEET PLUS WINTER RYE AT A RATE OF 15 POUNDS PER 1,000 SQUARE FEET.

8. UN-VEGETATED FIELDS WILL NOT BE ALLOWED AND THE SYSTEM WILL NOT BE FINALLY APPROVED UNTIL A GRASS COVER IS ESTABLISHED. ALL AREAS DISTURBED BY THE CONSTRUCTION, INCLUDING THE TANK AREA, THE FIELD SUPPLY LINE, THE FIELD AREAS AND ANY OTHER AREA THAT HAS EXPOSED EARTH IN THE VICINITY OF THE FIELD, SHALL HAVE AN APPROPRIATE GRASS COVER ESTABLISHED.

9. ANY ADDITIONS TO THE SITE, INCLUDING SIDEWALKS, DRIVEWAYS, PATIOS, SWIMMING POOLS OR OTHER IMPERVIOUS COVER SHALL BE CONSTRUCTED CLEAR OF THE FIELD AREA. DRAINAGE FROM ANY IMPROVEMENTS, OR NATURAL OVERLAND FLOW SHALL BE DIVERTED AWAY FROM, OR AROUND AND AWAY FROM THE WASTEWATER DISPOSAL SYSTEM.

10. SHOULD GROUND WATER BE ENCOUNTERED IN THE TRENCHES, OR TANK HOLE, WHICH WAS NOT PREVIOUSLY INDICATED ON THE PLANS, OR DISCOVERED PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE LICENSING AUTHORITY AND ENGINEER.

11. SEE PIPE SCHEDULE FOR LATERAL LENGTH AND THE REQUIRED NUMBER, SIZE AND SPACING OF HOLES.

11. THE BED FEED PIPE SHALL BE ENCASED IN MINIMUM 4" DIAMETER, SCHEDULE 40 PVC PIPE UNDER ALL DRIVES, WALKS, PATIOS, ETC.

12. PIPE FOR THE SUPPLY LINE SHALL BE 2" DIAMETER, SCHEDULE 40 PVC, THE LATERALS SHALL BE 1 1/2" DIAMETER SCH. 40 PVC.

14. ONE INSPECTION PORT, 4" PVC, SHALL BE INSTALLED PER TRENCH.