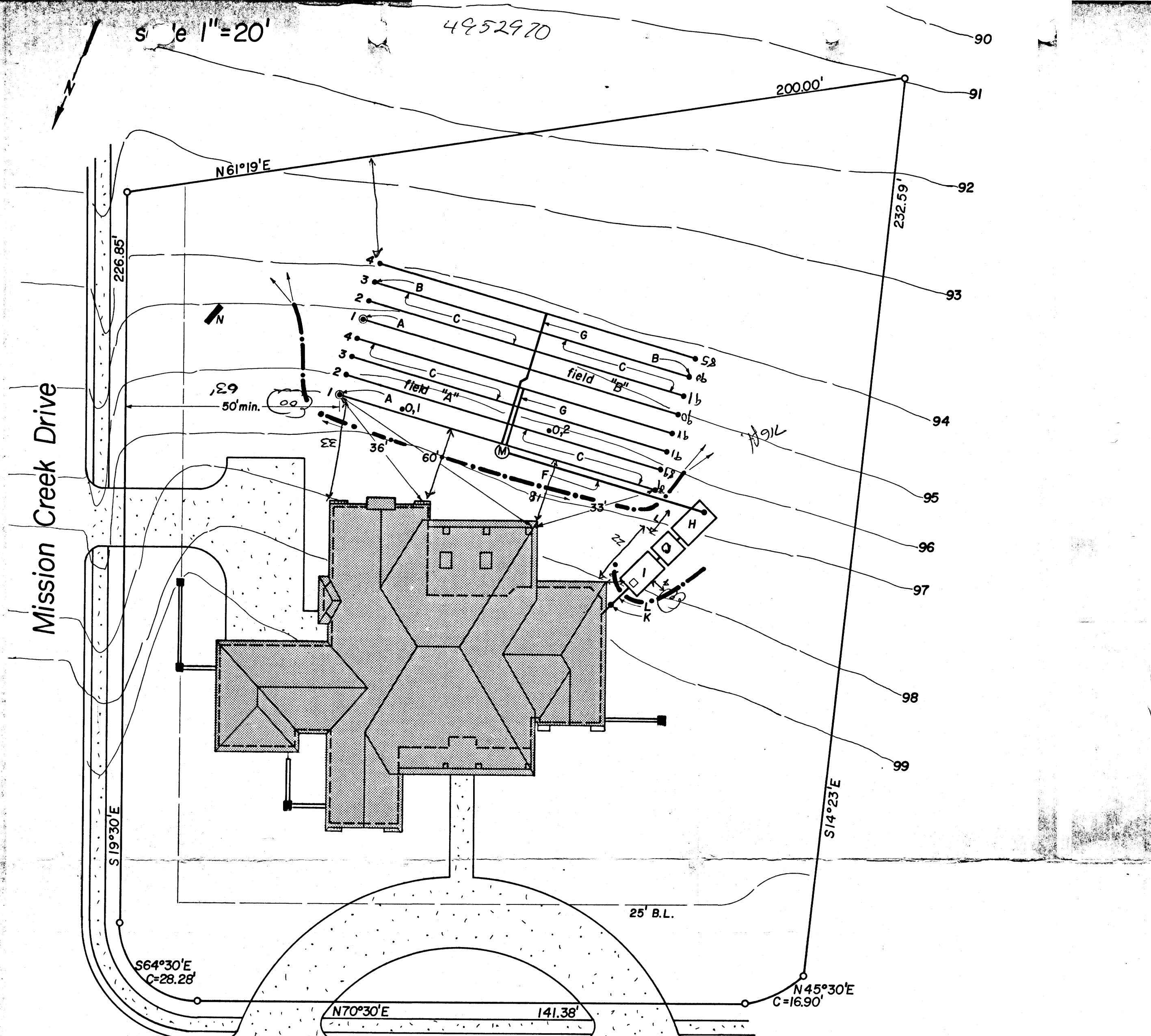




ADDRESS: 8903 Mission Creek Cove

LEGAL DESCRIPTION: Lot 10, Block G, The Estates Above Lost Creek

BUILDER: Legacy Builders, Inc.

RECEIPT NUMBER: 27777

SQUARE FOOTAGE (HEATED/COOLED): 3409

BEDROOM EQUIVALENCY: five (5)

PERCOLATION TESTS:

Date of Tests:	8-29-88	Test begun	11:20 a.m.
Hole Size:	10" x 28"	Test end	11:50 a.m.
Hole Depth:	12.0'		11.0'
Hole Bottom:	12.0'		10.75'
			1.00'
			1.25'

Lowest percolation hole = 30 minutes per inch.

CONSTRUCTION STANDARDS indicate an Ra of .4 gpd/square foot/day.

Tests performed by Kevin Dunne, R.S. 1413

See site plan for location of percolation test holes.

PROFILE HOLE:

0" - 12" = grey and black top soil

12" - 72" = 1t. tan soft caliche.

No groundwater or indicators of groundwater encountered in profile hole. (Kevin Dunne, R.S. 1413)

See location of holes on site plan. See Legend.

FIELD SIZING:

For a percolation rate of 30 minutes per inch, a sewage application rate (Ra) of .4 gpd/sq.ft./day is designated. Using a five (5) bedroom equivalency and the CONSTRUCTION STANDARD formula for absorption systems for dwellings:

A = 150 (1 + B)

B = total absorption bed required.

Ba = total number of bedrooms in the dwelling.

Ba = sewage application rate expressed as gallons per square foot of bed bottom per day based on percolation rate. (Table VI)

150 (1 + 5) = 1875 square feet

Total disposal field area provided in lateral trenches set on a typical five (5) foot center to center spacing:

FIELD "A"	FIELD "B"	LINEAR FOOTAGE	SQUARE FOOTAGE
340	340	1700	1700
680	680	3400	3400

SEPTIC TANK SIZING:

For a five (5) bedroom equivalency, 1500 gallons of capacity is required in two compartments. Provided are 1500 gallons total septic tank capacity. Provided is a 1000 gallon single compartment and a 500 gallon single compartment septic tank in series with a 1000 gallon single compartment pump chamber. The pump chamber is outfitted with an SE 411 Peabody Barnes .4 HP submersible pump, level and alarm controls. (See details.) NOTE: Two (2) 750 gallon single compartment septic tanks in series may be substituted for the tanks shown on the plan.

VARIANCES REQUESTED: None.

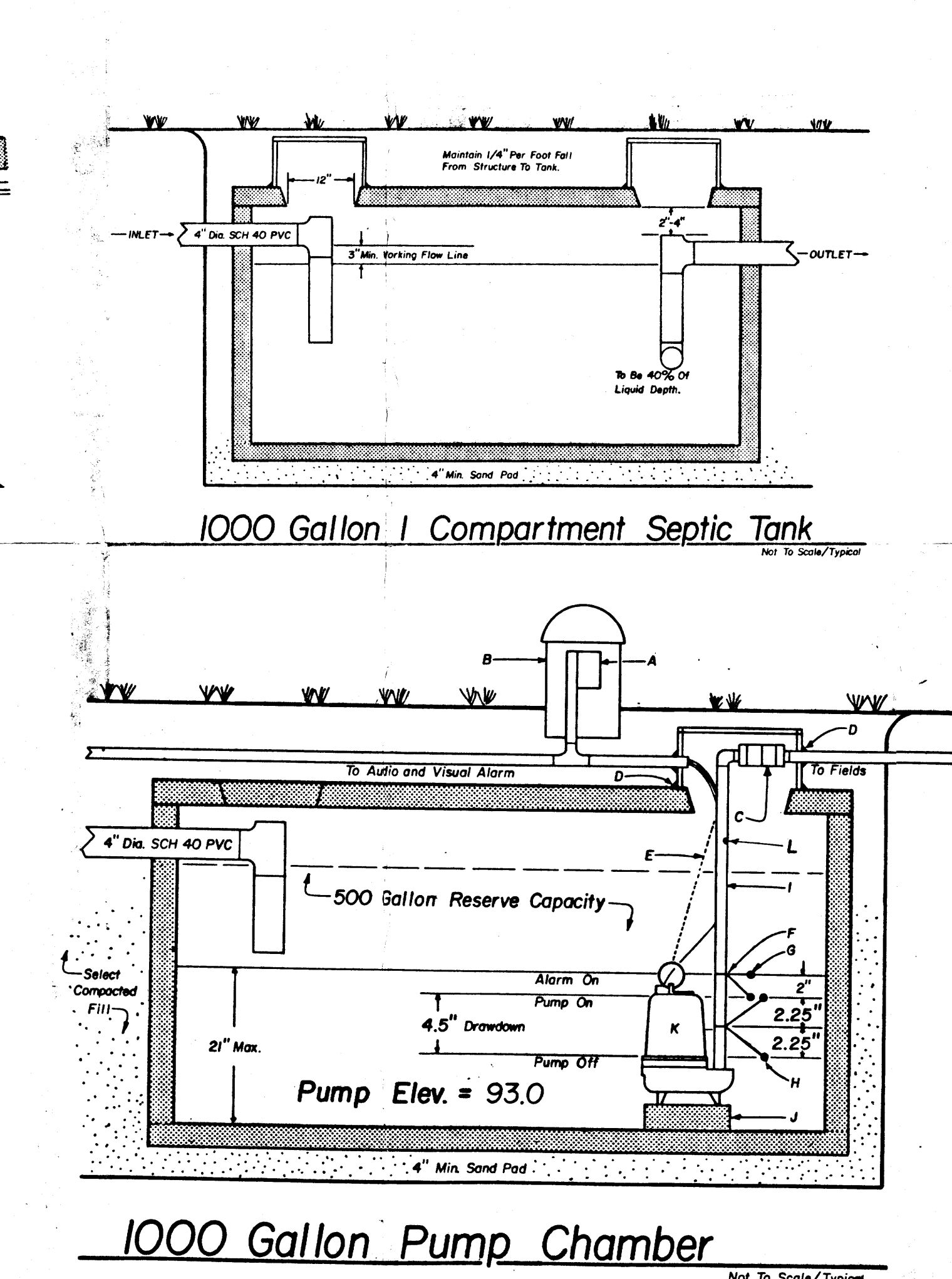
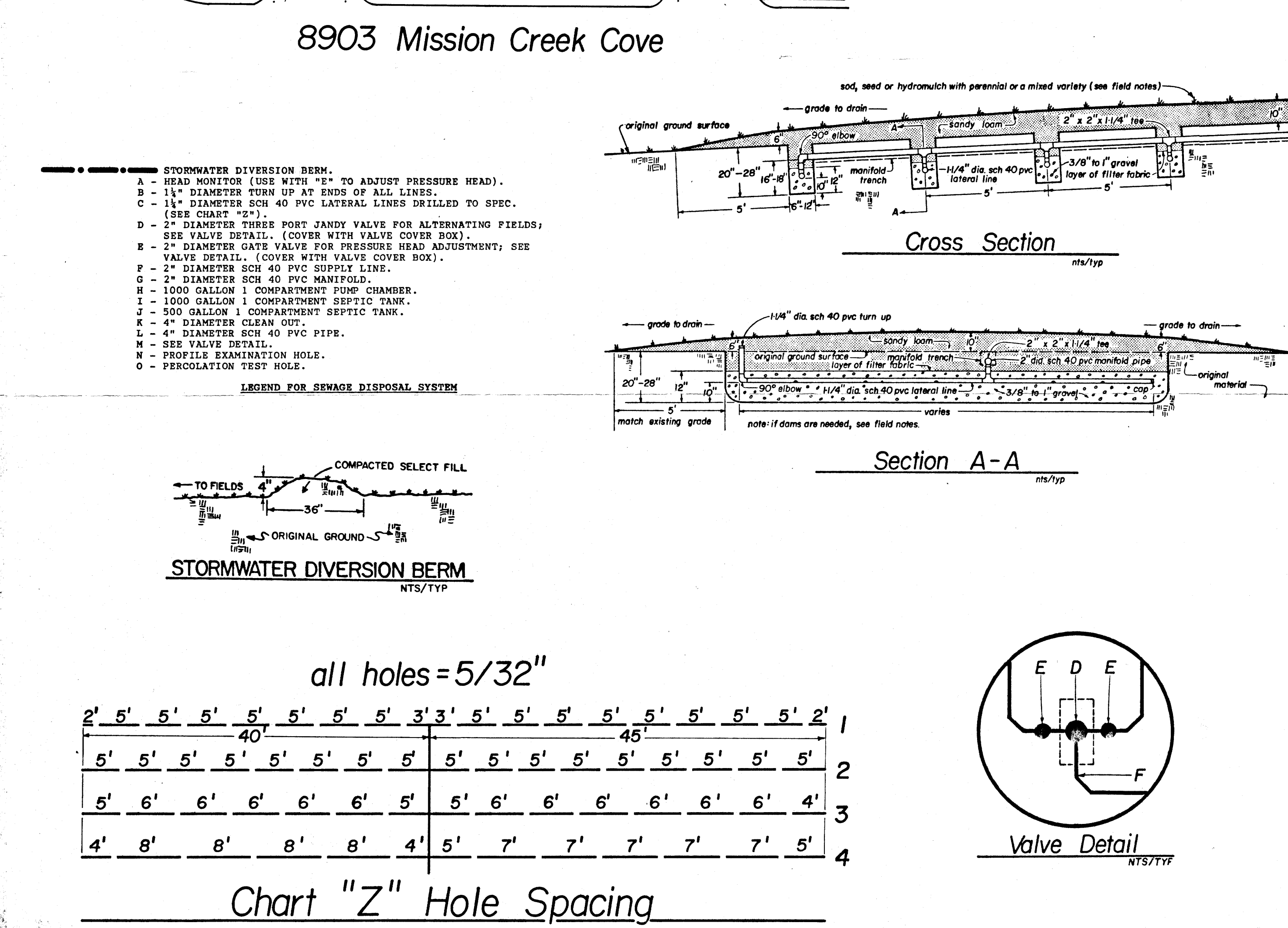
SEWER AVAILABILITY: None.

CALCULATIONS ON HOLE SIZE AND SPACING, PUMP, AND DOSAGE HAVE BEEN SUBMITTED SEPARATELY.

- NOTES:**
- The bottom of the trenches shall be leveled to within two (2) inches on the overall grade. Up-to four (4) inches of grade variation in the trench bottom is allowable if "dams" are used.
 - Dams, if needed, shall be poured concrete. The seams between the concrete and the walls and floor of the trench shall be sealed with hydraulic cement and shall be used as needed to keep distribution of effluent equalized. No more than two (2) inches of grade variation is allowable between dams.
 - The manifold trench which crosses the lateral line trenches shall be at least four (4) inches above the gravel layer so that effluent can not travel between the trenches to create a hydraulic overload on the lower trenches. The manifold trench shall be at least three (3) inches deep into original material. Note that manifold pipe (in contrast to the manifold trench) may be placed in lateral trenches as needed. The INSTALLER is expected to verify grades and that the low pressure dosing trenches can be cut according to the plan. If grading has been done on site which changes the approved plans, then the INSTALLER shall contact the Engineer. Unless it has already been accomplished, staking of the field prior to any construction or excavation is the responsibility of the INSTALLER.
 - Drill the holes for the SCH 40 PVC distribution laterals as specified in Chart "Z". Do not block the drilled holes with the dams if dams are used.
 - Drill the holes in a straight line on one side of the pipe only.
 - Face the drilled holes down into the gravel.
 - Start the first drilled hole about 2.5 feet from the end of the laterals or as specified in Chart "Z". Keep the drilled holes about 2.5 feet from the manifold connection or as specified in Chart "Z".
 - All PVC pipe joints shall be thoroughly cleaned with the pipe joint cleaner and the type of joint solvent used shall be recommended by the pipe manufacturer for use with their pipe. Metallic locating tape shall be used with installation of all piping to and within the disposal field. This tape shall be readily detectable with a metal detector. An equal method may be used with the prior approval of the Licensing Authority.
 - All drilled holes in the lateral piping shall be thoroughly cored out so that they are smooth and free of PVC shavings. Pipes shall be flushed with clean water before installing them in the trenches and flushed again when the system is pressure tested. This procedure is important in preventing clogging of the drilled holes which can possibly cause the uneven distribution of effluent.
 - Individual lateral trenches may be adjusted slightly in order to better adjust the layout of the trenches to site conditions.
 - When installing trenches near significant trees as shown on the site plan, the installer shall coordinate with the owner the method of root excavation to mitigate the effect on the root system of the tree. See Vegetation Note also.
 - SCH 40 PVC "turn-ups" with threaded adaptors for use in the cleanout of drilled lateral lines shall be included on the end of each line. These "turn-ups" shall be brought up to or just slightly below grade. If a turnup is damaged, it shall be replaced immediately to prevent any loss of pressure within the low pressure dosing system or any surfacing of effluent.
 - The turn-up of the uppermost lateral in a bed shall serve as head monitor and as an aid in setting the specified pressure head for the system. The pressure head for this system shall be set at 2 feet, TO BPT PRESSURE HEAD. The pump shall be activated and the water level in the turnup shall be adjusted to the stated pressure head of 2 ft. using the pressure head adjustment valve. The pressure head is measured from the level of the horizontal lateral line to 2 feet above the lateral line. Do not over pressure the system; surfacing of effluent may occur under this condition. From time to time the system may need to have the lines cleaned and/or the pressure head reset. This activity should be performed by trained professionals.
 - The pressure head valves shall be clearly marked to avoid confusion with the Jandy switching valve or the alternation valve. Colored tape, such as yellow, shall be used to mark the level of the horizontal lateral line to 2 feet above the lateral line. Do not over pressure the system; surfacing of effluent may occur under this condition. From time to time the system may need to have the lines cleaned and/or the pressure head reset. This activity should be performed by trained professionals.
 - Only sandy loam shall be placed on the low pressure dosing field beds. Clay loam will cause improper functioning of the system and is not allowed. Sandy loam shall be defined as shown in Table VIII (USDA SOIL TEXTURAL CLASSIFICATIONS) of CONSTRUCTION STANDARDS FOR ON-SITE SEWAGE FACILITIES, Texas Department of Health, January 1, 1988 and the coverage of soil may be rejected for use by either the ENGINEER or by the LICENSING AUTHORITY. The INSTALLER shall be responsible for verifying the quality of each load of loam placed on the system. Loam with amounts of clay in excess of that which is designated and which is noted during an on-site inspection by either the ENGINEER or by the LICENSING AUTHORITY shall be replaced with appropriate material.
 - All structure drainages and associated guttering shall be diverted to avoid the septic tank(s), pump chamber, and the low pressure dosing field(s).
 - Should underground water occur in the trenches which was not indicated during the examination of the profile hole, contact the LICENSING AUTHORITY and the ENGINEER for instructions.
 - If two or more fields are being used, they shall be switched as needed when one field becomes saturated (stay on the surface). Only one field shall be used at a time. Pressure heads and line flows are figured for only one field's usage at a time.
 - Field bed(s) shall be seeded, sodded or hydromulched with appropriate perennial grasses or grasses of a mixed variety to take advantage of transpiration. Overseeding with winter grasses is required to assist in the efficient operation of this system. Field bed(s) must be maintained by mowing at regular intervals. Failure to maintain a proper vegetative cover will result in system failure. Recommended grass coverage: Use common Bermuda at the rate of 1 lb/1000 sq. ft. of field area and over-seed at the rate of 1 lb/1000 sq. ft. with rye grass in mid-October or use St. Augustine sod which may be laid solid. A 50% coverage of St. Augustine with the remainder being Bermuda or another grass is acceptable also. Unvegetated fields are not allowed.
 - See Chart "Z" for length of laterals. The center to center spacing between lateral lines is 5 feet unless it is shown otherwise on the site plan.
 - Any additions to this site plan in the form of sidewalks, patios, swimming pools or other permanent structures must allow for proper drainage and shall not be laid out in a way which will compromise the proper functioning of the system. Contact the Engineer for consultation if needed.
 - If applicable, the pressure supply line shall be encased in a 4" PVC pipe where it passes under the driveway.
- PUMP NOTES:**
- The submersible pump and the high water alarm level shall be placed on separate electrical circuits. The electrical connections shall be "hard-wired" external to the pump tank and placed in a weatherproof box. The alarm circuit and pump circuit shall be clearly marked on the electrical panel.
 - All electrical panels, wire, wiring and conduit shall be installed in conformance with the Electrical Code of the City of Austin.
 - A spare pump should be kept readily available in case of pump failure.
 - The alarm light or audio alarm will activate whenever effluent in the pump chamber rises above the pump-on level control.
 - A) Power failure: If there has been a power failure, effluent will continue to accumulate in the tank until power is restored. When the power is restored, the alarm will come on for a brief period until the pump draws down the effluent. No action is necessary.
 - B) Pump or switch failure: If the pump and/or level controls malfunction, they can be quickly replaced. The pump and the PVC union and lifting the entire assembly out of the pumping chamber. Use the nylon lifting rope. Be sure to turn off the power supply and disconnect all cords before removing or replacing the pump or control assembly.
 - C) Clogged valve or discharge holes: If the distribution system becomes clogged, the tank will not be emptied. Back flush laterals and supply manifold through the turn-ups if necessary.
- Legend for Pump Chamber: (also refer to Pump Notes)**
- A - Weatherproof Box ("hard-wired"). Provide two separate circuits. One for the pump, one for the alarm.
 - B - 8" to 10" diameter PVC pipe with cap.
 - C - Threaded union repair coupling and combination check valve.
 - D - Hydraulic cement.
 - E - 3/8" nylon rope.
 - F - Plastic clamp (metal clamps unacceptable).
 - G - Mercury highwater alarm switch.
 - H - Mercury wide angle float switch.
 - I - 2" diameter SCH 40 PVC discharge pipe.
 - J - 3" concrete pump pad.
 - K - PEABODY BARNES SE411 4/10 h.p. submersible pump.
 - L - 1/4" diameter siphon breaker hole.
- VEGETATION NOTE:**
- If it is practical, significant vegetation shall be protected. Lateral trenches shall be kept as far away from the base of trees, but must stay within reasonable tolerances of the plan specifications to maintain the integrity of the system design. Also, the numerous factors which influence the life of trees and shrubs such as root system development, rock and/or soil conditions and moisture content etc., the ENGINEER and the INSTALLER shall not be responsible for the loss of vegetation which might occur as a result of the installation of this system.

The Dunne Company

3600 Bee Cave Road, Suite 206
Austin, Texas 78746
Ph. No. 512-327-2761



- NOTES:**
- Construction materials, specifications and all construction methods shall conform to the requirements set forth in the CONSTRUCTION STANDARDS FOR ON-SITE SEWAGE FACILITIES, TEXAS DEPARTMENT OF HEALTH, EFFECTIVE JANUARY 1, 1988 and CONSTRUCTION STANDARDS FOR PRIVATE SEWAGE FACILITIES, AS AMENDED FOR TRAVIS COUNTY, TEXAS, EFFECTIVE November 30, 1983.
 - The INSTALLER shall be responsible for having this low pressure dosing system inspected and approved by the Austin-Travis County Health Department.
 - After this system is installed, the ENGINEER is required by the Health Department to certify that the system has been installed in substantial accordance with the approved plans. Therefore, the INSTALLER is required to contact the ENGINEER at 327-2761 or 327-2762 at the following points so that he may inspect the system.
 - A) After the trenches have been excavated and leveled and before the gravel is placed. At this time, the lateral pipes shall have been drilled to specification and laid adjacent to the appropriate trenches.
 - B) After the gravel is laid in the trenches and the pipes are embedded in the gravel.
 - C) When the pump and alarm are tested and pressure head is set.
 - D) After final landscaping when the vegetative cover has been accomplished.
 - E) Additional inspections as required by the Austin-Travis County Health Department.
 - The INSTALLER shall not deviate from these plans without the express consent of the ENGINEER and the Austin-Travis County Health Department.
 - All PVC pipe joints shall be thoroughly cleaned with pipe joint cleaner and the appropriate type of joint solvent recommended by the pipe manufacturer for use with their pipe shall be used to join all pipes. Piping shall be pressure tested when all of the piping is joined to insure leak proof connections.
 - All house drainages shall be guttered to avoid both the low pressure dosing system and the tanks. Stormwater diversion berm and areas shall also be used as needed to protect the system.
 - Running commodes, leaky faucets, etc. shall be strictly guarded against to prevent hydraulic overload on the low pressure dosing fields.
 - The OWNER or a responsible maintenance person shall be informed of the proper operation of the system so that bed switching and other maintenance needs can be met. When the surface of a bed becomes saturated (stay damp on top), use the gate valve or the Jandy valve provided to switch to the other bed(s). Only one (1) bed shall be used at a time. More than one valve is open, failure could occur.
 - This low pressure dosing system has been designed to operate properly according to the design specifications set forth herein. Alteration of the installed and approved low pressure dosing system by the OWNER including but not limited to landscaping and/or drainage changes may cause system malfunction and such failure shall be the sole responsibility of the OWNER. Questions regarding this low pressure dosing system shall be directed to the ENGINEER.
 - Automatic sprinkler systems shall not be installed over this low pressure dosing system or within 10 feet of it. This system with proper alteration of beds is designed to handle a maximum effluent loading of 18000 gallons a month. Winter spring and fall months with heavy rainfall are not included in this maximum figure and general water conservation is strongly recommended throughout the year.
 - One flush gallon flush commodes and low flow faucets and showerheads are recommended to reduce the hydraulic load on the fields. No commodes shall exceed 3.5 gallons per flush.
 - The list of inspections as shown in these General Notes shows major items to be checked during each inspection. However, every part of this total system including grade, materials and workmanship shall be open to inspection and approval.
 - All water lines must be kept a minimum of ten (10) feet away from any part of the proposed sewage disposal system.
- INSTALLER NOTE:**
- The INSTALLER shall be responsible for adhering to all design specifications, details and notes associated with this set of plans. Additionally, the INSTALLER shall comply with all reasonable changes requested by the Licensing Authority and approved by the ENGINEER. If the INSTALLER has any questions concerning these plans, then he is expected to contact the ENGINEER promptly for clarification. Call 327-2761.
- VEGETATION NOTE:**
- If it is practical, significant vegetation shall be protected. Lateral trenches shall be kept as far away from the base of trees, but must stay within reasonable tolerances of the plan specifications to maintain the integrity of the system design. Also, the numerous factors which influence the life of trees and shrubs such as root system development, rock and/or soil conditions and moisture content etc., the ENGINEER and the INSTALLER shall not be responsible for the loss of vegetation which might occur as a result of the installation of this system.

Lambert/Evans Residence

Legacy Builders, Inc.

Lot 10, Block G
The Estates Above Barton Creek

Client: _____

Sheet No. 1 of 1

Date: 6-6-89

Job No. 1050

Scale: 1"=20'

Designer: SVF