SEWER CONNECTION PERMIT APPLICATION

COUNTY OF NEVADA
COMMUNITY DEVELOPMENT AGENCY
SANITATION DISTRICT No. 1
950 MAIDU AVENUE, NEVADA CITY, CA 95959-8617
(530) 265-1411 FAX (530) 265-9849 www.mynevadacounty.com

COUNTY USE ONLY

PERMIT #: WW-_____

EXPIRES: _____

CHECK #:_____

SEWER SERVICE CONNECTION MARKING AND INSPECTION FORM
CS-LOP-LWW-NSJ-CC

GENERAL

1. Services shall be the following minimum sizes:
   a. Pump services in ROW: 2 inches
   b. Gravity services in ROW serving 1 or 2 dwellings: 4 inches
   c. Gravity services in ROW serving 3 plus dwellings: 6 inches

2. Minimum cover over service lateral: 24 inches (if 4" thick concrete cap provided: 12 inches)

3. Minimum separation between water and sewer service with water above sewer: 12 inches
   a. A ductile iron pipe sleeve shall be used on any service lateral crossing a water line.

4. Four-inch PVC cleanout shall be provided near the property line using a PVC wye 1/8" bend and a threaded plug.

5. Pumped services shall be connected to the gravity laterals immediately upstream of the cleanout wyes using an ABS slip to 2-inch glue fitting.

6. Service connections to main shall enter at 45 degrees above horizontal

CASCADE SHORES:

1. Laterals are 4-inch PVC to property line cleanouts.
2. Connection to existing PVC main was made with an appropriately sized strap-on PVC saddle with stainless steel bands.

LAKE WILDWOOD:

1. Service is a 4-inch VCP from main to clean-out.
2. Connected PVC to VCP using clay by ABS bushing with connecting bands.
3. Connection to existing VCP main was made using a VCP snap-in wye with caulder bands.

LAKE OF THE PINES:

1. Laterals are 4-inch PVC to property line cleanouts.
2. Connection to existing PVC main was made with an appropriately sized strap-on PVC saddle with stainless steel bands.

NORTH SAN JUAN:

1. Connected to existing 4-inch PVC service below provided cleanout.

CASCADE CROSSING:

1. Connected to existing 4-inch PVC service below provided cleanout.

FOR COUNTY STAFF USE ONLY

AREA: _____LOT: _____ADDRESS: _____

COMMENTS: _____
_____
_____

MARKING
DATE MARKED: _____ BY:_____

INSPECTIONS
DATE INSPECTED: _____ BY: _____
DATE INSPECTED: _____ BY: _____
DATE FINALED: _____ BY: _____
ADDITIONAL INSPECTION: _____ BY: _____
ADDITIONAL INSPECTION: _____ BY: _____

CONDITIONS: _____
_____
_____
_____

File: 300.11.004

Revised Draft
July 30, 2019

NEVADA COUNTY SANITATION DISTRICT

RESIDENTIAL SEWERAGE PUMPING SYSTEM REQUIREMENTS AND APPLICATION FORM

SPECIFIC TO PUMP LOTS IN LAKE OF THE PINES AND LAKE WILDWOOD.

A. GENERAL:

The minimum requirements for a residential sewage pumping system connecting a single residence (or equivalent) to the Nevada County Sanitation District's system are specified in the following paragraphs. These requirements are for a Simplex (single pump), sewage pumping system connection for a private usage installation, as defined in Section 117 of the most recent edition of the Uniform Plumbing Code. Attention is called to the fact that the District accepts no responsibility for the design, operation, or maintenance of such privately owned and operated systems.

All design and installation shall be done in conformance with the most recent edition of uniform codes as promugated by the California Division of Industrial Safety, the National Fire Protection Association (National Electrical Code), the California Electrical Code, and the International Association of Plumbing and Mechanical Officials (Uniform Plumbing Code).

All equipment and accessories shall be standard manufactured items and those coming in direct contact with sewage shall be designed to be safe and free from electrical and fire hazards as required by the above-mentioned codes for a residential environment. All equipment and accessories shall be specifically manufactured for raw sewage use by a company regularly engaged in the manufacturing and assembly of similar units for a minimum of five (5) years. Design configurations and specifications other than listed herein, including package pumping stations, must be submitted for prior approval.

In addition to the codes listed above, and unless otherwise noted, the requirements for building sewers (material and installation) are listed in the Standard and Specifications of the Sanitation District shall be followed.

"Public Use" installations, defined as a facility directly controlled by a public authority, will require dual pumps (duplex system) meeting or exceeding all standards described herein, with dual pumps designed to function independently in case of overload or mechanical failure.

B. PUMP:

a. Direct Discharge From Building Served:

1. Unless otherwise approved, the pump shall be a Submersible Centrifugal Non-Clog Sewage Pump for raw sewage effluent with a 2-inch minimum pump discharge and minimum of 2-inch solids passing capability. The pump shall be capable of delivering a minimum flow rate of twenty-five (25) GPM when pumping against the actual conservative design head, with no overloading throughout the entire pump curve.
2. At the owner's option, an alternative to the above described pump is a Submersible Centrifugal Grinder Pump with a 1 ¼-inch minimum pump discharge and be capable of delivering a minimum flow rate of ten (10) GPM when pumping against the actual conservative design head, with no overloading throughout the entire pump curve.

   The grinder shall be constructed of long-lasting, low-maintenance material that is capable of reducing all component in normal domestic sewage, including a reasonable amount of "foreign objects" such as paper, wood, plastic, glass, rubber and the like, to finely-divided particles which will pass freely through the passaged of the pump.

b. Direct Discharge From Septic Tank:

Unless otherwise approved, the pump shall be a Submersible Centrifugal Septic Tank Effluent Pump (S.T.E.P.) with a 1 ¼-inch minimum pump discharge and be capable of delivering a minimum flow rate of seven (7) GPM when pumping against the actual conservative design head with no overloading throughout the entire pump curve.

c. Low Pressure Sewer System:

If a system is proposed, whereby one or more houses may be linked together in a network to be discharged to a public sewer system, then a Submersible Semi-Positive Displacement Grinder Pump System may be proposed as a package system. It is recognized that aspects of a specific "package system" may not meet all requirements specified herein for system specified in (a) or (b) above and in subsequent sections of these "Requirements." In such cases the package system proposed must be prior approved by the District to verify that the intent of these specification is being met.

C. MOTOR:

The motor shall be constructed for use in a sewage environment with the windings operating in a sealed encasement containing clean dielectric oil, with thermal overload protection.

The motor shaft shall be stainless steel and the standard seals between the motor and pump shall include a secondary exclusion seal, to give added protection against any leakage between the motor and the pump.

All bearings shall be permanently lubricated, with the lower a ball type to accept radial and thrust loads and the upper a sleeve or ball type to accept radial loads.

D. ELECTRICAL:

The power cable for the pump motor and the cables for the level/alarm controls must be installed in separate non-corrosive conduits. Electrical connections within the pump tank shall be held to a minimum but when used shall be made with heat-shrink tubes and epoxy to protect against any moisture and corrosion.

E. PUMP TANK:

Unless otherwise approved, the pump tank should be generally cylindrical in configuration with a minimum diameter of thirty-six (36) inches and extending zero to six (6) inches above ground surface. The tank shall be of such vertical dimension that a minimum holding capacity of one-hundred (100) gallons of sewage between high and low set-points is achieved. Two (2) feet minimum between high and low set-points in a three (3) foot diameter tank will meet the minimum capacity criteria.

A minimum four (4) inch diameter inlet stub, an outlet stub the size of the discharge pressure line, stub for tank vent, and openings for the electrical conduits shall be manufactured into the pump tank and or cover at the factory. An alternative to factory installation of stubs is field installation of approve gas-tight fittings. (NOTE: Knock-outs are permissible for a concrete tank only).

The pump tank must be watertight, sized to meet the requirements of the pump station designer. It shall have a sufficient wall thickness and reinforcing to prevent any deformation from all dead and live loading that may be imposed on the pump tank during installation and/or in service.

It is recommended that a fiberglass reinforced polyester tank be used. This type of light-weight tank shall also have a bottom mounted anti-flotation collar or be anchored to a concrete base slab to protect against any possibility of flotation due to high ground water. The interior must be smoothly sealed at the factory with a 10-20 mil thick resin-rich surface.

If, as an alternate to the fiberglass tank, steel, reinforced, concrete, or other material for the tank is proposed, the design and material specifications must be submitted for review and approval. If steel is used for the tank, epoxy coating will be required for interior surfaces of tank and cover to provide a corrosion resistant surface.

If an existing tank is proposed to be retro-fitted for use as a pump tank, information on size, material and design must be submitted for pre-approval prior to using the tank. The pump tank cover shall be constructed of fiberglass, heavy aluminum, cast iron, epoxy coated steel, reinforced concrete or approved equal. It shall be designed to be adequate to resist the maximum expected dead and live loads including impact. H-20 loading required for traffic areas.

All hardware used to attach the cover to the tank and all equipment and hardware within the sewage atmosphere, and above the lowest possible water level, of the tank must be non-corrosive material such as stainless steel, brass, and /or plastic. Approved flexible gasket material shall be used between the cover and the tank to form a long-lasting flexible gas-tight seal. Adequately sized, sealed gas-tight inspection and maintenance access opening shall be provided in the cover.

Unless otherwise approved, the pump tank must be located on private property with a minimum set-back from the property line of ten (10) feet and fifty (50) feet from lake, stream, or reservoir. Also, unless otherwise approved, the pump tank shall be installed a minimum of five (5) feet outside of the building served in a location readily accessible to maintenance equipment.

F. VENT:

The pump tank must be vented to maintain atmospheric pressure within the tank, as described and sized in the Uniform Plumbing Code (Chapter 5). When the pumping system is located near the building served, a vent shall be provided, connected into the house plumbing vent system. If the pump tank is located remote from the building served, and it is not practical to run the vent into the building's vent system, a vent shall be securely supported and extended vertically to a point ten (10) feet above the pump cover, (per Uniform Plumbing code).

G. **LEVEL/ALARM CONTROLS**:

Sump pump level controls shall be mercury switches sealed within polypropylene shell(s) with neoprene covered cable, or an approved equal. The switches must either meet the National Electrical Code requirements for use in hazardous atmospheres or be designed to be electrically isolated with intrinsically safe barriers.

High-water set-point shall not be less than two (2) inches below invert of inlet pipe into the pump tank. A high-water alarm shall be set approximately eight (8) inches above the high water set point. The low-water set-point shall be not less than four (4) inches above the top of the motor casing. A redundant low-water pump level control shall be mounted approximately four (4) inches below the aforementioned low-water set point, at a location to still maintain submergence of the motor and shall serve to de-energize power to the pump in both the manual and automatic modes. A low-water alarm shall be se at the same level as the aforementioned redundant low-water pump (power off) level control.

The control systems (3) shall be wired directly and independently to terminals within the control panel. The alarm systems (2) shall be wired directly and independently to terminals within the alarm panel.

All connections from the wet well shall be made gas-tight to prevent any gas from inside the pump tank from escaping through electrical conduits.

H. MOTOR CONTROL PANEL:

Shall be pedestal-mounted external to the pump tank and in a readily accessible location adjacent thereto. An exception is if the pump tank is near the building serviced, and the pedestal would be an obstruction or eye-sore, the control panel may be mounted on the outside wall of the building, preferably facing the pump tank. A NEMA 3 enclosure shall be used with a hinge and pad-lockable latch. A 115 or 230 volt, single or three phase starter control shall include motor contactor, terminal blocks for level controls and hand-off-auto selector switch.

I. ALARM PANEL:

The alarm system shall be on a separate circuit from the pump motor controls and be mounted in a readily accessible location within the building that is served by the pump. An audible alarm with silencer must be provided along with two (2) alarm lights, one for high-water alarm and one for low-water alarm. As an alternative to being installed inside the building, the Alarm Panel may, at the option of the homeowner, be mounted on the outside wall of the building served, preferably facing the pump tank and adjacent to the motor control panel when it too is mounted on the building wall. A NEMA I enclosure shall be used if the mounting is inside the building or a NEMA 3 enclosure if the mounting is outside.

J. DISCHARGE LINE:

The pressure portion of the discharge line, including the valves, unions and fittings shall be the same diameter as the pump discharge, (see Section B – Pump). A check valve and a shut-off (gate) valve shall be installed within the pump tank, easily accessible from the ground surface with a union between that will enable ready maintenance and/or removal of the valves and/or pump. They shall be 150 psi full bore PVC, brass, or approved equal valves all manufactured to operate in a sewage atmosphere. All pressure discharge pipe and fittings shall be solvent-weld Schedule 40 PVC or approved, be laid within a minimum of thirty (30) inches cover. All 90-degree turns shall be constructed by use of two (2) 45-degree elbow PVC Schedule 40 fittings as to facilitate line cleaning operations.

If the designer increases the diameter of the discharge line outside the pump tank to greater than the specified minimums, the minimum pump flow rates specified in Section B herein must be increased to maintain a minimum discharge velocity of two 2) feet per second in the discharge line during the entire pumping cycle, (minimum of 1 ½ feet per second for S.T.E.P. system). The pressure line shall join the gravity portion of the discharge line with a twelve (12) inch minimum vertical drop, (see detail on the Nevada County Sanitation District – "Application form – Residential Sewerage Pumping System").

K. **GRAVITY INLET SEWER BACKWATER PROTECTION**:

A standard District "Backwater Overflow Device and Two-Way Cleanout" (see District Standard Details) shall be installed on the gravity sewer between the pump tank and the building served, as a protection, when in the opinion of the District, there could be a possibility of flooding the building in the event of a pump tank check valve failure. The most appropriate location (between the house and the pump tank) for the "Overflow Device" will be determined by ground topography conditions.

If the above described "Overflow Device" would not be effective due to a plumbing fixture outlet inside the building that is lower than ground level, then a "Backwater Check Valve" (See District Standard Details) shall be installed on the gravity sewer, (in lieu of the "Overflow Device"), between the house and the pump tank.

The above described backwater devices are not necessary for a S.T.E.P. system, (septic tank between the pump tank and the house.)

L. WARRANTY:

The manufacturer shall offer, as a minimum, a limited warranty which guarantees its' product to be free from defects in material and factory workmanship for a period of twelve (12) months from date of completion of installation or eighteen (18) months from date of shipment, whichever occurs first, provided the product is properly installed and serviced, and is operated under normal conditions and in accordance with the manufacturer's instruction.

M. DATA REQUIRED FOR ISSUANCE OF A BUILDING SEWER CONSTRUCTION PERMIT:

The owner or contractor shall submit the following to the District for approval: two (2) copies of the Site Plan showing all existing and proposed improvements, the completed for Sheets 1 and 2 entitled "Residential Sewerage Pumping System Requirements and Application Form", and a complete list of equipment (with manufacturers) and accessories to be installed, including pump curves. A copy of the pump/motor warranties is also required.

Additionally, if in the opinion of the District, the system design is complex, it will be required that a Registered Professional Engineer sign the system design calculations.

The above submittals, evidence of issuance of a "Nevada County Building Permit to the applicant, and any other information that the Nevada County Sanitation District may require, must be approved by

the District, and required fees and charges paid, prior to issuance of a "Building Sewer Construction Permit" for any buildings requiring a pumping system.

Attention is also called to pertinent portions of the Standards and Specifications of the Nevada County Sanitation District regarding permit issuance requirements for building sewers.

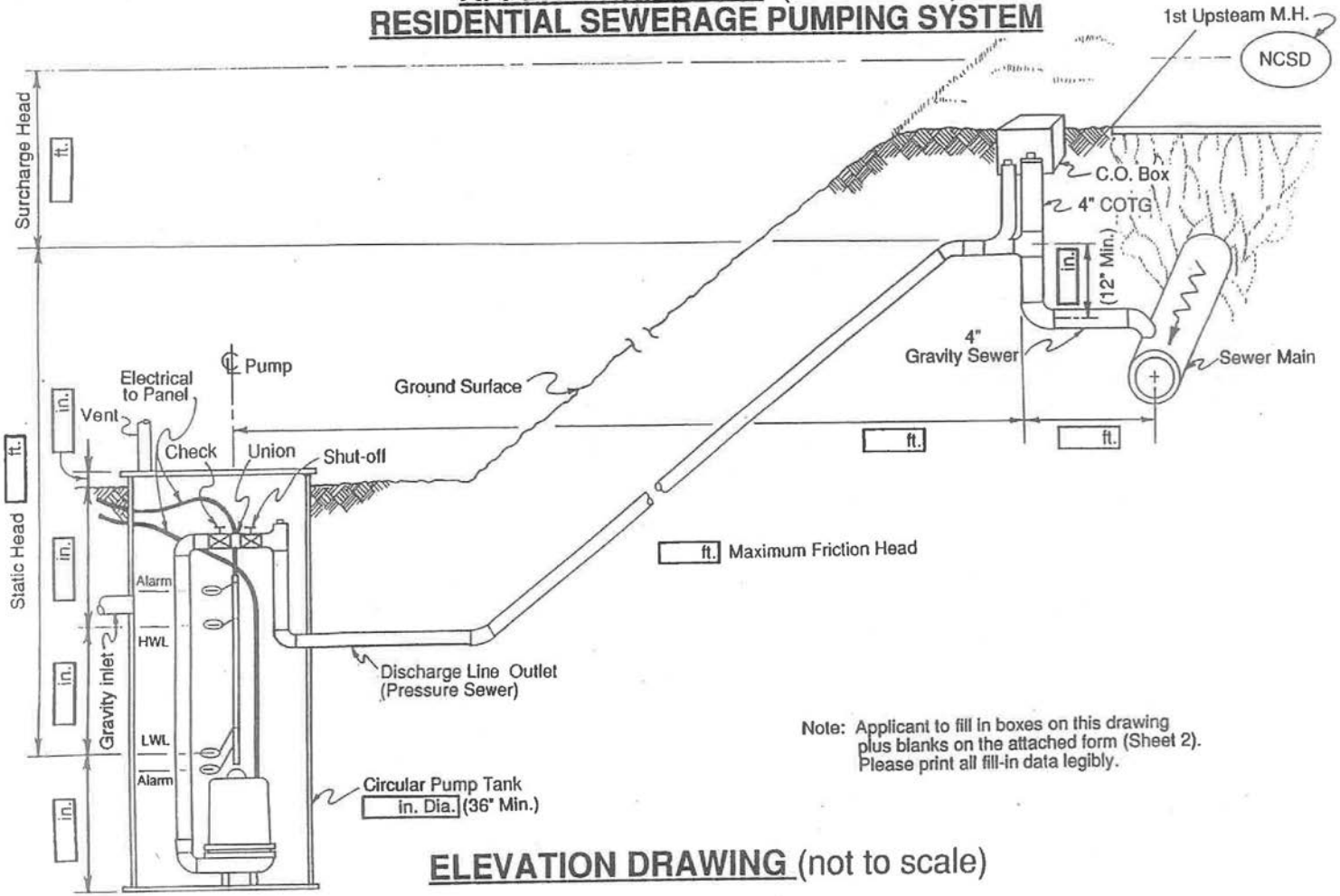
N. APPLICATION FORM – RESIDENTIAL SEWAGE PUMPING SYSTEM:

See Attached

O. ACCEPTANCE OF WORK:

Installation of the pump station and the gravity and pressure portions of the building sewer is all subject to the design, construction and inspection requirements listed in the Standards and Specifications of the Sanitation District. When all work has been completed to the satisfaction of the Sanitation District, and all fees and charges paid, an acceptance notice will be issued to the recipient of the "Building Sewer Construction Permit".

NEVADA COUNTY SANITATION DISTRICT
APPLICATION FORM (sheet 1 of 2)
RESIDENTIAL SEWERAGE PUMPING SYSTEM



Note: Applicant to fill in boxes on this drawing plus blanks on the attached form (Sheet 2). Please print all fill-in data legibly.

ELEVATION DRAWING (not to scale)

RESIDENTIAL SEWERAGE PUMPING SYSTEM APPLICATION

COUNTY OF NEVADA
COMMUNITY DEVELOPMENT AGENCY
SANITATION DISTRICT No. 1
950 MAIDU AVENUE, NEVADA CITY, CA 95959-8617
(530) 265-1411 FAX (530) 265-9849 www.mynevadacounty.com

COUNTY USE ONLY

TO BE COMPLETED BY APPLICANT

SERVICE ADDRESS: _____

BUILDING PERMIT NUMBER: _____ ASSESSOR'S PARCEL NO. (APN) : _____

PROPERTY OWNER: _____

ADDRESS: _____

EMAIL ADDRESS: _____ PHONE: _____ CELL: _____

DESIGNER: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____

PHONE: _____ CELL: _____ EMAIL: _____ LICENSE NO. : _____

APPLICANT HAS READ AND UNDERSTAND THE ENTIRETY OF THIS FORM AS EVIDENCE BY HIS/HER SIGNATURE BELOW.

SIGNATURE: _____ DATE: _____

PRINTED NAME : _____

DISCHARGE DIRECTLY FROM:

SEPTIC TANK ☐ HOUSE ☐ PERSONS SERVED _____ *OTHER ☐
IF FLOW IS FROM OTHER THAN A HOUSE OR A SEPTIC TANK, DESCRIBE SOURCE AND ESTIMATED PEAK GALLON/HOUR AND MAXIMUM GAL/DAY. _____

_____

EQUIPMENT DATA

PUMP MANUFACTURER: _____
DISTRIBUTOR: NAME _____
ADDRESS: _____
TELEPHONE: _____ EMAIL: _____
PUMP CAPACITY: _____ GPM @ _____ FT. T.D.H. _____
PUMP TYPE: _____ MODEL NO. _____
DISCHARGE SIZE: _____ INCHES SOLIDS: _____ INCHES
H.P. :_____ R.P.M. :_____ PHASE: _____ VOLTS: _____
PANEL/ALARM MANUFACTURER: _____
TANK/COVER MANUFACTURER NAME: _____
ADDRESS: _____
TELEPHONE: _____ EMAIL: _____
TANK MATERIAL: _____ COVER MATERIAL: _____
COATING SYSTEMS USED (DESCRIBE): _____
TRAFFIC LOADING (Y OF N): _____ COVER STRENGTH: _____
PRESSURE SEWER: DIAMETER_____ MATERIAL _____ CLASS _____
GRAVITY SEWER: DIAMETER_____ MATERIAL _____ CLASS _____

COUNTY USE ONLY

APPLICATION RECEIPT: _____ _____
COUNTY STAFF DATE