LAYMAN'S GUIDE
THROUGH THE MAZE
TO UTILIZING THE NEVADA COUNTY
DEFERRED COMPLIANCE
AND
TITLE 25 [ALTERNATIVE OWNER/BUILDER] PROGRAMS

SUBTITLED
TITLE 25 [AOB] MADE ALMOST SIMPLE

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WITH THE COOPERATION OF SAM DARDICK,
AND AT LEAST HALF THE STAFF OF THE COMMUNITY DEVELOPMENT AGENCY
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AUTHOR'S ACKNOWLEDGEMENT

An incredibly indescribable amount of effort was put forth by the author and county staff, to make this document as clear and user friendly as possible. If any portion still leaves you confused, please give gentle feedback to author, and we'll try to improve that section for the 2nd printing.

Besides our county/citizen collaboration, there are others who labored mightily to give you the rights of the Alternative Owner/Builder Title 25 program, the Deferred Compliance program, and the Owner/Builder Bill of Rights.

For the fact that we have the Deferred Compliance and Title 25 programs at all, we need to thank the progressive and people oriented members of our current Board of Supervisors. And on the altar of your new Title 25 home, you need to light candles and pay special homage to Sam Dardick and Ray Oliver, for without their persistence and tireless efforts, Title 25 for Nevada County would still be but a gleam in the owner/builder's eyes. Finally, without the cooperation and support of the County Administrator Ted Gaebler, you wouldn't be reading this.

Okay -- after you have read this-go out and build yourself a nice, safe, inexpensive home, and then tell your friends about the process. Spread the word. The goal is safe, healthy, affordable homes for Nevada County.
Chamba Lane
[530] 265-0534
Dec 2000

LAYMAN'S DESCRIPTION OF DEFERRED COMPLIANCE PERMIT PROGRAM AND ALTERNATIVE OWNER BUILT [AOB] HOUSING PROGRAM

History

0n October 28, 1999, Nevada County's Board of Supervisors established a program to assist people wanting to bring presently illegal housing into legal compliance. The program has numerous incentives to enable people to have legal occupancy of an existing unpermitted building or accessory structures, and is called Deferred Compliance or DC. At the same time, the Board adopted portions of Subchapter 1, Article 8 of Title 25 of the State Housing Law, which provides for alternative structural and sanitation requirements for rural housing. This program is referred to in this paper as Alternative Owner Built Housing (AOB). This is a demonstration pilot project for 30 homes, either existing or new construction. If the program is successful the Board of Supervisors will probably permanently adopt the program.

INTRO TO THIS LAYMAN'S HANDOUT:

This is the first step in implementing the new pilot programs for Deferred Compliance [DC] and Title 25 rural alternative owner built [AOB] housing. This handout is our attempt to begin educating the public so that staff and public can work together to produce safe and healthy affordable structures.

It is by necessity incomplete. Please bear with us as we all learn how to implement this exciting new program.

Our goal is to create a smooth simple process to bring Title 25 Alternative Owner Built [AOB] housing to Nevada county, engender positive interactions between county staff and the public, and produce a win-win situation for all of us. Please bear with us during the birth stages.

If you have doubts or questions, at any stage of the process, contact the county ombudsman for these programs, Steve Brown at 470-2560. He is here to serve you.

Please be aware that a Title 25 Appeal Board has been created, with 2 knowledgeable members from the public included. If you have any dissatisfaction with the discretionary decisions of county staff regarding your DC or AOB building process, you have the right to appeal to this Board.

There may be some confusion, as there are two different programs depending on whether your construction already exists without permits, or you wish to now build. When the following information refers to existing unpermitted structures only it will be noted [DC] for deferred compliance. When info applies to new construction only it will be marked NEW. If no notation, it applies to both.

You must decide which program you wish to utilize. A further decision to be made by you, is that in all cases you can chose to conform to either Title 24 [the old code] or Title 25 AOB, the newly adopted rural Alternative Owner Builder Code. You must declare on your application for building permit which code you intend to follow.

DEFERRED COMPLIANCE: Refers to bringing an existing unpermitted dwelling up to old or new code and becoming permitted and fully legal. The way the program works is that a person who has done construction without a building permit can now come into compliance with all codes and ordinances by applying for a building permit either under the Title 24 of the Uniform State Building Code or under AOB [Title 25]. Essentially, that person can apply for a building permit and then must meet all requirements within two years, or if they feel they can't meet the requirement in that period they can apply for the Deferred Compliance Program which allows up to 10 years in achieving compliance.

Incentives for entering DC are many and include deferred or reduced school, fire, road, and recreation development fees, and reduced or deferred permit fees. Whenever possible, fees will be based on actual time spent by County officials in administrating the permits**.** If a person applies for the Deferred Compliance Program initially they will have to meet minimum building and sanitation standards and after doing so receive a "Temporary Certificate of Occupancy". After receiving the certificate, they will work with the County officials in preparing a plan for meeting building and sanitation requirements either under Title 24 or AOB. They will have to complete this plan within 2-10 years. However, if the person decides to sell or lease their property, outside their immediate family, prior to the timelines agreed upon in the program they will have to immediately comply to the agreed upon requirements before selling or leasing.

TEMPORARY OCCUPANCY: You can legally temporarily occupy a dwelling while you are completing it, provided you have a kitchen, bathroom, and at least one habitable room.

GENERAL OVERVIEW

These programs are not limited to presently unpermitted dwellings. You can also utilize these programs to come into compliance if you have: [without building permits], renovated, or added onto, or changed the declared usage of an already permitted structure. ex- you have converted a garage or other structure into a dwelling or habitable space, you have added a deck, an extra room, or another structure to your property. However, ancillary structures, such as a barn or shed, can only come into this program so long as a dwelling use is permitted at the same time.

Choices: Title 24 [the conventional building code] has changed over the years. If you think you can bring your unpermitted construction into compliance with Title 24 [as Title 24 existed on the date you began construction], under the deferred compliance program you can apply for and conform to Title 24. If it won't, then come in under Title 25 [AOB]. If you need time to comply with either, come in under DC, declaring which code you intend to meet, and work out an agreed upon compliance schedule with county staff.
Code compliance will be enforced based on the codes in force as of when you commenced building, rather than the standard in force when you enroll.
Impact fees will be based on fee structures in place as of when you commenced building, rather than the standard in force when you enroll. Plan check and construction inspection fees use current fee schedules.
Impact fees will be charged based on the time you commenced construction. If prior to Feb. 1998 no recreation fees. If prior to July 27 1986, there are no road impact fees.
NOTICE: 5 acre minimum parcel size is no longer required for these programs.

IF YOU HAVE ANY QUESTIONS REGARDING THESE PROGRAMS

Steve Brown, Ombdudsperson: 470-2560
You will find him super helpful, and very supportive of these programs.
Angela Costa, Planning Technician: 265-1441

Knowledgeable citizens [who helped create these programs]
Retired County Supervisor Sam Dardick: 292-1726
Citizen advisor Chamba Lane: 265-0534
As time goes on and more owner/builders utilize these programs, some of them will hopefully make themselves available to advise potential applicants.

What follows are the authors' descriptions of what are the requirements for meeting the Deferred Compliance Program under Title 24 and/or AOB, based on far too many conversations with relevant officials. If in doubt, check with them to make sure. If there seems to be a major discrepancy between what is written here, and what they are telling you, check with citizen advisors.

Fee Matrix For Deferred Compliance/Title 25

(County Contact For Program (any questions) - Steve Brown, 470-2560.)
OSSE is your on site soils evaluation, [formerly called a mantle]
KW/GW/WT= Kitchen Waste/GrayWater/Waterless Toilet system

Category	Description
On-Site Sewage Disposal: Options and Fee Range	1. (new) OSSE & Conventional permit PRIOR to Building Permit being issued $518 – 597 2. (new) OSSE & KW/GW/WT PRIOR to Building Permit being issued $358.50-478.50 3. Existing system - inspection & evaluation $79.50-279 4. Special Design - PRIOR to Building Permit being issued $597-1,074+
Water Supply: Options and Fee Range	5. Existing Well (EH inspect as part of site evaluation and test as part of pilot study) $0 6. Existing Spring (EH inspect as part of site evaluation and test as part of pilot study)

	$79.50 per hour 7. New Well $183 8. NID Untreated $79.50 per hour
Building Permits: Options and Fee Range	9. If existing, Health and Safety Inspection required $60 10. Follow up inspections, if required $60 each 11. If NEW, minimum of one inspection required $60 12. Plan Review $28
School	Call School District Office at 273-3351 x 201 and ask for Julie. Fees must be paid PRIOR to issuance of a Building Permit. Efforts are underway to allow deferred payment.
Recreation	No fees required if structure was built PRIOR to Feb 9, 1998 (Quimby fees). If after Feb 9, 1998 (AB 1600 fees), please contact the Nevada County Community Development Agency (CDA) at 265-1222.
Fire	Contact your Fire District for the appropriate fee. It must be paid PRIOR to a Building Permit being issued - receipt must be provided to the CDA prior to a Building Permit being issued.
Assessment of Property	Legal property owner must contact an appraiser in the Assessor's office to determine the earliest Assessment Year. For questions, please call 265-1232.
Back Taxes	For existing dwellings in the AOB Program - Either provide a copy of taxes paid on improvements for the past four years (statement from Treasurer's/Tax Collector OR pay your taxes on unassessed improvements for the past three years (and current year). For questions on this or the possibility of deferred payment, please contact the Tax Collector's office at 265-1285 x 1144.

Road fee charges must be paid prior to Building Department final. There are **NO** fees if prior to 7/27/86.

Road Fee Charges (CDA staff will determine your zone for you)

Zone	**Time Period**				
	7/27/86-9/3/90	**9/3/90-7/14/91**	**7/14/91-3/17/95**	**3/17/95 to 6/15/97**	**6/15/97 on**
1	$850	$1,700	$1,700	$1,700	$1,700
2a	$180	$760	$760	$540	$667
2b	$180	$870	$870	$540	$787
3a	$180	$120	$120	$120	$1,565
3b	$180	$230	$230	$230	$1,675
4	$410	$450	$450	$450	$686
5	$250	$530	$530	$530	$1,142
6a	$400	$720	$720	$720	$792
6b	$400	$840	$840	$840	$902
7	$220	$260	$860	$860	$919
8	$180	$230	$230	$230	$544

BACK PROPERTY TAXES

If you are coming in under deferred compliance [for an existing non-permitted structure] you will be liable for up to 4 years back taxes. You have been paying some taxes, but you will be liable for the difference between the assessed value your taxes were based on, and the new assessment reflecting the improvements you have been actually living with for the past four years.

So the county can collect back taxes [only for the last four years] for the portion of your improvements they did not know about, hence had not appraised, and did not charge you taxes on. Sounds simple doesn't it? I went round and round with the Assessor's office, trying to give you a simple formula or at least explanation for how you would guestimate the back taxes you would owe. Here it is, ready or not.

You have been taxed based upon some sort of accessed value. Guestimate your property's real or present value, [increased value], or better yet have your property appraised. Multiply that increased value by your tax rate. So how do you know your tax rate? You may find this on your last tax bill. If not, you can guestimate what you owe by multiplying your increased value by: 1% which is the rate the state mandates, plus any voter approved taxes applying to your tax district. To ascertain which district you live in, and what the actual tax rate is for your district, contact the tax collectors office and give them your parcel #.

SITE DEVELOPMENT AND SITE PLANS

You must know the particular requirements and limitations of your parcel. This is determined by the zoning of your property. If you wish to ascertain these requirements without revealing your name, address or parcel # you can do so, by going to the new kiosk at the Rood center, and using their computer. Enter your parcel # and it will tell you your zoning, and your fire and school districts. Staff can then advise you on: setback requirements [the minimum distance allowable from your structures to your property lines], setbacks for location of wells and septic systems, and driveway standards. Note: The well and septic setbacks you must conform to could be influenced if the properties adjacent to yours already have a well or septic system close to your mutual property line. If you suspect this might be the case, give details and ask**.**

You're going to love the way they calculate setbacks. This is from the horses' mouth. Planning dept states: Front and rear setbacks are measured from property line to your structures' wall, assuming your roof overhangs into this area less than 5 ft. [If it extends more, its measured from the roof drip line]. Side setbacks are measured from property line to eaves [your roof drip line]. Why is this different for the side and front/rear setbacks? God alone knows, and she ain't talkin.

You then must submit a site plan [5 copies]- The County has a Site Plan check list that details exactly what they want to see. The reverse side has a sample site plan. Refer to it.

What is required is basically a single sheet of paper which clearly identifies and labels the use of all structures, and shows all wells, springs, ponds, seasonal and permanent water courses, ditches and canals, wetlands, waste disposal systems [existing or proposed], with their distances to each other, to property lines, and to easements.

It must be in ink, on unlined paper minimum size 8.5" by 11", showing the entire property, with north arrow. List all named roads, include any easements. Your driveway should be indicated with its

slope, width, and surface material. If you have or intend a conventional leach field, include your designated repair area. If you intend a gray water system, include its location.

YOUR BUILDING PLANS

You must also submit 5 copies of the floor plan for each floor of each structure you are getting permits for. Elevations [scale drawings of each wall as seen from the side] will not be required unless your structure is more than 2 stories, in which case you will need to show plans for the tallest side so that your total building height can be determined, to insure that you are not exceeding the height limitations for your zoning. On these floor plans, critical dimensions should be noted such as: room size, door and window sizes and locations, and location of electrical outlets. This will help staff determine if your design meets ingress/egress and ventilation requirements. It's easier than it sounds. See the requirements spelled out in the Mechanical/structural section. Many builders draw a separate floor plan sheet just for electrical fixtures and outlets [electrical floor plan]. This extra step makes it easier for the plan checker/inspector and for whomever orders materials and then wires your structure, thus saving you time /money. If you are foolish enough to design something requiring energy calcs, then your window sizes and locations become much more critical

You can prepare these plans yourself, but they should be as clear as possible, done to a standard scale [1 inch on your plan equals so many feet], and on minimum 8.5 by 11 paper. Hint: You can used blue lined graph paper for your original, and then make copies using a lighter copy setting so that the graph lines disappear on the copies you will submit. At a stationers you can buy a triangular ruler marked with various scales. It makes drawing plans on graph paper very simple. Your final step is to note on the corner of each plan the scale it was drawn to.

You must label [declare] the usage of each room. Your declared usage is very important as there is a legal distinction between habitable and non-habitable space. These two designations will determine what building standards you will have to meet in each space, and whether energy calcs are required for that space. Typical examples of habitable spaces are eating, sleeping, offices, basically "living in" areas. Typical non-habitable spaces are hallways, closets, storage areas, and utility rooms.

If a loft or any other room will obviously not meet any of the building standards quoted here or in county handouts, including ceiling height or access, you can not use it for living space and can only use it for storage.

ENERGY CALCULATION AND HEATING REQUIREMENTS

You must have a reasonable source of room heating, but there are no specific requirements under AOB. An open fireplace must have some sort of door, as well as a flue damper. Energy calculations [energy standards] are a State requirement, intended to conserve non-renewable fuel. They limit you in various ways, especially in size, placement, and type of windows. These calculations are complex enough that most builders pay an expert to do them.

You will have much more creativity in room design and window size and placement if you can avoid having to comply with the energy calcs. In addition, you will probably save considerable money, and you will have created a more natural and environmentally friendly dwelling. TITLE 25 structures both DEFERRED COMPLIANCE AND NEW will be exempted from energy calcs if:

You use only a renewable fuel source for your room heat [wood stove, solar, wind, or water generation], and: your water is heated by renewable fuel or if by a non renewable fuel [propane or

electricity] then your water heater is either tank-less, or insulated with an energy saving blanket, and in either case, your outside hot water pipes are insulated. Failing to meet the above conditions, you will be required to meet the energy standards [commonly referred to as energy calcs.

ELECTRICAL REQUIREMENTS UNDER AOB

You can chose to hook up with PG&E, or go solar, or some other form of do it yourself electrical generation, or even have none at all. But whatever you do install must be safe. The standard electricity code will be followed rigorously here, as it consists almost entirely of common sense, practical matters of safety.
Unlike other parts of the Title 24 Code, the electrical codes have no requirements put in just to enrich special interests.

GENERATORS: must be installed safely, with proper lockouts to PG&E wiring. PG&E has a handout on what is required.
GENERAL: The electrical code and its inspections are really quite simple. You must estimate the kind and number of usage's of electricity you want, where you want them, and approximately how much power each will require [this is to determine proper sizing of wiring and breakers]. A friend who understands electricity can help you with this. Under AOB you can even chose the parts of your house you want to serve with electricity and only wire that part. You are not required to install more than you think you will need. A simple dwelling could wire only one wall, and perhaps ceiling lights, and be done with it. Decide what users of electricity [appliances] you will be using, how much power they will consume, and where you want them. Every wall that you do wire must have an outlet every 6-ft. The reason for this is to avoid you're having extension cords running all over the place, which could be dangerous.
HINT: If you can group your usage to a limited area, or along one wall, or along an internal wall dividing two spaces, you can electrify your dwelling incredibly cheaply. However keep in mind that the basic materials, [wire, electricity boxes, receptacles and switches] are so inexpensive that you can most likely easily afford to wire your entire house. It's easy to do now, and complicated and messy if done later.

ELECTRICAL INSPECTION: Remember that the inspector is your friend here. They are looking to insure that you have installed the proper size wire and breaker [to serve the functions intended] and that you haven't overloaded any circuits. Errors can be dangerous, to you, your neighbors, and the environment. Since most 110-volt circuits are usually either one of two wire sizes and breakers, [depending on the intended load], this isn't rocket science, so don't panic. Any receptacles near a water source [kitchen counter tops, bathroom, garage or outside] must be protected by a Ground Fault Interrupter. This is a simple device which when installed, protects all following receptacles on that circuit.
HINT: Install a GFI as the first receptacle in every circuit and you more than satisfy this requirement, as well as insuring that any future additions to that circuit will be protected. The inspectors will also be checking that the wiring and boxes are installed so they are protected from accidental contact. Make friends with or hire an electrician and they can quickly advise you on proper wire and breaker sizing and these installation details. Once you understand the basic principles, its just common sense.

INSTALLATION: After you decide on your wiring paths, you install the wires and someone shows you [or does it for you] how to correctly connect up the receptacles and switches. The inspector will check that you wired it up with correct polarity, and that no wires are exposed. Since electrical

mistakes can cause fires, [your house could burn down, possibly a neighbors, and possibly the whole neighborhood], or even cause fatal injury, the inspector is your friend here, and you both want to be sure that it has been done correctly. The rules are easy. Learn em and follow em.

MECHANICAL-STRUCTURAL

Where the county handout seems clear, we have not added any commentary. Use their handout along with this commentary, to make sure you fully comply.
DEFERRED COMPLIANCE: The inspector will not tear into what you have already built. They will determine compliance by what they can see, and may ask you to sign a declaration of what you have built. The deed restriction you may eventually have to record with the county may indicate that various construction inspections were waived and the county cannot verify compliance. This information is then available to all future buyers and real estate agents.

All mechanical aspects of your building will have to <u>appear</u> <u>safe</u> to the inspector. This will include proper bracing, cross bracing if pier and post foundation, some form of sheer support, adequate sizes of weight bearing members. Some examples of this would be properly sized floor and deck joists, ceiling and roof rafters, and headers over doors and windows.
Chief Building inspector Clint McKinley comments:
“Inspection will be for if the building appears to be in substantial compliance with the program and visual observation for any violation, defective material or failed element that would compel the inspector to require correction.”
NOTE: AOB structures may be of alternative construction techniques or materials, and as in the case of existing construction being brought into deferred compliance, you may be required to state to the county that the construction techniques and materials are safe, and sign a letter to that affect, thereby acknowledging that the county has not inspected those particular aspects, and you, and any future occupants or owners, are assuming responsibility for structural and mechanical safety. Your recorded deed restriction may specify these deviations from conventional building materials or practices. [See page on “Waivers”]

HABITABLE/NON HABITABLE SPACE-The floor plans you submit must identify the intended usage of every space. From this declaration, the county will determine habitable from non-habitable space.

IF AN AREA [ROOM) IS DECLARED NON HABITABLE SPACE
DC: No special requirements. Individual case determination based on common sense.
NEW: minimum ceiling height [7 ft] in hallways, kitchens, bathrooms, corridors, and laundry rooms.

MECHANICAL REQUIREMENTS

ROOM DIMENSIONS: there are no requirements for width dimensions, if you provide adequate light, ventilation and egress. However, there are ceiling height requirements that must be adhered to, stated below. If your existing ceiling height does not conform, you cannot declare nor use it as habitable space. You must label it on your plans and use it as non-habitable space, i.e. storage. Exceptions will probably be allowed for DC existing structures.

CEILING HEIGHTS: must average 7'6" in all habitable rooms except for kitchen, bath, and hallways, corridors, laundry rooms, which can average 7 ft.

STAIRWAYS: DC can be minimum 30"' wide.

NEW: must be minimum 36" wide, but you may ask for a variance, as before Jan 1982, 30" was acceptable and the change was made not for safety considerations but for ease of moving furniture and appliances. Just another example of unnecessary restrictions of the building code.
All stairways must have handrails with provisions such that children cannot fall off the edge. See county handouts on stairways for their requirements. Basically, the spaces between railing supports must not be greater than 4". The test is that you must not be able to pass a 4 " ball through the openings. Note: If you commenced building before Aug. 1992, the standard was 6", so your openings can be minimum 6".

LADDERS: are not permitted accesses to any habitable space. This means if you have a loft, with access by ladder, or if its ceiling height averages less than 7'6", you can not use it as habitable space. On the plans you submit, you must declare it as storage space

ROOM HEATERS: Installation will have to be according to manufacturers" installation instructions and their vents [chimney] will have to conform to building safety codes. The requirements are simple and available as free handouts from Building Dept. Fireplaces should have some sort of door, and flue damper.

NATURAL LIGHTING: You must have window area equal to at least 1/10 floor area [mm 10 sq., ft.] For purposes of satisfying light and ventilation requirements, two adjoining rooms may be considered one if:
DC: Individual case basis. Generally speaking, if the two rooms are joined by a non-airtight door or drape, the door opening must be minimum 9.5 sq. ft, [conventional 36"x78" doorway]. If door is airtight, the rooms will be treated as separate, with min. req. of light and ventilation for each.
NEW: The minimum opening must be 25 sq. ft.

LIGHT AND VENTILATION: There must be proper ventilation for all habitable rooms. Each habitable room must have windows equal to 1/10th of floor area, and at least one openable window or exterior door with total size equal to 1/20th of the floor area

WINDOWS: All window glazing must be unbroken. All opening windows must function.

SAFETY GLAZING: You must use special safety [tempered or laminated plastic] glass in dangerous areas. Examples include any windows within 2 ft of doorways, bath/shower enclosures, windows located within 36" of rim of tub/shower and less than 60" from drain, any glazing mounted directly on the tub rim, any windows within 18" of floor. It is fairly complex what areas require safety glass and which do not, so if in doubt, best call in and describe your situation and get Building Dept opinion.

EXITS TO OUTSIDE: You must have minimum of one, sized 36"x78". In addition, each bedroom must have direct exit to outside by openable window or exterior door.

ROOF COVERING: Roof coverings must be non combustible, it's called Class-A roofing. [No wood roofs]

LPG APPLIANCES: installed according to manufacturers instructions and so as to eliminate possibility of leaking propane collecting in closed area. This means proper venting of any enclosed spaces.

PROPANE TANK LOCATIONS: Tanks greater than 125 gallons must be located minimum 10 ft from

any structure. Tank or bottle located closer than 10 feet to bldg. requires fire Marshall approval. Tanks less than 150 gallons must be minimum 5 ft. from any opening into the house. Propane tanks must never be located in or under the house.

DRIVEWAY STANDARDS: These are created by Fire Marshall but inspected by Building Dept. They want minimum width of 10 ft. [paved with gravel wherever necessary], with 1 ft. shoulders [cleared but unpaved] on each side. You must have brush cleared for an additional 10 ft. on each side of your driveway although you may leave trees [with lower branches removed] in this 10 ft. cleared space. DRIVEWAY SLOPE: You are allowed maximum 16 % slope with no paving required. You can have 20 % slope for max. lengths of 100 ft. providing that those sections are hard paved. To calculate your % of slope, measure the running distance, have a friend stand at low end holding a stick upright touching the ground. You stand at high end and sight with a level, either from ground at your feet, or from a predetermined height. Have your friend slide another stick along their first stick until it reaches the spot you are sighting [level with your end]. Have them mark that spot on their stick. Now subtract whatever distance off the ground you were sighting from. The distance left on the stick is the elevation rise for whatever running distance you are measuring. Now you can calculate your % slope**.** A 10-ft. rise over 34 ft. run or a 5 ft rise over 17 ft, would be 16% slope. Less than that, you be cool, more than that, you must work with the inspector or fire marshal to determine what they will require. Present requirement is 4" compacted gravel over entire length of driveway. We believe that as of this writing, we have an agreement that the fire marshal will accept any driveway that they can drive their equipment over, in order to fight a fire on your property. You will have to gravel where necessary, but not necessarily the entire length of your driveway. If you think your driveway will not meet these standards, have your local Fire Marshal come out and look over your situation and offer suggestions. They are helpful folks, and will not turn you in to other departments for other irregularities.

ENGINEERING WAIVER

It is recommended that your structure be as sound [strong] as possible. With normal construction techniques, the inspector or any competent builder can easily ascertain if it is sound [strong]. If you chose to utilize unusual/unconventional building techniques, such as cob, straw bale, rubber tire, rammed earth, etc. you may be required to submit engineering or architect's approval [wet stamp on your building plans]. You have an option if the county requires this. You can sign a statement, to be recorded on your deed, that you have waived county inspection of the mechanical [structural] aspects of your construction. The building inspector will then inspect the other aspects of your construction but will not inspect nor attest to the soundness of the mechanical/structural aspects. However, if the inspector sees an obvious structural flaw, they will point it out, and if they feel it is a clear and obvious threat to basic safety [cracked or sagging beams is one example], they could require you to remedy it.

The entire thrust of this ordinance is to provide the owner builder with simplified, inexpensive alternatives to conventional [Title 24] building codes while still resulting in safe construction. Although it is assumed you will want to minimize the expenses associated with construction, throughout this guidebook, we attempt to point out when you might chose an initial savings that may result in added expense down the road. One example might be this recorded inspection waiver, which could make your property less desirable to future owners, and also could make homeowners insurance difficult to obtain, so you might want to consider other alternatives, and this waiver as a last resort.

Another example of utilizing this waiver might be in your choice of foundation for your construction. Conventional code [Title 24] calls for poured slab or a reinforced concrete wall around the perimeter of the construction.

POST AND PIER FOUNDATIONS

Many rural sites just don't lend themselves to a poured concrete foundation, especially those that do not have drive in access all the way to the structure. Pouring a perimeter or slab foundation by hand can be exhaustingly difficult. In addition, some builders have other reasons for preferring post and pier over perimeter foundations. Asked the chief building inspector if he would allow post and pier foundations for AOB construction. Here is his reply: “California Codes and Standards require an engineering design for such a foundation and support system. For the purposes of Title 25 owner-built & owner-occupied dwelling we are going to rely on Section 6744 of the Business and Professions Code which allows that an individual is not required to be registered as a civil engineer to practice civil engineering in connection with property owned by the individual provided the work does not involve the public health or safety or the health and safety of employees of the individual”. In-other-words the owner of an owner-built & owner-occupied building can be his own designer.

Staff will not evaluate the structural adequacy of the design and make recommendations. To do so would be “practicing engineering” and potentially make the jurisdiction and the inspector liable.” Bottom line: Design it well, or have a knowledgeable friend advise that you have your posts at proper spans for the size of your floor joists and the load it will be carrying, each post has enough of a concrete pad for your soil type, and the system is adequately braced.

HINT: The programs detailed in this booklet are designed for the owner/builder who is creating an inexpensive, perhaps innovative home for their family. Although a contractor may be employed in any stage of construction, these programs are not intended for speculative builders, or with resale in mind. However, eventually, someone; you, your children, or your great grandchildren will want to sell the property. At that point, you will be doing the seller and their realtor a huge favor if you have photos that show details of any deviations to the conventional Title 24 building code you may have incorporated into your construction, and demonstrate that you did it correctly, safely. A few carefully shot photos will work wonders in reassuring conservative realtors or buyers. If it’s a stick frame structure, photos showing the sizes and bracing of now concealed framing and joisting work wonders at putting doubters latent fears to rest. If you are utilizing any of the truly innovative [and unusual] building techniques, photos of construction phases will serve as a strong selling point, as well as alleviate concerns of various interested parties. Last but not least, building inspectors are human beings, and as such have good days and not so good days. During inspections, things could go smoother for you if you have photos demonstrating that now hidden construction features were of adequate strength and integrity, [adequate nailing patterns, bracing, tied together with metal straps, reinforcing rods, whatever, etc.]

As in all phases of building, as well as in life, plan several steps down the road, and the journey will be much smoother.

WATER, PLUMBING AND WASTE SYSTEMS

OK this section is monstrous, but we wanted to give you as much useful info as possible. See appendix for charts and tables .which will hopefully clear up any questions.

WASTE SYSTEMS

Terminology: OSSE= on site soils evaluation [formerly called a mantle]
KW/GW/WT= Kitchen Waste/Gray Water/Waterless Toilet

Applicants may apply for one of two permit packages during this process - 1) a conventional sewage permit package (OSSE & conventional septic permit or 2), an alternative sewage permit package {which includes your soil testing [OSSE] and 3 separate disposal systems (KW / GW / WT}.

HINT: To save yourself county charges for inspectors travel time, incorporate as many inspections as possible into the same inspection visit.

Conventional Sewage Permit Package (for existing system]: Inspection fee will be charged but no permit fee.

1) Provide description of existing system (self certify/inspect or septic contractor inspection)
2) Site Evaluation & Test Pit (at least 4 feet deeper than existing trench bottom, and minimum 3 ft wide).
3) Uncover portions of the existing system as follows:
   - Three corners of the septic tank and both manholes.
   - Ends of all leach lines.
   - All points of distribution.
   - One excavation showing depth of leach line.
4) Arrange for EH inspection. You may want to have a backhoe on site in the event the inspector determines you have poor drainage conditions, or other negative factors, and feels that digging other tests pits will be to your advantage, especially if it helps you avoid needing a special or engineered system.
5) If your existing system meets minimum standards as determined by onsite inspection, you are done. If it is determined you must add to or alter your present system, see procedure for new system.

Conventional Sewage Permit Package (for new system): Permit fee and inspection fee will be charged. Process is as for existing systems, except delete 3 & 5. EH will help you determine what is required for your system, apply for the permit, you build that and they come out and inspect it, and you are done.

WATER

You must have potable water on site. To conform to Title 24 it must be pressurized. AOB [Title 25] need not be pressurized.

NEW: Your well or spring must produce a minimum 3 gallons per minute. If only 1-3 gpm, you must have a minimum 1000 gal storage tank per service connection [dwelling]. You could combine several low yield wells to equal 1 or more gpm. If less then 3 gpm, a well yield test must be performed by a qualified individual. See the Environmental Health Department for details or visit their website at www.co.nevada.ca.us/ehealth/law/welcome.htm for the actual ordinance text.
DC: If your well or spring produces less than 3 gpm, 100 gallons storage per bedroom is required. Standing water capacity in your well casing can be used in this calculation. Prior to receiving your final inspection, you must bring your water storage capacity up to the 1000-gallon minimum standard.

PLUMBING:

Your plumbing must be installed and maintained in a safe and sanitary condition, according to the plumbing code. You can avoid copper or iron pipes if you chose.

DC: CPVC will be allowed.
NEW: Presently, code allows for CPVC piping inside dwellings so long as you demonstrate that acidic water is will damage metal pipe. There are brands of plastic pipes that are allowed. The generic name is PEX. Check with building dept. for approved brands of PEX piping.

GENERAL REQUIREMENTS: To be able to occupy a dwelling, you must provide: potable water, an approved toilet facility [can be waterless or conventional], a means of bathing [tub or shower], a sink for washing hands and kitchen preparation, and some form of approved sewage disposal system to safely dispose of the above wastes.. There are many choices and options to achieve these minimum requirements. Title 24 requires all these to be in the same building. Under AOB, there is no requirement that your kitchen or bath be in same structure as rest of your house

ROOM SEPARATIONS: The toilet room must be separated from the kitchen area by a tight fitting door.

TOILET can be waterless, [keep in mind that composting or incinerating toilets do require periodic maintenance in accordance with the manufacturer's directions, and must also conform with the county waterless toilet ordinance, viewable at the department website at www.co.nevada.ca.us/ehealth/law/welcome.htm]. Since this ordinance is written in bureaucrateze, we include a synopsis of this, called "The waterless toilet and you", at the end of this section, which was developed by the head of EH dept.

I haven't viewed this site, so can't comment on what else the bureaucrats want here. If a conventional [flushing] toilet is used, it must be connected to a properly sized and installed septic system. The county can provide specs, and these are also available for viewing or downloading at the department's website listed above.

If you are going with a waterless toilet, you do not need to install rough plumbing for the possibility that you might want to later convert to a conventional flush toilet. However, there are 2 reasons that it might be in your best interest to install rough plumbing anyway; 1- you may one day want to convert to a conventional system, or 2- the inclusion might make your construction more attractive to any future buyer who may want a conventional flush toilet. If either is a possibility, keep in mind that it would be far more economical to install it now than to have to retrofit.

SINKS: Any fixture that includes a hot water faucet must have hot water plumbed to it. If you don't want hot water to that sink, make sure you only have a single faucet.
DC: and NEW: Two sinks and two separate gray water systems will be required, one for kitchen, the other for bath. These gray water systems are simple, require no holding tank, and may be a simple, inexpensive alternative [along with a waterless toilet] to your waste disposal requirements.

WASTE SYSTEMS: This is an issue of basic health and safety. No surface disposal and no discharge that imperils ground water are permitted. Perk tests are not required.

However, since soil texturing evaluation "tends to produce results on the conservative side", feel free to ask your inspector if they feel running perk tests would improve the outcome and result in a small septic system and resulting in lower costs.

However, in all cases, a test pit [also called a mantle] is required. Its purpose is so the inspector can examine the soil structure and characteristics [by examining [the sides of the pit from bottom up] to estimate the leaching capabilities and ensure that the disposal system proposed will not contaminate the groundwater.—You will want to have the test pit ready for your [first] health/safety inspection. Minimum depth must be 6.5 ft deep for graywater systems, and 6 feet for septic systems, with access by sloping ramp. [The reason for this difference is that the State graywater law is more stringent then county ordinance for conventional septic systems]. The ramp slope can be no greater than 45 degrees, so practically speaking to achieve 6.5 foot depth, your ramp must be at least 6.5 feet long by 3 feet wide.

The test pit must be dug in the area your septic system[s] will occupy, and afford a safe view of the insides of the pit. After inspection, you must prevent accident by backfilling your pit or adequately and securely covering it.

The environmental health inspector will use this test pit to examine your soil profile to insure there is no ground water contamination and that your ground is suitable for your proposed sewage disposal system. Once the test pit is inspected, this pit should be filled in. HINT: If you plan on later installing [burying] a septic tank, you could site this pit where you later want your septic tank, have it inspected, and then safely cover this pit for such later usage, Be aware that a permit is required to install a septic tank. Also be aware that such a pit represents quite a potential hazard and you should ensure that your pit is watertight, and kid proof/fall in proof. [The law does allow maintaining an open excavation so long as it is not a possible hazard].

If you already have an existing septic tank and leach field, but you must enlarge it because it is deemed not adequate for number of bedrooms you have, or want to have, the easiest way will probably be to add an additional tank, and lengthen your existing leach lines. Ask environmental health dept to explain your options

There are 3 kinds of waste: toilet waste [called black water], and two kinds of gray water: kitchen and bath. All can go into a conventional septic system. This is the simplest, yet most expensive, and septic systems, like all other wastewater systems, are not lifetime nor foolproof. They require pumping out after a number of years, depending on usage.
HINT: You can greatly lengthen the periods between pumping out by several practices.

1) Eliminate all paper products.
2) Minimize the disposal of fats, detergents, and disinfectants into your system.
3) There is a balanced ratio of water to solids for maximum decomposition in your septic system achieved by sensible water use. (The department can provide you a handout on septic tank use and care.)

However an alternative to the conventional septic system is that you can chose to separate and dispose of these 3 wastes separately. If there is no conventional septic tank and leach field, there then must be two separate gray water systems, one for kitchen the other for bath, [as well as a waterless toilet system
Handouts with examples and minimum standards are available from the Environmental Health dept. State law dictates Graywater standards. For additional information, the State maintains a website where additional information can be obtained. It is:
http://www.dpla.water.ca.gov/urban/land/revisedgwstand.html. County requirements for the kitchen

waste and waterless toilet disposal systems can be found at
www.co.nevada.ca.us/ehealth/law/welcome.htm

There are two types of graywater systems. (1) Subsurface trench and (2) Subsurface drip irrigation. Trench is the simple system. You can confer with county staff for drip irrigation system requirements. The construction requirements for the simpler trench system is detailed below:

See Appendix for setback tables and graywater trench-size sizing table for one, two, three bedrooms.

GRAYWATER SYSTEM:

See notes at end of this section called " a brief guide to the graywater law". Typical requirements for a one bedroom house with "average" soil and 5 ft soil depth to bedrock or groundwater is estimated to be 35 ft trench [18"x18"] or 52 ft trench [12" wide x 18" deep]. Estimated req. for kitchen waste system, one bedroom house is 15 ft trench [18"x18"] or 20 ft trench [12"wide x 18" deep]. The cheapest system would be waterless toilet [if you are willing to follow manufacturers periodic maintenance instructions], and the two separate gray water systems. Examples of a typical system are in county handout. If your dwelling has more [or less] bedrooms, ask what is required for your situation.

PIT PRIVY

DC: If already in existence, a Pit Privy is acceptable for 2-year period with 1 year extension. You will be required to demonstrate the basic health and safety of your Privy. This is done by inspecting a ten-foot deep hole sufficient to visually inspect the bottom and sides from the surface. This inspection hole must be within 50 feet of your Privy. If this hole is dug with a backhoe and you can have the backhoe onsite for the inspection, it makes things very easy. The inspectors regularly make appointments to accommodate this. Depending on your soil conditions, the inspector may want soil samples from various depths. If a backhoe on site is not possible or you are digging this by hand, notify the inspector ahead of time so they can bring with them telescoping soil-sampling tools.

After max of 2 years, you must then upgrade to, at a minimum, a vault privy, which requires periodic pumping out, or the triple system of waterless toilet and 2 gray water systems, or conventional septic tank and leach field system.

NEW: Pit privy not allowed. Choices are Vault, Triple system, or conventional septic tank and leach field, unless it is determined that your soil conditions require a special [engineered] system.

VAULT PRIVY

: In either DC or NEW, Your vault privy would be allowed for as long as you are in one of these programs; i.e. currently up to 10 years, or when the home sells or becomes renter occupied. After this period expires, you would be required to upgrade to conventional septic or the triple system. Since your vault privy is a concrete septic tank minus the leach lines, upgrading to a conventional system requires only adding on the required # of feet of leach lines, which the county will determine, based on # of bedrooms of your house and the soil test pit evaluation. If you are unhappy with the Environmental Health dept. decision based on their evaluation of your soil mantle [test pit], you could have them evaluate a percolation test [called perk test} They tell me the results of a perk test might be to your benefit.

Theoretically, you could dig a pit, prepare forms and pour your own tank, but as you would have to submit plans and engineering calcs and pay for county review at hourly rate, and it is not easy to cast

a water-tight tank, it would most probably be cheaper to just buy the pre-cast tank. Merrill and Sons will deliver and drop it into your prepared hole, as long as they have truck access to your pit. Ask them what they need for access.

Finally, for a pit or vault privy, you are required to have an annual permit and annual inspections to ensure continuing health and safety. Now it gets tricky. If you choose to not establish that your property will support a conventional or alternative sewage system at this time, you must record a document acknowledging that there is no guarantee of future sewage disposal. (See county resolution 99451 for the exact wording.)

APPENDIX

PERMIT AND INSPECTION COSTS

Sewage	Fee	H_2O	Fee
OSSE and Conventional Permit for new system	$518-597	Existing Well EH will test at no charge as part of study	-0-
Evaluate existing system	$79.50-279	New Well	$183
OSSE and KW/GW/WT*	$358-478.50	Spring	$79.50/hr
Special Design Permit and OSSE	$597-1,074	NID	-0-

NOTICE: if your OSSE reveals poor drainage or other special circumstances, you may be required to build a special design [engineered] system such as pressure distribution, sand filter, mound, or deep trench. These systems require a special consultant and are beyond the scope of this presentation.

The Waterless Toilet Ordinance and You

The county adopted a waterless toilet ordinance in 1993. This allows for the use of a waterless toilet in Nevada County. The requirements are fairly simple. Any waterless toilet can be used that has been accepted for use by any government agency. Operation and maintenance of the waterless toilet must be carried out in accordance with the manufacturer's instructions. Waterless toilet waste disposal can occur only after the waste is thoroughly and completely decomposed. WHERE you dispose of the waste is specific:

1) Plastic bagged to a landfill.
2) Removed by a licensed septic tank pumper.
3) On the property where the toilet is located. Disposal must ensure that humans, animals, surface and ground waters do not come into contact with it. Impervious gloves must be worn for removal. HOW it is disposed on site:
   A) Direct burial under a minimum of 1 foot of compacted soil.
   B) Shallow subsurface tilling. This is more involved, requiring restricted access to humans and animals, usually by fencing. If using this method of disposal, discuss with your inspector first.
   C) In no case should you dispose on-site when a user of the toilet is sick with an infection that could be spread by human waste.

If you are using an incinerating toilet, you may also spread the ash directly onto the ground, so long as it is odor free.

There are some caveats to waterless toilet disposal. The following methods are **not** allowed:

1) Shallow subsurface disposal in present or future food crop growing areas or dairy pasture.

2) Any disposal in areas subject to seasonal water runoff or areas seasonally inundated by water, or any other application that could permit the waste to come to flow into surface or subsurface water.
3) Any waste disposal must meet the normal setback requirements from creeks, wells, etc. as normally required for a leachfield.
4) You must make sure that the waste does not runoff or blow onto a neighbor's property.
5) During periods of ground saturation.
6) When the waterless toilet isn't working properly.

Pit Privy Setback Requirements	
Distance Required From ↓	**Minimum Horizontal Distance In Feet To A Pit Privy ↓**
Public Well	200
Private Well	150
Stream, Body of Water or Ditch (as measured from the high water mark[1])	150
Intermittent Stream	50
Water Pipe	10
Property Line	200
Property Line (when domestic water on adjacent parcel is provided by public water system)	200
Cut or fill bank (where "h"= height of cut or fill)	4h , 50' maximum

1. Setbacks shall be measured from the edge of the 10-year historic high water level (Western County) or the 100-year historic high water level (eastern county). In no event shall a system be placed within a 100-year flood plain or within an area of special flood hazard as defined in the Flood Plain Management Regulations contained in Chapter XII of the Nevada County Land Use and Development Code. For Western County, where a flood plain is indicated on a FEMA map, the 100-year setback shall be utilized unless a 10-year flood plain has been delineated by a drainage study or other approved methods.

Here are the criteria for soil sizing from the regulations, if it helps you.

(A) Single-family dwellings. Systems serving single-family dwellings shall be sized at minimum one hundred fifty (150) gallons per day (gpd) projected daily sewage flow. Projected daily sewage flow shall be calculated at one hundred and fifty (150) gallons per day per bedroom.

(B) Disposal trench sizing for single-family dwellings. The effective absorption area required, shall be based upon the projected daily sewage flow and one of the following:
(1.) Rate of sewage application based on soil group in chart below.

Soil Group	Rate of Sewage Application
A*	1.2 gpd/ft ^{2}
B	0.8 gpd/ft ^{2}
C	0.6 gpd/ft ^{2}
D	0.45 gpd/ft ^{2}
E*	0.2 gpd/ft ^{2}

A* sand, loamy sand
B sandy loam
C loam, sandy clay loam
D sandy clay, silt loam, clay loam, non-expansive clay
E* clay, silty clay, silty clay loam, silt

*Soil Groups A and E are not suitable for a standard system. OR

(2.) Effective absorption area required, when given the design percolation rate, shall be calculated using the following formulas:

For gravity-fed trenches: $3.5/\sqrt{t}$

For pressure-distribution trenches: $5/\sqrt{t}$

where "t" is the percolation rate in minutes per inch. Percolation rates of less than six (6) minutes per inch (mpi) and greater than sixty (60) mpi, are unsuitable for a standard system.

*Note: When a pressure-distribution trench is utilized, the sewage disposal system is a special design system, in accordance with Section T-058, *et seq*.

(C) When sizing by soil group and more than one soil group is encountered within a soil profile, disposal trench sizing shall be based on the most restrictive soil group encountered within thirty-six (36) inches from the bottom of the disposal trench.

(D) When sizing by percolation rate and more than one soil group is encountered within a soil profile, disposal trench sizing shall consider the soil characteristics within thirty-six (36) inches from the bottom of the disposal trench, and may require percolation tests in deeper soil layers.

(E) For calculating the required lineal feet of the disposal field, only the trench bottom area shall be considered.

A Brief Guide to the Graywater Law

State law, not county ordinance, sets the graywater requirements. These requirements were not developed with alternative sewage disposal in mind. Rather, they arose from the southern counties where water shortages occur and landscaping is the main concern. Therefore, they are not as user-friendly as we would wish, and do not always lend themselves to the best interests of we who inhabit rural areas. In approaching the construction of a graywater system, it is recommended that you review the State graywater law. It is available from the Environmental Health department, or on-line at www.dpla.water.ca.gov/urban/land/revisedgwstand.html. However, there are some general guidelines that are listed here:

The graywater system accepts liquid wastes from such plumbing fixtures as your bathroom sink, showers, washing machines and related. State law does not allow kitchen wastes to be mixed with other wastes, so you will need a separate system for your kitchen plumbing fixtures (sink, dishwasher). This is done with a "Kitchen Waste Disposal System." It is identical to your graywater system except that the two cannot be physically connected. This means that you will have two identically constructed systems, one for graywater, one for kitchen waste. The graywater system will normally be larger then the kitchen one.

Both of these systems will normally consist of a your house plumbing going to the system, with an optional small surge tank, followed by a disposal system-either drip irrigation or a mini-leachfield. The easier and more reliable of these systems (the drip systems can plug up) is the mini-leachfield. In all cases the liquid must stay below ground.

As this guide is intended to simplify processes, it focuses on the mini-leachfield. To construct one of these systems, a test pit is needed, which will be inspected by the EH inspector. The test pit is the same as described elsewhere in this Guide. The test pit must have a minimum width of 3 ft. To put in a graywater system, at least 6.5 -feet of good soil is needed-1.5 feet for the mini-leachfield and 5-feet below that.

A typical system consists of an optional small surge tank (recommended by the county-talk with your inspector if interested), followed by the mini-leachfield. The permit process includes providing 2 site plans to the county showing the system layout and features that require setbacks.

Some Basic Requirements for the Mini-Leachfield

	Minimum	**Maximum**
Number of drain lines per irrigation zone	1	---
Length of each perforated line	---	100 feet
Bottom width of trench	6 inches	18 inches
Total depth of trench	17 inches	18 inches
Spacing of lines, center to center	4 feet	---
Depth of earth cover of lines	9 inches	---
Depth of filter material cover of lines	2 inches	---
Depth of filter material beneath lines	3 inches	---
Grade of perforated lines	level	3 inches/100 feet

In general, the graywater system construction and inspection can be summarized as follows:

Required Area

- at least two irrigation zones
- each zone to distribute all graywater produced daily without surfacing

Surge Tanks [optional]

- talk to your inspector or see the graywater law

Valves and Piping

- piping marked “DANGER-UNSAFE WATER”
- all valves readily accessible
- backwater valves on all surge tank drain connections to sanitary drain or sewer
- stub-out plumbing permanently marked

Mini-leachfield systems

- perforated lines minimum 3 inches diameter
- high density polyethylene pipe, perforated ABS or PVC pipe
- Maximum length of perforated line – 100 feet
- maximum grade – 3 inches/100 feet
- minimum spacing – 4 feet
- earth cover of lines at least 9 inches
- clean stone or gravel filter material from ¾ to 2 ½ inch size in trench 3 inch

- deep beneath lines and 2 inches above
- filter fabric covers filter material

Inspection

- system components identified as to manufacturer
- irrigation field installed at same location as soil test, if required
- installation conforms with approved plans

Testing

- surge tank remains watertight as tank is filled with water
- flow test shows all lines and components remain watertight

Sizing for the graywater disposal system uses one of the following tables (one is for an 18" wide trench, the other for 12")

Table for Determining Graywater Trench (18" deep X **18** wide") Length*

Soil Type	Suitability For Use	Total Trench Length for 1 Bedroom	Total Trench Length for 2 Bedrooms	Total Trench Length for 3 Bedrooms
Sand, loamy sand	Not acceptable for use-soil too fast			
Sandy loam	OK	21'	43'	64'
Loam, sandy clay loam	OK	32'	64'	96'
Sandy clay, silt loam, clay loam, non-expansive clay	OK	48'	96'	144'
Clay, silty clay, silty clay loam, silt	Not acceptable for use-soil too slow			

- This assumes a home with a shower or bathtub and laundry. This can be adjusted differently for other situations. See your inspector for alternative calculations.

Table for Determining Graywater Trench (18" deep X **12** wide") Length*

Soil Type	Suitability For Use	Total Trench Length for 1 Bedroom	Total Trench Length for 2 Bedrooms	Total Trench Length for 3 Bedrooms
Sand, loamy sand	Not acceptable for use-soil too fast			
Sandy loam	OK	32'	64'	96'
Loam, sandy clay loam	OK	60'	96'	144'
Sandy clay, silt loam, clay loam, non-expansive clay	OK	72'	144'	214'
Clay, silty clay, silty clay loam, silt	Not acceptable for use-soil too slow			

*** This a**ssumes a home with a shower or bathtub and laundry. This can be adjusted differently for other situations. See your inspector for alternative calculations.

Sizing for the kitchen waste disposal system uses one of the following tables (one is for an 18" wide trench, the other for 12"):

Table for Determining Kitchen Waste Trench (18" deep X **18** wide") Length

Soil Type	Suitability For Use	Total Trench Length for 1 Bedroom	Total Trench Length for 2 Bedrooms	Total Trench Length for 3 Bedrooms
Sand, loamy sand	Not acceptable for use-soil too fast			
Sandy loam	OK	6'	11'	16'
Loam, sandy clay loam	OK	8'	16'	24'
Sandy clay, silt loam, clay loam, non-expansive clay	OK	12'	24'	36'
Clay, silty clay, silty clay loam, silt	Not acceptable for use-soil too slow			

Table for Determining Kitchen Waste Trench (18" deep X **12** wide") Length

Soil Type	Suitability For Use	Total Trench Length for 1 Bedroom	Total Trench Length for 2 Bedrooms	Total Trench Length for 3 Bedrooms
Sand, loamy sand	Not acceptable for use-soil too fast			
Sandy loam	OK	8'	16'	24'
Loam, sandy clay loam	OK	12'	24'	36'
Sandy clay, silt loam, clay loam, non-expansive clay	OK	18'	36'	54'
Clay, silty clay, silty clay loam, silt	Not acceptable for use-soil too slow			