Town of Legal
P.O. Box 390
Legal AB T0G 1L0
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PERMIT STICKER

The Inspections Group Inc.
12010 111 Avenue
Edmonton, AB T5G 0E6
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www.inspectionsgroup.com

PRIVATE SEWAGE DISPOSAL SYSTEM APPLICATION FORM

Permit Number: _____ **Tax Roll Number:** _____

Application Date(Y/M/D): _____ **Estimated Completion Date (Y/M/D):** _____

Permit Type: ☐ **Owner** ☐ **Contractor** **Cost of Installation (Labour & Materials) $** _____

The Permit Holder hereby certifies that this installation will be completed in accordance with the Alberta Safety Codes Act & Regulations and shall be commenced within 90 days and expires after one year without an extension request.

Owner Name: _____ Address: _____

City: _____ Prov: _____ Postal Code: _____ Phone: _____ Fax: _____

_____ Cell: _____ Email: _____

Owner's Signature / Declaration (Single Family Residential Only)
"I hereby declare I am the owner of the premises in which the work will be conducted, and reside on the property. I am doing the work myself, and assume responsibility for compliance with the applicable Act and Regulations"

Contractor Name: _____ Address: _____

City: _____ Prov: _____ Postal Code: _____ Phone _____ Fax: _____

Cell: _____ Email: _____

_____ _____ _____

PSDS Installer's Number Print Private Sewage Installer's Name Installer's Signature

Project Location in The Town of Legal:

Street Address: _____

Legal Subdivision: Part of: _____ Section: _____ Township: _____ Range: _____ West of: _____

Subdivision Name: _____ Lot: _____ Block: _____ Plan: _____

Directions: _____

Installation:

☐ New installation

☐ Alteration

Expected Volume of Sewage:

_____

☐ m3 per day

☐ Litres per day

☐ Gallons per day

Type of Work:

☐ Commercial

☐ Residential _____
Number of Bedrooms

☐ Work Camp _____
Number of Men

☐ Other _____

Treatment / Disposal Methods (complete all applicable items):

☐ Treatment Mound ☐ Packaged Sewage Treatment Plant

☐ Open (Surface) Discharge ☐ Sewage Lagoon

☐ Sand Filter ☐ Disposal Field

☐ Septic Tank Size _____

☐ Sewage Holding Tank Size: _____

☐ Other _____

Description Of Work: _____

COMPLETE THE ATTACHED SITE EVALUATION REPORT.

Payment Type: ☐ Cash ☐ Cheque ☐ C/C Agreement ☐ On File ☐ Interac

Permit Fee: $_____

\+ **SCC Levy*** $_____

Total Cost: $_____ Receipt #: _____

*$4.50 or 4% of the permit fee maximum $560.00

OFFICE USE ONLY

Issuing Officer's Name: _____

Issuing Officer's Signature: _____

Designation Number: _____

Permit Issue Date: _____

The personal information provided as part of this application is collected under Sec. 43 of the Safety Codes Act and Sections 303 and 295 of the Municipal Government Act and in accordance with Section 32.c of the Freedom of Information and Protection of Privacy Act.

Please contact The Inspections Group Inc. via Phone 780 454 5048, Fax 780 454 5222 or online www.inspectionsgroup.com for all inspection requests, allowing two working days notice.

Summary Design Report

Project: Onsite Wastewater Treatment System Design.

Owner's Name: _____

Mailing Address:_____P.C._____

Phone (Work)_____(Home)_____(Cell)_____

Location of Project:

Legal Land Description:_____, _____, _____, _____, W of _____
Part of Section Twp. Range Meridian

Municipal Address:_____
Lot:_____, Block: _____, Plan: _____

Permit Application Reference Number: _____

Contractor's Information

Contractor's Name:_____

Mailing Address:_____P.C._____

Installer's Certification #:_____. Contractor's Signature_____

Phone (Work):_____ (Cell):_____

Designer's Information **(If Different from above)**

Designer's Name:_____

Mailing Address:_____

Phone (Work):_____ (Cell):_____

Design Overview:

This design serves a _____**.bedroom** single family dwelling. which has a _____**Imp. gal/day additional flow** due to fixture units present in the dwelling. Based on the site evaluation and soil assessment **the type of system being installed will be:** ☐ **Holding Tank,** ☐ **Septic Tank,** ☐ **Packaged Sewage Treatment Plant** ☐**Sand Filter,** ☐ **Septic Treatment Mound,** ☐ **Septic Field,** ☐ **Open/surface Discharge,** ☐ **Subsurface Drip Dispersal,** ☐ **At Grade Treatment System**

will be used in this design because soil conditions exist to maintain a **vertical separation of _____feet**.

Development Considerations and Wastewater Characteristics

The development being served is a _____**bedroom** single family home. The expected peak daily flow volume is _____ **Imp. gal/day.** The expected fixture units in this dwelling are _____**fixture units. Total number of fixture units over 20 is**_____ **X 11 Imp. gal/day =**_____**Imp. gal. Plus daily peak flow** _____, = **Total Peak Daily Flow of _____ Imp. gal./day.**

Characteristics of the home were considered with regard to impact on sewage strength. Garbage grinder ☐ yes, ☐ no. Water saving fixtures ☐ yes, ☐ no.

Projected wastewater strength for this design is: BOD_____mg/L, TSS_____mg/L

This project and use are expected to generate wastewater flow ☐ **With**, ☐ **Without** substantial variation during the day or from day to day. As a result flow variation management, **Will** ☐, **Will Not** ☐, be required.

Site Design Considerations:

This lot size is_____ **Acres** with dimensions noted on site plan. There ☐ **is**, ☐ **is not** a **well or buried cistern** on this site. Land-use of neighboring property in this area is

☐**Country Residential**, ☐**Farmland**, ☐**Urban Residential**, ☐**Country Forested**

There ☐ **are**, ☐ **are not**, any utility right-of-way's or easements on this property and, as such, will be noted on the site plan.

There ☐ **are**, ☐ **are not**, any discernible watercourses on this property. **Describe:** ___

_____

A setback distance of _____**feet** will be maintained from this watercourse.

Topography at site is: ☐ **Rolling Hills**, ☐ **Generally Level**, ☐ **Sloping**,

Topography at system installation is: ☐ **Generally Level**, ☐ **Sloping % of Slope**_____

Soils Assessment:

The site evaluation identified a suitable area on this property which was investigated, to assess the suitability this of site to the system design. A total of ____ **Test Pits** were excavated to a depth of _____**feet,** and described in the attached soil profile logs. Soil horizons where measured from ground surface to the top and bottom of each soil horizon only and logged on the Soil Profile Log Form, along with soil Color, Texture, Structure, Grade, and Consistence for each horizon. A laboratory analysis was conducted of the most limiting layer above a restricting layer for each pit. A total of _____ **laboratory soil analyses** were conducted and the resulting **laboratory soils analysis reports have been attached**.

Key Soil Characteristics Applied to This Design:

An evaluation of the soil characteristics at this site was conducted by_____
The soil evaluation is considered complete and sufficient for the design of this system and meets the requirements set out in Section 7 of the SOP as applicable to this site and system design. A summary of profiles identifies:_____

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Initial Treatment Component Design Details

Detailed considerations and specifications for the initial treatment components described in this section have been attached if additional information is required on the system design.

Tank Requirements

After consideration of the design requirements as set out in section 4.2 and 5.2 of the 2009 SOP, a

Model:_____

☐**Tank /** ☐**Packaged Treatment Plant** with at working capacity of _____**Imp. gal.**

was chosen.

Dose Tank:

This system design ☐ **Will**, ☐ **Will Not**, require the use of a separate dosing tank to regulate flow. A **Model** _____Tank was chosen.

High Liquid Level Alarm:

A high liquid level alarm will be utilized in this system design.
Manufacturer _____ Model Number_____

Effluent Filter:

An effluent filter: Manufacturer_____Model #_____
This filter will be installed in:_____
This filter is rated for a flow rate of_____**Imp. gal./min.** and will be readily accessible for service.

Soil treatment component design details:

The system selected for this design is: (**eg.** Tank and mound)_____
_____

Selection of this system type has considered soil stratigraphy effects on effluent treatment and infiltration, potential for groundwater or effluent mounding in the subsurface, achieving vertical separation distances within the soil, seven day retention treatment requirements for effluent and the potential impact on human health and the environment for this system dispersal option.

Sizing:

Based on the expected peak daily flow volume of _____**Imp. gal/day,** from

Section 1 of this report and a soil loading rate of _____ **Imp. gal/day,** for the design soil horizon in Section 2 of this report, this requires a soil infiltration surface area of

_____**sq. ft.**

Linear loading was considered and **will** ☐, **will not** ☐**,** be required for this design.

The linear loading rate required for this design will be _____ **gal/day/foot,** based on information provided from soil horizon logs, lab results, and **Table A.1.E.1** of the SOP.

This design has considered various sizing requirements outlined in Section 8.1 of the SOP. The design calculations have been completed on worksheets, which have been **included** ☐, **not included** ☐, but will be made available upon request.

Effluent Distribution Design Detail

Septic Fields

This system will utilize; ☐ **Gravity Distribution,** ☐ **Pressure Distribution**

Number of laterals used with in this system **will be_____,** Length of each lateral within system **will be _____, Orifice size _____. Total Number of Orifices_____.**

Pipe and Gravel ☐, Chambers ☐, Chamber Width ☐36 in. ☐ 24 in.

Pressure distribution piping will be elevated at least 4 inches above trench bottom.

Pressurized Septic Treatment Mounds

Number of laterals used with in this system **will be:_____,** Length of each lateral within the system **will be:_____, Orifice Size:_____, Total # of Orifices:_____**

☐Pipe and Gravel, or ☐Chambers, Chamber Width ☐ 36 in. ☐ 24 in.

Width Of Sand Layer _____ feet. Length of Sand layer _____feet.

Base infiltration area _____sq. ft. Area of Sand layer _____feet.

Pressurized At-Grade Dispersal System

Number of laterals used with in this system **will be_____ft.,** Length of each lateral with in the system **will be_____ft. Orifice size_____, Total # of Orifices is_____**

Chambers will be utilized in this type of system. **Chamber width ☐36 in. ☐24 in.**

Pressure distribution piping will be elevated at least 4 inches above ground surface within chambers.

Pump Selection:

Size of line from tank to treatment site will be _____**inches**.
Design Head Height at Orifice will be 5 feet or more and adjusted to 5 feet.
Pump selected for this design will be a **Make:**_____
Model Number:_____. Delivering_____**Imp. gal/min. At** a pressure head of _____**ft. Dose volume selected for this system will be**_____**Gal./Dose.**

Operational Monitoring Components:

A detailed Operations and Maintenance (O&M) Manual will be provided to the owner/occupant upon completion of the installation and should be referenced for details on maintenance intervals and the procedure for such activities.

Monitoring Ports

Monitoring ports will be installed in each lateral of the soil treatment component to inspect the ponding depth of effluent on the soil infiltration area.

Lateral Cleanouts

Cleanouts have been installed at the end of each pressure distribution lateral to facilitate the flushing of laterals of any initial construction debris and any particulate matter that has entered the piping with the effluent. The laterals should be flushed to prevent the piping from clogging up with material.

Sampling Effluent Quality

Sampling to assess the performance of the septic tank/treatment plant to reduce such parameters as BOD, TSS, etc. can be accomplished through the manhole access to the effluent chamber.

Initial Operational Set-Up Parameters

The following activities should be conducted in order to commission this system and ensure the design requirements have been achieved:

- Clean the septic tank of any debris from system construction and flushed the laterals to ensure any debris that resulted from drilling orifices have been removed to prevent laterals from becoming clogged.
- Conduct a squirt test (with safety codes officer present, if possible) to assess that residual head pressure required by the design (5 feet) has been achieved by the pump selected.
- Confirm the float levels that deliver the expected dose volume are corrected by measuring volume at orifices and ensuring that volumes are even across the entire soil infiltration area.
- **Ensure that final inspection has been conducted by safety codes officer and rectify any deficiencies noted.**

Alberta Private Sewage Treatment System Soil Profile Log Form

Owner Name or Job ID.									
Legal Land Location								Test Pit GPS Coordinates	
LSD-1/4	Sec	Twp	Rg	Mer	Lot	Block	Plan	Easting	Northing

Vegetation notes:		Overall site slope %	
		Slope position of test pit:	

Test hole No.	Soil Subgroup	Parent Material	Drainage	Depth of Lab sample #1	Depth of Lab sample #2

Hori-zon	Depth (cm) (in)	Texture	Lab or HT	Colour	Gleying	Mottling	Structure	Grade	Consistence	Moisture	% Coarse Fragments

Depth to Groundwater		Limiting Soil Layer Characteristic, describe	
Depth to Seasonally Saturated Soil		Depth to Limiting Soil Layer	
Limiting Topography		Depth to Highly Permeable Layer	
Key Limiting Features on System Design			

Weather Condition notes:

Comments: such as root depth and abundance or other pertinent observations:

Alberta Private Sewage Treatment System Soil Profile Log Form

Owner Name or Job ID.									
Legal Land Location								Test Pit GPS Coordinates	
LSD-1/4	Sec	Twp	Rg	Mer	Lot	Block	Plan	Easting	Northing

Vegetation notes:		Overall site slope %	
		Slope position of test pit:	

Test hole No.	Soil Subgroup	Parent Material	Drainage	Depth of Lab sample #1	Depth of Lab sample #2

Hori-zon	Depth (cm) (in)	Texture	Lab or HT	Colour	Gleying	Mottling	Structure	Grade	Consistence	Moisture	% Coarse Fragments

Depth to Groundwater		Limiting Soil Layer Characteristic, describe	
Depth to Seasonally Saturated Soil		Depth to Limiting Soil Layer	
Limiting Topography		Depth to Highly Permeable Layer	
Key Limiting Features on System Design			
Weather Condition notes:			
Comments: such as root depth and abundance or other pertinent observations:			

Onsite Sewage System Site Evaluation Lot Diagram Sketch and Notes

Project Name: Lot or Legal Description: Date:

N

Show the proposed location of the onsite sewage system and the following items indicating their distances from the proposed system:

trees
floodplains
wells
water sources
surface water
bedrock outcrops
buildings
property lines
easement lines
ditches or interceptors
banks or steep slopes
fills
driveways
existing sewage systems
underground utilities
soil test pit and borehole locations

drainage course

slope direction

borehole BH 1

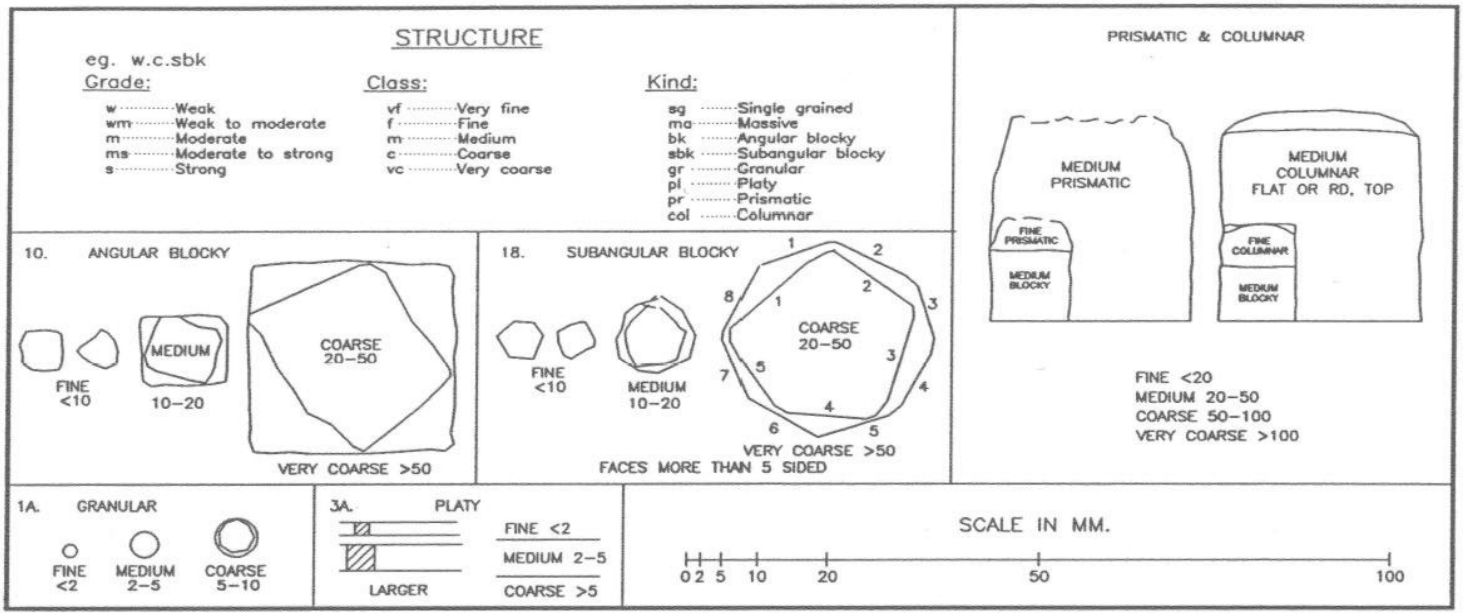
Test Pit P1

Comments:

Property line GPS coordinates:
GPS coordinates of well:
GPS coordinate of tank:
GPS coordinates of soil treatment component corners:

Additional information is required separately for the system design detail.

Figure 4: Diagrammatic representation of soil structure



SLOPE CLASSES OF LOCAL LANDFORMS

Slope Class	Percent Slope	Approximate Degrees	Description
1	0–0.5	0	level
2	0.5–2.5	0.3–1.5	nearly level
3	2–5	1–3	very gentle slopes
4	6–9	3.5–5	gentle slopes
5	10–15	6–8.5	moderate slopes
6	16–30	9–17	strong slopes
7	31–45	17–24	very strong slopes
8	46–70	25–35	extreme slopes
9	71–100	35–45	steep slopes
10	>100	>45	very steep slopes

SURFACE STONINESS

		Surface Area	Distance Apart (cm)
S0	non–stony	<0.01%	>30
S1	slightly stony	0.01–0.1%	10–30
S2	moderately stony	0.1–3%	2–10
S3	very stony	3–15%	1–2
S4	exceedingly stony	15–50%	0.1–5
S5	excessively stony	50%	0.1

SLOPE POSITION

c	– crest
u	– upper slope
m	– mid slope
l	– lower slope
t	– toe
d	– depression
l	– level

DRAINAGE

VR	- very rapidly
R	- rapidly
w	- well
M	- moderately well
I	- imperfectly
P	- poorly
VP	- very poorly

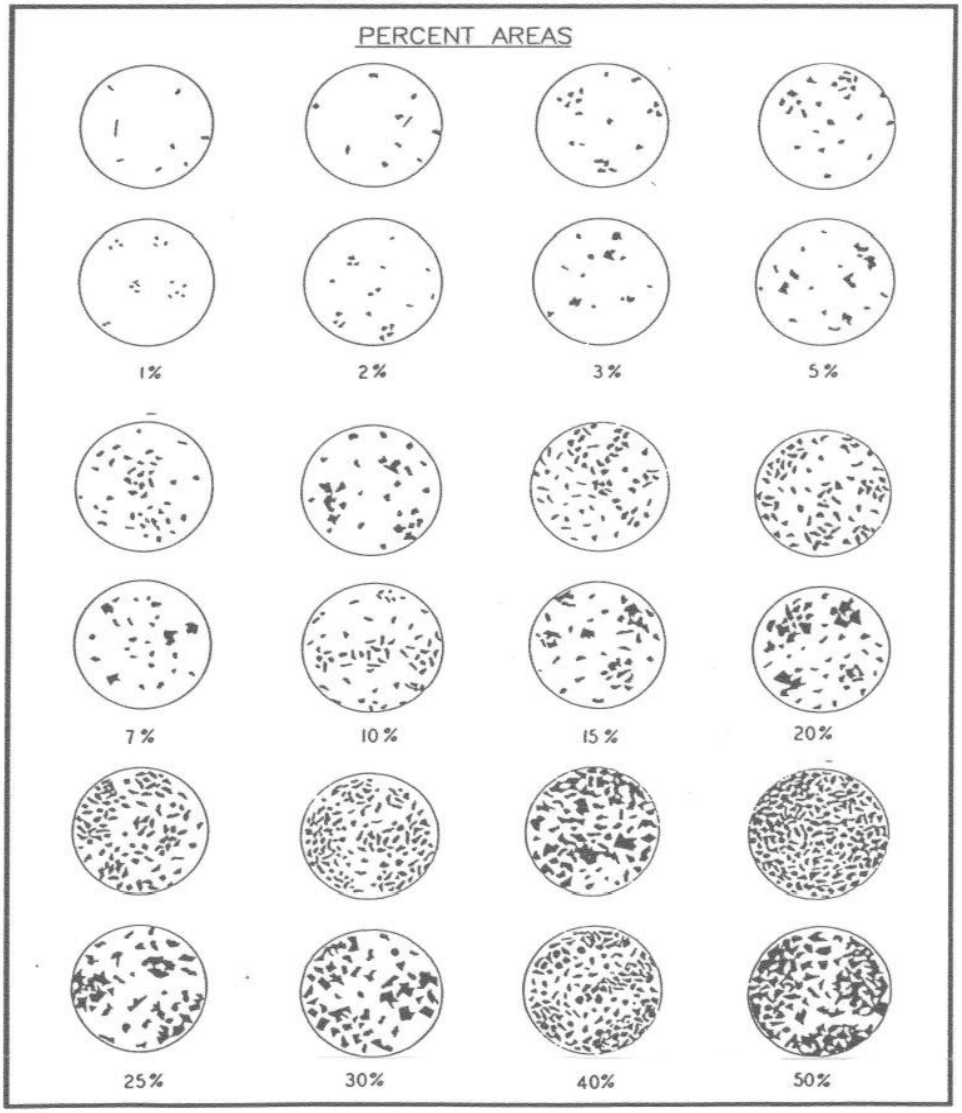


Table 10. Types, kinds and classes of soil structure.

Type	Kind (Kind Code)	Structure Class and Code	Size[1] (mm)
Blocklike - soil particles arranged around a point and bounded by flat or rounded surfaces **BK**	**Angular blocky (ABK)** peds bounded by flattened, rectangular faces intersecting at relatively sharp angles	**VF:** very fine angular blocky	<5
		F: fine angular blocky	5-10
		M: medium angular blocky	10-20
		C: coarse angular blocky	20-50
		VC: very coarse angular blocky	>50
	Subangular blocky (SBK): peds bounded by slightly rounded, subrectangular faces with vertices[2] of their intersections mostly subrounded	**VF:** very fine subangular blocky	<5
		F: fine subangular blocky	5-10
		M: medium subangular blocky	10-20
		C: coarse subangular blocky	20-50
		VC: very coarse subangular blocky	>50
	Granular (GR): spheroidal peds bounded by curved or very irregular faces that do not adjoin those of adjacent peds	**VF:** very fine granular	<1
		F: fine granular	1-2
		M: medium granular	2-5
		C: coarse granular	5-10
		VC: very coarse granular	>10
Platelike: soil particles arranged around a horizontal plane and generally bounded by relatively flat horizontal surfaces **PL**	**Platy (PL):** peds flat or platelike; horizontal planes more or less well developed	**VF:** very fine platy	<1
		F: fine platy	1-2
		M: medium platy	2-5
		C: coarse platy	5-10
		VC: very coarse platy	>10
Prismlike: soil particles arranged around a vertical axis and bounded by relatively flat vertical surfaces. **PR**	**Prismatic (PR):** vertical faces of peds well defined and vertices[2] angular (edges sharp); prism tops essentially flat	**VF:** very fine prismatic	<10
		F: fine prismatic	10-20
		M: medium prismatic	20-50
		C: coarse prismatic	50-100
		VC: very coarse prismatic	>100
	Columnar (COL): vertical edges near top of columns not sharp (vertices[2] subrounded); column tops flat, rounded, or irregular	**VF:** very fine columnar	<10
		F: fine columnar	10-20
		M: medium columnar	20-50
		C: coarse columnar	50-100
		VC: very coarse prismatic	>100
Structureless: no observable aggregation of primary particles or no definite orderly arrangement around natural lines of weakness **MA**	**Single grained (SGR):**	Loose, incoherent mass of individual primary particles, as in sands	
	Massive (MA):	amorphous; a coherent mass showing no evidence of any distinct arrangement of soil particles; separates into clusters of particles; not peds	

Cloddy (CDY): not a structure; used to indicate the condition of some ploughed surface, grade, class, and shape too varied to be described in standard terms.

[1] The size limits refer to measurements in the smallest dimension of platy, prismatic, and columnar peds and to the largest of the nearly equal dimensions of blocky and granular peds.

[2] Definition of vertex (plural, vertices): the intersection of two planes of a geometrical figure.

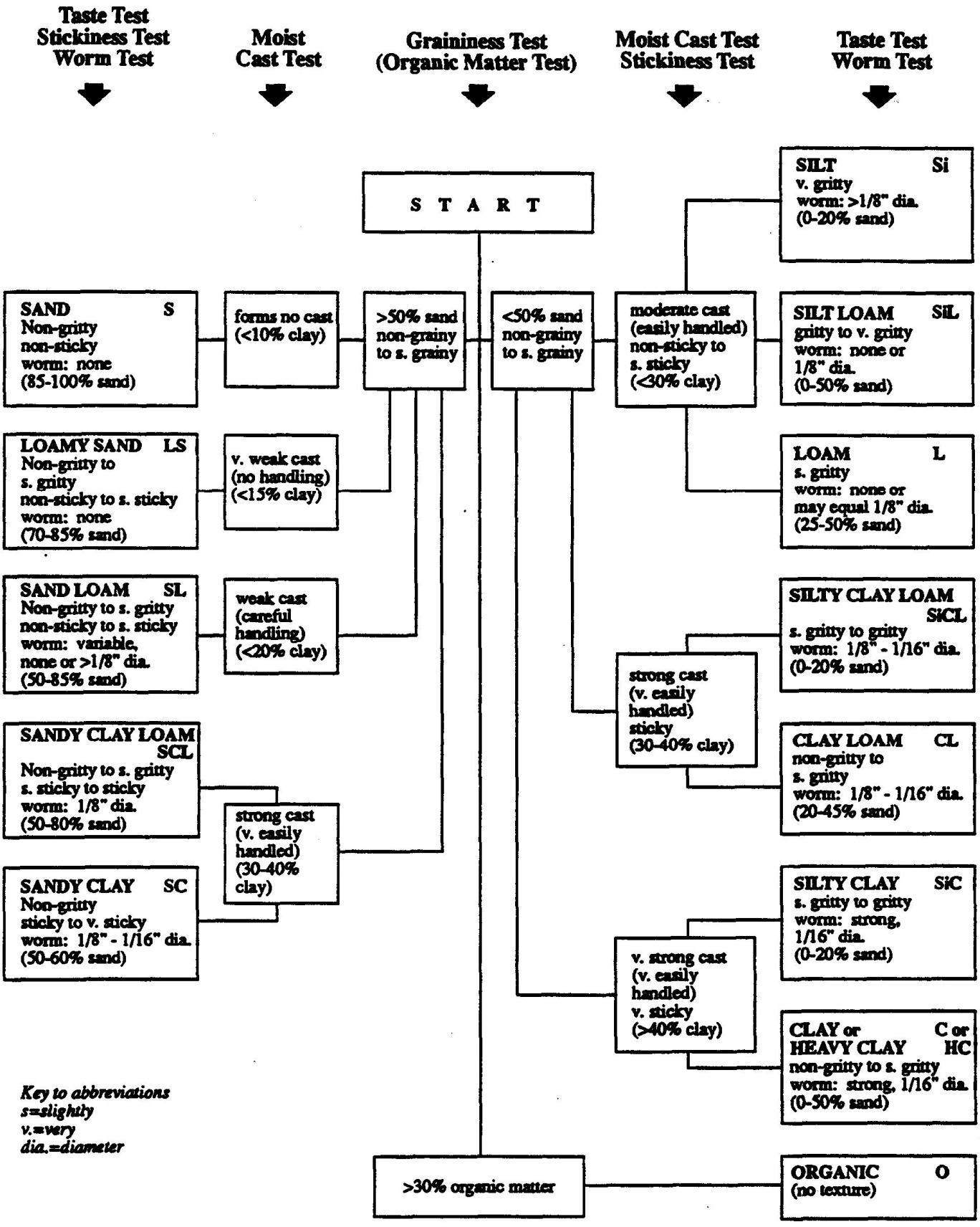
Consistence – moist soil	
• Loose:	No intact sample can be obtained.
• Friable:	Structure breaks down with slight force between the fingers.
• Firm:	Structure breaks down with moderate force between the fingers.
• Extremely firm:	Structure breaks down with moderate force between the hands or slight foot pressure.
• Rigid:	Structure breaks down only with foot pressure.

Structure Grade Descriptions

Code		Structure Grade Definition
0	**Massive /or single grained used to describe sands**	This describes a soil that has no developed structure. There is no aggregation of primary particles or no definite orderly arrangement around natural lines of weakness.
1	**Weak**	Peds are either indistinct and barely evident in place, or observable in place but incompletely separated from adjacent peds. When disturbed, the soil material separates into a mixture of only a few entire peds, many broken peds and much unaggregated material.
2	**Moderate**	Peds are moderately durable, and are evident but not distinct in the undisturbed soil. When disturbed, the soil material parts into a mixture of many well formed, entire peds, some broken peds, and little unaggregated material. The peds may be handled without breaking and they part from adjoining peds to reveal nearly entire surfaces which have properties distinct from those caused by fracturing.
3	**Strong**	Peds are durable and evident in the undisturbed soil, adhere weakly to one another, withstand displacement and separate cleanly when the soil is disturbed. When removed, the soil material separates mainly into entire peds. Surfaces of unbroken peds have distinctive properties, compared to surfaces that result from fracturing.

Mottling Descriptions

Parameter	Code	Description
Abundance	**Few**	<2% of the exposed surface
	Common	2-20% of the exposed surface
	Many	>20% of the exposed surface
Size	**Fine**	< 5 mm
	Medium	5-15 mm
	Coarse	>15 mm
Contrast	**Faint**	Evident only on close examination. Faint mottles commonly have the same hue as the colour to which they are compared and differ by no more than 1 unit of chroma or 2 units of value. Some faint mottles of similar but low chroma and value can differ by 2.5 units of hue.
	Distinct	Readily seen, but contrast only moderately with the colour to which they are compared. Distinct mottles commonly have the same hue as the colour to which they are compared, but differ by 2 to 4 units of chroma or 3 to 4 units of value; or differ from the colour to which they are compared by 2.5 units of hue but by no ore than 1 unit of chroma or 2 units of value.
	Prominent	Contrast strongly with the colour to which they are compared. Prominent mottles are commonly the most obvious colour feature in a soil. Prominent mottles that have medium chroma and value commonly differ from the colour to which they are compared by at least 5 units of hue if chroma and value are the same; or at least 1 unit of chroma or 2 units of value if hue differs by 2.5 units.


Taste Test
Stickiness Test
Worm Test
Moist
Cast Test
Graininess Test
(Organic Matter Test)
Moist Cast Test
Stickiness Test
Taste Test
Worm Test
START
SAND S
Non-gritty
non-sticky
worm: none
(85-100% sand)
LOAMY SAND LS
Non-gritty to
s. gritty
non-sticky to s. sticky
worm: none
(70-85% sand)
SAND LOAM SL
Non-gritty to s. gritty
non-sticky to s. sticky
worm: variable,
none or >1/8" dia.
(50-85% sand)
SANDY CLAY LOAM
SCL
Non-gritty to s. gritty
s. sticky to sticky
worm: 1/8" dia.
(50-80% sand)
SANDY CLAY SC
Non-gritty
sticky to v. sticky
worm: 1/8" - 1/16" dia.
(50-60% sand)
forms no cast
(<10% clay)
v. weak cast
(no handling)
(<15% clay)
weak cast
(careful
handling)
(<20% clay)
strong cast
(v. easily
handled)
(30-40%
clay)
>50% sand
non-grainy
to s. grainy
<50% sand
non-grainy
to s. grainy
>30% organic matter
moderate cast
(easily handled)
non-sticky to
s. sticky
(<30% clay)
strong cast
(v. easily
handled)
sticky
(30-40% clay)
v. strong cast
(v. easily
handled)
v. sticky
(>40% clay)
SILT Si
v. gritty
worm: >1/8" dia.
(0-20% sand)
SILT LOAM SiL
gritty to v. gritty
worm: none or
1/8" dia.
(0-50% sand)
LOAM L
s. gritty
worm: none or
may equal 1/8" dia.
(25-50% sand)
SILTY CLAY LOAM
SiCL
s. gritty to gritty
worm: 1/8" - 1/16" dia.
(0-20% sand)
CLAY LOAM CL
non-gritty to
s. gritty
worm: 1/8" - 1/16" dia.
(20-45% sand)
SILTY CLAY SiC
s. gritty to gritty
worm: strong,
1/16" dia.
(0-20% sand)
CLAY or C or
HEAVY CLAY HC
non-gritty to s. gritty
worm: strong, 1/16" dia.
(0-50% sand)
ORGANIC O
(no texture)
Key to abbreviations
s=slightly
v.=very
dia.=diameter

SYSTEM DRAWING

- ✓ **Complete drawing of proposed system, layout of laterals, position and location of tank etc.**

Comments:

_____

_____

_____

_____

_____

_____

_____

_____