



CITY OF
FORT SASKATCHEWAN

PRIVATE SEWAGE DISPOSAL SYSTEM PERMIT APPLICATION

Planning & Development, 10005 102 Street
Fort Saskatchewan, AB T8L 2C5
780.992.6198 fortplanning@fortsask.ca

Inspections: 780.992.6207

OFFICE USE ONLY

Application Number: PR _____
Building Permit: _____ ☐ N/A
Lot: _____ Block: _____ Plan: _____ Tax Roll: _____

Permit Number: PS- _____

Please Print All Information Clearly - All Fields Required

Project Address

Street Address: _____

Applicant/Installer Information

Applicant Interest: ☐ Homeowner ☐ Certified Contractor
Applicant/Business Name: _____
Contractor Name: _____ Private Sewage ID #: _____
Address: _____ City: _____ Postal Code: _____
Phone: _____ Email: _____

Property Owner Information

Property Owner's Name: _____ Phone: _____
Address: _____ City: _____ Postal Code: _____
Email: _____

System Information

COST OF INSTALLATION: \$ _____

System Design Criteria:

☐ Residential No. of Bedrooms: _____ ☐ Other: _____
Depth of Water Table (if less than 3m from ground surface (m): _____
Expected daily volume of effluent (L): _____

First Private Sewage System Component:

☐ Septic Tank: Working Capacity (L): _____ ☐ Packaged Sewage Treatment Plant
☐ Sewage Lagoon: Storage surface area (ft²): _____
☐ Sand Filter Type: ☐ Coarse ☐ Medium Area: _____ m²

Effluent Treatment Components:

Sizing method: Percolation Test (Rate): _____ Soil classification (type: _____
Other (specify): _____

Sizing method test conducted by (name): _____

☐ Disposal Field: trench area(m²): _____ or ☐ Open discharge or ☐ Other: _____
☐ Treatment mound: sand bed area (m²): _____ base infiltrative area(m²): _____

Basic System Drawings: please attach a basic system drawing including location in relation to buildings, distance to water supply and/or surface water bodies and other pertinent information.

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

Signature: _____

Date: _____

OFFICE USE ONLY

Permit Fee: _____	Issued By: _____
SCC (\$4.50 or 4%): _____	Designation #: _____
TOTAL: _____	Date: _____
Paid By: Cash / Cheque / Visa / MC / Debit	Signature: _____

IMPORTANT INFORMATION

Compliance monitoring will be performed to assure compliance with the National Plumbing Code of Canada, applicable Alberta amendments and regulations and Alberta Private Sewage Systems Standard of Practice as follows:

<i>Private Sewage Disposal System</i>	<i>Homeowner or Contractor Permit</i>	<i>One (1) inspection during installation/or final (within 30 days of permit issuance)</i>
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Inspections may be conducted at a later date subject to documented extenuating circumstances, as determined by a Safety Codes Officer. Extenuating circumstances may include: inclement weather, unforeseeable construction delays, etc.

PERMIT TERM :

The term of the permit is one (1) year from date of issuance.

PERMIT EXPIRY:

The permit expires if the work to which it applies:

- *is not commenced within 90 days of the issue of the permit*
- *is suspended or abandoned for a period of 120 days*
- *is in respect to a seasonal residence is suspended or abandoned for a period of 240 days after the work is commenced.*
- *permit is expired (one year from date of issuance)*

PERMIT EXTENSION:

On receipt of a written application, a Safety Codes Officer, may in writing, extend a permit for a limited period of time, if the permit has 'not expired' when the application for extension is made (note expiry conditions above).

FEE REFUNDS:

Should a permit be cancelled, the holder of the permit must submit a written request to the City of Fort Saskatchewan. The City of Fort Saskatchewan will refund as follows:

- To the permit holder, if there has not been an inspection - holdback of 50% or \$60.00, whichever is greater. No refund of the Safety Codes Fee.*
- To the permit holder, if an inspection has been held - no refund.*

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 of this 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 were 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	
Horizon	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:												

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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	
Horizon	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:

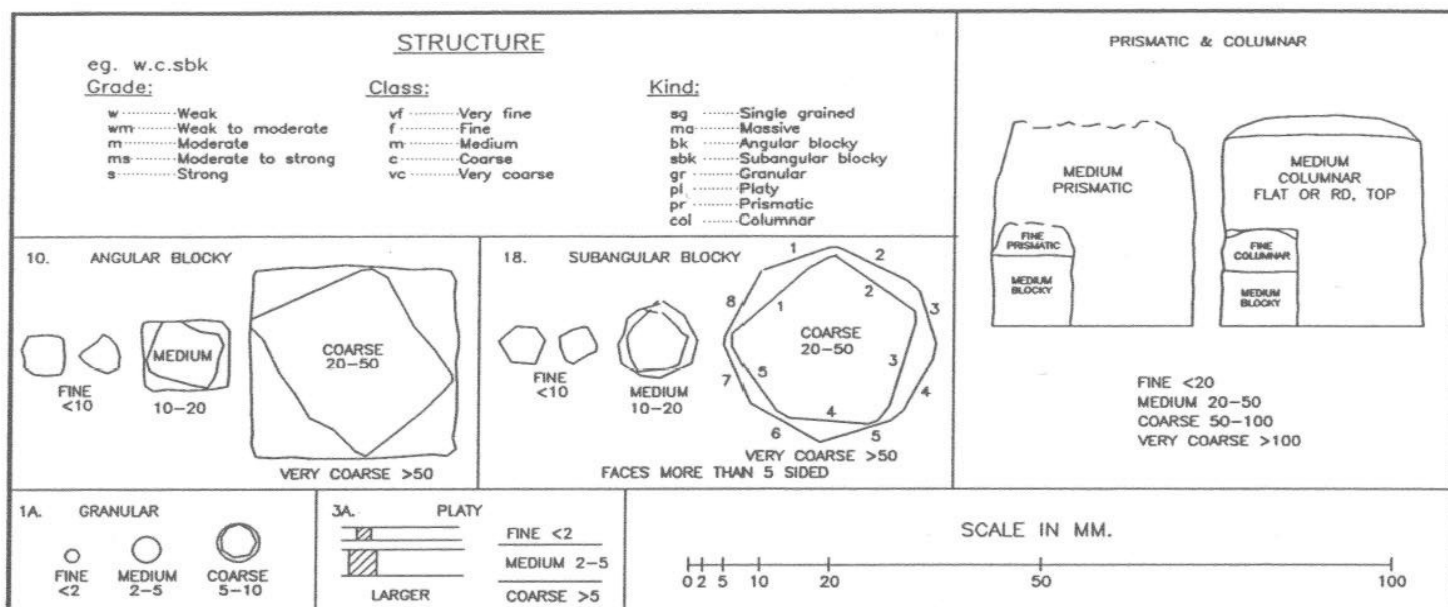
GPS coordinates of well:

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

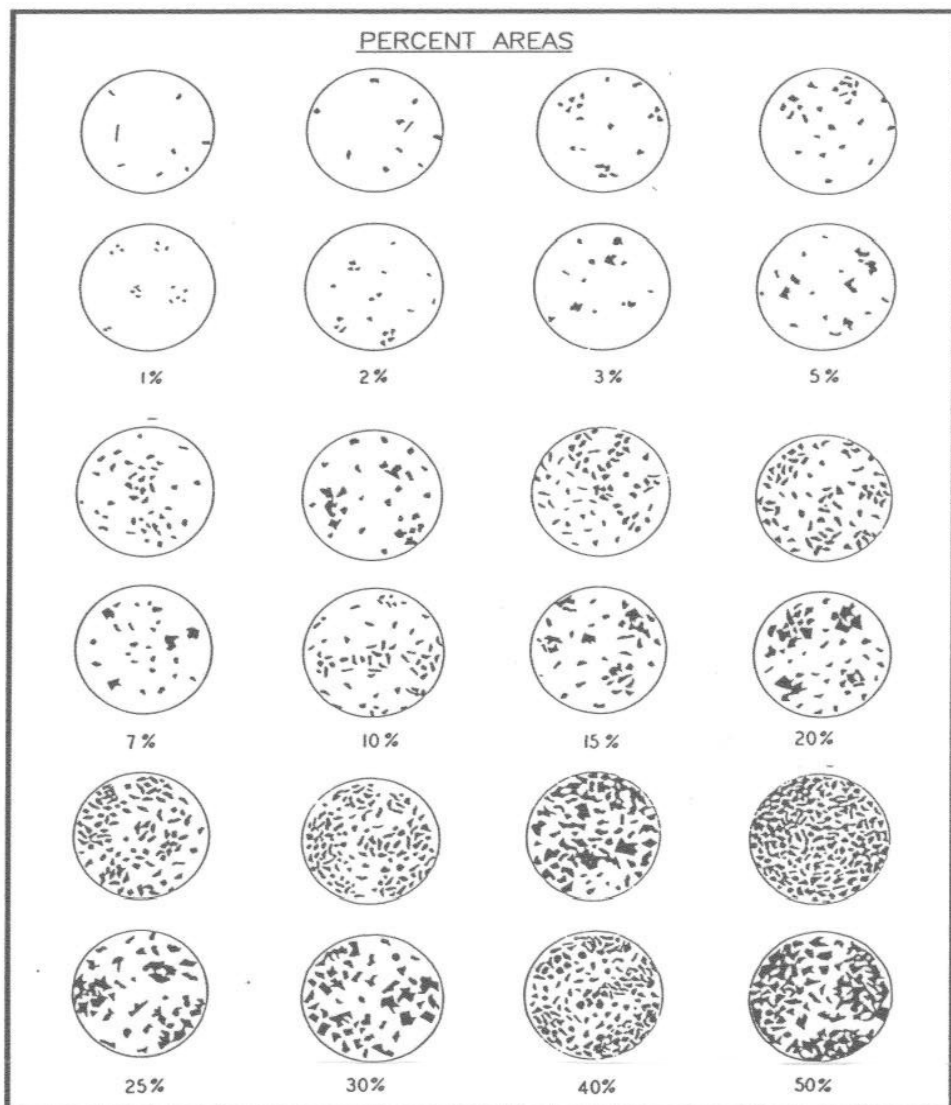


Table 10. Types, kinds and classes of soil structure.

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 F: fine angular blocky M: medium angular blocky C: coarse angular blocky VC: very coarse angular blocky	<5 5-10 10-20 20-50 >50
	Subangular blocky (SBK): peds bounded by slightly rounded, subrectangular faces with vertices ² of their intersections mostly subrounded	VF: very fine subangular blocky F: fine subangular blocky M: medium subangular blocky C: coarse subangular blocky VC: very coarse subangular blocky	<5 5-10 10-20 20-50 >50
	Granular (GR): spheroidal peds bounded by curved or very irregular faces that do not adjoin those of adjacent peds	VF: very fine granular F: fine granular M: medium granular C: coarse granular VC: very coarse granular	<1 1-2 2-5 5-10 >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 F: fine platy M: medium platy C: coarse platy VC: very coarse platy	<1 1-2 2-5 5-10 >10
	Prismatic (PR): vertical faces of peds well defined and vertices ² angular (edges sharp); prism tops essentially flat	VF: very fine prismatic F: fine prismatic M: medium prismatic C: coarse prismatic VC: very coarse prismatic	<10 10-20 20-50 50-100 >100
	Columnar (COL): vertical edges near top of columns not sharp (vertices ² subrounded); column tops flat, rounded, or irregular	VF: very fine columnar F: fine columnar M: medium columnar C: coarse columnar VC: very coarse prismatic	<10 10-20 20-50 50-100 >100
Structureless: no observable aggregation of primary particles or no definite orderly arrangement around natural lines of weakness MA	Single grained (SGR): Massive (MA):	Loose, incoherent mass of individual primary particles, as in sands 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.

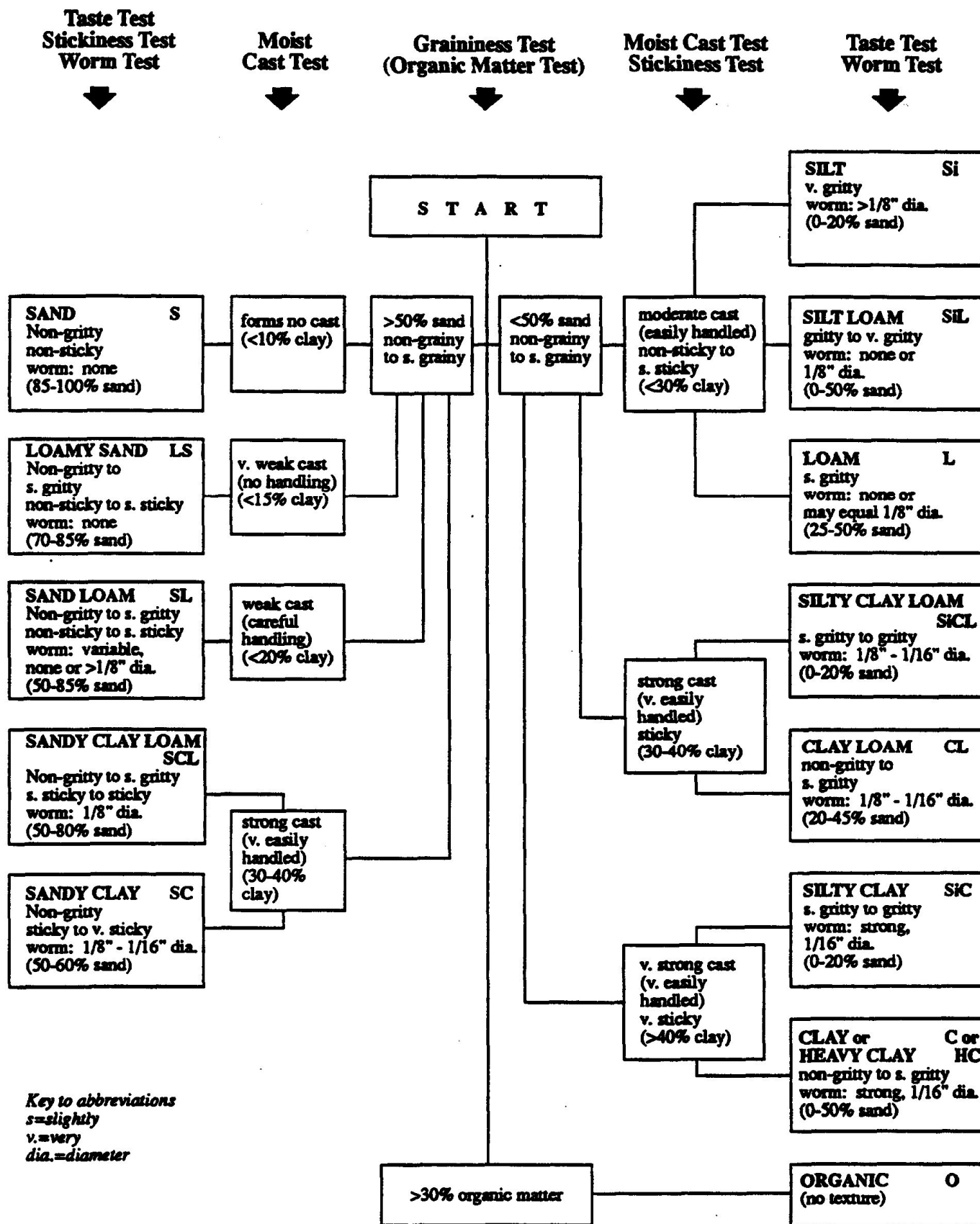
Consistence – moist soil	
• Loose:	No intact sample can be obtained.
• Friable:	Structure breaks down with slight force between the fingers.
• Firm:	Structure breaks down with moderate force between the fingers.
• Extremely firm:	Structure breaks down with moderate force between the hands or slight foot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



SYSTEM DRAWING

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



Comments:
