Description of Soil Compactness or Consistency

SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF PENETRATION RESISTANCE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH
Coarse grained soils (More than half of material is larger than No. 200 sieve size.)	Very loose Loose Medium compact Compact Very compact	Less than 4 blows per ft. 4 to 10 10 to 30 30 to 50 Greater than 50	Not applicable
Fine grained soils (More than half of material is smaller than No. 200 sieve size.)	Very soft Soft Medium stiff Stiff Very stiff Hard	Not applicable	Less than 0.25 tsf 0.25 to 0.50 0.50 to 1.0 1.0 to 2.0 2.0 to 4.0 Greater than 4.0

Unified Soil Classifications

MAJOR DIVISION		SYMBOL		NAME
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW		Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP		Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GM		Silty gravels, gravel-sand-silt mixtures.
		GC		Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW		Well graded sands or gravelly sands, little or no fines.
		SP		Poorly graded sands or gravelly sands, little or no fines.
		SM		Silty sands, sand-silt mixtures.
		SC		Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS LL IS LESS THAN 50	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays silty clays, lean clays.
	SILTS AND CLAYS LL IS GREATER THAN 50	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH		Inorganic clays of high plasticity, fat clays.
UNCLASSIFIED MATERIAL		NONE		Non-classified material (i.e. overburden, pavement, slag, etc.) include visual description.

AI	Activity Index
LI	Liquidity Index
N	Penetration Resistance
S+C(%)	Material finer than No. 200 sieve
○	Rockline Soundings
⊕	Disturbed Sample Boring
◎	Undisturbed Sample Boring
◎	Undisturbed Sample Boring & Rock Core
○	Rock Core
☼	Slope Inclinometer Installation
	typical applications: ☼ ⊕ ◎ ◎ ☼
▱→	Approximate Footing Elevation
OW	
⧖	7-Day (or greater) Water Table & Date
□	Thin-walled Tube Sample
<	Standard Penetration Test Sample
UU (psi)	Unconsolidated, Undrained Triaxial Test
Qu (psi)	Unconfined Compressive Strength
w (%)	Moisture Content
RQD (%)	Rock Quality Designation
SDI (JS)	Slake Durability Index (Jar Slake Test)
Rec. (%)	Core Recovery
Ø	Angle of Internal Friction
$\bar{Ø}$	Effective Angle of Internal Friction
c (psi)	Cohesion
$\bar{c}$ (psi)	Effective Cohesion
γ	Total Unit Weight
RDZ	Rock Disintegration Zone
OB	Overburden Bench
IB	Intermediate Bench
R	Refusal
NR	Refusal Not Encountered
VS (psi)	Field Vane Shear Strength

LIMESTONE

SANDSTONE

COAL

NONDURABLE SHALE (SDI < 90)

DURABLE SHALE (SDI ≥ 90)

TALUS OR MINE WASTE OR FILL MATERIAL

ROADWAY FILL-GRANULAR EMBANKMENT

STRUCTURE GRANULAR BACKFILL

SLOPE PROTECTION

Relation of RQD and in situ Rock Quality

RDQ (%)	Rock Quality
90 - 100	Excellent
75 - 90	Good
50 - 75	Fair
25 - 50	Poor
0 - 25	Very Poor

KENTUCKY DEPARTMENT OF HIGHWAYS

GEOTECHNICAL LEGEND

STANDARD DRAWING NO. BGX-012-02

SUBMITTED _____ DIRECTOR DIVISION OF BRIDGE DESIGN 12-01-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-01-99 DATE