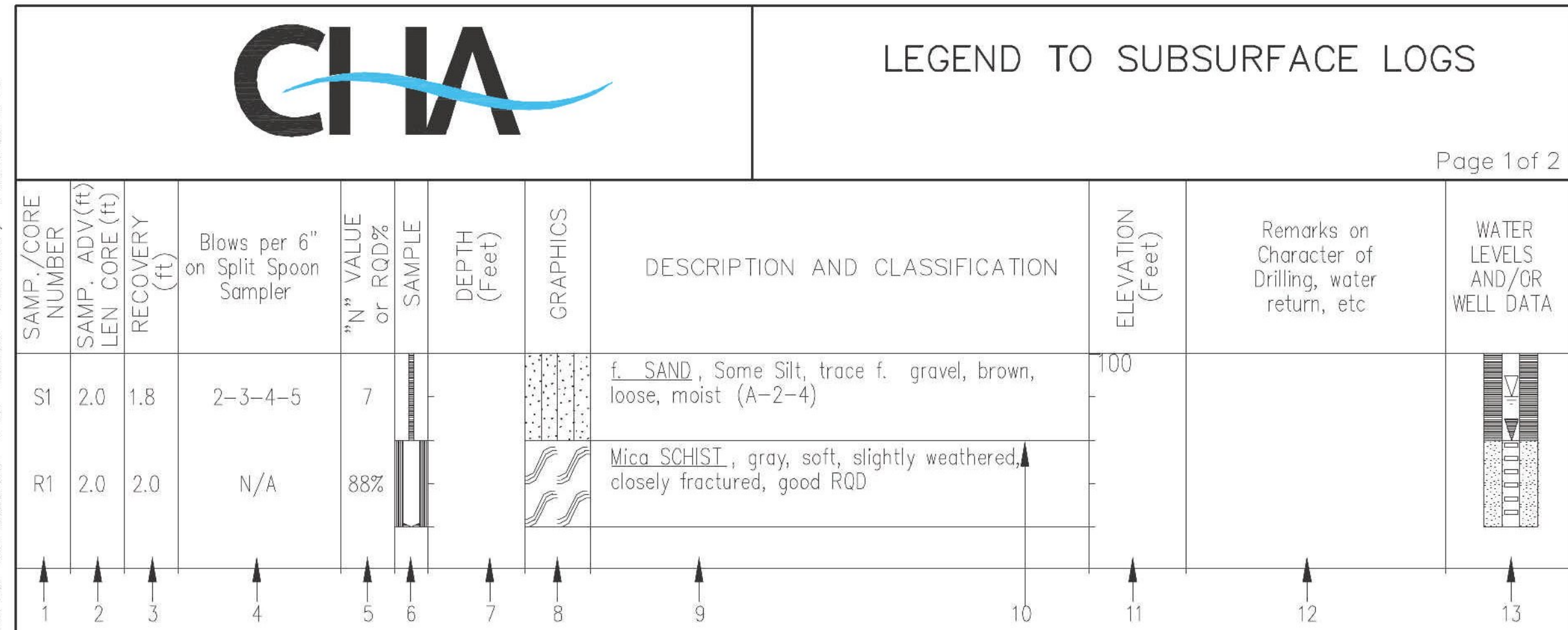
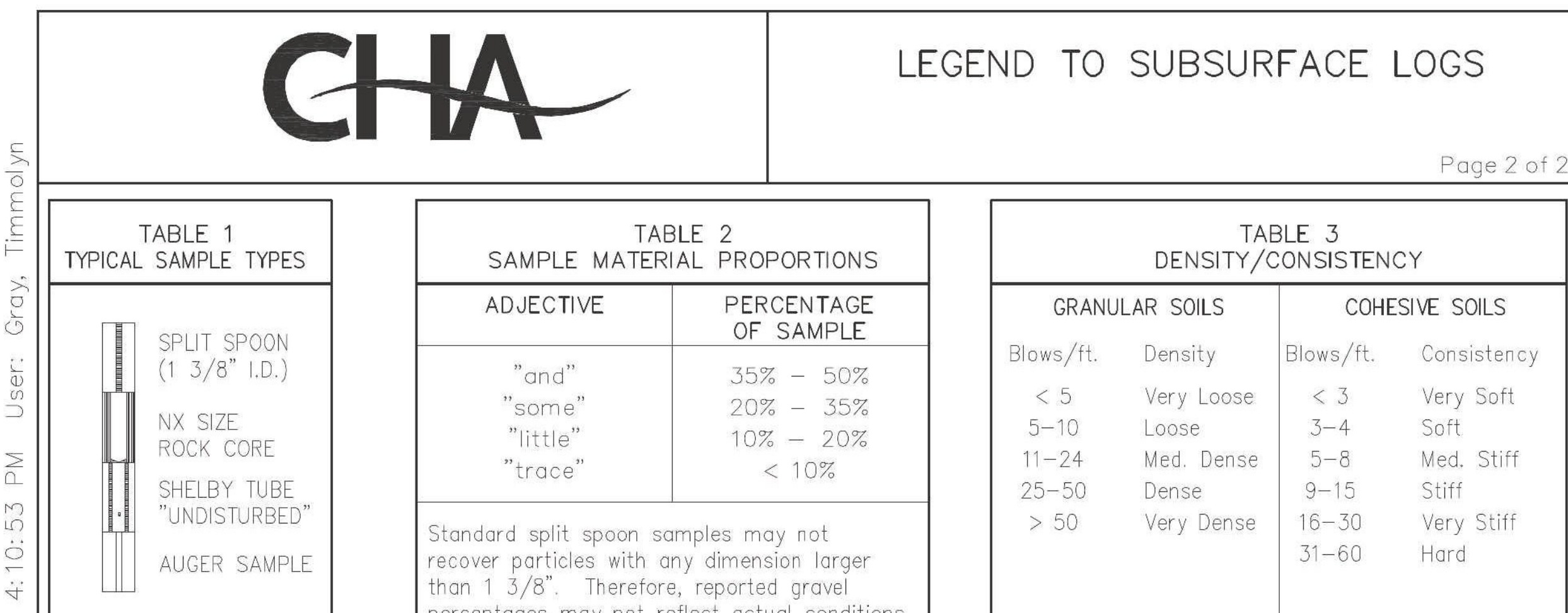


File: O:_GEOPUBLIC\LOG LEGENDS\AASHTO\LL1-ENG-AASHTO.DWG Saved: 9/27/2012 3:02:46 PM Plotted: 9/27/2012 3:03:02 PM User: GRAY, TIMMOLYN



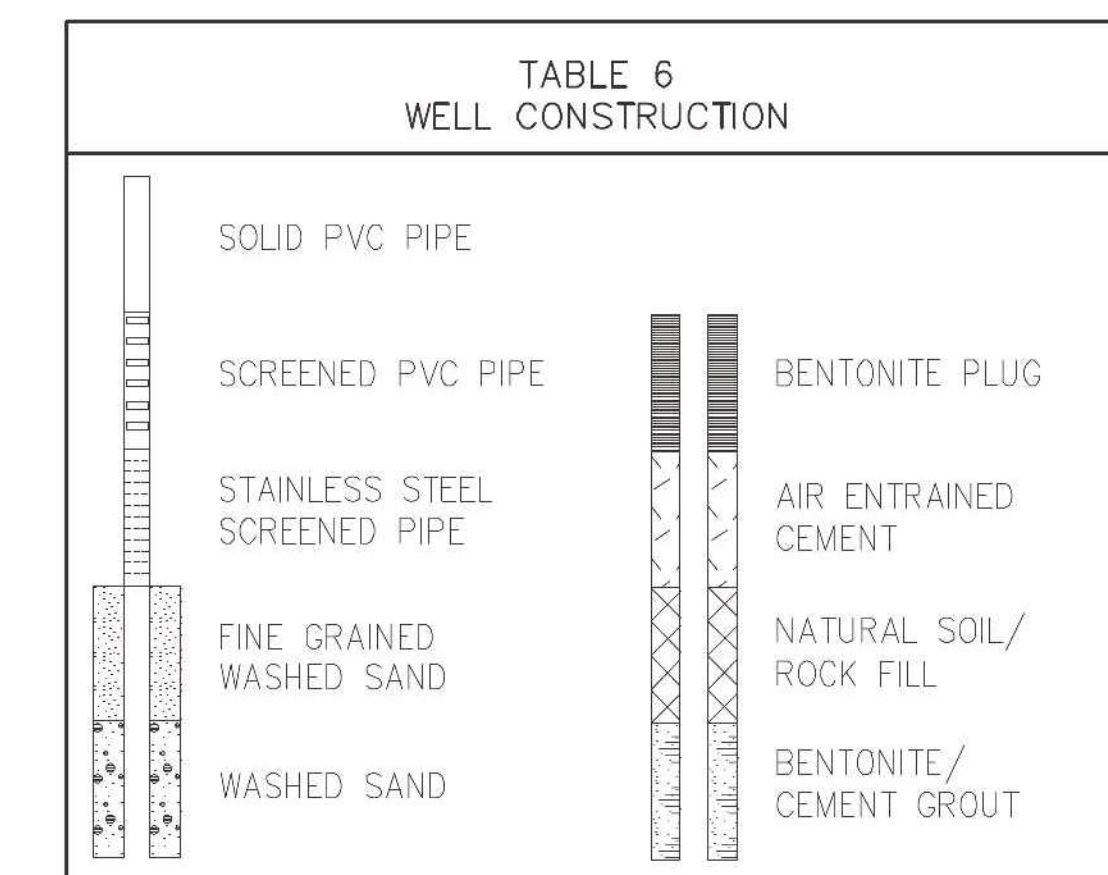
Subsurface Logs present material classifications, test data, and observations from subsurface investigations at the subject site as reported by the inspecting geologist or engineer. In some cases, the classifications may be made based on laboratory test data when available. It should be noted that the investigation procedures only recover a small portion of the subsurface materials at the site. Therefore, actual conditions between borings and sampled intervals may differ from those presented on the Subsurface Logs. The information presented on the logs provide a basis for an evaluation of the subsurface conditions and may indicate the need for additional exploration. Any evaluation of the conditions reported on the logs must be performed by Professional Engineers or Geologists.

- SAMP./CORE NUMBER** - Samples are numbered for identification on containers, laboratory reports or in text reports.
- SAMP.ADV./LEN.CORE** - Length of sampler advance or length of coring run measured in feet.
- RECOVERY** - Amount of sample actually recovered after withdrawing sampler or core barrel from bore hole measured in feet.
- SAMPLE BLOWS/6"** - Unless otherwise noted, blow counts represent values obtained by driving a 2.0" (O.D.), 1-3/8" (I.D.) split spoon sampler into the subsurface strata with a 140 pound weight falling 30" as per AASHTO T 206. After an initial penetration of 6" to seat the sampler into undisturbed material, the sampler is then driven an additional 2 or 3 six inch increments. Refusal is defined as a resistance greater than 50 blows per 6" of penetration.
- "N" Value or RQD** - "N" VALUE - The sum of the second and third sample blow increments is generally termed the Standard Penetration Test (SPT) "N" value. Refusal (R) is defined as a resistance greater than 50 blows for 6 inches of penetration. CORE RQD - Core Rock Quality Designation, RQD, is defined as the summed length of all pieces of core equal to or longer than 4 inches divided by the total length of the coring run. Fresh, irregular breaks distinguishable as being caused by drilling or recovery operations are ignored and the pieces are counted as intact lengths. RQD values are valid only for cores obtained with NX size core barrels.
- SAMPLE** - Graphical presentation of sample type and advance or core run length. See Table 1.
- DEPTH** - Depth as measured from the ground surface in feet.
- GRAPHICS** - Graphical presentation of subsurface materials. See Table 4. Dual soil classification and rock graphics may vary and are not shown on Table 4.
- DESCRIPTION AND CLASSIFICATION** - SOIL - Recovered samples are visually classified in the field by the supervising geologist or engineer unless otherwise noted. Particle size and plasticity classification is based on field observations, and using the AASHTO soil classification system. See Table 4. AASHTO symbols are presented in parentheses following the soil description. Where necessary, dual symbols may be used for combinations of soil types. Relative proportions, by weight and/or plasticity, are described in general accordance with "Suggested Methods of Test for Identification of Soils" by D.M. Burmister, ASTM Special Publication 479, 6-1970. See Table 2. Soil density or consistency description is based on the penetration resistance. See Table 3. Soil moisture description is based on the observed wetness of the soil recovered being dry, moist, wet, or saturated. Water introduced into the boring during drilling may affect the moisture content of the materials. Other geologic terms may also be used to further describe the subsurface materials. ROCK - Rock core descriptions are based on the inspector's observations and may be examined and described in greater detail by the project engineer or geologist. Terms used in the description of rock core are presented in Table 5.
- DIVISION LINES** - Division lines between deposits are based on field observations and changes in recovered material. Solid lines depict contacts between two deposits of different geologic depositional environment of known elevation. Dashed lines represent estimated elevation of contacts between two deposits of different geologic depositional environment. Dotted lines depict transitions of deposits within the same depositional environment, such as grain size or density.
- ELEVATION** - Elevation of strata changes in feet.
- REMARKS** - Miscellaneous observations.
- WATER LEVELS & WELL DATA** - Hollow water level symbol, if present, represents level at which first saturated sample or water level was encountered. Solid water level symbol, if present, depicts the most probable static water elevation at the time of drilling or as measured in an installed observation well at a later date. Subsurface water conditions are influenced by factors such as precipitation, stratigraphic composition, and drilling/coring methods. Conditions at other times may differ from those described on the logs. For graphical presentation of observation/monitoring well construction, see Table 6. Elevations of changes in construction are noted at the bottom of each section.



MAJOR PARTICLE SIZE DIVISION	AASHTO SYMBOL	GRAPHIC SYMBOL	GENERAL DESCRIPTION
GRAVEL Coarse: 3"-3/4" Fine: 3/4"-#10 Classification based on > 50% being gravel	A-1-a		Well graded gravels, gravel & sand mix.
	A-1-b		Poorly graded gravels, gravel & sand mix.
	A-2-4		Sand and silt mix.
	A-2-5		Sand and silt mix.
	A-2-6		Sand and clay mix.
	A-2-7		Sand and clay mix.
	A-3		Sand and gravel mix.
SILT & CLAY Classification based on > 50% passing #200 sieve.	A-4		Inorganic silt, low plasticity.
	A-5		Inorganic silt, high plasticity.
	A-6		Inorganic clay, low plasticity.
	A-7-5		Inorganic clay, moderate plasticity.
ORGANIC SOILS	A-8		Peat and other highly organic soils.
	Fill		Miscellaneous fill materials.

HARDNESS:		
Very Soft	Carves	
Soft	Groves with knife	
Med. Hard	Scatched easily with knife	
Hard	Scatched with difficulty	
Very Hard	Cannot be scratched with knife	
WEATHERING:		
Fresh	Slight or no staining of fractures, little or no discoloration, few fractures.	
Slightly	Fractures stained, discoloration may extend into rock 1", some soil in fractures.	
Moderately	Significant portions of rock stained and discolored, soil in fractures, loss of strength.	
Highly	Entire rock discolored and dull except quartz grains, severe loss of strength.	
Complete	Weathered to a residual soil.	
BEDDING:		
Massive	> 40"	Excellent
Thick	12' - 40"	Good
Medium	4" - 12"	Fair
Thin	< 4"	Poor
FRACTURE SPACING:		
Massive/V. Wide	> 6'	Excellent
Thick/Wide	2' - 6'	Good
Med./Med.	8" - 24"	Fair
Thin/Close	2 1/2" - 8"	Poor
V. Thin/V. Close	< 2 1/2"	V. Poor
RQD:		
> 90%	Excellent	
76% - 90%	Good	
51% - 75%	Fair	
25% - 50%	Poor	
< 25%	V. Poor	



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PROJECT NAME: SEARSBURG
 PROJECT NUMBER: STP SCRP(7)
 FILE NAME: dl0ci98_forms.dgn
 PROJECT LEADER: K. UPMAL
 DESIGNED BY: B. MCADAMS
 BORING LOG LEGEND
 PLOT DATE: 27-FEB-2013
 DRAWN BY: B. MCADAMS
 CHECKED BY: A. KEMPTON
 SHEET 15 OF 35