



REV. 8/11/98

| SOIL LEGEND AND AASHTO CLASSIFICATION | | | | CONSISTENCY OR DENSENESS | | | |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GENERAL CLASS. | GRANULAR MATERIALS (≤ 35% PASSING #200) | SILT-CLAY MATERIALS (> 35% PASSING #200) | ORGANIC MATERIALS | PRIMARY SOIL TYPE | COMPACTNESS OR CONSISTENCY | RANGE OF STANDARD PENETRATION RESISTANCE (N - VALUE) | RANGE OF UNCONFINED COMPRESSIVE STRENGTH (qu) (kN / m ²) |
| GROUP CLASS. | A-1 A-3 A-2 | A-4 A-5 A-6 A-7 | A-1-A-2 A-4-A-5 A-6-A-7 | GENERALLY GRANULAR MATERIAL | VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE | < 4 4 TO 10 10 TO 30 30 TO 50 > 50 | N/A |
| SYMBOL | | | | GENERALLY SILT-CLAY MATERIAL | VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD | < 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30 | < 25 25 TO 50 50 TO 100 100 TO 200 200 TO 400 > 400 |
| % PASSING | #10 50 MX #40 30 MX 50 MX 51 MN #200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN | LL PI | SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER | GROUND WATER | | | |
| GROUP INDEX | 0 0 4 MX 8 MX 12 MX 16 MX NO MX | USUAL TYPES OF MAJOR MATERIALS | HIGHLY ORGANIC SOILS | ▽ WATER LEVEL IN BORE HOLE [IMMEDIATELY AFTER DRILLING (I.A.D.) SOON AFTER DRILLING (S.A.D.)] (0 HRS.) ▽ STATIC WATER LEVEL (AFTER 24 OR 48 HRS.) ▽ PERCHED WATER (PW), SATURATED ZONE, OR WATER BEARING STRATA ◀ SPRING OR SEEPAGE | | | |
| TEXTURE OR GRAIN SIZE | | | | MISCELLANEOUS SYMBOLS AND ABBREVIATIONS | | | |
| BOULDER | COBBLE | GRAVEL | COARSE SAND | FINE SAND | SILT | CLAY | L ROADWAY EMBANKMENT WITH SOIL DESCRIPTION X ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS 25° STRIKE AND DIP APPARENT DIP (NORMAL TO...) ROD SOUNDING |
| GRAIN (mm) | 305 | 75 | 2 | 0.25 | 0.075 | 0.0075 | SPT TEST BORING AUGER BORING CORE BORING PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE MONITORING WELL |
| SIZE (IN) | 12 | 3 | | | | | |
| SOIL MOISTURE - CORRELATION OF TERMS | | | | ABBREVIATIONS | | | |
| SOIL MOISTURE SCALE (ATTERBERG LIMITS) | FIELD MOISTURE DESCRIPTION | GUIDE FOR FIELD MOISTURE DESCRIPTION | | ALLUV. | ALLUVIUM | MUD ROT | MUD ROTARY BLOWS/30 cm |
| LL LIQUID LIMIT (SAT.) | -SATURATED- | USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE | | AR | AUGER REFUSAL | NGWE | NO GROUNDWATER ENCOUNTERED |
| PLASTIC RANGE (PI) PL PLASTIC LIMIT | -WET- (W) | SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE | | BIAD | BACKFILLED IMMEDIATELY AFTER DRILLING | NM | NOT MEASURED |
| OM OPTIMUM MOISTURE | -MOIST- (M) | SOLID; AT OR NEAR OPTIMUM MOISTURE | | BDR. | BOULDER | NP | NOT PLASTIC |
| SL SHRINKAGE LIMIT | -DRY- (D) | REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE | | BT | BORING TERMINATION | NS | NO SAMPLE TAKEN |
| | | | | BLDR. | BOULDER | NT | NOT TESTED |
| | | | | CL. | CLAY | ORG. | ORGANIC |
| | | | | CLY. | CLAYEY | PP | POCKET PENETROMETER |
| | | | | COB. | COBBLE | R/C | ROLLER CONE |
| | | | | CSE. | COARSE | REF. | REFER TO |
| | | | | CT | CORING TERMINATION | RES. | RESIDUAL |
| | | | | DPT | DYNAMIC PENETRATION TEST | S. | SOFT |
| | | | | EST. | ESTIMATED | SAT. | SATURATED |
| | | | | EL. | ELEVATION | SD. | SAND |
| | | | | ELEV. | ELEVATION | SDY. | SANDY |
| | | | | F. | FINE | SED(S). | SEDIMENT(S) |
| | | | | FOSS. | FOSSILIFEROUS | SICB | SPLIT INNER CORE BARREL |
| | | | | FRAC. | FRACTURED | SL. | SILT, SILTY |
| | | | | FRAG(S). | FRAGMENT(S) | SLI. | SLIGHTLY |
| | | | | GR. | GRAVEL | SPT | STANDARD PENETRATION TEST |
| | | | | GS | SPECIFIC GRAVITY | T.D. | TOTAL DEPTH |
| | | | | GW | GROUND WATER | TS. | TOPSOIL |
| | | | | HSA | HOLLOW STEM AUGER | VST | VANE SHEAR TEST |
| | | | | MED. | MEDIUM | V. | VERY |
| | | | | MIC. | MICACEOUS | W/ | WITH |
| | | | | MOT. | MOTTLED | | |

LEGEND SUPPLEMENT

In addition to the terms and abbreviations listed on the Legend Sheet, the following will be used to further describe rock quality on this project. Because of limited space on the logs, abbreviations are in parenthesis.

WEATHERING

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|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fresh | Rock fresh, crystals bright, few joints may show slight staining. Rock rings under hammer in crystalline. |
| Very Slight (V. SLI.) | Rock generally fresh, joints stained, some joints may show thin clay coatings if open, crystals on a broken specimen face shine brightly. Rock rings under hammer blows if of a crystalline nature. |
| Slight (SLI.) | Rock generally fresh, joints stained and discoloration extends into rock up to 0.025 m (1 in.). Open joints may contain clay. In granitoid rocks some occasional feldspar crystals are dull and discolored. |
| Moderate (MOD.) | Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored, some show clay. Rock has dull sound under hammer blows and show significant loss of strength as compared with fresh rock. |
| Moderately Severe (MOD. SEV.) | All rock except quartz discolored or stained. In granitoid rocks, all feldspars dull and discolored and a majority show kaolinization. Rock shows severe loss of strength & can be excavated with geologist's pick. Rock gives "clunk" sound when struck. <u>Comparable to hard weathered rock.</u> |
| Severe (SEV.) | All rocks except quartz discolored or stained. Rock "fabric" clear and evident but reduced in strength to strong soil. In granitoid rocks all feldspars are kaolinized to some extent. Some fragments of strong rock usually remain. <u>Comparable to soft weathered rock.</u> |
| Very Severe (V. SEV.) | All rock except quartz discolored or stained. Rock fabric elements are discernible but the mass is effectively reduced to soil status, with only fragments of strong rock remaining. Saprolite is an example of rock weathered to a degree such that only minor vestiges of the original rock fabric remain. <u>Comparable to soil.</u> |
| Complete | Rock reduced to soil. Rock fabric not discernible only in small and scattered concentrations. Quartz may be present as dikes or stringers. Saprolite is also an example. <u>Comparable to soil.</u> |

ROCK CONTINUITY

| | |
|------------------------------------|-----------------------------------------|
| Sound | Core pieces larger than 0.20 m. |
| Slightly Fractured (SLI. FRAC.)- | Core pieces between 0.10 m and 0.20m. |
| Moderately Fractured (MOD. FRAC.)- | Core pieces between 0.025 m and 0.10 m. |
| Extremely Fractured (EXT. FRAC.)- | Core pieces less than 0.025 m. |

JOINT SPACING

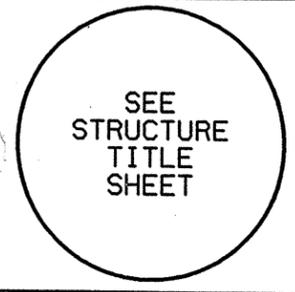
Average Discontinuity Spacing (ADS)

The average measured distance (in meters) between joints in the same set. Will not apply to individual joints.

JOINT THICKNESS

Average Discontinuity Thickness (ADT)

The average thickness or width of gap in the joint (in meters).



SEAL

SEE STRUCTURE TITLE SHEET
 Signature ELIZABETH C. HOWEY, L.G., P.E.

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| BENCH MARK: GEOTECHNICAL REF. POINTS (SURVEY PINS): *50000 14+51.799, 4.5m RT. ELEV. 60.207m; *50003 14+66.206, 4.5m LT. ELEV. 59.539m; *50005 14+80.206, 4.5m LT. ELEV. 59.280m; *50006 14+89.794, 4.5m RT. ELEV. 59.804m |
| STATE PROJECT NO. B.T311002 |
| T.I.P. NO. R-2552B F.A. NO. NHF-60-(9) |
| COUNTY JOHNSTON ROUTE SR 1560 |
| SITE DESCRIPTION RELOCATION OF BRIDGE #207 ON SR 1560 OVER LITTLE CREEK |
| PROJECT GEOTECHNICAL ENGINEER ELIZABETH C. HOWEY, L.G., P.E. |
| PROJECT GEOLOGIST LISA B. GILCHRIST, CPG SUBMITTED BY F&R, INC. |
| PERSONNEL D. CARR F. RACEY, JR. |
| J. GILCHRIST B. NAPRSTEK |
| M. RENZA DATE SUBMITTED 9/01 |