**ROJECT:** 42249.1.1

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

# STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. <u>42249.1.1 (B-5111)</u> F.A. PROJ. <u>BRZ-1588(2)</u>
COUNTY <u>PITT</u>

PROJECT DESCRIPTION BRIDGE NO. III ON SR 1588 (BRIERY SWAMP ROAD) OVER BRIERY SWAMP CREEK AT -L- STA. 20+67.50

STATE STATE PROJECT REFERENCE NO. SHEET TOTALS NO. B-5111 1 8

#### CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORNING LOOS, ROCK CORPS, AND SOIL TEST DATA AVAILABLE MAY ERREVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, COTTECTION, LEGISLET LEGISLET, AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

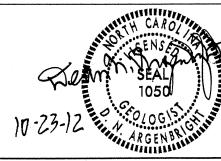
GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINDS OR DETWEEN SAMPLED STRATA WITHIN THE BORRHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU INPPLACE TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH THE ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIODER OR CONTRACTOR IS CAUTIONED THAT DETALS SHOWN ON THE SUBSUPFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETALS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PLANS REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR CLIARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUICH INDEPENDENT USBUSHFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

|                              | R.E. SMITH          |
|------------------------------|---------------------|
| na katawa nga manang ya na k | D.G. PINTER         |
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| INVESTIGATED E               | BY D.N. ARGENBRIGHT |
| CHECKED BY                   | D.N. ARGENBRIGHT    |
|                              | D.N. ARGENBRIGHT    |
| DATE                         | OCTOBER 2012        |
|                              |                     |

PERSONNEL

C.M. WRIKE



**CONTENTS** 

DESCRIPTION

TITLE SHEET

LEGEND SITE PLAN PROFILE BORE LOGS

SHEET

#### NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

### DIVISION OF HIGHWAYS

#### GEOTECHNICAL ENGINEERING UNIT

## SUBSURFACE INVESTIGATION

| PROPERTY   Company   Com   |  | SOIL AND ROCK LEGEND, 7   | ERMS, SYMBOLS, AND ABBREVIATIONS   |  |
|--|--|---|--|--|
| The content of the    | SOIL DESCRIPTION   |   | ROCK DESCRIPTION   | TERMS AND DEFINITIONS  |
| Column   C   | THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AGAITO T206, ASTH D-1586). SDIL CLASSIFICATION IS BASED ON THE AGAITO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AGAITO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH   | UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.  ANGULARITY OF GRAINS  THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR. | ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.  SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER BOUAL TO DR LESS THAN QL FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZON OF WEATHERED ROCK.  ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: | ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.  ADUIFER - A WATER BEARING FORMATION OR STRATA.  ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.  ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS. |
| The control of the    |  |   | ROCK (WR) BLOWS PER FOOT IF TESTED.  | ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL  |
|  | CLASS. (≤ 35% PASSING #200) (> 35% PASSING #200) DRGANIC MATERIALS   | WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.   | ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.  | GROUND SURFACE.  |
| March   1   1   1   1   1   1   1   1   1  |  | SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31   | ROCK (NCR)  SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED, ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.   | COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM  |
| 1.0  | Z PASSING  | HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50  | SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.   | ,  |
| The control   1  | # 40 30 MX 50 MX 51 MN GRANULAR CLAY PEAT  | ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL   |  | ROCKS OR CUTS MASSIVE ROCK.  |
| Fig.   10   10   10   10   10   10   10   1  | 13 TA   23 TA   18 TA   35 MX   35 MX   35 MX   36 MN   36 MN  | LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 18 - 20%  | HAMMER IF CRYSTALLINE.   | HORIZONTAL.  |
| Second Continue   Second Con   | PLASTIC INDEX 6 MX NP 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN LITTLE OR HIGHLY   | HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE   | (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF   | THE LINE OF DIP. MEASURED CLOCKWISE FROM NORTH.  |
| Part      | USUAL TYPES STONE FRACE. FINE SILTY OR CLAYEY SILTY CLAYEY ORGANIC ORG | WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING   | (SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY, IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR   | SIDES RELATIVE TO DNE ANOTHER PARALLEL TO THE FRACTURE.  |
| Part   1900      | MATERIALS SAND STATE THE STATE STATE STATE STATE STATE STATE TO STATE ST | VPW DEDCHED HATER CATHEATER TONE OF MATER PEARWOOD CORP.  | MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN  | FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM  |
| CRESTREET OF CRESSIONS   PROJECT AND PRO   | SUBSRADE   | · '   | DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.  | FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY  |
| ## 100   Continue   Provided   Pr | CONSISTENCY OR DENSENESS  RANGE OF STANDARD   RANGE OF UNCONFINED  |   | SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION, ROCK SHOWS SEVERE LOSS OF STRENGTH  | FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN  |
| Section   Color   Co   | PRIMARY SULL TIPE   CONSTITUTE   PENETRATION RESISTENCE   COMPRESSIVE STRENGTH   | ROADWAY EMBANKMENT (RE)  WITH SOIL DESCRIPTION  OPT DAT  TEST BORING  W/ COF  | IF TESTED, WOULD YIELD SPT REFUSAL   |  |
| An in the content of the content o   | GRANULAR LOOSE 4 TO 10   | l mt  | ALUE (SEV.) IN STRENGTH TO STRONG SDIL, IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.  | ITS LATERAL EXTENT.  |
| PRODUCT   1  | MATERIAL DENSE 30 TO 50  | THAN ROADWAY EMBANKMENT   | VERY SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT   | MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN  |
| MATERIAL PROPERTY   10 10 10 10 10 10 10 10 10 10 10 10 10   | GENERALLY SOFT 2 TO 4 0.25 TO 0.50   | INFERRED ROCK LINE A PIEZOMETER   | REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR  | PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF A  |
| TEXTURE OR ORAIN SIZE  1.5. TOURNET OR THE ORAIN SIZE  1.5. TO | MATERIAL STIFF 8 TO 15 1 TO 2 (COHESIVE) VERY STIFF 15 TO 30 2 TO 4  | INSTALLATION  TTFTTT ALLUVIAL SOIL BOUNDARY SLOPE INDICATOR   | SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS  | •  |
| Second column   Second colum   | THIRD >300 >4 25/825 DIP & DIP DIRECTION OF DOOR CONTINUE OR CONTINUE OF DOOR CONTINUE OF D |   |  | ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AI   |
| ## AGEN COMMENT   FREE   Fill   CLV   SACE   FREE   Fill   CLV   SACE   FREE    | U.S. STD. SIEVE SIZE 4 10 40 60 200 270 • SOUNDING ROD   |   | VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.  | SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.  |
| ## 10.5   S.   S.   S.   S.   S.   S.   S.   | BOULDER CORRIE GRAVEL COARSE FINE STIT CLAY  |   | TO DETACH HAND SPECIMEN.   | RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL  |
| SIZE BY 12 3  SOLL MOSTURE - CORRELATION OF TERMS  SOLL MOSTURE - CORRELATION OF TRANSPORT OF TRANSPORT OF TRANSPORT OF THROUGH SISTER OF THROU | (BLDR.) (CDB.) (GR.) (SE. SD.) (F SD.) (SL.) (CL.)   | BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY 7 - UNIT WEIGHT  | MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVER TO 0.25 INCHES DEEP CAN BE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED   | SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR  |
| OF DISTURE SCALE  OF PIELD DISTURE SCALE  OF A STATISTICAL TO SCHALL NORTH TO SCALE AND SCALE  OF A STATISTICAL TO SCALE AND SCALE  OF A PIELD DISTURE SCALE  OF A STATISTICAL TO SCALE AND SCALE  OF OF THAM HOISTURE  OF OS THAM HOISTURE  | SIZE IN 12 3   | CSE CDARSE ORG ORGANIC  | MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.  | A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH  |
| - SATURATED - USAILLY LIDUID LINET FROM SECULOR FER GRADUE WET, ISBNELLY FOR A FREEDRISH FROM SECULOR FOR GRADUE WITH COURSE REPORT AND FOR A FREEDRISH FROM SECULOR FROM SECULOR FROM SECULOR FOR A FREEDRISH FROM SECULOR FOR A FREEDRISH FROM SECULOR FOR A FREEDRISH FROM SECULOR FROM SECULO | SOIL MOISTURE SCALE FIELD MOISTURE CHIDE FOR FIELD MOISTURE DESCRIPTION  | e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON  | POINT OF A GEOLOGIST'S PICK.  SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK, CAN BE EXCAVATED IN FRAGMENTS   | THAN 0.1 FOOT PER 60 BLOWS.  |
| LL LUDIO LIMIT PRASTIC FRAMENTS W - MOST CREATER THAN 4 NOHS OWIDED BY THE PRESSURE, OH RE SCRAFFLED READILY BY FRAMENTS W - MOST CREATER THAN 4 NOHS OWIDED BY THE PRASTIC FRAMENTS W - MOST CREATER THAN 1 NOHS OWING THE PRASTIC FRAMENTS W - MOST CREATE THAN 1 NOHS OWING THE PRASTIC FRAMENTS W - MOST CREATE THAN 1 NOHS OWING THAN 4 NOHS OWING THAN | (SAT.) FROM BELOW THE GROUND WATER TABLE   | FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED T  | PIECES CAN BE BROKEN BY FINGER PRESSURE.  RIAXIAL VERY CAN BE CARVED WITH KNIFF CAN BE EXCOVATED READILY WITH POINT DE PICK PIECES 1 INC.  | OF STRATUM AND EXPRESSED AS A PERCENTAGE.  |
| PLASTICITY  | PLASTIC SEMICOLIDE OPYING TO   | HI HIGHLY V - VERY RATIO  | ARING SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY  | TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.  |
| OM OPTIMUM MOISTURE SHRINKAGE LIMIT  OF HOUSE - (M) SOLID AT OR NEAR OPTIMUM MOISTURE SHRINKAGE LIMIT  OF LOY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE  OF LOX - SHRINKAGE LIMIT  OF LOX - OBSTRANCE - (M) SOLID AT OR NEAR OPTIMUM MOISTURE  OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SURE - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF CONTINUOUS FLIGHT AUGER  OF CONTINUOUS FLIGHT AUGER  OF SUR - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF SUR - (LOX - SIZE) OF CONTINUOUS FLIGHT AUGER  OF CONTINUOUS FL | ATTAIN OPTIMUM MOISTURE  |   | TEDM TURCHECC  |  |
| REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE  PLASTICITY  B-5  VERY LOW LOW LASTICITY  PLASTICITY  PLANTACOUGH PLANTAGE DISPASSER, ETC.  PLASTICITY  PLAST | 014 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | TO STAN PAGE  | VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED > 4 FEET   | BENCH MARK: BM-I: RR SPIKE IN 27 HARDWOOD AT -BL- STA. 10+02   |
| PLASTICITY  POST MODERATE  POST HOLE DIGGER  HAND TOOLS:  PRIBLE  POST HOLE DIGGER  MODERATELY INDURATED  POST HOLE DIGGER  MODERATELY INDURATED  PRIBLE  POST HOLE DIGGER  MODERATELY INDURATED  POST HOLE DIGGER  MODERATELY INDURATED  PRIBLE  POST HOLE DIGGER  MODERATELY INDURATED  POST HOLE DIGGER  MODERATE INDURATED  POST HOLE DIGGER  MODERATE INDURATED  POST HOLE DIGGER  PRIBLE  POST HOLE DIGGER  MODERATE INDURATED  POST HOLE DIGGER  MODERATE INDURATED  POST HOLE DIGGER  PRIBLE  POST HOLE DIGGER  PRIBLE  POST HOLE DIGGER  PRIBLE  POST HOLE DIGGER  POST HOLE DIGGER  PRIBLE  POST HOLE DIGGER  PR | REDUIRES ADDITIONAL WATER TO   | 6° CONTINUOUS FLIGHT AUGER CORE SIZE;   | MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET CLOSE 0.16 TO 1 FFFT YERY THINLY BEDDED 0.03 - 0.16 FEET  |  |
| PLASTICITY INDEX (P]) DRY STRENGTH  NONPLASTIC  0-5 VERY LOW PLASTICITY 16-25 MEDIUM HIGH PLASTICITY 26 OR MORE HIGH  PORTABLE HOIST  TRICONE  | HITHIN OF IMON POISTORE  | BK-51 8" HOLLOW AUGERS -B_  | THINLY LAMINATED < 0.008 FEET  | INOTES:  |
| NONPLASTIC 9-5 VERY LOW PLASTICITY 6-15 SLIGHT MED. PLASTICITY 16-25 MEDIUM HIGH PLASTICITY 25 OR MORE HIGH  COLOR  COLOR  DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN. RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.  MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.  MINIS-CARBID INSERTS  CASING W/ ADVANCER HAND TOLOS: HAND TOLOS: HAND TOLOS: HAND AUGER GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. OBJEFICULT TO BREAK WITH HAMMER.  VANE SHEAR TEST  FRIBLE  RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.  HAND TOLOS: HAND TOLOS: HAND TOLOS: HAND TOLOS: HAND AUGER SOUNDING ROD INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;  EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;   |  | 1   |  |  |
| LOW PLASTICITY 6-15 MEDIUM MED. PLASTICITY 16-25 MEDIUM HIGH PLASTICITY 26 OR MORE HIGH PORTABLE HOIST  TRICONE TRICONE TRICONE  DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.  X TRICONE T |  | 1   |  |  |
| HIGH PORTABLE HOIST X TRICONE 2 15/6 STEEL TEETH POST HOLD DIGGER MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.  DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).  MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.  X TRICONE 2 15/6 STEEL TEETH POST HOLD DIGGER MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.  SOUNDING ROD INDURATED GRAINS ARE DIFFICULT TO BREAK WITH HAMMER.  VANE SHEAR TEST  EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;  | LOW PLASTICITY 6-15 SLIGHT   | X CASING W/ ADVANCER HAND TODI St   |  |  |
| COLOR  COSCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).  MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.  HAND AUGER  SOUNDING ROD  INDURATED  GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE;  DIFFICULT TO BREAK WITH HAMMER,  VANE SHEAR TEST  EXTREMELY INDURATED  SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;   |  | PORTABLE HOIST  X TRICONE 2 15/16 STEEL TEETH  POST HOLE DIGGER   |  |  |
| DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).  MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.  DIFFICULT TO BREAK WITH HAMMER.  VANE SHEAR TEST  EXTREMELY INDURATED  SHARP HAMMER BLOWS REDUIRED TO BREAK SAMPLE;   | COLOR  | ]   |  |  |
| THOSE ICLIS SOCK HS CLOTH, DHINK, STREMEU, ETC. HRE USED TO DESCRIBE HIPPERHANCE.  | · ·  | L cone bit  | DIFFICULT TO BREAK WITH HAMMER.  |  |
|  |  |   |  |  |

REVISED 09/23/09

SHEET NO. 2 OF 8

PROJECT REFERENCE NO.

B-5III

