ID: B-4034

OJECT: 33401.1.1

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

CONTENTS

HEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5	CROSS SECTION(S)
6,7	BORE LOGS
8	SCOUR REPORT
9	SITE PHOTOGRAPH

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. <u>34401.1.1</u> COUNTY BUNCOMBE	F.A. PROJ. <i>BRSTP-151(10</i>)
PROJECT DESCRIPTION Bridge No. 134 on NC-15	over Stony Fork Creek
SITE DESCRIPTION	

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL
N.C.	34401.1.1 (B4034)	1	9

CAUTION NOTICE

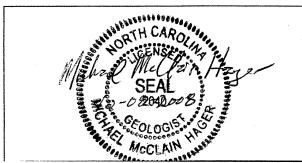
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (1919) 250-408B. NEITHER THE SUBSURFACE PLANS 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 BORINGS OR BETWEEN SAMPLED STRATA
WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU IN-PLACE! TEST DATA CAN BE
RELIED ON ONLY TO THE DEGREE OF RELIABLITY INHERENT IN THE STANDARD TEST METHOD.
THE OBSERVED MATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE
WINSTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL
MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING
TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN REFORMATION ON THIS PROJECT. THE DEFARTMENT DOES NOT MARRANT OR CUARANTE 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 SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMMESELF AS TO CONDITIONS TO BE ENCOUNTEDED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAMA 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.

	CJC
	RDC
INVESTIGATED	_{ВҮ_} ММН
CHECKED BY_	WDF
SUBMITTED BY	
DATE	10-00-2008

PERSONNEL



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO. 3440I.I.I (B-4034)

SHEET NO.

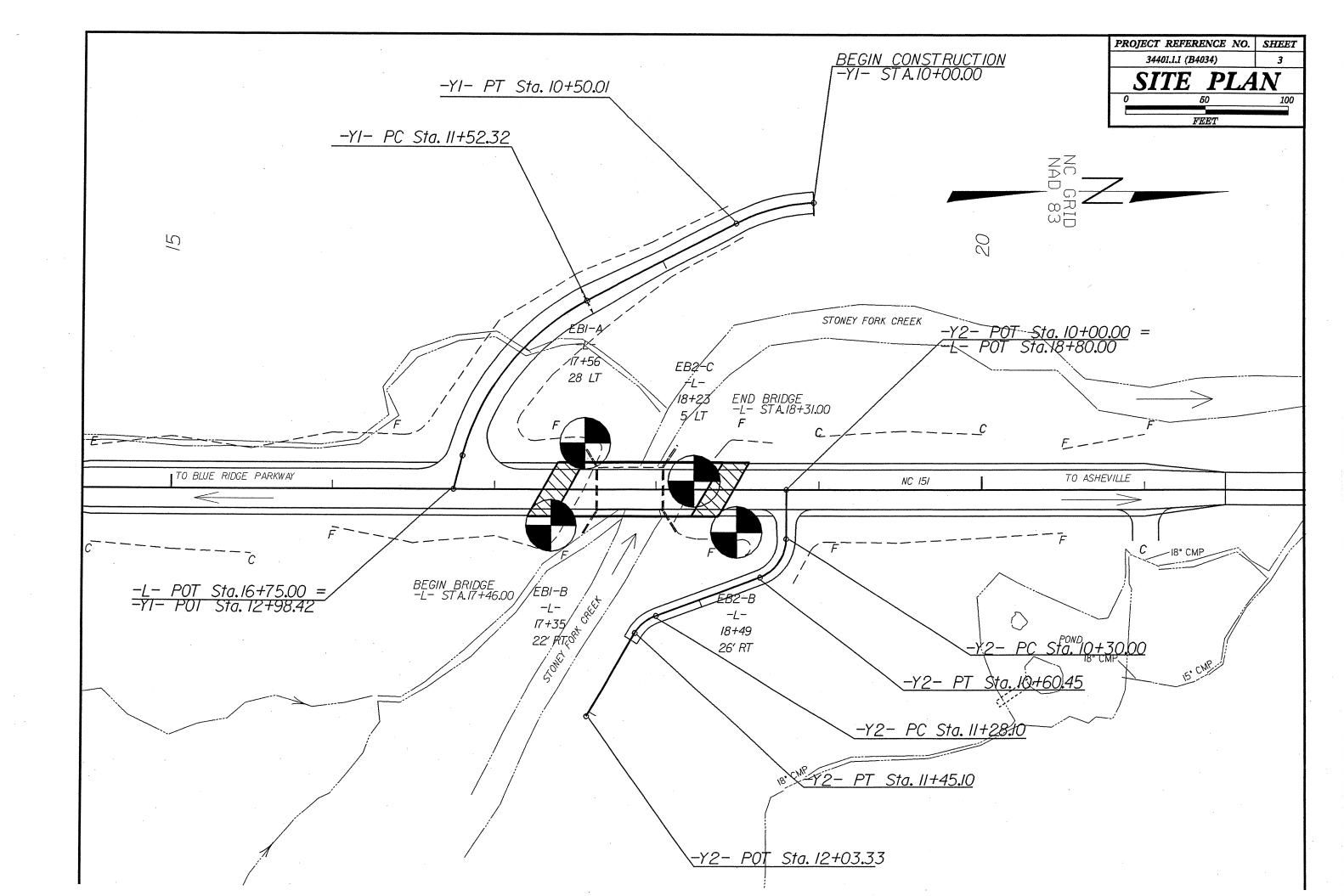
DIVISION OF HIGHWAYS

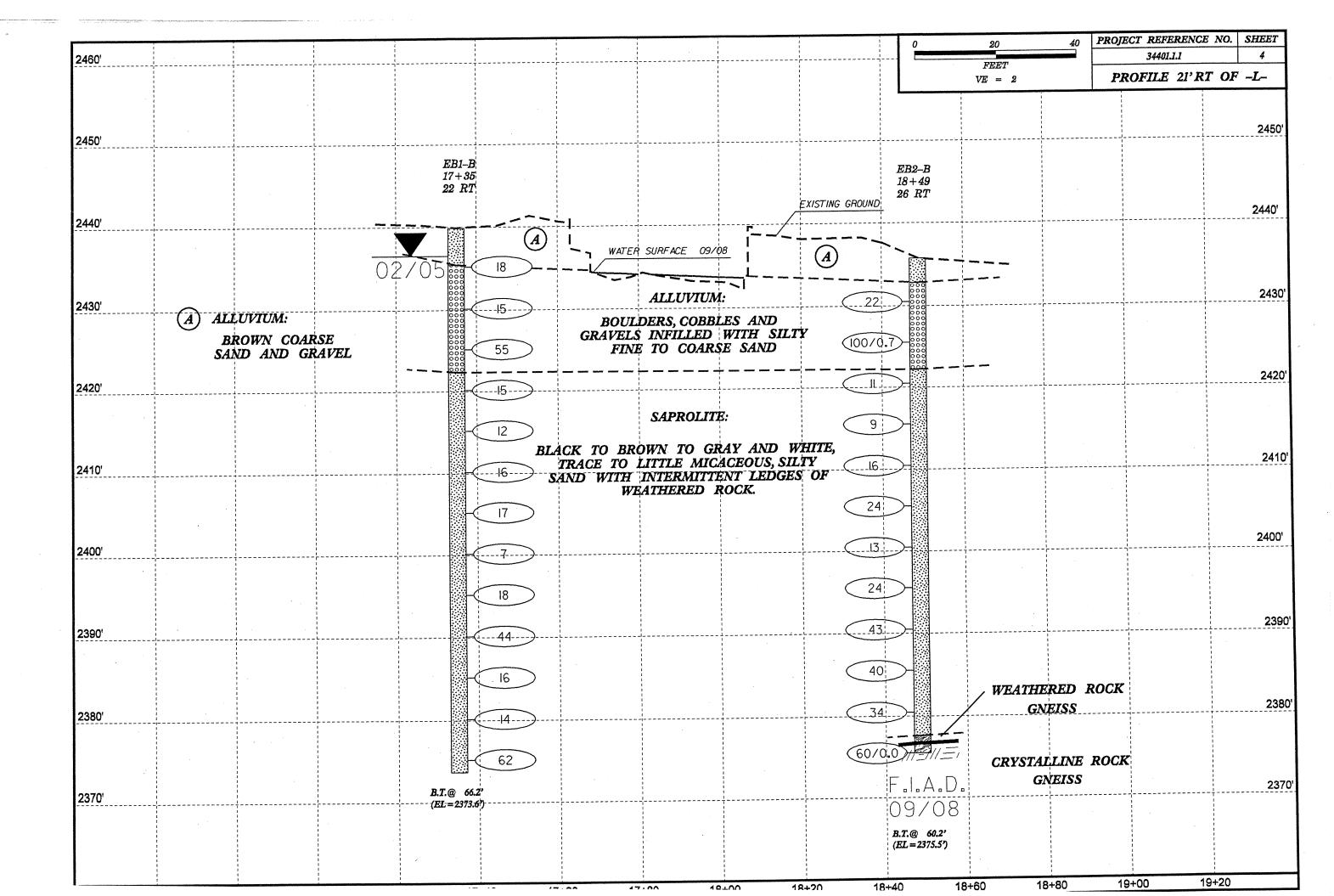
GEOTECHNICAL ENGINEERING UNIT

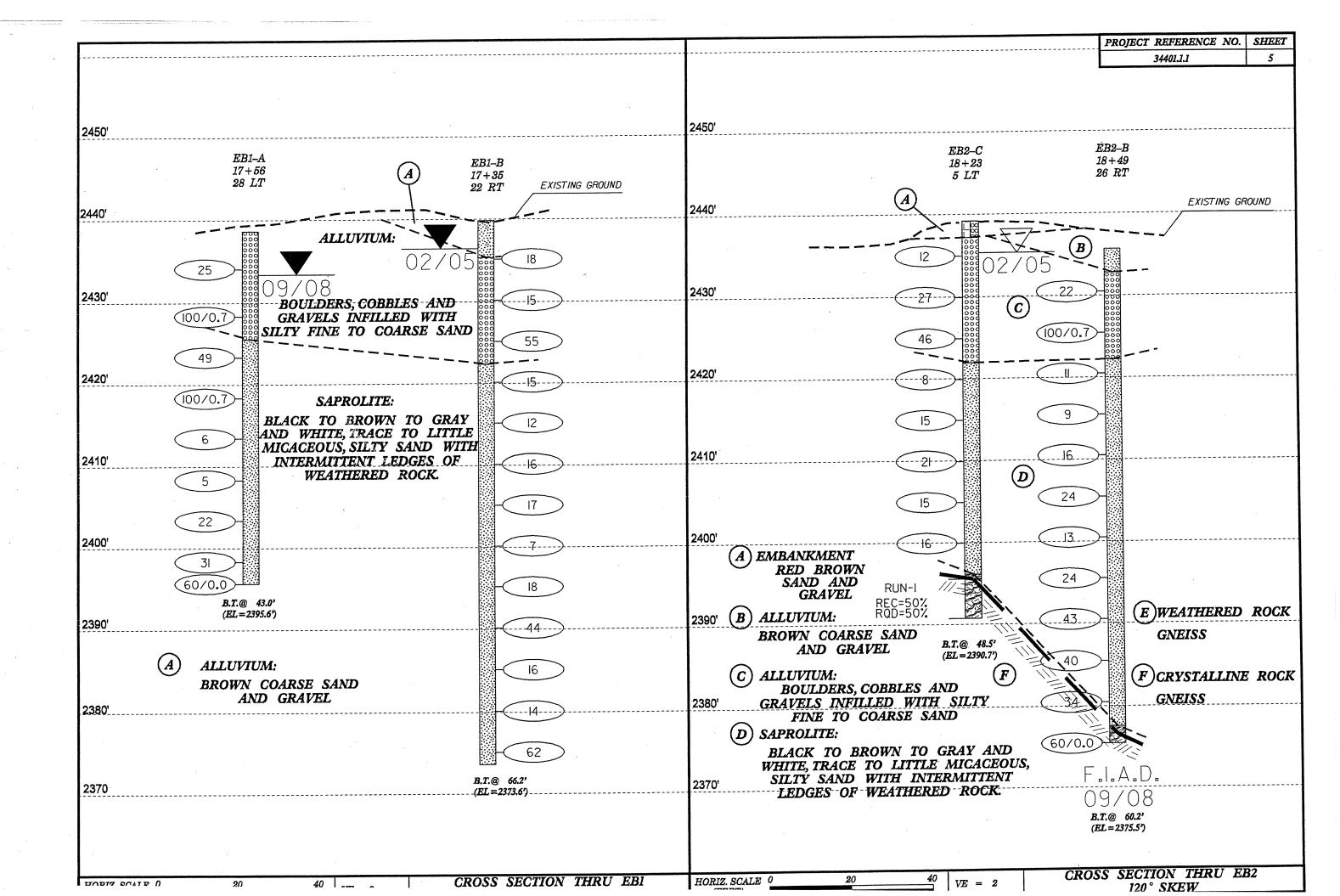
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

	CDADATION	DOOK DECODIDATION	TEDMO AND DEFINITIONS
SOIL DESCRIPTION	GRADATION WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.	ROCK DESCRIPTION HAPO ROCK IS NON-CDASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED	TERMS AND DEFINITIONS
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, DR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN	UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE, (ALSO	ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
I 1800 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586), SOIL	POORLY GRADED GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.	SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE	ADUIFER - A WATER BEARING FORMATION OR STRATA.
CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE:	ANGULARITY OF GRAINS	OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR,	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS.
YERY STIFF, GRAY, SITTY CLM, MOST WITH INTERBEDDED FINE SAID LATERS, MIGHLY PLASTIC, A-7-6	SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 180	OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.
		ROCK (WR) BLOWS PER FOOT IF TESTED.	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL
SOIL LEGEND AND AASHTO CLASSIFICATION	MINERALOGICAL COMPOSITION	CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT	AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS CLASS. (≤ 35% PASSING *200) (> 35% PASSING *200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS DUARTZ, FELDSPAR, MICA, TALC, KADLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.	GROUND SURFACE.
		FINE TO COADCE COATS METAMODOUTE AND MOST COACTAL DEATH	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
H-1, H-2 11 11 11 11 11 11 11	COMPRESSIBILITY	ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YELLD SPT REFUSAL IF TESTED. ROCK TYPE	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
02.150 H 1 8 H 2 7 H 2 7 H 2 7 H 2 7 H 3	SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50	INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. CDASTAL PLAIN CDASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	
SYMBOL SOCIOSOS SOCIOSIS SOCIO	HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50	SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
IZ PASSING	PERCENTAGE OF MATERIAL	(CP) SHELL BEDS, ETC.	
# 10 S8 MX SILT- MUCK, CLAY CLAY	GRANULAR SILT - CLAY	WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
* 40 38 MX 50 MX 51 MN S0 MX 51 MN S0 MX 35 MX 35 MX 35 MX 35 MX 36 MN 3	SULS SULS	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
	TRACE OF ORGANIC MATTER	HAMMER IF CRYSTALLINE.	HORIZONTAL.
LIDIND LIMIT 48 HX 41 HN 48 HX 41 HN 48 HX 41 HN 48 HX 41 HN SOILS WITH	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF
TENSTIC REES S FAX NO 118 MX 138 MX 111 MN 118 MX 10 MX 111 MN 11 MN LITTLE OR HIGHLY	HIGHLY DRGANIC >10% >20% HIGHLY 35% AND ABOVE	IV SLIJ CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF	THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 8 8 4 MX 8 MX 12 MX 16 MX NO MX MODERATE ORGANIC	GROUND WATER	OF A CRYSTALLINE NATURE.	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY ORGANIC SOILS	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLDRATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME DCCASIONAL FELDSPAR	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
OF MAJOR GRAVEL AND GOAD GROVET OND SOAD GOTTE GOTTE		CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SHIND SHAND SOLLS SOLLS	4	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
AS A EXCELLENT TO GOOD FAIR TO POOR FAIR TO POOR INSUITABLE	PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	PARENT MATERIAL.
SUBGRADE POOR POOR UNSUITSEL		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
Pl OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30	SPRING OR SEEP		THE STREAM.
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT DUARTZ DISCOLORED OR STAINED, IN GRANITOID ROCKS, ALL FELDSPARS DULL 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
COMPACTNESS OF RANGE OF STANDARD RANGE OF UNCONFINED	FTI SPT CPT CAMPUT	(MOD, SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES "CLUNK" SOUND WHEN STRUCK.	THE FIELD.
PRIMARY SOIL TYPE CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH (N-VALUE) (TONS/FT ²)	ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION ROADWAY EMBANKMENT (RE) DEST DATE TEST BORING DESIGNATIONS	JF TESTED, WOULD YIELD SPT REFUSAL	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
15D1 10005	S - BULK SAMPLE	SEVERE ALL ROCK EXCEPT DUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
DENEMALLY	SOIL SYMBOL AUGER BORING SS - SPLIT SPOON	IN STRENGTH TO STRONG SOIL, IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME	ITS LATERAL EXTENT.
MATERIAI MEDIUM DENSE 10 TD 30 N/A	ARTIFICIAL FILL (AF) OTHER A SAMPLE	EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED YIELDS SPT N VALUES > 180 BPF	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
(NON-COHESIVE) DENSE 30 TO 50	THAN ROADWAY EMBANKMENT - CORE BORING ST - SHELBY TUBE	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
	INFERRED SOIL BOUNDARY SAMPLE	(V SEV.) THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH DNLY FRAGMENTS OF STRONG ROCK	SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
VERY SOFT <2 (8.25 GENERALLY SOFT 2 TO 4 8.25 TO 6 F6	MONITORING WELL DE PREK COMPLE	REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINDR	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.25 TO 0.50	INFERRED ROCK LINE A PIEZOMETER RS - ROCK SAMPLE	VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, YIELDS SPT N VALUES < 100 BPF</u>	
MATERIAL STIFF 8 TO 15 1 TO 2	INSTALLATION RT - RECOMPACTED TRIAXIAL	COMPLETE ROCK REDUCED TO SOIL, ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS, QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD >30 24	SLOPE INDICATOR		ROCK QUALITY DESIGNATION (RDD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
		I ALSU AN EXAMPLE.	
74	25/825 DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING	ALSO AN EXAMPLE. ROCK HARDNESS	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	25/825 DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING ROCK STRUCTURES RATIO SAMPLE	ROCK HARDNESS	EXPRESSED AS A PERCENTAGE,
74	DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING RATIO SAMPLE SPT N-VALUE SPT N-VALUE	ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REDUIRES	
TEXTURE OR GRAIN SIZE	25/025 DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING RATIO SAMPLE SOUNDING ROD REP SPT N-VALUE SOUNDING ROD REP SPT REFUSAL	ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK,	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING RATIO SAMPLE SOUNDING ROD REF SPT REFUSAL ABBREVIATIONS	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REDUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REDUIRED	EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL
TEXTURE OR GRAIN SIZE	25/925 DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING RATIO SAMPLE SOUNDING ROD REF SPT REFUSAL ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY # - MOISTURE CONTENT	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REDUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REDUIRED TO DETACH HAND SPECIMEN.	EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
TEXTURE OR GRAIN SIZE	25/925 DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING RATIO SAMPLE SOUNDING ROD REF SPT REFUSAL ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY ## - MOISTURE CONTENT V - VERY	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REDUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REDUIRED	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR
TEXTURE OR GRAIN SIZE	25/925 DIP & DIP DIRECTION OF INSTALLATION CBR - CALIFORNIA BEARING RATIO SAMPLE SOUNDING ROD REF SPT REFUSAL ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY # - MOISTURE CONTENT	POCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GRODVES TO 0.25 INCHES DEEP CAN BE	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
TEXTURE OR GRAIN SIZE	25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES SPI N-VALUE SOUNDING ROD REF SPI REFUSAL ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY # - MOISTURE CONTENT V - VERY CL CLAY MICA MICACEDUS VST - VANE SHEAR TEST CPT - COME PENETRATION TEST MOD MODERATELY WEA WEATHERED CSE COARSE NP - NON PLASTIC 7 - UNIT WEIGHT	POCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REDUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REDUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT.	EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARRIT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) DF
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL AR - AUGER REFUSAL HI HIGHLY MICA MICACEDUS CL CLAY CPT - COME PENETRATION TEST CSE COARSE NP - NON PLASTIC Y - UNIT WEIGHT DIM T DILATOMETER TEST ORG ORGANIC CCBR - CALIFORNIA BEARING RATID SAMPLE W - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST Y - UNIT WEIGHT Z - DRY UNIT WEIGHT	PROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT. THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB, HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF I FDOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EDUAL TO OR LESS
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD REF SPT N-VALUE SOUNDING ROD REF SPT REFUSAL ABBREVIATIONS AR - AUGER REFUSAL BT - BORING TERMINATED MED MEDIUM V - VERY CL CLAY MICA MICACEOUS CPT - CONE PENETRATION TEST MOD MODERATELY WEA WEATHERED CSE COARSE DPT - DINAMIC PENETRATION TEST DPT - DYNAMIC PENETRATION TEST PMT - PRESSUREMETER TEST CSE - COARSE DPT - DYNAMIC PENETRATION TEST PMT - PRESSUREMETER TEST	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL. AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT. THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB, HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF I FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL AR - AUGER REFUSAL HI HIGHLY MICA MICACEDUS CSL CLAY CPT - COME PENETRATION TEST DMT - DILATIONETER TEST DMT - DILATIONETER TEST DRG ORGANIC F - FINE SD SAND, SANDY INSTALLATION CBR - CALIFORNIA BEARING RATID SAMPLE W - MOISTURE CONTENT V - VERY V - VERY WEA WEATHERED 7 - UNIT WEIGHT 7 - UNIT WEIGHT SAP SAPROLITIC SD SAND, SANDY	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TD DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. CAN BE GROOVED OR GOUGED 8.85 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT, CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT, SMALL, THIN	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EDUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD REF SPT N-VALUE SOUNDING ROD REF SPT REFUSAL ABBREVIATIONS AR - AUGER REFUSAL BT - BORING TERMINATED MED MEDIUM CL CLAY MICA MICACEOUS CPT - CONE PENETRATION TEST MOD MODERATELY CPT - CONE PENETRATION TEST MOD MODERATELY CSE COARSE NP - NON PLASTIC DMT - DILATOMETER TEST OF ORGANIC DPT - DYNAMIC PENETRATION TEST - VOID RATIO SAP SAPROLITIC F - FINE SD SAND, SANDY FOSS FOSSILIFEROUS SL - SILT, SILTY	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TD DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK, CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT, SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST OPENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL 1S PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATAM AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL BT - BORING TERMINATED CL CLAY CPT - COME PENETRATION TEST CPT - COME PENETRATION TEST DMT - DILATOMETER TEST DMT - DILATOMETER TEST DMT - DILATOMETER TEST OF - VOID RATIO FF SS FOSSILIFEROUS FRAC FRACTURED SOUNDING ROD RATIO SAMPLE SPT N-VALUE ABBREVIATIONS AF - MUGSTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA WEATHERED 7' - UNIT WEIGHT 7'_d- DRY UNIT WEIGHT PMT - PRESSUREMETER TEST FOSS FOSSILIFEROUS SL SILT, SILTY FRAC FRACTURED, FRACTURES SLI SLIDHTLY CER - CALIFORNIA BEARING RATIO SAMPLE W - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA WEATHERED 7' - UNIT WEIGHT 7'_d- DRY UNIT WEIGHT PMT - PRESSUREMETER TEST SAPPOLITIC F - FINE SD SAPROLITIC F - SPACTURED, FRACTURES SLI SLIDHTLY	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REDUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GRODVES TO \$\particle{Q}_2\$ SINCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED \$\particle{Q}_3\$ SINCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EDUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH
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TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY CL CLAY MICA MICACEOUS CS COARSE NP - NON PLASTIC DHT - DILATOMETER TEST OFF ORGANIC DPT - DYNAMIC PENETRATION TEST F - FINS FOSS FOSSILIFEROUS SL SILT, SILTY FRAGS FRAGMENTS TO SPT N-VALUE SPT N-VALUE ABBREVIATIONS AC - MOISTURE CONTENT V - VERY V - WERY VST - VANE SHEAR TEST WEA WEATHERED 7 - UNIT WEIGHT 7 - UNIT WEIGHT TO TO TYNAMIC PENETRATION TEST SD SAPROLITIC SAP SAPROLITIC SD SARO, SANDY FRAGS FRAGMENTS TCR - TRICONE REFUSAL	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TD DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.85 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT, CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK PDINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH PDINT OF PICK. PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRDD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF TOTAL LENGTH OF ROCK SECREMS WITHIN A STRATUM EQUAL TO DR GREATER THAN 4 INCHES DIVIDED BY THE
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL AR - AUGER REFUSAL HI HIGHLY MED MEDIUM CL CLAY CPT - COME PENETRATION TEST CSE COARSE DMT - DILATOMETER TEST DMT - DILATOMETER TEST DMT - DIVAMMIC PENETRATION TEST OF - VOID RATIO SAP SAPROLITIC F - FINE SD SAND, SANDY FRACS FRACTURED, FRACTURES SLI SILT, SILTY FRACS FRAGMENTS CCBR - CALIFORNIA BEARING RATID SAMPLE W - CALIFORNIA BEARING RATID SAMPLE W - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST VST - VANE SHEAR TEST VG ORGANIC VG SAND, SANDY FOSS FOSSILIFEROUS SL SILT, SILTY FRACT. FRACTURED, FRACTURES SL SILT, SILTY FRACT. FRACTURED, FRACTURES SL SILT, SILTY FRACS FRAGMENTS COULDMENT USED ON SUBJECT PROJECT	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TD DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.85 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING BEDDING	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATIM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A HEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA MOCK SEGMENTS WITHIN A STRATUM EQUAL TO DR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY TO HIGHLY HICA - MICACEOUS CS COARSE NP - NON PLASTIC CS COARSE NP - NON PLASTIC DHT - DILATOMETER TEST ORG ORGANIC F - FINE F - FINE FOSS FOSSILIFEROUS SL SILT, SILTY FRACS FRACHERIS EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: ADVANCING TOOLS: NATIO SAMPLE BY - CALIFORNIA BEARING RATIO SAMPLE W - CALIFORNIA BEARING RATIO SAMPLE W - CALIFORNIA BEARING RATIO SAMPLE W - MOISTURE CONTENT V - VERY V - VERY V - VERY V - VANE SHEAR TEST WEA WEATHERED 7 - UNIT WEIGHT 7 - UNIT WEIGHT 7 - DRY UNIT WEIGHT F - FINE SD SAND, SANDY FRACS FRACTURED, FRACTURES SL SILT, SILTY FRACS FRACTURED, FRACTURES SL SILT, SUBJECT PROJECT DRILL UNITS: ADVANCING TOOLS:	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. CAN BE GROOVED OR GOUGED 8.65 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE GROOVED OR GOUGED 8.65 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CRAVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE, CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING SPACING VERY WIDE WERE WIDE WERE WIDE THICKNESS VERY HICKLY BEDDEND THICKNESS VERY WIDE WERE WIDE WERE WIDE THORWARD THORK THAN 18 EEET VERY HICKLY BEDDEND THE MODE THAN 18 EEET VERY HICKLY BEDDEND THE MODE THAN 18 EEET VERY HICKLY BEDDEND THE MODE THAN 18 EEET VERY WIDE THORK THAN 18 EEET VERY HICKLY BEDDEND THE MODE THAN 18 EEET THE MEDIT THE MODE THAN 18 EEET THE MEDIT THE MODE THAN 18 EEET THE MEDIT THAN 18 EEET THE MEDIT THE MODE THAN 18 EEET THE MEDIT THAN 18 EEET THE MEDIT THAN 18 EET THE MEDIT THAN 18 EEET THE MEDIT THAN 18 EEET THE MEDIT THA	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST OPENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL 1S PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 68 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATAM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOTAL LENGTH OF FORK SEDMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. JOSSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL BT - BORING TERMINATED CL CLAY CPT - COMP PENETRATION TEST DMT - DILATOMETER TEST DMT - DILATOMETER TEST DMT - DILATOMETER TEST DMT - DILATOMETER TEST OF - VOID RATIO SAP SAPROLITIC F - FINE SD SAND, SANDY FRAGS FRACTURED, FRACTURES SLI SLI. SLIPT FRAGS FRACTURED, FRACTURES DRILL UNITS: ADVANCING TOOLS: MEA CRAITION TEST DRISTALLATION RATIO SAMPLE WF - NON-VABLE NF - NON PLASTIC 7' - UNIT WEIGHT 7' - FRACTURED, FRACTURES SLI SLI. SLIL'Y FRAGS FRACTURED, FRACTURES SLI SLI. SLIL'Y FRAGS FRAGMENTS TCR - TRICONE REFUSAL	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TD DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNALL. FRACTURE SPACING SPACING VERY HICKLY BEDDED A 7 4 FEET THICKLY BEDDED 1.5 - 4 FEET	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EDUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATA MAD EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OT STRATA AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OT STRATA AND EXPRESSED AS A PERCENTAGE. JOPSOIL (IS.) - SURFACE SOILS USUALLY CONTAINING DRGANIC MATTER. BENCH MARK: Rollroad spike set in 30" poplor tree, 49.27' LT of -L- Station 16+47.34
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY BT - BORING TERMINATED MED MEDIUM CL CLAY MICA MICACEOUS CPT - CONE PENETRATION TEST OPT - DUATOMETER TEST OPT - DUATOMETER TEST OPT - DUATOMETER TEST OPT - DYNAMIC PENETRATION TEST PMT - PRESSUREMETER TEST OPT - DYNAMIC PENETRATION TEST OPT - DYNAMIC PENETRATION TEST F - FINE SD SAPNO, SANDY FOSS FOSSILIFEROUS SL SILT, SILTY FRAC FRACTURED, FRACTURES SL SILT, SILTY FRAGS FRAGMENTS CLAY BITS CLAY BITS CRAF - CALIFORNIA BEARING RATID SAMPLE W - CALIFORNIA BEARING RATID SAMPLE W - CALIFORNIA BEARING RATID SAMPLE W - MOISTURE CONTENT V - VERY V - VERY V - VERY V - VERY V - WEAR - WEATHERED 7 - UNIT WEIGHT 7 - UNIT WEIGHT 7 - DRY UNIT WEIGHT TO - TRICONE REFUSAL FRAGS FRAGMENTS TCR - TRICONE REFUSAL MANUAL MOBILE B- CLAY BITS CRAF - CALIFORNIA BEARING RATID SAMPLE **ONE THOUSE SAMPLE** **ONE THOUSE CONTENT **ONE THOUSE CONTE	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING IERM SPACING VERY WIDE MORE THAN 18 FEET THICKLY BEDDED ARE ARE ARE FEET THICKLY BEDDED REPORT THICKLY BEDDED ARE ARE ARE FEET THICKLY BEDDED REPORT THICKLY BEDED REPORT THICKLY BEDDE	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST OPENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL 1S PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. STRATA FOCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. JOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: Railroad spike set in 30" poplar tree, 49.27' LT of -L- Station 16+47.34 ELEVATION: 2442.21 FT.
TEXTURE OR GRAIN SIZE	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD ABBREVIATIONS AR - AUGER REFUSAL HI HIGHLY BT - BORING TERNINATED MED MEDIUM CCL CLAY MICA MICACEOUS CPT - CONE PENETRATION TEST OPT - DIATOMETER TEST OPT - SAPROLITIC F - FINE SD SAPROLITIC F - FINE SD SAPROLITIC F - FINE SD SAPROLITIC FRACE - FRACTURED, FRACTURES SL SILT, SILTY FRACE - FRACTURED, FRACTURES TCR - TRICONE REFUSAL CLAY BITS CLAY BITS CORE SIZE: CORE SIZE:	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MIDDERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GRODVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK PDINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING IERM SPACING VERY WIDE MORE THAN 10 FEET HICKLY BEDDED 0.16 - 1.5 FEET HICKLY BEDDED 0.18 - 1.5 FEET HICKLY BEDDED 0.20 - 0.16 FEET HICKLY BENDED 0.20 - 0.16 FEET	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EDUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATA MAD EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OT STRATA AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OT STRATA AND EXPRESSED AS A PERCENTAGE. JOPSOIL (IS.) - SURFACE SOILS USUALLY CONTAINING DRGANIC MATTER. BENCH MARK: Rollroad spike set in 30" poplor tree, 49.27' LT of -L- Station 16+47.34
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TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE 4 10 40 60 200 270 DPENING (MM) 4.76 2.00 0.42 0.25 0.053 BOULDER (CDB.) (CDB.) (CDB.) (CR.) (CSE. SD.) (F SD.) (SL.) (CL.) GRAIN MM 305 75 2.0 0.25 0.05 0.005 SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION LL LIQUID LIMIT PLASTIC LIMIT DM DPTIMUM MOISTURE - WET - (W) SEMISOLID: REDUIRES DRYING TO ATTAIN OPTIMUM MOISTURE SOIL MOISTURE - MOIST - (M) SOLID: AT OR NEAR OPTIMUM MOISTURE PLASTIC LIMIT - DRY - (D) REDUIRES ADDITIONAL VATER TO ATTAIN OPTIMUM MOISTURE PLASTICITY PLASTI	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL AR - AUGER REFUSAL HI HIGHLY HICA MICACEOUS CSE COARSE DIF & DIP NOTITIONS AR - AUGER REFUSAL HI HIGHLY MICA MICACEOUS CSE COARSE DIF & DIP NOTITION OF MICA MICACEOUS DIF - COME PENETRATION TEST DRIG ORGANIC PHOTO	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE GROOVED OR GOUGED REDILY BY KNIFE OR PICK. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED REDILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING IERM SPACING VERY VIDE MODERATELY CLOSE 1 TO 3 FEET WIDE CLOSE 0.16 T. 15 FEET VERY THICKLY BEDDED 0.16 - 1.5 FEET VERY THICKLY BEDDED 0.16 - 1.5 FEET VERY THICKLY BEDDED 0.18 - 0.15 FEET VERY THICKLY LAMINATED COMBOR - 0.03 FEET THICKLY LAMINATED COMBOR - 0.03 FEET THICKLY LAMINATED COMBOR - 0.03 FEET THINKLY LAMINATED COMBOR - 0.03 FEET THINKLY LAMINATED COMBO - 0.03 FEET	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST OPENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL 1S PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. STRATA FOCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. JOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: Railroad spike set in 30" poplar tree, 49.27' LT of -L- Station 16+47.34 ELEVATION: 2442.21 FT.
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TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE DPENING (MM) 4.76 2.00 4.42 6.0 200 270 BOULDER (COB.) (COB.) (GR.) COBRE (GLDR.) (CSE. SD.) (F SD.) BOULDER (COB.) (COB.) (GR.) (CSE. SD.) (F SD.) (SL.) (CL.) GRAIN MM 305 75 2.0 6.25 0.05 0.005 SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS) SOIL MOISTURE SCALE (SATURATED - USUALLY LIDUID, VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE LIQUID LIMIT - WET - (W) SEMISOLID, REDUIRES DRYING TO ATTAIN OPTIMUM MOISTURE SHRINKAGE LIMIT - DRY - (D) REDUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE PLASTICITY PLASTICITY PLASTICITY PLASTICITY INDEX (PI) DRY STRENGTH NONPLASTIC OPTIMUM MOISTURE SCALE (BESTER OF THE ORIGINAL WATER TO ATTAIN OPTIMUM MOISTURE SHRINGTH PLASTICITY INDEX (PI) DRY STRENGTH NONPLASTIC (B-5 WERY LOW SLIGHT NONPLASTICITY 16-25 MEDDIUM DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).	DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD AR - AUGER REFUSAL BT - BORING TERMINATED CL CLAY CPT - CORE PENETRATION TEST CPT - CORE PENETRATION TEST DMT - DILATOMETER TEST OF - VOID RATIO F - FINE SD SAND, SANDY FRAGS FRACTURES SL SILT, SILTY FRAGS FRACTURES, FRACTURES DRILL UNITS: ADVANCING TOOLS: CME - SPT N-VALUE SOUNDING ROD ABBREVIATIONS ABBREVIATIONS ABBREVIATIONS W - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA WEATHERED 7 - UNIT WEIGHT 7 - UNIT WEIGHT 7 - UNIT WEIGHT 7 - DRY UNIT WEIGHT 8 - SD SAND, SANDY FRAGS FRAGMENTS CLAY BITS CLAY BITS CHE-45C HAMMER TYPE: X AUTOMATIC MANUAL CORE SIZE: B + HOLLOW AUGERS B + HOLLOW AUGERS DRY ADVANCER HAND TOOLS: TUNG, CARBIDE INSERTS HAND TOOLS: POST HOLE DIGGER HAND TOOLS: POST HOLE DIGGER HAND AUGER 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. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.65 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNALL. FRACTURE SPACING IERM SPACING IERM SPACING IERM SPACING IERM SPACING IERM SPACING IERM THICKNESS VERY VIDE MODERATELY CLOSE 1 10 3 FEET THICKLY BEDDED 1.5 - 4 FEET THICKLY BEDDED 2.6 - 1.5 FEET VERY THICKLY BEDDED 3.6 - 1.5 FEET THICKLY LAMINATED RUBBING WITH FINGER FREES NUMEROUS GRAINS; CONTROL THINK Y BEDDED A.83 - 0.16 FEET THICKLY LAMINATED CRAINS CAN BE SEPARATED FROM SAMPLE. RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.	EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP)- RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST OPENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL 1S PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. STRATA FOCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. JOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: Railroad spike set in 30" poplar tree, 49.27' LT of -L- Station 16+47.34 ELEVATION: 2442.21 FT.







NCDOT GEOTECHNICAL ENGINEERING UNIT

BOREL BOREL	OG REPORT				·				T., -	2.4024	001	INTY Bu	incombe		GEOLOGIST Dani	el, T. B.	
	ID. B-4034	COUNTY Buncombe	GEOLOGIST Hag		1 1	JECT NO.			10. E	3-4034 NC 151 OVER STONI			III IOOI IIDC			GROUND V	NTR (ft)
SITE DESCRIPTION BRDG NO 1	34 ON NC 151 OVER STONEY FO			GROUND WTR (ft)	ļ			SKUG NO		ATION 17+35		SET 221	ft RT	ALIGNI	MENT -L-	0 HR.	N/A
BORING NO. EB1-A	STATION 17+56	011021 201121	ALIGNMENT -L-	0 HR. N/A	 	ING NO.				TAL DEPTH 66.2 ft		THING			IG 886,851	24 HR.	3.4
COLLAR ELEV. 2,438.6 ft	TOTAL DEPTH 43.0 ft		EASTING 886,531	24 HR. N/A	 	LAR ELEV				ILL METHOD H.S. AL		.,,			HAMMER TYPE	Automatic	
DRILL MACHINE CME-550	DRILL METHOD NW Casing w		HAMMER TYPE		l	L MACHIN				MP. DATE 02/10/05		FACE W	ATER DEPTH	N/A	DEPTH TO ROCK	N/A	
START DATE 09/03/08	COMP. DATE 09/03/08	SURFACE WATER DEPTH N/A	DEPTH TO ROC	K 43.0 ft	 	DRIVE L		BLOW COL		BLOWS PE			SAMP.	- [SOIL AND ROCK DES	PIDTION	
ELEV DRIVE DEPTH BLOW COU		75 400	SOIL AND ROCK DES	SCRIPTION DEPTH (ft)	ELEV (ft)	DRIVE ELEV (ft)).5ft 0.5ft		0 25 50		100	NO. MOI	O 3	SOIL AND ROCK DES		
(ft) ELEV (ft) 0.5ft 0.5ft	0.5ft 0 25 50	75 100 NO. MOI G I	ELEV. (ft)	DEPTH (II)													
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2440			2,438.6 GROUND SURI	FACE 0.0	I -	1 ‡								Ł	ALLUVIAL Brown silty sa	ıd	
‡		· · · · · · · · · · · · · · · · · · ·	ALLUVIAL Boulders, Cobbles, and Gra	avels Infilled with									V	2,435.3			4.5
2435			Silty Sand.	•	2435	2,435.1	4.7	13 8	10					2,433.3	ALLUVIAL Brown coarse sand a	nd gravel	
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			Gneiss Boring Terminated WIT	H STANDARD		1 I								*			
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NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELO	OG REPORT					ID. B-4034	COUNTY Buncombe	GEOLOGIST Dar	iel, T. B.
	D. B-4034	COUNTY Buncombe	GEOLOGIST Hage		PROJECT NO. 34401.1.1 SITE DESCRIPTION BRDG NO				GROUND WTR
	4 ON NC 151 OVER STONEY FO	RK CREEK		GROUND WTR (ft)		STATION 18+23	OFFSET 5ft LT	ALIGNMENT -L-	0 HR. 3
ORING NO. EB2-B	STATION 18+49	OFFSET 26ft RT	ALIGNMENT -L-	0 HR. N/A	BORING NO. EB2-C	TOTAL DEPTH 48.5 ft	NORTHING 648,159	EASTING 886,585	24 HR. FI
OLLAR ELEV. 2,435.7 ft	TOTAL DEPTH 60.2 ft	NORTHING 648,185	EASTING 886,585	24 HR. N/A	COLLAR ELEV. 2,439.2 ft	DRILL METHOD NW Casing		HAMMER TYPE	Automatic
RILL MACHINE CME-550	DRILL METHOD NW Casing w		HAMMER TYPE	Automatic	DRILL MACHINE CME-550		SURFACE WATER DEPTH	N/A DEPTH TO ROO	K 43.7 ft
TART DATE 09/04/08	COMP. DATE 09/04/08	SURFACE WATER DEPTH	N/A DEPTH TO ROCI	K 60.2 ft	START DATE 02/17/05	COMP. DATE 02/17/05 UNT BLOWS PER FO	OOT SAMP.	The same proof DE	COUNTION
DD0/F DLOW COUNT			SOIL AND ROCK DES	CRIPTIÓN	ELEV DRIVE DEPTH BLOW COU		75 100 NO. MOI G	•	CRIPTION
EV DRIVE DEPTH BLOW COUN (ft) (ft) 0.5ft 0.5ft 0	1	75 100 NO. MOI G	}	DEPTH (ft)	(ii) (ff) (ii) 0.5ii 0.5ii	0.511			
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140			-					Red-Brown, sand a	•
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435 + + + +			ALLUVIAL Brown silty sand and sa		2433 2,434.9 4.3 6 7	5 . •12	Sat.	0.94 0.00 0.00	
			2,432.8 cobbles and gra	vels. 2.9				001 000 00 1	
2 420 5 5 2			ALLUVIAL Boulders, Cobbles, and Gra	avels Infilled with	2430 2,429.9 9.3	12		\$ 	
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			SAPROLITI Black to brown to gray and	E d white, trace to	2420 2,419.9 19.3			Brown silty sand with tr	ace to little mica.
20 2,420.5 15.2 2 5	6	Sat.	little micaceous, si	ilty sand.	3 4	4		(1) [(1) [
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2,395.5 40.2 6 11	13		+					CRYSTALLII Gnei	
			<u>}</u>			1 11 1 1		2,390.7 Boring Terminated at E	
390 2,390.5 + 45.2			<u>#</u>		2390			1 1	
390 2,550.5 10 20	23	w						CRYSTALLINE R	JUN (GINEISS)
			4		1				
385 2,385.5 50.2 15 18	22	·· ···	<u> </u>		2385				
15 18	· · · · · · · · · · · · · · · · · ·								
	$ \cdot \cdot :::::::::::::::::::::::::::::::::$		*		2380				
80 2,380.5+ 55.2 8 16	18	Sat.		58				1 -	
		-:	2,377.6 WEATHERED	ROCK59	al			1 -	
2,375.5+ 60.2			2,376.7 WEATHERED 2,375.5 Gneiss CRYSTALLINE	60	2 2375 ‡			1 F	
375 2,575.5 60/0.0		60/0.0●	- Gneiss	5				F	
			Boring Terminated V ADVANCER REFUSAL a	VITH CASING tt Elevation 2,375.5				 	
2370			ft IN	, , , , , , , , , , , , , , , , , , ,	2370				
1 1			CRYSTALLINE RO	CK (GNEISS)					
 			F		2365				
2365	,		F					1 -	
			F		11 1 I I			I E	



FIELD SCOUR REPORT

	WBS:	33401.1.1	TIP:	B-4034	COUNTY: Buncombe
Е	ESCRIPTION(1): <u>l</u>				
F	-				
				EXISTING	
	Information from:	Field I Othe	nspection r (explain)	X Micr NCGS Topograp	ofilm(reelpos:) hic Map (Dunsmore Mtn. Quadrangle)
	Bridge No.: 1 Foundation Type:	34Length Concrete Footii	n: 42 ng on alluv	Total Bents: 2	Bents in Channel: 0 Bents in Floodplain: 2 obbles
	EVIDENCE OF S Abutments or E		s: None n	oted	
	Interior Bents:	N/A		,	
	Channel Bed:	None noted.			
	Channel Bank:	None noted			
	EXISTING SCO	UR PROTECTI	ON		
		Wing Walls on		<u> </u>	
	Extent(4):	Approximately	15' at all	corners of existing	structure.
	Effectiveness(5):	Slight undercu	tting of foo	oting, has been re	paired with concrete skirting below wingwall.
	Obstructions(6):	None noted			·

INSTRUCTIONS

- 1 Describe the specific site's location, including route number and body of water crossed.
- 2 Note scour evidence at existing end bents or abutments (e.g. undermining, sloughing, degradations).
- 3 Note existing scour protection (e.g. rip rap).
- Describe extent of existing scour protection.
- Describe whether or not the scour protection appears to be working.
- Note obstructions such as dams, fallen trees, debris at bents, etc.
- 7 Describe the channel bed material based on observation and/or samples. Include any lab results with report.
- Describe the channel bank material based on observation and/or samples. Include any lab results with report.
- Describe the material covering the banks (e.g. grass, trees, rip rap, none).
- 10 Determine the approximate floodplain width from field observation or a topographic map.
- 11 Describe the material covering the floodplain (e.g. grass, trees, crops).
- 12 Use professional judgement to specify if the stream is degrading, aggrading, or static.
- 13 Describe potential and direction of the stream to migrate laterally during the bridge's life (approx. 100 years).
- 14 Give the design scour elevation (DSE) expected over the life of the bridge (approx. 100 years). This elevation can be given as a range across the site, or for each bent. Discuss the relationship between the Hydraulics Unit theoritical scour and the DSE. If the DSE is dependent on scour counter measures, explain (e.g. rip rap armoring on slopes). The DSE is based on the erodability of materials, giving consideration to the influence of joints, foliation, bedding characteristics, % core recovery, % RQD, differential weathering, shear strength, observations at existing structures, other tests deemed appropriate, and overall geologic conditions at the site.

			DESI	GN INF	ORMA	TION					
Channel Bed Mate	erial(7): I	Boulders, cobbles, and gravels.									
	`										
Channel Bank Mate	erial(8): <u> </u> -	Boulders, cobbles, and gravels infilled with silt and sand.									
Channel Bank Co	over(9):	Minor bru	Minor brush, grasses or no cover.								
Floodplain Width(10): 300'											
Floodplain Cover(11): Grasses, Shrubs, and trees. Stream is(12): Aggrading DegradingX Static											
									ic		
nannel Migration Tender	icy(13):	From So	uth to No	orth at br	idge site.						
Observations and Othe	r Comm	nents: No	ne notec	<u>I.</u>							
DESIGN SCOUR ELE	VATION	IS(14)				Feet	<u>X</u>	Mete	ers	- .	
	BENTS EB1	EB2									
Left Side (A)			•								
Right Side (A)											
rtight Glas (2)											
İ										_	
										_	
				·		<u></u>			<u></u>		
Comparison of DSE to	Hydrau	lics Unit t	heoretic	al scour:							
No theoretical scour av	ailable a	at time of	investig	ation for	comparis	son.					
No scour is anticipated	at the e	end bents.									
SOIL ANALYSIS RES	ULTS F	ROM CH	ANNEL	BED AN	ND BANK	K MATE	RIAL				
Bed or Bank										-	
Sample No.											
Retained #4										+	
Passed #10											
Passed #40										_	
Passed #200											
Coarse Sand											
Fine Sand					+						
Silt					-						
Clay											
					+						
PI					-						
AASHTO			_		+						
Station	·				+						
Offset			-								
Depth											

Form GEU-017e Revised 7/26/2007

Date: 10/3/2008



Looking East from -L-STA 18+10, 50 LT