EMERGENC REFER

CONTENTS

DESCRIPTION

SUPPLEMENTAL LEGEND (GSI)

TITLE SHEET LEGEND (SOIL & ROCK)

SITE PLAN

BORE LOGS

SHEET NO.

2A

4-5

HENDERSON

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY _HENDERSON
PROJECT DESCRIPTION <u>REPLACE BRIDGE</u> #0036
ON SR 1585 (SOUTH MILLS GAP RD.)
OVER CLEAR CREEK
SITE DESCRIPTION

STATE	STATE PROJECT REFERENCE NO.	NO.	TOTAL
V.C.	EMERGENCY	1	5

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF PREPARING THE SCOPE OF WORK TO BE INCLUDED IN THE REQUEST FOR PROPOSAL. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DOTA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEGIN BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1991 707-680. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

SOIL AND ROCK BOUNDARES WITHIN BOREHOLE ARE BASED ON GEOTECHNICAL INTERPRETATION UNLESS ENCOUNTERED IN A SAMPLE, INTERPRETED BOUNDARIES MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN SAMPLED STRATA AND BOREHOLE REFORMATION MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN BORNOSS. THE LABORATORY SAMPLE DATA AND THE IN SITU INH-PLACEJ TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERITY IN THE STANDARD TEST METHOD. THE OBSERVED MATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE RIVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION, THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH THAE ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WHO, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHORM ON THE SUBSURFACE PLANS ARE PRELAMMARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THAT PROJECT, THE DEPARTMENT DOES NOT TRANSANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE RITERRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO PERFORM RODEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSANT TO CONFIRM CONDITIONS ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAMFOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TAME FOR ANY REASON RESULTANG FROM THE SUTE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

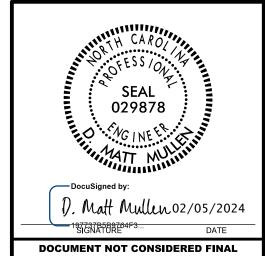
NOTES:

1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.

2. BY HAVIOR REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAMS FOR INCREASED COMPENSATION OR EXTENSION OF THE BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

CE STEWMAN

CJ COFFEY
JD WORLEY
INVESTIGATED BY DM MULLEN
DRAWN BY DM MULLEN
CHECKED BY DC ELLIOTT
SUBMITTED BY DC ELLIOTT
DATE <u>2/5/2024</u>



UNLESS ALL SIGNATURES COMPLETED

EMERGENCY 2

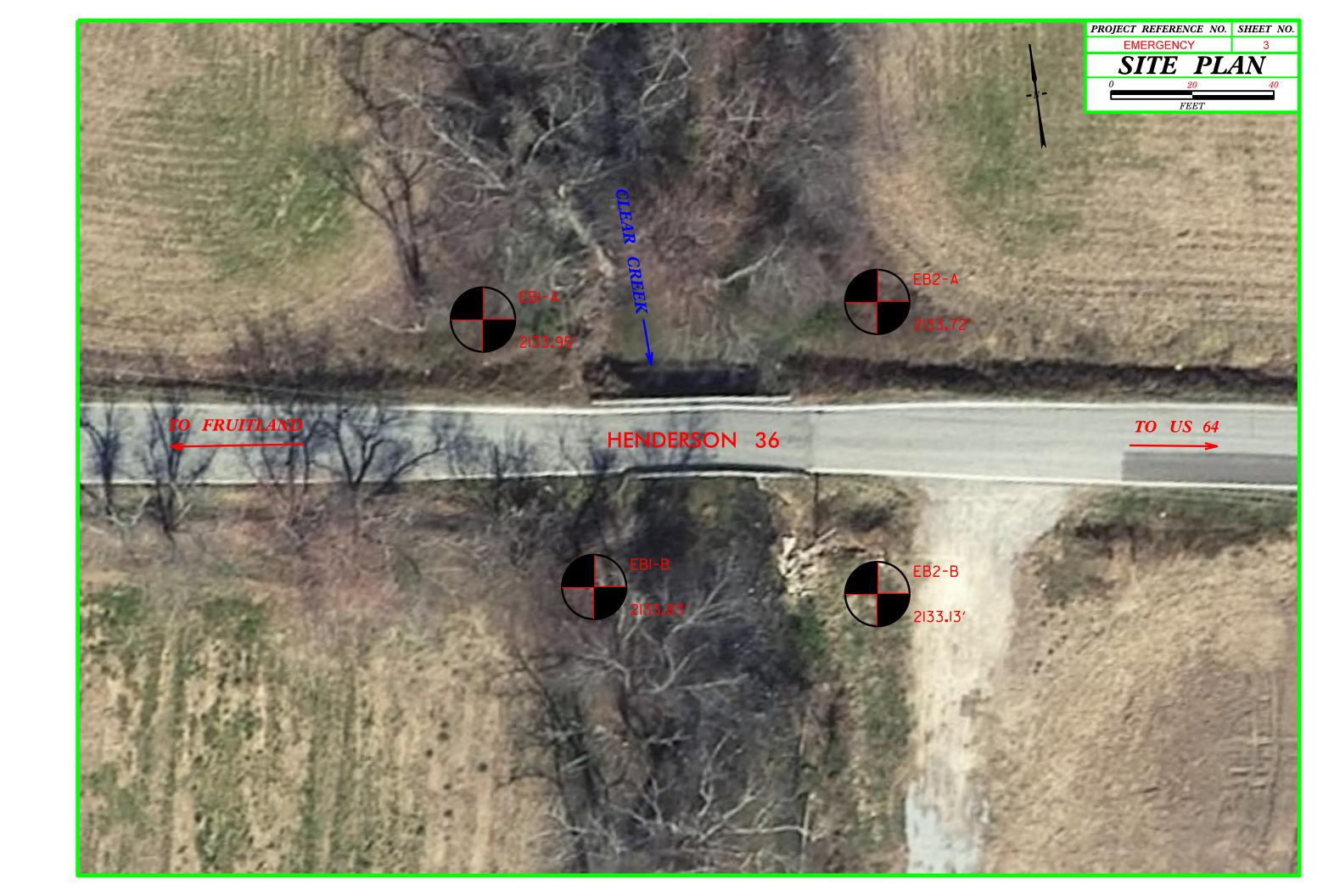
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADAT ON	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 180 BLOWS PER FOOT	WELL CRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY CRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.	MARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM DIS66), SDIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES 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	<u>AQUIFER</u> - A WATER BEARING FORMATION OR STRATA, <u>ARENACEOUS</u> - 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. FOR EXAMPLE,	ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAYING
VERY STIFF,GRAY,SULTY CLAY,NOIST WITH INTERBEDOED FINE SAND LAYERS,HIGHLY PLASTIC,A-7-6	THE ANGULARITY OR ROUMONESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS. ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	MEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
SOIL LEGEND AND AASHTO CLASSIFICATION GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS	MINERALOGICAL COMPOSITION	CONSTALLINE FINE TO COARSE CRAIN IGNEOUS AND METAMORPHIC ROCK THAT	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
CLASS. (≤ 35% PASSING "200) (> 35% PASSING "200) (***********************************	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED, ROCK TYPE INCLUDES GRANITE, CAREISS, GABBRO, SCHIST, ETC.	SURFACE. <u>CALCAREOUS (CALC.)</u> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1,a-2 A-4,a-5 CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-1,a-2 A-4,a-5 A-6,a-7	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE CRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YELLD SPT REFUSAL IF TESTED.	COLLUYIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
5mg0. ::::::::::::::::::::::::::::::::::::	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL • 31 - 50	ROCK (NCR) ROCK TYPE INCLUDES PHYLLITE, SATE, SANOSTONE, ETC. COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	OF SLOPE,
2 PASSING SILT-	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANOSTONE, CEMENTED SHELL BEDS, ETC.	CORE RECOVERY IREC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*10 50 NZ 50 NX 51 N01 151 N01 N01 N01 N01 N01 N01 N01 N01 N01 N0	PERCENTAGE OF MATERIAL GRANLLAR SILT - CLAY	WEATHERING	<u>DIKE</u> - A TABULAR BODY OF ICHEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
"280 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 M1 36 M1	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 32, 3 - 52, TRACE 1 - 102,	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
PASSING *40 SOILS WITH	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 18 - 28% MODERATELY ORGANIC 5 - 18% 12 - 28% SOME 28 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,	HORIZONTAL. <u>DIP DIRECTION (DIP AZIMUTH)</u> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE
LL 40 MX 41 M0 40 MX 41 M0 40 MX 41 M0 40 MX 41 M0 LITILE OR HIGHLY PI 6 MX NP 10 MX 10 MX 11 M0 10 MX 10 MX 11 M0 11 M0 MODERATE HIGHLY	HIGHLY ORGANIC > 18% > 28% HIGHLY 35% AND ABOVE	(V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH,
CROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX MO MX MOUNTS OF ORGANIC SOILS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
OF MAINE CRANCE AND FINE SILTY OR CLAYEY SILTY CLAYEY MATTER	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER ORILLING	I INCH, OPEN JOINTS MAY CONTAIN CLAY, IN CRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SAND CAMPEL AND SAND SUILS SUILS	STATIC WATER LEVEL AFTER 24 HOURS \[\sum_{PW} \] PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS, IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY, ROCK HAS	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOCGED FROM PARENT MATERIAL.
GEN, RATING EXCELLENT TO COOD FAIR TO POOR FAIR TO POOR POOR UNSUITABLE	0.00	OULL SOLAD 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 THE STREAM,
PI OF A-7-5 SUBCROUP IS ≤ LL - 30 :PI OF A-7-6 SUBCROUP IS > LL - 30		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELOSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
CONSISTENCY OR DENSENESS RANGE OF STANDARD RANGE OF UNCONFINED	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES "CLUMK" SOUND WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY PENETRATION RESISTENCE (TOMS/FT2)	ROADWAY EMBANKMENT (RE) ROADWAY EMBANKMENT (RE) OF ROCK STRUCTURES	IF TESTED. WOLLD YIELD SPT REFUSAL SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
CEMERALLY VERY LOOSE < 4	SLOPE INDICATOR	ISEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
GRANULAR LOOSE 4 TO 18 GRANULAR MEDIUM DENSE 18 TO 38 N/A	1 60	TO SOME EXTENT, SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOLLD YIELD SPI N VALUES > 180 8PF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS
MATERIAL DENSE 30 TO 50 (NON-COHESIVE) VERY DENSE > 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CONE PENETROMETER TEST	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25	- INFERRED SOIL BOUNDARY CORE BORING • SOUNDING ROD	IV SEV.) REMAINING, SAPPOLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DECREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOLLD YIELD SPT N VALUES < 100 BPF	OF AN INTERVENING IMPERVIOUS STRATUM.
CENERALLY SOFT 2 TO 4 8.25 TO 8.5 SILT-CLAY MEDIUM STIFF 4 TO 8 8.5 TO 1.8	INFERRED ROCK LINE MONITORING WELL TEST BORING WITH CORE	VESTIGES OF ORIGINAL HOCK FABRIC NEMAIN. IF TESTED BOOLD YIELD SPT N VALUES CIBB BPF COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
MATERIAL STIFF 8 TO 15 1 TO 2 (CONESIVE) VERY STIFF 15 TO 38 2 TO 4	A PIEZOMETER CON TOUR MANUEL	SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
HARD > 38 > 4	INSTRUCTION —	ROCK HARDNESS	Run and expressed as a percentage. <u>Saprolite (Sap.)</u> - residual soil that retains the relic structure or fabric of the parent
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS [XX] LANGEBOUX [XX] L	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES	ROCK.
U.S. STO. SIEVE SIZE 4 10 40 60 200 270 OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	UNSUITABLE WASTE	SEVERAL MARO BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, MARD MANMER BLOWS REQUIRED	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
BOULDER COBBLE GRAYEL COARSE FINE SILT CLAY	SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. <u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
(BLDR.) (COB.) (GR.) (CSE. SO.) (F SO.) (SL.) (CL.)	ABBREVIATIONS	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 8.25 INCHES DEEP CAN BE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED	OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3	AR - AUGER REFUSAL MED MEDIUM YST - YANE SHEAR TEST BT - BORING TERMINATED MICA, - MICACEOUS WEA, - WEATHERED	BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 8.85 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	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
SOIL MOISTURE - CORRELATION OF TERMS	CL CLAY MOD MODERATELY 7 - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7 - DRY UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE CHIEF OF STELL MOISTURE OF SCRIPTION	CSE COARSE ORG ORGANIC	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY
CATTENDENC CIMITS) DESCRIPTION	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.	TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY (SAT.) FROM BELOW THE CROUND WATER TABLE	e - VOID RATIO SO SAND, SANDY SS - SPLIT SPOON F - FINE SL SILT, SILTY ST - SHELBY TUBE	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH	STRATA ROCK QUALITY DESIGNATION ISROD: A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SECRENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASTIC PLASTIC PROVIDED CONTROL OF THE PLASTIC PROVIDED CONTROL OF	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.	TOPSOIL (15.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
PANCE / LUT SEMISULIDIRES DATING TO	FRAGS FRAGMENTS w - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: BOREHOLES WERE LOCATED BY DIV 14 SURVEY PERSONNEL
(PI) PL PLASTIC LIMITATTAIN OPTIMUM MOISTURE	HI HIGHLY V - VERY RATIO EQUIPMENT USED ON SUBJECT PROJECT	TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	PROVIDING X,Y, AND Z ELEVATION: FEET
OM OPTIMUM MOISTURE - MOIST - (M) SOLID: AT OR NEAR OPTIMUM MOISTURE	ORILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	
SL _ SHRINKAGE LIMIT REQUIRES ADDITIONAL WATER TO	CME-45C CLAY BITS AUTOMATIC X MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEODED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	NOTES:
- DRY - (D) ATTAIN OPTIMUM MOISTURE	CME-55 CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.000 FEET	
PLASTICITY	8" HOLLOW AUGERS	INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE MARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
PLASTICITY INDEX (PI) ORY STRENGTH NON PLASTIC 0-5 VERY LOW	X CME-550	FRIADE F RUBBING WITH FINGER FREES NUMEROUS GRAINS	
SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM	VANE SHEAR TEST W commerce HAND TOOLS:	CENTE GLUW BY PROPER DISINIEGURIES SMALLE.	
HIGHLY PLASTIC 26 OR MORE HIGH	PORTABLE HOIST TRICONE STEEL TEETH MAND AUGER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE: BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	TRICONE	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE:	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY),	CORE BIT WANE SHEAR TEST	DIFFICULT TO BREAK WITH HAMMEN,	
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	<u> </u>	EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-1-



GEOTECHNICAL BORING REPORT BORE LOG

WBS 999 TIP 999 CO	JNTY HENDERSON GEO	LOGIST Stewman, C. E.	WBS 999 TIP 999 COUNTY	HENDERSON GEOLOGIST Stewman, C. E.
SITE DESCRIPTION BRIDGE 36 OVER CLEAR CREEK ON S.		GROUND WTR (ft)	SITE DESCRIPTION BRIDGE 36 OVER CLEAR CREEK ON S. MILLS	
BORING NO. EB1-A STATION N/A	OFFSET N/A ALIG	N/A 0 HR. N/A	BORING NO. EB1-B STATION N/A OI	FFSET N/A ALIGNMENT N/A 0 HR. N/A
COLLAR ELEV. 2,134.0 ft TOTAL DEPTH 45.3 ft	NORTHING 614,738 EAST	TING 994,570 24 HR . 6.0	COLLAR ELEV. 2,133.8 ft TOTAL DEPTH 45.2 ft NO	ORTHING 614,670 EASTING 994,588 24 HR. FIAD
DRILL RIG/HAMMER EFF./DATE AFO8963 CME-550X 83% 04/11/2022	DRILL METHOD NW Casing		DRILL RIG/HAMMER EFF./DATE AF08963 CME-550X 83% 04/11/2022	DRILL METHOD NW Casing w/ SPT HAMMER TYPE Automatic
DRILLER Coffey, Jr., C. START DATE 01/23/24	<u> </u>	FACE WATER DEPTH N/A	DRILLER Coffey, Jr., C. START DATE 01/24/24 CO	OMP. DATE 01/24/24 SURFACE WATER DEPTH N/A
ELEV DRIVE DEPTH BLOW COUNT BLOWS PER F		SOIL AND ROCK DESCRIPTION	ELEV (ft) DRIVE ELEV (ft) DEPTH (ft) BLOW COUNT (ft) BLOWS PER FOOT (ft) 0.5ft 0.5ft 0.5ft 0 25 50 75	SAMP. L SOIL AND ROCK DESCRIPTION
2135 2130 2,128.8		GROUND SURFACE 0.0 ALLUVIAL BROWN, GRAY SILT-SAND W/ SUB-ROUNDED PEBBLES (A-2) ***COBBLES/BOULDERS @ 6.7' SAPROLITE GRAY/WHITE SL. MICACEOUS SAND-SILT (A-4)	2135 2130 2130 2,128.7 - 5.1 2125 2,123.7 - 10.1 2120 2,118.7 - 15.1 2	100

GEOTECHNICAL BORING REPORT BORE LOG

