STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HE-0002	1	54

REFERENCE: HE-0002

PROJECT: 49745

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

APPENDIX A

APPENDIX B

APPENDIX B BORE LOG AND SOIL TEST DATA COLLECTED PRIOR TO CHANGE OF PROPOSED CONSTRUCTION LIMITS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *WAKE*

PROJECT DESCRIPTION *PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS*

INVENTORY

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 DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

SOIL AND ROCK BOUNDARIES WITHIN A 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 INFORMATION MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) 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 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 INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE 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 HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE 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.

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

PERSONNEL

J. HOLLAND

J. ROSE

C. SWAFFORD

SUMMIT PLLC

INVESTIGATED BY *J. HOLLAND*

DRAWN BY *J. HOLLAND*

CHECKED BY *J. CRENSHAW*

SUBMITTED BY *SCHNABEL ENG.*

DATE *MAY 2023*

Schnabel ENGINEERING

NORTH CAROLINA LICENSED SEAL 2818 GEOLOGIST JASON A. HOLLAND

DocuSigned by: Jason Holland 05/16/2023

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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
HE–0002	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,
VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	26 OR MORE	HIGH

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.

GRADATION

WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.
GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LL < 31
MODERATELY COMPRESSIBLE	LL = 31 - 50
HIGHLY COMPRESSIBLE	LL > 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT, DPT, DMT, VST, PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

RECOMMENDATION SYMBOLS

- UNDERCUT
- SHALLOW UNDERCUT
- UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE
- UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK
- UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

S - BULK
SS - SPLIT SPOON
ST - SHELBY TUBE
RS - ROCK
RT - RECOMPACTED TRIAXIAL
CBR - CALIFORNIA BEARING RATIO

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] CME-45C
- [ ] CME-55
- [X] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [X] -N 02

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

HARD 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. 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 OF WEATHERED ROCK.
ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
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 ALSO AN EXAMPLE.

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.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	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 HARD	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 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 SOFT	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

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	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.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - 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, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.

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 SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

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.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND 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.

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 (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK: BM-3 N:690678.8350 E:2041477.6800

ELEVATION: 304.616 FEET

NOTES:

BORING AND GROUND SURFACE ELEVATIONS OBTAINED FROM 'HE0002_CON_SAM_FS_ETM' FILE DATED 02/06/2023

FIAD - FILLED IMMEDIATELY AFTER DRILLING

DATE: 8-15-14

PROJECT REFERENCE NO.	SHEET NO.
HE-0002	2A

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SUPPLEMENTAL LEGEND, GEOLOGICAL STRENGTH INDEX (GSI) TABLES FROM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

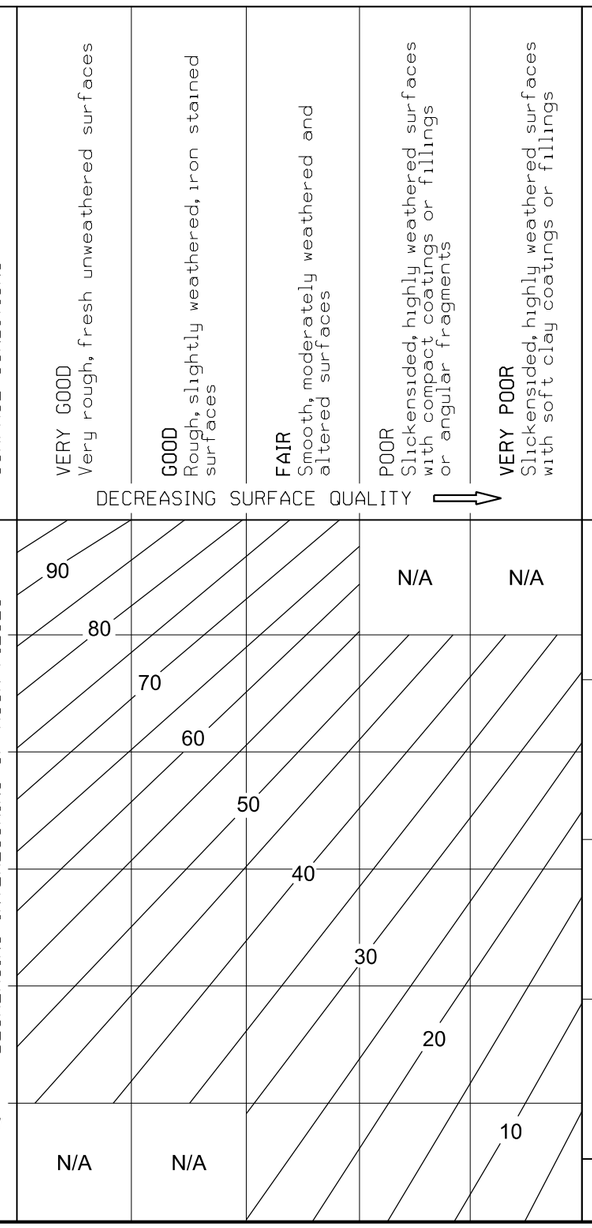
AASHTO LRFD Figure 10.4.6.4-1 — Determination of GSI for Jointed Rock Mass (Marinos and Hoek, 2000)

GEOLOGICAL STRENGTH INDEX (GSI) FOR JOINTED ROCKS (Hoek and Marinos, 2000)

From the lithology, structure and surface conditions of the discontinuities, estimate the average value of GSI. Do not try to be too precise. Quoting a range from 33 to 37 is more realistic than stating that GSI = 35. Note that the table does not apply to structurally controlled failures. Where weak planar structural planes are present in an unfavorable orientation with respect to the excavation face, these will dominate the rock mass behaviour. The shear strength of surfaces in rocks that are prone to deterioration as a result of changes in moisture content will be reduced if water is present. When working with rocks in the fair to very poor categories, a shift to the right may be made for wet conditions. Water pressure is dealt with by effective stress analysis.

STRUCTURE

- INTACT OR MASSIVE - intact rock specimens or massive in situ rock with few widely spaced discontinuities
- BLOCKY - well interlocked undisturbed rock mass consisting of cubical blocks formed by three intersecting discontinuity sets
- VERY BLOCKY - interlocked, partially disturbed mass with multi-faceted angular blocks formed by 4 or more joint sets
- BLOCKY/DISTURBED/SEAMY - folded with angular blocks formed by many intersecting discontinuity sets. Persistence of bedding planes or schistosity
- DISINTEGRATED - poorly interlocked, heavily broken rock mass with mixture of angular and rounded rock pieces
- LAMINATED/SHEARED - Lack of blockiness due to close spacing of weak schistosity or shear planes

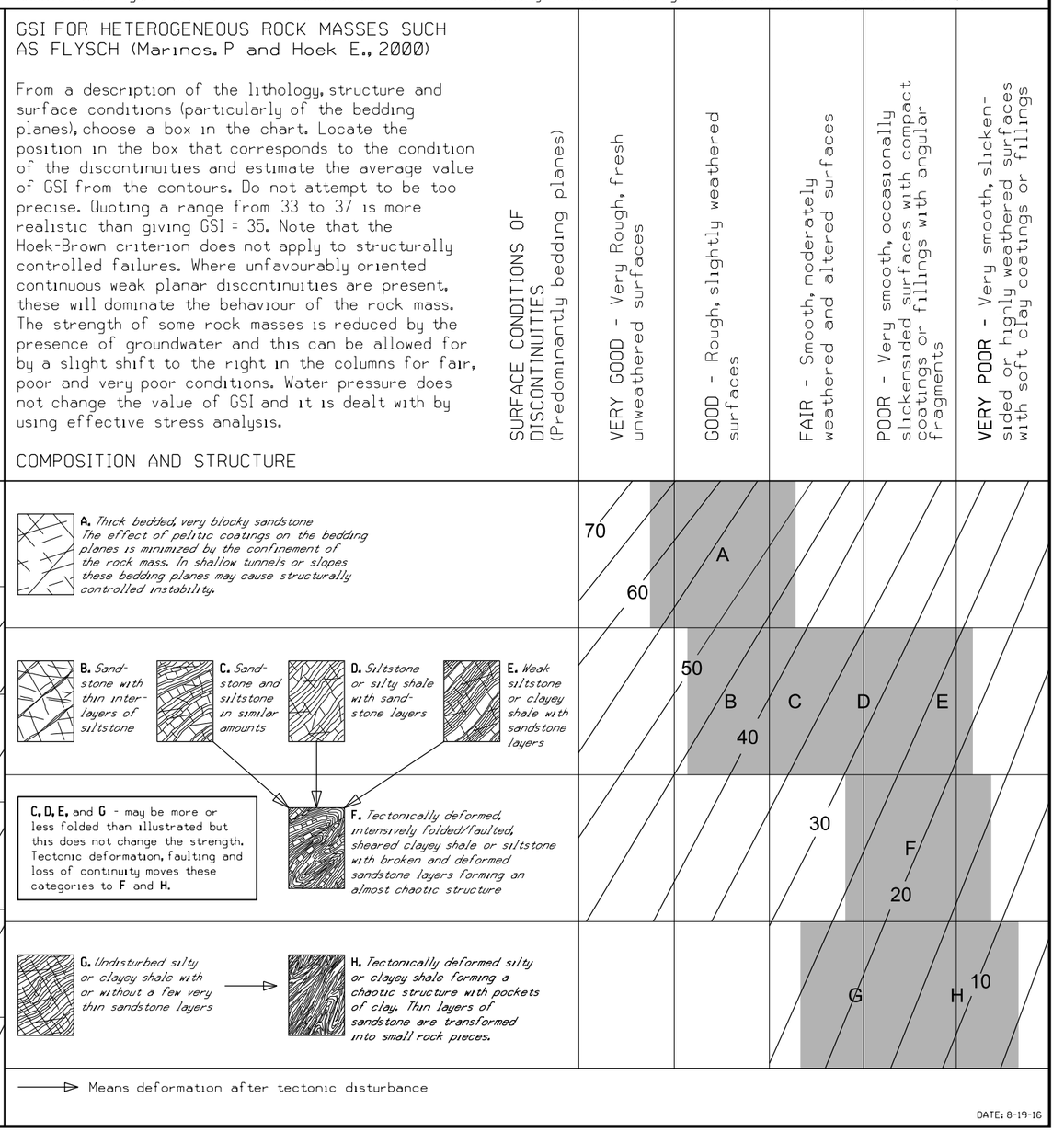


AASHTO LRFD Figure 10.4.6.4-2 — Determination of GSI for Tectonically Deformed Heterogeneous Rock Masses (Marinos and Hoek, 2000)

GSI FOR HETEROGENEOUS ROCK MASSES SUCH AS FLYSCH (Marinos. P and Hoek E., 2000)

From a description of the lithology, structure and surface conditions (particularly of the bedding planes), choose a box in the chart. Locate the position in the box that corresponds to the condition of the discontinuities and estimate the average value of GSI from the contours. Do not attempt to be too precise. Quoting a range from 33 to 37 is more realistic than giving GSI = 35. Note that the Hoek-Brown criterion does not apply to structurally controlled failures. Where unfavourably oriented continuous weak planar discontinuities are present, these will dominate the behaviour of the rock mass. The strength of some rock masses is reduced by the presence of groundwater and this can be allowed for by a slight shift to the right in the columns for fair, poor and very poor conditions. Water pressure does not change the value of GSI and it is dealt with by using effective stress analysis.

COMPOSITION AND STRUCTURE



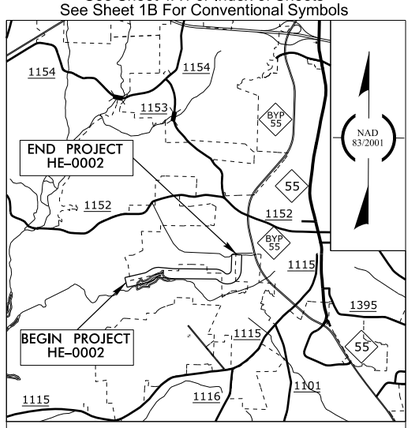
DATE: 8-19-16

09/08/99

TIP PROJECT: HE-0002

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP (NTS)

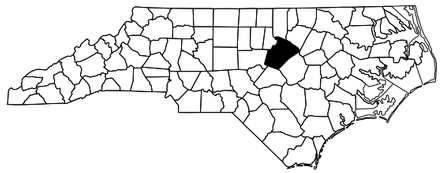
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

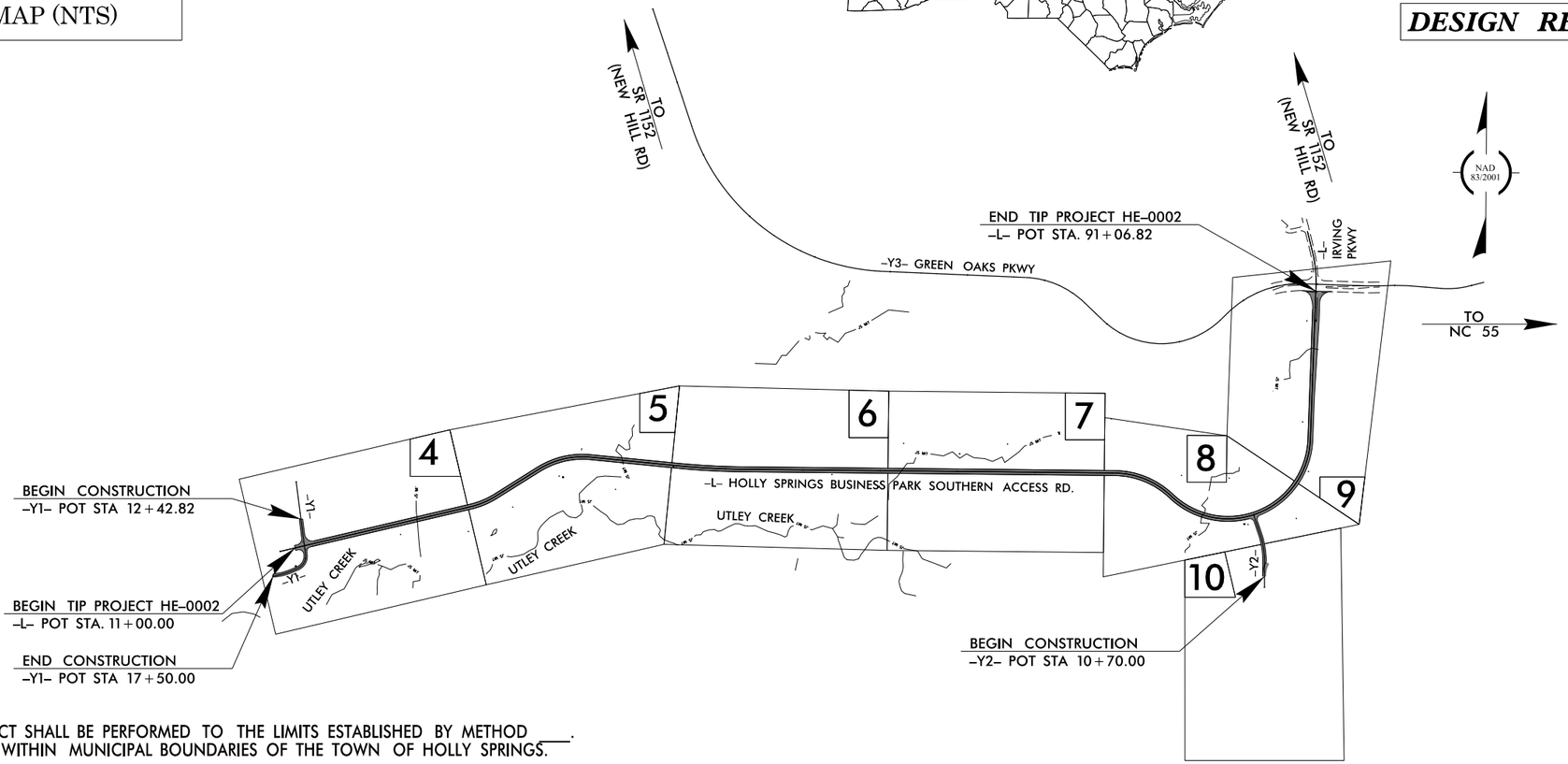
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HE-0002	3	54
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
49745.1.1	N/A	PE	

LOCATION: *ACCESS ROAD INTERSECTING GREEN OAKS PARKWAY*
BETWEEN THOMAS MILL RD AND NC 55

TYPE OF WORK: *GRADING, DRAINAGE, PAVING (ABC COURSE), AND CULVERT*



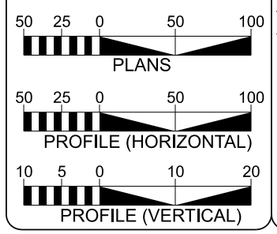
DESIGN RECOMMENDATION PLANS



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.
THIS PROJECT IS LOCATED WITHIN MUNICIPAL BOUNDARIES OF THE TOWN OF HOLLY SPRINGS.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 7,800
ADT 2045 = 10,700
K = 13 %
D = N/A %
T = N/A % *
V = 40 MPH
* TTST =N/A DUAL N/A
FUNC CLASS =
LOCAL
REGIONAL TIER

PROJECT LENGTH

PROJECT LENGTH FOR TIP PROJECT HE-0002

LENGTH ROADWAY	=	1.516 MILES
TOTAL LENGTH	=	1.516 MILES

NCDOT CONTACT: TRACY N. PARROTT, P.E.

PREPARED IN THE OFFICE OF:

CDM Smith

CDM Smith Inc.
5400 Glenwood Avenue
Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 27, 2023

LETTING DATE:
TBD

DAVID Z. KEISER, P.E.
PROJECT ENGINEER

CURTIS J. TILLMAN, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

Schnabel Engineering South, P.C.
1133 Military Cutoff Road, Suite 210 / Wilmington, NC 28405
T 910.769.1621
schnabel-eng.com

May 8, 2023

STATE PROJECT: 49745.1.1

TIP NUMBER: HE-0002

COUNTY: WAKE

DESCRIPTION: PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS

SUBJECT: Geotechnical Roadway Inventory Report

Project Description

The project consists of constructing a new access road intersecting Green Oaks Parkway, between Thomas Mill Road and NC 55, SR 1153 intersection with Bennet Knoll Parkway, and SR 1152 intersection with SR1153 in the city of Holly Springs, North Carolina. At the time of this report, all design work from -L- Sta. 70+00 to the end of construction limits (-L- Sta. 91+06.82) and -Y2- Sta. 11+41.36 to 14+62.94 is to be done by others. Logs for borings advanced between -L- Sta. 71+00 – 91+00 and -Y2- 12+50 – 14+50 are appended to this report for reference. The original proposed project was 1.67 miles in length. The current plans show a total project length of 1.27 miles.

The field investigation was conducted in November and December of 2022 using a track-mounted CME 550X, with automatic hammer, and hand tools. Standard Penetration Tests (SPT) were performed at selected locations. Borings were advanced with hollow stem auger equipment, rock coring equipment, and hand tools along the project corridor. Hand augers were performed at locations the drill rig could not access. Representative soil samples were collected and forwarded to an approved testing facility for soil quality analysis, moisture content, California Bearing Ratio, specific gravity, organic content, and AASHTO classification. Representative rock samples were submitted for unconfined compressive strength testing. Rock soundings were advanced with hollow stem augers in areas where crystalline rock was suspected to occur above the proposed grade.

The following alignments were investigated

Line	Station			Length (ft)
-L-	11+00	to	91+07	8007
-Y1-	12+43	to	17+50	507
-Y2-	10+70	to	14+63	393
			Total=	8,907 feet (~1.69 miles)

Physiography and Geology

Based on a review of the Geologic map of North Carolina (1985) and the Geologic map of the Apex 7.5-Minute Quadrangle, Wake County, North Carolina (2016) the project is located in the Piedmont Physiographic Province, between the Utley Creek Syncline and Holly Springs Anticline. Soils in the area generally consist of Triassic residual sands, silts, and clays. Weathered rock and Late Triassic sedimentary rock of the Chatham Group, primarily consisting of interbedded Conglomerate, Sandstone, Siltstone, and Mudstones (Trcc, Trcs) underlie, and are interbedded within the Triassic residual soils. Topography along the project corridor is gently rolling, traversing through a heavily wooded area to the north of Utley Creek. Natural ground elevations range from 278.0 ± feet above sea level at the beginning of the alignment to 386.0± feet above sea level at the end of project limits.

Soil Properties

Soil and rock encountered along the project corridor are divided into five categories based on origin: artificial fill, roadway embankment soils, alluvial soils, Triassic residual soils, weathered rock, and non-crystalline rock.

Artificial fill soils consisting of medium dense, clayey SAND (A-2-6), medium stiff to very stiff, sandy SILT (A-4), were encountered along existing utility easements in areas where underground pipes were installed. Soils moistures were typically moist to saturated and varied in thickness from the ground surface to a maximum of 4.8 feet thick.

Roadway embankment soils consisting of medium dense, silty SAND and clayey SAND (A-2-4, A-2-6), medium stiff to very stiff, sandy SILT and clayey SILT (A-4, A-5), and very soft to hard, sandy CLAY, silty CLAY, and sandy and silty CLAY (A-6, A-7) were encountered along the -L-, and -Y1- alignments. Soils moistures were typically dry to moist and varied in thickness from the ground surface to a maximum of 14 feet. Within the cohesive roadway embankment soils, moisture contents ranged from 8.0 to 15.0%. The plasticity indices (PI) within the cohesive soils ranged from 7 to 12.

Alluvial soils consisting of medium dense, SAND and GRAVEL (A-1-b), soft, sandy SILT and clayey SILT (A-4, A-5), and soft to medium stiff, sandy CLAY, silty CLAY (A-6, A-7-6) were encountered along the -L- and -Y1- alignments. Soils moistures were typically moist and varied in thickness from the ground surface to at least 3 feet thick. Within the cohesive alluvial soils, moisture contents ranged from 18.0 to 21.0%. The plasticity indices (PI) within the cohesive sediments ranged from 2 to 22.

Triassic Residual soils consisting of loose to very dense silty SAND and clayey SAND (A-2-4, A-2-6), medium stiff to hard, sandy SILT and clayey SILT (A-4, A-5), and soft to hard, sandy CLAY, silty CLAY, and sandy and silty CLAY (A-6, A-7, A-7-6) were encountered along the -L-, -Y1-, and -Y2- alignments. Soil moistures were typically dry to moist and varied in thickness from the ground surface to a maximum of 21 feet. Within the cohesive Triassic residual soils, moisture contents ranged from 6.0 to 27.0%. Plasticity indices (PI) within the cohesive sediments range from 3 to 26.

Weathered rock consisting of gray, white, red, brown, purple, and orange, CONGLOMERATE, SILTSTONE, AND MUDSTONE, was encountered underlying Triassic residual soils at several locations along the project corridor. Weathered rock elevations in these borings varied from 260.2± feet above sea level to 380.0± feet above sea level. Auger and split spoon refusal were noted beneath some of these layers on NCR (Conglomerate, Siltstone, and Mudstone).

Non-Crystalline rock consisting of gray, white, red, brown, purple, and orange, CONGLOMERATE, BRECCIA, SILTSTONE, AND MUDSTONE, was encountered underlying Triassic residual soils and weathered rock at several locations along the corridor. Top of rock elevations in these borings varied from 255.2± feet above sea level to 352.3± feet above sea level. Rock core samples collected at -L- Sta. 63+63 consist of interbedded breccia and siltstone.

Groundwater

All borings were left open for a minimum of 24 hours to equilibrate with the surrounding conditions. Groundwater data was collected in November and December of 2022, during a time of average precipitation. Groundwater elevations generally varied with topography and ranged from 264.5± to 346.5± feet above sea level.

Areas of Special Geotechnical Interest

A. Alluvial Soils were encountered in the following sections

Alignment	Begin Station	End Station
-L-	30+60	31+15
-L-	32+35	37+35
-L-	40+75	43+35
-L-	50+75	52+75
-L-	70+75	72+30
-Y1-	13+25	14+25

B. Groundwater was encountered within 6 feet of proposed grade in the following sections

Alignment	Begin Station	End Station
-L-	26+25	34+75
-Y1-	15+25	15+75

C. Non-crystalline rock was encountered above or within approximately 6 feet of the proposed grade within some of the cut sections along the project corridor. Rock soundings were advanced to the top of non-crystalline rock or deeper than the proposed grade to evaluate the presence of non-crystalline rock within cut sections. Rock core samples were collected at -L- station 63+63 to evaluate material properties.

Degradable Rock was encountered above or within 6 feet of proposed grade in the following sections

Alignment	Begin Station	End Station
-L-	26+25	27+25
-L-	44+75	47+25
-L-	52+75	70+25
-Y1-	12+43	13+75
-Y1-	16+25	17+50

D. Artificial Fill soils were encountered in the following sections

Alignment	Begin Station	End Station
-L-	20+15	20+45
-L-	30+19	32+10

Schnabel Engineering
1133 Military Cutoff Road, Suite 210
Wilmington, NC 28405

5/26/20

HE-0002

PLAN 004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED BY

Schnabel ENGINEERING

FUJIFILM DIOSYNTH BIOTECHNOLOGIES HOLDINGS DELAWAR
DB 18879 PG 1689

SEQIRUS INC
DB 16104 PG 1384

60' ACCESS EASEMENT
DB 1990 PG 160

BEGIN CONST -Y1-
POT STA 12+42.82

BEGIN TIP PROJECT HE-0002
-L- POT STA. 11+00.00

END CONST -Y1-
POT STA 17+50.00

-L- POT STA 11+62.18 =
-Y1- POT STA 14+16.17

TRIASSIC RESIDUAL

ALLUVIAL

ARTIFICIAL FILL

ROADWAY EMBANKMENT

CHAINLINK FENCE

FORCE MAIN

20" METAL

40' PERMANENT UTILITY EASEMENT TOWN OF HOLLY SPRINGS PROJECT NO. 04-0014

Utley Creek

PA

DUKE ENERGY PROGRESS INC
DB 15289 PG 2437

MATCH LINE -L- STA 22+50.00 SEE SHEET Plan 005

REVISIONS

5/26/20

HE-0002

PLAN 005

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

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MATCH LINE -L- STA 22+50.00 SEE SHEET Plan 004

MATCH LINE -L- STA 36+50.00 SEE SHEET Plan 006

SEQIRUS INC
DB 16104 PG 1384

DUKE ENERGY PROGRESS INC
DB 15289 PG 2437

60' ACCESS EASEMENT
DB 1990 PG 160

ALLUVIAL

TRIASSIC RESIDUAL

ARTIFICIAL FILL (SEWER LINE TRENCH BACKFILL)

BL-5 BL-6 BL-7 BL-8 BM2

SSMH
RIM EL. 275.45'
NE 20" METAL INV IN EL. 264.45'
SW 20" METAL INV OUT EL. 264.35'

SSMH
RIM EL. 285.30'
N 20" METAL INV IN EL. 271.39'
S 20" METAL INV OUT EL. 271.30'

SSMH
RIM EL. 286.6'
NE 20" METAL INV IN EL. 267.4'
SW 20" METAL INV OUT EL. 267.3'

SSMH
RIM EL. 282.8'
NE 20" METAL INV IN EL. 267.7'
W 20" METAL INV OUT EL. 267.6'

S 87°21'31" W
305.20'

Utley Creek

SC

5/26/20

HE-0002

PLAN 006

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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REVISIONS

10
SEQIRUS INC
DB 16104 PG 1384

S 00°42'41" E
952.59'

N 88°08'54" W
940.21'

EIP

40

45

50

11

7

N 01°14'32" E
876.54'

ALLUVIAL

ALLUVIAL

TRIASSIC RESIDUAL

TRIASSIC RESIDUAL

TRIASSIC RESIDUAL

ALLUVIAL

ALLUVIAL

MATCH LINE -L- STA 36+50.00 SEE SHEET Plan 005

MATCH LINE -L- STA 50+50.00 SEE SHEET Plan 007

16'

16'

BL-9

BL-10

BL-11

BL-12

BM3

BM3

11
DUKE ENERGY PROGRESS INC
DB 15289 PG 2437

Utley Creek

5/26/20

MATCH LINE -L- STA 50+50.00 SEE SHEET Plan 006

MATCH LINE -L- STA 64+50.00 SEE SHEET Plan 008

BL-13

BL-14

BL-15

BL-16

BM4

EIR

55

60

7

8

5

SEQIRUS INC
DB 16104 PG 2884

TOWN OF HOLLY SPRINGS
DB 18267 PG 2717

20' ACCESS EASEMENT FOR DUKE ENERGY
BM2020 PG 183

ALLUVIAL

TRIASSIC RESIDUAL

TRIASSIC RESIDUAL

N 89°53'40" W
759.08'

S 89°02'10" E
336.50'

N 80°25'52" W
273.65'

S 00°14'10" E
282.00'

N 35°38'55" E
372.53'

S 17°29'10" W
42.90'

N 89°01'36" W
138.20'

S 00°12'42" E
211.33'

S 02°46'45" W
403.89'

16' 16'

REVISIONS

HE-0002

PLAN 007

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

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PLAN 008

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

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MATCH LINE -L- STA 64+50.00 SEE SHEET Plan 007

MATCH LINE -L- STA 78+50.00 SEE SHEET Plan 009

BL-17

65

5
301 GREEN OAKS LLC
DB 19087 PG 1093

3

S 89°04'21" E
281.42'

S 89°01'17" E
173.82'

S 89°02'07" E
640.83'

S 88°58'45" E
279.34'

EIP

8

BL-19

70

BL-20

75

4
TOWN OF HOLLY SPRINGS
DB 9231 PG 2301

TOWN OF HOLLY SPRINGS
DB 18267 PG 2717

TRIASSIC RESIDUAL

ALLUVIAL

-L- POC STA 74+97.97=
-Y2- POT STA 14+79.02

S 89°29'48" E
600.32'

BM5

BL-21

BL-22

1

S 03°05'58" W
480.74'

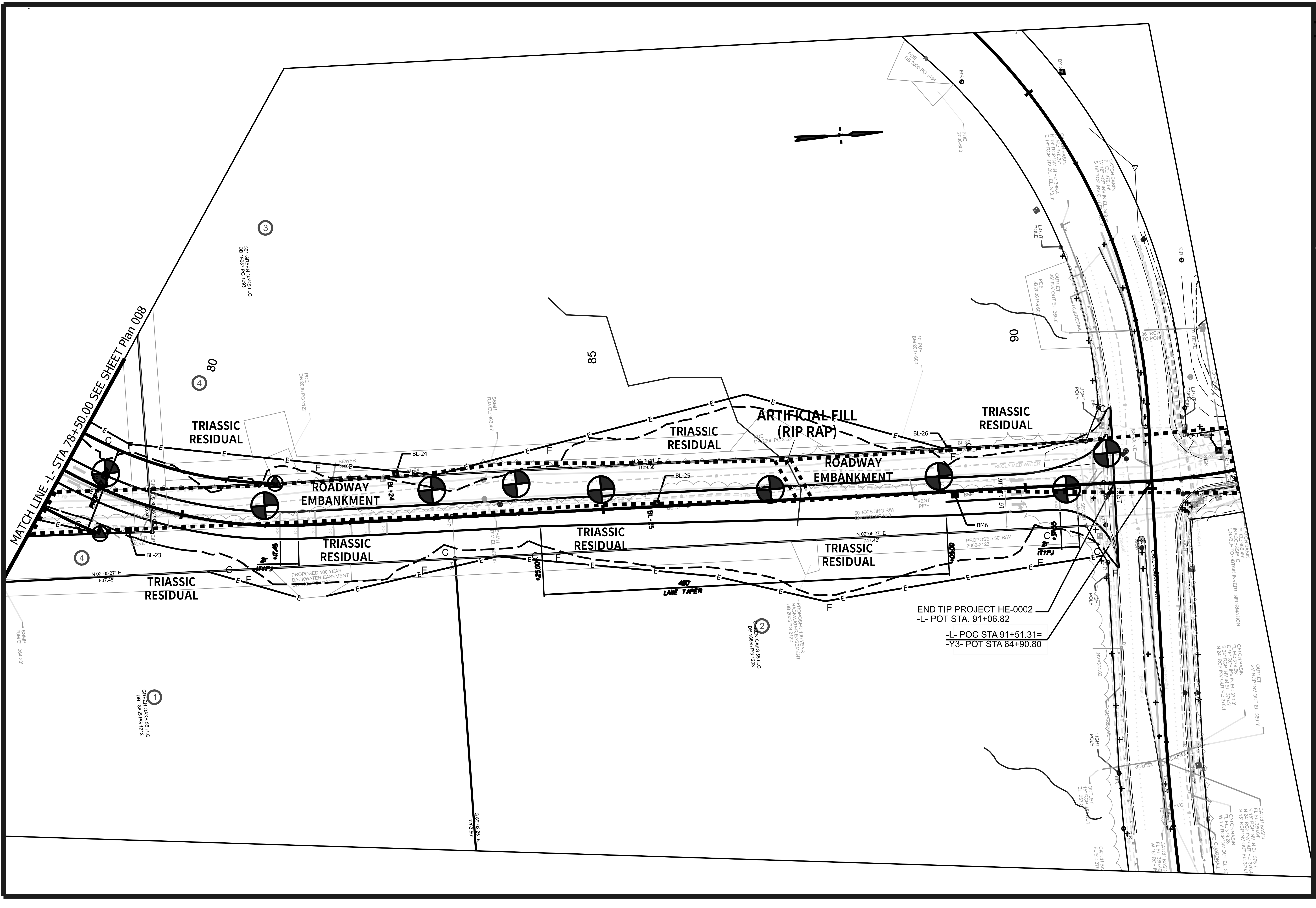
SEWER VALVE

EOI

16'

15'

5/26/20



HE-0002

PLAN 009

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

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ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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HE-0002

PLAN 010

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DEPARTMENT OF TRANSPORTATION
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REVISIONS

N 01°28'21" E
568.03'

N 87°15'49" E
184.58'

N 87°29'16" E
310.58'

N 78°19'33" E
182.53'

S 19°47'46" E
52.00'

N 74°49'35" E
120.86'

S 12°02'27" W
71.79'

S 12°12'21" E
56.63'

S 29°39'10" E
84.18'

N 81°50'07" E
139.26'

10

4

TOWN OF HOLLY SPRINGS
DB 9321 PG 2301

REMOVE EXISTING CURB & GUTTER

BEGIN CONST -Y2-
POT STA 10+70.00

TRIASSIC
RESIDUAL

E

C

EP

1

UTILITY EASEMENT
BM 2007 PG 600

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_1050SPT	**STATION** 10+64	**OFFSET** 20 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 274.6 ft	**TOTAL DEPTH** 9.4 ft	**NORTHING** 690,257	**EASTING** 2,037,670	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/29/22	**COMP. DATE** 12/01/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
275	274.6	0.0	2	4	6	10	SS-59	15%		GROUND SURFACE **TRIASSIC RESIDUAL** Light brown, silty CLAY (A-7-6(19)), contains root and rock fragments	274.6	0.0
270	270.4	4.2	100/0.3			100/0.3				**WEATHERED ROCK** Purple and red, TRIASSIC SILTSTONE *Rig chatter from 4.2 to 9.4 ft BGS	270.6	4.0
	265.4	9.2	100/0.2			100/0.2				Boring Terminated at Elevation 265.2 ft In Weathered Rock (SILTSTONE)	265.2	9.4

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_1300SPT	**STATION** 13+00	**OFFSET** 20 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 285.7 ft	**TOTAL DEPTH** 19.1 ft	**NORTHING** 690,350	**EASTING** 2,037,891	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/28/22	**COMP. DATE** 11/29/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
290												
285	285.7	0.0	10	10	7	17		M		GROUND SURFACE **ROADWAY EMBANKMENT** Light brown, silty SAND (A-2-4), contains gravel and root fragments	285.7	0.0
	281.9	3.8	9	12	15	27	SS-44	23%		**TRIASSIC RESIDUAL** Light brown, red, purple, gray, and white, silty CLAY (A-7-5(24,16))	281.2	4.5
280	276.9	8.8	4	6	9	15	SS-45	27%				
275	271.9	13.8	15	24	60	84		D		White, gray, and red, silty SAND (A-2-4) *Rig chatter from 15.3 to 18.8 ft BGS	270.7	15.0
270	266.9	18.8	100/0.3			100/0.3				**WEATHERED ROCK** White, gray, and red, TRIASSIC CONGLOMERATE	268.7	17.0
										Boring Terminated at Elevation 266.6 ft In Weathered Rock (CONGLOMERATE)	266.6	19.1

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_1500SPT	**STATION** 14+85	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 289.6 ft	**TOTAL DEPTH** 19.5 ft	**NORTHING** 690,404	**EASTING** 2,038,068	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/28/22	**COMP. DATE** 11/29/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
290	289.6	0.0	2	2	3	5	SS-39	27%		289.6 GROUND SURFACE	0.0
										TRIASSIC RESIDUAL Red and brown, silty CLAY (A-7-6(21,22)), with trace to little sand, contains root fragments	
285	285.3	4.3	9	10	16	26	SS-40	18%			
280	280.3	9.3	6	8	10	18		M		279.2 Purple, red, and white, SILT (A-4), with trace clay and sand	10.4
275	275.3	14.3	7	8	11	19		M			
	270.3	19.3	100/0.2			100/0.2				271.1 **WEATHERED ROCK** Purple, red, and white, TRIASSIC SILTSTONE *Hard drilling from 18.5 to 19.3 ft BGS Boring Terminated at Elevation 270.1 ft In Weathered Rock (SILTSTONE)	18.5
										270.1	19.5

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_1700SPT	**STATION** 17+00	**OFFSET** 24 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 287.5 ft	**TOTAL DEPTH** 20.3 ft	**NORTHING** 690,445	**EASTING** 2,038,279	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/28/22	**COMP. DATE** 11/29/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
290	287.5	0.0	1	3	7	10	SS-34	15%		287.5 GROUND SURFACE	0.0
										287.0 **ALLUVIAL** Light brown and brown, SILT (A-4), with little sand and clay	0.5
285	283.5	4.0	8	10	15	25	SS-35	16%		285.0 **TRIASSIC RESIDUAL** Light brown and tan, sandy SILT (A-4 (4))	2.5
280	278.5	9.0	10	20	30	50		M		280.5 Light brown, red, and white, silty CLAY (A-7-5(25)), with some sand, contains rock fragments Purple, red, and white, SILT (A-4), with trace sand	7.0
275	273.5	14.0	100/0.5			100/0.5				275.5 **WEATHERED ROCK** Gray, and white, TRIASSIC SILTSTONE	12.0
270	268.5	19.0	21	15	85/0.3	100/0.8				267.2 Boring Terminated at Elevation 267.2 ft In Weathered Rock (SILTSTONE)	20.3

NCDOT BORE DOUBLE HE-0002_GINT LOGS_UPDATED5.GPJ NC_DOT.GDT 4/21/23

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_1900SPT	**STATION** 18+81	**OFFSET** 15 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 276.6 ft	**TOTAL DEPTH** 18.7 ft	**NORTHING** 690,448	**EASTING** 2,038,464	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/23/22	**COMP. DATE** 11/28/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft) / DEPTH (ft)
280										
	276.6	0.0	3	4	5	9		M		276.6 GROUND SURFACE 0.0 **TRIASSIC RESIDUAL** Light brown, gray, and red, sandy SILT (A-4), with little clay, contains rock fragments and root fragments
275	273.0	3.6	11	21	30	51		M		
270	268.0	8.6	9	31	30	61		M		269.6 Red and purple, silty CLAY (A-7) 7.0
265	263.0	13.6	20	100/0.3		100/0.3				264.6 12.0 **WEATHERED ROCK** Red and purple, TRIASSIC MUDSTONE
260	258.0	18.6	60/0.1			60/0.1				*Rig chatter from 16.8 to 18.6 ft BGS 258.0 18.6 257.9 18.7 **NON-CRYSTALLINE ROCK** Red, gray, and white, TRIASSIC SILTSTONE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 257.9 ft In Non-Crystalline Rock (SILTSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_2050SPT	**STATION** 20+64	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 284.2 ft	**TOTAL DEPTH** 14.7 ft	**NORTHING** 690,536	**EASTING** 2,038,632	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/23/22	**COMP. DATE** 11/28/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
285										
	284.2	0.0	3	4	4	8		M		284.2 GROUND SURFACE 0.0 283.1 **ARTIFICIAL FILL** 1.1 282.2 Brown, clayey SILT (A-4), with little sand, contains gravel 2.0
280	280.0	4.2	18	22	25	47		M		**TRIASSIC RESIDUAL** Light brown, clayey SILT (A-5), contains rock fragments Light brown, red, and white, silty CLAY (A-7), with trace sand, contains rock fragments
275	275.0	9.2	13	14	19	33		M		
270	270.0	14.2	100/0.5			100/0.5				271.7 12.5 **WEATHERED ROCK** 269.5 Red and purple, TRIASSIC MUDSTONE 14.7 Boring Terminated at Elevation 269.5 ft In Weathered Rock (MUDSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_2250SPT	**STATION** 22+66	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 289.5 ft	**TOTAL DEPTH** 19.3 ft	**NORTHING** 690,582	**EASTING** 2,038,829	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/23/22	**COMP. DATE** 11/28/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
290											
	289.5	0.0	6	6	5	11	SS-21	10%		289.5 GROUND SURFACE	0.0
285	285.6	3.9	10	16	15	31	SS-22	12%		**TRIASSIC RESIDUAL** Brown, white, and red, sandy SILT (A-4(0,3)), with trace clay, contains rock fragments	
280	280.6	8.9	7	12	16	28		M			
275	275.6	13.9	30	70/0.4		100/0.9				276.5 **WEATHERED ROCK** Red, TRIASSIC CONGLOMERATE	13.0
	270.6	18.9	100/0.4			100/0.4				272.5 Red, TRIASSIC MUDSTONE	17.0
										270.2 Boring Terminated at Elevation 270.2 ft In Weathered Rock (MUDSTONE)	19.3

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_2500SPT	**STATION** 24+87	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 288.5 ft	**TOTAL DEPTH** 19.1 ft	**NORTHING** 690,669	**EASTING** 2,039,019	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/23/22	**COMP. DATE** 11/28/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
290										
	288.5	0.0	2	3	2	5	SS-16	16%		288.5 GROUND SURFACE 0.0
285	284.7	3.8	8	10	12	22	SS-17	15%		288.0 **TOPSOIL** Brown, sandy SILT (A-4), contains root fragments 0.5 **TRIASSIC RESIDUAL** Light brown, red, white, and gray, sandy SILT (A-4(0,3)), contains rock fragments
280	279.7	8.8	6	8	11	19		M		
275	274.7	13.8	20	60	40/0.2	100/0.7				276.5 **WEATHERED ROCK** Red and purple, TRIASSIC MUDSTONE 12.0
270	269.7	18.8	100/0.3			100/0.3				269.4 Boring Terminated at Elevation 269.4 ft In Weathered Rock (MUDSTONE) 19.1

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_2650SPT	**STATION** 26+73	**OFFSET** 28 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 286.2 ft	**TOTAL DEPTH** 19.0 ft	**NORTHING** 690,717	**EASTING** 2,039,208	**24 HR.** 2.1
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/16/22	**COMP. DATE** 12/19/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
290											
285	286.2	0.0	2	2	2	4 33	SS-1001	19%		286.2 GROUND SURFACE	0.0
	285.7	0.5								**TRIASSIC RESIDUAL** Tan, silty CLAY (A-2-4), with some sand, contains gravel	
	283.2	3.0								Orange, silty CLAY (A-6(9))	
280	282.3	3.9	11	13	20		SS-1002	9%		Orange and red, sandy SILT (A-4(5)), with trace clay, contains rock fragments	
	279.7	6.5								**WEATHERED ROCK** Red and gray, TRIASSIC SILTSTONE	
275	277.3	8.9	100/0.5			100/0.5					
270	272.3	13.9	100/0.3			100/0.3					
	267.3	18.9	60/0.1			60/0.1				267.3	18.9
	267.2	19.0								**NON-CRYSTALLINE ROCK** Red, TRIASSIC SILTSTONE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 267.2 ft In Non-Crystalline Rock (SILTSTONE)	

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_2700HA	**STATION** 27+00	**OFFSET** 28 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 285.5 ft	**TOTAL DEPTH** 4.0 ft	**NORTHING** 690,731	**EASTING** 2,039,231	**24 HR.** 2.1
DRILL RIG/HAMMER EFF./DATE N/A		**DRILL METHOD** Hand Auger	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/15/22	**COMP. DATE** 12/16/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
290										
285								M		285.5 GROUND SURFACE 0.0
										284.5 **TOPSOIL** Soft, light to dark brown, silty SAND (A-2-4), contains rock and root fragments 1.0
										281.5 **TRIASSIC RESIDUAL** Medium stiff to very stiff, orange and red, silty CLAY (A-7), contains rock fragments 4.0
										Boring Terminated by Hand Auger Refusal at Elevation 281.5 ft In Triassic Residual silty CLAY (A-7)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_2900SPT	**STATION** 28+89	**OFFSET** 38 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 290.6 ft	**TOTAL DEPTH** 19.8 ft	**NORTHING** 690,880	**EASTING** 2,039,370	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/21/22	**COMP. DATE** 11/21/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
295											
290	290.6	0.0	3	2	3	5		M		290.6 GROUND SURFACE	0.0
										TRIASSIC RESIDUAL Red and brown, silty CLAY (A-7), with some sand, contains root fragments	
	286.7	3.9	8	7	9	16		M			
285											
	281.7	8.9	18	24	35	59		M			
280											
	276.7	13.9	15	14	100/0.4	100/0.4				275.7 WEATHERED ROCK	14.9
275										273.6 Red, purple, and dark gray, TRIASSIC MUDSTONE	17.0
	271.7	18.9	27	100/0.4		100/0.4				270.8 Red, purple, and white, TRIASSIC SILTSTONE	19.8
										Boring Terminated at Elevation 270.8 ft In Weathered Rock (SILTSTONE)	

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_3100SPT	**STATION** 31+21	**OFFSET** 25 ft RT	**ALIGNMENT** -L-	**0 HR.** 1.1
COLLAR ELEV. 277.2 ft	**TOTAL DEPTH** 13.2 ft	**NORTHING** 690,847	**EASTING** 2,039,609	**24 HR.** 5.8
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/23/22	**COMP. DATE** 11/28/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
280										
	277.2	0.0	10	9	8	17		Sat.		277.2 GROUND SURFACE 0.0
275										**ARTIFICIAL FILL** Red and brown, sandy SILT (A-4), with little clay, contains gravel
	273.4	3.8	5	4	2	6		Sat.		272.4 4.8
270										Gray, brown, and red, SAND and GRAVEL (A-1-b), with trace clay
	268.4	8.8	1	0	1	1		Sat.		
265										
	264.0	13.2	60/0.0			60/0.0				264.0 *Hard drilling from 11.5 to 13.2 ft BGS 13.2
										Boring Terminated BY AUGER REFUSAL at Elevation 264.0 ft On Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_3200SPT	**STATION** 32+00	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 282.8 ft	**TOTAL DEPTH** 15.5 ft	**NORTHING** 690,896	**EASTING** 2,039,693	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/21/22	**COMP. DATE** 11/21/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
285										ELEV. (ft) DEPTH (ft)
	282.8	0.0	9	11	6	17		M		282.8 GROUND SURFACE 0.0
280										282.0 **ARTIFICIAL FILL** 0.8 Red and brown, clayey SAND (A-2-6)
	278.8	4.0	6	8	10	18		M		**TRIASSIC RESIDUAL** Light brown and red, clayey SILT (A-5), with trace sand
275										
	273.8	9.0	9	25	31	56		M		273.3 9.5 Light gray and red, silty CLAY (A-7)
270										
	269.3	13.5	27	41	43	84		M		267.3 15.5 Boring Terminated at Elevation 267.3 ft In Triassic Residual silty CLAY (A-7)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_3250SPT	**STATION** 32+55	**OFFSET** 38 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 279.6 ft	**TOTAL DEPTH** 12.9 ft	**NORTHING** 690,821	**EASTING** 2,039,741	**24 HR.** 1.9
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/23/22	**COMP. DATE** 11/28/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
280										
	279.6	0.0	2	1	2	3	SS-12	16%		279.6 GROUND SURFACE 0.0
275	275.8	3.8	100/0.3			100/0.3				**ALLUVIAL** Brown and red, sandy SILT (A-4(0)), contains gravel and root fragments 3.0 276.6
	270.8	8.8	100/0.3			100/0.3				**WEATHERED ROCK** Red and white, TRIASSIC SILTSTONE 272.6 7.0
270										Red, white, and gray, TRIASSIC CONGLOMERATE
	266.7	12.9	60/0.0			60/0.0				266.7 12.9 Boring Terminated BY AUGER REFUSAL at Elevation 266.7 ft On Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_3500SPT	**STATION** 35+00	**OFFSET** 20 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 285.1 ft	**TOTAL DEPTH** 14.1 ft	**NORTHING** 690,854	**EASTING** 2,039,990	**24 HR.** 0.7
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/13/22	**COMP. DATE** 12/19/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
290											
285	285.1	0.0	2	2	3	5		M		285.1 GROUND SURFACE	0.0
										283.1 **ALLUVIAL** Light brown, orange, and red, sandy CLAY (A-6), with trace silt, contains gravel and root fragments	2.0
280	281.1	4.0	9	13	18	31		M		**TRIASSIC RESIDUAL** Red and white, silty CLAY (A-7)	
										278.1 **WEATHERED ROCK** Red, TRIASSIC MUDSTONE	7.0
275	276.1	9.0	100/0.4			100/0.4					
	271.1	14.0	60/0.1			60/0.1				271.1 271.0 **NON-CRYSTALLINE ROCK** Red and white, TRIASSIC SILTSTONE	14.0 14.1
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 271.0 ft In Non-Crystalline Rock (SILTSTONE)	

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_3700SPT	**STATION** 37+00	**OFFSET** 35 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 298.5 ft	**TOTAL DEPTH** 13.5 ft	**NORTHING** 690,850	**EASTING** 2,040,191	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/13/22	**COMP. DATE** 12/19/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
300										
	298.5	0.0	3	2	3	5		M		298.5 GROUND SURFACE 0.0
295	295.0	3.5	16	23	27	50	SS-167	8%		297.2 **ALLUVIAL** Light to dark brown, SILT (A-4), with some clay and trace sand, contains gravel 1.3
								M		**TRIASSIC RESIDUAL** Light brown, red, white, and orange, SILT (A-4(5))
290	290.0	8.5	7	11	30	41		M		*Rig chatter from 10.5 to 13.5 ft BGS
	285.0	13.5	60/0.0			60/0.0				285.0 13.5
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 285.0 ft On Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_3900SPT	**STATION** 39+14	**OFFSET** 10 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 300.5 ft	**TOTAL DEPTH** 20.6 ft	**NORTHING** 690,789	**EASTING** 2,040,400	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/13/22	**COMP. DATE** 12/19/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
305											
300	300.5	0.0	2	2	5	7 45	SS-161	21%		300.5 GROUND SURFACE	0.0
	296.4	4.1								**TRIASSIC RESIDUAL** Light brown and orange, silty CLAY (A-7-6(16)), with some sand, contains gravel and root fragments	
295			15	20	25		SS-162	12%		296.4	4.1
	291.4	9.1	100/0.5			100/0.5				Red and white, SILT (A-4(6)), with some clay and sand contain rock fragments	
290										294.5	6.0
	286.4	14.1	100/0.3			100/0.3				**WEATHERED ROCK** Red and white, TRIASSIC SILTSTONE *Hard drilling from 6.0 to 19.0 ft BGS	
285											
	281.4	19.1	15	20	34	54		M		281.5	19.0
280										279.9 **TRIASSIC RESIDUAL** Red and white, silty CLAY (A-7)	20.6
										Boring Terminated at Elevation 279.9 ft In Triassic Residual silty CLAY (A-7)	

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_4100SPT	**STATION** 41+00	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 310.6 ft	**TOTAL DEPTH** 19.5 ft	**NORTHING** 690,825	**EASTING** 2,040,587	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/13/22	**COMP. DATE** 12/19/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
315										
310	310.6	0.0	2	1	1	2 25	SS-156	21%		310.6 GROUND SURFACE 0.0
	306.4	4.2								309.6 **ALLUVIAL** Brown, silty CLAY (A-7-6(18)), with some sand, contains gravel and root fragments 1.0
305			5	10	15		SS-157	15%		**TRIASSIC RESIDUAL** Light brown, orange, red, and white, silty CLAY (A-7-5(14)), with some sand, contains rock fragments
	301.4	9.2				10				301.6 9.0
300			5	5	5			M		Orange, red, and white, sandy SILT (A-4), with trace clay, contains rock fragments
	296.4	14.2								297.6 13.0
295			4	10	26	36		M		Red, purple, and white, silty CLAY (A-7), with trace sand
	291.4	19.2	100/0.3			100/0.3				293.1 17.5
										WEATHERED ROCK Red, purple, and white, TRIASSIC CONGLOMERATE 19.5
										Boring Terminated at Elevation 291.1 ft In Weathered Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_4300SPT	**STATION** 43+00	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 311.5 ft	**TOTAL DEPTH** 20.4 ft	**NORTHING** 690,823	**EASTING** 2,040,787	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/12/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)
315										
310	311.5	0.0	3	5	5	10		M		311.5 GROUND SURFACE 0.0 310.5 **ALLUVIAL** 1.0 Light to dark brown, SAND and GRAVEL (A-1-b)
	307.4	4.1	8	11	14	25	SS-153	19%		**TRIASSIC RESIDUAL** Light brown, orange, and red, silty CLAY (A-7-5(23)), with some sand, contains rock fragments 304.5 7.0
305	303.0	8.5	9	12	18	30		M		Red, white, and gray, sandy SILT (A-4), with trace clay, contains rock fragments
300	298.0	13.5	88	12/0.0		100/0.5				298.5 13.0 **WEATHERED ROCK** Red, white, and gray, TRIASSIC CONGLOMERATE *Hard drilling from 13.0 to 17.5 ft BGS
295	292.4	19.1	35	55	45/0.3	100/0.8				294.0 17.5 Red, white, and gray, TRIASSIC MUDSTONE 291.1 20.4 Boring Terminated at Elevation 291.1 ft In Weathered Rock (MUDSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_4500SPT	**STATION** 45+00	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 307.3 ft	**TOTAL DEPTH** 14.1 ft	**NORTHING** 690,821	**EASTING** 2,040,987	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/12/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
310										
	307.3	0.0	2	1	3	4	SS-148	25%		307.3 GROUND SURFACE 0.0 **TRIASSIC RESIDUAL** Light brown and orange, silty CLAY (A-6(11)), with some sand, contains rock and root fragments 304.3 3.0
305	303.3	4.0	32	68/0.4		100/0.9				**WEATHERED ROCK** Gray, white, and red, TRIASSIC CONGLOMERATE
300	298.3	9.0	100/0.3			100/0.3				
295	293.3	14.0	60/0.1			60/0.1				295.3 12.0 Gray to red, TRIASSIC MUDSTONE 293.3 14.0 293.2 **NON-CRYSTALLINE ROCK** 14.1 Red and gray, TRIASSIC SILTSTONE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 293.2 ft In Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_4700SPT	**STATION** 47+00	**OFFSET** 20 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 302.2 ft	**TOTAL DEPTH** 9.2 ft	**NORTHING** 690,767	**EASTING** 2,041,186	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/12/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
305												
	302.2	0.0	4	3	2	5	SS-145	17%		GROUND SURFACE	302.2	0.0
300										**TRIASSIC RESIDUAL** Light brown, and orange, silty CLAY (A-6(7)), with some sand	299.2	3.0
	298.3	3.9	25	61	39/0.4	100/0.9				**WEATHERED ROCK** Orange, red, and gray, TRIASSIC CONGLOMERATE	295.2	7.0
295										Orange, red, and gray, TRIASSIC SILTSTONE	293.0	9.2
	293.3	8.9	100/0.3			100/0.3				Boring Terminated at Elevation 293.0 ft In Weathered Rock (SILTSTONE)		

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_4900SPT	**STATION** 49+00	**OFFSET** 20 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 297.2 ft	**TOTAL DEPTH** 4.2 ft	**NORTHING** 690,805	**EASTING** 2,041,387	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/12/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
300										
	297.2	0.0	3	6	10	16	SS-143	15%		GROUND SURFACE 297.2 0.0
295										**TRIASSIC RESIDUAL** Red and white, silty CLAY (A-6(11)), with some sand, contains rock fragments 293.1 4.1
	293.1	4.1	60/0.1			60/0.1				**NON-CRYSTALLINE ROCK** Red and white, TRIASSIC SILTSTONE *Rig chatter from 4.0 to 4.1 ft BGS 293.0 4.2 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 293.0 ft In Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_5100SPT	**STATION** 51+00	**OFFSET** 20 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 292.4 ft	**TOTAL DEPTH** 14.0 ft	**NORTHING** 690,763	**EASTING** 2,041,586	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/12/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)
295										
	292.4	0.0	3	2	3	5		M		292.4 0.0 GROUND SURFACE **ALLUVIAL** Light to dark brown, red, and white, clayey SILT (A-5), with trace sand, contains rock fragments and root fragments
290										289.4 3.0
	288.5	3.9	23	24	76/0.5	100/1.0		D		**WEATHERED ROCK** Red, gray, and white, TRIASSIC MUDSTONE
285										284.4 8.0
	283.5	8.9	100/0.3			100/0.3				Red, gray, and white, TRIASSIC SILTSTONE *Hard drilling from 9.2 to 12.5 ft BGS
280										
	278.5	13.9	60/0.1			60/0.1				278.5 13.9 278.4 14.0 **NON-CRYSTALLINE ROCK** Red, gray, and white, TRIASSIC CONGLOMERATE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 278.4 ft In Non-Crystalline Rock (CONGLOMERATE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_5350SPT	**STATION** 53+35	**OFFSET** 32 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 315.7 ft	**TOTAL DEPTH** 14.0 ft	**NORTHING** 690,749	**EASTING** 2,041,821	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/08/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
320										
	315.7	0.0	3	7	12	19	SS-135	17%		315.7 0.0 GROUND SURFACE **TRIASSIC RESIDUAL** Red and brown, clayey SILT (A-4(1)), with some sand, contains rock fragments and root fragments
315										313.2 2.5
	312.0	3.7	100/0.4			100/0.4				**WEATHERED ROCK** Red and brown, TRIASSIC SILTSTONE
310										308.2 7.5
	307.0	8.7	70	30/0.2		100/0.7				Red and brown, TRIASSIC MUDSTONE
305										
	302.0	13.7	100/0.3			100/0.3				301.7 14.0 Boring Terminated at Elevation 301.7 ft In Weathered Rock (MUDSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_5550SPT	**STATION** 55+26	**OFFSET** 25 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 320.6 ft	**TOTAL DEPTH** 16.3 ft	**NORTHING** 690,804	**EASTING** 2,042,013	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/08/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
325										
320	320.6	0.0	3	6	18	24		M		320.6 0.0 GROUND SURFACE
	316.8	3.8	49	51/0.3		100/0.8				**TRIASSIC RESIDUAL** Red, gray, and white, clayey SAND (A-2-6), with trace silt, contains rock fragments and root fragments
315										317.6 3.0
	311.8	8.8	100/0.4			100/0.4				**WEATHERED ROCK** Red, purple, and white, TRIASSIC MUDSTONE *Hard drilling from 3.0 to 15.0 ft BGS
310										
	306.8	13.8	100/0.4			100/0.4				
305	304.3	16.3	60/0.0			60/0.0				304.3 16.3 *Rig chatter from 15.5 to 16.3 ft BGS. Boring Terminated BY AUGER REFUSAL at Elevation 304.3 ft On Non-Crystalline Rock (CONGLOMERATE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_5700SPT	**STATION** 56+88	**OFFSET** 31 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 321.4 ft	**TOTAL DEPTH** 21.6 ft	**NORTHING** 690,746	**EASTING** 2,042,174	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/08/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
325										
	321.4	0.0	3	5	9	14	SS-126	18%		321.4 0.0 GROUND SURFACE
320										**TRIASSIC RESIDUAL** Light brown, purple, and red, silty CLAY (A-6(11,12)), with trace to little sand, contains rock and root fragments
	317.4	4.0	13	14	16	30	SS-127	8%		314.4 7.0
315										**WEATHERED ROCK** Red, TRIASSIC MUDSTONE
	312.4	9.0	100/0.4			100/0.4				311.4 10.0
310										Red, TRIASSIC SILTSTONE *Hard drilling from 10.4 to 13.0 ft BGS
	307.4	14.0	26	74/0.3		100/0.8				308.4 13.0
305										Red, TRIASSIC MUDSTONE
	302.4	19.0	100/0.3			100/0.3				
300	299.8	21.6	60/0.0			60/0.0				299.8 21.6 *Rig chatter from 21.0 to 21.6 ft BGS. Boring Terminated BY AUGER REFUSAL at Elevation 299.8 ft On Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_5900SPT	**STATION** 58+81	**OFFSET** 32 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 321.7 ft	**TOTAL DEPTH** 19.0 ft	**NORTHING** 690,743	**EASTING** 2,042,367	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/08/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
325											
	321.7	0.0	2	5	7	12		M		321.7 GROUND SURFACE	0.0
320										**TRIASSIC RESIDUAL** Light brown, red, white, and gray, SILT (A-4(6)), with trace sand and little clay, contains rock fragments and root fragments	
	318.1	3.6	23	38	52	90	SS-122	6%			
315										315.7 Red, purple, and gray, silty CLAY (A-7), contains rock fragments	6.0
	313.1	8.6	24	33	43	76		D			
310											
	308.2	13.5	19	22	36	58		D			
305										304.7 **WEATHERED ROCK**	17.0
	303.1	18.6	100/0.4			100/0.4				302.7 Red and purple, TRIASSIC MUDSTONE Boring Terminated at Elevation 302.7 ft In Weathered Rock (MUDSTONE)	19.0

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6050AP	**STATION** 60+50	**OFFSET** 31 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 325.8 ft	**TOTAL DEPTH** 20.9 ft	**NORTHING** 690,804	**EASTING** 2,042,537	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/08/22	**COMP. DATE** 12/13/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
330										
325										325.8 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Light Brown, SILT (A-4)
320										322.8 **WEATHERED ROCK** Red, TRIASSIC SILTSTONE 3.0
										*Hard drilling from 3.0 to 19.0 ft BGS
315										
310										306.8 19.0
	306.4	19.4	6	7	8	15				**TRIASSIC RESIDUAL** 304.9 Red, CLAY (A-7), with trace sand, contains rock fragments 20.9
305										Boring Terminated at Elevation 304.9 ft In Triassic Residual silty CLAY (A-7)
										Auger probe from 0.0 to 20.9 ft BGS

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6100AP	**STATION** 61+08	**OFFSET** 19 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 330.2 ft	**TOTAL DEPTH** 23.9 ft	**NORTHING** 690,754	**EASTING** 2,042,594	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/07/22	**COMP. DATE** 12/08/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
335										
330										330.2 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Light Brown, SILT (A-4)
325										326.7 3.5
										WEATHERED ROCK Red, TRIASSIC SILTSTONE
320										*Hard drilling from 3.5 to 20.0 ft BGS
315										
310										*Rig chatter from 20.0 to 23.9 ft BGS
	306.3	23.9	60/0.0			60/0.0				306.3 23.9
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 306.3 ft On Non-Crystalline Rock (SILTSTONE)
										Auger probe from 0.0 to 23.9 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6100SPT	**STATION** 61+00	**OFFSET** 31 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 331.0 ft	**TOTAL DEPTH** 18.9 ft	**NORTHING** 690,804	**EASTING** 2,042,587	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/07/22	**COMP. DATE** 12/08/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
335										
330	331.0	0.0	1	3	5	8 67	SS-115	18%		331.0 GROUND SURFACE 0.0
	327.2	3.8	22	26	41			M		**TRIASSIC RESIDUAL** Light brown, red, and purple, clayey SILT (A-4(10)), with trace sand, contains rock fragments
325										324.0 7.0
	322.2	8.8	34	66/0.5		100/1.0				**WEATHERED ROCK** Red and purple, TRIASSIC MUDSTONE
320										
	317.2	13.8	100/0.4			100/0.4				
315										
	312.2	18.8	60/0.1			60/0.1				312.2 18.8 *Rig chatter from 15.0 to 18.8 ft BGS
										312.1 18.9 **NON-CRYSTALLINE ROCK** Red and gray, TRIASSIC CONGLOMERATE
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 312.1 ft In Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6150AP	**STATION** 61+50	**OFFSET** 31 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 317.6 ft	**TOTAL DEPTH** 13.6 ft	**NORTHING** 690,772	**EASTING** 2,042,637	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/07/22	**COMP. DATE** 12/08/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
320										317.6 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Light brown, red, and purple, clayey SILT (A-4)
315										
310										308.1 9.5
										WEATHERED ROCK Red, purple, and gray, TRIASSIC MUDSTONE *Rig chatter from 12.5 to 13.6 ft BGS
305	304.0	13.6	60/0.0			60/0.0				304.0 13.6 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 304.0 ft On Non-Crystalline Rock (CONGLOMERATE)
										Auger probe from 0.0 to 13.6 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6300AP-LT	**STATION** 63+10	**OFFSET** 25 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 349.6 ft	**TOTAL DEPTH** 6.6 ft	**NORTHING** 690,796	**EASTING** 2,042,797	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/02/22	**COMP. DATE** 12/02/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
350										349.6 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Brown, sandy SILT (A-4)
345										344.1 5.5
	343.1	6.5	60/0.1			60/0.1				343.1 6.5 **WEATHERED ROCK** Red, purple, and gray, TRIASSIC MUDSTONE
										343.0 6.6 *Hard drilling and rig chatter from 5.5 to 6.5 ft BGS **NON-CRYSTALLINE ROCK** Red and gray, TRIASSIC CONGLOMERATE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 343.0 ft In Non-Crystalline Rock (CONGLOMERATE)
										Auger probe from 0.0 to 6.6 ft BGS

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6300AP-RT	**STATION** 62+99	**OFFSET** 5 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 348.7 ft	**TOTAL DEPTH** 9.5 ft	**NORTHING** 690,766	**EASTING** 2,042,785	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/02/22	**COMP. DATE** 12/02/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
350										348.7 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL
										Brown, sandy SILT (A-4)
345										
340	339.2	9.5	60/0.0			60/0.0				339.7 9.0 339.2 9.5 **WEATHERED ROCK**
										Red, purple, and gray, TRIASSIC MUDSTONE
										*Rig chatter from 9.0 to 9.5 ft BGS
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 339.2 ft On Non-Crystalline Rock (CONGLOMERATE)
										Auger probe from 0.0 to 9.5 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6300SPT	**STATION** 63+28	**OFFSET** 20 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 351.2 ft	**TOTAL DEPTH** 15.1 ft	**NORTHING** 690,751	**EASTING** 2,042,814	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/02/22	**COMP. DATE** 12/05/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
355										
	351.2	0.0	2	2	3	5 57		M		351.2 GROUND SURFACE 0.0
350										350.4 **TRIASSIC RESIDUAL** 0.8
								M		349.2 Brown, sandy SILT (A-4), contains rock fragments and root fragments 2.0
	347.4	3.8	13	26	31					346.7 Light brown and orange, clayey SAND (A-2-6) 4.5
345								M		Light brown, and gray, sandy CLAY (A-6), with trace silt
	342.4	8.8	60/0.1			60/0.1				342.4 Red, white, and gray, sandy SILT (A-4), with little clay 8.8
340										**NON-CRYSTALLINE ROCK**
	337.4	13.8	60/0.1			60/0.1				Red, white, and gray, TRIASSIC CONGLOMERATE
	336.1	15.1	60/0.0			60/0.0				*Rig chatter from 6.8 to 15.1 ft BGS
										336.1 15.1
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 336.1 ft In Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6350AP	**STATION** 63+50	**OFFSET** 20 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 353.3 ft	**TOTAL DEPTH** 6.8 ft	**NORTHING** 690,750	**EASTING** 2,042,836	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers		**HAMMER TYPE** Automatic
DRILLER M. Moseley	**START DATE** 12/02/22	**COMP. DATE** 12/02/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
355										353.3 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Brown, sandy SILT (A-4)
350										347.3 6.0
	346.5	6.8	60/0.0			60/0.0				346.5 6.8 **WEATHERED ROCK** Red, TRIASSIC CONGLOMERATE *Rig chatter from 6.0 to 6.8 ft BGS Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 346.5 ft On Non-Crystalline Rock (CONGLOMERATE) Auger probe from 0.0 to 6.8 ft BGS

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6350CORE	**STATION** 63+63	**OFFSET** 60 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 353.3 ft	**TOTAL DEPTH** 19.1 ft	**NORTHING** 690,830	**EASTING** 2,042,850	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** NW Casing w/ Core	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/14/22	**COMP. DATE** 12/14/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
355										353.3 GROUND SURFACE	0.0
										TRIASSIC RESIDUAL Brown, SILT (A-4), contains rock fragments and root fragments	
350										344.2	9.1
										NON-CRYSTALLINE ROCK Red-brown with opaque clasts, TRIASSIC BRECCIA, slight to very slight weathering, medium to medium hard, close fracture	
345										342.8	10.5
										REC=100% RQD=29% GSI=20-30	
							RS-1			340.4	12.9
340										**NON-CRYSTALLINE ROCK** Red-brown, TRIASSIC SILTSTONE with some sand-sized clasts	
										339.2	14.1
										REC=100% RQD=100% GSI=80-90	
							RS-2			Gray, brown and red, TRIASSIC BRECCIA	
										REC=83% RQD=0% GSI=10-20	
335							RS-3			334.7	18.6
										334.5	18.8
										334.2	19.1
										Dark brown to red-brown with white gravel-sized clasts, TRIASSIC SILTSTONE	
										REC=100% RQD=69% GSI=40-50	
										TRIASSIC RESIDUAL Dark brown to red-brown, silty CLAY (A-7)	
										REC=100% RQD=0%	
										NON-CRYSTALLINE ROCK Dark brown to red-brown, TRIASSIC SILTSTONE	
										REC=100% RQD=0% GSI=10-20	
										Boring Terminated at Elevation 334.2 ft In Non-Crystalline Rock (SILTSTONE)	

Auger probe from 0.0 to 9.1 ft BGS.
Auger refusal at 9.1 ft BGS.
Coring begins at 9.1 ft BGS.
Loss of drilling fluid circulation to the formation from 13.1 to 14.1 ft BGS.

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6350CORE	**STATION** 63+63	**OFFSET** 60 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 353.3 ft	**TOTAL DEPTH** 19.1 ft	**NORTHING** 690,830	**EASTING** 2,042,850	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** NW Casing w/ Core	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/14/22	**COMP. DATE** 12/14/22	**SURFACE WATER DEPTH** N/A	
CORE SIZE NQ2	**TOTAL RUN** 10.0 ft			

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS ELEV. (ft)	DEPTH (ft)
344.17											Begin Coring @ 9.1 ft	
	344.2	9.1	4.0	1:34/1.0	(3.8) 95%	(2.8) 70%		(1.4) 100%	(0.7) 50%		344.2	9.1
				1:08/1.0							**NON-CRYSTALLINE ROCK** Red-brown with opaque clasts, TRIASSIC BRECCIA, slight to very slight weathering, medium hard, close fracture spacing, thickly bedded, subangular clasts	
				1:14/1.0				(2.4) 100%	(2.4) 100%		342.8	10.5
				1:05/1.0			RS-1				GSI = 20-30 Very severe weathering, soft to medium hard, very close fracture spacing Slight to very slight weathering, medium hard to moderately hard, close fracture spacing	
340	340.2	13.1									340.4	12.9
			5.0	1:41/1.0	(5.0) 100%	(3.2) 64%		(1.0) 83%	(0.0) 0%		**NON-CRYSTALLINE ROCK** Red-brown, TRIASSIC SILTSTONE with some sand-sized clasts, moderate to slight weathering, medium hard, moderately close fracture spacing, very thinly laminated GSI = 80-90	
				1:17/1.0							339.2	14.1
				1:30/1.0			RS-2	(4.5) 100%	(3.6) 80%		Gray, brown and red, TRIASSIC BRECCIA, moderate to slight weathering, medium hard, close fracture spacing, thickly bedded, angular clasts 0.2' core loss from 12.9 - 13.1 ft BGS GSI= 10-20	
				1:26/1.0							Dark brown to red-brown with white gravel-sized clasts, TRIASSIC SILTSTONE, severe to moderate weathering, medium hard, close to moderately close fracture spacing, very thinly laminated GSI=40-50	
				1:19/1.0							334.7	18.6
335	335.2	18.1					RS-3				334.5	18.8
			1.0	1:38/1.0	(1.0) 100%	(0.4) 40%		(0.2) 100%	(0.0) 0%		334.2	19.1
	334.2	19.1						(0.3) 100%	(0.0) 0%		SAA, very severe to moderate weathering, soft to medium hard, very close to close fracture spacing, thickly laminated SAA, with green gravel-sized clasts, very severe to moderate weathering, soft, very close fracture spacing	
											TRIASSIC RESIDUAL Dark brown to red-brown, silty CLAY (A-7)	
											NON-CRYSTALLINE ROCK Dark brown to red-brown, TRIASSIC SILTSTONE, moderate to slight weathering, medium hard, close fracture spacing, very thinly laminated GSI=10-20	
											Boring Terminated at Elevation 334.2 ft In Non-Crystalline Rock (SILTSTONE)	

Auger probe from 0.0 to 9.1 ft BGS.
Auger refusal at 9.1 ft BGS.
Coring begins at 9.1 ft BGS.
Loss of drilling fluid circulation to the formation from 13.1 to 14.1 ft BGS.

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6450AP	**STATION** 64+50	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 359.5 ft	**TOTAL DEPTH** 18.8 ft	**NORTHING** 690,799	**EASTING** 2,042,937	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/05/22	**COMP. DATE** 12/05/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
360										359.5 0.0 GROUND SURFACE
										TRIASSIC RESIDUAL Red, white, and gray, silty CLAY (A-7)
355										
										351.0 8.5 **WEATHERED ROCK** Red and gray, TRIASSIC CONGLOMERATE *Hard drilling from 8.5 to 18.0 ft BGS
350										
345										
	340.8	18.7	60/0.1			60/0.1				340.8 18.7 *Rig chatter from 18.0 to 18.7 ft BGS
										340.7 18.8 **NON-CRYSTALLINE ROCK** Red and gray, TRIASSIC CONGLOMERATE
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 340.7 ft In Non-Crystalline Rock (CONGLOMERATE)
										Auger probe from 0.0 to 18.8 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6500SPT	**STATION** 65+26	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 360.6 ft	**TOTAL DEPTH** 43.9 ft	**NORTHING** 690,798	**EASTING** 2,043,014	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/02/22	**COMP. DATE** 12/05/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
365										
	360.6	0.0	3	5	10	15	SS-94	14%		360.6 0.0 GROUND SURFACE
360										**TRIASSIC RESIDUAL** Light brown, red, white, and gray, silty CLAY (A-6(11,9)), with little sand, contains rock fragments
	356.7	3.9	13	14	15	29	SS-95	8%		
355										352.6 8.0 **WEATHERED ROCK** Red, TRIASSIC MUDSTONE
	351.7	8.9	100/0.4			100/0.4				
350										
	347.1	13.5	100/0.4			100/0.4				
345										
	342.1	18.5	100/0.3			100/0.3				
340										
	337.1	23.5	100/0.3			100/0.3				333.1 27.5 Red, TRIASSIC SILTSTONE *Hard drilling from 27.5 to 32.4 ft BGS
335										
	332.1	28.5	100/0.2			100/0.2				328.1 32.5 Red, TRIASSIC MUDSTONE
330										
	326.7	33.9	100/0.4			100/0.4				
325										
	322.1	38.5	100/0.3			100/0.3				
320										
	316.7	43.9	60/0.0			60/0.0				*Rig chatter from 41.9 to 43.9 ft BGS 316.7 43.9 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 316.7 ft On Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6550AP-LT	**STATION** 65+50	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 360.6 ft	**TOTAL DEPTH** 20.2 ft	**NORTHING** 690,797	**EASTING** 2,043,039	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/05/22	**COMP. DATE** 12/05/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
365										
360										360.6 GROUND SURFACE 0.0 **TRIASSIC RESIDUAL** Red, white, and gray, silty CLAY (A-7)
355										
350										
345										344.6 16.0 **WEATHERED ROCK** Red, TRIASSIC CONGLOMERATE *Hard drilling from 16.0 to 19.7 ft BGS *Rig chatter from 19.7 to 20.1 ft BGS
	341.9	18.7	100/0.3			100/0.3				340.5 20.1 340.4 20.2 **NON-CRYSTALLINE ROCK** Red, TRIASSIC CONGLOMERATE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 340.4 ft In Non-Crystalline Rock (SILTSTONE) Auger probe from 0.0 to 18.7 ft BGS
	340.5	20.1	60/0.1			60/0.1				

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6550AP-RT	**STATION** 65+43	**OFFSET** 20 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 364.8 ft	**TOTAL DEPTH** 19.5 ft	**NORTHING** 690,748	**EASTING** 2,043,028	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/05/22	**COMP. DATE** 12/05/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
365										364.8 GROUND SURFACE 0.0 **TRIASSIC RESIDUAL** Red, white, and gray, silty CLAY (A-7)
360										
355										
350										349.3 15.5 **WEATHERED ROCK** Red and gray, TRIASSIC CONGLOMERATE *Hard drilling from 15.5 to 18.5 ft BGS *Rig chatter from 18.5 to 19.5 ft BGS
	345.3	19.5	60/0.0			60/0.0				345.3 19.5 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 345.3 ft In Non-Crystalline Rock (CONGLOMERATE) Auger probe from 0.0 to 19.5 ft BGS

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6650AP	**STATION** 66+41	**OFFSET** 32 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 363.6 ft	**TOTAL DEPTH** 24.3 ft	**NORTHING** 690,721	**EASTING** 2,043,118	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/06/22	**COMP. DATE** 12/07/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
365										363.6 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Light brown and orange, silty CLAY (A-7)
360										
355										352.6 11.0
										WEATHERED ROCK Red and white, TRIASSIC SILTSTONE
350										*Hard drilling from 11.0 to 22.0 ft BGS
345	343.0	20.6	100/0.3			100/0.3				
340	339.4	24.2	60/0.1			60/0.1				339.4 24.2 339.3 24.3 **NON-CRYSTALLINE ROCK** Red and white, TRIASSIC SILTSTONE *Rig chatter from 22.0 to 24.3 ft BGS. Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 339.3 ft In Non-Crystaline Rock (SILTSTONE) Auger probe from 0.0 to 20.6 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6650SPT	**STATION** 66+66	**OFFSET** 32 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 362.6 ft	**TOTAL DEPTH** 24.1 ft	**NORTHING** 690,714	**EASTING** 2,043,141	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/05/22	**COMP. DATE** 12/06/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
365										
	362.6	0.0	2	3	4	7		M		362.6 GROUND SURFACE 0.0 **RESIDUAL** Light brown and orange, silty CLAY (A-7), contains root fragments 3.0
360	358.5	4.1	53	47/0.3		100/0.8				359.6 **WEATHERED ROCK** Red and white, TRIASSIC SILTSTONE
355	353.5	9.1	44	56/0.3		100/0.8				
350	348.5	14.1	100/0.4			100/0.4				
345	343.5	19.1	89	11/0.1		100/0.6				
340	338.5	24.1	60/0.0			60/0.0				338.5 24.1 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 338.5 ft On Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6700AP	**STATION** 66+88	**OFFSET** 18 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 358.9 ft	**TOTAL DEPTH** 21.2 ft	**NORTHING** 690,755	**EASTING** 2,043,177	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/06/22	**COMP. DATE** 12/07/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
360										358.9 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL Light brown and orange, silty CLAY (A-7)
355										
350										
345										346.0 12.9
										WEATHERED ROCK Red, TRIASSIC SILTSTONE
340										*Hard drilling from 12.9 to 20.0 ft BGS
	337.7	21.2	60/0.0			60/0.0				337.7 *Rig chatter from 20.0 to 21.2 ft BGS 21.2
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 337.7 ft On Non-Crystaline Rock (SILTSTONE)
										Auger probe from 0.0 to 21.2 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6750AP	**STATION** 67+31	**OFFSET** 32 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 360.7 ft	**TOTAL DEPTH** 19.3 ft	**NORTHING** 690,693	**EASTING** 2,043,198	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/06/22	**COMP. DATE** 12/07/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
365										
										360.7 GROUND SURFACE 0.0
360										**TRIASSIC RESIDUAL** Light brown and orange, silty CLAY (A-7)
355										
350										347.7 13.0
										WEATHERED ROCK Red, TRIASSIC SILTSTONE
345										*Hard drilling from 13.0 to 18.5 ft BGS
	341.5	19.2	60/0.1			60/0.1				341.5 *Rig chatter from 18.5-19.2 ft BGS 19.2
										341.4 **NON-CRYSTALLINE ROCK** TRIASSIC SILTSTONE 19.3
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 341.4 ft In Non-Crystaline Rock (SILTSTONE)
										Auger probe from 0.0 to 19.2 ft BGS

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6850AP	**STATION** 68+40	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 352.8 ft	**TOTAL DEPTH** 16.4 ft	**NORTHING** 690,692	**EASTING** 2,043,323	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/07/22	**COMP. DATE** 12/08/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
355										
										352.8 GROUND SURFACE 0.0
										TRIASSIC RESIDUAL
350										Light brown, red, and white, silty CLAY (A-7)
345										
										342.3 10.5
										WEATHERED ROCK
340										Red, TRIASSIC SILTSTONE
										*Hard drilling from 10.5 to 16.2 ft BGS
	336.4	16.4	60/0.0			60/0.0				336.4 16.4
										*Rig chatter from 16.2 to 16.4 ft BGS
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 336.4 ft On Non-Crystaline Rock (SILTSTONE)
										Auger probe from 0.0 to 16.4 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6900SPT	**STATION** 69+02	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 348.3 ft	**TOTAL DEPTH** 8.9 ft	**NORTHING** 690,650	**EASTING** 2,043,373	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/06/22	**COMP. DATE** 12/07/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
350										
	348.3	0.0	2	3	6	9		M		348.3 GROUND SURFACE 0.0
										347.3 **TRIASSIC RESIDUAL** 1.0
345										Light brown, sandy SILT (A-4), contains root fragments
	344.4	3.9	39	61/0.3		100/0.8				345.3 3.0
										Light brown, red, and white, silty CLAY (A-7), contains rock fragments and root fragments
340										**WEATHERED ROCK**
	339.4	8.9	60/0.0			60/0.0				Red and white, TRIASSIC SILTSTONE
										339.4 *Rig chatter from 4.7 to 8.9 ft BGS 8.9
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 339.4 ft On Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_6950AP	**STATION** 69+51	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 343.0 ft	**TOTAL DEPTH** 9.2 ft	**NORTHING** 690,618	**EASTING** 2,043,409	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/07/22	**COMP. DATE** 12/08/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
345										
										343.0 0.0 GROUND SURFACE
										TRIASSIC RESIDUAL Light brown, red, and white, silty CLAY (A-7)
340										338.8 4.2
										WEATHERED ROCK Red, TRIASSIC SILTSTONE
335										*Hard drilling from 4.2 to 8.6 ft BGS
	333.8	9.2	60/0.0			60/0.0				*Rig chatter from 8.6 to 9.2 ft BGS 333.8 9.2
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 333.8 ft In Non-Crystaline Rock (SILTSTONE)
										Auger probe from 0.0 to 9.2 ft BGS

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y1_1300SPT	**STATION** 13+04	**OFFSET** 32 ft LT	**ALIGNMENT** -Y1-	**0 HR.** Dry
COLLAR ELEV. 281.4 ft	**TOTAL DEPTH** 13.8 ft	**NORTHING** 690,414	**EASTING** 2,037,779	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/28/22	**COMP. DATE** 11/29/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
285										
	281.4	0.0	1	0	1	1	SS-48	22%		281.4 0.0 GROUND SURFACE
280										280.8 0.6 **TOPSOIL** Brown, sandy SILT (A-4), contains root fragments
	277.9	3.5	6	6	9	15	SS-49	16%		**TRIASSIC RESIDUAL** Light brown and white, SILT (A-4(5,3)), with some sand and clay
275										274.4 7.0
	272.9	8.5	20	80/0.3		100/0.8				**WEATHERED ROCK** Red, purple, and gray, TRIASSIC SILTSTONE
270										
	267.9	13.5	100/0.3			100/0.3				267.6 13.8
										Boring Terminated at Elevation 267.6 ft In Weathered Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y1_1400SPT	**STATION** 14+11	**OFFSET** 60 ft LT	**ALIGNMENT** -Y1-	**0 HR.** Dry
COLLAR ELEV. 280.2 ft	**TOTAL DEPTH** 13.1 ft	**NORTHING** 690,311	**EASTING** 2,037,820	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/28/22	**COMP. DATE** 11/29/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)
285										
280	280.2	0.0	2	2	4	6	SS-52	18%		280.2 GROUND SURFACE 0.0
										278.2 **ALLUVIAL** Light to dark brown, silty CLAY (A-6(11)), with some sand, contains gravel and root fragments 2.0
	276.0	4.2								**TRIASSIC RESIDUAL**
275			3	4	6	10		M		Red and brown, SILT (A-4), with trace clay 7.0
	271.0	9.2								273.2 Light gray and red, clayey SILT (A-5)
270			6	8	20	28		M		
	267.1	13.1	60/0.0			60/0.0				267.1 13.1 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 267.1 ft On Non-Crystalline Rock (SILTSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y1_1550SPT	**STATION** 15+65	**OFFSET** 27 ft LT	**ALIGNMENT** -Y1-	**0 HR.** Dry
COLLAR ELEV. 267.5 ft	**TOTAL DEPTH** 11.1 ft	**NORTHING** 690,140	**EASTING** 2,037,750	**24 HR.** 3.0
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/29/22	**COMP. DATE** 12/01/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
270										
	267.5	0.0								267.5 GROUND SURFACE 0.0
			7	9	11	20		M		**ROADWAY EMBANKMENT**
265										265.0 Brown, sandy SILT (A-4), contains gravel and root fragments 2.5
	263.6	3.9	1	0	0	0	SS-56	21%		Light gray and brown, sandy, silty CLAY (A-6(9))
260										*Rig chatter from 7.0 to 8.9 ft BGS
	258.6	8.9	60/0.1			60/0.1				258.6 8.9 **NON-CRYSTALLINE ROCK**
	256.4	11.1	60/0.0			60/0.0				Red, white and gray, TRIASSIC CONGLOMERATE 11.1
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 256.4 ft In Non-Crystalline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y1_1650SPT	**STATION** 16+50	**OFFSET** 32 ft RT	**ALIGNMENT** -Y1-	**0 HR.** Dry
COLLAR ELEV. 269.5 ft	**TOTAL DEPTH** 12.7 ft	**NORTHING** 690,157	**EASTING** 2,037,646	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/29/22	**COMP. DATE** 12/01/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
270										ELEV. (ft) DEPTH (ft)
	269.5	0.0	9	10	10	20	SS-62	7%		269.5 GROUND SURFACE 0.0
										ROADWAY EMBANKMENT
										Red, gray, and light brown, silty CLAY (A-6(7)), with some sand, contains gravel and root fragments
	266.5	3.0								266.5 3.0
265	265.5	4.0	13	15	17	32	SS-63	12%		**TRIASSIC RESIDUAL**
										Red and gray, SILT (A-4(8)), with little sand and some clay
	260.5	9.0								260.5 *Rig chatter from 8.0 to 9.0 ft BGS 9.0
260			60/0.1			60/0.1				**NON-CRYSTALLINE ROCK**
	256.8	12.7	60/0.0			60/0.0				Purple, red and gray, TRIASSIC SILTSTONE
										256.8 12.7
										Boring Terminated BY AUGER REFUSAL at Elevation 256.8 ft In Non-Crystalline Rock (SILTSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y1_1750SPT	**STATION** 17+50	**OFFSET** 25 ft RT	**ALIGNMENT** -Y1-	**0 HR.** Dry
COLLAR ELEV. 267.7 ft	**TOTAL DEPTH** 14.1 ft	**NORTHING** 690,128	**EASTING** 2,037,556	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/29/22	**COMP. DATE** 12/01/22	**SURFACE WATER DEPTH** N/A	

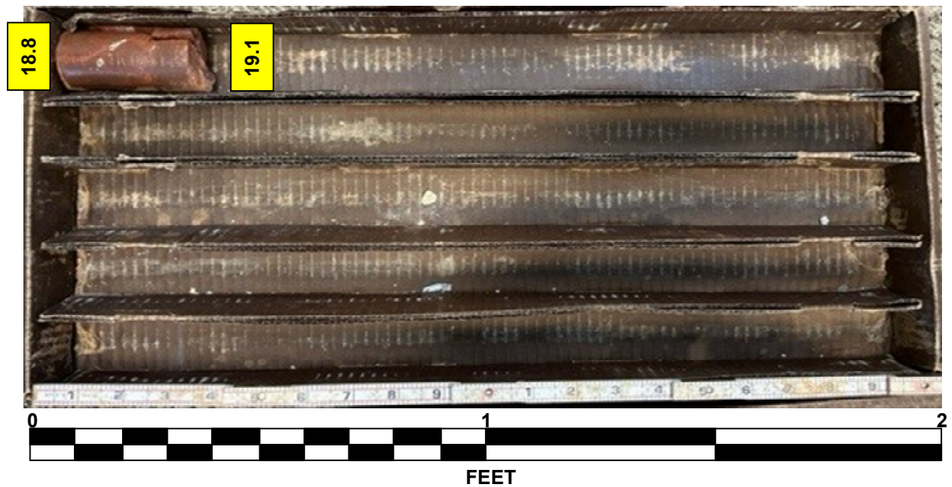
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
270										
	267.7	0.0	8	10	17	27	SS-65	5%		267.7 GROUND SURFACE 0.0
										ROADWAY EMBANKMENT
										Light brown, sandy SILT (A-4(3)), with little clay, contains gravel, contains root fragments
										265.7 2.0
265	263.6	4.1	31	30	30	60		M		**TRIASSIC RESIDUAL**
										Red, white, and gray, silty SAND (A-2-4), contains rock fragments
										260.2 7.5
260	258.6	9.1	51	49/0.4		100/0.9				**WEATHERED ROCK**
										Red, white and gray, TRIASSIC CONGLOMERATE
										*Rig chatter from 7.5 to 11.5 ft BGS
255										*Rig chatter from 12.5 to 14.1 BGS
	253.6	14.1	60/0.0			60/0.0				253.6 14.1
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 253.6 ft On Non-Crystalline Rock (SILTSTONE)

CORE PHOTOGRAPHIC RECORD
HE-0002
PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS NORTH CAROLINA

L_6350CORE

BOX 1 of 2: 9.1-18.8 FEET

BOX 2 of 2: 18.8-19.1 FEET



PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS (HE-0002)

-L- SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-59	10+64	20' RT	0.0-1.5	A-7-6(19)	41	18	1.7	7.2	56.6	34.5	99.1	98	94	15	-
SS-44	13+00	20' LT	4.5-5.3	A-7-5(24)	57	21	3.8	8	47.1	41.1	91.8	90	84	23	-
SS-45	13+00	20' LT	8.8-10.3	A-7-5(16)	44	13	1.1	6.1	64.5	28.4	99.7	99	95	27	-
SS-39	14+85	32' LT	0.0-1.5	A-7-6(21)	49	21	5.2	8.8	45.8	40.2	81.4	79	72	27	-
SS-40	14+85	32' LT	4.3-5.8	A-7-6(22)	50	21	3.1	9.1	44.5	43.3	95.5	94	87	18	-
SS-34	17+00	24' LT	0.0-1.5	A-4(4)	26	7	7.8	16	50.8	25.4	95.3	91	78	15	-
SS-35	17+00	24' LT	4-5.5	A-7-5(25)	57	26	9.9	9.8	35.9	44.4	86.3	80	72	16	-
SS-21	22+66	32' LT	0.0-1.5	A-4(0)	22	4	20.7	19.3	45	15	67.6	57	44	10	-
SS-22	22+66	32' LT	3.9-5.4	A-4(3)	34	4	18.6	15.4	53.2	12.8	78.9	69	54	12	-
SS-16	24+87	32' LT	0.5-1.5	A-4(0)	18	0	11	19.8	55.2	14	96.3	91	72	16	-
SS-17	24+87	32' LT	4.8-5.3	A-4(3)	36	5	22.3	14.1	43.6	20.1	80.7	68	54	15	-
SS-1001	26+73	28' RT	0.5-1.5	A-6(9)	33	14	11.1	16.3	44.6	27.9	92	86	71	19	-
SS-1002	26+73	28' RT	3.9-5.4	A-4(5)	36	10	25	15.7	41.3	18.1	80.9	66	51	9	-
SS-12	32+55	38' RT	0.0-1.5	A-4(0)	27	2	24.2	18.5	42.7	14.6	88.3	75	54	16	-
SS-167	37+00	35' LT	3.5-5	A-4(5)	29	7	4.5	18.1	54.9	22.6	98.8	96	82	8	-
SS-161	39+14	10' RT	0.0-1.5	A-7-6(16)	41	16	5.8	9.5	44.6	40	89.1	86	78	21	-
SS-162	39+14	10' RT	4.1-5.6	A-4(6)	35	10	17.3	14.8	43.9	24.1	97.2	87	69	12	-
SS-156	41+00	32' LT	0.0-1.0	A-7-6(18)	45	22	10.5	12	42.5	35.1	85.4	79	69	21	-
SS-157	41+00	32' LT	4.2-5.7	A-7-5(14)	48	15	12.4	11.9	41.4	34.4	87.9	80	69	15	-
SS-153	43+00	32' LT	4.1-5.6	A-7-5(23)	57	26	13.2	10.5	37.9	38.3	84.8	77	66	19	-
SS-148	45+00	32' LT	0.0-1.5	A-6(11)	35	15	10.3	14.6	44.2	31	94.2	88	75	25	-
SS-145	47+00	20' RT	0.0-1.5	A-6(7)	29	11	9.7	13.4	52.9	23.9	89.5	83	73	17	-
SS-143	49+00	20' LT	0.0-1.5	A-6(11)	35	14	8.9	10.6	51.1	29.4	90.1	84	76	15	-
SS-135	53+35	32' RT	0.0-1.5	A-4(1)	27	3	5	21.6	34.7	38.7	99.7	98	79	17	-
SS-126	56+88	31' RT	0.0-1.5	A-6(11)	35	12	6.6	7.1	51.8	34.5	98.2	93	87	18	-
SS-127	56+88	31' RT	4-5.5	A-6(12)	33	12	0.6	1.9	62.4	35.1	100	99	98	8	-
SS-122	58+81	32' RT	3.6-5.1	A-4(6)	29	7	1.4	13	67.1	18.6	100	99	91	6	-
SS-115	61+00	31' LT	0.0-1.5	A-4(10)	33	10	2.7	4.5	57.8	35.1	99.7	98	95	18	-
SS-94	65+26	30' LT	0.0-1.5	A-6(11)	36	12	7.5	9.8	49.4	33.3	95.3	90	83	14	-
SS-95	65+26	30' LT	3.9-5.4	A-6(9)	31	11	5.9	8.4	51.5	34.1	97.4	93	87	8	-

PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS (HE-0002)

-Y1- SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-48	13+04	32' LT	0.6-1.5	A-4(5)	29	8	11	10	57.9	21.1	83.9	77	69	22	-
SS-49	13+04	32' LT	3.5-5	A-4(3)	26	5	6	12.3	65	16.7	85.8	82	74	16	-
SS-52	14+11	60' LT	0.0-1.5	A-6(11)	36	14	8.7	13.5	49.4	28.4	82.3	77	67	18	-
SS-56	15+65	27' LT	3.9-5.4	A-6(9)	35	14	14.1	16.6	45	24.3	79.9	73	58	21	-
SS-62	16+50	32' RT	0.0-1.0	A-6(7)	29	12	8.6	21.5	50.5	19.4	96.1	92	73	7	-
SS-63	16+50	32' RT	5.0-5.5	A-4(8)	36	9	7.1	14.4	54.4	24.1	98.5	96	81	12	-
SS-65	17+50	25' RT	0.0-1.5	A-4(3)	25	7	11.6	21.2	49.6	17.6	87.3	82	64	5	-

PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS (HE-0002)

ROCK TEST RESULTS												
BORING	SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL (ft)	LENGTH (in.)	DIAMETER (in.)	AREA (sq. in.)	VOLUME ($in.^3$)	VOLUME (cf)	UNIT WEIGHT (pcf)	COMPRESSIVE STRENGTH (psi)	TESTING METHOD
L_6350_CORE	RS-1	63+63	60FT LT	11.7-12.1	4.0	1.97	3.05	12.29	0.00711	156.9	2210	ASTM D-7012-14 METHOD C
L_6350_CORE	RS-2	63+63	60FT LT	15.1-16.1	4.46	1.97	3.06	13.65	0.00789	159.7	4500	ASTM D-7012-14 METHOD C
L_6350_CORE	RS-3	63+63	60FT LT	17.6-18.1	4.52	1.98	3.07	13.86	0.00802	156.6	840	ASTM D-7012-14 METHOD C

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_7100SPT	**STATION** 70+95	**OFFSET** 30 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 326.8 ft	**TOTAL DEPTH** 12.6 ft	**NORTHING** 690,491	**EASTING** 2,043,498	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/06/22	**COMP. DATE** 12/07/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
330										ELEV. (ft) DEPTH (ft)
	326.8	0.0								326.8 GROUND SURFACE 0.0
325			2	1	2	3		M		324.8 **ALLUVIAL** Light brown, clayey SILT (A-5), with some sand 2.0
	323.1	3.7	11	12	16	28		M		**TRIASSIC RESIDUAL** Light brown, red, and white, silty CLAY (A-7), contains rock fragments
320										318.8 8.0
	318.1	8.7	18	20	80/0.3	100/0.8				**WEATHERED ROCK** Red and white, TRIASSIC CONGLOMERATE
315	314.2	12.6	60/0.0			60/0.0				314.2 12.6 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 314.2 ft On Non-Crystalline Rock (CONGLOMERATE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_7300SPT	**STATION** 72+92	**OFFSET** 24 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 328.3 ft	**TOTAL DEPTH** 13.4 ft	**NORTHING** 690,494	**EASTING** 2,043,702	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/01/22	**COMP. DATE** 12/02/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
330										
	328.3	0.0	1	2	8	10	SS-81	16%		328.3 GROUND SURFACE 0.0
325										326.3 **TRIASSIC RESIDUAL** Light brown, red, and white, SILT (A-4(5)), with some clay and little sand, contains rock, and roots fragments 2.0
	324.3	4.0	68	32/0.2		100/0.7				**WEATHERED ROCK** Red and white, TRIASSIC SILTSTONE
320										*Rig chatter from 7.3 to 9.0 ft BGS
	319.3	9.0	60/0.1			60/0.1				319.3 9.0 **NON-CRYSTALLINE ROCK** Red, gray, and white, TRIASSIC CONGLOMERATE
315	314.9	13.4	60/0.0			60/0.0				314.9 13.4 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 314.9 ft In Non-Crystaline Rock (CONGLOMERATE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_7500SPT	**STATION** 74+83	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 349.5 ft	**TOTAL DEPTH** 15.6 ft	**NORTHING** 690,523	**EASTING** 2,043,880	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/01/22	**COMP. DATE** 12/02/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION (ELEV. (ft) / DEPTH (ft))
350										
	349.5	0.0	1	2	3	5		M		349.5 / 0.0 GROUND SURFACE
345	345.8	3.7	14	20	28	48		M		**TRIASSIC RESIDUAL** Light brown, silty CLAY (A-6(10)), trace sand, contains rock fragments
340	340.8	8.7	17	24	59	83	SS-76	6%		
335	335.8	13.7	60/0.0			60/0.0				335.8 / 13.7 *Hard drilling from 12.1 to 13.7 ft BGS
	333.9	15.6	60/0.0			60/0.0				333.9 / 15.6 **NON-CRYSTALLINE ROCK** Red, purple and gray, TRIASSIC CONGLOMERATE
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 333.9 ft In Non-Crystaline Rock (CONGLOMERATE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_7700SPT	**STATION** 77+21	**OFFSET** 32 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 364.5 ft	**TOTAL DEPTH** 29.0 ft	**NORTHING** 690,586	**EASTING** 2,044,115	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/29/22	**COMP. DATE** 12/01/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
365										
	364.5	0.0	4	3	5	8	SS-69	19%		364.5 / 0.0 GROUND SURFACE
360	360.5	4.0	30	48	52/0.4	100/0.9				**TRIASSIC RESIDUAL** Light brown and orange, silty CLAY (A-7-6(25)), with little sand, contains rock fragments and root fragments
										361.5 / 3.0 **WEATHERED ROCK** Light gray and red, TRIASSIC SILTSTONE
355	355.5	9.0	19	24	29	53		M		357.5 / 7.0 **TRIASSIC RESIDUAL** Red, white, and gray, SILT (A-4), with some clay, contains rock fragments
350	350.5	14.0	13	15	20	35	SS-72	11%		352.5 / 12.0 Red, white, and gray, silty CLAY (A-6(10)), with trace sand, contains rock fragments
345	345.5	19.0	60/0.1			60/0.1				*Rig chatter from 16.8 to 27.0 ft BGS
340	340.5	24.0	60/0.0			60/0.0				345.5 / 19.0 **NON-CRYSTALLINE ROCK** Red and white, TRIASSIC SILTSTONE
	335.5	29.0	60/0.0			60/0.0				335.5 / 29.0 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 335.5 ft In Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_7900SPT	**STATION** 79+00	**OFFSET** 17 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 352.9 ft	**TOTAL DEPTH** 15.0 ft	**NORTHING** 690,758	**EASTING** 2,044,188	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/18/22	**COMP. DATE** 11/21/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
355										
	352.9	0.0	3	7	8	15	SS-535	21%		352.9 GROUND SURFACE 0.0
										351.9 **TRIASSIC RESIDUAL** 1.0
350										Red, SILT (A-4(6)), with little to some sand and little clay, contains root fragments
	349.1	3.8	100/0.3			100/0.3				349.9 3.0
										Tan and brown, sandy CLAY (A-6)
345										**WEATHERED ROCK**
	344.1	8.8	100/0.2			100/0.2				Red, TRIASSIC SILTSTONE
340										
	339.1	13.8	60/0.1			60/0.1				339.1 13.8
	337.9	15.0	60/0.0			60/0.0				337.9 **NON-CRYSTALLINE ROCK** 15.0
										Red, TRIASSIC SILTSTONE
335										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 337.9 ft In Non-Crystalline Rock (SILTSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_8100SPT	**STATION** 81+00	**OFFSET** 20 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 351.0 ft	**TOTAL DEPTH** 19.0 ft	**NORTHING** 690,942	**EASTING** 2,044,243	**24 HR.** 4.5
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/18/22	**COMP. DATE** 11/21/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
355										
	351.0	0.0	6	7	9	16		D		351.0 GROUND SURFACE 0.0
350										**ROADWAY EMBANKMENT**
	347.0	4.0	2	2	2	4				Red and white, silty CLAY (A-7), contains root fragments
345										
	342.0	9.0	WOH	1	4	5		D		341.0 10.0
340										**TRIASSIC RESIDUAL**
	337.0	14.0	100/0.2			100/0.2				338.5 Red, SILT (A-4), with trace sand 12.5
335										**WEATHERED ROCK**
	332.0	19.0	60/0.0			60/0.0				Red, TRIASSIC SILTSTONE
										332.0 19.0
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 332.0 ft On Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_8300SPT	**STATION** 83+00	**OFFSET** 30 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 365.6 ft	**TOTAL DEPTH** 10.6 ft	**NORTHING** 691,140	**EASTING** 2,044,242	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/18/22	**COMP. DATE** 11/21/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft) / DEPTH (ft)
370										
365	365.6	0.0	4	3	3	6		D		365.6 — GROUND SURFACE — 0.0 **ROADWAY EMBANKMENT** Red and white, silty CLAY (A-7), contains root fragments
	361.5	4.1								
360			1	2	3	5		D		
	358.6	7.0								**TRIASSIC RESIDUAL** Red, SILT (A-4), with trace sand and clay
	356.5	9.1								
355			47	29	20	49		D		355.0 — 10.6 Boring Terminated at Elevation 355.0 ft In Triassic Residual SILT (A-4)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_8400SPT	**STATION** 84+00	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 367.3 ft	**TOTAL DEPTH** 15.1 ft	**NORTHING** 691,240	**EASTING** 2,044,244	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/18/22	**COMP. DATE** 11/21/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
370										
	367.3	0.0	5	5	9	14	SS-524	11%		367.3 — GROUND SURFACE — 0.0 366.8 — 0.5 **TRIASSIC RESIDUAL** Red, silty CLAY (A-7) Tan, SILT (A-4(2)), with some sand, and little clay
365	363.3	4.0	100/0.3			100/0.3				363.3 — 4.0 **WEATHERED ROCK** Red, TRIASSIC SILTSTONE
360	358.3	9.0	100/0.2			100/0.2				
355	353.3	14.0	100/0.2			100/0.2				
	352.3	15.0	60/0.1			60/0.1				352.3 — 15.0 352.2 — 15.1 **NON-CRYSTALLINE ROCK** Red and brown, TRIASSIC SILTSTONE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 352.2 ft In Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_8500SPT	**STATION** 85+00	**OFFSET** 20 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 362.8 ft	**TOTAL DEPTH** 24.1 ft	**NORTHING** 691,340	**EASTING** 2,044,259	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/18/22	**COMP. DATE** 11/19/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
365										ELEV. (ft) DEPTH (ft)
	362.8	0.0	6	7	7	14		M		362.8 0.0 GROUND SURFACE **ROADWAY EMBANKMENT** Red, silty CLAY (A-7)
360	358.7	4.1	3	2	2	4		M		
355	353.7	9.1	100/0.3			100/0.3				353.8 9.0 **WEATHERED ROCK** Red, TRIASSIC SILTSTONE
350	348.7	14.1	60/0.1			60/0.1				348.7 14.1 **NON-CRYSTALLINE ROCK** Red, TRIASSIC SILTSTONE
345	343.7	19.1	26	74/0.2		100/0.7				344.8 18.0 **WEATHERED ROCK** Red, SILT (A-4), TRIASSIC SILTSTONE
340	338.7	24.1	60/0.0			60/0.0				338.7 24.1 **NON-CRYSTALLINE ROCK** Red, TRIASSIC SILTSTONE Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 338.7 ft On Non-Crystalline Rock (SILTSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_8700SPT	**STATION** 87+00	**OFFSET** 10 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 352.3 ft	**TOTAL DEPTH** 37.6 ft	**NORTHING** 691,539	**EASTING** 2,044,277	**24 HR.** 20.0
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/17/22	**COMP. DATE** 11/18/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
355										
	352.3	0.0	2	4	5	9	SS-514	11%		352.3 0.0 GROUND SURFACE **ROADWAY EMBANKMENT** Red and gray, sandy SILT (A-4(5)), with little clay, contains gravel
350	348.7	3.6	3	3	4	7	SS-515	15%		
345	343.7	8.6	100/0.3			100/0.3				346.3 6.0 **WEATHERED ROCK** Red and orange, TRIASSIC SILTSTONE
340	338.7	13.6	100/0.5			100/0.5				
335	333.7	18.6	60/0.0			60/0.0				Boulder encountered at 18.6 ft BGS
330	328.7	23.6	60/0.0			60/0.0				329.3 23.0 **NON-CRYSTALLINE ROCK** Red, TRIASSIC SILTSTONE
325	323.7	28.6	60/0.0			60/0.0				
320	318.7	33.6	60/0.1			60/0.1				
315	314.7	37.6	60/0.0			60/0.0				314.7 37.6 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 314.7 ft In Non-Crystalline Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_8900SPT	**STATION** 89+00	**OFFSET** 15 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 376.9 ft	**TOTAL DEPTH** 28.5 ft	**NORTHING** 691,740	**EASTING** 2,044,279	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/17/22	**COMP. DATE** 11/18/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
380										ELEV. (ft) DEPTH (ft)
	376.9	0.0								376.9 0.0 GROUND SURFACE
375			2	3	3	6	SS-508	8%		**ROADWAY EMBANKMENT** Red, sandy, silty CLAY (A-6(10)), contains gravel
	373.4	3.5								373.9 3.0 Red, sandy SILT (A-4(6)), with little to some clay, contains gravel
370			4	4	6	10	SS-509	11%		
	368.4	8.5								368.9 8.0 **TRIASSIC RESIDUAL** Red, silty CLAY (A-7)
365			3	4	7	11		M		
	363.4	13.5								
360			3	6	14	20		M		
	358.4	18.5								
355			6	8	12	20		M		355.4 21.5 **WEATHERED ROCK** Red, TRIASSIC SILTSTONE
	353.4	23.5	100/0.2			100/0.2				
350										
	348.4	28.5	60/0.0			60/0.0				348.4 28.5 Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 348.4 ft On Non-Crystalline Rock (SILTSTONE)

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_9050SPT	**STATION** 90+50	**OFFSET** 8 ft RT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 387.0 ft	**TOTAL DEPTH** 9.3 ft	**NORTHING** 691,889	**EASTING** 2,044,307	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/17/22	**COMP. DATE** 11/18/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
390										
	387.0	0.0								387.0 GROUND SURFACE 0.0
385			5	6	6	12		D		**TRIASSIC RESIDUAL** Red and orange, silty CLAY (A-7)
	383.2	3.8								
380			8	11	14	25		D		380.0 7.0
	378.2	8.8								377.7 9.3 **WEATHERED ROCK** Red and brown, TRIASSIC SILTSTONE
			100/0.5			100/0.5				Boring Terminated at Elevation 377.7 ft In Weathered Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jason Holland	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. L_9100SPT	**STATION** 91+00	**OFFSET** 32 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 382.9 ft	**TOTAL DEPTH** 14.8 ft	**NORTHING** 691,940	**EASTING** 2,044,269	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 11/17/22	**COMP. DATE** 11/18/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
385											
	382.9	0.0	6	9	14	23	SS-501	11%		382.9 GROUND SURFACE	0.0
380										**ROADWAY EMBANKMENT** Red, SILT (A-4(6)), with some clay	
	378.4	4.5	13	11	11	22		D			
375											
	373.4	9.5	5	5	7	12		M			
370											
	368.4	14.5	100/0.3			100/0.3				368.9 **WEATHERED ROCK** Red, TRIASSIC SILTSTONE	14.0
										368.1 Boring Terminated at Elevation 368.1 ft In Weathered Rock (SILTSTONE)	14.8

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y2_1250SPT	**STATION** 12+50	**OFFSET** CL	**ALIGNMENT** -Y2-	**0 HR.** Dry
COLLAR ELEV. 356.6 ft	**TOTAL DEPTH** 29.4 ft	**NORTHING** 690,279	**EASTING** 2,043,967	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER M. Moseley	**START DATE** 12/01/22	**COMP. DATE** 12/01/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
360										
	356.6	0.0	4	6	10	16	SS-84	14%		356.6 GROUND SURFACE 0.0
355										354.6 **TRIASSIC RESIDUAL** Light to dark brown and red, sandy SILT (A-4(3)), with little clay, contains rock fragments and roots fragments 2.0
	353.1	3.5	6	7	11	18	SS-85	18%		Light brown, red, and white, silty CLAY (A-7-6(24)), with trace sand, contains rock fragments
350										*Hard drilling from 8.0-8.5 ft BGS
	348.1	8.5	8	16	32	48		M		Purple, red, and white at 8.5 ft BGS
345										343.6 13.0
	343.1	13.5	100/0.4			100/0.4				**WEATHERED ROCK** Red, white, and purple, TRIASSIC CONGLOMERATE 16.0
340										340.6 Red, white, and gray, TRIASSIC MUDSTONE
	338.1	18.5	100/0.3			100/0.3				
335										
	333.1	23.5	23	33	67	100/1.0				330.6 26.0
330										Red, white, and gray, TRIASSIC SILTSTONE
	328.1	28.5	45	55/0.4		100/0.9				327.2 29.4
										Boring Terminated at Elevation 327.2 ft In Weathered Rock (SILTSTONE)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 49745.1.1	**TIP** HE-0002	**COUNTY** WAKE	**GEOLOGIST** Jacob Rose	
SITE DESCRIPTION Proposed Fujifilm Access Road in Holly Springs				**GROUND WTR (ft)**
BORING NO. Y2_1450SPT	**STATION** 14+51	**OFFSET** CL	**ALIGNMENT** -Y2-	**0 HR.** Dry
COLLAR ELEV. 353.0 ft	**TOTAL DEPTH** 18.8 ft	**NORTHING** 690,472	**EASTING** 2,043,911	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 83% 11/12/2021		**DRILL METHOD** H.S. Augers		**HAMMER TYPE** Automatic
DRILLER M. Moseley	**START DATE** 12/01/22	**COMP. DATE** 12/02/22	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
355										
	353.0	0.0	3	4	8	12	SS-78	16%		353.0 GROUND SURFACE 0.0
350										351.0 **TRIASSIC RESIDUAL** Light brown and red, silty CLAY (A-7-6(22)), with trace sand, contains rock fragments 2.0
	349.2	3.8	25	30	36	66	SS-79	5%		Red and white, SILT (A-4(5)), with little clay and little to some sand
345										
	344.2	8.8	17	19	23	42	SS-80	5%		
340										
	339.2	13.8	60/0.0			60/0.0				339.3 13.7
										338.3 **NON-CRYSTALLINE ROCK** Red, TRIASSIC SILTSTONE 14.7
335										**WEATHERED ROCK** Red, TRIASSIC SILTSTONE
	334.2	18.8	60/0.0			60/0.0				334.2 *Rig chatter from 17.2 to 18.8 ft BGS 18.8
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 334.2 ft On Non-Crystalline Rock (SILTSTONE)

PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS (HE-0002)

-L- SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-81	72+92	24' LT	0.0-1.5	A-4(5)	26	7	6.4	12.8	58.3	22.5	91.3	88	79	16	-
SS-76	74+83	32' LT	8.7-10.2	A-6(10)	30	11	1.4	7.5	62.2	28.8	99.9	99	94	6	-
SS-69	77+21	32' RT	0.0-1.5	A-7-6(25)	50	24	3.4	8.1	43.9	44.6	93.1	90	87	19	-
SS-72	77+21	32' RT	14-15.5	A-6(10)	31	11	1.9	6	60.8	31.3	99.8	99	95	11	-
SS-535	79+00	17' LT	0.0-1.5	A-4(6)	30	8	9.2	14.8	59.1	16.9	98.9	93	80	21	-
SS-524	84+00	32' LT	0.0-1.5	A-4(2)	23	4	6.2	13.8	65.2	14.7	88.9	84	76	11	-
SS-514	87+00	10' LT	0.0-1.5	A-4(5)	28	9	14.4	12.9	52.2	20.5	81.4	72	62	11	-
SS-515	87+00	10' LT	3.6-5.1	A-4(5)	28	9	14.1	17.6	50.4	17.8	84.5	77	62	15	-
SS-508	89+00	15' LT	0.0-1.5	A-6(10)	33	12	9.3	7.8	62.6	20.3	74.5	69	63	8	-
SS-509	89+00	15' LT	3.5-5	A-4(6)	28	9	11.4	9.1	58.8	20.7	70.5	64	58	11	-
SS-501	91+00	32' LT	0.0-1.5	A-4(6)	29	9	7.4	12.3	56	24.3	83	79	70	11	-

PROPOSED FUJIFILM ACCESS ROAD IN HOLLY SPRINGS (HE-0002)

-Y2- SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-84	12+50	CL	0.0-1.5	A-4(3)	27	5	10	15.8	60.4	13.8	68	63	54	14	-
SS-85	12+50	CL	3.5-5	A-7-6(24)	47	22	1.5	6.1	57	35.5	99.2	98	94	18	-
SS-78	14+51	CL	0.0-1.5	A-7-6(22)	46	21	2.6	8.7	50.1	38.5	98.6	97	91	16	-
SS-79	14+51	CL	3.8-5.3	A-4(5)	29	8	10.7	16.9	54.6	17.7	87.5	81	67	5	-
SS-80	14+51	CL	8.8-10.3	A-4(6)	28	9	11	15	57.4	16.7	91.6	83	72	5	-