

NOTE: SEE SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4020	1	10
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33387.1.1	BRZ-1403(4)	P.E.	
33387.2.1	BRZ-1403(4)	R/W, UTIL.	
33387.3.1	BRZ-1403(4)	CONST.	

CONTENTS

LINE	STATION	PLAN	PROFILE	X-SECTS
-L-	16+25 to 28+00	4	5	5

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 33387.1.1 (B-4020) F.A. PROJ. BRZ-1403(4)
COUNTY BEAUFORT - PITT
PROJECT DESCRIPTION BRIDGE NO. 8 ON SR 1403 AND SR 1567
OVER TRANTERS CREEK IN WASHINGTON

INVENTORY

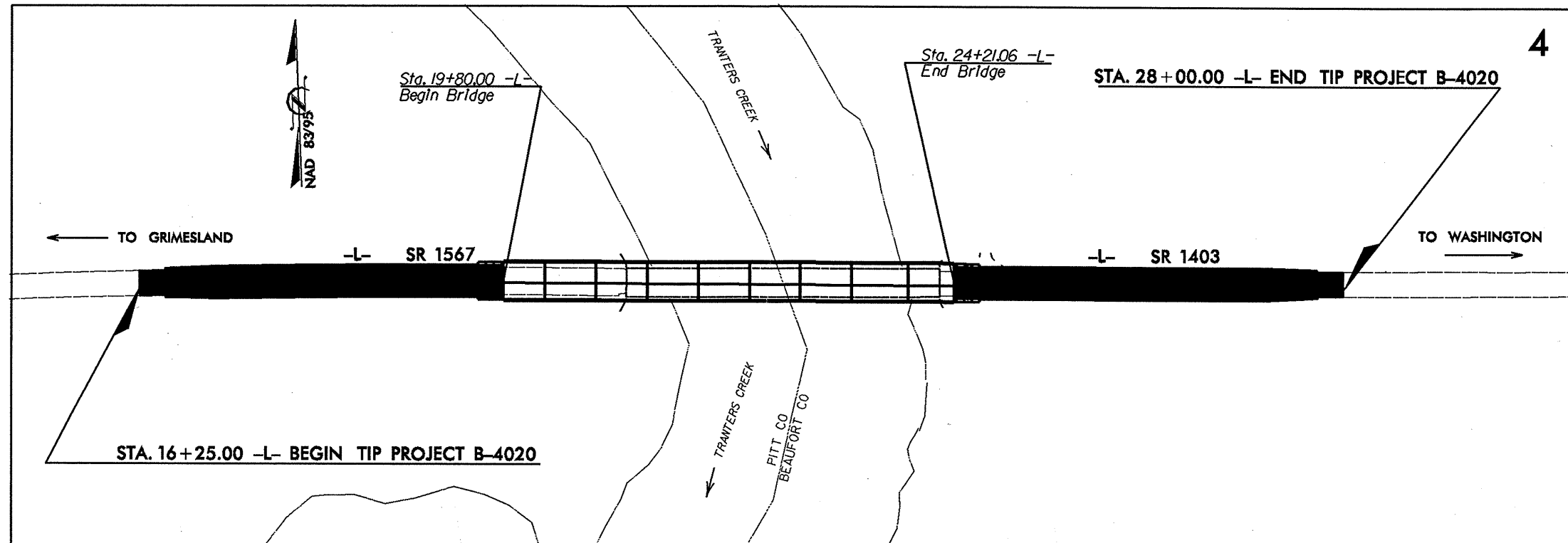
CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD 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) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF 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 THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

CONTRACT: C201732 ID: B-4020



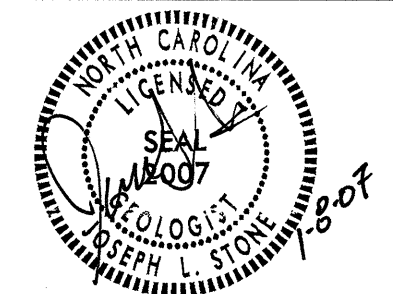
- PERSONNEL
- KBQ
 - MMH
 - WNC
 - RES

INVESTIGATED BY J. L. STONE
CHECKED BY D. N. ARGENBRIGHT
SUBMITTED BY D. N. ARGENBRIGHT
DATE JANUARY, 2007

DRAWN BY: W. D. FIELDS

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

NOTE - 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.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

ID	STATE PROJECT	SHEET NO.	TOTAL SHEETS
B-4020	33387.II	2	10

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION				GRADATION				ROCK DESCRIPTION				TERMS AND DEFINITIONS			
SOIL IS CONSIDERED TO BE THE 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 STANDARD PENETRATION TEST (ASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLES: <i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HARD PLASTIC, A-7-6</i>				WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.				HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. 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:				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, AS SHALE, SLATE, ETC. ARTESIAN - A BODY OF 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 (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF 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.			
SOIL LEGEND AND AASHTO CLASSIFICATION				MINERALOGICAL COMPOSITION				WEATHERING				WEATHERING			
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS				MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.				NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.				FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.			
GROUP CLASS. A-1, A-1-b, A-3, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7-5, A-7-6, A-1, A-2, A-3, A-4, A-5, A-6, A-7				SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50				FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD 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.			
SYMBOL				ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL				WEATHERING				WEATHERING			
% PASSING # 10, # 40, # 200				TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC >10%				FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.				VERY SLIGHT (V SL) 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.			
LIQUID LIMIT PLASTIC INDEX				GROUND WATER				SLIGHT (SL) 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.			
GROUP INDEX				WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING				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. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i>				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. <i>IF TESTED, YIELDS SPT N VALUES > 100 BPF</i>			
USUAL TYPES OF MAJOR MATERIALS				STATIC WATER LEVEL AFTER 24 HOURS				VERY SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES < 100 BPF</i>				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.			
GEN. RATING AS A SUBGRADE				PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA				ROCK HARDNESS				ROCK HARDNESS			
PI OF A-7-5 SUBGROUP IS <= LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30				SPRING OR SEEP				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.			
CONSISTENCY OR DENSENESS				MISCELLANEOUS SYMBOLS				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 PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.			
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)				ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION				SOIL SYMBOL				ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT			
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)				SOUNDING ROD				INFERRED SOIL BOUNDARY				INFERRED ROCK LINE			
GENERALLY SILT-CLAY MATERIAL (COHESIVE)				ALLUVIAL SOIL BOUNDARY				DIP & DIP DIRECTION OF ROCK STRUCTURES				SPT N-VALUE			
TEXTURE OR GRAIN SIZE				SOUNDING ROD				SPT REFUSAL				SOUNDING ROD			
U.S. STD. SIEVE SIZE OPENING (MM)				SOUNDING ROD				SPT REFUSAL				SOUNDING ROD			
BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE. SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)				SOUNDING ROD				SPT REFUSAL				SOUNDING ROD			
GRAIN SIZE				SOUNDING ROD				SPT REFUSAL				SOUNDING ROD			
SOIL MOISTURE - CORRELATION OF TERMS				ABBREVIATIONS				MOISTURE CONTENT				MOISTURE CONTENT			
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION				AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE. - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST o - 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 SLL - SLIGHTLY TCR - TRICONE REFUSAL				W - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA. - WEATHERED W - UNIT WEIGHT Wd - DRY UNIT WEIGHT			
LL - LIQUID LIMIT - SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
PL - PLASTIC LIMIT - WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE				MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST OTHER CME-45B				CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG.-CARBIDE INSERTS CASING TRICONE 2 1/8" *STEEL TEETH TRICONE *TUNG.-CARB. CORE BIT OTHER				AUTOMATIC MANUAL CORE SIZE: B N H POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST OTHER			
OM - OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
SL - SHRINKAGE LIMIT - DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
PLASTICITY				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
PLASTICITY INDEX (PI) DRY STRENGTH				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
COLOR				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:			
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.				DRILL UNITS:				ADVANCING TOOLS:							

09/08/09

See Sheet 1-A For Index of Sheets

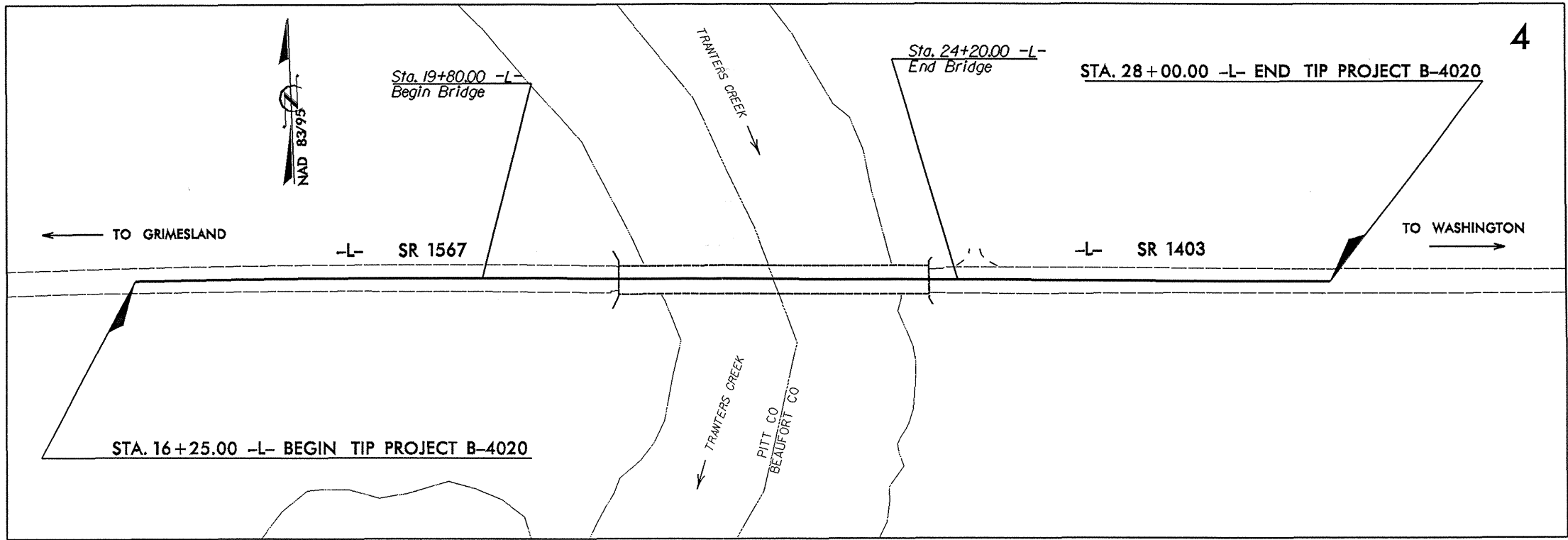
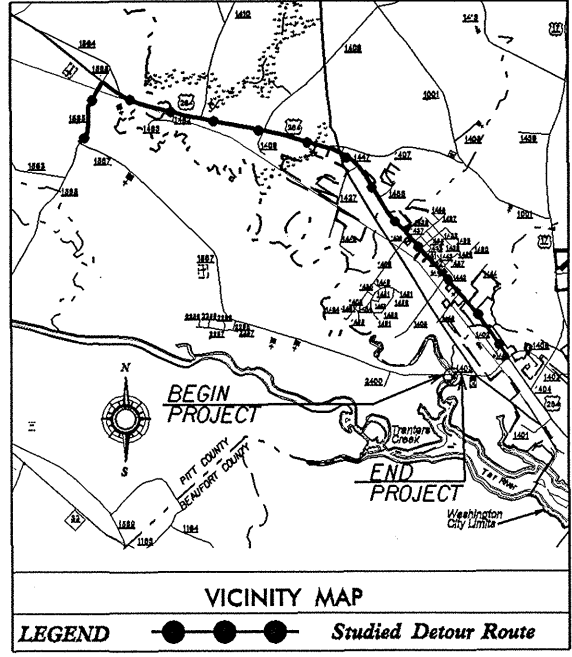
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4020	2A	10
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33387.1.1	BRZ-1403(4)	P.E.	

BEAUFORT / PITT COUNTIES

LOCATION: BRIDGE NO. 8 OVER TRANTERS CREEK
ON SR 1403 /SR 1567 IN WASHINGTON

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



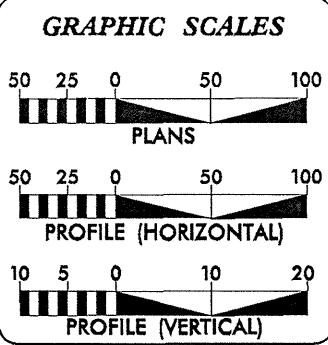
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

NCDOT CONTACT: CATHY HOUSER, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD "

CONTRACT: TIP PROJECT: B-4020



DESIGN DATA

ADT 2007 =	5940
ADT 2030 =	9300
DHV =	10 %
D =	60 %
T =	3 % *
V =	60 MPH
FUNC. CLASS =	URBAN LOCAL
* TTST 1 %	DUAL 2 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4020	=	0.139 mi.
LENGTH STRUCTURE TIP PROJECT B-4020	=	0.083 mi.
TOTAL LENGTH TIP PROJECT B-4020	=	0.222 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: August 18, 2006

LETTING DATE: December 18, 2007

GREG S. PURVIS, P.E.
PROJECT ENGINEER

SCOTT L. KENNEDY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

D:\JAN_2007_09\77_investigation\TIP\B4020.GEO\ROAD\CADD_GEO\TECH\Plan\Prof\B4020_r.dwg_tsh.dgn



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

January 8, 2007

STATE PROJECT: 33387.1.1 B-4020
F.A. PROJECT: BRZ-1403 (4)
COUNTY: Beaufort-Pitt
DESCRIPTION: Bridge No. 8 on SR 1403 and SR 1567 over Tranters Creek in Washington

SUBJECT: Geotechnical Report – Inventory

Project Description

The proposed project is located at the existing bridge site over Tranters creek at the Beaufort - Pitt County line. Based on the current plans, proposed construction consists of widening of the existing embankment, raising the grade approximately 1± foot and lengthening the bridge approximately 120± feet. The investigation of subsurface conditions was confined to areas of proposed construction.

The following line was investigated for this project:

<u>Line</u>	<u>Station (±)</u>
-L-	16+25 to 28+00

Areas of Special Geotechnical Interest

- 1) The entire project was found to exhibit seasonal high ground water, or the potential for ground water related construction problems:
- 2) The following section contains very soft organic alluvial soils, which have the potential to cause embankment stability and/or long term settlement problems.

<u>Line</u>	<u>Station (±)</u>
-L-	16+25 to 19+95

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Physiography and Geology

The project is located in Beaufort and Pitt Counties, within the Coastal Plain Physiographic Province. Topography along the project is flat to gently sloping with poor surface drainage. Ground elevations along the project range from -20± feet below sea level along the bed of Tranters Creek to 9± feet above sea level along the existing roadway embankment. Surface water along the project flows directly into Tranters Creek.

This area is underlain by recent alluvial sediments and Tertiary marine deposits.

Ground Water

Ground water data was collected during January 2006 during which period the area experienced above normal precipitation conditions. High ground water elevations were noted throughout the entire project area with elevations ranging from near sea level, to 2± feet above sea level.

Soils

Soils encountered during this investigation are separated into 3 categories: roadway embankment, alluvial soils, and formational soils.

Roadway embankment soils are comprised 4± to 8+ feet of loose silty sand, (A-2-4), with varying amounts of gravel and shell material.

Alluvial deposits encountered have been subdivided into two distinct units. The first unit, encountered in the flood plain along the western approach, is typically 9± to 16± feet of very soft muck, with varying amounts of wood debris and thin silty sand layers. Organic and moisture values of a tested sample were 20.9 and 242 percent, respectively. Two undisturbed Shelby Tube samples were collected and tested for consolidation. Vane shear tests indicate shear strengths ranging from 1086 psf to 2339 psf within this unit. The second alluvial unit encountered is within an upland area along the eastern approach and is comprised of 6+ feet of very loose silty sand (A-2-4) and sand (A-3).

Immediately underlying the alluvial sediments are the marine deposits of the Castle Hayne Formation. This unit is primarily composed of 16± feet of loose to medium dense clayey sand (A-2-6) with varying amounts of phosphate and shell material overlying 13± feet of medium dense sandy limestone. Underlying the Castle Hayne Formation is the Lower Tertiary, Beaufort Formation. This unit is comprised of loose to medium dense, green, glauconitic, silty sand (A-2-4) with thin indurated layers.

Prepared by,

Joseph L. Stone, L.G.
Engineering Geologist II

5/14/99

PROJECT REFERENCE NO. B-4020	SHEET NO.
RW SHEET NO.	

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT 33387.1.1

COUNTY Beaufort

DATE

7/1/2008

SHEET 1 OF 1 SHEETS

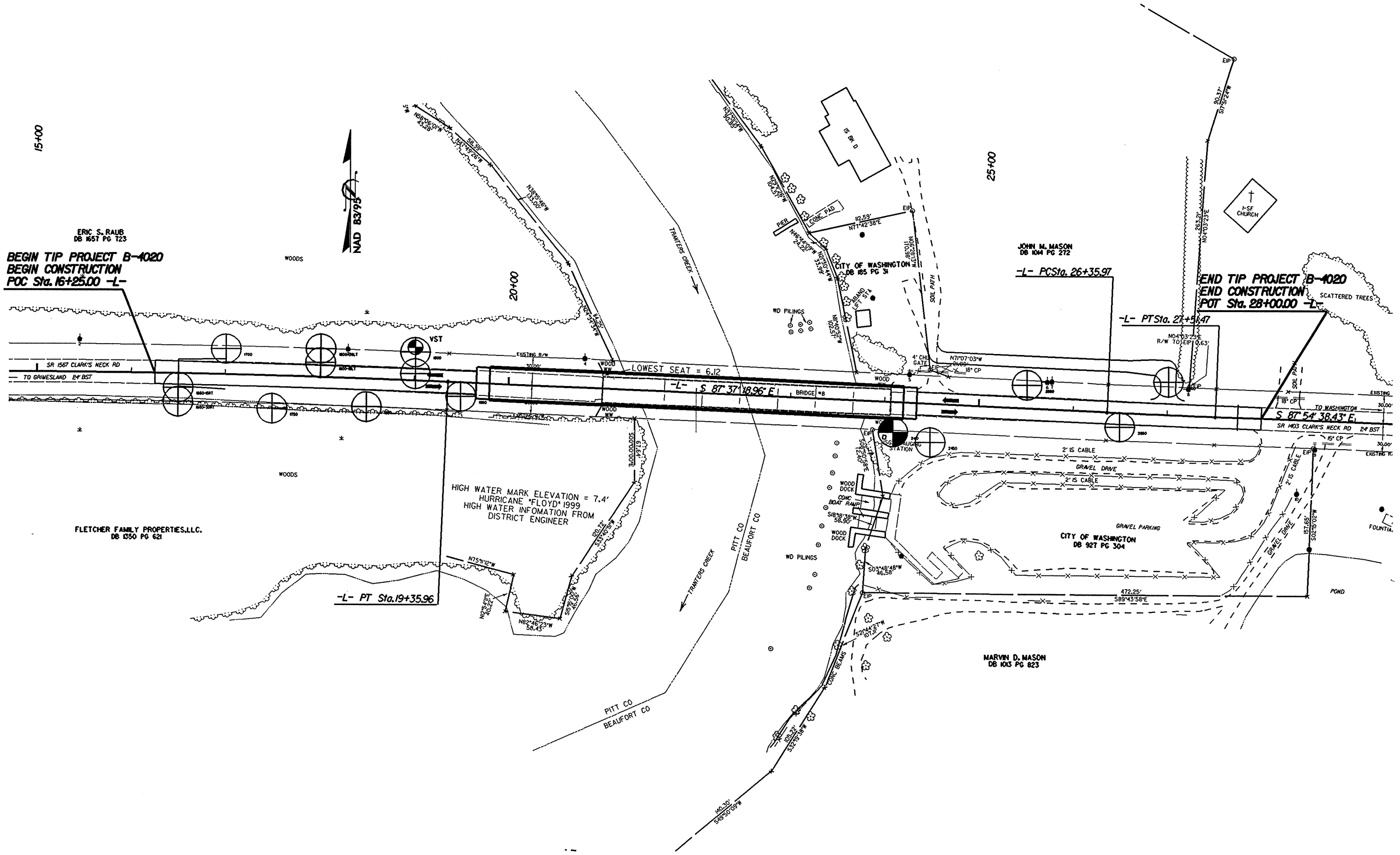
LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMBANK. +30%	BORROW	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
BEFORE BRIDGE															
-L-	16+50.00	19+98.00	176			154	22			*	*		22	154	176
PER GEOTECH ADDENDUM															
-L-	16+25 +/-	19+98 +/-			3000					*	*			3000	3000
SUBTOTAL			176			154	22						22	3154	3176
AFTER BRIDGE															
-L-	24+21.06	27+75.00	396				396	828		828	1076	680			
SUBTOTAL			396				396	828		828	1076	680			
SUBTOTAL			572		3000	154	418	828		828	1076	680	22	3154	3176
Additional Undercut					300										
Waste to replace borrow												-22	-22		-22
PROJECT TOTAL:			572		3300	154	418	828		828	1076	658		3154	3154
Estimate 5% for topsoil repl.												33			
Shoulder Material												70			
GRAND TOTAL:			572		3300	154	418	828		828	1076	761		3154	3154
SAY:			600									770			

DDE = 51 CY

LT. WT. AGGREGATE = 3600 TONS * To be used in place of earth embankment from Station 16+25 to Station 19+98

Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

01-JUL-2008 08:43
c:\pwworkspace\proj\B-4020_rdw.dsn.dgn



ERIC S. RAUB
DB 1657 PG 723

BEGIN TIP PROJECT B-4020
BEGIN CONSTRUCTION
POC Sta. 16+25.00 -L-

END TIP PROJECT B-4020
END CONSTRUCTION
POT Sta. 28+00.00 -L-

HIGH WATER MARK ELEVATION = 7.4'
HURRICANE "FLOYD" 1999
HIGH WATER INFORMATION FROM
DISTRICT ENGINEER

FLETCHER FAMILY PROPERTIES,LLC.
DB 1350 PG 621

JOHN M. MASON
DB 1044 PG 272

MARVIN D. MASON
DB 1015 PG 823



LOWEST SEAT = 6.12

-L- S 87° 37' 18.96" E

S 87° 54' 38.43" E

-L- PT Sta. 19+35.96

-L- POC Sta. 26+35.97

-L- PTS Sta. 27+58.47

PITT CO
BEAUFORT CO

PITT CO
BEAUFORT CO

PITT CO
BEAUFORT CO

CITY OF WASHINGTON
DB 927 PG 304

WOOD DOCK
WOOD DOCK

POND

FOUNTAIN

SCATTERED TREES



1-SF CHURCH

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

WOOD DOCK
WOOD DOCK

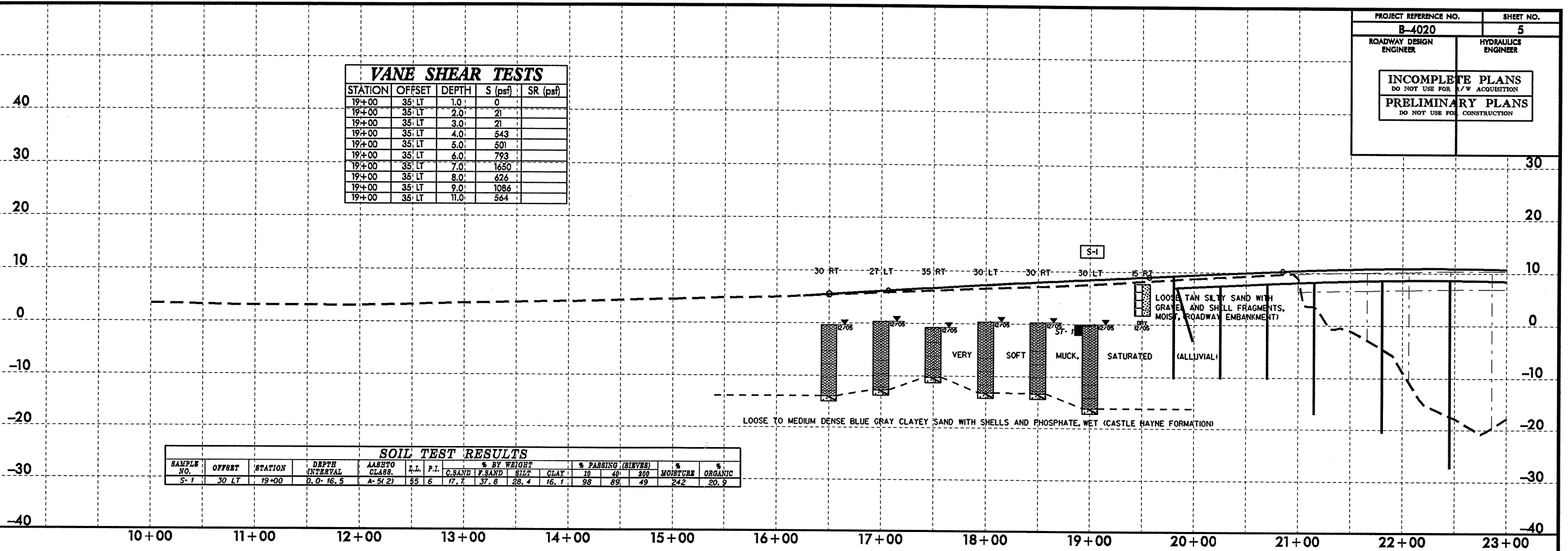
WOOD DOCK
WOOD DOCK

5/28/09

PROJECT REFERENCE NO.		SHEET NO.	
B-4020		5	
ROADWAY DESIGN ENGINEER			HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

VANE SHEAR TESTS

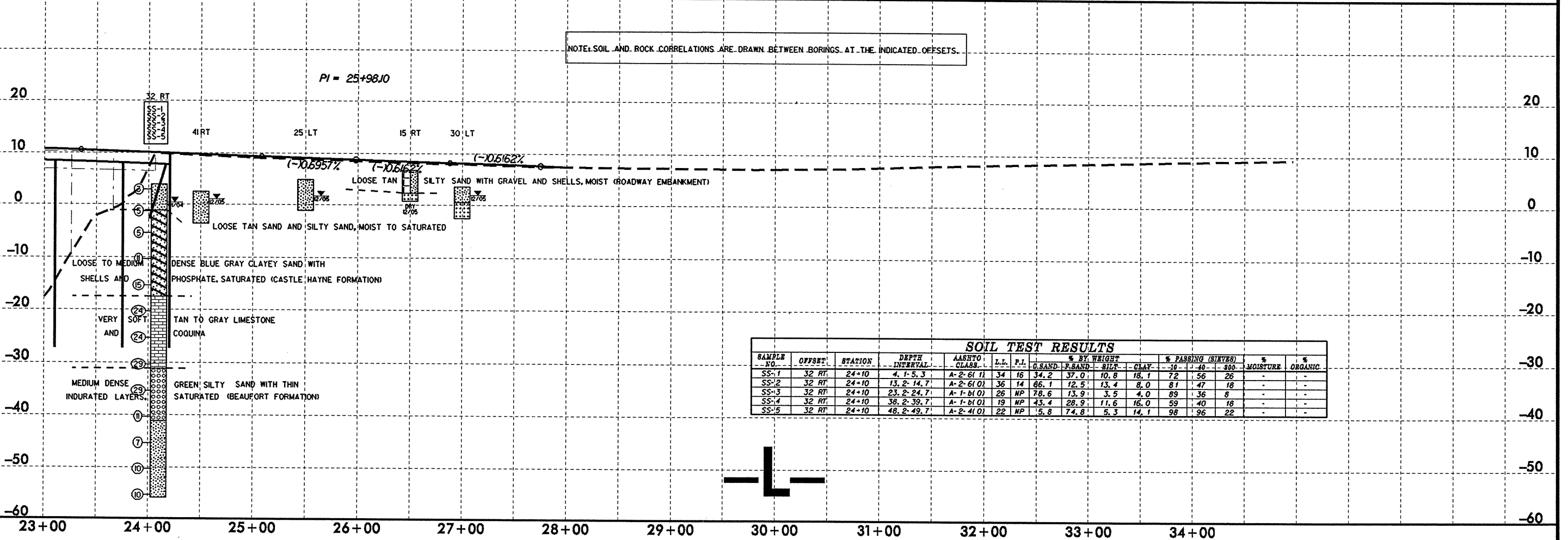
STATION	OFFSET	DEPTH	S (psf)	SR (psf)
19+00	35' LT	1.0'	0	
19+00	35' LT	2.0'	21	
19+00	35' LT	3.0'	21	
19+00	35' LT	4.0'	543	
19+00	35' LT	5.0'	501	
19+00	35' LT	6.0'	793	
19+00	35' LT	7.0'	1650	
19+00	35' LT	8.0'	624	
19+00	35' LT	9.0'	1086	
19+00	35' LT	11.0'	564	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AAHSTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	10	40	200		
S-1	30' LT	19+00	0.0-16.5	A-5(2)	55	6	17.7	37.8	28.4	16.1	98	89	49	242	20.9

NOTE: SOIL AND ROCK CORRELATIONS ARE DRAWN BETWEEN BORINGS AT THE INDICATED OFFSETS.

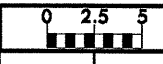


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AAHSTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-1	32' RT	24+10	4.1-5.3	A-2-6(1)	34	16	34.2	37.0	10.8	18.1	72	56	26	-	-
SS-2	32' RT	24+10	13.2-14.7	A-2-6(1)	36	14	66.1	12.5	13.4	8.0	81	47	18	-	-
SS-3	32' RT	24+10	23.2-24.7	A-1-0(1)	26	MP	78.6	13.9	3.5	4.0	89	36	8	-	-
SS-4	32' RT	24+10	36.2-39.7	A-1-0(1)	19	MP	43.4	28.9	11.6	16.0	59	40	18	-	-
SS-5	32' RT	24+10	48.2-49.7	A-2-4(1)	22	MP	5.8	74.8	5.3	14.1	98	96	22	-	-

02-AUG-2006 09:00
 D:\Projects\ERD\regville Investigation\TIP\B4020_GEO_BRD00008_APPR\CADD_GEO\TECH\Plan\Prof\B-4020_geo_pf1.dgn

8/23/99



PROJ. REFERENCE NO. B-4020 SHEET NO. 6

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

20 20

15 15

10 10

5 5

0 0

-5 -5

-10 -10

-15 -15

5 5

0 0

-5 -5

-10 -10

-15 -15

3:1

3:1

LOOSE TAN SILTY SAND WITH GRAVEL AND SHELL FRAGMENTS, MOIST (ROADWAY EMBANKMENT)

DRY 12/05

12/05

VERY SOFT MUCK WITH THIN SILTY SAND LAYERS, SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE BLUE GRAY CLAYEY SAND WITH SHELLS AND PHOSPHATE, SATURATED (CASTLE HAYNE FORMATION)

16 + 50.00

LOOSE TAN SILTY SAND WITH GRAVEL AND SHELL FRAGMENTS, MOIST (ROADWAY EMBANKMENT)

VERY SOFT MUCK WITH THIN SILTY SAND LAYERS, SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE BLUE GRAY CLAYEY SAND WITH SHELLS AND PHOSPHATE, SATURATED (CASTLE HAYNE FORMATION)

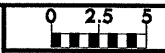
16 + 00.00

-4-

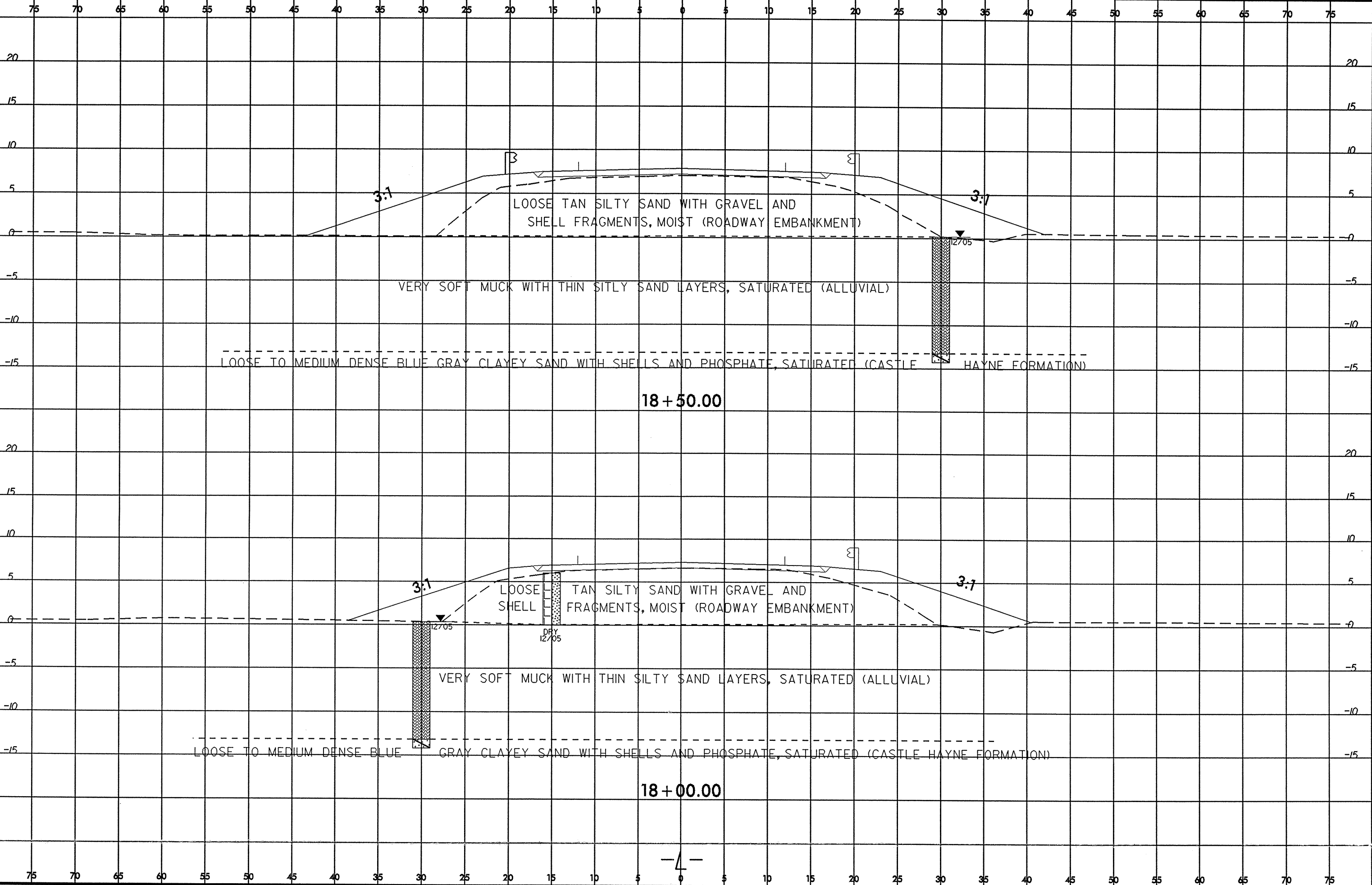
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

08-JAN-2007 09:15 L:\ER01\Geo\p11e\Investigation\TIP\B4020_GEO_ROWY\CADD_GEO\TECH\sec\B4020_geo_xst.dgn

8/23/99



PROJ. REFERENCE NO. B-4020 SHEET NO. 8



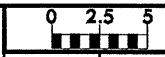
18 + 50.00

18 + 00.00

-4-

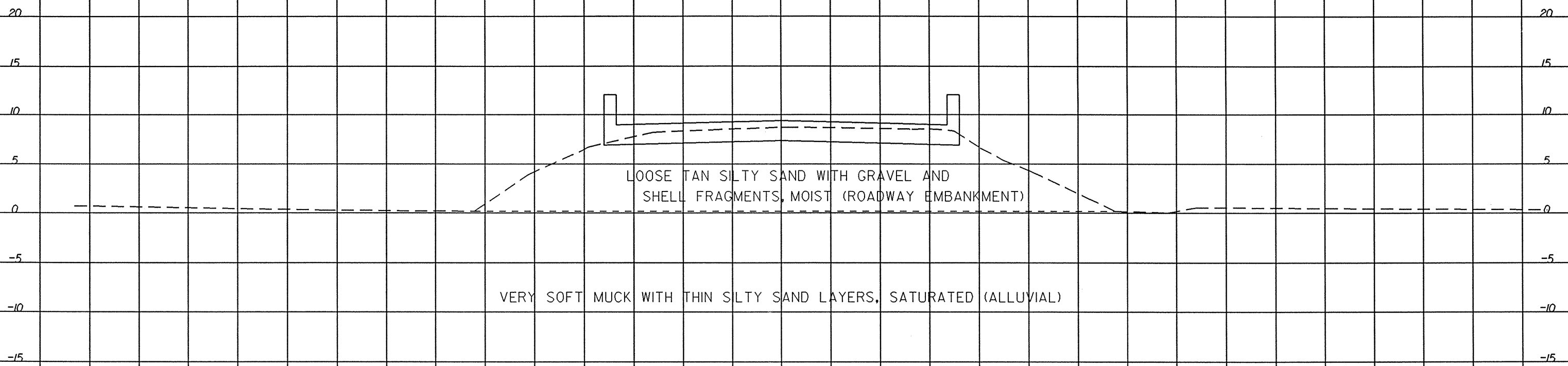
08-JAN-2007 09:46
L:\FERD\Gres\proj\16_Investigation\TIP\B4020_GEO_ROW\Y\CADD_GEO\TECH\ssc\164020-geo_xst.dgn
T:\stone\GEO\26153

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-4020	10

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



LOOSE TAN SILTY SAND WITH GRAVEL AND SHELL FRAGMENTS, MOIST (ROADWAY EMBANKMENT)

VERY SOFT MUCK WITH THIN SILTY SAND LAYERS, SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE BLUE GRAY CLAYEY SAND WITH SHELLS AND PHOSPHATE, SATURATED (CASTLE HAYNE FORMATION)

20 + 00.00

-4-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

08-JAN-2007 09:16
 L:\GEO\GREG\PROJECTS\B4020_GEO\RDWY\CADD_GEO\TECH\ssc_b4020_geo_xs.dgn
 iscone 21 08/23/99