REFERENCE: U-4405

PROJECT: 39049

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	15+65 - 322+95.00	4 - 27	N/A
-RPB-	10+00 - 34+68.31	29 - 30, 22	32

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	17+00, 18+50 - 25+50	33-36
-L-	27+00, 31+00	37
-L-	36+00, 41+00	38
-L-	46+00, 51+00	39
-L-	56+00, 61+00	40
-L-	66+00, 69+50 - 74+50	41 - 44
-L-	75+00, 78+00, 80+00	45
-L-	82+00 - 82+50	46 - 47
-L-	85+00, 90+00	48
-L-	95+00, 100+50	49
-L-	101+50 - 107+00	50 - 52
-L-	107+50, 110+00, 115+00	53
-L-	120+00, 125+00	54
-L-	127+50, 130+00	55
-L-	135+00, 137+50	56
-L-	138+50, 143+00	57
-L-	144+00, 145+50 - 153+50	58 - 62
-L-	154+00, 161+00	63
-L-	166+00, 171+00	64
-L-	173+00, 176+00	65
-L-	181+00, 191+00	66
-L-	196+00, 201+00	67
-L-	206+00, 211+00	68
-L-	216+00, 221+00 - 221+50	69 - 70
-L-	226+00, 231+00	71
-L-	236+00, 241+00	72
-L-	246+00, 256+00	73
-L-	261+00, 266+00	74
-L-	271+00, 276+00	75
-L-	280+00, 286+50	76
-L-	291+00, 296+00	77
-L-	301+00, 305+50	78
-L-	310+50, 316+00	79
-L-	321+00	80
-RPB-	19+00	81
-RPB-	21+50	82
-RPB-	32+50	83

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *CUMBERLAND*

PROJECT DESCRIPTION *US401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	86

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) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT 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 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

T. HOLZAPFEL (MAD)

M. GOOGAN (MAD)

A. RIGGS (S&ME)

S. TIERNAN (S&ME)

J. GERDES (S&ME)

INVESTIGATED BY *S&ME, INC.*

DRAWN BY *B. RATTI*

CHECKED BY *A.F. RIGGS JR, P.E.*

SUBMITTED BY *S&ME, INC.*

DATE *JAN 2016*

NORTH CAROLINA PROFESSIONAL SEAL 14155 ENGINEER ABNER F RIGGS JR

DocuSigned by:
Abner F. Riggs, Jr., P.E. 2/24/2016
2C477DC1AAD5484...
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
U-4405	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 EXCAVATION
- 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
- [ ] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] CME-45C
- [ ] _____

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

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

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: SEE BELOW
REBAR & CAP
ELEVATION: FEET

NOTES:

FIAD - FILLED IN AFTER DRILLING

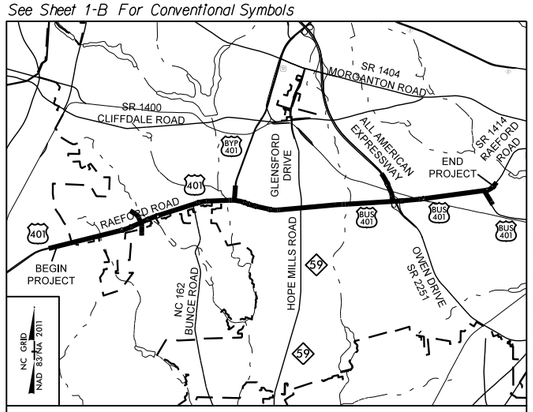
BL-8 N 469,789 E 2,001,198 ELEV 192.13
BL-28 N 470,818 E 2,016,214 ELEV 210.45
BY13-58 N 471,433 E 2,007,214 ELEV 151.10
BY29-77 N 471,344 E 2,017,477 ELEV 205.97
BY9-53 N 470,875 E 2,003,642 ELEV 206.86
BY8-52 N 469,913 E 2,003,082 ELEV 209.52
BL-18 N 470,734 E 2,008,205 ELEV 186.15
BY21-67 N 470,636 E 2,011,413 ELEV 211.12

DATE: 8-15-14

TIP PROJECT: U-4405

CONTRACT: 39049

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



VICINITY MAP

PRELIMINARY PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

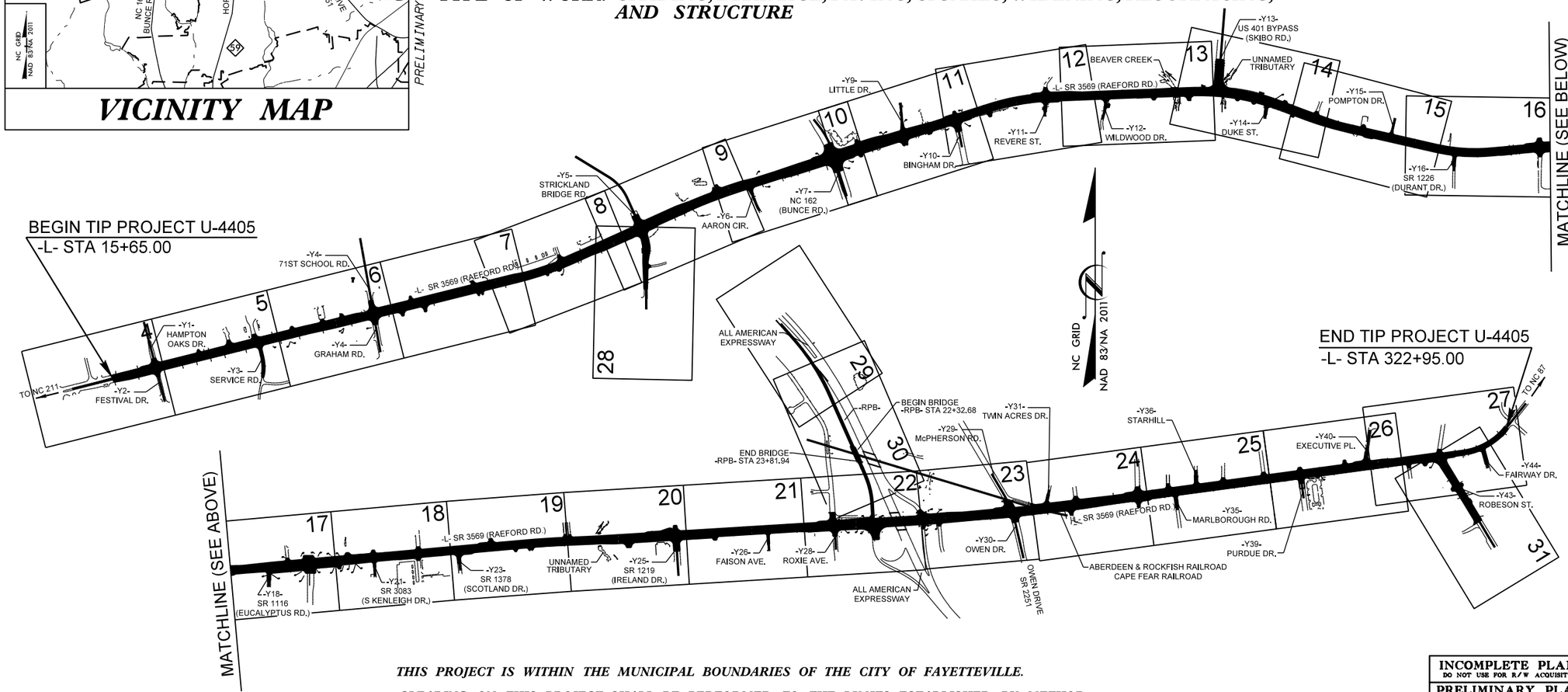
CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	3	86

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39049.1.1	STPDA-0401(230)	PE

LOCATION: US 401 FROM WEST OF HAMPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, AND STRUCTURE



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____ .

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

100 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 63,150
ADT 2038 = 70,975
K = 10 %
D = 60%
T = 3%*
V = 50 MPH
*TTST =1% DUAL=2%
FUNC CLASS =
URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 = 5.820 MILES
TOTAL LENGTH TIP PROJECT U-4405 = 5.820 MILES

NCDOT CONTACT: REKHA V. PATEL, PE

Prepared In the Office of:
ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 15, 2016

LETTING DATE: JULY 17, 2018

CLINTON J. MORGAN, PE
PROJECT ENGINEER

BRYAN LAMBETH, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

January 26, 2016

STATE PROJECT: 39049.1.1 (U-4405)
FEDERAL PROJECT: STPDA-0401(230)
COUNTY: Cumberland
DESCRIPTION: US 401 from West of Hampton Oaks Drive to east of Fairway Drive in Fayetteville, North Carolina

SUBJECT: Geotechnical Report - Inventory

Project Description

This project consists of widening 5.82 miles of the existing roadway along US 401 (Raeford Road) Road (-L-) and construction of a new ramp (-RPB-) from the SBL of All American Freeway over the Aberdeen & Rockfish Railroad to US 401 in Fayetteville North Carolina. US 401 currently consists of 4-lanes with a grassed median along the western most section and center turn lanes along the remaining section. The roadway will be widened to include new roadway, turn lanes and sidewalks on both sides of US 401. This will also include extending 4 culverts on each side of the roadway and construction of a new bridge on ramp -RPB- over the Aberdeen & Rockfish Railroad.

The project area is comprised of rural and wooded areas with some commercial development along the western portion of the alignment and more urban commercialized areas with small businesses along the eastern portion of the alignment. The project crosses several creeks and tributaries, underneath the All American Expressway and grade crossing of the Aberdeen & Rockfish Railroad.

The geotechnical exploration was conducted in June and July of 2015. Standard penetration test (SPT) borings were advanced using a CME-45C track mounted drilling machine equipped with an automatic hammer. Standard Penetration Testing (SPT) methods utilizing wash boring techniques with casing and tri-cone roller bit were used to advance borings to the necessary depths. Additionally, hand auger borings were performed along the alignment to determine subsurface conditions and obtain soil samples. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by S&ME's soil testing laboratory. Laboratory testing was performed in accordance with the AASHTO Soil Classification System.

The following alignments, totaling 6.287 miles, were investigated. Subsurface cross sections of the following alignment are included in this report.

Line	Stations
-L-	15+65 to 322+95
-RPB-	10+00 to 34+68.31

Areas of Special Geotechnical Interest

1) Highly Plastic Soils: Highly plastic Coastal Plain soils with plastic indices (PI) of 25 and greater with greater than 50 percent passing the #200 sieve were encountered within 3 feet of the proposed grade at the following locations:

Line	Stations	Offsets (ft)
-L-	19+00 to 25+00	55 LT to 55 RT
-L-	70+00 to 74+00	50 LT to 60 RT
-L-	102+00 to 107+00	75 LT to 55 RT
-L-	146+50 to 148+00	60 LT to 45 RT

A discussion of these highly plastic soils is located below in the section titled "Soil Properties".

2) Alluvial Soils: Recent alluvial deposits typically consist of very soft to soft, wet alluvial soils (N-values less than 4) were encountered within 3 feet of proposed grades within fill extent and may impact subgrade or embankment construction. These soils were found at the following locations:

Line	Stations	Offsets (ft)
-L-	81+70 to 82+75	70 to 100 LT
-L-	82+70 to 85+70	70 to 80 RT
-L-	136+40 to 135+00	55 to 70 LT
-L-	137+60 to 138+30	60 RT
-L-	221+10 to 222+15	60 to 100 LT
-L-	221+10 to 223+40	60 to 80 RT

A discussion of these alluvial soils is located below in the section titled "Soil Properties".

3) Artificial Fill: Artificial fill may contain soils placed in an uncontrolled manner and may contain unsuitable soils. Areas of artificial fill are present at the following locations:

Line	Stations	Offsets (ft)
-L-	78+00 to 82+70	65 RT
-L-	82+75 to 85+30	80 LT
-L-	85+65 to 87+00	70 RT
-L-	89+70 to 90+40	2 LT to 13 RT

-L-	127+35 to 128+30	35 to 50 RT
-L-	138+00 to 142+00	50 to 60 LT
-L-	138+30 to 143+30	50 to 90 RT
-L-	143+60 to 145+45	65 to 85 LT
-L-	148+70 to 149+35	30 to 70 RT
-L-	213+80 to 221+10	55 to 80 RT
-L-	218+10 to 221+10	60 to 65 LT

A discussion of these artificial fill soils is located below in the section titled “Soil Properties”.

4) Groundwater: High water tables, seasonal high groundwater, as well as potential perched groundwater above or within 6 feet of proposed grade were encountered at the following location:

Line	Stations	Offsets (ft)
-L-	300+00 to 311+00	50 to 60 LT

5) Culverts: Culverts will be extended on both sides of the roadway within the proposed right of way at the following locations:

Line	Station	Offset (ft)	Within Fill Extent
-L-	82+40	110 LT and 90 RT	Yes
-L-	137+95	90 LT and 100 RT	Yes
-L-	143+35	130 LT and 90 RT	Yes
-L-	221+20	110 LT and 105 RT	Yes

Physiography and Geology

The site is located in the south-western portion of the Coastal Plain Physiographic Province of North Carolina. The Coastal Plain Province is typically characterized by marine and eolian sediments that were deposited during periods of fluctuating sea levels and moving shorelines. The surface soils often consist of more recent deposits of interbedded sands, clayey sands and clays. Based on previous mapping (N.C. Geologic Map 1985) and our knowledge of the local geology, the predominant geological formation at this site is the Middendorf Formation. Portions of the Black Creek Formation which overlies the Middendorf Formation is also mapped in the eastern portion of the alignment near All American Freeway.

The Middendorf Formation consists of beds of sands and clays of alluvial origin. The lithology of the materials and mica content indicates that these sediments are derived from weathered crystalline granitic and metamorphosed gneiss rocks of the Piedmont. The sands consist of angular grains that are fine to course in texture and the clays are arenaceous.

The Black Creek Formation typically consists of dark gray to black clays with thinly bedded fine sands and often contain fine mica. The clays are often replaced abruptly in short distances both vertically and horizontally with highly cross bedded sands. Partially lignitized plant remains are also common.

Soil Properties

Soils encountered during this investigation are separated into four categories based on their origin. They consist of roadway embankment, artificial fill, alluvial, and Coastal Plain deposited soils.

Roadway Embankment fill soils are present beneath the existing roadway and shoulders of the existing roadway on the project. The embankment fill materials within the widening sections extend to depths of at least 8.5 feet below existing grade. The roadway embankment fill soils generally consist of orange-brown, red-brown, tan and gray, loose to medium dense, dry to wet, coarse to fine sands (A-1-b, A-3) and silty to clayey fine to coarse sands (A-2-4, A-2-6) with trace amounts of organics and gravel. The fine grained soils in the roadway embankment fill consist of orange-brown, red-brown, tan and gray, medium stiff to stiff, moist to wet coarse to fine sandy silts (A-4) and fine to coarse sandy and silty clays (A-6) with trace of organic material. The silts and clays tested exhibit low plastic indices of no greater than 19 percent with no more than 37 percent fines passing the No. 200 sieve.

Artificial Fill soils are present within the median and outside of roadway embankment fill areas along commercial areas and sewer easements developed adjacent to the roadway. Artificial fill was encountered to depths of at least 8.0 feet beneath the ground surface. These soils consist mainly of red, tan and gray, very loose to loose fine to coarse sands and gravels, silty to clayey fine to coarse sands (A-1-b, A-2-4 and A-2-6) and soft gray and yellow-tan, moist, fine sandy clay (A-6) with trace of organics. SPT N-values in the artificial fill soils ranged from 4 to 7 blows per foot (bpf).

Alluvial soils are present at existing creek and tributary crossings where existing pipes and culverts are located as indicated by the alluvial boundary area shown on the plan sheets. Alluvial soils were also encountered beneath roadway embankment and artificial fill materials to depths of up to 22.5 feet beneath the ground surface. These soils consist of brown, tan, dark gray and black, very soft to soft, wet, coarse to fine sandy to silty clays (A-6, A-7-6) and very loose to loose, wet to saturated silty to clayey fine to coarse sands (A-2-4, A-2-6) with trace to little amounts of organic material and some small quartz gravel. The alluvial soils exhibited SPT N-values of weight-of-hammer (WOH) to 10 bpf.

Coastal Plain soils were encountered throughout the project and beneath the roadway embankment and artificial fill materials and alluvial materials. The Coastal Plain soils were derived from undifferentiated coastal plain deposits and soils characteristic of more well defined formations mapped in the project area. Formations mapped in the area are the Black Creek Formation and underlying Middendorf Formation. The undifferentiated coastal plain soils and the soils of the Middendorf Formation typically consist of orange-brown, yellow-orange, red-brown, tan and gray, loose to medium dense, dry to saturated, silty to clayey fine to coarse sands (A-2-4, A-2-6, A-2-7) with traces of mica, and moist to wet, stiff to hard fine to coarse sandy and silty clays (A-6, A-7-6) with mudstone. These soil exhibited low to high plastic indices of 3 to 34 percent with 17 to 92 percent fines passing the No. 200 sieve. SPT N-values in the Coastal Plain soils ranged from 13 bpf to 100 blows with 0.6 feet of penetration.

Soils of the Black Creek Formation were encountered along -RPB- as high as elevations 177.1 and 178.2 feet. These soils are characterized by their dark black color and consist of moist medium stiff dark gray silty clay (A-7-6) with thin lenses of fine sand and traces of mica and partially lignitized organic materials. SPT N-values in these soils ranged from 4 to 7 blows per foot (bpf).

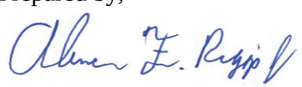
Rock Properties

Mudstone was encountered during the roadway investigation at End Bent No. 2 of the proposed bridge location over the Aberdeen & Rockfish Railroad along -RPB-. The mudstone originates in the underlying Middendorf Formation. The mudstone was encountered between approximately elevations 144.2 and 134.7 feet. SPT N-values in the mudstone range from 100 blow per 0.6 to 0.9 feet of penetration.

Groundwater

Groundwater was typically greater than 6 feet below proposed grades in almost all borings throughout the project corridor. Groundwater was typically encountered in boring locations adjacent to existing culverts in alluvial soils either exposed at the ground surface or beneath fill materials at depths of about 1.4 to 10.8 feet beneath the ground surface. An exception to this was in hand auger borings HA-63 and HA-65 where groundwater was encountered at depths of 3.8 and 4.4 feet, respectively and along -RPB- where groundwater was encountered at depths of 3.1 to 22.3 feet beneath the ground surface in coastal plain soils. The depth of ground water, beneath the ground surface, will fluctuate with seasonal precipitation and may occur at higher levels at other times of the year above less permeable clayey soils or hard soils.

Prepared by,



Abner F. Riggs, Jr. P.E.
Senior Geotechnical Engineer
N.C. Registration No. 14155

PROJECT REFERENCE NO.	SHEET NO.
U-4405	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

BEGIN TIP PROJECT U-4405
-L- STA.15+65.00

NC GRID
NAD 83/NA 2011

BEGIN CONSTRUCTION
-Y1- Sta.14+20.00

-L- Sta.20+55.59=
-Y1- Sta.15+26.27

-L- Sta.20+58.31=
-Y2- Sta.10+00.00

END CONSTRUCTION
-Y2- Sta.11+00.00

-L- POT Sta.11+00.00

-Y2- POT Sta.13+85.69

MATCHLINE -L- STA 22+00
SEE SHEET 5

ROADWAY EMBANKMENT

COASTAL PLAIN

HA-01

JOHN W. WILLIAMS & WIFE
DB 4041 PG 657
PB 57 PG 33

JAMES A BLUE & WIFE ANNETTE C.
DB 4348 PG 181
PB 57 PG 33

DAVID F SEAY & WIFE
DB 3214 PG 288
B 57 PG 33

RONEL VILLANUEVA
DB 8802 PG 597
PB 57 PG 33

GERALD HOLMES & WIFE
DB 5879 PG 181
PB 57 PG 33

YAIR AMED HODGE
MARTA DIAC UNIT
DB 5734 PG 604
PB 57 PG 33

THOMAS L MANIGO & WIFE
DB 5180 PG 418
PB 57 PG 33

JAMES E KOHLER, JR & WIFE
DB 3951 PG 861
PB 57 PG 33

V CORRELL & WIFE
DB 4269 PG 289
PB 57 PG 333

SHIRLEY A FONTAINE
DB 3873 PG 310
PB 57 PG 33

DEBRA NEICE WHITE
DB 4962 PG 886
PB 57 PG 33

JANICE MARIE TYSON
DB 5043 PG 871
PB 57 PG 33

ZARKO JOHNSON
DB 6073 PG 155

RAY JOHNSON
BST DB 5424 PG 474
PB 42 PG 63

SIMPSON & SIMPSON II
DB 5321 PG 155

RAYCONDA PROPERTIES
DB 5776 PG 175
PB 93 PG 37

RAYCONDA PROPERTIES
DB 5776 PG 175
PB 93 PG 37

RAYCONDA PROPERTIES
DB 5776 PG 175
PB 93 PG 37

HOLT REAL ESTATE ENTERPRISES
DB 9222 PG 288
PB 80 PG 18

FORT SILL NATIONAL BANK
DB 7750 PG 359
PB 104 PG 101

SPIRIT MASTERS FUNDING III, LLC
DB 7384 PG 716
PB 98 PG 72

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3424-1" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 470729.901(ft) EASTING: 2003980.051(ft)
ELEVATION: 211.690(ft)
THE AVERAGE COMBINED GRID FACTOR (GRID TO GROUND)

NC GRID
NAD 83 NA 2011

20-JAN-2016 14:58
C:\PROJECTS\2015\1305.15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS
8/17/99

MATCHLINE SEE SHEET 4
-L- STA 22+00

MATCHLINE SEE SHEET 6
-L- STA 35+50

NC GRID
NAD 83/NA 2011

JOHN W. WILLIAMS & WIFE
DB 4041 PG 657
PB 57 PG 33

RONEL VILLANUEVA
DB 8802 PG 597
PB 57 PG 33

GERALD T HOLMES & WIFE
DB 5874 PG 181
PB 57 PG 33

YAIR AMED HODGE MARTA
DB 7324 PG 604
PB 57 PG 33

THOMAS L MANIGO & WIFE
DB 5180 PG 418
PB 57 PG 33

TRINITY UNITED METHODIST CHURCH
DB 2552 PG 413

ISBLK BUS

MURRY EUGENE HODGES, JR & WIFE
DB 4712 PG 298
PB 96 PG 3

FAYETTEVILLE STORAGE 17 NC, LLC
DB 8993 PG 586
PB 96 PG 3

NORTH CAROLINA NATURAL GAS
DB 2085 PG 279

ISBK LOYD E AUMAN ELEMENTARY SCHOOL

CUMBERLAND COUNTY
DB 8304 PG 55

CUMBERLAND COUNTY
DB 8304 PG 55

COASTAL PLAIN

HA-01

HA-02

HA-03

HA-04

ROADWAY EMBANKMENT

US 401 BUS RAEFORD RD

RAYCONDA PROPERTIES
DB 5776 PG 175
PB 117 PG 64

EYE MEDICS OPTOMETRIST, PA
DB 6718 PG 465
PB 113 PG 117

PHILLIP R. TAYLOR
DB 8715 PG 230
PB 113 PG 117

MCNL ENTERPRISES, LLC
DB 6106 PG 294
PB 104 PG 101

M & S PIKE, LLC
DB 5493 PG 309
PB 104 PG 101

DELLAR CLAUDINE CAULDER
DB 5549 PG 182
PB 19 PG 45

DELLAR C CAULDER
DB 3650 PG 498
PB 19 PG 45

GERALD GOODSPEED, JR. HEIRS
DB 2121 PG 571
PB 19 PG 45

BEATRICE GLENN
DB 3594 PG 750
PB 19 PG 45

CYNTHIA HARRIS STEV
DB 7425 PG 883
PB 19 PG 45

JOHNNY DEAN CAPPS
DB 6337 PG 296
PB 33 PG 54

WALTER E CAULDER & WIFE
DB 5016 PG 572
PB 49 PG 67

ROY LESTER & WIFE SUNNY
DB 6931 PG 599
PB 49 PG 67

-Y3-
PI Sta 12+66.11
Δ = 20° 42' 00.5" (RT)
D = 10° 44' 58.8"
L = 192.57'
T = 97.34'
R = 533.00'
SE = 0.04

-Y3- PC Sta. 10+00.00
-Y3- PT Sta. 13+61.34
-Y3- POT Sta. 14+01.69
END CONSTRUCTION
-Y3- Sta. 13+92.00
-L- Sta. 32+26.84

20-JAN-2016 14:58
G:\PROJECTS\2015\11305-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_05.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83/NA 2011

REVISIONS 8/17/99

MATCHLINE SEE SHEET 5 -L- STA 35+50

MATCHLINE SEE SHEET 7 -L- STA 48+00

HA-05

HA-06

HA-07

ROADWAY EMBANKMENT

COASTAL PLAIN

-SR2- PT Sta. 12+11.99

-SR2- POT Sta. 12+48.83

-SR2- PI Sta 11+26.69
Δ = 13°05'28.3" (RT)
D = 4°38'22.0"
T = 86.06'
R = 750.00'

-SRI- PT Sta. 10+42.41

-SRI- PC Sta. 10+00.00

BEGIN CONSTRUCTION -Y4- Sta. 11+00.00

-L- Sta. 45+33.70= -Y4- Sta. 18+48.61

END CONSTRUCTION -Y4- Sta. 19+10.00

-BY5- # 47 -Y4- POT Sta. 22+80.26

CUMBERLAND COUNTY BOARD OF EDUCATION DB 635 PG 160 DB 5430 PG 468 DB 536 PG 404 DB 517 PG 190

CUMBERLAND COUNTY DB 8304 PG 55

CUMBERLAND COUNTY BOARD OF EDUCATION DB 847 PG 374

2SBK SEVENTY FIRST CLASSICAL MIDDLE SCHOOL

1SBK SEVENTY FIRST CLASSICAL MIDDLE DI SCHOOL

PETER A PORRECO & WIFE DB 7399 PG 738 PB 19 PG 45

MARLENE ELIZABETH VARGAS DB 7487 PG 273 PB 19 PG 45

CYNTHIA HARRIS STEVENS DB 7425 PG 883 PB 19 PG 45

JOSEPH R WEST & WIFE LINDA M. DB 4820 PG 525 PB 19 PG 45

G6 PROPERTIES, LLC DB 8761PG 382

BILLY C BALDWIN & WIFE DB 3154 PG 323 PB 55 PG 43

OAIHA & GIAU TANG DB 8732 PG 115 PB 55 PG 43

LOU S HORTON DB 6279 PG 4 PB 55 PG 43

OLAND BERYL LITTLE & WIFE DB 3433 PG 726 PB 55 PG 43

McDONALD'S CORP DB 4102 PG 555 PB 58 PG 116

AOM INVESTMENTS, L DB 5032 PG 661 PB 58 PG 116

R & W PIZZA HUTS OF NORTH CAROLINA DB 3223 PG 630 PB 98 PG 110

CONCRETE OVERHEAD SHELTER

ISBK BUS

ISBK BIRDS NEST MONTESSORI SCHOOL

ISFD

ISBKD

2SFD

MTL CAN

MTL GATE

GAZEBO

BUSHESON TERRACE

AG CONDENSOR

CREPE MYRTLE

PARKING STOPS

HOT BOX

WATER VAULT

CONCRETE STAIRS

6' CLF W/ BW

6' CLF

4' CONC SW

5' CONC SW

6' CONC SW

8' CONC SW

200' TAPER (LT TURN)

150' TAPER (LT TURN)

100' TAPER (RT TURN)

150' LANE SHIFT & TAPER

PROP.2'-6" C&G

PROP.1'-6" C&G

EXISTING

KINGSWAY CT

MANASSAS ST

US 401 BUS RAEFORD RD

CENTURYLINK DUCTBANK

FIELD EVIDENCE REVEALS TWO PIPES

POSSIBLE EXISTING R/R (8.33'+)

POSSIBLE EXISTING R/R (8.33'+)

20' UTILITY ESMT PB 58 PG 116

DRIVEWAY R/W PB 9

20-JAN-2016 14:58
N:\PROJECTS\2015\11305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_06.dgn
PROJECT ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
U-4405	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

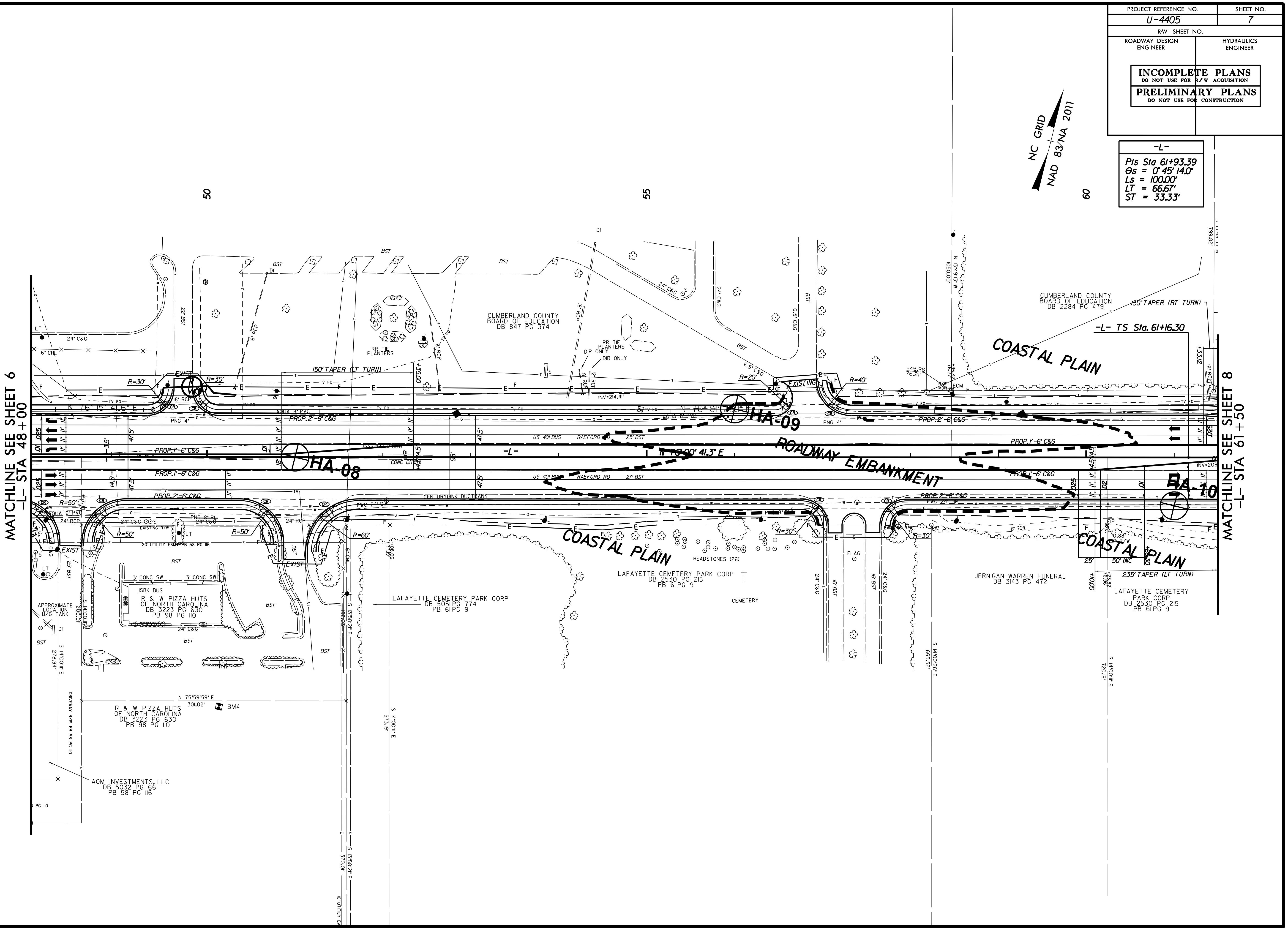
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PIs Sta 61+93.39
Θs = 0° 45' 14.0"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

8/17/99

REVISIONS

20-JAN-2016 14:59
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_07.dgn
BRatti AT BRATTI-T3500



PROJECT REFERENCE NO.	SHEET NO.
U-4405	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		
PIs Sta 61+82.97	PI Sta 65+10.09	PIs Sta 68+36.04
Θs = 0° 45' 14.0"	Δ = 8° 50' 29.8" (LT)	Θs = 0° 45' 14.0"
Ls = 100.00'	D = 1° 30' 28.0"	Ls = 100.00'
LT = 66.67'	L = 586.40'	LT = 66.67'
ST = 33.33'	T = 293.78'	ST = 33.33'
	R = 3,800.00'	
	SE = 0.025	

NC GRID
NAD 83/NA 2011

-L- SC Sta. 62+16.30

-L- CS Sta. 68+02.70

-L- ST Sta. 69+02.70

MATCHLINE SEE SHEET 7
-L- STA 61+50

MATCHLINE SEE SHEET 9
-L- STA 74+75

RAEFORD ROAD PARTNERS, LLC
DB 9170 PG 696
PB 132 PG 83

PROPOSED 3' UTILITY EASEMENT
PB 132 PG 83

WAL-MART REAL ESTATE
BUISINESS TRUST
DB 9449 PG 76
PB 134 PG 55

WAL-MART REAL ESTATE
BUISINESS TRUST
DB 9449 PG 76
PB 134 PG 55

COASTAL PLAIN

ROADWAY EMBANKMENT

HA-11

HA-12

150' TAPER (RT TURN)

235' TAPER (LT TURN)

150' TAPER (LT & RT TURN)

5' MONOLITHIC ISLAND

PROP. 2'-6" C&G

PROP. 1'-6" C&G

CENTURYLINK DUCTBANK

AQUA 8" PVC

EXIST. 6" DIP

EXISTING R/W POSSIBLE JB OR SIDE PIPE TIE

DIR ONLY UNABLE TO VERIFY CONNECTION TO CULVERT

FLAG POLE

4' CONC SW

5' CONC SW

HEADSTONE(S) DISPLAY ONLY

BRK DECK

2.5' BRK WALL

LAFAYETTE CEMETERY PARK CORP
DB 2530 PG 215
PB 61PG 9

SANDRA K CAIN
DB 5016 PG 516
PB 16 PG 48

GORDON FRANKLIN CRUMPLER
DB 5247 PG 636

M. D. GILLIS
DB 2890 PG 73
PB 16 PG 48

JOSEPH H GILLIS
& WIFE
DB 4479 PG 102
PB 58 PG 149

6157 CRYSTAL DRIVE, LLC
DB 8900 PG 777
PB 58 PG 149

BM4

S 75°43'50" W
259.62'

N 76°56'22" E
58.73'

N 75°31'12" E
227.88'

S 75°38'18" W
200.51'

S 75°43'57" W
125.70'

S 75°38'47" W
248.67'

N 65° 39' 46.5" E

REVISIONS

8/17/99

20-JAN-2016 14:59
G:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_08.dgn
ET TRANSIT 1.3002

PROJECT REFERENCE NO.	SHEET NO.
U-4405	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		
PIs Sta 81+21.39	PI Sta 84+71.94	PIs Sta 88+21.95
Θs = 0° 27' 17.0"	Δ = 5° 45' 54.2" (RT)	Θs = 0° 27' 17.0"
Ls = 100.00'	D = 0° 54' 34.0"	Ls = 100.00'
LT = 66.67'	L = 633.90'	LT = 66.67'
ST = 33.33'	T = 317.22'	ST = 33.33'
	R = 6,300.00'	
	SE = 0.025	

-Y5-
PI Sta 15+94.46
Δ = 34° 10' 44.0" (RT)
D = 10° 44' 58.8"
L = 317.95'
T = 163.86'
R = 533.00'

-Y5-
PI Sta 22+82.12
Δ = 25° 18' 13.3" (RT)
D = 10° 44' 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02

NC GRID
NAD 83/NA 2011

-Y5- PT Sta. 17+48.55

BEGIN CONSTRUCTION
-Y5- Sta. 19+60.00

-L- Sta.76+45.55
-Y5- Sta. 21+12.54

-L- Sta. 80+54.72

-L- SC Sta. 81+81.72

-L- CS Sta. 87+88.62

COASTAL PLAIN
ALLUVIAL
ARTIFICIAL FILL
ROADWAY EMBANKMENT

HA-11
HA-12
HA-13
HA-14
HA-16
HA-17
HA-18
HA-19

B-02

MATCHLINE SEE SHEET 8
-L- STA 74+75

MATCHLINE SEE SHEET 10
-L- STA 88+00

MATCHLINE SEE SHEET 28
-Y5- STA 23+00

RAEFORD CORPORATE PARK PROPERTY OWNERS ASSOC. INC.
DB 9374 PG 3[illegible]
PB 132 PG 83

RAEFORD CROSSING, LLC
DB 8474 PG 492
PG 127 PG 185

RICHARD WILDER & WIFE ALICE
DB 3249 PG 12

FRANCES H ELLIOT, TRUSTEE
DB 7732 PG 470
DB 510 PG 319

FRANCES H ELLIOT, TRUSTEE
DB 7732 PG 470
DB 2495 PG 254

SOUTH COAST PROPERTIES, LLC
DB 5539 PG 783

CCF REAL ESTATE FOUNDATION
DB 8043 PG 12
DB 89 PG 122

JONATHAN H ELLIOT
DB 5676 PG 794
DB 4960 PG 348

STEPHEN M. CENTER & WIFE
DB 4342 PG 504
PB 89 PG 122

300' TAPER (LT TURN)
150' LANE TAPER (RT TURN)
300' UNIFORM LANE SHIFT
40' INC
25' INC
50' INC
BUS STOP W/ 26' TAPER
5' MONOLITHIC ISLAND
US 401 BUS RAEFORD RD
PROP. CONC. SIDEWALK
PROP. 1'-6" C&G
PROP. 2'-6" C&G
EXISTING R/W
30' SANITARY SEWER EASEMENT PB 127 PG 185
DRAINAGE ACCESS EASEMENT PB 127 PG 185

N 65°22'29" E 225.60'
N 66°40'23" E 267.66'
N 71°30'29" E 310.69'
N 65°39'46.5" E
N 24°40'20" E 149.24'
N 24°40'21" W 139.99'
N 65°19'40" E 75.00'
S 65°19'40" W 40.00'
100.00' S 65°19'40" W
N 65°19'13" E 164.89'
N 24°26'09" W 53.73'
N 86°06'55" W 190.52'
N 30°05'55" W 59.42'
N 34°45'55" W 83.02'
N 37°43'42" W 104.15'
N 47°43'54" W 35.39'
N 41°02'19" W 38.36'
S 36°44' 358.2'
N 72°12'06" E 33.22'
N 25°55'18" W 400.01'
N 25°55'18" W 93.43'
S 24°40'20" E 235.39'
S 24°40'20" E 150.00'
S 24°40'20" E 150.00'
S 24°40'20" E 149.24'
S 24°40'21" E 43.26'
N 67°01'16" W 43.26'

REVISIONS
8/17/99

20-JAN-2016 14:59
N:\PROJECTS\2015\11305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_09.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS
8/17/99

MATCHLINE SEE SHEET 9
-L- STA 88+00

MATCHLINE SEE SHEET 11
-L- STA 101+50

NC GRID
NAD 83/NA 2011

-L-
PIs Sta 88+21.95
Θs = 0° 27' 17.0"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

-Y7-
PI Sta 12+57.36
Δ = 20° 39' 00.6" (RT)
D = 6° 30' 00.0"
L = 317.69'
T = 160.59'
R = 881.41'

-Y6-
PI Sta 12+56.41
Δ = 10° 40' 14.2" (LT)
D = 11° 01' 06.3"
L = 96.84'
T = 48.56'
R = 520.00'

-L- ST Sta. 88+88.62

-L- Sta. 99+26.68 =
-Y7- Sta. 14+82.51

-Y7- POT Sta. 10+00.00

-Y7- PC Sta. 10+96.77

BEGIN CONSTRUCTION
-Y7- Sta. 13+20.00

-Y7- PT Sta. 14+14.46

-Y6- Sta. 11+20.00

-Y6- PC Sta. 12+07.85

-Y6- PT Sta. 13+04.69

-Y6- POT Sta. 13+18.54

END CONSTRUCTION
-Y7- Sta. 16+45.00

POT Sta. 19+34.91

COASTAL PLAIN

ROADWAY EMBANKMENT

ARTIFICIAL FILL

RICHARD WILDER & WIFE ALICE
DB 3249 PG 12

CONNIE L WILSON PRICE
DB 5282 PG 507
DB 6724 PG 518

ISFD
FLORENCE C RANDALL
DB 2866 PG 155
PB 18 PG 12
PB 129 PG 144

ROGERS & BREECE INC
DB 9042 PG 860
PB 129 PG 144
PB 63 PG 92

NEW MACEDONIA FREE WILL BAPTIST CHURCH, INC
DB 9154 PG 572
DB 162 PG 179
PB 19 PG 9

VAN METER RENTALS, LLC
DB 8781PG 758

STEPHEN M. GENTER & WIFE
DB 4342 PG 504
PB 89 PG 122

STEPHEN R PARKER
DB 3394 PG 558

CHRISTINE WALKER HEIRS
DB 2150 PG235

CHIRSTINE B WALKER
DB 652I PG 473
PB 94 I42

BESSIE BLUE LIFE MOORE
DB 7485 PG 154

PETER STEWART ENTERPRISES, INC
DB 8481 PG 664

PETER B STEWART & WIFE
DB 4127 PG 234
DB 2895 PG 396

NCDOT
DB 6625 PG 43

PSP OF FAYETTEVILLE, LLC
DB 7302 PG 115
DB 117 PG 123

-BY7- # 50

-BY8- # 51

-BY8- # 52

BM5

RAEFORD RD HWY 401 84' BST

US 401 BUS RAEFORD RD BST

PROP. CONC. SIDEWALK

PROP. 2'-6" C&G

PROP. 1'-6" C&G

80' BUS STOP W/ 25' TAPER

150' TAPER (RT TURN)

300' LANE TAPER (LT TURN)

50' INC

40' INC

CONC STAIRS

ISF BUS

ISBKD

ISBLKD

A/G TANK

CHURCH

FLAG POLE

STORAGE

DUMPSTER PAD

25 BRK BUS

EXISTING R/W

CENTURYLINK DUCTBANK

CENTURYLINK 2"-4" INNERDUCT

PWC 24" DIP

PWC 12" DIP

PWC 6" DI

PWC 4" CI

PNG 4"

PNG 12" DIP

8" BST

24" BST

64" BST

102" BST

24" RCP

18" RCP

30" RCP

36" RCP

5' MONOLITHIC ISLAND

CONC ISL

CONC DITCH

BOUNCE RD

NCDOT EXISTING R/W

RIPRAP

20-JAN-2016 14:59
O:\PROJECTS\2015\1305-I5-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_10.dgn
Default, ET_BASELINE_LABEL

PROJECT REFERENCE NO.	SHEET NO.
U-4405	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

REVISIONS
8/17/99

MATCHLINE SEE SHEET 10
-L- STA 101+50

MATCHLINE SEE SHEET 12
-L- STA 115+00

-Y9- POT Sta. 10+00.00

-Y9- Sta. 12+15.00
BEGIN CONSTRUCTION

-L- Sta. 113+41.87
-Y10- Sta. 10+00.00

-Y10- Sta. 11+45.00
END CONSTRUCTION

-L- Sta. 107+24.92 =
-Y9- Sta. 13+62.38

-Y10- POT Sta. 13+24.44

-BY9- # 53

-BY10- # 54

DOHERTY HOLDINGS, LLC
DB 9119 PG 554
PB 102 PG 114

ROGERS & BREECE INC
DB 9042 PG 860
PB 129 PG 144
PB 63 PG 92

ROGERS & BREECE INC
DB 4556 PG 425
PB 129 PG 144

ROBERT H JORDAN & WIFE
DB 6539 PG 341

GARY LEE MENDELSOHN
DB 5550 PG 459
PB 21PG 30

M D GILLIS
DB 2890 PG 73

SARA WILLIAMS TOLLISON
DB 4300 PG 509
PB 31PG 18
PB 22 PG 28

DWANE D CLODFELTER
DB 7601PG 648

ALLISON HOLDINGS VII, LLC
DB 8248 PG 441
DB 96 PG 48

ALLISON HOLDINGS VII, LLC
DB 8248 PG 441

PSP OF FAYETTEVILLE, LLC
DB 7302 PG 113
DB 117 PG 123

BASIL AGAPION & WIFE SOPHIA S
DB 9192 PG 706

ZP #15, LLC
DB 4698 PG 1
PB 90 PG 48

CRAIG SAMPSON
DB 1056 PG 491
PB 27 PG 14

BILL P PAPPAS & WIFE MARIA G
DB 6042 PG 245
PB 108 PG 48

MARIA G PAPPAS
DB 5163 PG 376
PB 29 PG 59
PB 100 PG 132

ROADWAY EMBANKMENT
COASTAL PLAIN
HA-23
HA-24
HA-25

550' LANE SHIFT
150' TAPER (RT TURN)
250' TAPER (RT TURN)
165' TAPER (LT TURN)
200' UNIFORM TAPER (RT TURN)
150' TAPER (LT TURN)

US 401 BUS RAEFORD RD
SR 1141 BANANA DR

20-JAN-2016 14:59
G:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_11.dgn
Default at (GENERIC).tb00

-L-		
PIs Sta 117+70.17	PI Sta 120+68.70	PIs Sta 123+65.48
Θs = 1° 47' 25.8"	Δ = 11° 49' 28.7" (RT)	Θs = 1° 47' 25.8"
Ls = 150.00'	D = 2° 23' 14.4"	Ls = 150.00'
LT = 100.01'	L = 495.31'	LT = 100.01'
ST = 50.00'	T = 248.54'	ST = 50.00'
	R = 2,400.00'	
	SE = 0.03	

PROJECT REFERENCE NO.	SHEET NO.
U-4405	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

-L- TS Sta. 116+70.16
-L- SC Sta. 118+20.16
-L- CS Sta. 123+15.47
-L- ST Sta. 124+65.47
-L- Sta. 123+63.98 = -Y11- Sta. 10+00.00
-Y11- POT Sta. 12+10.77
END CONSTRUCTION -Y11- Sta. 11+60.00
-BY11- # 55

COASTAL PLAIN
ROADWAY EMBANKMENT
ARTIFICIAL FILL

HA-25
HA-26
HA-27
HA-28

MATCHLINE SEE SHEET 11 -L- STA 115+00
MATCHLINE SEE SHEET 13 -L- STA 128+00

SARA WILLIAMS TOLLISON DB 4300 PG 509 PB 31 PG 16 PB 22 PG 28
SARA WILLIAMS TOLLISON DB 4300 PG 509
TIME WARNER CABEL SOUTHEAST DB 9017 PG 866
TIME WARNER CABEL SOUTHEAST DB 9017 PG 866 PB 22 PG 28
R & T INVESTMENTS DB 7212 PG 445
RAYMOND A BASS III & WIFE DB 7032 PG 703 PB 31 PG 72
CSI PARTNERS, LLC DB 6415 PG 622 PB 110 PG 174
BILL P PAPPAS & WIFE MARIA C DB 6042 PG 245 PB 108 PG 48
B O C, LLC DB 6662 PG 7 PB 110 PG 174
HAMANN INVESTMENTS, LLC DB 8179 PG 648 PB 129 PG 159 PB 27 PG 53
BRUCE K ALLEN DB 3756 PG 281

DRAINAGE INLETS HAVE CONCRETE SLABS (DS) UNABLE TO GET ACCURATE INVERT ELEVATIONS AND CONNECTIVITY

REVISIONS
8/17/99

20-JAN-2016 14:59
O:\PROJECTS\2015\U305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_12.dgn
Plotted at GRAPHITE-1600

PROJECT REFERENCE NO.	SHEET NO.
U-4405	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	
PIs Sta 139+95.56	PI Sta 144+71.01
Θs = 1° 43' 07.9"	Δ = 19° 18' 58.8" (RT)
Ls = 150.00'	D = 2° 17' 30.6"
LT = 100.00'	L = 842.83'
ST = 50.00'	T = 425.45'
	R = 2,500.00'
	SE = 0.03

NC GRID
NAD 83/NA 2011

8/17/99

REVISIONS

MATCHLINE SEE SHEET 12
-L- STA 128+00

MATCHLINE SEE SHEET 14
-L- STA 141+00

-L- TS Sta. 138+95.56

-L- SC Sta. 140+45.56

-L- Sta.130+25.74 = -Y12- Sta. 10+00.00

-Y12- PC Sta. 10+50.86

-Y12- PT Sta. 11+46.72

-Y12- POT Sta. 12+76.59

END CONSTRUCTION -Y12- Sta. 11+50.00

COASTAL PLAIN

ALLUVIAL

ARTIFICIAL FILL

ROADWAY EMBANKMENT

PA-29 PA-30

B-04 B-03

TIME WARNER CABEL SOUTHEAST DB 9017 PG 866 PB 22 PG 28

JALARAM BAPA ENTERPRISES, LLC DB 8904 PG 433

TARHEEL TACO, LLC DB 8813 PB 161 PB 19 PG 66

BRYANNA COMPANY DB 4477 PB 575 PB 19 PG 66

JOSEPH E MOLGORA & WIFE DB 7140 PG 607 PB 19 PB 66

EDWARD C SCHANTZ & WIFE PB 19 PG 66

BRUCE K ALLEN DB 3756 PG 286

YONG JIN YU DB 7485 PG 256

KENNETH C LANCASTER, JR ET AL DB 3056 PG 589

SKIBO CROSSING LLC DB 6175 PG 182 PB 67 PG 18

CITY OF FAYETTEVILLE DB 4272 PG 670 PB 67 PG 18

AMERICAN FLAG-RAEFORD ROAD DB 4448 PG 340

AMERICAN FLAG-RAEFORD ROAD DB 4448 PG 342

-Y12-
PI Sta 10+99.11
Δ = 16° 09' 10.2" (RT)
D = 16° 51' 06.1"
L = 95.85'
T = 48.25'
R = 340.00'

20-JAN-2016 14:59
O:\PROJECTS\2015\13305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_13.dgn
Default at Default scale

-L-			
PI Sta 144+71.01	PIs Sta 149+38.40	PIs Sta 153+04.56	PI Sta 155+10.17
Δ = 19° 18' 58.8" (RT)	Θs = 1° 43' 07.9"	Θs = 1° 14' 50.5"	Δ = 5° 10' 21.2" (LT)
D = 2° 17' 30.6"	Ls = 150.00'	Ls = 150.00'	D = 1° 39' 47.4"
L = 842.83'	LT = 100.00'	LT = 100.00'	L = 311.01'
T = 425.45'	ST = 50.00'	ST = 50.00'	T = 155.61'
R = 2,500.00'			R = 3,445.00'
SE = 0.03			SE = 0.03

PROJECT REFERENCE NO.	SHEET NO.
U-4405	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/NA 2011
NC GRID

REVISIONS

8/17/99

BEGIN CONSTRUCTION -Y13- Sta. 16+50.00

-L- CS Sta. 148+88.39

-L- ST Sta. 150+38.39

-L- SC Sta. 153+54.56

-L- TS Sta. 152+04.56

-L- Sta.148+21.72 = -Y14- Sta. 10+60.00

-L- Sta.142+66.31 = -Y13- Sta. 20+11.93

END CONSTRUCTION -Y14- Sta. 11+45.00

-Y14- POT Sta. 11+89.87

MATCHLINE SEE SHEET 13 -L- STA 141+00

MATCHLINE SEE SHEET 15 -L- STA 154+00

ORA SIMONE & WIFE DELPHINE DB 2576 PG 519 PB 19 PG 66

OLAND B LITTLE DB 3816 PG 595

CLINTON RODNEY JACKSON DB 8396 PG 758

OLAND B LITTLE & WIFE BETSY P DB 2501 PG 620 DB 4627 PG 703 PB 112 PG 26

TARHEEL TACO, LLC DB 8813 PB 161 PB 19 PG 66

LEWIS CHAPEL MISSIONARY DB 5415 PG 626 DB 4094 PG 367 DB 4686 PG 25

OLAND B LITTLE & WIFE BETSY P DB 2501 PG 620 DB 4627 PG 703 PB 112 PG 26

OLAND B LITTLE DB 3816 PG 595 DB 4625 PG 636

LEWIS CHAPEL MISSIONARY DB 5415 PG 626 DB 2632 PG 417

LEWIS CHAPEL MISSIONARY DB 5415 PG 626 DB 5239 PG 676 DB 188 PG 196

ISBK LEWIS CHAPEL MISSIONARY BAPTIST CHURCH

LEWIS CHAPEL MISSIONARY DB 5415 PG 626 DB 2616 PG 771

TREETOP APARTMENTS, LLC DB 5009 PG 886 DB 2729 PG 507

LEWIS CHAPEL MISSIONARY DB 5415 PG 626 DB 2854 PG 1

LEWIS CHAPEL MISSIONARY DB 5415 PG 626 DB 3093 PG 199

BRYANNA COMPANY DB 6417 PB 575 DB 6417 PB 19 PG 66

DAVID A REAVES & WIFE DB 4625 PG 636

SCHULTZ RENTAL, LLC DB 7092 PG 852 PB 89 PG 54

WAFFLE HOUSE INC DB 4529 PG 389 PB 92 PG 24

D-J's LEASING CORP. DB 2704 PG 1 PB 89 PG 54

AMERICAN FLAG-RAEFORD ROAD DB 4448 PG 342

WILLIAM D SHERMAN JR DB 5294 PG 275 DB 57 PG 29

HEAVERD DOBBS OXENDINE DB 7920 PG 881 PB 16 PG 80

RAY JOHNSON DB 7936 PG 308 PB 16 PG 80

WILLIAM D SHERMAN DB 5294 PG 275 PB 16 PG 80

ROADWAY EMBANKMENT

COASTAL PLAIN

ARTIFICIAL FILL

ALLUVIAL

B-06

B-05

PA-31

20-JAN-2016 14:59
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_14.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		
PI Sta 155+10.17	PIs Sta 157+15.57	PIs Sta 167+90.68
Δ = 5° 10' 21.2" (LT)	Θs = 1° 14' 50.5"	Θs = 2° 14' 59.4"
D = 1° 39' 47.4"	Ls = 150.00'	Ls = 150.00'
L = 311.01'	LT = 100.00'	LT = 100.01'
T = 155.61'	ST = 50.00'	ST = 50.01'
R = 3,445.00'		
SE = 0.03		

NAD 83/NA 2011
NC GRID

BEGIN CONSTRUCTION
-Y15- Sta. 11+40.00

-Y15- POT Sta. 10+00.00

-L- CS Sta. 156+65.57

-L- TS Sta. 166+90.67

-L- ST Sta. 158+15.57

-L- Sta. 162+45.78 =
-Y15- Sta. 12+25.21

PT+E62 = -BY16-
(POINT NOT SET)
-BY16- # 62

-BY15- # 60

-BY16- # 61

-BY17- # 63

MATCHLINE SEE SHEET 14
-L- STA 154+00

MATCHLINE SEE SHEET 16
-L- STA 167+00

COASTAL PLAIN

ROADWAY EMBANKMENT

NC 34

S 12° 55' 17.0" W

S 77° 10' 12.5" E

S 74° 23' 02.1" E

S 78° 20' 07.0" E

N 77° 17' 45" W

N 85° 39' 53" W

N 04° 54' 31" E

N 06° 38' 40" E

S 69° 29' 08" E

N 77° 21' 14" E

S 01° 39' 15" W

N 04° 42' 47" E

S 71° 05' 36" E 171.06'

S 18° 59' 44" W 186.06'

N 77° 02' 35" W 202.67'

N 13° 18' 25" E 255.87'

N 13° 52' 52" E 139.44'

S 12° 51' 36" W 138.96'

S 12° 54' 19" W 180.30'

S 12° 51' 36" W 200.00'

S 77° 08' 24" E 50.00'

S 77° 08' 24" E 276.19'

S 13° 51' 13" W 200.00'

N 13° 31' 02" E 209.05'

N 76° 35' 30" W 105.13'

19.87'

S 14° 28' 46" W 179.98'

S 13° 18' 06" W 180.30'

S 12° 55' 17" W 194.20'

N 77° 21' 14" E 215.95'

RICHARD R ALLEN, JR
DB 9077 PG 14
PB 132 PG 111

O'REILLY AUTOMOTIVE, INC
DB 7889 PG 44
PB 16 PG 80

ISF BUS

ISBKD

ISBK DELIVERANCE TEMPLE

WORD OF DELIVERANCE TEMPLE
DB 5011 PG 738
PB 738 PG 195

HARVEY SCHULTZ
DB 3747 PG 332
PB 16 PG 80
PB 11 PG 28

ROGER R COMPTON
& WIFE
DB 3382 PG 320
PB 16 PG 80

MARVIN WILLIAM SMITH, JR
DB 5241 PG 53
PB 24 PG 38

MARTIN R RASMUSSEN
DB 2148 PG 449
PB 24 PG 38

CARLIS EDGE
& WIFE
DB 1532 PG 246
PB 24 PG 38

LAMONIER BRYANT
& WIFE
DB 5040 PG 508
PB 24 PG 38

MITTIE LEONA OWEN
LIFE ESTATE
DB 490 PG 88
PB 22 PG 39

CAROL OWN PHILLIPS
DB 490 PG 88
PB 22 PG 39

CLYDE A CULBRETH
DB 5190 PG 334
DB 2052 PG 625

LEWIS CHAPEL MISSIONARY
DB 7804 PG 658

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626
PB 57 PG 9

LEWIS CHAPEL MISSIONARY
DB 5415 PG 626
PB 57 PG 9

LEWIS CHAPEL MISSIONARY
DB 833 PG 498
PB 39 PG 38

LEWIS CHAPEL MISSIONARY
DB 1024 PG 484

APPROXIMATE LOCATION OF LATERAL ACCESS ESMT.

150' TAPER (LT TURN)

230' TAPER (RT TURN)

80' BUS STOP W/ 25' TAPERS

PROP. 2'-6" C&G

PROP. 1'-6" C&G

PROP. CONC. SIDEWALK

EXISTING R/W

EXISTING EASEMENT

REVISIONS

8/17/99

20-JAN-2016 14:59
S:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_15.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/NA 2011
NC GRID

-L-		
PIs Sta 167+90.68	PI Sta 170+65.98	PIs Sta 173+39.22
Θs = 2° 14' 59.4"	Δ = 13° 27' 18.9" (LT)	Θs = 2° 14' 59.4"
Ls = 150.00'	D = 2° 59' 59.2"	Ls = 150.00'
LT = 100.01'	L = 448.54'	LT = 100.01'
ST = 50.01'	T = 225.31'	ST = 50.01'
	R = 1,910.00'	
	SE = 0.03	

-Y16-
PI Sta 11+23.85
Δ = 3° 32' 29.4" (LT)
D = 5° 43' 46.5"
L = 61.81'
T = 30.92'
R = 1,000.00'

MATCHLINE SEE SHEET 15
-L- STA 167+00

MATCHLINE SEE SHEET 17
-L- STA 180+00

-L- SC Sta. 168+40.67

-L- CS Sta. 172+89.21

-L- ST Sta. 174+39.21

-L- Sta. 169+75.37 = -Y16- Sta. 10+00.00

-Y16- PC Sta. 10+92.94

-Y16- POT Sta. 12+17.34

-Y16- PT Sta. 11+54.75

END CONSTRUCTION -Y16- Sta. 11+70.00

ROADWAY EMBANKMENT

COASTAL PLAIN

TRIPLE PIPES FROM THE SOUTH

TRIPLE PIPES FROM THE NORTH

LILLIAN SPEARS DARBY
DB 509 PG 109

KENNETH C. DECKER
DB 7434 PG 800

POULOS FAMILY LIMITED
DB 5544 PG 117

JOE RAYNOR, JR
DB 614 PG 49
PB 15 PG 58

M W AUTO, LLC
DB 7630 PG 449
PB 120 PG 116

JOHN SAMUEL ALEXANDER TRUSTEE
DB 6822 PG 577
PB 15 PG 58

WESLEY C POWERS
DB 8574 PG 305
PB 22 PG 62

CAROL OWN PHILLIPS
DB 4253 PG 34
PB 104 PG 185

JOHN P TAYLOR & WIFE
DB 5329 PG 297
PB 13 PG 32

-BY18- # 64

-BY19- #65

IIA-35

IIA-36

IIA-32

150' TAPER (LT TURN)

150' TAPER (RT TURN)

5' MONOLITHIC ISLAND

PROP. CONC. SIDEWALK

PROP. 2'-6" C&G

PROP. 30' C&G

PROP. 20' C&G

SR 1196 DAIRY DR

SR 1228 DURANT DR

SR 1187 SANDALWD DR

N 84°52'29.8" E

N 84°53'29" E

S 00°43'16" W DIRECTION ONLY

N 00°00'01" E DIRECTION ONLY

S 00°43'16" E DIRECTION ONLY

REVISIONS

8/17/99

20-JAN-2016 14:59
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_16.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

REVISIONS
8/17/99

MATCHLINE SEE SHEET 16
-L- STA 180+00

MATCHLINE SEE SHEET 18
-L- STA 193+00

COASTAL PLAIN

ROADWAY EMBANKMENT

WILSON YARBOROUGH
DB 4204 PG 383

BENJAMIN OWEN
DB 826 PG 584

NCDOT PER PROJECT U-4422

DPGP INVESTMENTS, LLC
DB 8341 PG 61
PB 15 PG 58

WILSON F. YARBOROUGH
DB 8109 PG 512

PAUL INVESTMENTS, LLC
DB 6709 PG 816
PB 15 PG 58

W.J. FUQUA
DB 584 PG 215
PB 15 PG 58

BENJAMIN OWEN
DB 826 PG 220
PB 15 PG 58

ETHEL C. DAVIDSON
DB 2175 PG 627

ELMWOOD HOLDINGS, LLC
DB 7463 PG 58
PB 127 PG 76

PEARL FAIRCLOTH
DB 3176 PG 792

LI'L THRIFT FOOD MARTS INC
DB 4258 PG 272
PB 13 PG 32

CVS 4293 NC, LLC
DB 7345 PG 155
PB 117 PG 200

MARY JOHNSON, et al
DB 5406 PG 621

CHARLES BILLINGS
DB 5445 PG 176

AUTO ZONE DEVELOPMENT CORP.
DB 7138 PG 656
PB 13 PG 32

JUDITH BUNCE, et al
DB 5406 PG 619

SR 1195 BANYAN RD

END CONSTRUCTION
-Y18- Sta. 11+50.00

-Y18- POT Sta. 12+21.68

-L- Sta. 184+55.97
-Y18- Sta. 10+00.00

TIE TO PROJECT U-4422

AREA UNDER CONSTRUCTION

UNABLE TO LOCATE CONNECTING STRUCTURES

20-JAN-2016 14:59
U:\PROJECTS\2015\13305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_17.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

NC GRID
NAD 83/NA 2011

MATCHLINE SEE SHEET 17
-L- STA 193+00

MATCHLINE SEE SHEET 19
-L- STA 205+00

ALDI LLC
DB 6753 PG 597

WILLIAM HAWLEY
DB 2921PG 359

TANDEM INVESTMENTS, LLC
DB 5694 PG 251
PB 110 PG 23

4807 RAEFORD ROAD, LLC
DB 9142 PG 355

PATRICE PROPERTIES INC #658
DB 2190 PG 472

ANDERSON RAEFORD REAL PROPERTY, LLC
DB 9285 PG 554
PB 133 PG 43

LOYD PROPERTIES, LLC
DB 5640 PG 667

FIRST UNION NATIONAL BANK
DB 3304 PG 882
PB 126 PG 169

RAEFORD ROAD HOLDINGS, LLC
DB 7218 PG 683

COASTAL PLAIN
DB 8555 PG 504

COASTAL PLAIN
300' LANE SHIFT & TAPER (LT TURN)

-L- Sta.196+24.02
-Y21- Sta.10+00.00

-Y21- POT Sta. 12+10.00

END CONSTRUCTION
-Y21- Sta. 11+10.00

-BY23- # 69

-BY24- # 70

HA-41

HA-42

ROADWAY EMBANKMENT

150' TAPER-LT TURN

ISBK BUS
ISBK BANK
ISM BUS
ISBLK BUS
MTL CAN
MTL WAREHOUSE
2SMAS BLDG
ISFD
PHONE BOOTH
U/G GAS TANKS
AIR PUMP
U/G TANK HEADS

BRIGHTON RD
RAEFORD RD
S KENLEIGH DR

N 84°52'29.8" E
N 84°48'23.6" E
N 84°36'57" E
N 84°59'13" E
N 83°31'20" E
S 84°58'01" W 209.78'
S 84°54'11" W 200.11'
N 83°37'34" E 142.93'
N 85°00'13" E 224.55'
S 84°48'45" W 125.00'
S 89°47'00" E 110.05'
N 89°47'38" W 105.01'
N 87°27'20" E 205.45'
N 87°27'20" E 206.08'
S 84°43'06.3" E 227.85'
S 02°18'56" E 227.60'
S 20°18'56" E 150.00'
S 06°28'40" E 260.02'
N 05°06'17" W 214.72'
S 00°48'37" E 306.06'
N 00°48'37" W 90.79'
S 00°02'36" E 182.41'
N 05°23'18" W 68.02'
N 05°05'12" W 328.56'
N 05°22'50" W 154.71'
S 05°23'18" E 181.72'
S 05°05'12" E 328.56'
S 05°22'50" E 154.71'
N 84°59'02.8" E 45.17'
S 84°59'02.8" E 45.17'
N 85°05'08" E 153.97'
S 85°05'08" W 153.97'
N 84°52'29.8" E 262.00'
N 84°48'23.6" E 262.00'

R=50'
R=30'
R=25'
24' C&G
30' C&G
18" RCP
18" HDPE
15" HDPE
30" HDPE
12" RCP
4' CONC
6' CONC
8" CURB
8" THL
4" ARL RAIL
6" CONC PVMT
6" AC (ABAND.)
12" AC
6" MONOLITHIC ISLAND
20' UTILITY EASEMENT (ABANDONED) PB 126 PG 169
28' INGRESS/EGRESS EASEMENT PB 80 PG
20' PERMANENT UTILITY EASEMENT
UPHILL FLOW VERIFIED

INV=206.25'(S)
INV=202.59'(S)
INV=205.63'
INV=204.86'
INV=201.75'(S)
INV=201.23'(N)
INV=201.93'(E)
INV=201.75'(S)
INV=202.48'(N)
INV=202.56'(E)
INV=202.23'(W)

20-JAN-2016 14:59
G:\PROJECTS\2015\13305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_18.dgn
PLOTTED BY: ARRELL
PLOT SCALE = 1.000

PROJECT REFERENCE NO.	SHEET NO.
U-4405	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI Sta 215+19.81
Δ = 2° 41' 44.8" (RT)
D = 0° 34' 22.6"
L = 470.50'
T = 235.29'
R = 10,000.00'
SE = NC

NC GRID
NAD 83/NA 2011

8/17/99

REVISIONS

MATCHLINE SEE SHEET 18
-L- STA 205+00

MATCHLINE SEE SHEET 20
-L- STA 218+50

-L- PC Sta. 212+84.51

-L- Sta. 205+53.67 = -Y23- Sta. 10+00.00

END CONSTRUCTION
-Y23- Sta. 11+50.00

-Y23- POT Sta. 12+28.41

-L- PT Sta. 217+55.01

HA-43

HA-44

HA-45

COASTAL PLAIN

ARTIFICIAL FILL

ROADWAY EMBANKMENT

DOMINIC MARANGI
DB 8943 PG 756
DB 685 PG 349
DB 3785 PG 387

DOMINIC MARANGI
DB 8943 PG 756
DB 685 PG 345
DB 3006 PG 215

DOMINIC MARANGI
DB 8943 PG 756

CLAUDE T. HALEY, JR & WIFE
DB 4459 PG 814
PB 80 PG 11

RAEFORD ROAD LIMITED
DB 5228 PG 23
PB 85 PG 172

WILIAM M PATE
DB 5656 PG 47
PB 85 PG 172
PB 106 PG 1

MARGARET L GREER
DB 978 PG 319
PB 123 PG 1

LYNNE B BARRETT
DB 4782 PG 694

CUMBERLAND COUNTY BOARD OF EDUCATION
DB 8910 PG 375
DG 8015 PG 66

CUMBERLAND COUNTY MEMORIAL GARDENS
DB 4598 PG 842
PB 48 PG 35

CUMBERLAND COUNTY MEMORIAL GARDENS
DB 4598 PG 842

ISBK
WH OWEN ELEMENTARY SCHOOL

US 401 BUS RAEFORD RD
SR 1978 SCOTLAND DR
SR 4468 MONTCLAIR DR

20-JAN-2016 15:00
O:\PROJECTS\2015\1305-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_19.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

-L-
PI Sta 220+67.31
Δ = 1° 04' 31.9" (LT)
D = 0° 34' 22.6"
L = 187.71'
T = 93.86'
R = 10,000.00'
SE = NC

-L- PT Sta. 221+61.17
-L- PC Sta. 219+73.45

ALLUVIAL
ARTIFICIAL FILL
COASTAL PLAIN
BROADWAY EMBANKMENT
ARTIFICIAL FILL
ALLUVIAL
COASTAL PLAIN

B-08
HA-47
HA-46
HA-72
2HA-48
HA-49

UNSURE OF SIZE AND TYPE INFORMATION DUE TO DEPTH OF PIPES AND AMOUNT OF FLOW

JOHN M. TEW & WIFE SHIRLEY DB 2542 PG 343 DB 23 PG 1

KENT A VAN BELOIS & WIFE DB 3364 PG 865

M & E SPA LLC DB 8717 PG 2

IRELAND CROSSING, INC DB 4262 PG 371 PB 73 PG 61

NCP FAYETTEVILLE, LLC DB 6243 PG 563

IRELAND CROSSING, INC DB 4261 PG 210 PB 86 PG 110

-L- Sta. 229+68.64 = -Y25- Sta. 10+00.00

END CONSTRUCTION -Y25- Sta. 11+75.00

-Y25- POT Sta. 14+51.24

MATCHLINE SEE SHEET 19 -L- STA 218+50

MATCHLINE SEE SHEET 21 -L- STA 231+50

REVISIONS 8/17/99

20-JAN-2016 15:00
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEO\CHVPlanProf\u4405_rdy_psh_20.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

REVISIONS
8/17/99

MATCHLINE SEE SHEET 20
-L- STA 231+50

MATCHLINE SEE SHEET 22
-L- STA 245+00

235 240 245

-L- Sta.239+86.38 = -Y26- Sta.10+00.00

END CONSTRUCTION -Y26- Sta.11+60.00

-Y26- POT Sta.12+38.24

HA-50 HA-51

COASTAL PLAIN

ROADWAY EMBANKMENT

150' TAPER (LT TURN)

150' TAPER (RT TURN)

PROP. 2'-6" C&G

PROP. 1'-6" C&G

PROP. CONC. SIDEWALK

5' MONOLITHIC ISLAND

FASSON AVENUE 205'

EXISTING R/W

NORWOOD E BRYAN, JR & DAVID C BRYAN
DB 2389 PG 719

HAROLD L GODWIN
DB 2789 PG 743
DB 959 PG 553

HAROLD L GODWIN
DB 2789 PG 743
DB 983 PG 307

LANDFALL PARTNERS, LLC
DB 6793 PG 445

McCAULEY & McDONALD INVESTS, INC
DB 2653 PG 53

JOHN L CANADY
DB 2844 PG 695
PB 68 PG 16

JIFFY PROPERTY
DB 4465 PG 334
PB 68 PG 16

HUFF & PENNINK HOLDINGS, LLC
DB 8290 PG 376
PB 68 PG 16

NEW LOWES CENTER, LLC
DB 6592 PG 431
PB 114 PG 129

JAMES M PETERS & WIFE
DB 3820 PG 802
PB 9 PG 36

KENNETH E TUCKER & WIFE
DB 2828 PG 806
PB 9 PG 36

GRACE BAPTIST CHURCH
DB 1147 PG 277
DB 3098 PG 356
PB 9 PG 36

LINDA DUKE FARMER
DB 4359 PG 518
PB 9 PG 36

CUNNINGHAM PROPERTIES OF FAYETTEVILLE
DB 8191 PG 868
PB 9 PG 36

JAI SRI CANESHA, LLC
DB 9110 PG 113
PB 12 PG 46

GOOD WILL COMMUNITY FOUNDATION
DB 5200 PG 190
PB 9 PG 36

DEAN F RUSSELL, JR
DB 5440 PG 441
PB 9 PG 36

ISBK BUS
ISBLK BUS
ISM BUS
2SBK CHURCH
ISF BUS
M WELLS
IRON FENCE
STEPS
WD FOOT BRIDGE
WD RAMP
MTL CAN
FLAG POLE
UNABLE TO LOCATE CONNECTING STRUCTURE POSSIBLE ROOF DRAIN SYSTEM

N 86°27'51" E 30.25'
N 86°27'51" E 164.47'
N 86°27'51" E 110.28'
S 86°30'42" W 149.67'
S 03°02'49" E 100.23'
N 03°28'35" W 499.69'
N 03°08'43" W 200.00'
S 03°08'43" E 200.00'
S 03°26'49" E 199.85'
S 03°35'03" E 214.97'
S 03°33'18" E 214.76'
S 03°35'00" E 407.14'
S 03°22'13" E 205.00'
N 86°26'42" E 100.00'
N 86°23'04" E 102.02'
N 86°23'04" E 100.06'
N 86°23'04" E 106.04'
N 86°23'04" E 100.00'
N 86°23'04" E 100.00'
N 86°23'04" E 100.02'

PROJECT REFERENCE NO.	SHEET NO.
U-4405	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-RPB-	
Pls Sta 17+61.56	Pl Sta 25+80.73
Θs = 1° 30' 27.7"	Δ = 20° 28' 11.6" (RT)
Ls = 199.99'	D = 7° 09' 43.1"
LT = 133.33'	L = 285.81'
ST = 66.67'	T = 144.45'
	R = 800.00'
	SE = 0.08

-L-	
Pls Sta 257+51.40	Pl Sta 258+20.74
Θs = 0° 31' 15.1"	Δ = 0° 45' 00.9" (LT)
Ls = 100.00'	D = 1° 02' 30.3"
LT = 66.67'	L = 72.02'
ST = 33.33'	T = 36.01'
	R = 5,500.00'
	SE = 0.025

NC GRID
NAD 83/NA 2011

MATCHLINE SEE SHEET 30
-RPB- STA 30+96

MATCHLINE SEE SHEET 21
-L- STA 245+00

MATCHLINE SEE SHEET 23
-L- STA 258+00

-RPB- Sta. 32+50.40

-L- Sta. 251+55.88 = -RPB- Sta. 34+68.31

-L- Sta. 247+26.67 = -Y28- Sta. 10+00.00

-L- SC Sta. 257+84.73

-L- TS Sta. 256+84.73

-Y28- POT Sta. 12+69.02

END CONSTRUCTION -Y28- Sta. 11+20.00

HA-69

HA-70

HA-52

HA-54

COASTAL PLAIN

ROADWAY EMBANKMENT

BUCKHEAD PLAZA INC.
DB 4482 PG 897
PB 96 PG 100
2SBK BUS

WILLIAMS FAMILY HEIRS, LLC
DB 8555 PG 304
PB 112 PG 157

HOLT REAL ESTATE ENTERPRISES
DB 9222 PG 295
PB 9 PG 36

LUKE NWOSU, TRUSTEE of the
MAXIORIE IRREVOCABLE TRUST
DB 7062 PG 577

CLIFFORD N. BOSTIC
DB 6750 PG 458

STARR RAY
DB 9162 PG 37

ALL AMERICAN EXPRESSWAY

NBL ALL AMERICAN EXPRESSWAY

SBL ALL AMERICAN EXPRESSWAY

US 401 BUS RAEFORD RD

OLD MCPHERSON CHURCH RD SR 2157

REVISIONS

8/17/99

20-JAN-2016 15:00
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEO\ECH\PlanProf\u4405_rdy_psh_22.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	23

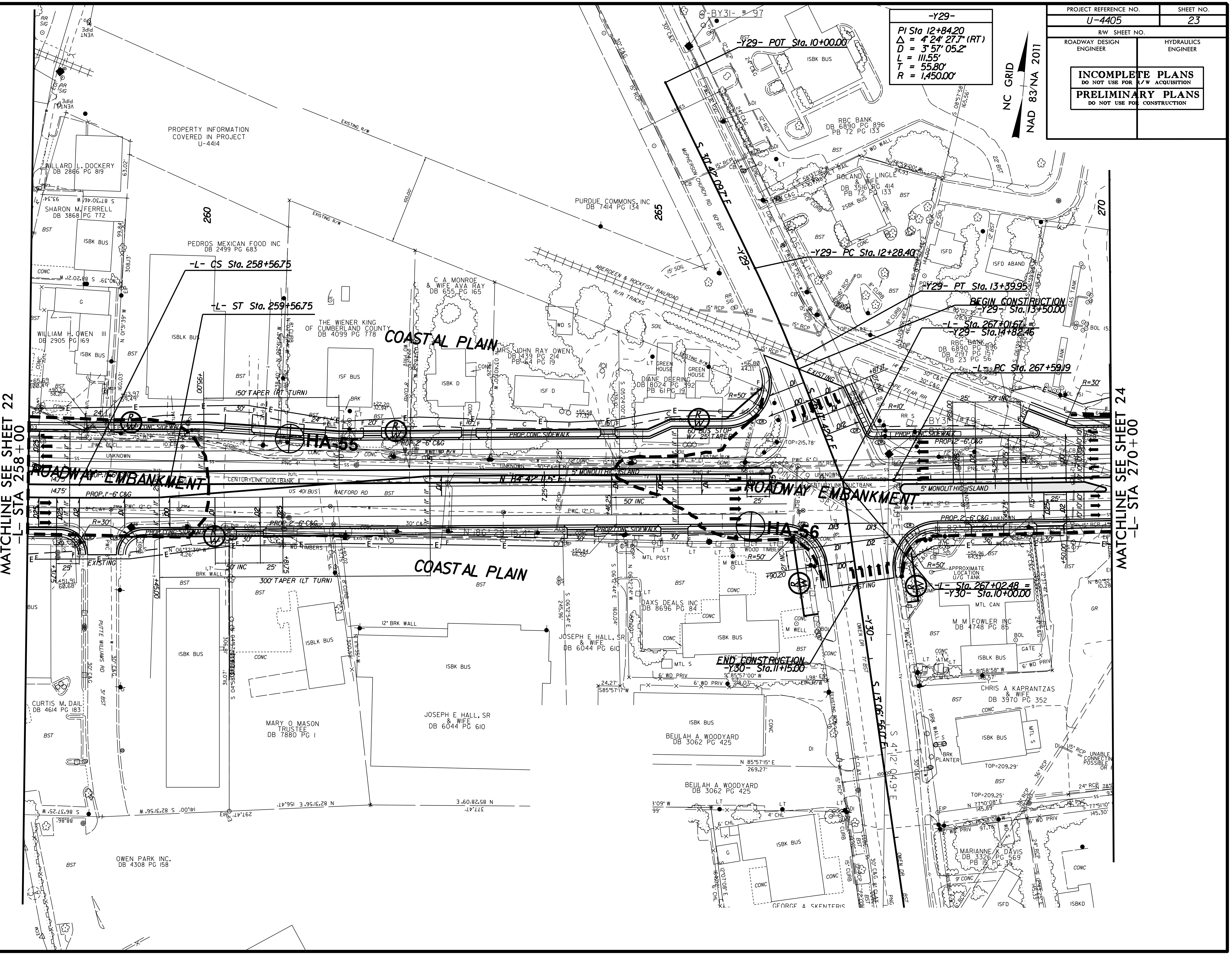
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

20-JAN-2016 15:00
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_23.dgn
BRatti AT BRATTI-T3500

PROJECT REFERENCE NO.	SHEET NO.
U-4405	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

MATCHLINE SEE SHEET 23
-L- STA 270+00

MATCHLINE SEE SHEET 25
-L- STA 283+00

-Y31- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y31- Sta. 10+50.00

NC GRID
NAD 83/NA 2011

-L-
PI Sta 271+75.23
Δ = 2° 23' 00.3" (LT)
D = 0° 17' 11.3"
L = 831.97'
T = 416.05'
R = 20,000.00'

-L- Sta. 270+61.66 = -Y31- Sta.12+16.81

-BY35- # 83

-BY34- # 82

COASTAL PLAIN

ROADWAY EMBANKMENT

-L- PT Sta. 275+91.16

275

280

FERRELL GAS LP
DB 7169 PG 169
PB 23 PG 56

JUAN MACIAS
DB 7172 PG 16
PB 115 PG 94
03-CVS-8146

JOHN C. TALLY & ROBERT T. TALLY
DB 3074 PG 381

JOHN C TALLY & ROBERT T TALLY
DB 3074 PG 381

JOHN C TALLY & ROBERT T TALLY
DB 3074 PG 381
PB 24 PG 43

JOHN C TALLY & ROBERT T TALLY
DB 3586 PG 220
DB 3756 PG 564

LACAST COMMERCIAL, LLC
DB 8866 PG 49

KIMBRELL'S INVSTMENT COMPANY, INC
DB 5122 PG 125

ROBERT TAYLOR TALLY
DB 9076 PG 364

GRAYLYN PROPERTIES, LLC
DB 7687 PG 447
PB 102 PG 9

CHRIST UNITED METHODIST CHURCH OF FAYETTEVILLE
DB 673 PG 86
PB 8 PG 5

CHRIST UNITED METHODIST CHURCH OF FAYETTEVILLE
DB 2770 PG 533
PB 8 PG 5

ALEX JOE THOMPSON
DB 3702 PG 618
PB 8 PG 5

EDNA HARPER & JAMES SHIELD
DB 8073 PG 174
DB 3370 PG 356

DAVID HARSANT
DB 8877 PG 198
PB 15 PG 35

HA-57

HA-58

HA-59

20-JAN-2016 15:00
O:\PROJECTS\2015\13305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_24.dgn

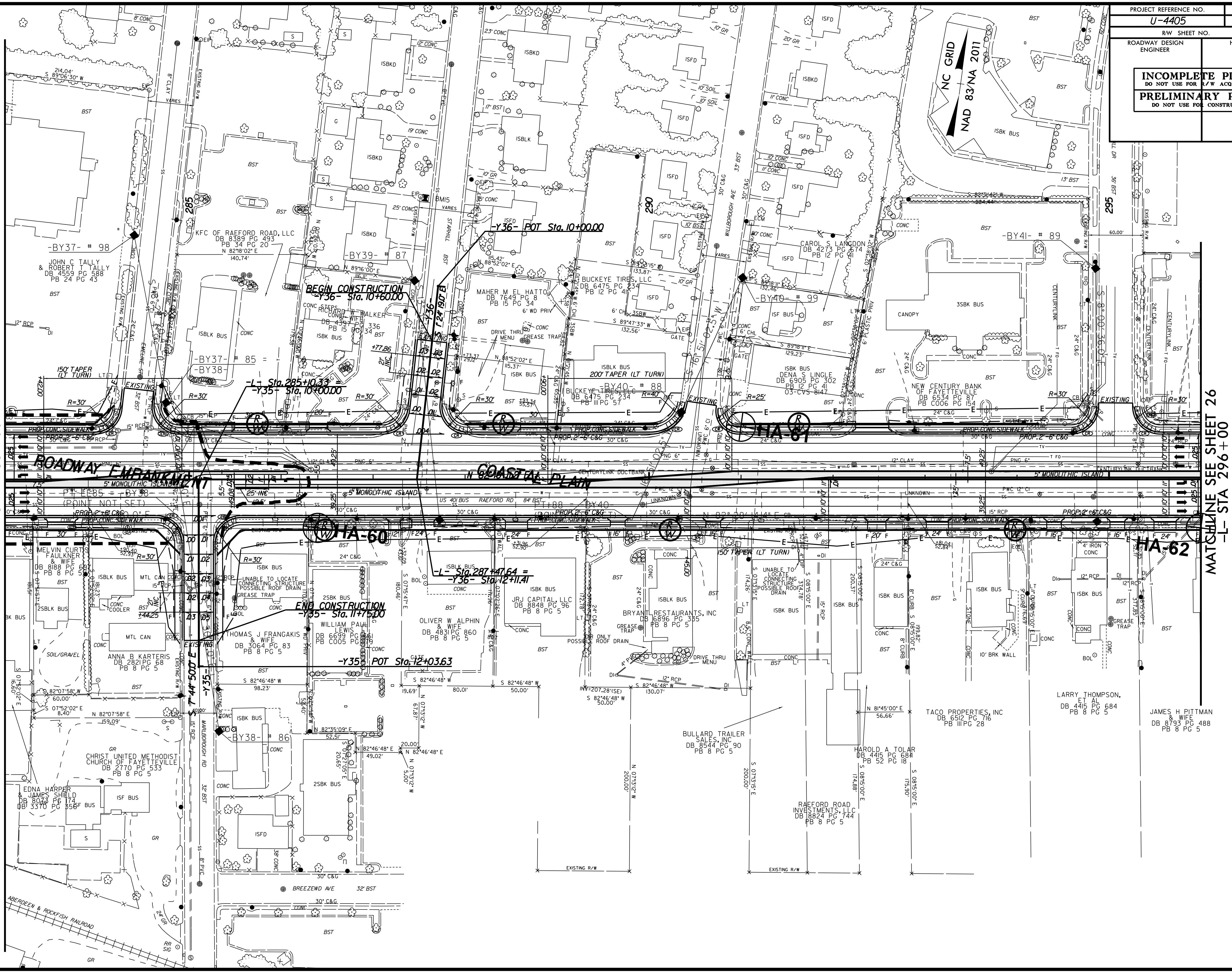
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



20-JAN-2016 15:00
...\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_25.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

20-JAN-2016 15:00
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_26.dgn
Default ET Default 1:1000

NC GRID
NAD 83/NA 2011

MATCHLINE SEE SHEET 25
-L- STA 296+00

MATCHLINE SEE SHEET 27
-L- STA 309+50

BEGIN CONSTRUCTION
-Y40- Sta. 12+50.00

-Y40- POT Sta. 10+00.00

END CONSTRUCTION
-Y39- Sta. 11+50.00

-L- Sta. 299+10.74 =
-Y39- Sta. 10+00.00

-L- Sta. 306+25.38 =
-Y40- Sta. 14+07.70

-Y39- POT Sta. 12+60.28

COASTAL PLAIN

ROADWAY EMBANKMENT

HA-62

HA-63

HA-64

JOHN GERAFFO
DB 7800 PG 730
PB 44 PG 71

HIGHLAND CENTRE
DB 3442 PG 332
PB 93 PG 34

FJW REALTY CORP.
DB 4711 PG 71

MDO PROPERTIES, INC
DB 9024 PG 462
PB 93 PG 34

TALLEY INVESTMENTS, LL
DB 7779 PG 868
DB 7779 PG 873

OLD LIGHT TALLEY INVESTMENTS, LLC
DB 7779 PG 868
PB 125 PG 65

CHEERS TOO, LLC
LT DB 8970 PG 246
PB 8 PG 5

DIE THREE, LLC
DB 3473 PG 481
PB 8 PG 5

SPEREDON C POULOS
& WIFE
DB 7605 PG 179
PB 8 PG 5

CUMBERLAND CROSSING, LLC.
C/O CHICKFILA INC.
DB 9276 PG 652
PB 133 PG 38

BREWSITZ PROPERTIES, LLC
DB 4294 PG 417
PB 8 PG 5

BREWSITZ
PROPERTIES, LLC
DB 6629 PG 687
PB 9 PG 11

J GARY CICCONE
& WIFE TERRY G
DB 7482 PG 772
PB 9 PG 11

WOOTEN RENTALS, LLC
DB 7266 PG 64
PB 8 PG 5

LOUIS FRANGOS
& OURANIA FRANGOS
DB 6545 PG 755
PB 8 PG 5

DAVID VALENTINE
DB 5218 PG 877
PB 8 PG 5

-BY43- # 91

-BY42- # 90

BREEZEWD AVE @ 32.5' BST

PROJECT REFERENCE NO.	SHEET NO.
U-4405	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

REVISIONS
8/17/99

MATCHLINE SEE SHEET 26
-L- STA 309+50

END TIP PROJECT U-4405
-L- Sta. 322+95.00

-L-
PI Sta 320+13.00
Δ = 43° 34' 29.9" (LT)
D = 8° 00' 48.2"
L = 543.78'
T = 285.80'
R = 715.00'
SE = 0.04

-L- PT Sta. 322+70.91

-L- PC Sta. 317+27.20

-L- Sta. 314+63.20 =
-Y43- Sta. 10+00.00

-L- Sta. 319+48.48 =
-Y44- Sta. 10+00.00

END CONSTRUCTION
-Y44- Sta. 11+90.00

-Y44- POT Sta. 12+38.14

MATCHLINE SEE SHEET 31
-Y43- STA 13+00

HA-65

HA-66

HA-67

COASTAL PLAIN

ROADWAY EMBANKMENT

MONOLITHIC ISLAND

MCBAIN DR @ 32' BST

MCPHEE DRIVE 39' BST

-BY44- # 106

-BY44- # 93

-BY45- # 94

-BY48- # 103

-BY48- #102=

-BY49-

-BY47- # 96

-Y44-

TALLEY INVESTMENTS, LLC
DB 7779 PG 868
PB 125 PG 65

V/D NEAL PROPERTIES, LLC
DB 6426 PG 49

PBM OF FAYETTEVILLE, LLC
DB 7956 PG 556
PB 124 PG 163

RANDY S GREGORY & WIFE ANNE
DB 4672 PG 63

WEEKS RENTAL PROPERTIES
DB 6018 PG 711

HIGHLAND DAIRIES INC
DB 2148 PG 67
PB 15 PG 19

HIGHLAND COMMERCIAL, LLC
DB 8595 PG 54
PB 99 PG 187

WATERVILLE EQUITIES I, LLC
DB 5187 PG 200
PB 101 PG 100

EDWIN J MILLER & WIFE
DB 5187 PG 391
PB 8 PG 5

DAVID VALENTINE
DB 5218 PG 877
PB 8 PG 5

W A MAXWELL INC
DB 3226 PG 710
PB 2 PG 186

W A MAXWELL INC
DB 3226 PG 710
PB 9 PG 9

HIGHLAND COUNTRY CLUB
DB 471 PG 296

FAYETTEVILLE ASSOCIATION OF REALTORS
DB 2706 PG 741

TRASE HOMES INC
DB 3079 PG 715
PB 105 PG 158

NANCY A CREEDON & HUSBAND
DB 8046 PG 181
PB 105 PG 158

JIMMY P PEARSON & WIFE
DB 702 PG 295
PB 105 PG 158

GENE S AMMONS & WIFE DELORES
DB 1178 PG 359
PB 17 PG 41

MARIE LEWIS & HUSBAND GEO PERKINS
DB 983 PG 47
PB 14 PG 6

UNABLE TO LOCATE CONNECTING STRUCTURE POSSIBLE JUNCTION BOX EVIDENCE INDICATES 24" CPP IS HEADING TOWARD THE SURVEY LIMITS

UNABLE TO LOCATE CONNECTING STRUCTURE POSSIBLE JUNCTION BOX APPROXIMATE DIRECTION OF 36" RCP SHOWN

20-JAN-2016 15:00
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_27.dgn
ET GRANITE-1.STM

PROJECT REFERENCE NO.	SHEET NO.
U-4405	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

NC GRID
NAD 83/NA 2011

COASTAL PLAIN

JOSEPH H GILLIS
& WIFE
DB 4479 PG 102
PB 58 PG 149

-Y5- PT Sta. 23+97.87

END CONSTRUCTION
-Y5- Sta. 28+00.00

ANGELA NICHOLS
DB 5046 PG 152
PB 16 PG 48

CONFERENCE OF CAROLINA
DB 7738 PG 311
PB 16 PG 48

WILDEMAR GUZMAN
& WIFE
DB 8419 PG 295
PB 127 PG 75

6157 CRYSTAL DRIVE, LLC
DB 8900 PG 777
PB 58 PG 149

ROBERT LEE
& WIFE THERESA M
DB 3709 PG 111
PB 16 PG 48

FRANCES H ELLIOT
DB 2456 PG 93

WILLARD HAROLD CHIKON
DB 5508 PG 861
PB 28 PG 30

FIRST SPANISH BAPTIST CHURCH
DB 5489 PG 294
PB 28 PG 30

FIRST SPANISH BAPTIST CHURCH
DB 5489 PG 294
PB 28 PG 30

STRICKLAND BRIDGE RD

ST ARBROOK DR

300' TAPER

50' TAPER

150' TAPER (RT TURN)

MATCHLINE SEE SHEET 9
-Y5- STA 23+00

-Y5- POT Sta. 30+20.46

-Y5- PT Sta. 29+07.96

-Y5- PC Sta. 28+05.44

-Y5-	
PI Sta 28+56.71	PI Sta 22+82.12
Δ = 1° 28' 06.4" (LT)	Δ = 25° 18' 13.3" (RT)
D = 1° 25' 56.6"	D = 10° 44' 58.8"
L = 102.52'	L = 235.39'
T = 51.26'	T = 119.65'
R = 4,000.00'	R = 533.00'
	SE = 0.02

20-JAN-2016 15:00
G:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_28.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

REVISIONS

8/17/99

EXISTING R/W

JEAN PHARR LYNCH LIVING TRUST
DB 6205 PG 160
PB 63 PG 93

MOHAMMED W. RAHMAN
DB 5396 PG 563
PB 63 PG 93

TIMOTHY R. GODWIN
DB 5945 PG764
PB 63 PG 93

SUSAN C. SERANO
DB 5210 PG 660
PB 63 PG 93

BEVAN E. GRICE
DB 3575 PG 25
PB 63 PG 93

JEFFREY REITZEL
DB 3983 PG 362
PB 63 PG 93

CRAIG L. JOHNSON
DB 7600 PG 747
PB 86 PG 175

RROBERT B TAYLOR
DB 8409 PG 15
PB 86 PG 175

2SBK CHURCH

VILLAGE DRIVE
BAPTIST CHURCH
DB 4107 PG 44
PB 83 PG 177

BST

30' UTILITY EASEMENT

25' SANITARY SEWER EASEMENT

POT -RPB- Sta. 10+00.00

TS -RPB- Sta. 11+54.49

SC -RPB- Sta. 13+04.49

ROADWAY EMBANKMENT

B-09 HA-73

25' INC

SEE SHEET 30
MATCHLINE -RPB- STA 19+05

COASTAL PLAIN

JERUBY M LANGDON
LIFE ESTATE
DB 8629 PG 292
PB 66 PG 11

BOBBILIV. WILLIAMS
DB 7308 PG 617
PB 66 PG 11

JOSE A. GONZALEZ
DB 7556 PG 687
PB 62 PG 83

KISHORKUMAR P. KANERIA
DB 8900 PG 303
PB 62 PG 83

STEVEN C. DAVIES
DB 8608 PG 601
PB 62 PG 83

RICKY TORRES
DB 8383 PG 481
PB 62 PG 83

CALVIN NGUYEN
DB 8806 PG 000
PB 62 PG 83

LOUIS W. HACKETT
DB 3478 PG 845
PB 62 PG 83

ERNEST L. NELON
DB 6126 PG 207
PB 62 PG 83

2SBKD
2SFD
POOL
15SBKD
26' CONC
22' CONC
18' CONC
12' CONC
24' C&G
24' BST
LARKFIELD CT

-RPB-

PIs Sta 12+54.50	PI Sta 15+91.64
θs = 1° 47' 25.8"	Δ = 13° 38' 43.4" (RT)
Ls = 150.00'	D = 2° 23' 14.4"
LT = 100.01'	L = 571.58'
ST = 50.00'	T = 287.15'
	R = 2,400.00'

20-JAN-2016 15:00
G:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_29.dgn
Default
81 Model 1:1000

PROJECT REFERENCE NO.	SHEET NO.
U-4405	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

CS -RPB- Sta. 18+76.07

ST -RPB- Sta. 20+26.07

TS -RPB- Sta. 28+88.86

SC -RPB- Sta. 30+28.86

ROADWAY EMBANKMENT

MATCHLINE SEE SHEET 29 -RPB- STA 19+05

MATCHLINE SEE SHEET 22 -RPB- STA 30+96

COASTAL PLAIN

VILLAGE DRIVE BAPTIST CHURCH
DB 4107 PG 44
PB 83 PG 177

2SBK FIELD HOUSE

BK DUGOUTS

25' SANITARY SEWER EASEMENT

MC PHERSON GREEN INC.
DB 4128 PG 612
PB C005 PG 7

LANEY LN

2SF APT

NBL ALL AMERICAN EXPRESSWAY BST

SBL ALL AMERICAN EXPRESSWAY BST

GRAU 350

CALI N PHAN I
DB 5115 PG 244
PB 66 PG 11

KYAW KHINE
DB 6647 PG 29
PB 62 PG 83

CHRISTOPHER COLAVITA
DB 7898 PG 841
PB 62 PG 83

BENNIE C. BENTON
DB 3590 PG 25
PB 62 PG 83

BETTY M. REEVES
DB 6122 PG 3
PB 62 PG 83

FERNCREEK DR

ABERDEEN & ROCKFISH RAILROAD

B-10 B-11 EB1-B EB2-B B-12

TYPE III

-RPB-

PI Sta 15+91.64	PIs Sta 19+26.07	PIs Sta 29+62.28	PI Sta 31+40.19
Δ = 13° 38' 43.4" (RT)	θs = 1° 47' 25.8"	θs = 6° 21' 58.3"	Δ = 14° 06' 13.2" (RT)
D = 2° 23' 14.4"	Ls = 150.00'	Ls = 200.00'	D = 6° 21' 58.3"
L = 571.58'	LT = 100.01'	LT = 133.42'	L = 221.54'
T = 287.15'	ST = 50.00'	ST = 66.75'	T = 111.33'
R = 2,400.00'			R = 900.00'
SE=.06			SE=.08

20-JAN-2016 15:01
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_30.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/NA 2011

REVISIONS
8/17/99

MATCHLINE SEE SHEET 27
-Y43- STA 13+00

-Y43-	
PI Sta 18+97.74	PI Sta 21+17.77
Δ = 0° 29' 06.2" (RT)	Δ = 0° 28' 56.2" (LT)
D = 1° 25' 56.6"	D = 1° 25' 56.6"
L = 33.86'	L = 33.67'
T = 16.93'	T = 16.83'
R = 4,000.00'	R = 4,000.00'

-Y43- PI Sta. 18+84.05
-Y43- PI Sta. 20+73.56
-Y43- POT Sta. 21+78.21
-BY47- # 107
-Y43-
U4405-6
END CONSTRUCTION -Y43- Sta. 18+43.12

W A MAXWELL INC
DB 3226 PG 710
PB 2 PG 184

HIGHLAND COUNTRY CLUB INC
DB 2174 PG 180

FAIRWAY BUILDING
DB 4176 PG 130

JOSEPH D JACKSON
DB 8561 PG 156
PB 56 PG 61

JAMES H SMITH
DB 8567 PG 289
PB 56 PG 61

FREDERICK A BOOTH JR
DB 5940 PG 61
PB 56 PG 61

FREDERICK A BOOTH JR
DB 3184 PG 435

EDWIN J MILLER & WIFE
DB 5187 PG 203
PB 101 PG 100

FREDERICK L GRAHAM
DB 6196 PG 76

WJ WIGGS ETALS C/O PAMELA GRIFFIN
DB 2401 PG 724

CATBIRD GROUP LLC
DB 6273 PG 527
PB 72 PG 32

ROBESON BEND OWNERS ASSOC INC
DB 3885 PG 830
PB 81 PG 192

2401 ROBESON BEND LLC
DB 8725 PG 325
PB 72 PG 32

FILLED WITH DIRT INV UNKNOWN

UNABLE TO LOCATE CONNECTING STRUCTURE POSSIBLE JUNCTION BOX APPROXIMATE DIRECTION OF 36" CPP SHOWN

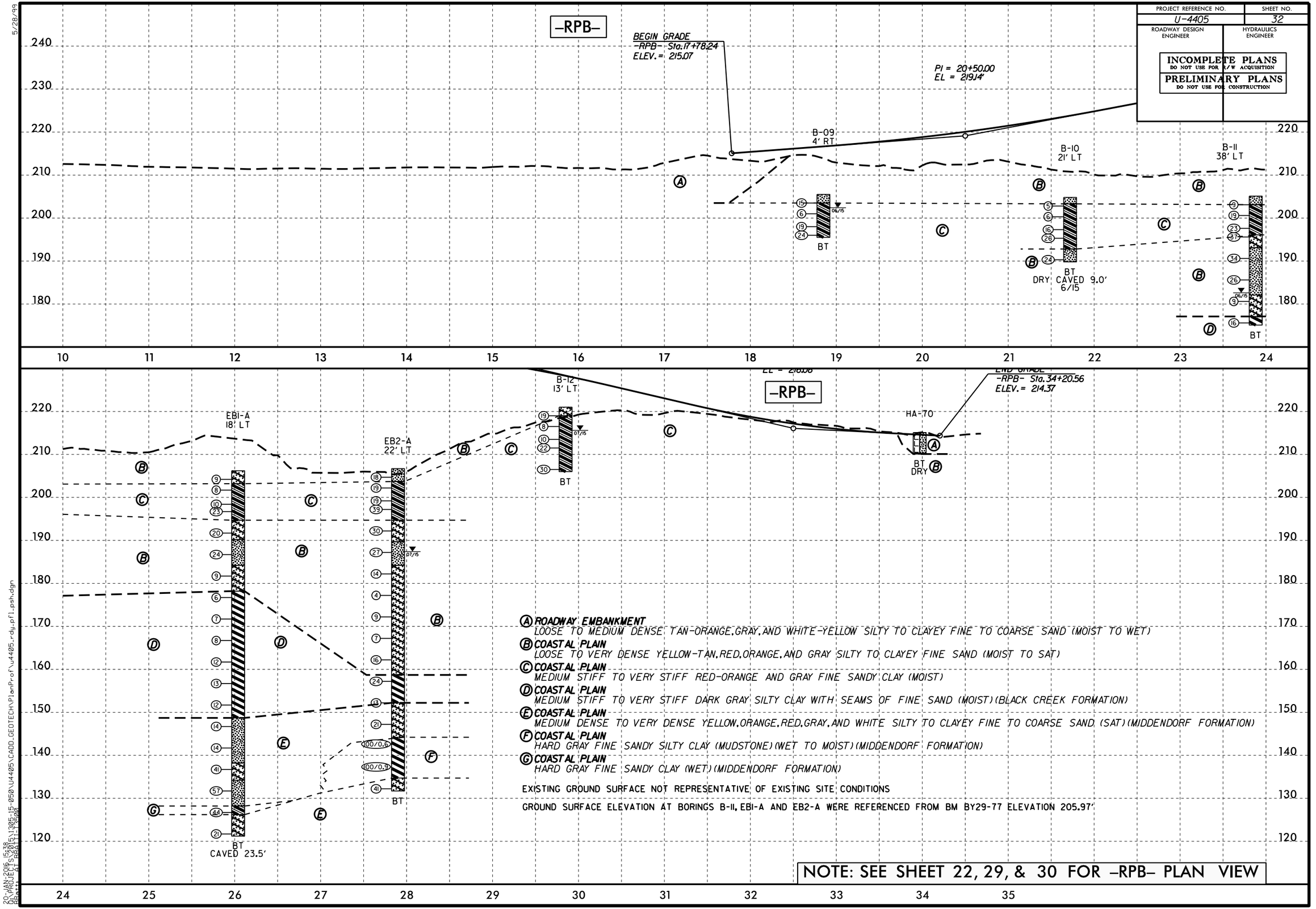
20-JAN-2016 15:01
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\PlanProf\u4405_rdy_psh_31.dgn
Default
El Shaw 1:1300

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Ⓐ **ROADWAY EMBANKMENT**
LOOSE TO MEDIUM DENSE TAN-ORANGE, GRAY, AND WHITE-YELLOW SILTY TO CLAYEY FINE TO COARSE SAND (MOIST TO WET)

Ⓑ **COASTAL PLAIN**
LOOSE TO VERY DENSE YELLOW-TAN, RED, ORANGE, AND GRAY SILTY TO CLAYEY FINE SAND (MOIST TO SAT)

Ⓒ **COASTAL PLAIN**
MEDIUM STIFF TO VERY STIFF RED-ORANGE AND GRAY FINE SANDY CLAY (MOIST)

Ⓓ **COASTAL PLAIN**
MEDIUM STIFF TO VERY STIFF DARK GRAY SILTY CLAY WITH SEAMS OF FINE SAND (MOIST) (BLACK CREEK FORMATION)

Ⓔ **COASTAL PLAIN**
MEDIUM DENSE TO VERY DENSE YELLOW, ORANGE, RED, GRAY, AND WHITE SILTY TO CLAYEY FINE TO COARSE SAND (SAT) (MIDDENDORF FORMATION)

Ⓕ **COASTAL PLAIN**
HARD GRAY FINE SANDY SILTY CLAY (MUDSTONE) (WET TO MOIST) (MIDDENDORF FORMATION)

Ⓖ **COASTAL PLAIN**
HARD GRAY FINE SANDY CLAY (WET) (MIDDENDORF FORMATION)

EXISTING GROUND SURFACE NOT REPRESENTATIVE OF EXISTING SITE CONDITIONS

GROUND SURFACE ELEVATION AT BORINGS B-11, EB1-A AND EB2-A WERE REFERENCED FROM BM BY29-77 ELEVATION 205.97'

NOTE: SEE SHEET 22, 29, & 30 FOR –RPB– PLAN VIEW

20-JAN-2006 15:38
G:\PROJECTS\2015\1305-15-050\U4405\CADD.GEOTECH\PlanProf\u4405_rdy_pf1_psh.dgn
default AT E&A 1:1.5000

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	33

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

220
215
210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY FINE TO COARSE SANDY CLAY (MOIST)

19+00.00

ROADWAY EMBANKMENT
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY CLAY (MOIST)

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY CLAY (MOIST)

18+50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-52	55' RT	17+00	0.0-1.5	A-6 (1)	29	12	41	25	10	24	100	76	37	14.2	ND

225
220
215
210
205

S-52
HA-01

ROADWAY EMBANKMENT
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY CLAY (MOIST)

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY CLAY (MOIST)

BT
DRY 7/15

17+00.00

-L-

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

25-JAN-2016 13:55
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Bhatti AT BHATTI-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	34

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

220
215
210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY FINE TO COARSE SANDY CLAY (MOIST)

21+00.00

225
220
215
210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY FINE TO COARSE SANDY CLAY (MOIST)

20+50.00

220
215
210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY FINE TO COARSE SANDY CLAY (MOIST)

20+00.00

220
215
210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY FINE TO COARSE SANDY CLAY (MOIST)

19+50.00

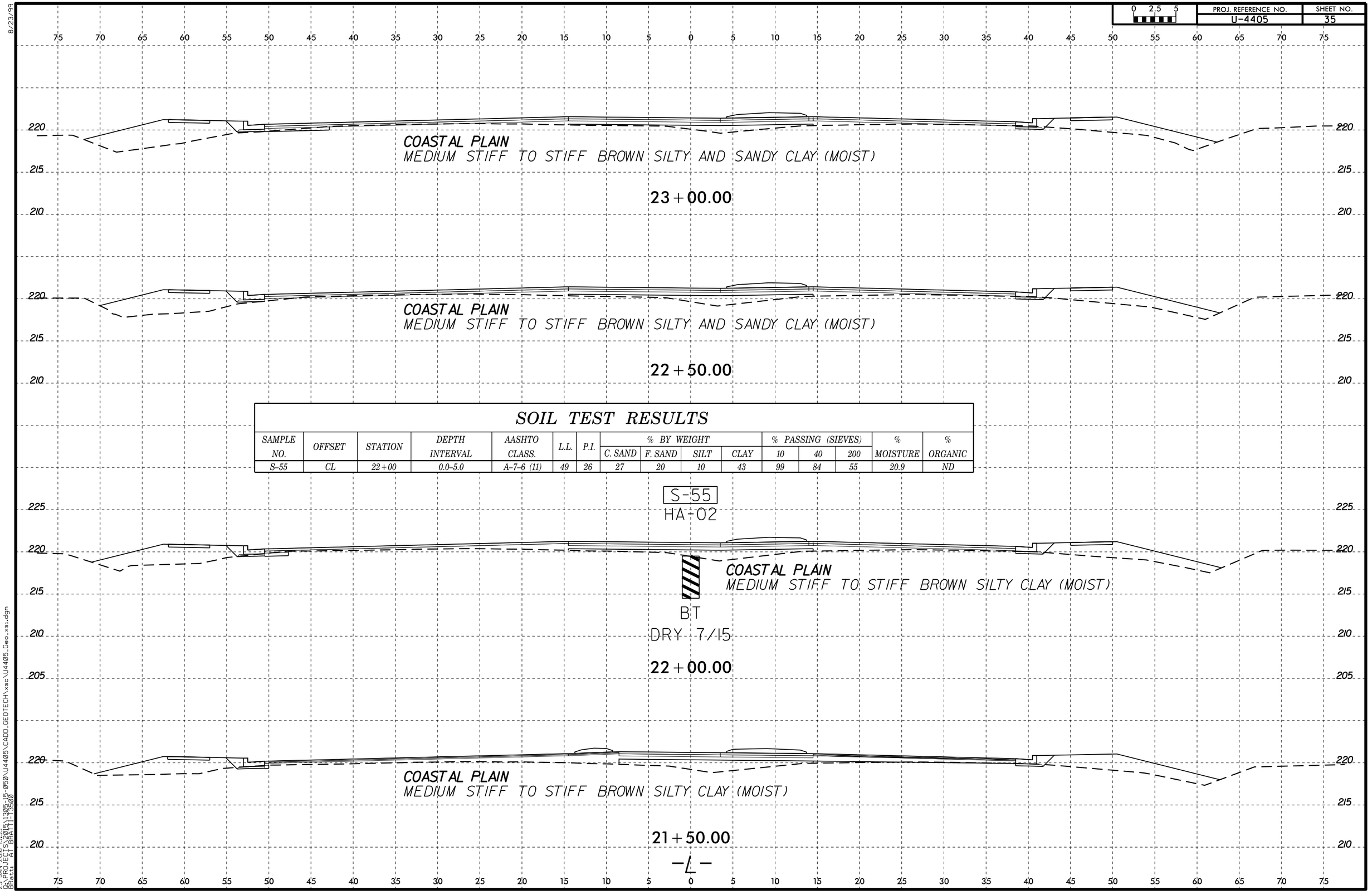
—L—

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

25-JAN-2016 13:55
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	35



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-55	CL	22+00	0.0-5.0	A-7-6 (11)	49	26	27	20	10	43	99	84	55	20.9	ND

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	36

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

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE ORANGE BROWN CLAYEY FINE TO COARSE SAND WITH TRACE OF GRAVEL (MOIST)

220 215

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY CLAY (MOIST)

25+50.00

220 215 210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY AND SANDY CLAY (MOIST)

25+00.00

220 215 210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY AND SANDY CLAY (MOIST)

24+50.00

220 215 210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY AND SANDY CLAY (MOIST)

24+00.00

220 215 210

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN SILTY AND SANDY CLAY (MOIST)

23+50.00

–L–

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

25-JAN-2016 13:55
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Bratt AT BRATT1-3600

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	37

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

225 220 215 210 205 200

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND WITH TRACE OF GRAVEL (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE REDDISH BROWN CLAYEY FINE TO COARSE SAND (MOIST)

HA-04

B-T

DRY 7/15

31+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-124	55' LT	27+00	0.0-2.5	A-2-6 (0)	33	16	46	29	3	22	100	74	28	10.5	ND

S-124

HA-03

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE ORANGE BROWN CLAYEY FINE TO COARSE SAND WITH TRACE OF GRAVEL (MOIST)

COASTAL PLAIN
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY CLAY (MOIST)

B-T

DRY 7/15

27+00.00

-L-

225 220 215 210 205 200

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

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	38

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

225 220 215 210 205 200

HA-06

BT

DRY 7/15

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND WITH GRAVEL (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED-BROWN CLAYEY FINE TO COARSE SAND (MOIST)

41+00.00

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MOIST)

HA-05

COASTAL PLAIN
RED BROWN CLAYEY FINE TO CORSE SAND (MOIST)

BT

DRY 7/15

36+00.00

$-L-$

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

25-JAN-2016 13:55
Q:\PROJECTS\2015\1305-150\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-3500

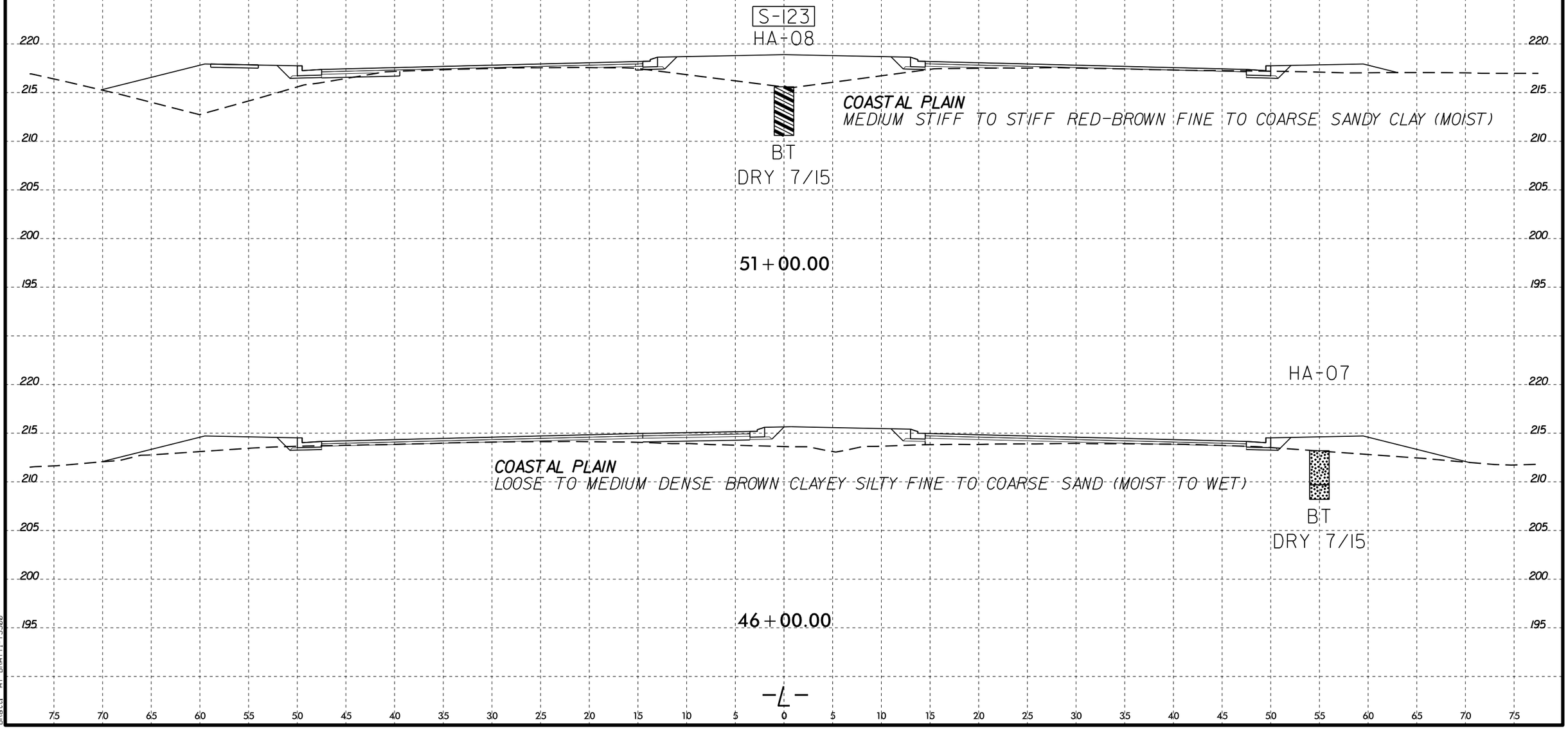
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-4405	39

0 2.5 5

SOIL TEST RESULTS

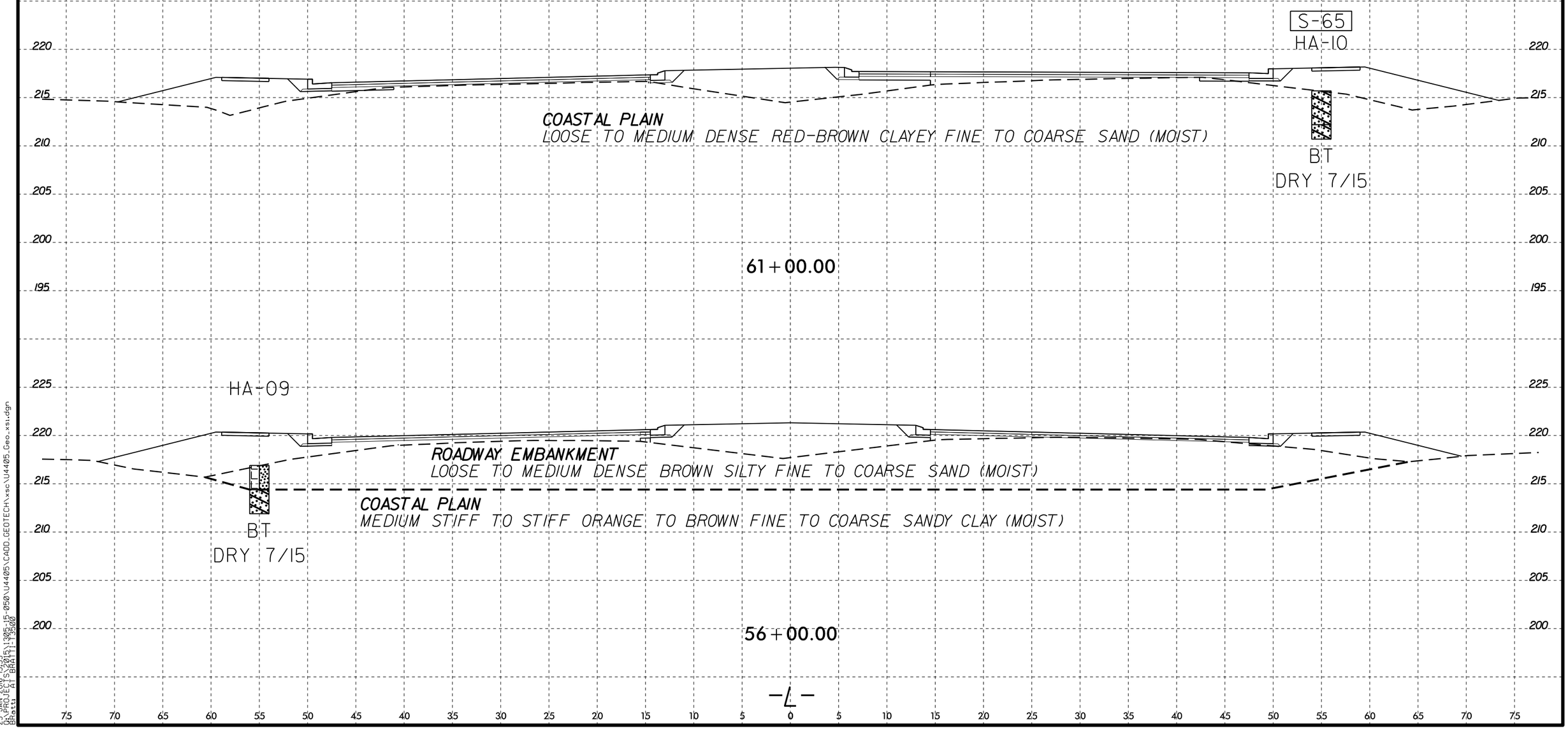
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-123	CL	51+00	0.0-5.0	A-6 (2)	34	19	40	27	6	27	99	75	36	12.9	ND



25-JAN-2016 13:55
Q:\PROJECTS\2015\1305-05-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-13500

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-65	55' RT	61+00	0.0-3.5	A-2-6 (1)	34	15	46	24	5	25	100	73	33	11.8	ND



8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	41

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

210 205 200 195

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

70+00.00

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN BROWN SLIGHTLY SILTY FINE TO COARSE SAND (WET)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE ORANGE BROWN SLIGHTLY SILTY FINE TO COARSE SAND (WET)

69+50.00

220 215 210 205 200 195

HA-II

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN BROWN SLIGHTLY SILTY FINE TO COARSE SAND (WET)

BT
DRY 7/15

COASTAL PLAIN
LOOSE TO MEDIUM DENSE ORANGE BROWN SLIGHTLY SILTY FINE TO COARSE SAND (WET)

66+00.00

-L-

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

25-JAN-2016 13:56
Q:\PROJECTS\2015\1305-150\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-13500

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	42

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

210 205 200 195

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

71+50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-87	55' RT	71+00	0.0-5.0	A-7-6 (8)	56	34	40	22	2	36	100	78	41	17.5	ND

210 205 200 195 190

S-87
HA-12

BT
DRY 7/15

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE SILTY CLAY (MOIST)

71+00.00

210 205 200

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

70+50.00

—L—

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

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	43

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

210
205
200
195

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

73+00.00

210
205
200
195

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

72+50.00

210
205
200
195

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

72+00.00

-L-

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

25-JAN-2016 13:59
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	44

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

210
205
200
195
190

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE TO COARSE SAND (MOIST)

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED GRAY FINE TO COARSE SANDY CLAY (MOIST)

74+50.00

210
205
200
195
190

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

74+00.00

210
205
200
195

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

73+50.00

-L-

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

25-JAN-2016 14:00
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	45

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

195 190 185 180 175 170

S-83
HA-16

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN ORANGE SLIGHTLY CLAYEY COARSE TO FINE SAND (MOIST TO WET)

07/15
BT

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED GRAY FINE TO COARSE SANDY CLAY (MOIST)

80+00.00

S-84
HA-14

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN BROWN SLIGHTLY CLAYEY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED BROWN COARSE TO FINE SANDY CLAY (MOIST)

78+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-83	75' LT	80+00	0.0-4.0	A-2-4 (0)	20	4	29	44	9	18	100	84	34	17.3	ND
S-84	75' LT	78+00	0.0-2.8	A-2-4 (0)	15	NP	43	41	7	9	100	78	19	10.1	ND
S-67	60' RT	75+00	0.0-4.0	A-2-4 (0)	21	5	47	33	4	16	100	74	22	8.7	ND

210 205 200 195 190

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE TO COARSE SAND (MOIST)

S-67
HA-13

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED GRAY FINE TO COARSE SANDY CLAY (MOIST)

BT
DRY 7/15

75+00.00
-L-

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

25-JAN-2016 14:00
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-13500

8/23/99

90 85 80 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

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-80	45' LT	82+00	0.0-2.7	A-2-4 (0)	24	8	46	31	4	19	99	69	26	8.4	ND

Ⓐ **ALLUVIAL**
VERY LOOSE TAN SILTY FINE SAND (WET)

Ⓑ **ALLUVIAL**
SOFT BROWN TAN FINE SANDY CLAY (WET)

Ⓒ **ALLUVIAL**
VERY LOOSE GRAY CLAYEY FINE SAND WITH TRACE OF ORGANICS (SAT)

Ⓓ **ALLUVIAL**
MEDIUM STIFF DARK GRAY TO BLACK SILTY CLAY WITH TRACE OF ORGANICS (WET)

Ⓔ **ALLUVIAL**
LOOSE GRAY SILTY FINE SAND (SATURATED)

215 210 205 200 195 190 185 180

S-80
HA-17

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE ORANGE RED CLAYEY FINE TO COARSE SAND (MOIST)

MEDIUM STIFF TO STIFF RED-TAN COARSE TO FINE SANDY AND SILTY CLAY (MOIST)

BT
DRY 7/15

HA-71
STA 82+08

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ BT

07/15

82+00.00

-L-

215 210 205 200 195 190 185 180

90 85 80 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

25-JAN-2016 14:00
G:\PROJECTS\2015\13015-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	47

B-02

195 190 185 180 175 170 165 160 155 150

ROADWAY EMBANKMENT
LOOSE ORANGE-TAN AND RED CLAYEY FINE SAND (MOIST TO WET)

ALLUVIAL
VERY LOOSE GRAY CLAYEY FINE TO COARSE SAND (SAT)

LOOSE SILTY FINE TO COARSE SAND
WITH TRACE OF SMALL GRAVEL (SAT)

COASTAL PLAIN
VERY LOOSE TO DENSE ORANGE, RED-ORANGE, AND TAN-WHITE SLIGHTLY CLAYEY
SILTY FINE TO COARSE SAND WITH CEMENTED SAND FRAGMENTS (SAT)

(4) (5) (4) (2) WOH (10) (8) (5) (3) (38)

07/15

BT

82+50.00

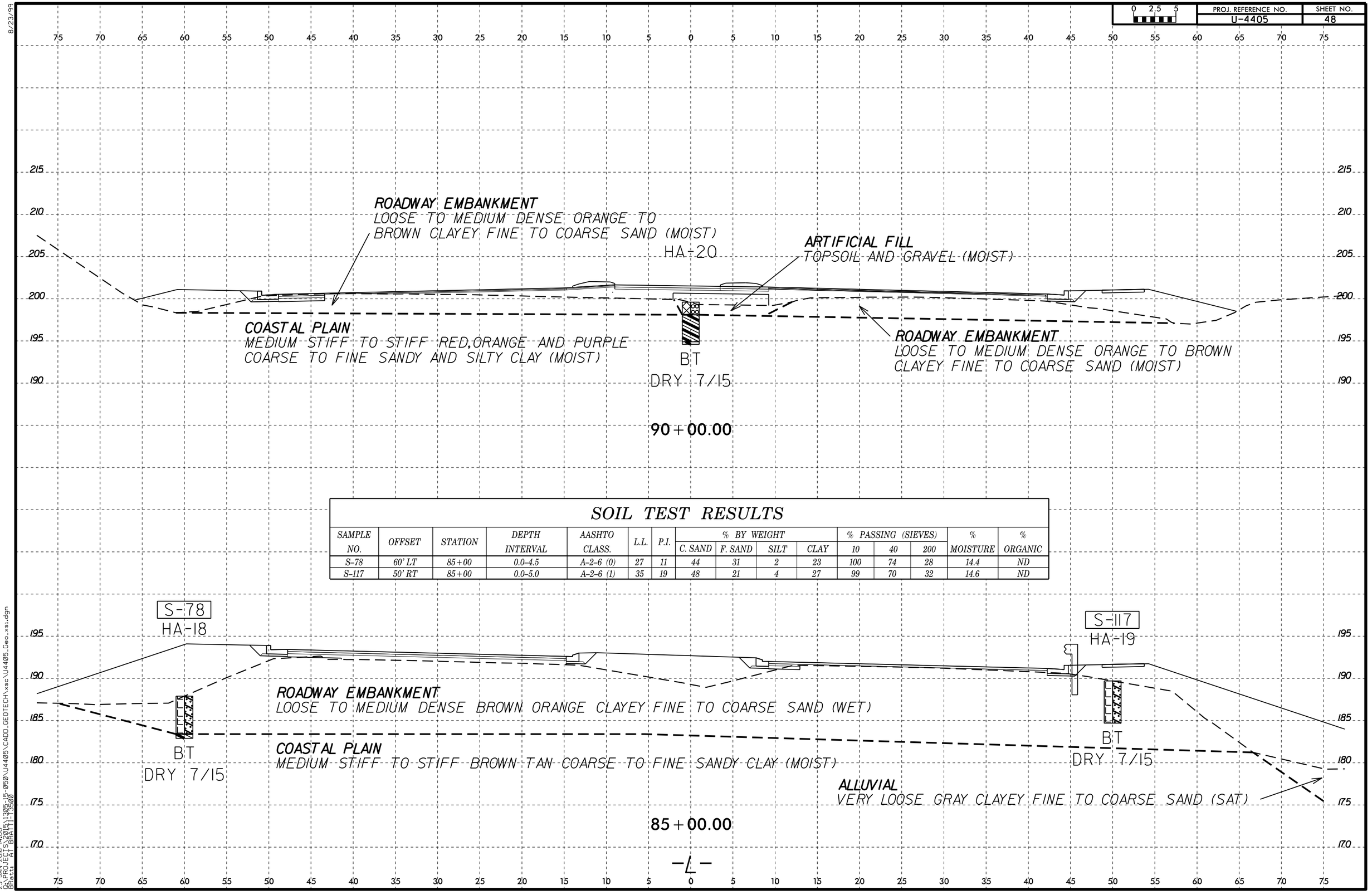
-L-

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

25-JAN-2016 14:00
O:\PROJECTS_2015\13305-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xsi.dgn
Brett AT BRATT-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	48



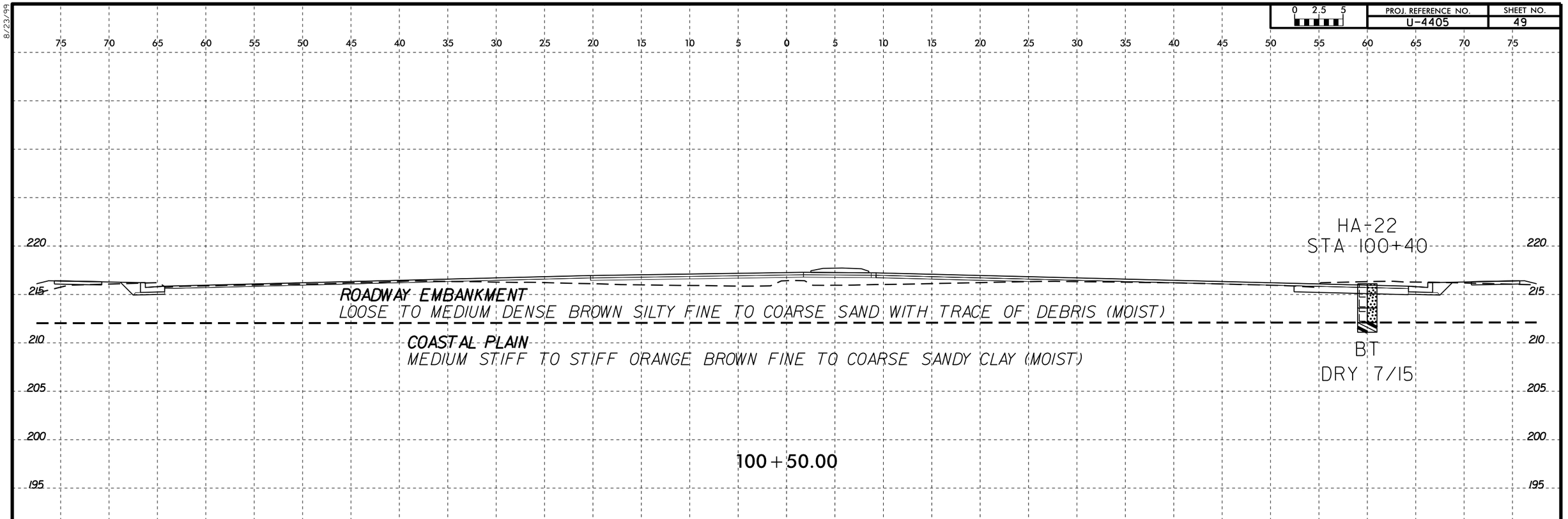
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-78	60' LT	85+00	0.0-4.5	A-2-6 (0)	27	11	44	31	2	23	100	74	28	14.4	ND
S-117	50' RT	85+00	0.0-5.0	A-2-6 (1)	35	19	48	21	4	27	99	70	32	14.6	ND

25-JAN-2016 14:00
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

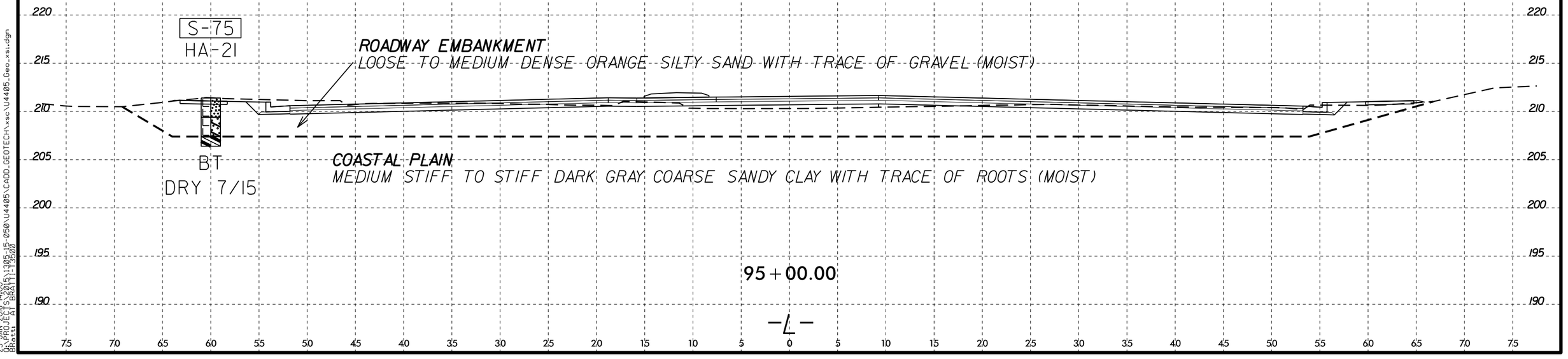
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	49



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-75	60' LT	95+00	0.0-2.0	A-2-4 (0)	25	7	35	44	3	18	99	77	23	7.3	ND



25-JAN-2016 14:00
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRATT1-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	50

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

215 210 205

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN FINE TO COARSE SANDY CLAY (MOIST)

103+50.00

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN FINE TO COARSE SANDY CLAY (MOIST)

103+00.00

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN FINE TO COARSE SANDY CLAY (MOIST)

102+50.00

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN FINE TO COARSE SANDY CLAY (MOIST)

102+00.00

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND WITH TRACE OF DEBRIS (MOIST)

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN FINE TO COARSE SANDY CLAY (MOIST)

101+50.00

-L-

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

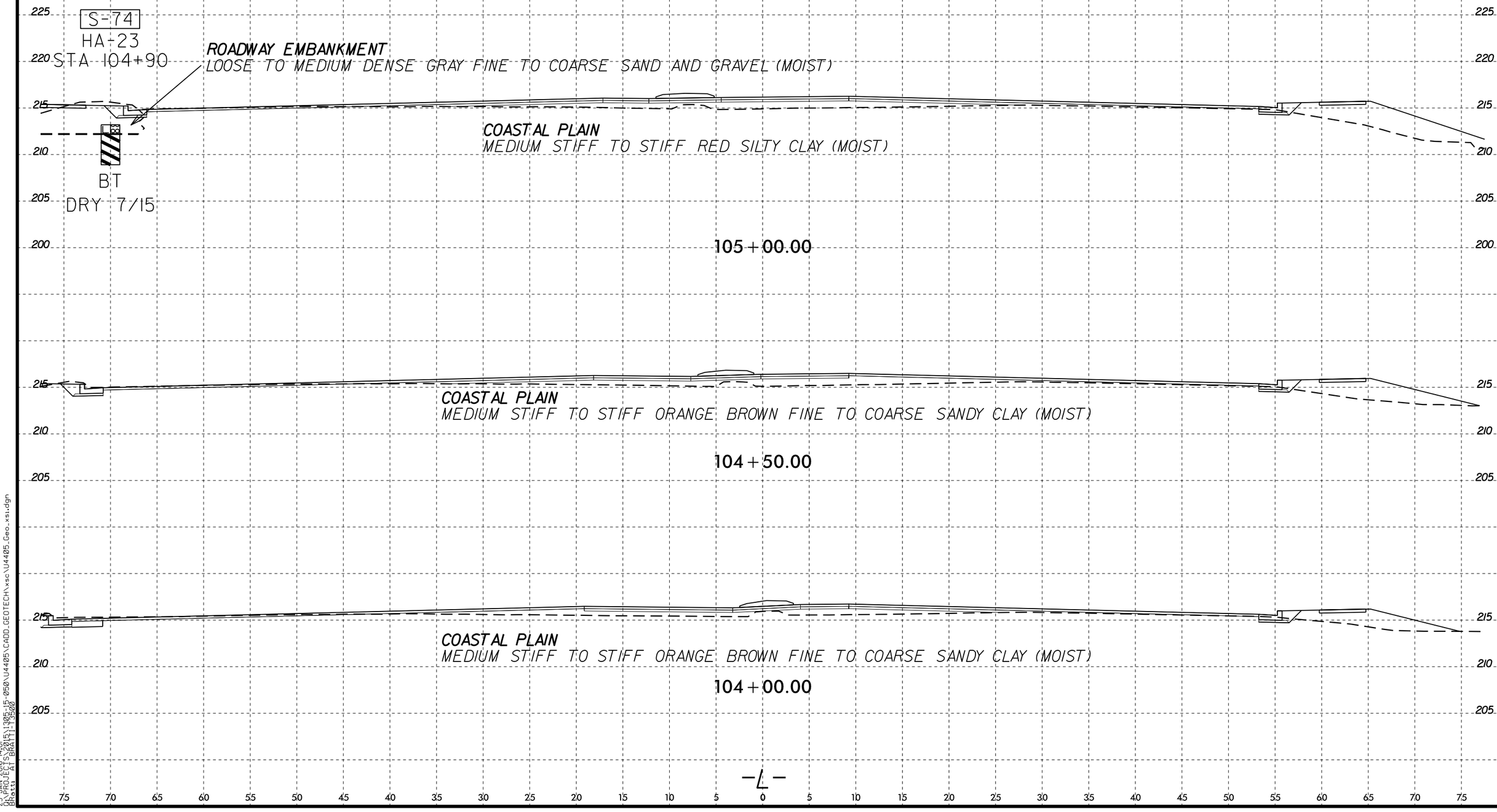
25-JAN-2016 14:00
O:\PROJECTS_2015\13305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xsi.dgn
Brett BRATTI-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	51

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-74	70' LT	104+90	1.0-4.3	A-7-6 (14)	52	26	28	14	7	51	100	82	60	22.2	ND



25-JAN-2016 14:01
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	52

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

220 215 210 205

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED FINE TO COARSE SANDY CLAY (MOIST)

107+00.00

220 215 210 205

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED FINE TO COARSE SANDY CLAY (MOIST)

106+50.00

220 215 210 205

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED FINE TO COARSE SANDY CLAY (MOIST)

106+00.00

220 215 210 205

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED FINE TO COARSE SANDY CLAY (MOIST)

105+50.00

-L-

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

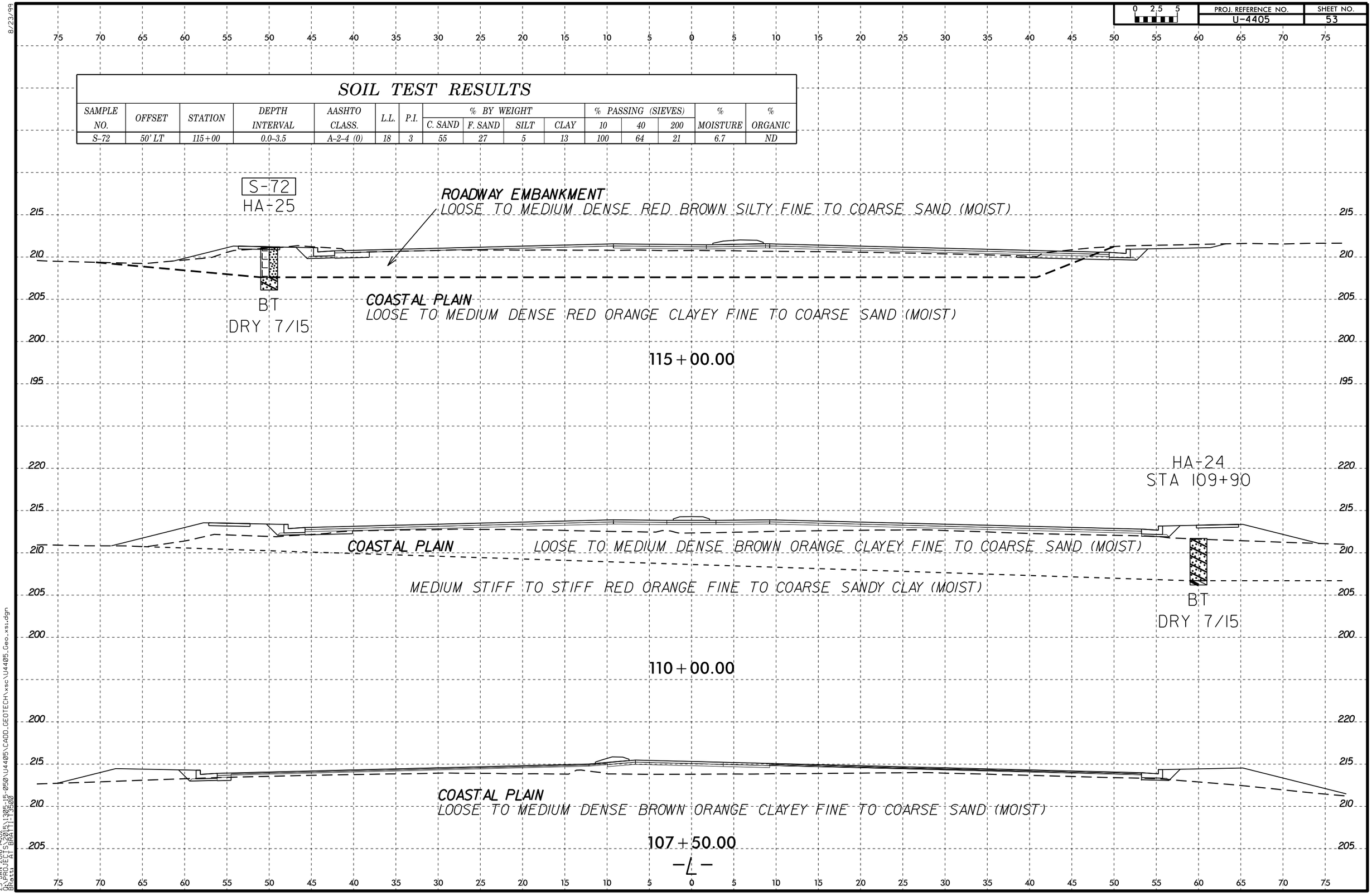
25-JAN-2016 14:01
U:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	53

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-72	50' LT	115+00	0.0-3.5	A-2-4 (0)	18	3	55	27	5	13	100	64	21	6.7	ND



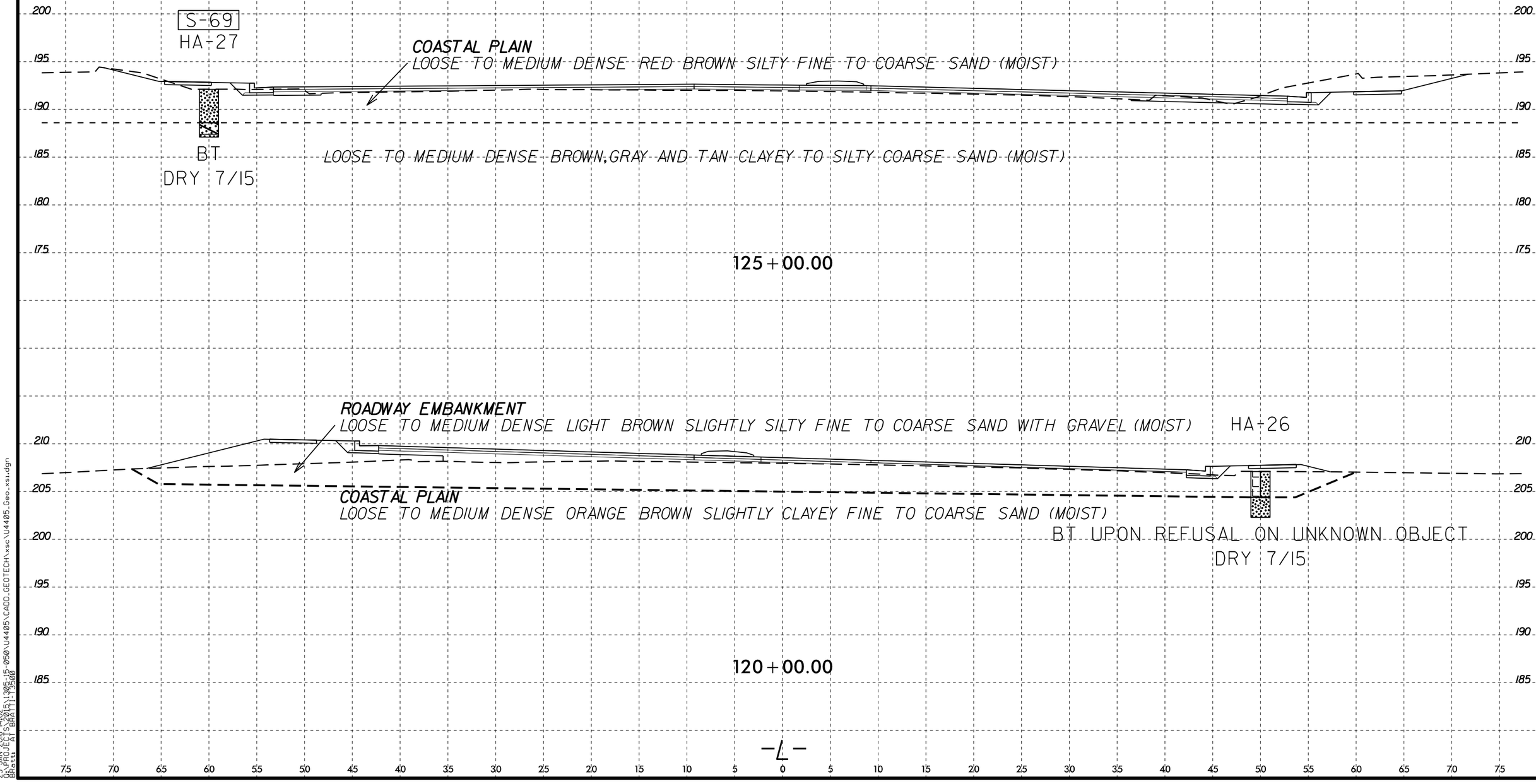
25-JAN-2016 14:02
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	54

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-69	60' LT	125+00	0.0-3.5	A-2-4 (0)	17	4	49	37	3	11	98	68	17	9.3	ND



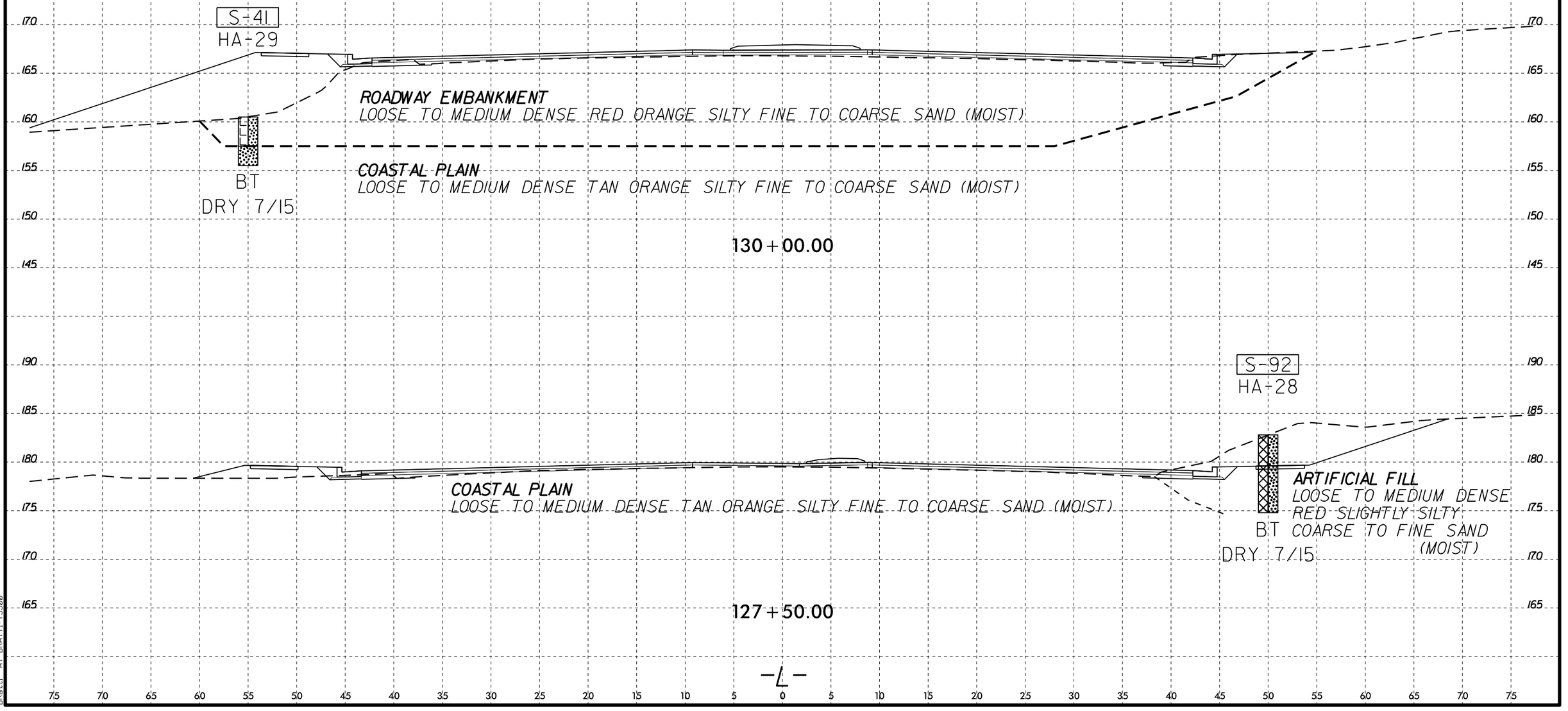
25-JAN-2016 14:02
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	55

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-41	55' LT	130+00	0.0-3.0	A-2-4 (0)	18	1	40	41	5	14	99	76	22	7.7	ND
S-92	50' RT	127+50	0.0-8.0	A-2-4 (0)	24	4	26	57	4	13	100	84	19	8	ND



25-JAN-2016 14:02
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett Al Bratti 13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	56

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

150 145 140 135 130 125 120 115 110

B-04
STA 137+43

WOH
1
1
4
8
21
37
100/0.8
BT

07/15

ROADWAY EMBANKMENT
LOOSE TAN AND GRAY SILTY FINE SAND (MOIST)

ALLUVIAL
VERY LOOSE TO LOOSE TAN AND GRAY SILTY FINE SAND
WITH TRACE OF ORGANICS,WOOD AND QUARTZ GRAVEL (SAT)

COASTAL PLAIN
VERY STIFF TO HARD GRAY FINE SANDY
SILTY CLAY WITH TRACE OF MICA (MOIST)

137+50.00

155 150 145 140 135 130

HA-30

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO
COARSE SAND WITH BLACK COAL LIKE FRAGMENTS (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE TAN ORANGE
SILTY FINE TO COARSE SAND (MOIST)

BT
REFUSAL AT 3.1' ON UNKNOWN OBJECT
DRY 7/15

135+00.00

-L-

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

25-JAN-2016 14:03
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Bhatti AT BHATTI-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	57

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 80 85 90

155 150 145 140 135 130

ARTIFICIAL FILL
LOOSE TAN-GRAY AND BROWN SILTY FINE SAND (MOIST)

ROADWAY EMBANKMENT
LOOSE TAN-GRAY AND BROWN SILTY FINE SAND (MOIST)

ALLUVIAL
VERY LOOSE BLACK SILTY FINE SAND WITH TRACE OF ORGANICS (SAT)

COASTAL PLAIN *STIFF GRAY AND RED SILTY CLAY (MOIST)*

MEDIUM DENSE GRAY CLAYEY FINE TO COARSE SAND (SAT)

VERY STIFF GRAY-TAN AND RED FINE SANDY SILTY CLAY (MOIST)

143+00.00

B-05
STA 143+16

7 5 4 11 9 15 17 18

07/15

BT

155 150 145 140 135 130 125 120 115

ARTIFICIAL FILL
LOOSE TAN AND GRAY SILTY FINE SAND (WET)

ROADWAY EMBANKMENT
LOOSE TAN AND GRAY SILTY FINE SAND (WET)

ALLUVIAL
VERY LOOSE TO LOOSE DARK GRAY SILTY FINE TO COARSE SAND WITH TRACE OF QUARTZ GRAVEL (SAT)

COASTAL PLAIN
STIFF TO HARD GRAY AND TAN FINE SANDY SILTY CLAY (MOIST)

138+50.00

B-03
STA 138+66

7 7 2 3 8 8 11 73

07/15

BT

-L-

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 80 85 90

25-JAN-2016 14:03
GR:PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	58

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

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

155
150
145

ROADWAY EMBANKMENT
LOOSE TAN-GRAY AND BROWN SILTY FINE SAND (MOIST)

145+50.00

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

165
160
155
150
145
140
135

B-06
STA 143+77

ARTIFICIAL FILL
LOOSE ORANGE AND GRAY CLAYEY FINE SAND WITH TRACE OF ORGANICS AND ROUNDED QUARTZ GRAVEL (MOIST)

ROADWAY EMBANKMENT
LOOSE TAN-GRAY AND BROWN SILTY FINE SAND (MOIST)

6
5
4
1

07/15

ALLUVIAL
VERY SOFT TO SOFT GRAY FINE SANDY CLAY (WET)

5

VERY LOOSE DARK BROWN AND BLACK SILTY FINE SAND WITH TRACE OF ORGANICS (SAT)

9

COASTAL PLAIN
STIFF GRAY AND RED-BROWN SILTY CLAY (MOIST)

12

MEDIUM DENSE GRAY CLAYEY FINE SAND (SAT)

16

VERY STIFF GRAY FINE SANDY CLAY (MOIST)

BT

144+00.00

115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25

25-JAN-2016 14:03
Q:\PROJECTS\2015\1305-150\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	59

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

165
160
155

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

147+50.00

160
155
150

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

147+00.00

160
155
150

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

146+50.00

155
150
145

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

146+00.00

—L—

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

25-JAN-2016 14:03
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	60

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-93	40' RT	149+00	2.0-3.3	A-7-6 (33)	56	32	1	19	24	56	100	99	92	28	ND
S-94	40' RT	149+00	3.3-8.0	A-2-7 (0)	56	33	77	5	1	17	94	25	18	9.4	ND

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

149+50.00

S-93
S-94
HA-31

ARTIFICIAL FILL
LOOSE GRAY FINE TO COARSE SAND AND GRAVEL

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN
TAN CLAYEY COARSE SAND (MOIST)

BT
DRY 7/15

COASTAL PLAIN
MEDIUM STIFF TO STIFF GRAY TAN
FINE SANDY SILTY CLAY (MOIST)

149+00.00

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

148+50.00

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

148+00.00

-L-

25-JAN-2016 14:03
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Bhatti, AT BHATTI-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	61

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

185 180 175 170

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

151+50.00

185 180 175 170

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

151+00.00

180 175 170 165

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

150+50.00

180 175 170 165

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

150+00.00

-L-

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

25-JAN-2016 14:03
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	62

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

185 180 175

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE SAND (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE SAND (MOIST)

153+50.00

185 180 175

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

153+00.00

185 180 175

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

152+50.00

185 180 175 170

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY COARSE SAND (MOIST)

152+00.00

185 180 175 170

$-L-$

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

25-JAN-2016 14:03
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	63

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

205 200 195 190 185 180

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED LIGHT BROWN
SLIGHTLY CLAYEY SILTY FINE TO COARSE SAND (MOIST)

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED BROWN FINE TO COARSE SANDY CLAY (MOIST)

HA-33
BT
DRY 7/15

161+00.00

HA-32
STA 154+15
BT
DRY 7/15

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE SAND WITH TRACE OF ROOTS (WET)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE SAND (MOIST)

154+00.00

205 200 195 190 185 180 175 170

-L-

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

25-JAN-2016 14:05
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett AT BRETT-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	64

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

215 210 205 200 195 190

HA-35

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN SILTY FINE SAND (MOIST)

LOOSE TO MEDIUM DENSE TAN CLAYEY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

171+00.00

Ⓐ **ROADWAY EMBANKMENT**
LOOSE TO MEDIUM DENSE RED SLIGHTLY SILTY FINE SAND (MOIST)

Ⓑ **COASTAL PLAIN**
MEDIUM STIFF TO STIFF ORANGE FINE SANDY CLAY (MOIST)

Ⓒ **COASTAL PLAIN**
LOOSE TO MEDIUM DENSE BROWN SLIGHTLY CLAYEY FINE TO COARSE SAND

HA-34

BT
DRY 7/15

166+00.00

-L-

220 215 210 205 200 195

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

25-JAN-2016 14:05
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	65

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

210 205 200 195 190 185

HA-37

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND WITH GRAVEL (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE GRAY BROWN CLAYEY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

176+00.00

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN GRAY SILTY FINE SAND (MOIST)

HA-36

BT
DRY 7/15

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN SILTY FINE SAND (MOIST)

173+00.00

205 200 195 190 185 180

-L-

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

25-JAN-2016 14:05
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	66

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

220 215 210 205 200 195 190

HA-40
STA 190+85

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN GRAY SILTY FINE TO COARSE SAND (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN TAN CLAYEY FINE SAND (MOIST)

BT
DRY 7/15

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

191+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-35	50' LT	181+00	0.0-2.0	A-2-4 (0)	23	6	51	30	2	17	96	66	20	13.5	ND

215 210 205 200 195 190 185

S-35
HA-38

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN SILTY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

COASTAL PLAIN
MEDIUM STIFF TO STIFF GRAY BLACK AND RED COARSE TO FINE SANDY CLAY (MOIST)

181+00.00

-L-

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

25-JAN-2016 14:05
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Brett Al Bratti-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	67

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

220 215 210 205 200 195 190

HA-42
STA 200+90

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN GRAY SILTY FINE SAND (MOIST)

BT
DRY 7/15

COASTAL PLAIN
LOOSE TO MEDIUM DENSE TAN SILTY FINE SAND (WET)

201+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-104	50' RT	196+00	0.0-2.0	A-2-4 (0)	25	7	45	34	3	18	98	71	23	10.9	ND

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN SILTY CLAYEY FINE TO COARSE SAND (MOIST)

S-104
HA-41

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN FINE TO COARSE SANDY CLAY (MOIST)

BT
DRY 7/15

196+00.00

—L—

25-JAN-2016 14:05
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xsi.dgn
Brott AT BRATT-13500

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4405	68

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

HA-44

215 210 205 200 195 190

COASTAL PLAIN
LOOSE TO MEDIUM DENSE ORANGE BROWN SILTY COARSE TO FINE SAND WITH TRACE OF CLAY (MOIST)

BT
DRY 7/15

211+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
S-97	50' RT	206+00	0.0-5.0	A-4 (1)	25	10	27	34	15	24	100	85	46	11.9	ND

S-97
HA-43

215 210 205 200 195 190

COASTAL PLAIN
MEDIUM STIFF TO STIFF RED ORANGE COARSE TO FINE SANDY SILT (MOIST)

BT
DRY 7/15

206+00.00

-L-

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

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	69

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-98	45' RT	221+00	0.0-2.1	A-2-6 (0)	27	12	38	31	6	25	86	66	30	9.6	ND

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

205 200 195 190 185 180 175

HA-47

BT
DRY 7/15

S-98
HA-46

BT ON HARD
UNKNOWN MATERIAL
DRY 7/15

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED,ORANGE,BROWN AND GRAY CLAYEY TO SILTY COARSE TO FINE SAND (MOIST)

221+00.00

ALLUVIAL
LOOSE TO MEDIUM DENSE GRAY AND BROWN CLAYEY TO SILTY FINE TO COARSE SAND (SAT)

215 210 205 200 195 190 185

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN SILTY FINE TO COARSE SAND WITH CLAY LENSES (MOIST)

HA-45

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

216+00.00

$-L-$

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

25-JAN-2016 14:05
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-13500

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-4405	70

0 2.5 5

135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15

200 195 190 185 180 175 170 165 160 155

B-08
STA 221+38

3 3 WOH WOH 6 15 12 13

07'15

BT

ARTIFICIAL FILL
SOFT GRAY AND YELLOW-TAN FINE SANDY CLAY WITH TRACE OF ORGANICS (MOIST)

ALLUVIAL
SOFT DARK GRAY AND BROWN FINE SANDY SILTY CLAY (WET)

ALLUVIAL
VERY LOOSE TO LOOSE DARK GRAY AND BROWN CLAYEY TO SILTY FINE TO COARSE SAND (SAT)

COASTAL PLAIN
MEDIUM STIFF GRAY FINE SILTY CLAY (WET)

COASTAL PLAIN
ORANGE, TAN, AND RED SILTY FINE SAND (SAT)

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED, ORANGE, BROWN AND GRAY CLAYEY TO SILTY COARSE TO FINE SAND (MOIST)

221+50.00

135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15

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

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-99	70' RT	221+60	0.0-4.5	A-2-4 (0)	21	2	43	38	5	14	95	70	21	14.8	ND

200 195 190 185 180 175

S-99
HA+72
STA 221+60

07'15

BT

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED, ORANGE, BROWN AND GRAY CLAYEY TO SILTY COARSE TO FINE SAND (MOIST)

ALLUVIAL
LOOSE DARK GRAY AND BROWN CLAYEY TO SILTY FINE TO COARSE SAND (SAT)

221+50.00

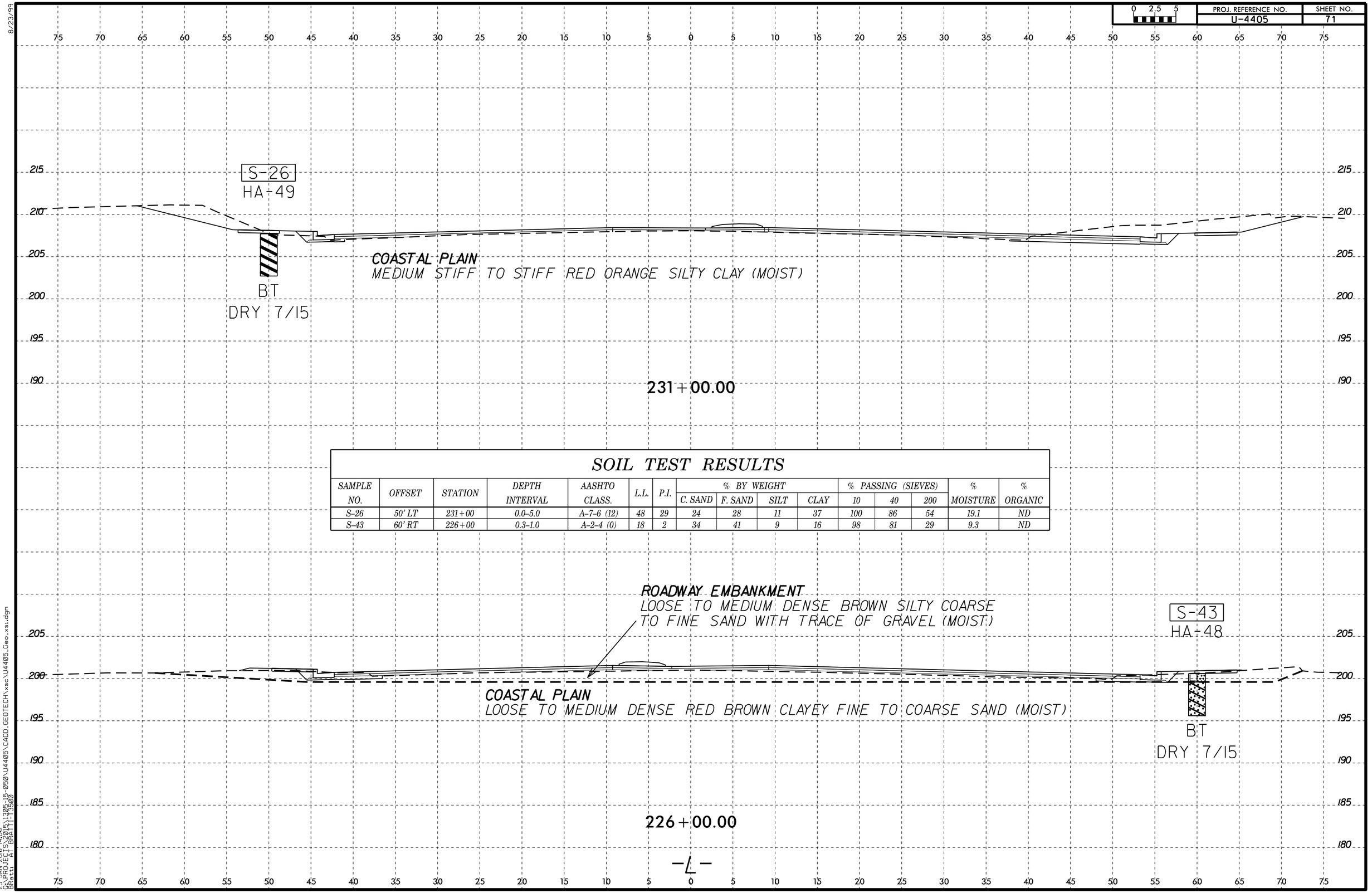
-L-

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

25-JAN-2016 14:05
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xsi.dgn
Bracket AT BRATT1-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	71



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-26	50' LT	231+00	0.0-5.0	A-7-6 (12)	48	29	24	28	11	37	100	86	54	19.1	ND
S-43	60' RT	226+00	0.3-1.0	A-2-4 (0)	18	2	34	41	9	16	98	81	29	9.3	ND

25-JAN-2016 14:06
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xsi.dgn
Bratcher, AT BRATTI-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	72

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

215 210 205 200 195 190

HA-51

B-T
DRY 7/15

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED / TAN GRAY SILTY FINE SAND (WET)

MEDIUM STIFF TO STIFF BROWN ORANGE FINE TO COARSE SANDY CLAY (MOIST)

241+00.00

ROADWAY EMBANKMENT
MEDIUM STIFF TO STIFF BROWN FINE TO COARSE SANDY SILT (MOIST)

HA-50

COASTAL PLAIN
MEDIUM STIFF TO STIFF
RED ORANGE SILTY CLAY (MOIST)

DRY 7/15
BT REFUSAL ON CONCRETE / ASHPALT AT
1.4' ON BOTH HAND AUGER ATTEMPTS

236+00.00

-L-

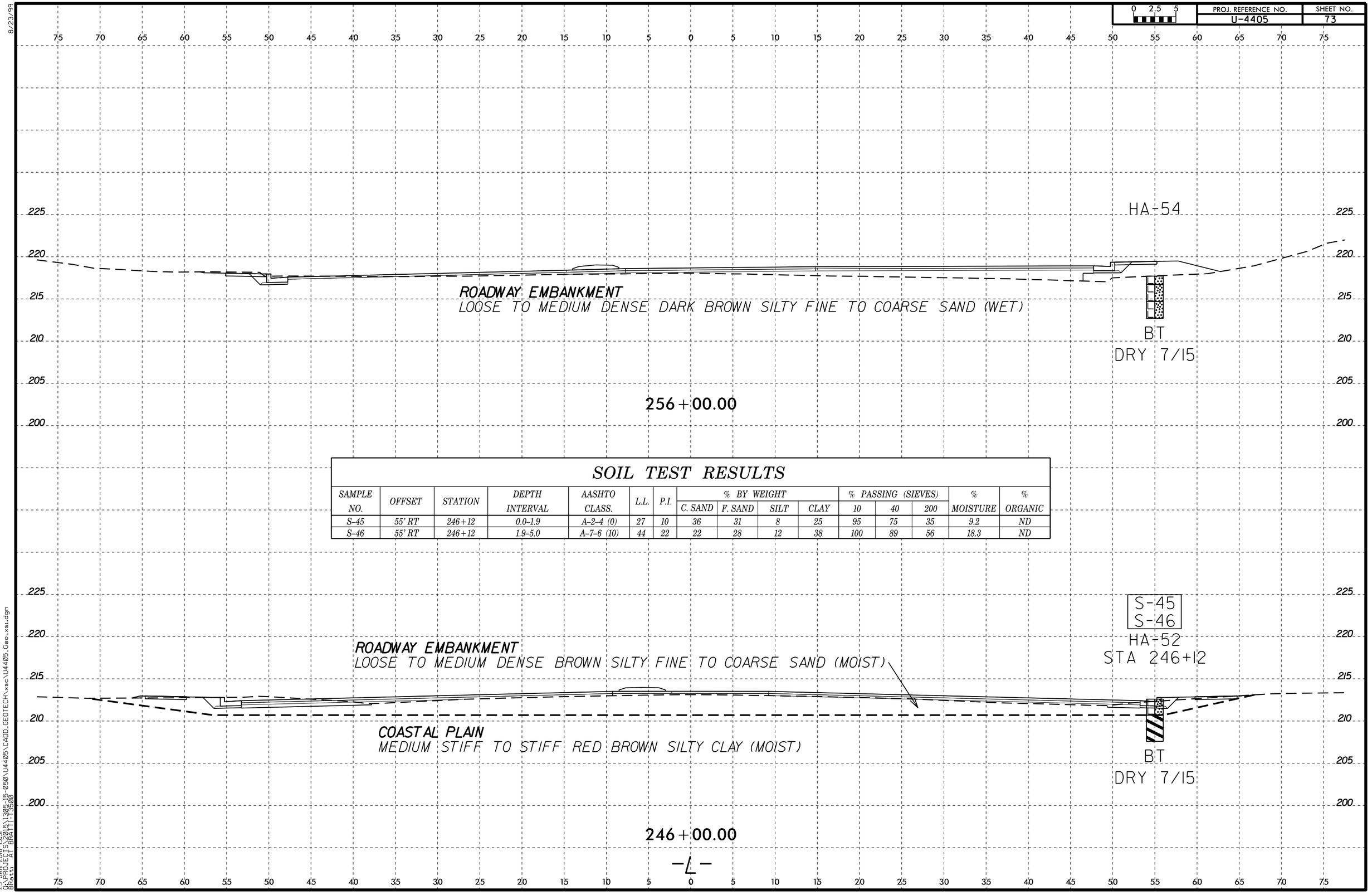
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

215 210 205 200 195 190

25-JAN-2016 14:06
D:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4405	73



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-45	55' RT	246+12	0.0-1.9	A-2-4 (0)	27	10	36	31	8	25	95	75	35	9.2	ND
S-46	55' RT	246+12	1.9-5.0	A-7-6 (10)	44	22	22	28	12	38	100	89	56	18.3	ND

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	74

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

225 220 215 210 205 200

HA-56

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE RED BROWN SILTY FINE TO COARSE SAND WITH CLAY (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED BROWN CLAYEY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

266+00.00

HA-55
STA 260+90

DRY 7/15
BT REFUSAL ON HARD MATERIAL
AT 3.2' COULD NOT PENETRATE

COASTAL PLAIN
LOOSE TO MEDIUM DENSE ORANGE RED SILTY FINE TO COARSE SAND (MOIST)

261+00.00

-L-

225 220 215 210 205 200

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

25-JAN-2016 13:51
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	75

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

220 215 210 205 200 195

HA-58

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND WITH TRACE OF GRAVEL (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED BROWN SILTY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

276+00.00

HA-57
STA 271+20

BT
DRY 7/15

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN SILTY FINE TO COARSE SAND WITH TRACE OF ASPHALT AND CLAY (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED BROWN SILTY FINE TO COARSE SAND (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE RED BROWN SILTY FINE TO COARSE SAND (MOIST)

271+00.00

-L-

25-JAN-2016 13:51
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4405	76

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

220 215 210 205 200 195

HA-60
STA 286+40

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN,GRAY,BLACK,SILTY TO CLAYEY COARSE TO FINE SAND (MOIST)

BT
DRY 7/15

286+50.00

HA-59
STA 280+10

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN SILTY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

COASTAL PLAIN
MEDIUM STIFF TO STIFF TAN ORANGE COARSE TO FINE SANDY CLAY (MOIST)

280+00.00

-L-

25-JAN-2016 13:51
Q:\PROJECTS\2015\1305-150\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	77

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

215 210 205 200 195 190 185

COASTAL PLAIN
LOOSE TO MEDIUM DENSE TAN BROWN SILTY FINE TO COARSE SAND (MOIST)

HA-62

MEDIUM STIFF TO STIFF TAN BROWN SILTY CLAY (MOIST)

LOOSE TO MEDIUM DENSE BLACK SILTY COARSE TO FINE SAND (MOIST)

BT
DRY 7/15

296+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-9	60' LT	291+00	0.0-5.0	A-2-4 (0)	17	3	38	35	10	17	98	76	32	12.8	ND

S-9
HA-61

BT
DRY 7/15

COASTAL PLAIN
LOOSE TO MEDIUM DENSE BROWN ORANGE SILTY FINE TO COARSE SAND (MOIST)

291+00.00

$-L-$

25-JAN-2016 13:51
O:\PROJECTS\2015\1305-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	78

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

210 205 200 195 190 185

HA-64
STA 305+30

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN BROWN SILTY FINE TO COARSE SAND WITH TRACE OF ROOTS, ROCKS AND GLASS (MOIST)

COASTAL PLAIN
LOOSE TO MEDIUM DENSE TAN BROWN SILTY FINE TO COARSE SAND (MOIST)

BT
DRY 7/15

305+50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-7	60' LT	300+90	0.0-3.2	A-7-6 (7)	45	23	29	25	7	39	97	81	48	23.9	ND

S-7
HA-63
STA 300+90

COASTAL PLAIN
MEDIUM STIFF TO STIFF ORANGE BROWN SILTY CLAY (MOIST)

06/15
BT

LOOSE TO MEDIUM DENSE ORANGE BROWN SILTY FINE SAND (SAT)

301+00.00

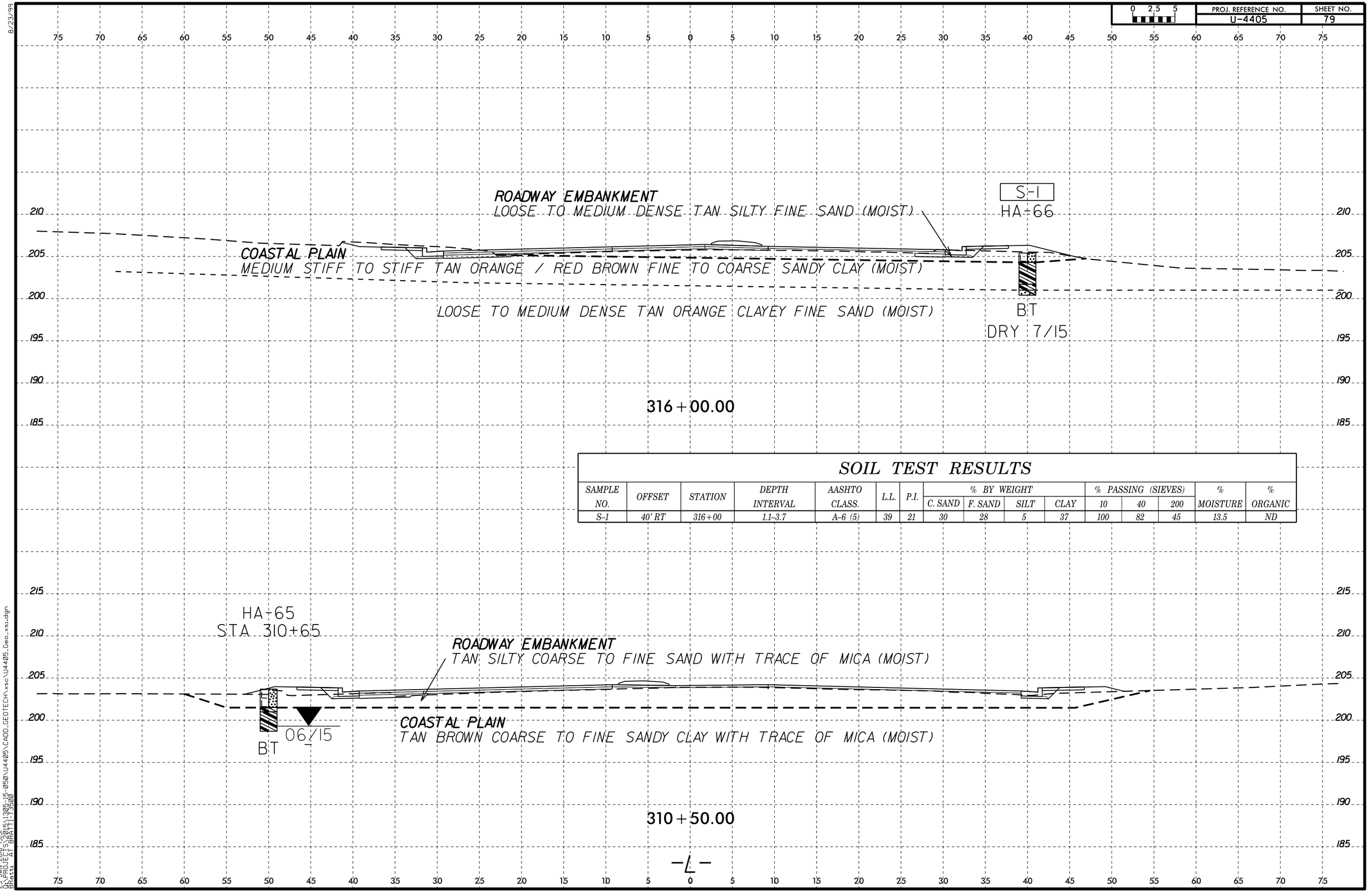
-L-

210 205 200 195 190 185

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

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4405	79



SOIL TEST RESULTS

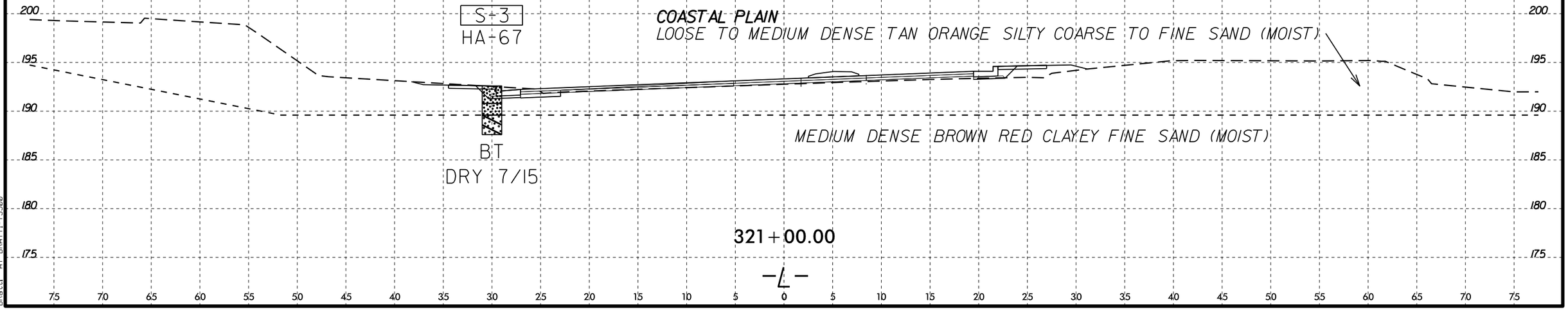
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-1	40' RT	316+00	1.1-3.7	A-6 (5)	39	21	30	28	5	37	100	82	45	13.5	ND

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	80

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-3	30' LT	321+00	0.0-1.8	A-2-4 (0)	23	7	25	50	5	20	100	87	28	10.9	ND



25-JAN-2016 13:52
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Bratt AT BRATT 1-3600

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	81

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

220 215 210 205 200 195 190 185 180 175

HA-73
STA 19+05

B-09
STA 18+85

ROADWAY EMBANKMENT
LOOSE TO MEDIUM DENSE TAN-ORANGE AND WHITE-YELLOW SILTY FINE SAND (MOIST TO WET)

BT

REFUSAL ON ROOT
DRY 7/15

COASTAL PLAIN
MEDIUM DENSE TAN-ORANGE TO RED-ORANGE CLAYEY AND SILTY FINE SAND (MOIST TO WET)

15
6
19
24

06/15

BT

MEDIUM STIFF TO VERY STIFF ORANGE-TAN AND GRAY FINE SANDY CLAY (MOIST)

GROUND SURFACE ELEVATION OF B-09 REFERENCED FROM BM BY29-77 ELEVATION 205.97'

19+00.00

-RPB-

25-JAN-2016 14:12
O:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
Bhatti AT BHATTI-3500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	82

HA-68
STA 21+54

B-10
STA 21+72

ROADWAY EMBANKMENT
LOOSE ORANGE-TAN AND GRAY CLAYEY TO SILTY FINE TO COARSE SAND (MOIST)

COASTAL PLAIN
MEDIUM STIFF GRAY AND ORANGE SILTY FINE SANDY CLAY WITH ROOTS (MOIST)

BT
DRY

COASTAL PLAIN
LOOSE TAN-ORANGE SILTY FINE SAND (MOIST)

5
6
16
26

MEDIUM STIFF TO VERY STIFF ORANGE-TAN GRAY AND RED FINE SANDY CLAY (MOIST)

24

MEDIUM DENSE YELLOW-TAN SILTY FINE SAND (SAT)

BT
DRY
6/15

GROUND SURFACE ELEVATION OF B-10 REFERENCED FROM BM BY29-77 ELEVATION 205.97'

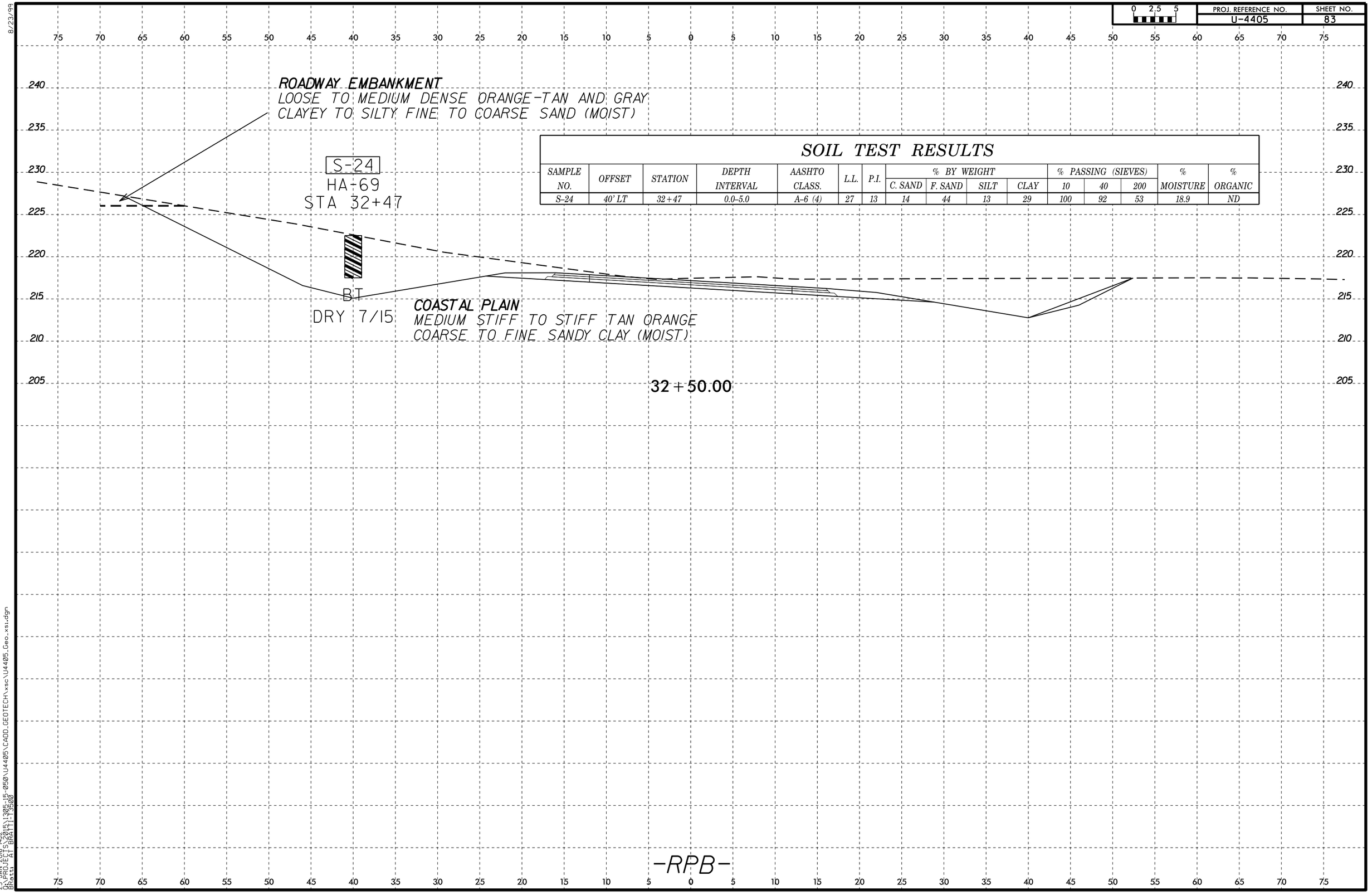
21+50.00

-RPB-

25-JAN-2016 14:12
Q:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xsi.dgn
Gradall AT BRAIT1-13500

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-4405	83



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-24	40' LT	32+47	0.0-5.0	A-6 (4)	27	13	14	44	13	29	100	92	53	18.9	ND

-RPB-

25-JAN-2016 14:12
U:\PROJECTS\2015\1305-15-050\U4405\CADD_GEOTECH\xsc\U4405_Geo_xs1.dgn
BRatti AT BRATTI-3500