

NOTE: SEE SHEET 1A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

| | | | |
|-----------------|-----------------------------|--------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | U-3300B | 1 | 40 |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 34908.1.1 | STP-1542(2) | P.E. | |
| 34908.3.2 | STP-1542(5) | R / W, UTIL. | |
| 34908.2.3 | STP-1542(6) | CONST. | |

CONTENTS

| LINE | STATION | PLAN | PROFILE | XSECT |
|------|---------------------|-------|---------|---------|
| -L- | 10+73.22 - 87+38.94 | 4 - 9 | 11 - 13 | |
| -L- | 18+00.00 - 45+00.00 | | | 17 - 33 |
| -L- | 52+00.00 - 62+50.00 | | | 34 - 40 |
| -Y1- | 19+50.00 - 23+10.61 | 5 | 14 | |
| -Y2- | 12+30.00 - 19+50.00 | 6 | 14 | |
| -Y3- | 10+90.00 - 15+71.08 | 10 | 15 | |
| -Y3- | 19+72.33 - 26+90.00 | 8 | 15 | |
| -Y4- | 10+00.00 - 12+75.00 | 10 | 16 | |

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34908.1.1 (U-3300B) F.A. PROJ. STP-1542(2)
COUNTY STANLY
PROJECT DESCRIPTION SR 1542 (RIDGE STREET EXTENSION)
FROM EXISTING RIDGE STREET TO AIRPORT ROAD

INVENTORY

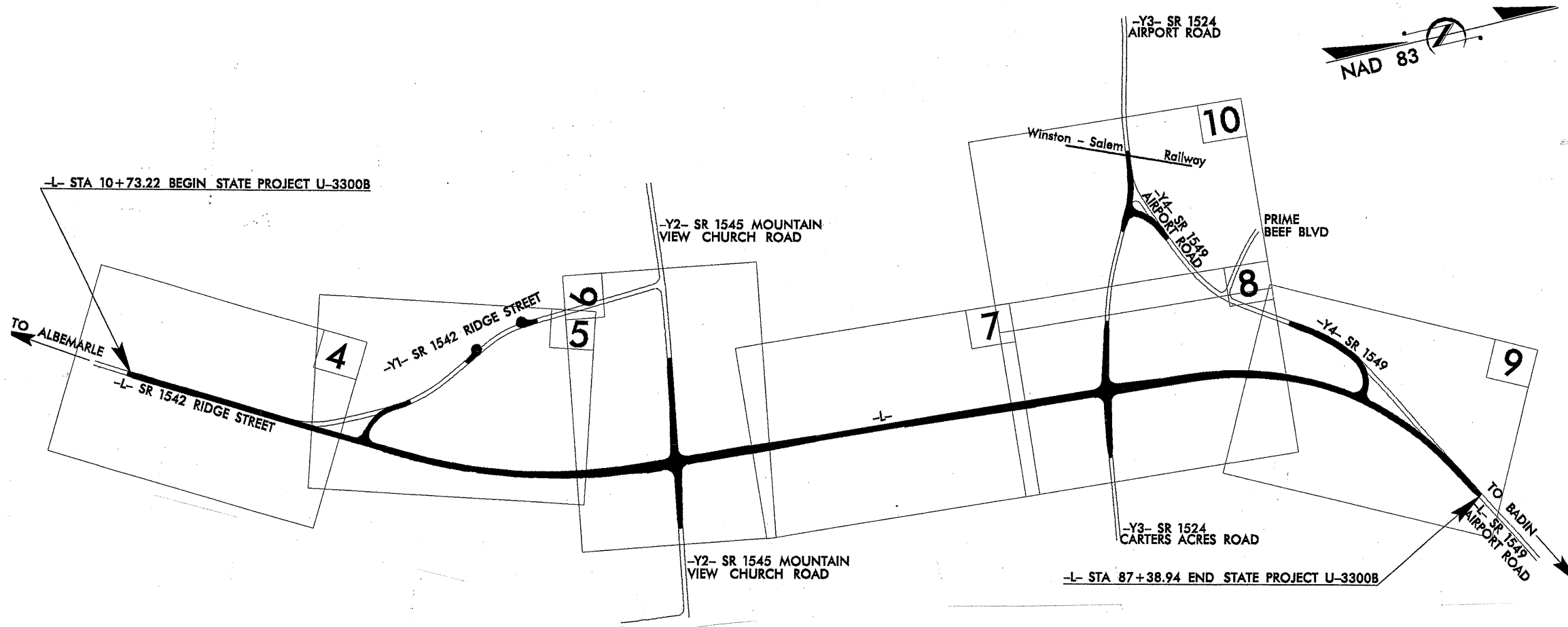
CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

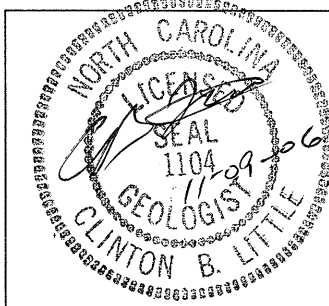
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

CONTRACT: C202065 ID: U-3300B



PERSONNEL
J. K. STICKNEY
C. L. SMITH
H. K. WISE

INVESTIGATED BY J. E. BEVERLY
CHECKED BY C. B. LITTLE
SUBMITTED BY C. B. LITTLE
DATE AUGUST 2006



DRAWN BY: C E BURRIS

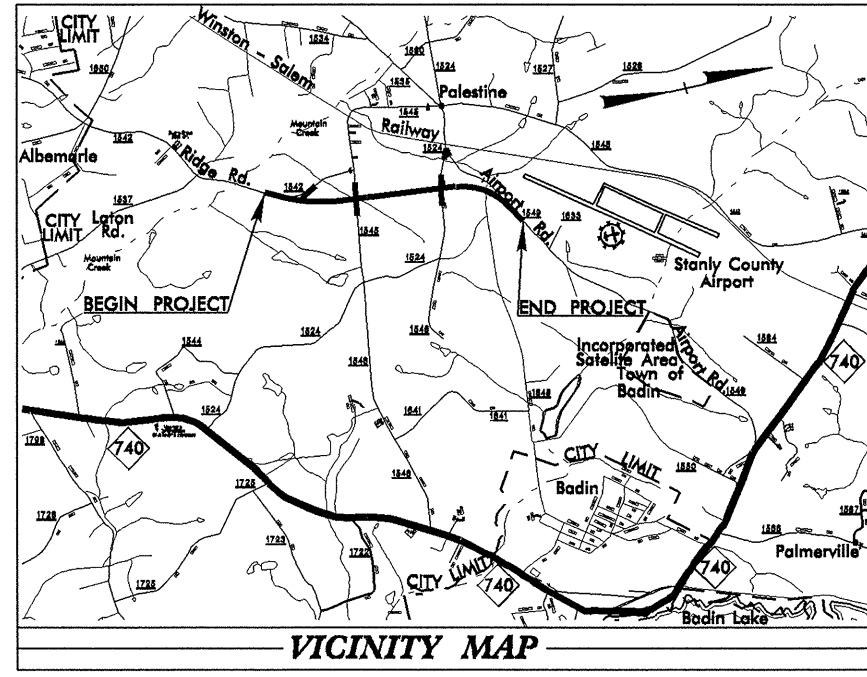
NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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

03-AUG-2006 13:46
 d:\projects\3300b\geo_rdw\stanly\cadd\geotech\planprof\copy of u-3300b_rdy_tsh.dgn
 cburris AT GEH22617

CONTRACT: U-3300B

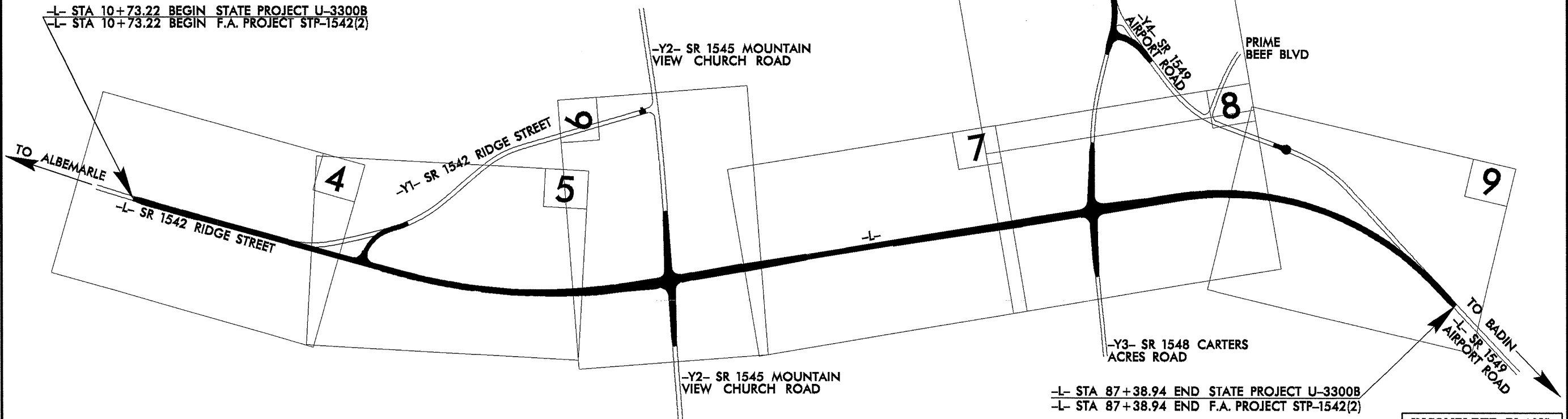
See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
STANLY COUNTY

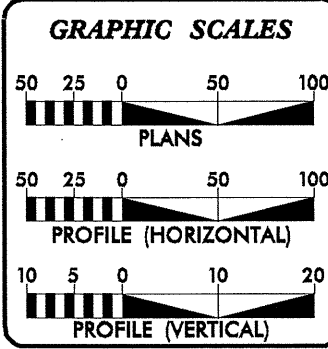
**LOCATION: ALBEMARLE - SR 1542 (RIDGE STREET EXTENSION)
 FROM EXISTING RIDGE STREET TO AIRPORT ROAD**
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | U-3300B | 1A | 40 |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 34908.1.1 | STP-1542(2) | P.E. | |
| | | | |
| | | | |
| | | | |
| | | | |



NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
 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



DESIGN DATA

| | |
|------------|-----------|
| ADT 2008 = | 4640 VPD |
| ADT 2028 = | 10240 VPD |
| DHV = | 55 % |
| D = | 12 % |
| T = | 11 % * |
| V = | 60 MPH |
| * TTST 5% | DUAL 6% |

PROJECT LENGTH

| | |
|------------------------------------|-------------|
| LENGTH ROADWAY TIP PROJECT U-3300B | = 1.452 mi. |
| TOTAL LENGTH TIP PROJECT U-3300B | = 1.452 mi. |

Prepared in the Office of:
DIVISION OF HIGHWAYS
 1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 DECEMBER 19, 2006

LETTING DATE:
 DECEMBER 16, 2008

JIMMY GOODNIGHT
 PROJECT ENGINEER

MARK HUSSEY
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER





NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

PROJECT REFERENCE NO.
U-3300B

SHEET NO.
2

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

| SOIL DESCRIPTION | | | | | GRADATION | | | | | ROCK DESCRIPTION | | | | | TERMS AND DEFINITIONS | | | | | | | | | | | | | | |
|---|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|
| SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i> | | | | | WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: <u>ANGULAR</u> , <u>SUBANGULAR</u> , <u>SUBROUNDED</u> , OR <u>ROUNDED</u> . | | | | | HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: 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 YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. COASTAL PLAIN SEDIMENTARY ROCK (CP)  COASTAL PLAIN SEDIMENTS INCORPORATED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC. | | | | | ALUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. ADUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - 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 DISLOGED 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 (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (IN OR BFF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. | | | | | | | | | | | | | | |
| SOIL LEGEND AND AASHTO CLASSIFICATION | | | | | MINERALOGICAL COMPOSITION | | | | | WEATHERING | | | | | | | | | | | | | | | | | | | |
| GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS | | | | | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE. | | | | | FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (V SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES > 100 BFF</i> VERY SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES < 100 BFF</i> COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. | | | | | SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50 | | | | | FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. | | | | | | | | | |
| 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 | | | | | COMPRESSIBILITY | | | | | PERCENTAGE OF MATERIAL | | | | | GROUND WATER | | | | | | | | | | | | | | |
| SYMBOL | | | | | ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL | | | | | WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING | | | | | ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION | | | | | | | | | | | | | | |
| % PASSING #10, #40, #200 | | | | | TRACE OF ORGANIC MATTER 2-3%, LITTLE ORGANIC MATTER 3-5%, MODERATELY ORGANIC 5-10%, HIGHLY ORGANIC >10% | | | | | STATIC WATER LEVEL AFTER 24 HOURS | | | | | SOIL SYMBOL | | | | | | | | | | | | | | |
| LIQUID LIMIT PLASTIC INDEX | | | | | GRAIN SIZE DISTRIBUTION | | | | | PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA | | | | | INFERRED SOIL BOUNDARY | | | | | | | | | | | | | | |
| GROUP INDEX | | | | | USUAL TYPES OF MAJOR MATERIALS | | | | | SPRING OR SEEP | | | | | INFERRED ROCK LINE | | | | | | | | | | | | | | |
| GEORATING AS A SUBGRADE | | | | | PI OF A-7-5 SUBGROUP IS <= LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30 | | | | | ALLUVIAL SOIL BOUNDARY | | | | | DIP & DIP DIRECTION OF ROCK STRUCTURES | | | | | | | | | | | | | | |
| CONSISTENCY OR DENSENESS | | | | | MISCELLANEOUS SYMBOLS | | | | | SOUNDING ROD | | | | | SPT N-VALUE | | | | | | | | | | | | | | |
| PRIMARY SOIL TYPE | | | | | ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| GENERAL GRANULAR MATERIAL (NON-COHESIVE) | | | | | ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| GENERAL SILT-CLAY MATERIAL (COHESIVE) | | | | | INFERRED SOIL BOUNDARY | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| TEXTURE OR GRAIN SIZE | | | | | INFERRED ROCK LINE | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| U.S. STD. SIEVE SIZE OPENING (MM) | | | | | ALLUVIAL SOIL BOUNDARY | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| BOULDER (BLDR.), COBBLE (COB.), GRAVEL (GR.), COARSE SAND (CSE, SD.), FINE SAND (F SD.), SILT (SL.), CLAY (CL.) | | | | | DIP & DIP DIRECTION OF ROCK STRUCTURES | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| GRAIN SIZE | | | | | DIP & DIP DIRECTION OF ROCK STRUCTURES | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| SOIL MOISTURE - CORRELATION OF TERMS | | | | | ABBREVIATIONS | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| SOIL MOISTURE SCALE (ATTERBERG LIMITS) | | | | | 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 | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| FIELD MOISTURE DESCRIPTION | | | | | HL - 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 | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| GUIDE FOR FIELD MOISTURE DESCRIPTION | | | | | # - MOISTURE CONTENT, V - VERY, VST - VANE SHEAR TEST, WEA. - WEATHERED, W - UNIT WEIGHT, W _d - DRY UNIT WEIGHT | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| LL - LIQUID LIMIT, PL - PLASTIC LIMIT, OM - OPTIMUM MOISTURE, SL - SHRINKAGE LIMIT | | | | | MOISTURE CONTENT | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| PLASTICITY | | | | | EQUIPMENT USED ON SUBJECT PROJECT | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| NONPLASTIC, LOW PLASTICITY, MED. PLASTICITY, HIGH PLASTICITY | | | | | DRILL UNITS: MOBILE B-, BK-51, CME-45C, CME-550, PORTABLE HOIST | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| COLOR | | | | | ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, 8" HOLLOW AUGERS, HARD FACED FINGER BITS, TUNG-CARBIDE INSERTS, CASING W/ ADVANCER, TRICONE STEEL TEETH, TRICONE TUNG-CARB., CORE BIT | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | HAMMER TYPE: AUTOMATIC, MANUAL | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | CORE SIZE: B, N, H | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | HAND TOOLS: POST HOLE DIGGER, HAND AUGER, SOUNDING ROD, VANE SHEAR TEST | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | FRACTIONAL SPACING | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | BEDDING | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | INDURATION | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | BENCH MARK | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | ELEVATION: FT. | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |
| 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. | | | | | NOTES: | | | | | SOUNDING ROD | | | | | SPT REFUSAL | | | | | | | | | | | | | | |

EARTHWORK BALANCE SHEET

| PROJECT <u>U-3300B</u> | | COUNTY <u>STANLY</u> | | COMPUTED BY: <u>GIL</u> | | SHEET <u>1</u> OF <u>1</u> | | | | | | | | |
|---|--|------------------------|-------------|-------------------------|----------------|----------------------------|---------------|-----------|---------------|---------------|---------------|----------------|---------------|---------------|
| | | CHECKED BY: <u>BCF</u> | | | | | | | | | | | | |
| STATION | STATION | TOTAL EXCAV. (UNCL.) | ROCK EXCAV. | UNDERCUT EXCAV. | UNSUIT. EXCAV. | SUITABLE EARTH EXCAV. | TOTAL EMB. | ROCK EMB. | EARTH EMB. | EMB. + 20 % | BORROW | SUITABLE WASTE | UNSUIT. WASTE | TOTAL WASTE |
| 10+00.00 | ^{-L-} LEFT 18+00.00 | 566 | 0 | 0 | 0 | 566 | 344 | 0 | 344 | 413 | 0 | 153 | 0 | 153 |
| 10+00.00 | ^{-L-} RIGHT 18+00.00 | 895 | 0 | 0 | 0 | 895 | 211 | 0 | 211 | 253 | 0 | 642 | 0 | 642 |
| 18+00.00 | ^{-L-} 38+00.00 | 16,430 | 0 | 0 | 0 | 16,430 | 8,680 | 0 | 8,680 | 10,416 | 0 | 6,014 | 0 | 6,014 |
| 19+50.00 | ^{-Y1-} 22+98.60 | 321 | 0 | 0 | 0 | 321 | 1,970 | 0 | 1,970 | 2,364 | 2,043 | 0 | 0 | 0 |
| 11+25.00 | ^{-Y1-} CUL-DE-SAC 15+75.00 | 339 | 0 | 0 | 0 | 339 | 49 | 0 | 49 | 59 | 0 | 280 | 0 | 280 |
| SUBTOTAL: | | 18,551 | 0 | 0 | 0 | 18,551 | 11,254 | 0 | 11,254 | 13,505 | 2,043 | 7,089 | 0 | 7,089 |
| 38+00.00 | ^{-L-} 67+50.00 | 46,223 | 0 | 0 | 0 | 46,223 | 19,381 | 0 | 19,381 | 23,257 | 0 | 22,966 | 0 | 22,966 |
| 10+25.00 | ^{-Y2-} 19+50.00 | 1,220 | 0 | 0 | 0 | 1,220 | 3,317 | 0 | 3,317 | 3,980 | 2,760 | 0 | 0 | 0 |
| 10+90.00 | ^{-Y3-} 29+90.00 | 2,294 | 0 | 0 | 0 | 2,294 | 601 | 0 | 601 | 721 | 0 | 1,573 | 0 | 1,573 |
| SUBTOTAL: | | 49,737 | 0 | 0 | 0 | 49,737 | 23,299 | 0 | 23,299 | 27,958 | 2,760 | 24,539 | 0 | 24,539 |
| 67+50.00 | ^{-L-} 83+50.00 | 2,001 | 0 | 0 | 0 | 2,001 | 24,568 | 0 | 24,568 | 29,482 | 27,481 | 0 | 0 | 0 |
| 83+50.00 | ^{-L-} LEFT 87+50.00 | 377 | 0 | 0 | 0 | 377 | 303 | 0 | 303 | 364 | 0 | 13 | 0 | 13 |
| 83+50.00 | ^{-L-} RIGHT 87+50.00 | 186 | 0 | 0 | 0 | 186 | 232 | 0 | 232 | 278 | 92 | 0 | 0 | 0 |
| 10+12.02 | ^{-Y4-} 12+75.00 | 827 | 0 | 0 | 0 | 827 | 59 | 0 | 59 | 71 | 0 | 756 | 0 | 756 |
| 21+00.00 | ^{-Y4-} 27+39.49 | 184 | 0 | 0 | 0 | 184 | 10,168 | 0 | 10,168 | 12,201 | 12,017 | 0 | 0 | 0 |
| SUBTOTAL: | | 3,575 | 0 | 0 | 0 | 3,575 | 35,330 | 0 | 35,330 | 42,396 | 39,590 | 769 | 0 | 769 |
| PROJECT SUBTOTAL: | | 71,863 | 0 | 0 | 0 | 71,863 | 69,883 | 0 | 69,883 | 83,859 | 44,393 | 32,397 | 0 | 32,397 |
| LOSS DUE TO CLEARING & GRUBBING | | -5,100 | | | | | | | | | +5,100 | | | |
| WASTE IN LIEU OF BORROW | | | | | | | | | | | -32,397 | | | -32,397 |
| PROJECT SUBTOTAL: | | 66,763 | | | | | | | | | 17,096 | | | 0 |
| ESTIMATED 5% TO REPLACE TOPSOIL IN BORROW PIT | | | | | | | | | | | 855 | | | |
| GRAND TOTAL: | | 66,763 | | | | | | | | | 17,951 | | | |
| SAY: | | 67,000 | | | | | | | | | 18,200 | | | |

GEOTECH REC'S FABRIC for SOIL STABILIZATION = 4250 SY
 CLASS IV SUBGRADE STABILIZATION = 1890 TONS
 SELECT GRANULAR MATERIAL, CLASS II OR III = 1250 TONS
 EST. DDE = 260 CY

DIVISION REC'S UNDERCUT = 7000CY

EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

LYNDO TIPPETT
SECRETARY

September 29, 2006

STATE PROJECT: 34908.1.1 (U-3300B)
F.A. PROJECT: STP - 1542(2)
COUNTY: Stanly
DESCRIPTION: SR 1542 (Ridge Street Extension) from Existing Ridge Street to Airport Road
SUBJECT: Geotechnical Report - Inventory

This report presents the findings of the Geotechnical Investigation for the proposed Ridge Street Extension. The project corridor, which is mainly on new location, trends in a northerly direction through the city limits of Albemarle. The project begins at -L- station 10+73.22 and ends at -L- station 87+38.94. A total of 4 SR roads (-Y- lines) will intersect the Ridge Street Extension.

The geotechnical field investigation for this project was conducted between the months of March and April of 2006. An ATV mounted CME 550X drill machine with automatic drop hammer was utilized to perform test borings along the proposed corridor. The following survey lines are addressed in this inventory report:

| Line | Station |
|---------------------------------|---------------------|
| -L- | 10+73.22 - 87+38.94 |
| -Y1- (Ridge Street) | 19+50 - 22+98.6 |
| -Y2- (Mountain View Church Rd.) | 10+25 - 19+50 |
| -Y3- (Carters Acres Rd.) | 10+90 - 26+90 |
| -Y4- (Airport Rd.) | 10+12 - 12+75 |
| Culvert on -L- | 43+98 |
| Culvert on -Y2- | 13+58.5 |

Areas of Special Geotechnical Interest:

1. Groundwater:

Groundwater was recorded sporadically in boring locations along the project corridor. The majority of holes drilled were dry after 24 hours. There were 2 borings in which groundwater was noted at or above proposed grade. The first boring location was 13' right of -L- station 66+50 and the second location was 34' right of -L- station 82+23.

2. Non-Crystalline Rock:

There were many instances in which non-crystalline rock was encountered during this investigation. The vast majority of rock was found to be well below proposed grade. The 4 areas where rock may be encountered at or above proposed grade are as follows.

- L- stations 33+00 - 36+00
- L- stations 37+00 - 38+00
- L- stations 53+00 - 55+00
- L- stations 58+50 - 59+50

3. High PI Soils: (PI's 26 or greater)

Soil sample data indicated only 2 instances of high PI clay soils. The first area of high PI soils was found between -L- station 33+00 - 36+50. This is a residual clay soil which ranges from the surface to 6 feet in depth. Associated PI value for this clay is 29. The second occurrence lies between -L- stations 76+00 - 76+80. Clay soil in this area is alluvial in nature and extends from the ground surface to 5 feet in depth. The PI value of this alluvial clay is 30.

4. Alluvial Soils / Wet Areas:

There are several areas containing alluvial soils along the project corridor. Most of these areas result from adjacent streams, creeks, and drainage features that are small to moderate in size. Much of the larger alluvial areas fall outside of construction limits. By far the largest alluvial source is from a pair of streams that cross at -L- stations 39+50 and 44+00, bisect -Y2- at station 13+50, and join into a single drainage feature southwest of the project. Alluvial soils associated with this floodplain are predominantly soft sandy clayey silt (A-4). A much smaller floodplain resulting from a stream running between -Y3- station 15+00 and -Y4- station 13+00 contains alluvial soils comprised of soft to medium stiff high PI silty clay (A-7-6). None of these floodplains appear to warrant any major concern.

Physiography/Geology:

The project area is located within the city limits of Albemarle in Stanly County. Area topography is flat to gently rolling and is surrounded mostly by woods and some residential structures. Approximate elevation range is 580 to 610 feet along the project corridor.

Geologically this site is part of the Carolina Slate Belt and is mostly underlain by late Proterozoic age siltstone and argillite of the Floyd Church Formation. This would be considered non-crystalline rock.

Soil Properties:

1. Residual Soils:

These soils are derived from in place weathering of parent materials. They occur in a variety of consistencies, classifications, and stratigraphic sequences. Residual soils encountered along this project were clays, silts and sands.

Clay soils consist primarily of stiff to hard tan-brown sandy silty clay in the AASHTO classifications of A-7-5, A-7-6, and A-6. Residual clays appear as both surface soils and subsoils. They are well drained with a plasticity index range from 11 to 30.

Silts were encountered as both surface soils and subsoils. They occur in the A-4 AASHTO Classification. Silts consist primarily of hard tan-brown clayey sandy silt.

Sands were sparse along the project. In our area of encounter they were surficial and consist of medium dense to very dense tan-yellow silty clayey sand (A-2-6).

2. Alluvial Soils:

Alluvial soils originate from water transportation and deposition in a floodplain environment. The alluvial deposits along the project corridor are fairly shallow. Alluvial soils are comprised of soft tan-yellow-brown clayey sandy silt (A-4), soft to medium stiff tan-gray highly plastic silty clay (A-7-6), and soft brown sandy silty clay (A-6).

3. Fill Soils:

Roadway fill soils are present at connecting alignments. No sample data was obtained in roadway fill soils. There were no areas of artificial fill discovered during this investigation.

Rock Properties:

Rock is defined by SPT refusal and in most instances by power auger refusal. Rock was encountered in scattered locations along the project. Rock type is non-crystalline siltstone and argillite of the Floyd Church Formation.

Culvert at -L- Station 43+98 and 4x48" RCP's

A 1 barrel 10'x6' RCBC is proposed at -L- station 43+98. Two borings were performed left and right of -L- along the creek banks to determine subsurface conditions for construction purposes. Each boring encountered a 1' - 3' layer of soft alluvial tan-brown sandy silt (A-4) overlying a thin layer of weathered rock and / or residual soil. Non-crystalline rock was encountered at each boring location between elevation 566 feet (LT) and 569 feet (RT). The proposed elevation of the culvert floor ranges from 568 feet at the exit (LT) side to 569 feet at the inlet (RT) side. Thus it appears that the current design will place the foundation on non-crystalline rock at the inlet side and in soft alluvial silt at the exit side.

There are 4 buried 48" reinforced concrete pipes proposed in the vicinity of -L- station 43+50. Alluvial soils in this area are approximately 5 feet deep and consist of soft tan-brown sandy silt (A-4) overlying a thin layer of weathered rock and / or non-crystalline rock. Rock elevation is approximately 566.5 feet at the centerline.

Culvert at -Y2- Station 13+58.5 and 4x48" RCP's

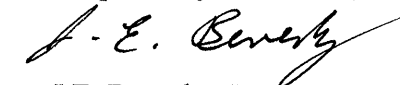
A 1 barrel 10'x6' RCBC is proposed at -Y2- station 13+58.5. A single boring was performed 31' right of -Y2- station 13+55 along the creek bank to determine subsurface conditions. The boring encountered 2.5 feet of alluvium consisting of soft brown sandy silty clay (A-6) overlying a thin layer of weathered rock before achieving auger refusal on non-crystalline rock. Elevation of weathered rock at the boring is 564' with rock occurring at 563'. The elevation of the proposed culvert floor at the inlet is 564.2' and 563.5' at the exit. Thus it appears that the culvert design will place the foundation very close to if not within the thin weathered rock zone.

There are 4 buried 48" RC pipes proposed in the vicinity of -Y2- station 13+95. We project soil and rock conditions in that area to be similar to those described for the culvert listed above.

Wells:

During the course of this investigation there were several wells noted, however, only 1 was found within the proposed construction limits. This well is located within a well house 40 feet left of -L- station 32+10.

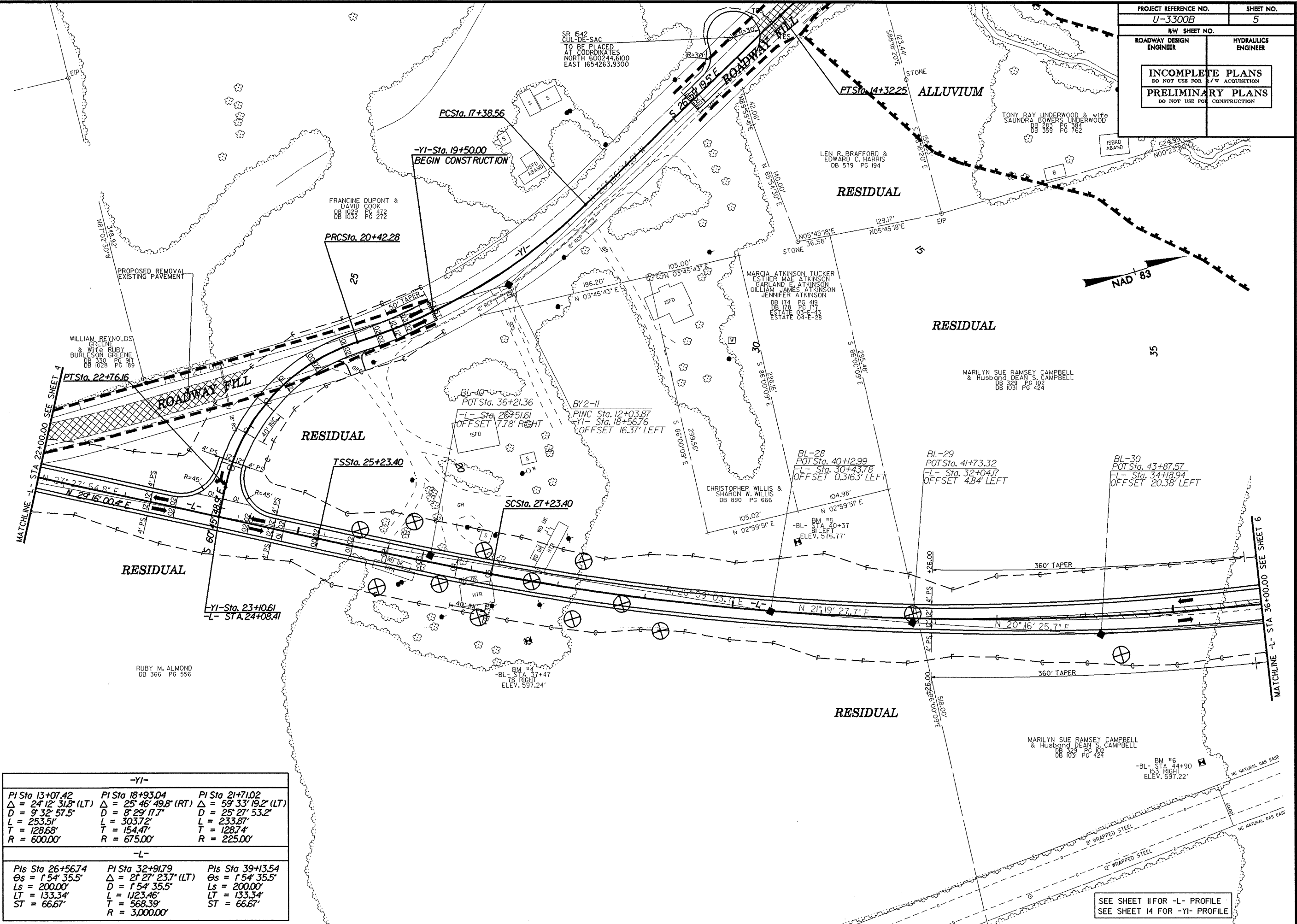
Respectfully Submitted,



J.E. Beverly, Project Geo-Engineer

8/17/99

| | |
|--|-----------------------|
| PROJECT REFERENCE NO. U-3300B | SHEET NO. 5 |
| 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

03-AUG-2006 14:30
 d:\projects\U3300B\planprof\U3300B-geo-inv-005.pah005.dgn
 03-AUG-2006 14:30
 d:\projects\U3300B\planprof\U3300B-geo-inv-005.pah005.dgn

| -YI- | | |
|------------------------------------|------------------------------------|------------------------------------|
| PI Sta 13+07.42 | PI Sta 18+93.04 | PI Sta 21+71.02 |
| $\Delta = 24^{\circ}12'31.8"$ (LT) | $\Delta = 25^{\circ}46'49.8"$ (RT) | $\Delta = 59^{\circ}33'19.2"$ (LT) |
| D = 9'32" 57.5" | D = 8'29" 17.7" | D = 25'27" 53.2" |
| L = 253.51' | L = 303.72' | L = 233.87' |
| T = 128.68' | T = 154.47' | T = 128.74' |
| R = 600.00' | R = 675.00' | R = 225.00' |

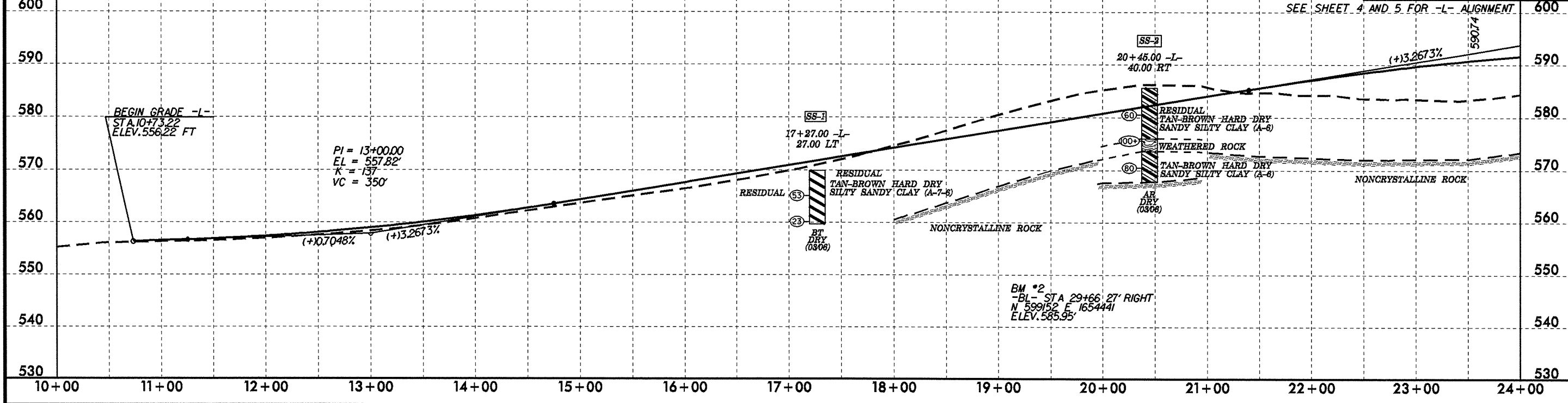
| -L- | | |
|--------------------------------|------------------------------------|--------------------------------|
| PIs Sta 26+56.74 | PI Sta 32+91.79 | PIs Sta 39+13.54 |
| $\Theta_s = 1^{\circ}54'35.5"$ | $\Delta = 21^{\circ}27'23.7"$ (LT) | $\Theta_s = 1^{\circ}54'35.5"$ |
| Ls = 200.00' | L = 154.355' | Ls = 200.00' |
| LT = 133.34' | L = 1423.46' | LT = 133.34' |
| ST = 66.67' | T = 568.39' | ST = 66.67' |
| | R = 3,000.00' | |

SEE SHEET 11 FOR -L- PROFILE
 SEE SHEET 14 FOR -YI- PROFILE

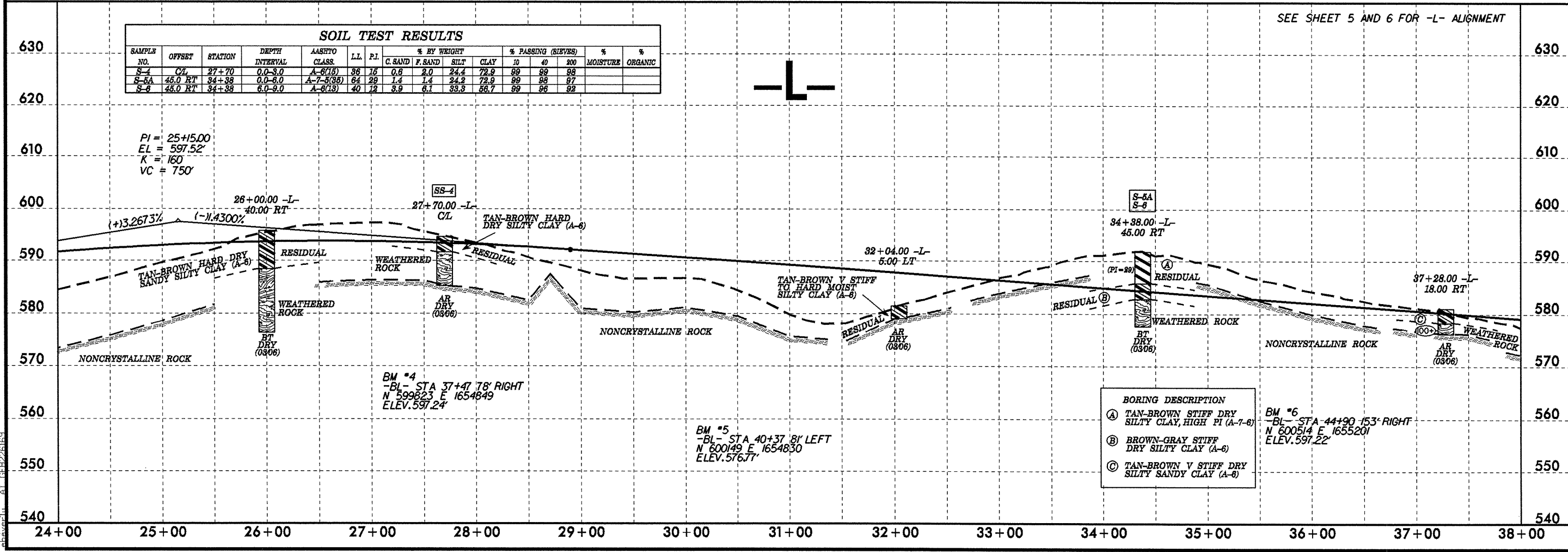
5/28/99

| | | | |
|--|--|--|--|
| PROJECT REFERENCE NO. | | SHEET NO. | |
| U-3300B | | 11 | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| INCOMPLETE PLANS DO NOT USE FOR ACQUISITION | | PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|---------------|----|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | LL | P.I. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-1 | 27.0 LT | 17+27 | 4.3-6.3 | A-7-6(4) | 49 | 16 | 32.8 | 10.9 | 21.8 | 34.4 | 77 | 66 | 46 | | |
| S-2 | 40.0 RT | 20+46 | 4.6-5.6 | A-8(9) | 89 | 11 | 14.0 | 10.3 | 27.1 | 48.6 | 98 | 88 | 78 | | |



| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|---------------|----|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | LL | P.I. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-4 | CL | 27+70 | 0.0-3.0 | A-6(15) | 96 | 16 | 0.8 | 2.0 | 24.4 | 72.9 | 99 | 99 | 98 | | |
| S-5A | 45.0 RT | 34+38 | 0.0-6.0 | A-7-5(36) | 64 | 29 | 1.4 | 1.4 | 24.2 | 72.9 | 99 | 98 | 97 | | |
| S-6 | 45.0 RT | 34+38 | 6.0-9.0 | A-6(18) | 40 | 12 | 8.9 | 6.1 | 33.3 | 56.7 | 99 | 96 | 92 | | |



- BORING DESCRIPTION**
- (A) TAN-BROWN STIFF DRY SILTY CLAY, HIGH PI (A-7-6)
 - (B) BROWN-GRAY STIFF DRY SILTY CLAY (A-6)
 - (C) TAN-BROWN V STIFF DRY SILTY SANDY CLAY (A-6)

01-NOV-2006 14:53:00 5:\u3300b\geo_r\dwy.stanly\cadd\geotech\plan\prof\U-3300b\geo_pf_11.psh11.dgn
 01-NOV-2006 14:53:00 5:\u3300b\geo_r\dwy.stanly\cadd\geotech\plan\prof\U-3300b\geo_pf_11.psh11.dgn

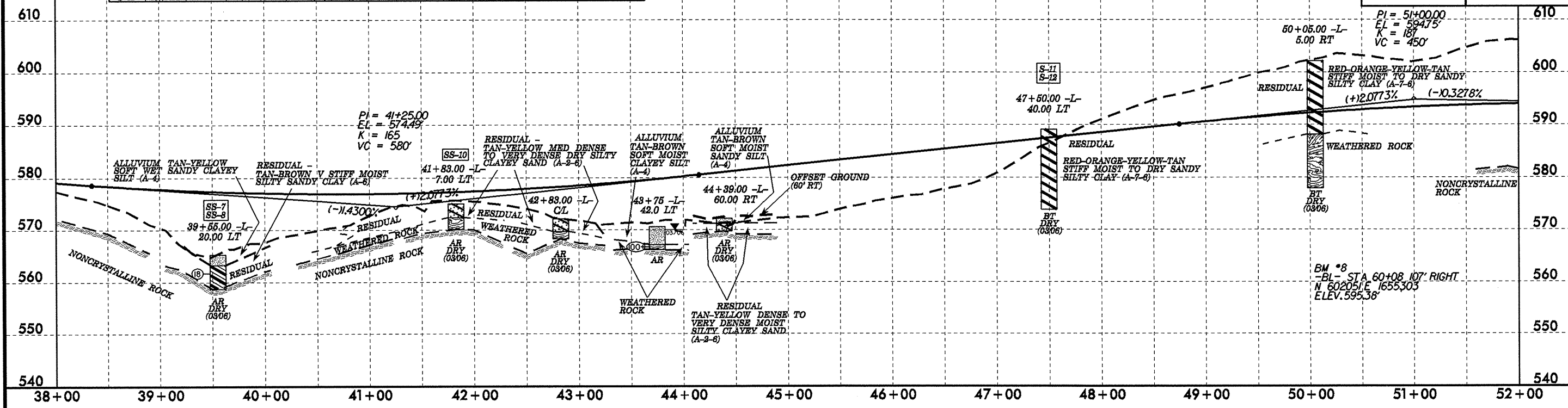
5/28/99

01-NOV-2006 14:55:00h:\3300b-geo-rdwy-stamly\cadd\geotech\planproj\3300b-geo-rdwy-stamly\psh11.dgn

| | |
|--|------------------------|
| PROJECT REFERENCE NO. U-3300B | SHEET NO. 12 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR ACQUISITION | |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

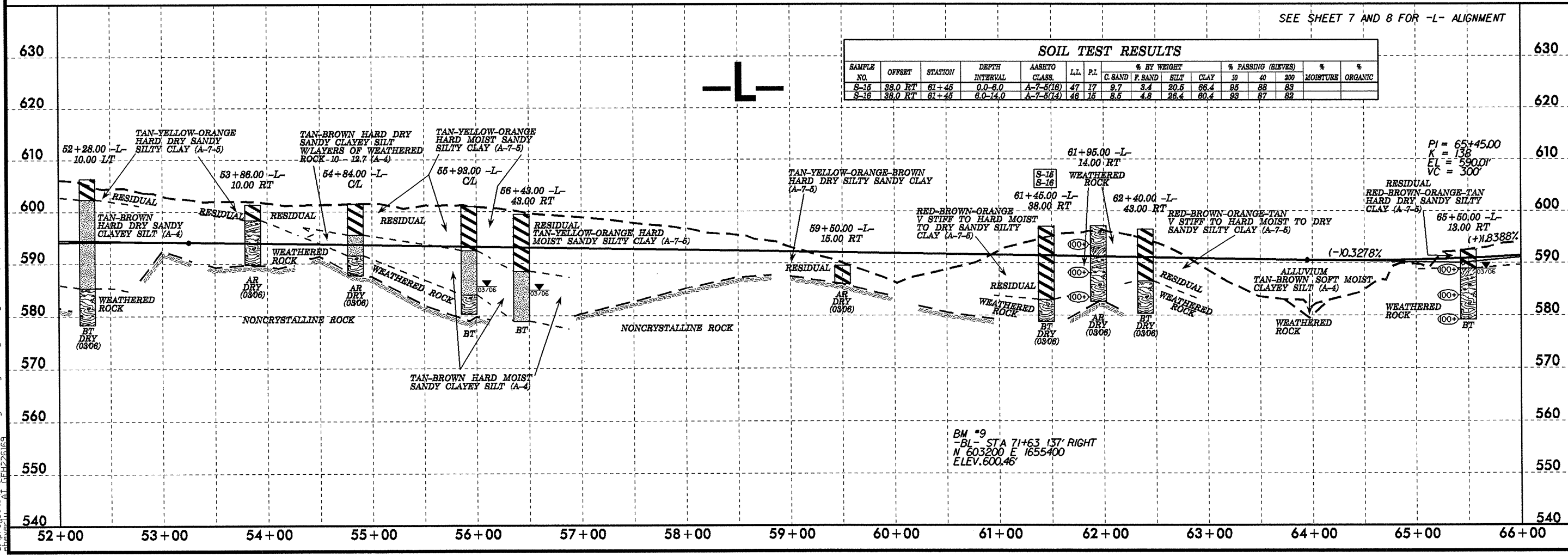
SEE SHEET 6 AND 7 FOR -L- ALIGNMENT

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS | LL | PI | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
|------------|---------|---------|----------------|--------------|----|----|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-7 | 20.0 LT | 39+55 | 0.0-2.0 | A-4(7) | 33 | 8 | 12.0 | 4.8 | 35.2 | 48.6 | 99 | 89 | 84 | | |
| S-8 | 20.0 LT | 39+55 | 3.1-4.1 | A-6(3) | 94 | 11 | 94.9 | 9.9 | 18.7 | 36.5 | 99 | 64 | 51 | | |
| S-10 | 7.0 LT | 41+83 | 0.0-2.7 | A-2-6(0) | 35 | 11 | 27.3 | 8.5 | 23.8 | 40.5 | 45 | 34 | 30 | | |
| S-11 | 40.0 LT | 47+50 | 0.0-10.0 | A-7-8(23) | 81 | 23 | 7.9 | 6.9 | 25.4 | 60.8 | 97 | 92 | 86 | | |
| S-12 | 40.0 LT | 47+50 | 10.0-15.2 | A-7-8(21) | 62 | 23 | 10.1 | 6.9 | 24.2 | 68.8 | 96 | 89 | 81 | | |



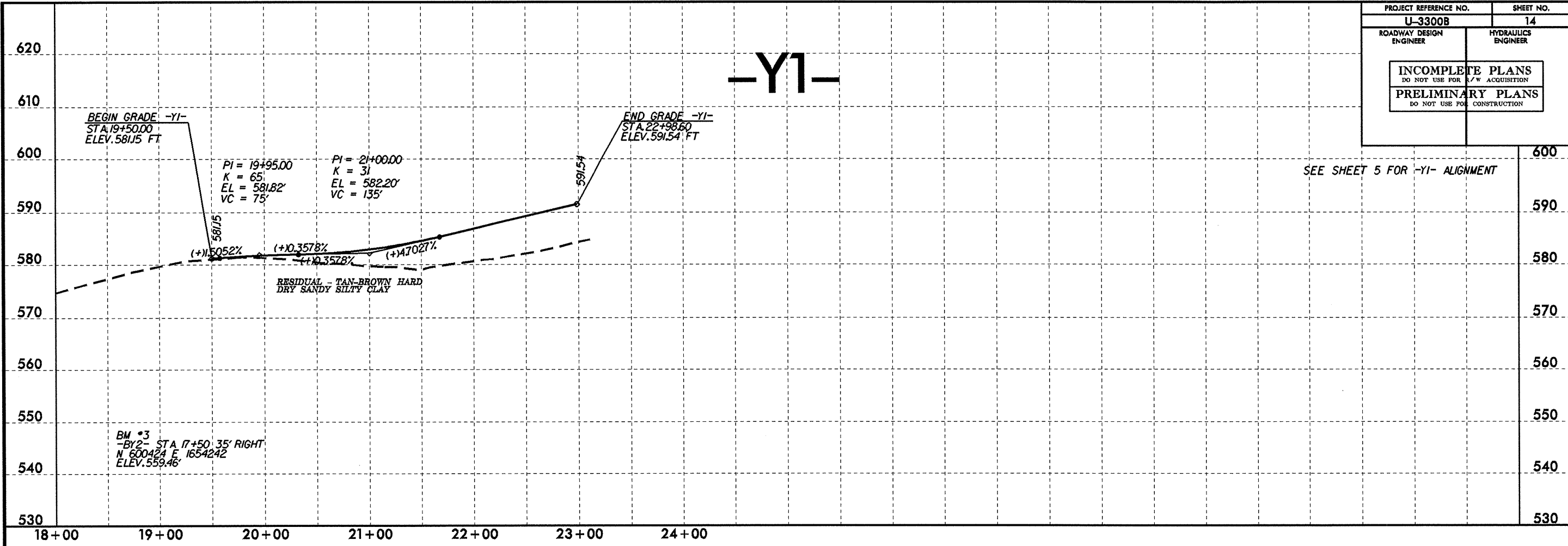
SEE SHEET 7 AND 8 FOR -L- ALIGNMENT

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS | LL | PI | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
|------------|---------|---------|----------------|--------------|----|----|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-16 | 38.0 RT | 61+45 | 0.0-6.0 | A-7-8(18) | 47 | 17 | 9.7 | 3.4 | 20.6 | 66.4 | 95 | 88 | 83 | | |
| S-16 | 38.0 RT | 61+45 | 6.0-14.0 | A-7-8(14) | 46 | 15 | 8.5 | 4.8 | 26.4 | 60.4 | 89 | 87 | 82 | | |

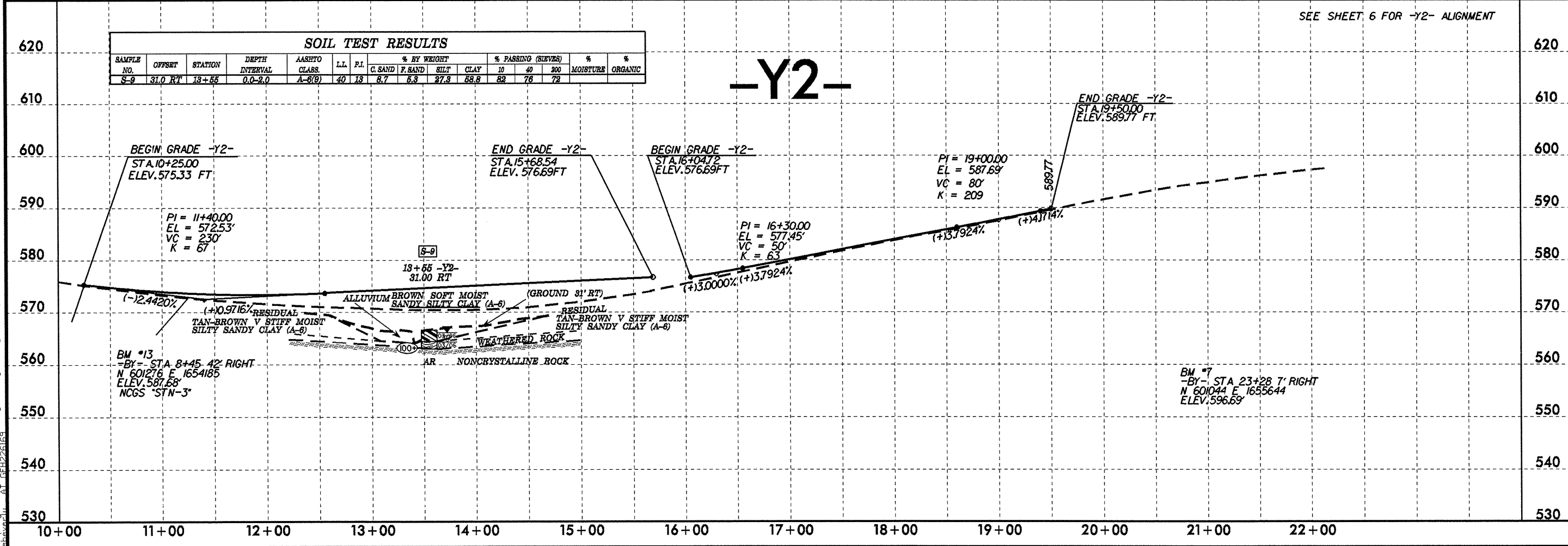


5/28/99

| | |
|---|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| U-3300B | 14 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR ACQUISITION | |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |



| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | G. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-9 | 31.0 RT | 13+55 | 0.0-2.0 | A-8(9) | 40 | 18 | 8.7 | 6.3 | 27.3 | 58.8 | 82 | 76 | 72 | | |

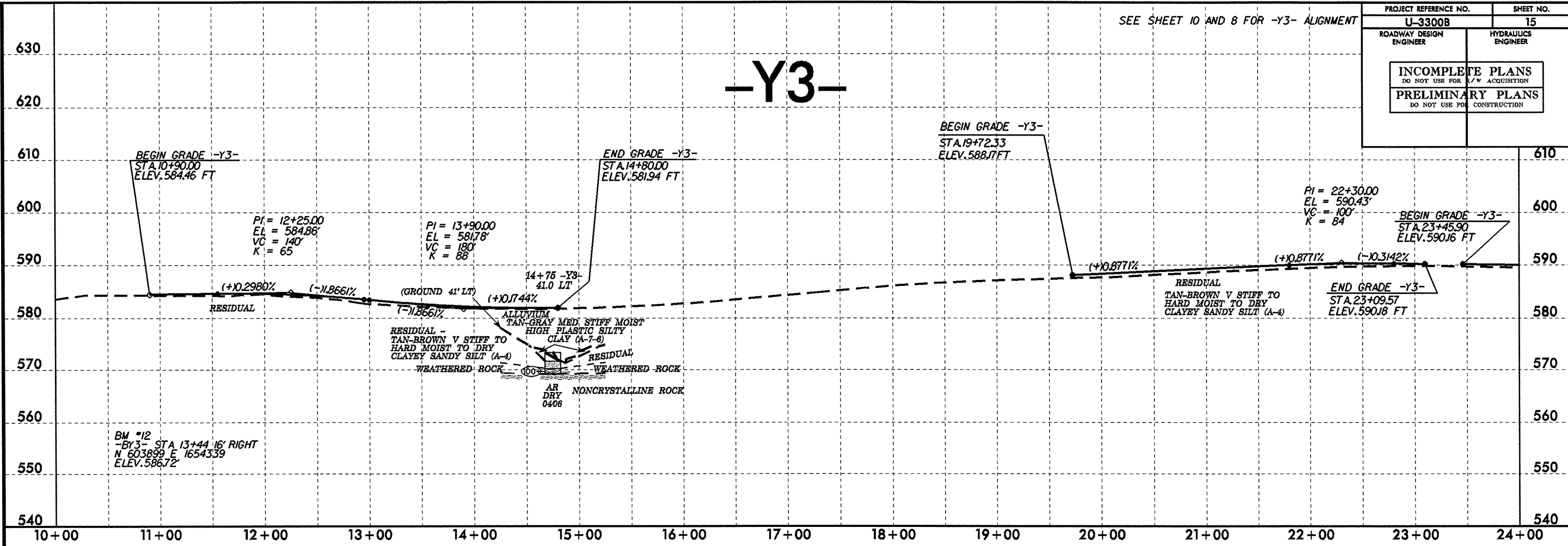


01-NOV-2006 15:03:00 \\s:\projects\153300b\geo_r\dwy.stm\ly\cadd\geotech\PlanProf\U3300b\geo_pf_1\j1u2_psh14.dgn

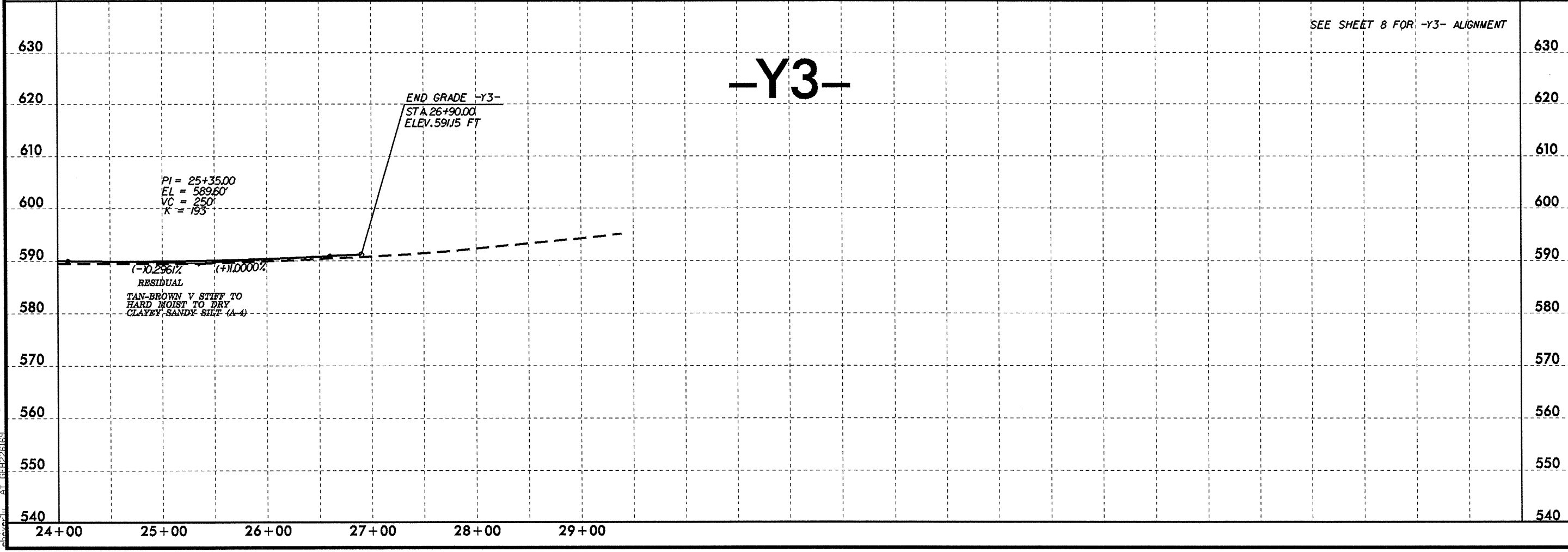
5/28/99

SEE SHEET 10 AND 8 FOR -Y3- ALIGNMENT

| | |
|---|------------------------|
| PROJECT REFERENCE NO. U-3300B | SHEET NO. 15 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION | |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |



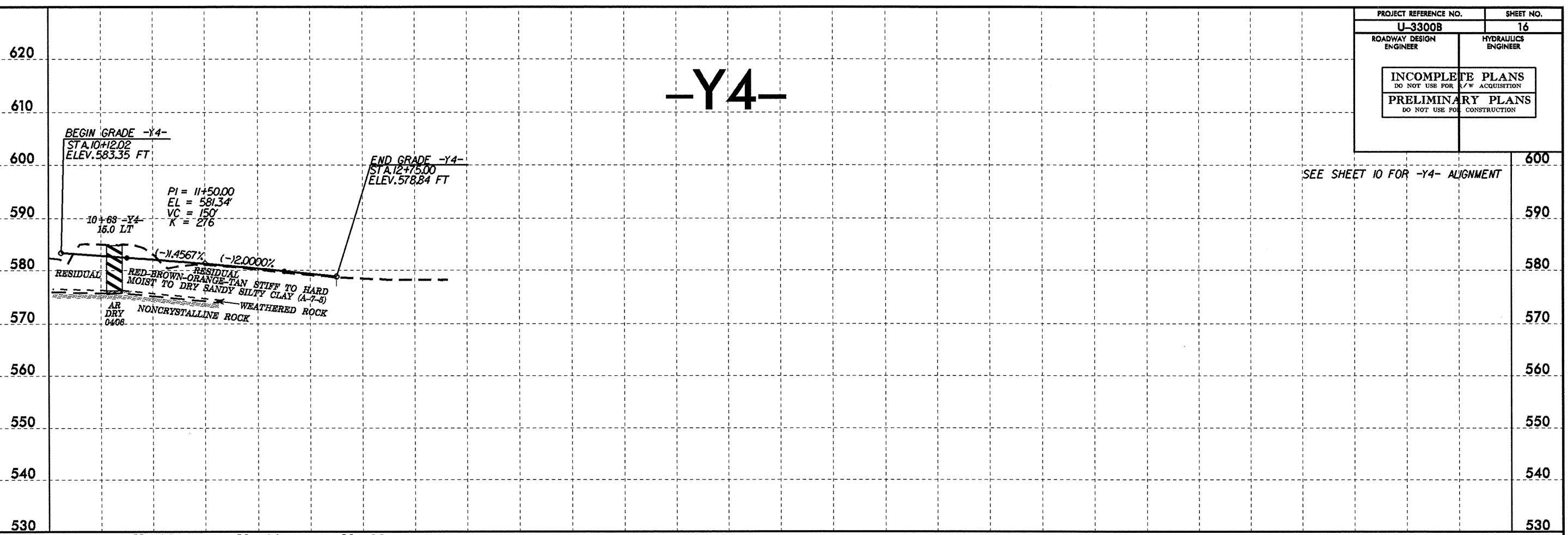
SEE SHEET 8 FOR -Y3- ALIGNMENT



01-NOV-2006 15:38:00 5:\u3300b\plan\prof\U3300B_GEO_pf_15.dgn

| | |
|---|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| U-3300B | 16 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION | |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

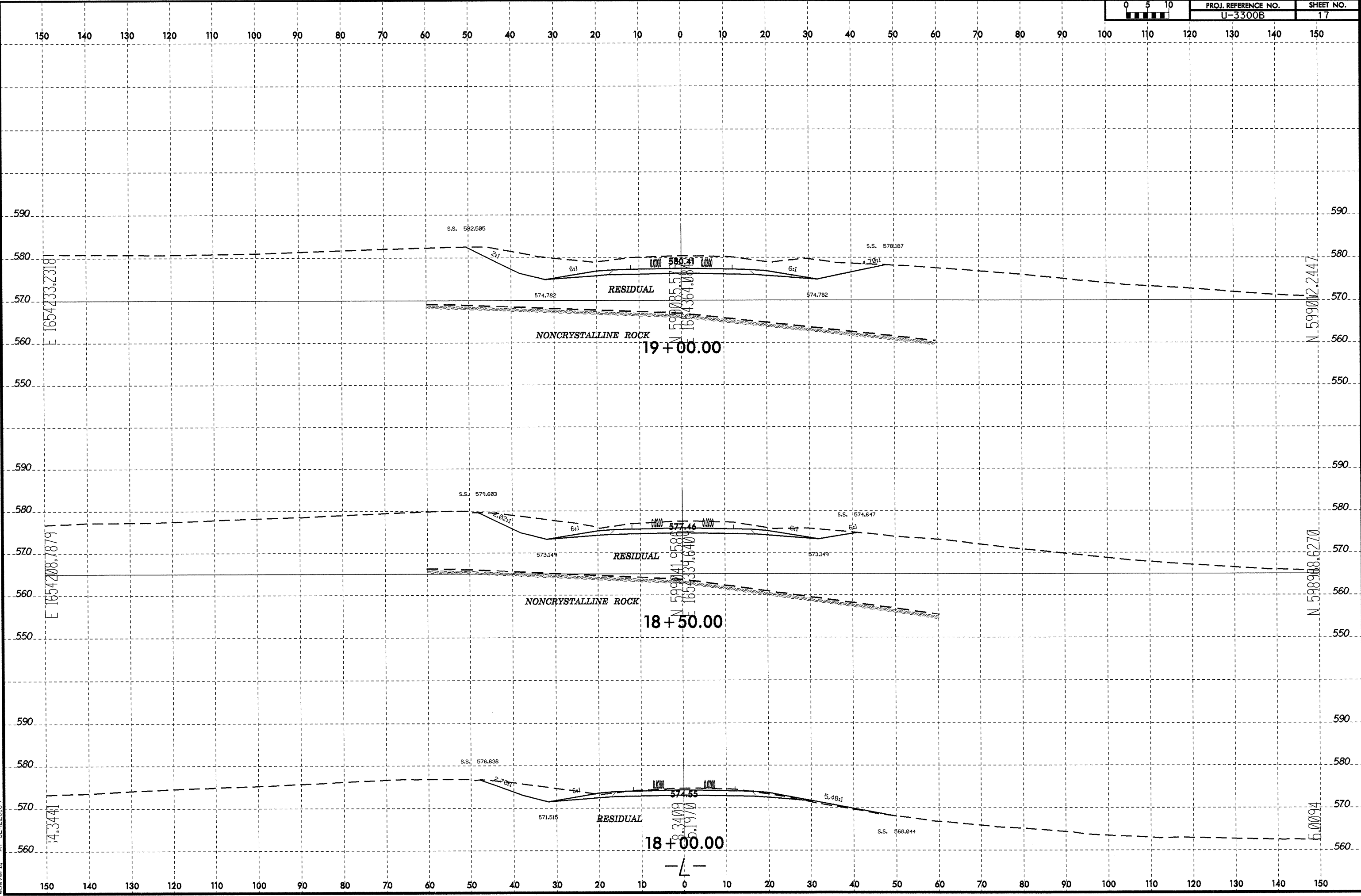
-Y4-



5/28/99

Q1-NOV-2006 5:10:00 PM
 C:\projects\U-3300B\geo_rdy.stn\ly\cadd\geotech\Plan\U-3300B_GEO_P1-Y4_psh16.dgn

8/23/99

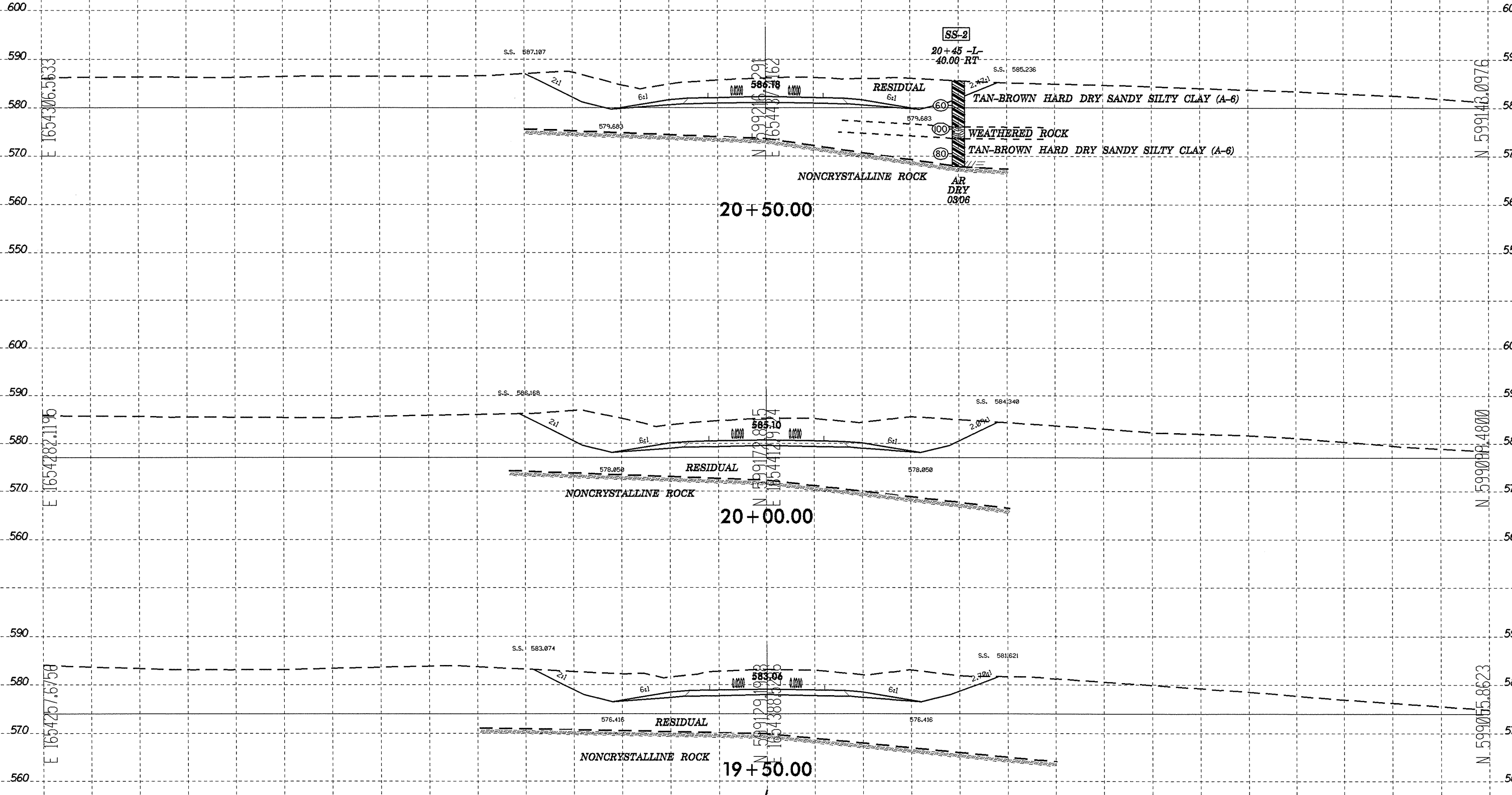


24-OCT-2006 14:54
I:\3300B\3300B-geo.rdwj.stanly\cadd\geotech\yso\ur-3300b-geo-1.xsd.dgn
22/23/03

8/23/99
24-OCT-2006 14:55
d:\proj\sect\3300b\geo_r\dwy_stam\j\cadd\geotech\asc\ur-3300b\geo_1.xsd.dgn
e:\proj\sect\3300b\geo_r\dwy_stam\j\cadd\geotech\asc\ur-3300b\geo_1.xsd.dgn

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|----------------|------|------|-------------|---------|------|--------------------|----|----|--------------------|--|--|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASBESTO CLASS. | L.L. | P.L. | % BY WEIGHT | | | % PASSING (SIEVES) | | | % MOISTURE ORGANIC | | |
| | | | | | | | C. BAND | F. BAND | SILT | CLAY | 20 | 40 | 80 | | |
| SS-2 | 40.0 RT | 20+45 | 4.6-5.6 | A-6(9) | 39 | 1 | 14.0 | 10.3 | 27.1 | 48.6 | 98 | 88 | 78 | | |



20+50.00

20+00.00

19+50.00

SS-2

20+45 -L-
40.00 -RT

RESIDUAL
6:1

TAN-BROWN HARD DRY SANDY SILTY CLAY (A-6)

WEATHERED ROCK

TAN-BROWN HARD DRY SANDY SILTY CLAY (A-6)

NONCRYSTALLINE ROCK

AR
DRY
0306

RESIDUAL

NONCRYSTALLINE ROCK

RESIDUAL

NONCRYSTALLINE ROCK

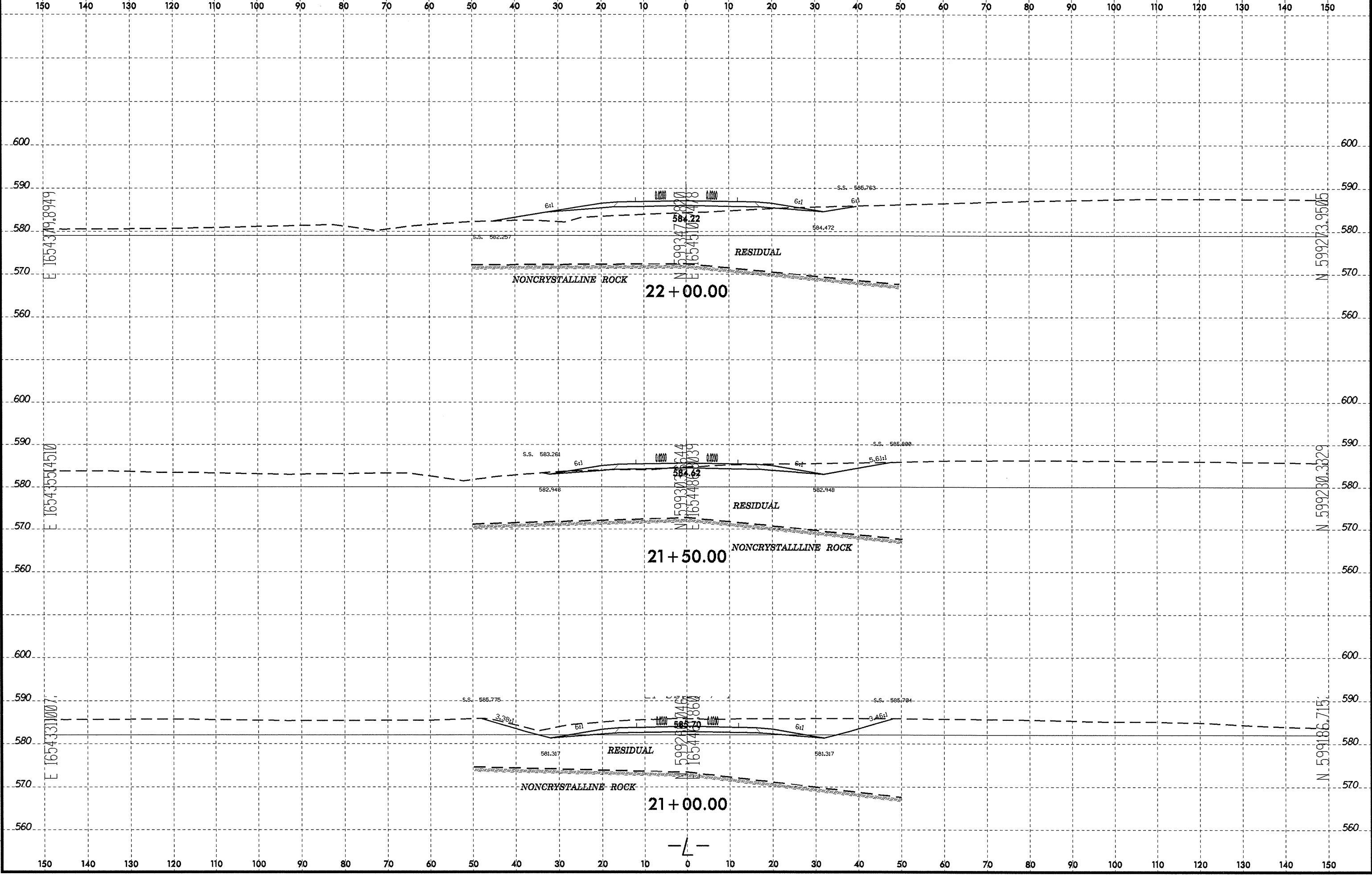
E 1654306.5633
E 1654282.1196

N 599148.0976
N 599089.4800

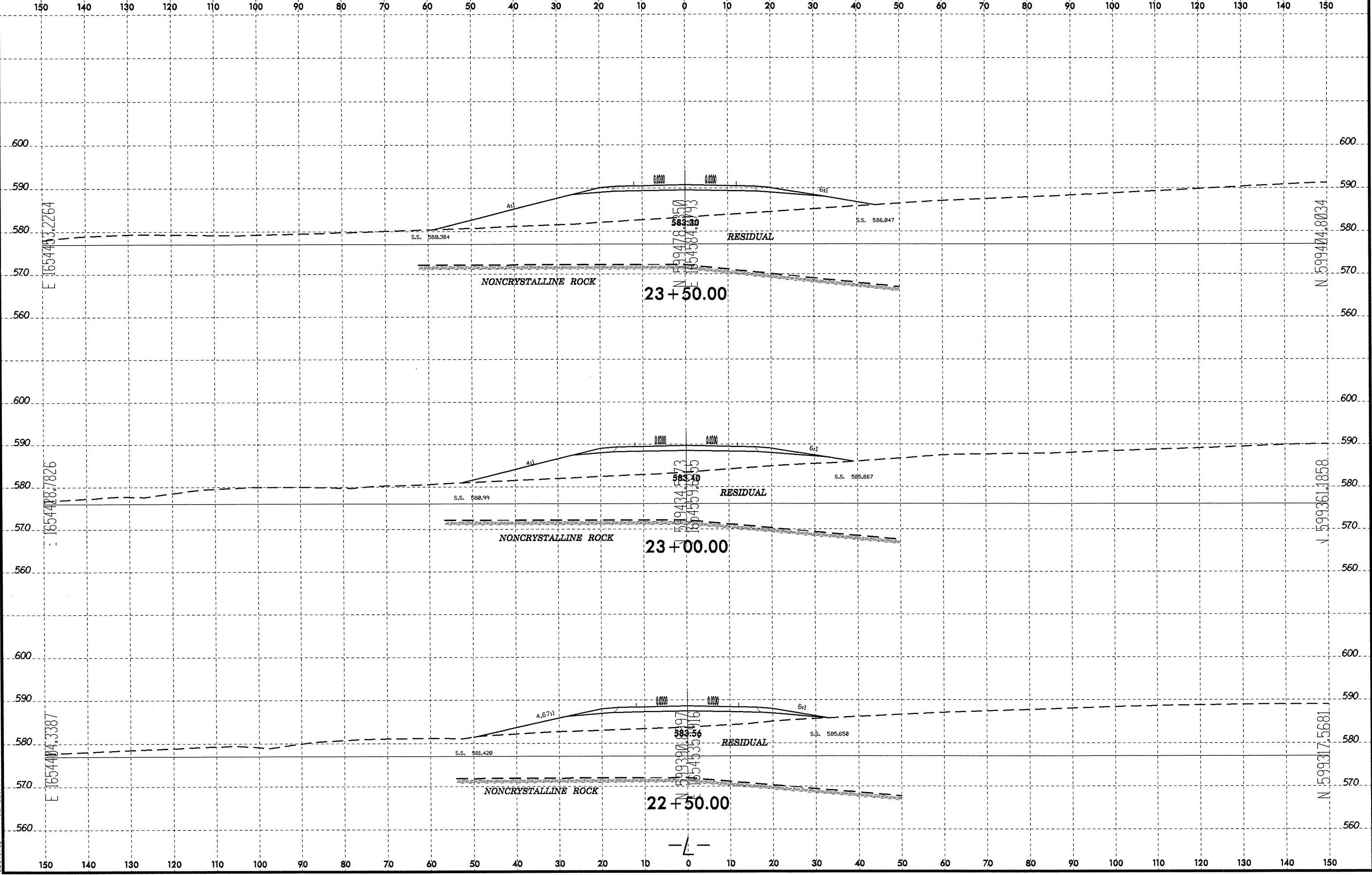
E 1654257.6758

N 599055.8623

8/23/99
24-OCT-2006 14:55
d:\projects\ur-3300b\ur-3300b\geo.r\dwy.ston1\cadd\geotech\ur-3300b\geo.1.xsi.dgn
e:\projects\ur-3300b\ur-3300b\geo.r\dwy.ston1\cadd\geotech\ur-3300b\geo.1.xsi.dgn
e:\projects\ur-3300b\ur-3300b\geo.r\dwy.ston1\cadd\geotech\ur-3300b\geo.1.xsi.dgn

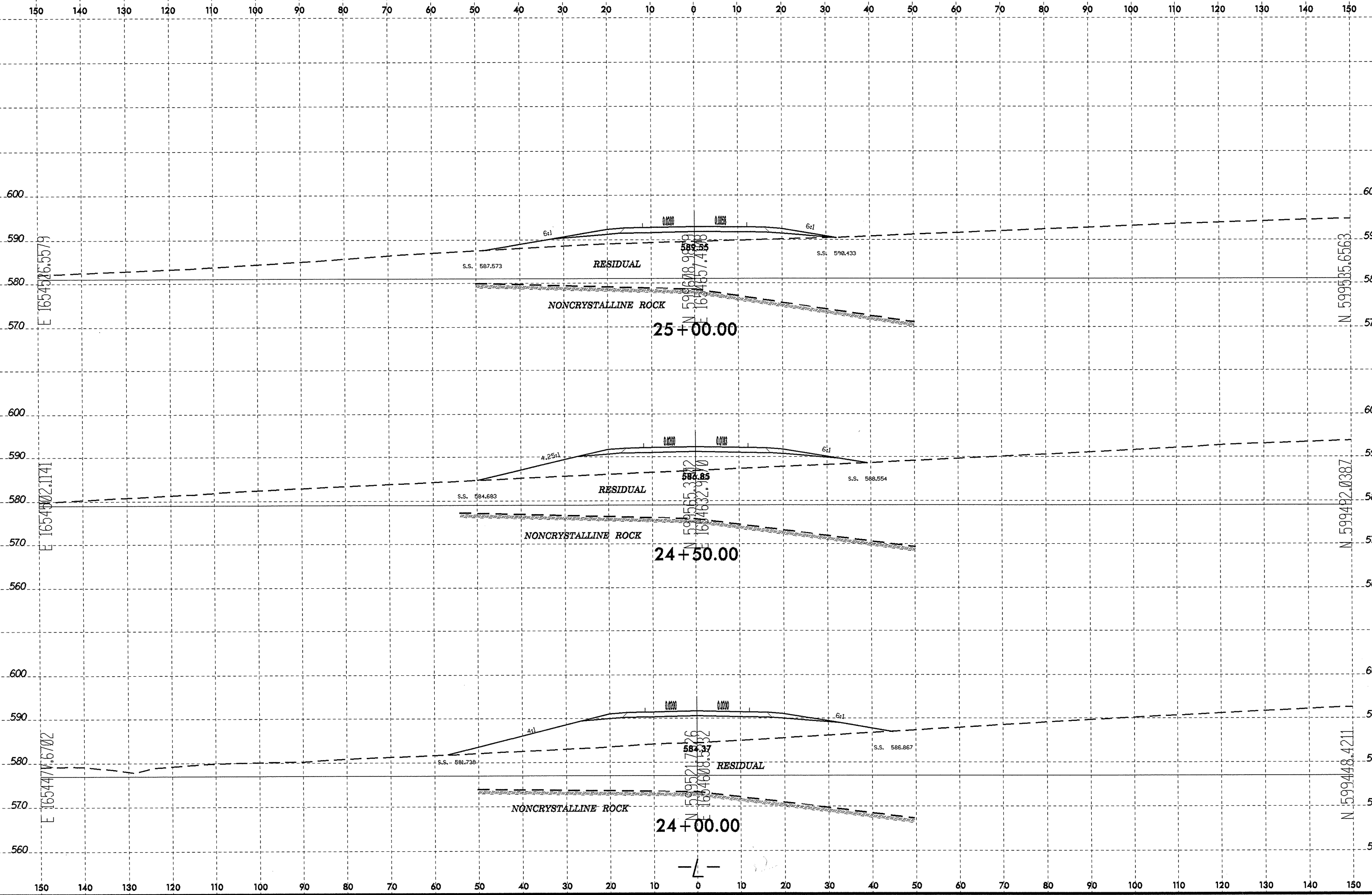


8/23/99
24-OCT-2006 14:55
d:\projects\3300b\3300b-geo-rdwy-stnly\cadd-geotech\3300b-geo-1.xst.dgn
e:\projects\3300b\3300b-geo-rdwy-stnly\cadd-geotech\3300b-geo-1.xst.dgn



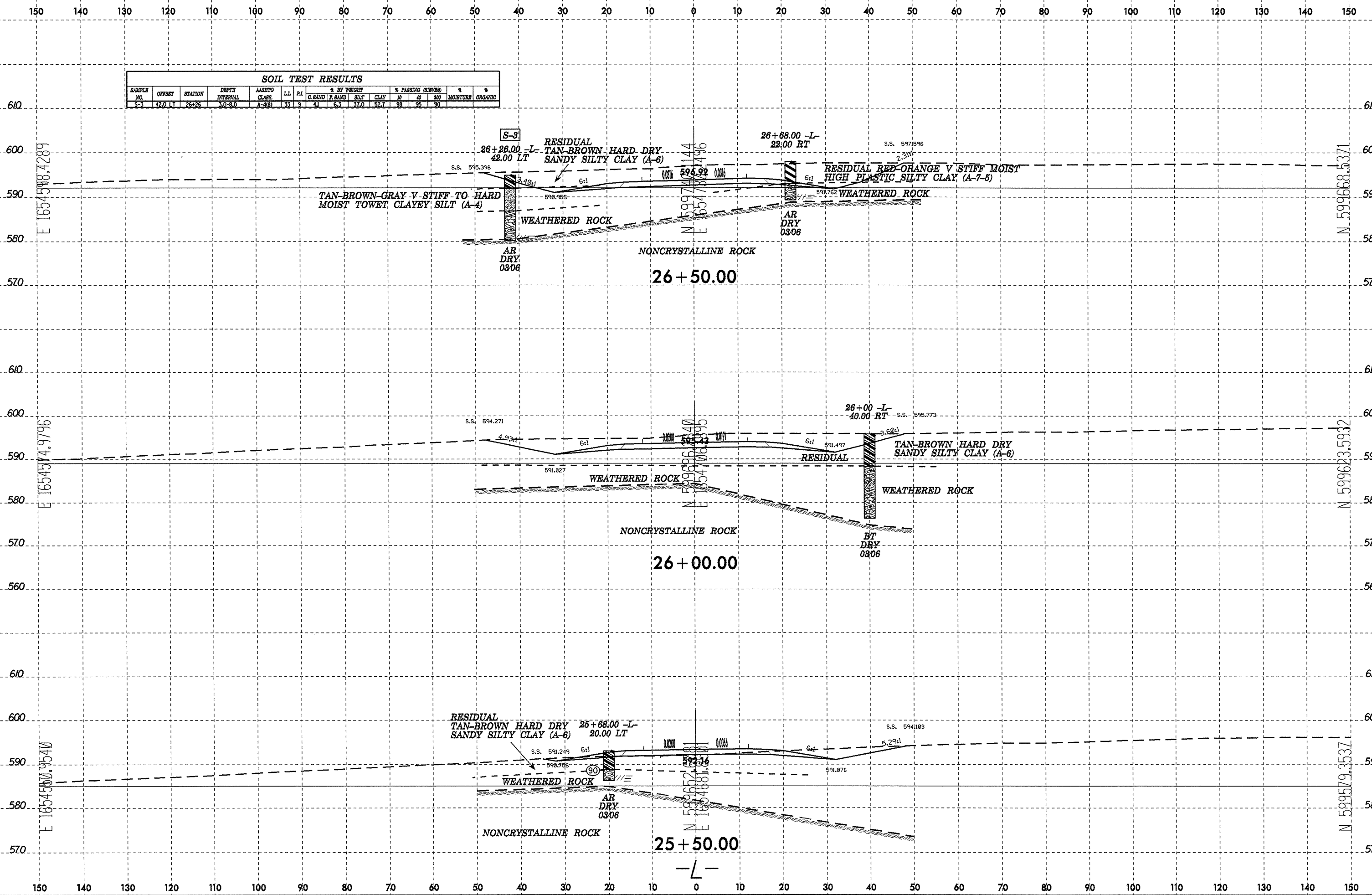
-L-

8/23/99
24-OCT-2006 14:55:00 \\proj\lects\U-3300b\geo_rdy\stnly\cadd\geotech\vac\U-3300b\geo.l...xsi.dgn



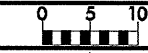
8/23/99
 24-OCT-2006 14:56
 d:\projects\3300b\geo_r\dwy_stemlj\cadd\geotech\asc\ur-3300b\geo.l.xst.dgn
 ebeverly

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|--------------|----|----|-------------|---------|------|------|--------------------|-----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS | LL | PI | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. BAND | F. BAND | SILT | CLAY | #20 | #40 | #60 | | |
| S-3 | 42.0 LT | 26+26 | 3.0-8.0 | A-4(6) | 33 | 9 | 41 | 6.3 | 37.0 | 52.7 | 98 | 95 | 90 | | |

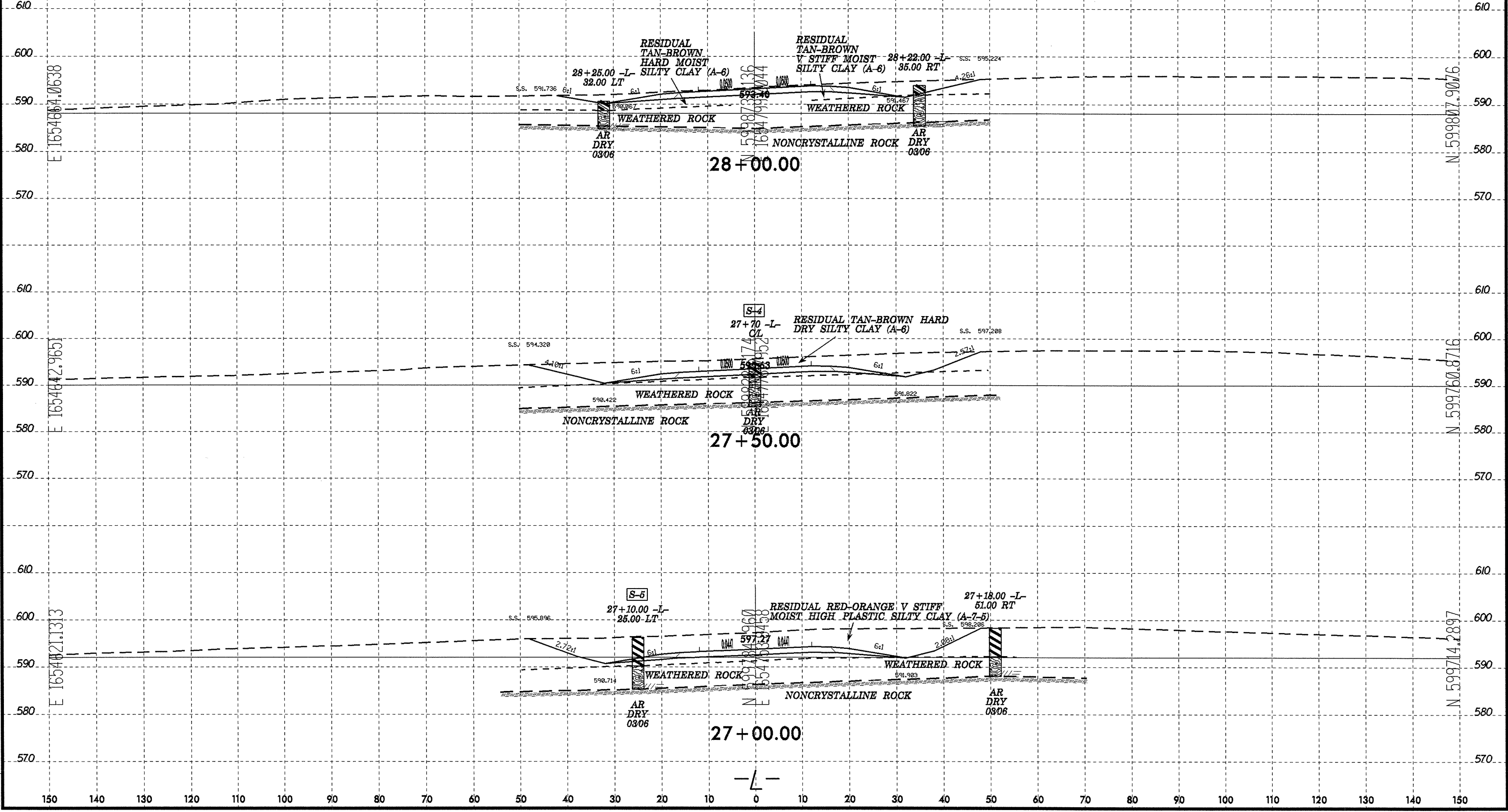


E 1654508.7289
 E 1654504.9796
 E 1654500.9540
 N 599668.5371
 N 599623.5932
 N 599579.3537

8/23/99

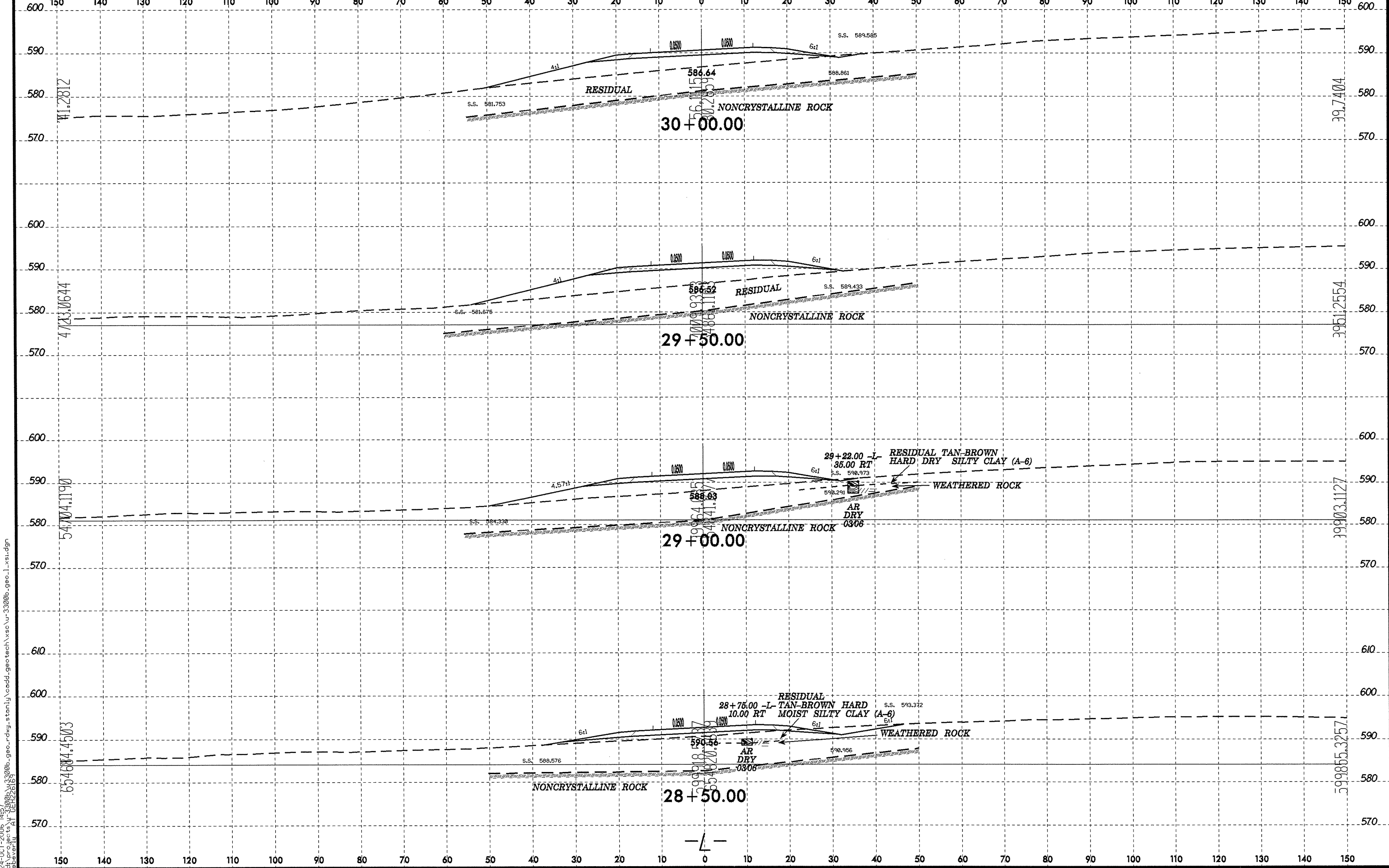


| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|--------------|----|----|-------------|--------|------|------|--------------------|-----|------|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AAHSTO CLASS | LL | PI | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C.BAND | F.BAND | SILT | CLAY | #20 | #40 | #100 | | |
| S-4 | C/L | 27+70 | 0.0-3.0 | A-6(5) | 36 | 15 | 0.6 | 2.0 | 24.4 | 72.9 | 99 | 99 | 98 | | |
| S-5 | 25.0 LT | 27+10 | 0.0-6.0 | A-1-6(22) | 48 | 24 | 9.1 | 6.7 | 35.6 | 46.6 | 99 | 92 | 85 | | |



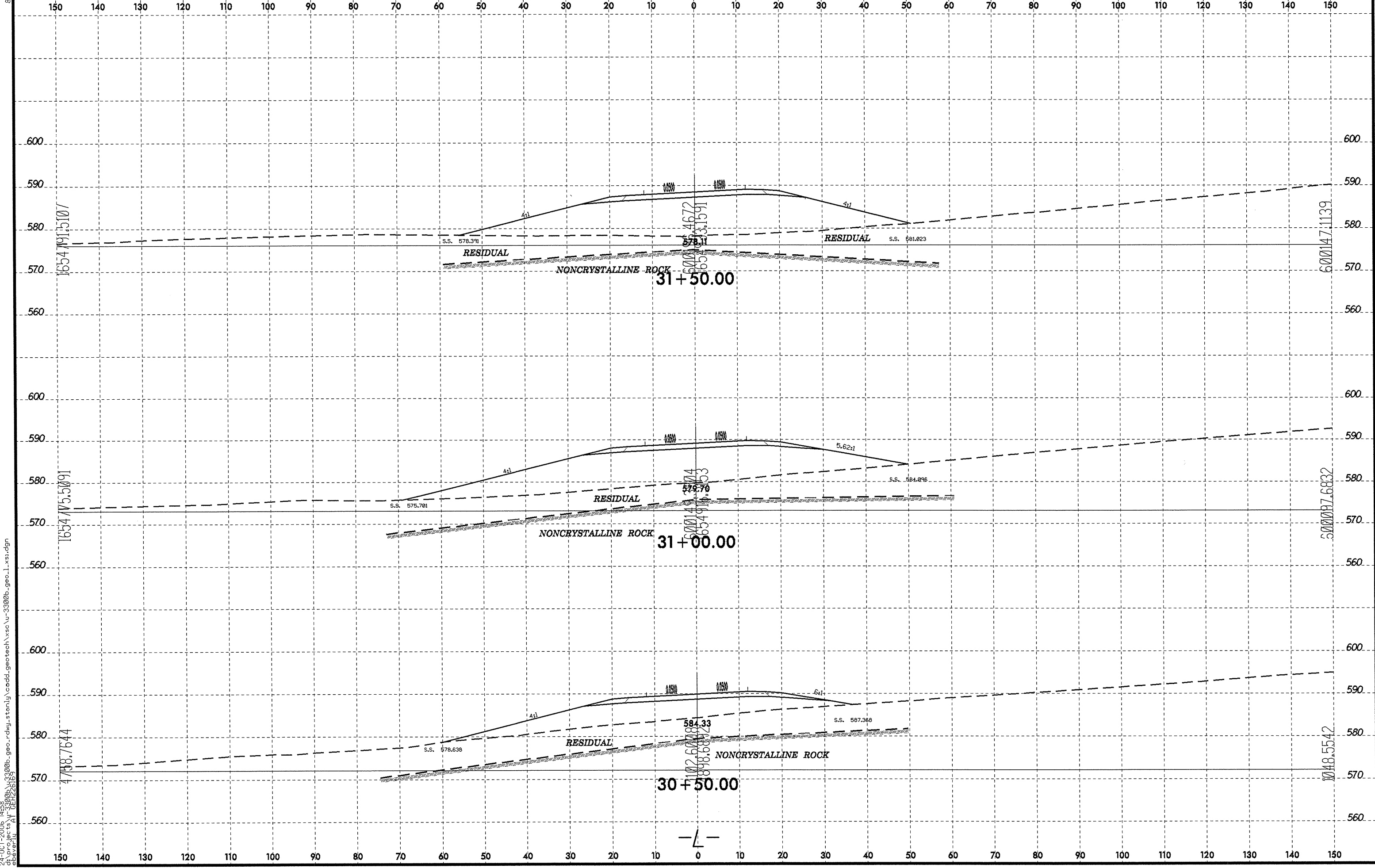
24-OCT-2006 14:57 d:\projects\ur-3300b\geo_r.dwg stn14\cadd\geotech\ur-3300b_geo.1_xai.dgn

8/23/99



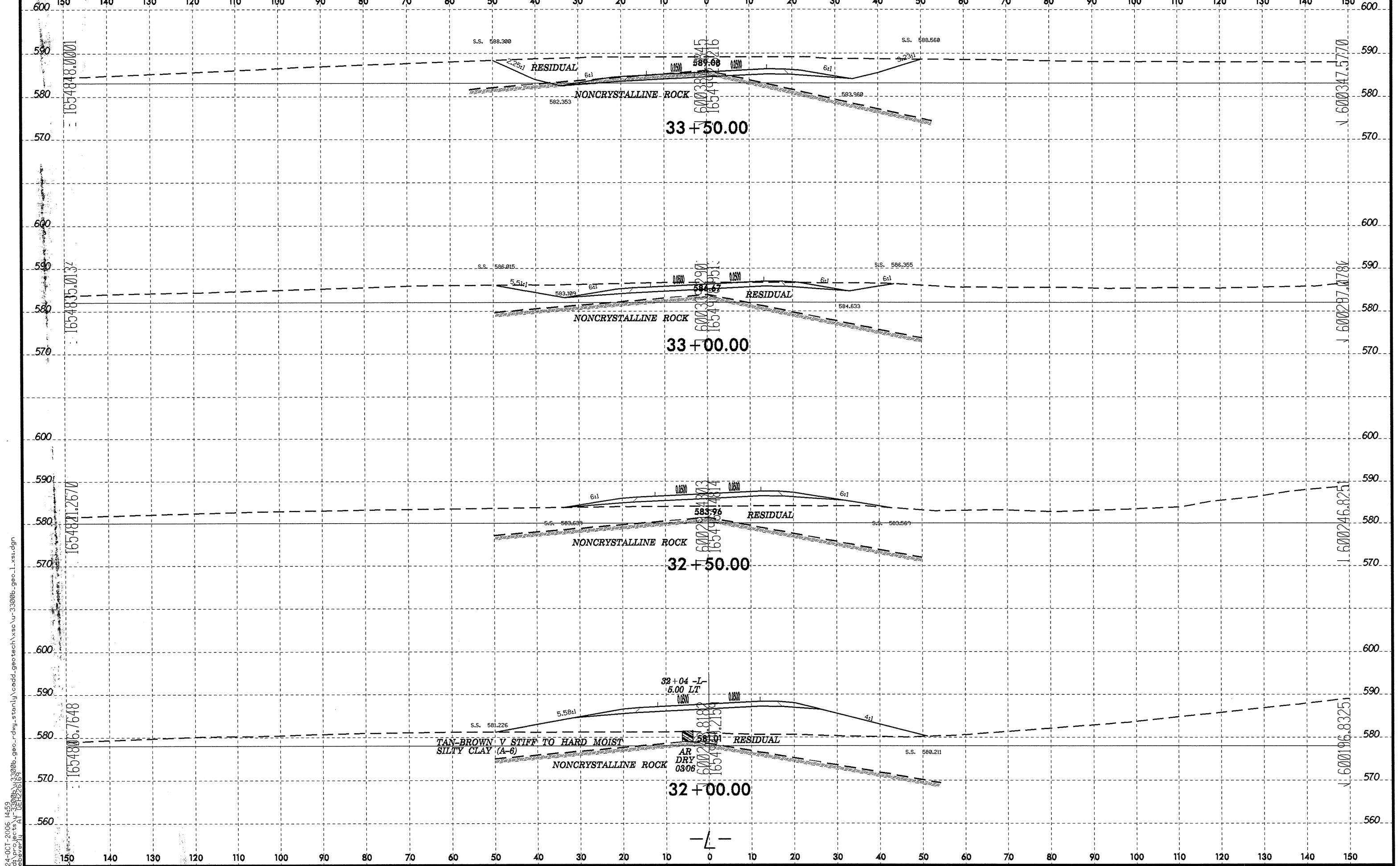
24-OCT-2006 14:57
 d:\projects\3300b\geo_r\dwy_stonlj\cadd\geotech\asc\ur-3300b_geo_1_xsi.dgn
 ebeverly

8/23/99



24-OCT-2006 14:58
 C:\p\c\p\3300b\3300b_gce_r\dwy.stenly\cadd\geotech\ssc\3300b\geo.i.xsi.dgn
 ebeverly

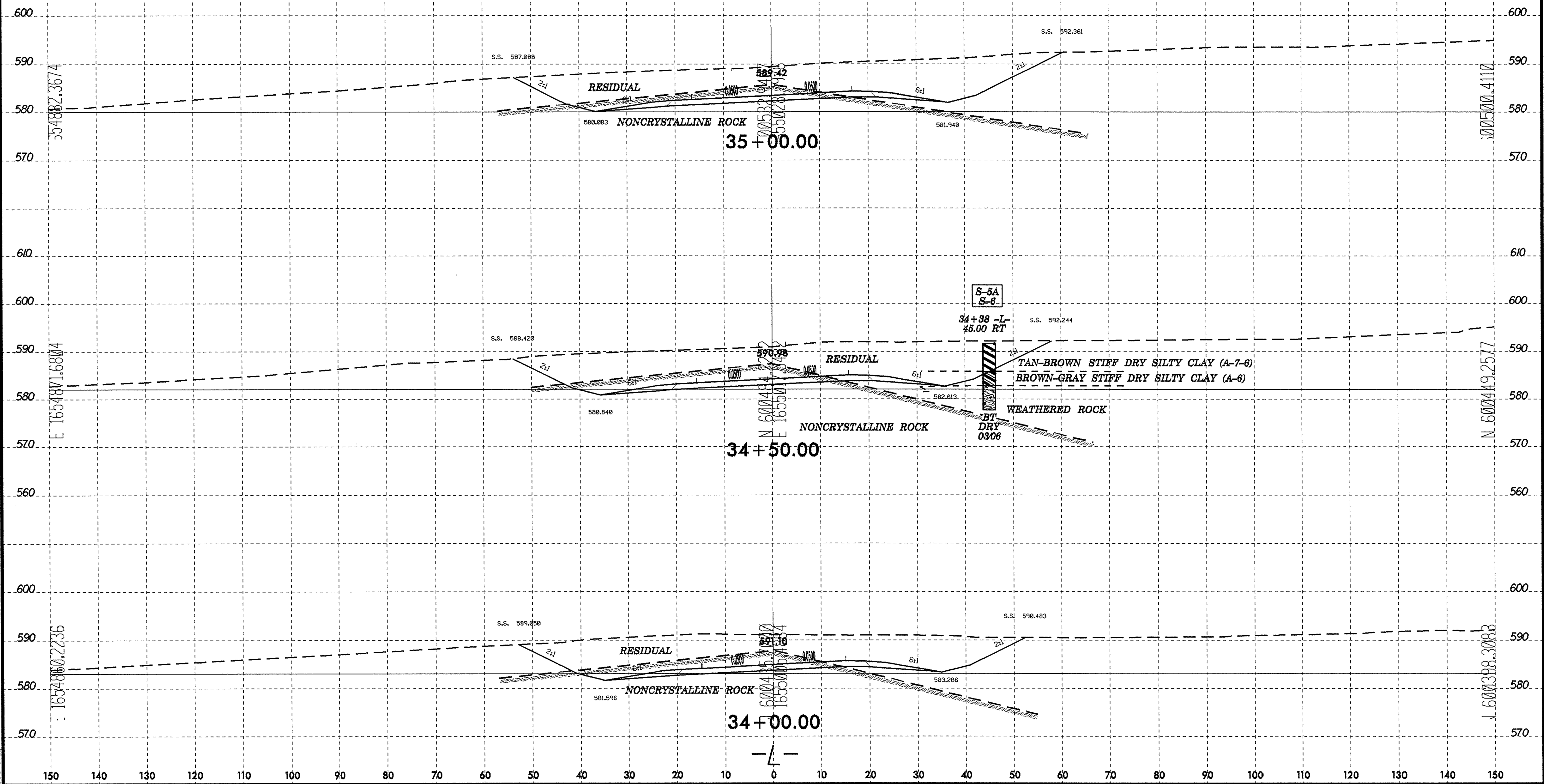
8/23/99



24-OCT-2006 14:59
 c:\projects\U-3300B\geo_r\dwy_stam\l\cadd\geotech\csc\U-3300B_geo_1_xai.dgn
 ebeverly

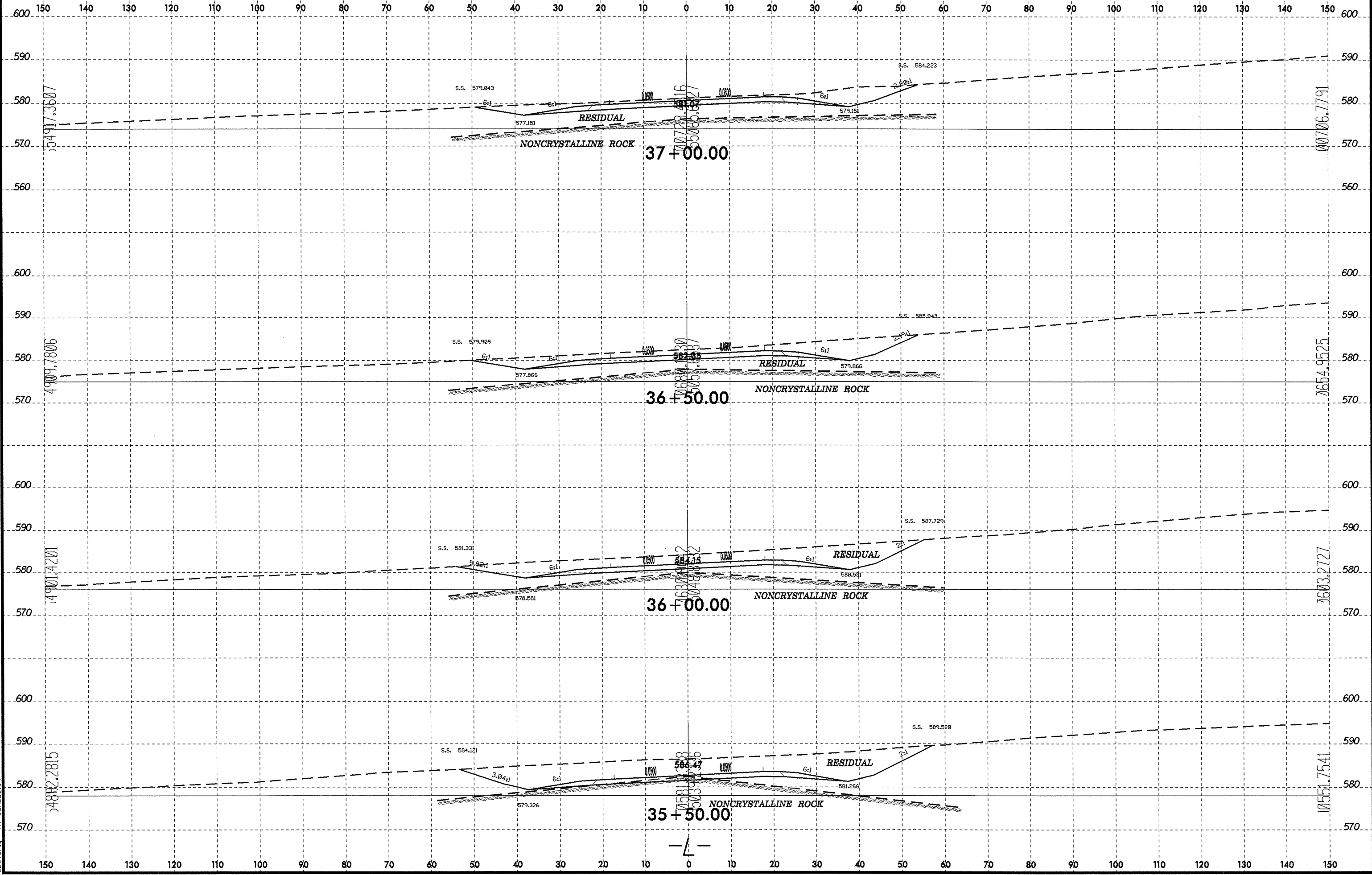
8/23/99
24-OCT-2006 15:00
d:\projects\ur-3300b\geo_r.dwg-stm1j\cadd\geotech\ur-3300b_geo_1.xsi.dgn
e:\beaver\j

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|-------------|----|----|-------------|--------|------|------|--------------------|----|------------|-----------|--|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASTRO CLASS | LL | PL | % BY WEIGHT | | | | % PASSING (SIEVES) | | % MOISTURE | % ORGANIC | |
| S-4 | 45.0 RT | 34+38 | 0.0-5.0 | A-7-5(35) | 64 | 29 | G.BAND | F.BAND | SILT | CLAY | 10 | 40 | 80 | | |
| S-6 | 45.0 RT | 34+38 | 5.0-9.0 | A-6(3) | 40 | 12 | 3.9 | 6.1 | 33.3 | 56.7 | 99 | 96 | 92 | | |



-L-

8/23/99
24-OCT-2006 15:00
d:\projects\U-3300b\geo_rdw\stony\cadd\geotech\asc\ur-3300b-geo-1.xsdgn
e:\beverly



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

5491.3607

5491.3607

4909.7806

4909.7806

14901.4201

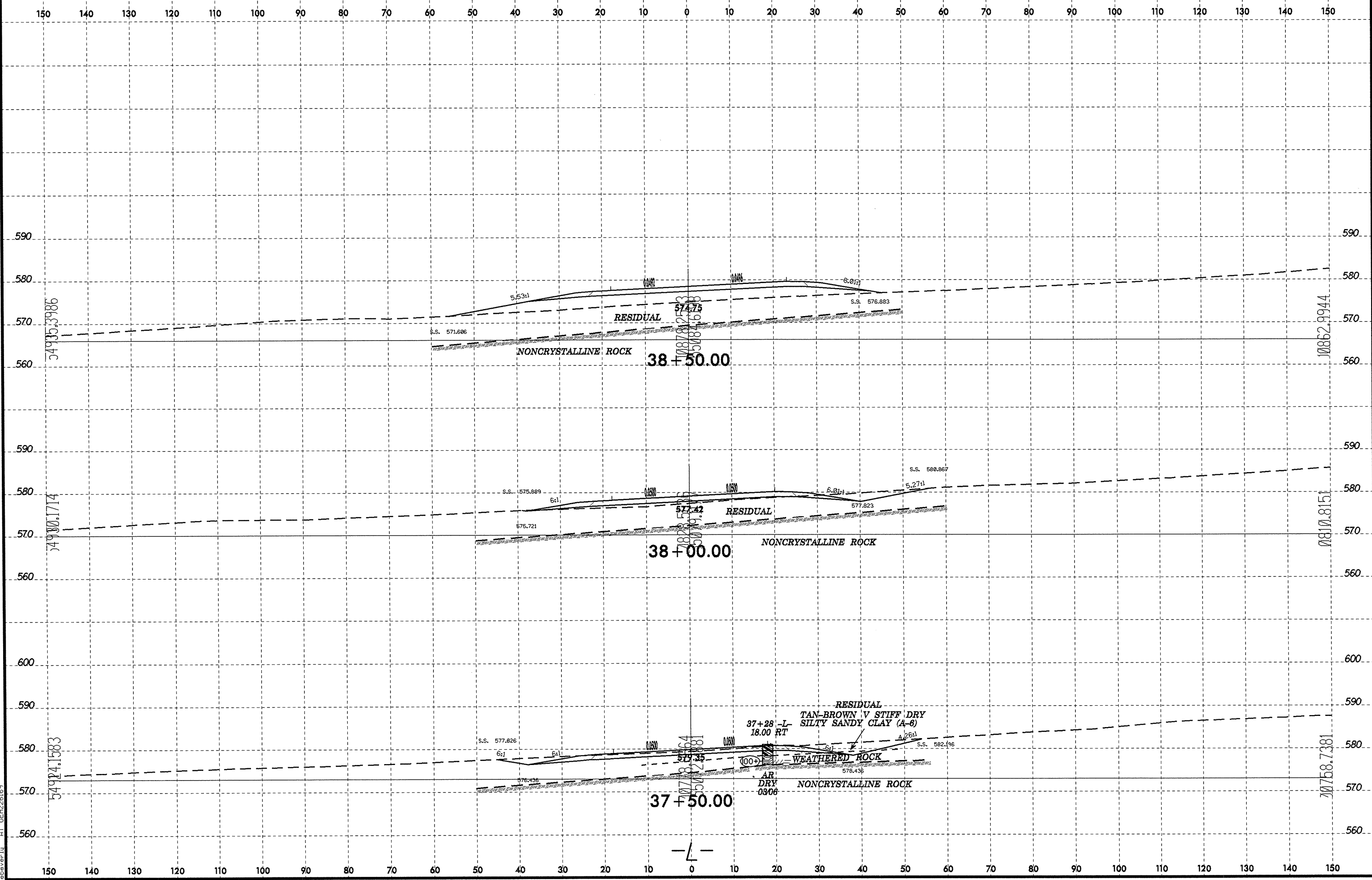
14901.4201

5482.2815

5482.2815

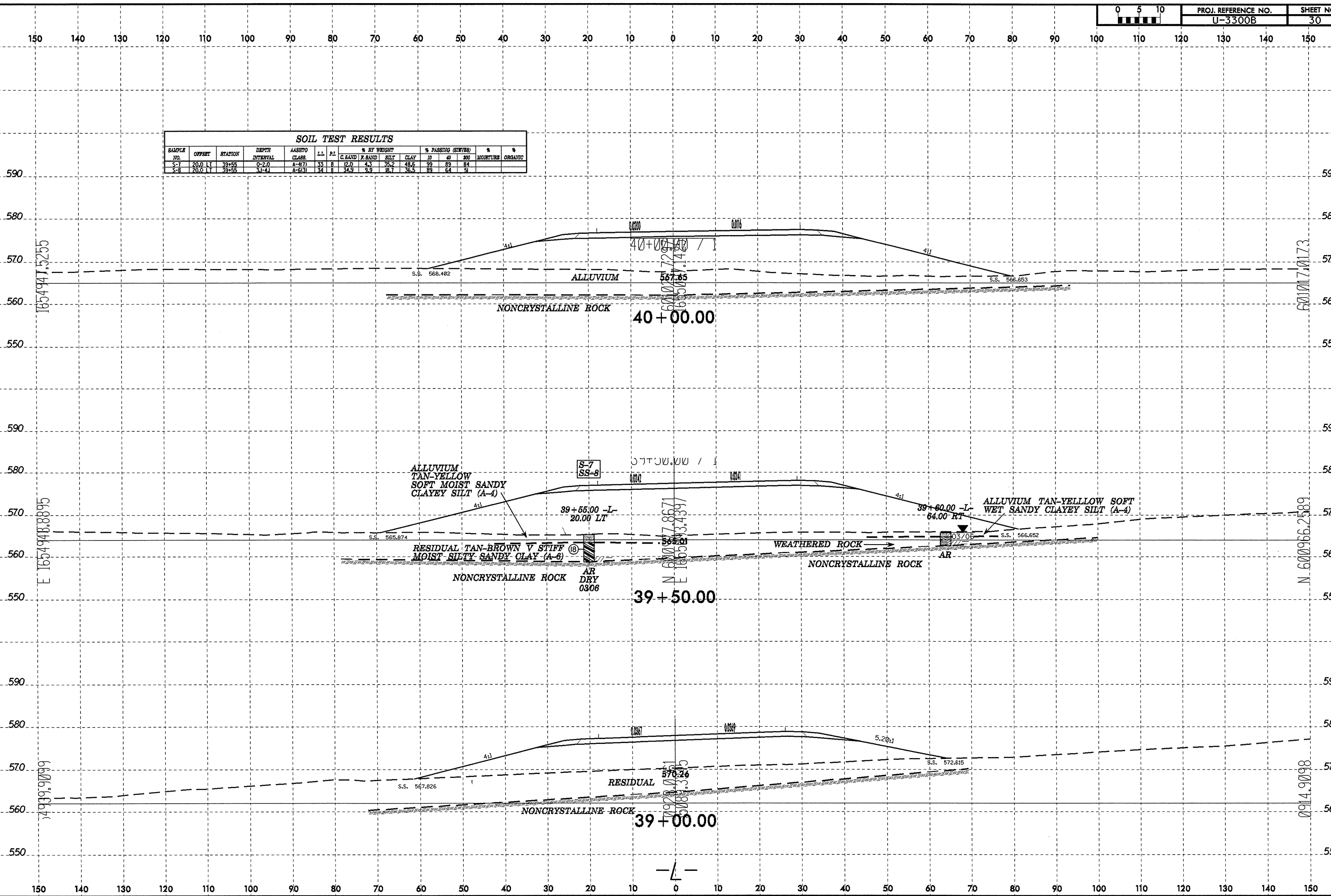
-L-

8/23/99
24-OCT-2006 15:50
d:\proj\ecr\ts\1\3300b\geo-rd\w\stanly\cadd\geotech\wse\3300b-geo-1.xst.dgn





| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|----------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASBESTO CLASS. | L.L. | P.L. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | G. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-7 | 20.0 LT | 39+55 | 0-2.0 | A-6(7) | 33 | 8 | 12.0 | 4.3 | 35.2 | 48.6 | 99 | 89 | 84 | | |
| S-8 | 20.0 LT | 39+55 | 3.1-4.1 | A-6(3) | 34 | 11 | 34.9 | 9.9 | 18.7 | 36.5 | 89 | 64 | 51 | | |



24-OCT-2006 16:01 d:\projects\U-3300b\geo_r.dwg...stn\j\cadd\geotech\asc\U-3300b_geo.l.xst.dgn

1654947.5255

E 1654948.8895

14939.9099

601017.0173

N 600966.2589

0914.9098

-L-

8/23/99



PROJ. REFERENCE NO. U-3300B SHEET NO. 31

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|--------|---------|----------------|---------------|----|----|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | LL | PL | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-10 | 7.0 | 11 | 4+83 | A-2-6(0) | 35 | 1 | 27.2 | 8.5 | 23.8 | 40.5 | 45 | 34 | 30 | | |

TAN-YELLOW MED DENSE TO VERY DENSE DRY SILTY CLAYEY SAND (A-2-6)

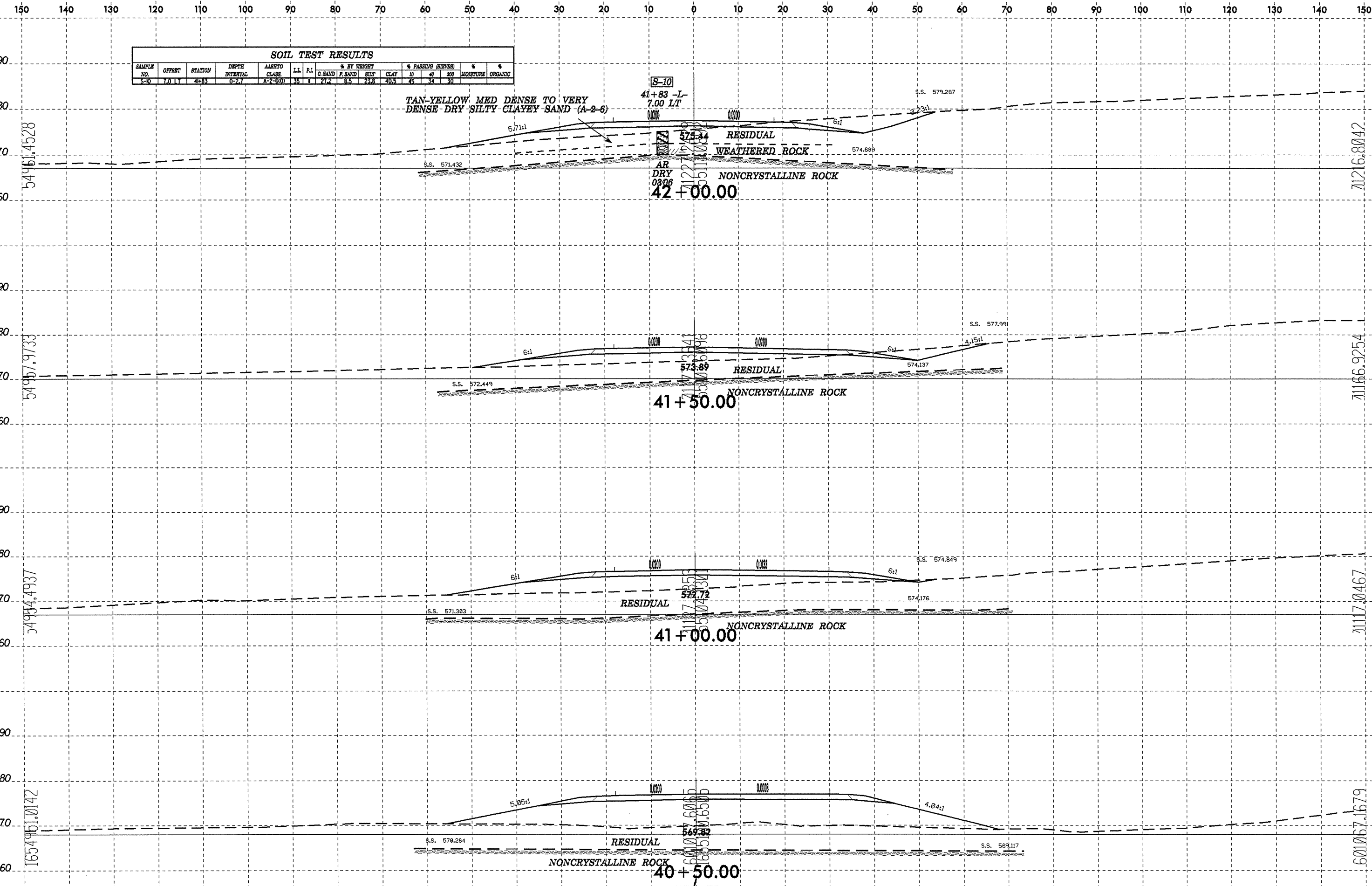
S-10
41+83 -L-
7.00 LT

AR
DRY
0306
42+00.00

41+50.00

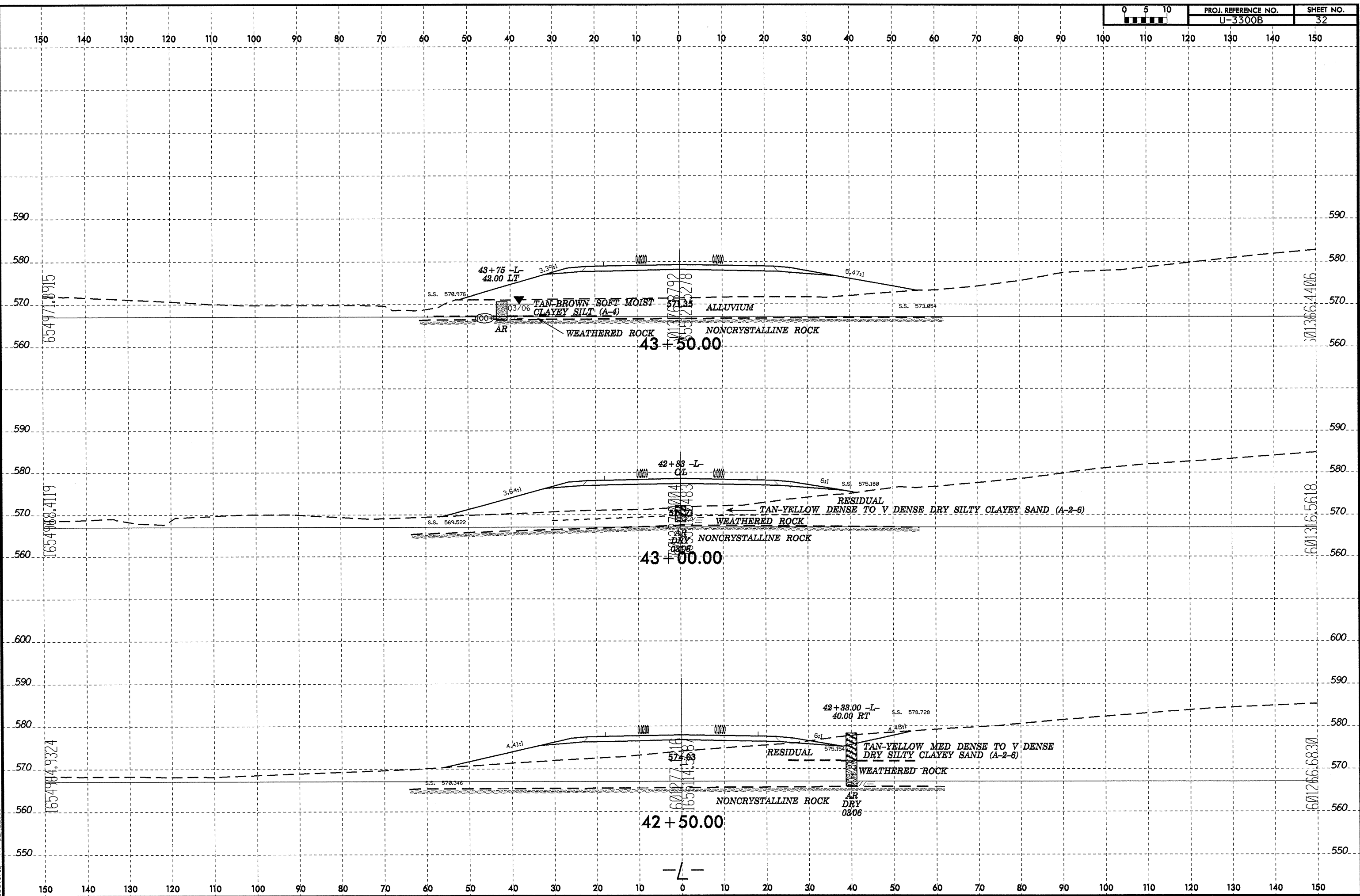
41+00.00

40+50.00



24-OCT-2006 15:02
d:\projects\U-3300B\geo_rdwj_stanly\cadd\geotech\asc\U-3300B_geo_1_xsi.dgn
e:\bever\lu

8/23/99
24-OCT-2006 15:02
d:\projects\U-3300b\geo_r.dwg...stonlj\cadd\geotech\asc\U-3300b_geo_1.xsi.dgn
e:\beverly



43+75 -L- 42.00 LT
3.3%

S.S. 578.976

TAN-BROWN SOFT MOIST CLAYEY SILT (A-4)

571.35

ALLUVIUM

S.S. 573.054

WEATHERED ROCK

NONCRYSTALLINE ROCK

43+50.00

3.6%

42+88 -L- CL

S.S. 569.522

RESIDUAL TAN-YELLOW DENSE TO V DENSE DRY SILTY CLAYEY SAND (A-2-6)

WEATHERED ROCK

NONCRYSTALLINE ROCK

43+00.00

4.4%

42+38.00 -L- 40.00 RT

S.S. 578.346

RESIDUAL TAN-YELLOW MED DENSE TO V DENSE DRY SILTY CLAYEY SAND (A-2-6)

WEATHERED ROCK

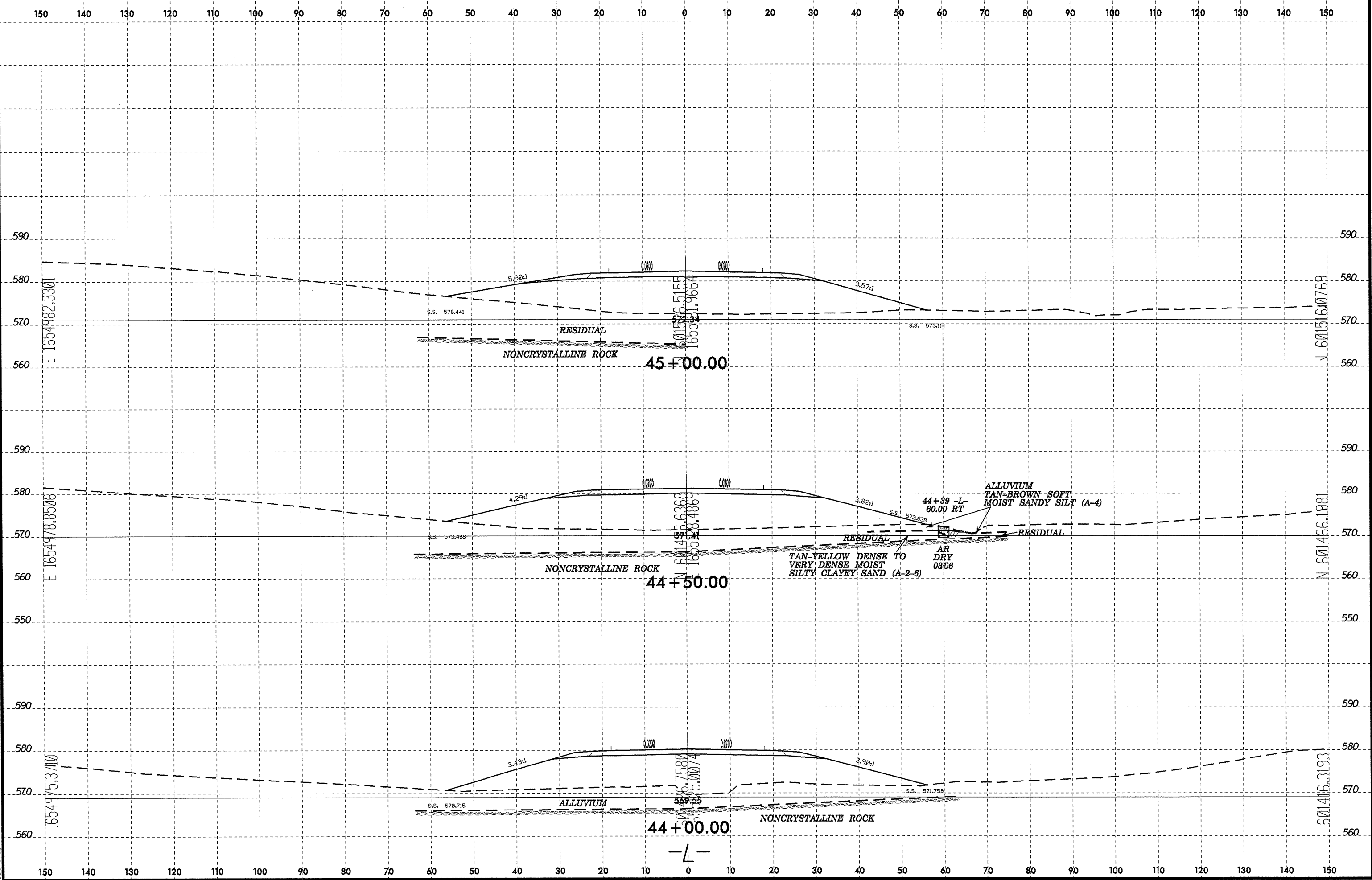
NONCRYSTALLINE ROCK

AR DRY 0306

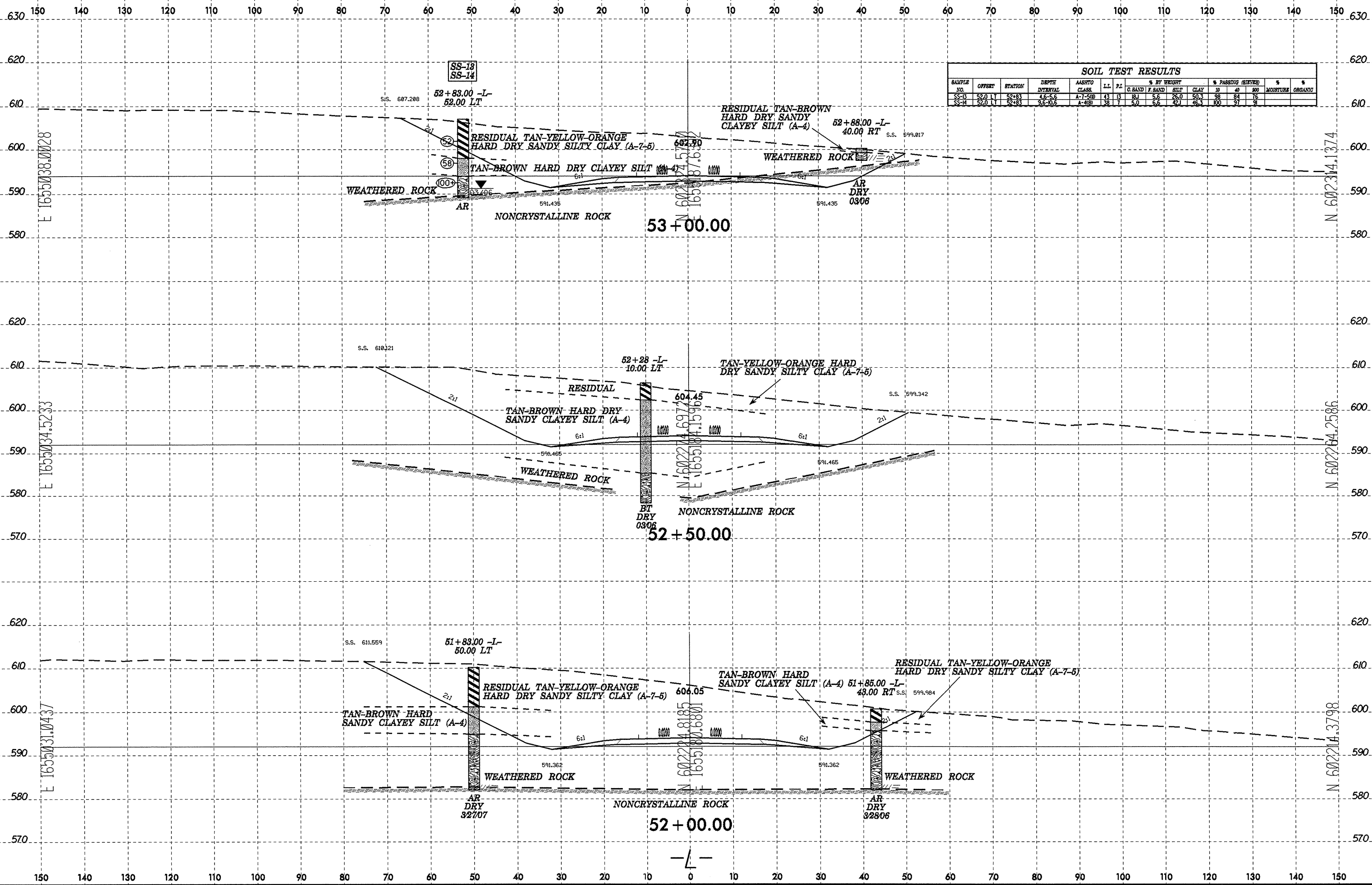
42+50.00

-L-

8/23/99



24-OCT-2006 15:02
 d:\projects\33000b\geo_rdw\stamly\cadd\geotech\asc\3300b_geo_1.xsi.dgn
 ebeverlu

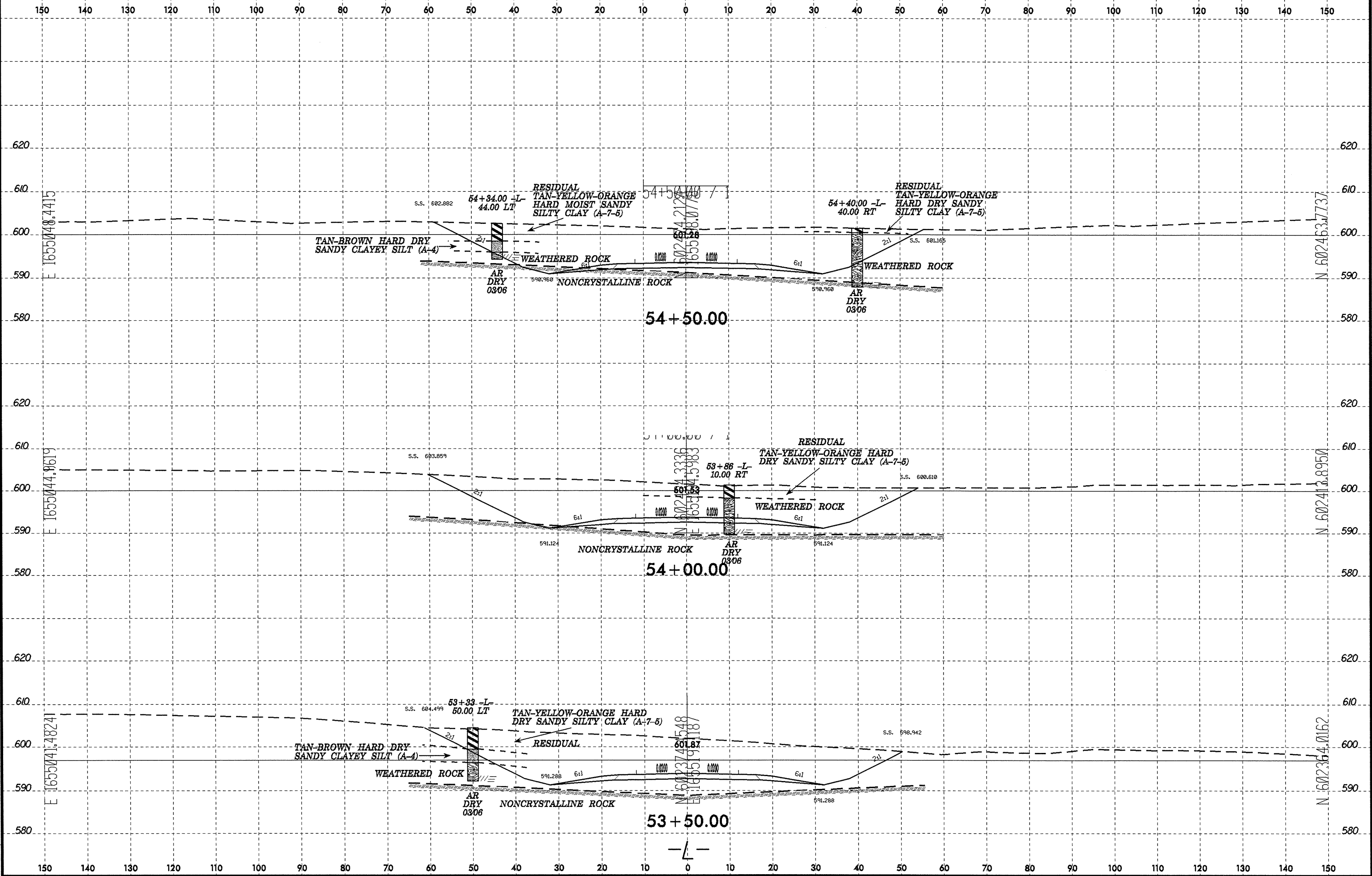


| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS | LL | PL | % BY WEIGHT | | | % PASSING (SIEVES) | | | % MOISTURE | % |
|------------|---------|---------|----------------|--------------|----|----|-------------|---------|------|--------------------|-----|-----|------------|---|
| | | | | | | | G. SAND | F. SAND | SILT | CLAY | #20 | #40 | | |
| SS-13 | 52.0 LT | 52+83 | 4'-5'-6" | A-7-5(B) | 43 | 17 | 18.1 | 5.6 | 28.0 | 50.3 | 38 | 34 | 15 | |
| SS-14 | 52.0 LT | 52+83 | 3'-6"-0" | A-4(B) | 38 | 7 | 5.0 | 6.6 | 22.1 | 46.3 | 100 | 31 | 9 | |

01-NOV-2006 14:30:00 \\proj\elects\11-2006\3300b\geo_r\dwy.stonily\cadd\geotech\asc\U-3300b\geo.l.xai.dgn
 1655031.0437
 1655034.5233
 1655038.0028

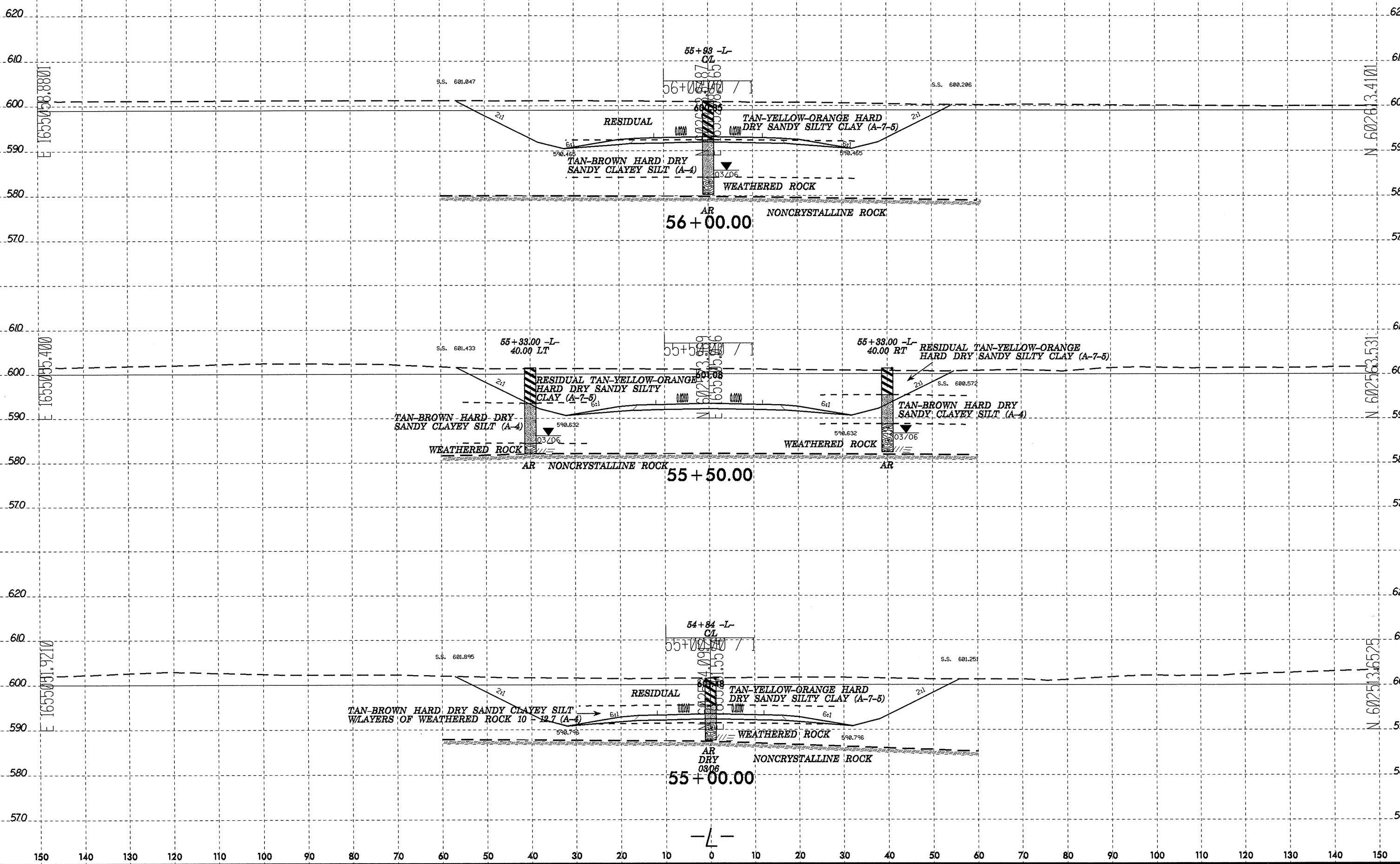
602314.1374
 602314.2586
 602314.3798

8/23/99
24-OCT-2006 15:03
d:\projects\3300b\geo_r\dwy_stmly\cadd_geotech\asc\3300b_geo_1_xsi.dgn
e:\beverly



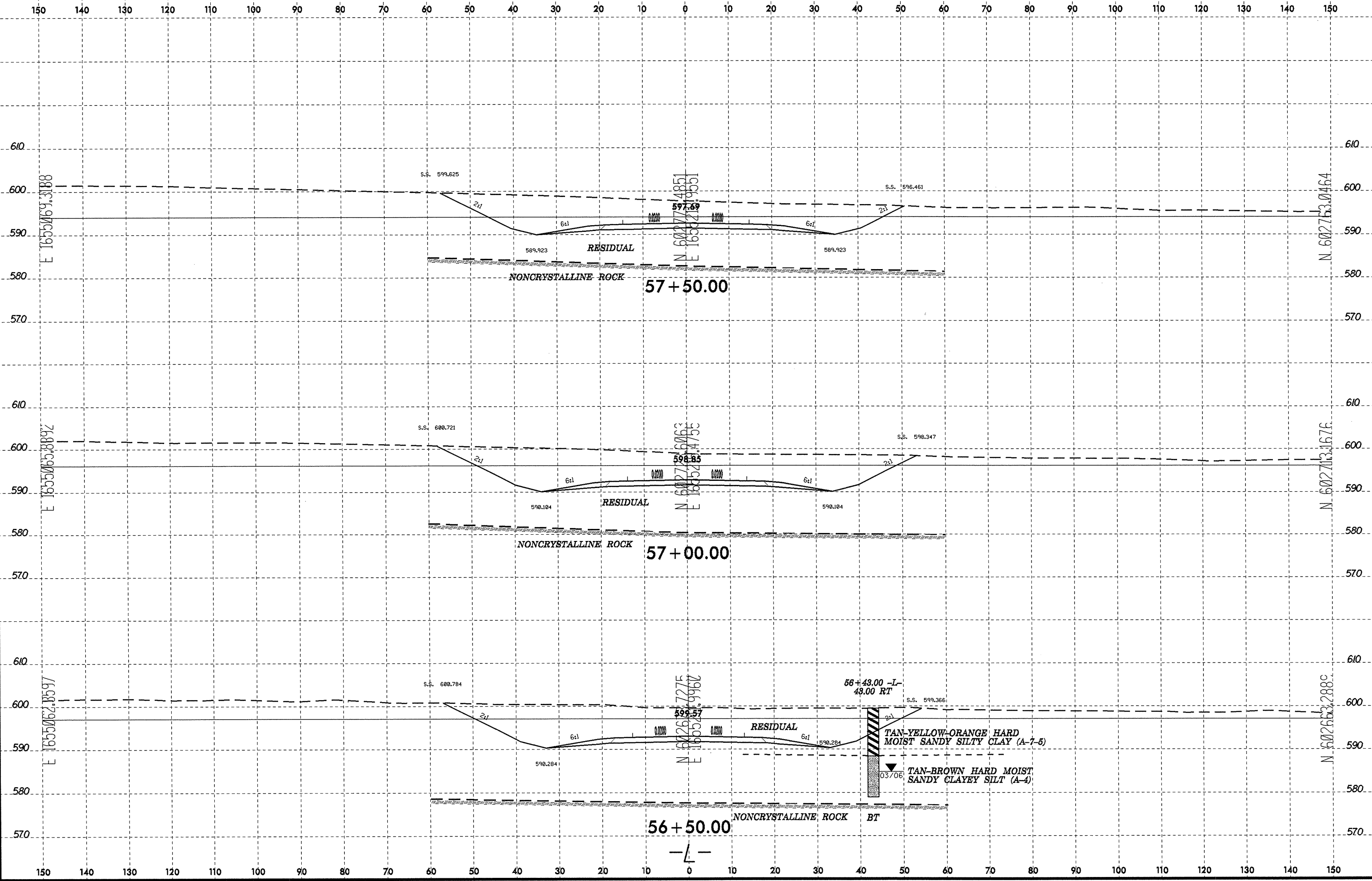
8/23/99

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



24-OCT-2006 15:04
 C:\projects\3300b\geo_r.dwg.stamly\cadd\geotech\asc\ur-3300b\geo.l...su.dgn
 3300b\ur-3300b\geo.l...su.dgn
 3300b\ur-3300b\geo.l...su.dgn

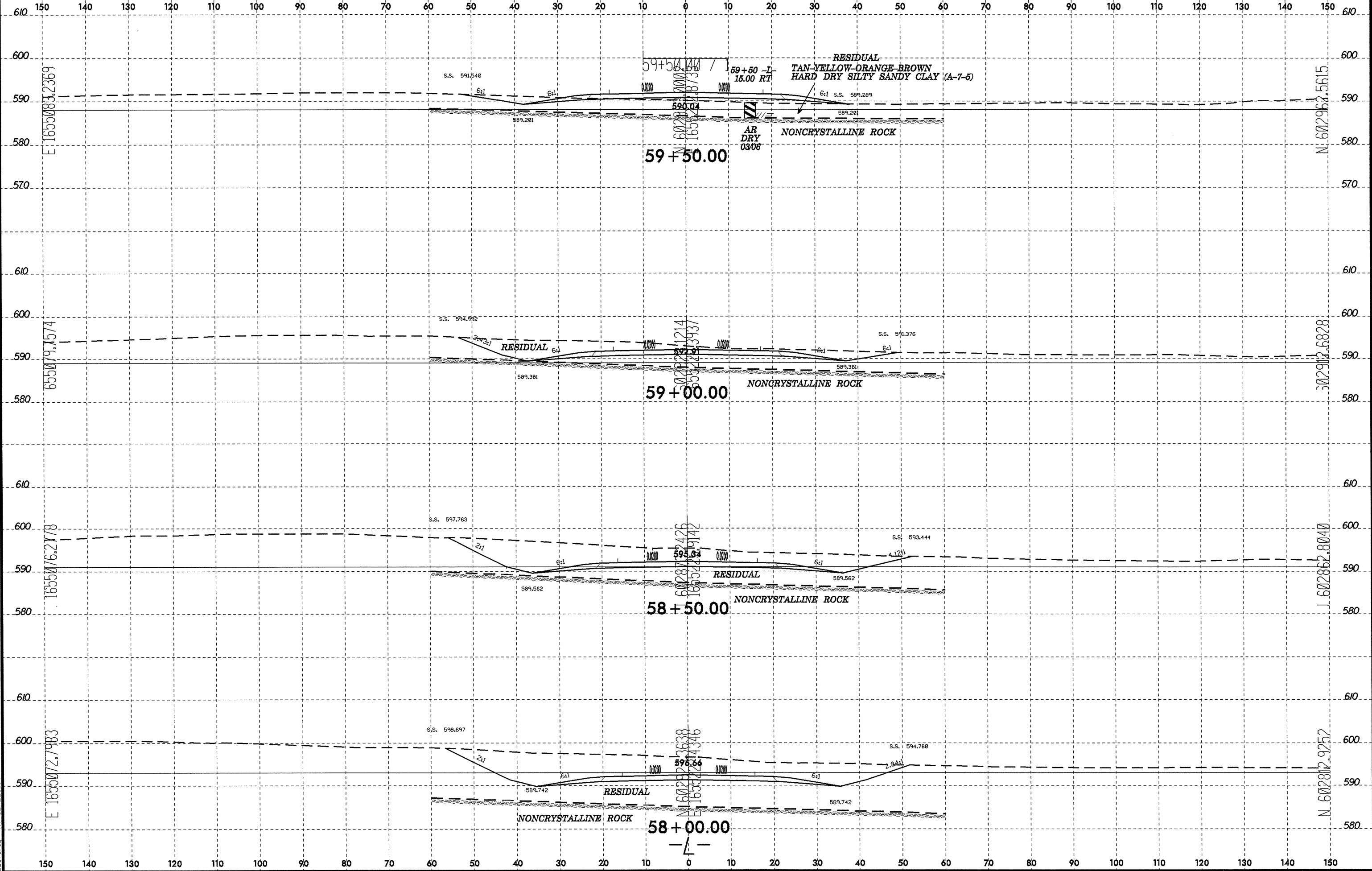
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



24-001-2006 15:04
 c:\projects\11-2006\11-2006b\11-2006b-geo-rdwj-stanly\cadd\geotech\asc\ur-3300b-geo.l.xsi.dgn
 Beverly AI 08/23/99

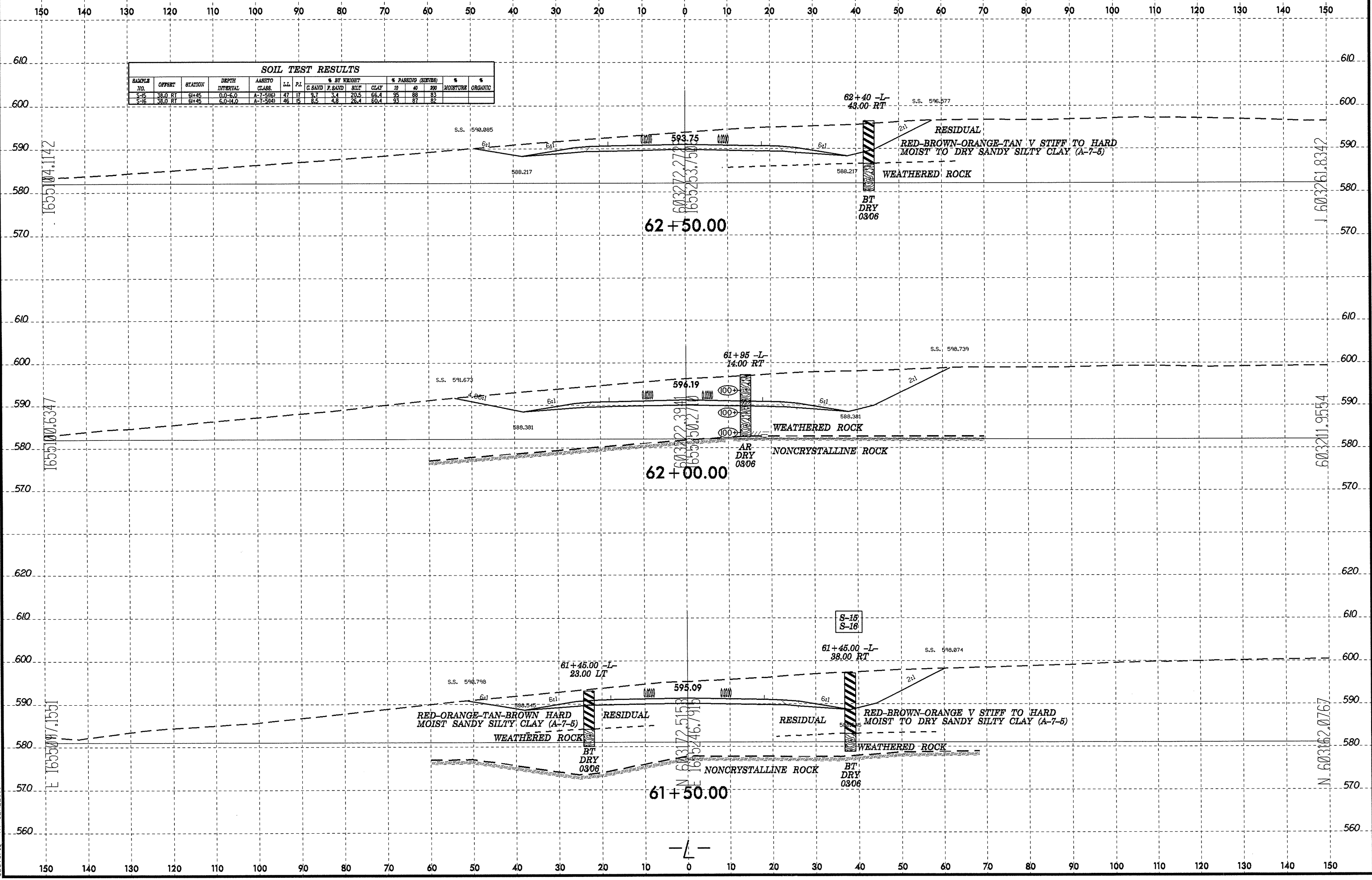
E 1655069.3188
 E 1655065.8897
 E 1655062.8597
 N 602713.0464
 N 602713.0464
 N 602713.1676
 N 602662.2889
 S.S. 599.625
 S.S. 596.461
 S.S. 600.721
 S.S. 598.347
 S.S. 600.784
 S.S. 599.366
 589.923
 589.923
 590.104
 590.104
 590.284
 590.284
 56+43.00 -L-
 43.00 RT
 RESIDUAL
 NONCRYSTALLINE ROCK
 NONCRYSTALLINE ROCK
 NONCRYSTALLINE ROCK
 BT
 TAN-YELLOW-ORANGE HARD
 MOIST SANDY SILTY CLAY (A-7-5)
 TAN-BROWN HARD MOIST
 SANDY CLAYEY SILT (A-4)

8/23/99
24-OCT-2006 15:05
d:\projects\U-3300b\geo_r.dwg...stem1\cadd\geotech\asc\U-3300b_geo_1.xs.dgn
e:\beverly



8/23/99

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|----------------|----|----|-------------|---------|------|------|-------------------|-----|------|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASBESTOS CLASS | LL | PL | % BY WEIGHT | | | | % PASSING (SIZES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | #10 | #40 | #200 | | |
| S-5 | 38.0 RT | 61+45 | 0.0-5.0 | A-7-5(6) | 47 | 17 | 9.7 | 3.4 | 20.5 | 66.4 | 95 | 88 | 83 | | |
| S-16 | 38.0 RT | 61+45 | 5.0-14.0 | A-7-5(4) | 46 | 15 | 8.5 | 4.8 | 26.4 | 60.4 | 93 | 87 | 82 | | |



24-OCT-2006 15:05 d:\projects\3300b\geo_r\dwy_stm\j\cadd\geotech\asc\3300b_geo.1_xsa.dgn