This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –

The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.
This file or an individual page
shall not be considered a certified document.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

REFERENCE: U-4751

PROJECT: 40191

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4751	1	299

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *NEW HANOVER*

PROJECT DESCRIPTION *SR 1409 (MILITARY CUTOFF RD) TO US 17 IN WILMINGTON*

INVENTORY

CONTENTS

LINE	*STATION*	*SECTION 1 PLAN*	*SECTION 1 PROFILE*	*SECTION 2 CROSS SECTIONS*
-L-	10+35 to 229+80	4-20	35-50	91-200
-Y-	10+95 to 31+93	5, 25-26	51-52	-
-Y1-	14+20 to 84+97	24-25, 6, 28-29	53-58	-
-Y1LPB-	10+00 to 24+40	6	59	-
-Y1RPA-	10+00 to 21+89	6-7	60	-
-Y1RPB-	10+00 to 32+12	6-7	61	201-202
-Y1RPD-	10+00 to 35+66	5, 27, 6	62	203-211
-Y3-	12+08 to 16+50	10	63	-
-Y4-	11+70 to 18+42	12	64	212-215
-Y5-	12+80 to 17+00	13	65	216-218
-Y6-	10+00 to 13+40	14	66	219-220
-Y8-	31+20 to 121+98	20-22, 31-34	67-73	221-227
-Y8LPB-	10+00 to 25+07	20	74	228-237
-Y8RPB-	29+50 to 33+03	20-21	75	238-240
-Y8RPC-	10+00 to 34+66	19-21	76	240
-Y8RPCA-	48+03 to 68+92	33, 21	77-78	241-249
-Y8RPD-	10+00 to 30+18	20, 22, 34	79	250-258
-Y8RPDB-	10+00 to 69+87	19-21, 33	80-84	259-284
-Y10-	10+00 to 12+50	28	66	-
-Y12-	10+00 to 12+55	11	66	285
-Y13-	11+50 to 25+95	29-30	85	-
-Y14-	10+00 to 12+22	30	86	-
-Y15-	10+00 to 12+50	30	86	-
-Y16-	10+00 to 13+10	6	86	-
-Y17-	10+42 to 17+10	6	86	-
-Y18-	12+25 to 12+85	18	87	-
-Y18-	17+81 to 19+33	18	87	-
-Y20-	10+00 to 11+50	4	87	-
-Y24-	10+55 to 16+73	6	87	-
-SR1-	10+39 to 19+47	6	88	-
-SR4-	10+00 to 34+59	17-18	89-90	286-299

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

NCDOT:
J. LEE STONE
THEA WRIKE
JARED CRENSHAW
CATLIN:
COREY FUTRAL
SHAWN MCGUIRE

INVESTIGATED BY *J.L. STONE P.G.*
DRAWN BY *DAVID MCPHERSON*
CHECKED BY *DEAN ARGENBRIGHT, LG*
SUBMITTED BY *DEAN ARGENBRIGHT, LG*
DATE *DECEMBER 2016*

SEAL 2007
JOSEPH L. STONE

SIGNATURE	DATE	SIGNATURE	DATE
		DocuSigned by: Joseph L. Stone 443F443F329A402	3/10/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
U-4751	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	< 4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	> 50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	< 2	< 0.25
	SOFT	2 TO 4	0.25 TO 0.5
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	> 30	> 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) PL — PLASTIC LIMIT	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
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
25/025 ↦ DIP & DIP DIRECTION OF ROCK STRUCTURES
SOIL SYMBOL
◕ TEST BORING (SPT, DPT, DMT, VST, PMT)
⬡ SLOPE INDICATOR INSTALLATION
☒ ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
⊕ AUGER BORING
⦻ CONE PENETROMETER TEST
— — INFERRED SOIL BOUNDARY
⌖ CORE BORING
● SOUNDING ROD
INFERRED ROCK LINE
MW ○ MONITORING WELL
⊕ TEST BORING WITH CORE
▾▾▾ ALLUVIAL SOIL BOUNDARY
△ PIEZOMETER INSTALLATION
⬭ SPT N-VALUE

RECOMMENDATION SYMBOLS

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

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
W/ - WITH
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
☒ CPT
☐ ______

ADVANCING TOOLS:
☐ CLAY BITS
☐ 6" CONTINUOUS FLIGHT AUGER
☒ 8" HOLLOW AUGERS
☒ HARD FACED FINGER BITS
☐ TUNG.-CARBIDE INSERTS
☒ CASING ☐ W/ ADVANCER
☒ TRICONE 2 7/8 " STEEL TEETH
☐ TRICONE ______ " TUNG.-CARB.
☐ CORE BIT
☐ ______

HAMMER TYPE:
☒ AUTOMATIC ☐ MANUAL

CORE SIZE:
☐ -B ______ ☐ -H ______
☐ -N ______

HAND TOOLS:
☐ POST HOLE DIGGER
☒ 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:

ELEVATION: FEET

NOTES:

U.C.P. - UNDIVIDED COASTAL PLAIN

NM - GROUNDWATER NOT MEASURED (SEE SHEET 76 FOR EXAMPLE)

┳ ┳ - APPROXIMATE LIMIT OF ORGANIC SOILS

DATE: 8-15-14

09/08/99

TIP PROJECT: U-4751

CONTRACT:

R/W PLANS
16-NOV-2016 14:02

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4751	3	299

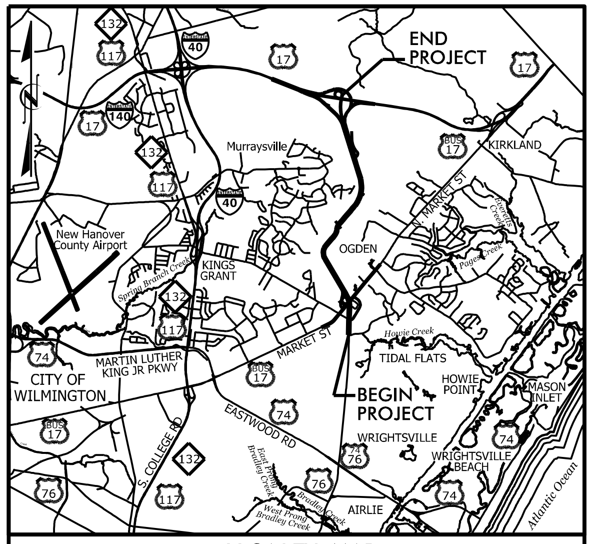
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
40191.1.2		PE
40191.2.1		R/W

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEW HANOVER COUNTY

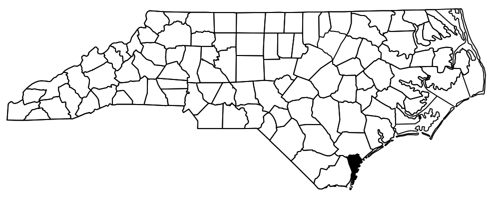
LOCATION: SR 1409 (MILITARY CUTOFF ROAD) TO US 17 IN WILMINGTON

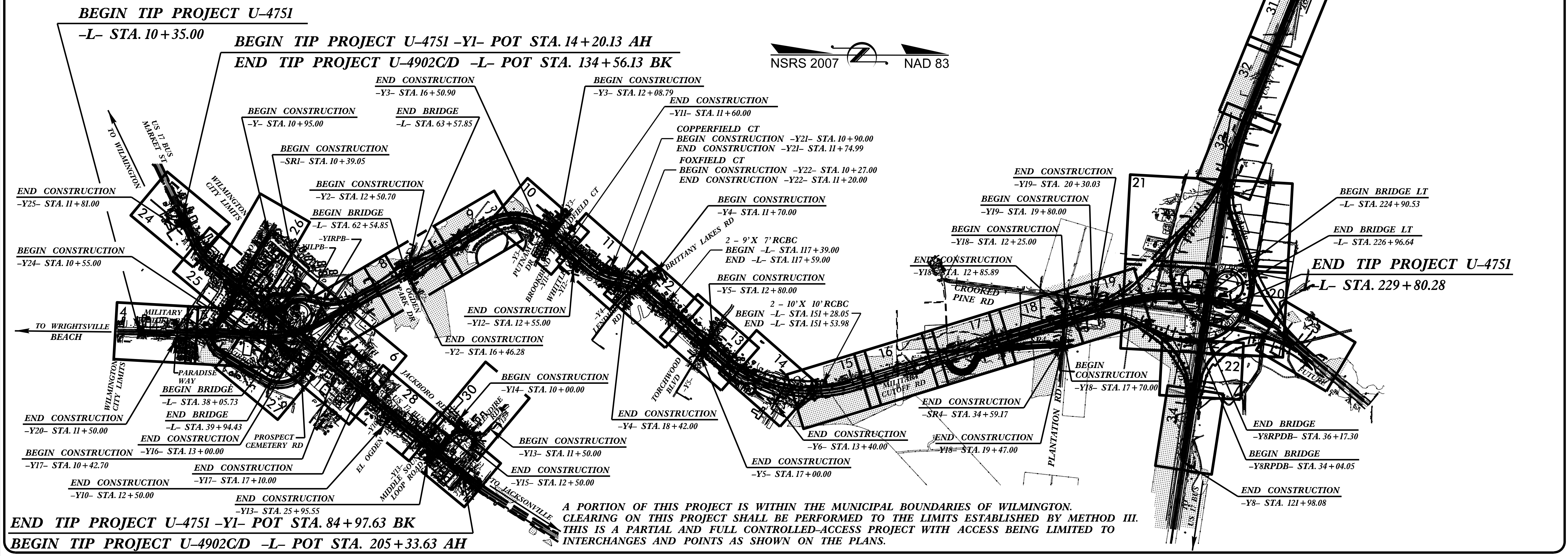
TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALLS, SIGNALS, STRUCTURES & CULVERTS



VICINITY MAP

N.T.S.





A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WILMINGTON. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III. THIS IS A PARTIAL AND FULL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES AND POINTS AS SHOWN ON THE PLANS.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 23,900
ADT 2037 = 49,100
K = 12%
D = 60%
T = 7%*
V = 50 MPH
* (TTST = 3% + DUAL 4%)
FUNC CLASS =
ARTERIAL/FREEWAY
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4751 = 5.394 MILES
LENGTH STRUCTURE TIP PROJECT U-4751 = 0.103 MILES
TOTAL LENGTH OF TIP PROJECT U-4751 = 5.497 MILES

PLANS PREPARED FOR THE NCDOT BY:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 17, 2015

LETTING DATE:
OCTOBER 17, 2017

JOHN N. JOHNSON, PE
PROJECT ENGINEER

SEAN C. STEPHENS, EI
PROJECT DESIGNER

GARY LOVERING, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

WBS PROJECT: 40191.1.2
TIP NUMBER: U-4751
F.A. PROJECT: HPNHS-1409(7)
COUNTY: NEW HANOVER

DESCRIPTION: SR 1409 (Military Cutoff Rd) to US 17 in Wilmington

SUBJECT: Geotechnical Inventory Report

PROJECT DESCRIPTION

The proposed project is located in New Hanover County immediately north of the city of Wilmington. The proposed roadway and bridges will extend Military Cutoff Road from Market Street to the US 17 Wilmington Bypass.

A geotechnical field investigation was conducted by NCDOT personnel with the assistance of CATLIN Engineers and Scientists (CATLIN) and Mid-Atlantic Drilling (MAD) personnel from May 2014 through July 2015. Standard penetration test borings were advanced using hollow-stem augers in addition to mud rotary drilling techniques under the direct supervision of a North Carolina Licensed Well Contractor with a Central Mine Equipment (CME) 550 or a CME 45 drilling rig equipped with an automatic hammer. Standard penetration testing was conducted in general accordance with American Society for Testing and Materials (ASTM) D-1586-84, "Penetration Test and Split Barrel Sampling of Soils" or American Association of State Highway and Transportation Officials (AASHTO) Standard Method T206-81. Cone Penetrometer Test (CPT) borings in addition to hand-augered borings were advanced across the entire project site to augment the SPT data. Cone Penetrometer Test borings were advanced with a track mounted Hogentogler pushing system. A total of approximately 577 borings totaling roughly 6,270 vertical feet were advanced during this investigation.

Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by NCDOT Materials and Tests Unit Soils Laboratory located in Raleigh, North Carolina. Samples were prepared and analyzed in accordance with one or more of the following AASHTO Standards as modified by NCDOT:

T 87-86	(Dry Preparation of Disturbed Soil)
T 88-93	(Particle Size Analysis)
T 89-94	(Liquid Limit)
T 90-94	(Plastic Limit)
T 265-93	(Soil Moisture Content)
T 267	(Organic Content)

Proposed SPT and hand-auger drilling locations as well as drilled locations were determined in the field by NCDOT personnel. CATLIN and MAD personnel used Global Positioning System (GPS) technology to locate CPT borings and some SPT borings. All horizontal locations were recorded to the nearest foot and are presented in the North Carolina State Plane (NCSP), North American Datum 1983 (NAD 83). Vertical control was measured to the nearest 0.1 foot and referenced to the National Geodetic Vertical Datum 1988 (NGVD88). All measurements were recorded and reported in United States Survey Feet (US Ft).

The following alignments were investigated. Plan sheets, subsurface profiles, and selected cross sections of the alignment are included in this report.

Line	Station (±)
-L-	10+35 to 229+80
-Y-	10+95 to 31+93
-Y1-	14+20 to 84+97
-Y1LPB-	10+00 to 24+40
-Y1RPA-	10+00 to 21+89
-Y1RPB-	10+00 to 32+12
-Y1RPD-	10+00 to 35+66
-Y3-	12+08 to 16+50
-Y4-	11+70 to 18+42
-Y5-	12+80 to 17+00
-Y6-	10+00 to 13+40
-Y8-	31+20 to 121+98
-Y8LPB-	10+00 to 25+07
-Y8RPB-	29+50 to 33+03
-Y8RPC-	10+00 to 34+66
-Y8RPCA-	48+03 to 68+92
-Y8RPD-	10+00 to 30+18
-Y8RPDB-	10+00 to 69+87
-Y10-	10+00 to 12+50
-Y12-	10+00 to 12+55
-Y13-	11+50 to 25+95
-Y14-	10+00 to 12+22
-Y15-	10+00 to 12+50
-Y16-	10+00 to 13+10
-Y17-	10+42 to 17+10
-Y18-	12+25 to 12+85
-Y18-	17+70 to 19+47
-Y20-	10+00 to 11+50
-Y24-	10+55 to 16+73
-SR1-	10+39 to 19+47
-SR4-	10+00 to 34+59

The project reportedly will consist of 5.497 miles of roadway and bridges.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) GROUNDWATER: As a large portion of this project is located within identified wetlands with relatively low topography, seasonal high groundwater, or the potential for groundwater related construction problems may exist. Groundwater within six (6) feet of natural ground was noted at the following sections:

Line	Station (±)
-L-	35+00 to 229+80
-Y-	22+00 to 25+00
-Y1-	29+00 to 31+00
-Y1-	35+00 to 45+00
-Y1-	77+00 to 84+97
-Y1LPB-	10+00 to 13+00
-Y1LPB-	29+00 to 32+12
-Y1RPB-	10+00 to 25+00
-Y1RPD-	10+00 to 15+50
-Y1RPD-	19+00 to 21+00
-Y1RPD-	23+00 to 27+00
-Y1RPD-	33+00 to 35+66
-Y4-	15+00 to 18+42
-Y5-	12+80 to 17+00
-Y6-	10+00 to 13+40
-Y8-	31+20 to 121+98
-Y8LPB-	10+00 to 25+07
-Y8RPB-	29+50 to 33+03
-Y8RPC-	10+00 to 34+66
-Y8RPCA-	48+03 to 68+92
-Y8RPD-	10+00 to 30+18
-Y8RPDB-	10+00 to 69+87
-Y12-	10+00 to 12+55
-Y13-	11+50 to 25+95
-Y14-	10+00 to 12+22
-Y17-	11+00 to 14+50
-Y18-	12+25 to 12+85
-Y18-	17+81 to 19+33
-Y24-	13+50 to 15+40
-SR4-	10+00 to 34+59

Standing water was noted in the majority of drainage ditches along and intersecting the -L- line from approximate station 49+00 to the end of the project.

Ponds with depths of up to 12 feet were noted along the following sections:

Line	Station (±)	Offset (±)
-L-	112+57 to 116+33	40ft RT
-L-	120+53 to 121+18	85ft RT
-L-	121+60 to 126+20	90ft RT
-L-	126+40 to 127+55	90ft RT
-L-	128+50 to 145+00	20ft RT to 120ft RT

The ponds are retention ponds associated with the drainage system of the heavily developed area through which this project traverses.

2) COHESIVE SOILS: Clay soils which may have the potential to cause embankment/subgrade and or slope stability problems during construction was encountered within portions of this project at the following sections:

Line	Station (±)
-L-	63+25 to 64+74
-L-	113+00 to 117+90
-L-	131+10 to 133+90
-L-	138+34 to 145+90
-L-	208+90 to 211+00
-L-	219+00 to 231+00
-Y6-	10+00 to 13+40
-Y8LPB-	10+00 to 19+90
-Y8RPC-	24+15 to 29+90
-Y8RPD-	12+18 to 22+88
-Y8RPDB-	25+10 to 44+90

3) ORGANIC SOILS: Organic material that may cause construction related issues was identified at the following sections on the project:

Line	Station ±
-L-	23+12 to 28+58
-L-	49+10 to 135+15
-L-	135+67 to 146+53
-L-	148+45 to 219+47
-L-	220+80 to 229+80
-Y1RPA-	10+00 to 12+13
-Y1RPB-	10+00 to 18+59
-Y1RPD-	10+69 to 29+52
-Y3-	12+08 to 16+50
-Y4-	11+70 to 18+42
-Y5-	12+80 to 17+00
-Y6-	10+00 to 13+40
-Y8-	40+39 to 79+52
-Y8-	85+84 to 106+91
-Y8LPB-	10+00 to 25+07
-Y8RPB-	29+50 to 33+03
-Y8RPC-	10+00 34+66
-Y8RPCA-	48+03 to 68+92
-Y8RPD-	10+00 to 28+28
-Y8RPDB-	10+00 to 69+87
-Y12-	10+00 to 12+55
-Y18-	17+81 to 19+47
-SR4-	10+00 to 34+59

Material within the identified organic soil areas was characterized into two predominant types which consisted of very loose to loose, brown to black sand with trace to moderate organics and very soft/very loose, muck and very soft/loose to medium stiff/medium dense, sandy silt to silty sand with trace to moderate organics.

A total of 43 samples were submitted for organic analysis. Laboratory analysis of select soils revealed reported organic concentrations ranging from 0.4% to 74.6% with an average of 9.3%. The highest reported organic concentrations were as follows:

Line	Station / Offset	Sample Depth	Percent Organic
-L-	114+00 / 35ft RT	3.7-5.2 ft.	63.5%
-L-	120+00 / 40ft RT	0.0-4.5 ft.	74.6%

4) WATER WELLS: No water wells were identified within the proposed construction limits. Potable water is supplied to residences in the vicinity by a public water supply. Well buffers were noted for two municipal production wells that are located immediately adjacent to the project corridor at the following locations:

Line	Station (±)	Offset (±)
-L-	139+12	210ft RT
-L-	139+42	215ft RT

Water supply wells may be present along the project corridors that were not detected.

PHYSIOGRAPHY AND GEOLOGY

The project is located within the eastern most portion of the North Carolina Coastal Plain physiographic province. Geology in the vicinity of Wilmington is dominated by Undivided Coastal Plain (U.C.P.) materials which are noted as Quaternary Surficial Deposits on the Geologic Map of North Carolina. Coastal Plain materials are described as sand, clay, gravel, and peat deposits which were deposited in marine, fluvial, eonian, and lacustrine environments. Sediments of the Castle Hayne and Peedee Formations are reported to underlay the U.C.P. deposits in the vicinity of Wilmington.

Land use in the area is primarily residential, commercial, and undeveloped wetland and light agriculture. The land surface in the project vicinity is dominated by flat terrain typical of coastal environments with land surface elevations ranging from approximately 25 to 50 feet with elevations increasing to the north. Numerous underground and overhead utilities exist in the vicinity of the proposed project. The project is primarily drained by surficial runoff to stormwater systems and drainage ditches.

GROUNDWATER

Groundwater data was collected from open boreholes, where possible, during the field investigation conducted during May 2014 and August 2015

Measured groundwater elevations (24 hour measurements) ranged from elevation 29.5 feet to 41.4 feet with an average elevation of 38.7 feet. Twenty-four hour depth to groundwater measurements ranged from 0.1 feet to 12.4 feet (below existing land surface), with an average depth to water of 3.8 feet. Formational material in which groundwater was typically observed was found to be predominantly sandy material with an assumed moderate to high permeability.

SOIL PROPERTIES

Soils encountered at the project site include roadway embankment, artificial fill, undivided coastal plain sediments, and Castle Hayne Formation sediments.

Roadway Embankment soils were identified beneath and adjacent to existing roadways and consists of loose to medium dense, sand and silty sand (A-3 and A-2-4).

Artificial fill consisting of muck to very loose to loose sand and silty sand with trace to moderate organic content was encountered adjacent to many of the numerous drainage ditches.

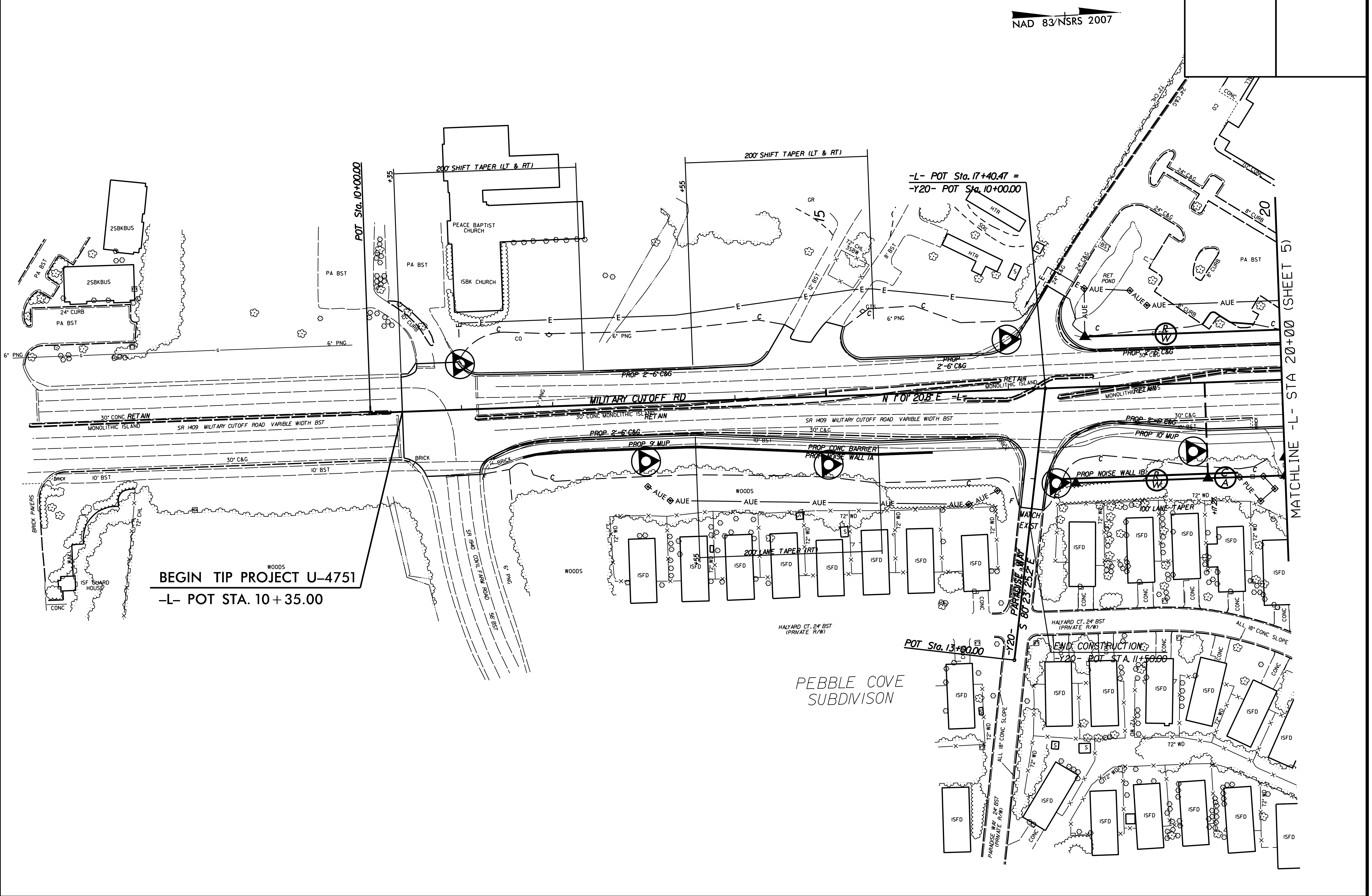
The dominant undivided coastal plain (U.C.P.) material encountered consisted of very loose to dense sand to silty sand (A-3 and A-2-4). The sand was encountered from land surface, or below the organic materials to an approximate elevation of zero to 15 feet.

Castle Hayne Formation material consisting of very soft to medium stiff sandy clay, clay, and silts was identified below the U.C.P. sands. The fine material was 10 to 20 feet thick on average and is underlain by soft to hard, sandy limestone.

PROJECT REFERENCE NO.	SHEET NO.
U-4751	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEGI) - ADDED AUE MONUMENTS ON PARCEL 4 AND CORRECTED STATION OFFSET CALLOUT AT PARCEL 4.



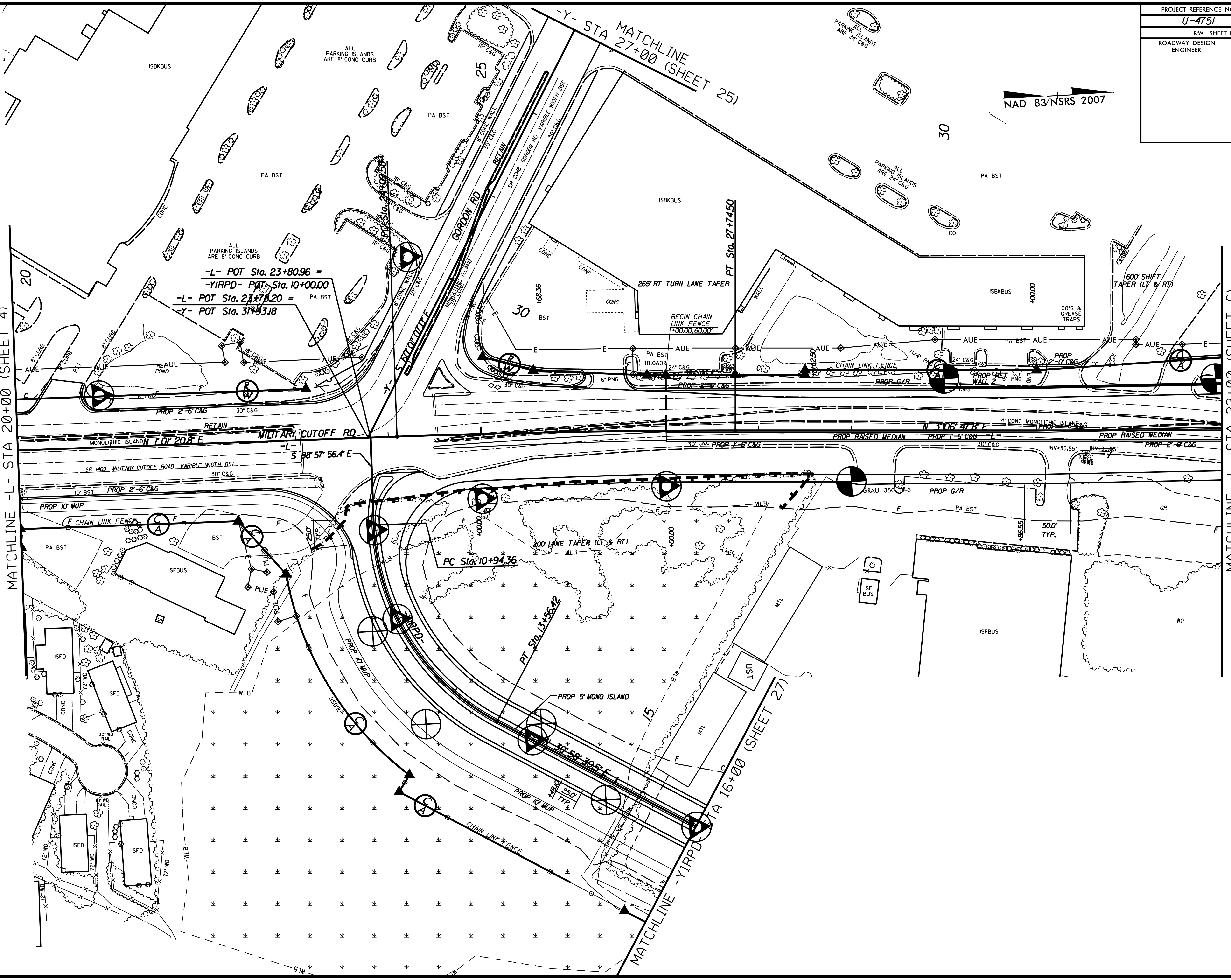
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4751	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEGI) - ADJUSTED MONUMENT AT PARCEL 3, ADDED STATION OFFSET AT PARCEL 8, CORRECTED STATION OFFSET AT PARCEL 10.

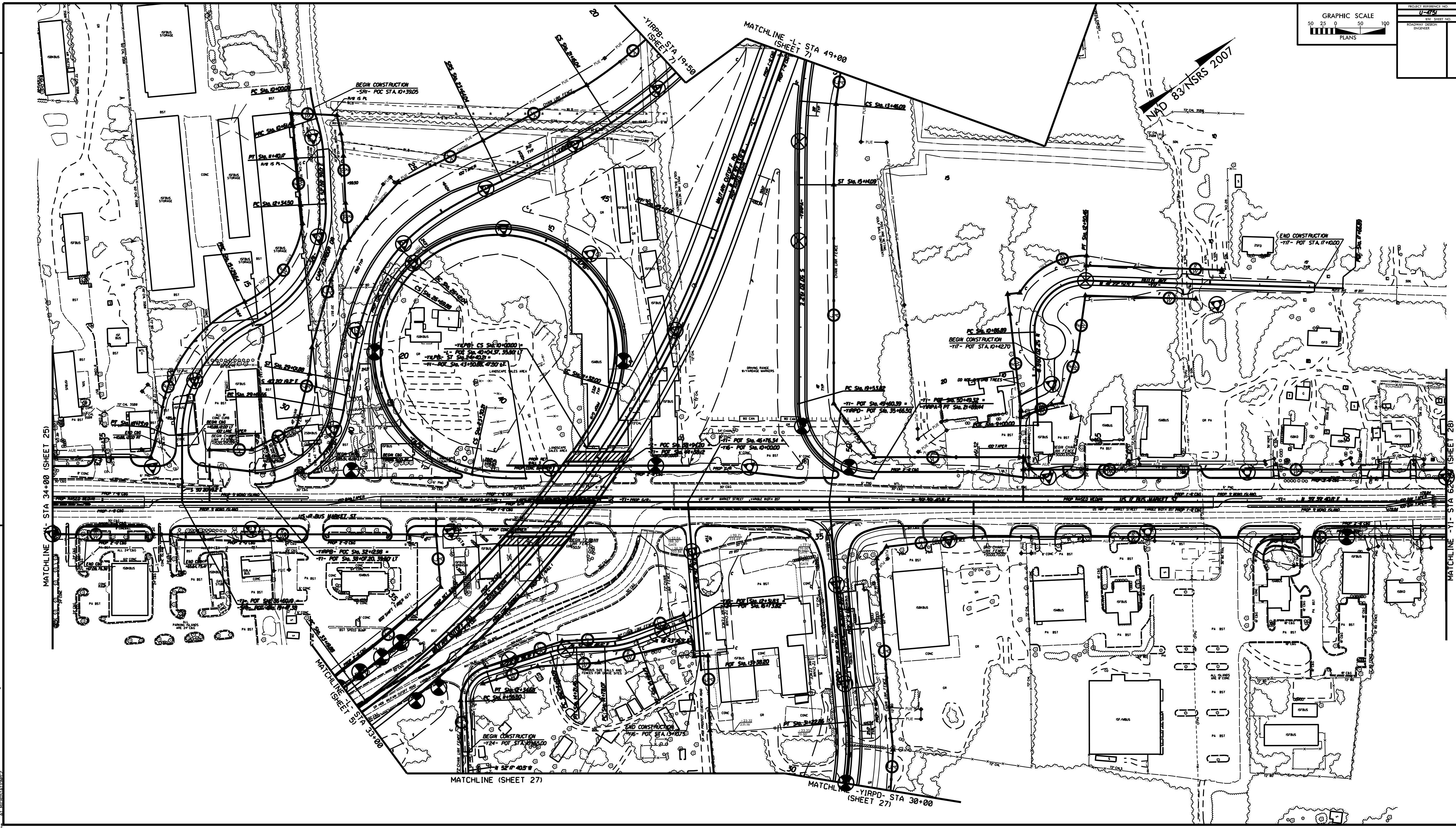
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_05.dgn



REVISIONS

2015-05-14 - R/W REVISION (SCS) - ADDED TCE TO PARCEL 13 TO ENCOMPASS CONSTRUCTION LIMITS,FROM STA.-Y24- 10+47 TO 11+69 RT.AND STA.12+13 TO 13+35 RT.
2015-07-31 - R/W REVISION (SCS) - REVISED TCE STATION OFFSETS AT PARCEL 8.
2015-08-12 - R/W REVISION (SCS) - ADDED TCE TO PARCEL 12,ADDED R/W EASEMENT TO PARCEL 13, MODIFIED C/A EASEMENT, MONUMENTS AND STATION OFFSETS AT PARCEL 12,13,18,901,& 907.UPDATED PROPERTY OWNER INFORMATION ON PARCEL 17 & 32. ADDED STATION OFFSET TO PARCEL 8A & 903.UPDATED STATION OFFSETS ON PARCEL 18. MODIFIED PROPERTY AND EASEMENT LINES ON PARCEL 26.
2015-09-28 - R/W REVISION (SCS) - UPDATED PROPERTY LINES FOR PARCEL 26 AND 28.
2015-10-21 - R/W REVISION (SCS) - UPDATED PARCEL INFORMATION ON PARCELS 21B,21C,21D,21E,21G,21H,21I,AND 21J

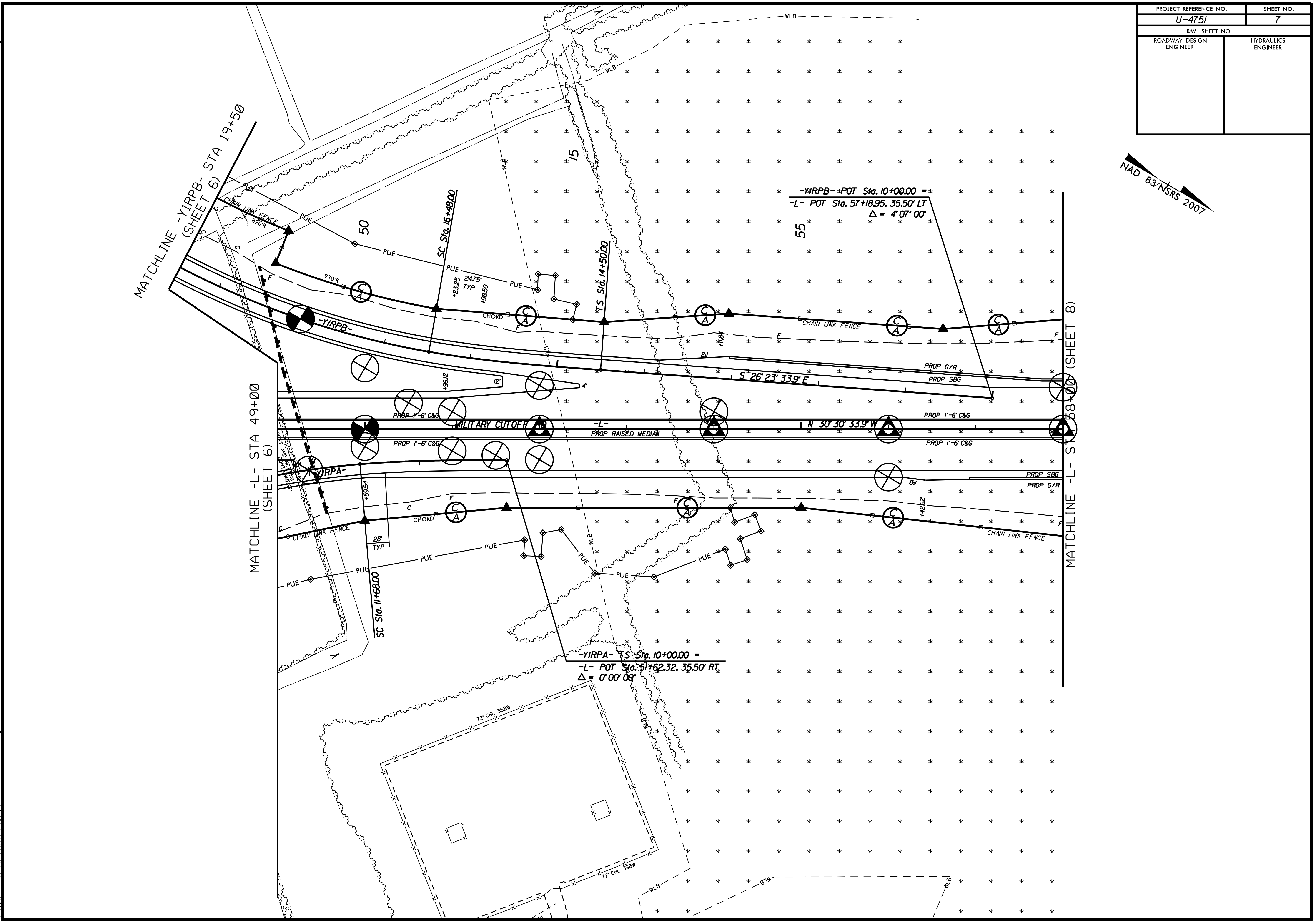
PROJECT REFERENCE NO.	SHEET NO.
U-4751	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT REFERENCE NO.	SHEET NO.
U-4751	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADJUSTED MONUMENT AT PARCEL 37.

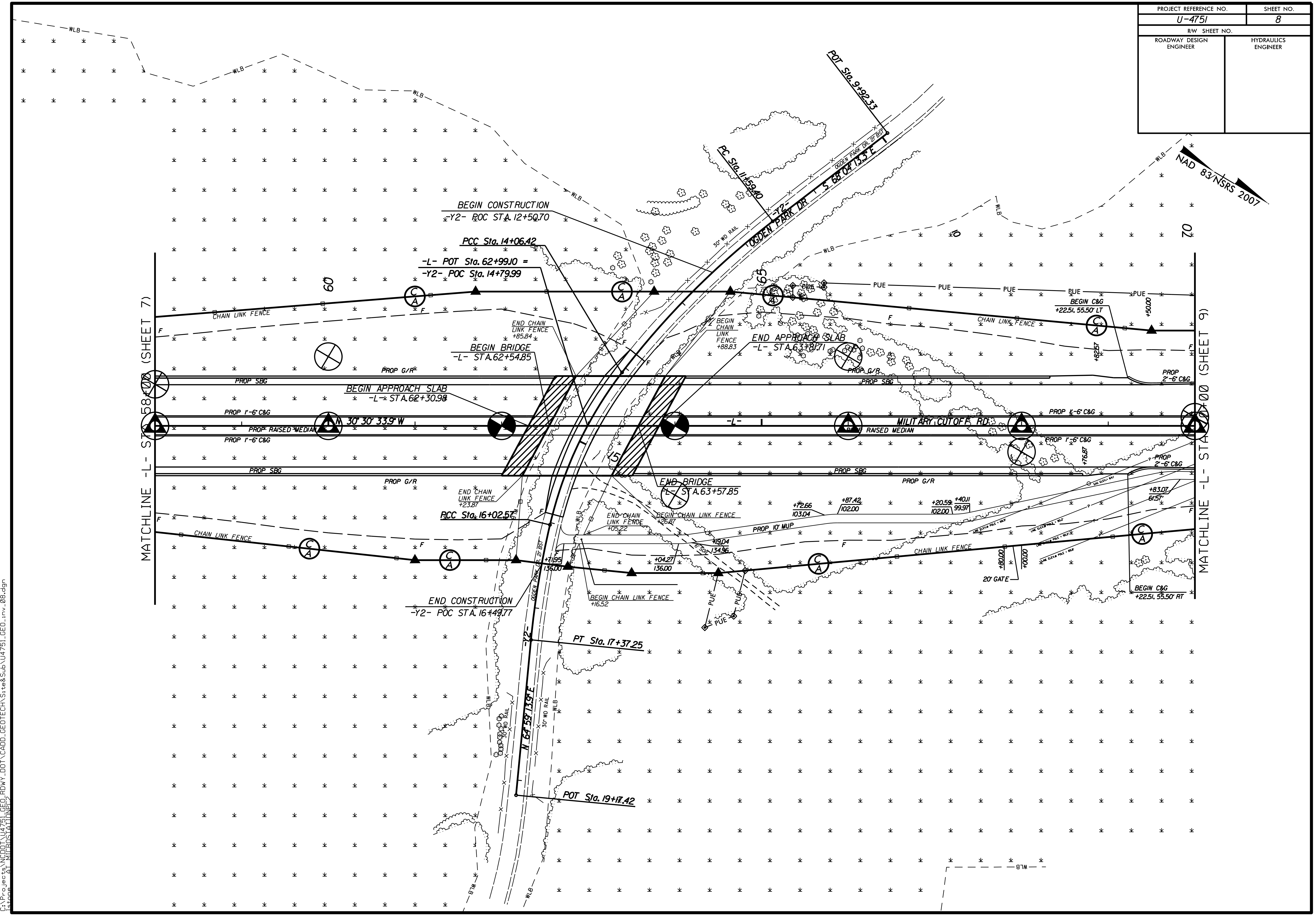


16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_07.dgn
1stone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-11-05 - R/W REVISION (SCS) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 38.



16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_08.dgn
lstone AT MICROSTATIONPC2

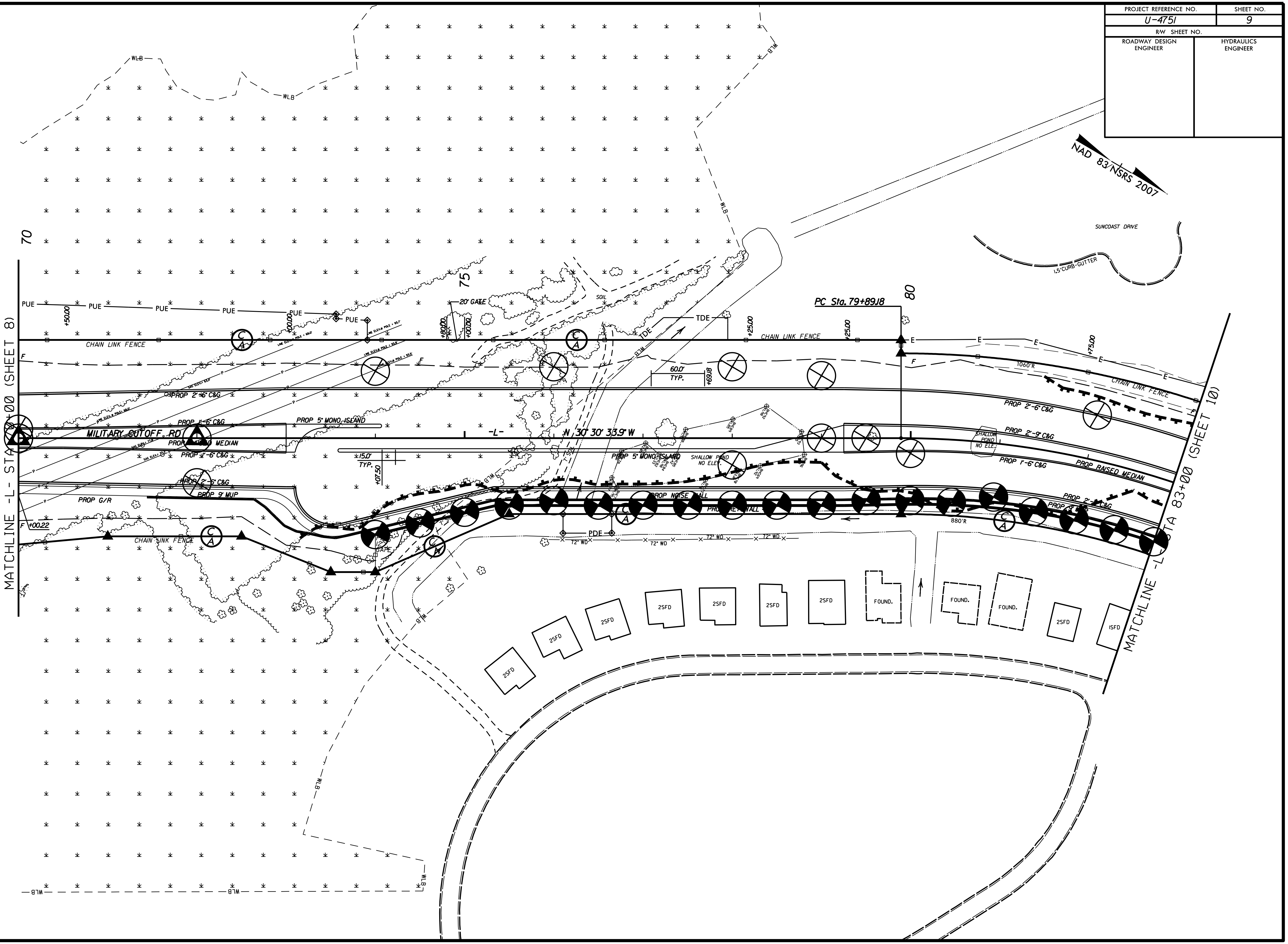
PROJECT REFERENCE NO.	SHEET NO.
U-4751	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADDED PROPERTY LINES FOR PARCEL 41, 41A, 41B, & 41C. UPDATED PROPERTY OWNER INFORMATION ON PARCEL 41, 41A, 41B, 41C, 46, 47, & 48.
2015-10-21 - R/W REVISION (SCS) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 39. ADDED PARCEL 41 AND CHANGED PARCEL 41 TO PARCEL 41D.
2015-11-05 - R/W REVISION (SCS) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 38.

16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEO
AT MICROSTATIONPC2



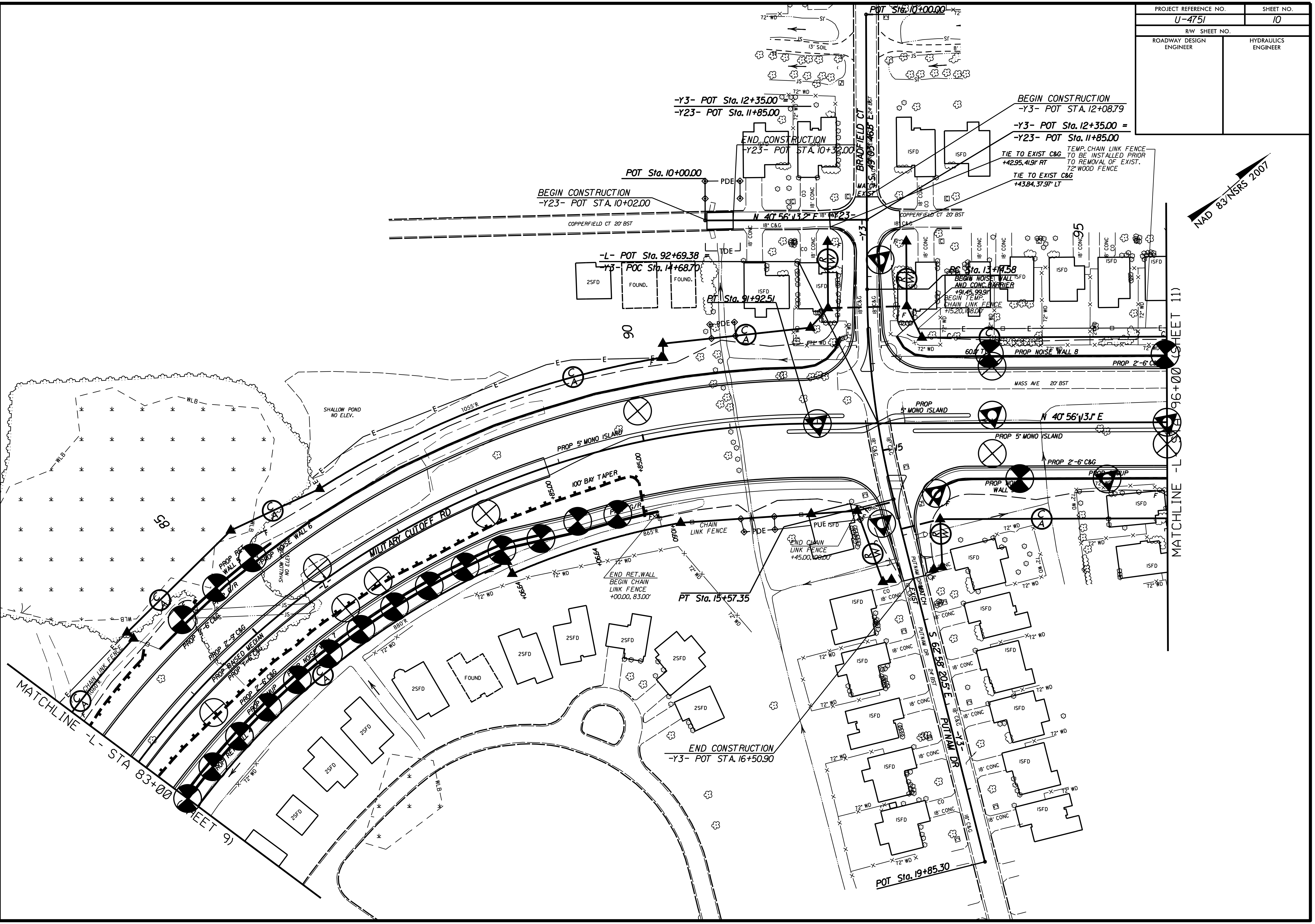
PROJECT REFERENCE NO.	SHEET NO.
U-4751	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 54, 56, 58, 68, 65, 67, 71, 73, 74, & 75. CHANGED PARCEL 59 TO PARCEL 41. MOVED MONUMENT AND CORRECTED STATION OFFSET AT PARCEL 925.

2015-10-21 - R/W REVISION (SCS) - CHANGED PARCEL 41 AND 57 TO 39, AND UPDATED PROPERTY OWNER INFORMATION ON PARCEL 39 AND 62.

2015-11-05 - R/W REVISION (SCS) - CHANGED PARCEL 41 TO 39 AND CHANGED PROPERTY OWNER INFORMATION ON PARCEL 39.

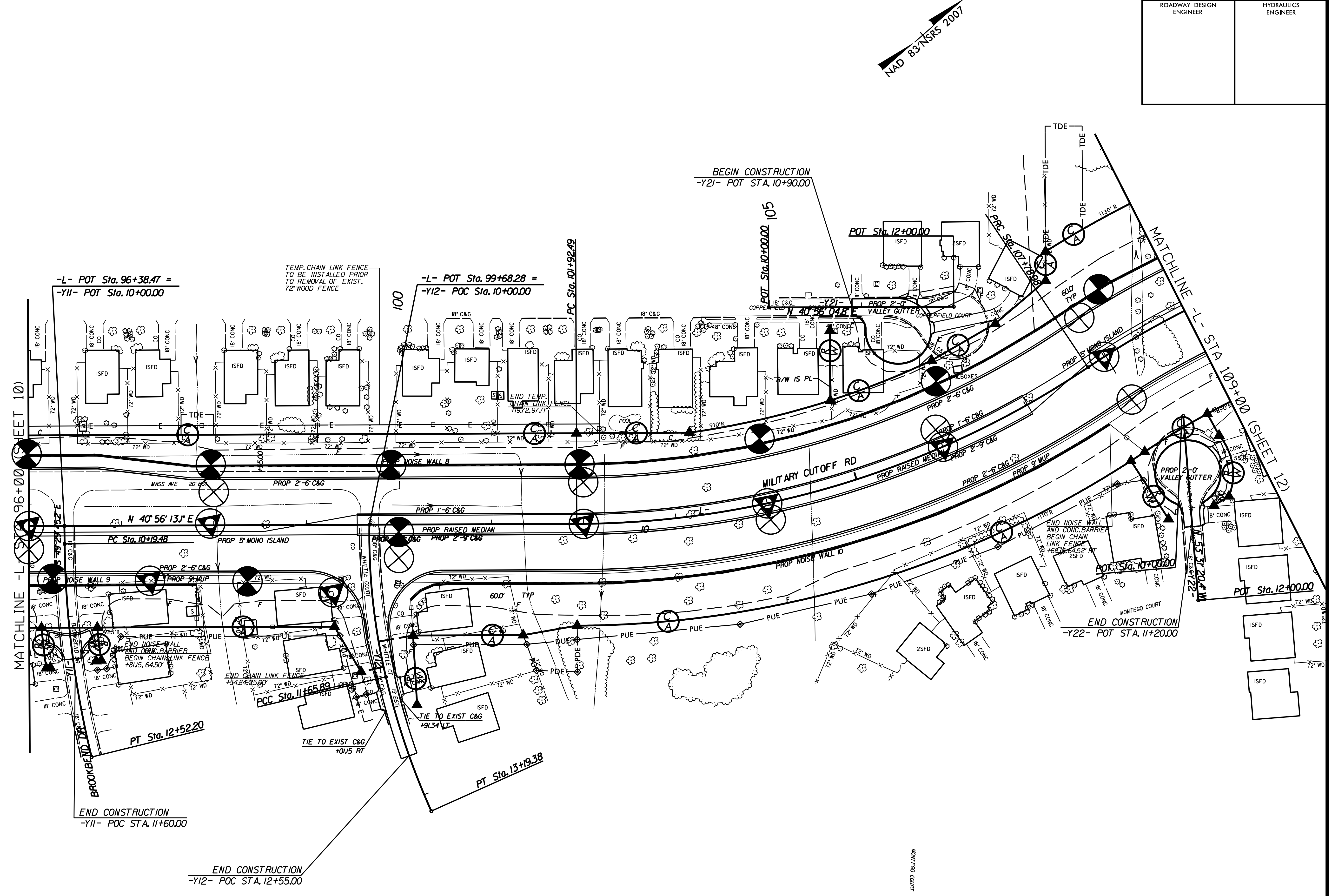


16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEO
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 73, 74, 75, 77, 82, 90, 91, 95, 96, 99, 101, & 102. ADDED STATION OFFSET AT PARCEL 84 AND 103.



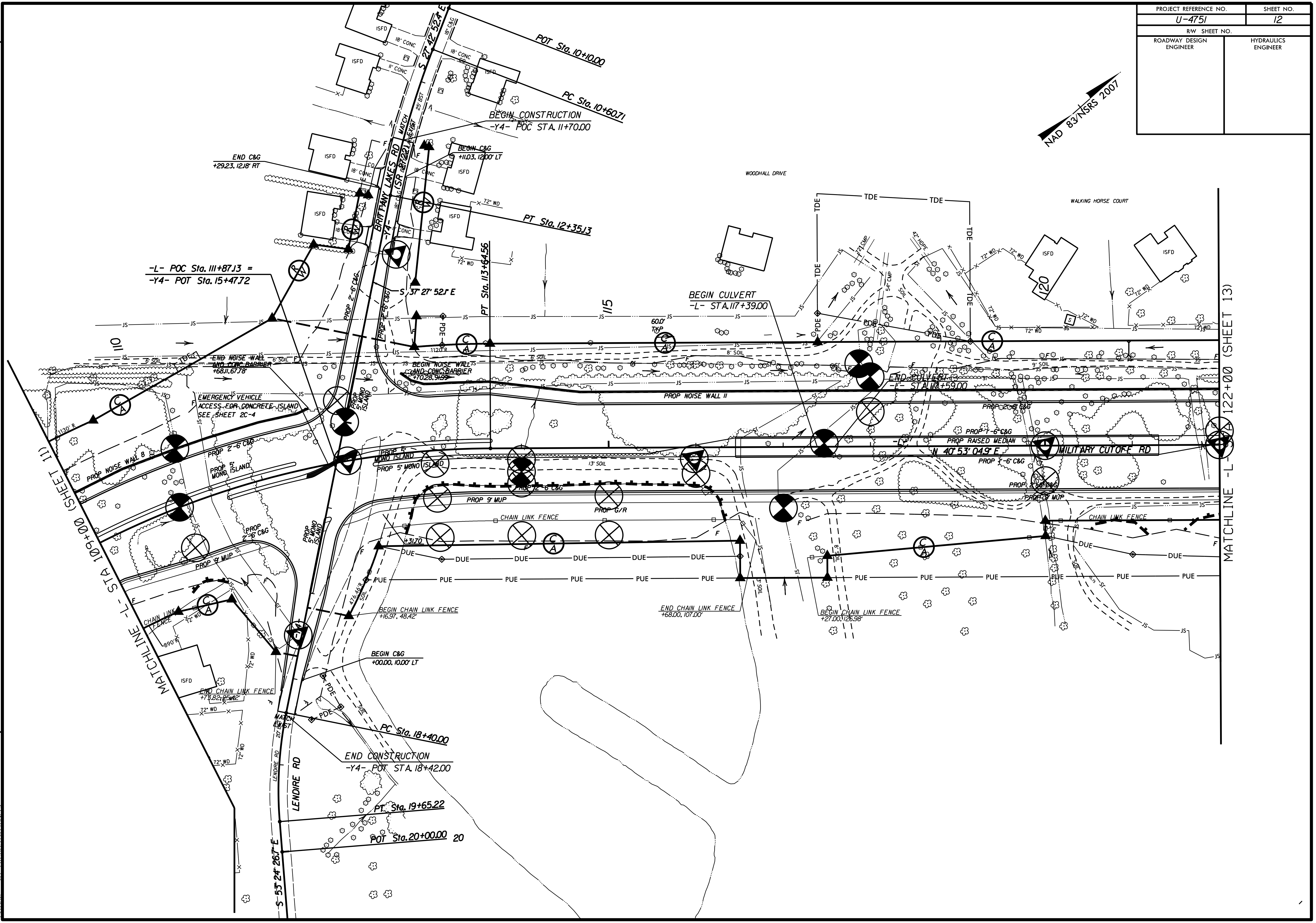
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_11.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 105 & 106. ADDED HOUSE ON PARCEL 114A, MOVED MONUMENTS AT PARCEL 905, MOVED PDE LINE & MONUMENT AT PARCEL 104.

2015-11-05 - R/W REVISION (CEG) - UPDATED PROPERTY LINES AND PROPERTY OWNER INFORMATION ON PARCEL 905, CREATING PARCELS 242, 243, AND 244.



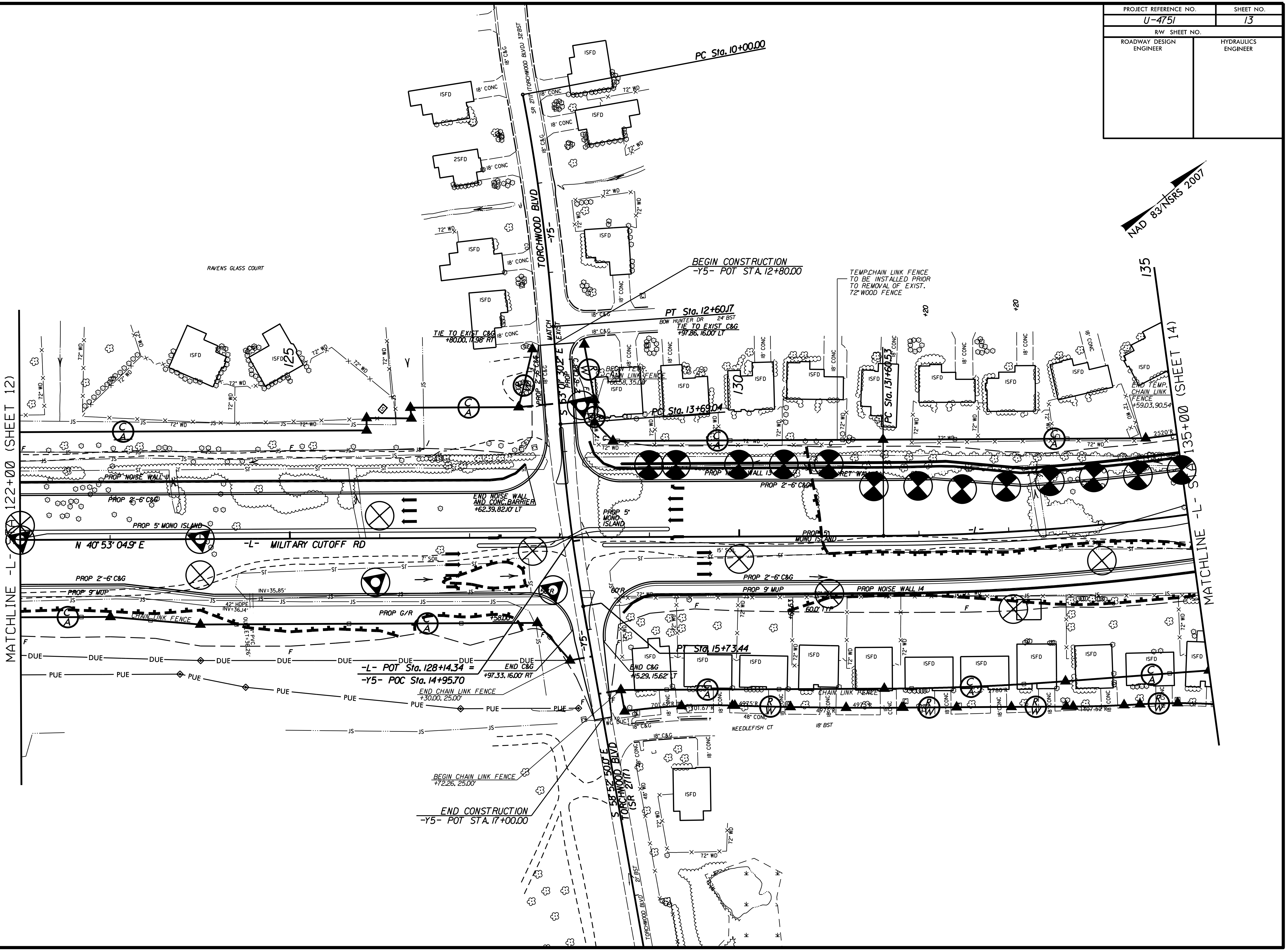
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_12.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCELS 114, 116, 123, 125, 127, 129, & 130, ADDED PUE MONUMENT AT PARCEL 115, ADDED STATION OFFSET AT PARCEL 115 & 118, CHANGED PARCEL 137 TO PARCEL 114, ADDED HOUSE TO PARCEL 116.

2015-11-05 - R/W REVISION (CEG) - CHANGED PARCEL 905 TO 243, UPDATED PROPERTY OWNER INFORMATION ON PARCEL 243.



16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_13.dgn
lstone AT MICROSTATIONPC2

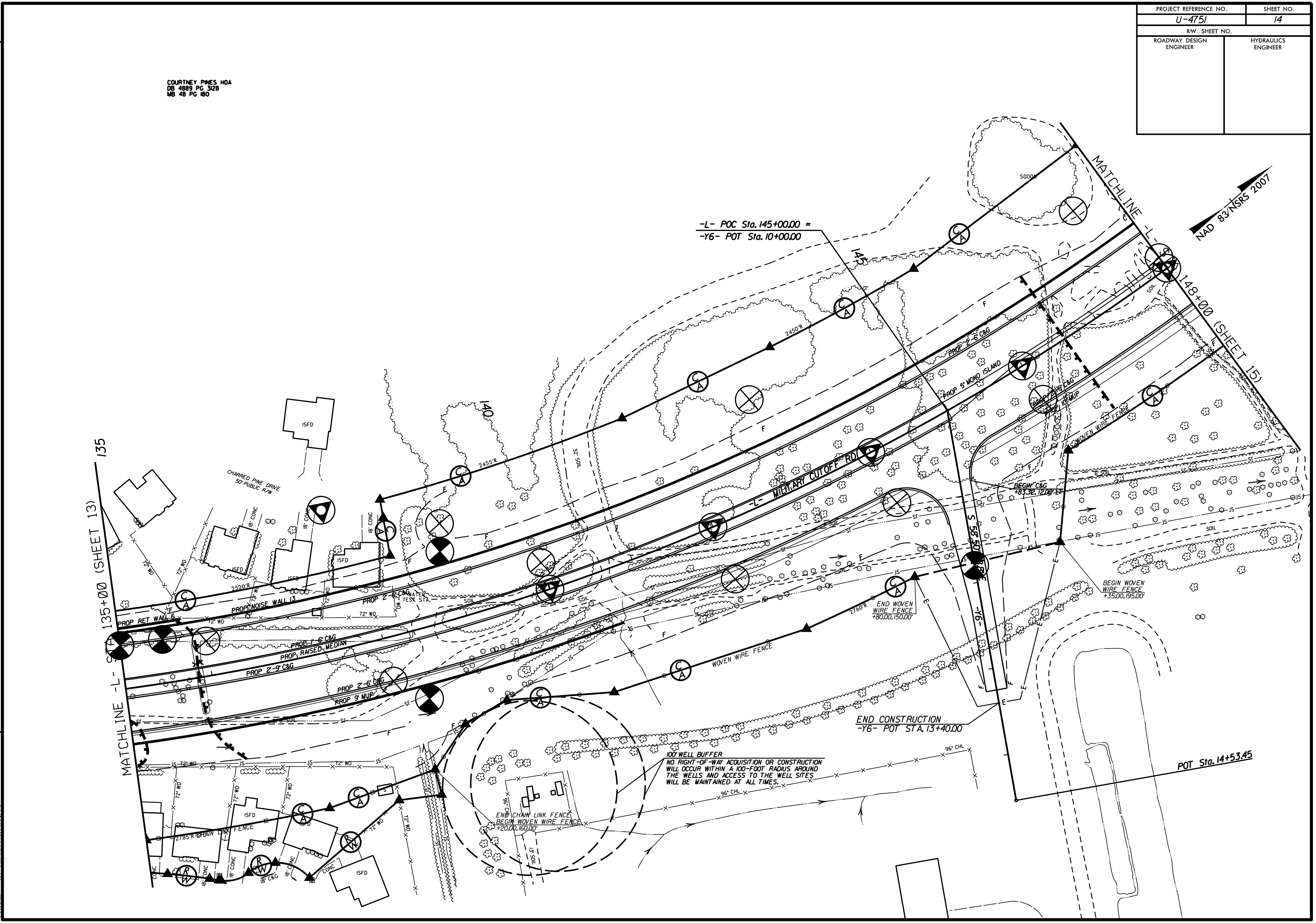
PROJECT REFERENCE NO.	SHEET NO.
U-4751	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 142, CHANGED PARCEL 137 TO PARCEL 114, ADDED STATION OFFSET AT PARCEL 140 & 145.

2015-10-21 - R/W REVISION (SCS) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 145.

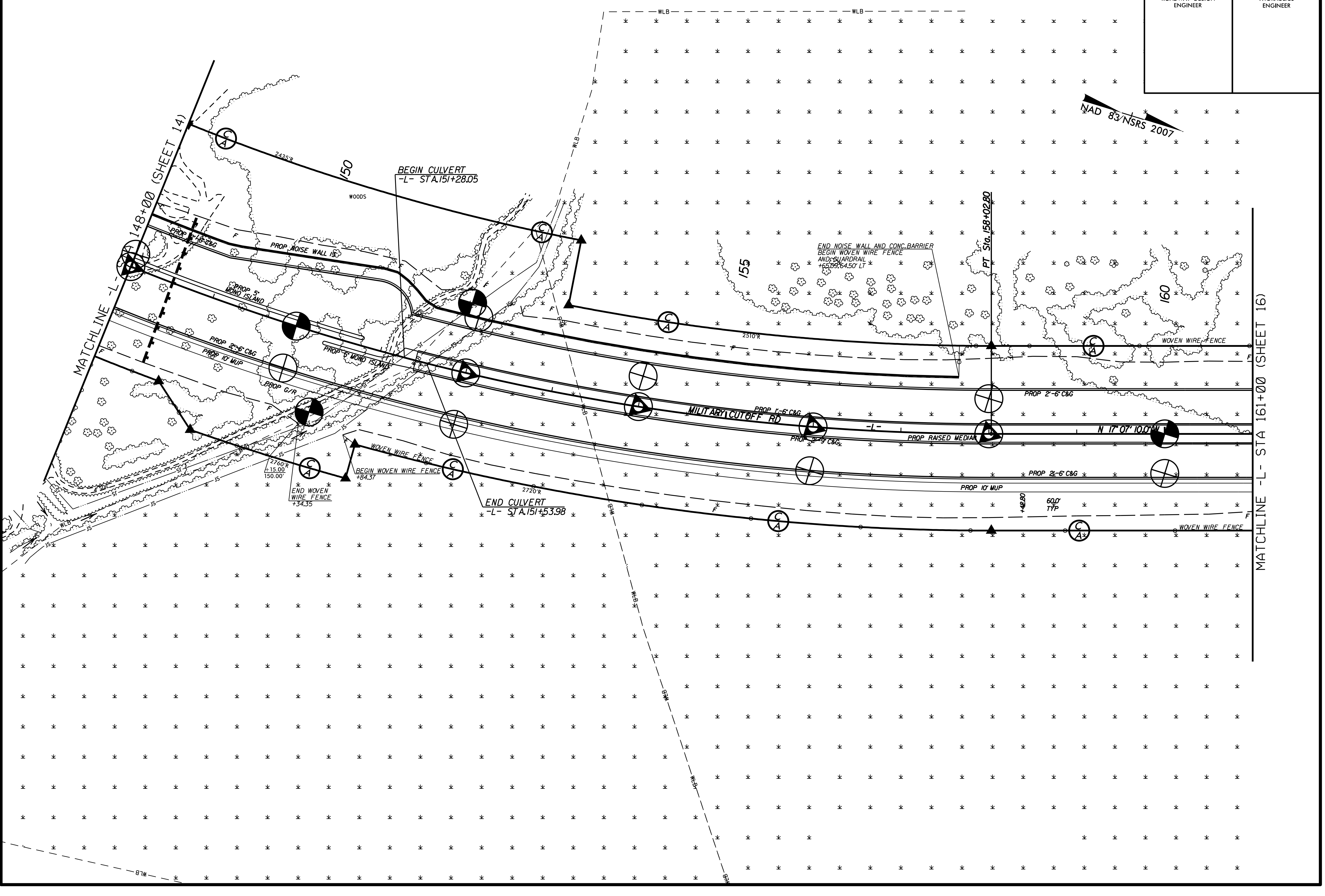
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_14.dgn
lstone AT MICROSTATIONPC2



PROJECT REFERENCE NO.	SHEET NO.
U-4751	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADJUSTED MONUMENT AT PARCEL 148.

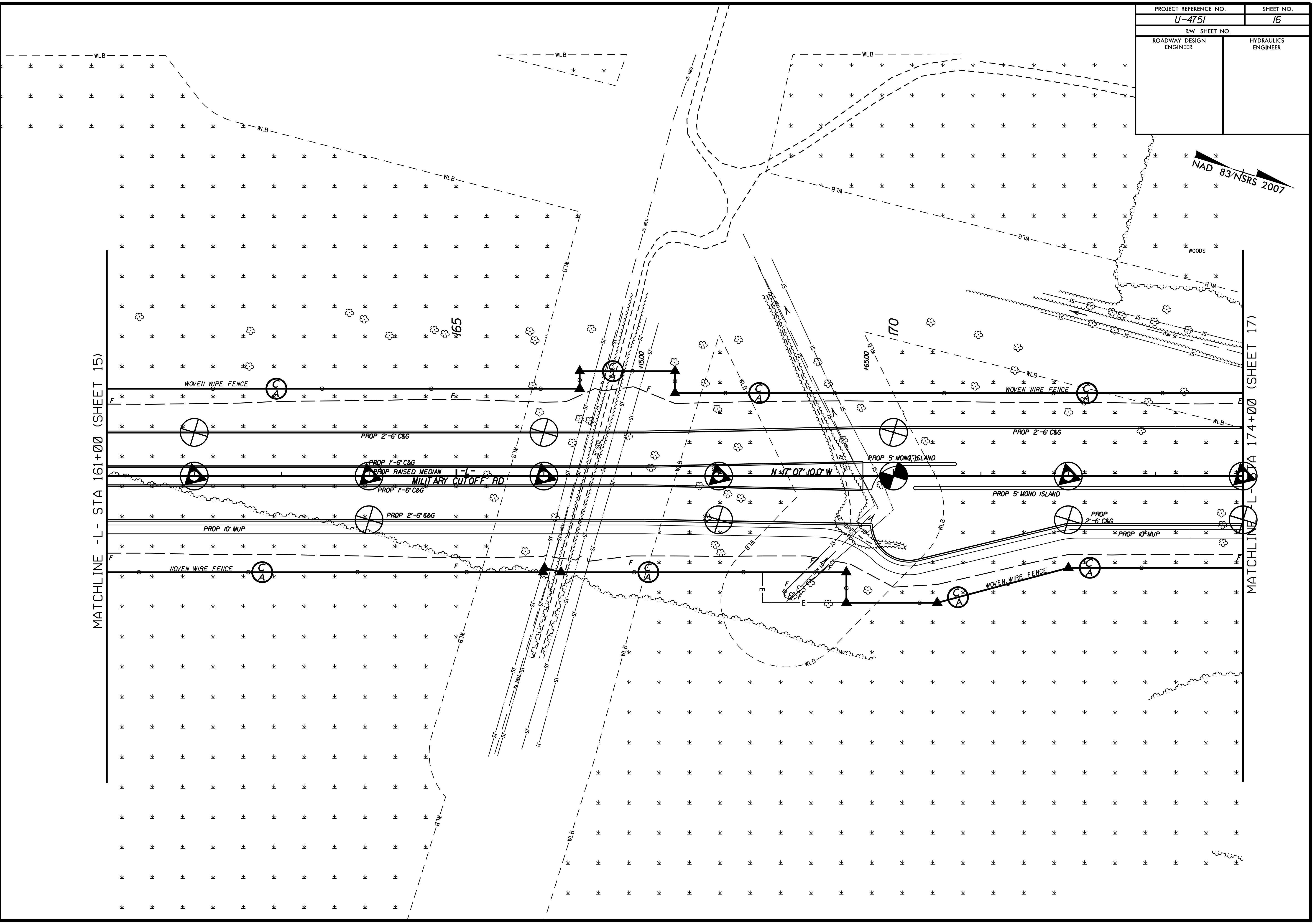


16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_15.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADJUSTED C/A RIGHT OF WAY TO ELIMINATE CLAIM ON PARCEL 150.



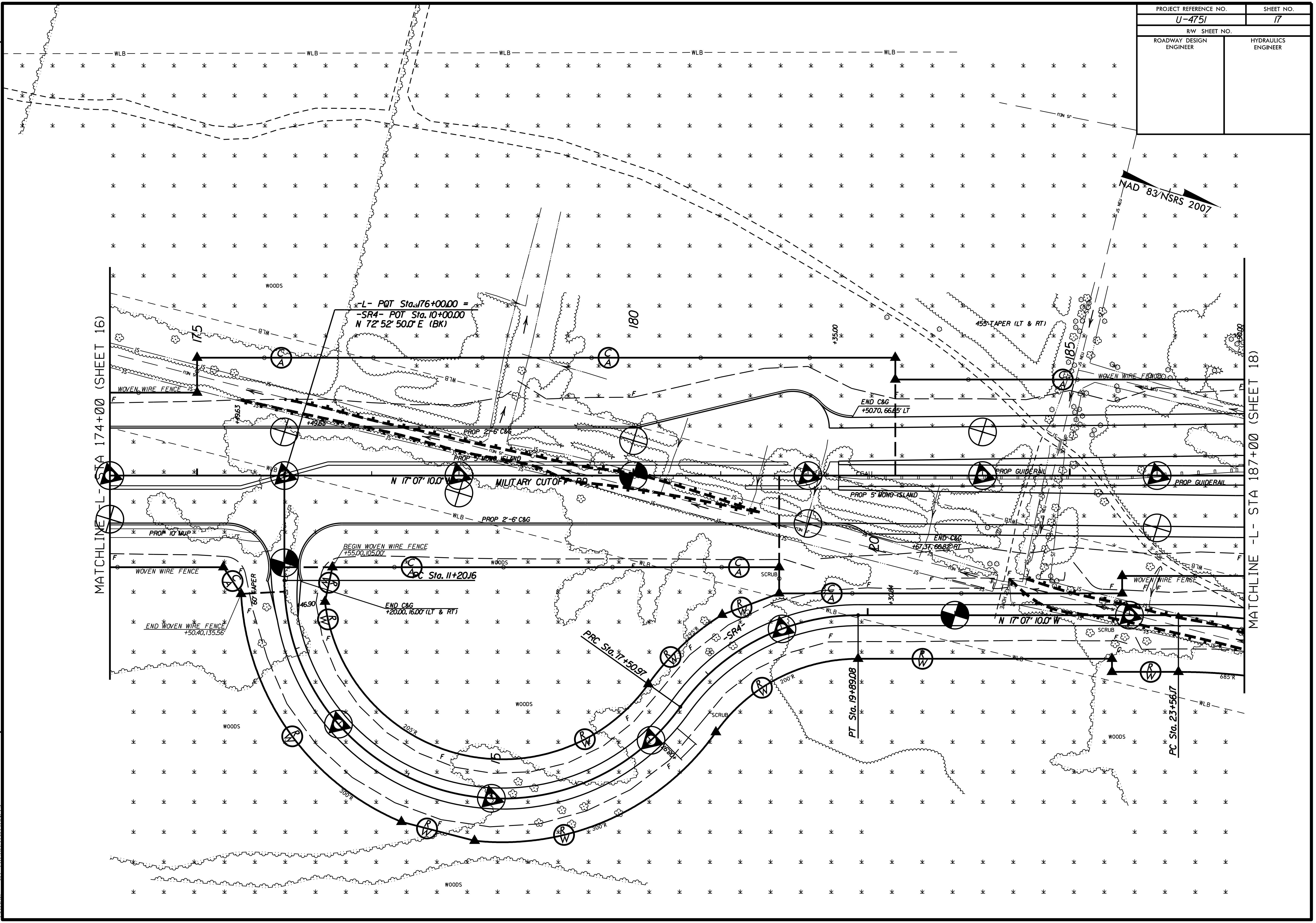
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_16.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADDED STATION OFFSET AT PARCEL 148, ADJUSTED C/A RIGHT OF WAY TO ELIMINATE CLAIM ON PARCEL 152.

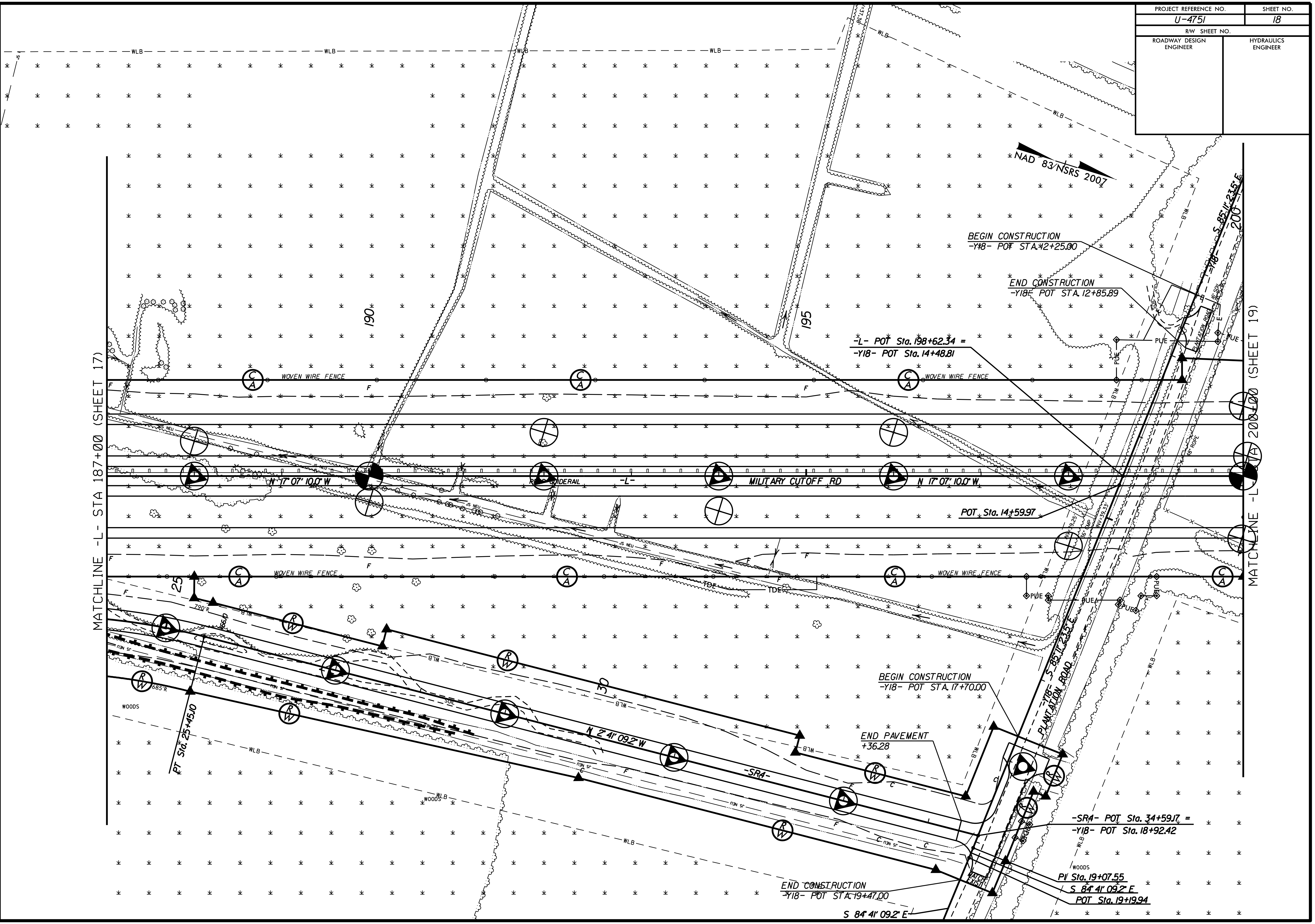
16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_17.dgn
lstone AT_MICROSTATIONPC2



PROJECT REFERENCE NO.	SHEET NO.
U-4751	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - AT PARCEL 156 REMOVED TDE INSIDE OF THE PUE, CORRECTED STATION OFFSET AT PARCEL 915.

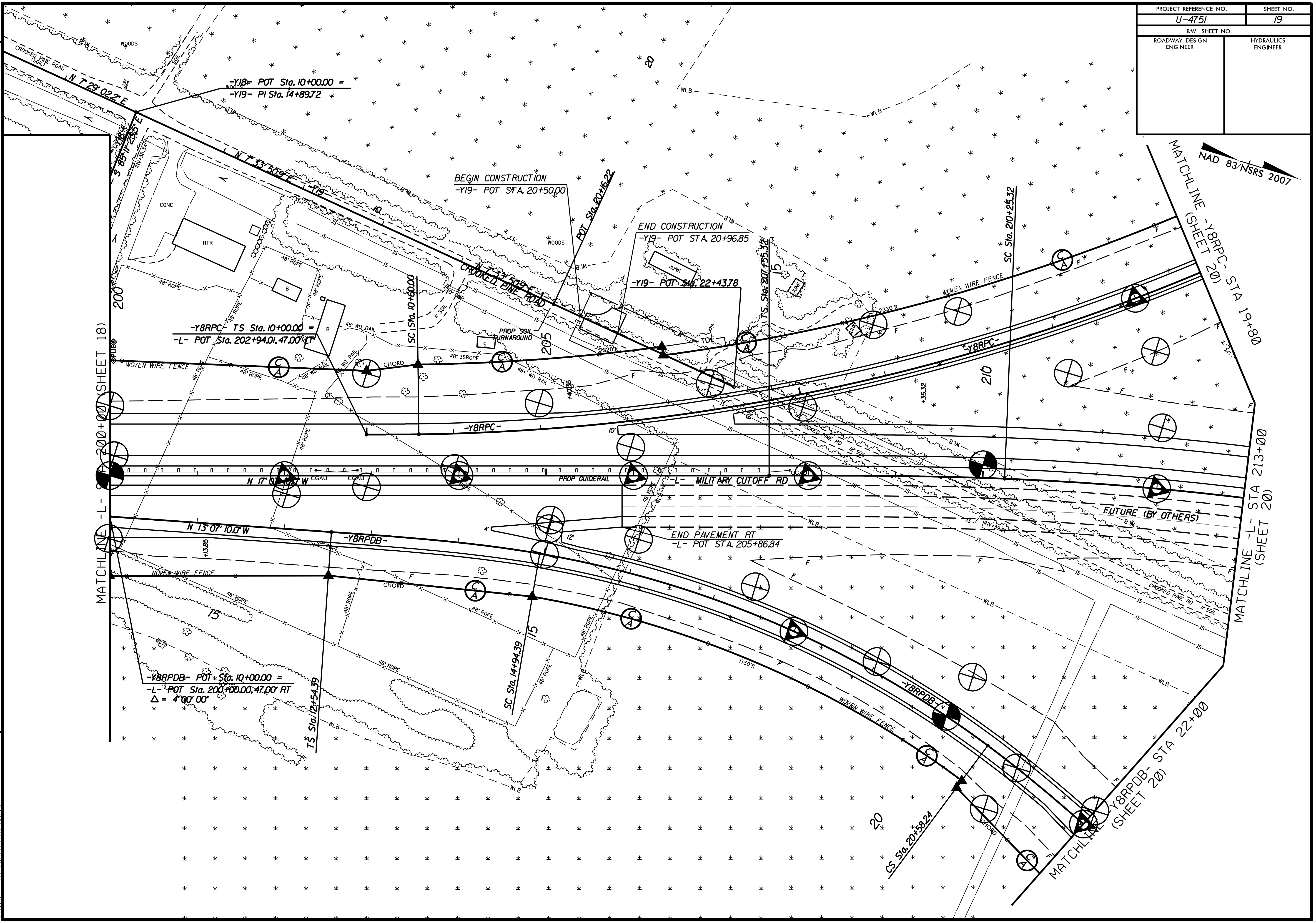


16-NOV-2016 13:39
r:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_18.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4751	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - COMBINDED PARCEL 156 & 157 TO BE PARCEL 156, ADJUSTED MONUMENT AT PARCEL 915, SHIFTED TURNAROUND AND TCE NORTH TO ELIMINATE PARCEL 158.



16-NOV-2016 13:39
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_19.dgn
lstone AT MICROSTATIONPC2

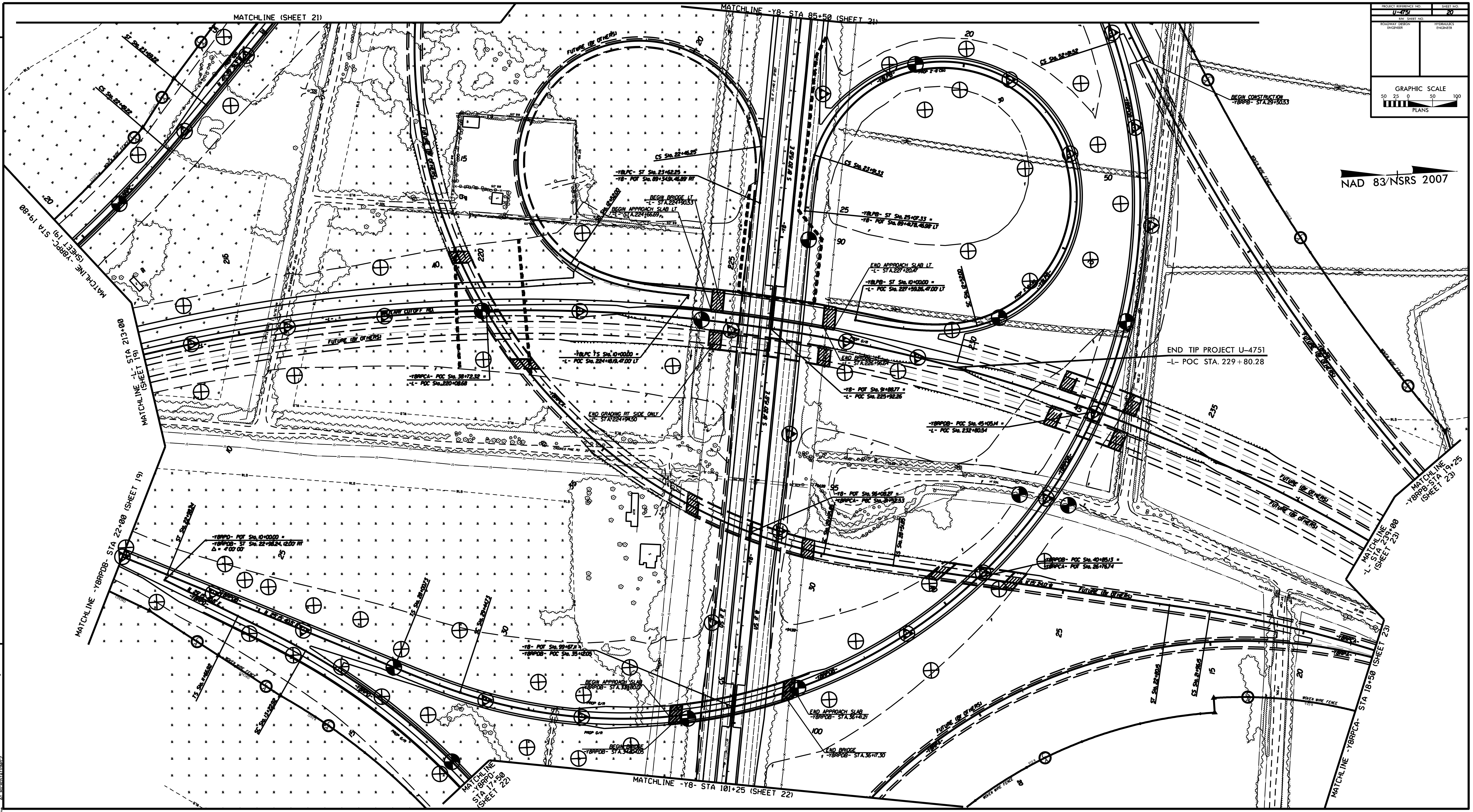
PROJECT REFERENCE NO.	SHEET NO.
U-4751	20

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 169.

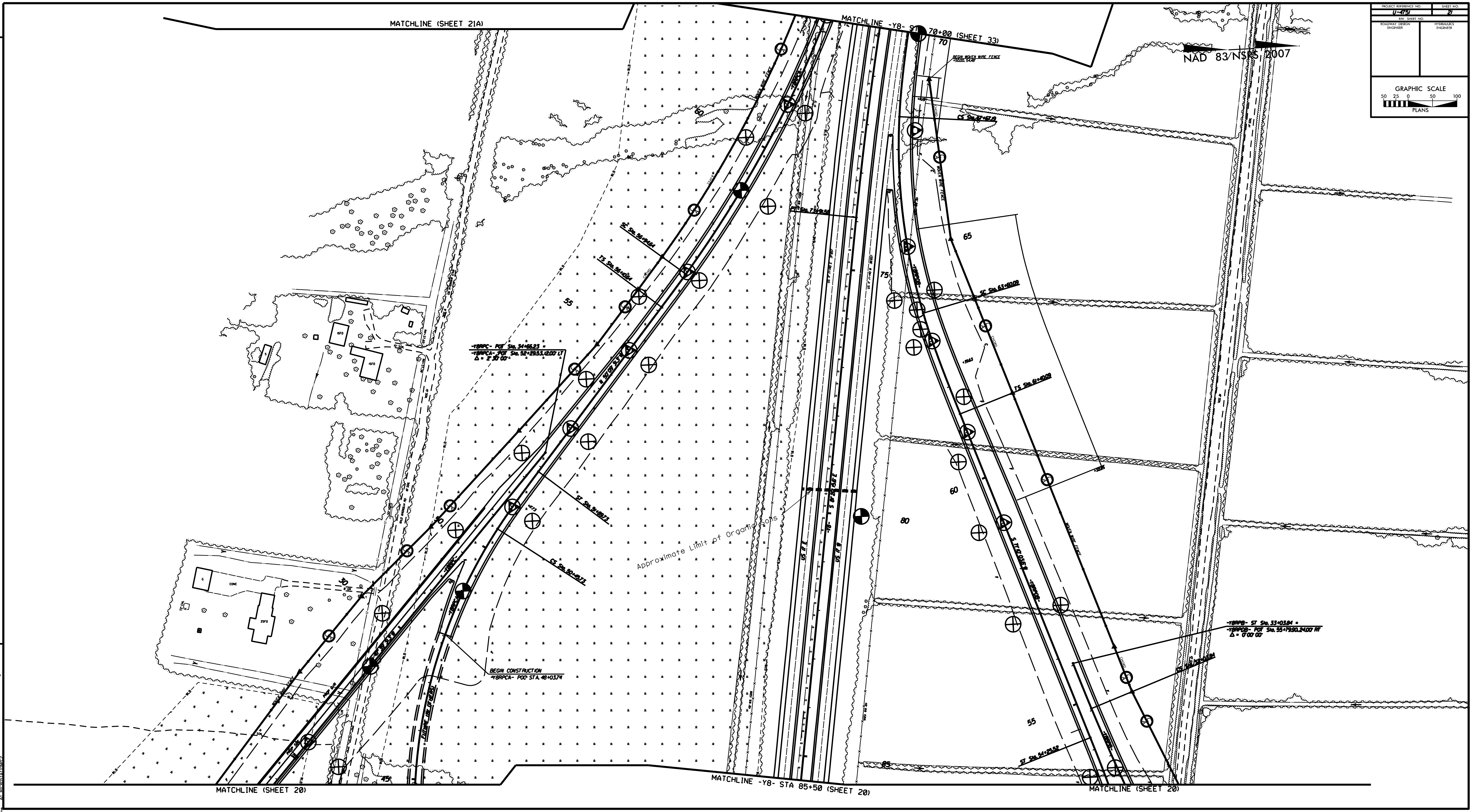


PROJECT REFERENCE NO.	SHEET NO.
U-4751	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE

REVISIONS

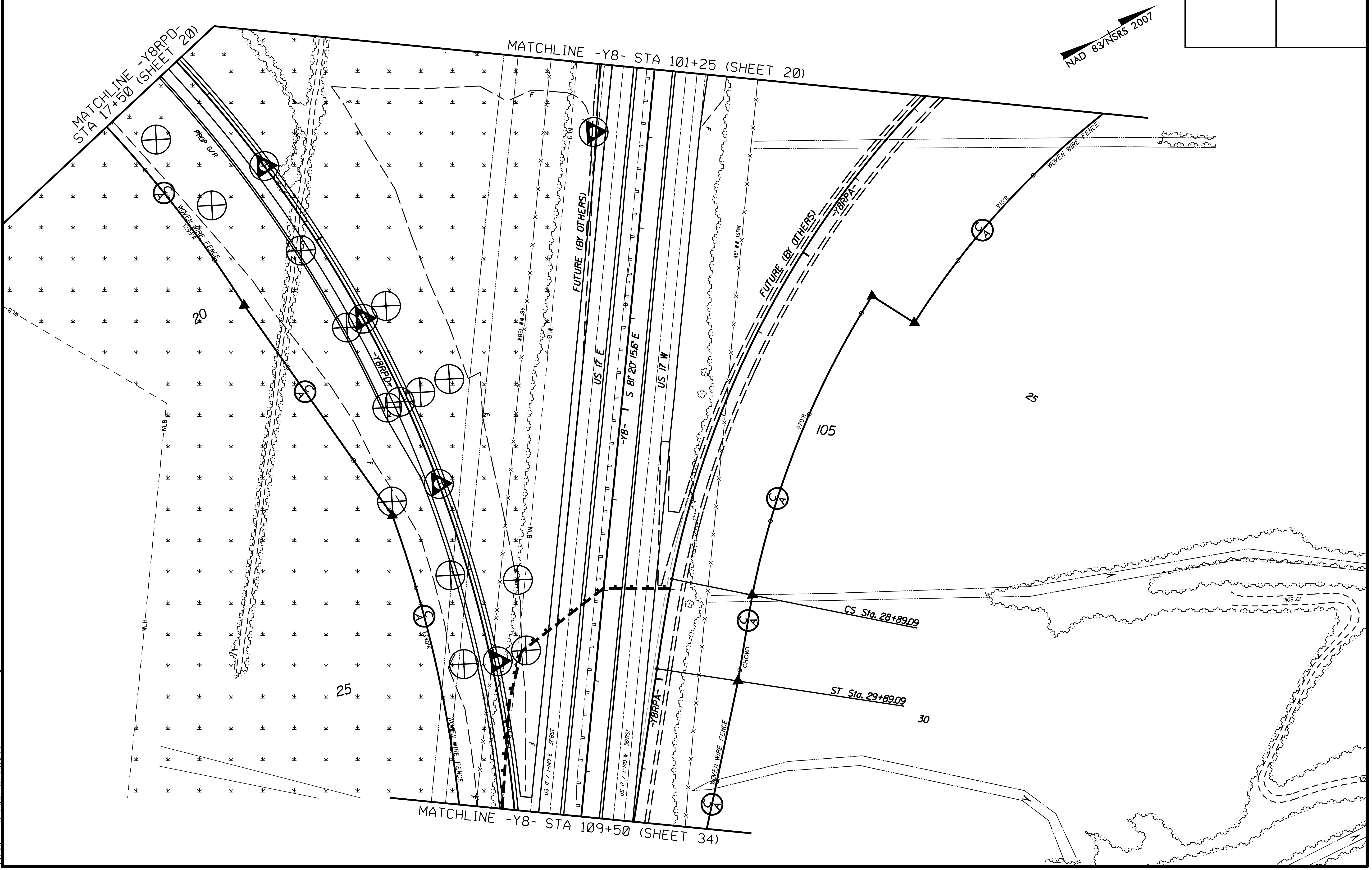
2015-08-12- R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 174, ADJUSTED MONUMENT AT PARCEL 173, ADDED PARCEL 240 & 241, UPDATED PROPERTY LINES.



PROJECT REFERENCE NO.	SHEET NO.
U-4751	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 169.



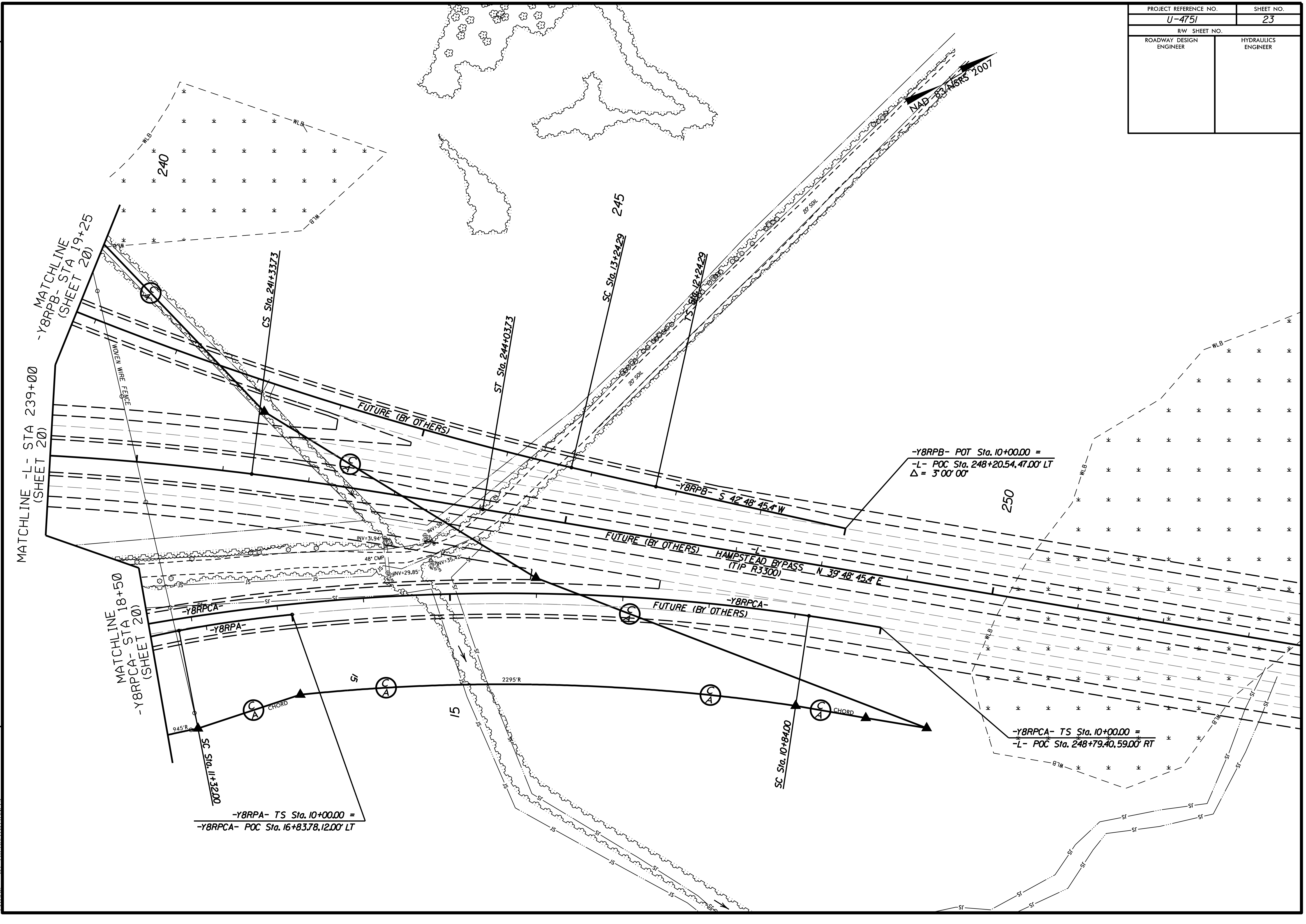
16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_22.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

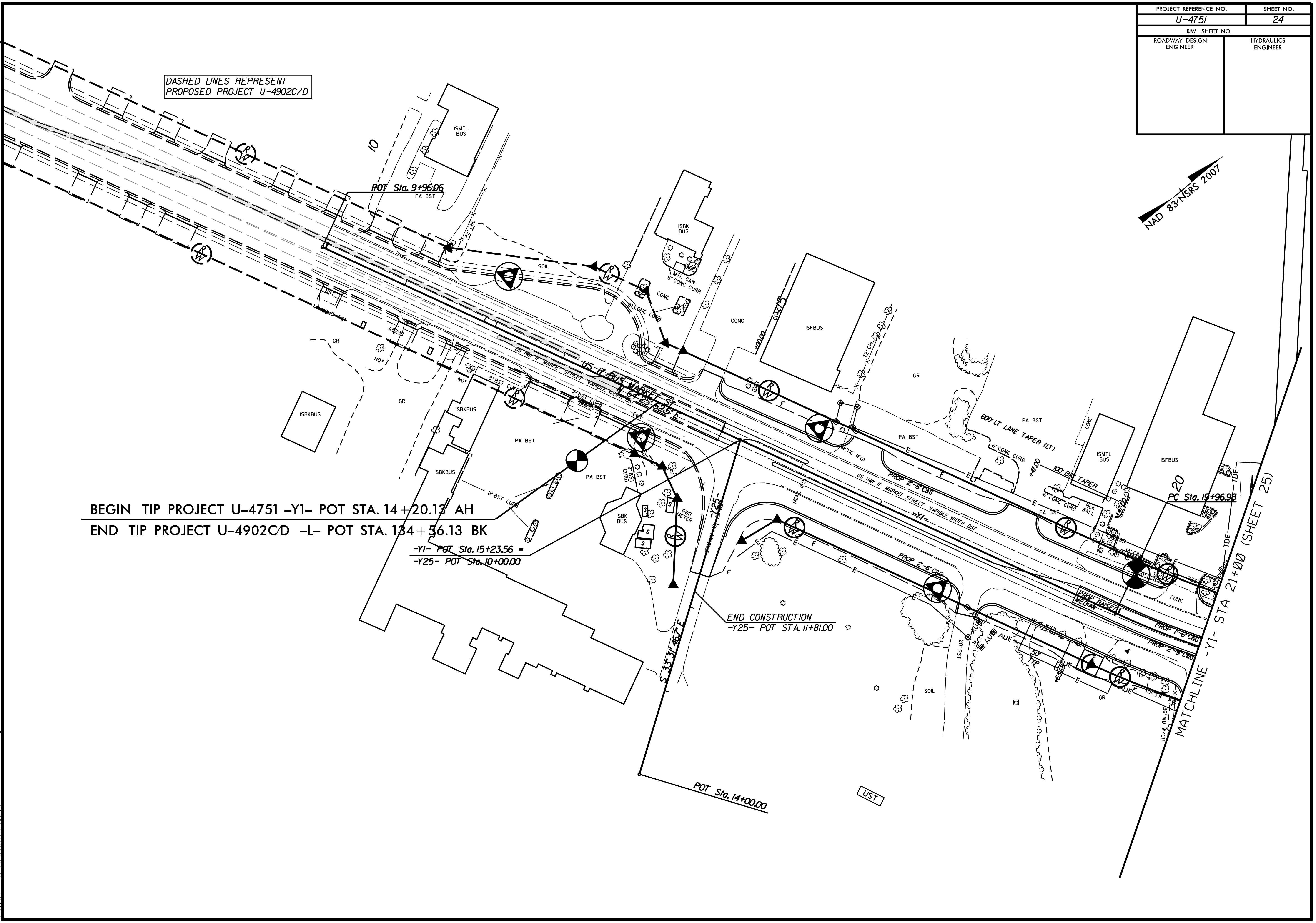
REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADJUSTED MONUMENT AT PARCEL 170.

16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_23.dgn
lstone AT MICROSTATIONPC2



PROJECT REFERENCE NO.	SHEET NO.
U-4751	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



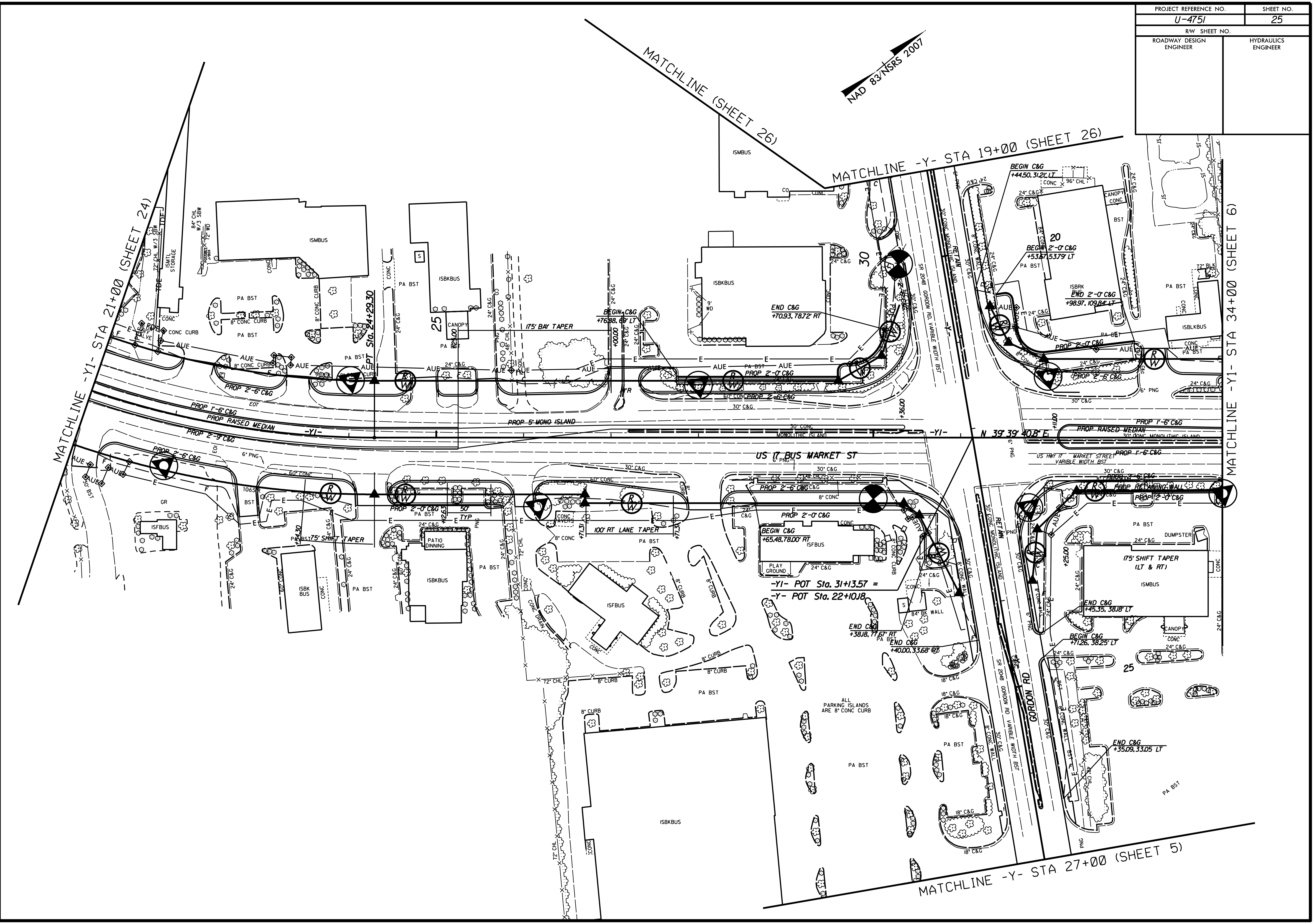
REVISIONS

2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 181 & 183, CORRECTED AUE STATION OFFSET AT PARCEL 180, ADDED MONUMENT AT PARCEL 178A, INCREASED DRIVES TO 36' WITH 20' RADII ON PARCEL 181.

2015-09-28 - R/W REVISION (SCS) - REVISED AUE ON PARCEL 180 AND 181.

16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_24.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

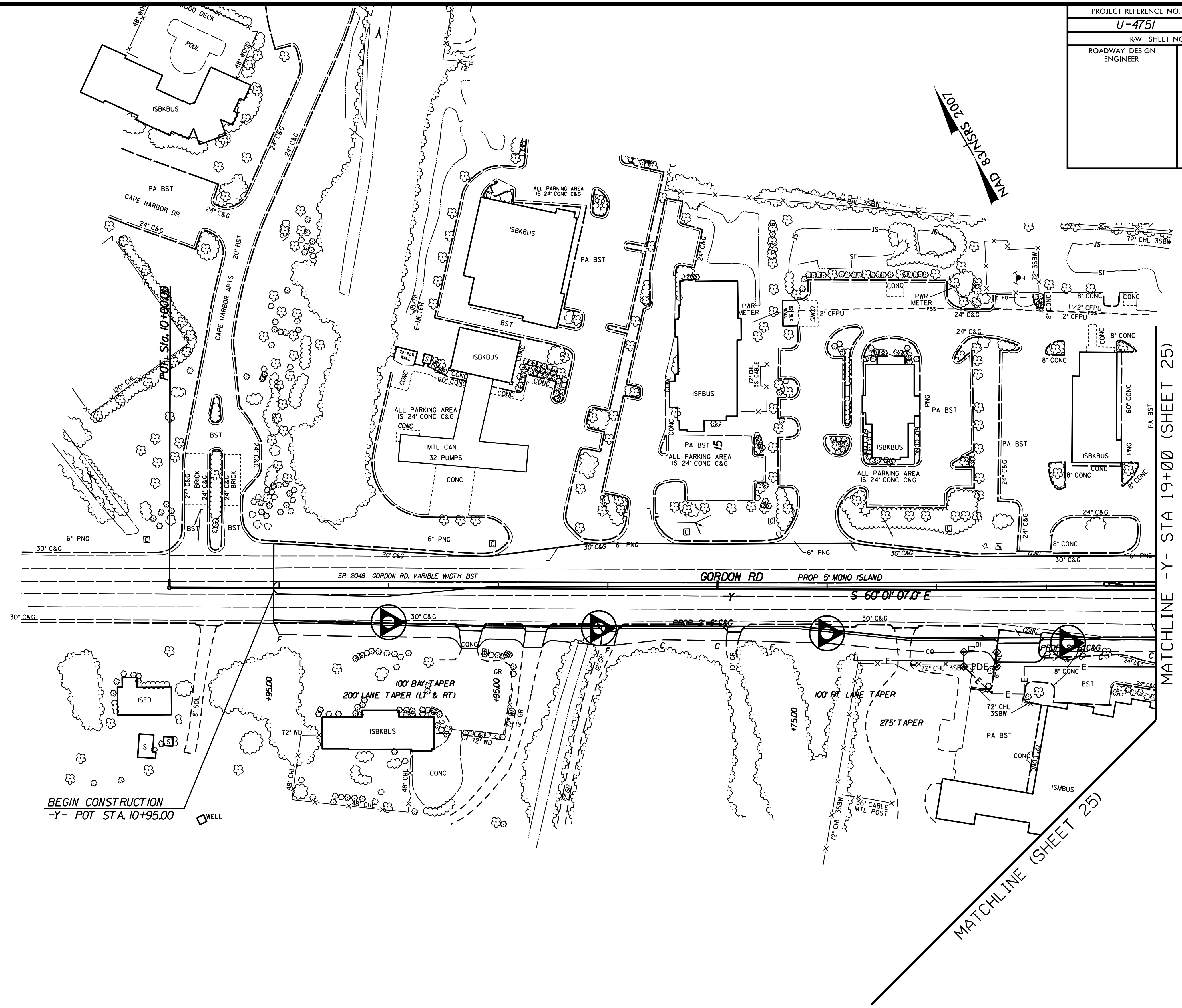


2015-07-31 - R/W REVISION (SCS) - REVISED TCE, AUE, AND PROPOSED ROW LINES, MONUMENTS, AND STATION OFFSETS AT PARCEL 3 & 8. REVISED CHANNELIZATION CURB IN THE PARKING LOTS FOR PARCEL 3 & 8.

2015-08-12 - R/W REVISION (SCS) - UPDATED OWNER INFORMATION ON PARCEL 183 & 187. CHANGED AUE STATION OFFSET TO A ROW STATION OFFSET AT PARCEL 192. ADDED PROPERTY LINES TO PARCEL 8. PORTION OF PARCEL 8 ADDED TO PARCEL 3.

16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_25.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

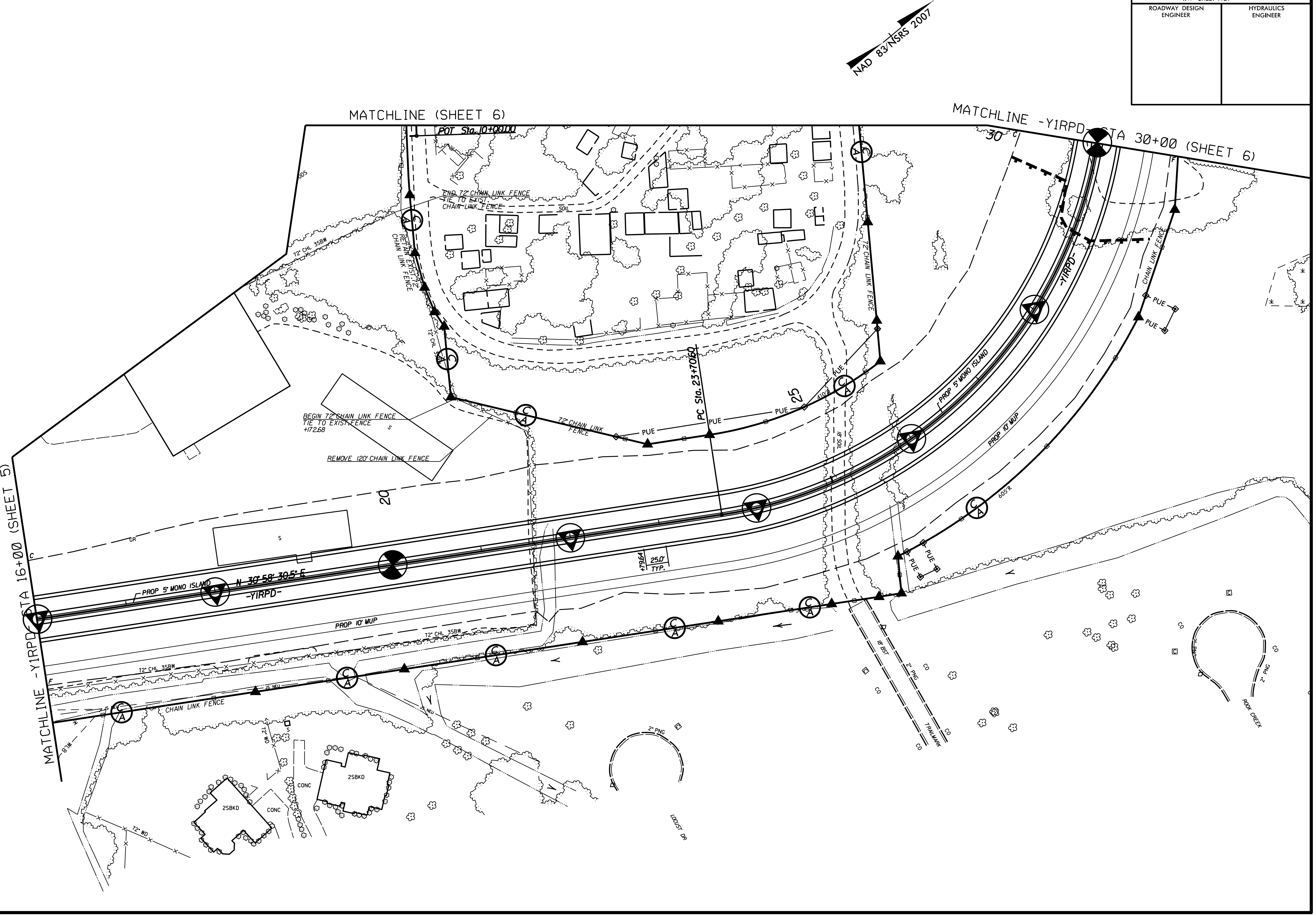


16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_26.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - MODIFIED C/A EASEMENT, MONUMENTS, AND STATION OFFSETS AT PARCEL 12,13,200 & 907, ADDED C/A MONUMENT AT PARCEL 13 & 901.



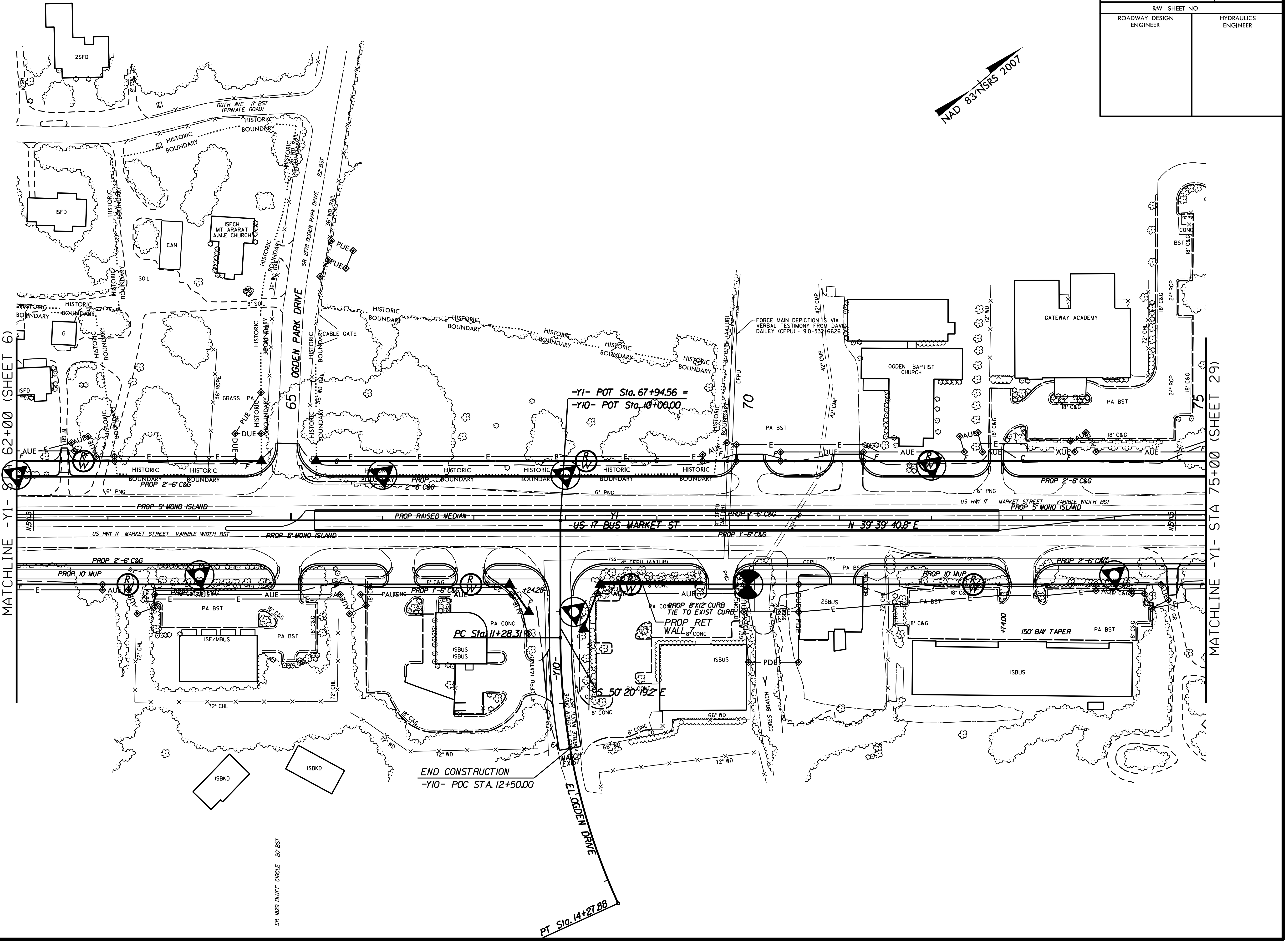
16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_27.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-06-15 - R/W REVISION (SCS) - CHANGED THE TCE TO AUE ON PARCEL 206 ALONG -Y1- RT.
2015-08-12 - R/W REVISION (CEG) - EXTENDED AUE LINE TO MONUMENT AT PARCEL 206, ADDED MONUMENT AT PARCEL 201.
2015-09-28 - R/W REVISION (SCS) - UPDATED PARCEL INFORMATION ON PARCELS 208,209,AND 212.
2015-10-21 - R/W REVISION (SCS) - UPDATED PARCEL INFORMATION ON PARCELS 21E AND 21F.
2015-11-05 - R/W REVISION (SCS) - ADDED DRIVEWAY ACCESS ON PARCEL 208.

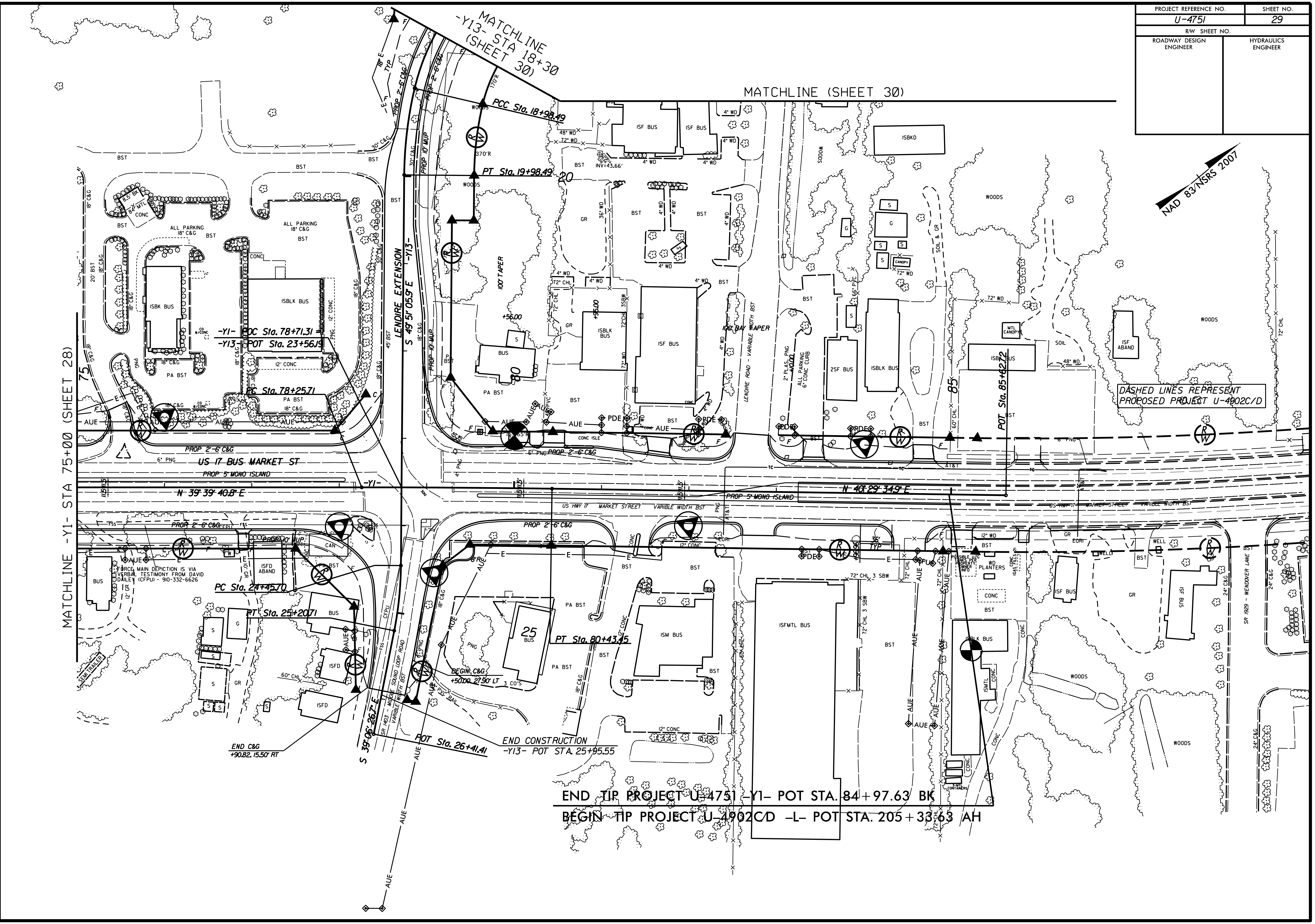
16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Sitex Sub\U4751_Rdy_GEO_inv_28.dgn
lstone AT MICROSTATIONPC2



PROJECT REFERENCE NO.	SHEET NO.
U-4751	29
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-05-14 - R/W REVISION (SCS) - ADDED PDE TO PARCELS 219,220,222 AND 223 TO ENCOMPASS DRAINAGE STR.NO'S 2945,2955,2957 AND 2949 ALONG -Y1- LT.
2015-08-12 - R/W REVISION (CEG) - UPDATED PROPERTY OWNER INFORMATION ON PARCEL 211,214,221,222 & 223, ADDED MISSING PDE LINE AT PARCEL 220, CORRECTED TCE AND STATION OFFSET AT PARCEL 211 & 214, COMBINED PARCEL 211 & 213 TO BE PARCEL 211, UPDATED STATION OFFSET AT PARCEL 218.
2015-09-28 - R/W REVISION (SCS) - UPDATED PARCEL INFORMATION ON PARCELS 212,216,AND 218.
2015-11-05 - R/W REVISION (SCS) - PROVIDED ADDITIONAL DRIVEWAY ACCESS AND ADDED PDE,PUE,AND AUE ON PARCEL 221; ADDED PARCEL 242 DUE TO ADDITIONAL AUE ON PARCEL 221.

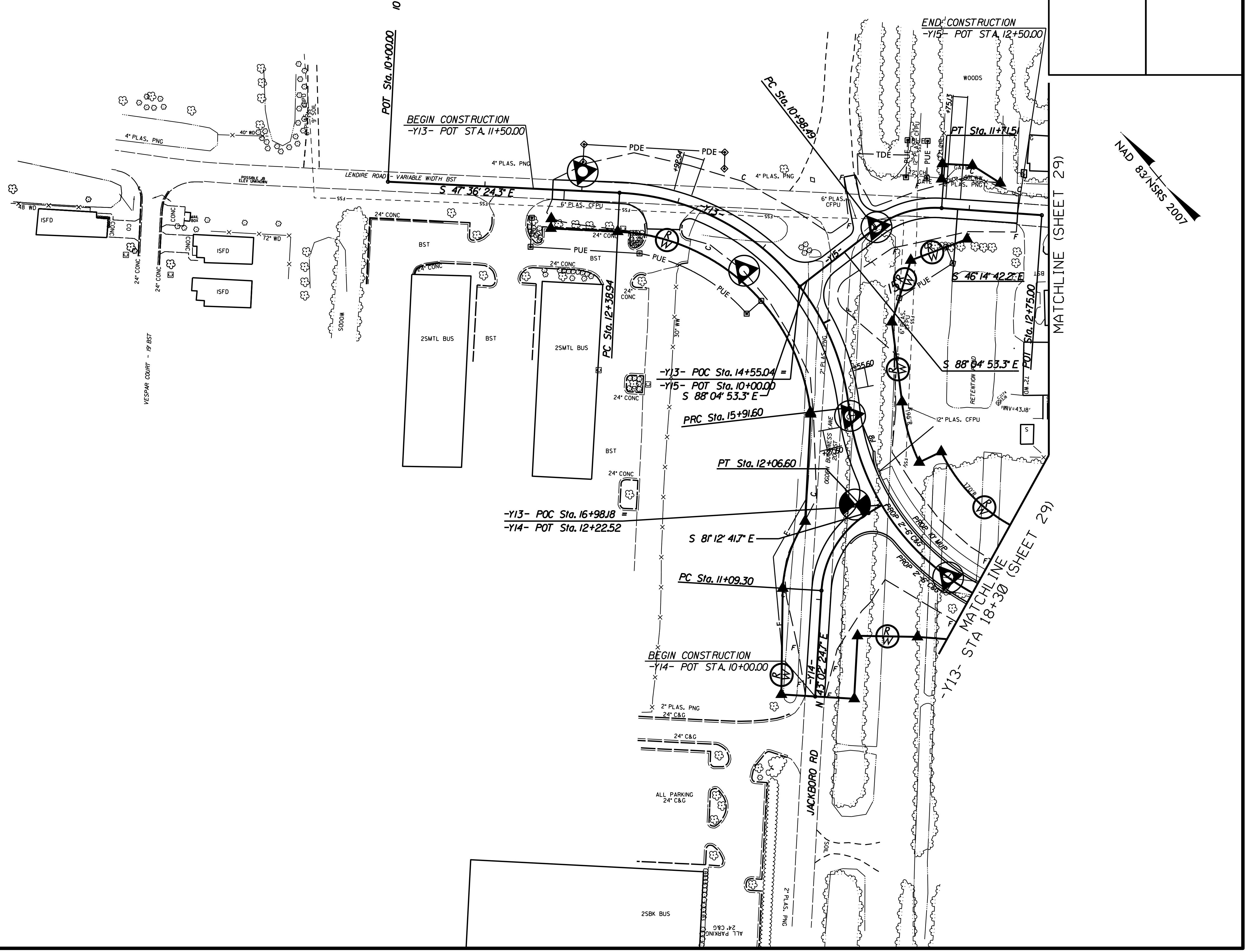


16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_29.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	30
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

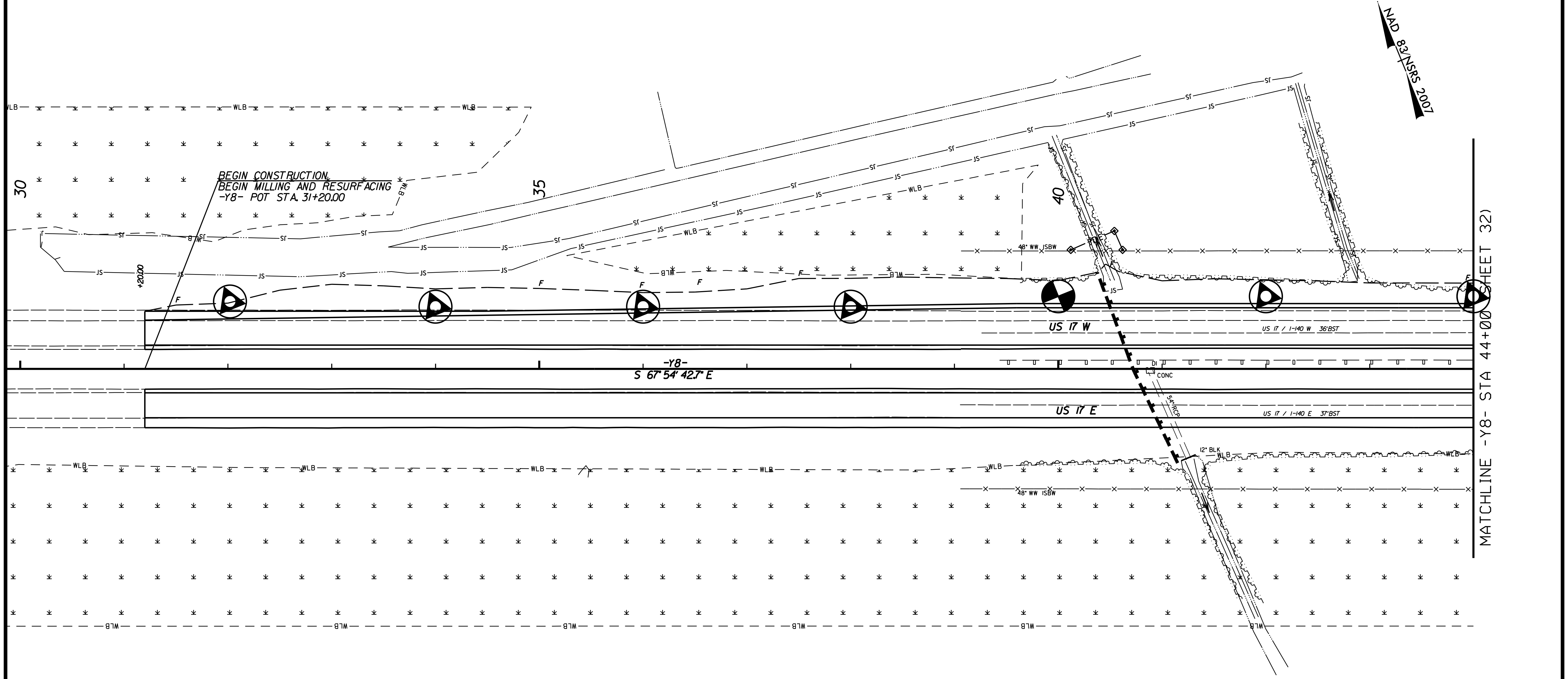
REVISIONS

2015-05-14 - R/W REVISION (SCS) - ADDED PUE TO PARCEL 220 FROM -Y15- STA.10+74 TO 11+79 RT.
REVISED PUE ON PARCEL 919 FROM -Y13- STA.12+70 TO 14+40 RT.



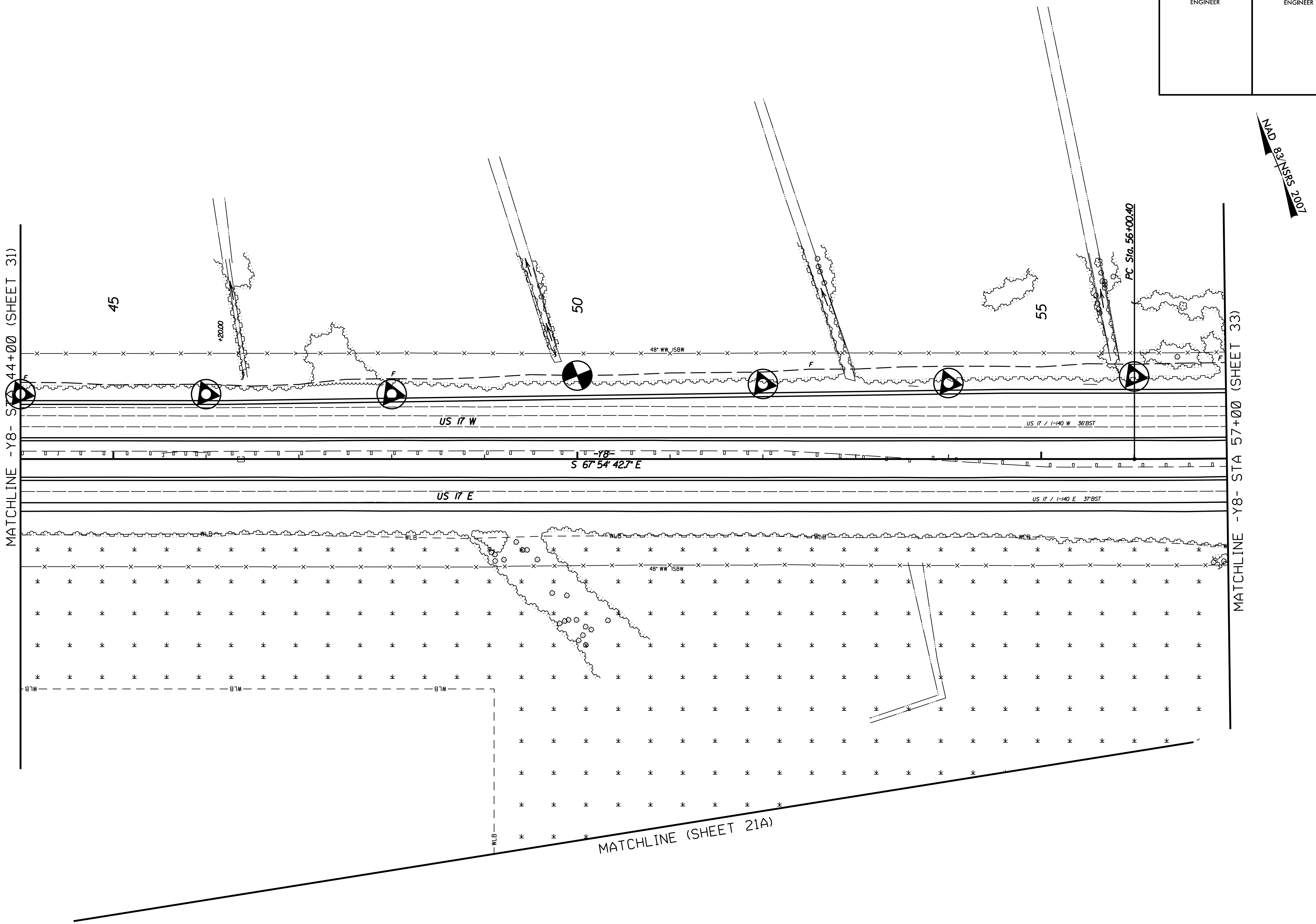
16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_30.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_31.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



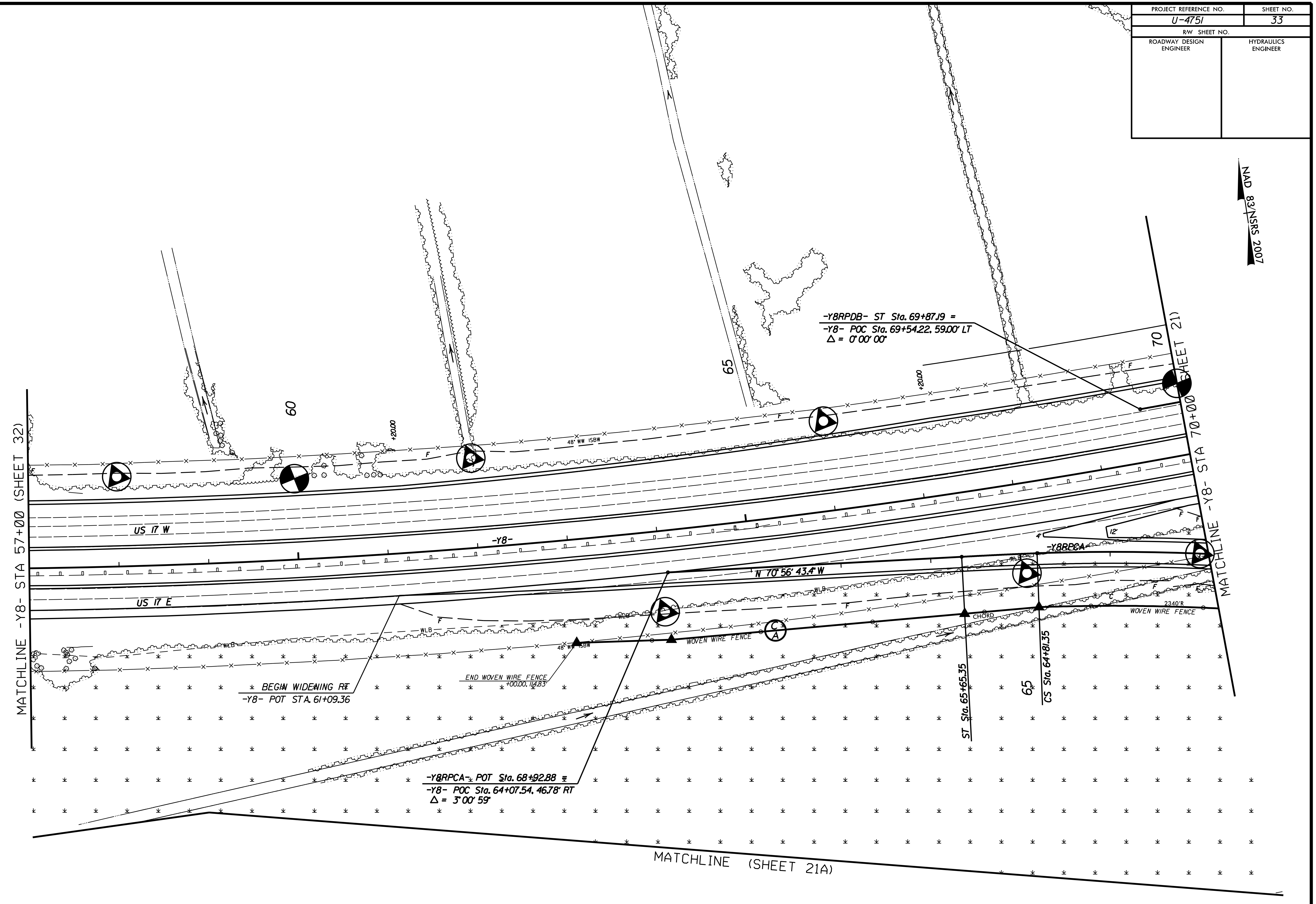
16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_32.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADDED STATION OFFSET AT PARCEL 170, ADDED PARCELS 231 & 232.

16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_33.dgn
lston AT MICROSTATIONPC2

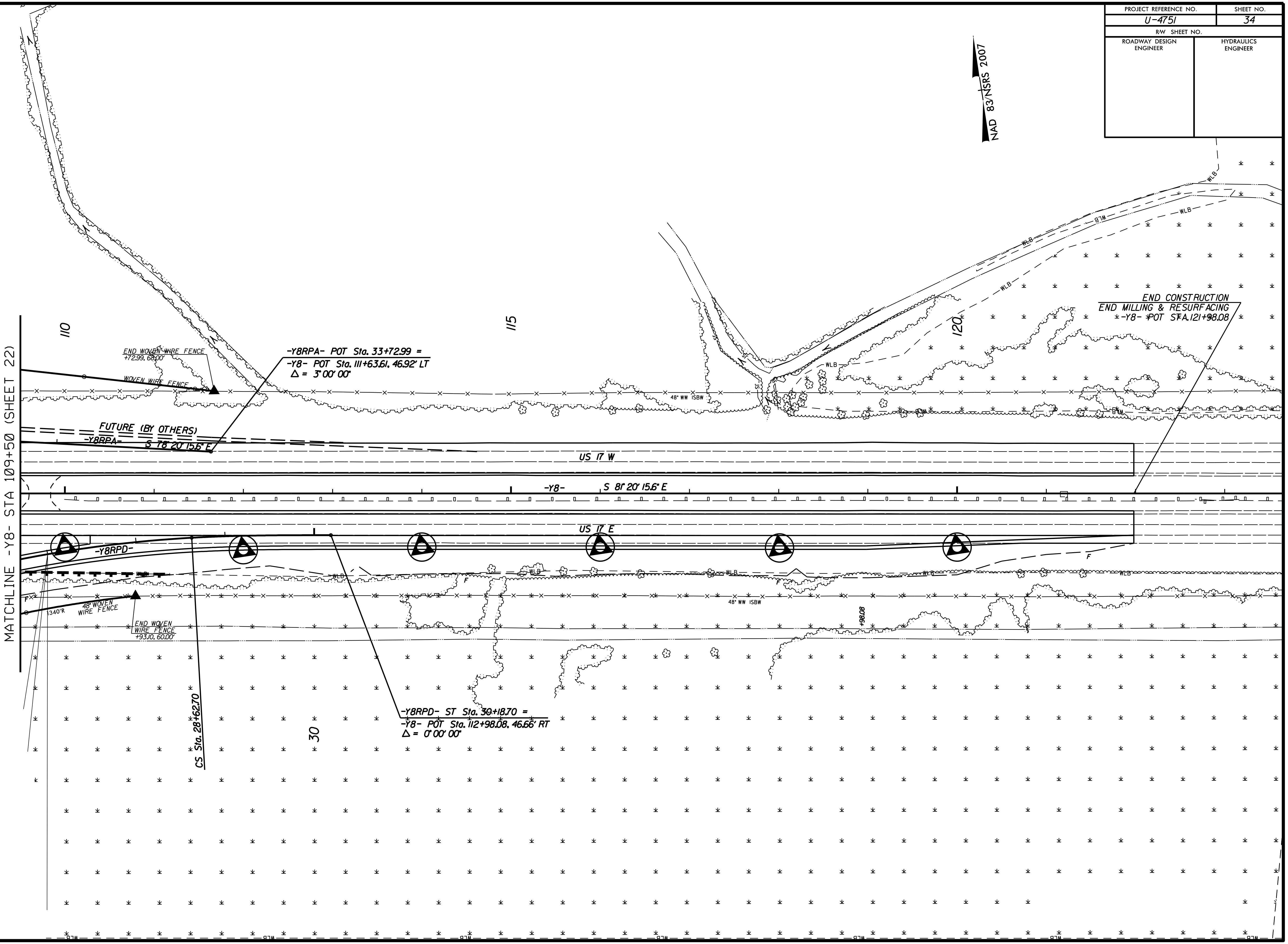


PROJECT REFERENCE NO.	SHEET NO.
U-4751	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

2015-08-12 - R/W REVISION (CEG) - ADDED STATION OFFSETS AT PARCEL 170.

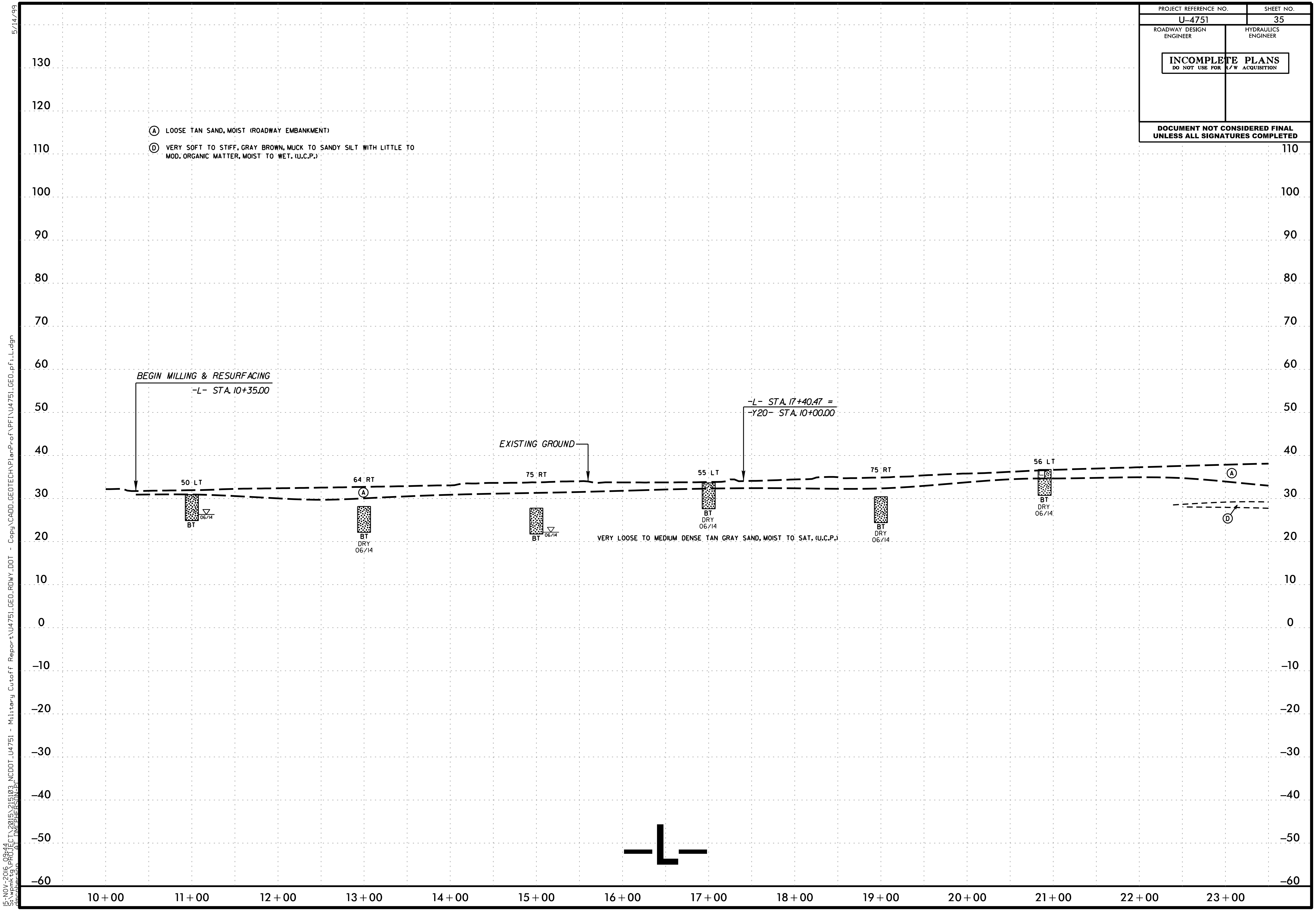
16-NOV-2016 13:40
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\Site&Sub\U4751_GEO_inv_34.dgn
lstone AT MICROSTATIONPC2



PROJECT REFERENCE NO.	SHEET NO.
U-4751	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓓ VERY SOFT TO STIFF, GRAY BROWN, MUCK TO SANDY SILT WITH LITTLE TO MOD. ORGANIC MATTER, MOIST TO WET. (U.C.P.)

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

-L-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_L.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	36

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

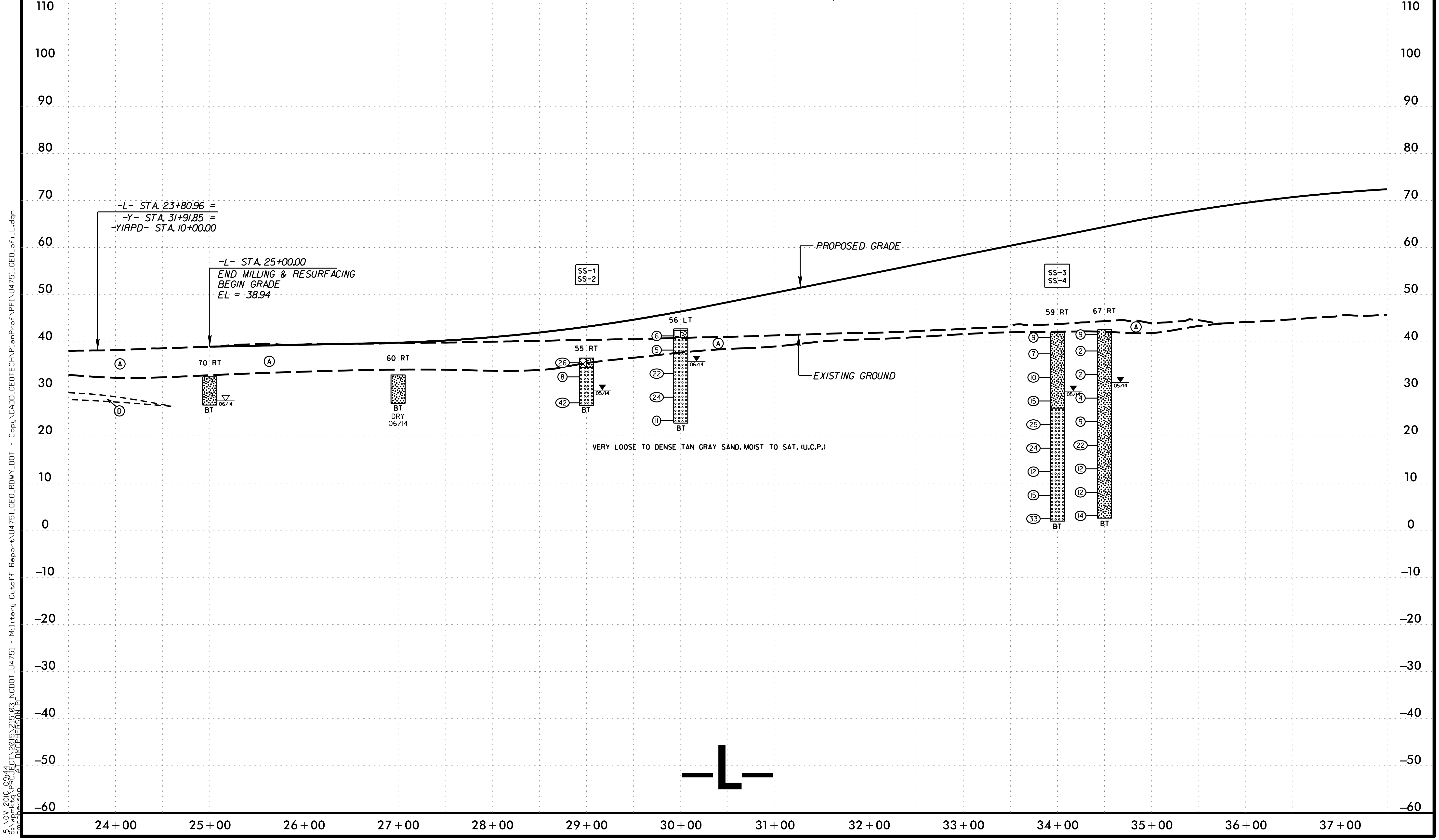
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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		
SS-1	55 RT	29+00	0.0-1.5	A-2-4(0)	13	NP	30.3	53.9	5.5	10.3	70	60	14	-	-
SS-2	55 RT	29+00	8.5-10.0	A-3(0)	18	NP	49.7	46.1	2.0	2.2	100	94	5	-	-
SS-3	59 RT	34+00	23.5-25.0	A-3(0)	18	NP	32.2	64.8	0.6	2.2	100	98	3	-	-
SS-4	59 RT	34+00	38.5-40.0	A-3(0)	17	NP	11.9	87.3	0.8	-	100	100	1	-	-

Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓓ VERY SOFT TO STIFF, GRAY BROWN, MUCK TO SANDY SILT WITH LITTLE TO MOD. ORGANIC MATTER, MOIST TO WET. (U.C.P.)



-L-

PROJECT REFERENCE NO.	SHEET NO.
U-4751	37

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

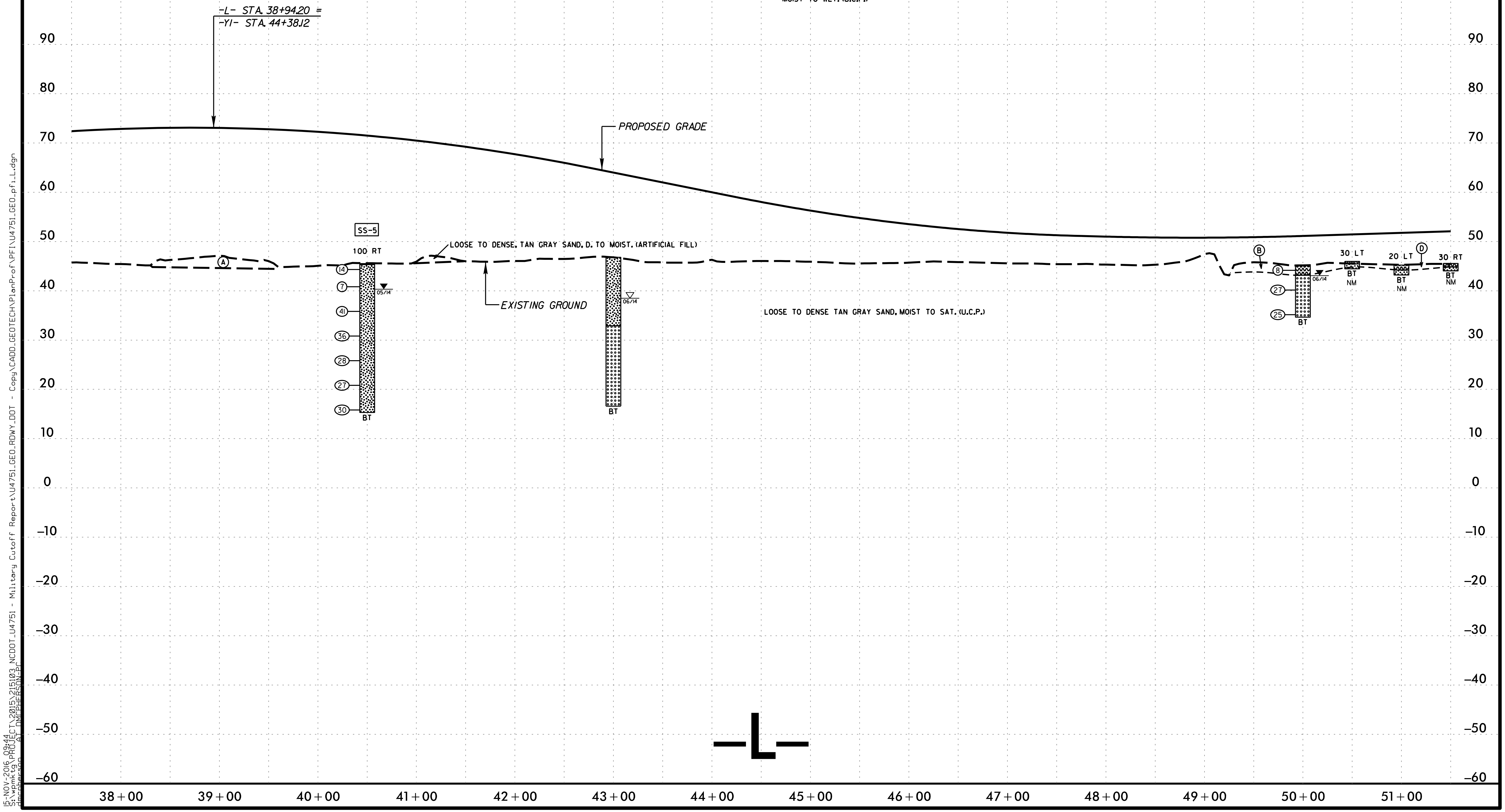
SOIL TEST RESULTS

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		
SS-5	100 RT	40+50	3.7-5.2	A-3(0)	16	NP	26.5	70.5	2.8	0.2	100	95	5	-	-

Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓑ VERY LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO SAT. (U.C.P.)

Ⓓ VERY LOOSE, BROWN, SAND WITH MOD. ORGANICS TO MUCK, MOIST TO WET. (U.C.P.)



-L-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	38

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

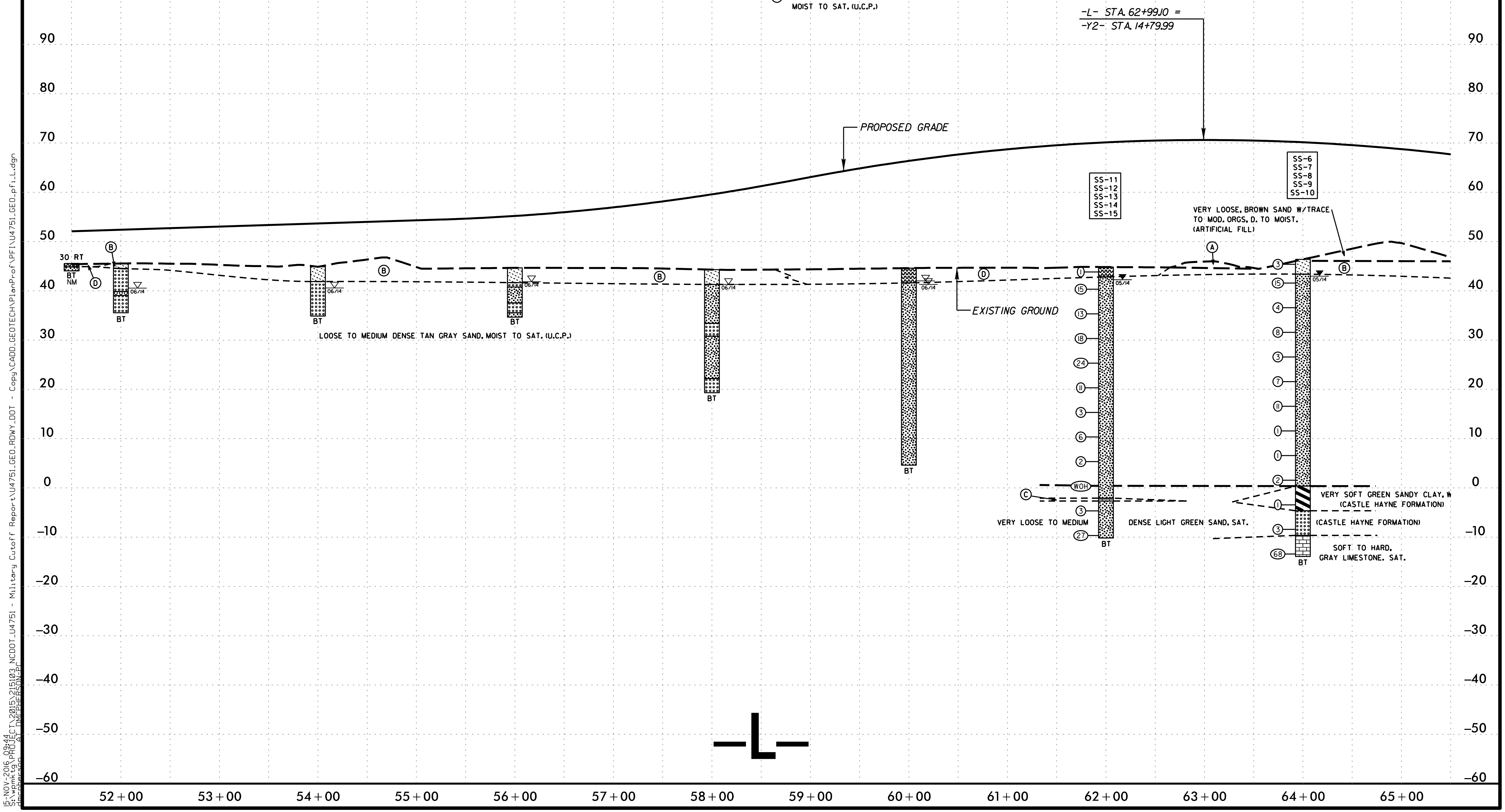
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-11	CL	62+00	0.0-1.5	A-3(0)	19	NP	2.4	91.9	3.4	2.2	100	99	9	-	-
SS-12	CL	62+00	3.5-5.0	A-2-4(0)	12	NP	29.7	43.6	20.4	6.3	100	94	31	-	-
SS-13	CL	62+00	38.5-40.0	A-2-4(0)	22	NP	3.4	81.6	8.7	6.3	100	99	18	-	-
SS-14	CL	62+00	48.5-50.0	A-2-4(0)	37	4	46.5	23.2	20.0	10.3	100	61	34	-	-
SS-15	CL	62+00	53.5-55.0	A-2-4(0)	21	NP	2.2	76.8	10.7	10.3	100	100	30	-	-
SS-6	CL	64+00	33.8-35.3	A-2-4(0)	21	NP	2.2	87.5	6.1	4.2	100	99	14	-	-
SS-7	CL	64+00	43.8-45.3	A-2-4(0)	21	NP	3.4	75.4	10.9	10.3	100	99	29	-	-
SS-8	CL	64+00	48.8-50.3	A-7-6(5)	41	22	47.3	12.1	26.3	14.3	100	60	42	-	-
SS-9	CL	64+00	53.8-55.3	A-3(0)	20	NP	40.4	56.8	0.8	2.0	100	96	4	-	-
SS-10	CL	64+00	58.8-60.3	A-4(0)	14	NP	1.0	73.7	14.9	10.3	100	100	38	-	-

Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓑ VERY LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO SAT. (U.C.P.)

Ⓒ SOFT GRAY LIMESTONE (CASTLE HAYNE FORMATION)

Ⓓ VERY LOOSE BROWN MUCK TO SAND W/MODERATE ORGANICS, MOIST TO SAT. (U.C.P.)



5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_L.dgn
dmcpherson AT DMCPHERSON-PC

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-40	75 LT	74+00	0.0-3.0	A-2-4(0)	26	NP	32.8	37.0	12.1	18.0	100	89	34	-	7.4
S-39	80 LT	76+00	0.0-2.5	A-2-4(0)	36	NP	41.8	30.0	22.1	6.0	100	83	31	-	10.9
S-1	30 RT	78+00	0.0-2.0	A-4(2)	31	9	17.4	31.9	22.5	28.3	100	96	52	-	10.5
S-2	CL	79+00	0.0-2.0	A-2-4(0)	22	3	26.8	41.0	14.0	18.2	100	94	35	-	5.7

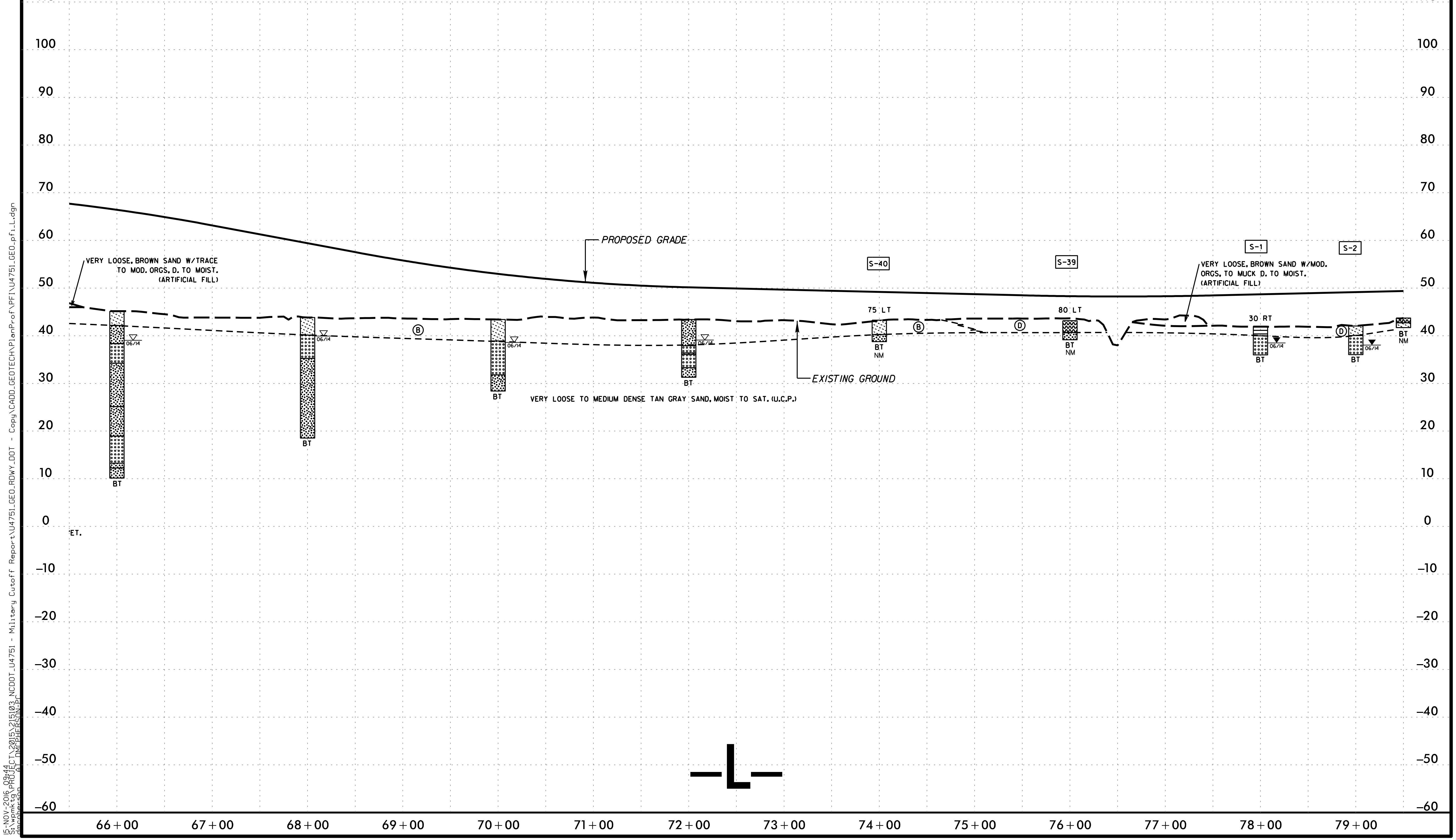
Ⓑ VERY LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO SAT. (U.C.P.)

Ⓓ VERY LOOSE BROWN MUCK TO SAND AND SILT W/MODERATE ORGANICS, MOIST TO SAT. (U.C.P.)

PROJECT REFERENCE NO.	SHEET NO.
U-4751	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT REFERENCE NO.	SHEET NO.
U–4751	40

ROADWAY DESIGN ENGINEER

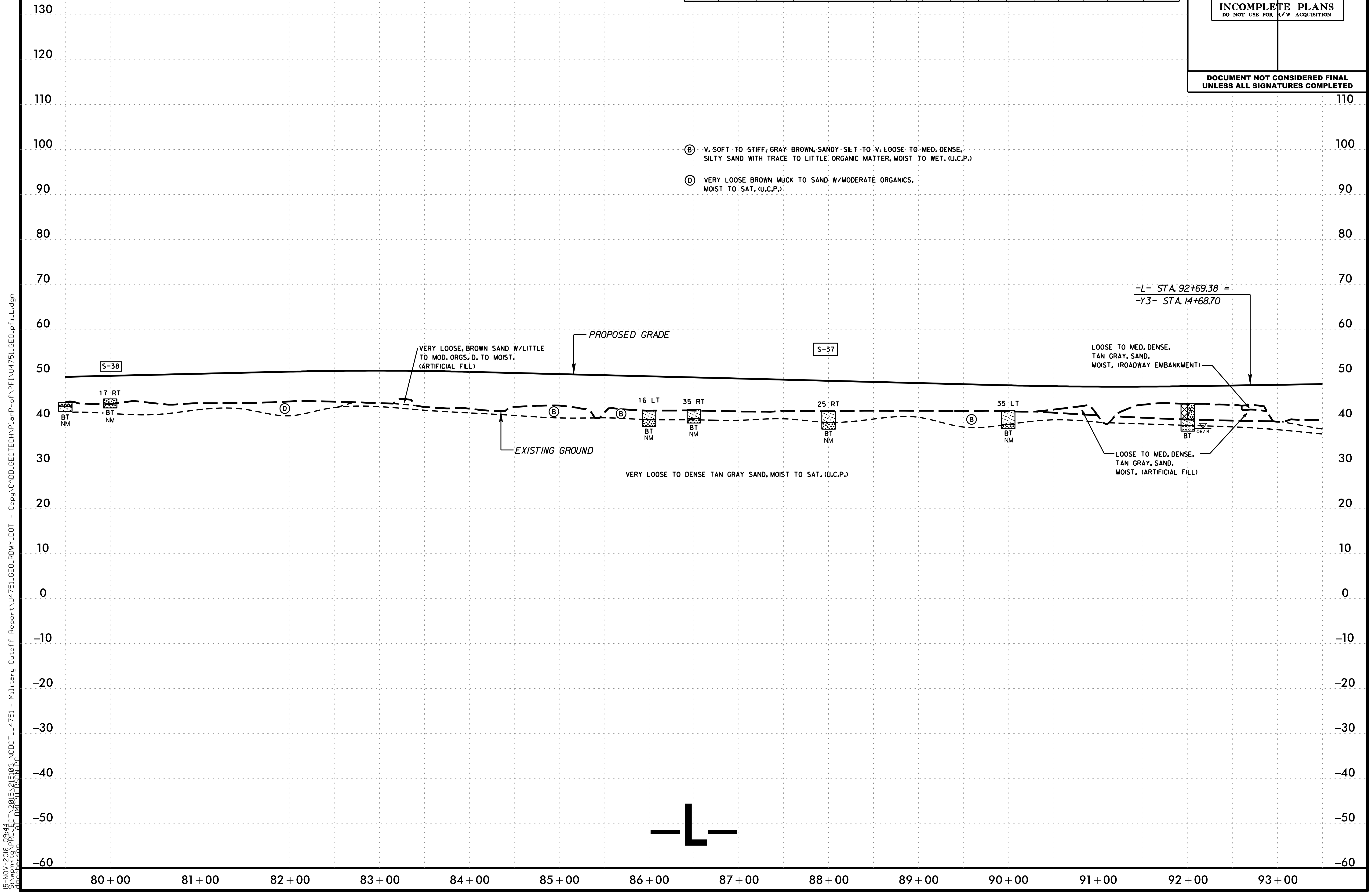
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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-38	17 RT	80+00	0.0-2.0	A-2-4(0)	14	NP	23.2	65.3	5.5	6.0	100	95	13	-	1.9
S-37	25 RT	88+00	0.0-2.5	A-2-4(0)	27	NP	18.2	51.3	12.5	18.0	100	95	32	-	6.4



-L-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

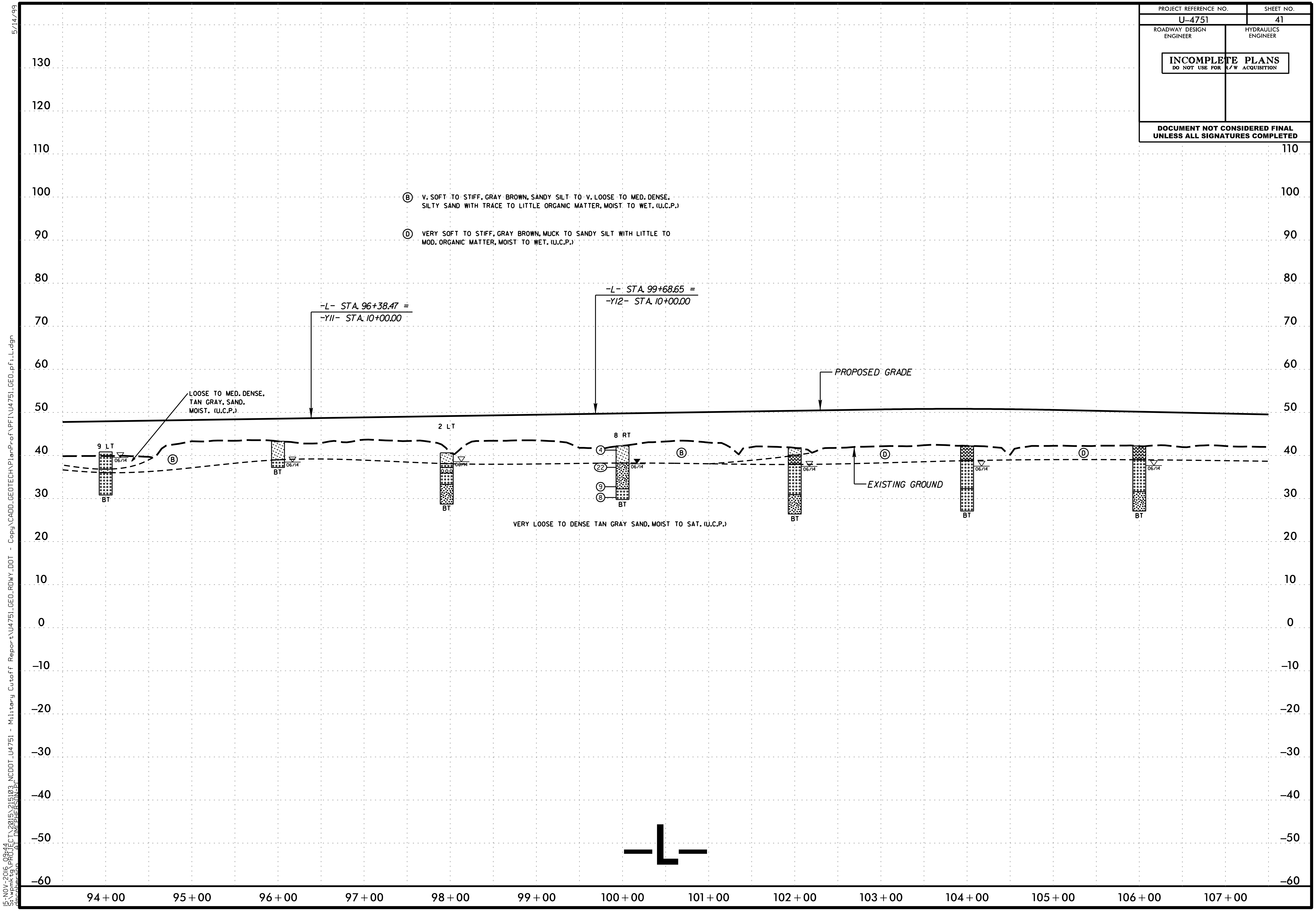
PROJECT REFERENCE NO.	SHEET NO.
U-4751	41

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4751	42

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

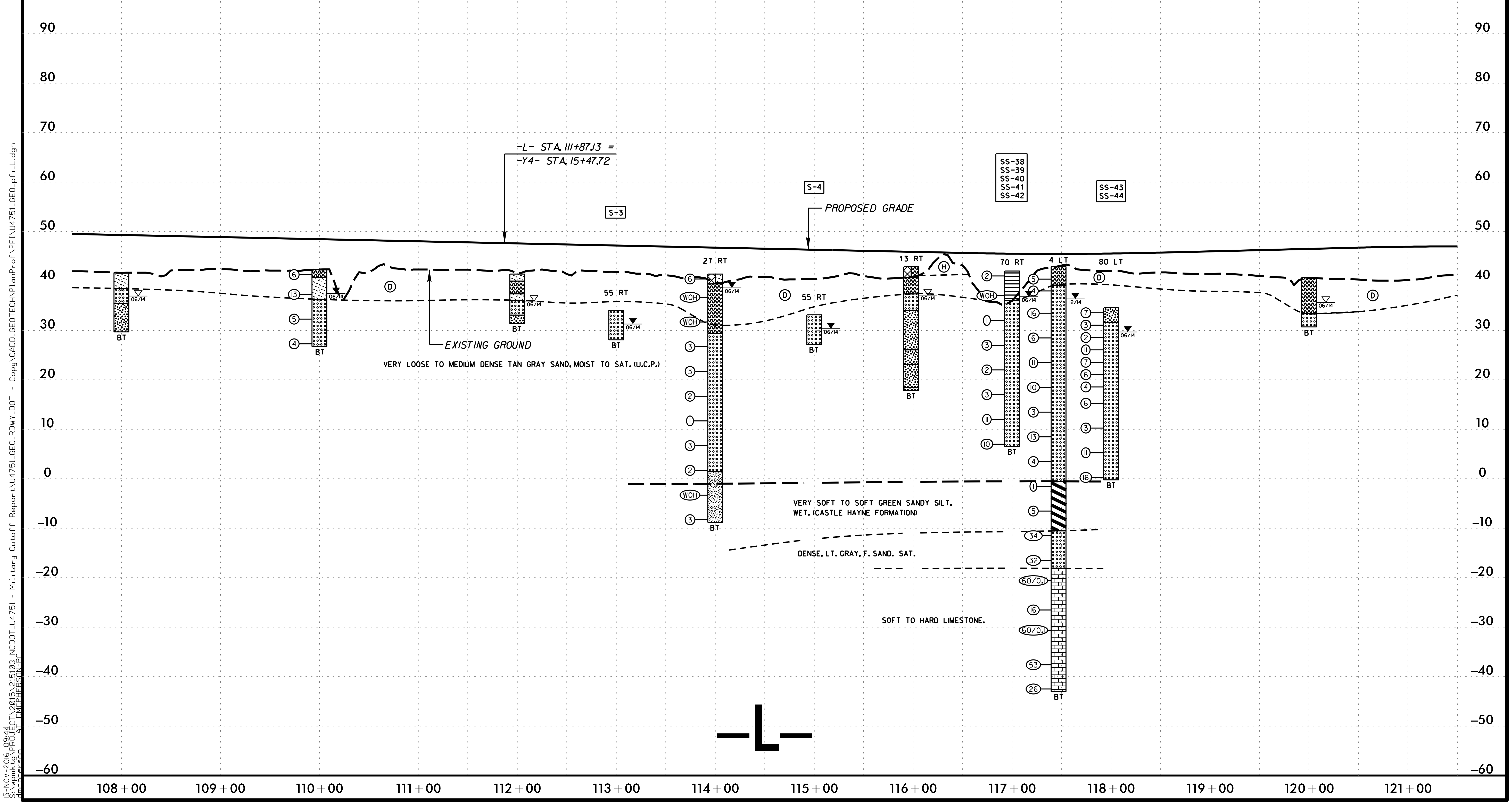
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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	55 RT	113+00	0.0-1.0	A-3(0)	23	NP	31.1	66.6	1.3	1.0	100	97	3	-	0.4
S-4	55 RT	115+00	0.0-6.0	A-3(0)	18	NP	25.1	73.0	0.7	1.2	100	99	2	-	-
SS-38	70 RT	117+00	0.0-1.5	A-4(0)	21	2	11.5	56.7	12.1	19.7	100	98	36	-	-
SS-39	70 RT	117+00	4.0-5.5	A-4(0)	21	2	11.7	55.7	10.9	21.7	99	98	36	-	-
SS-40	70 RT	117+00	9.0-10.5	A-3(0)	19	NP	42.1	52.1	2.2	3.6	100	92	6	-	-
SS-41	70 RT	117+00	19.0-20.5	A-3(0)	16	NP	24.1	75.3	0.6	-	100	99	1	-	-
SS-42	70 RT	117+00	29.0-30.5	A-3(0)	19	NP	1.2	96.4	0.8	1.6	100	100	5	-	-
SS-43	80 LT	118+00	0.0-1.5	A-2-4(0)	30	NP	21.8	57.8	16.0	4.4	100	95	25	-	-
SS-44	80 LT	118+00	5.0-6.5	A-3(0)	16	NP	29.7	68.1	1.0	1.2	99	97	4	-	-

Ⓓ VERY SOFT TO STIFF, GRAY BROWN, MUCK TO SANDY SILT WITH LITTLE TO MOD. ORGANIC MATTER, MOIST TO WET. (U.C.P.)

Ⓗ V. LOOSE TO LOOSE, DARK GRAY, MUCK TO ORG. F. SAND (ARTIFICIAL FILL)



15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_L.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

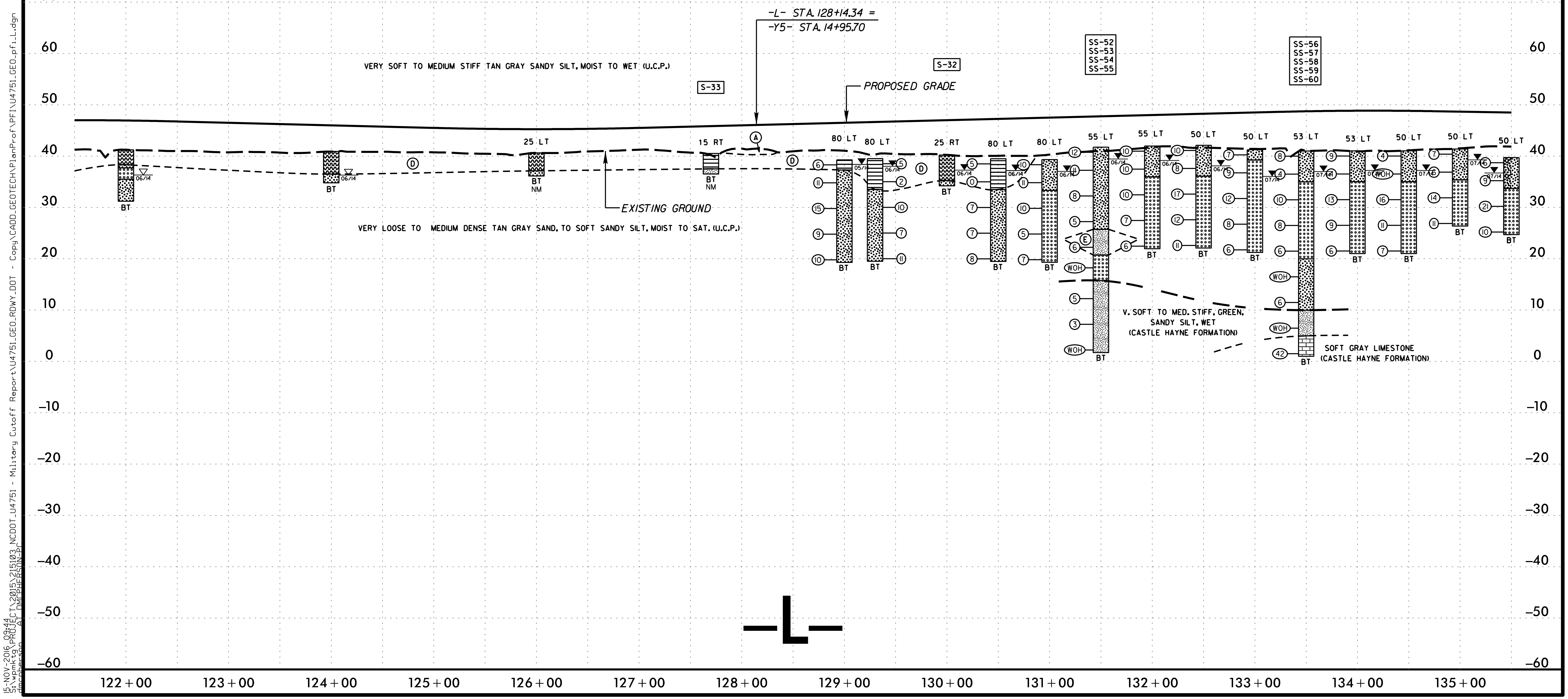
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-33	15 RT	127+70	3.0-4.0	A-4(0)	18	NP	3.2	65.5	31.3	-	100	99	43	-	-
S-32	25 RT	130+00	0.0-5.0	A-2-4(0)	21	NP	23.0	59.7	11.3	6.0	100	93	21	-	14.2
SS-52	55 LT	131+50	0.0-1.5	A-2-4(0)	28	NP	13.7	76.6	5.1	4.6	100	97	13	-	-
SS-53	55 LT	131+50	23.5-25.0	A-4(0)	17	NP	2.0	76.2	10.7	11.1	100	100	38	-	-
SS-54	55 LT	131+50	28.5-30.0	A-3(0)	29	NP	19.8	78.6	1.6	-	100	96	2	-	-
SS-55	55 LT	131+50	33.5-35.0	A-4(0)	26	5	1.2	57.2	14.9	26.7	100	99	53	-	-
SS-56	53 LT	133+50	0.0-1.5	A-2-4(0)	34	NP	17.2	66.1	10.1	6.7	100	97	20	-	-
SS-57	53 LT	133+50	23.5-25.0	A-2-4(0)	26	NP	0.8	80.8	7.7	10.7	100	100	30	-	-
SS-58	53 LT	133+50	28.5-30.0	A-2-4(0)	21	NP	17.0	68.3	4.0	10.7	100	93	20	-	-
SS-59	53 LT	133+50	33.5-35.0	A-4(4)	32	7	10.5	39.0	35.8	14.7	100	93	69	-	-
SS-60	53 LT	133+50	38.5-40.0	A-2-6(0)	27	19	41.0	20.4	13.7	24.8	47	33	20	-	-

Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

Ⓓ VERY SOFT TO STIFF, GRAY BROWN, MUCK TO SANDY SILT WITH LITTLE TO MOD. ORGANIC MATTER, MOIST TO WET. (U.C.P.)

Ⓔ SOFT TO STIFF TAN GRAY SANDY SILT, WET. (U.C.P.)



-L-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_L.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	44

ROADWAY DESIGN ENGINEER

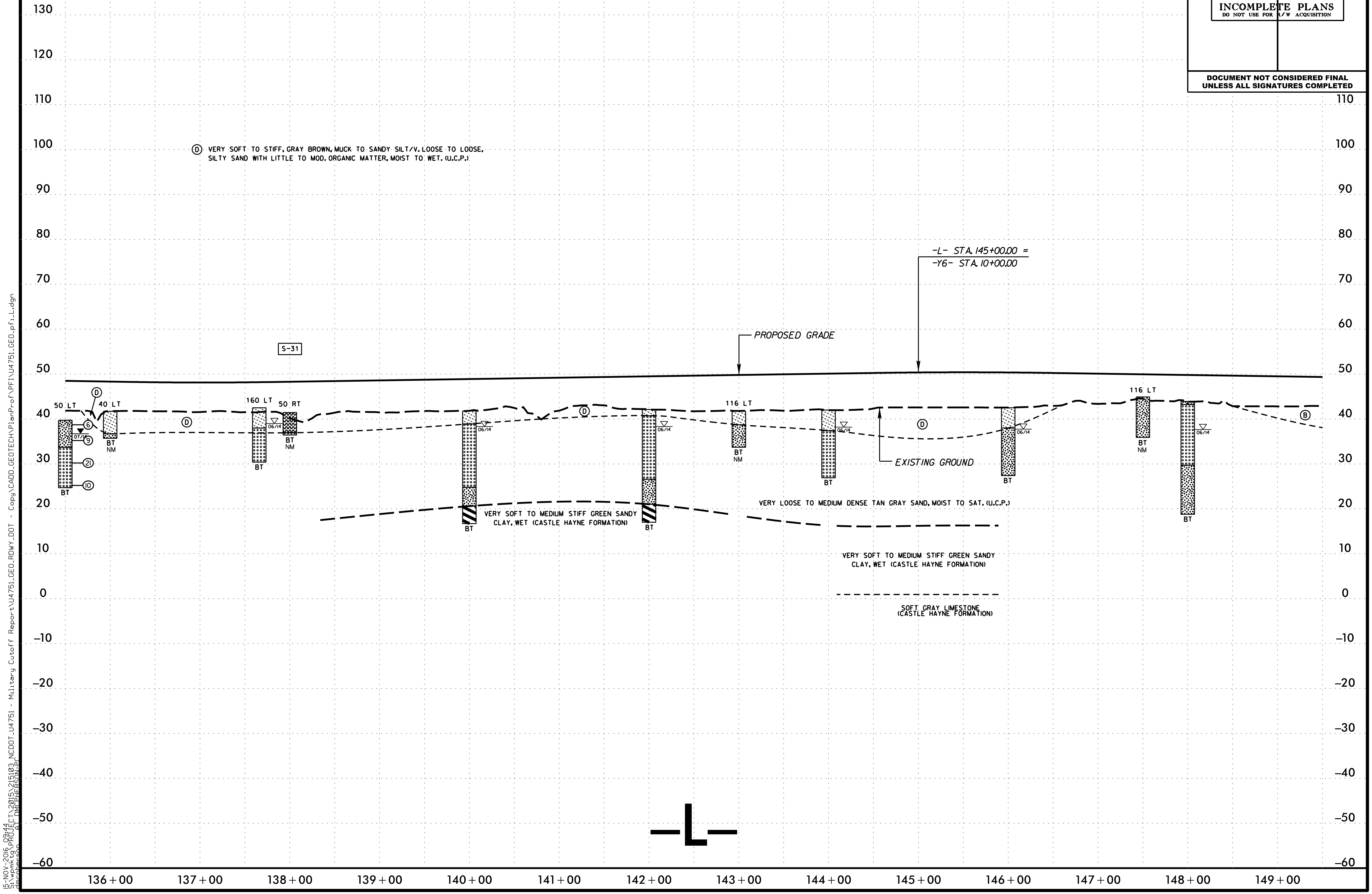
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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-31	50 RT	138+00	0.0-4.5	A-2-4(0)	21	NP	9.0	71.1	11.9	8.0	100	98	25	-	12.4



5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_L.dgn
dmcpherson AT DMCPHERSON-PC

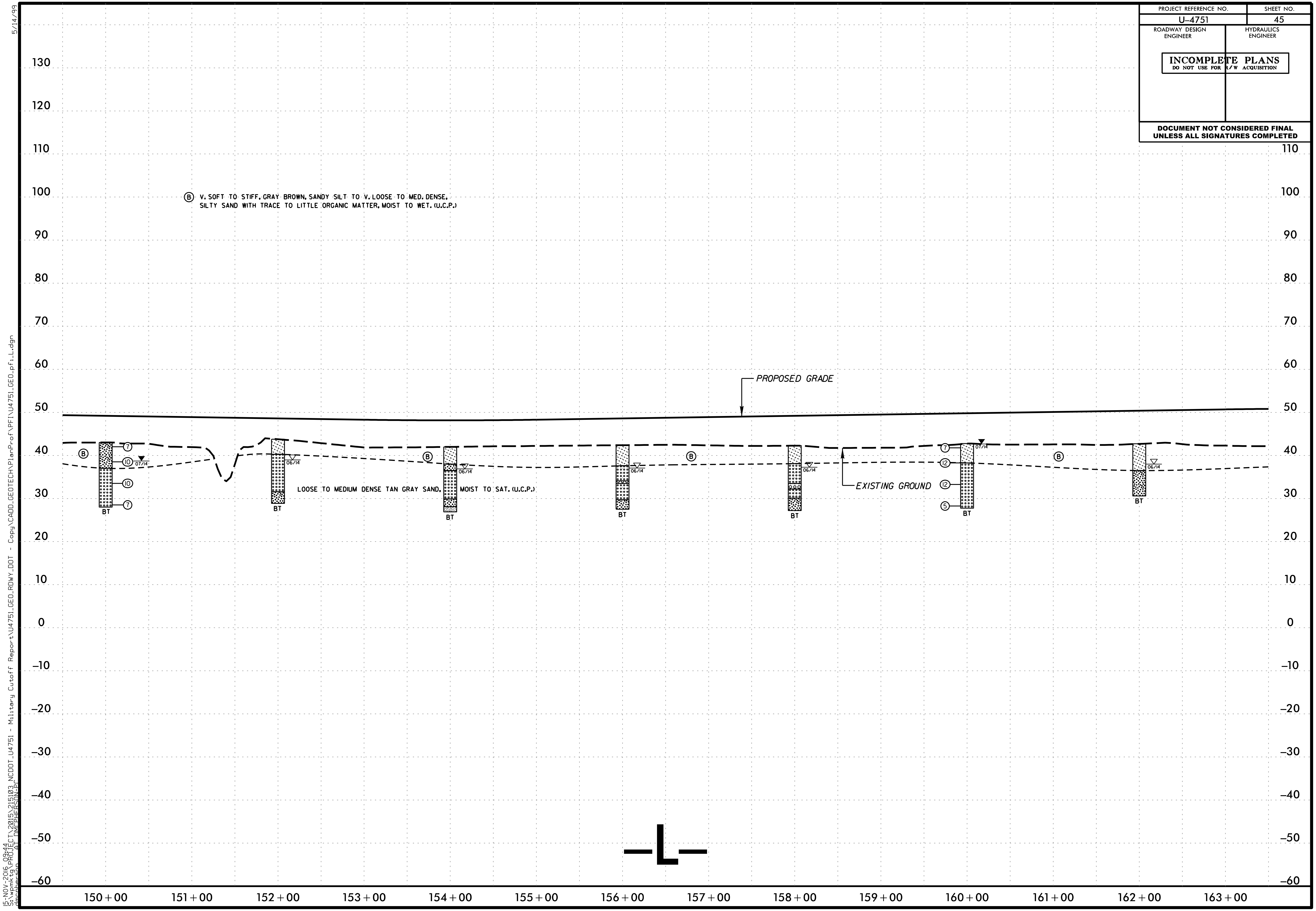
PROJECT REFERENCE NO.	SHEET NO.
U-4751	45

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

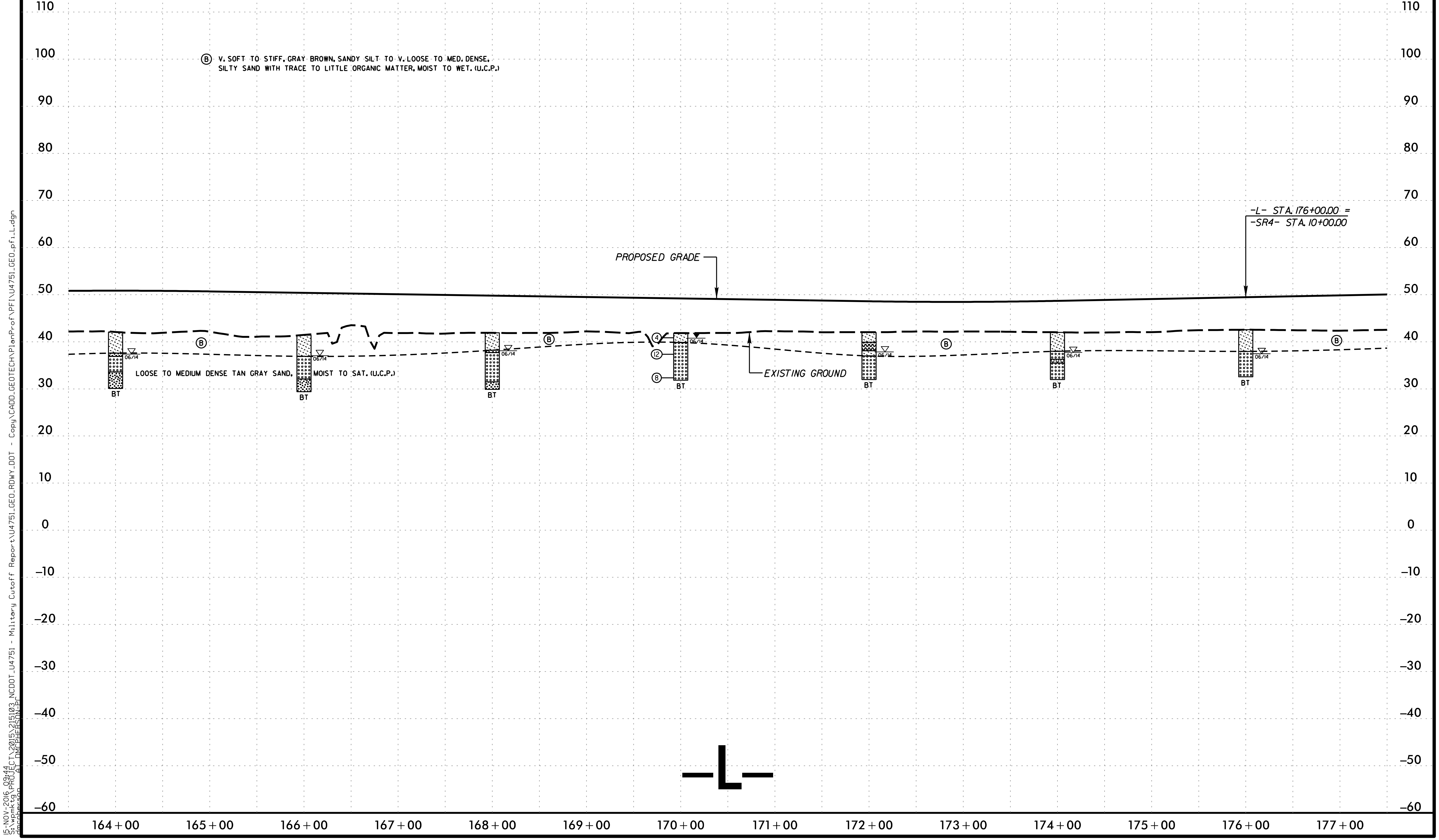
PROJECT REFERENCE NO.	SHEET NO.
U-4751	46

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

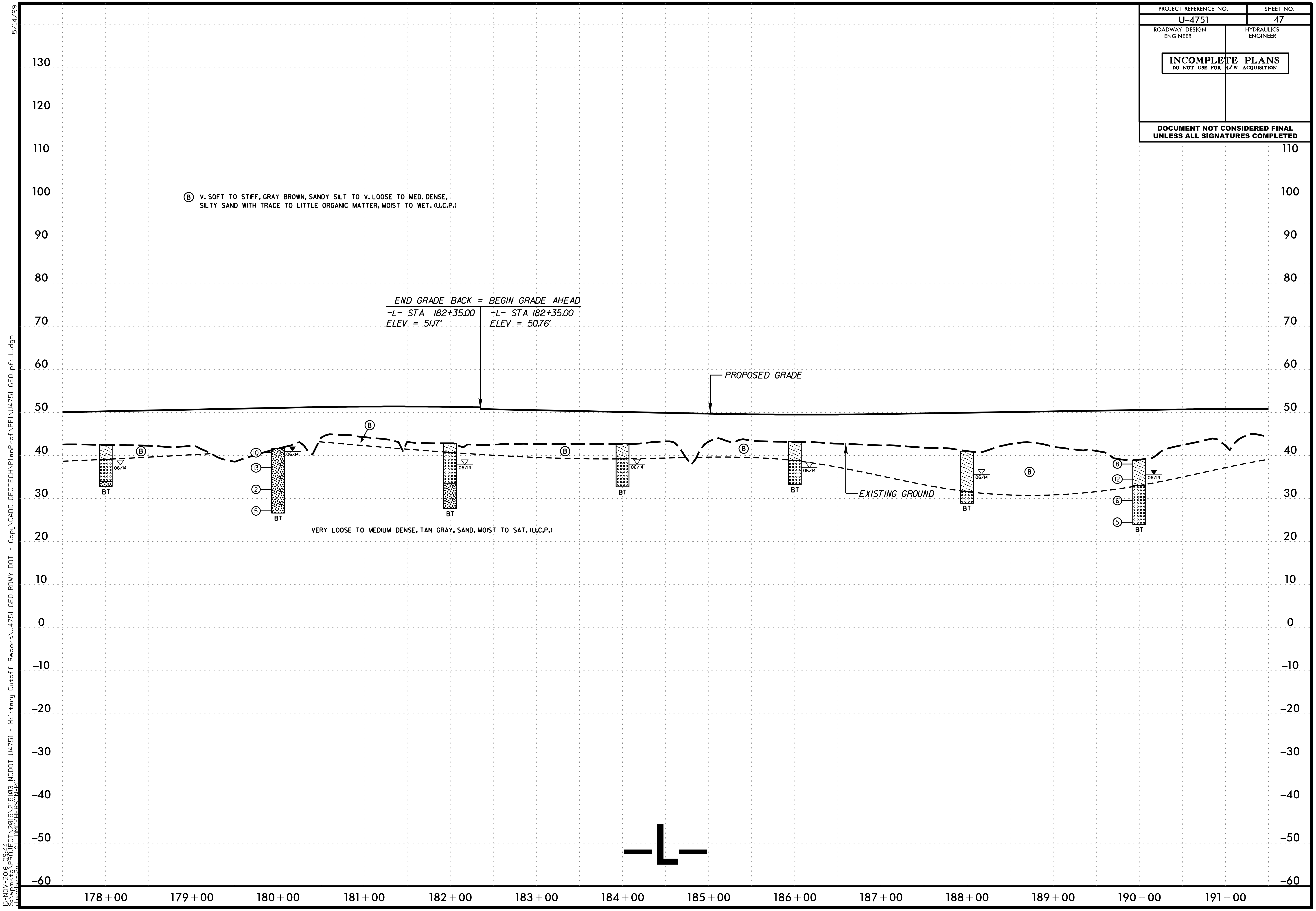
PROJECT REFERENCE NO.	SHEET NO.
U-4751	47

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

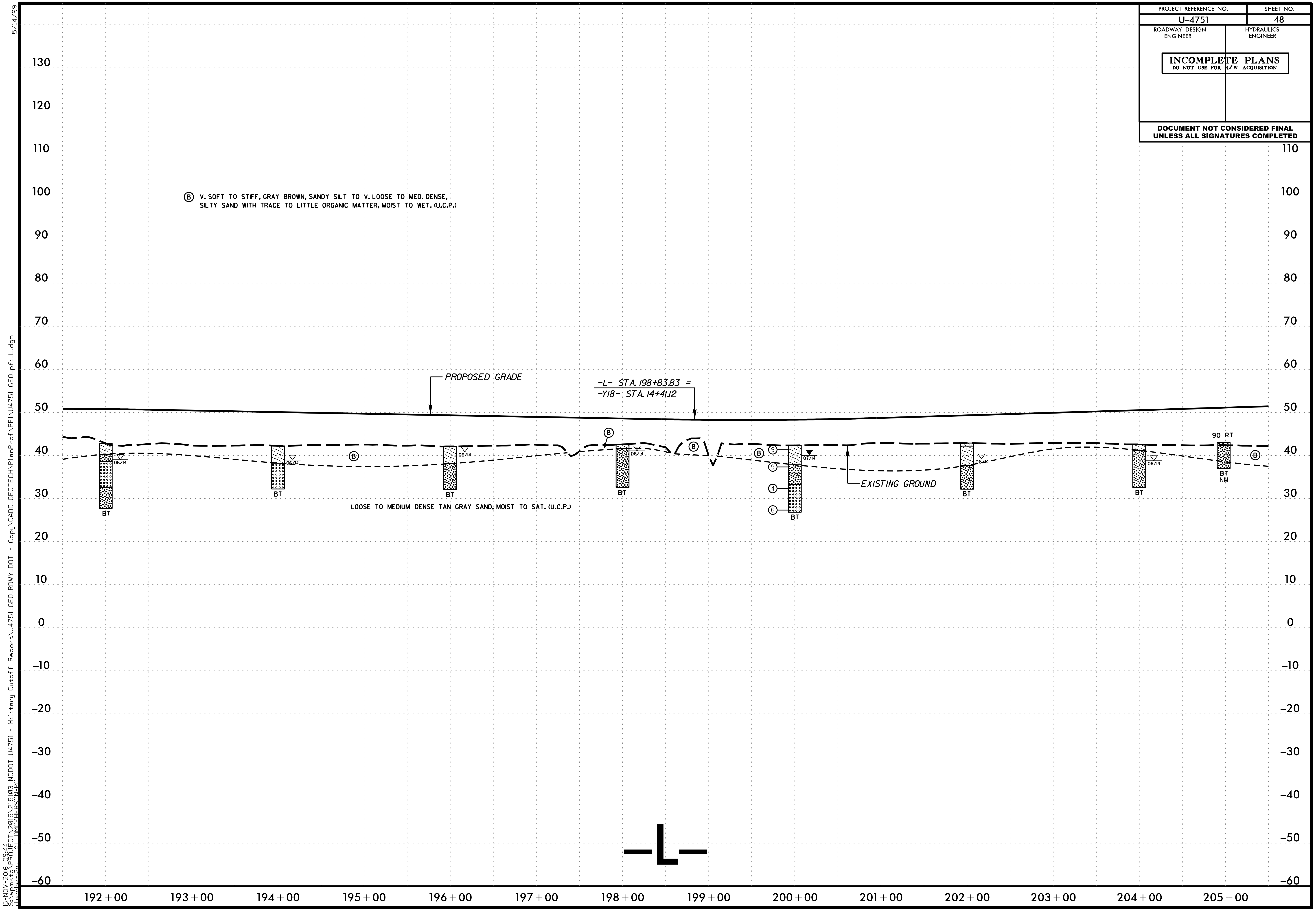
PROJECT REFERENCE NO.	SHEET NO.
U-4751	48

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

-L- STA. 198+83.83 =
-Y18- STA. 14+41.12

-L-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_L.dgn
dmcpherson AT DMCPHERSON-PC

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U–4751	49

ROADWAY DESIGN ENGINEER

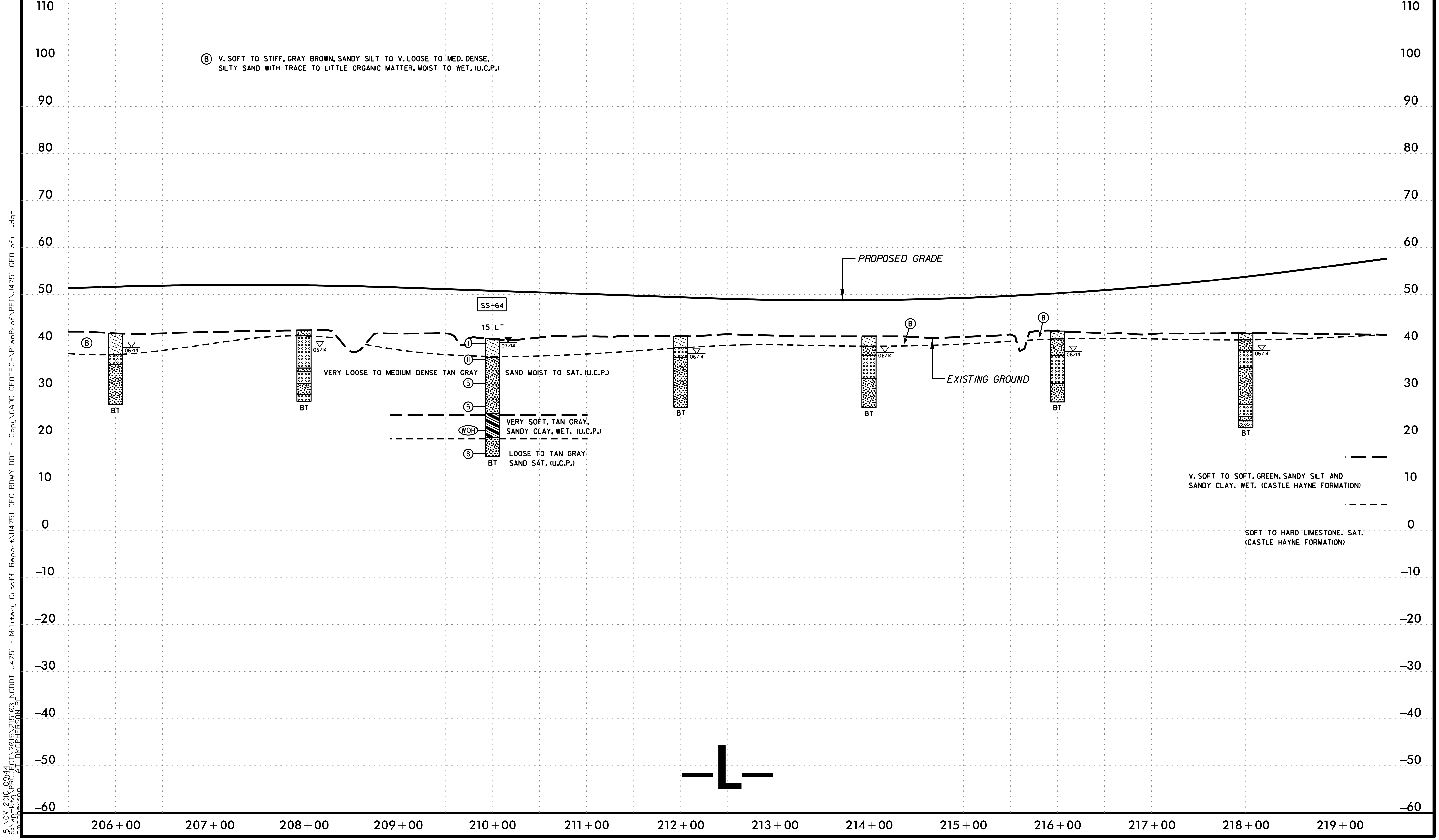
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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		
SS-64	15 LT	210+00	18.5-20.0	A-6(4)	22	11	1.6	41.8	33.5	23.0	100	100	67	-	-



15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4751	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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		
SS-73	CL	220+00	0.0-1.5	A-2-4(0)	18	NP	15.6	66.5	6.9	11.1	100	97	22	-	-
SS-74	CL	220+00	28.5-30.0	A-4(7)	31	9	8.1	28.3	50.9	12.7	100	95	83	-	-
SS-75	CL	220+00	36.6-37.0	***	-	-	-	-	-	-	-	-	-	-	-
SS-67	CL	224+50	18.5-20.0	A-4(2)	26	6	9.9	30.7	16.8	42.6	100	98	61	-	-
SS-68	CL	224+50	23.5-25.0	A-2-4(0)	19	7	11.7	62.8	6.5	19.0	100	97	31	-	-
SS-69	CL	224+50	28.5-30.0	A-6(7)	32	11	12.3	29.3	46.9	11.5	100	91	77	-	-
SS-70	CL	224+50	33.5-35.0	A-2-4(0)	19	1	50.7	34.7	5.3	9.3	100	78	20	-	-
SS-71	CL	224+50	37.3-38.6	A-1-a(0)	18	NP	60.0	21.0	2.2	16.8	37	20	8	-	-
SS-72	CL	224+50	43.5-44.5	A-1-a(0)	15	NP	61.8	20.6	2.8	14.7	32	16	6	-	-

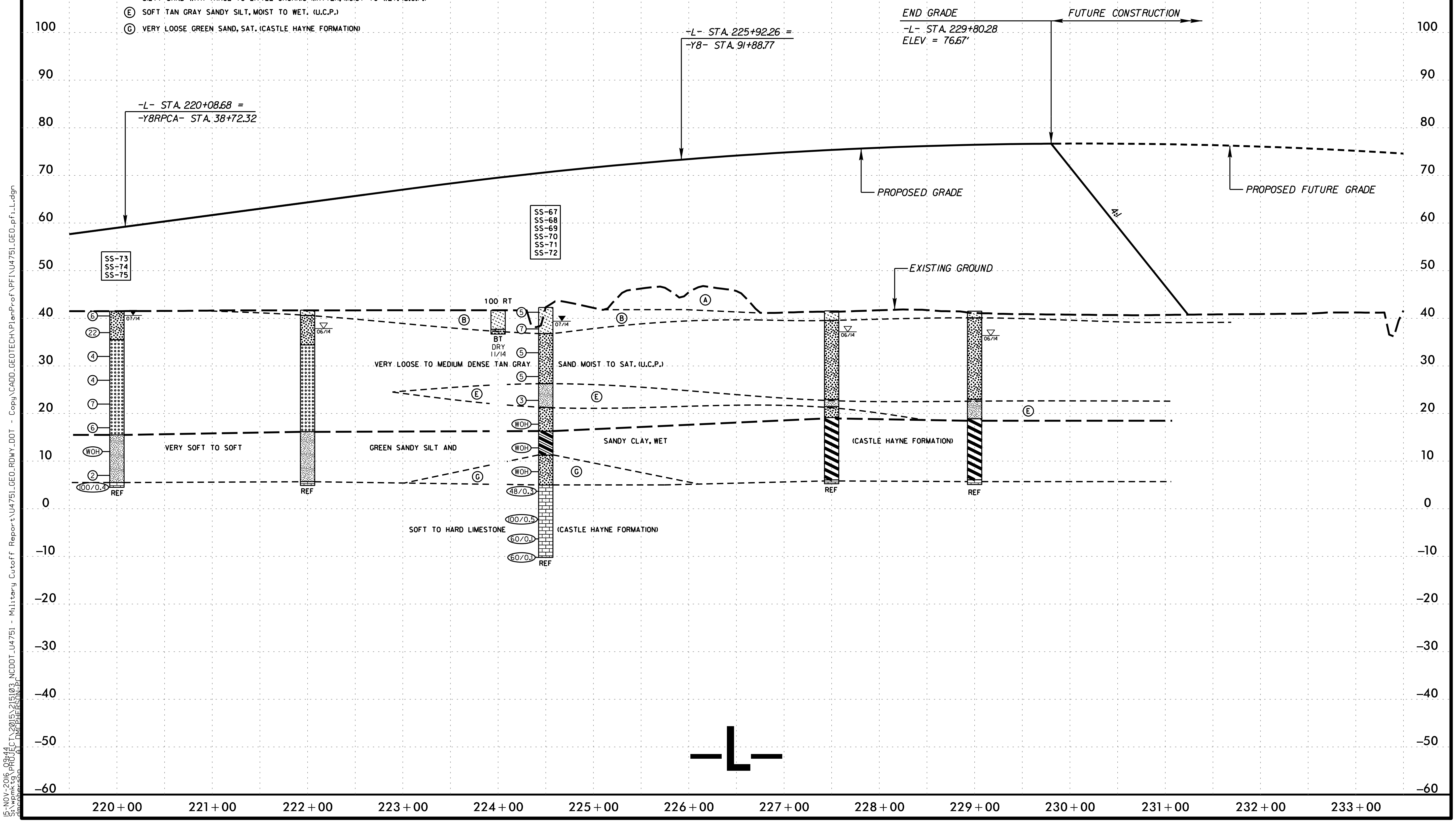
*** - INSUFFICIENT MATERIAL TO TEST SAMPLE

Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

Ⓔ SOFT TAN GRAY SANDY SILT, MOIST TO WET. (U.C.P.)

Ⓖ VERY LOOSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

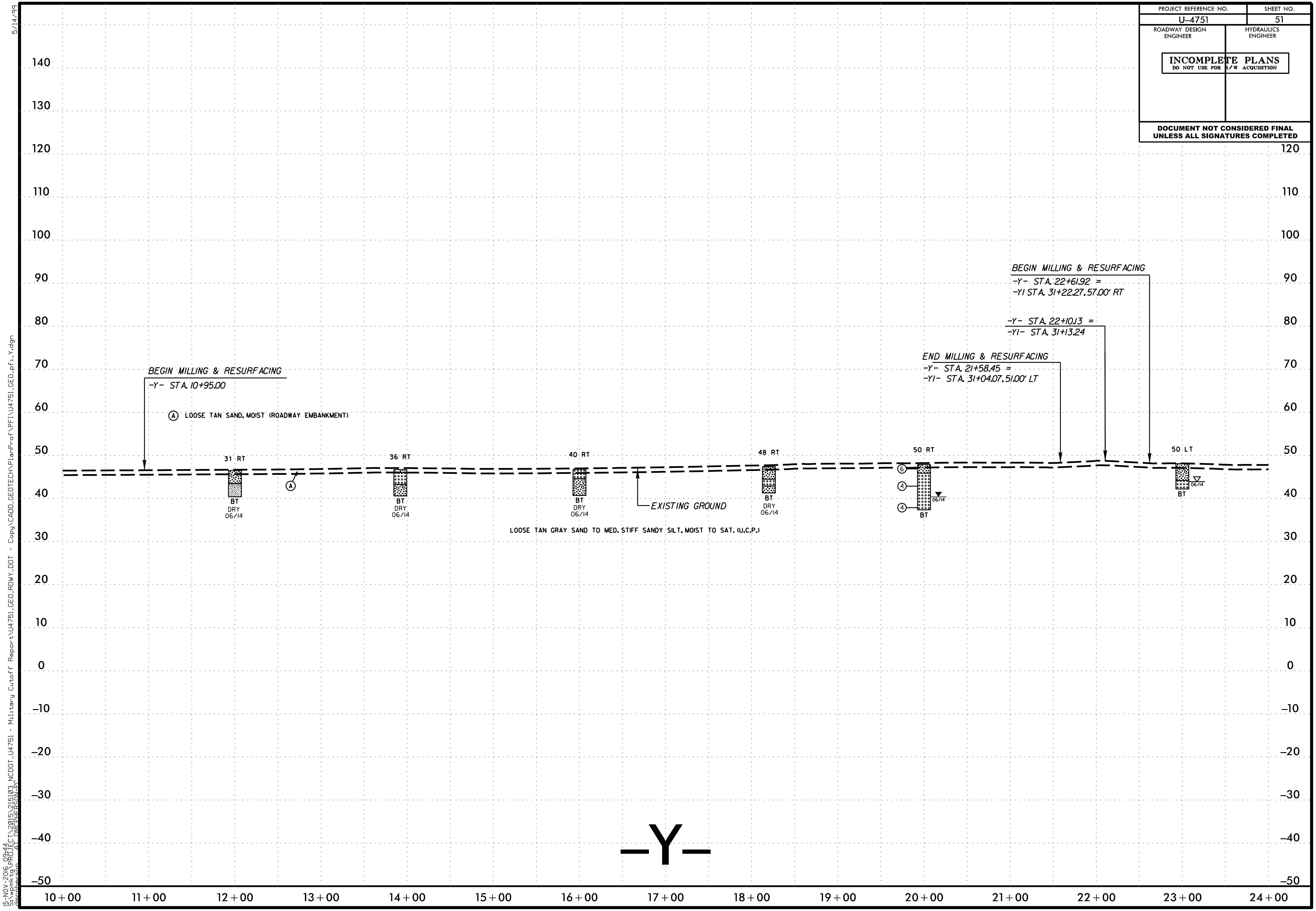


15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_L.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y-

5/14/99

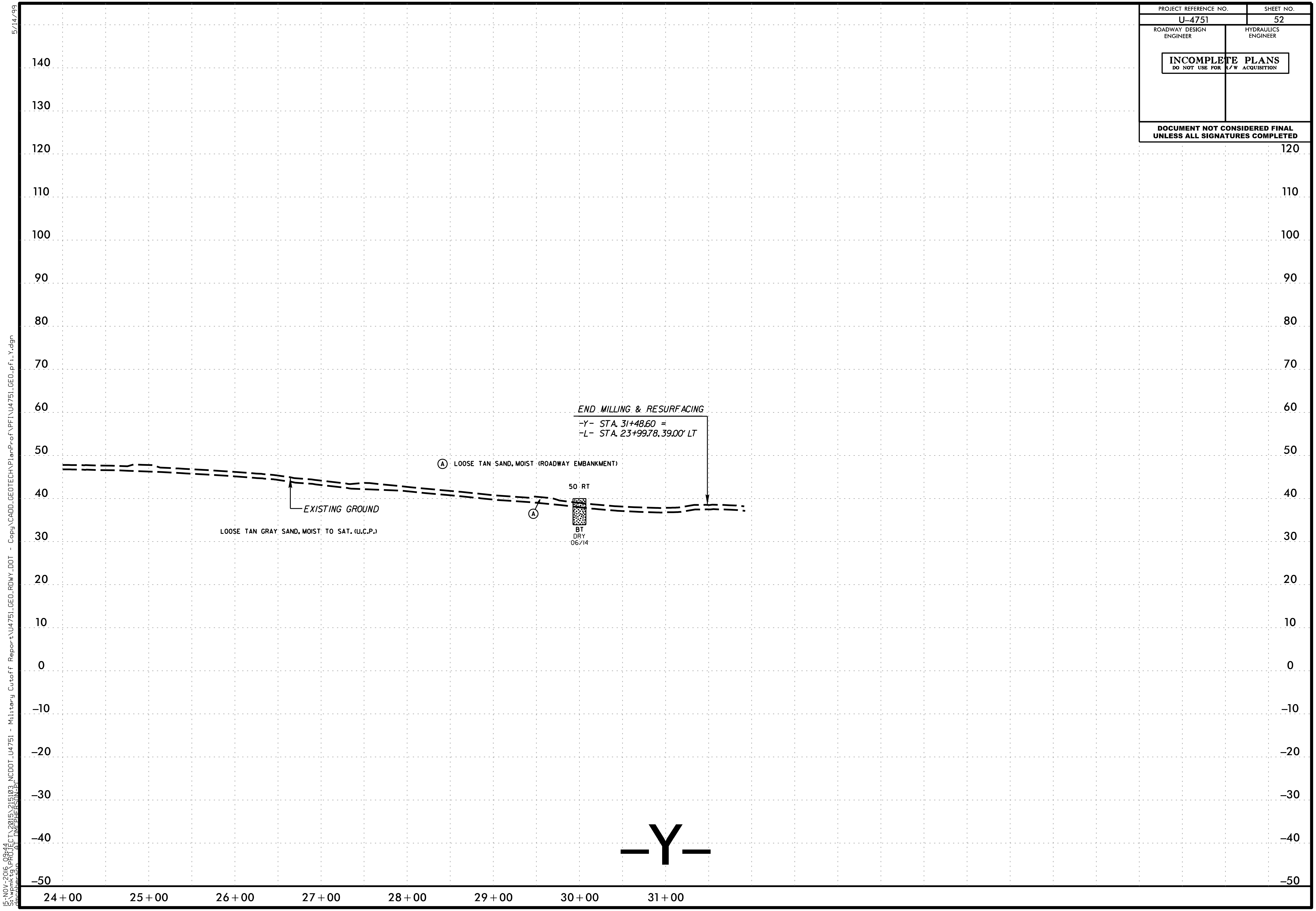
15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	52

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y.dgn
dmcpherson AT DMCPHERSON-PC

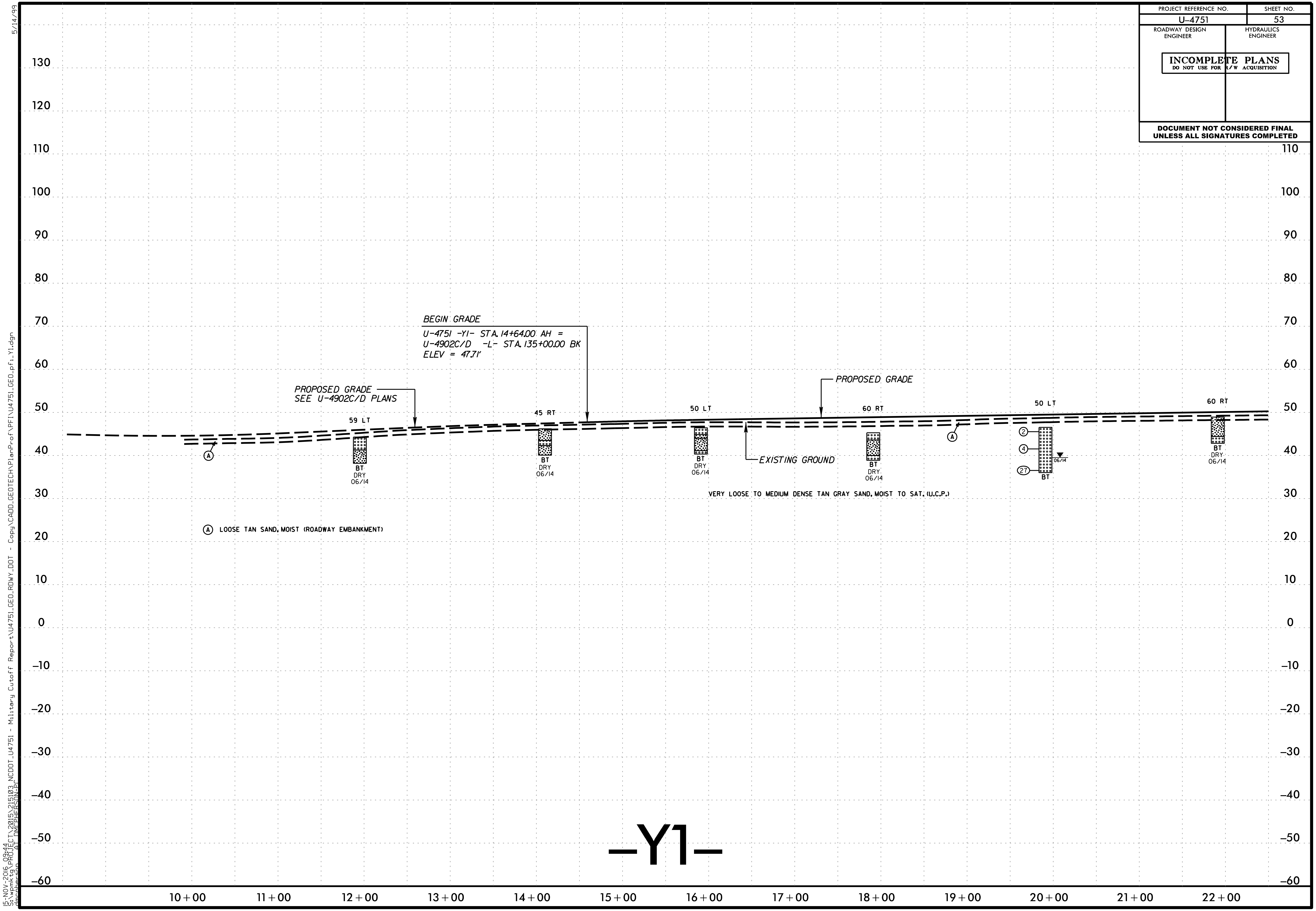
PROJECT REFERENCE NO.	SHEET NO.
U-4751	53

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y1-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y1.dgn
dmcpherson AT DMCPHERSON-PC

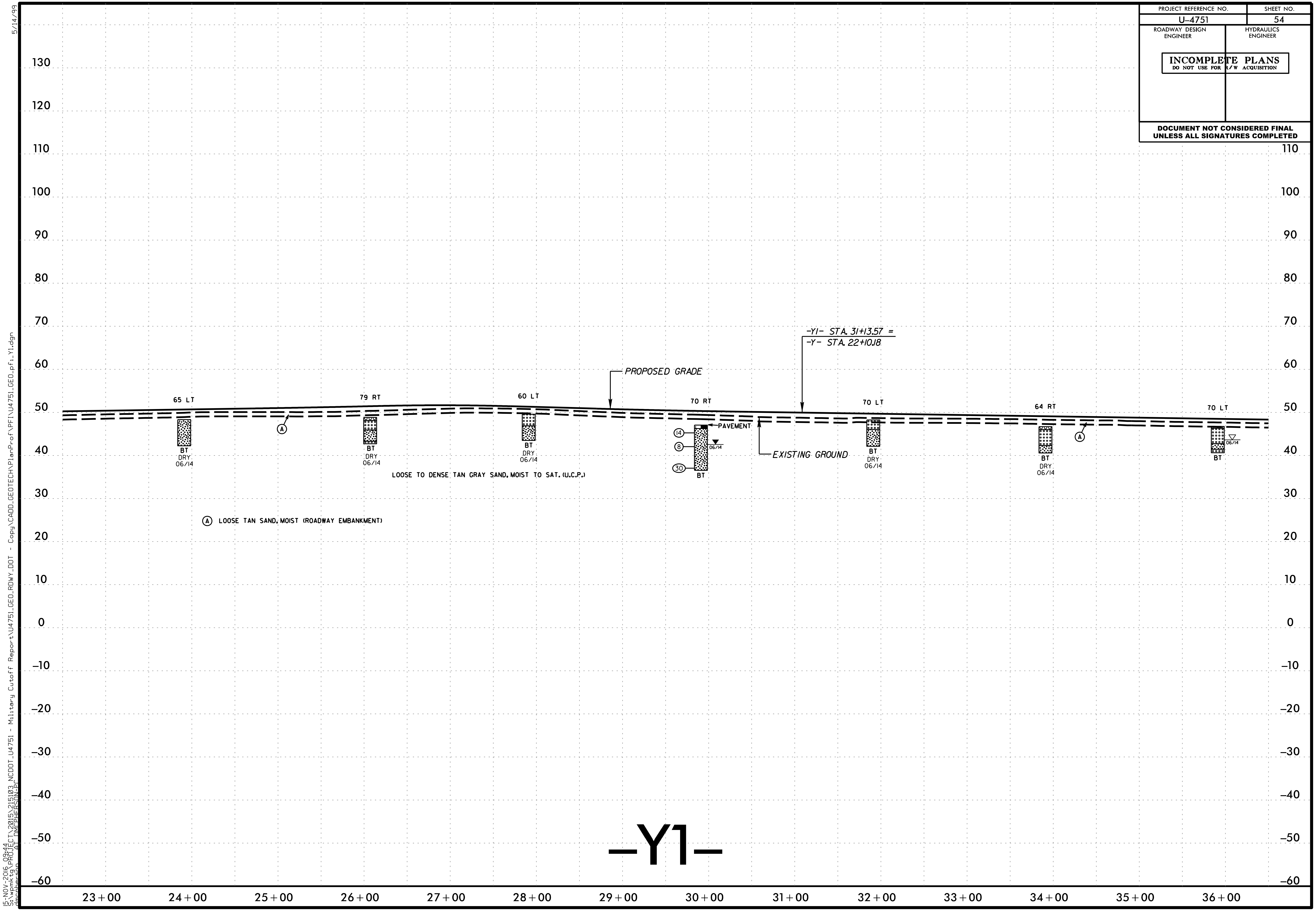
PROJECT REFERENCE NO.	SHEET NO.
U-4751	54

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y1-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PF\U4751_GEO_pfl_Y1.dgn
dmcpherson AT DMCPHERSON-PC

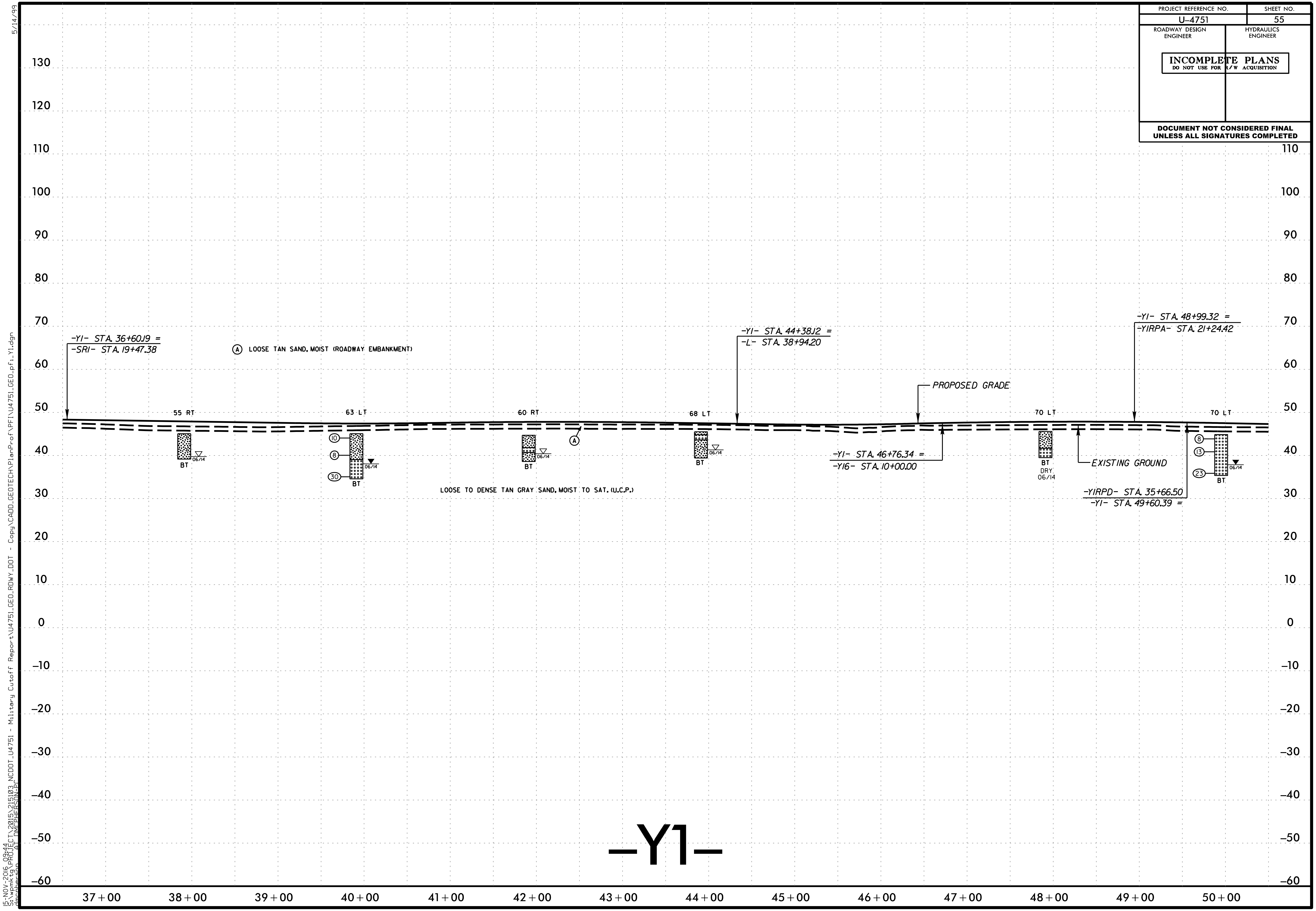
PROJECT REFERENCE NO.	SHEET NO.
U-4751	55

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



5/14/99

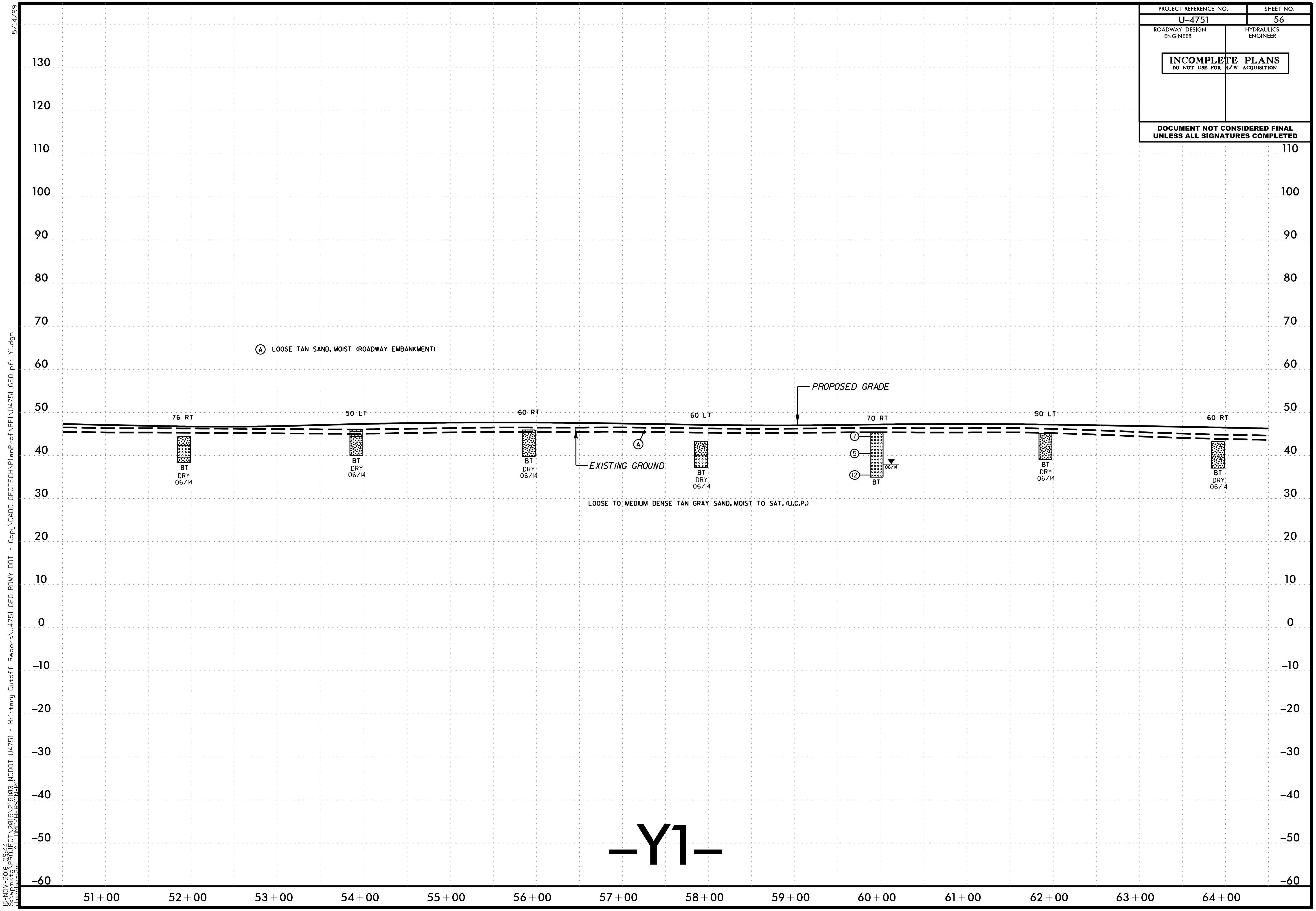
15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_Y1.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U–4751	56

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y1.dgn
dmcpherson AT DMCPHERSON-PC

5/14/99

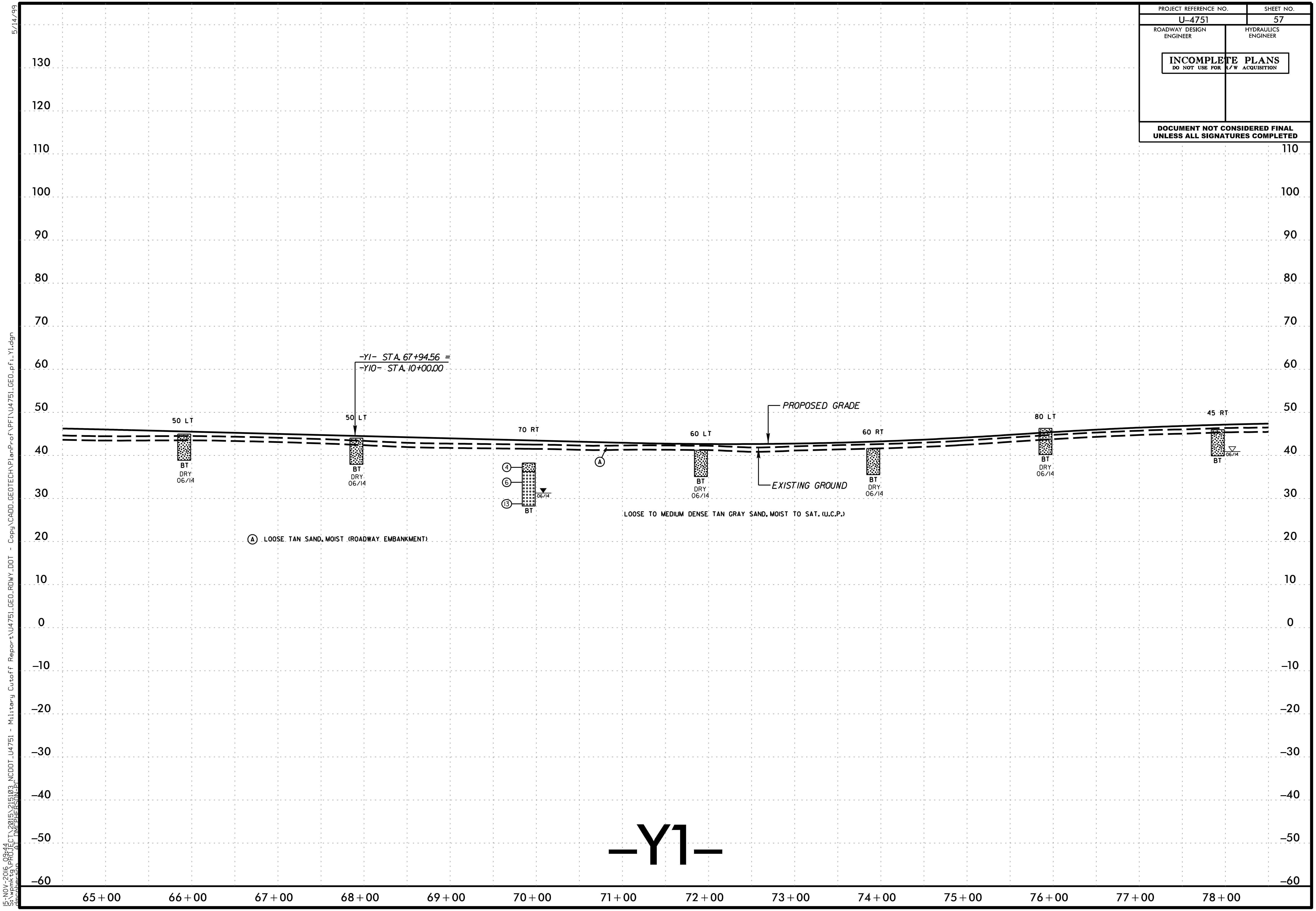
PROJECT REFERENCE NO.	SHEET NO.
U-4751	57

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



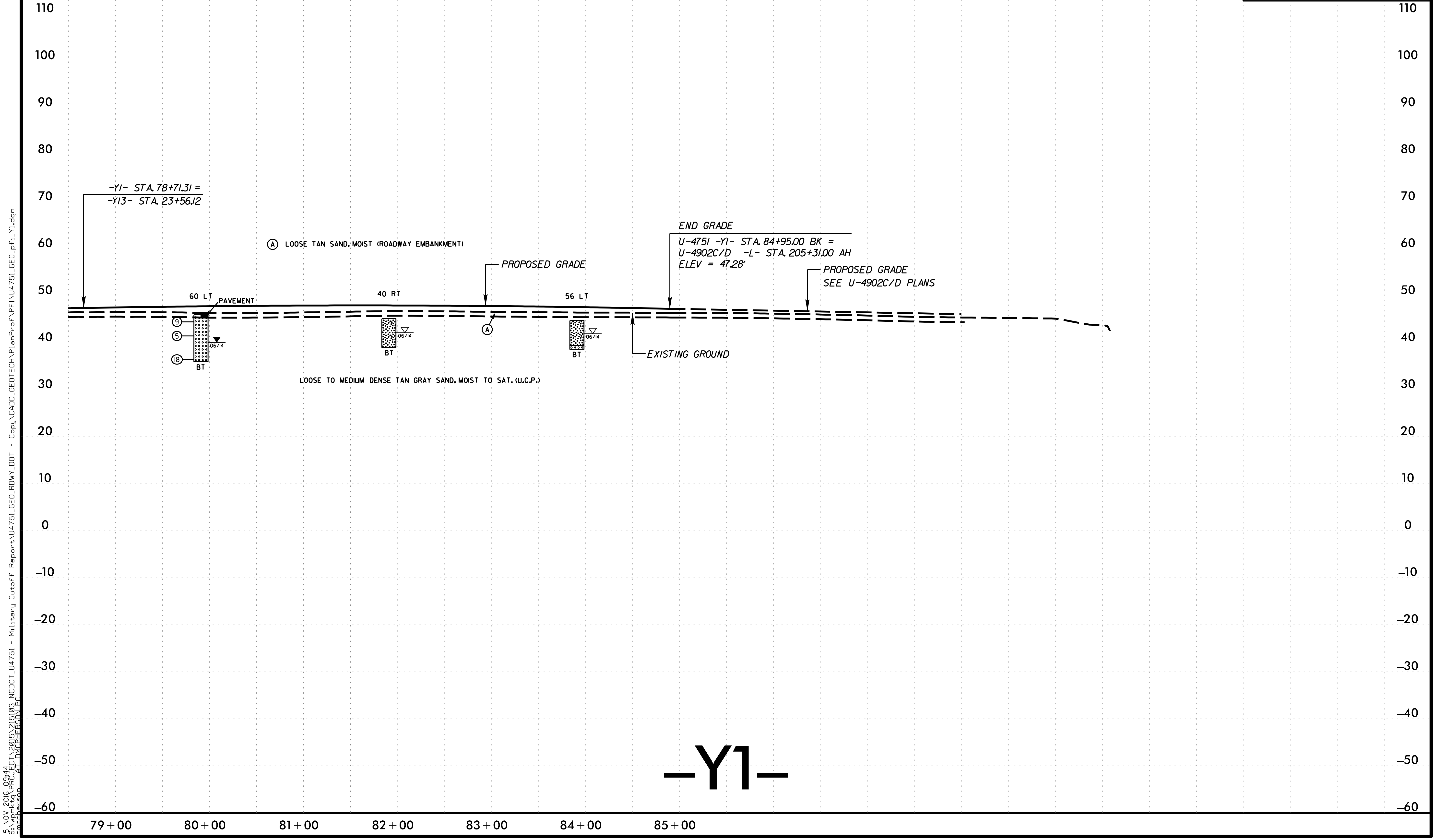
-Y1-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y1.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	58
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y1-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_Y1.dgn
dmcpherson AT DMCPHERSON-PC

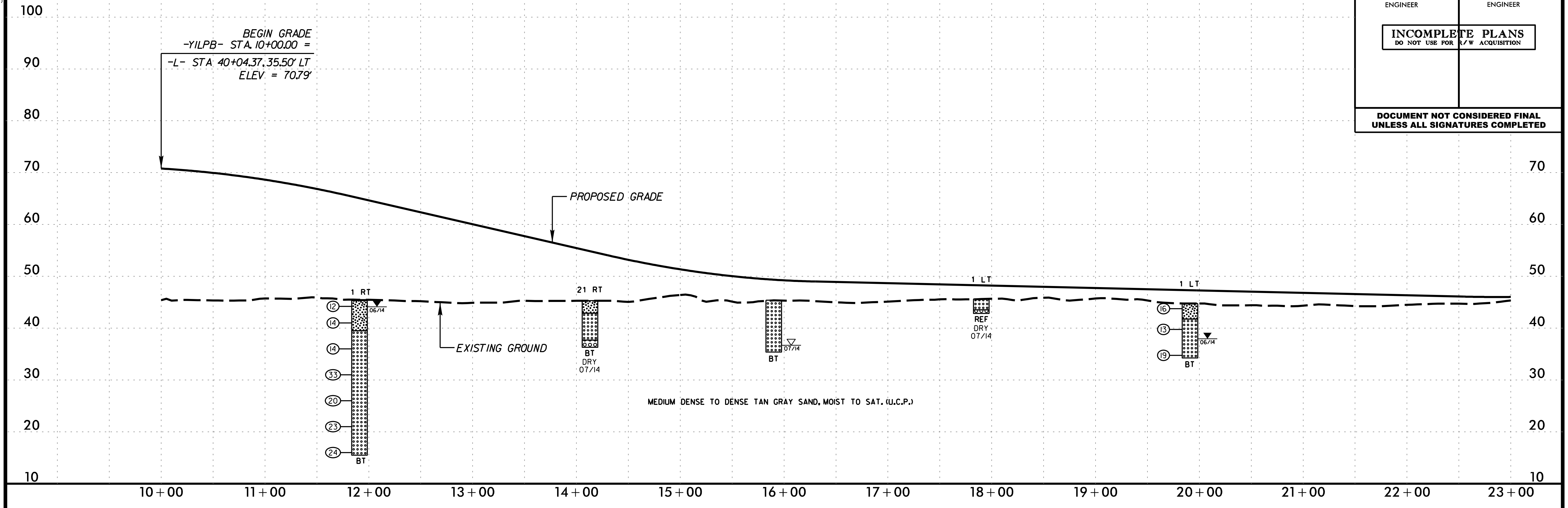
PROJECT REFERENCE NO.	SHEET NO.
U-4751	59

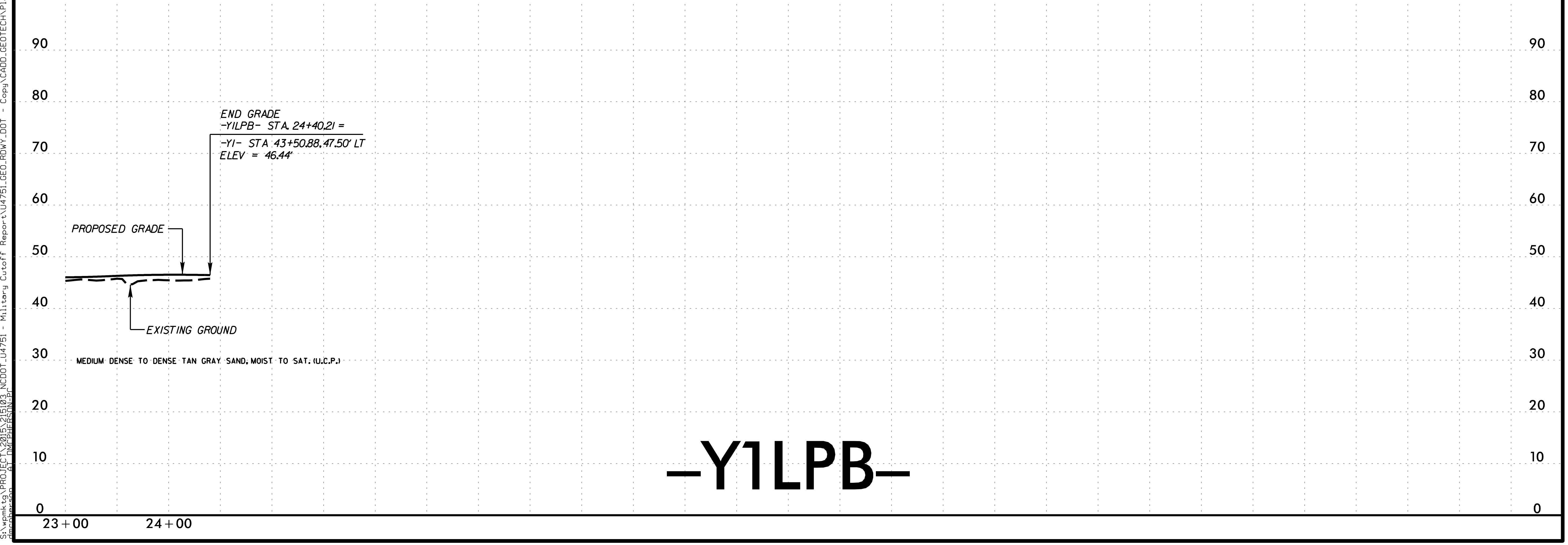
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





-Y1LPB-

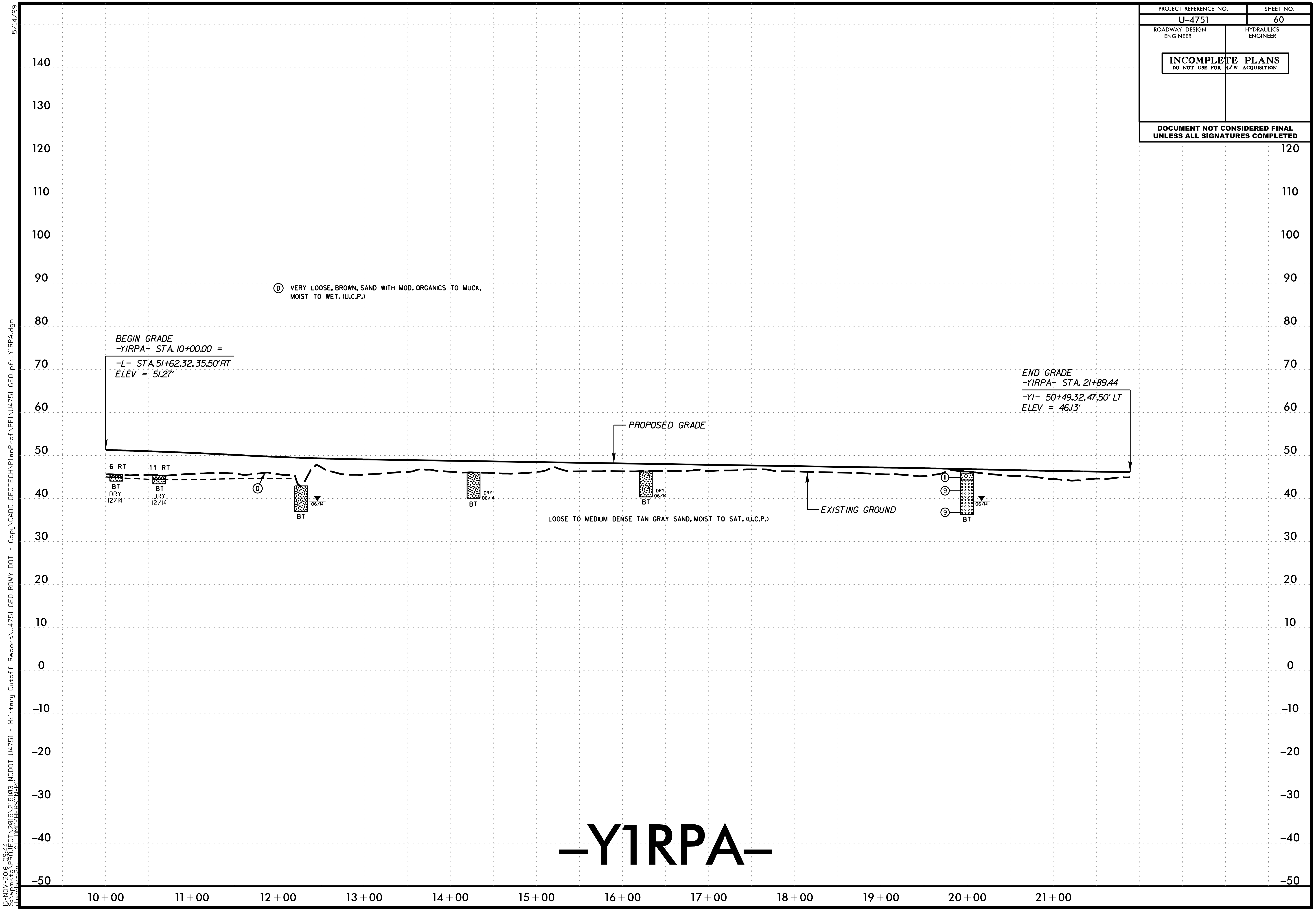
5/28/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y1LPB.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y1RPA-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PF1\U4751_GEO_pf1_Y1RPA.dgn
dmcpherson AT DMCPHERSON-PC

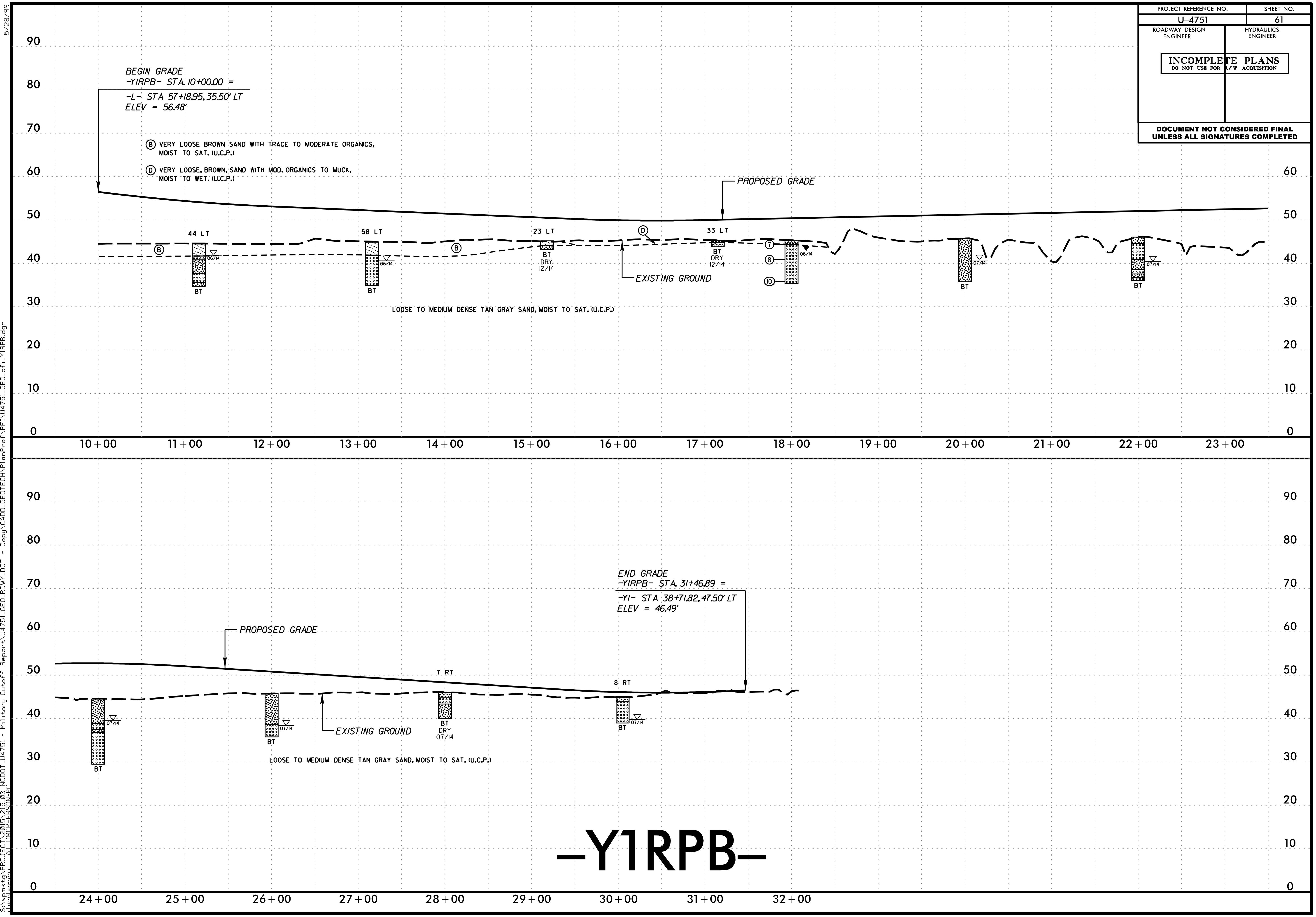
PROJECT REFERENCE NO.	SHEET NO.
U-4751	61

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y1RPB-

5/28/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y1RPB.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	62

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

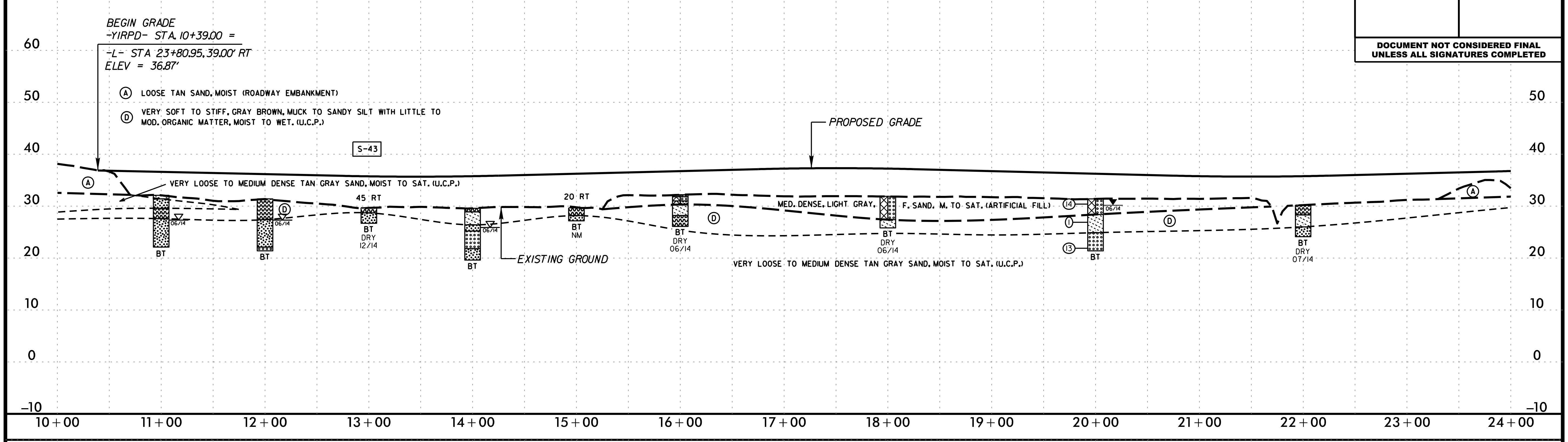
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

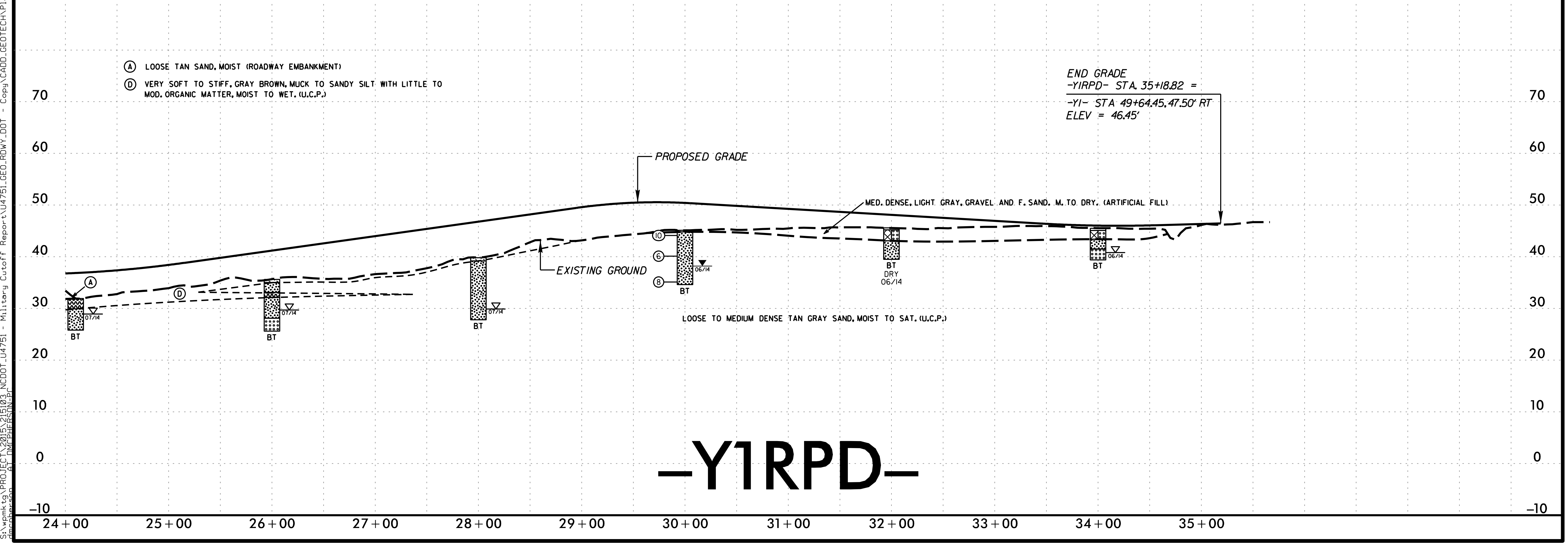
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/28/99

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-43	45 RT	13+00	0.0-1.0	A-2-4(0)	40	NP	37.2	48.4	6.3	8.0	100	83	16	-	12.4





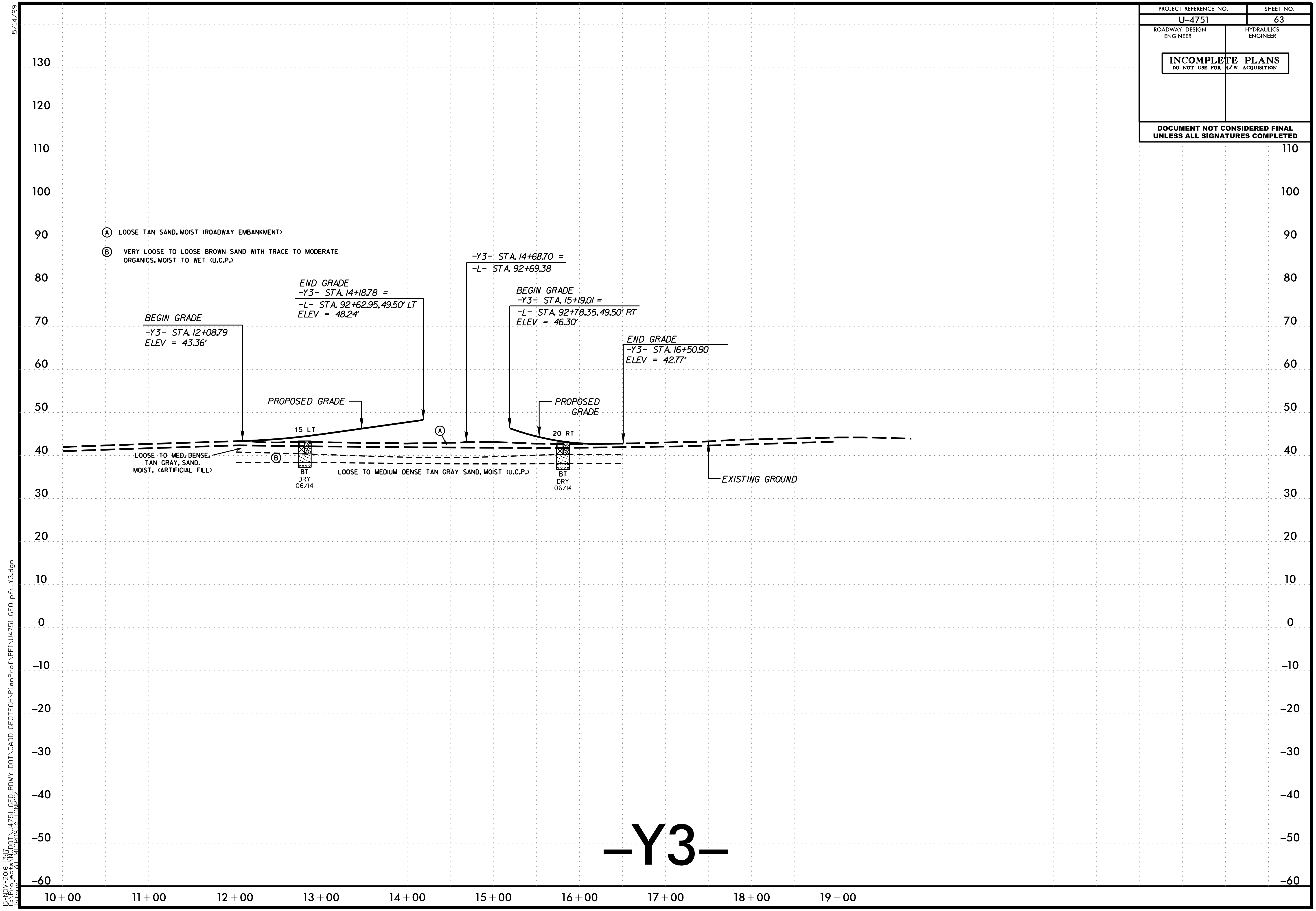
-Y1RPD-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PF1\U4751_GEO_pf1_Y1RPD.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y3-

15-NOV-2016 13:17
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y3.dgn
lstone AT MICROSTATIONPC2

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U–4751	64

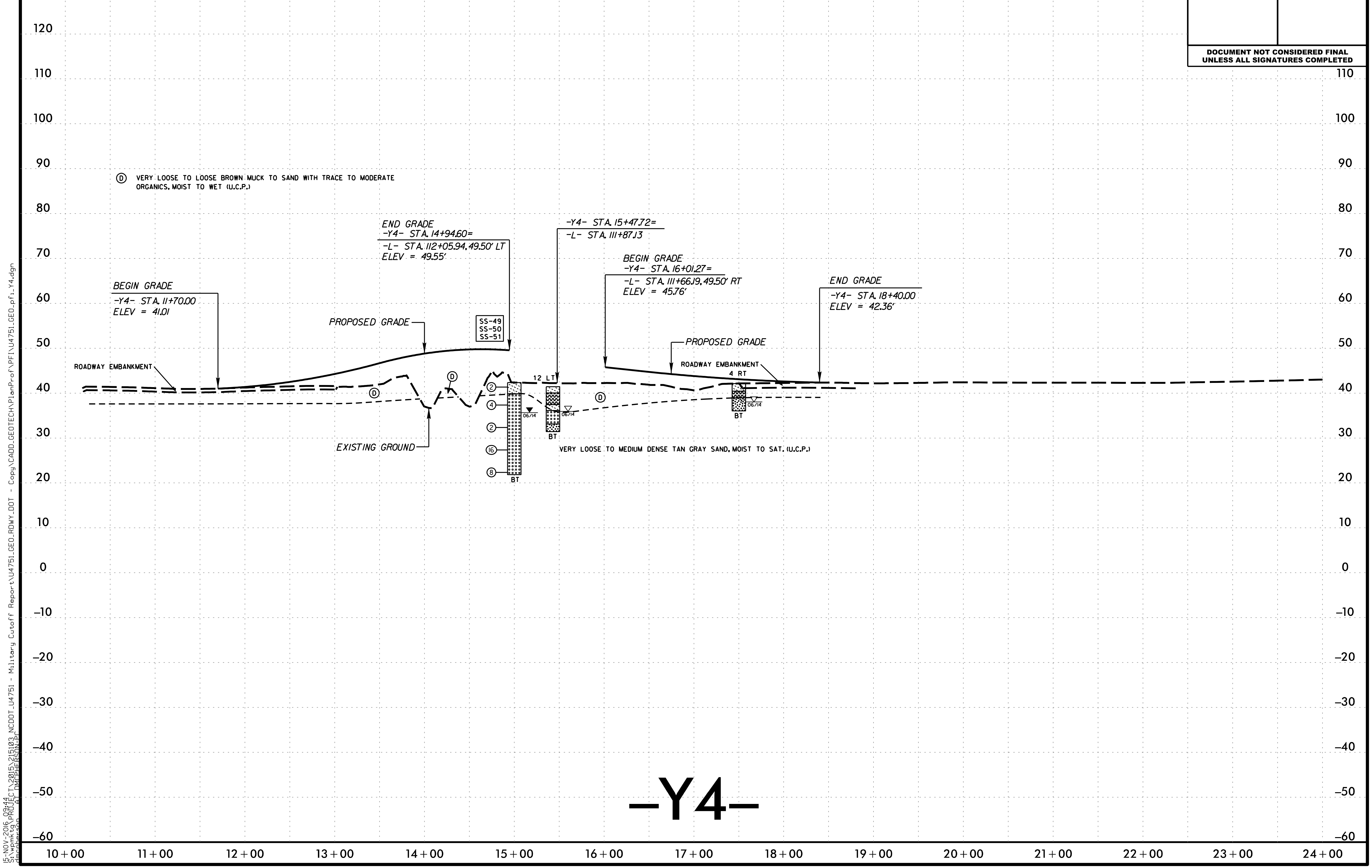
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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		
SS-49	CL	14+75	0.0-1.5	A-2-4(0)	22	NP	19.1	68.2	7.0	5.6	100	96	15	-	-
SS-50	CL	14+75	4.0-5.5	A-3(0)	21	NP	26.8	72.0	1.2	-	100	98	2	-	-
SS-51	CL	14+75	14.0-15.5	A-3(0)	18	NP	28.6	71.0	0.4	-	100	99	1	-	-



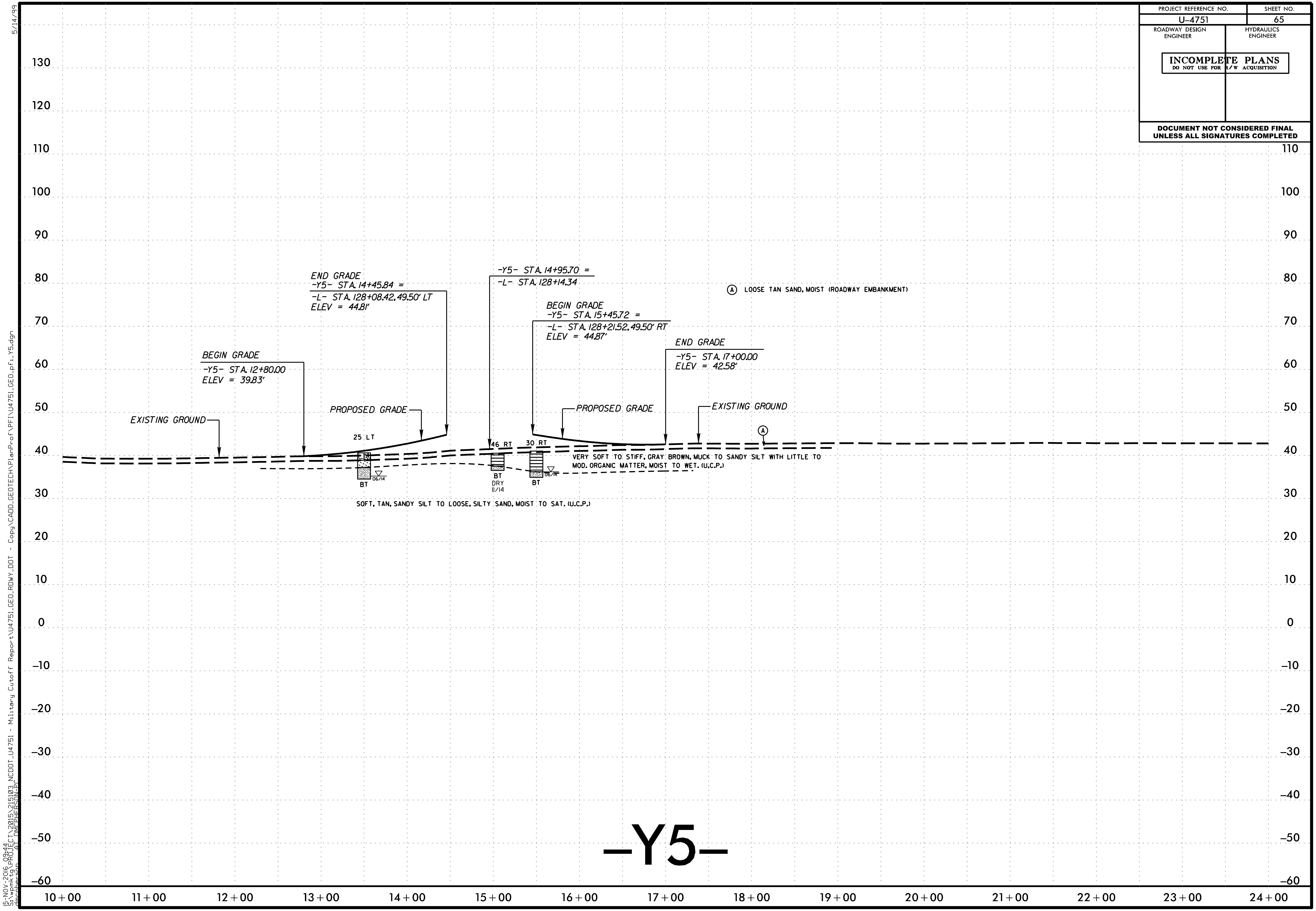
–Y4–

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y4.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	65
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y5-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y5.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	66

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

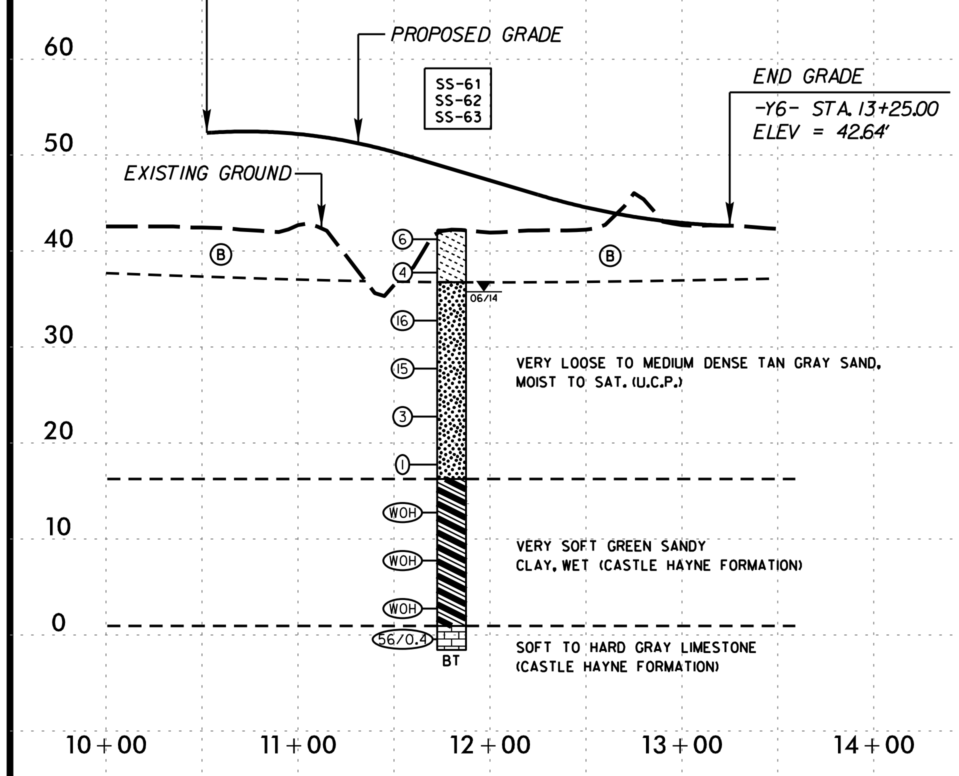
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

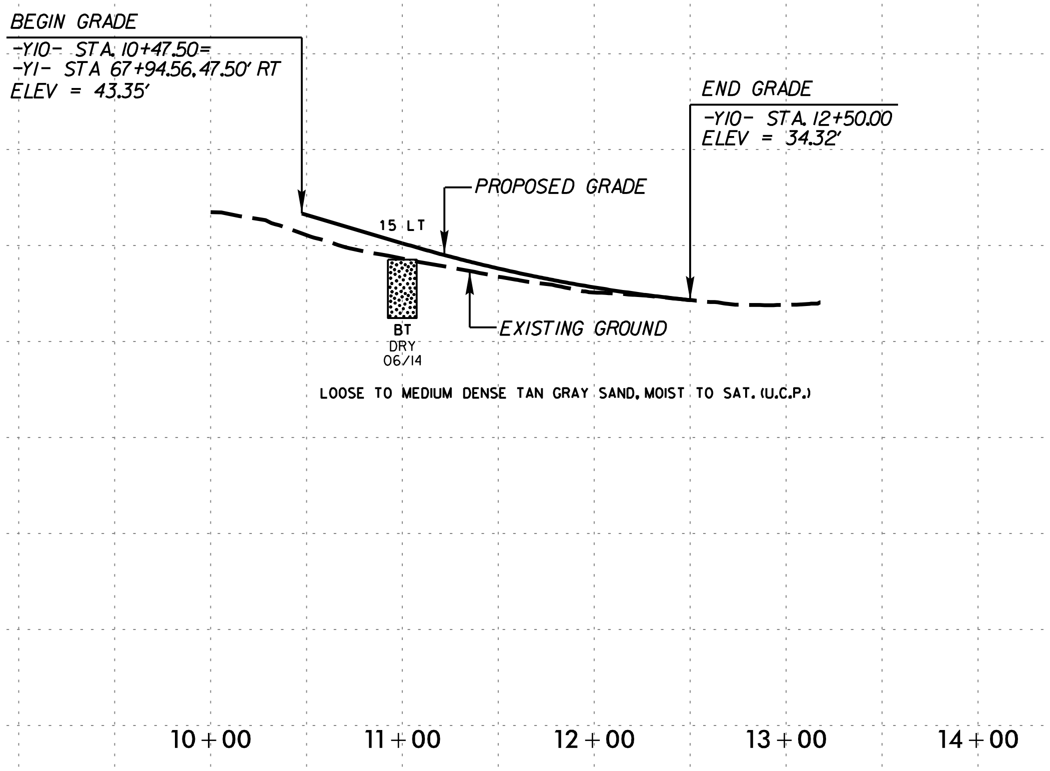
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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		
SS-61	CL	11+80	23.5-25.0	A-2-4(0)	24	7	1.0	83.0	5.3	10.7	100	100	29	-	-
SS-62	CL	11+80	28.5-30.0	A-6(1)	27	16	21.2	48.5	20.6	9.7	100	88	36	-	-
SS-63	CL	11+80	41.3-42.7	A-2-4(0)	22	7	49.7	23.4	7.1	19.8	33	21	10	-	-

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



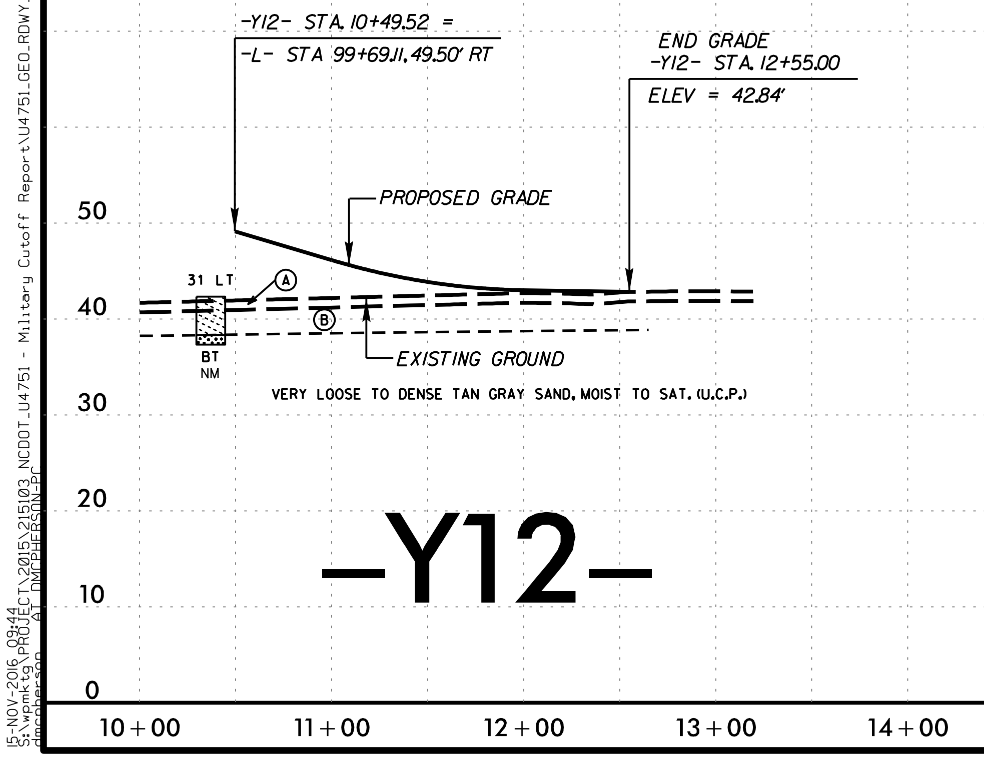


–Y6–

–Y10–

Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



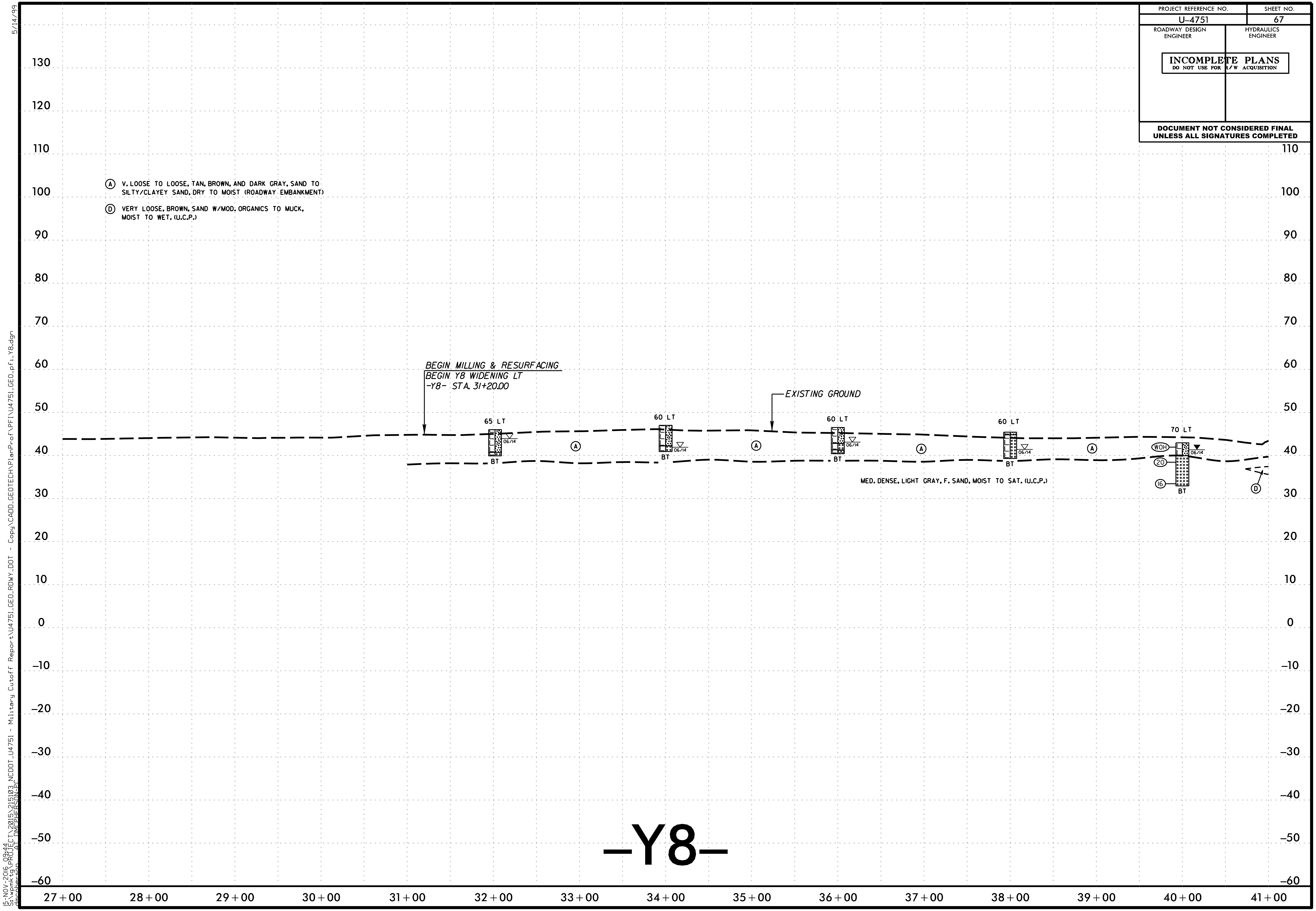
–Y12–

50
40
30
20
10
0

PROJECT REFERENCE NO.	SHEET NO.
U-4751	67
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Ⓐ V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

Ⓓ VERY LOOSE, BROWN, SAND W/MOD. ORGANICS TO MUCK, MOIST TO WET. (U.C.P.)

MED. DENSE, LIGHT GRAY, F. SAND, MOIST TO SAT. (U.C.P.)

-Y8-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PF\U4751_GEO_pfl_Y8.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

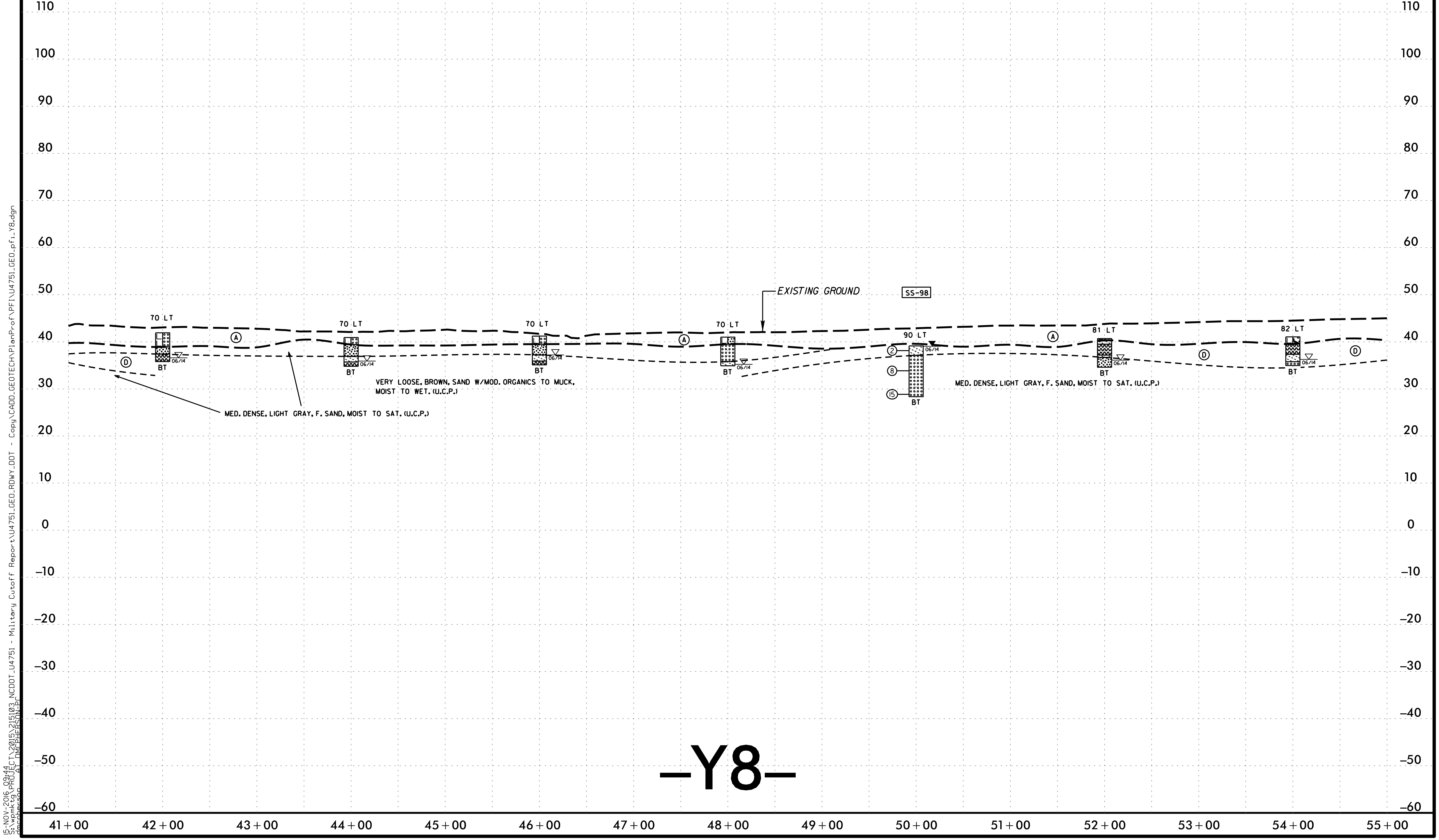
5/14/99

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		
SS-98	90 LT	50+00	0.0-1.5	A-2-5(0)	41	NP	27.5	59.2	9.2	4.0	97	89	14	-	7.4

Ⓐ V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

Ⓓ VERY LOOSE, BROWN, SAND W/MOD. ORGANICS TO MUCK, MOIST TO WET. (U.C.P.)



-Y8-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PF\U4751_GEO_pfl_Y8.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U–4751	69

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

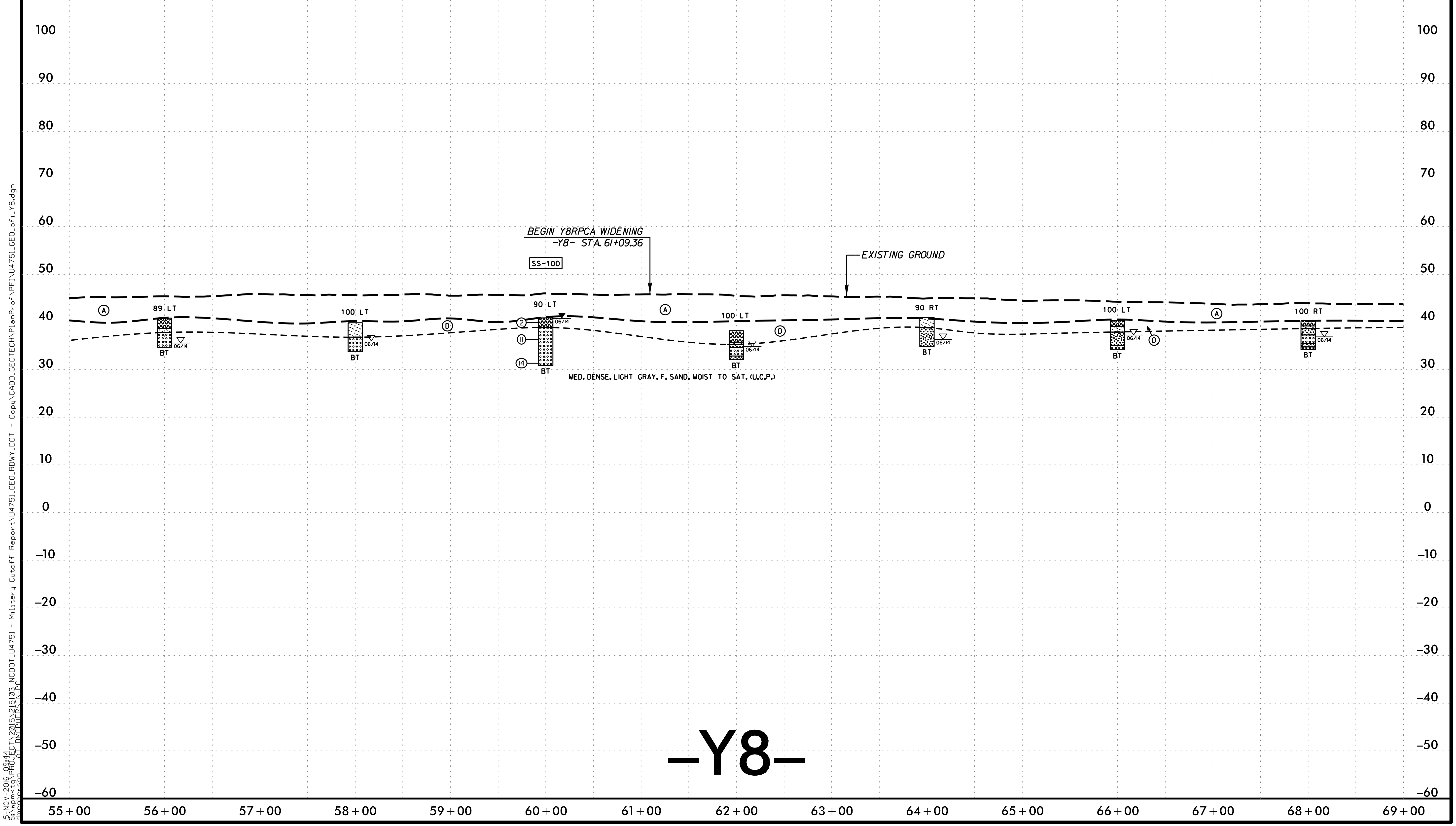
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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		
SS- 100	90 LT	60+00	0.0- 1.5	A- 2- 4(0)	35	NP	10.1	64.6	19.5	6.1	100	97	31	-	14.2

Ⓐ V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

Ⓓ VERY LOOSE, BROWN, SAND W/MOD. ORGANICS TO MUCK, MOIST TO WET. (U.C.P.)



5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8.dgn
dmcpherson AT DMCPHERSON-PC

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4751	70

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

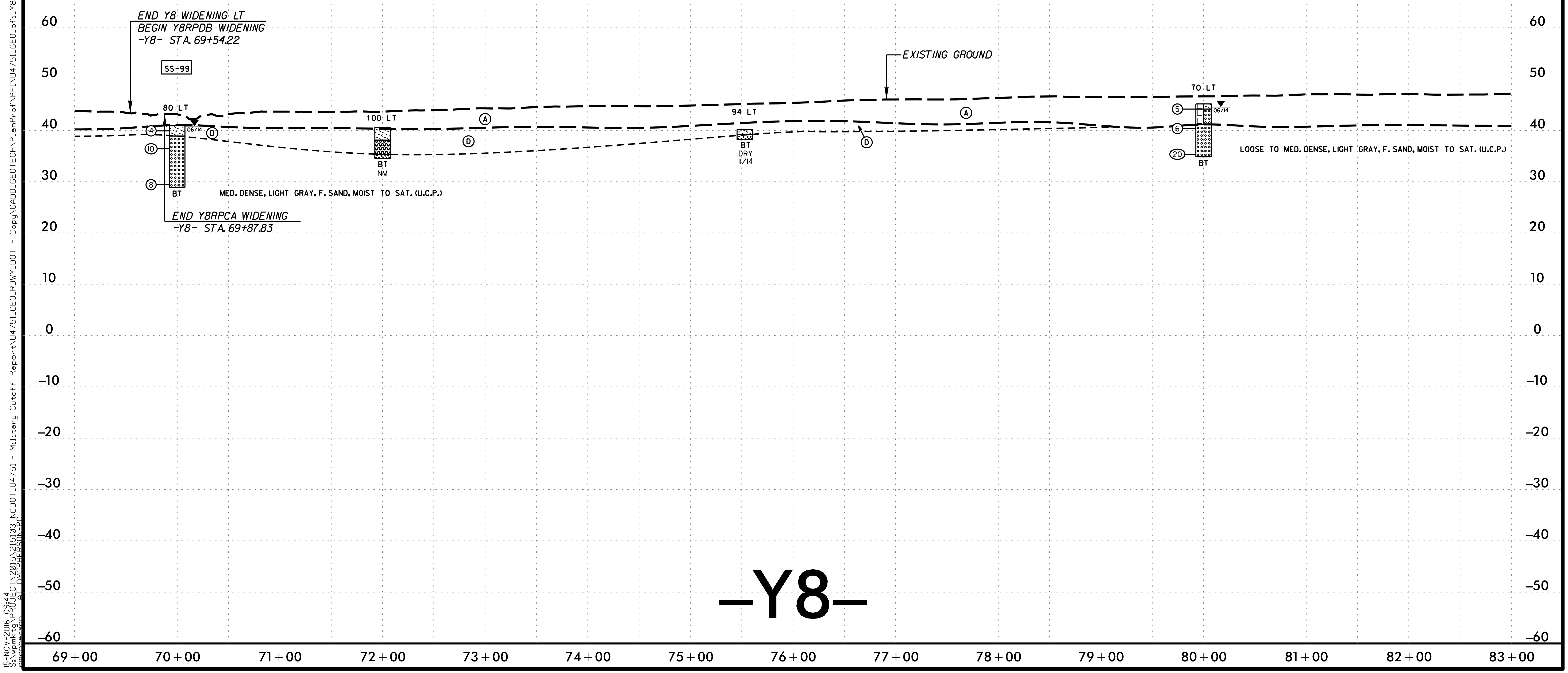
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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		
SS-99	80 LT	70+00	0.0-1.5	A-2-4(0)	22	NP	21.1	53.7	13.1	12.1	100	93	27	-	7.6

Ⓐ V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

Ⓓ VERY LOOSE, BROWN, SAND W/MOD. ORGANICS TO MUCK, MOIST TO WET. (U.C.P.)



15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pf1_Y8.dgn
dmcpherson AT DMCPHERSON-PC

5/14/99

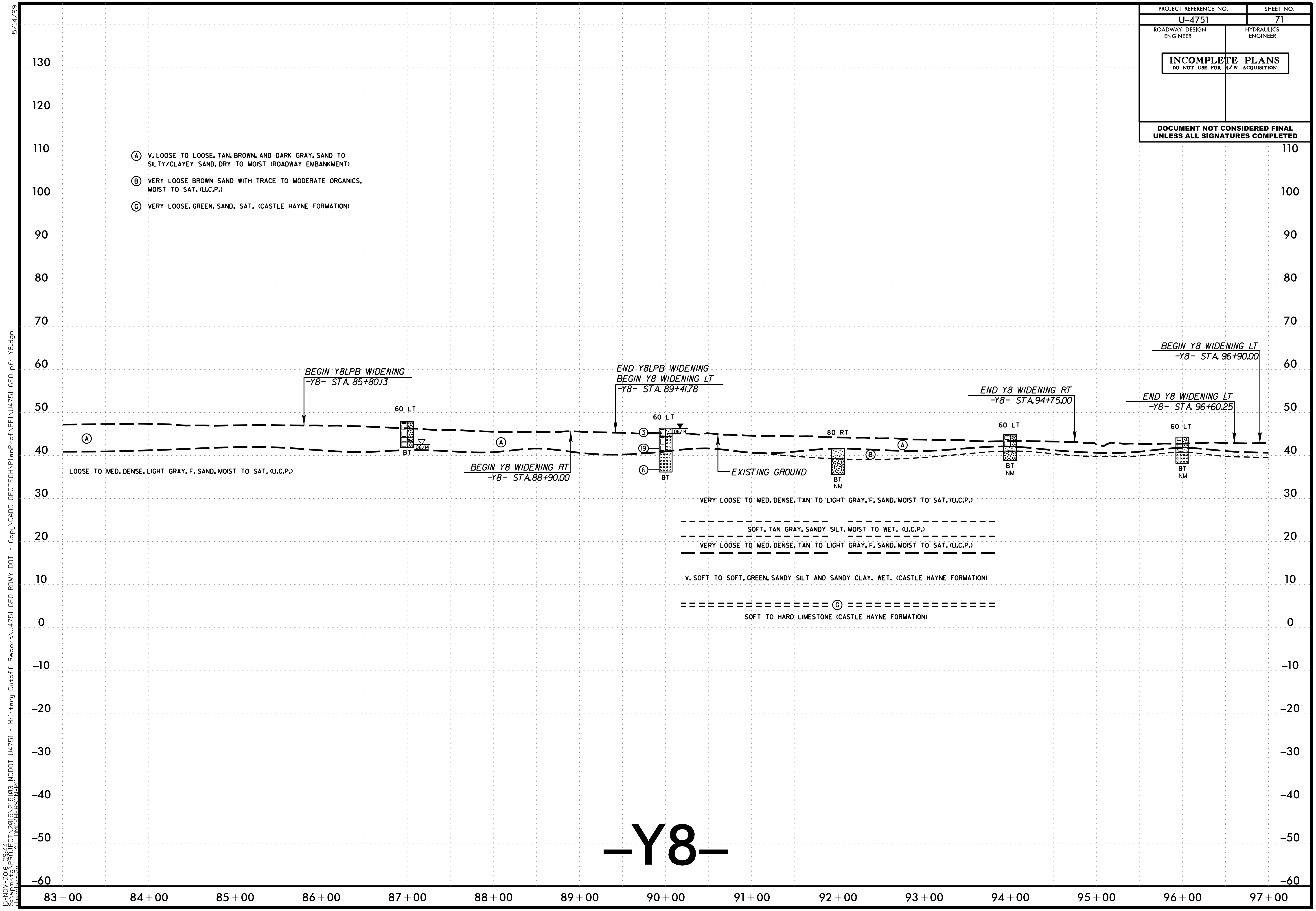
PROJECT REFERENCE NO.	SHEET NO.
U-4751	71

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8.dgn
dmcpherson AT DMCPHERSON-PC

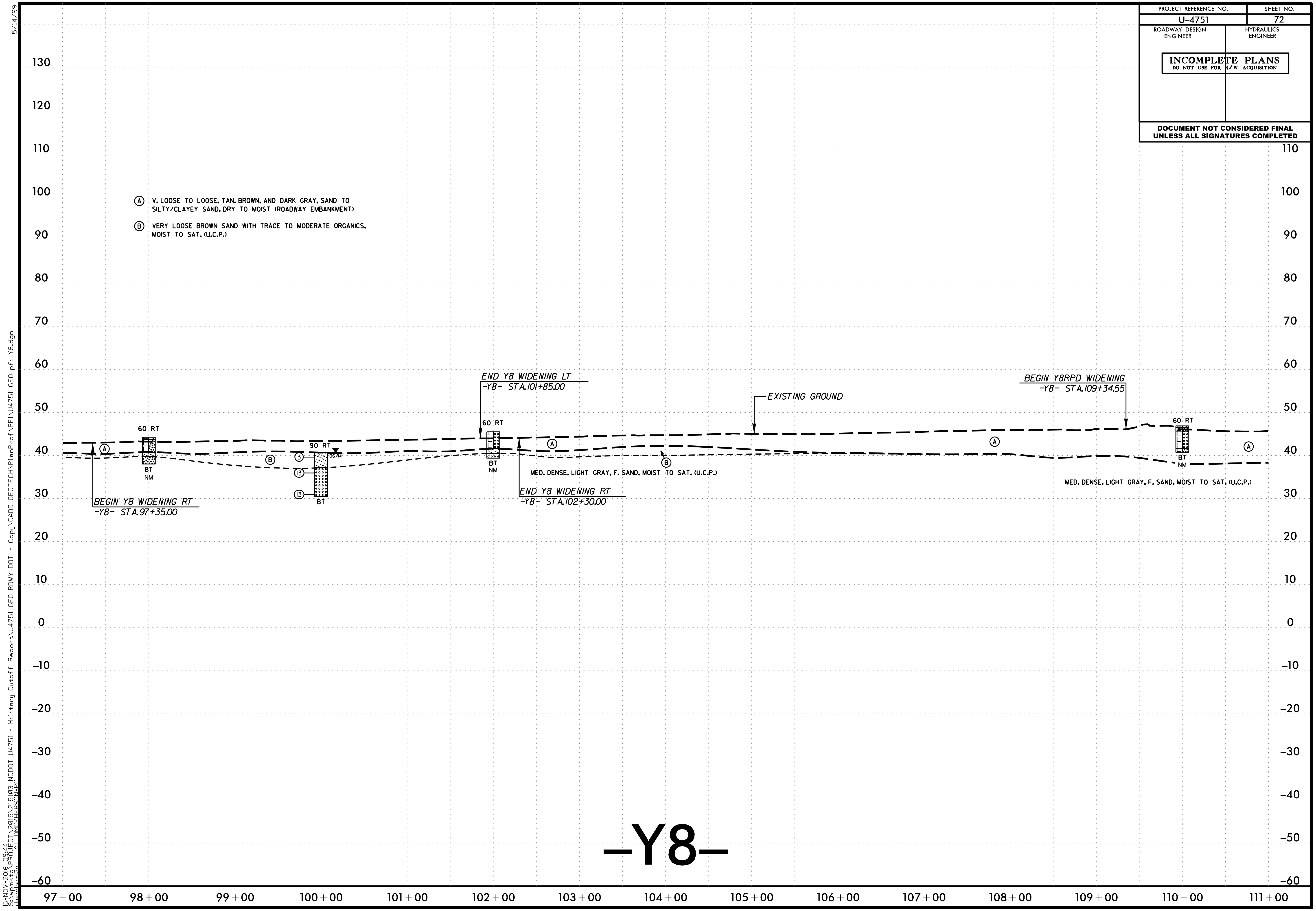
PROJECT REFERENCE NO.	SHEET NO.
U-4751	72

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Ⓐ V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

Ⓑ VERY LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO SAT. (U.C.P.)

-Y8-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8.dgn
dmcpherson AT DMCPHERSON-PC

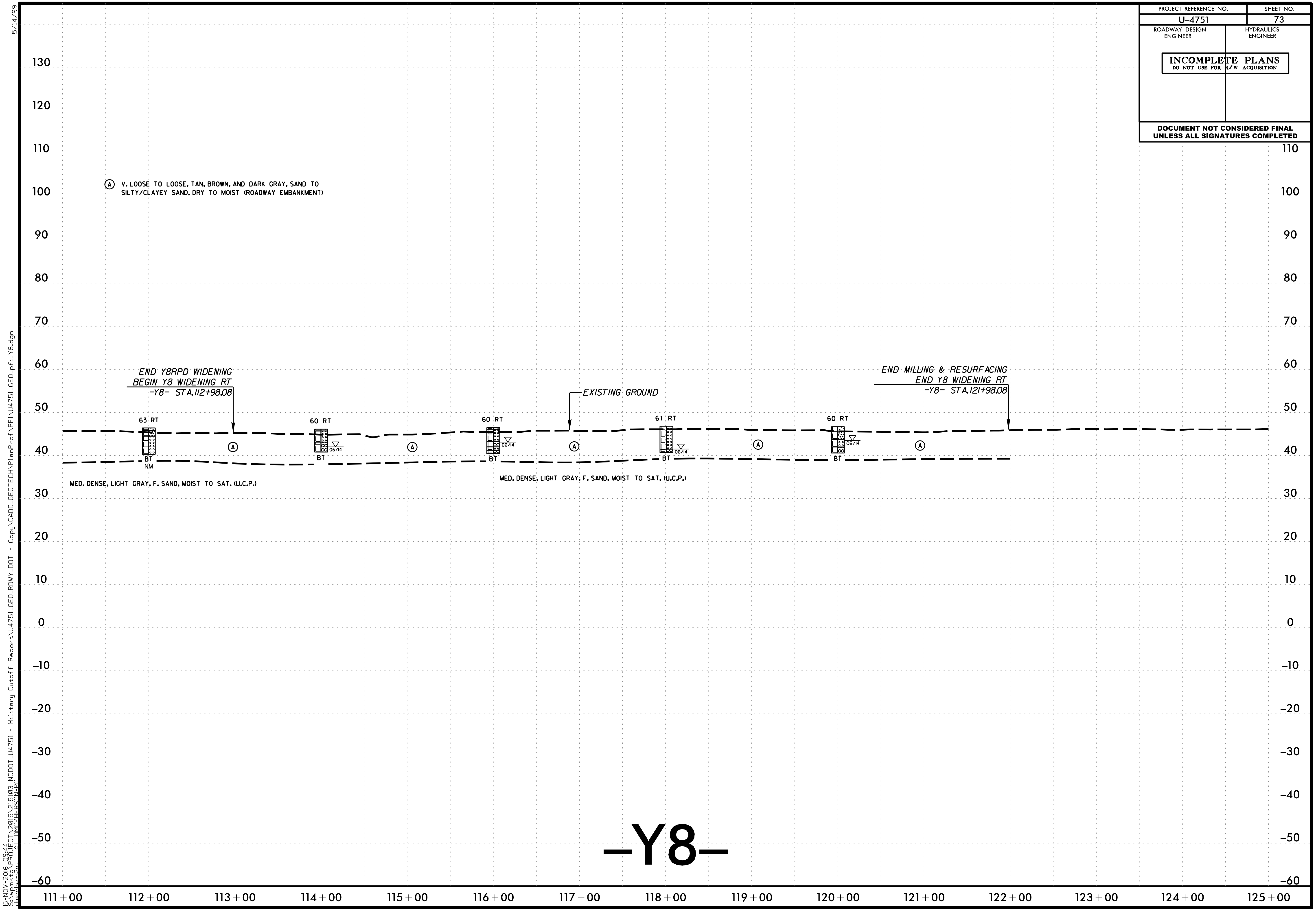
PROJECT REFERENCE NO.	SHEET NO.
U-4751	73

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y8-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8.dgn
dmcpherson AT DMCPHERSON-PC

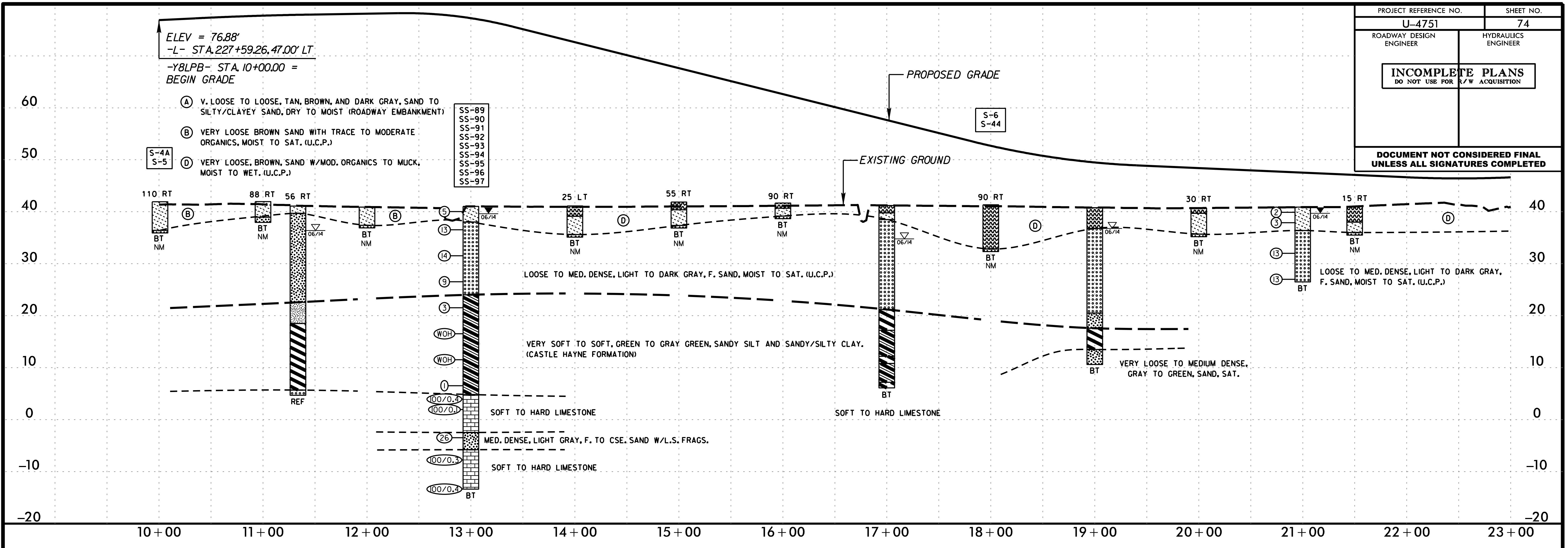
PROJECT REFERENCE NO.	SHEET NO.
U-4751	74

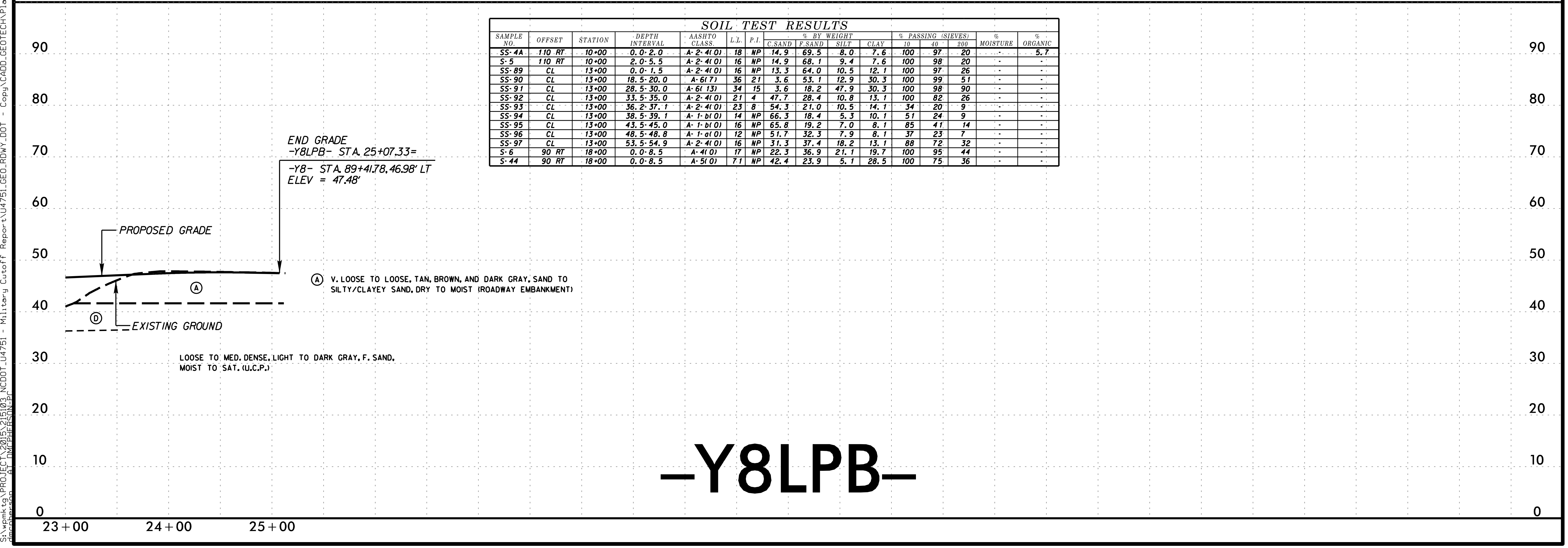
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





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		
SS-4A	110 RT	10+00	0.0-2.0	A-2-4(0)	18	NP	14.9	69.5	8.0	7.6	100	97	20	-	5.7
S-5	110 RT	10+00	2.0-5.5	A-2-4(0)	16	NP	14.9	68.1	9.4	7.6	100	98	20	-	-
SS-89	CL	13+00	0.0-1.5	A-2-4(0)	16	NP	13.3	64.0	10.5	12.1	100	97	26	-	-
SS-90	CL	13+00	18.5-20.0	A-6(7)	36	21	3.6	53.1	12.9	30.3	100	99	51	-	-
SS-91	CL	13+00	28.5-30.0	A-6(13)	34	15	3.6	18.2	47.9	30.3	100	98	90	-	-
SS-92	CL	13+00	33.5-35.0	A-2-4(0)	21	4	47.7	28.4	10.8	13.1	100	82	26	-	-
SS-93	CL	13+00	36.2-37.1	A-2-4(0)	23	8	54.3	21.0	10.5	14.1	34	20	9	-	-
SS-94	CL	13+00	38.5-39.1	A-1-b(0)	14	NP	66.3	18.4	5.3	10.1	51	24	9	-	-
SS-95	CL	13+00	43.5-45.0	A-1-b(0)	16	NP	65.8	19.2	7.0	8.1	85	41	14	-	-
SS-96	CL	13+00	48.5-48.8	A-1-a(0)	12	NP	51.7	32.3	7.9	8.1	37	23	7	-	-
SS-97	CL	13+00	53.5-54.9	A-2-4(0)	16	NP	31.3	37.4	18.2	13.1	88	72	32	-	-
S-6	90 RT	18+00	0.0-8.5	A-4(0)	17	NP	22.3	36.9	21.1	19.7	100	95	44	-	-
S-44	90 RT	18+00	0.0-8.5	A-5(0)	71	NP	42.4	23.9	5.1	28.5	100	75	36	-	-

-Y8LPB-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8LPB.dgn
dmcpherson AT DMCPHERSON-PC

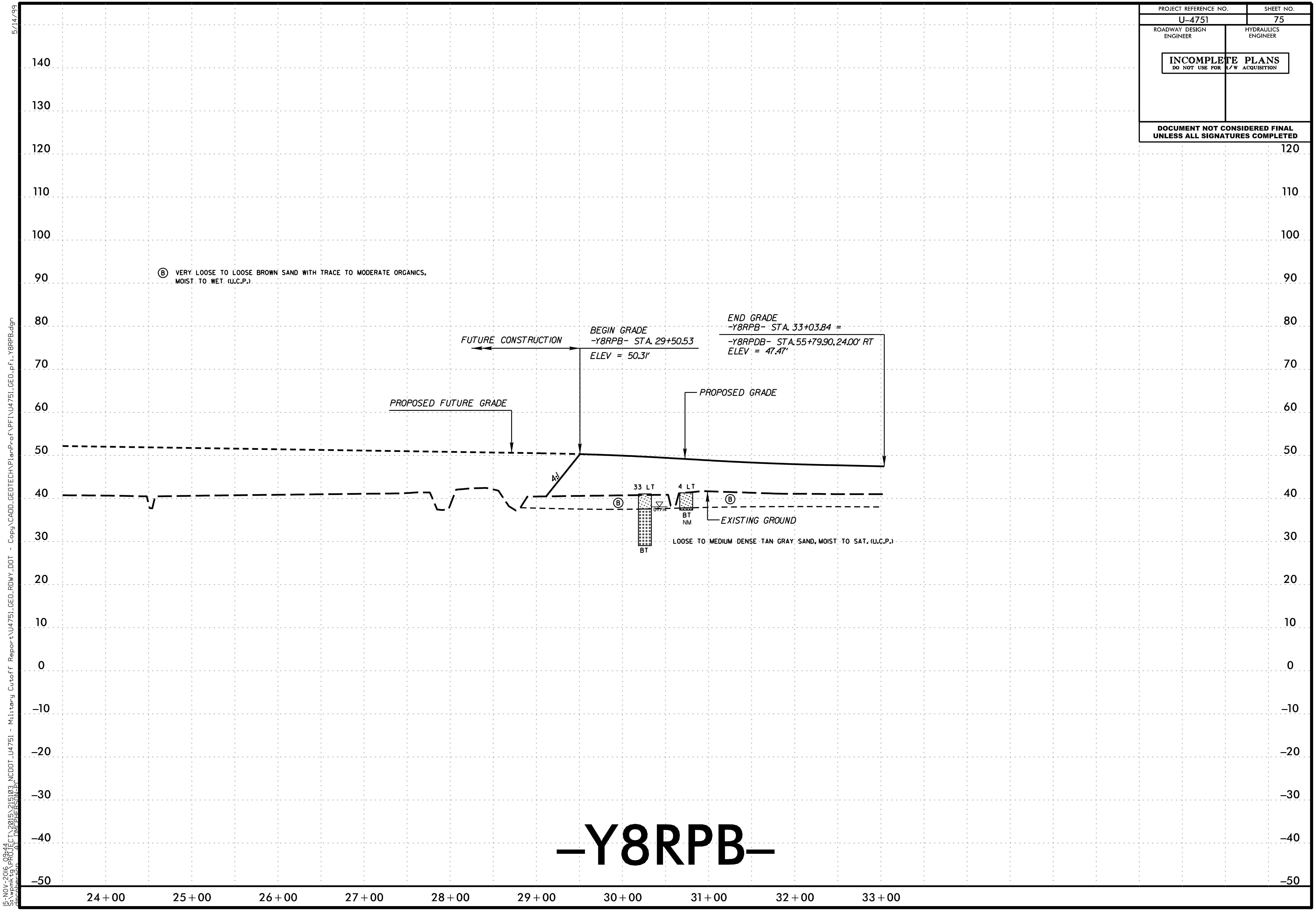
PROJECT REFERENCE NO.	SHEET NO.
U-4751	75

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y8RPB-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECTS\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8RPB.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	76

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

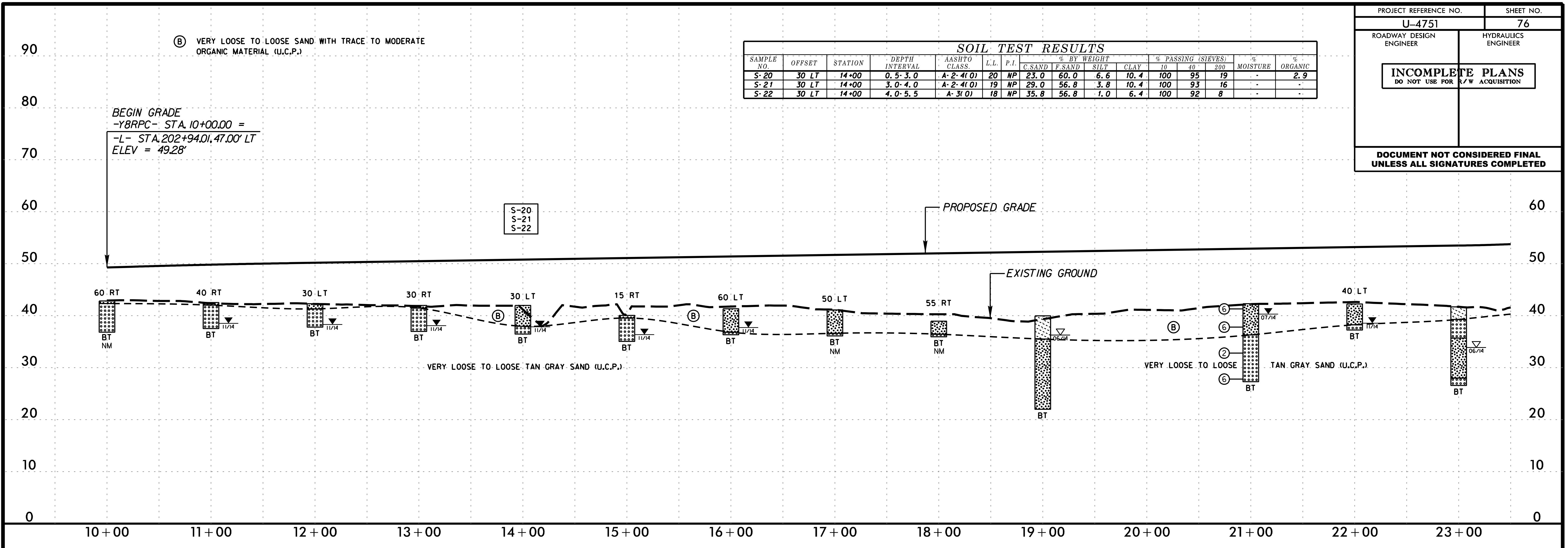
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/28/99

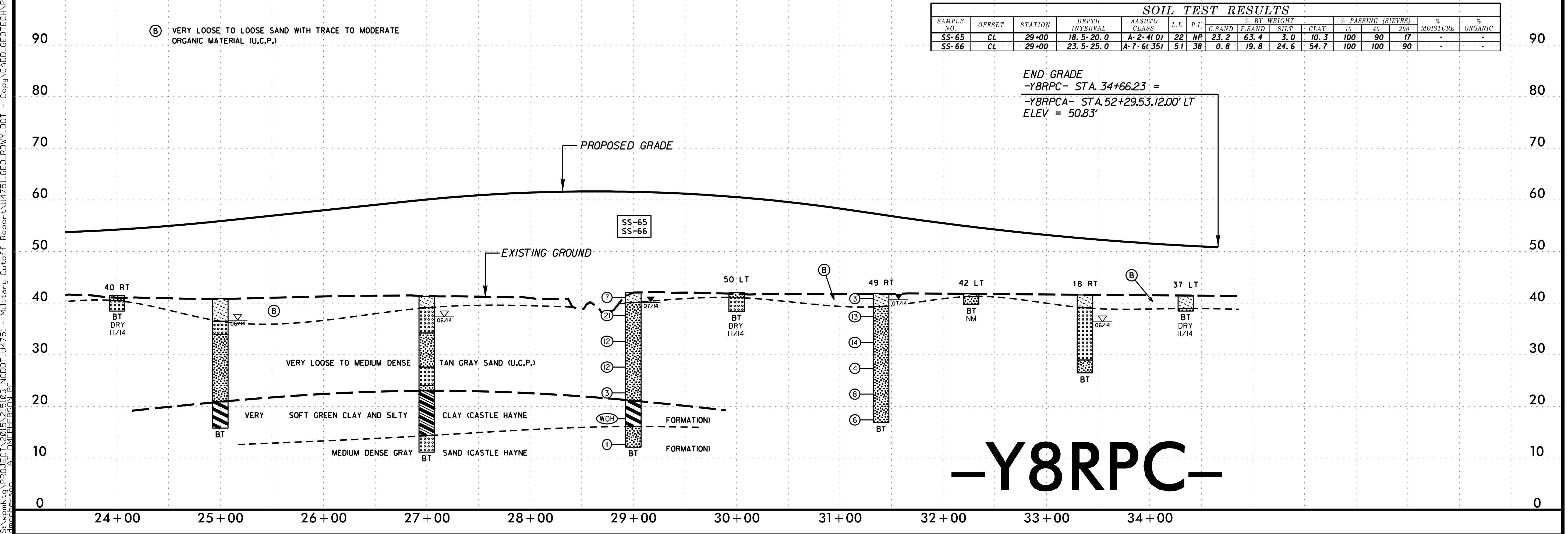
SOIL TEST RESULTS

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-20	30 LT	14+00	0.5-3.0	A-2-4(0)	20	NP	23.0	60.0	6.6	10.4	100	95	19	-	2.9
S-21	30 LT	14+00	3.0-4.0	A-2-4(0)	19	NP	29.0	56.8	3.8	10.4	100	93	16	-	-
S-22	30 LT	14+00	4.0-5.5	A-3(0)	18	NP	35.8	56.8	1.0	6.4	100	92	8	-	-



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		
SS-65	CL	29+00	18.5-20.0	A-2-4(0)	22	NP	23.2	63.4	3.0	10.3	100	90	17	-	-
SS-66	CL	29+00	23.5-25.0	A-7-6(35)	51	38	0.8	19.8	24.6	54.7	100	100	90	-	-



-Y8RPC-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8RPC.dgn
dmcpherson AT DMCPHERSON-PC

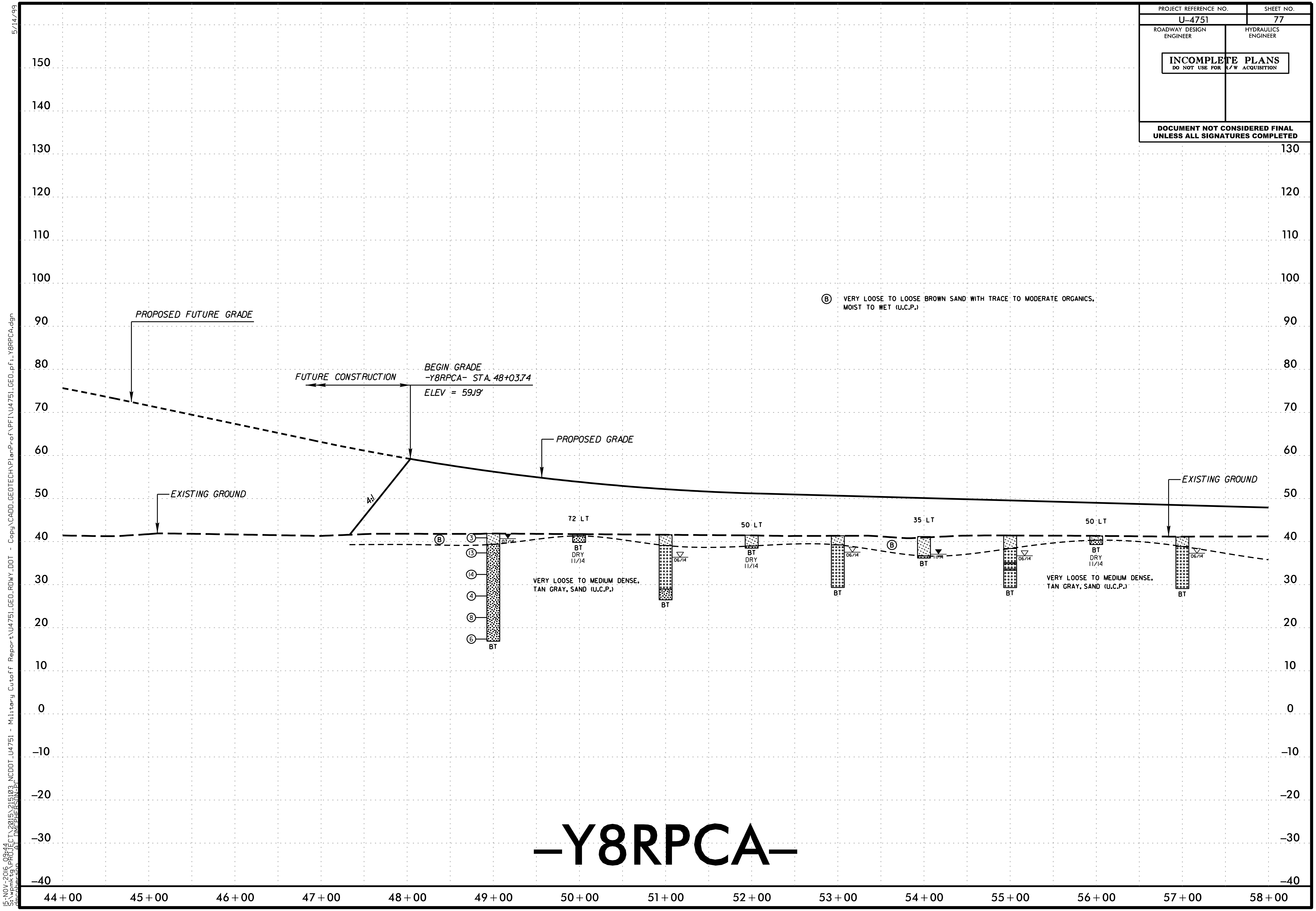
PROJECT REFERENCE NO.	SHEET NO.
U-4751	77

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



–Y8RPCA–

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_Y8RPCA.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U–4751	78

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

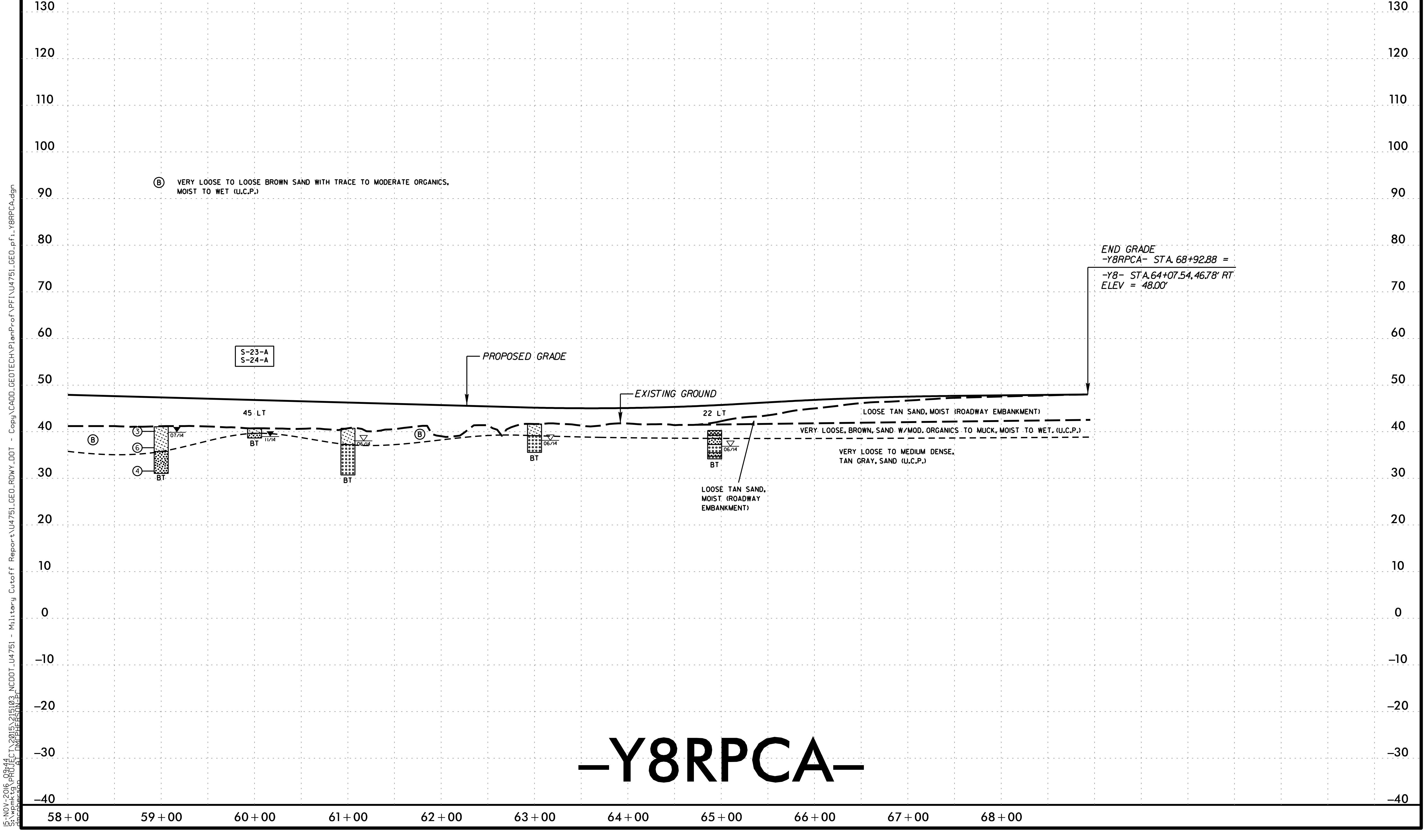
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

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-23-A	45 LT	60+00	0.0-1.0	A-2-4(0)	11	NP	19.2	69.5	5.3	6.0	100	95	15	-	-
S-24 A	45 LT	60+00	1.0-2.0	A-2-4(0)	14	NP	17.0	66.7	8.3	8.0	100	96	20	-	-



–Y8RPCA–

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8RPCA.dgn
dmcpherson AT DMCPHERSON-PC

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-4751	79

ROADWAY DESIGN ENGINEER

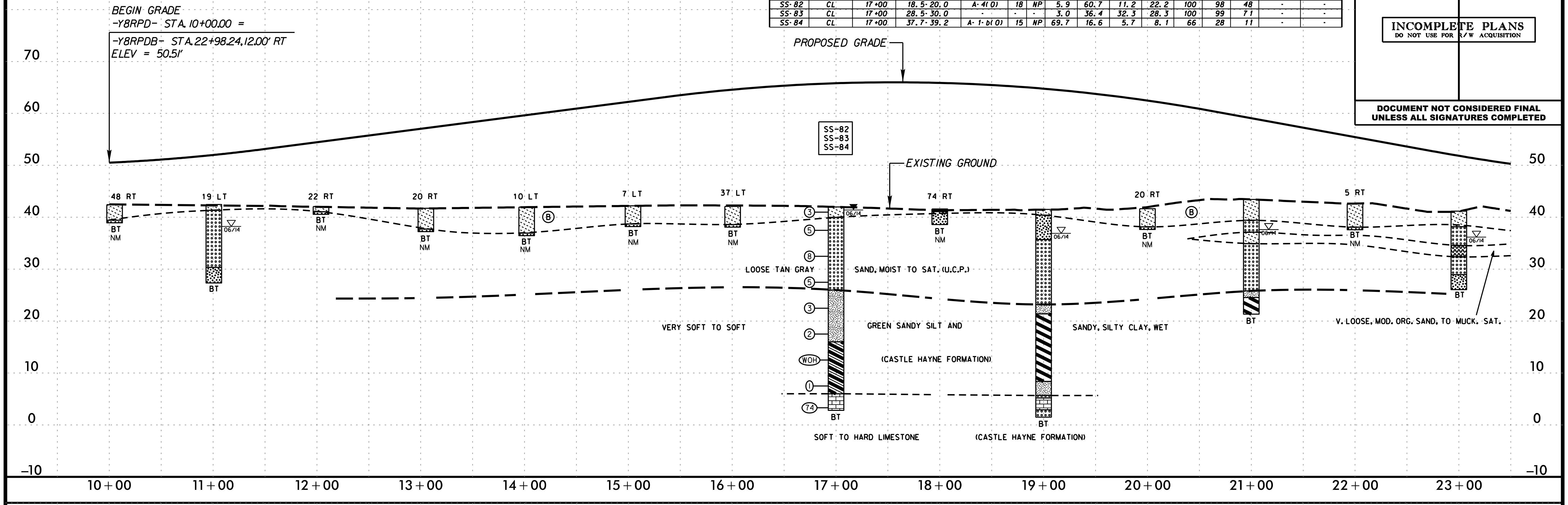
HYDRAULICS ENGINEER

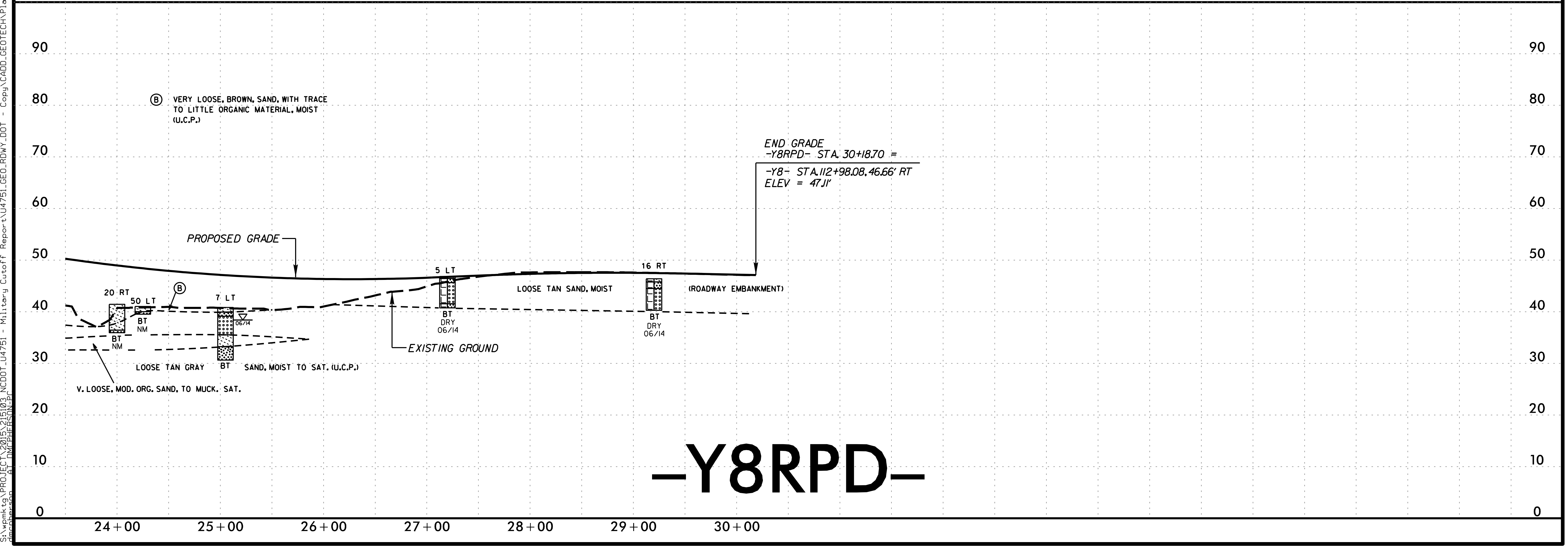
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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		
SS-82	CL	17+00	18.5-20.0	A-4(0)	18	NP	5.9	60.7	11.2	22.2	100	98	48	-	-
SS-83	CL	17+00	28.5-30.0	-	-	-	3.0	36.4	32.3	28.3	100	99	71	-	-
SS-84	CL	17+00	37.7-39.2	A-1-b(0)	15	NP	69.7	16.6	5.7	8.1	66	28	11	-	-





-Y8RPD-

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8RPD.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U–4751	80

ROADWAY DESIGN ENGINEER

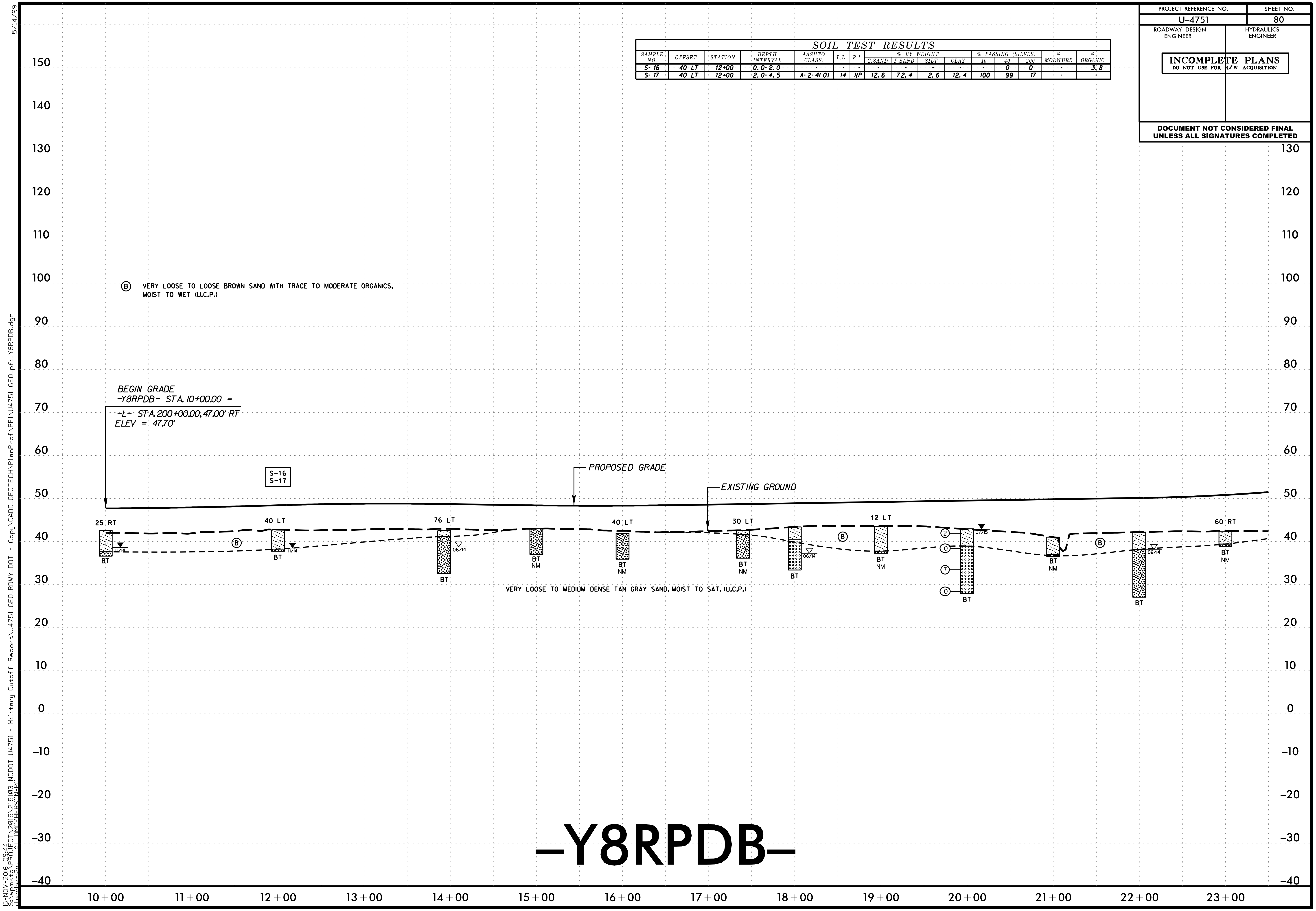
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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-16	40 LT	12+00	0.0-2.0	-	-	-	-	-	-	-	-	0	0	-	3.8
S-17	40 LT	12+00	2.0-4.5	A-2-4(0)	14	NP	12.6	72.4	2.6	12.4	100	99	17	-	-



-Y8RPDB-

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pf1_Y8RPDB.dgn
dmcpherson AT DMCPHERSON-PC

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U–4751	81

ROADWAY DESIGN ENGINEER

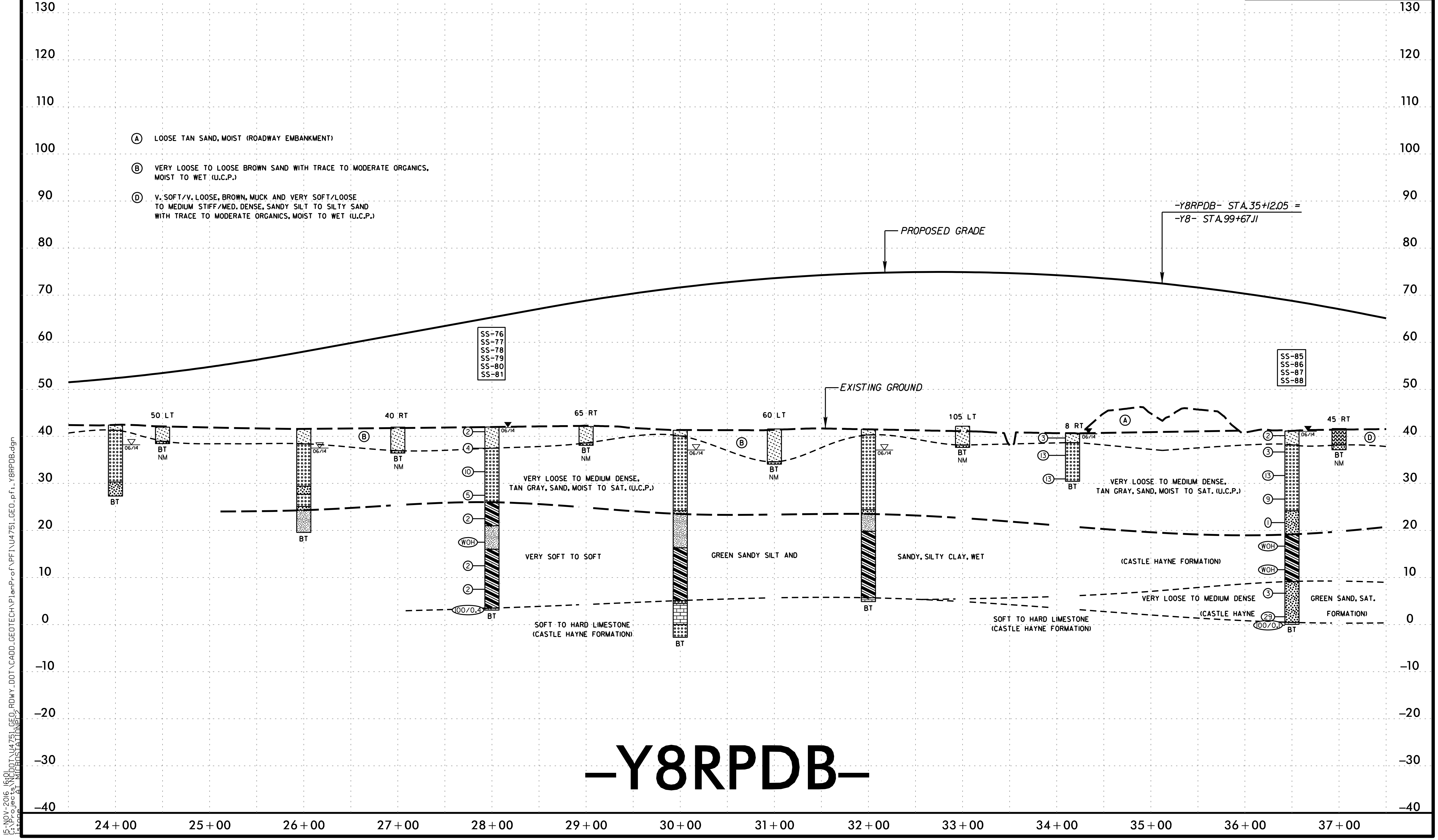
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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		
SS-76	CL	28+00	0.0-1.5	A-2-4(0)	16	NP	15.7	59.5	10.7	14.1	100	97	27	-	5.5
SS-77	CL	28+00	3.5-5.0	A-3(0)	16	NP	1.0	91.4	5.6	2.0	100	100	10	-	-
SS-78	CL	28+00	18.5-20.0	A-6(7)	35	19	6.1	50.5	17.2	26.3	100	98	56	-	-
SS-79	CL	28+00	23.5-25.0	A-4(0)	23	NP	0.8	64.8	26.3	8.1	100	100	62	-	-
SS-80	CL	28+00	28.5-30.0	A-6(19)	40	22	3.6	22.6	41.4	32.3	100	98	87	-	-
SS-81	CL	28+00	38.5-39.0	A-1-b(0)	19	NP	65.9	22.2	3.8	8.1	47	38	7	-	-
SS-85	CL	36+50	18.5-20.0	A-2-4(0)	24	8	6.7	62.6	8.5	22.2	100	98	34	-	-
SS-86	CL	36+50	28.5-30.0	A-6(12)	35	13	3.8	19.4	52.5	24.2	100	98	92	-	-
SS-87	CL	36+50	33.5-35.0	A-2-4(0)	23	6	42.4	31.7	9.7	16.2	100	86	29	-	-
SS-88	CL	36+50	38.5-40.0	A-1-b(0)	17	NP	53.5	22.2	10.1	14.1	65	39	18	-	-

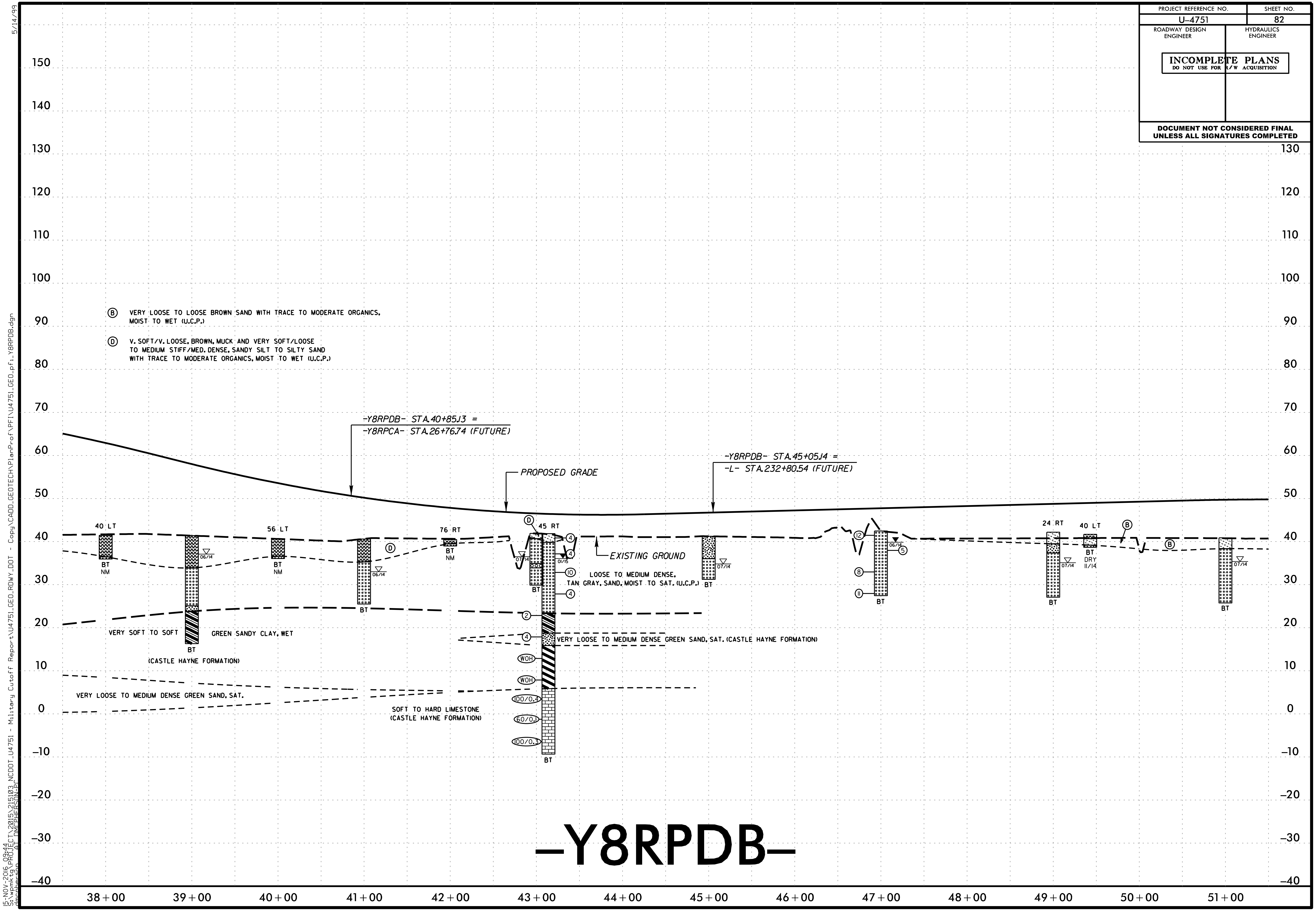


15-NOV-2016 16:01
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pf1_Y8RPDB.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	82
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Ⓑ VERY LOOSE TO LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

Ⓓ V. SOFT/V. LOOSE, BROWN, MUCK AND VERY SOFT/LOOSE TO MEDIUM STIFF/MED. DENSE, SANDY SILT TO SILTY SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

–Y8RPDB–

5/14/99

15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8RPDB.dgn
dmcpherson AT DMCPHERSON-PC

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

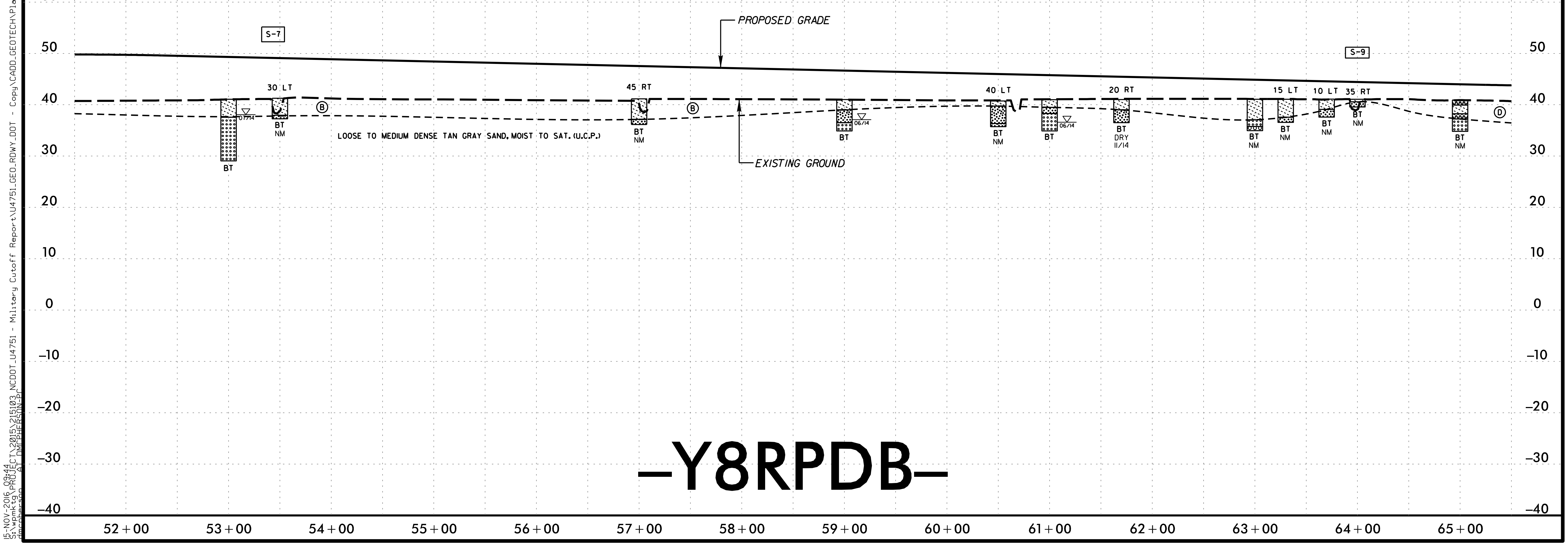
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

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	30 LT	53+50	1.0-3.3	A-2-4(0)	13	NP	27.0	47.8	10.8	14.4	100	95	29	-	-
S-9	35 RT	64+00	0.5-1.5	A-2-4(0)	14	NP	21.6	62.6	7.4	8.4	99	95	22	-	-

Ⓑ VERY LOOSE TO LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

Ⓓ V. SOFT/V. LOOSE, BROWN, MUCK AND VERY SOFT/LOOSE TO MEDIUM STIFF/MED. DENSE, SANDY SILT TO SILTY SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)



150
140
130
120
110
100
90
80
70
60

5/14/99

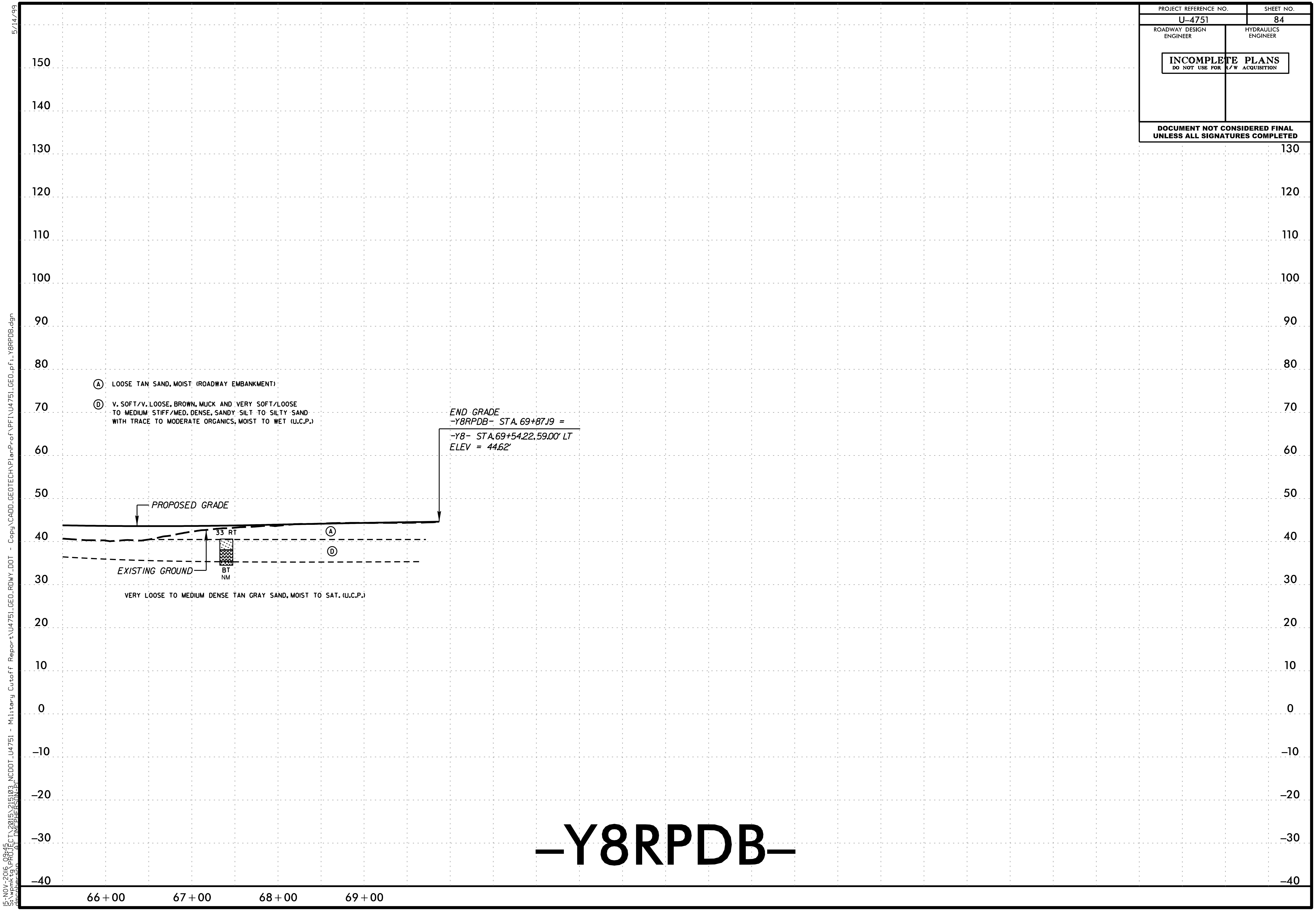
15-NOV-2016 09:44
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pf1_Y8RPDB.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	84

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓓ V. SOFT/V. LOOSE, BROWN, MUCK AND VERY SOFT/LOOSE TO MEDIUM STIFF/MED. DENSE, SANDY SILT TO SILTY SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

END GRADE
-Y8RPDB- STA. 69+87.19 =
-Y8- STA.69+54.22, 59.00' LT
ELEV = 44.62'

-Y8RPDB-

5/14/99

15-NOV-2016 09:45
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y8RPDB.dgn
dmcpherson AT DMCPHERSON-PC

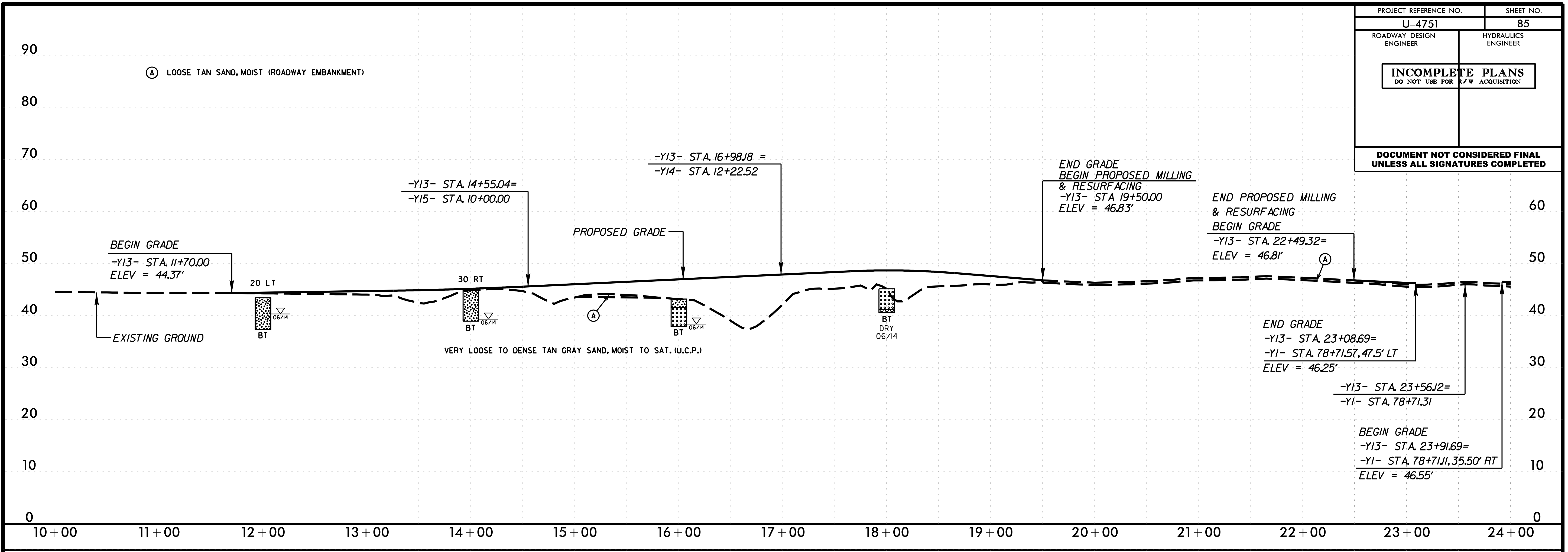
PROJECT REFERENCE NO.	SHEET NO.
U-4751	85

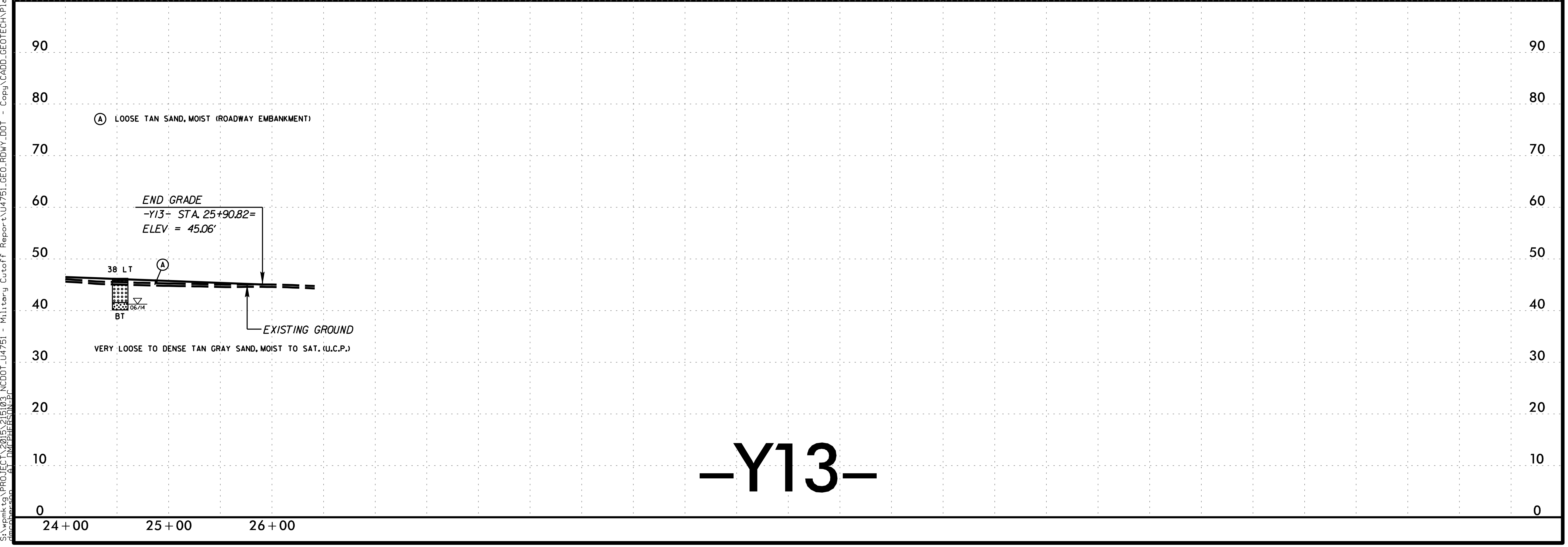
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





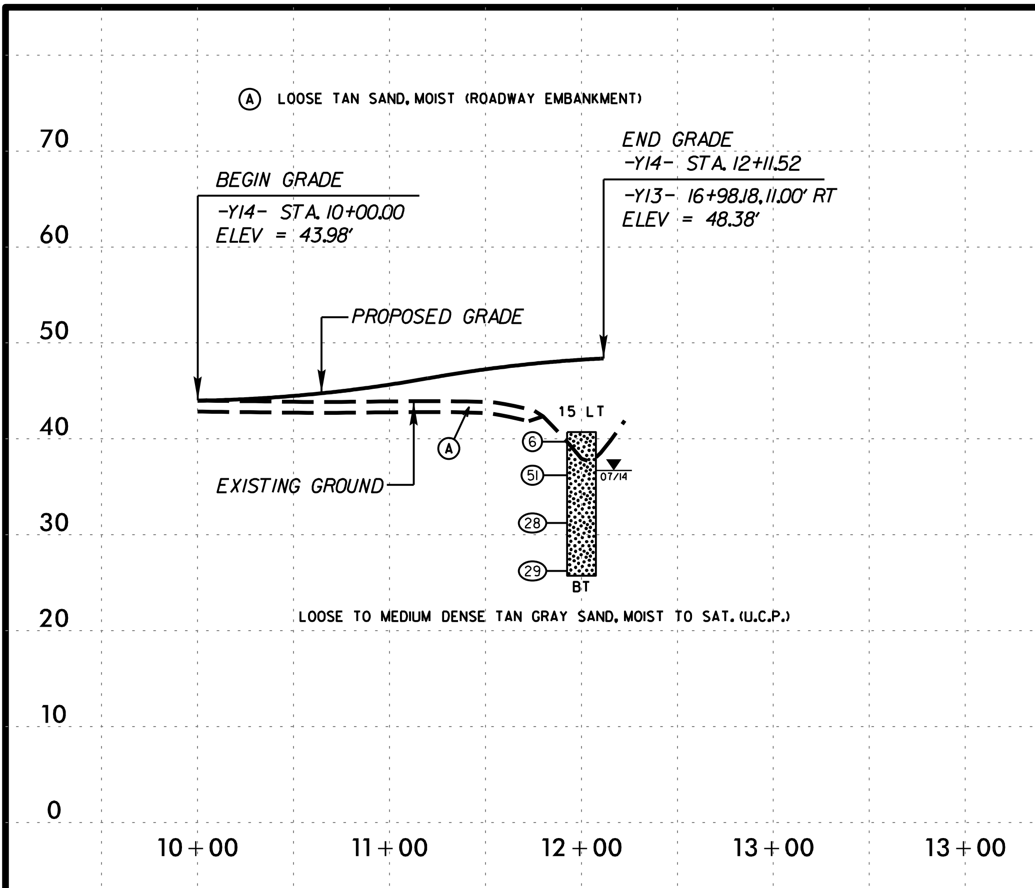
-Y13-

15-NOV-2016 09:45
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y13.dgn
dmcpherson AT DMCPHERSON-PC

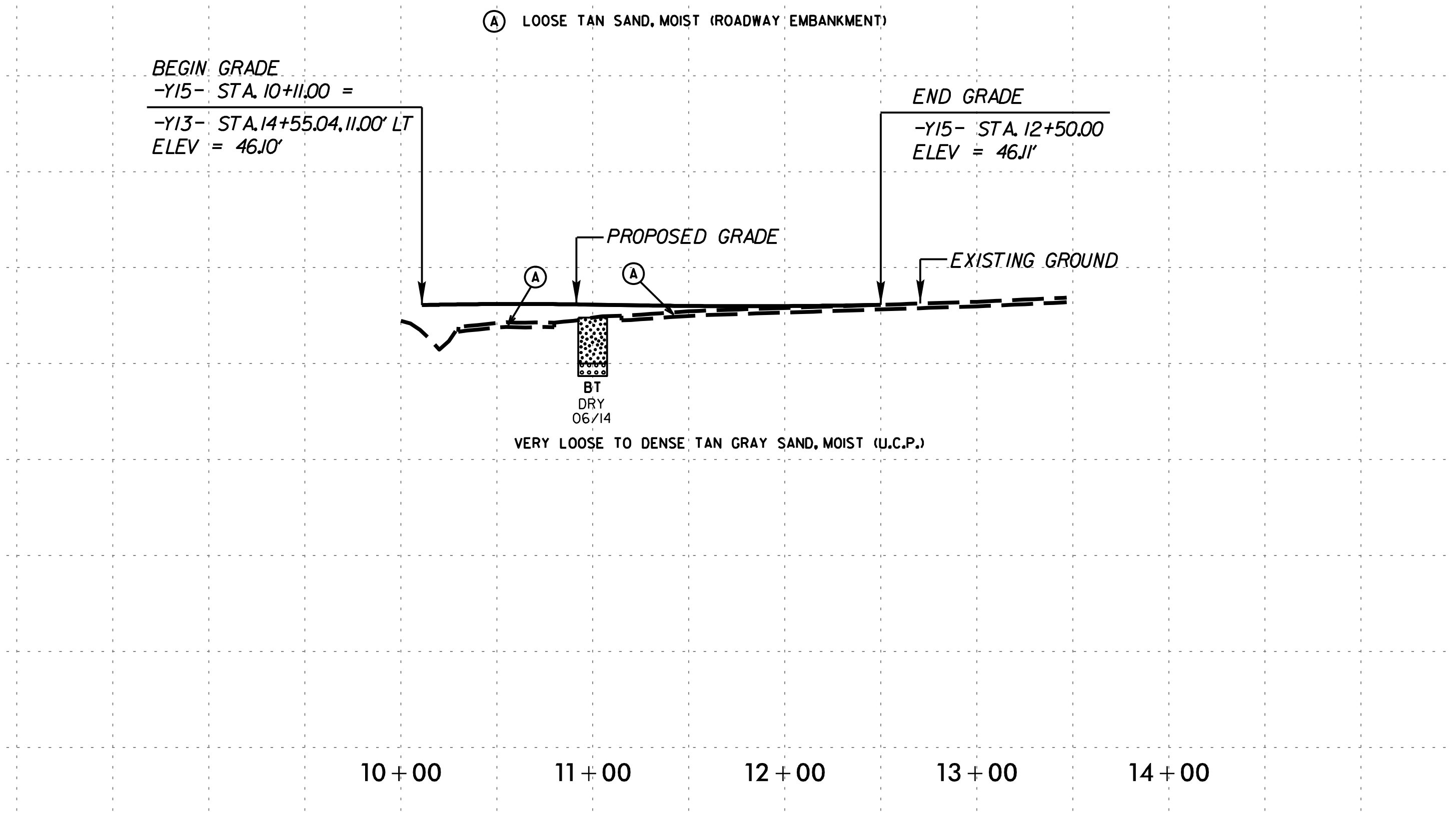
PROJECT REFERENCE NO.	SHEET NO.
U-4751	86
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

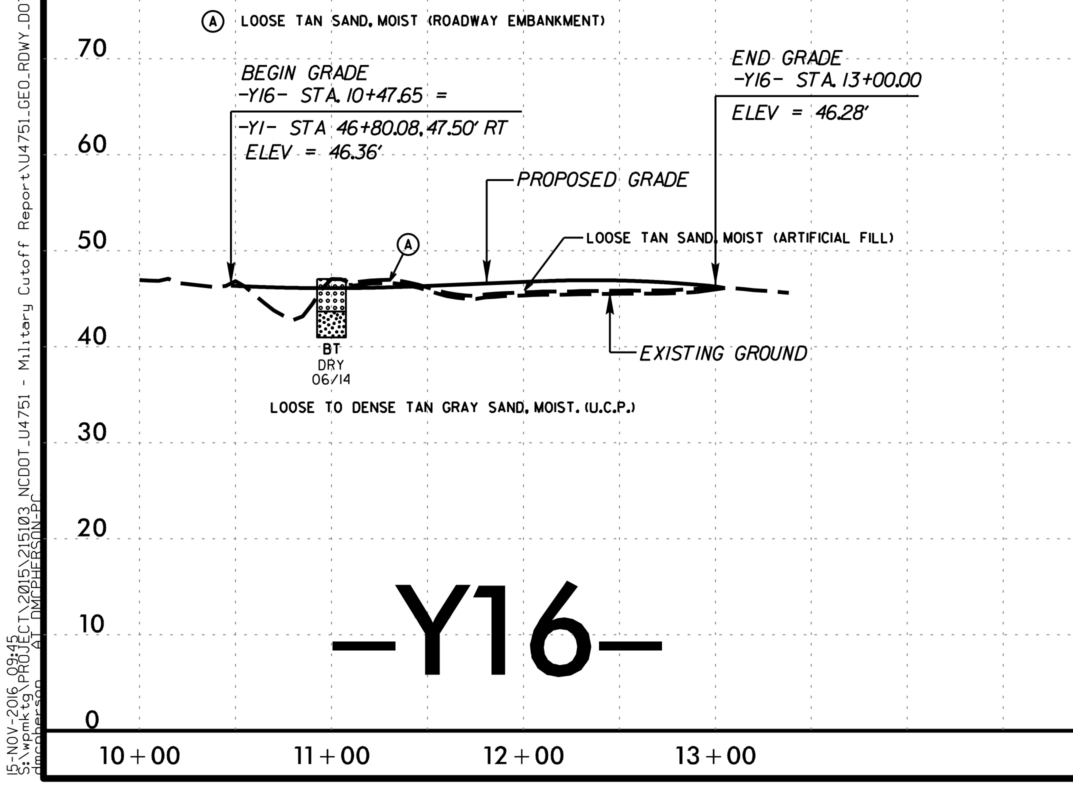


-Y14-

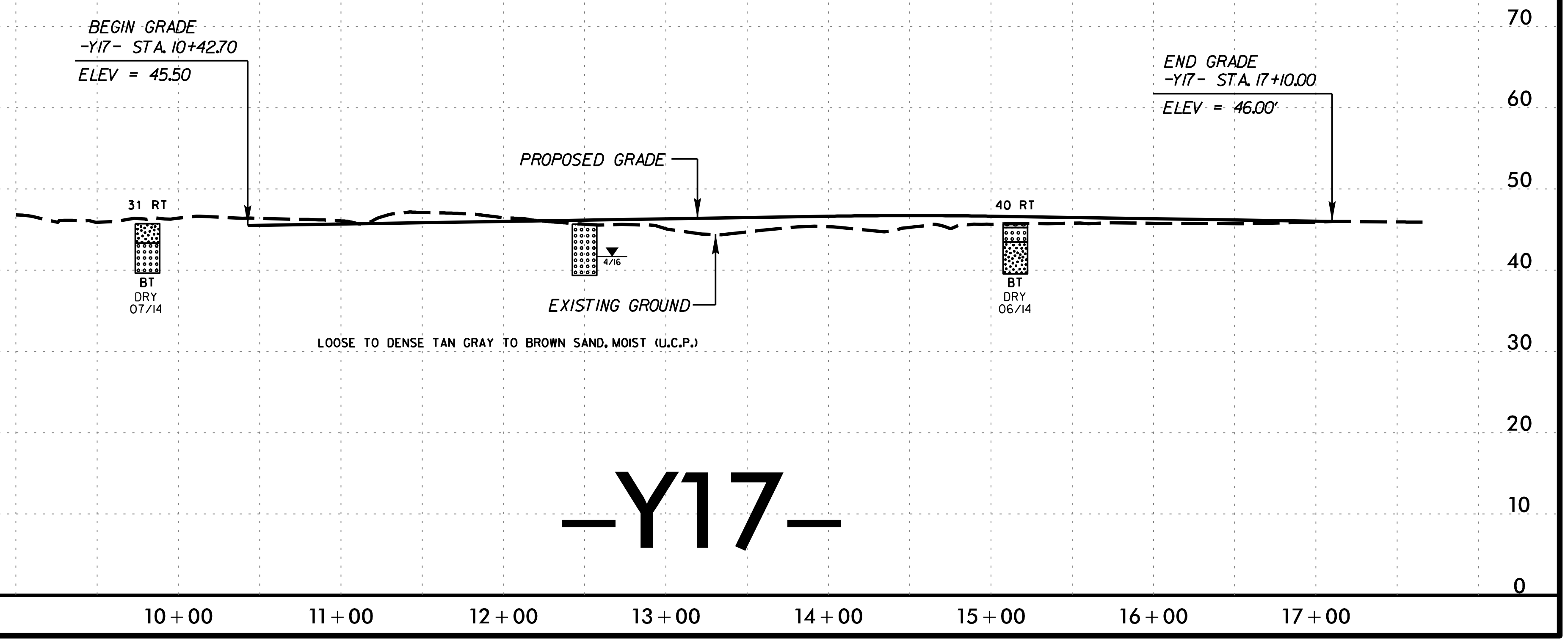


50
40
30
20
10
0

-Y15-



-Y16-



-Y17-

5/14/99

15-NOV-2016 09:45
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_Y14-Y17.dgn
dmcpherson AT DMCPHERSON-PC

PROJECT REFERENCE NO.	SHEET NO.
U-4751	87

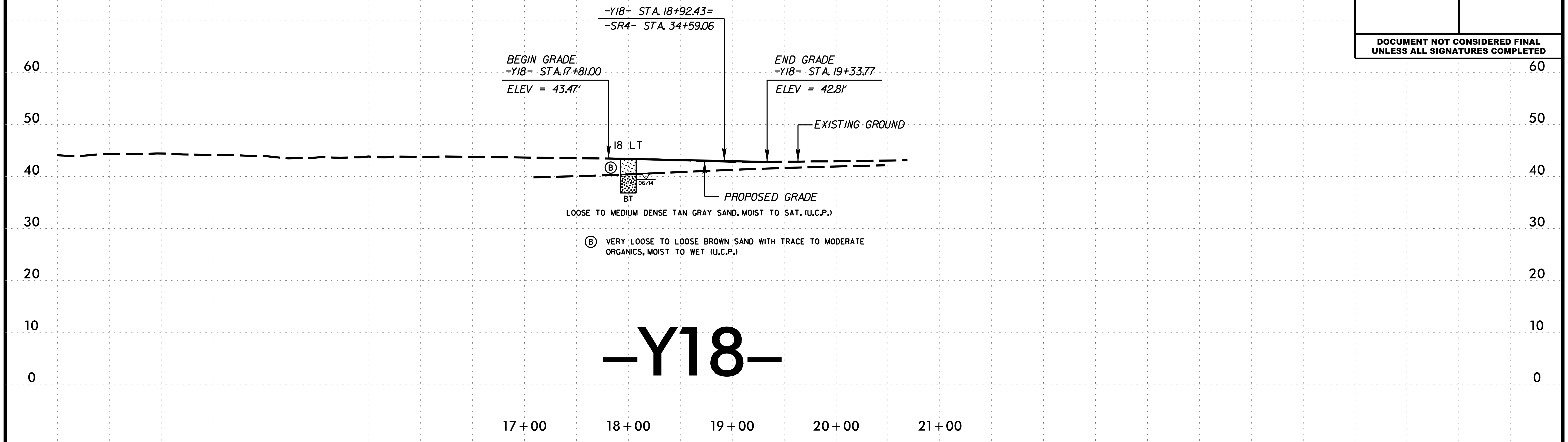
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

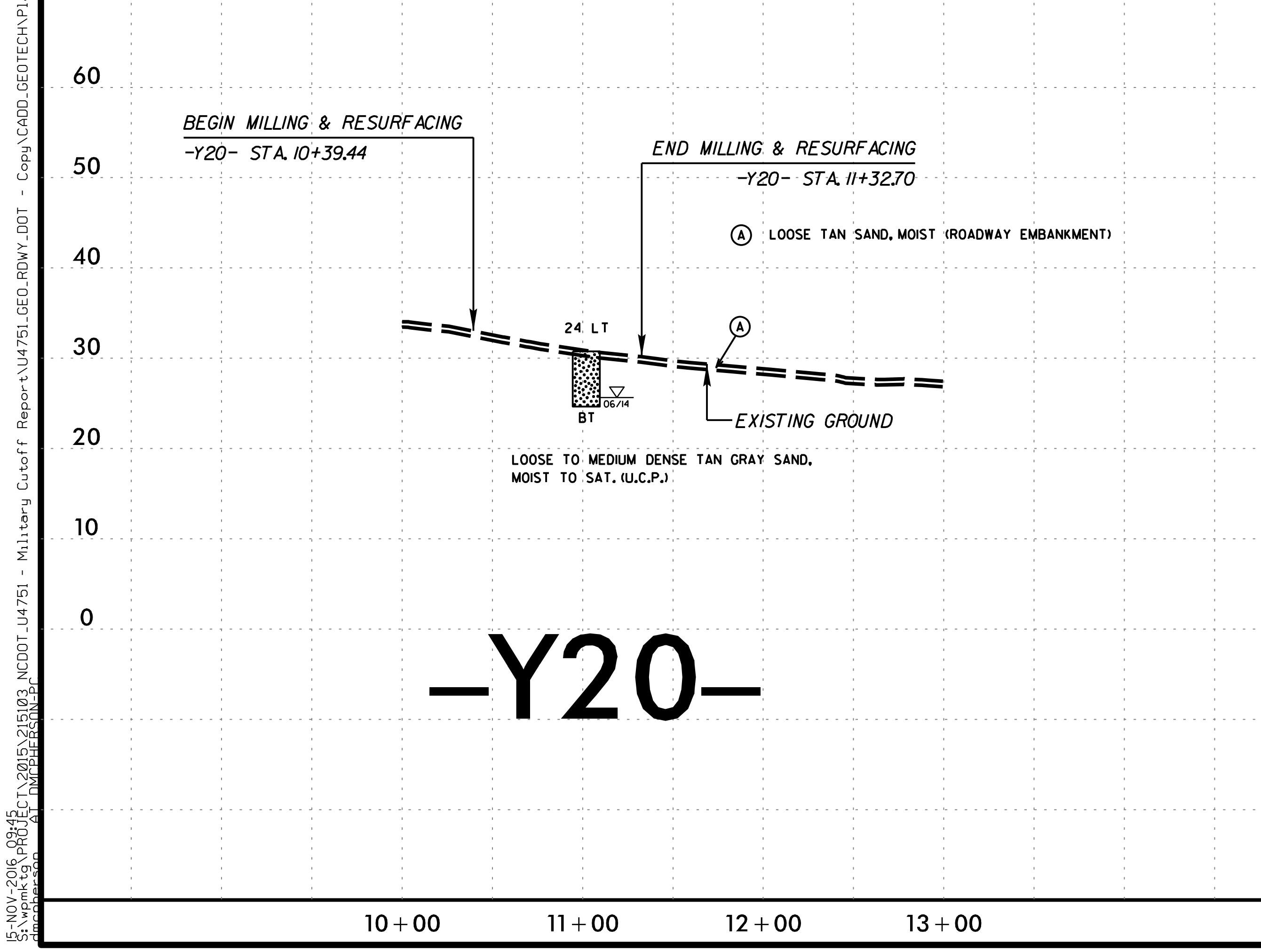
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-3	57 LT	11+72	23.5-25.0	A-3(0)	18	NP	32.2	64.8	0.6	2.2	100	98	3	-	-
SS-4	57 LT	11+72	38.5-40.0	A-3(0)	17	NP	11.9	87.3	0.8	-	100	100	1	-	-



LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

Ⓑ VERY LOOSE TO LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

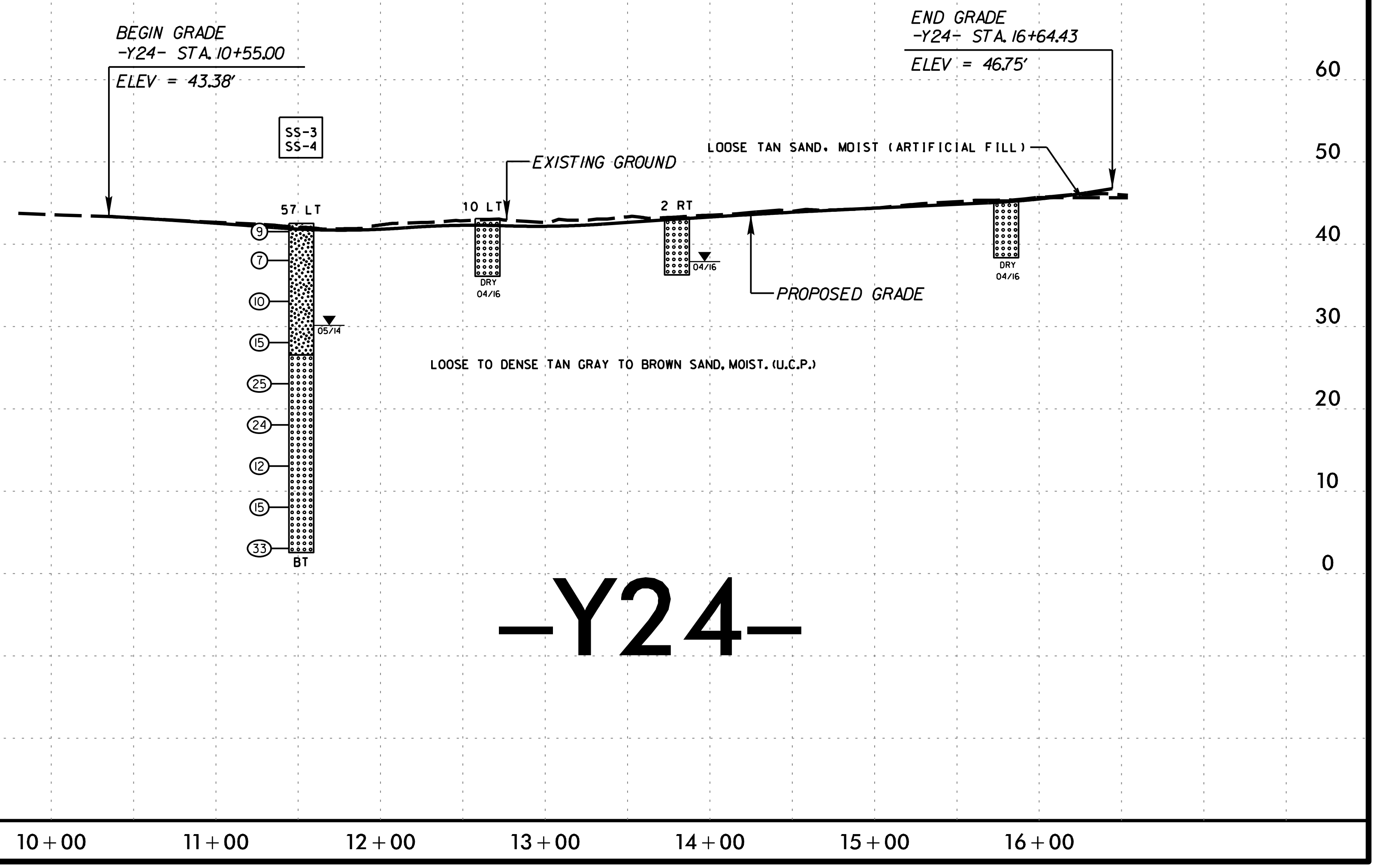
-Y18-



Ⓐ LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

-Y20-



LOOSE TAN SAND, MOIST (ARTIFICIAL FILL)

LOOSE TO DENSE TAN GRAY TO BROWN SAND, MOIST. (U.C.P.)

-Y24-

5/14/99

15-NOV-2016 09:45
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pf1_Y18-Y24.dgn
dmcpherson AT DMCPHERSON-PC

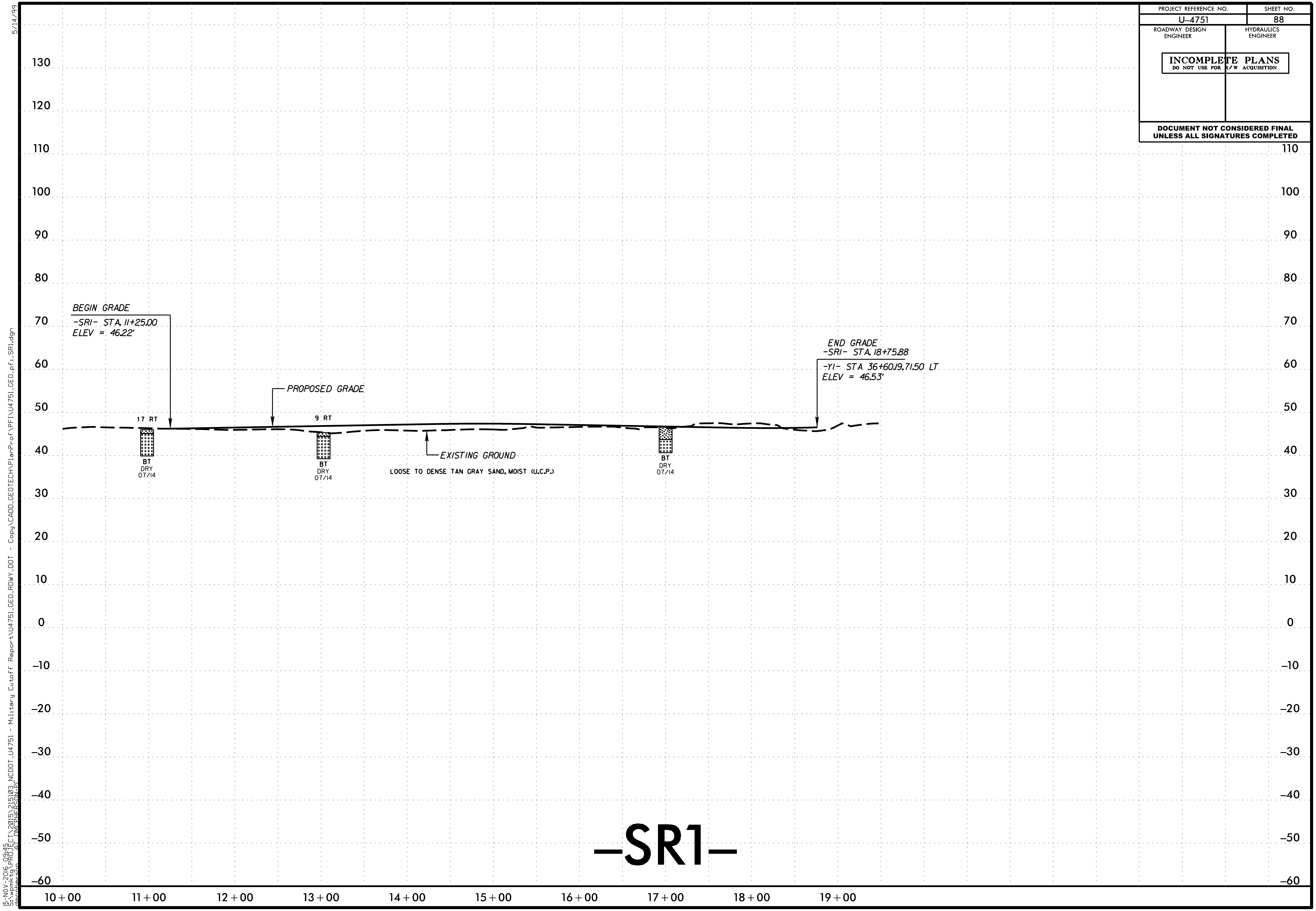
PROJECT REFERENCE NO.	SHEET NO.
U-4751	88

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



5/14/99

15-NOV-2016 09:45
S:\wpmktg\PROJECT\2015\215103 NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_SR1.dgn
dmcpherson AT DMCPHERSON-PC

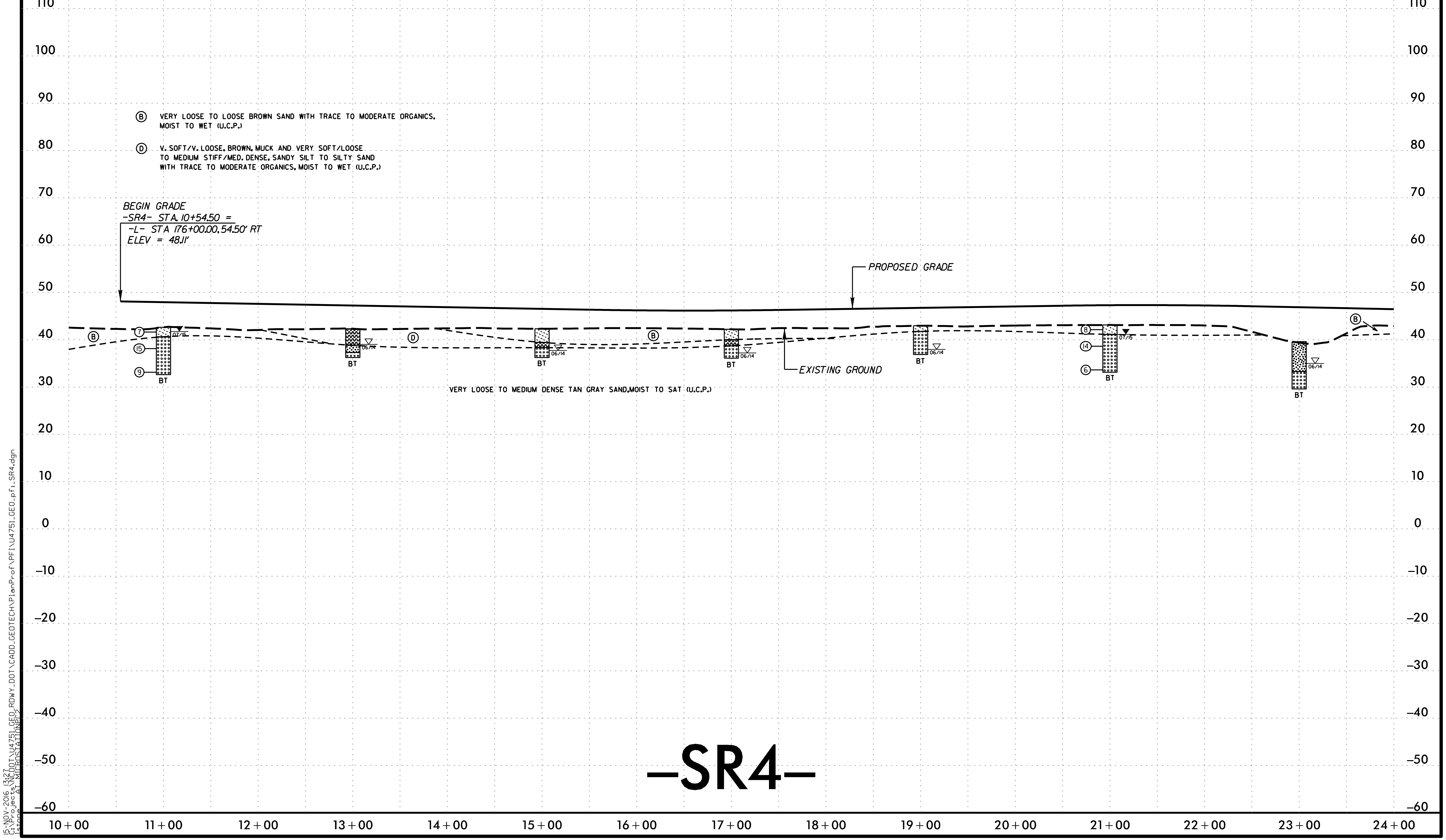
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4751	89

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



Ⓑ VERY LOOSE TO LOOSE BROWN SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

Ⓓ V. SOFT/V. LOOSE, BROWN, MUCK AND VERY SOFT/LOOSE TO MEDIUM STIFF/MED. DENSE, SANDY SILT TO SILTY SAND WITH TRACE TO MODERATE ORGANICS, MOIST TO WET (U.C.P.)

BEGIN GRADE
-SR4- STA. 10+54.50 =
-L- STA 176+00.00, 54.50' RT
ELEV = 48.11'

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT (U.C.P.)

-SR4-

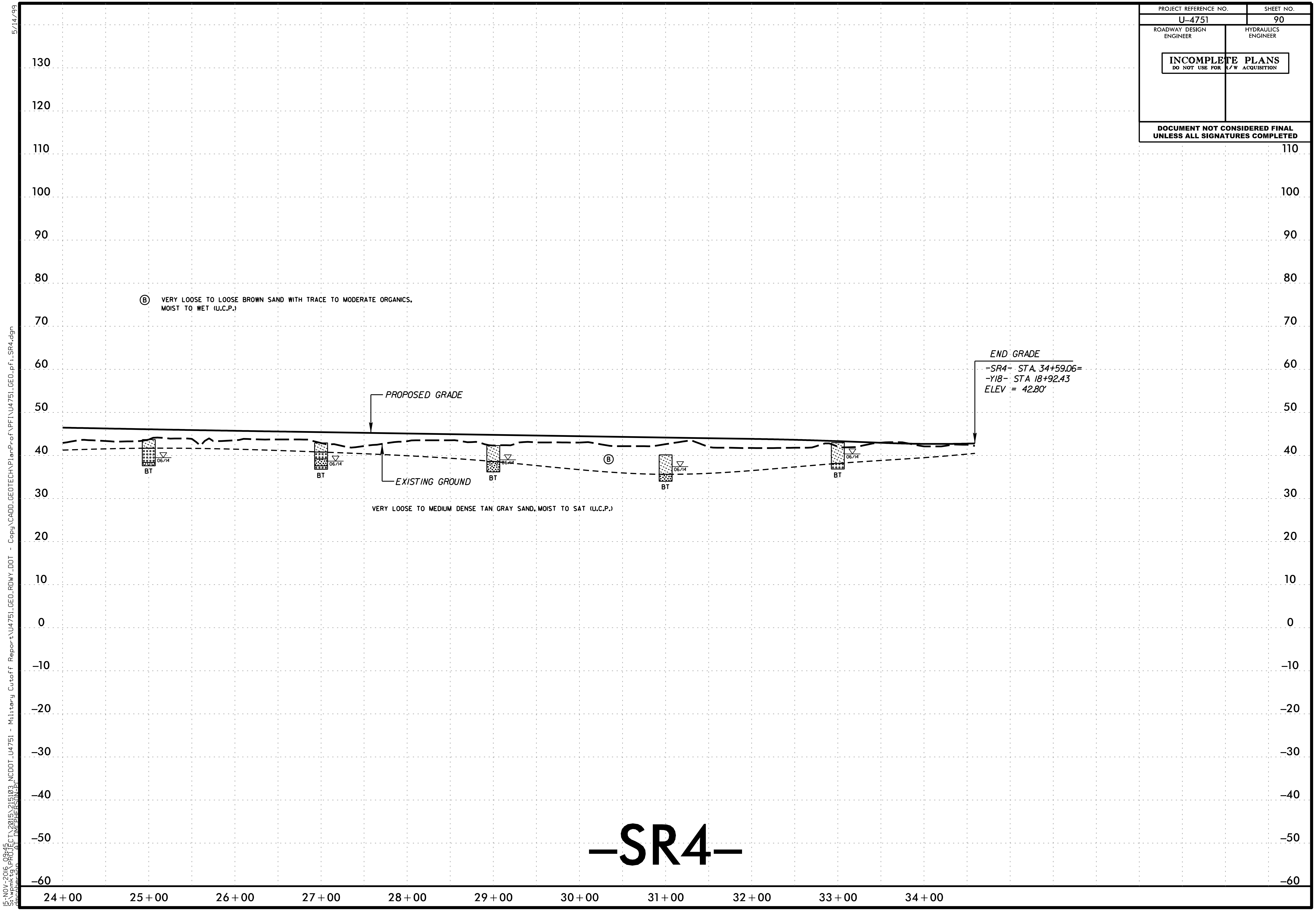
15-NOV-2016 13:27
C:\Projects\NCDOT\U4751_GEO_RDWY_DOT\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfi_SR4.dgn
lstone AT MICROSTATIONPC2

PROJECT REFERENCE NO.	SHEET NO.
U-4751	90

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



–SR4–

5/14/99

15-NOV-2016 09:45
S:\wpmktg\PROJECT\2015\215103_NCDOT_U4751 - Military Cutoff Report\U4751_GEO_RDWY_DOT - Copy\CADD_GEOTECH\PlanProf\PFI\U4751_GEO_pfl_SR4.dgn
dmcpherson AT DMCPHERSON-PC