REFERENCE: I-5700

PROJECT: 50118

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	19+60.00 - 62+25.00	4-7	N/A
-RPA-	10+00.00 - 22+25.73	6	N/A
-RPASPUR-	10+00.00 - 12+06.55	6	N/A
-RPB-	10+00.00 - 23+93.68	6,10	N/A
-RPBSPUR-	10+00.00 - 14+09.31	6	N/A
-RPC-	10+00.00 - 22+86.11	6,10	N/A
-RPCSPUR-	20+40.66 - 22+80.65	6	N/A
-RPD-	10+00.00 - 26+69.97	6	N/A
-RPDSPUR-	10+00.00 - 14+78.07	6	N/A
-Y-	25+32.85 - 113+06.23	6,8-13	N/A
-Y1-	12+97.46 - 14+11.34	5	N/A
-Y2-	10+05.00 - 11+76.05	5	N/A
-Y3-	15+18.75 - 30+73.03	7,14	N/A
-Y5-	10+70.00 - 12+61.43	4	N/A
-Y8-	17+00.00 - 21+78.46	14	N/A
-NBL-	56+18.52 - 61+00.00	7	N/A
-NBLRPA-	12+29.11 - 17+47.62	7	N/A

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	23+00.00 - 60+00.00	15-31
-RPA-	12+49.86 - 21+50.00	32-38
-RPASPUR-	10+65.00 - 12+29.71	39-41
-RPB-	11+00.00 - 22+00.00	42-49
-RPBSPUR-	10+42.93 - 13+16.41	50-51
-RPC-	11+99.81 - 22+00.00	52-57
-RPCSPUR-	21+55.00	58
-RPD-	14+60.45 - 25+60.00	59-65
-RPDSPUR-	13+00.00	66
-Y-	37+00 - 113+06.23	67-97
-Y1-	14+00.00	98
-Y2-	11+00.00	99
-Y3-	15+50.00 - 29+50.00	100-107
-Y5-	12+00	108
-Y8-	18+00 - 20+00	109-110

APPENDICES

APPENDIX	TITLE	SHEETS
A	LABORATORY RESULTS	111-130

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *WAKE*

PROJECT DESCRIPTION *I-40 AND SR 3015 (AIRPORT BOULEVARD) REVISE INTERCHANGE AND CONSTRUCT AUXILIARY LANE ON I-40 WESTBOUND FROM SR 3015 (AIRPORT BOULEVARD) TO I-540*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5700	1	130

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

C. DRISCOLL

TRIGON EXPLORATION

INVESTIGATED BY *C. DRISCOLL*

DRAWN BY *C. DRISCOLL*

CHECKED BY *T. WELLS*

SUBMITTED BY *KLEINFELDER, INC.*

DATE *AUGUST 2018*

Prepared in the Office of:

KLEINFELDER
Bright People. Right Solutions.
7343 WEST FRIENDLY AVE.
GREENSBORO, NC 27410
NC FIRM LICENSE NO. F-192

NORTH CAROLINA PROFESSIONAL SEAL 037998 ENGINEER THOMAS R. WELLS

DocuSigned by:
Thomas Wells 8/27/2018
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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
I-5700	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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

SOIL LEGEND AND AASHTO CLASSIFICATION

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

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

CONSISTENCY OR DENSENESS

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

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

RECOMMENDATION SYMBOLS

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

ABBREVIATIONS

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

SAMPLE ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

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

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [X] TRICONE 11 5/16" TUNG.-CARB.
- [X] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [X] -N Q2

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: N/A

ELEVATION: N/A FEET

NOTES:

BORING ELEVATIONS OBTAINED FROM PROJECT TIN FILE I5700_LS_DTM_180126.TIN, RECEIVED ON APRIL 2, 2018

DATE: 8-15-14

09/08/99

TIP PROJECT: I-5700

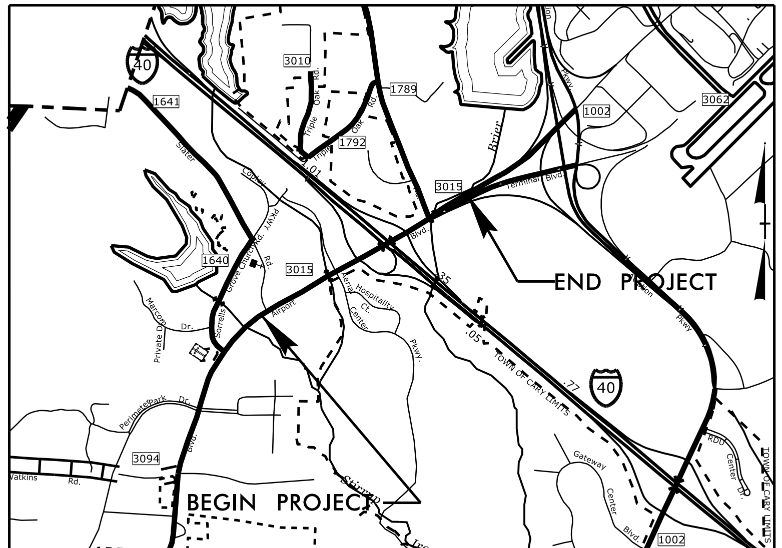
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5700	3	130

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50118.1.FS1	NHPP-040-1(259)286	PE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

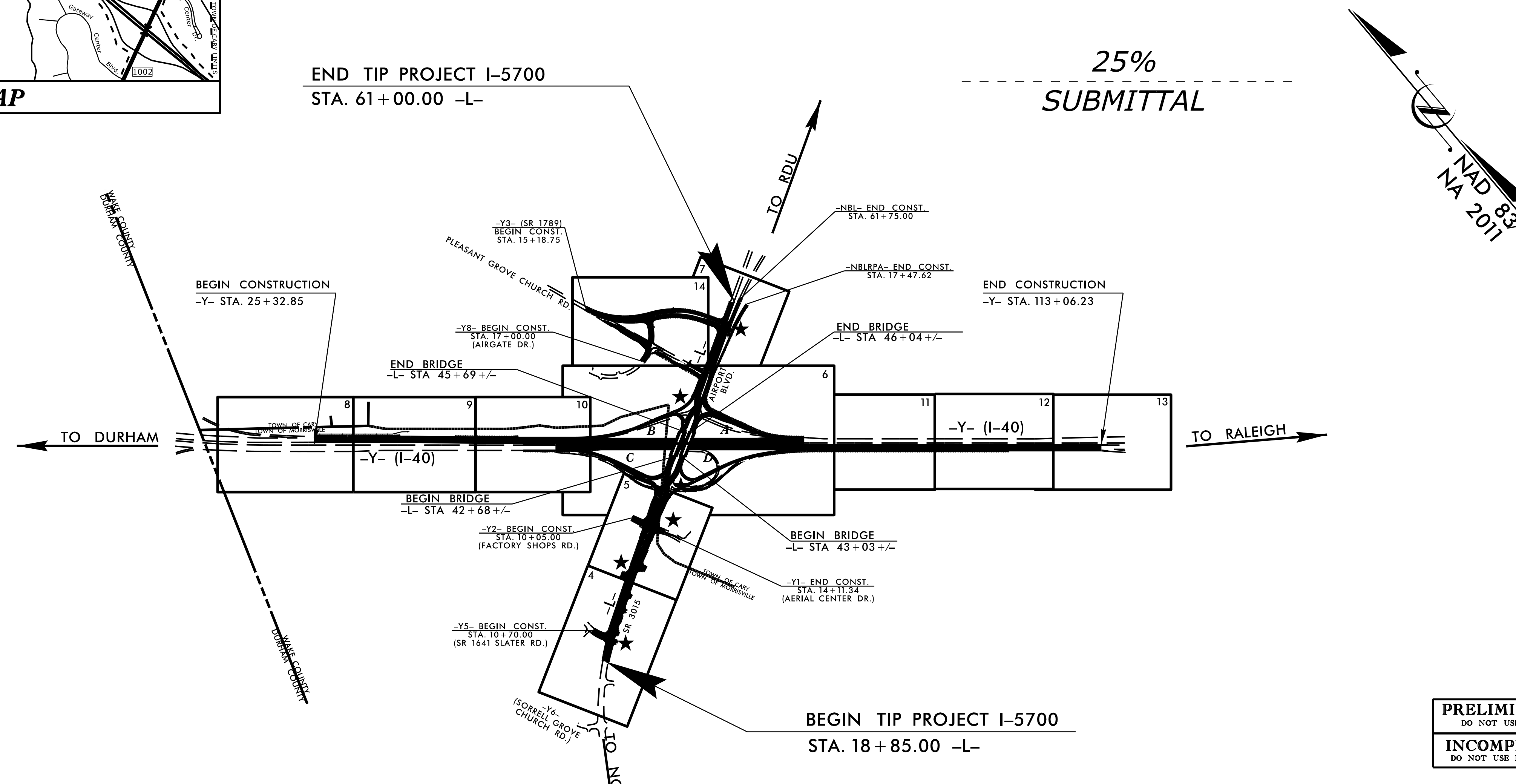


VICINITY MAP

LOCATION: I-40 AND SR 3015 (AIRPORT BLVD.), REVISE INTERCHANGE AND CONSTRUCT AUXILIARY LANE ON I-40 WESTBOUND FROM SR 3015 (AIRPORT BLVD. TO I-540.

TYPE OF WORK: ITS, DRAINAGE, GRADING, PAVING, SIGNALS CULVERTS AND STRUCTURES

25%
SUBMITTAL



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

★ PROPOSED SIGNALS

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF MORRISVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.
THIS IS A PARTIAL CONTROLLED- ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS 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 2019 = 33,660
ADT 2040 = 46,500
K = 9 %
D = 65 %
T = 6 % *
V = 50 MPH
* TTST = 2% DUAL = 4%
FUNC CLASS = ARTERIAL

STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5700 = 0.741 MILES
LENGTH STRUCTURE TIP PROJECT I-5700 = 0.057 MILES
TOTAL LENGTH OF TIP PROJECT I-5700 = 0.798 MILES

WETHERILL ENGINEERING

Prepared for the North Carolina Department of Transportation in the Office of:

1223 JONES FRANKLIN ROAD
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 21, 2018

LETTING DATE:
SEPTEMBER 17, 2019

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: TATIA WHITE, PE, PLS
ROADWAY DESIGN: PROJECT ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: ________ *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: ________ *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

CONTRACT: ___

23-AUG-2018 15:50
W:\share_GEOTECHNICAL\Projects\Active Projects\2015\548.053A I-5700 Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_geo_psh01_tsh.dgn
TWells AT KA209215

August 15, 2018

STATE PROJECT: 50118.1.FS1 (I-5700)
COUNTY: Wake
DESCRIPTION: I-40 and SR 3015 (Airport Boulevard) Revise Interchange and Construct Auxiliary Lane on I-40 Westbound from SR 3015 (Airport Boulevard) to I-540

SUBJECT: GEOTECHNICAL REPORT - INVENTORY

PROJECT DESCRIPTION

This project consists of a revised interchange at I-40 and SR 3015 (Airport Boulevard) including a dual bridge and realigned ramps (-RPA-, -RPASPUR-, -RPB-, -RPBSPUR-, -RPC-, -RPCSPUR-, -RPD-, -RPDSPUR-). This project will also include the construction of an auxiliary lane on I-40 westbound from SR 3015 (Airport Boulevard) to I-540. Lane widening is proposed for Aerial Center Parkway (-Y1-), Factory Shops Road (-Y2-), Slater Road (-Y5-) as well as the realignment and widening of Pleasant Grove Church Road (-Y3-) and extension to Airgate Drive (-Y8-).

The geotechnical investigation was conducted between April and June 2018. Standard Penetration Test borings were advanced with a CME-55 drill rig with an automatic hammer. Hand Augers were also performed in areas where the use of a drill rig was restricted. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by Geotechnics and F&R.

The following alignments, totaling 4.44 miles, were investigated. Plan sheets and cross sections of these alignments are included in this report.

LINE	STATIONS
-L-	19+60 to 62+25
-RPA-	10+00 to 22+26
-RPASPUR-	10+00 to 12+07
-RPB-	10+00 to 23+94
-RPBSPUR-	10+00 to 14+09
-RPC-	10+00 to 22+86
-RPCSPUR-	20+41 to 22+81
-RPD-	10+00 to 27+00
-RPDSPUR-	10+00 to 14+78
-Y-	25+33 to 113+06
-Y1-	12+97 to 14+11
-Y2-	10+05 to 11+76
-Y3-	15+19 to 30+73
-Y5-	10+70 to 12+61
-Y8-	17+00 to 21+78
-NBL-	56+19 to 61+00
-NBLRPA-	12+29 to 17+48

7343 West Friendly Avenue | Suite B, Greensboro, NC 27409 p| 336.668.0093 f| 336.668.3868

PHYSIOGRAPHY AND GEOLOGY

The project is located in the Piedmont Physiographic Province. The project corridor is comprised primarily of residential to urban properties and undeveloped wooded areas. The general topography along the project is generally flat to gently sloping.

Geologically, the project is located within the Durham sub-basin of the Deep River Triassic Basin. Soils are derived from the underlying bedrock which consists of Triassic age sedimentary rocks (interbedded sandstone, mudstone, siltstone, and conglomerate) of the Chatham group (Sanford formation).

SOIL PROPERTIES

Soils encountered during this investigation are separated into four categories based on origin. They consist of roadway embankment, artificial fill, alluvial soil, and Triassic residual soils.

Roadway Embankment soils are present along the existing roadways on the project. The roadway embankment encountered generally consist of dry to moist, soft to very stiff, sandy clays and sandy silts (A-4, A-6) with varying amounts of gravel and moist, medium stiff, silty clay (A-7). The plasticity index of the roadway embankment soils tested ranged from 5 to 13.

Soil identified as artificial fill are present adjacent to the existing roadway. The artificial fill encountered generally consists of dry to moist, medium stiff to hard, coarse to fine sandy clays and fine sandy silts (A-4, A-6) with varying amounts of rock fragments and dry, loose, coarse sands (A-1) with variable amounts of asphalt fragments and gravel. The plasticity index of the artificial fill silt tested was 2.

Alluvial soils are present along the existing streams and creeks on the project. The alluvial soils generally consist of moist to wet, very soft to hard, sandy silts, clayey silts, and sandy clays (A-4, A-5, A-6) moist to wet, soft to very stiff, highly plastic, silty clay (A-7), and moist to saturated, medium dense, silty coarse to fine sands and coarse sands (A-2-4, A-2-5, A-3) with variable amounts of organic matter and gravel. The plasticity of the alluvial silt tested was 3.

Triassic residual soils are derived from the weathering of underlying Triassic sandstone, siltstone, mudstone, and conglomerate. The majority of the Triassic residual soils encountered consist of moist, soft to hard, fine sandy silts and sandy clays (A-4, A-6) with variable amounts of rock fragments, moist, medium stiff, highly plastic, silty clays (A-7), and dry, non-plastic to slightly plastic, silty coarse to fine sands (A-2-4). The plasticity index of the Triassic residual silts and clays tested ranged from 5 to 16.

ROCK PROPERTIES

Weathered rock was encountered along the existing roadways (-L-, -RPA-, -RPASPUR-, -RPB-, -RPBSPUR--RPC-, -RPD-, -Y-, -Y3-, -Y5-, and -Y8-) at elevations ranging from 270.3 to 358.4 feet (MSL). The majority of the weathered rock consists of Triassic sandstone and siltstone with lessor amounts of Triassic mudstone and conglomerate. Triassic weathered rock exhibits high slaking characteristics when exposed at the surface to air and water.

Non-Crystalline rock was encountered along the existing roadways (-L-, -RPB-, -RPC-, -RPD-, -Y-, -Y2-, and -Y8-) at elevations ranging from 264.7 to 350.7 feet (MSL). The majority of the non-crystalline rock consists of Triassic sandstone and siltstone with lessor amounts of Triassic mudstone and conglomerate. Triassic non crystalline rock exhibits high slaking characteristics when exposed at the surface to air and water.

GROUNDWATER

Groundwater was encountered at elevations ranging from 277.5 to 306.7 feet and is typically 8 feet or more below the existing ground surface.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) Highly Plastic Clays: Highly plastic clays (PI > 25) were encountered on the project at the following locations:

LINE	STATIONS	OFFSETS
-L-	28+00 to 31+50	LT
-L-	34+50 to 38+00	LT
-L-	59+00 to 61+00	LT
-RPD-	13+50 to 15+50	LT
-Y-	84+00 to 86+00	RT
-Y-	88+00 to 90+00	RT
-Y-	92+50 to 97+00	RT
-Y2-	10+05 to 12+00	RT

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

2) Groundwater: The following areas exhibit a high water table, seasonal high groundwater or the potential for groundwater related construction problems:

LINE	STATIONS	OFFSETS
-RPC-	21+00 to 23+00	LT to RT
-RPD-	13+50 to 15+50	LT to RT
-Y-	70+00 to 72+00	RT
-Y-	84+00 to 101+00	RT

2) Alluvial Soil: Alluvial Soil was encountered on the project at the following locations:

LINE	STATIONS	OFFSETS
-L-	29+00 to 34+00	LT
-L-	31+50 to 34+00	RT
-L-	51+00 to 52+80	RT
-L-	53+50 to 64+30	LT
-RPA-	10+00 to 20+50	RT
-RPD-	10+00 to 17+00	LT
-Y-	42+00 to 45+00	LT
-Y-	79+00 to 87+80	LT
-Y-	79+00 to 100+50	RT
-Y3-	26+00 to 28+00	LT
-Y3-	28+00 to 30+10	LT to RT

3) Artificial Fill: Artificial Fill was encountered on the project at the following locations:

LINE	STATIONS	OFFSETS
-L-	35+20 to 38+20	LT
-RPD-	19+50 to 21+50	LT to RT
-Y-	22+50 to 47+60	LT

4) Weathered Rock and Non-Crystalline Rock: The following areas exhibit shallow non-crystalline rock within 6 feet of the proposed grade (including at or above the proposed grades):

LINE	STATIONS	OFFSETS
-L-	23+75 to 27+25	LT
-RPA-	17+70 to 21+50	LT to RT
-RPASPUR-	10+00 to 12+07	LT to RT
-RPB-	11+00 to 17+25	LT
-RPB-	17+75 to 21+75	LT to RT
-RPBSPUR-	10+00 to 13+00	LT to RT
-Y-	47+75 to 49+25	LT
-Y-	49+75 to 51+25	LT
-Y-	57+75 to 63+25	LT
-Y-	70+00 to 72+75	LT
-Y-	102+75 to 113+06	RT
-Y3-	15+25 to 16+25	RT
-Y3-	17+25 to 20+50	LT to RT

Prepared by,
KLEINFELDER, INC.
NC License No. F-1312

Daniel Kubinski, PE
Staff Professional

Thomas R. Wells, PE
Senior Professional

DHK/TRW:cas

Undisturbed Samples and Bulk Samples

Sample No.	Alignment	STA.	Offset	Depth (ft)	Tests Performed
ST-6	-RPA-	14+49	39' RT	5.0-7.0	CU Triaxial, Consolidation
S-12	-RPB-	17+61	116' LT	0.0-10.0	Standard Proctor, CBR

20151548.053A | GSO18R81927 August 15, 2018
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

BEGIN TIP PROJECT I-5700
-L- Sta. 18+85.00

MATCHLINE -L- STA. 26+00.00 SEE SHT. 5

ALLUVIAL

TRIASSIC RESIDUAL

ROADWAY EMBANKMENT

WOODS

CONC

L_2599

L_2399

L_2298

-L-

15

20

25

15+00

20+00

10'-00

7'-5"

★ PROPOSED TRAFFIC SIGNAL

14-AUG-2018 15:00
2015548.053A_I-5700 Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh04.dgn
jeslick

5/14/99

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Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	5

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y2- POT Sta. 10+00.00

-Y1- POT Sta. 12+42.46
-L- POC Sta. 34+60.00

-L- PC Sta. 26+59.89

-COI- POT Sta. 35+70.00
-L- POT Sta. 35+70.00
OFF.= 39' RT.

-Y2- PT Sta. 35+65.22

TRIASSIC RESIDUAL

ALLUVIAL

TRIASSIC RESIDUAL

ALLUVIAL

TRIASSIC RESIDUAL

ARTIFICIAL FILL

L-2599

L-3000

L-3285

L-3598

Y2-1099

ROADWAY EMBANKMENT

ROADWAY EMBANKMENT

SR 3015 AIRPORT BLVD 60' BST

L-3203

TRIASSIC RESIDUAL

TRIASSIC RESIDUAL

ALLUVIAL

-C02- POT Sta. 35+70.00
-L- POT Sta. 35+70.00
OFF.= 27' RT.

Y1-1400

TRIASSIC RESIDUAL

-Y2- POT Sta. 12+31.08
-L- POC Sta. 34+66.90

-Y1- PC Sta. 14+11.34
END CONST.

-Y1- PT Sta. 16+42.21

-Y4A- PC Sta. 10+98.35

-Y4A- POT Sta. 10+00.00

TOWN OF CARY
TOWN OF MORRISVILLE

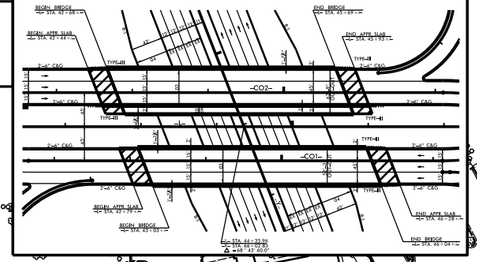
MATCHLINE -L- STA. 26+00.00 SEE SHT. 4

MATCHLINE -L- STA. 37+00.00 SEE SHT. 6

14-AUG-2018 15:00
20151548.053A_I-5700 Roadway\I5700_GEO_ROW\CADD_GEOTECH\PlanProf\I-5700_GEO_psh05.dgn
Wells, A. Kay

REVISIONS

SKETCH SHOWING PAVEMENT\STRUCTURE RELATIONSHIP



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License No. H-0277
Phone 919.851.1886
Fax 919.851.8107

TRANSPORTATION PLANNING/DESIGN • BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN • SURVEY • CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
17500	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

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MATCHLINE -L- STA. 51+00.00 SEE SHT. 7

MATCHLINE -Y- STA. 55+00.00 SEE SHT. 10

MATCHLINE -Y- STA. 80+00.00 SEE SHT. 11

MATCHLINE -L- STA. 37+00.00 SEE SHT. 5

RPBSPUR_1245

RPASPUR_1130

RPA_2050

RPB_1984 RPB_2049 RPB_2199 L_1810

RPB_1761 RPB_1850

RPB_1646

RPB_1564

RPB_1652

RPB_1191

RPB_1452

Y_5999_LT

Y_6199_LT

LL_EB2-A RL_EB2-B

RL_EB2-A

Y_7113_LT

RPA_1641

RPA_1449

RPA_1250

7350

LL_BI-A LL_BI-B RL_BI-B

Y_6201_RT

Y_6407

LL_EBI-A RL_EBI-B

RL_EBI-A

LL_EBI-B

L_4200

Y_7099_RT

RPD_1659

RPD_1464

RPC_1600

RPC_1390

RPC_1800

RPC_1999

RPC_2198

L_3999

RPCSPUR_2450

RPD_2050

RPD_1850

RPD_2560

RPD_2450

RPD_2350

RPDSPUR_2303

★ PROPOSED TRAFFIC SIGNAL

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION: SR 2013 (AIRPORT BLVD.) WITH: I-40

TIP NO. I-6170D COUNTY: WAKE

DESIGNED BY:

CHECKED BY: DATE:

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1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
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Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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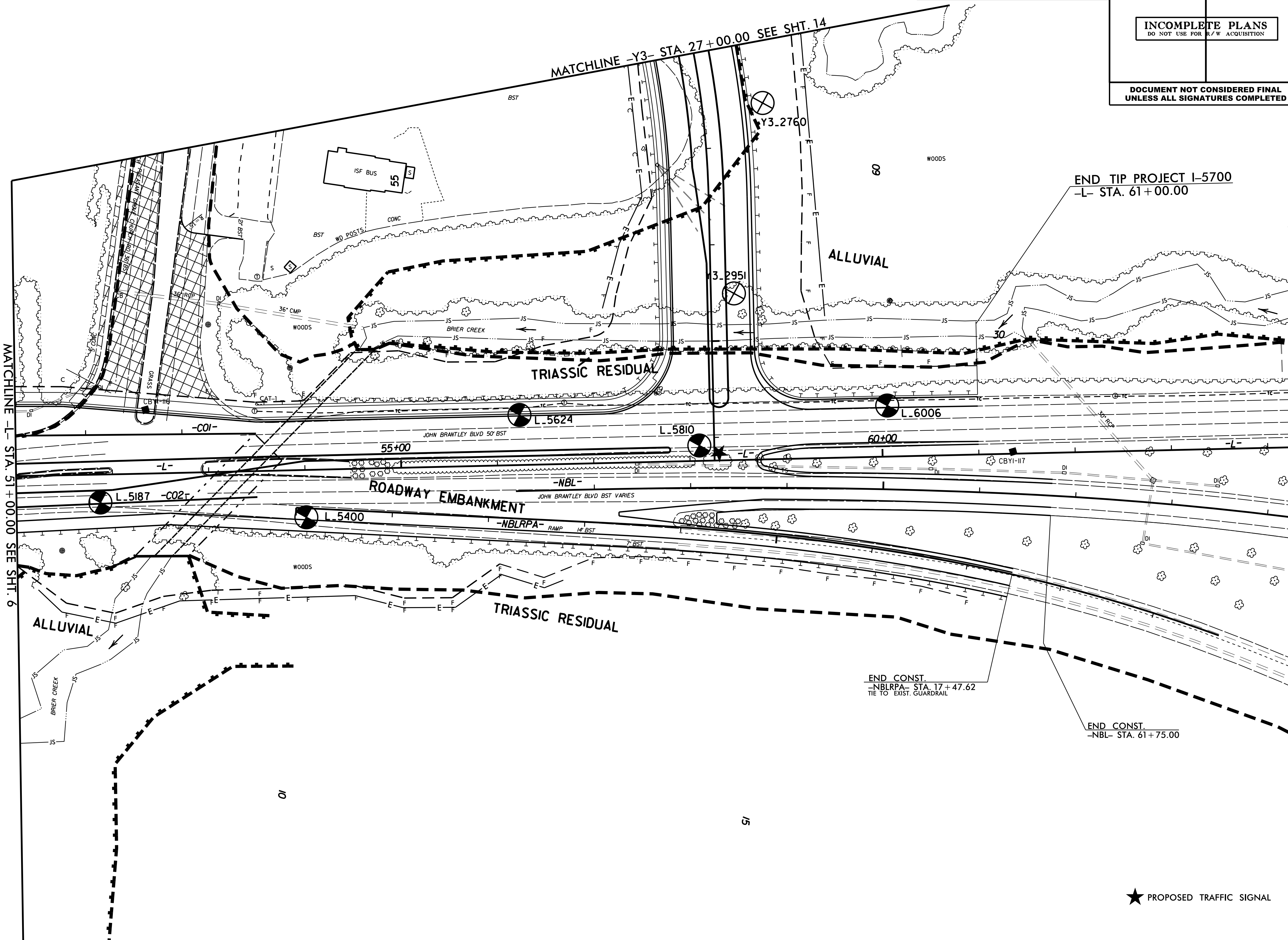

5/14/99

14-AUG-2018 15:00
I-5700_GEO_psh07.dgn

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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5/14/99

NC GRID
NAD 83 NA 2011

BEGIN CONST.
-Y- STA. 25+32.85
BEG. PROP. WW CA FENCE
TIE TO EXIST. CA FENCE

-Y- PT Sta. 20+48.91

CBM-1 ELEVATION = 334.52'
N 771735' E 2051331'
CBL STATION 15+32.00 87' LEFT
NAIL SET IN 20" PINE TREE

15 20 25

40' EXPRESSWAY CURB
OFF RAMP TO I-540 29.5' BST
2% CMP
CONC
TRIASSIC RESIDUAL
WOODS
TOWN OF CARY
TOWN OF MORRISVILLE
EDGE OF WATER
RIP-RAP
PROP. LOCATION
ARTIFICIAL FILL
I5700-I
I-40 WB DAN K MOORE FREEWAY 77.5' BST
ROADWAY EMBANKMENT
-Y-
I-40 EB DAN K MOORE FREEWAY 93' BST
24" RCP
15" CMP
30" RCP
3'-10"W X 6'-0" BOX CULVERT
EIP

MATCHLINE -Y- STA. 29+00.00 SEE SHT. 9

14-AUG-2018 15:00
20151548.05A.T5700 Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh08.dgn

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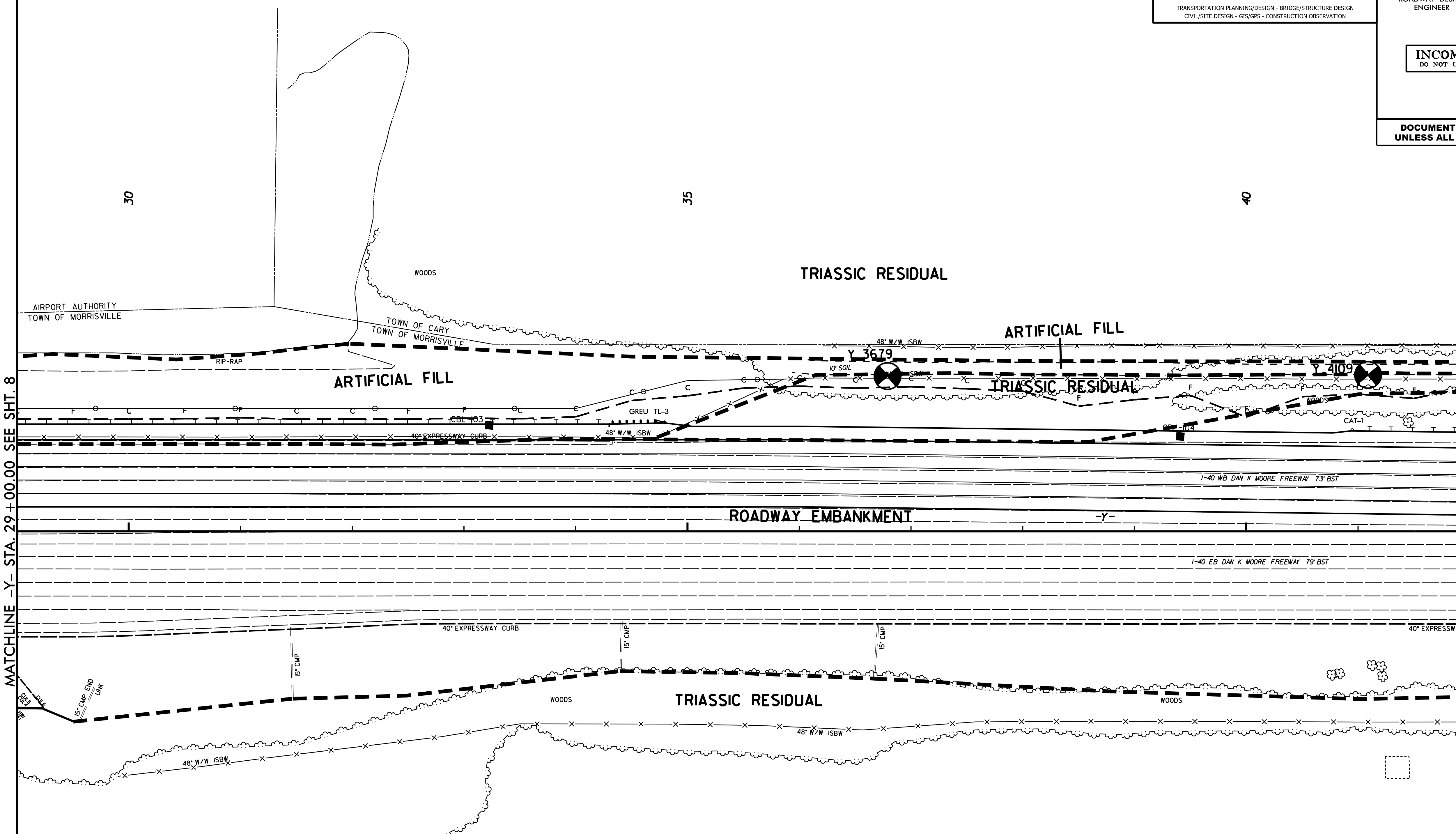
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE -Y- STA. 29+00.00 SEE SHT. 8



MATCHLINE -Y- STA. 42+00.00 SEE SHT. 10

5/14/99
14-AUG-2018 15:00
Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh09.dgn

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	10
RW SHEET NO.	
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

45 50 55

SR 1310 TRIPLE OAK RD 13' BST
SR 1792 TRIPLE OAK RD 12' BST
NO ACCESS
TOWN OF CARY
TOWN OF MORRISVILLE
WOODS
TRIASSIC RESIDUAL
ARTIFICIAL FILL
10' SOIL
Y-4293
Y-4703
Y-4902
Y-5097
6' CONC
ROADWAY EMBANKMENT
-Y-
MATCHLINE -Y- STA. 42+00.00 SEE SHT. 9
MATCHLINE -Y- STA. 55+00.00 SEE SHT. 6
40' EXPRESSWAY CURB
15" CMP
30" RCP
15" CMP
RPC_1193
ALLUVIAL

10

14-AUG-2018 15:00
2015I548.05 I-5700 Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh10.dgn
Metric At 22.352%

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	11
RW SHEET NO.	
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

80

85

90

MATCHLINE -Y- STA. 80+00.00 SEE SHT. 6

MATCHLINE -Y- STA. 93+00.00 SEE SHT. 12

TRIASSIC RESIDUAL

ALLUVIAL

I5506-7

ROADWAY EMBANKMENT

-Y-

DAN K MOORE FREEWAY 73' BST

Y_8489

Y_8663

Y_8901

Y_9100

ALLUVIAL

14-AUG-2018 15:00
20151548.05a I-5700 Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh11.dgn
Bentley PowerGeotech CONNECT Edition

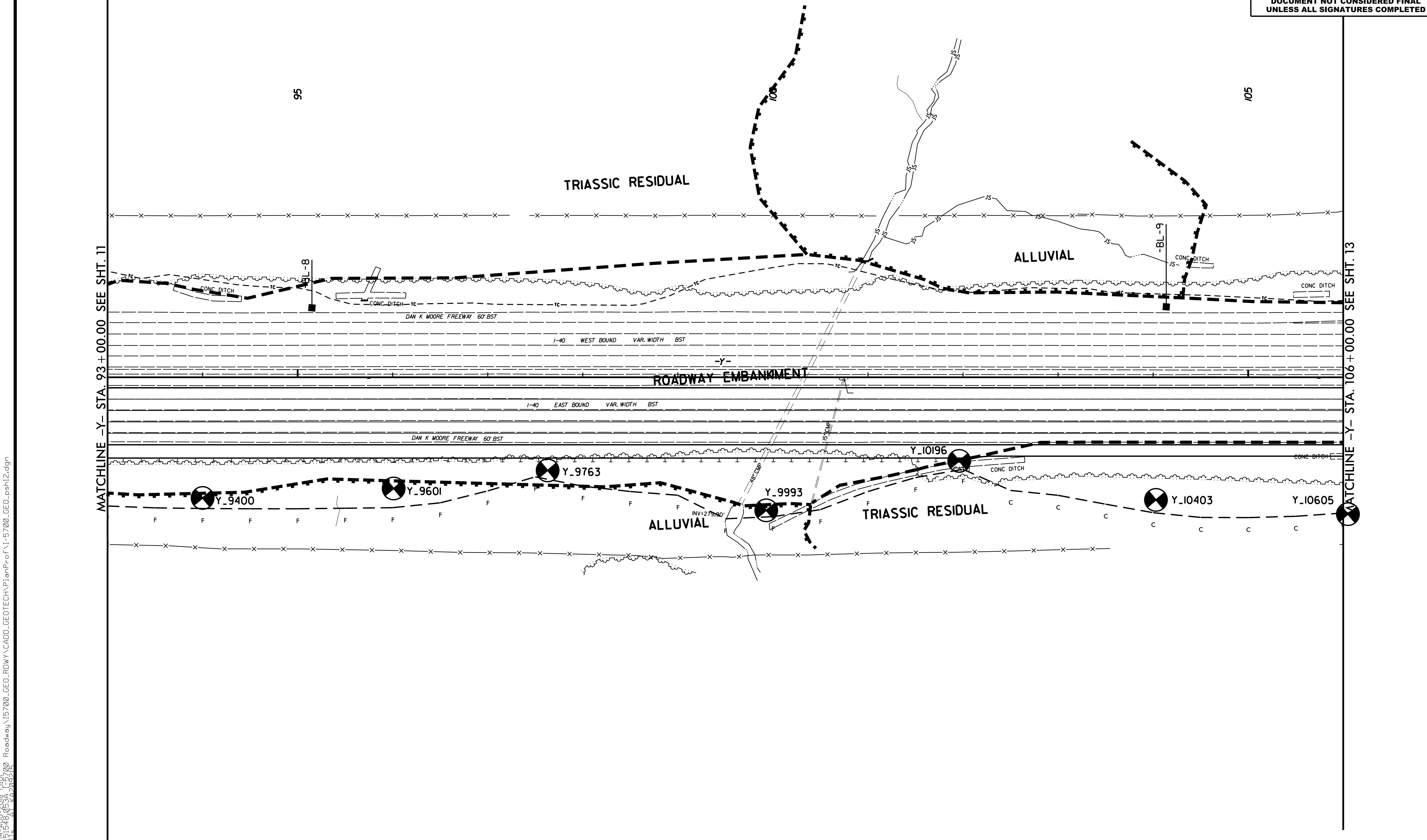
WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	12
RW SHEET NO.	
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

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WETHERILL ENGINEERING
1223 Jones Franklin Rd.
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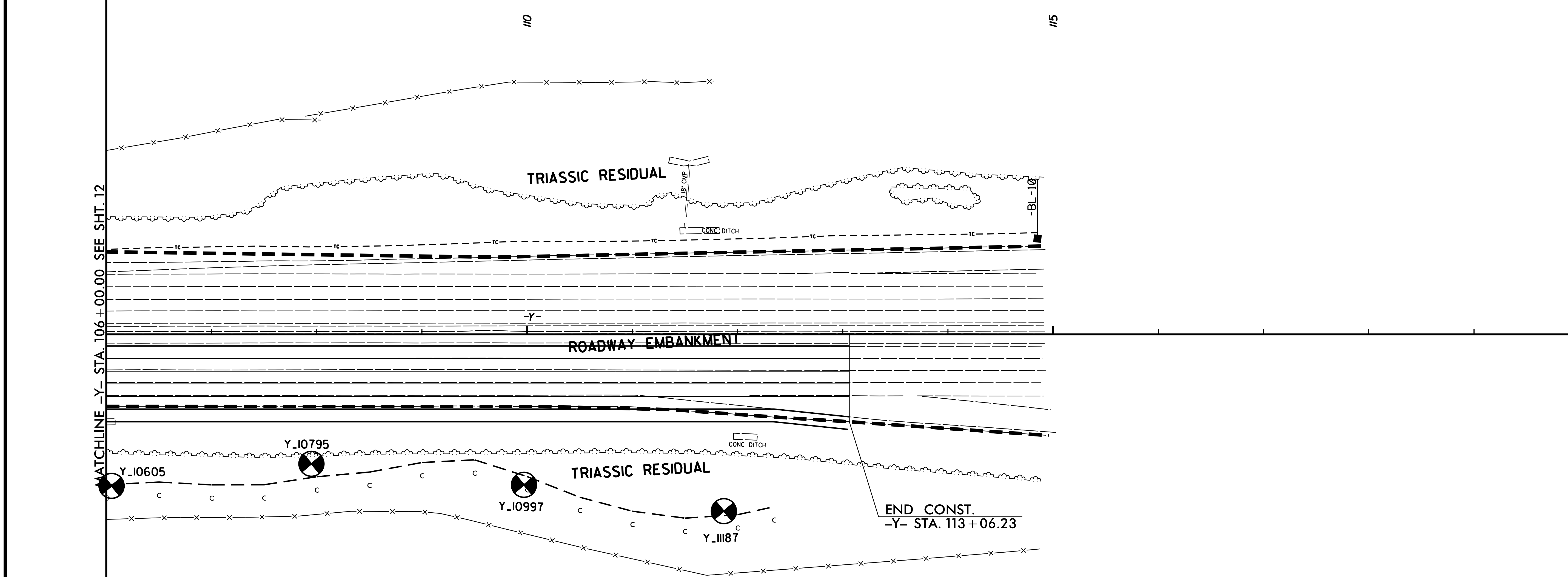
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SEE SHTS. 20 THRU 23 FOR -Y- PROFILE

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2015\548.0534 I-5700 Roadway\5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh13.dgn

5/14/99

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
I-5700	14

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

15
20
25
WOODS
ALLUVIAL
MATCHLINE -Y3- STA. 27+00.00 SEE SHT. 7
CAT-1
Y3_2189
Y3_2539
Y3_1749
Y3_1549
Y3_1942
Y3_2325
-Y3-
TRIASSIC RESIDUAL
CBY2-203
54" MTL
72" BLK
ROADWAY EMBANKMENT
Y8_2003
Y8_1791
60" CMP
36" W/W
35' BROKEN BST AND GR
PLEASANT GROVE CHURCH RD 36 BST
CBY2-201
53BK BLS
CANOPY
POOL
5' CONC
36" BLK
CBY1-301
-Y8-
AIRGAP DR 36 BST
BEGIN CONST.
-Y8- STA. 17+00.00

14-AUG-2018 15:01
201516486\03A_I-5700 Roadway\I5700_GEO_RDWY\CADD_GEOTECH\PlanProf\I-5700_GEO_psh14.dgn

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

320 310 300 290 280

SS-1
L_2399
23+99

A **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, MEDIUM STIFF, BROWN FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

2:1 (7) (A)

108/0.2

100/0.3

WEATHERED ROCK: RED TO BROWN TRIASSIC SANDSTONE

60/0.1

BT
DRY
05/18

NON-CRYSTALLINE ROCK: GRAY TO BROWN TRIASSIC SANDSTONE

24+00.00

320 310 300 290 280

ROADWAY EMBANKMENT: ASPHALT

2:1

TRIASSIC RESIDUAL: MOIST, STIFF, BROWN, SANDY SILT

WEATHERED ROCK: RED AND BROWN TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: RED AND WHITE TRIASSIC SANDSTONE

23+50.00

320 310 300 290 280

ROADWAY EMBANKMENT: ASPHALT

4:34:1

L_2298
22+98

4.70:1

TRIASSIC RESIDUAL: MOIST, STIFF, BROWN, SANDY SILT

15

WEATHERED ROCK: RED AND BROWN TRIASSIC SANDSTONE

100/0.4

60/0.1

BT
DRY
05/18

NON-CRYSTALLINE ROCK: RED AND WHITE TRIASSIC SANDSTONE

23+00.00

270

—L—

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

L_2599
25+99

17
100/0.8
100/0.6
56
50/0.2
DRY
05/18

2:1

(A) **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, VERY STIFF, TAN, FINE SANDY SILT
(B) **WEATHERED ROCK:** WHITE, GRAY, RED AND BROWN TRIASSIC SANDSTONE
(C) **TRIASSIC RESIDUAL:** MOIST, HARD, MODERATELY PLASTIC, BROWN FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

5.36:1

NON-CRYSTALLINE ROCK: WHITE TO GRAY TRIASSIC SANDSTONE

26+00.00

(A) **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, VERY STIFF, TAN, FINE SANDY SILT
(B) **WEATHERED ROCK:** WHITE, GRAY, RED AND BROWN TRIASSIC SANDSTONE
(C) **TRIASSIC RESIDUAL:** MOIST, HARD, MODERATELY PLASTIC, BROWN FINE SANDY CLAY

2:1

ROADWAY EMBANKMENT: ASPHALT

8.48:1

NON-CRYSTALLINE ROCK: WHITE TO GRAY TRIASSIC SANDSTONE

25+50.00

(A) **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, VERY STIFF, TAN, FINE SANDY SILT
(B) **WEATHERED ROCK:** WHITE, GRAY, RED AND BROWN TRIASSIC SANDSTONE
(C) **TRIASSIC RESIDUAL:** MOIST, HARD, MODERATELY PLASTIC, BROWN FINE SANDY CLAY

2:1

ROADWAY EMBANKMENT: ASPHALT

NON-CRYSTALLINE ROCK: WHITE TO GRAY TRIASSIC SANDSTONE

25+00.00

(A) **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, MEDIUM STIFF, BROWN FINE SANDY CLAY

2:1

ROADWAY EMBANKMENT: ASPHALT

WEATHERED ROCK: RED TO BROWN TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: GRAY TO BROWN TRIASSIC SANDSTONE

24+50.00

6/23/16
14-AUG-2018 15:01
W:\shore\GEOTECHNICAL\Projects\Active Projects\20151548.053A I-5700 Roadway\15700.GEO.RDWY\CADD.GEOTECH\xsc\15700_GEO_xs1_L.dgn
swells
AT KA2047215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	17

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

320
310
300
290

Ⓐ **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, VERY STIFF, TAN, FINE SANDY SILT
Ⓑ **WEATHERED ROCK:** WHITE, GRAY, RED AND BROWN TRIASSIC SANDSTONE
Ⓒ **TRIASSIC RESIDUAL:** MOIST, HARD, MODERATELY PLASTIC, BROWN FINE SANDY CLAY

NON-CRYSTALLINE ROCK: WHITE TO GRAY TRIASSIC SANDSTONE

2.36:1

ROADWAY EMBANKMENT: ASPHALT

3.26:1

27+50.00

320
310
300
290

Ⓐ **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, VERY STIFF, TAN, FINE SANDY SILT
Ⓑ **WEATHERED ROCK:** WHITE, GRAY, RED AND BROWN TRIASSIC SANDSTONE
Ⓒ **TRIASSIC RESIDUAL:** MOIST, HARD, MODERATELY PLASTIC, BROWN FINE SANDY CLAY

2:1

ROADWAY EMBANKMENT: ASPHALT

NON-CRYSTALLINE ROCK: WHITE TO GRAY TRIASSIC SANDSTONE

27+00.00

320
310
300
290
280

Ⓐ **TRIASSIC RESIDUAL:** MOIST, SLIGHTLY PLASTIC, VERY STIFF, TAN, FINE SANDY SILT
Ⓑ **WEATHERED ROCK:** WHITE, GRAY, RED AND BROWN TRIASSIC SANDSTONE
Ⓒ **TRIASSIC RESIDUAL:** MOIST, HARD, MODERATELY PLASTIC, BROWN FINE SANDY CLAY

2:1

ROADWAY EMBANKMENT: ASPHALT

NON-CRYSTALLINE ROCK: WHITE TO GRAY TRIASSIC SANDSTONE

26+50.00

320
310
300
290
280

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	18

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

310
300
290
280

SS-2
L_3000
30+00

3.03:T

6
7
5

BT
DRY
05/18

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY PLASTIC, BROWN FINE SANDY CLAY

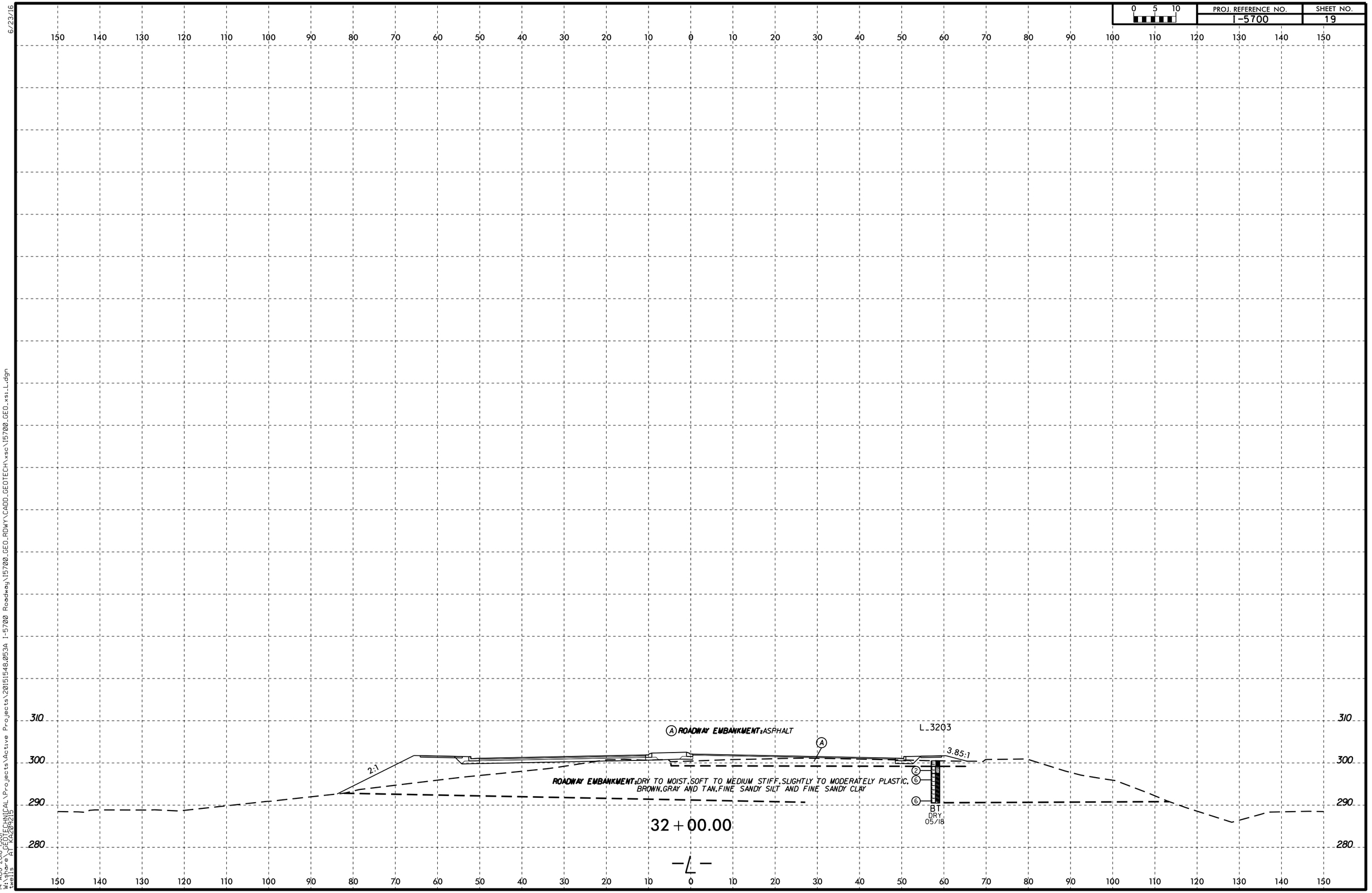
ALLUVIAL: MOIST, MEDIUM STIFF, HIGHLY PLASTIC, GRAY, SILTY CLAY

30+00.00

—L—

310
300
290
280

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



6/23/16

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twells
AT XA20/9215

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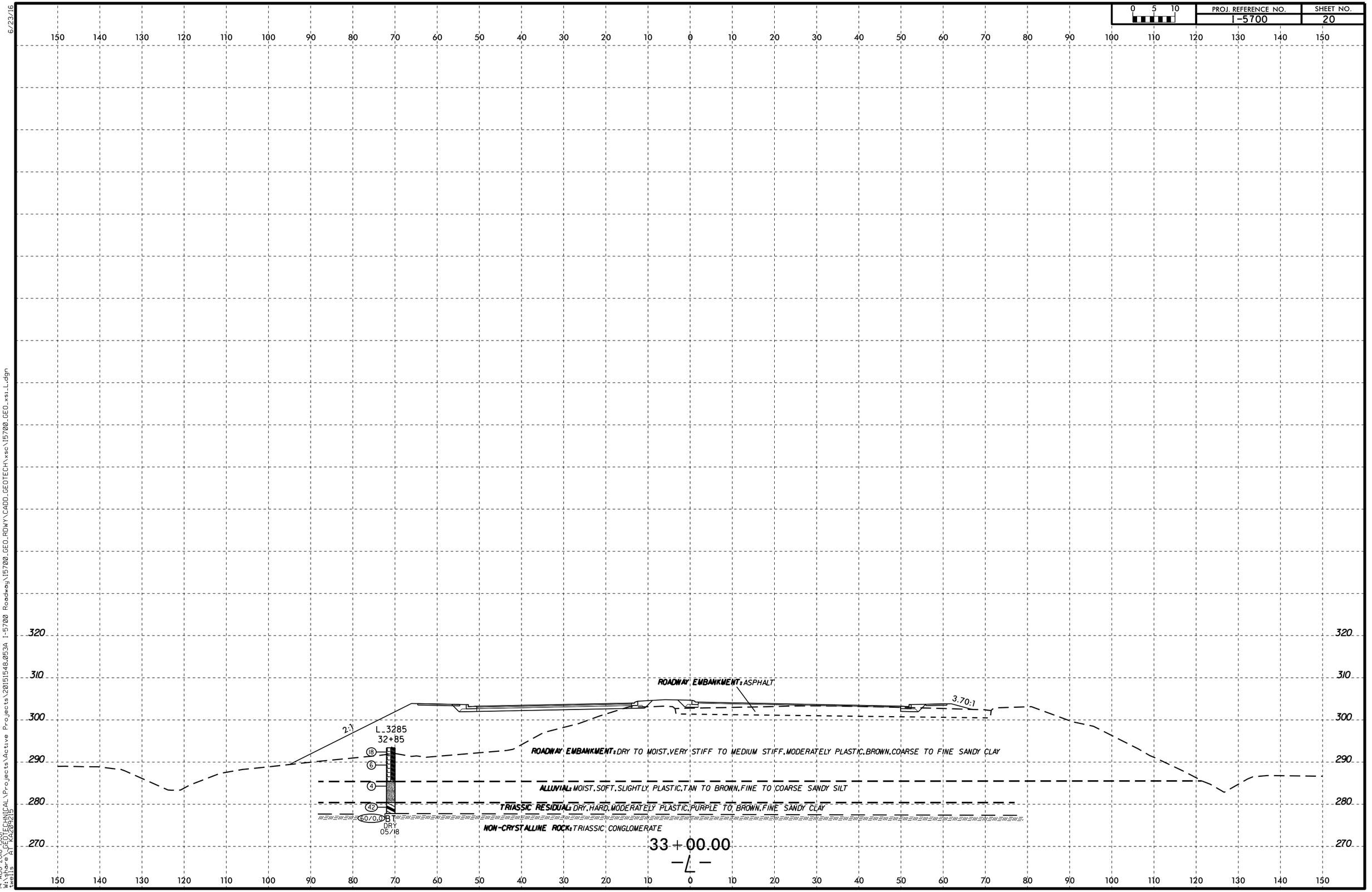
	I-5700	20



6/23/16

14-AUG-2018 15:01
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swells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	21

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

320
310
300
290
280
270

2:1

7.76:1

L_3598
35+98

12
23
17
3
20

BT
DRY
05/18

ARTIFICAL FILL: DRY, STIFF TO VERY STIFF, MODERATELY PLASTIC, BROWN, COARSE TO FINE SANDY CLAY

ROADWAY EMBANKMENT: DRY, STIFF TO VERY STIFF, MODERATELY PLASTIC, BROWN, COARSE TO FINE SANDY CLAY

TRIASSIC RESIDUAL: DRY, HARD, MODERATELY PLASTIC, PURPLE TO BROWN, FINE SANDY CLAY

ALLUVIAL: WET, SOFT, HIGHLY PLASTIC, GRAY TO BROWN, SILTY CLAY

MOIST, VERY STIFF, MODERATELY PLASTIC, GRAY, CLAYEY SILT

36+00.00

—L—

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

320
310
300
290
280
270

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	22

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

340
330
320
310
300
290

BP9

3.01:1

L_3999
39+99

22
11
26
19
12

BT
DRY
04/18

ROADWAY EMBANKMENT: ASPHALT

2:1

BP10

ROADWAY EMBANKMENT: DRY, STIFF TO VERY STIFF, BROWN, COARSE TO FINE SANDY SILT

ALLUVIAL: MOIST, VERY STIFF, NON PLASTIC, SILTY FINE SAND WITH TRACE ORGANIC MATTER

TRIASSIC RESIDUAL: MOIST, VERY STIFF TO STIFF, SLIGHTLY PLASTIC, ORANGE TO GRAY SANDY CLAY

40+00.00

—L—

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

14-AUG-2018 15:01
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twells
AT XA20915

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	23

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

340 330 320 310 300 290 280

ROADWAY EMBANKMENT: ASPHALT

LL_EBI-B
42+49

ROADWAY EMBANKMENT: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, BROWN AND RED TO GRAY, FINE SANDY SILT AND FINE SANDY CLAY

2:1

LL_EBI-A
42+37

2:1

8 4 7 36 81 100/0.3 100/0.2 100/0.3
BT
DRY
05/18

TRIASSIC RESIDUAL: DRY, VERY STIFF, NON PLASTIC, TAN TO BROWN, COARSE TO FINE SANDY SILT

25 100/0.3 100/0.5 100/0.2 100/0.3
BT
DRY
05/18

WEATHERED ROCK: DARK BROWN, DARK RED, TAN, AND ORANGE TRIASSIC SANDSTONE

42+50.00

Ⓐ **ROADWAY EMBANKMENT:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, BROWN AND RED TO GRAY, FINE SANDY SILT AND FINE SANDY CLAY

BP15

ROADWAY EMBANKMENT: ASPHALT Ⓐ

2:1

L_4200
42+00

24 10 63 100/0.3
B
DRY
04/18

TRIASSIC RESIDUAL: MOIST, STIFF TO HARD, RED, BROWN, TAN, ORANGE AND GRAY, COARSE TO FINE SANDY SILT

WEATHERED ROCK: DARK RED TRIASSIC SANDSTONE

60/0.1

NON-CRYSTALLINE ROCK: DARK RED TRIASSIC SANDSTONE

42+00.00

—L—

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

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wells AT KAZ0215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	24

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

350
340
330
320
310
300
290
280

Ⓐ **ROADWAY EMBANKMENT:** ASPHALT

Ⓑ **ROADWAY EMBANKMENT:** MOIST, STIFF, NON PLASTIC, TAN TO RED, COARSE TO FINE SANDY SILT WITH TRACE GRAVEL

RL_EBI-A
42+80

RL_EBI-B
43+15

2:1

2:1

Ⓐ

Ⓑ

10
8
4
26
9
100/0.2
100/0.2
60/0.1

BT
DRY
05/18

19
20
100/0.9
100/0.4
100/0.2
60/0.1

BT
DRY
04/18

TRIASSIC RESIDUAL: DRY TO MOIST, SOFT TO VERY STIFF, SLIGHTLY TO MODERATELY PLASTIC, RED, BROWN, TAN AND GRAY, FINE SANDY SILT AND FINE SANDY CLAY

WEATHERED ROCK: BROWN, RED AND GRAY, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: WHITE, TAN AND DARK RED TRIASSIC SANDSTONE

43+00.00

-L-

14-AUG-2018 15:01
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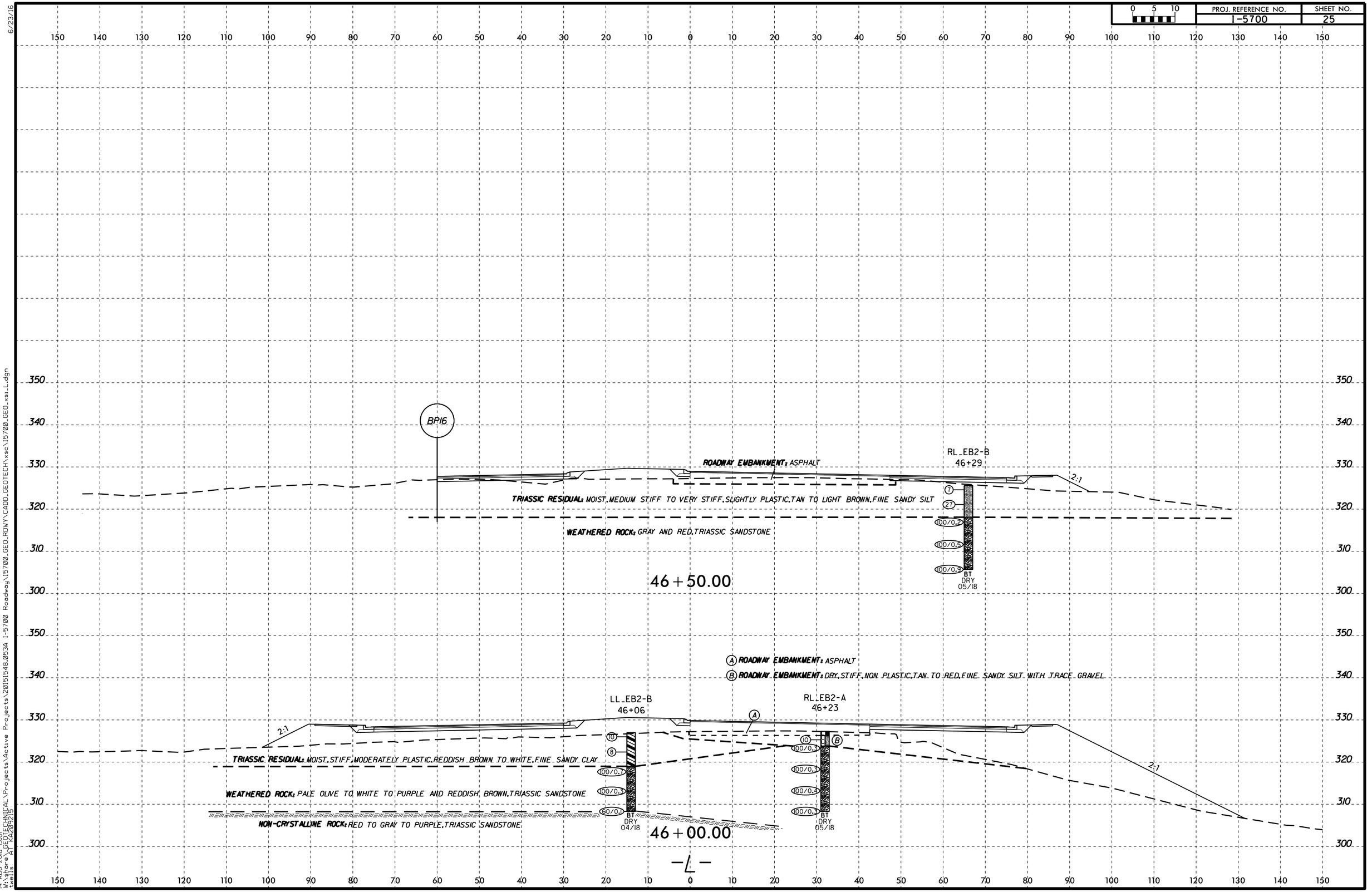
swells AT KA209215



6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	26

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

350
340
330
320
310

BP21

BP22

Ⓐ ROADWAY EMBANKMENT: ASPHALT

L-4810
48+10

3.26:1

Ⓐ

13

100/0.4

100/0.3

BT
DRY
05/18

TRIASSIC RESIDUAL: MOIST, STIFF, MODERATELY PLASTIC, BROWN, FINE, SANDY CLAY

WEATHERED ROCK: GRAY-WHITE TO BROWN-TAN TRIASSIC SANDSTONE

48+00.00

-L-

350
340
330
320
310

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

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	27

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

350 340 330 320 310 300 290 280 270

Ⓐ **ROADWAY EMBANKMENT:** ASPHALT
Ⓑ **ROADWAY EMBANKMENT:** MOIST, STIFF, SLIGHTLY PLASTIC, RED TO TAN TO WHITE, FINE SANDY SILT
Ⓒ **TRIASSIC RESIDUAL:** MOIST, VERY STIFF, MODERATLY PLASTIC, GRAY TO BROWN, FINE SANDY CLAY
Ⓓ **WEATHERED ROCK:** GRAY TO WHITE, TRIASSIC SANDSTONE

L-5187
51+87

2.43:1

2:1

14 11 9 12 16

100/0.2
50/0.0 BT.
DRY
05/18

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

ALLUVIAL

52+00.00
-L-

14-AUG-2018 15:01
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twells
AT XA20915

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	28

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

330 320 310 300 290 280

Ⓐ **ROADWAY EMBANKMENT:** ASPHALT

SS-3
L_5400
54+00

2:1

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO VERY STIFF, SLIGHTLY PLASTIC, OLIVE TO TAN TO RED TO WHITE, FINE SANDY SILT WITH TRACE GRAVEL

15 13 16 15 22

BT
DRY
05/18

2:1

TRIASSIC RESIDUAL: MOIST, VERY STIFF, MODERATLY PLASTIC, GRAY TO BROWN, FINE SANDY CLAY

ALLUVIAL

54+00.00

-L-

6/23/16

14-AUG-2018 15:01
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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	29

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

330
320
310
300
290
280
270

L-5624
56+24

(A) **ROADWAY EMBANKMENT:** ASPHALT

(28)
(37)
(29)
BT
DRY
05/18

ROADWAY EMBANKMENT: MOIST, VERY STIFF AND HARD, SLIGHTLY TO MODERATELY PLASTIC. TAN TO REDDISH BROWN, FINE SANDY SILT TO FINE SANDY CLAY

2:1

2:1

TRIASSIC RESIDUAL: MOIST, VERY STIFF, MODERATLY PLASTIC, GRAY TO BROWN, FINE SANDY CLAY

ALLUVIAL

56+00.00
-L-

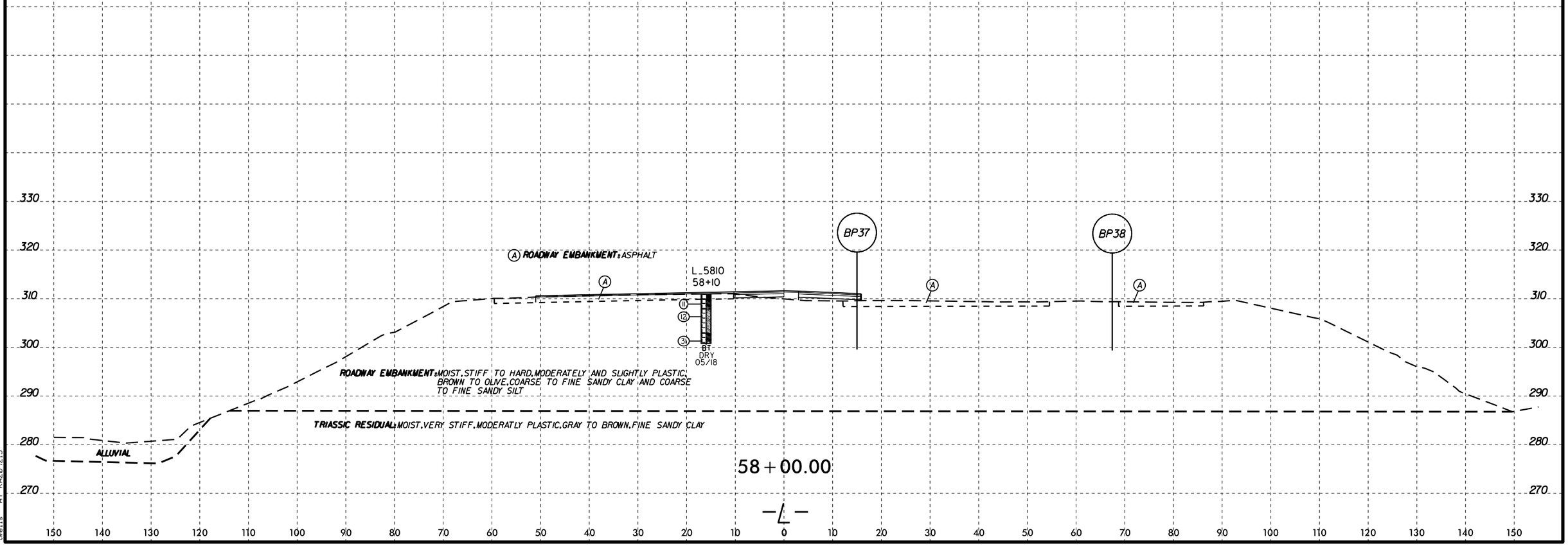
14-AUG-2018 15:01
W:\shore\GEOTECHNICAL\Projects\Active Projects\20151548.053A I-5700 Roadway\15700.GEO.RDWY\CADD.GEOTECH\xsc\15700_GEO_xs1_L.dgn
twells
AT XA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	30

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

330
320
310
300
290
280
270



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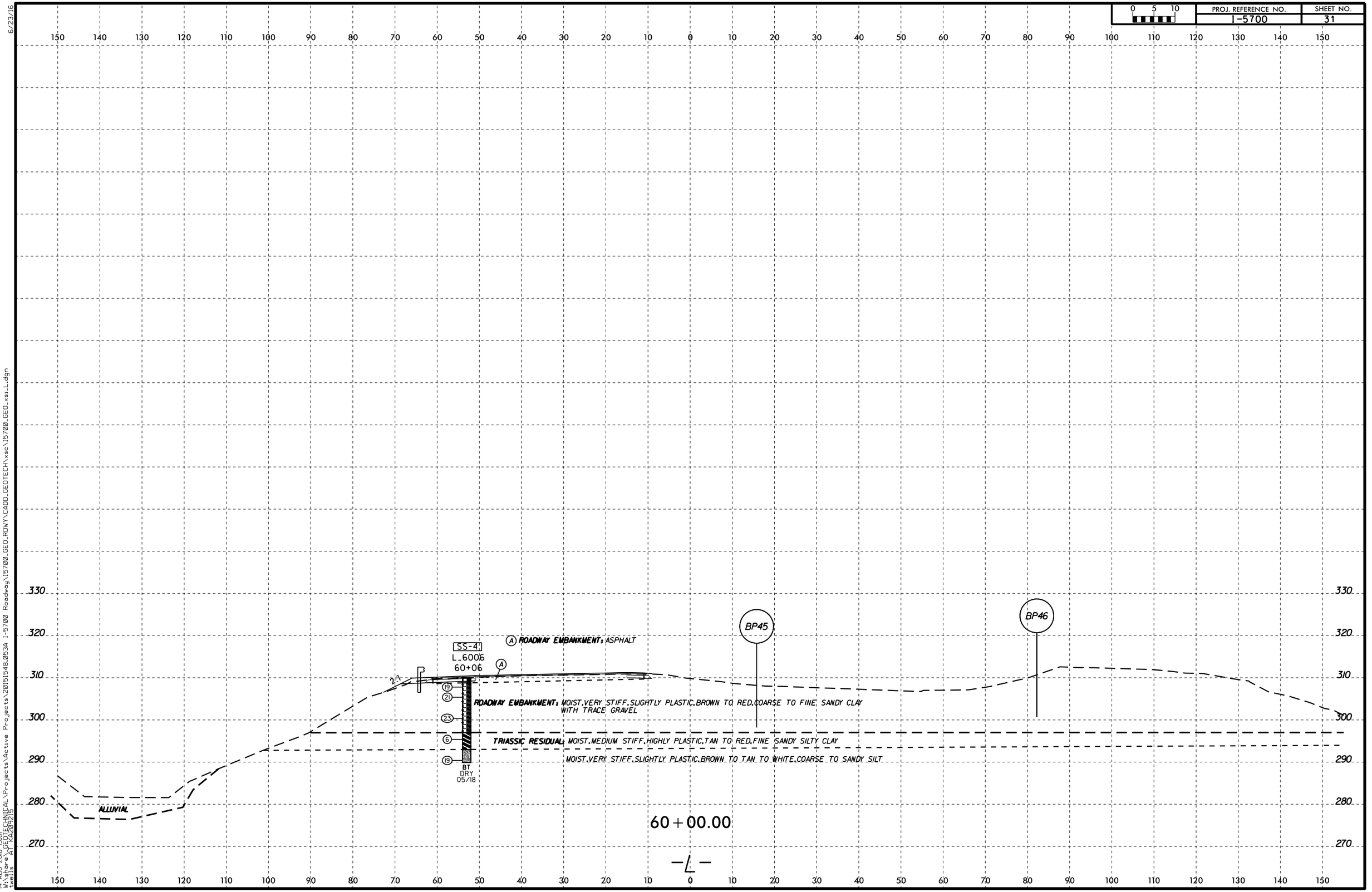
twells
AT XA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	31



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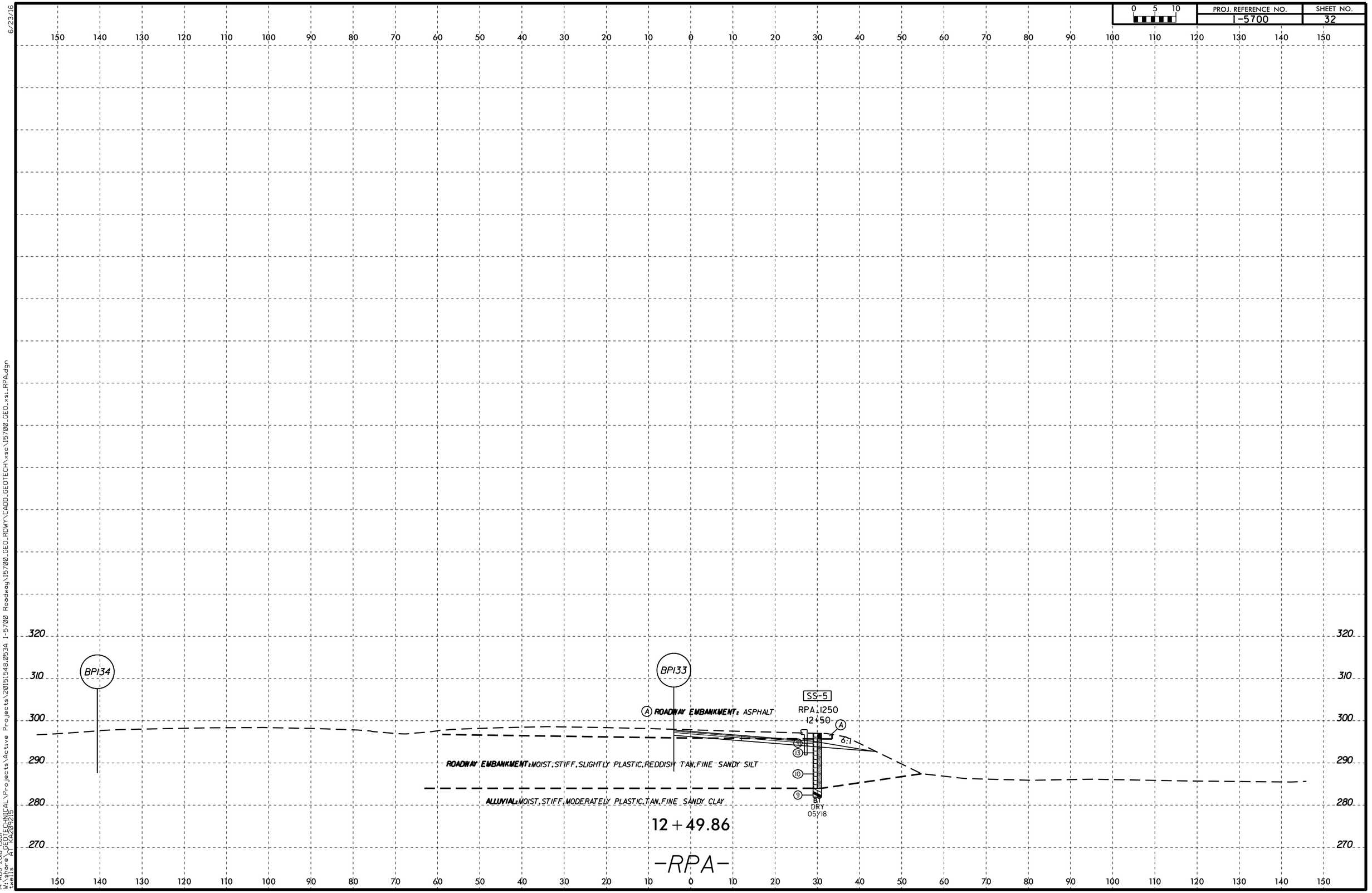
twells
AT KA209215



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

320 310 300 290 280 270

BP125

A ROADWAY EMBANKMENT: MOIST, STIFF TO VERY STIFF, SLIGHTLY PLASTIC. REDDISH TAN, FINE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

ST-6
RPA-1449
14+49

3.88:1

ALLUVIAL: MOIST TO WET, STIFF TO SOFT, SLIGHTLY TO NON PLASTIC. BROWNISH TAN TO GRAY, FINE SANDY SILT

WET, STIFF, NON PLASTIC, GRAY, FINE SAND

14+49.23

RT
DRY
05/18

-RPA-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	34

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

320
310
300
290
280

BPII7

SS-7
RPA_1641
16+41

ROADWAY EMBANKMENT: PAVEMENT

4.43:1
4.44:1
6.15:1
3:1

ROADWAY EMBANKMENT: MOIST, STIFF TO VERY STIFF, SLIGHTLY PLASTIC, REDDISH TAN, FINE SANDY SILT

WEATHERED ROCK: TRIASSIC SANDSTONE

9
33
100/0.6
100/0.6

BT
DRY
05718

16+57.99

-RPA-

320
310
300
290
280

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

6/23/16

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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	35

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

330 320 310 300 290

BPI09

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

4:1 4:1 6:1 6:1 4:1 3:1

WEATHERED ROCK: TRIASSIC SANDSTONE

18+50.00

330 320 310 300 290

BPI11

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

4:1 4:1 6:1 6:1 4:1 3:1

WEATHERED ROCK: TRIASSIC SANDSTONE

18+00.00

320 310 300 290 280 270

BPI13

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

4:1 4:1 6:1 6:1 5.25:1

WEATHERED ROCK: TRIASSIC SANDSTONE

17+45.00

-RPA-

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

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cwells
AT K4420215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	36

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

340 330 320 310 300

BP103

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

Ⓐ

WEATHERED ROCK: TRIASSIC SANDSTONE

4:1 6:1 4:1 3:1

20+00.00

BP105

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

Ⓐ

WEATHERED ROCK: TRIASSIC SANDSTONE

4:1 4:1 6:1 6:1 4:1 3:1

19+50.00

BP107

TRIASSIC RESIDUAL:
MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

WEATHERED ROCK: TRIASSIC SANDSTONE

4:1 4:1 6:1 6:1 4:1 3:1

19+00.00

290

-RPA-

14-AUG-2018 15:01
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swells AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	37

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

340
330
320
310
300
350
340
330
320
310
300

BP148

A **TRIASSIC RESIDUAL:** MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

A

4:1

4:1

WEATHERED ROCK: TRIASSIC SANDSTONE

21+00.00

BP147

RPA_2050
20+50

A **TRIASSIC RESIDUAL:** MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

B
A

100/0.6
100/0.3
100/0.3
100/0.2
100/0.3

4:1

WEATHERED ROCK: TRIASSIC SANDSTONE

BT
DRY
05/18

20+50.00

-RPA-

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

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twells AT K420715

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	38

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

350
340
330
320
310

BP149

A TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO ORANGE, FINE SANDY SILT

4:1

4:1

21+30.00

-RPA-

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

350
340
330
320
310

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twells
AT XA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	39

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

370
360
350
340
330
320
310
300

BP148

4:1

6:1

4.97:1

Ⓐ **TRIASSIC RESIDUAL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO TAN, FINE SANDY SILT

WEATHERED ROCK: TRIASSIC SANDSTONE

10+65.00

-RPASPUR-

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tsells AT K2420915

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	40

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

350 340 330 320 310 300

BP27

BP28

(A) **TRIASSIC RESIDUAL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO TAN, FINE SANDY SILT

6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

11+85.17

BP25

BP26

SS-8
RPASPUR_1139
11+39

(A) **TRIASSIC RESIDUAL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO TAN, FINE SANDY SILT

4:1

100/0.1

100/0.3

100/0.4

100/0.2

BT
DRY
05/18

6:1

6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

11+40.00

BP149

(A) **TRIASSIC RESIDUAL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO TAN, FINE SANDY SILT

4:1

6:1

6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

11+00.00

-RPASPUR-

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tsells AT K4209215

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

350 340 330 320 310 300

BP29

BP30

Ⓐ ROADWAY EMBANKMENT:
MOIST,STIFF,SLIGHTLY PLASTIC,RED TO TAN TO WHITE,FINE SANDY SILT

WEATHERED ROCK: TRIASSIC SANDSTONE

12+29.71

-RPASPUR-

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	42

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

340 330 320 310 300

BP64

SS-9
RPB_1191
11+91

3:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

7
100/0.7
100/0.4
50/0.1

WEATHERED ROCK: TRIASSIC SANDSTONE

BT
DRY
04/18

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

11+99.86

BP65

330 320 310 300 290

BP62

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

4.31:1 6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

11+49.97

BP63

340 330 320 310 300 290

BP60

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

11+00.00

-RPB-

BP61

330 320 310 300 290

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

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

330 320 310 300 290

BP70

Ⓐ **TRIASSIC RESIDUAL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

3:1 4:1 6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

13+50.24

BP68

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

3:1 4:1 6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

12+99.98

BP66

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

3:1 4:1 6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

12+49.85

-RPB-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	44

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

330 320 310 300 290 280

BP76

ROADWAY EMBANKMENT: ASPHALT

3:1 3.09:1 4:1 6:1

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO TAN, FINE SANDY SILT

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

14+99.69

BP74

RPB_I452
14+52

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO TAN, FINE SANDY SILT

10 3.3 100/0.8 100/0.6 100/0.4 50/0.0

3:1 4:1 6:1 4.19:1 4.03:1 4.04:1 4.03:1

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

BT
DRY
04/18

14+49.09

BP72

ROADWAY EMBANKMENT: ASPHALT

(A) TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

3:1 4:1 6:1

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

14+00.69

-RPB-

6/23/16

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PROJ. REFERENCE NO.	SHEET NO.
I-5700	45

0 5 10

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

350 340 330 320 310 300

SS-10
SS-11

RPB_1646
16+46

2 82 43 79 100/0.9 60/0.1
BT
DRY
04/18

Ⓐ **TRIASSIC RESIDUAL:** MOIST AND DRY, VERY STIFF TO HARD, SLIGHTLY TO MODERATELY PLASTIC BROWN TO TAN AND GRAY TO RED, FINE SANDY CLAY AND FINE SANDY SILT

3:1 3:05:1 Ⓐ 4:1 6:1

BP82

ROADWAY EMBANKMENT: ASPHALT

RPB_1652
16+52

60/0.1
BT
DRY
05/18

6.20:1

Y_5999_LT
16+44

15 100/0.3 60/0.1
BT
DRY
04/18

WEATHERED ROCK: PURPLE-RED-GRAY AND RED-BROWN, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

16+53.39

330 320 310 300

BP80

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, NON PLASTIC, TAN TO ORANGE AND RED AND GRAY TO PURPLE, FINE SANDY SILT

3:3.06:1 Ⓐ 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

6.20:1 4:1

WEATHERED ROCK: TRIASSIC SANDSTONE

16+01.79

330 320 310 300 290

RPB_1564
15+64

BP78

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, NON PLASTIC, TAN TO ORANGE AND RED AND GRAY TO PURPLE, FINE SANDY SILT

3:3.07:1 Ⓐ 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

WEATHERED ROCK: TRIASSIC SANDSTONE

60/0.0
BT
DRY
05/18

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

15+50.57

-RPB-

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

6/23/16

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swells
AT XA20915

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	46

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

350 340 330 320 310 300

BP88

Ⓐ **TRIASSIC RESIDUAL:** WET TO DRY, SOFT TO HARD, MODERATELY TO NON PLASTIC, BROWN TO TAN AND GRAY AND RED, FINE SANDY CLAY AND FINE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

3:1 3.05:1 4:1 6:1 6:1 4:1 4:1 4:1

WEATHERED ROCK: TRIASSIC SANDSTONE AND SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE AND SILTSTONE

17+93.00

SS-12
RPB_1761
17+61

BP86

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, SLIGHTLY PLASTIC, BROWN TO TAN AND GRAY TO ORANGE AND RED, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

3:1 3.05:1 4:1 6:1 6:1 4:1 4:1 4:1

60/0.0 BT DRY 05/18

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

17+43.00

BP84

Ⓐ **TRIASSIC RESIDUAL:** MOIST AND DRY, VERY STIFF TO HARD, SLIGHTLY TO MODERATELY PLASTIC, BROWN TO TAN AND GRAY TO RED, FINE SANDY CLAY AND FINE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

3:1 3.05:1 4:1 6:1 6.19:1 4.80:1

WEATHERED ROCK: PURPLE-RED-GRAY AND RED-BROWN, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

17+05.42

290

-RPB-

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

6/23/16

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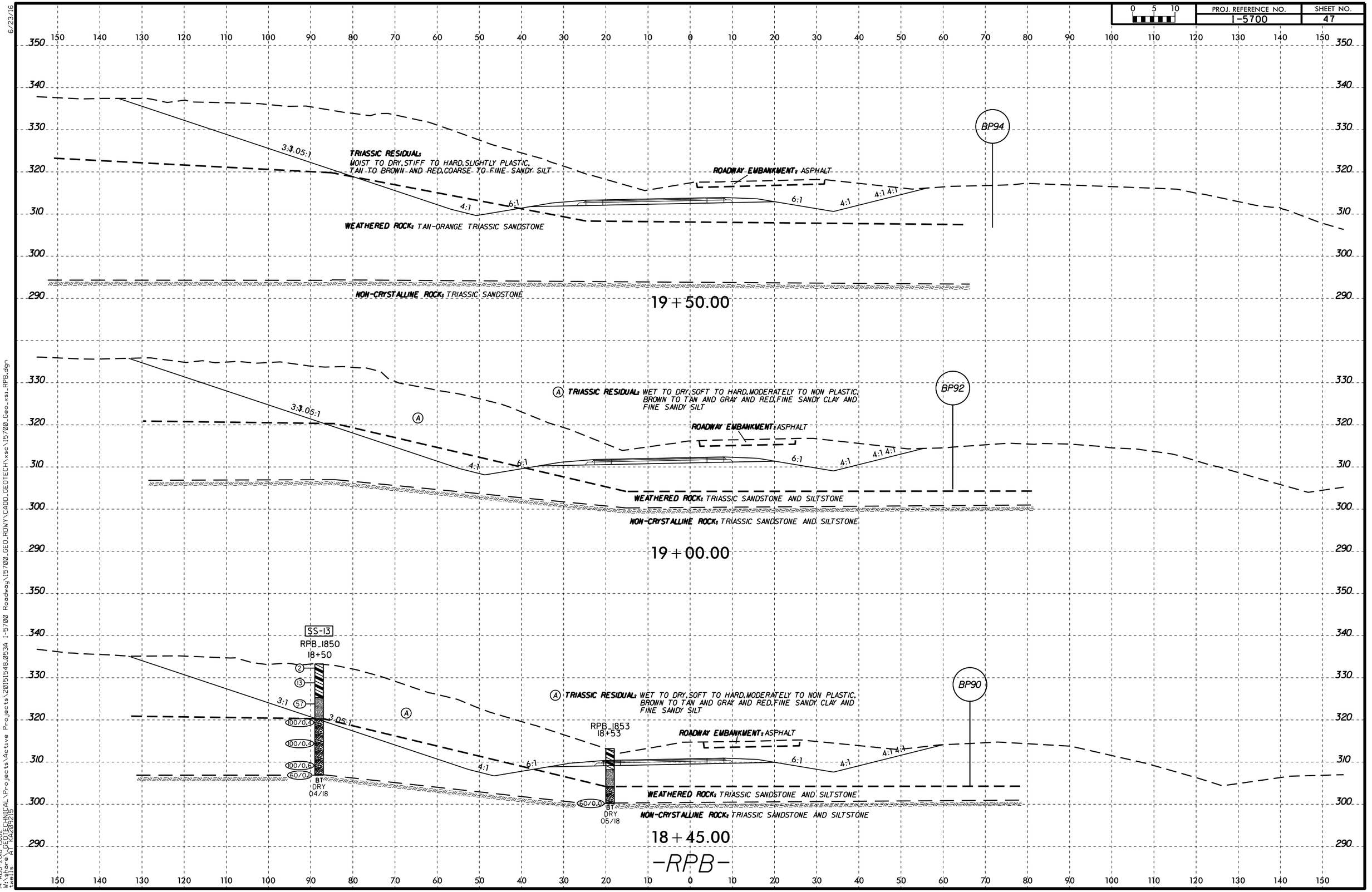
tsells AT K2209215



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	48

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

350 340 330 320 310 300

Ⓐ **TRIASSIC RESIDUAL:** DRY TO MOIST, STIFF TO HARD, SLIGHTLY PLASTIC, BROWN AND TAN TO RED, COARSE TO FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

BP97

3:1 3.06:1

WEATHERED ROCK: TAN-BROWN TO RED-GRAY TRIASSIC SANDSTONE AND CONGLOMERATE

4:1 6:1 6:1 4:1 4:1 4:1

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE AND CONGLOMERATE

21+00.00

Ⓐ **TRIASSIC RESIDUAL:** DRY TO MOIST, STIFF TO HARD, SLIGHTLY PLASTIC, BROWN AND TAN TO RED, COARSE TO FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

Ⓑ **WEATHERED ROCK:** TAN-BROWN TO RED-GRAY TRIASSIC SANDSTONE AND CONGLOMERATE

RPB_2049
20+49

11
37
100/0.2
60/0.1
BT
DRY
04/18

RPB_2048
20+48

60/0.1
BT
DRY
05/18

BP96

ROADWAY EMBANKMENT: ASPHALT

3:1 3.06:1

4:1 6:1 6:1 4:1 4:1 4:1

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE AND CONGLOMERATE

20+50.00

RPB_1984
19+84

TRIASSIC RESIDUAL:
MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC, TAN TO BROWN AND RED, COARSE TO FINE SANDY SILT

3:1 3.05:1

BP95

ROADWAY EMBANKMENT: ASPHALT

4:1 6:1 6:1 4:1 4:1 4:1

WEATHERED ROCK: TAN-ORANGE TRIASSIC SANDSTONE

60/0.0
BT
DRY
05/18

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

20+00.00

290 280

-RPB-

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

6/23/16

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I-5700_Geo_xs1_RPB.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	49

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

350
340
330
320
310
300

BP150

SS-14
RPB_2199
21+99

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, SLIGHTLY PLASTIC, RED TO BROWN TO TAN, COARSE TO FINE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

3.99:1

12"
5"
100/0.6
100/0.7
100/0.8
BT
DRY
04/18

WEATHERED ROCK: RED-BROWN TRIASSIC SANDSTONE

22+00.00

Ⓐ **TRIASSIC RESIDUAL:** DRY TO MOIST, STIFF TO HARD, SLIGHTLY PLASTIC, BROWN AND TAN TO RED, COARSE TO FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

3:1
4:1
6:1
4:1

BP98

WEATHERED ROCK: TAN-BROWN TO RED-GRAY TRIASSIC SANDSTONE AND CONGLOMERATE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE AND CONGLOMERATE

21+50.00

-RPB-

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

6/23/16

14-AUG-2018 15:02
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tsells AT KH209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	50

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

360 350 340 330 320 310

Ⓐ **TRIASSIC RESIDUAL:** MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC REDDISH TAN TO RED-BROWN, FINE SANDY SILT

SS-15
RPBSPUR_I245
I2+45
9
49
100/0.3
100/0.2
100/0.3
100/0.3
BT
DRY
04/18

2:1 4:1

BP23

WEATHERED ROCK: RED-GRAY TO DARK RED TRIASSIC SANDSTONE

12+25.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC REDDISH TAN TO RED-BROWN, FINE SANDY SILT

2:1 4:1

BP21

WEATHERED ROCK: RED-GRAY TO DARK RED TRIASSIC SANDSTONE

11+75.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC REDDISH TAN TO RED-BROWN, FINE SANDY SILT

2:1 4:1

BP151

WEATHERED ROCK: RED-GRAY TO DARK RED TRIASSIC SANDSTONE

11+05.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC REDDISH TAN TO RED-BROWN, FINE SANDY SILT

2:1

BP150

WEATHERED ROCK: RED-GRAY TO DARK RED TRIASSIC SANDSTONE

10+42.93

-RPBSPUR-

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

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

350 340 330 320 310 300

Ⓐ **TRIASSIC RESIDUAL:** MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC REDDISH TAN TO RED-BROWN, FINE SANDY SILT

BP27

4:1

Ⓐ

WEATHERED ROCK: RED-GRAY TO DARK RED TRIASSIC SANDSTONE

BP28

13 + 16.41

Ⓐ **TRIASSIC RESIDUAL:** MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC REDDISH TAN TO RED-BROWN, FINE SANDY SILT

BP25

3:1

4:1

Ⓐ

WEATHERED ROCK: RED-GRAY TO DARK RED TRIASSIC SANDSTONE

BP26

12 + 72.00

-RPBSPUR-

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

340 330 320 310 300 290

BP58

BP59

A ROADWAY EMBANKMENT: MOIST, STIFF, NON PLASTIC TO MODERATELY PLASTIC, DARK BROWN TO TAN AND REDDISH BROWN, COARSE TO FINE SANDY SILT AND FINE SANDY CLAY

ROADWAY EMBANKMENT & PAVEMENT

SS-16
RPC_1193
20+50

6.7

12 10 8 15

A

BT
DRY
05/18

ALLUVIAL: WET, VERY STIFF, MODERATELY PLASTIC, GRAY TO TAN, COARSE TO FINE SANDY CLAY

11+99.81
-RPC-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	53

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

330
320
310
300
290
280

BP67

ROADWAY EMBANKMENT: ASPHALT

6:1

RPC_I390
I3+90

24
5
5
5
15

ROADWAY EMBANKMENT: MOIST, VERY STIFF TO MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH TAN TO BROWN, FINE SANDY SILT

BT
DRY
05/18

ALLUVIAL: MOIST, MEDIUM DENSE, SLIGHLY PLASTIC, GRAY TO TAN, SILTY COARSE TO FINE SAND

14+01.99

-RPC-

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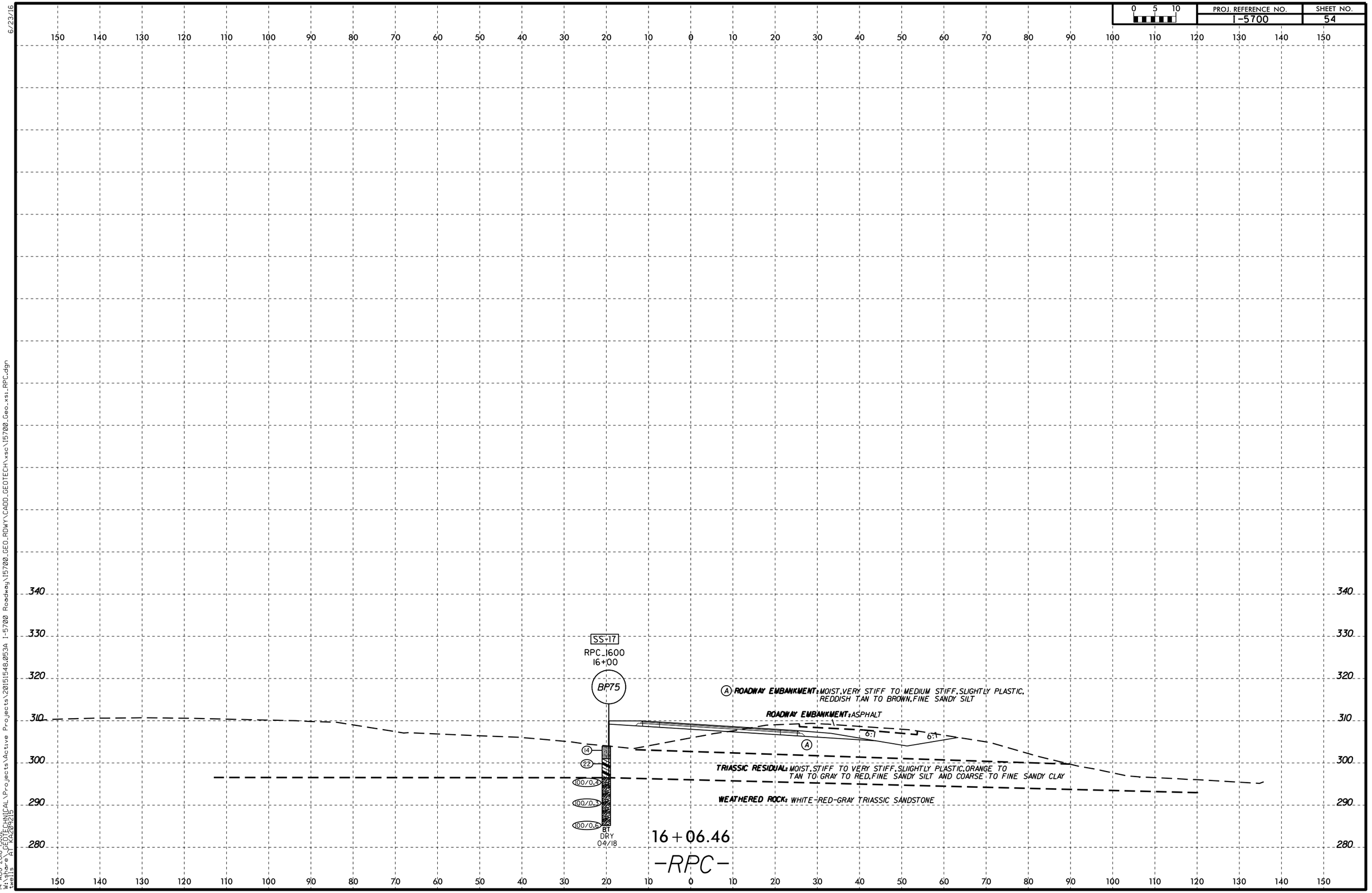
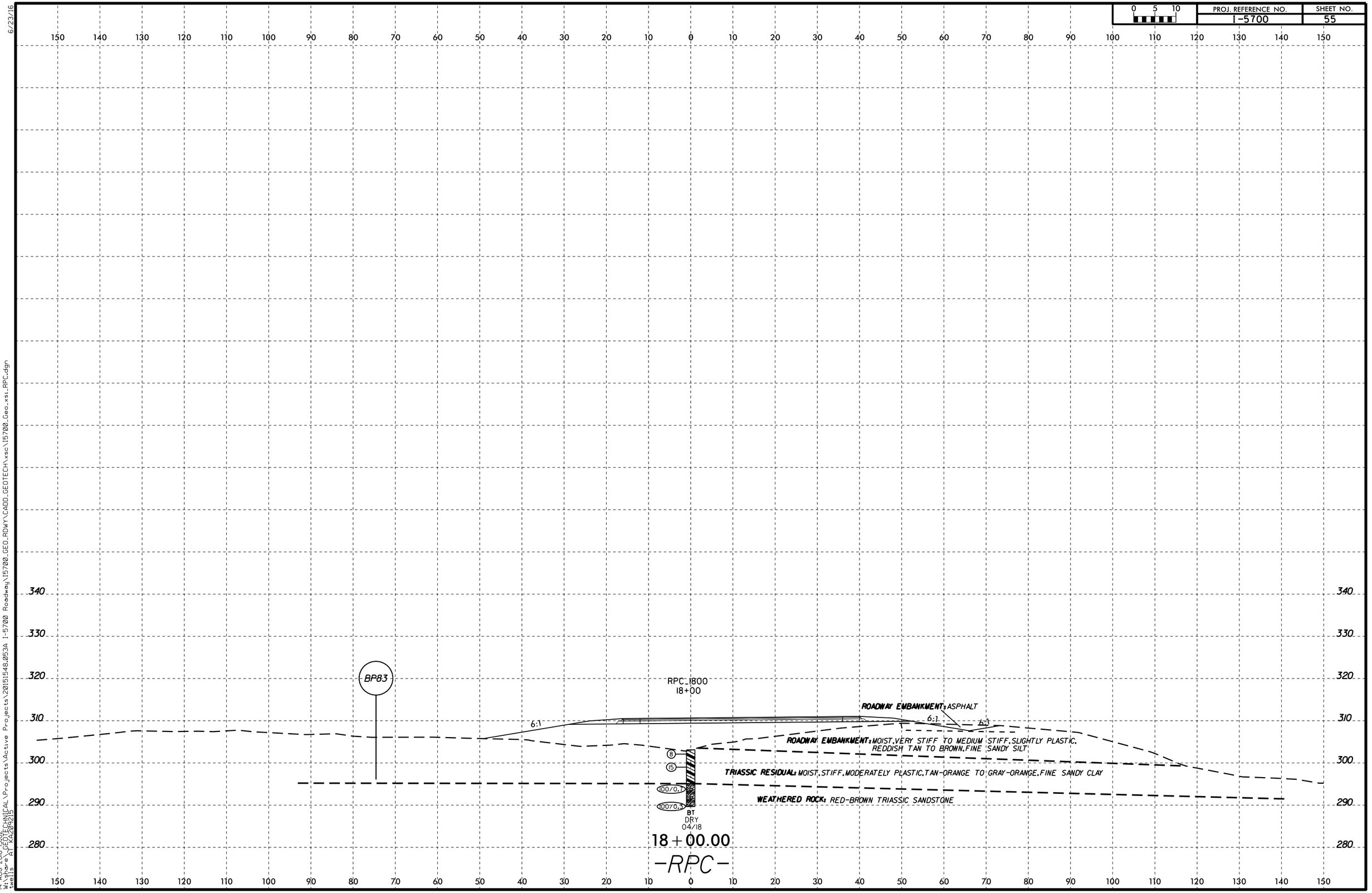
twells AT XA20915





6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	56

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

340
330
320
310
300
290
280

BP91

RPC 1999
19+99

4:1

6:1

6
7
30
100/0.2
60/0.1

BT
DRY
04/18

ROADWAY EMBANKMENT: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, RED, FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF TO VERY STIFF, MODERATELY PLASTIC, ORANGE TO GRAY, COARSE TO FINE SANDY CLAY

WEATHERED ROCK: GRAY-WHITE-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

20+00.00

-RPC-

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twells
AT XA20.09.15

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	57

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

340
330
320
310
300
290
280

RPC 2199
21+99

3:1

3:1

BP7

20
73
42
17
89

04/18

BT

TRIASSIC RESIDUAL: MOIST TO DRY, VERY STIFF TO HARD, SLIGHTLY PLASTIC TO NON PLASTIC RED AND ORANGE TO GRAY, FINE SANDY CLAY AND FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

MOIST, MEDIUM DENSE, NON PLASTIC, TAN, FINE SAND

MOIST, HARD, SLIGHT PLASTIC, RED, FINE SANDY SILT

22+00.00
-RPC-

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

340
330
320
310
300
290
280

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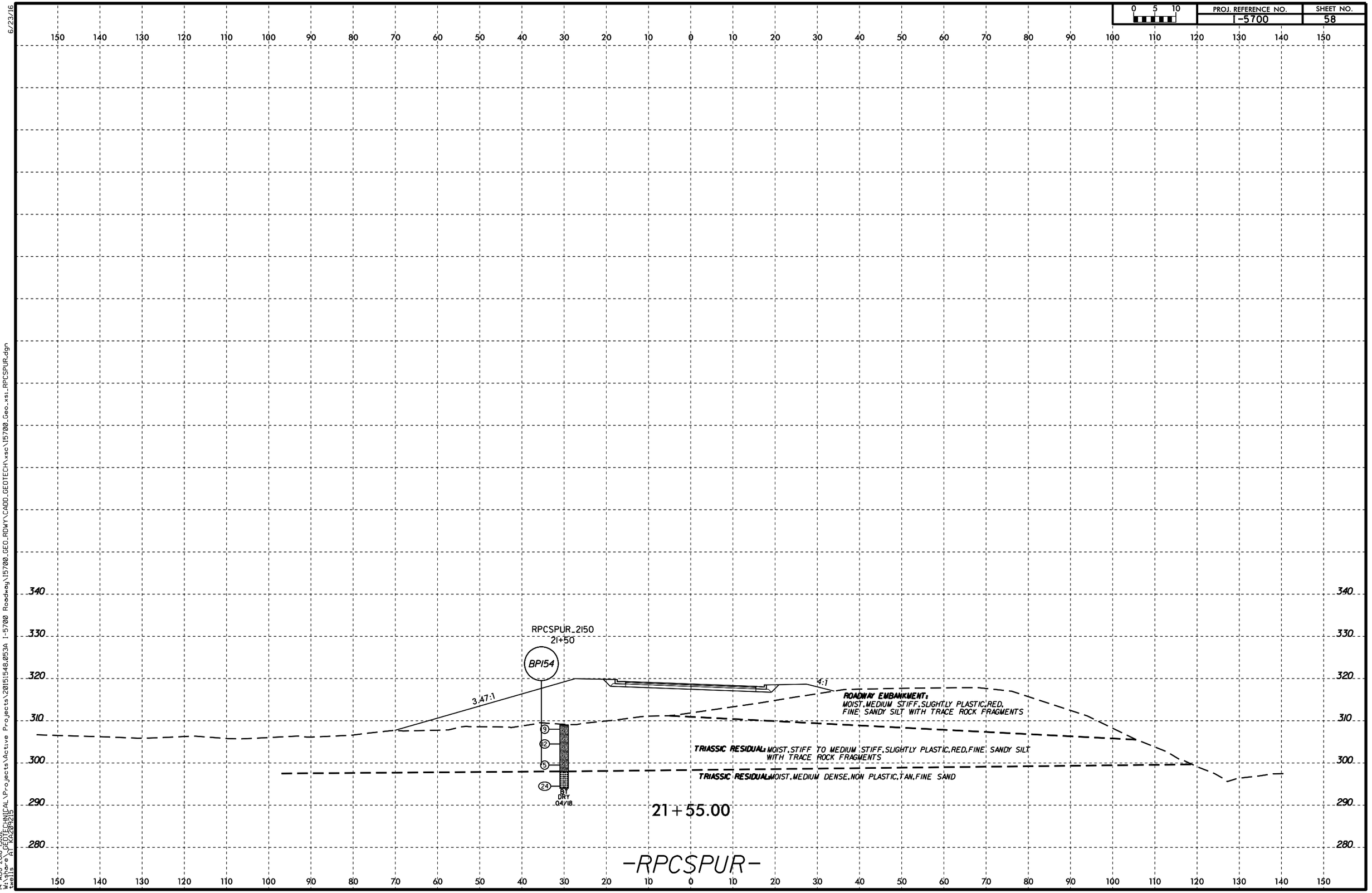
twells
AT XA20915

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	58



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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	59

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

320
310
300
290
280
270
260

BPI32

BPI34

RPD_I464
I4+64

3.15:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: DRY TO MOIST,VERY STIFF AND STIFF,NON TO MODERATELY PLASTIC,TAN TO RED AND BROWN, COARSE TO FINE SANDY SILT AND FINE SANDY CLAY

26
7
27
05/18
3
13
100/0.1
BT

ALLUVIAL: WET,SOFT TO STIFF,HIGHLY PLASTIC,TAN AND LIGHT BROWN,SILTY CLAY

WEATHERED ROCK: BROWN-TAN,TRIASSIC SILTSTONE

14+60.45

-RPD-

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

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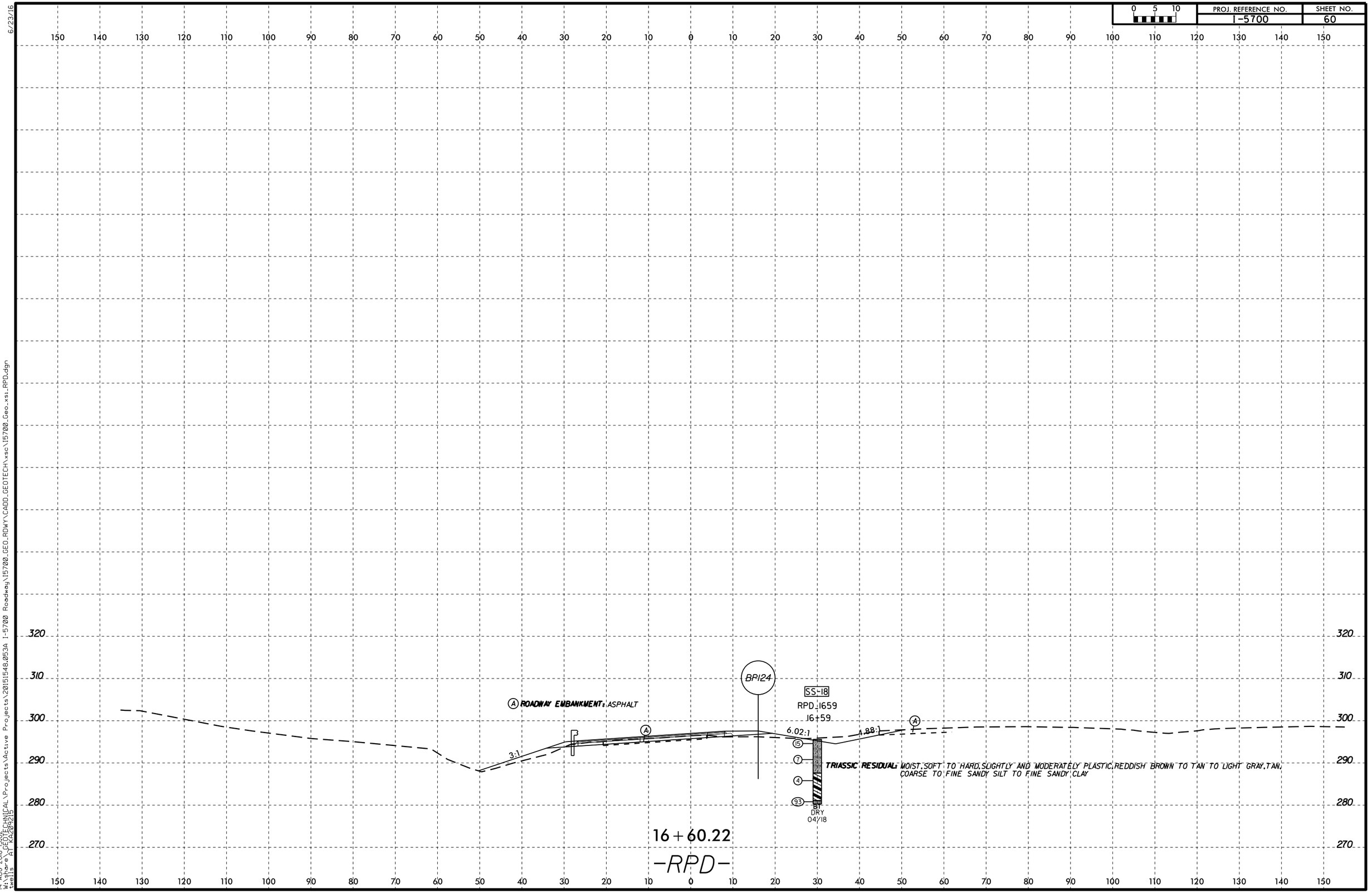
twells
AT KA209215



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swells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	61

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

320
310
300
290
280
270

A TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

6:1

6:1

6:1

RPD_I850
18+50

BPII6

I5

A

100/0.8

60/0.1

WEATHERED ROCK: DARK RED TRIASSIC MUDSTONE

BT
DRY
04/18

NON-CRYSTALLINE ROCK: TRIASSIC MUDSTONE

18+55.00

-RPD-

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twells AT KA209215

6/23/16

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

330 320 310 300 290

Ⓐ **ARTIFICIAL FILL:** DRY, HARD TO VERY STIFF, NON PLASTIC, REDDISH BROWN, FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

SS-19
RPD_2050
20+50

BPI08

40
17
100/0.9
100/0.4
50/0.0
BT
DRY
04/18

4:1
6:1
Ⓐ
6:1
4:1

ROADWAY EMBANKMENT: ASPHALT

WEATHERED ROCK: RED-GRAY TO RED-PURPLE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

20+50.00

-RPD-

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

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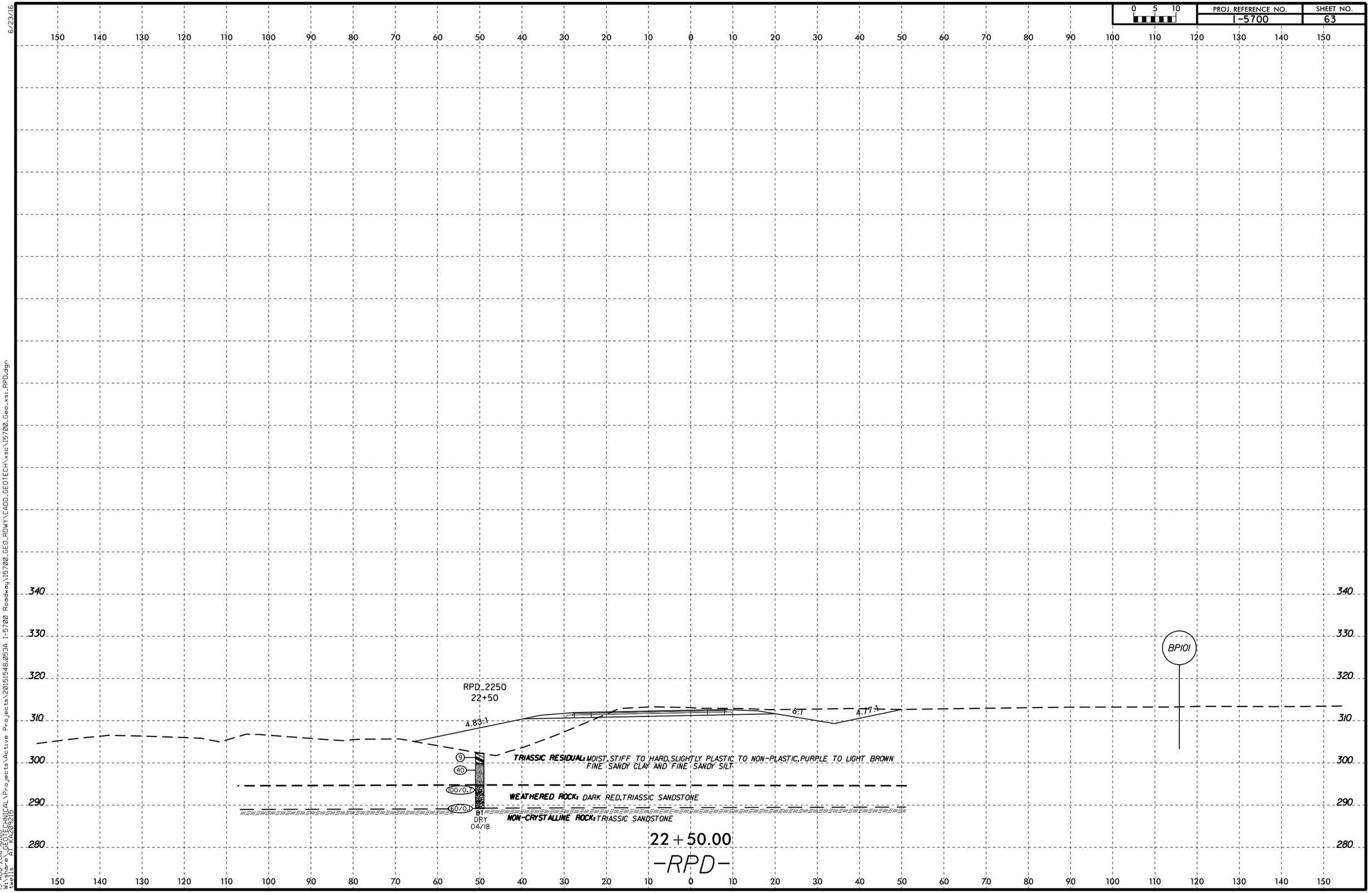
swells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	63



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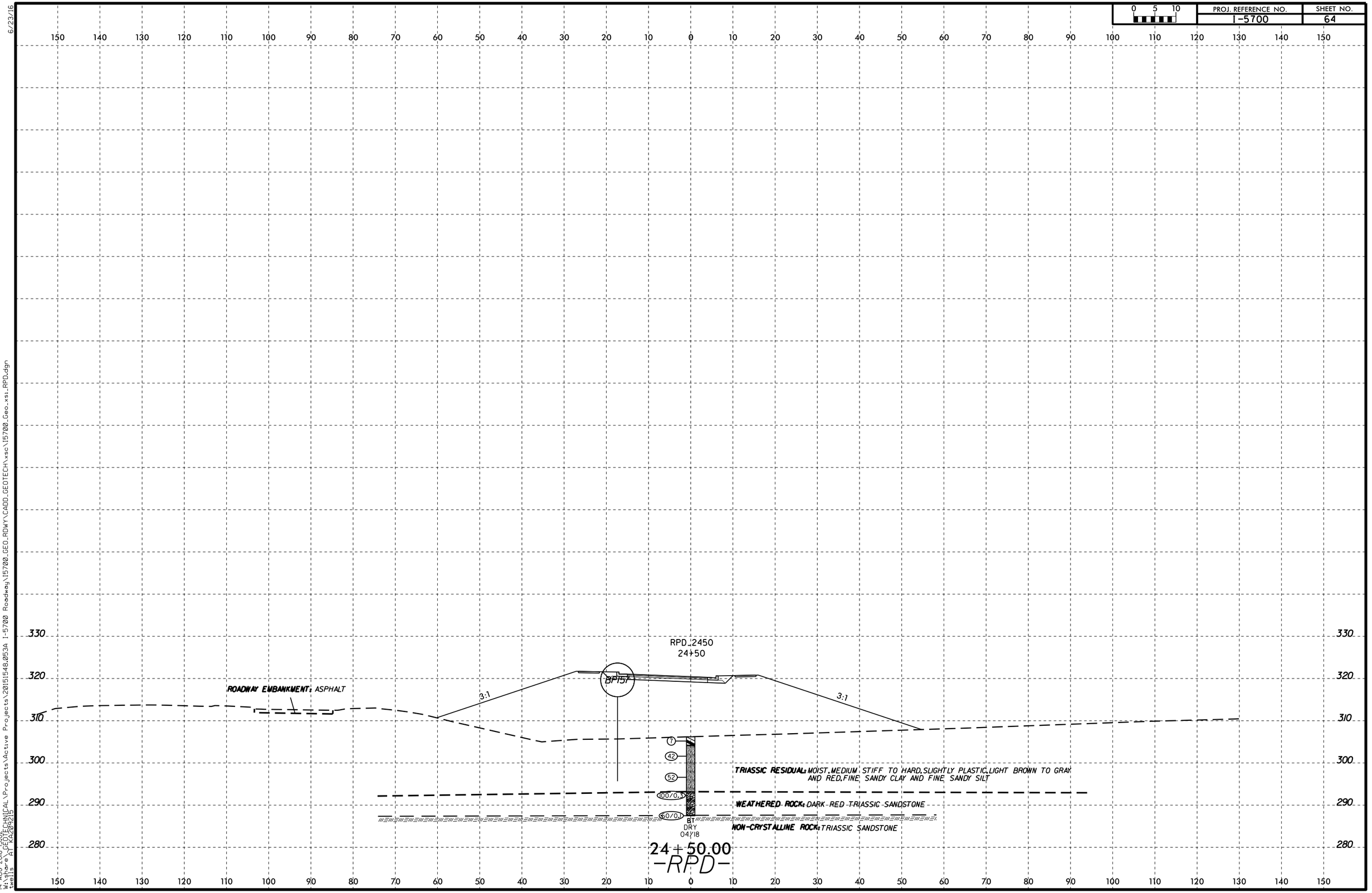
twells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	64



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twells
AT XA20915

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	65

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

340
330
320
310
300
290
280

BP259

3:1

3:1

RPD_2560
25+60

12
48
100/0.3
100/0.2
60/0.1

BT
DRY
04/18

TRIASSIC RESIDUAL: MOIST, STIFF TO HARD, SLIGHTLY PLASTIC, LIGHT BROWN TO GRAY AND RED, FINE SANDY CLAY AND FINE SANDY SILT

WEATHERED ROCK: RED-GRAY TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

25+60.00
-RPD-

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swells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	66

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

340
330
320
310
300
290

Ⓐ **ROADWAY EMBANKMENT:** ASPHALT

Ⓑ **ROADWAY EMBANKMENT:** DRY, STIFF, SLIGHTLY PLASTIC, TAN, FINE SANDY SILT WITH TRACE GRAVEL

BP8

SS-20
RPDSPUR_1303
13+03

3:1

4:1

Ⓐ Ⓑ

6
5
9
4

BT

DRY
04/18

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF AND STIFF, SLIGHTLY PLASTIC, REDDISH BROWN TO TAN AND ORANGE, FINE SANDY CLAY TO FINE SANDY SILT

13+00.00

-RPDSPUR-

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

6/23/16

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swells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	67

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

340
330
320
310
300
290

SS-2
Y 3679
36+79

15
46
100/0.8
60/0.1
BT
DRY
05/18

3:1 3.0:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

TRIASSIC RESIDUAL: MOIST TO DRY, STIFF TO HARD, SLIGHTLY PLASTIC, GRAY TO TAN TO RED, FINE SANDY SILT

WEATHERED ROCK: PURPLE TO BROWN, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

37+00.00

-Y-

340
330
320
310
300
290

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

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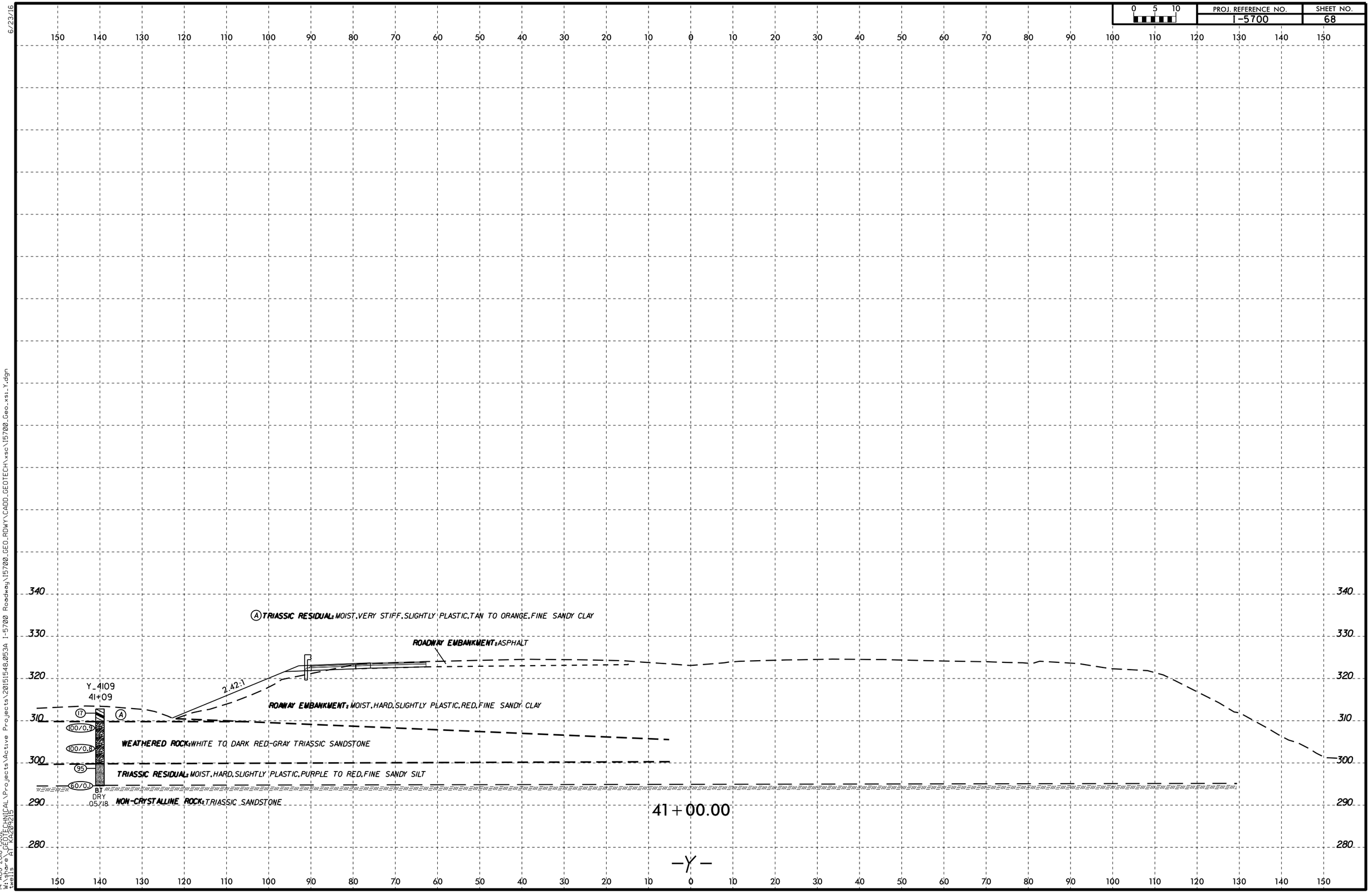
swells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	68



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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	69

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

340
330
320
310
300
290
280

Ⓐ **ARTIFICIAL FILL:** MOIST, VERY STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT WITH TRACE ROCK FRAGMENTS

ROADWAY EMBANKMENT: ASPHALT

2:1

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

Y-4293
42+93
Ⓐ
16
3
100/0.2
100/0.4
60/0.1
BT
DRY
05/18

ALLUVIAL: MOIST, SOFT, MODERATELY PLASTIC, TAN TO GRAY, FINE TO COARSE SANDY CLAY

WEATHERED ROCK: TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

43+00.00

-Y-

14-AUG-2018 15:03
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swells
AT XA209215

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

330 320 310 300 290 340 330

TRIASSIC RESIDUAL: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:3.25:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

WEATHERED ROCK: RED TO WHITE-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

48+00.00

330 320 310 300 290 340 330

TRIASSIC RESIDUAL: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:3.25:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

WEATHERED ROCK: RED TO WHITE-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

47+50.00

330 320 310 300 290 340 330

(A) **ARTIFICIAL FILL:** DRY, LOOSE, NON PLASTIC, LIGHT BROWN TO BLACK, COARSE SAND WITH TRACE ASPHALT FRAGMENTS AND GRAVEL

SS-22
Y_4703
47+03

(A) (B) 20 100/0.2 100/0.5 BT
DRY
04/18

6:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, GRAY TO RED, SANDY CLAY

WEATHERED ROCK: DARK RED TRIASSIC SANDSTONE

47+00.00

-Y-

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

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

340 330 320 310 300 290

TRIASSIC RESIDUAL: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:1 2.0:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

2:1

WEATHERED ROCK: RED TO WHITE-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

49+50.00

SS-23
Y_4902
49+02

TRIASSIC RESIDUAL: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:1 3.17:1 4:1 6:1

(3) (100/0.1) (100/0.3) (60/0.1)

BT
DRY
04/18

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

2:1

WEATHERED ROCK: RED TO WHITE-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

49+00.00

TRIASSIC RESIDUAL: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:1 2.0:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

2:1

WEATHERED ROCK: RED TO WHITE-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

48+50.00

-Y-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	72

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

340 330 320 310 300 290

SS-24
Y-5097
50+97

TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:1 2:1 6:1

24
100/0.9
60/0.0
DRY
04/18

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

2:1

WEATHERED ROCK: WHITE GRAY TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

51+00.00

TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:1 2:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

2:1

WEATHERED ROCK: WHITE GRAY TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

50+50.00

TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

3:1 2:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

2:1

WEATHERED ROCK: WHITE GRAY TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

50+00.00

-Y-

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

340 330 320 310 300 290

6/23/16

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wells AT KAZ0215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	73

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

330
320
310
300
290
280

TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY.

3:1 2.6:1 4:1 6:1

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: MOIST, HARD, SLIGHTLY PLASTIC, RED, FINE SANDY CLAY

WEATHERED ROCK: WHITE GRAY TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

51+50.00

-Y-

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

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twells AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	74

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

330
320
310
300
290

BP72

A TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, RED TO GRAY, FINE SANDY SILT WITH TRACE OF ORGANIC MATTER

ROADWAY EMBANKMENT: ASPHALT

6:1

3:1

BP73

A

WEATHERED ROCK: LIGHT GRAY-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

57+50.00

-Y-

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twells
AT XA20915

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

350 340 330 320 310 300 290

BP86

(A) **TRIASSIC RESIDUAL:** MOIST,VERY STIFF,SLIGHTLY PLASTIC,RED TO GRAY,FINE SANDY SILT WITH TRACE OF ORGANIC MATTER

ROADWAY EMBANKMENT: ASPHALT

3:1 4:1 6:1 6:1 3:1

WEATHERED ROCK: LIGHT GRAY-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

61+00.00

BP84

ROADWAY EMBANKMENT: ASPHALT

(A) **TRIASSIC RESIDUAL:** MOIST,VERY STIFF,SLIGHTLY PLASTIC,RED TO GRAY,FINE SANDY SILT WITH TRACE OF ORGANIC MATTER

ROADWAY EMBANKMENT: ASPHALT

3:1 4:1 6:1 6:1 3:1

WEATHERED ROCK: LIGHT GRAY-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

60+50.00

BP82

SS-25
Y_5999_LT
59+99

18
100/0.3
60/0.1
BT
DRY
04/18

(A) **TRIASSIC RESIDUAL:** MOIST,VERY STIFF,SLIGHTLY PLASTIC,RED TO GRAY, FINE SANDY SILT WITH TRACE OF ORGANIC MATTER

ROADWAY EMBANKMENT: ASPHALT

4:1 6:1 6:1 3:1

WEATHERED ROCK: LIGHT GRAY-RED TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

60+00.00

-Y-

6/23/16

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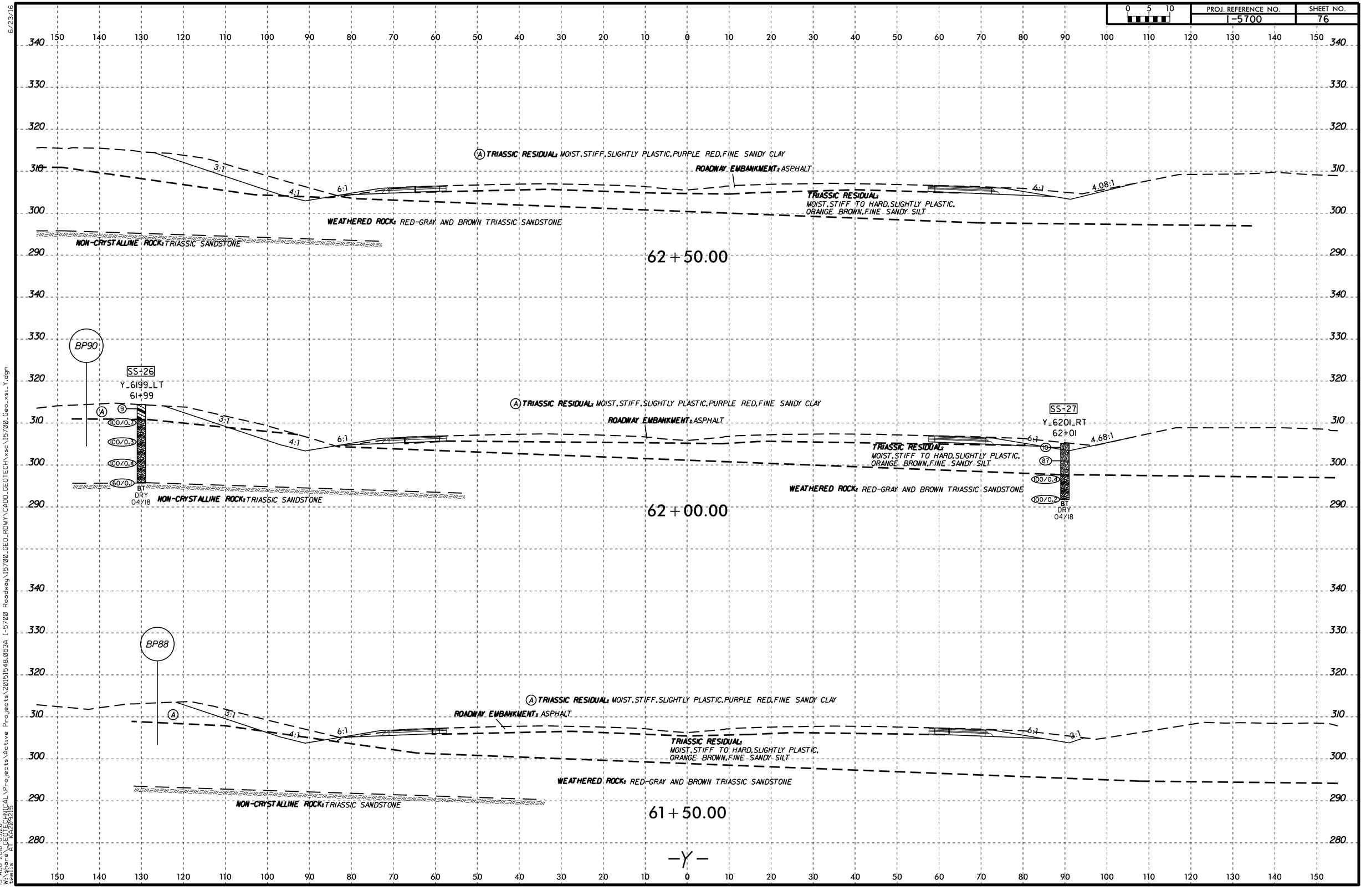
swells AT KA209215



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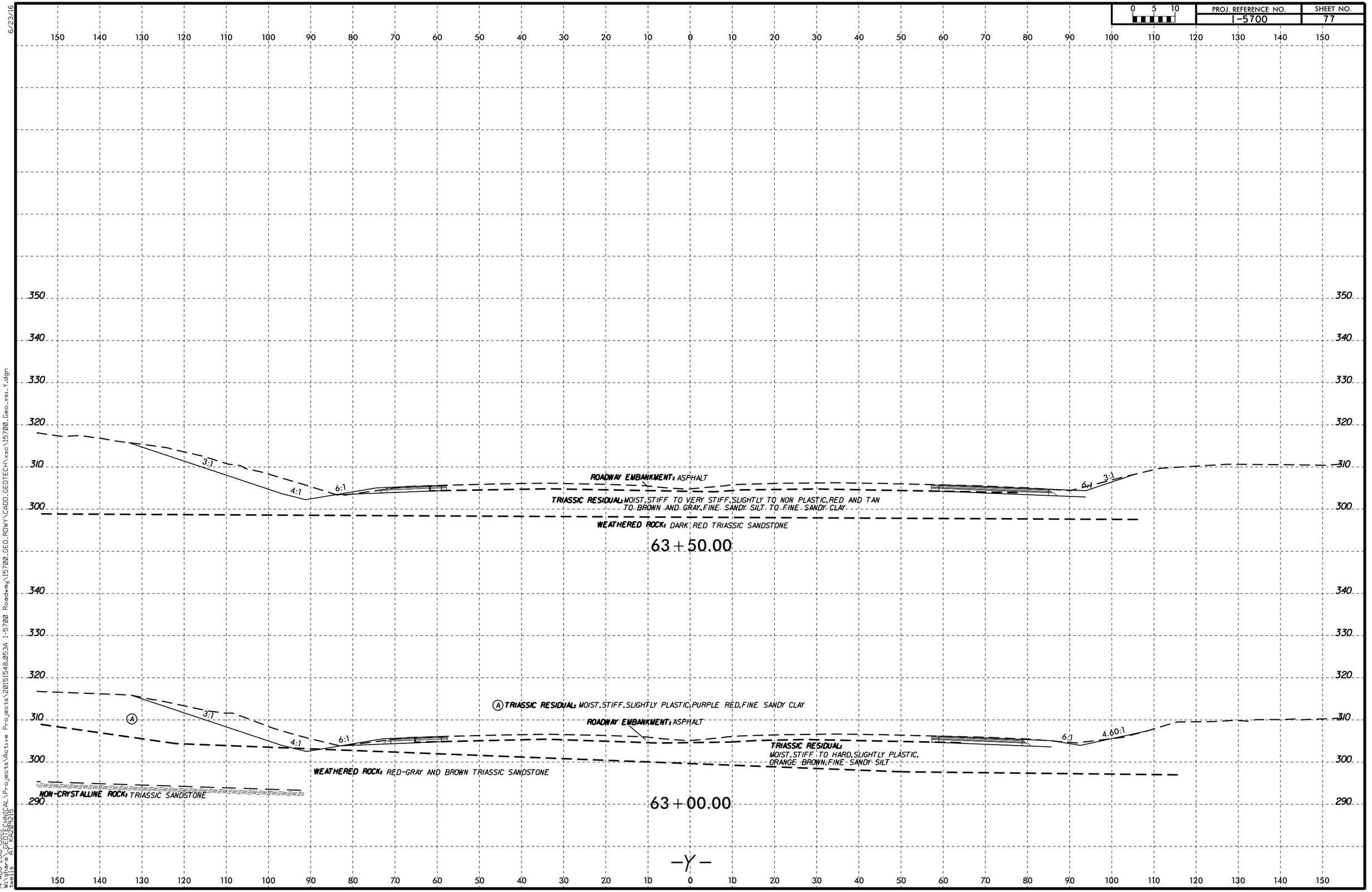

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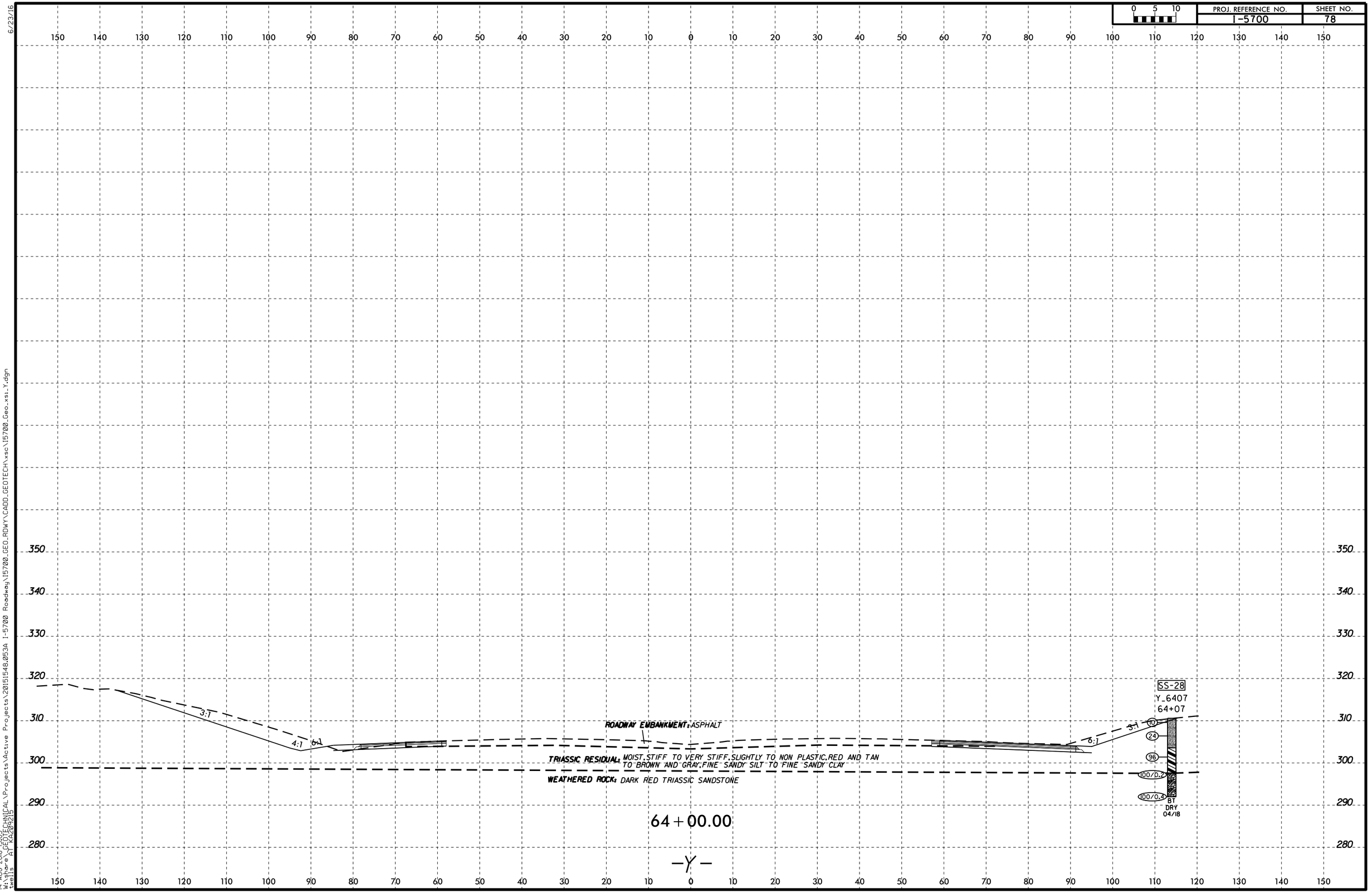
twells
AT KA2042215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	78



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twells
AT KA209215

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

330 320 310 300 290 280

SS-29
Y_7113_LT
71+13
86
100/0.4
60/0.1
BT
DRY
05/18

Y_7099_RT
70+99
100/0.7
60/0.1
04/18
BT

BP110

Ⓐ **TRIASSIC RESIDUAL:** MOIST, HARD, REDDISH BROWN, FINE SANDY SILT
Ⓑ **TRIASSIC RESIDUAL:** DRY, MEDIUM DENSE, RED, SILTY COARSE TO FINE SAND
Ⓒ **WEATHERED ROCK:** GRAY-RED TO WHITE-GRAY-PALE OLIVE TRIASSIC SANDSTONE
ROADWAY EMBANKMENT: ASPHALT
NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 3:1 3:1 4:1 6:1 6:1 6:1

71+00.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST, HARD, REDDISH BROWN, FINE SANDY SILT
Ⓑ **TRIASSIC RESIDUAL:** DRY, MEDIUM DENSE, RED, SILTY COARSE TO FINE SAND
Ⓒ **WEATHERED ROCK:** GRAY-RED TO WHITE-GRAY-PALE OLIVE TRIASSIC SANDSTONE
ROADWAY EMBANKMENT: ASPHALT
NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 3:1 5:1 4:1 6:1 6:1 6:1

70+50.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST, HARD, REDDISH BROWN, FINE SANDY SILT
Ⓑ **TRIASSIC RESIDUAL:** DRY, MEDIUM DENSE, RED, SILTY COARSE TO FINE SAND
Ⓒ **WEATHERED ROCK:** GRAY-RED TO WHITE-GRAY-PALE OLIVE TRIASSIC SANDSTONE
ROADWAY EMBANKMENT: ASPHALT
NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 3:1 3:1 4:1 6:1 6:1 6:1

70+00.00

-Y-

6/23/16

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	80

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

330 320 310 300 290 280

BPII5

(A) **TRIASSIC RESIDUAL:** MOIST, HARD, REDDISH BROWN, FINE SANDY SILT
(B) **TRIASSIC RESIDUAL:** DRY, MEDIUM DENSE, RED, SILTY COARSE TO FINE SAND
(C) **WEATHERED ROCK:** GRAY-RED TO WHITE-GRAY-PALE OLIVE TRIASSIC SANDSTONE

ROADWAY EMBANKMENT: ASPHALT

3:1 4:1 6:1 6:1 5.21:1

BPII6

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

72+50.00

BPII3

(A) **TRIASSIC RESIDUAL:** MOIST, HARD, REDDISH BROWN, FINE SANDY SILT
(B) **TRIASSIC RESIDUAL:** DRY, MEDIUM DENSE, RED, SILTY COARSE TO FINE SAND
(C) **WEATHERED ROCK:** GRAY-RED TO WHITE-GRAY-PALE OLIVE TRIASSIC SANDSTONE

ROADWAY EMBANKMENT: ASPHALT

3:1 2.3:1 4:1 6:1 6:1 4.88:1

BPII4

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

72+00.00

(A) **TRIASSIC RESIDUAL:** MOIST, HARD, REDDISH BROWN, FINE SANDY SILT
(B) **TRIASSIC RESIDUAL:** DRY, MEDIUM DENSE, RED, SILTY COARSE TO FINE SAND
(C) **WEATHERED ROCK:** GRAY-RED TO WHITE-GRAY-PALE OLIVE TRIASSIC SANDSTONE

ROADWAY EMBANKMENT: ASPHALT

3:1 2.21:1 4:1 6:1 6:1 4.60:1

BPII2

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

71+50.00

-Y-

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	81

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

320 310 300 290 280 270

BP119

SS-30
Y_7350
73+50

BP120

(A) ROADWAY EMBANKMENT: ASPHALT
(B) ROADWAY EMBANKMENT: MOIST, HARD, REDDISH BROWN, FINE SANDY SILT

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO REDDISH BROWN, FINE TO COARSE SANDY SILT

WEATHERED ROCK: LIGHT BROWN TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

9 12 100/0.5 60/0.1

BT
DRY
05/18

6:1 4:1 6:1 6:1 6:1

73+50.00

BP117

BP118

(A) ROADWAY EMBANKMENT: ASPHALT
(B) ROADWAY EMBANKMENT: MOIST, HARD, REDDISH BROWN, FINE SANDY SILT

TRIASSIC RESIDUAL: MOIST, STIFF, SLIGHTLY PLASTIC, LIGHT BROWN TO REDDISH BROWN, FINE TO COARSE SANDY SILT

WEATHERED ROCK: LIGHT BROWN TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 2:1 3:1 4:1 6:1 6:1 6:1

73+00.00

-Y-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	82

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

320
310
300
290
280
270
260

Ⓐ ROADWAY EMBANKMENT: ASPHALT

Y_8489
84+89

ROADWAY EMBANKMENT: MOIST, MEDIUM STIFF, SLIGHTLY TO HIGHLY PLASTIC, REDDISH BROWN, BROWN TO GRAY, FINE SANDY SILT TO FINE SANDY CLAY AND FINE SANDY SILTY CLAY

7
6
6
6
8
16
100/0.8
60/0.0

2:1

ALLUVIAL: MOIST, STIFF, HIGHLY PLASTIC, BROWN TO GRAY, FINE SANDY SILTY CLAY

MOIST, VERY STIFF, SLIGHTLY PLASTIC, GRAY TO TAN TO BROWN, FINE SANDY SILT

WEATHERED ROCK: BROWN, RED AND TAN TRIASSIC SILTSTONE

BT
DRY
05/18

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

85+00.00

-Y-

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	83

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

320
310
300
290
280
270
260

A ROADWAY EMBANKMENT: ASPHALT

Y_8663
86+63

9
11
9
4
6
10
26
100/0.1
50/0.0

2:1

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC. TAN TO REDDISH BROWN, FINE TO COARSE SANDY SILT AND FINE TO COARSE SANDY CLAY

ALLUVIAL: MOIST, STIFF, TAN TO BROWN, SILTY CLAY

MOIST, MEDIUM DENSE, TAN TO GRAY, COARSE SAND WITH TRACE GRAVEL

WEATHERED ROCK: TRIASSIC SILTSTONE

BT
DRY
- 05/18

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

86+50.00

-Y-

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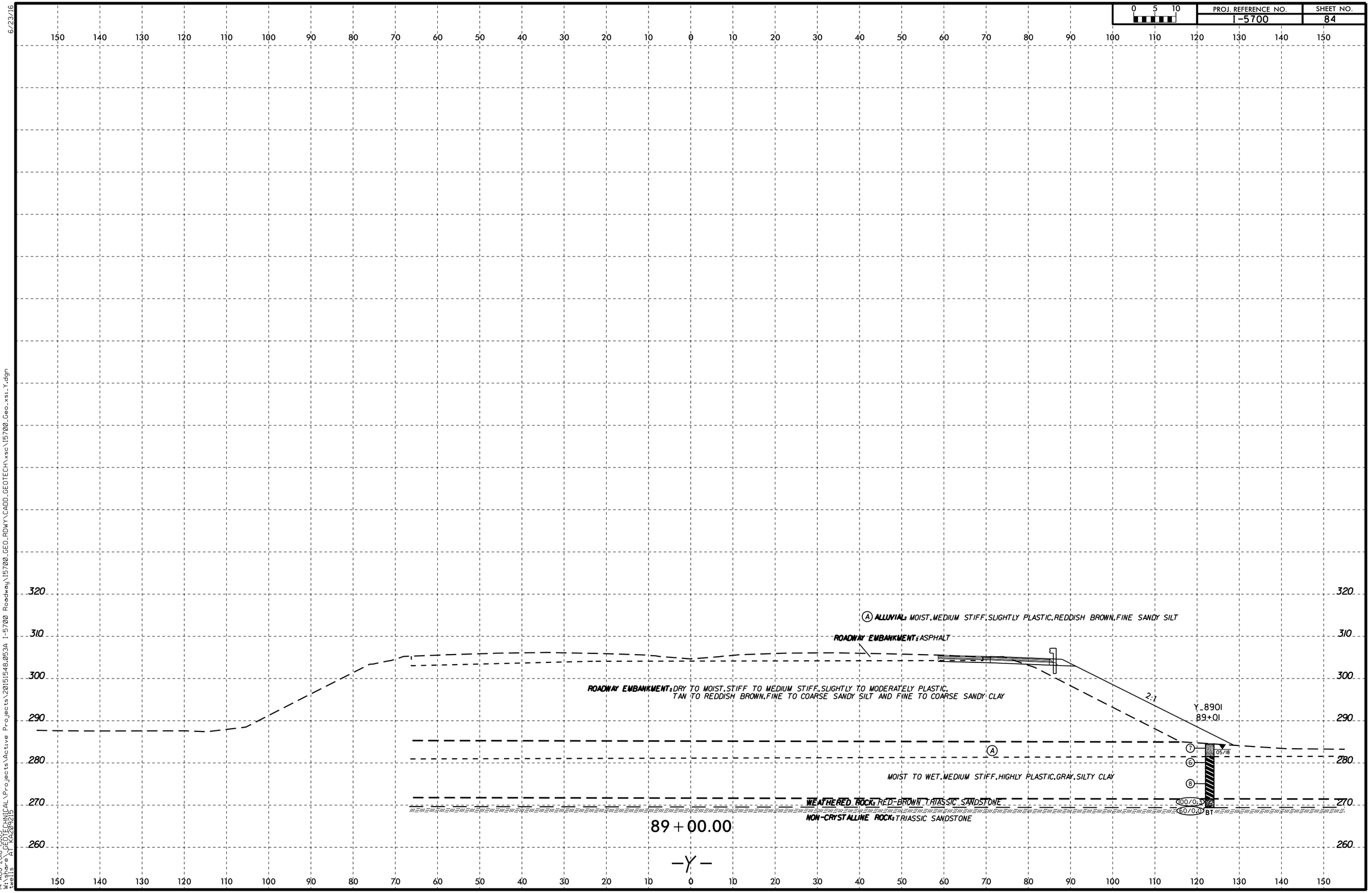
swells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	84



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swells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	85

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

320
310
300
290
280
270
260

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC, TAN TO REDDISH BROWN, FINE TO COARSE SANDY SILT AND FINE TO COARSE SANDY CLAY

2:1

Y_9100
91+00

ALLUVIAL: MOIST, STIFF TO SOFT, MODERATELY TO SLIGHTLY PLASTIC, REDDISH BROWN TO GRAY, FINE SANDY CLAY TO FINE SANDY SILT

10
3
100/0.3
100/0.2
50/0.0
05/18
BT

WEATHERED ROCK: RED BROWN TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

91+00.00

-Y-

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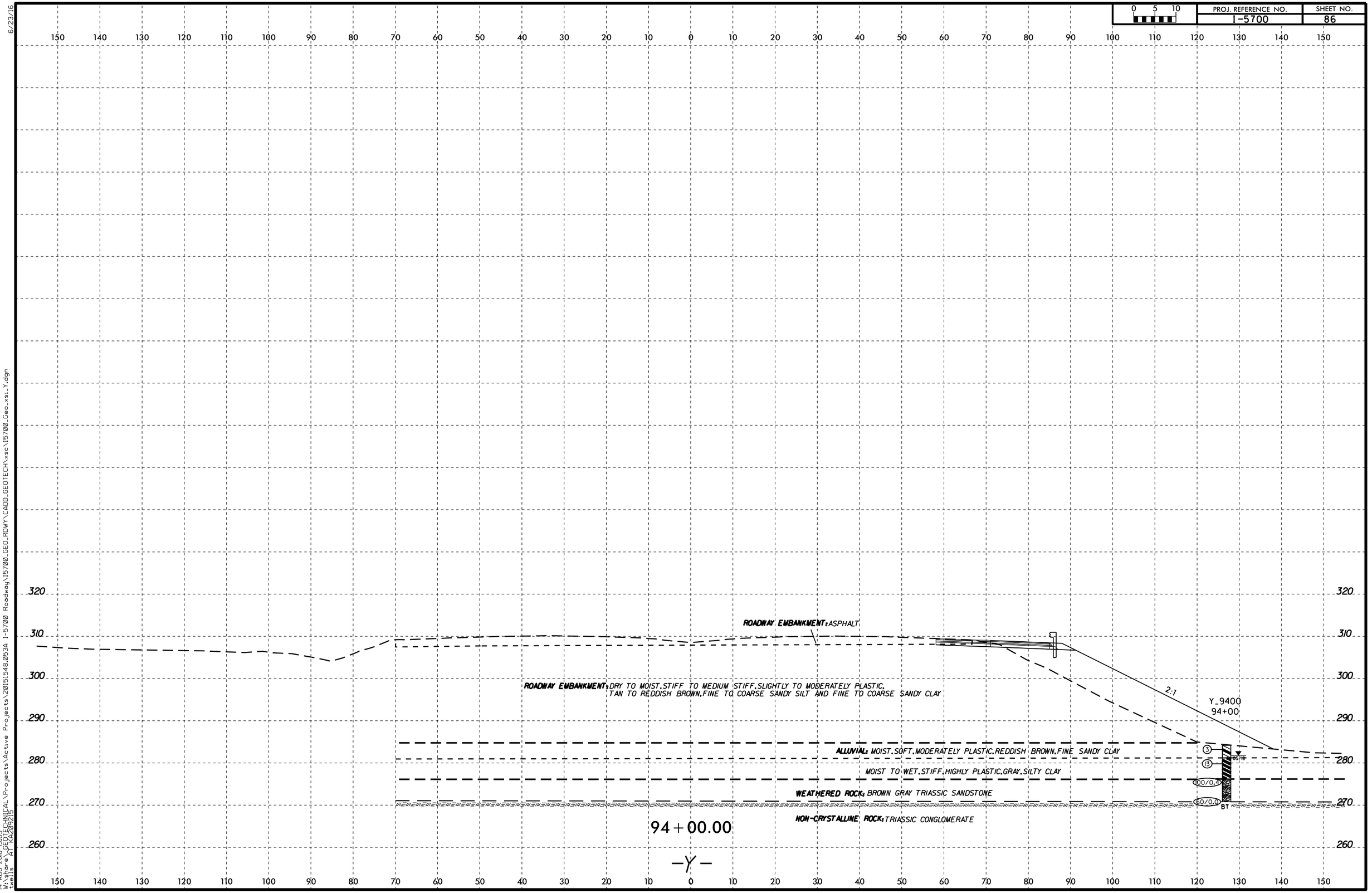
AT XA20/9215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	86



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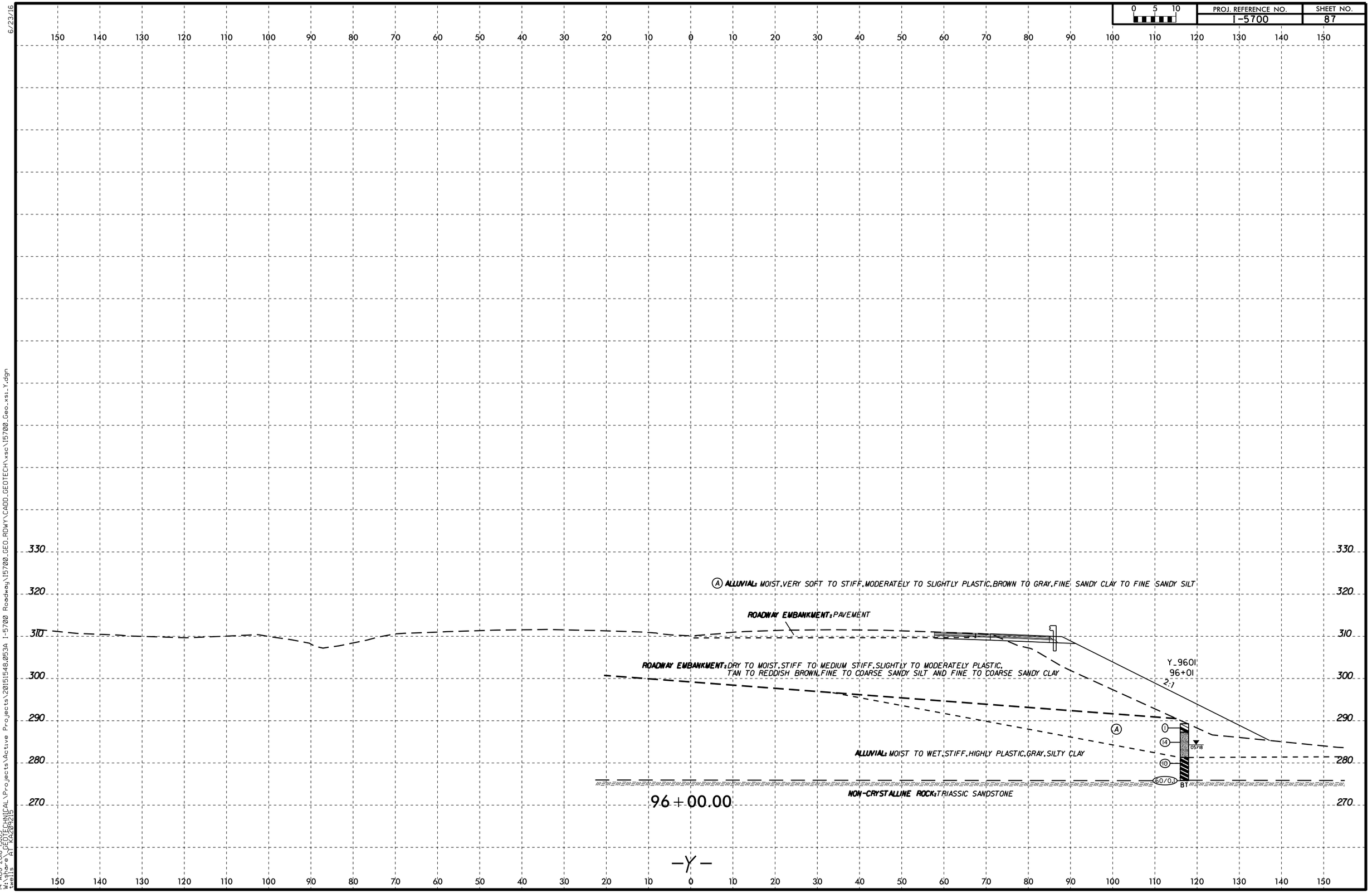
	I-5700	87



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twells
AT KA209215

6/23/16

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	88

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

330
320
310
300
290
280

Ⓐ **ALLUVIAL:** MOIST, MEDIUM STIFF, MODERATLY PLASTIC, TAN TO BROWN, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC, TAN TO REDDISH BROWN, FINE TO COARSE SANDY SILT AND FINE TO COARSE SANDY CLAY

Y_9763
97+63
2:1

Ⓐ Ⓣ

100/0.9
100/0.3
50/0.0

BT
DRY
05/18

WEATHERED ROCK: RED-BROWN TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC CONGLOMERATE

97+50.00

-Y-

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twells
AT XA20915

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	89

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

320 310 300 290 280 270 260

ROADWAY EMBANKMENT: ASPHALT

2:1

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC, TAN TO REDDISH BROWN, FINE TO COARSE SANDY SILT AND FINE TO COARSE SANDY CLAY

Y_9993
99+93

ALLUVIAL: MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC, REDDISH BROWN TO GRAY-BROWN, FINE SANDY SILT TO FINE SANDY CLAY

9 05/18
5
100/0.3
50/0.0
BT

WEATHERED ROCK: RED-BROWN TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

100+00.00

-Y-

6/23/16

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twells
AT XA20915

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

330 320 310 300 290

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO RED TO GRAY, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3:1 3:1

WEATHERED ROCK: DARK RED TO RED-PURPLE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

103+00.00

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC. TAN TO REDDISH BROWN, FINE TO COARSE SANDY SILT AND FINE TO COARSE SANDY CLAY

6:1 4:40:1

TRIASSIC RESIDUAL: MOIST TO DRY, STIFF TO HARD. MODERATELY PLASTIC, REDDISH BROWN. FINE SANDY CLAY

WEATHERED ROCK: RED TO BROWN, TRIASSIC SILTSTONE

102+50.00

Y_10196
101+96

ROADWAY EMBANKMENT: ASPHALT

ROADWAY EMBANKMENT: DRY TO MOIST, STIFF TO MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC. TAN TO REDDISH BROWN, FINE TO COARSE SANDY SILT AND FINE TO COARSE SANDY CLAY

2:1

(10) (61) 100/0.4

BT DRY 04/18

TRIASSIC RESIDUAL: MOIST TO DRY, STIFF TO HARD. MODERATELY PLASTIC, REDDISH BROWN. FINE SANDY CLAY

WEATHERED ROCK: RED TO BROWN, TRIASSIC SILTSTONE

102+00.00

-Y-

6/23/16

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AT KA209215

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

330 320 310 300

(A) TRIASSIC RESIDUAL: MOIST, STIFF, MODERATELY PLASTIC, TAN TO RED TO GRAY, FINE, SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.10:3:1

WEATHERED ROCK: DARK RED TO RED-PURPLE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

105+00.00

330 320 310 300

(A) TRIASSIC RESIDUAL: MOIST, STIFF, MODERATELY PLASTIC, TAN TO RED TO GRAY, FINE, SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.10:3:1

WEATHERED ROCK: DARK RED TO RED-PURPLE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

104+50.00

330 320 310 300

(A) TRIASSIC RESIDUAL: MOIST, STIFF, MODERATELY PLASTIC, TAN TO RED TO GRAY, FINE, SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.12:1 3:1

Y_10403
104+03
12"
100/0.2
100/0.8
100/0.6
50/0.0
B
DRY
05/18

WEATHERED ROCK: DARK RED TO RED-PURPLE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

104+00.00

330 320 310 300

(A) TRIASSIC RESIDUAL: MOIST, STIFF, MODERATELY PLASTIC, TAN TO RED TO GRAY, FINE, SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.15:3:1

WEATHERED ROCK: DARK RED TO RED-PURPLE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

103+50.00

330 320 310 300 290

-Y-

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

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

350 340 330 320 310

107+00.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO DARK BROWN, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.12:1 3:1 Ⓐ

WEATHERED ROCK: GRAY TO RED AND LIGHT BROWN-ORANGE TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

330 320 310

106+50.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO DARK BROWN, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.13:1 3:1 Ⓐ

WEATHERED ROCK: GRAY TO RED AND LIGHT BROWN-ORANGE TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

330 320 310

Y_10605
106+05

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO DARK BROWN, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.12:1 3:1 Ⓐ

100/0.8 100/0.2 100/0.2 60/0.0 BT DRY 05/18

WEATHERED ROCK: GRAY TO RED AND LIGHT BROWN-ORANGE TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

330 320 310 300

106+00.00

330 320 310

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO RED TO GRAY, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.11:1 3:1 Ⓐ

WEATHERED ROCK: DARK RED TO RED-PURPLE, TRIASSIC SANDSTONE

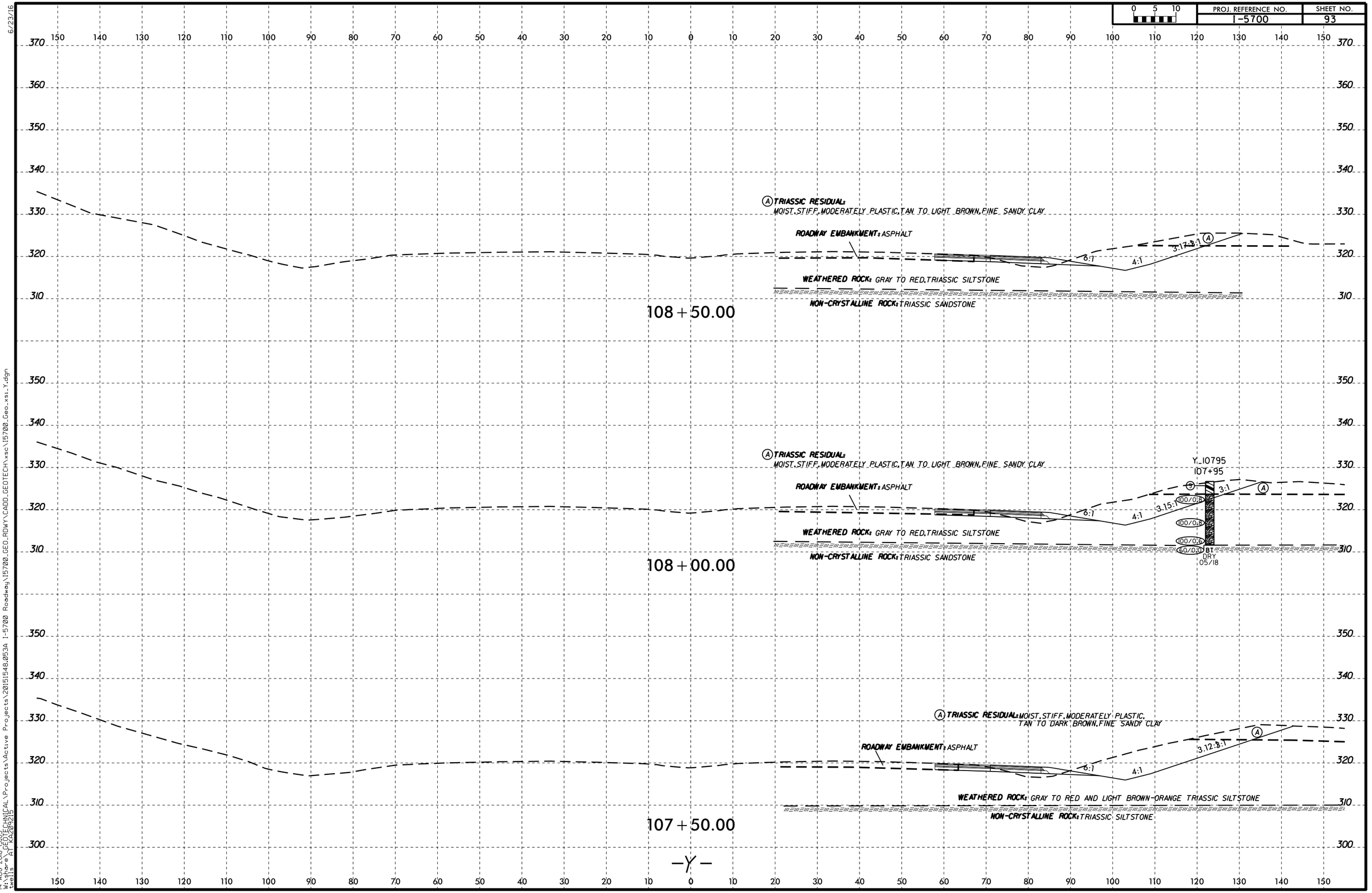
NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

310 300

105+50.00

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

-Y-



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twells
AT XA20.09.15

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	94

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

370 360 350 340 330 320 310 300

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO LIGHT BROWN, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.35:1 Ⓐ

WEATHERED ROCK: GRAY TO RED, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

109+50.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST, STIFF, MODERATELY PLASTIC, TAN TO LIGHT BROWN, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

6:1 4:1 3.26:1 Ⓐ

WEATHERED ROCK: GRAY TO RED, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

109+00.00

-Y-

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

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twells AT K42095215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	95

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

360 350 340 330 320 310 300

A TRIASSIC RESIDUAL: MOIST TO DRY, MEDIUM STIFF, MODERATELY PLASTIC, YELLOW, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

WEATHERED ROCK: REDDISH BROWN, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

6:1 4:1 3.09:1 3:1 A

110+50.00

A TRIASSIC RESIDUAL: MOIST TO DRY, MEDIUM STIFF, MODERATELY PLASTIC, YELLOW, FINE SANDY CLAY

ROADWAY EMBANKMENT: ASPHALT

WEATHERED ROCK: REDDISH BROWN, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

6:1 4:1 3.15:1 3:1 5 A

100/0.8 100/0.2 60/0.1 60/0.0 BT DRY 05/18

Y_10997
109+97

110+00.00

-Y-

6/23/16

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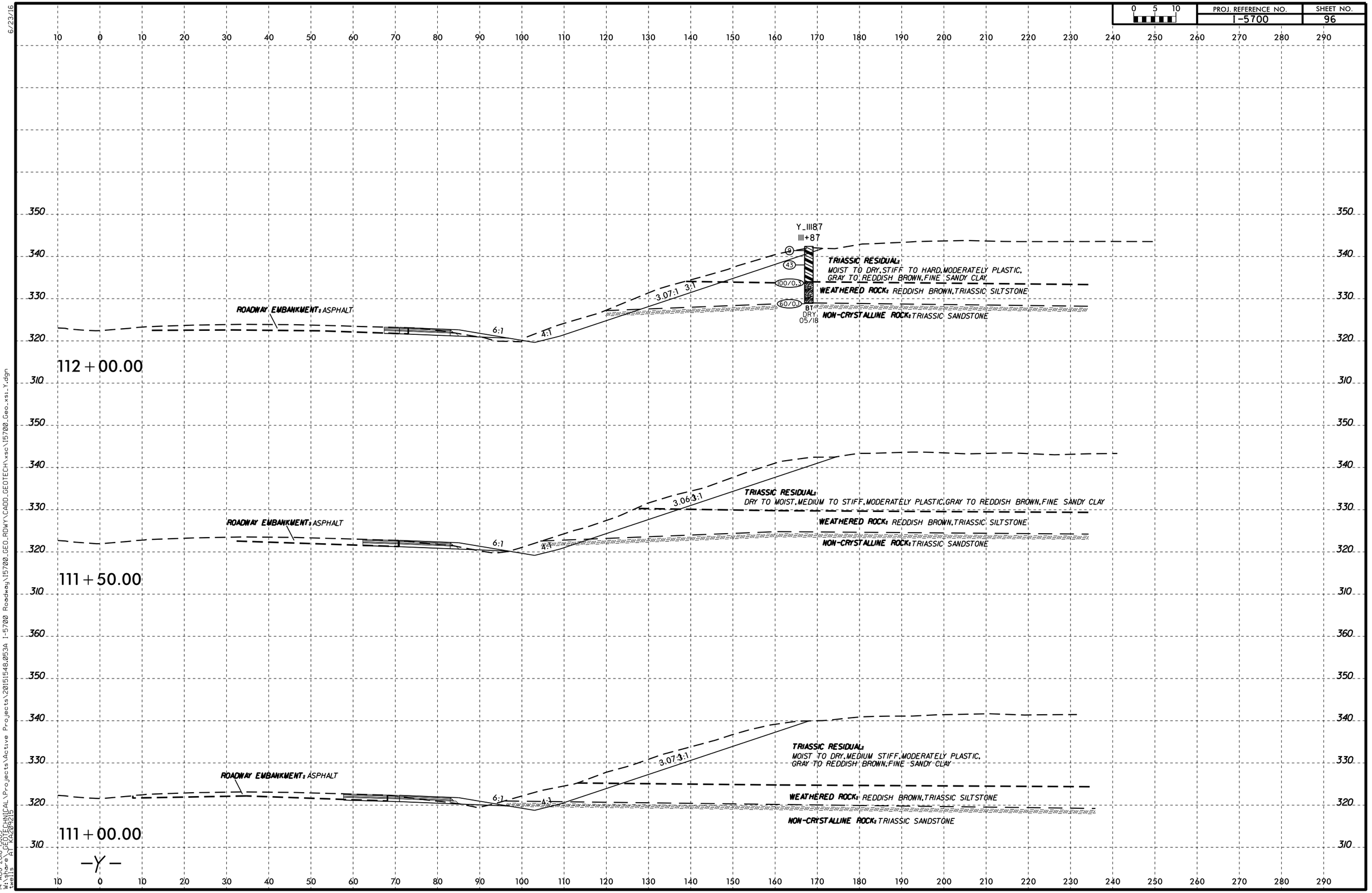
swells
AT KA209215



6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	97

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

350 340 330 320 310

113+06.23

112+34.64

-Y-

TRIASSIC RESIDUAL: MOIST TO DRY, STIFF TO HARD, GRAY TO REDDISH BROWN, FINE SANDY CLAY

WEATHERED ROCK: REDDISH BROWN, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

ROADWAY EMBANKMENT: ASPHALT

6:1

4:1

3.08:1

TRIASSIC RESIDUAL: MOIST TO DRY, STIFF TO HARD, MODEREATELY PLASTIC, GRAY TO REDDISH BROWN, FINE SANDY CLAY

WEATHERED ROCK: REDDISH BROWN, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	98

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

320
310
300
290
280
270

Ⓐ **ROADWAY EMBANKMENT:** ASPHALT

YI_I400
I4+00

2:1

2:1

18
9
17
6
10

ROADWAY EMBANKMENT: DRY TO MOIST, VERY STIFF TO MEDIUM STIFF, NON PLASTIC TO MODERATELY PLASTIC, TAN AND WHITE TO GRAY AND REDDISH BROWN, FINE SANDY SILT TO FINE SANDY CLAY WITH TRACE GRAVEL

ALLUVIAL: WET, STIFF, GRAY TO BROWN, FINE SANDY SILT

BT
DRY
05/18

14+00.00

-YI-

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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	99

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

310
300
290
280
270

ROADWAY EMBANKMENT: ASPHALT

4:1

ROADWAY EMBANKMENT: DRY TO MOIST,VERY STIFF TO MEDIUM STIFF, NON PLASTIC TO MODERATELY PLASTIC,TAN AND WHITE TO GRAY AND REDDISH BROWN,FINE SANDY SILT TO FINE SANDY CLAY WITH TRACE GRAVEL

ARTIFICIAL FILL: DRY TO MOIST,VERY STIFF TO MEDIUM STIFF, MODERATELY PLASTIC,TAN AND WHITE TO GRAY AND REDDISH BROWN,FINE SANDY SILT

3:1

Y2_1099
10+99

11
WOH
21
50/0.0
BT
DRY
05/18

ALLUVIAL: MOIST TO SATURATED,STIFF TO VERY SOFT,MODERATELY TO SLIGHTLY PLASTIC,TAN TO BROWN, COARSE TO FINE SANDY CLAY AND FINE TO COARSE SANDY SILT

SATURATED,VERY STIFF,HIGHLY PLASTIC,TAN TO BROWN TO GRAY,SILTY CLAY

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

11+00.00
-Y2-

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twells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	100

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

370 360 350 340

ROADWAY EMBANKMENT: ASPHALT

3:1 4:1 6:1 6:1 4.44:1

TRIASSIC RESIDUAL: DRY, MEDIUM STIFF, SLIGHTLY PLASTIC, TAN, FINE TO COARSE SANDY SILT

WEATHERED ROCK: RED-GRAY, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

17 + 00.00

Ⓐ **TRIASSIC RESIDUAL:** DRY, MEDIUM STIFF, SLIGHTLY PLASTIC, TAN, FINE TO COARSE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

6:1 6:1 6:1 5.94:1

WEATHERED ROCK: RED-GRAY, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

16 + 50.00

Ⓐ **TRIASSIC RESIDUAL:** DRY, MEDIUM STIFF, SLIGHTLY PLASTIC, TAN, FINE TO COARSE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

6:1 6:1 6:1 4.96:1

WEATHERED ROCK: RED-GRAY, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

16 + 00.00

Y3_1549
15+49

Ⓐ **TRIASSIC RESIDUAL:** DRY, MEDIUM STIFF, SLIGHTLY PLASTIC, TAN, FINE TO COARSE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

6:1 6:1 6:1 4.63:1

100/0.9

60/0.1

BT
DRY
05/18

WEATHERED ROCK: RED-GRAY, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

15 + 50.00

Ⓐ **TRIASSIC RESIDUAL:** DRY, MEDIUM STIFF, SLIGHTLY PLASTIC, TAN, FINE TO COARSE SANDY SILT

ROADWAY EMBANKMENT: ASPHALT

WEATHERED ROCK: RED-GRAY, TRIASSIC SILTSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

15 + 00.00

-Y3-

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

6/23/16

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swells
AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	101

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

380 370 360 350

Ⓐ **TRIASSIC RESIDUAL:** DRY, STIFF, MODERATELY PLASTIC, GRAY TO RED TO ORANGE, FINE SANDY CLAY

Ⓑ **TRIASSIC RESIDUAL:** DRY, HARD, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

WEATHERED ROCK: TAN-RED, TRIASSIC SANDSTONE

WEATHERED ROCK: GRAY-WHITE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 4:1 6:1 6:1 6:1

19 + 00.00

Ⓐ **TRIASSIC RESIDUAL:** DRY, STIFF, MODERATELY PLASTIC, GRAY TO RED TO ORANGE, FINE SANDY CLAY

Ⓑ **TRIASSIC RESIDUAL:** DRY, HARD, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

WEATHERED ROCK: TAN-RED, TRIASSIC SANDSTONE

WEATHERED ROCK: GRAY-WHITE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 4:1 6:1 6:1 6:1

18 + 50.00

3:1 4:1 6:1 6:1

WEATHERED ROCK: RED, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

18 + 00.00

Ⓐ **TRIASSIC RESIDUAL:** MOIST, MEDIUM STIFF TO STIFF, SLIGHTLY PLASTIC, BROWNISH TAN TO GRAY AND ORANGE, COARSE TO FINE SANDY SILT TO FINE TO COARSE SANDY CLAY

SS-31
Y3_1749
17+49

6 13 100/0.3 100/0.2 50/0.0

BT
DRY
05/18

ROADWAY EMBANKMENT: ASPHALT

3:1 6:1

WEATHERED ROCK: RED, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

17 + 50.00

-Y3-

330

6/23/16

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twells AT K420215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	102

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

360 350 340 330 320 380

TRIASSIC RESIDUAL: DRY, HARD, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

3:1 4:1 6:1 6:1 4:1 3.15:1 3:1

WEATHERED ROCK: GRAY-WHITE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

20+50.00

370 360 350 340

Ⓐ **TRIASSIC RESIDUAL:** DRY, STIFF, MODERATELY PLASTIC, GRAY TO RED TO ORANGE, FINE SANDY CLAY

Ⓑ **TRIASSIC RESIDUAL:** DRY, HARD, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

Ⓐ

WEATHERED ROCK: TAN-RED, TRIASSIC SANDSTONE

Ⓑ

WEATHERED ROCK: GRAY-WHITE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

3:1 6:1 4:1 3.23:1 3:1

ROADWAY EMBANKMENT: ASPHALT

20+00.00

370 360 350 340

Ⓐ **TRIASSIC RESIDUAL:** DRY, STIFF, MODERATELY PLASTIC, GRAY TO RED TO ORANGE, FINE SANDY CLAY

Ⓑ **TRIASSIC RESIDUAL:** DRY, HARD, SLIGHTLY PLASTIC, REDDISH BROWN, FINE SANDY SILT

SS-32
SS-33
Y3_1942
19+42

Ⓐ

WEATHERED ROCK: TAN-RED, TRIASSIC SANDSTONE

Ⓑ

WEATHERED ROCK: GRAY-WHITE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

10 100/0.8 52 100/0.3 50/0.1 BT
DRY
05/18

3:1 6:1 6:1 6:1

ROADWAY EMBANKMENT: ASPHALT

19+50.00

370 360 350 340

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

-Y3-

6/23/16

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swells AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	103

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

350
340
330

Y3_2189
21+89

3:1 4:1 6:1

BT
DRY
06/18

TRIASSIC RESIDUAL: MOIST, MODERATELY PLASTIC, STIFF, TAN-LIGHT BROWN AND TAN-ORANGE AND RED-BROWN, COARSE TO FINE SANDY CLAY

22+00.00

-Y3-

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

350
340
330

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twells
AT XA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	104

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

340

330

320

4:3.7:1

6:1

Y3_2325
23+25

TRIASSIC RESIDUAL: MOIST.NON PLASTIC.MEDIUM DENSE.DARK BROWN.SILTY FINE TO COARSE SAND

MOIST.MEDIUM STIFF.MODERATELY PLASTIC.RED TO BROWN.FINE SANDY CLAY

BT
DRY
06/18

23+00.00

-Y3-

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

14-AUG-2018 15:04
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twells AT KA209215

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	105

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

330
320
310
300
290

2:1

2:1

Y3_2539
25+39

BT
DRY
06/18

TRIASSIC RESIDUAL: MOIST, MEDIUM STIFF, SLIGHTLY TO MODERATELY PLASTIC, RED TO BROWN, FINE SANDY SILT TO FINE SANDY CLAY

25+50.00
-Y3-

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

6/23/16

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twells
AT XA20915

6/23/16

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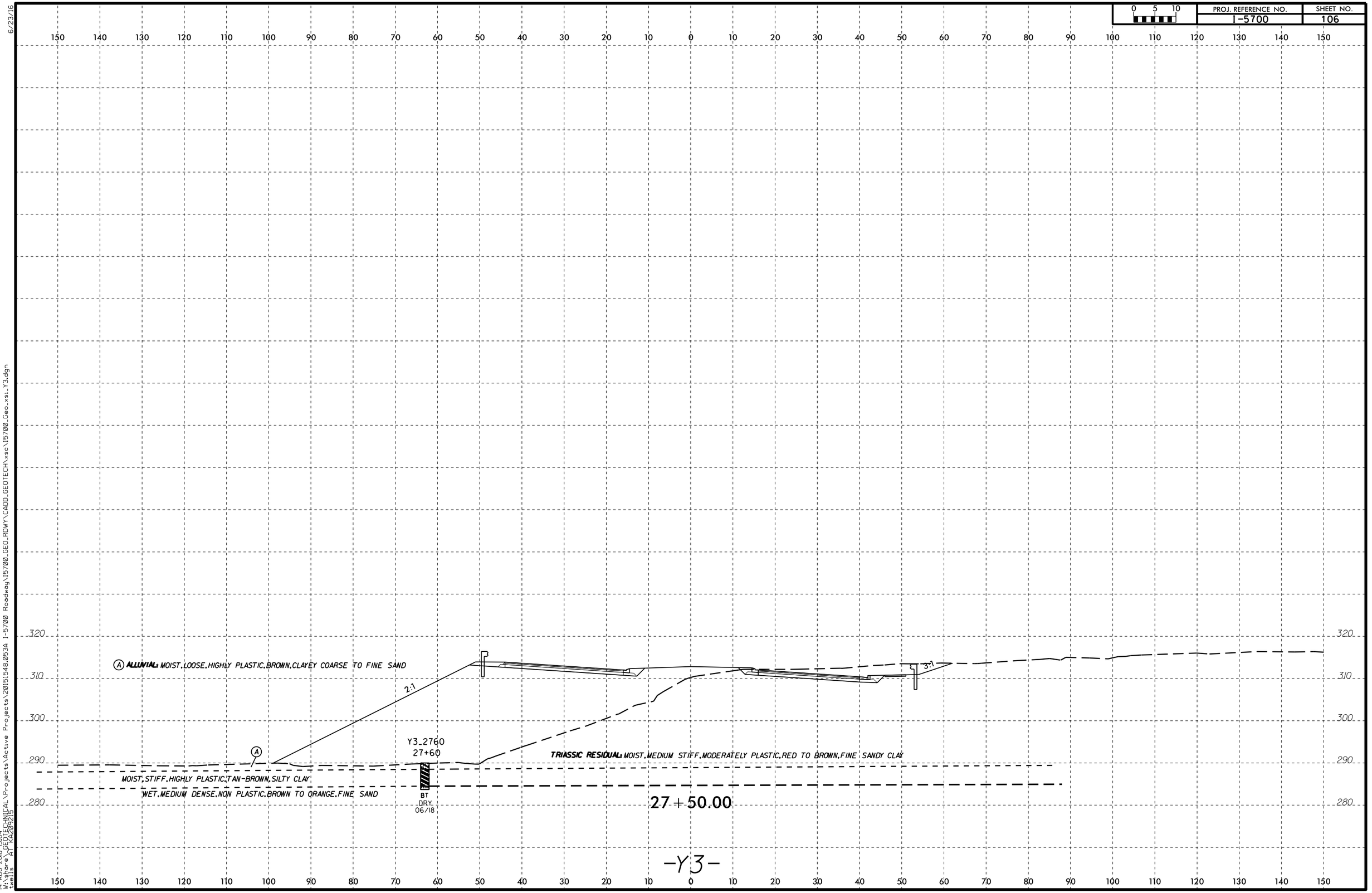
	I-5700	106



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twells
AT KA209215

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

320
310
300
290
280

2:1

2:1

Y3_2951
29+51

ALLUVIAL: MOIST, MEDIUM STIFF, MODERATELY TO SLIGHTLY PLASTIC, TAN TO ORANGE, FINE SANDY CLAY TO FINE SANDY SILT

BT
DRY
06/18

29+50.00

-Y3-

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

320
310
300
290
280

6/23/16
14-AUG-2018 15:04
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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	108

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

320
310
300
290
280

SS-34
Y5_II90
II+90

(A) **ROADWAY EMBANKMENT:** ASPHALT
(B) **ROADWAY EMBANKMENT:** DRY, STIFF, SLIGHTLY PLASTIC, TAN, FINE TO COARSE SANDY SILT WITH TRACE GRAVEL

9.10:1

(14)
(19)
100/0.5
100/0.3
BT
DRY
05/18

TRIASSIC RESIDUAL: MOIST, VERY STIFF, SLIGHTLY PLASTIC, RED-TAN-WHITE, FINE SANDY SILT

WEATHERED ROCK: LIGHT BROWN-RED, TRIASSIC SILTSTONE

12+00.00
-Y5-

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

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swells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	109

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

370
360
350
340
330

(A) **ROADWAY EMBANKMENT:** ASPHALT
(B) **TRIASSIC RESIDUAL:** MOIST, VERY STIFF, MODERATELY PLASTIC, RED-BROWN, COARSE TO FINE SANDY CLAY
(C) **WEATHERED ROCK:** TAN-BROWN, TRIASSIC SANDSTONE

Y8_1791
17+91

4:1 4:1

A B C

100/0.9
60/0.7
BT
DRY
05/18

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

18+00.00

-Y8-

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

370
360
350
340
330

14-AUG-2018 15:04
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twells
AT KA209215

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5700	110

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

350
340
330
320
310

Y8_2003
20+03

4:1

3:1

TRIASSIC RESIDUAL: MOIST, SOFT, MODERATLEY PLASTIC, TAN, FINE TO COARSE SANDY CLAY

WEATHERED ROCK: RED-BROWN-WHITE, TRIASSIC SANDSTONE

NON-CRYSTALLINE ROCK: TRIASSIC SANDSTONE

4
100/0.5
100/0.4
50/0.0
BT
DRY
05/18

20+00.00

-Y8-

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

14-AUG-2018 15:04
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twells
AT XA20.9215

PROJECT REFERENCE NO.	SHEET NO.
I–5700	111

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A
LABORATORY RESULTS

REFERENCE: I–5700

PROJECT: 50118

INITIALS DATE

LABORATORY SUMMARY SHEET FOR SOIL SAMPLES

PROJECT NO.: 50118.1.FS1 (I-5700)
COUNTY: WAKE
I-40 AND SR 3015 (AIRPORT BOULEVARD) REVISE INTERCHANGE AND CONSTRUCT AUXILIARY LANE

								Atterberg Limits			Gradation Results							
Sample No.	Boring Number	Alignment	Station	Offset	Sample Depth (ft.)	Natural Moisture Content (%)	AASHTO Class.	L.L.	P.L.	P.I.	Retained #4 Sieve	Pass #10 Sieve	Pass #40 Sieve	Pass #200 Sieve	Coarse Sand (%)	Fine Sand (%)	Silt (%)	Clay (%)
SS-1	L_2399	-L-	23+99	59' LT	0.0 - 1.5	10.6	A-6	34	22	12	2.0	95.6	82.2	54.5	23.5	23.2	29.4	23.8
SS-2	L_3000	-L-	30+00	49' LT	0.0 - 1.5	9.9	A-6	31	18	13	11.9	82.4	69.9	52.1	22.4	17.6	34.7	25.4
SS-3	L_5400	-L-	54+00	49' RT	3.7 - 5.2	--	A-4	26	19	7	23.9	67.8	54.6	35.8	27.6	25.1	30.3	17.0
SS-4	L_6006	-L-	60+06	53' LT	1.2 - 2.7	7.8	A-6	27	16	11	17.8	76.5	61.5	39.9	30.4	21.6	29.3	18.7
SS-5	RPA_1250	-RPA-	12+50	30' RT	1.3 - 2.8	13.2	A-4	24	16	8	16.8	76.0	65.7	49.7	19.7	20.6	38.0	21.7
ST-6	RPA_1449	-RPA-	14+49	39' RT	5.0 - 7.0	--	A-4	21	18	3	0.0	100.0	99.6	65.4	2.7	40.4	38.0	18.9
SS-7	RPA_1641	-RPA-	16+41	8' RT	3.1 - 4.6	4.7	A-4	25	18	7	0.2	99.3	90.8	60.7	17.0	28.3	34.5	20.2
SS-8	RPASPUR_1139	-RPASPUR-	11+39	10' RT	0.4 - 1.5	20.3	A-4	31	21	10	0.1	99.4	92.9	70.3	13.1	21.5	33.6	31.8
SS-9	RPB_1191	-RPB-	11+91	58' LT	0.0 - 1.5	13.8	A-4	26	18	8	2.6	96.0	85.1	59.7	18.5	25.0	32.1	24.4
SS-10	RPB_1646	-RPB-	16+46	120' LT	0.0 - 1.5	15.2	A-6	36	22	14	4.0	93.8	79.4	57.1	22.5	21.5	25.9	30.1
SS-11	RPB_1646	-RPB-	16+46	120' LT	3.5 - 5.0	10.6	A-4	28	22	6	0.1	99.6	93.1	59.1	15.5	31.1	30.7	22.7
S-12	RPB_1761	-RPB-	17+61	116' LT	0.0 - 10.0	9.1	A-6	36	20	16	5.4	91.9	81.2	62.6	17.7	18.6	27.1	36.6
SS-13	RPB_1850	-RPB-	18+50	88' LT	8.5 - 10.0	12.8	A-4	27	19	8	0.1	99.6	96.0	81.6	6.8	16.2	44.3	32.7
SS-14	RPB_2199	-RPB-	21+99	CL	0.2 - 1.5	12.6	A-4	27	18	9	2.7	94.5	78.2	54.2	26.0	21.9	29.4	22.7
SS-15	RPBSPUR_1245	-RPBSPUR-	12+45	5' LT	3.2 - 4.7	7.9	A-4	28	19	9	0.1	99.4	92.6	73.3	13.4	17.4	40.9	28.3
SS-16	RPC_1193	-RPC-	11+93	49' RT	3.5 - 5.0	8.0	A-4	21	16	5	5.7	91.3	66.7	35.6	40.4	24.7	22.3	12.6
SS-17	RPC_1600	-RPC-	16+00	20' LT	3.2 - 4.7	15.8	A-6	33	22	11	0.9	98.4	85.2	53.8	22.2	29.6	25.9	22.3
SS-18	RPD_1659	-RPD-	16+59	30' RT	0.0 - 1.5	12.7	A-4	29	19	10	25.4	71.4	60.8	45.0	21.9	19.5	31.9	26.7
SS-19	RPD_2050	-RPD-	20+50	49' RT	0.1 - 1.5	4.8	A-4	22	20	2	0.4	98.6	77.0	37.1	37.8	28.9	20.3	13.0
SS-20	RPDSPUR_1303	-RPDSPUR-	13+03	5' LT	3.6 - 5.1	--	A-6	29	15	14	9.3	86.8	75.1	55.5	20.8	20.3	33.6	25.3
SS-21	Y_3679	-Y-	36+79	139' LT	3.7 - 5.2	9.5	A-4	33	24	9	0.0	100.0	99.0	95.7	1.5	5.9	54.9	37.7
SS-22	Y_4703	-Y-	47+03	115' LT	3.3 - 4.8	14.2	A-6	36	21	15	0.0	100.0	95.3	80.7	7.7	17.6	38.8	35.9
SS-23	Y_4902	-Y-	49+02	111' LT	0.0 - 1.5	10.0	A-6	33	21	12	0.0	99.8	97.1	80.8	6.1	17.5	46.1	30.3
SS-24	Y_5097	-Y-	50+97	106' LT	0.3 - 1.5	10.8	A-6	31	19	12	1.2	98.5	94.3	82.2	8.1	12.1	45.6	34.2
SS-25	Y_5999_LT	-Y-	59+99	99' LT	0.0 - 1.5	12.7	A-4	27	19	8	9.2	87.7	73.4	41.9	27.9	29.1	20.7	22.3
SS-26	Y_6199_LT	-Y-	61+99	130' LT	0.1 - 1.5	13.0	A-6	34	20	14	4.7	92.7	83.1	68.7	15.7	13.9	38.1	32.3
SS-27	Y_6201_RT	-Y-	62+01	90' RT	3.2 - 4.7	7.9	A-4	29	19	10	0.9	98.2	93.6	82.1	7.5	14.9	47.6	30.0
SS-28	Y_6407	-Y-	64+07	114' RT	8.2 - 9.7	6.3	A-6	29	17	12	0.0	99.5	93.9	74.6	12.2	15.9	32.9	39.0
SS-29	Y_7113_LT	-Y-	71+13	138' LT	0.2 - 1.5	4.4	A-4	26	21	5	0.0	100.0	99.4	70.8	2.3	39.0	40.0	18.7
SS-30	Y_7350	-Y-	73+50	100' LT	3.2 - 4.7	13.7	A-4	26	17	9	1.3	96.8	86.3	66.9	16.8	18.9	36.0	28.3
SS-31	Y3_1749	-Y3-	17+49	49' LT	3.2 - 4.7	--	A-6	34	22	12	1.3	97.0	78.9	45.7	32.4	24.1	26.3	17.2
SS-32	Y3_1942	-Y3-	19+42	20' RT	0.0 - 1.5	--	A-6	35	19	16	0.0	99.4	88.9	57.7	22.3	22.6	23.0	32.2
SS-33	Y3_1942	-Y3-	19+42	20' RT	8.3 - 9.8	8.0	A-4	28	18	10	0.1	99.7	94.6	77.3	10.1	15.7	43.8	30.4
SS-34	Y5_1190	-Y5-	11+90	20' RT	3.5 - 5.0	17.5	A-4	36	26	10	0.0	99.6	97.3	78.3	4.8	24.4	51.1	19.7

SPECIFIC GRAVITY

AASHTO T-100-15

Client	Kleinfelder	Boring No.	RPA_1450
Client Reference	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-1
Lab ID	R-2018-133-001-007	Visual Description	**Brown**
			(MInus No.4 sieve material, airdried)

Replicate Number	**1**	**2**
Pycnometer ID	R 347	R 543
Weight of Pycnometer + Soil + Water (gm)	708.17	700.58
Temperature, T (°Celsius)	23.7	23.6
Weight of Pycnometer + Water (gm)	669.25	661.23
Tare Number	347	543
Weight of Tare + Dry Soil (gm)	233.69	226.6
Weight of Tare (gm)	170.71	163.17
Weight of Dry Soil (gm)	62.98	63.43
Specific Gravity of Soil @ T	2.617	2.635
Specific Gravity of Water @ T	0.9974	0.9974
Conversion Factor for Temperature T	0.9992	0.9992
Specific Gravity @ 20° Celsius	2.619	2.637

Average Specific Gravity @ 20° Celsius	2.63

Tested By *129-05-0411* *Date* *5/23/18* *Checked By* *GEM* *Date* *5/23/18*

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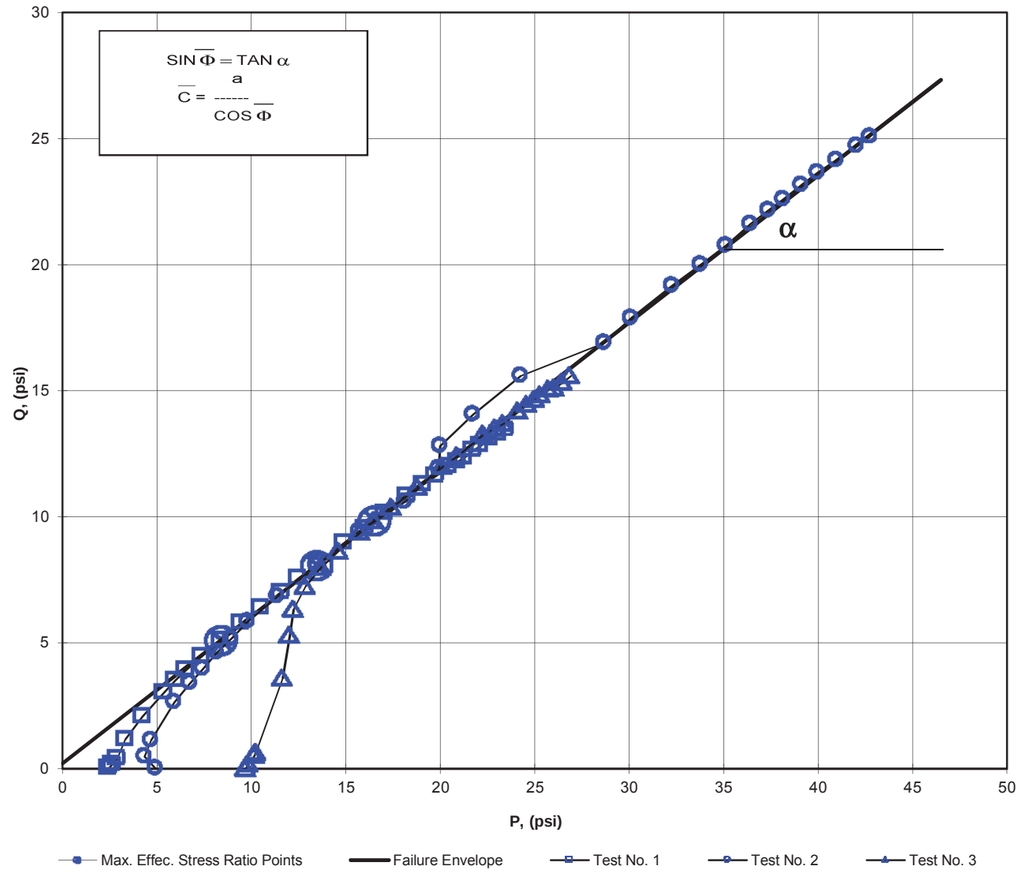
CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

Consolidated Undrained Triaxial Test with Pore Pressure



a =	**0.22**	**$\overline{C}$ =**	**0.27**
α =	**30.2**	**$\overline{\Phi}$ =**	**35.65**

Tested By: 129-04-0411 Date: 5/16/18 Approved By: MPS Date: 5/23/18

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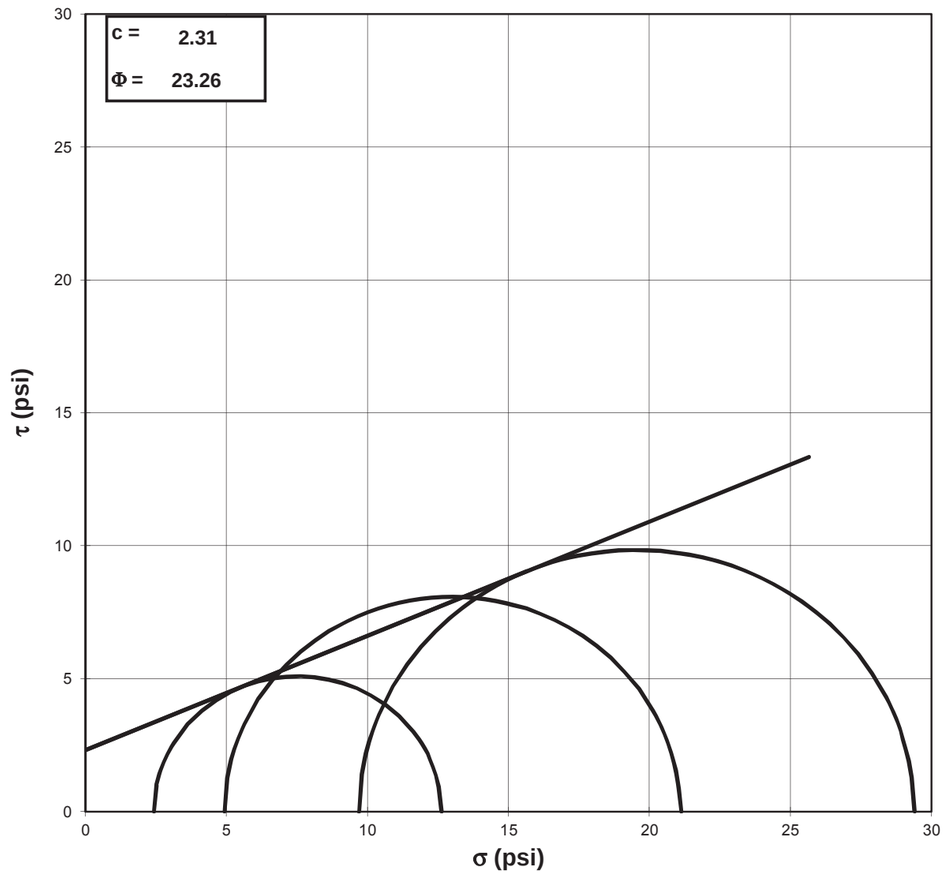
MOHR TOTAL STRENGTH ENVELOPE

AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		
Visual Description:	BROWN SANDY CLAY (UNDISTURBED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: 129-04-0411 *Date:* 5/16/18 *Approved By:* MPS *Date:* 5/23/18

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		
Visual Description:	BROWN SANDY CLAY (UNDISTURBED)		

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	52.4
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	2.4
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	8.36
Q	=	5.09

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.920	Diameter 1:	2.837
Length 2:	5.947	Diameter 2:	2.857
Length 3:	5.919	Diameter 3:	2.849
Length 4:	5.968	Diameter 4:	2.839
Avg. Length:	5.939	*Avg. Diam.:*	2.846

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	21.0
Final Change (ml)	3.0

Initial Dial Reading (mil)	217
Dial Reading After Saturation (mil)	230
Dial Reading After Consolidation (mil)	245

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
8.5	0.000	50.0
10.5	0.001	50.0
10.6	0.003	50.0
13.2	0.009	49.9
23.2	0.014	50.3
34.6	0.020	50.3
46.8	0.029	50.1
52.9	0.038	50.0
58.1	0.050	49.8
65.4	0.071	49.5
73.9	0.100	49.2
83.0	0.135	48.7
91.2	0.170	48.3
100.0	0.212	47.8
107.6	0.241	47.5
116.6	0.283	47.1
128.1	0.339	46.5
137.4	0.398	45.9
146.6	0.442	45.5
157.5	0.501	45.0
165.3	0.545	44.6
171.4	0.590	44.3
177.7	0.634	43.9
181.8	0.664	43.7
184.9	0.694	43.5
190.0	0.723	43.3
193.9	0.753	43.1
199.2	0.797	42.9
203.9	0.841	42.6
208.2	0.889	42.4

Tested By: 129-04-0411 Date: 5/16/18 Input Checked By: GEM Date: 5/23/18

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

Visual Description: BROWN SANDY CLAY (UNDISTURBED)

Effective Confining Pressure (psi)	2.4	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.94
Initial Sample Diameter (in)	2.85
Initial Sample Area (in^2)	6.36
Initial Sample Volume (in^3)	37.76

VOLUME CHANGE

Volume After Consolidation (in^3)	37.33
Length After Consolidation (in)	5.91
Area After Consolidation (in^2)	6.316

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.33	-0.03	2.79	2.5	1.134	-0.10	2.63	0.16
0.05	0.33	-0.05	2.81	2.5	1.134	-0.14	2.64	0.17
0.15	0.75	-0.08	3.26	2.5	1.299	-0.10	2.88	0.37
0.24	2.32	0.28	4.48	2.2	2.081	0.12	3.31	1.16
0.34	4.13	0.27	6.29	2.2	2.908	0.07	4.23	2.06
0.49	6.04	0.09	8.38	2.3	3.581	0.01	5.36	3.02
0.64	6.99	-0.04	9.46	2.5	3.827	-0.01	5.97	3.49
0.84	7.80	-0.20	10.42	2.6	3.969	-0.03	6.52	3.90
1.20	8.91	-0.47	11.81	2.9	4.076	-0.05	7.35	4.46
1.70	10.19	-0.84	13.45	3.3	4.117	-0.08	8.36	5.09
2.28	11.53	-1.27	15.23	3.7	4.114	-0.11	9.47	5.76
2.88	12.73	-1.69	16.85	4.1	4.090	-0.13	10.49	6.37
3.58	13.98	-2.16	18.57	4.6	4.045	-0.16	11.58	6.99
4.08	15.06	-2.50	19.98	4.9	4.057	-0.17	12.46	7.53
4.79	16.29	-2.95	21.67	5.4	4.029	-0.18	13.53	8.15
5.74	17.86	-3.53	23.82	6.0	3.996	-0.20	14.89	8.93
6.73	19.04	-4.09	25.55	6.5	3.922	-0.22	16.03	9.52
7.48	20.24	-4.51	27.17	6.9	3.918	-0.22	17.05	10.12
8.48	21.59	-5.02	29.04	7.5	3.898	-0.23	18.25	10.80
9.23	22.53	-5.39	30.36	7.8	3.881	-0.24	19.09	11.27
9.98	23.23	-5.73	31.39	8.2	3.845	-0.25	19.78	11.61
10.73	23.92	-6.07	32.42	8.5	3.813	-0.26	20.46	11.96
11.24	24.36	-6.29	33.08	8.7	3.794	-0.26	20.90	12.18
11.74	24.66	-6.49	33.58	8.9	3.765	-0.27	21.25	12.33
12.23	25.23	-6.69	34.35	9.1	3.767	-0.27	21.73	12.61
12.74	25.62	-6.87	34.92	9.3	3.754	-0.27	22.11	12.81
13.49	26.13	-7.14	35.70	9.6	3.731	-0.28	22.63	13.06
14.24	26.54	-7.38	36.35	9.8	3.706	-0.28	23.08	13.27
15.04	26.86	-7.60	36.89	10.0	3.679	-0.29	23.46	13.43

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

Visual Description: BROWN SANDY CLAY (UNDISTURBED)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	54.9
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	4.9
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	13.44
Q	=	8.07

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	6.016	Diameter 1:	2.831
Length 2:	6.059	Diameter 2:	2.834
Length 3:	6.053	Diameter 3:	2.842
Length 4:	6.001	Diameter 4:	2.854
Avg. Length:	6.032	*Avg. Diam.:*	2.840

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	18.5
Final Change (ml)	5.5
Initial Dial Reading (mil)	250
Dial Reading After Saturation (mil)	276
Dial Reading After Consolidation (mil)	279

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
15.4	0.000	50.0
21.2	0.001	51.1
29.4	0.002	51.4
48.2	0.007	51.6
57.6	0.013	51.6
64.8	0.019	51.4
72.9	0.027	51.4
79.9	0.036	51.2
88.5	0.048	51.0
101.4	0.068	50.4
117.6	0.096	49.6
135.3	0.133	48.6
151.0	0.169	47.4
169.0	0.209	46.9
181.5	0.238	47.7
198.9	0.279	47.2
221.0	0.337	46.2
240.5	0.395	43.1
255.7	0.440	42.7
275.7	0.499	41.8
289.1	0.544	41.1
301.9	0.589	40.5
316.1	0.633	40.1
325.6	0.662	39.7
333.3	0.691	39.4
343.3	0.722	39.0
352.2	0.752	38.6
361.9	0.796	38.1
373.1	0.840	37.6
380.5	0.869	37.3
386.7	0.899	36.9

Tested By: 129-04-0411 Date: 5/16/18 I nput Checked By: GEM Date: 5/23/18

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

Visual Description: BROWN SANDY CLAY (UNDISTURBED)

Effective Confining Pressure (psi)	4.9	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	6.03
Initial Sample Diameter (in)	2.84
Initial Sample Area (in^2)	6.34
Initial Sample Volume (in^3)	38.22

VOLUME CHANGE

Volume After Consolidation (in^3)	37.39
Length After Consolidation (in)	6.00
Area After Consolidation (in^2)	6.228

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.93	1.06	4.81	3.9	1.240	1.13	4.35	0.47
0.03	2.25	1.37	5.82	3.6	1.631	0.61	4.70	1.13
0.12	5.27	1.64	8.57	3.3	2.596	0.31	5.93	2.63
0.22	6.77	1.56	10.15	3.4	3.006	0.23	6.76	3.39
0.31	7.91	1.45	11.40	3.5	3.269	0.18	7.45	3.96
0.46	9.20	1.36	12.78	3.6	3.575	0.15	8.18	4.60
0.60	10.30	1.17	14.07	3.8	3.732	0.11	8.92	5.15
0.79	11.65	0.96	15.63	4.0	3.927	0.08	9.80	5.82
1.12	13.65	0.39	18.20	4.5	4.001	0.03	11.38	6.83
1.61	16.15	-0.43	21.51	5.4	4.008	-0.03	13.44	8.07
2.22	18.83	-1.36	25.12	6.3	3.991	-0.07	15.71	9.41
2.81	21.17	-2.60	28.70	7.5	3.810	-0.12	18.12	10.58
3.49	23.81	-3.09	31.84	8.0	3.967	-0.13	19.93	11.91
3.97	25.62	-2.25	32.80	7.2	4.565	-0.09	20.00	12.81
4.65	28.10	-2.75	35.79	7.7	4.656	-0.10	21.74	14.05
5.61	31.16	-3.76	39.86	8.7	4.582	-0.12	24.28	15.58
6.59	33.76	-6.86	45.56	11.8	3.862	-0.20	28.68	16.88
7.33	35.77	-7.29	47.99	12.2	3.927	-0.20	30.11	17.88
8.31	38.32	-8.18	51.44	13.1	3.921	-0.21	32.28	19.16
9.06	39.98	-8.86	53.77	13.8	3.898	-0.22	33.78	19.99
9.81	41.49	-9.46	55.89	14.4	3.882	-0.23	35.14	20.74
10.54	43.20	-9.89	58.02	14.8	3.914	-0.23	36.42	21.60
11.02	44.32	-10.29	59.54	15.2	3.912	-0.23	37.38	22.16
11.51	45.18	-10.65	60.76	15.6	3.899	-0.24	38.17	22.59
12.02	46.32	-11.03	62.28	16.0	3.902	-0.24	39.12	23.16
12.53	47.31	-11.38	63.63	16.3	3.899	-0.24	39.97	23.66
13.26	48.26	-11.91	65.11	16.8	3.865	-0.25	40.98	24.13
13.98	49.41	-12.41	66.75	17.3	3.849	-0.25	42.04	24.70
14.48	50.14	-12.75	67.83	17.7	3.836	-0.25	42.75	25.07
14.98	50.69	-13.07	68.69	18.0	3.816	-0.26	43.34	25.34

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

Visual Description: BROWN SANDY CLAY (UNDISTURBED)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	59.7
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	9.7
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	16.51
Q	=	9.84

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.833	Diameter 1:	2.779
Length 2:	5.870	Diameter 2:	2.809
Length 3:	5.875	Diameter 3:	2.804
Length 4:	5.899	Diameter 4:	2.841
Avg. Length:	5.869	*Avg. Diam.:*	2.808

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	14.0
Final Change (ml)	10.0
Initial Dial Reading (mil)	101
Dial Reading After Saturation (mil)	107
Dial Reading After Consolidation (mil)	110

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
7.9	0.000	50.0
10.2	0.001	50.1
14.1	0.003	50.1
14.4	0.009	50.1
14.9	0.014	50.1
15.1	0.021	50.1
15.8	0.029	50.1
51.8	0.038	51.7
72.8	0.049	53.0
85.8	0.069	53.8
97.5	0.099	54.1
107.5	0.133	54.0
115.9	0.168	53.8
126.1	0.208	53.3
132.7	0.238	53.1
140.2	0.278	52.6
152.0	0.333	52.1
164.0	0.392	51.6
170.9	0.435	51.2
184.2	0.493	50.7
188.9	0.537	50.3
192.6	0.581	50.0
201.0	0.625	49.7
205.6	0.654	49.5
209.7	0.682	49.4
213.1	0.711	49.2
217.6	0.740	49.0
220.1	0.784	48.8
225.1	0.827	48.6
229.9	0.857	48.4
233.5	0.887	48.3

Tested By: 129-04-0411 Date: 5/16/18 I nput Checked By: GEM Date: 5/23/18

DCN: CT-S28 DATE: 4/12/13 REVISION: 3
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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

Visual Description: BROWN SANDY CLAY (UNDISTURBED)

Effective Confining Pressure (psi)	9.7	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.87
Initial Sample Diameter (in)	2.81
Initial Sample Area (in^2)	6.19
Initial Sample Volume (in^3)	36.35

VOLUME CHANGE

Volume After Consolidation (in^3)	35.63
Length After Consolidation (in)	5.86
Area After Consolidation (in^2)	6.080

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma_1}$	$\overline{\sigma_3}$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.38	0.04	10.04	9.7	1.039	0.12	9.85	0.19
0.05	1.01	0.04	10.68	9.7	1.105	0.04	10.17	0.51
0.15	1.06	0.08	10.69	9.6	1.110	0.07	10.16	0.53
0.25	1.15	0.08	10.77	9.6	1.119	0.07	10.20	0.57
0.35	1.18	0.09	10.79	9.6	1.122	0.08	10.20	0.59
0.50	1.29	0.11	10.88	9.6	1.134	0.09	10.24	0.64
0.64	7.17	1.63	15.25	8.1	1.887	0.23	11.66	3.58
0.84	10.58	2.96	17.32	6.7	2.569	0.29	12.03	5.29
1.18	12.66	3.81	18.56	5.9	3.148	0.31	12.23	6.33
1.68	14.48	4.08	20.10	5.6	3.575	0.29	12.86	7.24
2.28	16.00	3.99	21.71	5.7	3.799	0.26	13.71	8.00
2.87	17.25	3.73	23.23	6.0	3.888	0.22	14.60	8.63
3.56	18.74	3.31	25.13	6.4	3.931	0.18	15.76	9.37
4.05	19.68	3.04	26.35	6.7	3.952	0.16	16.51	9.84
4.75	20.71	2.62	27.80	7.1	3.922	0.13	17.45	10.36
5.68	22.36	2.06	30.00	7.6	3.925	0.10	18.82	11.18
6.69	23.96	1.53	32.13	8.2	3.932	0.07	20.15	11.98
7.43	24.81	1.18	33.34	8.5	3.908	0.05	20.93	12.40
8.41	26.56	0.66	35.60	9.0	3.937	0.03	22.32	13.28
9.16	27.04	0.26	36.48	9.4	3.863	0.01	22.96	13.52
9.91	27.37	0.00	37.08	9.7	3.819	0.00	23.39	13.68
10.66	28.37	-0.28	38.36	10.0	3.840	-0.01	24.18	14.19
11.16	28.89	-0.50	39.09	10.2	3.831	-0.02	24.65	14.44
11.65	29.32	-0.67	39.70	10.4	3.825	-0.02	25.04	14.66
12.14	29.64	-0.84	40.19	10.5	3.812	-0.03	25.36	14.82
12.62	30.12	-1.02	40.85	10.7	3.809	-0.03	25.79	15.06
13.37	30.23	-1.26	41.19	11.0	3.758	-0.04	26.08	15.12
14.12	30.68	-1.47	41.85	11.2	3.746	-0.05	26.51	15.34
14.63	31.16	-1.64	42.51	11.3	3.746	-0.05	26.93	15.58
15.13	31.49	-1.76	42.95	11.5	3.746	-0.06	27.21	15.74

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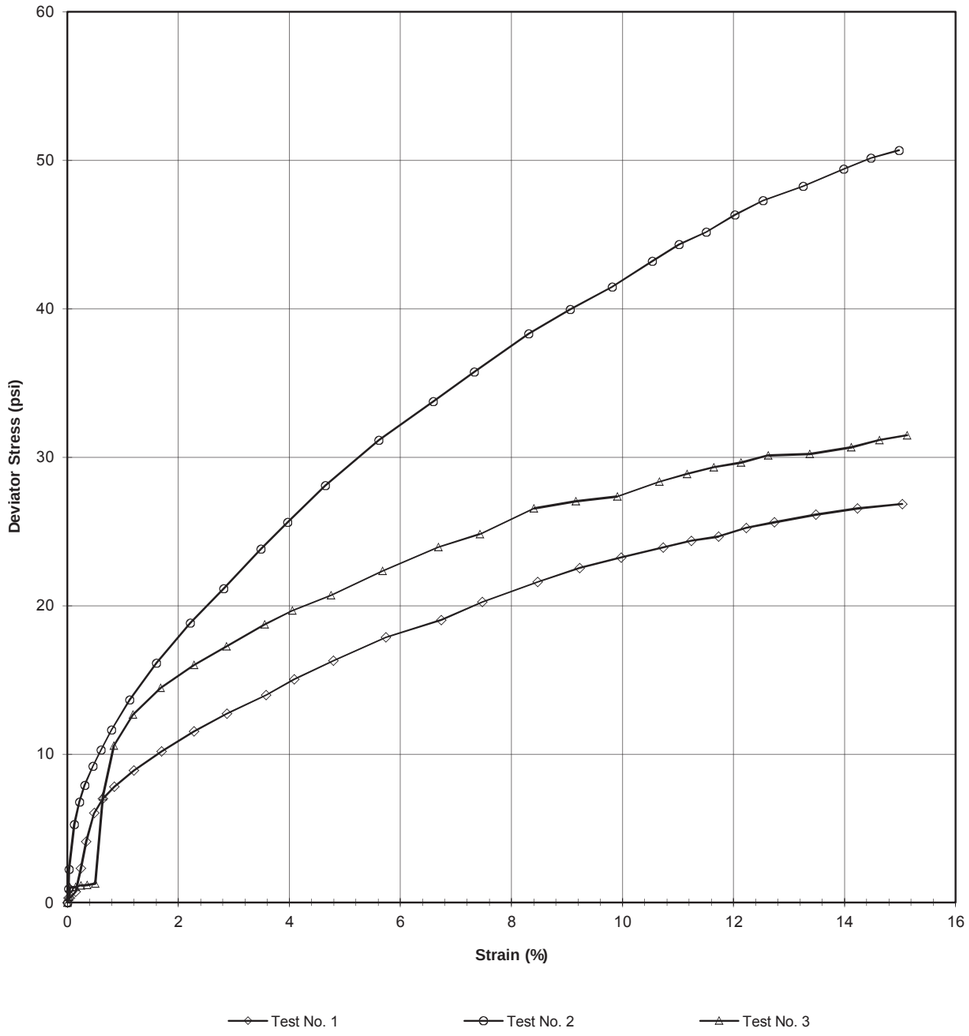
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		
Visual Description:	BROWN SANDY CLAY (UNDISTURBED)		



Tested By: 129-04-0411 Date: 5/16/18 Approved By: MPS Date: 5/23/18

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder		
Client Reference:	I-5700 / 20151548.053A		
Project No.:	R-2018-133-001		
Lab ID:	R-2018-133-001-007	Specific Gravity (Measured)	2.63

Visual Description: BROWN SANDY CLAY (UNDISTURBED)

SAMPLE CONDITION SUMMARY

Boring No.:	RPA_1449	RPA_144	RPA_1449
Depth (ft):	5.0-7.0	5.0-7.0	5.0-7.0
Sample No.:	ST-6	ST-6	ST-6
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.0018	0.0018	0.0018
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	18.8	18.9	20.4
Total Unit Weight (pcf)	131.4	133.1	135.4
Dry Unit Weight (pcf)	110.6	112.0	112.4
Moisture Content (%) (FINAL)	20.0	19.6	18.8
Initial State Void Ratio,e	0.484	0.466	0.460
Void Ratio at Shear, e	0.468	0.435	0.432

Tested By: 129-04-0411 Date: 5/16/18 I nput Checked By: GEM Date: 5/23/18

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297

Client:	Kleinfelder	Boring No.:	RPA_1449
Client Reference:	I-5700 / 20151548.053A	Depth (ft):	5.0-7.0
Project No.:	R-2018-133-001	Sample No.:	ST-6
Lab ID:	R-2018-133-001-007		

TEST 1 INITIAL

TEST 1 FINAL

TEST 2 INITIAL

TEST 2 FINAL

TEST 3 INITIAL

TEST 3 FINAL

Tested By *129-04-0411* *Date* *5/16/18* *Approved By* MPS *Date* 5/23/18

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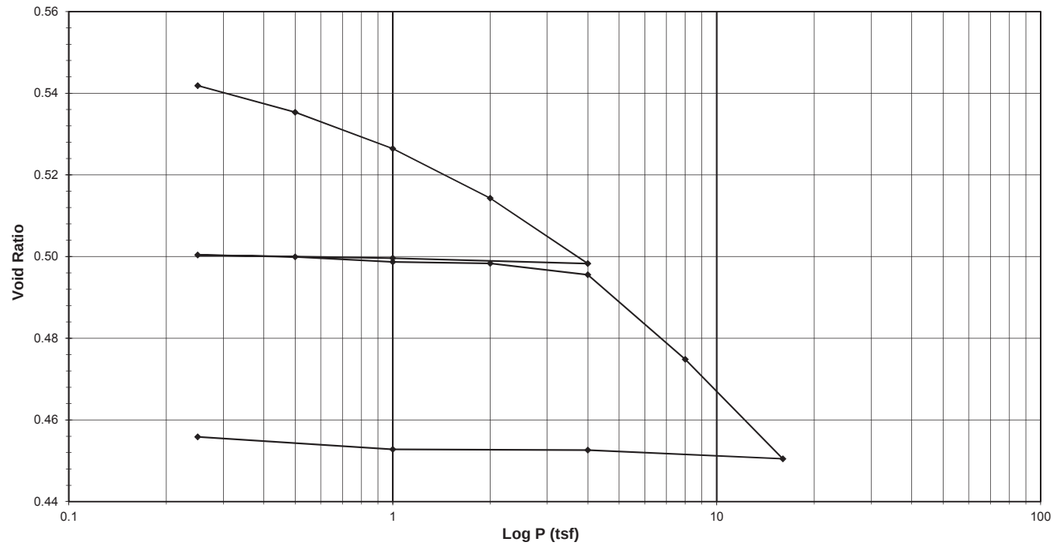
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Reference	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By 129-04-0411 *Date* 5/17/18 *Approved By* MPS *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 6

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ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Reference	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470

1 Division = 0.0001 (in.)

Sample Properties	**Initial**	**Final**
Water Content		
Tare Number	911	807
Wt. Tare & WS (g)	408.90	258.74
Wt. Tare & DS (g)	360.27	235.58
Wt. Water (g)	48.63	23.16
Wt. Tare (g)	101.89	101.13
Wt. DS (g)	258.38	134.45
Water Content (%)	18.82	17.23
Sample Parameters		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.0000	0.9340
Sample Volume (cc)	80.44	75.13
Wt. Wet Sample + Ring (g)	375.47	373.30
Wt. of Ring (g)	214.20	214.20
Wt. of Wet Sample (g)	161.27	159.10
Wet Density (pcf)	125.10	132.14
Wet Density (g/cc)	2.00	2.12
Water Content (%)	18.82	17.23
Wt. of Dry Sample (g)	135.73	135.73
Dry Density (pcf)	105.29	112.73
Dry Density (g/cc)	1.69	1.81
Void Ratio	0.5587	0.4558
Saturation (%)	88.60	99.38
Specific Gravity	2.63	*Measured*

Test Data Summary

Applied Pressure (tsf)	**Final Dial Reading** (div)	**Machine Deflection** (div)	**Corrected Reading** (div)	**Height of Sample** (mm)	**Volume** (cc)	**Dry Density** (g/cc)	**Void Ratio**
Seating	0	0	0	25.400	80.440	1.68729	**0.55872**
0.25	121.2	13.1	108.1	25.125	79.570	1.70573	**0.54186**
0.5	177.5	27.4	150.1	25.019	79.232	1.71301	**0.53531**
1	258.1	51.0	207.1	24.874	78.774	1.72296	**0.52644**
2	372.2	87.1	285.0	24.676	78.147	1.73679	**0.51429**
4	512.4	124.7	387.7	24.415	77.321	1.75534	**0.49828**
1	450.9	71.5	379.3	24.436	77.388	1.75382	**0.49959**
0.25	410.6	36.3	374.3	24.449	77.429	1.75289	**0.50038**
0.5	418.1	41.0	377.1	24.442	77.407	1.75340	**0.49994**
1	435.1	50.0	385.1	24.422	77.342	1.75487	**0.49868**
2	472.4	85.0	387.4	24.416	77.323	1.75530	**0.49832**
4	531.1	125.9	405.2	24.371	77.180	1.75854	**0.49556**
8	701.3	163.1	538.2	24.033	76.110	1.78327	**0.47482**
16	910.2	215.8	694.4	23.636	74.854	1.81319	**0.45048**
4	829.9	149.1	680.8	23.671	74.964	1.81054	**0.45260**
1	770.6	91.1	679.5	23.674	74.974	1.81030	**0.45280**
0.25	708.4	48.4	660.0	23.724	75.131	1.80651	**0.45585**

Tested By 129-04-0411 *Date* 5/17/18 *Input Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 6

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]FINAL PLOT

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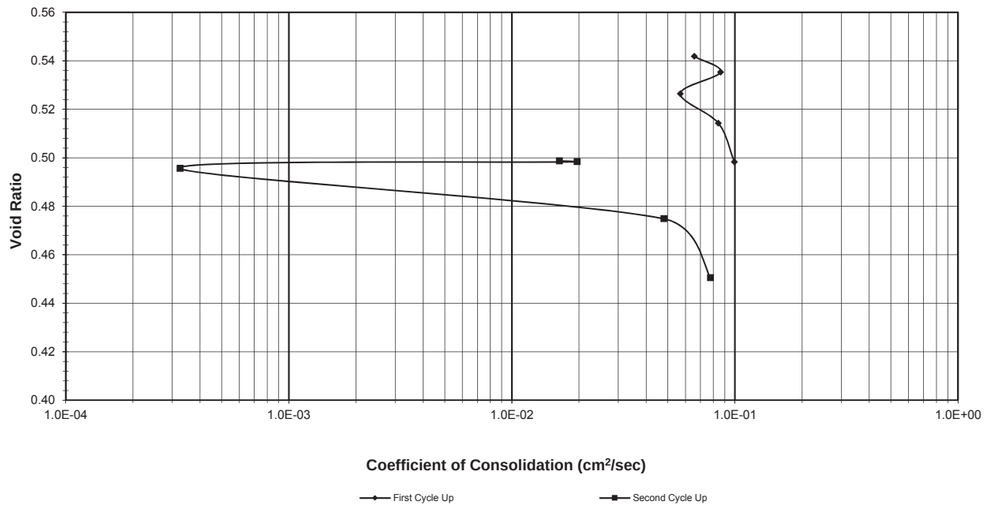
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Reference	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By 129-04-0411 *Date* 5/17/18 *Input Checked By* GEM *Date* 5/23/18

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ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Reference	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470

1 Division = 0.0001 (in.)

Sample Properties	**Initial**	**Final**
Water Content		
Tare Number	911	807
Wt. Tare & WS (g)	408.90	258.74
Wt. Tare & DS (g)	360.27	235.58
Wt. Water (g)	48.63	23.16
Wt. Tare (g)	101.89	101.13
Wt. DS (g)	258.38	134.45
Water Content (%)	18.82	17.23
Sample Parameters		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.000	0.934
Sample Volume (cc)	80.44	75.13
Wt. Wet Sample + Ring (g)	375.47	373.30
Wt. of Ring (g)	214.20	214.20
Wt. of Wet Sample (g)	161.27	159.10
Wet Density (pcf)	125.10	132.14
Wet Density (g/cc)	2.00	2.12
Water Content (%)	18.82	17.23
Wt. of Dry Sample (g)	135.73	135.73
Dry Density (pcf)	105.29	112.73
Dry Density (g/cc)	1.69	1.81
Void Ratio	0.5587	0.4558
Saturation (%)	88.60	99.38
Specific Gravity	*2.63*	*Measured*

C_v Test Data Summary

Load Increment	**Dial Reading @ t_{50}**	**Machine Deflection**	**Corrected Dial Reading @ t_{50}**	**Sample Height @ t_{50}**	**Time t_{50}**	**C_v**
(tsf)	(div)	(div)	(div)	(cm)	(min.)	**(cm²/sec)**
0 - 0.25	54.0	13.1	40.9	2.530	**0.08**	**0.06566**
0.25 - 0.5	147.4	27.4	120.0	2.510	**0.06**	**0.08616**
0.5 - 1.0	219.6	51.0	168.6	2.497	**0.09**	**0.05687**
1.0 - 2.0	318.2	87.1	231.1	2.481	**0.06**	**0.08423**
2.0 - 4.0	435.2	124.7	310.5	2.461	**0.05**	**0.09944**
4.0 - 1.0	NA	71.5	NA	NA	**NA**	**NA**
1.0 - 0.25	NA	36.3	NA	NA	**NA**	**NA**
0.25 - 0.5	NA	41.0	NA	NA	**NA**	**NA**
0.5 - 1.0	431.1	50.0	381.1	2.443	**0.30**	**0.01633**
1.0 - 2.0	466.6	85.0	381.6	2.443	**0.25**	**0.01960**
2.0 - 4.0	520.6	125.9	394.7	2.440	**15.00**	**0.00033**
4.0 - 8.0	642.4	163.1	479.3	2.418	**0.10**	**0.04800**
8.0 - 16.0	835.4	215.8	619.6	2.383	**0.06**	**0.07766**
16.0 - 4.0	NA	149.1	NA	NA	**NA**	**NA**
4.0 - 1.0	NA	91.1	NA	NA	**NA**	**NA**
1.0 - 0.25	NA	48.4	NA	NA	**NA**	**NA**

Tested By 129-04-0411 *Date* 5/17/18 *Input Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 6 *Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]FINAL PLOT*

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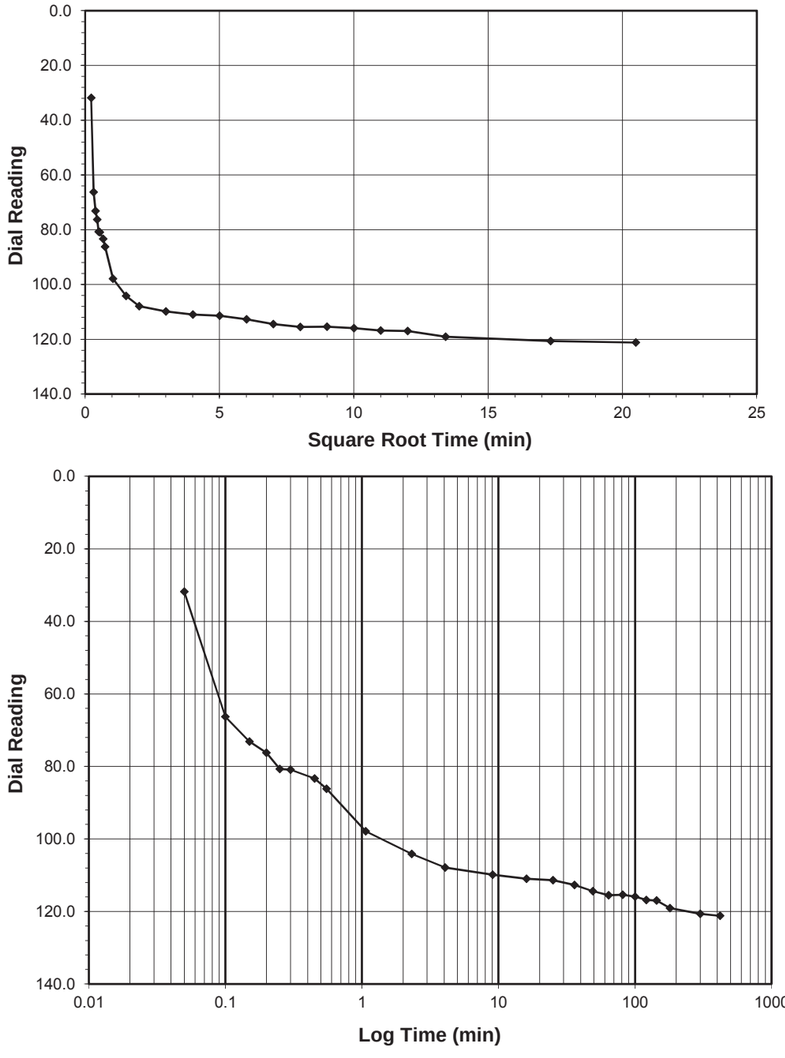
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**0.0-0.25**
Final Reading	**(div)**	**121.2**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/17/18
Start Time		9:28:58

Elapsed Time (min)	Dial Reading (div)
Initial	**0.0**
0.05	31.8
0.10	66.3
0.15	73.1
0.20	76.2
0.25	80.7
0.30	80.9
0.45	83.3
0.55	86.2
1.07	97.9
2.32	104.1
4.07	107.9
9.07	109.8
16.07	111.0
25.07	111.4
36.07	112.7
49.07	114.4
64.07	115.5
81.07	115.4
100.07	115.9
121.07	116.8
144.07	116.9
180.07	119.1
300.07	120.6
420.28	121.2

Tested By 129-04-0411 *Date* 5/17/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 1

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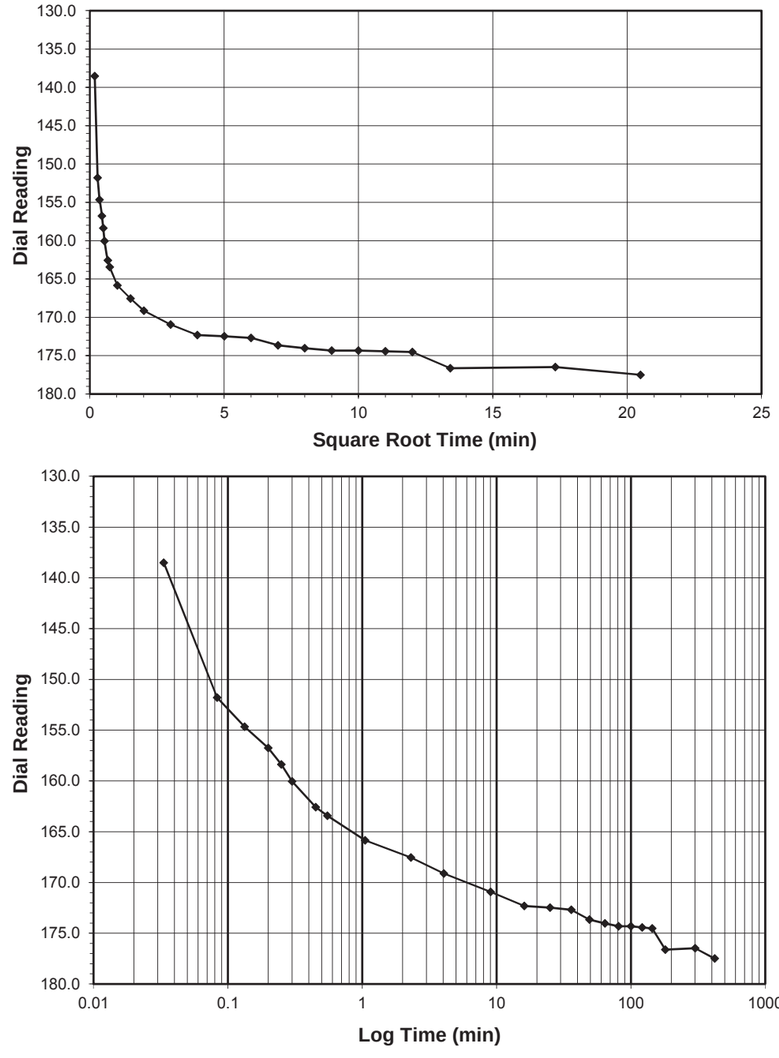
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**0.25-0.5**
Final Reading	**(div)**	**177.5**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/17/18
Start Time		16:29:15

Elapsed Time (min)	Dial Reading (div)
Initial	**121.2**
0.03	138.5
0.08	151.8
0.13	154.7
0.20	156.8
0.25	158.4
0.30	160.0
0.45	162.6
0.55	163.4
1.05	165.8
2.30	167.6
4.05	169.1
9.05	170.9
16.05	172.3
25.05	172.5
36.05	172.7
49.05	173.7
64.05	174.0
81.05	174.3
100.05	174.3
121.07	174.4
144.07	174.5
180.07	176.6
300.07	176.5
420.17	177.5

Tested By 129-04-0411 *Date* 5/17/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 2

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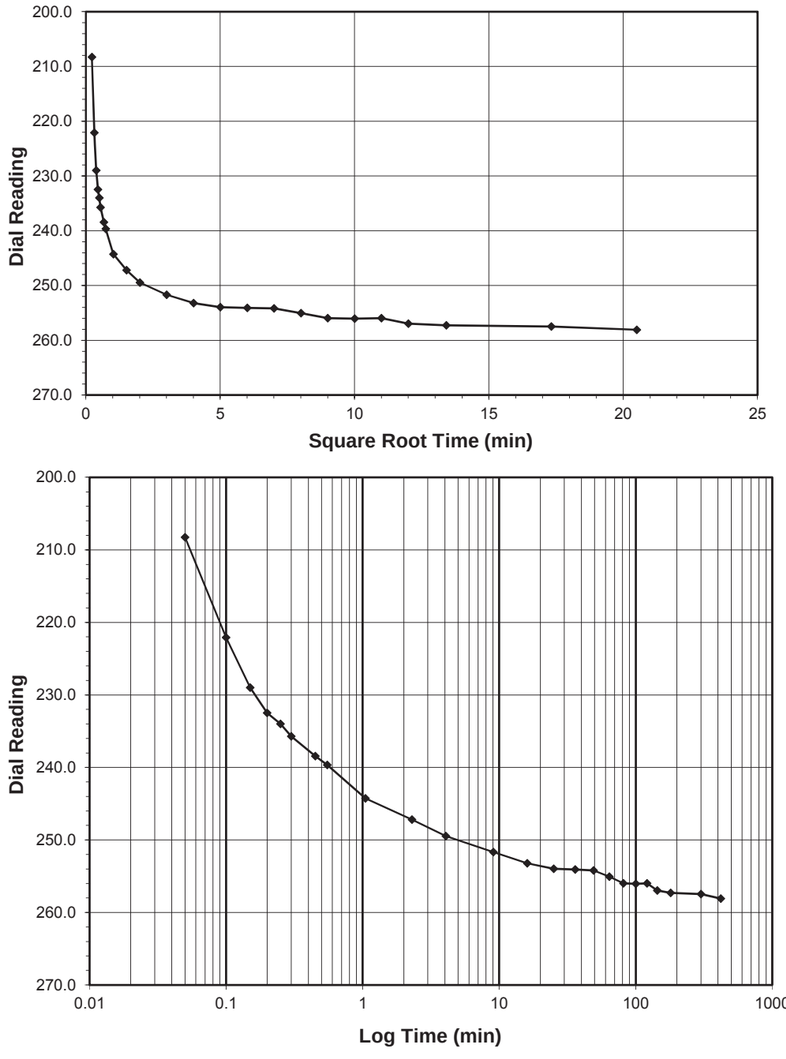
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**0.5-1.0**
Final Reading	**(div)**	**258.1**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/17/18
Start Time		23:29:26

Elapsed Time (min)	Dial Reading (div)
Initial	**177.5**
0.05	208.3
0.10	222.1
0.15	229.0
0.20	232.5
0.25	234.0
0.30	235.7
0.45	238.5
0.55	239.7
1.05	244.3
2.30	247.2
4.07	249.5
9.07	251.7
16.07	253.2
25.07	254.0
36.07	254.1
49.07	254.2
64.07	255.1
81.07	256.0
100.07	256.0
121.07	256.0
144.07	257.0
180.07	257.3
300.07	257.5
420.37	258.1

Tested By 129-04-0411 *Date* 5/17/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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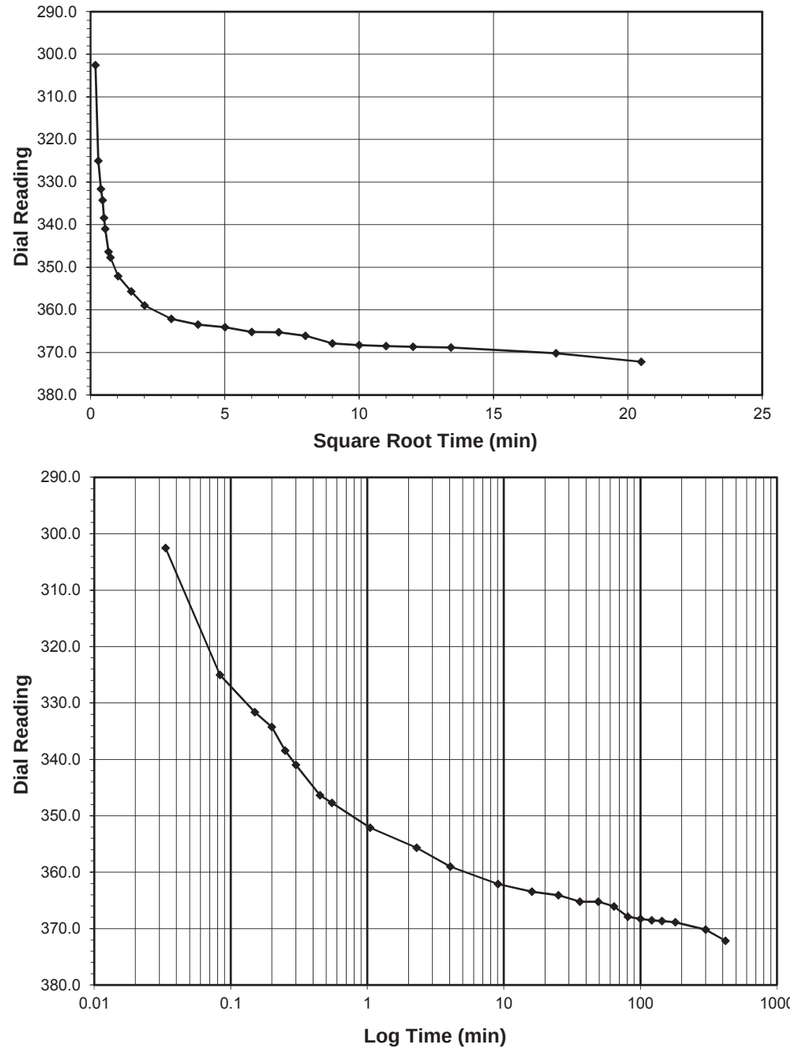
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**1.0-2.0**
Final Reading	**(div)**	**372.2**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/18/18
Start Time		6:29:48

Elapsed Time (min)	Dial Reading (div)
Initial	**258.1**
0.03	302.5
0.08	325.0
0.15	331.6
0.20	334.3
0.25	338.4
0.30	341.0
0.45	346.4
0.55	347.7
1.05	352.1
2.30	355.7
4.05	359.0
9.05	362.1
16.05	363.4
25.05	364.1
36.05	365.2
49.05	365.2
64.05	366.1
81.05	367.9
100.05	368.3
121.05	368.5
144.05	368.7
180.05	368.9
300.05	370.2
420.27	372.2

Tested By 129-04-0411 *Date* 5/18/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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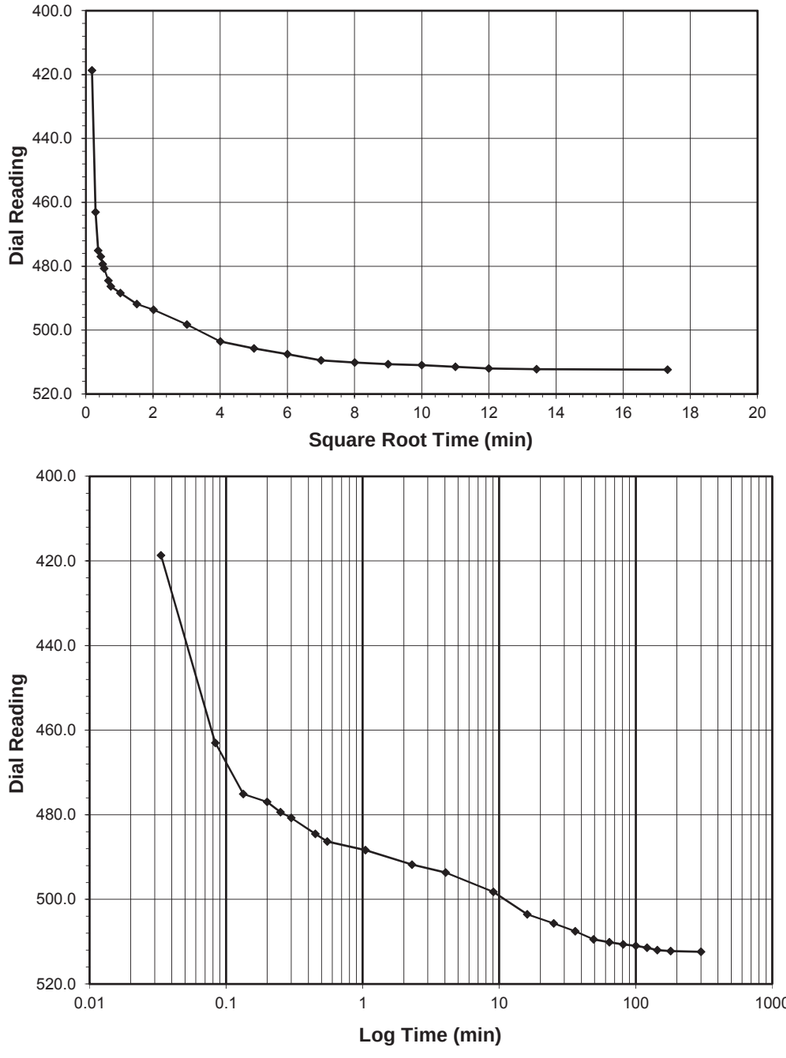
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**2.0-4.0**
Final Reading	**(div)**	**512.4**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/18/18
Start Time		13:30:05

Elapsed Time (min)	Dial Reading (div)
Initial	**372.2**
0.03	418.7
0.08	463.0
0.13	475.1
0.20	477.0
0.25	479.4
0.30	480.7
0.45	484.5
0.55	486.3
1.05	488.4
2.30	491.8
4.05	493.6
9.05	498.3
16.05	503.5
25.05	505.7
36.05	507.5
49.05	509.5
64.05	510.1
81.05	510.6
100.05	511.0
121.05	511.4
144.07	512.0
180.07	512.2
300.07	512.4

Tested By 129-04-0411 *Date* 5/18/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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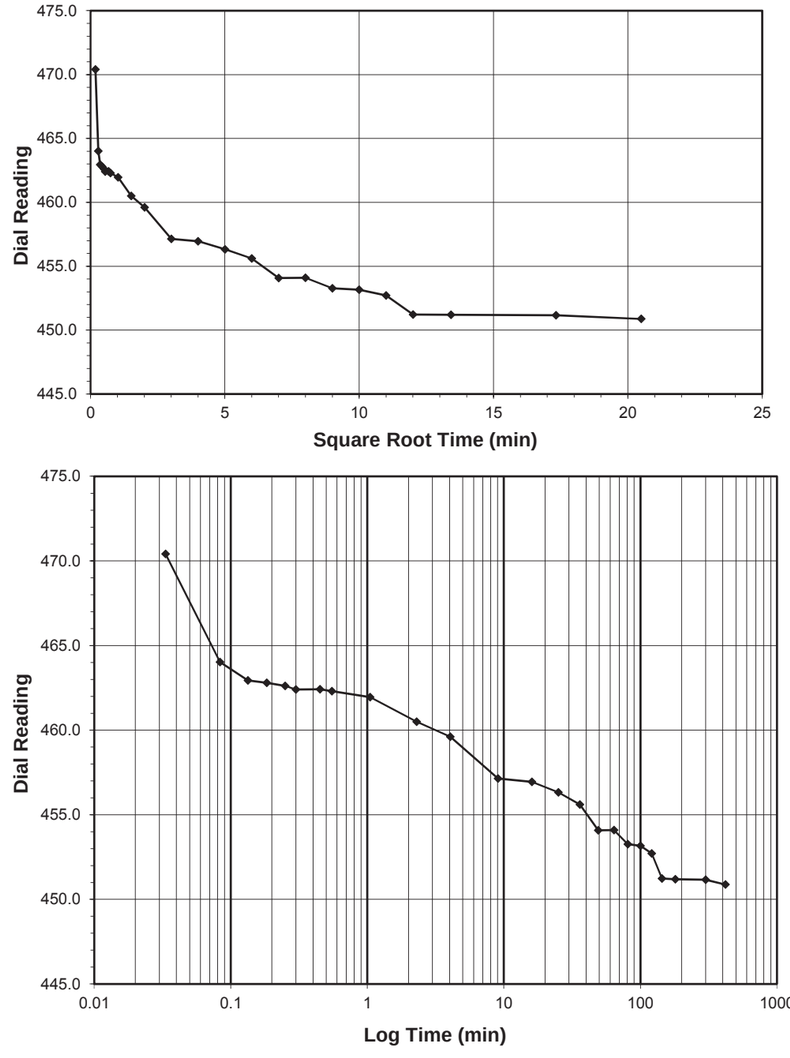
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**4.0-1.0**
Final Reading	**(div)**	**450.9**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/18/18
Start Time		20:30:29

Elapsed Time (min)	Dial Reading (div)
Initial	**512.4**
0.03	470.4
0.08	464.0
0.13	462.9
0.18	462.8
0.25	462.6
0.30	462.4
0.45	462.4
0.55	462.3
1.05	462.0
2.30	460.5
4.05	459.6
9.05	457.1
16.05	456.9
25.05	456.3
36.05	455.6
49.05	454.1
64.05	454.1
81.05	453.3
100.05	453.2
121.05	452.7
144.05	451.2
180.05	451.2
300.07	451.2
420.25	450.9

Tested By 129-04-0411 *Date* 5/18/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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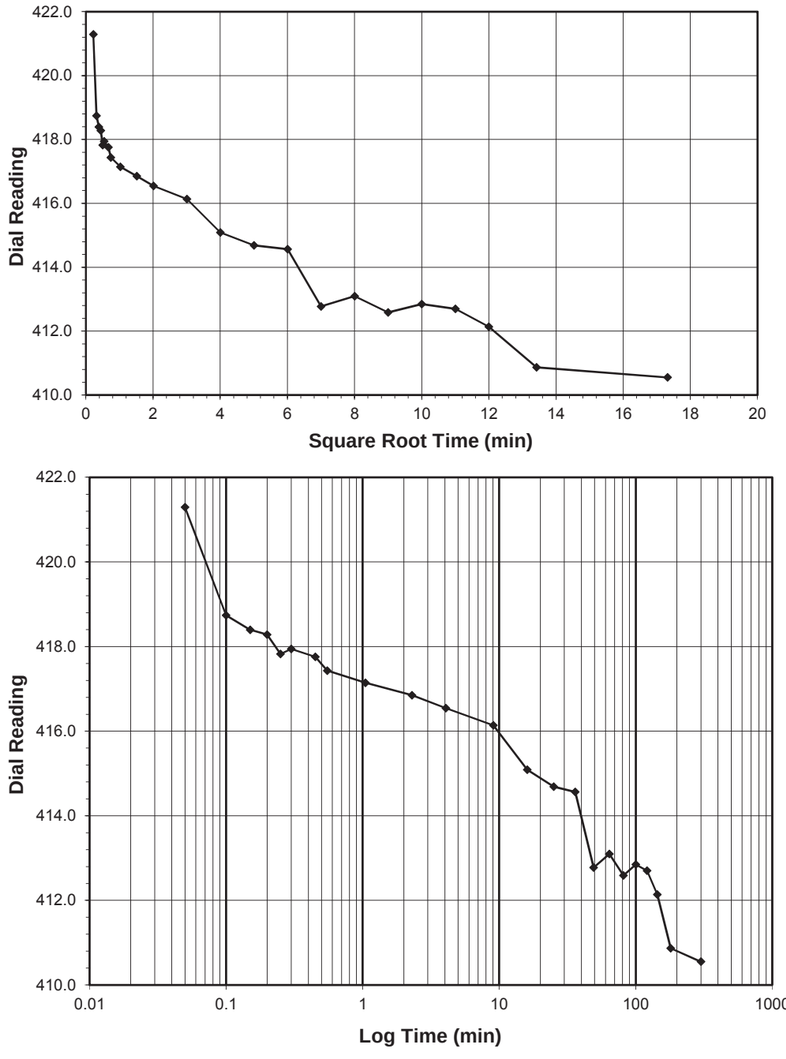
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**1.0-0.25**
Final Reading	**(div)**	**410.6**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/19/18
Start Time		3:30:45

Elapsed Time (min)	Dial Reading (div)
Initial	**450.9**
0.05	421.3
0.10	418.7
0.15	418.4
0.20	418.3
0.25	417.8
0.30	417.9
0.45	417.8
0.55	417.4
1.05	417.1
2.30	416.8
4.07	416.5
9.07	416.1
16.07	415.1
25.07	414.7
36.07	414.6
49.07	412.8
64.07	413.1
81.07	412.6
100.07	412.9
121.07	412.7
144.07	412.1
180.07	410.9
300.07	410.6

Tested By 129-04-0411 *Date* 5/19/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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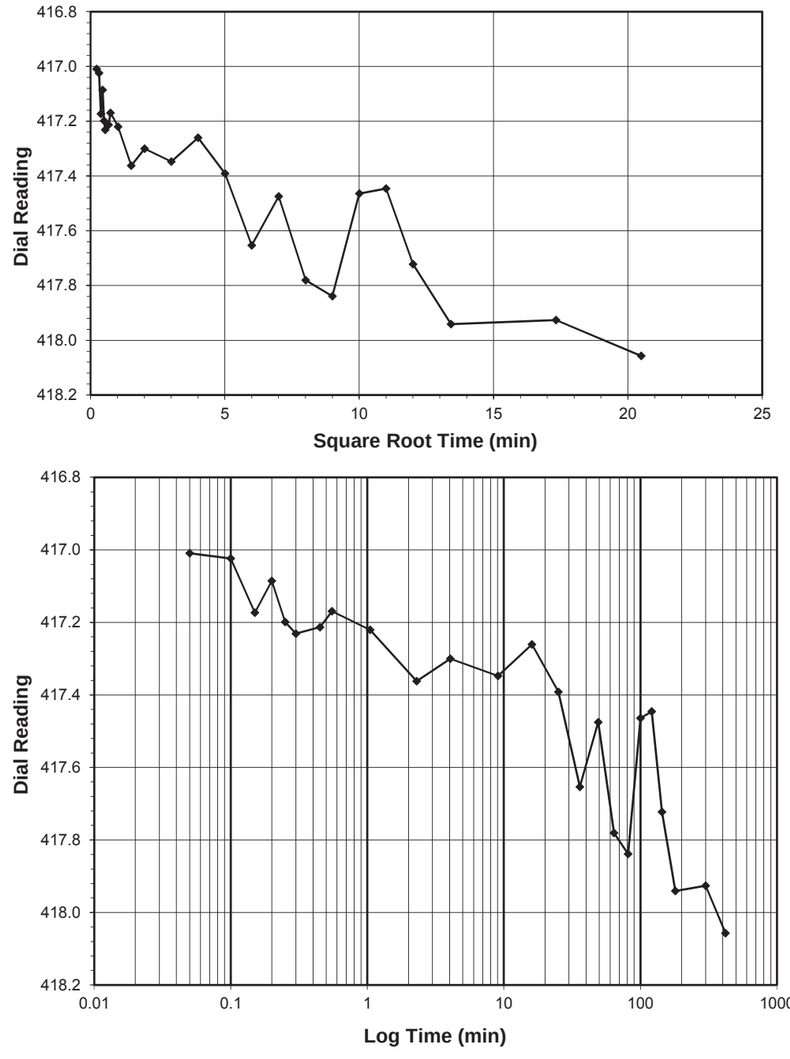
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**0.25-0.5**
Final Reading	**(div)**	**418.1**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/19/18
Start Time		10:31:01

Elapsed Time (min)	Dial Reading (div)
Initial	**410.6**
0.05	417.0
0.10	417.0
0.15	417.2
0.20	417.1
0.25	417.2
0.30	417.2
0.45	417.2
0.55	417.2
1.05	417.2
2.30	417.4
4.05	417.3
9.05	417.3
16.05	417.3
25.05	417.4
36.05	417.7
49.07	417.5
64.07	417.8
81.07	417.8
100.07	417.5
121.07	417.4
144.07	417.7
180.07	417.9
300.07	417.9
420.32	418.1

Tested By 129-04-0411 *Date* 5/19/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 8

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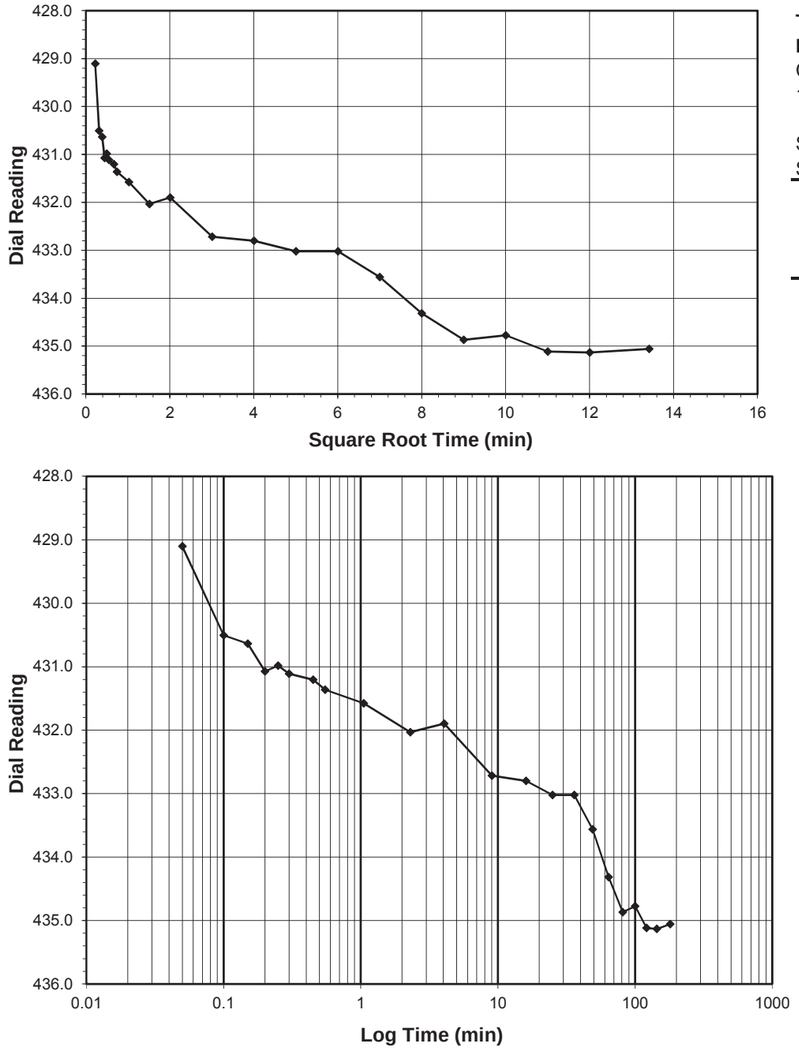
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**0.5-1.0**
Final Reading	**(div)**	**435.1**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/19/18
Start Time		17:31:20

Elapsed Time (min)	Dial Reading (div)
Initial	**418.1**
0.05	429.1
0.10	430.5
0.15	430.6
0.20	431.1
0.25	431.0
0.30	431.1
0.45	431.2
0.55	431.4
1.05	431.6
2.30	432.0
4.05	431.9
9.05	432.7
16.05	432.8
25.05	433.0
36.05	433.0
49.05	433.6
64.05	434.3
81.05	434.9
100.07	434.8
121.07	435.1
144.07	435.1
180.07	435.1

Tested By 129-04-0411 *Date* 5/19/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 9

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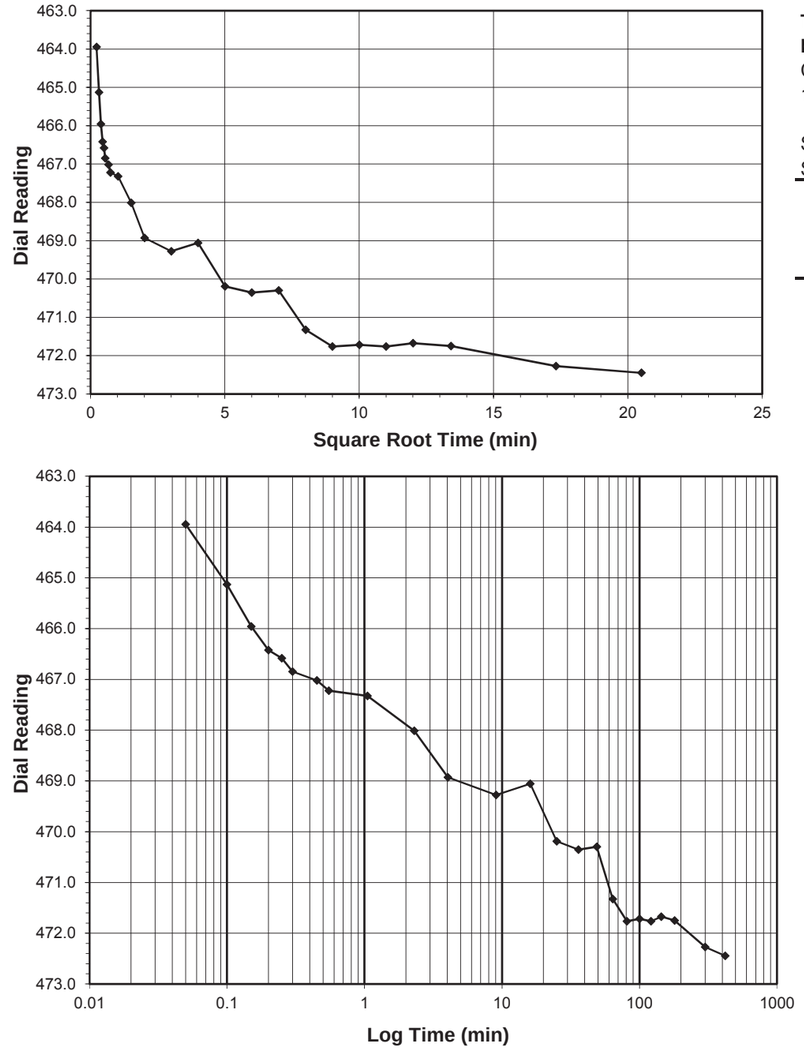
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**1.0-2.0**
Final Reading	**(div)**	**472.4**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/20/18
Start Time		0:31:41

Elapsed Time (min)	Dial Reading (div)
Initial	**435.1**
0.05	463.9
0.10	465.1
0.15	466.0
0.20	466.4
0.25	466.6
0.30	466.8
0.45	467.0
0.55	467.2
1.05	467.3
2.30	468.0
4.05	468.9
9.05	469.3
16.05	469.1
25.05	470.2
36.05	470.4
49.05	470.3
64.07	471.3
81.07	471.8
100.07	471.7
121.07	471.8
144.07	471.7
180.07	471.7
300.07	472.3
420.37	472.4

Tested By 129-04-0411 *Date* 5/20/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 10

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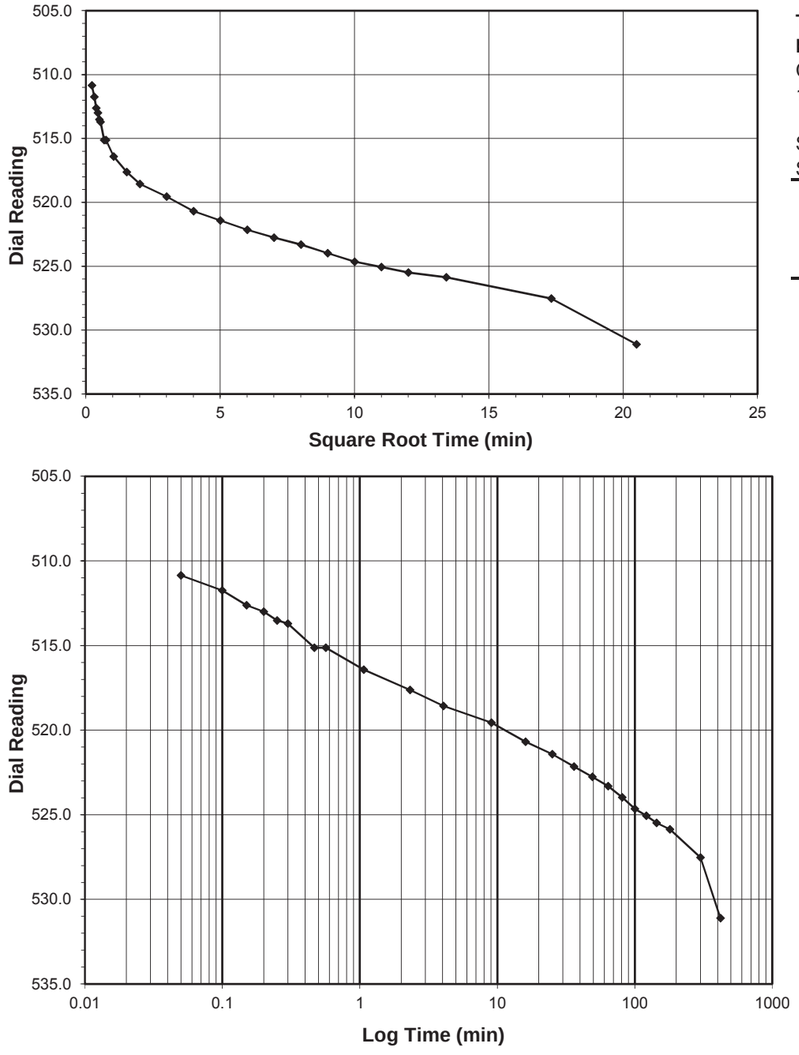
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**2.0-4.0**
Final Reading	**(div)**	**531.1**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/20/18
Start Time		7:32:03

Elapsed Time (min)	Dial Reading (div)
Initial	**472.4**
0.05	510.9
0.10	511.7
0.15	512.6
0.20	513.0
0.25	513.5
0.30	513.7
0.47	515.1
0.57	515.1
1.07	516.4
2.32	517.6
4.07	518.6
9.07	519.6
16.07	520.7
25.07	521.4
36.07	522.2
49.07	522.8
64.07	523.3
81.07	524.0
100.07	524.6
121.07	525.1
144.07	525.5
180.07	525.9
300.08	527.5
420.23	531.1

Tested By 129-04-0411 *Date* 5/20/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 11

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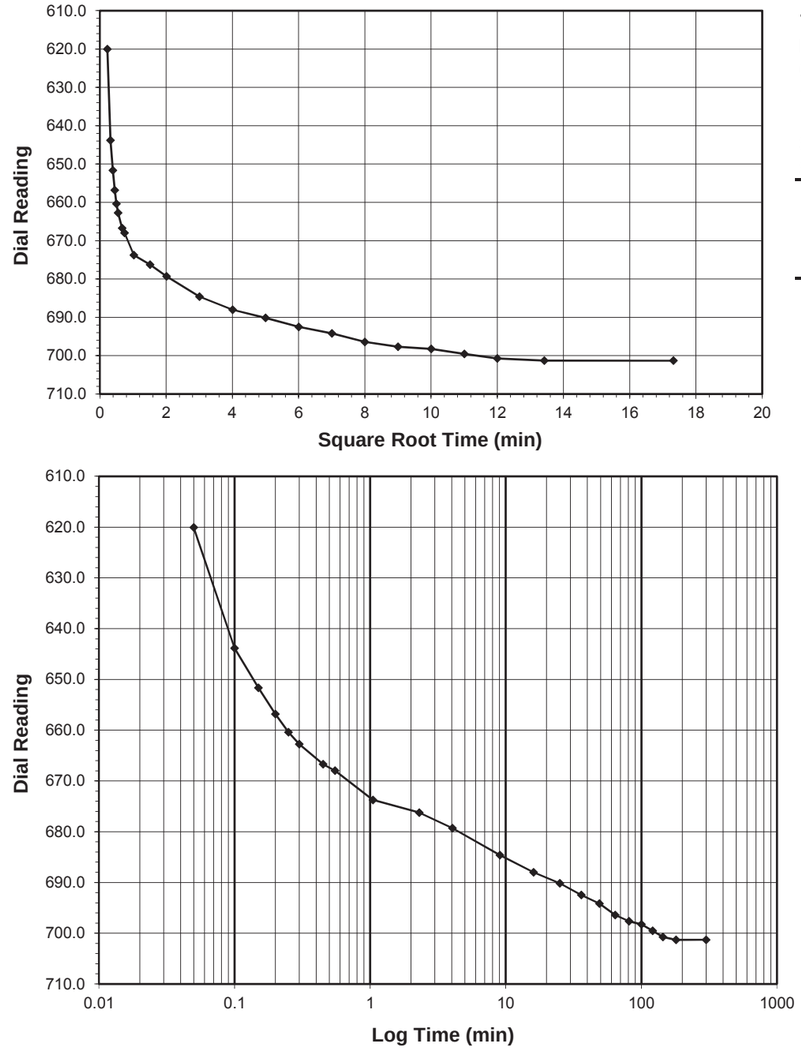
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**4.0-8.0**
Final Reading	**(div)**	**701.3**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/20/18
Start Time		14:32:17

Elapsed Time (min)	Dial Reading (div)
Initial	**531.1**
0.05	620.1
0.10	643.8
0.15	651.7
0.20	656.8
0.25	660.4
0.30	662.8
0.45	666.7
0.55	668.0
1.05	673.8
2.30	676.2
4.05	679.3
9.05	684.6
16.05	688.0
25.05	690.2
36.05	692.5
49.05	694.2
64.07	696.4
81.07	697.7
100.07	698.2
121.07	699.5
144.07	700.7
180.07	701.3
300.07	701.3

Tested By 129-04-0411 *Date* 5/20/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

Z:\2018 PROJECTS\KLEINFELDER\2018-133 KLEINFELDER - I-5700 20151548.053A\[2018-133-001-007 GEOJAC-16TSF1 Cv.xlsm]STEP 12

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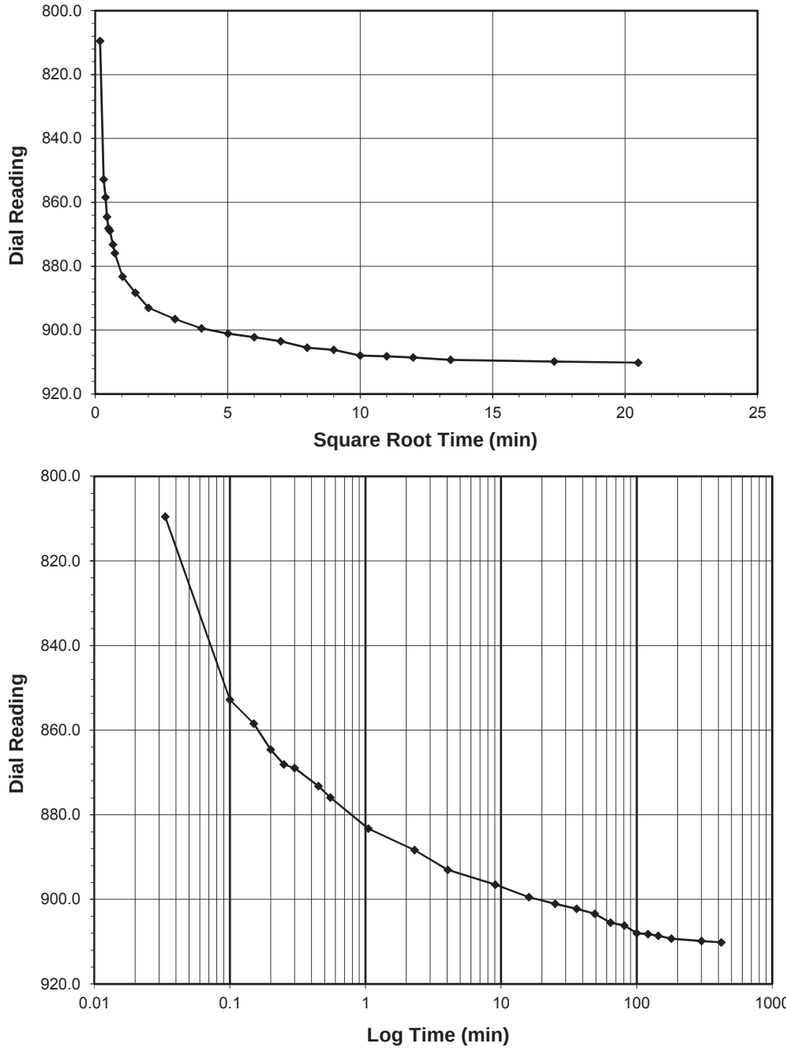
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**8.0-16.0**
Final Reading	**(div)**	**910.2**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/20/18
Start Time		21:32:30

Elapsed Time (min)	Dial Reading (div)
Initial	**701.3**
0.03	809.5
0.10	852.8
0.15	858.4
0.20	864.6
0.25	868.1
0.30	868.9
0.45	873.2
0.55	875.9
1.05	883.3
2.30	888.3
4.05	893.1
9.05	896.5
16.07	899.4
25.07	901.1
36.07	902.2
49.07	903.4
64.07	905.5
81.07	906.2
100.07	908.0
121.07	908.2
144.07	908.6
180.07	909.3
300.07	909.8
420.15	910.2

Tested By 129-04-0411 *Date* 5/20/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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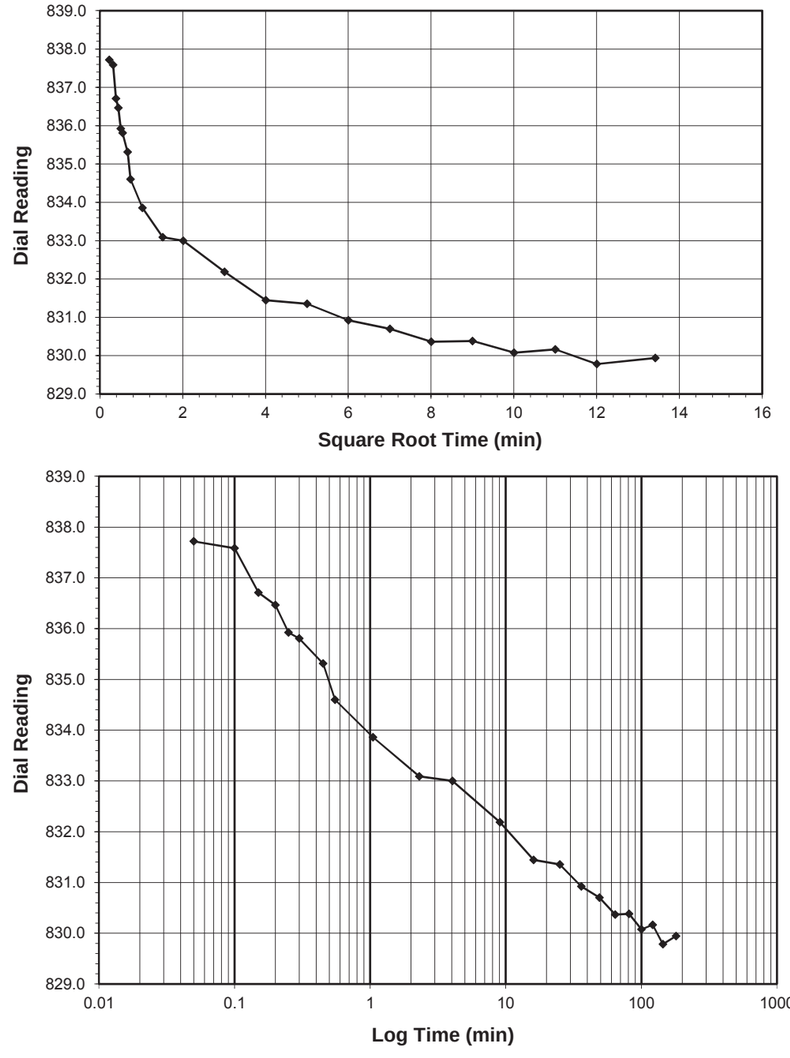
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**16.0-4.0**
Final Reading	**(div)**	**829.9**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/21/18
Start Time		4:32:40

Elapsed Time (min)	Dial Reading (div)
Initial	**910.2**
0.05	837.7
0.10	837.6
0.15	836.7
0.20	836.5
0.25	835.9
0.30	835.8
0.45	835.3
0.55	834.6
1.05	833.9
2.30	833.1
4.05	833.0
9.05	832.2
16.05	831.4
25.05	831.4
36.05	830.9
49.05	830.7
64.05	830.4
81.05	830.4
100.05	830.1
121.05	830.2
144.05	829.8
180.05	829.9

Tested By 129-04-0411 *Date* 5/21/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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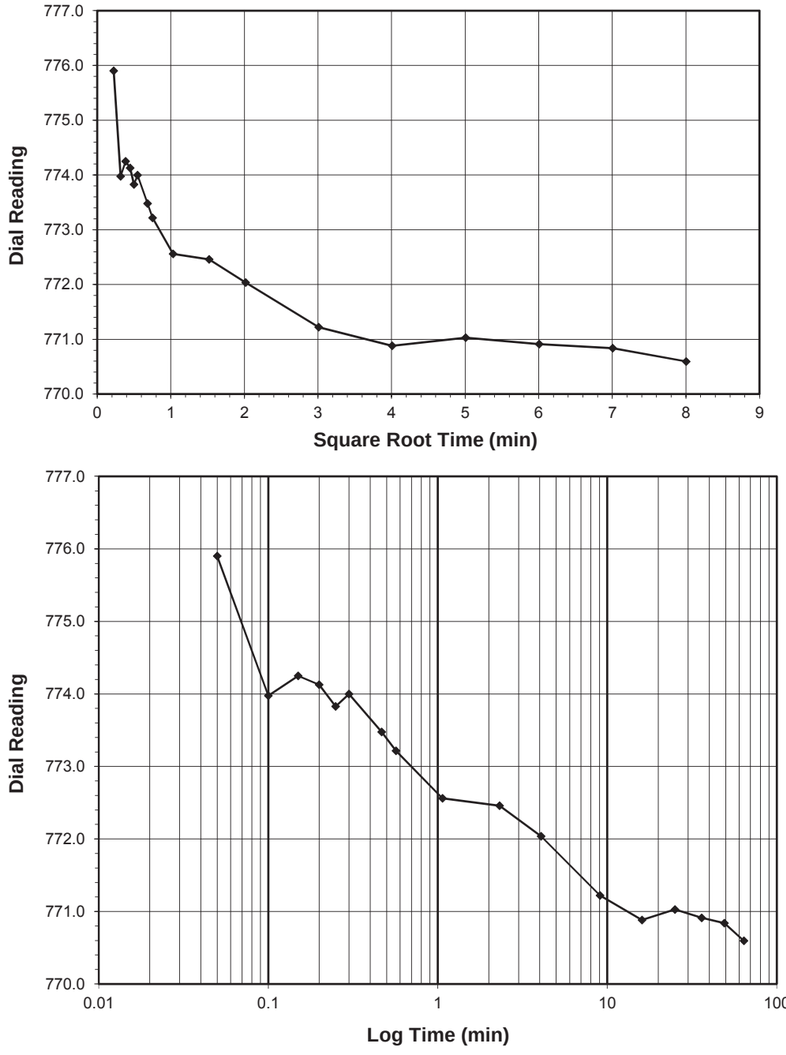
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**4.0-1.0**
Final Reading	**(div)**	**770.6**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/21/18
Start Time		11:33:01

Elapsed Time (min)	Dial Reading (div)
Initial	**829.9**
0.05	775.9
0.10	774.0
0.15	774.2
0.20	774.1
0.25	773.8
0.30	774.0
0.47	773.5
0.57	773.2
1.07	772.6
2.32	772.5
4.07	772.0
9.07	771.2
16.07	770.9
25.07	771.0
36.07	770.9
49.07	770.8
64.07	770.6

Tested By 129-04-0411 *Date* 5/21/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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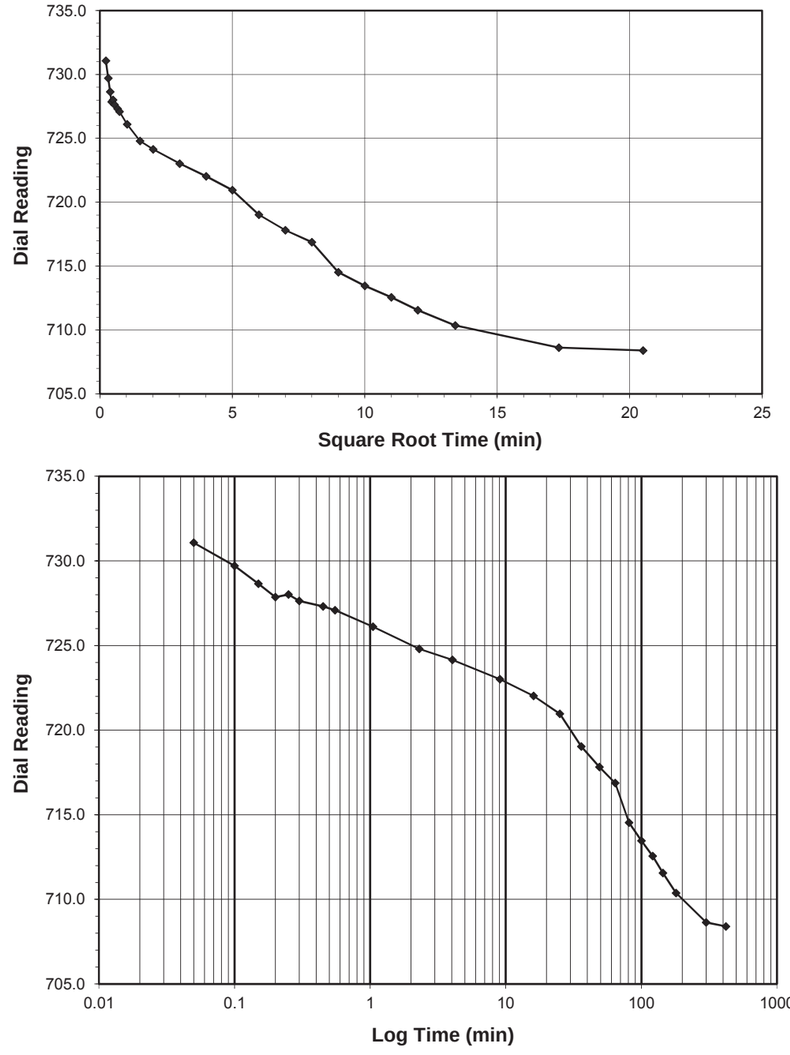
ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Kleinfelder	Boring No.	RPA_1449
Client Project	I-5700 / 20151548.053A	Depth (ft)	5.0-7.0
Project No.	R-2018-133-001	Sample No.	ST-6
Lab ID	R-2018-133-001-007	Visual Description	BROWN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	**(tsf)**	**1.0-0.25**
Final Reading	**(div)**	**708.4**
Consolidometer No.		**R470**
1 Division	(in)	0.0001
Start Date		5/21/18
Start Time		18:33:12

Elapsed Time (min)	Dial Reading (div)
Initial	**770.6**
0.05	731.1
0.10	729.7
0.15	728.6
0.20	727.9
0.25	728.0
0.30	727.6
0.45	727.3
0.55	727.1
1.05	726.1
2.30	724.8
4.05	724.2
9.05	723.0
16.05	722.0
25.05	721.0
36.05	719.0
49.07	717.8
64.07	716.9
81.07	714.5
100.07	713.5
121.07	712.6
144.07	711.6
180.07	710.4
300.07	708.6
420.38	708.4

Tested By 129-04-0411 *Date* 5/21/18 *Checked By* GEM *Date* 5/23/18

DCN: CT-24E Date: 5/3/12 Revision: 3

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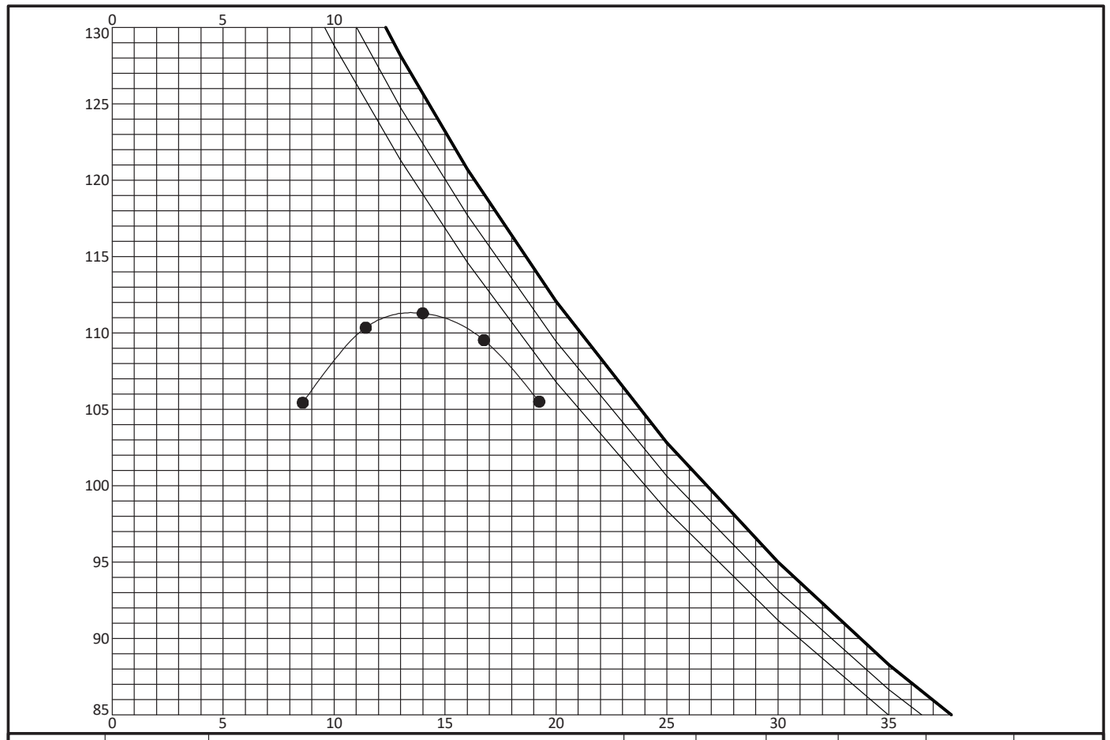
Froehling & Robertson, Inc.

MOISTURE-DENSITY RELATIONSHIP

Project No: 66W-0056
Client: Kleinfelder
Project: I-5700
City/State: N.A.



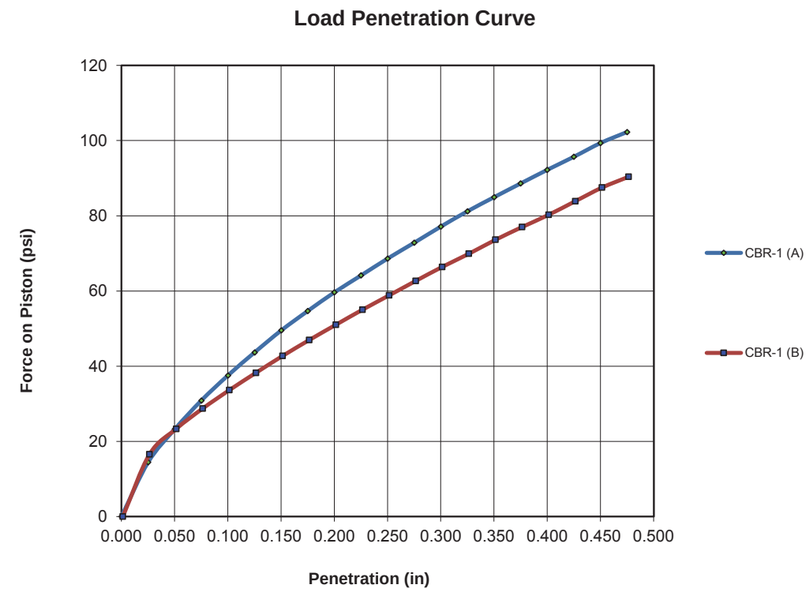
Sample	Depth (ft)	Sample Description	LL	PL	PI	% GRAVEL	% SAND	% FINES
● S-12	0.0' - 10.0'	Brown, SANDY LEAN CLAY (CL)	36	20	16	5.4	32.0	62.6

Sample	Optimum Moisture (%)	Max Dry Density (pcf)	AASHTO Classification	AASHTO Method	Sample Location	Natural Moisture (%)
● S-12	13.5	111.3	A-6 (8)	T-99 B	RPB-176	13.1

PROCTOR CURVE 66W-0056 CLASSIFICATIONS & PROCTORS.GPJ F&R.GDT 6/5/18

FROEHLING & ROBERTSON, INC.

California Bearing Ratio Test Report



SOAKED CBR TEST RESULTS					
Results	CBR-1 (A)	CBR-1 (B)			
0.1 in Pen.	3.8	3.4			
0.2 in Pen.	4.0	3.4			
Moisture (%)	12.8	13.0			
Density (pcf)	111.5	110.3			
Final Moisture (%)	18.1	18.3			
Final Density (pcf)	111.4	110.6			

Project Information		Natural Moisture (%)		
Project Name:	I-5700	CBR-1	13.1	
Client Name:	Kleinfelder			
Project Number:	66W-0056	Percent Swell	A	B
Date Received:	5/11/2018	CBR-1	2.600	2.690
Project Location:	N.A.			

Sample Information		Proctor Value *(ASTM D-698)*	
Sample Number	Classification	Max. Dry Density (pcf)	Optimum Moisture %
S-12	A-6 (8)	111.3	13.5
Sample Number	**Sample Location**	**AASHTO**	**% - #200**
S-12	RPB-1761	A-6 (8)	62.6

Specimen S-12 (A) Information

Froehling & Robertson, Inc.

Project Information

Project No. 66W-0056
Project Name: I-5700
Client: Kleinfelder
Sample Location: RPB-1761
Sample Description: A-6 (8)

Date Tested 5/29/2018
Natural Moisture: 13.1
AASHTO: A-6 (8)
Surcharge Weight (lb.): 10
% Retained on 4.75 mm: 5.4%

Specimen Data

Hours Soaked	96

Soaked Height (in): 4.6960001
Swell (%): 2.5999999

Liquid Limit: 36
Plastic Limit: 16
Max Dry Dens. (pcf): 111.3
Opt. Moisture (%): 13.5

Compacted Specimen	
Height (in)	4.58
Weight (g)	8039.30
Soil Weight + Mold (g)	27.15
Soil Weight (g)	4275.05
Mold Volume (in3)	129.4
Dry Density (pcf)	111.5
Percent Compaction	**100.2**

Moisture Percentage	Initial	Final
Moist Soil + tare (g)	357.10	1527.80
Dry Soil + tare (g)	329.10	1327.70
tare (g)	110.20	223.90
Moisture (%)	12.8	18.1

Specimen Test Data

Read Number	Load (lbs)	Disp. (in)	Force on Pistin (psi)	Penetration (in)	CBR
0	-6.96	0.00006	0.0	0.000	0.00
2	62.72	0.05013	23.2	0.051	0.00
3	85.62	0.07510	30.9	0.076	0.00
4	105.66	0.10010	37.5	0.101	3.75
5	124.01	0.12513	43.7	0.127	0.00
6	141.53	0.15013	49.5	0.152	0.00
7	157.06	0.17508	54.7	0.177	0.00
8	171.92	0.20008	59.6	0.203	3.97
9	185.41	0.22509	64.1	0.228	0.00
10	198.89	0.25010	68.6	0.253	0.00
11	211.51	0.27507	72.8	0.279	0.00
12	224.41	0.30010	77.1	0.304	4.06
13	236.61	0.32508	81.2	0.329	0.00
14	247.87	0.35013	84.9	0.355	0.00
15	258.83	0.37507	88.6	0.380	0.00
16	269.69	0.40009	92.2	0.405	4.01
18	291.08	0.45011	99.3	0.456	0.00
19	299.89	0.47507	102.3	0.482	0.00

Test Performed By: Drew Council

Specimen S-12 Information

Froehling & Robertson, Inc.

Project Information

Project No. 66W-0056
Project Name: I-5700
Client: Kleinfelder
Sample Location: RPB-1761
Sample Description: A-6 (8)

Date Tested 5/29/2018
Natural Moisture: 13.1
AASHTO: A-6 (8)
Surcharge Weight (lb.): 10
% Retained on 4.75 mm: 5.4%

Specimen Data

Hours Soaked	96

Soaked Height (in): 4.6989999
Swell (%): 2.6900001

Liquid Limit: 36
Plastic Limit: 16
Max Dry Dens. (pcf): 111.3
Opt. Moisture (%): 13.5

Compacted Specimen	
Height (in)	4.58
Weight (g)	8061.90
Soil Weight + Mold (g)	27.11
Soil Weight (g)	4234.08
Mold Volume (in3)	4275.1
Dry Density (pcf)	110.3
Percent Compaction	**99.1**

Moisture Percentage	Initial	Final
Moist Soil + tare (g)	397.60	1387.70
Dry Soil + tare (g)	364.60	1211.90
tare (g)	109.90	251.30
Moisture (%)	13.0	18.3

Specimen Test Data

Read Number	Load (lbs)	Disp. (in)	Force on Piston (psi)	Penetration (in)	CBR
0	-22.2	0.00139	0.0	0.000	0.00
2	47.7	0.05147	23.3	0.051	0.00
3	64.0	0.07646	28.8	0.076	0.00
4	78.7	0.10145	33.6	0.101	3.36
5	92.5	0.12640	38.2	0.127	0.00
6	105.9	0.15148	42.7	0.152	0.00
7	118.6	0.17643	46.9	0.177	0.00
8	130.8	0.20142	51.0	0.203	3.40
9	142.8	0.22641	55.0	0.228	0.00
10	154.2	0.25142	58.8	0.253	0.00
11	165.7	0.27644	62.7	0.279	0.00
12	177.0	0.30143	66.4	0.304	3.49
13	187.4	0.32641	69.9	0.329	0.00
14	198.6	0.35146	73.6	0.355	0.00
15	208.8	0.37648	77.0	0.380	0.00
16	218.5	0.40143	80.3	0.405	3.49
18	240.2	0.45147	87.5	0.456	0.00
19	248.9	0.47647	90.4	0.481	0.00

Test Performed By: Drew Council