STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3830	1	282

REFERENCE: R-3830

PROJECT: 38887

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *LEE*

PROJECT DESCRIPTION *NC42 FROM US421 TO SR1579 (MAIN STREET) IN SANFORD AND ALONG SR1579 FROM NC42 TO SR1538 (BUCKHORN AVE) IN BROADWAY*

INVENTORY

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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.

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DATE *MAY 2017*

Prepared in the Office of:

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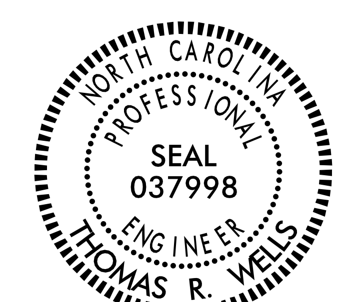

DocuSigned by:
Thomas R. Wells 5/16/2017
7DA5D2D051F... SIGNATURE DATE

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PROJECT REFERENCE NO.	SHEET NO.
R-3830	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	50 MX													
#40	30 MX	50 MX	51 MN											
#200	15 MX	25 MX	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	—		—	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PI	6 MX		NP	10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

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

CONSISTENCY OR DENSENESS

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

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- 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
- [ ] CME-55
- [ ] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] B-57 MOBILE
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [X] TRICONE 2-15/16" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.
ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.

ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.

ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK: SEE BELOW

ELEVATION: N/A FEET

NOTES:

TOP OF BORING ELEVATIONS OBTAINED FROM PROJECT TIN FILE (R3830_LS_TIN.TIN-MODIFIED 12/23/2016)

FIAD - FILLED IMMEDIATELY AFTER DRILLING
CP - COASTAL PLAIN

DATE: 8-15-14

09/08/99

TIP PROJECT: R-3830

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

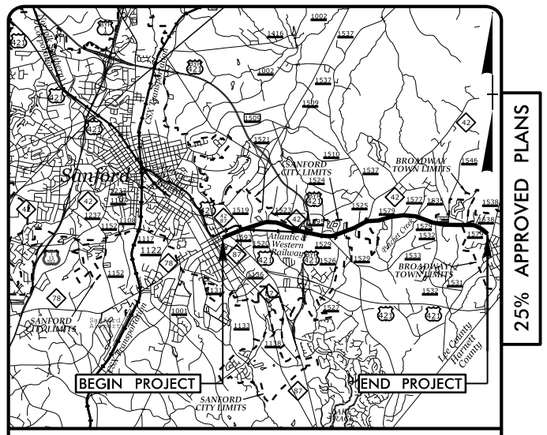
LEE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3830	3	282

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38887.1.1	STP-0042(49)	PE

LOCATION: *NC 42 FROM US 421 TO SR 1579 (MAIN STREET) IN SANFORD AND ALONG SR 1579 FROM NC 42 TO SR 1538 (E. HARRINGTON AVE) IN BROADWAY*

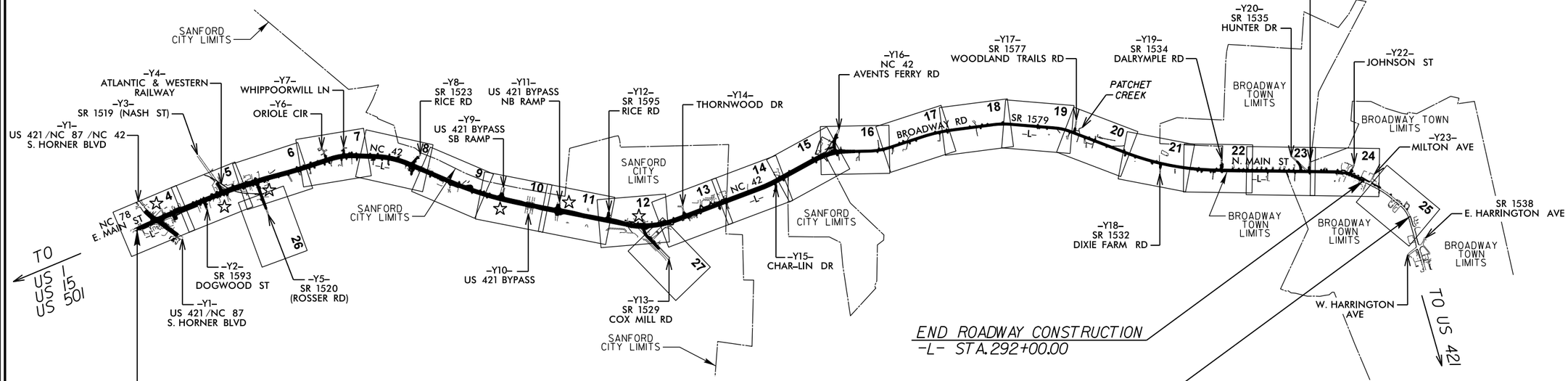
TYPE OF WORK: *GRADING, DRAINAGE, PAVING, AND SIGNALS*



VICINITY MAP

25% APPROVED PLANS

NAD 83/ NSRS 2007



END ROADWAY CONSTRUCTION
-L- STA. 292+00.00

BEGIN TIP PROJECT R-3830
-L- STA. 13+25.00

END TIP PROJECT R-3830
-L- STA. 304+90.86

☆ UPGRADE EXISTING SIGNAL

A DESIGN EXCEPTION IS REQUIRED FOR THE LANE WIDTH.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.
PORTIONS OF THIS PROJECT ARE WITHIN 'SANFORD' AND 'BROADWAY' MUNICIPAL BOUNDARIES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 = 15,200
ADT 2039 = 20,350
K = 8 %
D = 55 %
T = 4 % *
V = 50 MPH
* TTST=2% DUAL=2%
FUNC CLASS = MINOR ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3830 = 5.524 mile +/-

TOTAL LENGTH TIP PROJECT R-3830 = 5.524 mile +/-

LENGTH OF PROJECT BASED ON -L-

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

By:
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 20, 2017

LETTING DATE:
OCTOBER 15, 2019

V. MARCUS LOWERY, PE
PROJECT ENGINEER

TRAVIS COOK, EI
PROJECT DESIGN ENGINEER

GARY LOVERING, PE
PROJECT ENGINEER NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

12-MAY-2017 15:06
W:\share_GEOTECHNICAL\Projects\Active Projects\2015\548.037A R-3830 Roadway\R3830_GEO_RDWY\CADD_GEOTECH\PlanProf\R3830_GEO_tsh_inv_03.dgn
bajohnson AT KA206660

May 12, 2017

STATE PROJECT: 38887.1.1 (R-3830)
FEDERAL PROJECT: STP-0042 (49)
COUNTY: Lee
DESCRIPTION: NC 42 from US 421 to SR 1579 (Main Street) in Sanford and along SR 1579 from NC 42 to SR 1538 (E. Harrington Ave) in Broadway

SUBJECT: GEOTECHNICAL REPORT - INVENTORY

PROJECT DESCRIPTION

This project consists of the widening of SR 1579 (-L-) in Sanford and from NC 42 to SR 1538 in Broadway. The project also includes the widening of NC 42 (-Y1-), Dogwood Street (-Y2-), Nash Street (-Y3-), Rosser Road (-Y5-) Lane widening is proposed for Rosser Road (-Y5-), Oriole Circle (-Y6-), Whippoorwill Lane (-Y7-), Rice Road (-Y8-), US 421 Bypass SB Ramp (-Y9-), US 421 NB Ramp (-Y11-), Rice Road (-Y12-), Thornwood Drive (-Y14-), Char-Lin Drive (-Y15-), Woodlawn Trails Road (-Y17-), Dixie Farm Road (-Y18-), Dalrymple Road (-Y19-), Gilbert Lett Drive (-Y21-), and Johnson Street (-Y22-) as well as the realignment and widening of Nash Street (-Y3-), Cox Mill Road (-Y13-), Avents Ferry Road (-Y16-), and Hunter Road (-Y20-).

The geotechnical investigation was conducted between February and March of 2017. Standard Penetration Test borings were advanced with a B-57 Mobile drill rig with an automatic hammer. Hand auger borings were also completed. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by Geotechnics.

The following alignments, totaling 5.97 miles, were investigated. Plan sheets, subsurface profiles and cross sections of these alignments are included in this report.

LINE	STATIONS
-L-	13+00 to 305+00
-Y3-	17+21 to 19+69
-Y5-	10+00 to 16+40
-Y8-	10+60 to 11+95
-Y13-	10+00 to 16+25
-Y16-	10+90 to 15+01
-Y20-	11+00 to 13+47

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) Moderately to Highly Plastic Clays: Moderate to Highly plastic clays (PI > 15) were encountered on the project at the following locations:

LINE	STATIONS	OFFSETS
-L-	13+00 to 305+00	LT to RT
-Y3-	17+21 to 19+29	LT to RT
-Y5-	10+40 to 16+40	LT to RT
-Y8-	10+60 to 11+95	LT to RT
-Y13-	10+15 to 16+25	LT to RT
-Y16-	10+90 to 14+68	LT to RT
-Y20-	11+00 to 13+28	LT to RT

A discussion of these moderate to 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
-L-	17+00 to 19+50
-L-	23+50 to 29+50
-L-	33+50 to 37+00
-L-	42+50 to 44+50
-L-	125+50 to 140+50
-L-	150+50 to 152+50
-L-	170+00 to 172+00
-L-	182+50 to 192+50
-L-	202+00 to 250+00
-L-	258+00 to 260+00
-L-	272+00 to 274+00
-L-	284+00 to 286+00
-Y3-	17+00 to 19+29
-Y5-	10+40 to 16+50
-Y8-	10+50 to 12+39
-Y16-	10+75 to 14+68

3) Artificial Fill: Artificial fill is present in the following areas:

LINE	STATIONS
-L-	13+00 to 46+00
-L-	121+00 to 128+50
-L-	135+80 to 142+20
-L-	109+30 to 110+20

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 Coastal Plain Physiographic Province. The project corridor is comprised primarily of residential to urban properties and cultivated farmlands. The general topography along the project is generally flat to gently sloping.

Geologically, the soils in the project area generally consist of the Middendorf Formation.

SOIL PROPERTIES

Soils encountered during this investigation are separated into three categories based on origin. They consist of roadway embankment, artificial fill, and coastal plain soils belonging to the Middendorf Formation.

Roadway Embankment soils are present along the existing roadways on the project. These soils consist of moist, loose to medium dense, non-plastic to slightly plastic, silty, fine to coarse sands, clayey, fine to coarse sands with varying amounts of gravel (A-3, A-2-4, A-2-6) and moist, medium stiff, slightly to highly plastic, fine to coarse sandy clays, coarse to fine sandy, and silty clays with varying amounts of gravel (A-6, A-7-6). The plasticity index of the roadway embankment soils tested ranged from 20 to 31.

Soil identified as artificial fill are present adjacent to the existing roadway. The artificial fill encountered generally consists of moist, loose to very dense, non-plastic to moderately plastic, coarse sandy gravels, silty, fine to coarse sands, and clayey, fine to coarse sands with varying amounts of gravel (A-1, A-2-4, A-2-6) and moist, medium stiff, slightly plastic, silty, fine to coarse sandy clays and fine to coarse sandy, silty clays with varying amounts of gravel (A-6, A-7-6). The plasticity index of the artificial fill tested ranged from 7 to 12.

Soils generally identified as Coastal Plain - Middendorf Formation consist of moist to wet, loose to medium dense, non-plastic to highly plastic, gravelly, silty fine to coarse sands with varying amounts of gravel and organic matter, silty, clayey, fine to coarse sands with varying amounts of gravel (A-3, A-2-4, A-2-6, A-2-7). Soft to very stiff, slightly plastic, fine to coarse sandy, clayey silts and coarse to fine sandy silts with varying amounts of gravel (A-4, A-5) as well as silty, coarse to fine sandy clays and coarse to fine sandy, silty clays with varying amounts of gravel and organic matter (A-6, A-7-5, A-7-6). The plasticity index of the coastal plain soils tested ranged from non-plastic to 55.

GROUNDWATER

Groundwater was encountered at elevations ranging from 391.8 to 488.6 feet MSL along the proposed roadways of the project.

Prepared by,

DocuSigned by:
Daniel H. Kubinski
AB2F7FFB796A411...
Daniel Kubinski, EI
Staff Professional

DocuSigned by:
Thomas R. Wells
7DA5D2D0518F4B0...
Thomas R. Wells, PE
Senior Professional

DK/TRW:cas

PROJECT REFERENCE NO.	SHEET NO.
R-3830	04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

① = -L- POT STA 17+83.13= -Y1- POT STA 15+26.37
② = -L- POT STA 21+80.28= -DRW1- POT STA 10+00.00

-Y1- PC Sta. 10+00.00

BEGIN CONSTRUCTION
-Y1- POC 12+20.00

BEGIN T.I.P. PROJECT R-3803
-L- POC 13+25.00

-Y1- PT Sta. 15+05.17

-L- PT Sta. 16+97.06

TBM#1

BL-100

BL-101

BY1-152

GREASE TRAP

HOLDING TANK FOR AUTO SHOP DISCHARGE

TANK FOR CAR WASH DISCHARGE

ARTIFICIAL FILL

COASTAL PLAIN

ROADWAY EMBANKMENT

R3830-2

N 67° 08' 01.8" E

S 56° 18' 45.8" E

-L- PC Sta. 10+00.00

-L- PC Sta. 22+24.93

-L- PT Sta. 23+24.92

END CONSTRUCTION
-DRW1- POT 11+51.52
-DRW1- POT Sta. 11+87.20

END CONSTRUCTION
-Y1- POT 20+95.00

MATCHLINE -L- STA. 24+00.00
SEE SHEET 5

-Y1-
US 421/NC 87/NC 42
S. HORNER BLVD.

2019 / 2039 ADT

-L- NC 42	4,600 / 6,450	12,850 / 17,200
	2,150 / 2,900	2,350 / 3,100
-L- NC 78	11,950 / 16,000	3,850 / 5,450
		25,100 / 33,600

-Y1-
US 421/NC 87
S. HORNER BLVD.

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3830	05

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
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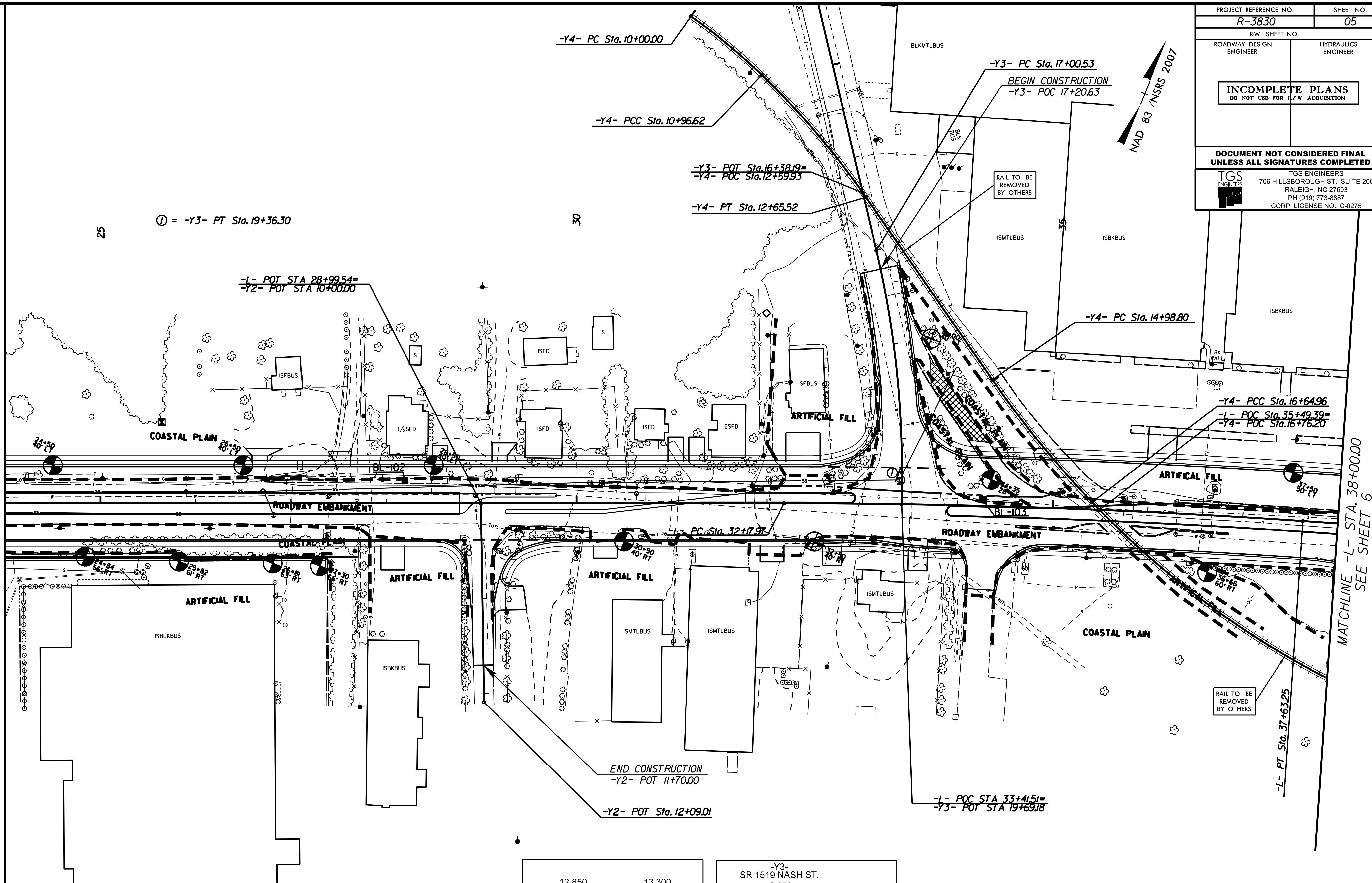
CORP. LICENSE NO.: C-0275



-L- NC 42	12,850 / 17,200	13,300 / 17,900	-L- NC 42
	500 / 500	950 / 1200	
	1450 / 1700		

-Y2- SR 1593 DOGWOOD ST. — 2019 / 2039 ADT

-Y3- SR 1519 NASH ST.

-Y3-	8,650 / 11,600
Left turn	3,900 / 5,250
Right turn	4,750 / 6,350
-L- NC 42 (west)	13,300 / 17,900
-L- NC 42 (east)	14,050 / 18,900

2019 / 2039 ADT

PAVEMENT REMOVAL

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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CORP. LICENSE NO.: C-0275

14,050 / 18,900 -L- NC 42
13,950 / 18,700 -L- NC 42
2,400 / 4,200
2,250 / 4,050
4,650 / 8,250 -Y5-
2019 / 2039 ADT SR 1520 ROSSER RD.

NAD 83 /NSRS 2007

① = -Y5- PC Sta. 10+63.57

-L- PC Sta. 40+65.07
-L- POC Sta. 41+26.08=
-Y5- POT 10+00.00
-L- PT Sta. 45+03.17
-L- PC Sta. 47+50.07
-L- PT Sta. 51+88.18

INV IN=439.62'
INV IN=445.29'
INV OUT=445.29'
INV IN=445.78'
INV IN=446.91'
INV OUT=446.45'
INV OUT=447.68'
INV IN=450.86'
INV IN=450.89'
INV=443.57'

ARTIFICIAL FILL
COASTAL PLAIN
GRASS
WOODS
ROADWAY EMBANKMENT
BL-105
ATLANTIC & WESTERN RAILWAY
RAIL TO BE REMOVED BY OTHERS

-Y4- PT Sta. 20+17.81
-Y4- PC Sta. 22+18.21
-Y5- PT Sta. 11+59.16
-Y5- POT STA 12+90.58=
-Y4- POC STA 23+31.50
-Y4- PT Sta. 24+09.42

MATCHLINE -L- STA. 38+00.00
SEE SHEET 5

MATCHLINE -L- STA. 52+00.00
SEE SHEET 7

MATCHLINE -Y5- STA.13+50.00
SEE SHEET 26

08-MAY-2017 15:53
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PROJECT REFERENCE NO.	SHEET NO.
R-3830	07
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
TGS ENGINEERS
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RALEIGH, NC 27603
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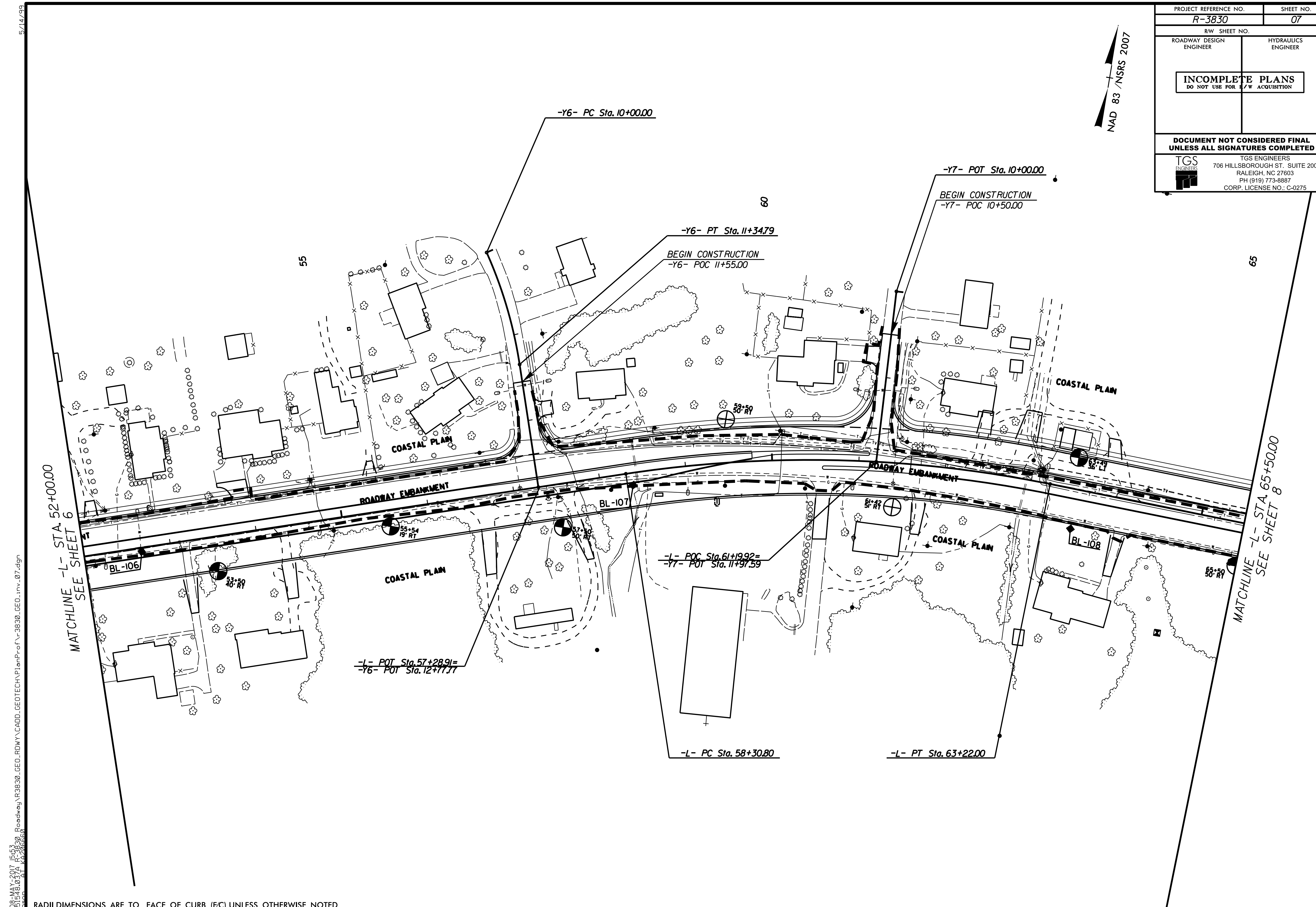
CORP. LICENSE NO.: C-0275


5/14/99
NAD 83 /NSRS 2007
-Y6- PC Sta. 10+00.00
-Y6- PT Sta. 11+34.79
BEGIN CONSTRUCTION
-Y6- POC 11+55.00
-Y7- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y7- POC 10+50.00
55
60
65
COASTAL PLAIN
ROADWAY EMBANKMENT
BL-106
BL-107
BL-108
53+50
40' RT
55+54
19' RT
57+50
50' RT
59+50
50' RT
61+42
51' RT
63+49
36' LT
65+50
50' RT
MATCHLINE -L- STA. 52+00.00
SEE SHEET 6
MATCHLINE -L- STA. 65+50.00
SEE SHEET 8
-L- POT Sta. 57+28.91=
-Y6- POT Sta. 12+77.77
-L- POC Sta. 61+19.92=
-Y7- POT Sta. 11+97.59
-L- PC Sta. 58+30.80
-L- PT Sta. 63+22.00
08-MAY-2017 15:53

RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

5/14/99

-Y8-
SR 1523 RICE RD.

	500/600	
300/300	200/200	13,400/18,000
-L- NC 42		-L- NC 42
13,700/18,400	550/600	300/300
	850/1000	2019/2039 ADT
	-DRW2-	

① = -Y8- PT Sta. 12+62.64

② = -L- POT Sta.76+58.63=
-Y8- POT Sta. 12+87.00=
-DRW2- POT Sta.10+00.00

NAD 83 /NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-3830	08
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
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RALEIGH, NC 27603
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CORP. LICENSE NO.: C-0275

70

75

BEGIN CONSTRUCTION
-Y8- POT 10+60.00

-Y8- POT Sta. 10+00.00

BY4-158
-Y8- PC Sta. 10+95.44

MATCHLINE -L- STA. 65+50.00
SEE SHEET 7

MATCHLINE -L- STA. 79+00.00
SEE SHEET 9

COASTAL PLAIN

ROADWAY EMBANKMENT

BL-109

BL-110

ARTIFICIAL FILL

-L- PC Sta. 68+14.00

-L- PT Sta. 75+50.07

-DRW2- POT Sta. 12+19.57

END CONSTRUCTION
-DRW2- POT 11+95.00

PAVEMENT REMOVAL

08-MAY-2017 15:53
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PROJECT REFERENCE NO.	SHEET NO.
R-3830	09

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
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TGS ENGINEERS
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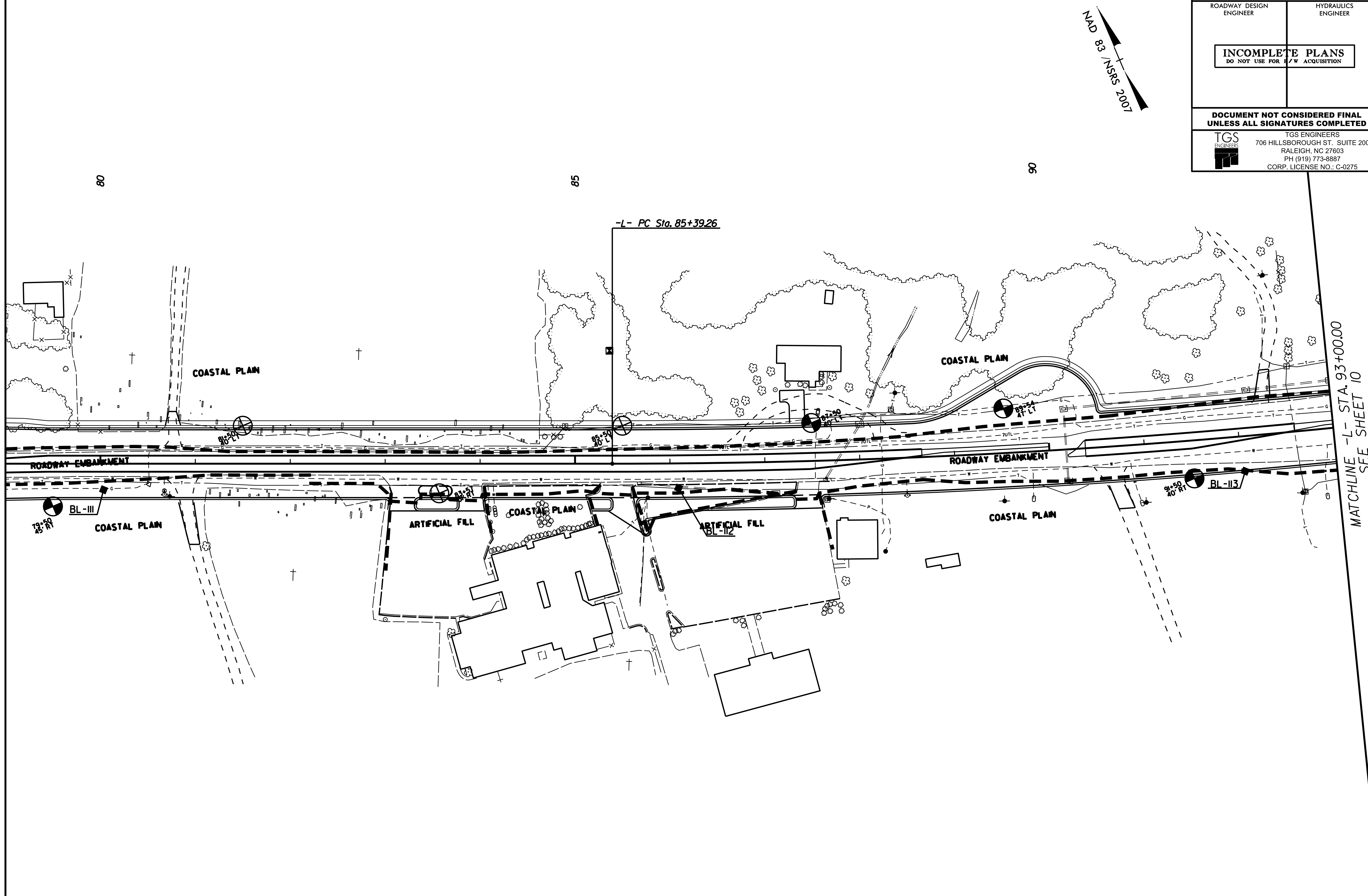
CORP. LICENSE NO.: C-0275



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5/14/99

-Y9-
US 421 SB

3,450
4,750

1,000
1,400

2,450
3,350

-L- NC 42

13,400
18,000

14,900
19,950

-L- NC 42

2019
2039 ADT

NAD 83 /NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-3830	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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RALEIGH, NC 27603
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CORP. LICENSE NO.: C-0275

95

100

105

MATCHLINE -L- STA. 93+00.00
SEE SHEET 9

MATCHLINE -L- STA. 107+00.00
SEE SHEET 11

-Y9- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y9- POT 11+20.00

-L- CS Sta. 99+64.83

-L- ST Sta. 103+14.83

-Y10- POT Sta. 10+00.00

-L- POT Sta. 103+64.15=
-Y10- POT Sta. 11+90.66

-L- POC Sta. 97+28.88=
-Y9- POT Sta. 12+46.63

-Y10- POT Sta. 13+82.89

COASTAL PLAIN

ROADWAY EMBANKMENT

GRASS

93+50 50' LT

95+50 50' RT

97+50 40' RT

99+50 50' LT

101+50 60' RT

103+50 50' LT

105+50 50' LT

UPGRADE EXISTING SIGNAL

08-MAY-2017 15:53
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PROJECT REFERENCE NO.	SHEET NO.
R-3830	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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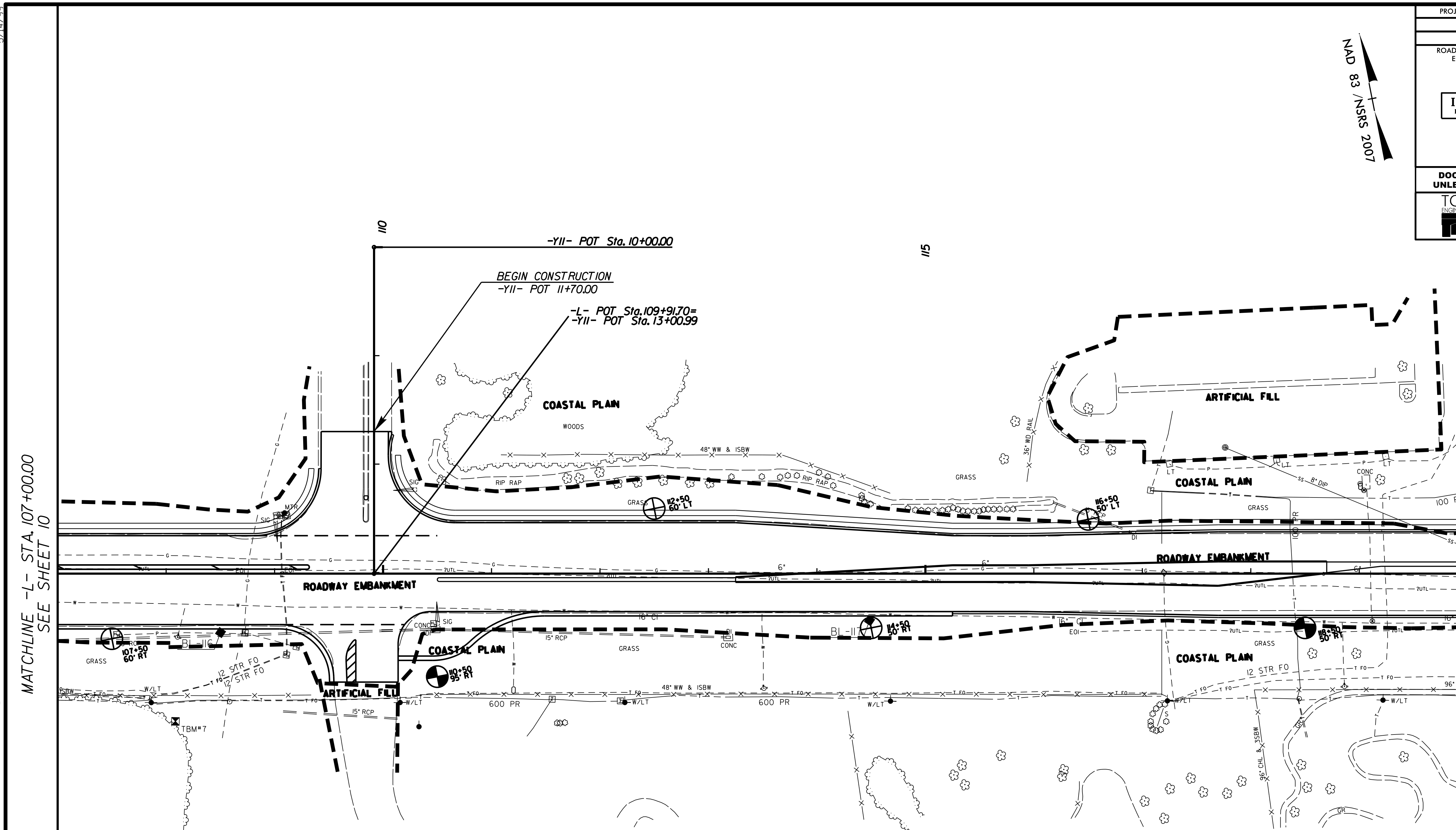
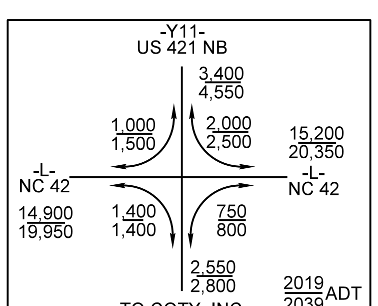
TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



NAD 83 /NSRS 2007
MATCHLINE -L- STA. 107+00.00
SEE SHEET 10
MATCHLINE -L- STA. 120+00.00
SEE SHEET 12
-Y11- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y11- POT 11+70.00
-L- POT Sta. 109+91.70=
-Y11- POT Sta. 13+00.99
110
115
COASTAL PLAIN
WOODS
ARTIFICIAL FILL
ROADWAY EMBANKMENT
GRASS
RIP RAP
48" WW & ISBW
600 PR
100 PR
15" RCP
12 STR FO
96" CHL & 35BW
107+50
60' RT
110+50
95' RT
112+50
60' LT
114+50
50' RT
116+50
50' LT
118+50
50' RT
TBM#7



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ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
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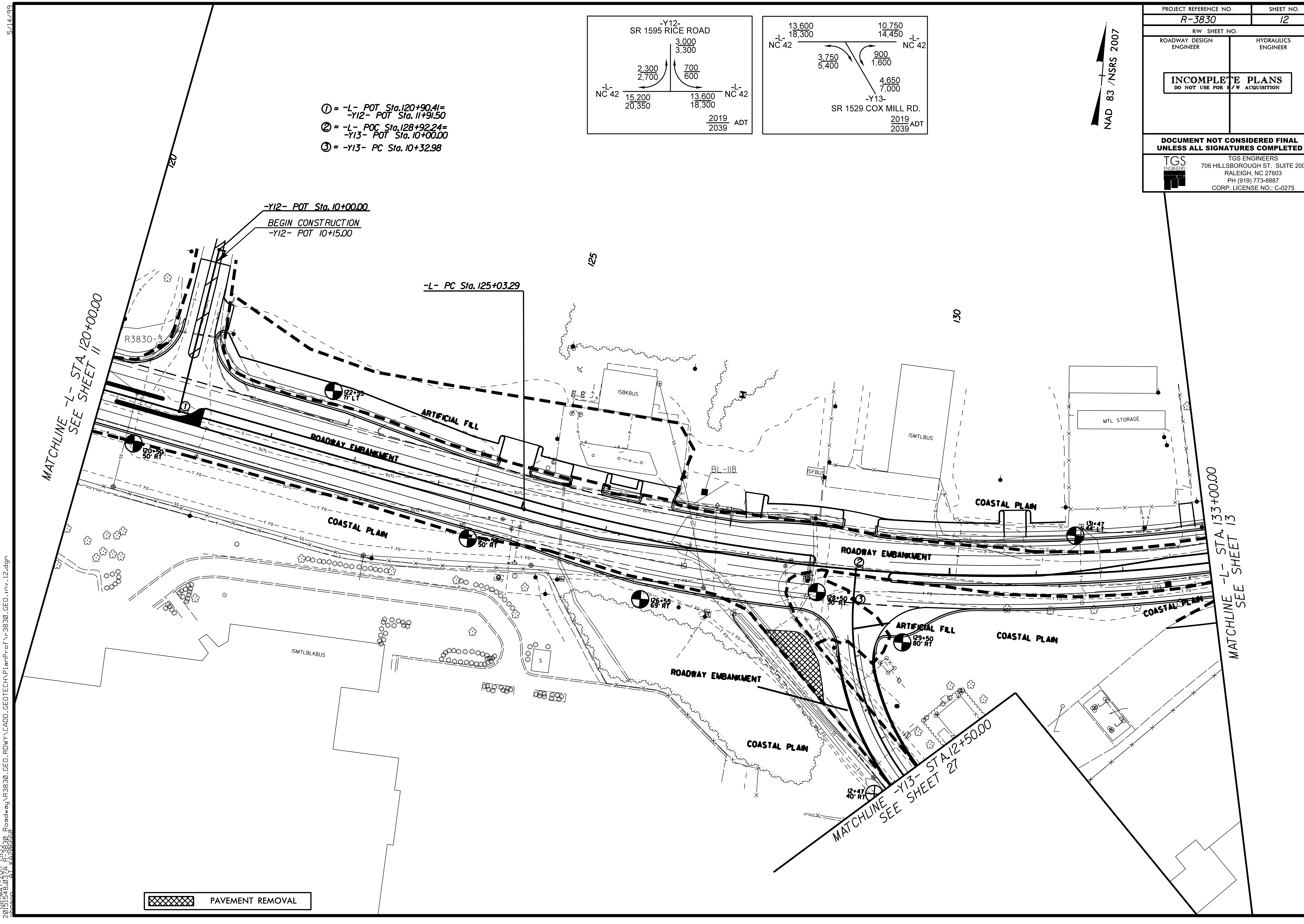
-Y12-
SR 1595 RICE ROAD
3,000
3,300
2,300
2,700
700
600
-L-
NC 42
15,200
20,350
13,600
18,300
-L-
NC 42
2019
2039 ADT
13,600
18,300
10,750
14,450
-L-
NC 42
-L-
NC 42
3,750
5,400
900
1,600
4,650
7,000
-Y13-
SR 1529 COX MILL RD.
2019
2039 ADT
NAD 83 /NSRS 2007
① = -L- POT Sta.120+90.41= -Y12- POT Sta. 11+91.50
② = -L- POC Sta.128+92.24= -Y13- POT Sta. 10+00.00
③ = -Y13- PC Sta. 10+32.98
-Y12- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y12- POT 10+15.00
-L- PC Sta. 125+03.29
MATCHLINE -L- STA. 120+00.00
SEE SHEET 11
MATCHLINE -L- STA. 133+00.00
SEE SHEET 13
MATCHLINE -Y13- STA. 12+50.00
SEE SHEET 27
120
125
130
R3830-
ARTIFICIAL FILL
ROADWAY EMBANKMENT
COASTAL PLAIN
ISBKBUS
ISMTLBUS
MTL STORAGE
ISFBUS
ISMTLBLKBUS
BL-118
BL-119
122+35 71' LT
120+50 50' RT
124+50 50' RT
126+55 69' RT
128+50 30' RT
129+50 80' RT
131+47 44' LT
12+47 40' RT

PAVEMENT REMOVAL

08-MAY-2017 15:53
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5/14/99

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

① = -L- POT Sta.146+04.00=
-DRW3- POT Sta. 10+00.00

-Y14- POT Sta. 10+00.00
-Y14- PC Sta. 10+23.52
BEGIN CONSTRUCTION
-Y14- POC 10+96.00
-Y14- PT Sta. 11+45.20

135
PT Sta. 136+11.13
140
145

MATCHLINE -L- STA. 133+00.00
SEE SHEET 12

MATCHLINE -L- STA. 147+00.00
SEE SHEET 14

ISBKBUS
ISMTLBUS
ISBKBUS
ISBKBUS

COASTAL PLAIN
ROADWAY EMBANKMENT
133+50 50' RT
COASTAL PLAIN
ARTIFICIAL FILL
COASTAL PLAIN
137+50 50' RT
ARTIFICIAL FILL
139+87 64' LT
143+50 45' LT
ARTIFICIAL FILL
COASTAL PLAIN
ROADWAY EMBANKMENT
141+50 45' RT
145+50 45' RT
COASTAL PLAIN
HTR

-DRW3- PC Sta. 10+65.03
TBM#9
END CONSTRUCTION
-DRW3- POC 11+25.00
-DRW3- PT Sta. 11+94.14
-DRW3- POT Sta. 12+03.01

-L- POT Sta.138+26.52=
-Y14- POT Sta. 11+95.41

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

08-MAY-2017 15:53
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Design

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

150

155

160

-L- PC Sta. 155+99.09

-L- PT Sta. 159+52.60

-L- POC Sta. 159+16.46=
-Y15- POT Sta. 10+00.00

COASTAL PLAIN

ROADWAY EMBANKMENT

DE-122

147+50 50' LT

149+50 62' LT

151+52 69' LT

155+50 50' LT

159+50 45' LT

153+50 40' RT

157+50 45' RT

SANFORD CITY LIMITS

MATCHLINE -L- STA. 147+00.00
SEE SHEET 13

MATCHLINE -L- STA. 160+50.00
SEE SHEET 15

-Y15- PC Sta. 10+36.34

-Y15- PT Sta. 11+45.55

END CONSTRUCTION
-Y15- POT 12+15.00

-Y15- POT Sta. 12+32.87

08-MAY-2017 15:53
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
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RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

MATCHLINE -L- STA. 160+50.00
SEE SHEET 14

MATCHLINE -L- STA. 172+00.00
SEE SHEET 16

165

170

COASTAL PLAIN

ROADWAY EMBANKMENT

SANFORD CITY LIMITS

-L- PC Sta. 169+10.46

165+35 65' LT

165+50 50' RT

163+50 50' RT

167+50 45' RT

169+00 45' RT

171+00 40' RT

08-MAY-2017 15:54
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PROJECT REFERENCE NO.	SHEET NO.
R-3830	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

-Y16- PC Sta. 10+00.00
BEGIN CONSTRUCTION
-Y16- POC 10+90.00
-Y16- PRC Sta. 10+98.47
-Y16- PT Sta. 14+10.78
-L- PC Sta. 181+20.50
-L- PT Sta. 176+33.72
-L- POC Sta. 174+00.51=
-Y16- POT Sta. 15+00.63

BY6-161

COASTAL PLAIN
ROADWAY EMBANKMENT
SANFORD CITY LIMITS
GUY

13+00 40' LT
173+50 60' LT
173+00 40' RT
175+50 30' RT
177+50 30' LT
179+50 30' RT
181+50 37' LT
183+50 37' LT

175
180

BL-127

MATCHLINE -L- STA. 172+00.00
SEE SHEET 15

MATCHLINE -L- STA. 185+00.00
SEE SHEET 17

2019 ADT
2039

-Y16-
AVENTS FERRY ROAD
NC 42

3,400
4,650

8,850
11,850

3,000
4,050

400
600

6,350
8,400

-L-
NC 42

-L-
SR 1579
BROADWAY RD.

PAVEMENT REMOVAL

5/14/99

08-MAY-2017 15:54
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

185

190

195

-L- PT Sta. 185+93.98

-L- PC Sta. 193+59.73

MATCHLINE -L- STA. 185+00.00
SEE SHEET 16

MATCHLINE -L- STA. 198+50.00
SEE SHEET 18

ROADWAY EMBANKMENT

ROADWAY EMBANKMENT

COASTAL PLAIN

COASTAL PLAIN

193+59
35' LT

185+50
25' RT

187+50
25' RT

189+50
30' RT

193+50
40' RT

195+50
37' RT

197+50
40' RT

TBM=11

08-MAY-2017 15:54
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PROJECT REFERENCE NO.	SHEET NO.
R-3830	18

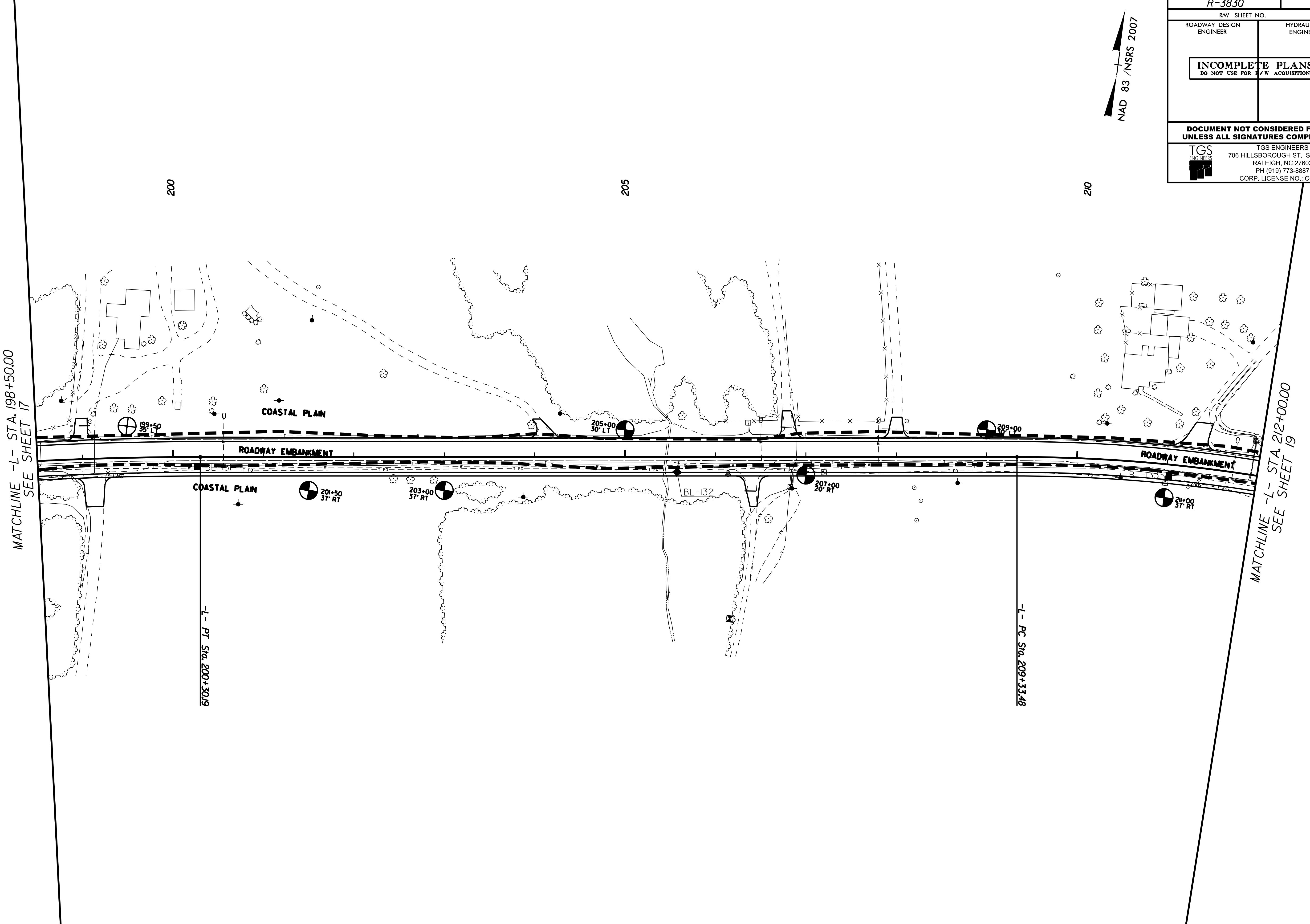
R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



5/14/99

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

215

220

225

-L- PC Sta. 222+75.26

COASTAL PLAIN

COASTAL PLAIN

COASTAL PLAIN

COASTAL PLAIN

213+00 30' LT

217+00 40' LT

219+00 37' LT

221+00 37' LT

ROADWAY EMBANKMENT

ROADWAY EMBANKMENT

BL-134

BL-135

215+00 25' RT

223+00 40' RT

225+00 25' RT

-L- PT Sta. 212+93.69

MATCHLINE -L- STA. 212+00.00
SEE SHEET 18

MATCHLINE -L- STA. 225+50.00
SEE SHEET 20

08-MAY-2017 15:54
20151548.0327A R-3830 Roadway\R3830_GEO_RDWY\CADD_GEOTECH\PlanProf\r-3830_GEO_inv_19.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3830	20
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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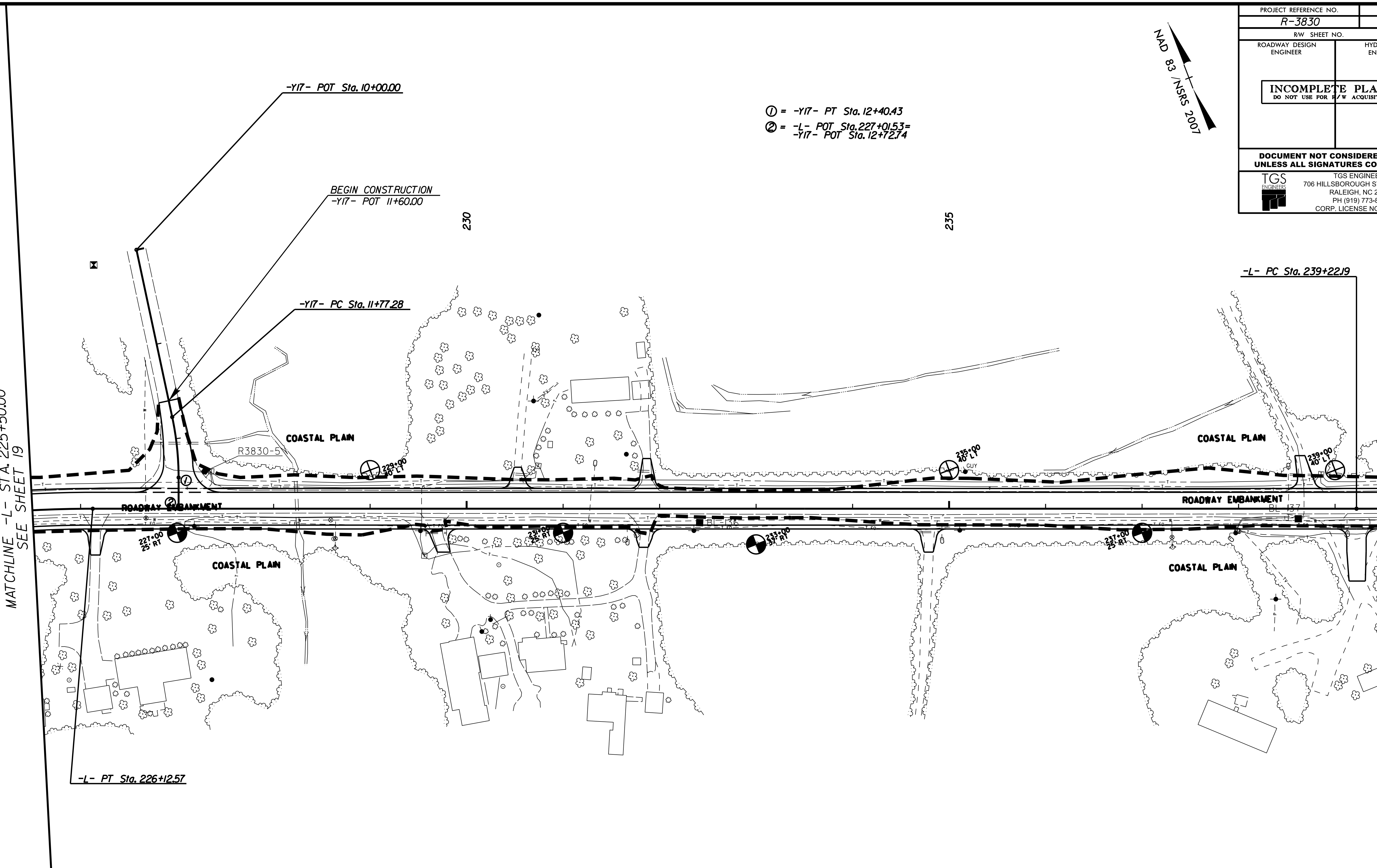
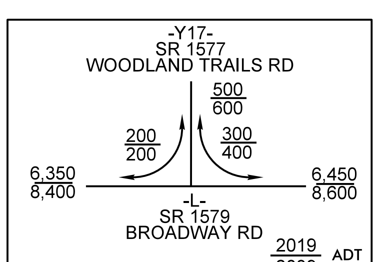
TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275





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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

240

245

250

MATCHLINE -L- STA. 239+50.00
SEE SHEET 20

MATCHLINE -L- STA. 253+00.00
SEE SHEET 22

COASTAL PLAIN

ROADWAY EMBANKMENT

ISFD

ISFD ABAND

HTR

S

241+00
35' RT

243+00
37' RT

245+00
40' LT

247+80
30' LT

249+00
25' RT

251+00
35' RT

-L- POC Sta. 247+20.45=
-Y18- POT Sta. 10+00.00

-Y18- PC Sta. 10+27.97

-Y18- PT Sta. 10+81.88

END CONSTRUCTION
-Y18- POT 11+10.00

-Y18- POT Sta. 12+19.46

-L-
SR 1579
BROADWAY RD

6,450 / 8,600		6,350 / 8,400
400 / 500		300 / 300
	700 / 800	

-Y18-
SR 1532
DIXIE FARM RD

2019 / 2039 ADT

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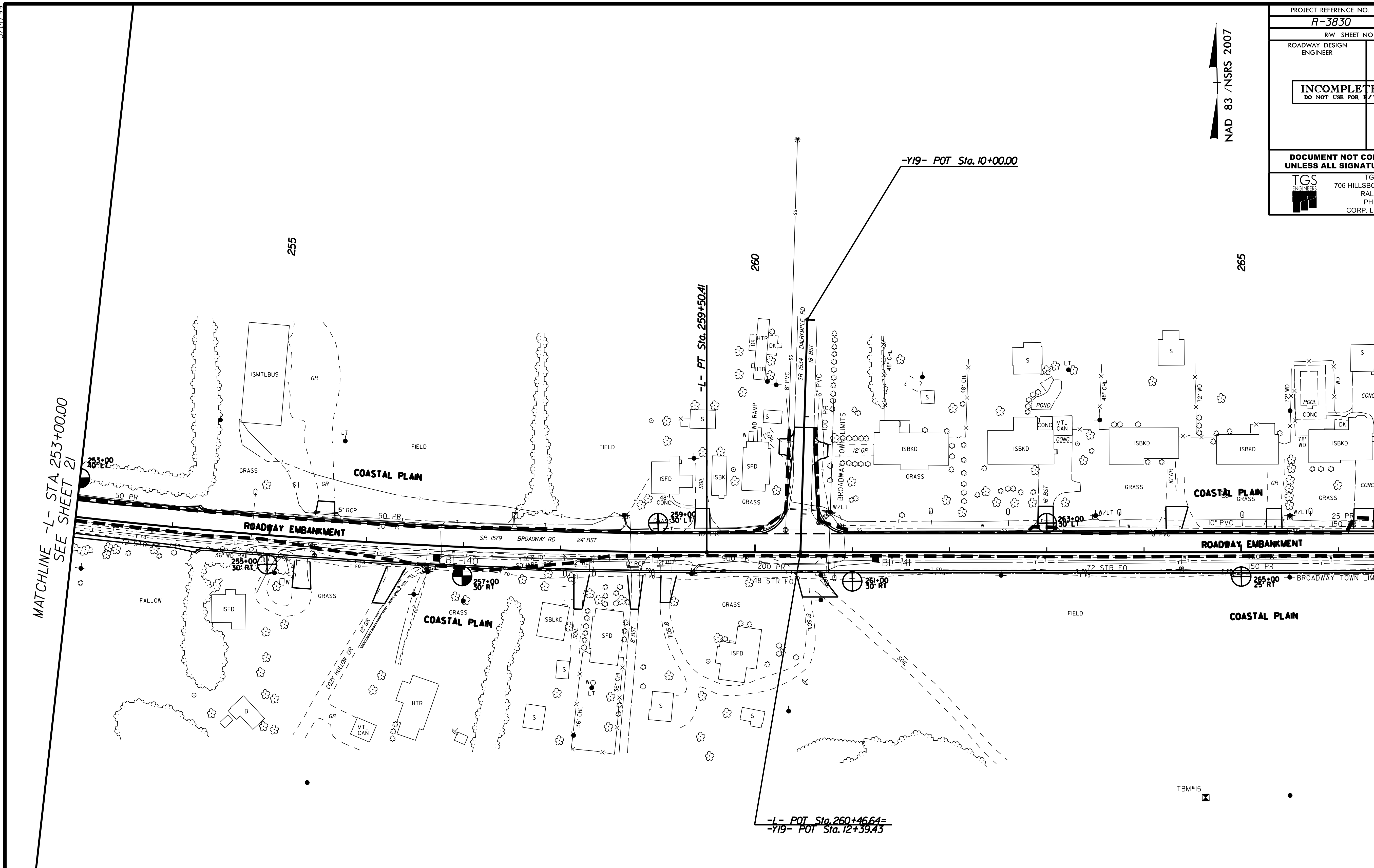
20151548.01A R-3830 Roadway\R3830_GEO_RDWY\CADD_GEOTECH\PlanProf\r-3830_GEO_inv_21.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3830	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

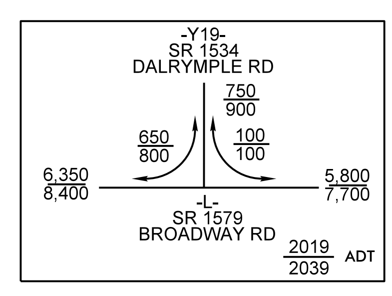
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



NAD 83 /NSRS 2007
MATCHLINE -L- STA. 253+00.00 SEE SHEET 21
MATCHLINE -L- STA. 266+50.00 SEE SHEET 23
-Y19- POT Sta. 10+00.00
-L- PT Sta. 259+50.41
-L- POT Sta. 260+46.64=
-Y19- POT Sta. 12+39.43
255
260
265
COASTAL PLAIN
ROADWAY EMBANKMENT
SR 1579 BROADWAY RD 24' BST
SR 1534 DALRYMPLE RD 18' BST
BROADWAY TOWN LIMITS
253+00 40' LT
255+00 30' RT
257+00 30' RT
259+00 30' LT
261+00 30' RT
263+00 30' LT
265+00 25' RT
FIELD
GRASS
FALLOW
TBM#15



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5/14/99

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

① = -Y20- PT Sta. 13+21.19
② = -Y21- PT Sta. 11+40.59

-Y20- POT Sta. 10+00.00
-Y20- PC Sta. 11+11.41
-Y21- POT Sta. 10+00.00
-Y21- PC Sta. 10+51.48

270 275 280

ROADWAY EMBANKMENT
COASTAL PLAIN
BROADWAY TOWN LIMITS
-Y7-162

267+00 30' RT
269+05 34' RT
271+00 30' LT
273+00 30' LT
274+89 RT
277+00 30' LT
279+00 30' RT
12+00 30' RT

BL-142 BL-143 BL-144

-L- POT Sta. 277+87.69=
-Y20- POT Sta. 13+47.09

-L- POT Sta. 279+65.19=
-Y21- POT Sta. 11+74.86

MATCHLINE -L- STA. 266+50.00
SEE SHEET 22

MATCHLINE -L- STA. 280+50.00
SEE SHEET 24

PAVEMENT REMOVAL

-Y20-
SR 1535
HUNTER DR

1,050 / 1,400
100 / 100
950 / 1,300
5,800 / 7,700
6,650 / 8,900

-L-
SR 1579
N. MAIN ST

2019 / 2039 ADT

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3830	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST, SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 /NSRS 2007

① = -L- POC Sta.288+63.17= -Y22- POT Sta. 11+71.73

-Y22- POT Sta. 10+00.00

-Y23- POT Sta. 10+00.00

285

290

10

COASTAL PLAIN

281+00 50' LT

285+00 50' LT

ROADWAY EMBANKMENT

283+00 30' RT

COASTAL PLAIN

ARTIFICIAL FILL

BL-146

COASTAL PLAIN

291+10 44' LT

ROADWAY EMBANKMENT

ARTIFICIAL FILL

ARTIFICIAL FILL

293+00 30' LT

COASTAL PLAIN

BL-147

-L- PC Sta. 285+80.78

-L- PT Sta. 290+07.43

-L- POT Sta. 293+54.06= -Y23- POT Sta. 12+27.07

MATCHLINE -L- STA. 280+50.00
SEE SHEET 23

MATCHLINE -L- STA. 294+50.00
SEE SHEET 25

08-MAY-2017 15:54
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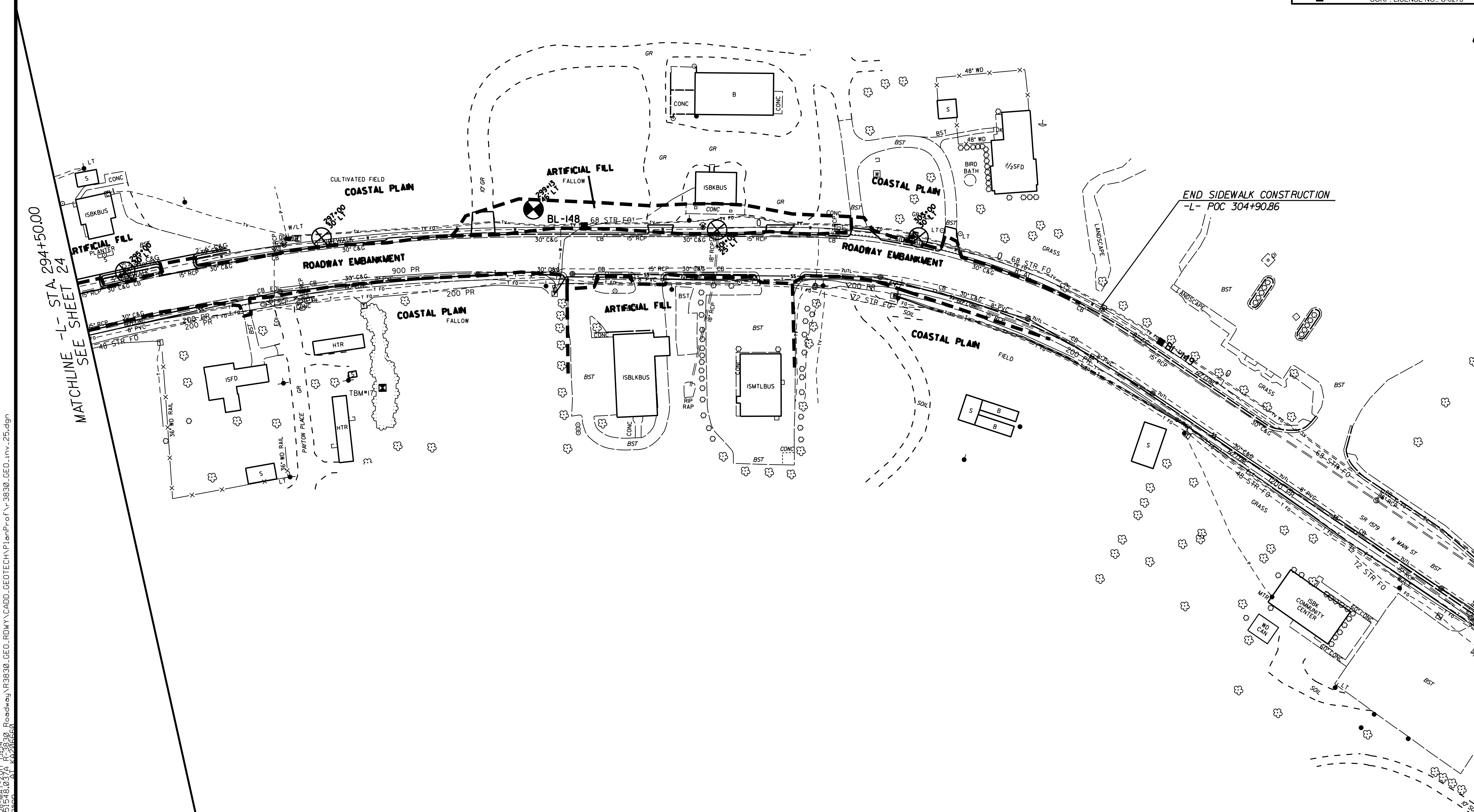
PROJECT REFERENCE NO.	SHEET NO.
R-3830	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



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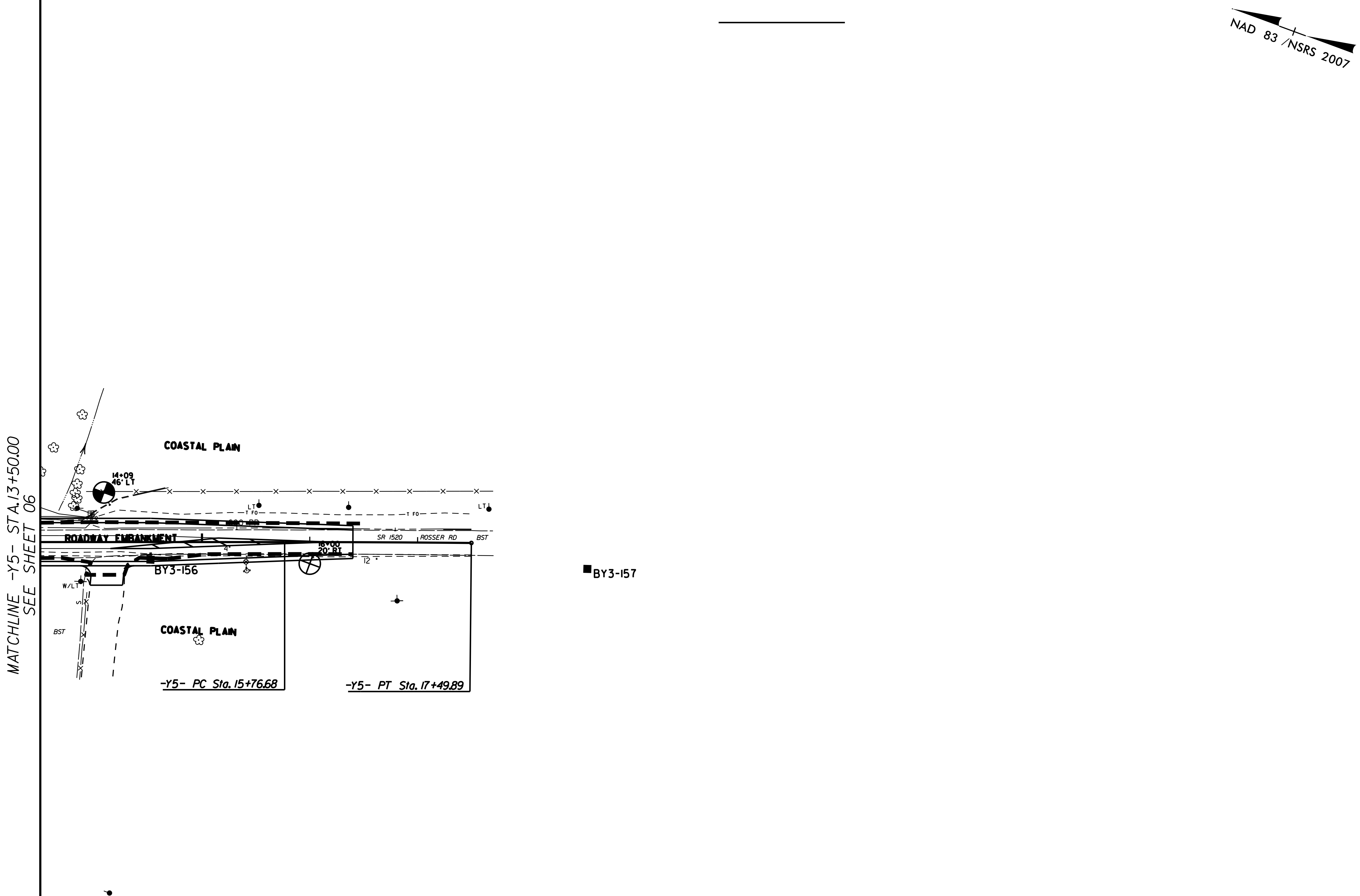
PROJECT REFERENCE NO.	SHEET NO.
R-3830	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



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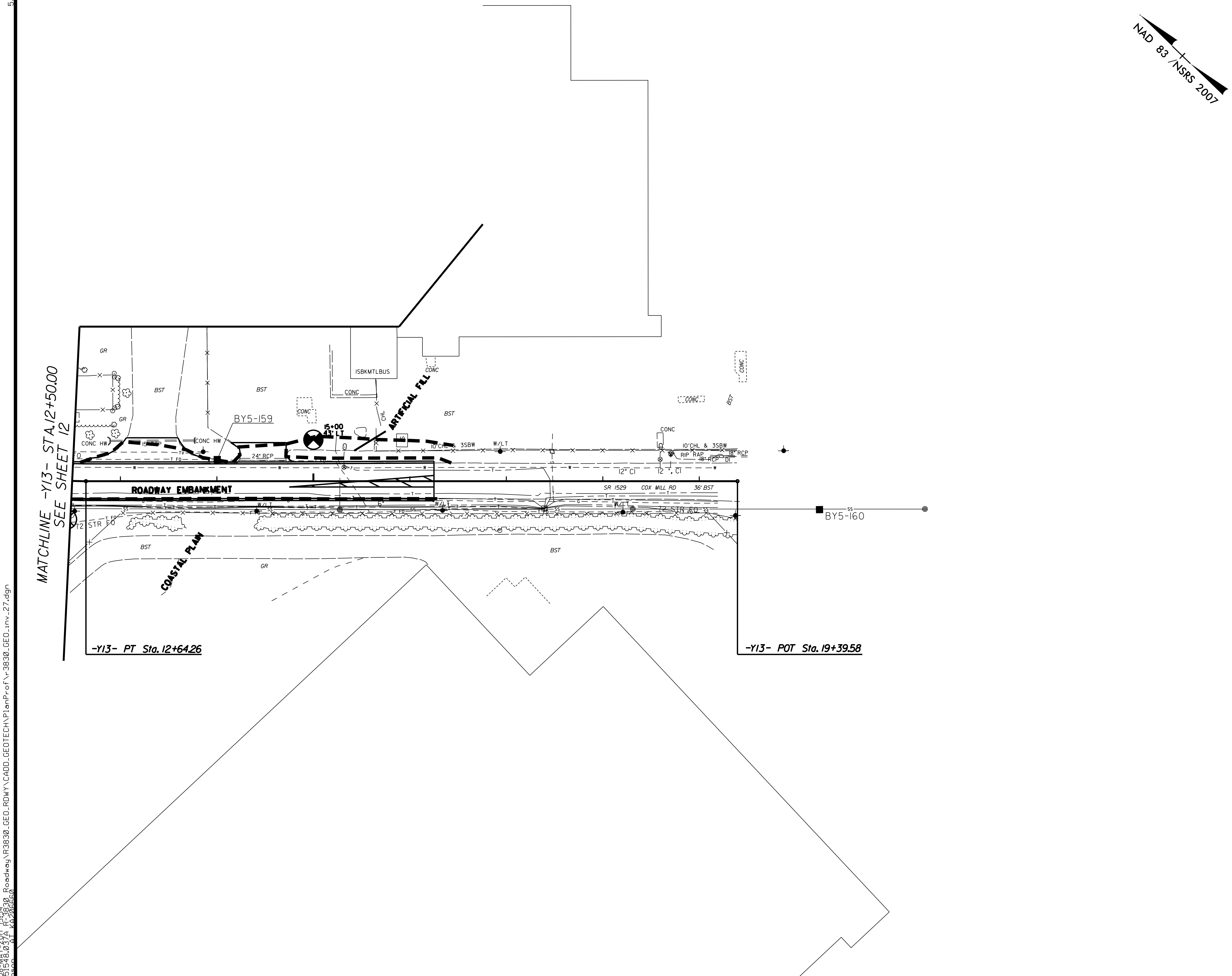
PROJECT REFERENCE NO.	SHEET NO.
R-3830	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



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TGS ENGINEERS
706 HILLSBOROUGH ST., SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO.	SHEET NO.
R-3830	28

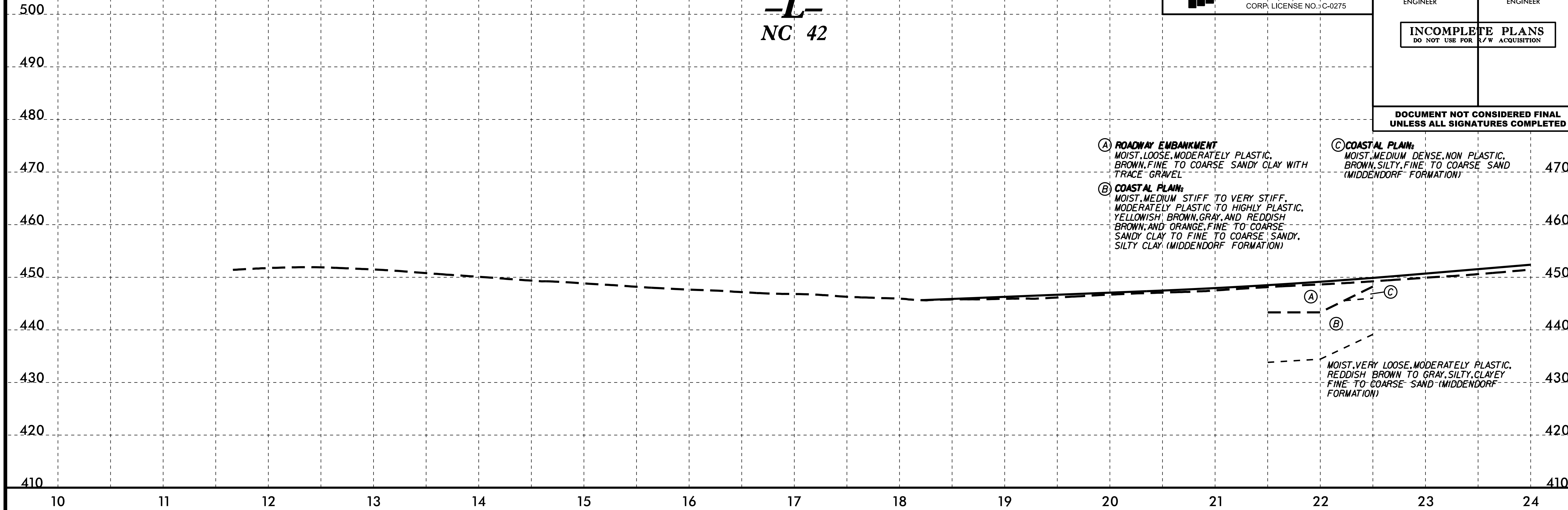
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L–
NC 42



PROFILES ARE SHOWN FOR THE FOLLOWING ALIGNMENTS & STATIONS:
–L– 10+00 TO 24+00
–L– 79+00 TO 93+00
–L– 107+00 TO 120+00
–Y16– 10+00 TO 16+00
ALL OTHER PROFILES HAVE BEEN OMITTED

5/28/99

08-MAY-2017 16:30 W:\share_GEOTECHNICAL\Projects\Active Projects\20151548.037A R-3830 Roadway\R3830_GEO_RDWY\CADD_GEOTECH\PlanProf\r-3830_GEO_pfl_28.dgn

5/28/99

TGS ENGINEERS
706 HILLSBOROUGH ST., SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO.	SHEET NO.
R-3830	29

ROADWAY DESIGN ENGINEER

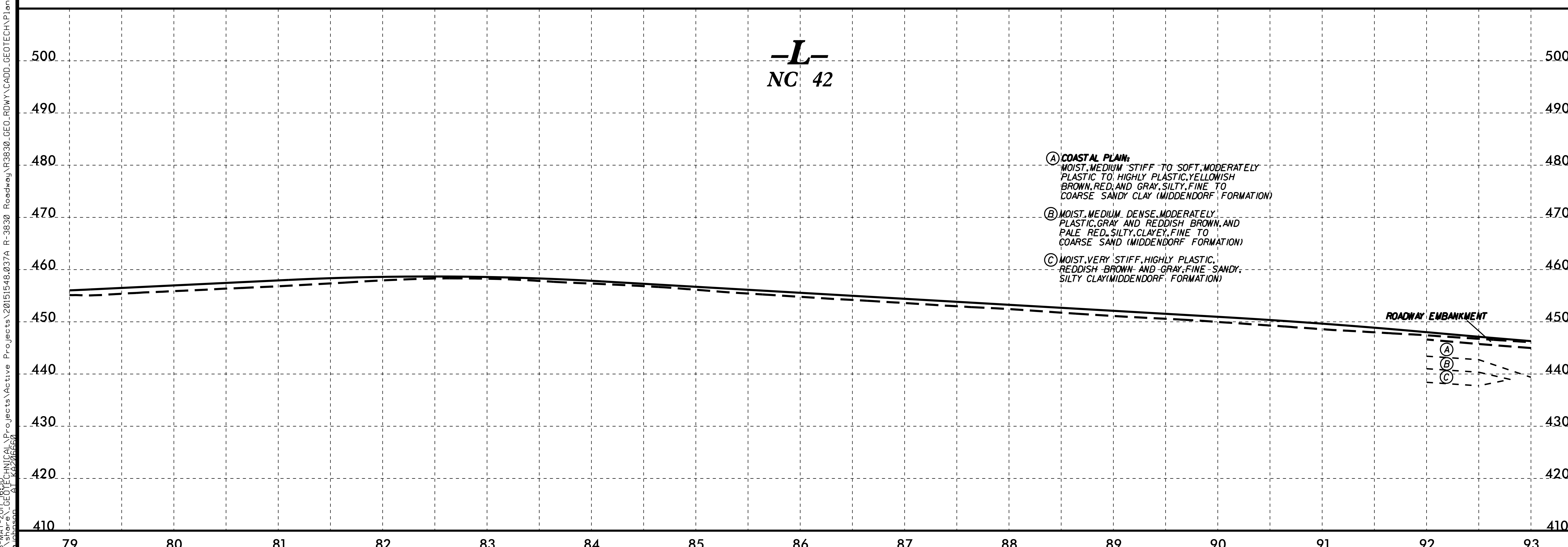
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROFILES ARE SHOWN FOR THE FOLLOWING ALIGNMENTS & STATIONS:

–L– 10+00 TO 24+00
–L– 79+00 TO 93+00
–L– 107+00 TO 120+00
–Y16– 10+00 TO 16+00
ALL OTHER PROFILES HAVE BEEN OMITTED



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bajohnson AT KA206660

TGS ENGINEERS
706 HILLSBOROUGH ST., SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO.	SHEET NO.
R-3830	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

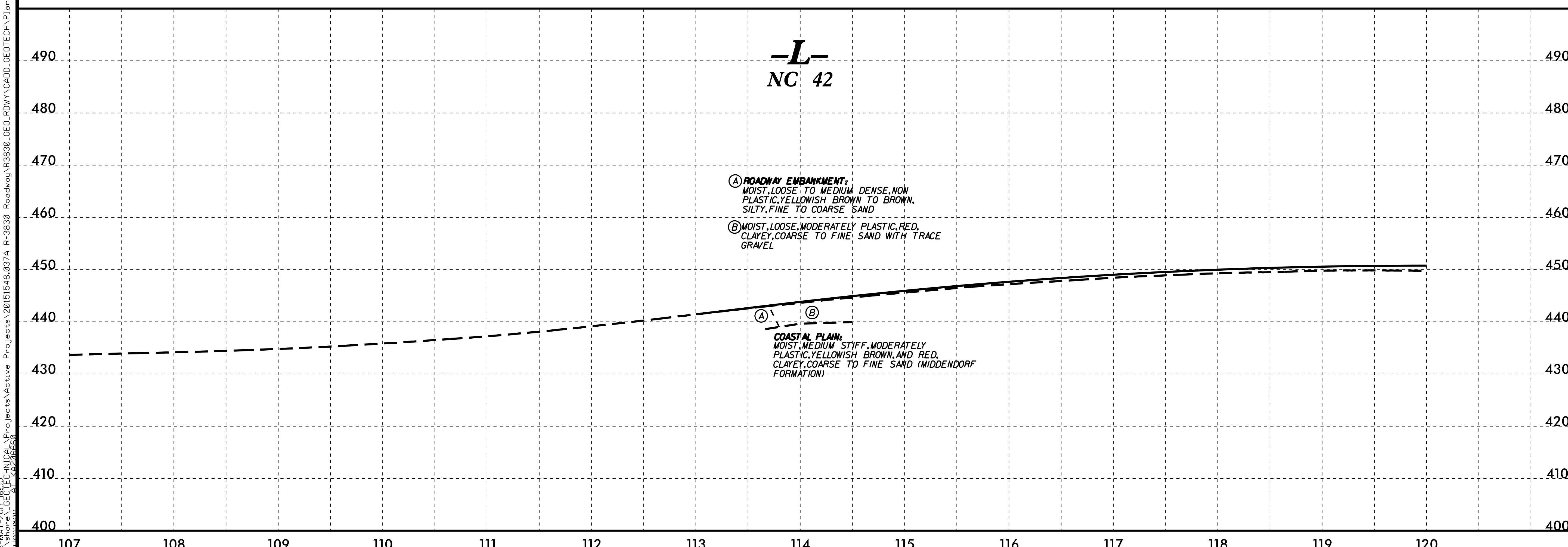
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROFILES ARE SHOWN FOR THE FOLLOWING ALIGNMENTS & STATIONS:

–L– 10+00 TO 24+00
–L– 79+00 TO 93+00
–L– 107+00 TO 120+00
–Y16– 10+00 TO 16+00

ALL OTHER PROFILES HAVE BEEN OMITTED



PROJECT REFERENCE NO.	SHEET NO.
R-3830	31

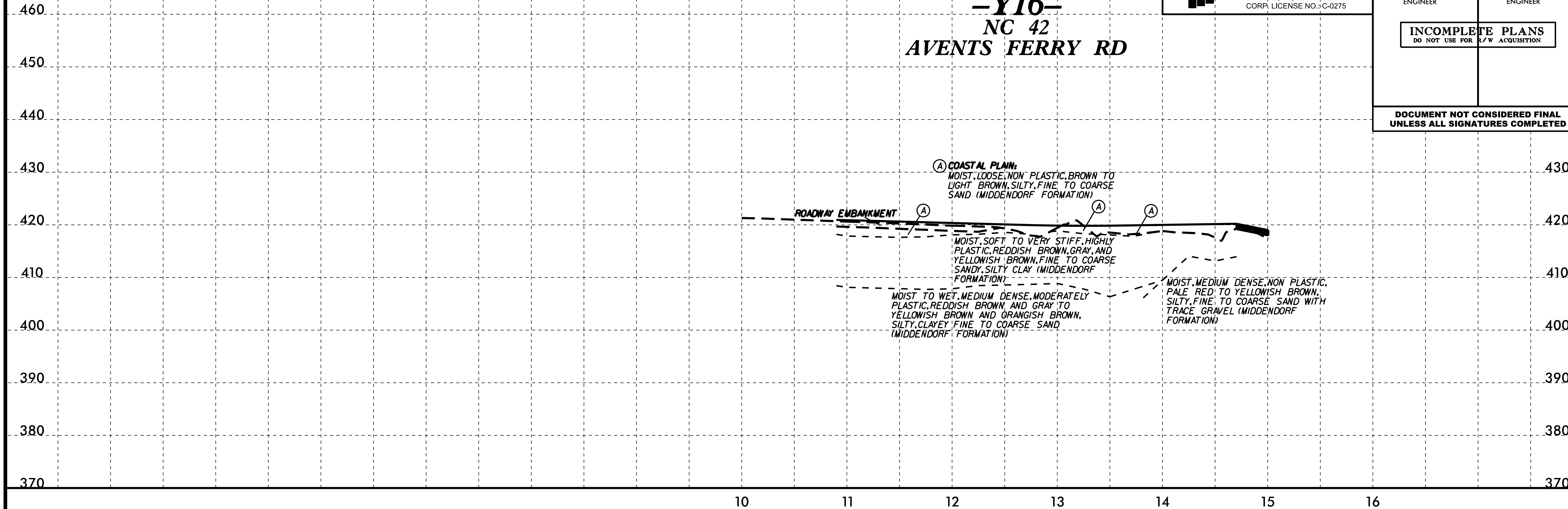
TGS ENGINEERS
706 HILLSBOROUGH ST., SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y16–
NC 42
AVENTS FERRY RD



PROFILES ARE SHOWN FOR THE FOLLOWING ALIGNMENTS & STATIONS:
–L– 10+00 TO 24+00
–L– 79+00 TO 93+00
–L– 107+00 TO 120+00
–Y16– 10+00 TO 16+00
ALL OTHER PROFILES HAVE BEEN OMITTED

5/28/99

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	32

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

470
460
450
440

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓐ

ROADWAY EMBANKMENT

4:1

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

13+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

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bajohnson AT KA206660

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

Ⓐ **COASTAL PLAIN:** MOIST,LOOSE,NON PLASTIC,BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓐ **ROADWAY EMBANKMENT**

MOIST,VERY STIFF,MODERATELY PLASTIC,REDDISH BROWN,GRAY,AND ORANGE,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY,SILTY,CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,MEDIUM STIFF,MODERATELY PLASTIC,YELLOWISH BROWN AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

14+50.00

SS-1
L_1400
14+00

Ⓐ **COASTAL PLAIN:** MOIST,LOOSE,NON PLASTIC,BROWN AND YELLOWISH BROWN,SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓐ **ROADWAY EMBANKMENT**

4:1

MOIST,VERY STIFF,MODERATELY PLASTIC,REDDISH BROWN,GRAY,AND ORANGE,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION) — 7 19

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY,SILTY,CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION) — 12

MOIST,MEDIUM STIFF,MODERATELY PLASTIC,YELLOWISH BROWN AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION) — 8

BT DRY 02/17

14+00.00

—L—

6/23/16

08-MAY-2017 15:02
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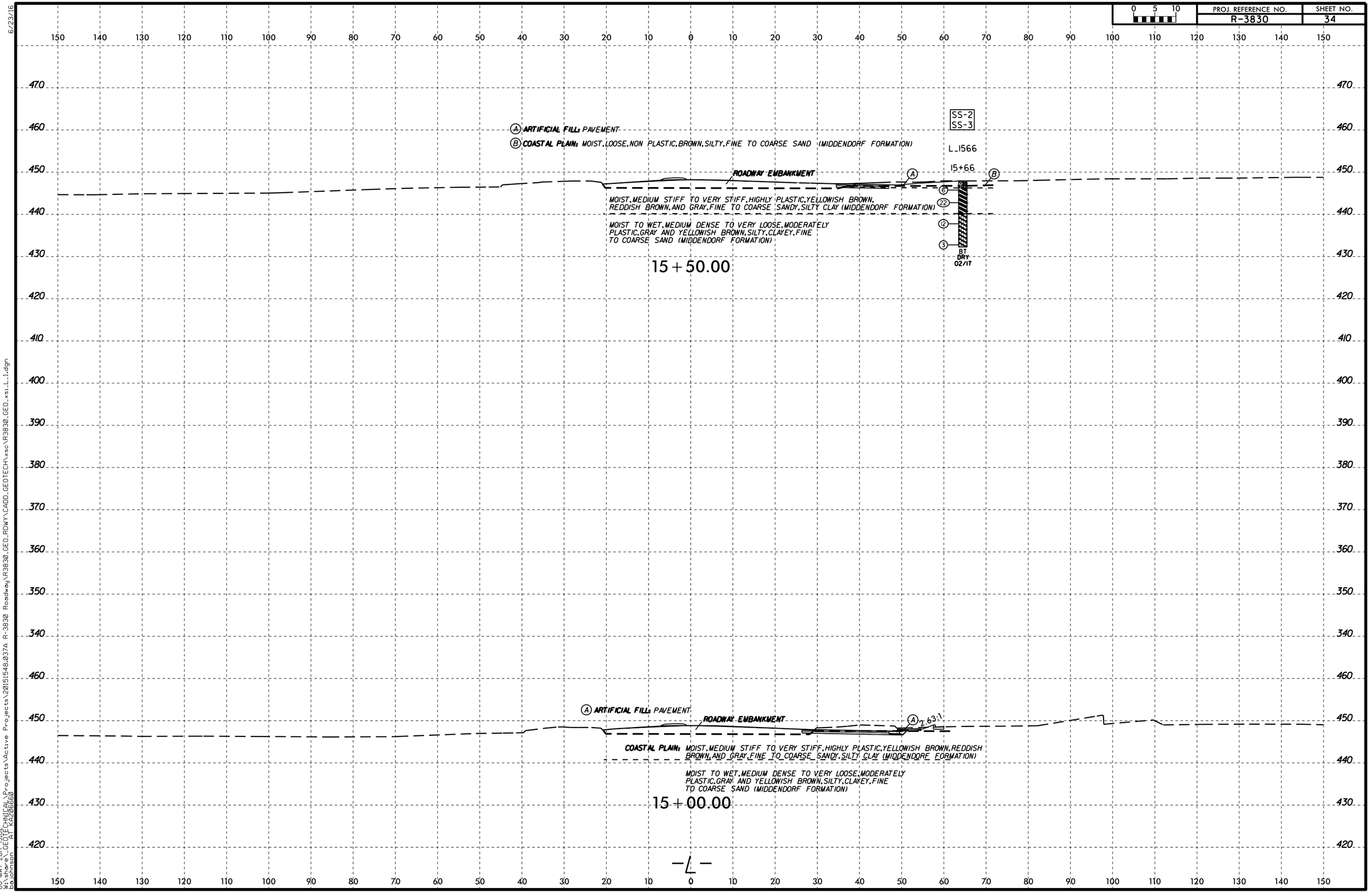
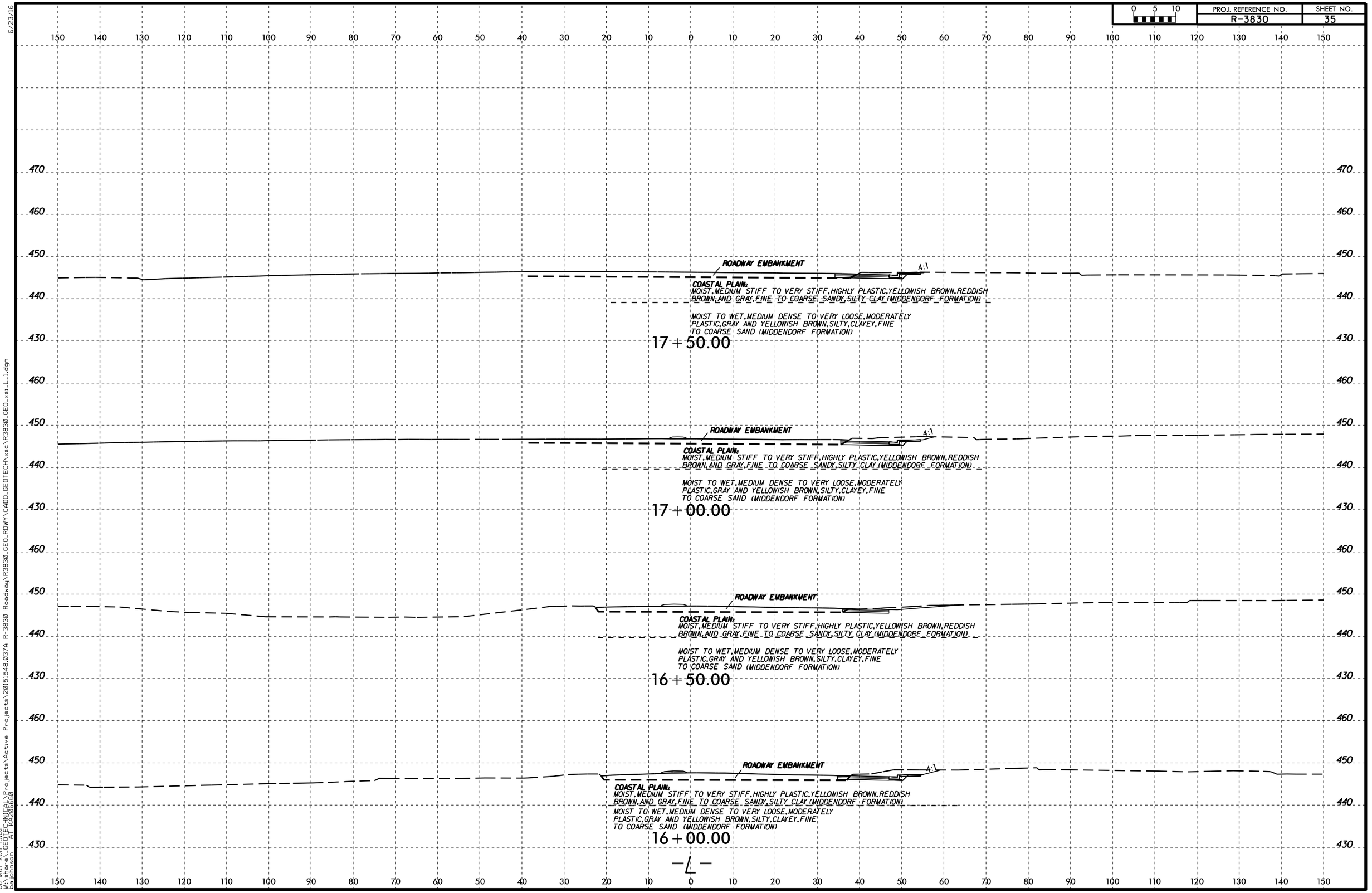
bajohnson
AT KP206660





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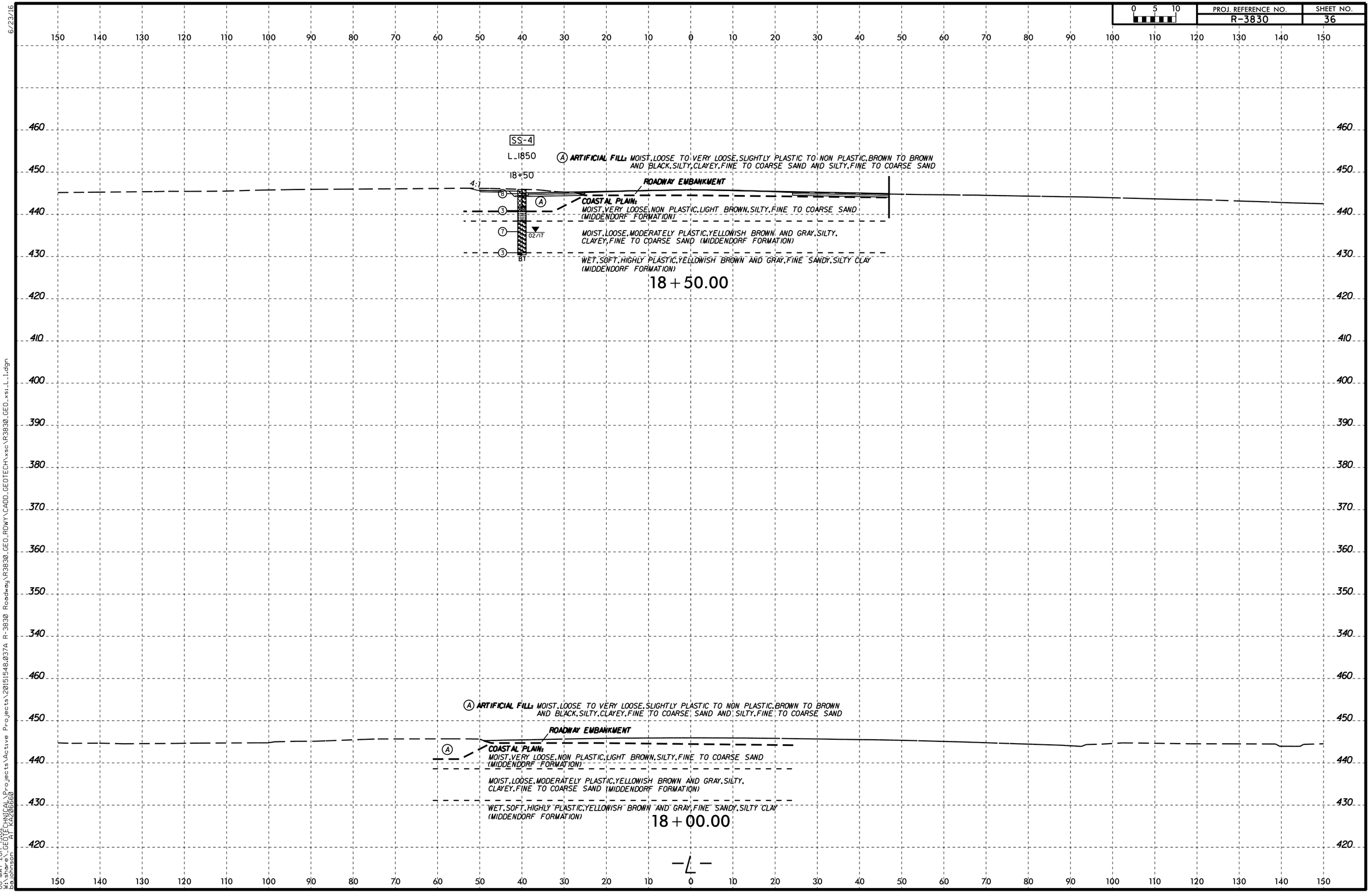


0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	37

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340 460 450 440 430 420

Ⓐ **ARTIFICIAL FILL:** MOIST, LOOSE TO VERY LOOSE, SLIGHTLY PLASTIC TO NON PLASTIC, BROWN TO BROWN AND BLACK, SILTY, CLAYEY, FINE TO COARSE SAND AND SILTY, FINE TO COARSE SAND

4:1 Ⓐ **ROADWAY EMBANKMENT**

RWI-1
19+27

COASTAL PLAIN: MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

12
33
10
3
BT
02/17

MOIST, DENSE TO MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN AND GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND PURPLE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

19 + 50.00

Ⓐ **ARTIFICIAL FILL:** MOIST, LOOSE TO VERY LOOSE, SLIGHTLY PLASTIC TO NON PLASTIC, BROWN TO BROWN AND BLACK, SILTY, CLAYEY, FINE TO COARSE SAND AND SILTY, FINE TO COARSE SAND

4:1 Ⓐ **ROADWAY EMBANKMENT**

INTERSECTION SHEAR LINE

COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

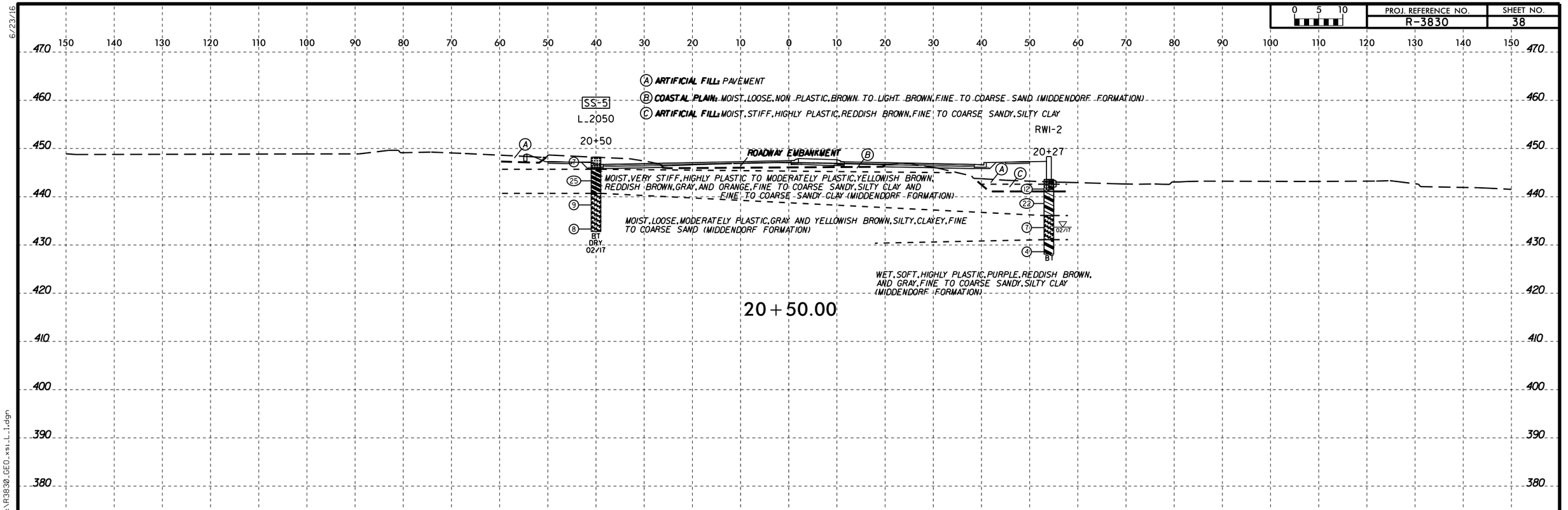
MOIST, LOOSE, MODERATELY PLASTIC TO NON-PLASTIC, YELLOWISH BROWN AND GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

19 + 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



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440 430 420 410 400 390

4.01:1

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

ROADWAY EMBANKMENT: MOIST, LOOSE, MODERATELY PLASTIC, BROWN, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL

COASTAL PLAIN: MOIST, MEDIUM STIFF TO VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, FINE TO COARSE SANDY CLAY AND FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, VERY LOOSE, MODERATELY PLASTIC, REDDISH BROWN TO GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

SS-40
RWI-3
21+44
7 7 18 2
BT
DRY
02/17

21+50.00

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

Ⓑ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓒ **ARTIFICIAL FILL:** MOIST, STIFF, HIGHLY PLASTIC, REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY

ROADWAY EMBANKMENT

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

21+00.00

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

480
470
460
450
440
430
420

4.0:1

ROADWAY EMBANKMENT: MOIST, LOOSE, MODERATELY PLASTIC, BROWN, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL

COASTAL PLAIN: MOIST, MEDIUM STIFF TO VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, FINE TO COARSE SANDY CLAY AND FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, VERY LOOSE, MODERATELY PLASTIC, REDDISH BROWN TO GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

22 + 00.00

$-L-$

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bajohnson AT KA206660

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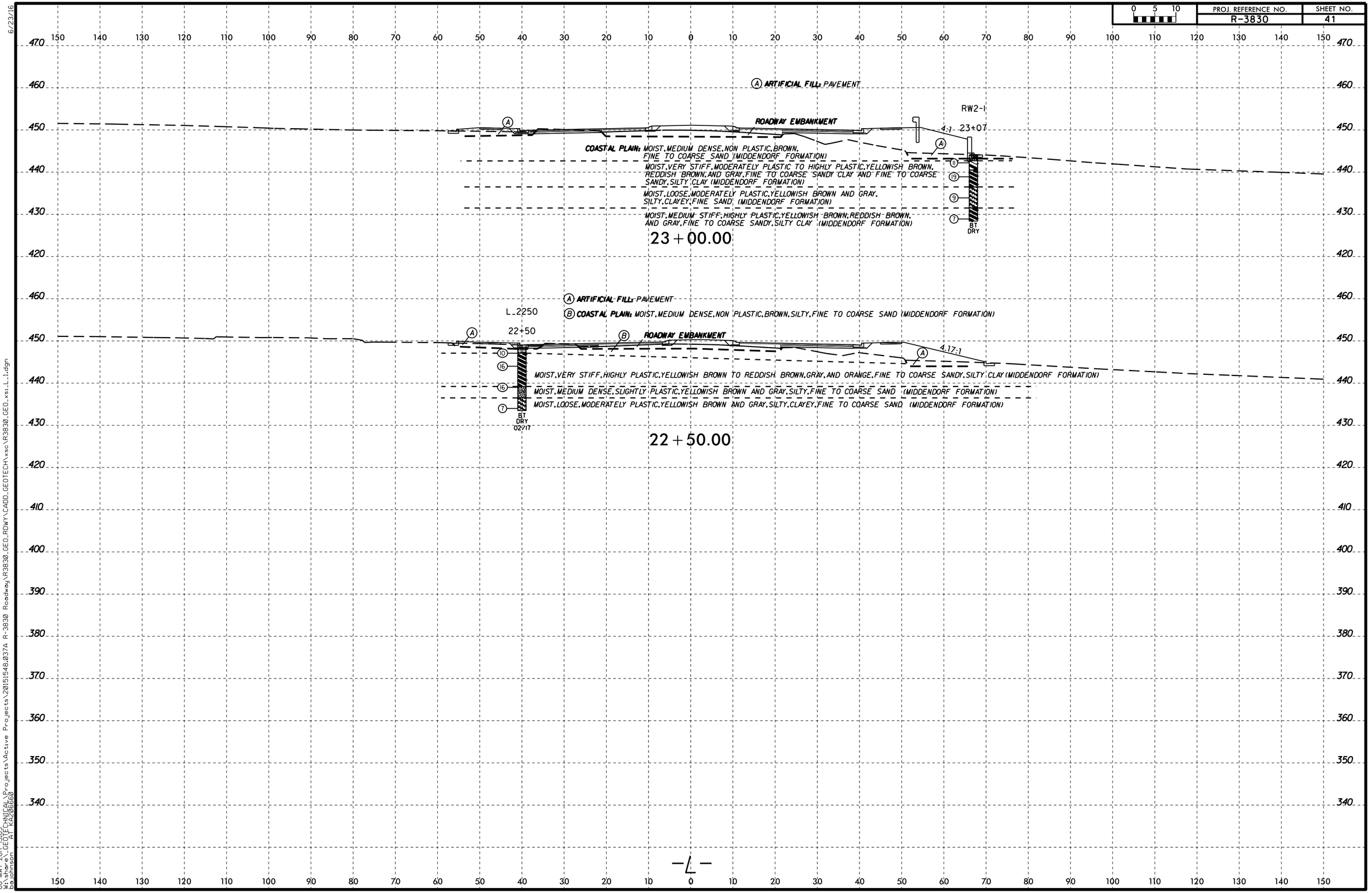

6/23/16

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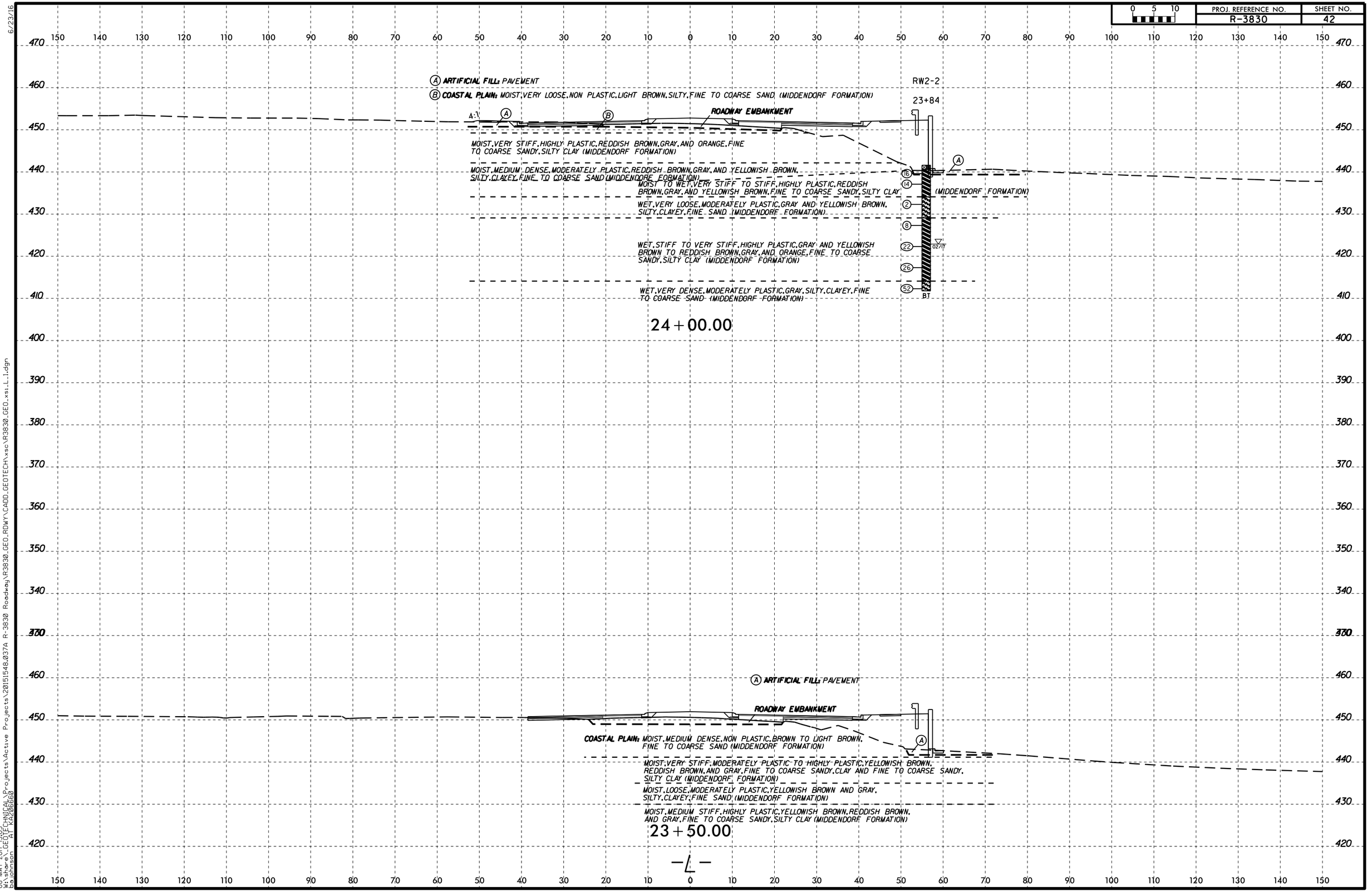
bajohnson AT KPZ06660



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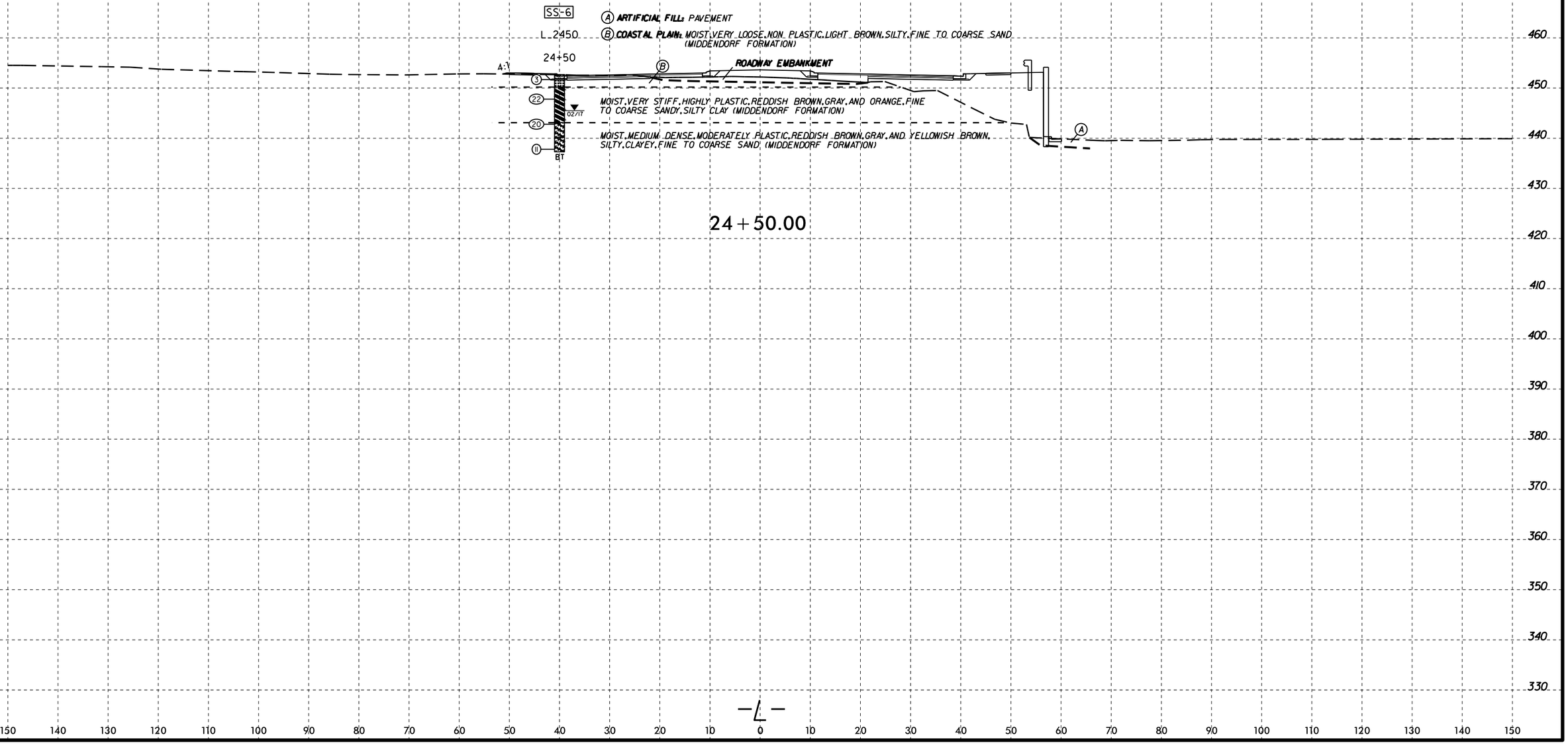
	R-3830	43



24+50.00

$-\mathit{L}-$

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

Ⓑ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND WITH TRACE GRAVEL

Ⓒ **COASTAL PLAIN:** MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

RW2-3

24+84

Ⓒ **ROADWAY EMBANKMENT**

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT TO VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, CLAY AND COARSE TO FINE SANDY, SILT CLAY (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, MODERATELY PLASTIC, GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

13 3 4 13 16 13 13 25

02/17

BT

25+00.00

08-MAY-2017 15:03
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bjohnson AIT KH206560

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	45

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

480 470 460 450 440 430 420 410 400

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

Ⓑ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND WITH TRACE GRAVEL

Ⓒ **COASTAL PLAIN:** MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓒ **ROADWAY EMBANKMENT**

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT TO VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, CLAY AND COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, MODERATELY PLASTIC, GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

25+50.00

-L-

6/23/16

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bajohnson AT KA206660

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

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330

(A) **ARTIFICIAL FILL:** PAVEMENT

(B) **ARTIFICIAL FILL:** MOIST, VERY DENSE, NON PLASTIC, GRAY, COARSE SANDY GRAVEL

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, LOOSE TO DENSE, NON-PLASTIC, LIGHT BROWN TO RED, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, HIGHLY PLASTIC, LIGHT BROWNISH GRAY WITH ORANGE, FINE TO COARSE SANDY, SILTY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

WET, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND

WET, MEDIUM STIFF TO HARD, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY, SILTY CLAY

WET, MEDIUM DENSE, MODERATELY PLASTIC, GRAY, SILTY, CLAYEY, FINE TO COARSE SAND

WET, MEDIUM DENSE, NON PLASTIC, GRAY, SILTY, FINE TO COARSE SAND

WET, HARD, SLIGHTLY PLASTIC, GREENISH GRAY, FINE TO COARSE SANDY SILT

RW2-4

25+82

00/0.3

02/1T

BT

5	(A) (B)	
6		(MIDDENDORF FORMATION)
8		
33		(MIDDENDORF FORMATION)
20		
22		(MIDDENDORF FORMATION)
26		(MIDDENDORF FORMATION)
39		(MIDDENDORF FORMATION)

26+00.00

-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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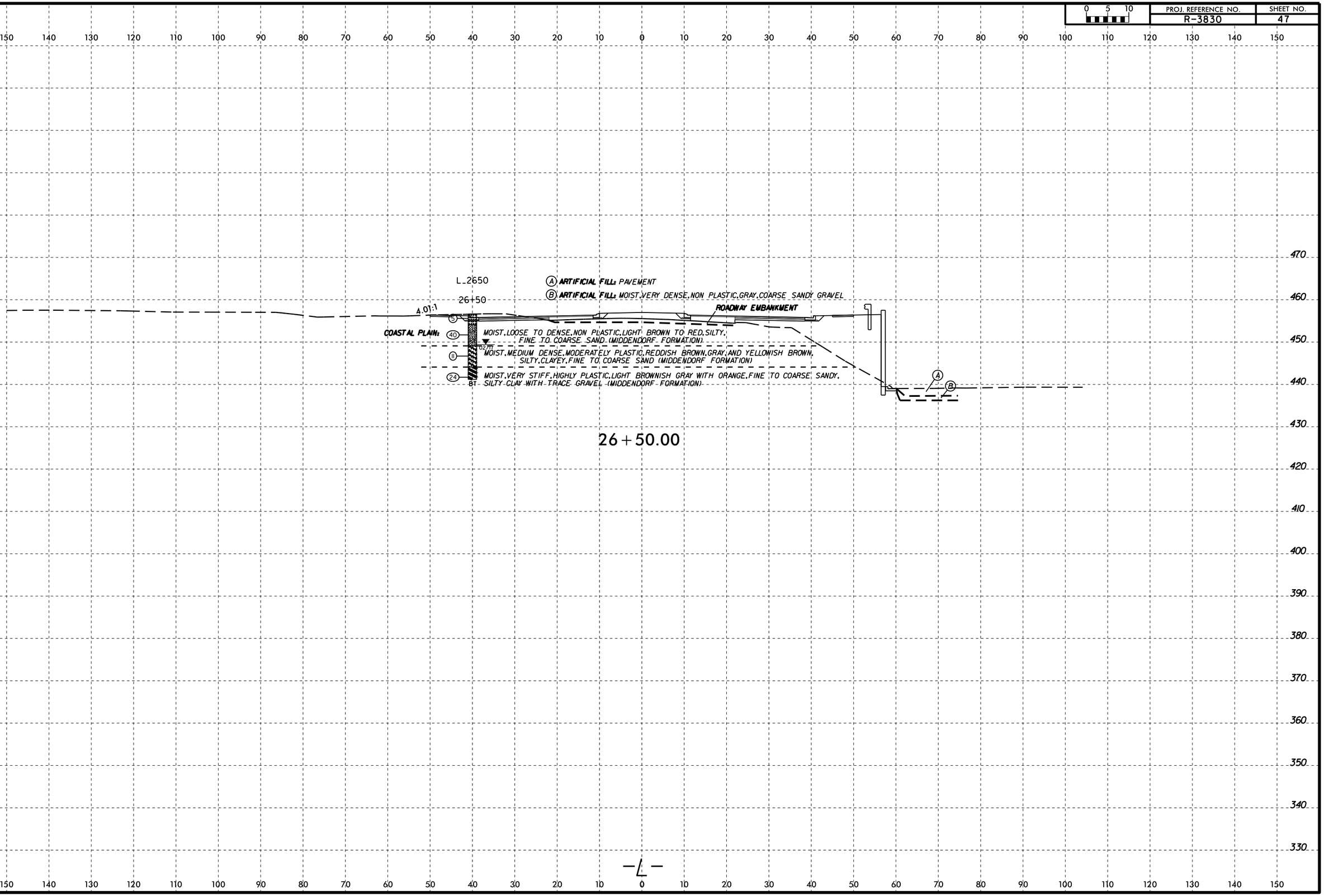

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bjohnson AT KAZOO660

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

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

Ⓑ **ARTIFICIAL FILL:** MOIST, LOOSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND WITH TRACE GRAVEL

4:1

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, LOOSE TO DENSE, NON PLASTIC, LIGHT BROWN TO RED, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, HIGHLY PLASTIC, LIGHT BRownish GRAY WITH ORANGE, FINE TO COARSE, SANDY, SILTY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

WET, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

WET, LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN AND GRAY, SILTY, FINE TO COARSE SAND

WET, VERY STIFF TO HARD, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

WET, VERY DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, VERY DENSE, SLIGHTLY PLASTIC, GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, HARD, HIGHLY PLASTIC, GRAY AND BLACK, COARSE TO FINE SANDY, SILTY CLAY WITH TRACE GRAVEL AND WOOD (MIDDENDORF FORMATION)

RW2-5

26+81

Ⓐ Ⓑ

5 10 9 22 36 100/0.4 56 31 32

02/17

(MIDDENDORF FORMATION)

BT

27+00.00

—L—

6/23/16

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bajohnson
AT KM266660

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

4.0:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST,VERY LOOSE TO VERY DENSE,NON PLASTIC,LIGHT BROWN,GRAY,REDDISH BROWN,AND YELLOWISH BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,YELLOWISH BROWN AND GRAY,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET,LOOSE,NON PLASTIC,YELLOWISH BROWN AND GRAY,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

28+00.00

(A) **ARTIFICIAL FILL:** PAVEMENT

(B) **ARTIFICIAL FILL:** MOIST,LOOSE,MODERATELY PLASTIC,REDDISH BROWN AND YELLOWISH BROWN,CLAYEY,FINE TO COARSE SAND WITH TRACE GRAVEL

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST,LOOSE TO DENSE,NON PLASTIC,LIGHT BROWN TO RED,SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN,GRAY,AND YELLOWISH BROWN, SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

RW2-6

27+30

(A) (B)

MOIST TO WET,MEDIUM STIFF TO VERY STIFF,MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN,GRAY,AND REDDISH BROWN,SILTY,FINE TO COARSE SANDY CLAY AND COARSE TO FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

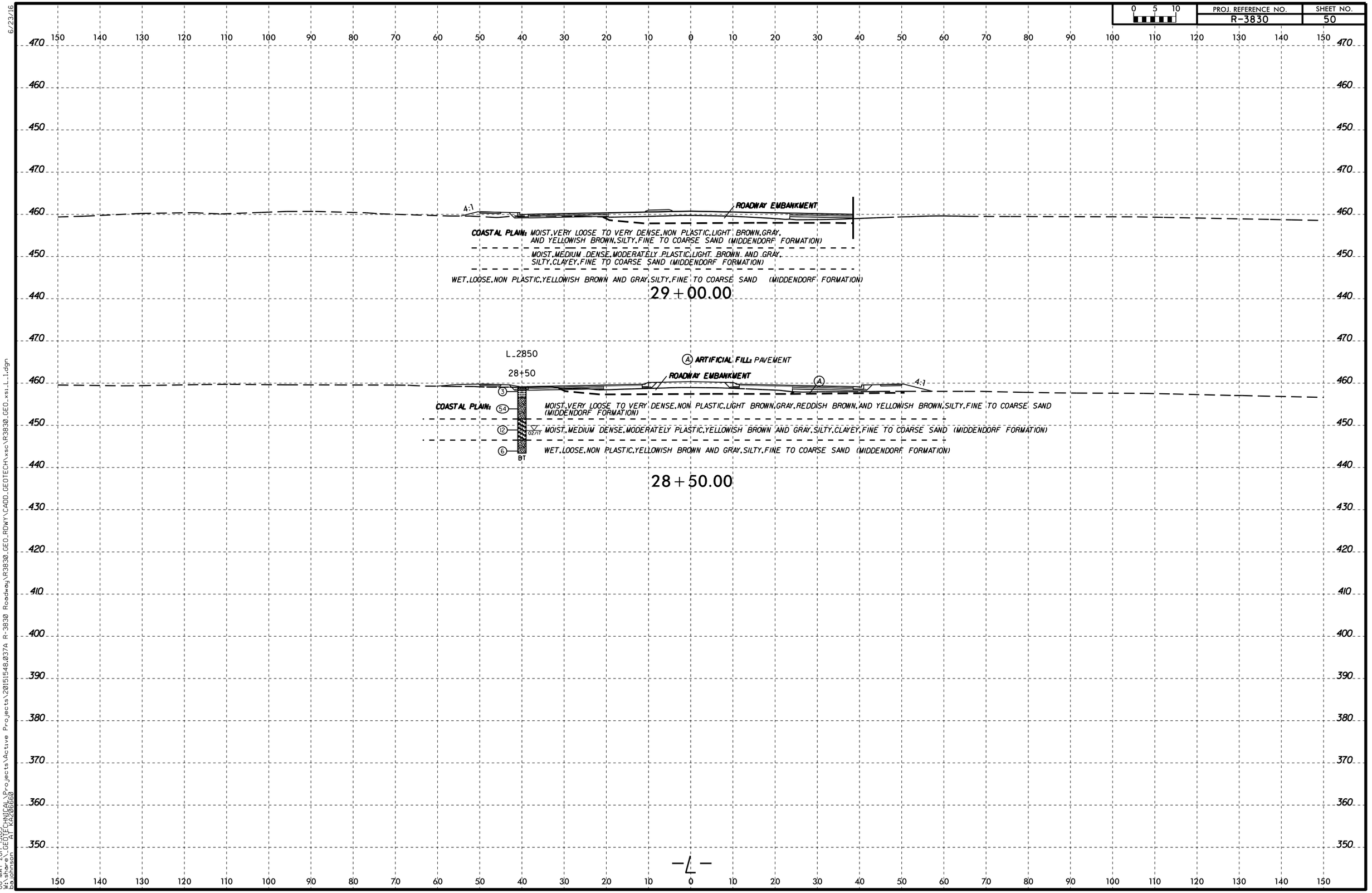
6 7 8 13 23 100/0.3 27

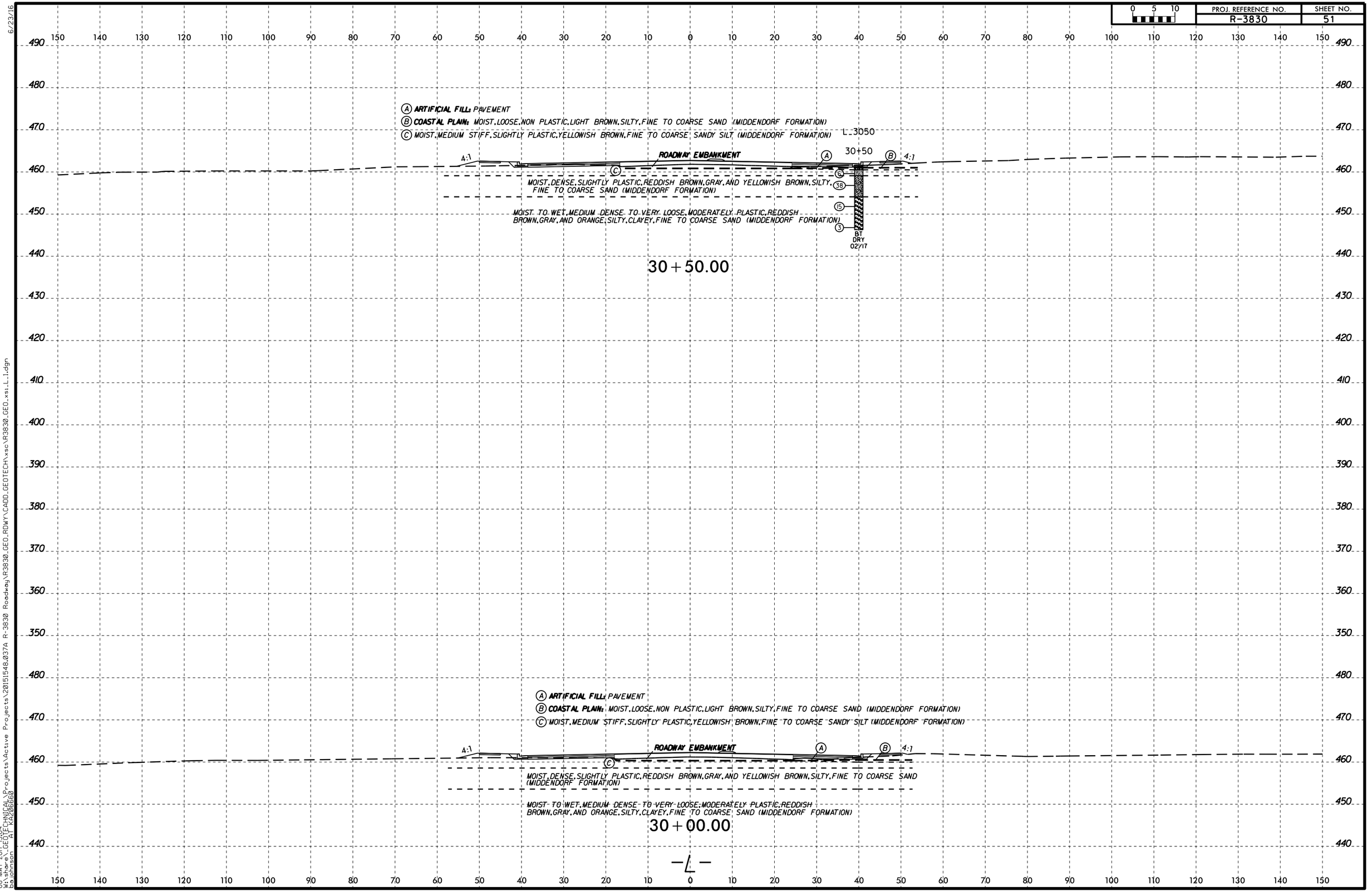
02/17

BT

WET,VERY DENSE TO MEDIUM DENSE,MODERATELY PLASTIC,YELLOWISH BROWN AND GRAY, SILTY,CLAYEY,FINE SAND (MIDDENDORF FORMATION)

27+50.00





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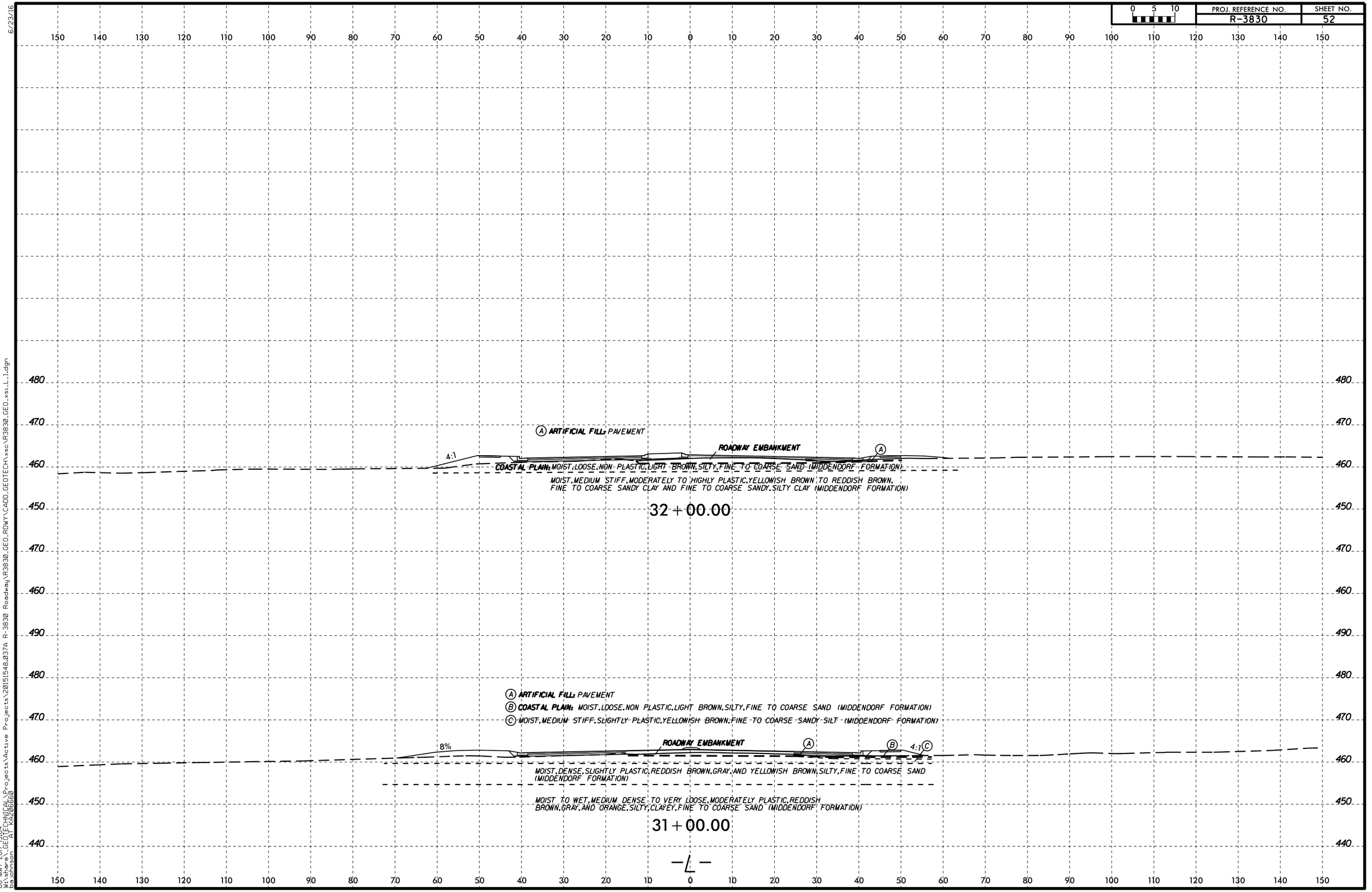
	R-3830	52



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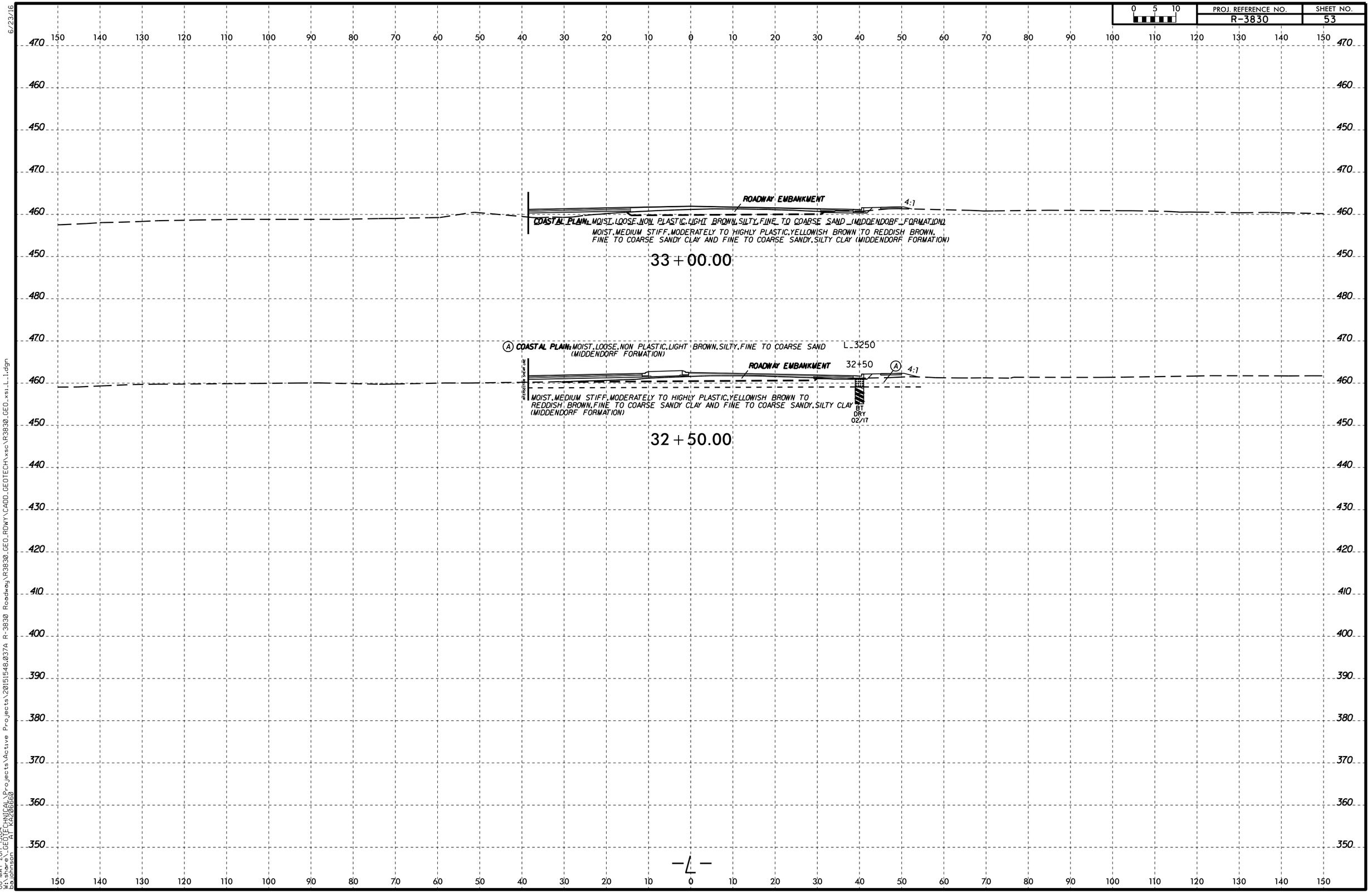
bajohnson
AT KH206660



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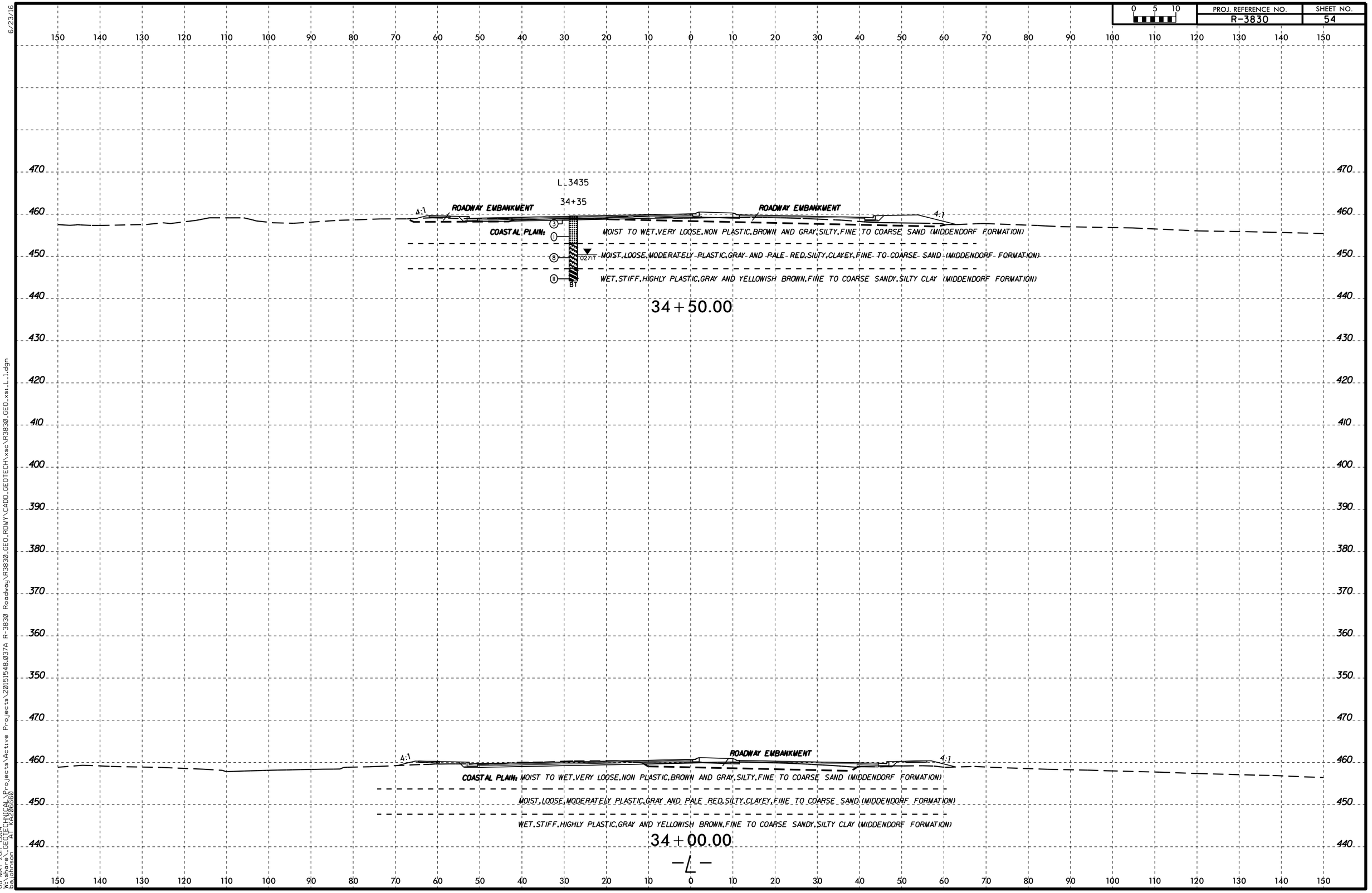
	R-3830	54



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bajohnson AT KA2066660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	55

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

470
460
450
440

ARTIFICIAL FILL
ROADWAY EMBANKMENT
ARTIFICIAL FILL
4:1

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND RED, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, HARD, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

36+00.00

4:1
ARTIFICIAL FILL
ROADWAY EMBANKMENT
4:1

COASTAL PLAIN: MOIST TO WET, VERY LOOSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND PALE RED, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, STIFF, HIGHLY PLASTIC, GRAY AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

35+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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bajohnson AT KA20666

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

480 470 460 450 440 430 420 410 400 390 380 370 360 350

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
Ⓑ MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

4:1 **ARTIFICIAL FILL** Ⓐ Ⓑ **ROADWAY EMBANKMENT** 4:1

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

37 + 00.00

L_3666

36+66

4:1 **ARTIFICIAL FILL** **ROADWAY EMBANKMENT** 4:1 **ARTIFICIAL FILL**

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION) (4)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND RED, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION) (16) ▽ 02/17

MOIST, HARD, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION) (42) BT

36 + 50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	57

Ⓐ **COASTAL PLAIN:** MOIST.LOOSE.NON PLASTIC.BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)
Ⓑ MOIST.MEDIUM STIFF.SLIGHTLY PLASTIC.YELLOWISH BROWN.FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

4:1 **ARTIFICIAL FILL:** Ⓐ Ⓑ **ROADWAY EMBANKMENT** **ARTIFICIAL FILL:**

MOIST.STIFF.MODERATELY PLASTIC.YELLOWISH BROWN.GRAY.AND REDDISH BROWN.COARSE TO FINE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

38+00.00

Ⓐ **COASTAL PLAIN:** MOIST.LOOSE.NON PLASTIC.BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)
Ⓑ MOIST.MEDIUM STIFF.SLIGHTLY PLASTIC.YELLOWISH BROWN.FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

L_3750
37+50

4:1 **ARTIFICIAL FILL:** Ⓐ Ⓑ **ROADWAY EMBANKMENT** 4:1 **ARTIFICIAL FILL:**

6
9
BT
DRY
02/17

MOIST.STIFF.MODERATELY PLASTIC.YELLOWISH BROWN.GRAY.AND REDDISH BROWN.COARSE TO FINE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

37+50.00

—L—

6/23/16

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bjohnson AT KAZOO660

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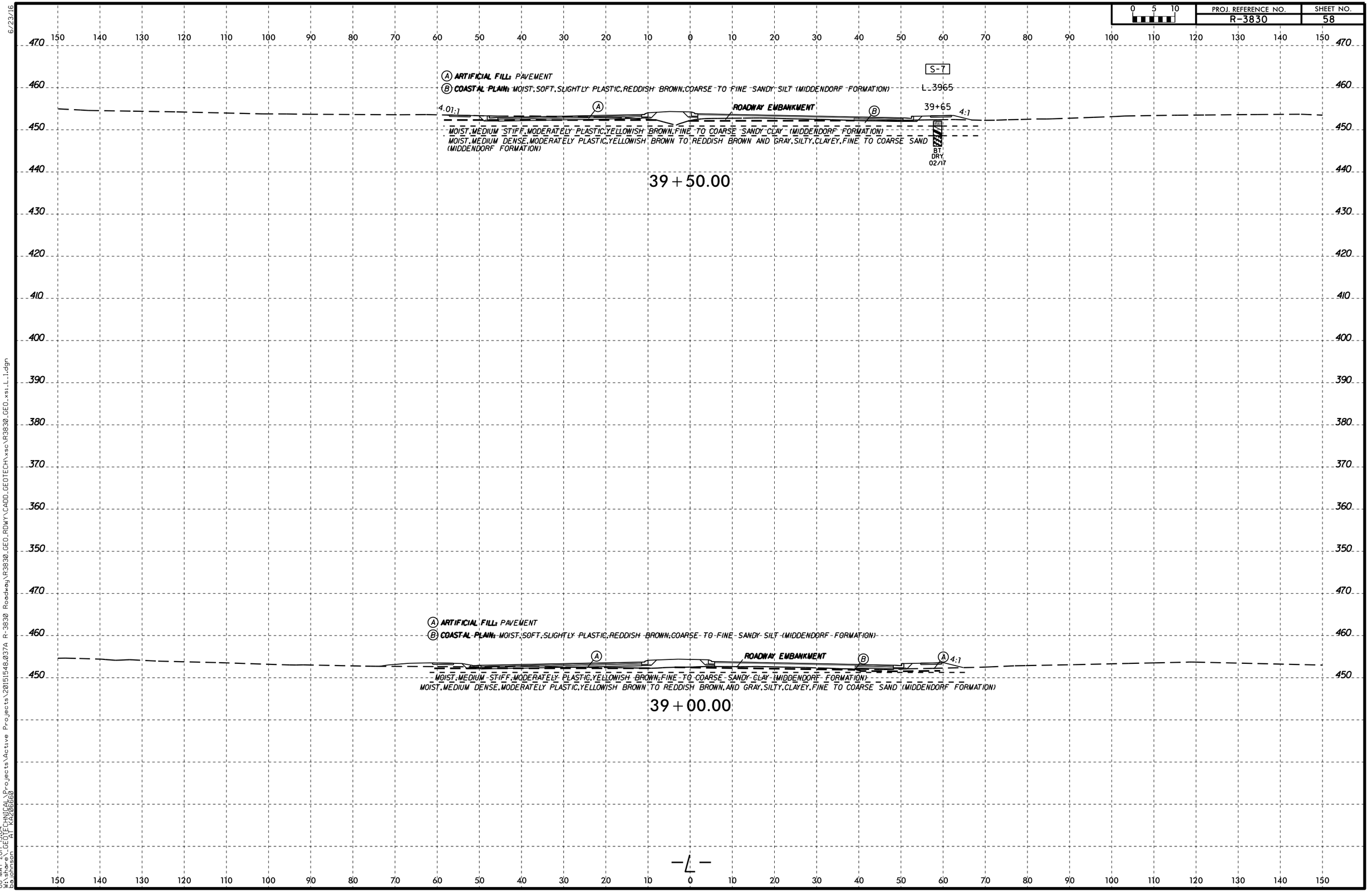

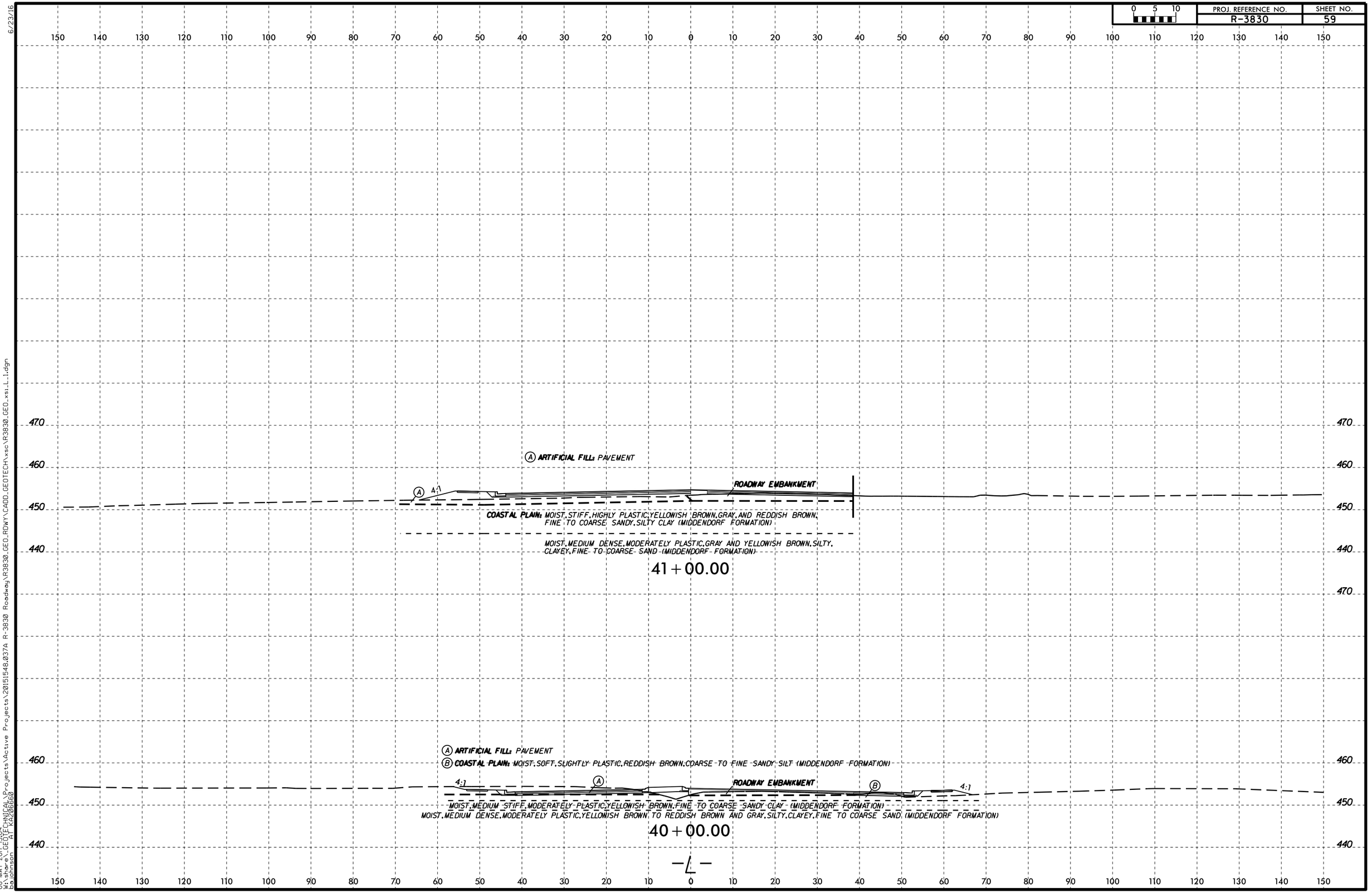

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	60

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

4:1

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

42 + 00.00

SS-8
L 4150
41+50

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

4:1

ROADWAY EMBANKMENT

10
16
19
BT
DRY
02/17

COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

41 + 50.00

−L−

6/23/16

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bjohnson AT KAZOO660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440

Ⓐ ARTIFICIAL FILL: PAVEMENT

ROADWAY EMBANKMENT

4:1

Ⓐ

COASTAL PLAIN: MOIST,VERY SOFT,SLIGHTLY PLASTIC,YELLOWISH BROWN,FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,NON PLASTIC,GRAY,RED,AND YELLOWISH BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,LOOSE,MODERATELY PLASTIC,GRAY,YELLOWISH BROWN,AND REDDISH BROWN,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

43+00.00

-L-

470 460 450 440

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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bajohnson AT KAZOO660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	62

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

ROADWAY EMBANKMENT

2:1

4:1

COASTAL PLAIN: MOIST, VERY SOFT, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, GRAY, RED, AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, GRAY, YELLOWISH BROWN, AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

44 + 00.00

Ⓐ **ARTIFICIAL FILL:** PAVEMENT

L_4350

43+50

3:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, VERY SOFT, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

16

02/17

8

BT

MOIST, MEDIUM DENSE, NON PLASTIC, GRAY, RED, AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, GRAY, YELLOWISH BROWN, AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

43 + 50.00

—L—

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bjohnson AT KAZOO660

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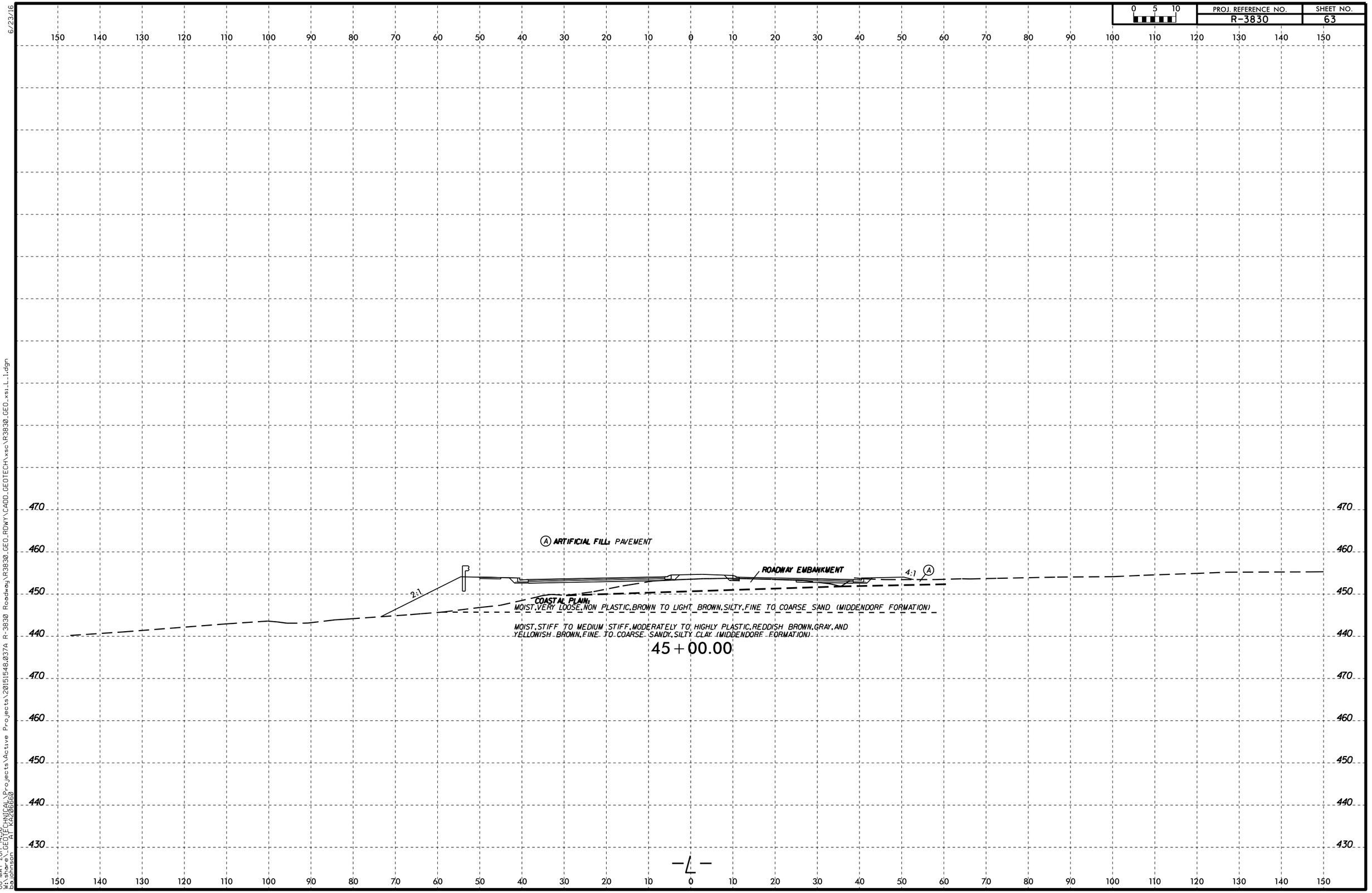
	R-3830	63



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bajohnson AT KAZOO60

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	64

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

Ⓐ ARTIFICIAL FILL: PAVEMENT

ROADWAY EMBANKMENT

4:1

4:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF TO MEDIUM STIFF, MODERATELY TO HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

46+00.00

L_4550

45+50

Ⓐ ARTIFICIAL FILL: PAVEMENT

3:1

ROADWAY EMBANKMENT

4:1

① COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

⑩

⑤ BT DRY 2/17

MOIST, STIFF TO MEDIUM STIFF, MODERATELY TO HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

45+50.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440

Ⓐ **COASTAL PLAIN:** MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

4:01:1

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN, SILTY, CLAYEY SAND (MIDDENDORF FORMATION)

MOIST, STIFF, HIGHLY PLASTIC, GRAY AND YELLOWISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

47 + 00.00

$-L-$

6/23/16

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bajohnson AT KAZOO660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440 480 470 460 450 440 430 420 410 400 390 380 370 360 350 340

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1 Ⓐ

MOIST,MEDIUM DENSE,HIGHLY PLASTIC,REDDISH BROWN,GRAY,AND YELLOWISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,VERY STIFF,HIGHLY PLASTIC,REDDISH BROWN AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY TO YELLOWISH BROWN,SILTY,CLAYEY SAND (MIDDENDORF FORMATION)

MOIST,STIFF,HIGHLY PLASTIC,GRAY AND YELLOWISH BROWN,COARSE TO FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

48+00.00

SS-9

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON-PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

L 4755

47+55

ROADWAY EMBANKMENT

4:1 Ⓐ 4:1

3 11 19 10

MOIST,MEDIUM DENSE,HIGHLY PLASTIC,REDDISH BROWN,GRAY,AND YELLOWISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,VERY STIFF,HIGHLY PLASTIC,REDDISH BROWN AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY TO YELLOWISH BROWN,SILTY,CLAYEY SAND (MIDDENDORF FORMATION)

MOIST,STIFF,HIGHLY PLASTIC,GRAY AND YELLOWISH BROWN,COARSE TO FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

BT DRY 02/17

47+50.00

—L—

6/23/16

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bajohnson
AT KP206660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470
460
450
440

4:1 ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, SILTY, FINE TO COARSE SANDY CLAY AND FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

49 + 00.00

Ⓐ COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 ROADWAY EMBANKMENT Ⓐ 4:1

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN, SILTY, CLAYEY SAND (MIDDENDORF FORMATION)

MOIST, STIFF, HIGHLY PLASTIC, GRAY AND YELLOWISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

48 + 50.00

$-L-$

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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bajohnson AT KA206660

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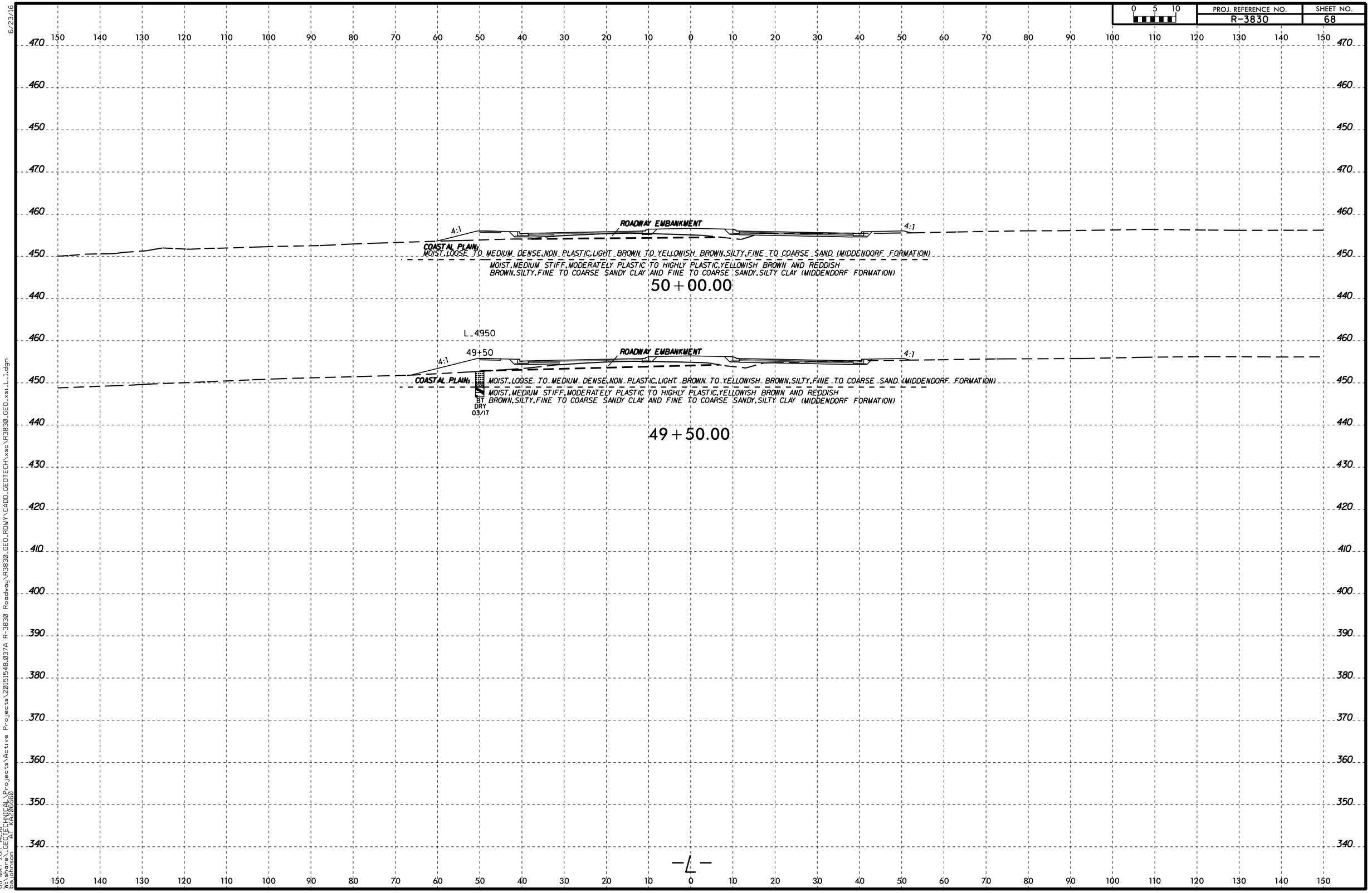
	R-3830	68



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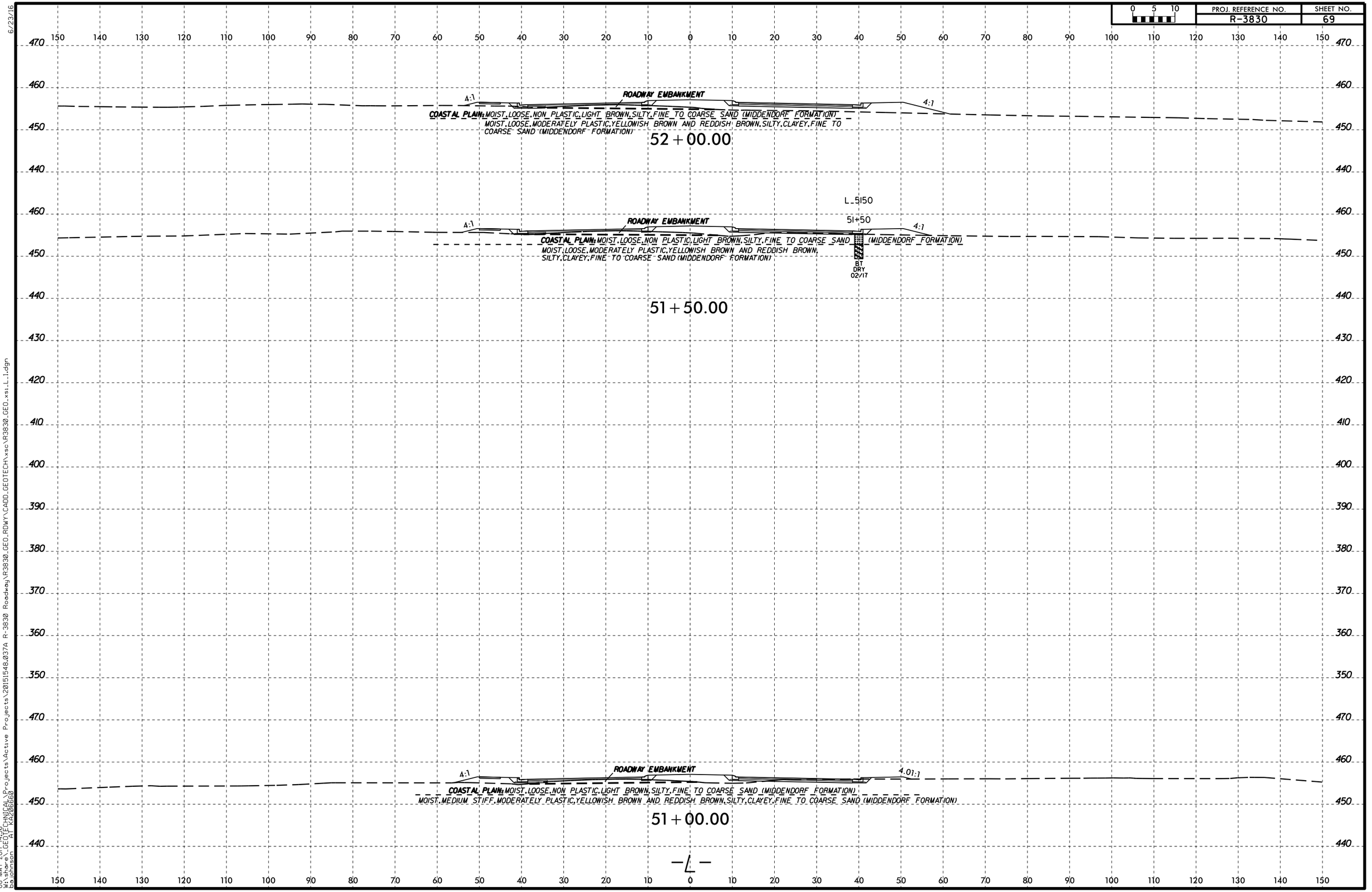
bjohnson AT KAZOO660



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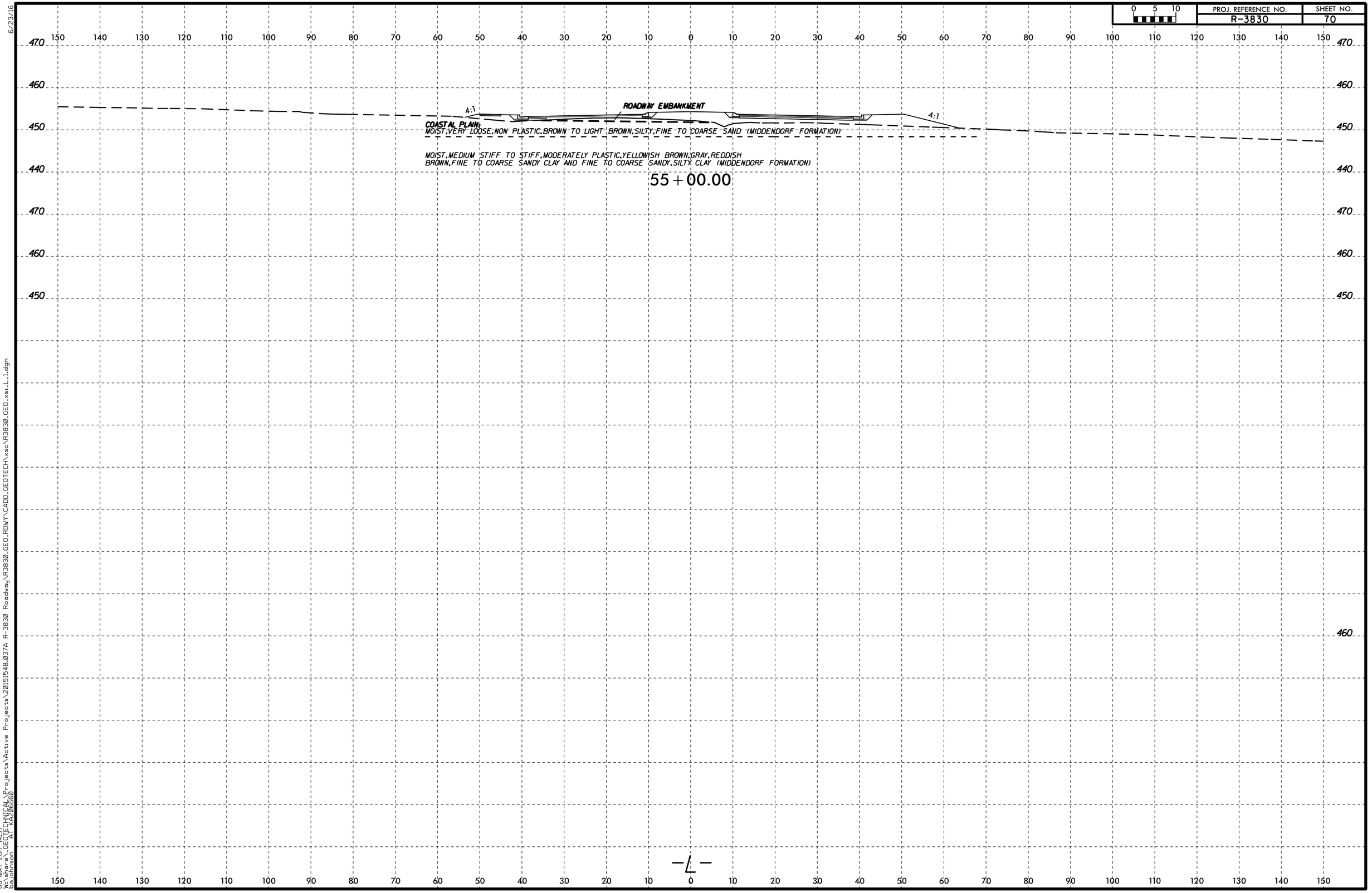


0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	71

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

460 450 440 460 450 470 460 450 440 430 420 410 400 390 380 370 360 350 340

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN:
MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,MEDIUM STIFF TO STIFF,MODERATELY PLASTIC,YELLOWISH BROWN,GRAY,REDDISH BROWN,FINE TO COARSE SANDY CLAY AND FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

56+00.00

L_5554

55+54

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN:
MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (2) (MIDDENDORF FORMATION)

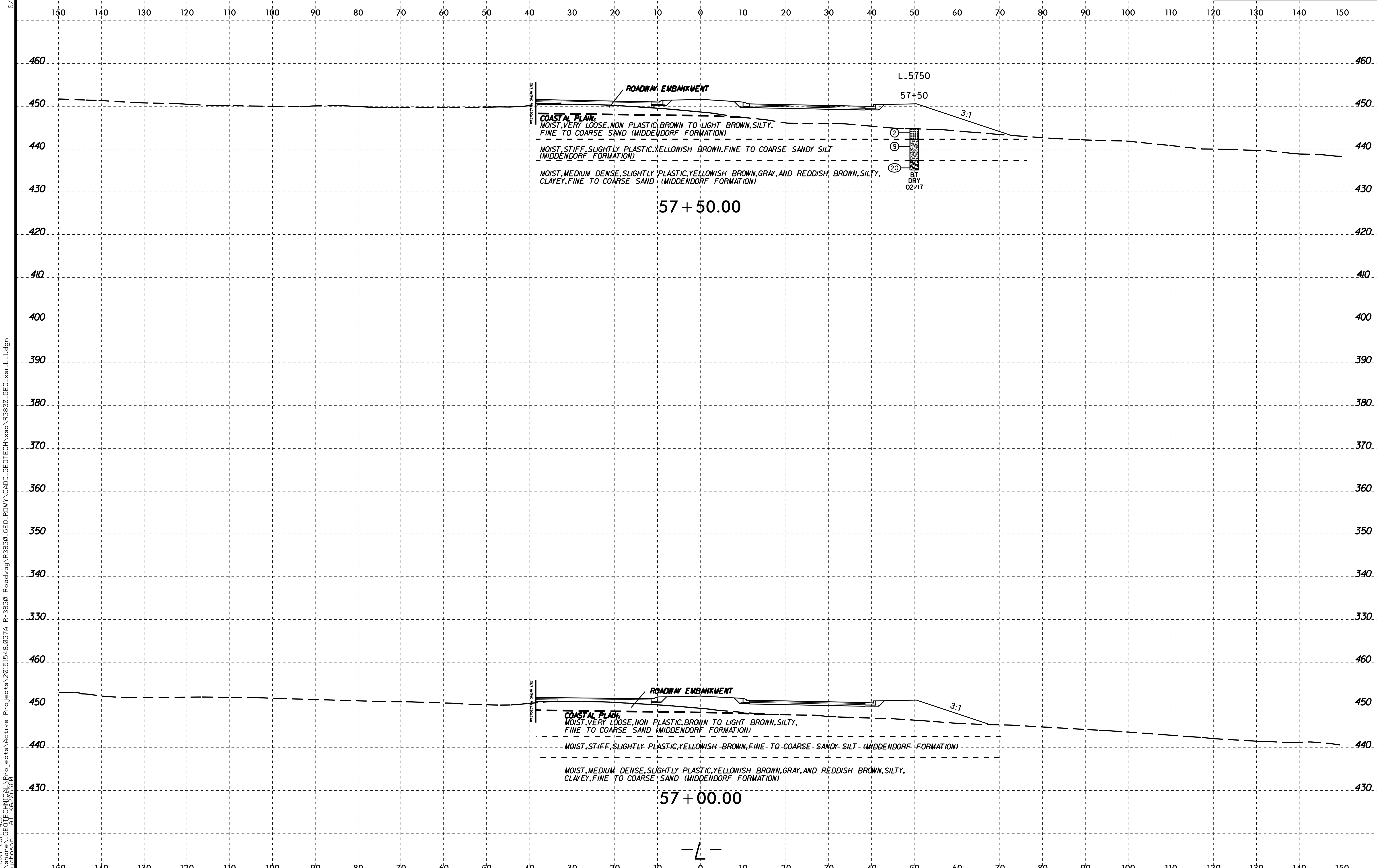
MOIST,MEDIUM STIFF TO STIFF,MODERATELY PLASTIC,YELLOWISH BROWN,GRAY,REDDISH BROWN,FINE TO COARSE SANDY CLAY AND FINE TO COARSE SANDY,SILTY CLAY (7) (16) (MIDDENDORF FORMATION)

BT
DRY
02/17

55+50.00

—L—

PROJ. REFERENCE NO.	SHEET NO.
R-3830	72



6/23/16

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bajohnson AT KA206660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470
460
450
440
430

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

3:1

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

59+00.00

ROADWAY EMBANKMENT

4:1

3:1

COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

58+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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bajohnson AT KA20660

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340 330

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

3:1

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

60+00.00

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_5950

59+50

ROADWAY EMBANKMENT

4:1

3:1

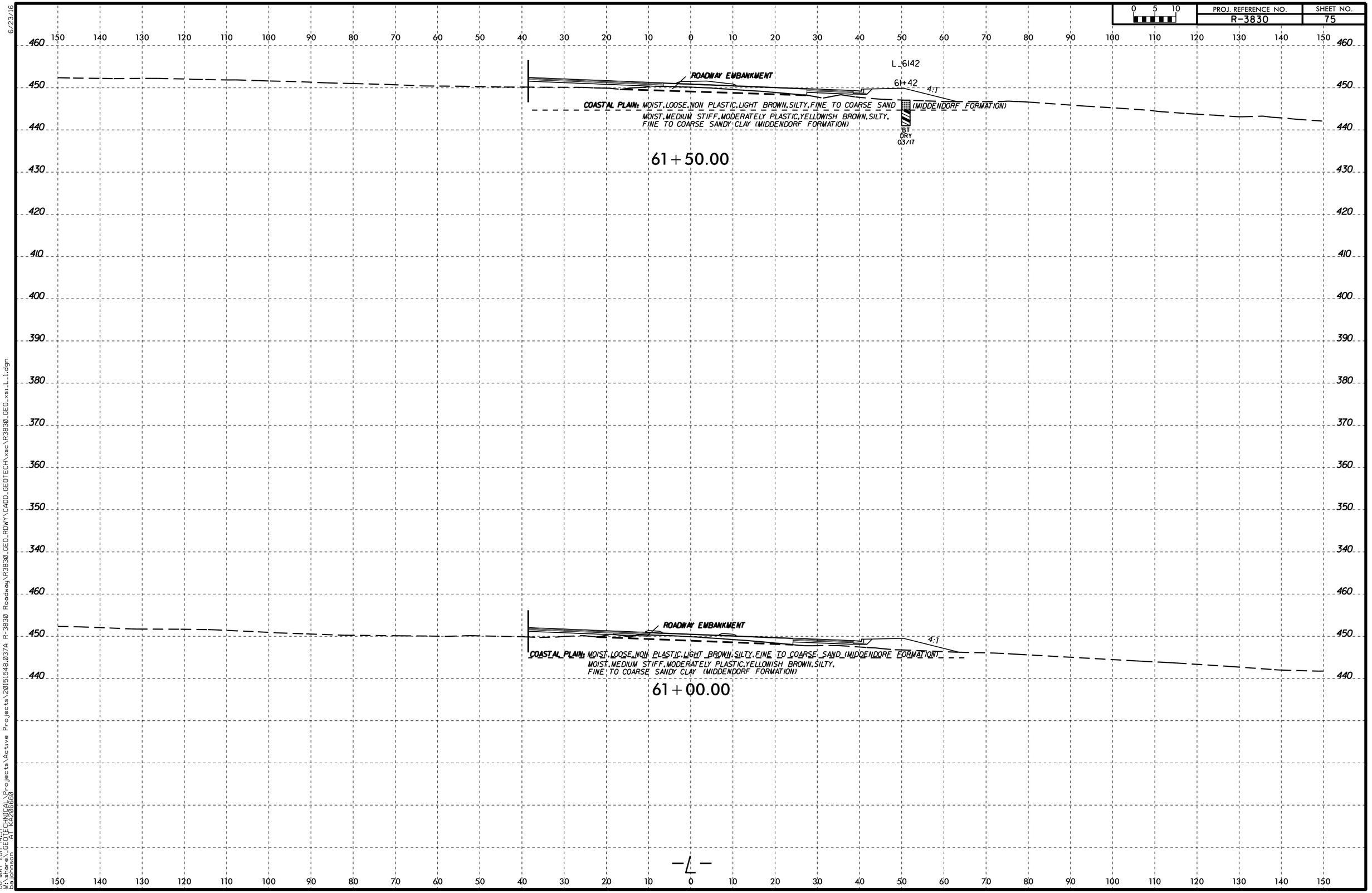
Ⓐ

BT
DRY
03/17

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

59+50.00

—L—



6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	76

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

470
460
450
440
430
460
450
440
460
450
440

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1

ROADWAY EMBANKMENT

4:1

Ⓐ

MOIST, VERY STIFF, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

MOIST, LOOSE, SLIGHTLY PLASTIC, GRAY TO YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

63+00.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

62+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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bajohnson AT KA206660

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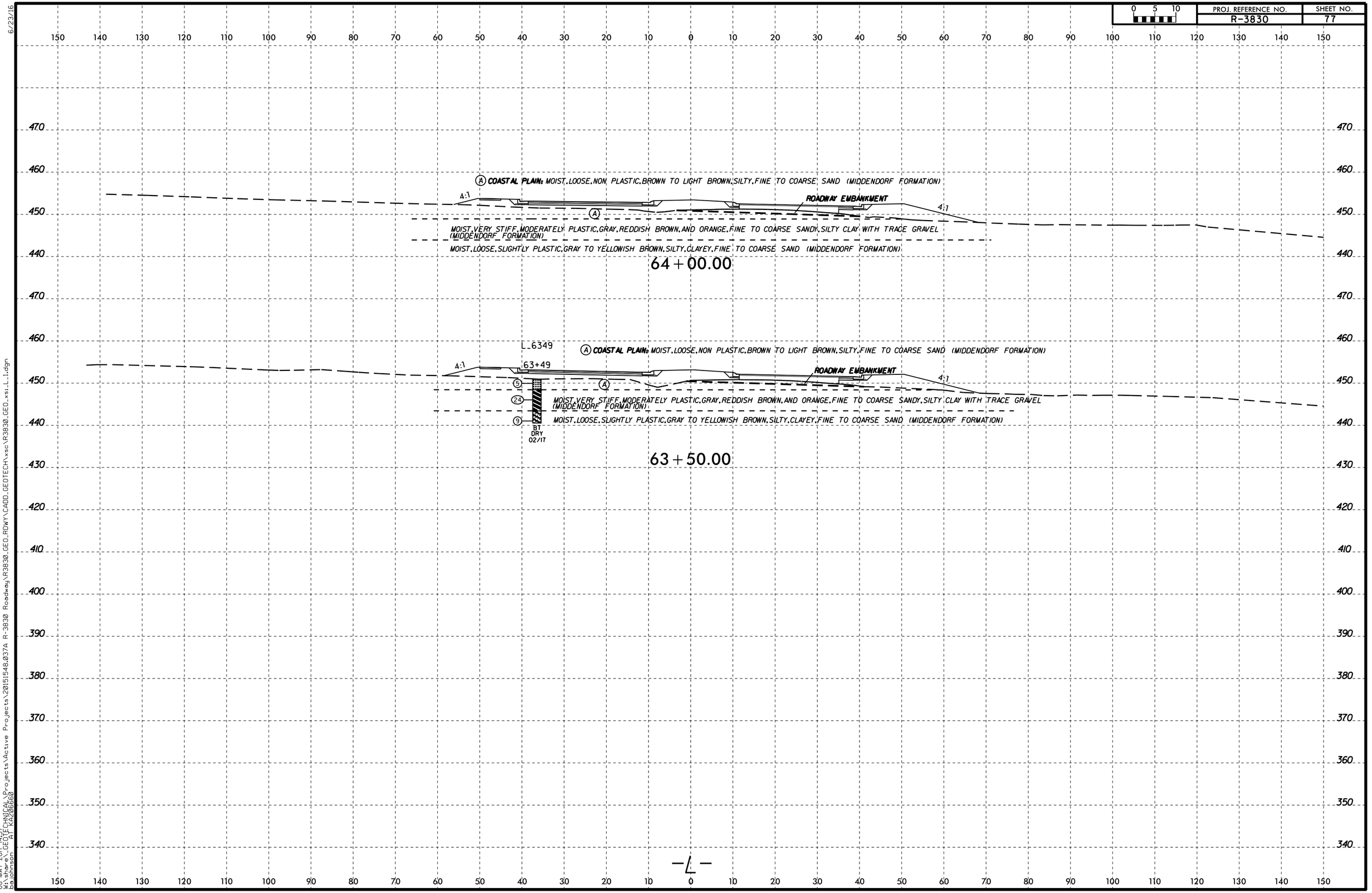

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	78

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

470
460
450
440

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH, BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, CLAYEY, FINE SAND (MIDDENDORF FORMATION)

65 + 00.00

-L-

470
460
450
440

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.
	R-3830	79

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN: MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,VERY STIFF,MODERATELY PLASTIC,REDDISH BROWN AND GRAY, FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,YELLOWISH BROWN,GRAY,AND REDDISH BROWN,SILTY,CLAYEY,FINE SAND (MIDDENDORF FORMATION)

66+00.00

L 6550

65+50

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN: MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,VERY STIFF,MODERATELY PLASTIC,REDDISH BROWN AND GRAY, FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,YELLOWISH BROWN,GRAY,AND REDDISH BROWN,SILTY,CLAYEY,FINE SAND (MIDDENDORF FORMATION)

2 19 10

BT DRY 02/17

65+50.00

—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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bajohnson
AT KP206660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470
460
450
440

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

MOIST,VERY STIFF,MODERATELY PLASTIC,GRAY,REDDISH BROWN,AND ORANGE,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

67+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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bjohnson AT KAZOO60

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440 430 420 410 400 390 380 370 360 350 340

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1

ROADWAY EMBANKMENT

Ⓐ

MOIST,VERY STIFF,MODERATELY PLASTIC,GRAY,REDDISH BROWN,AND ORANGE,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

68+00.00

L_6750

67+50

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1

ROADWAY EMBANKMENT

② Ⓐ

⑯ MOIST,VERY STIFF,MODERATELY PLASTIC,GRAY,REDDISH BROWN,AND ORANGE,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

⑯ BT DRY 2/17 MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

67+50.00

—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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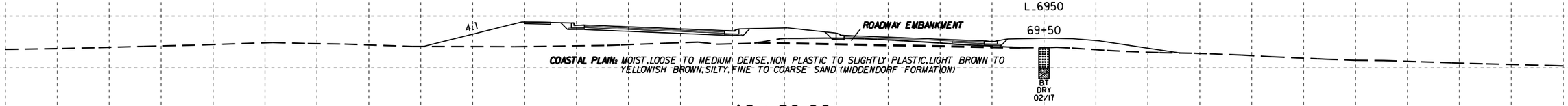
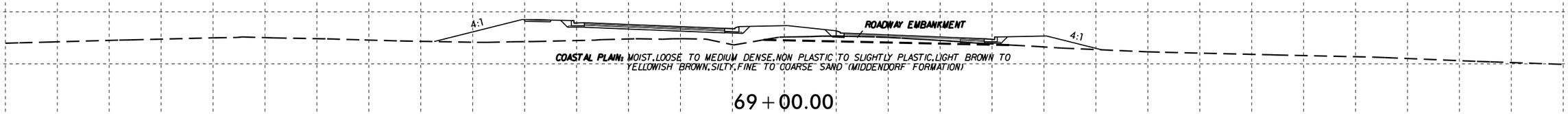
bajohnson
AT KH206660



69+50.00



69+00.00

-L-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470
460
450
440

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO LIGHT BROWN TO YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, FINE TO COARSE SAND TO SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

71+00.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

70+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

470
460
450
440

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bjohnson AT KAZ06660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	84

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

470 460 450 440 430 420 410 400 390 380 370 360 350

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO LIGHT BROWN TO YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, FINE TO COARSE SAND TO SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

72 + 00.00

L_7150

71+50

4:1

ROADWAY EMBANKMENT

4:1

4
24
12

BT
DRY
02/17

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO LIGHT BROWN TO YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, FINE TO COARSE SAND TO SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

71 + 50.00

—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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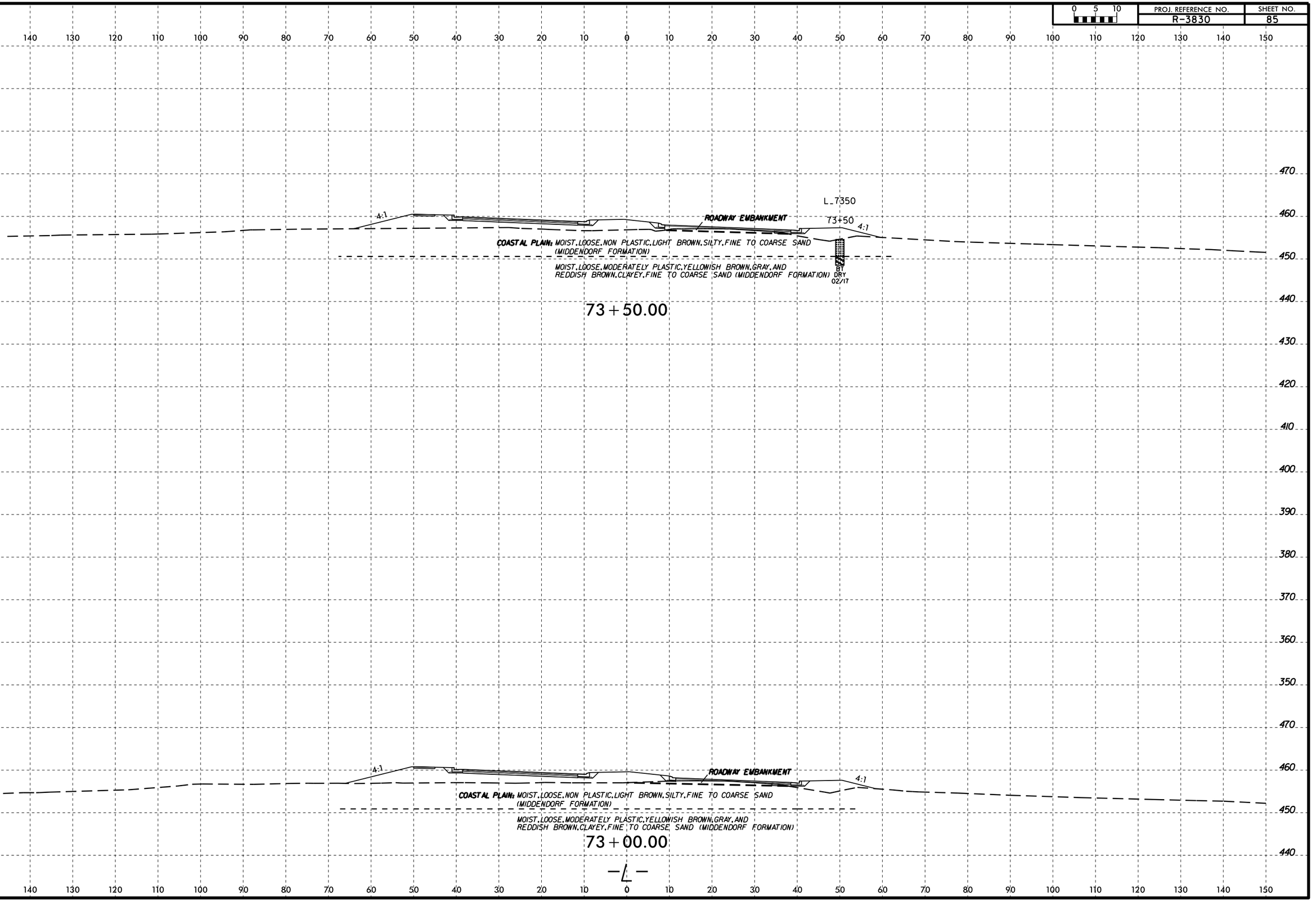
bajohnson
AT KP206660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440

Ⓐ **COASTAL PLAIN:** MOIST, VERY LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 4:1 **ROADWAY EMBANKMENT**

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN AND GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

75 + 00.00

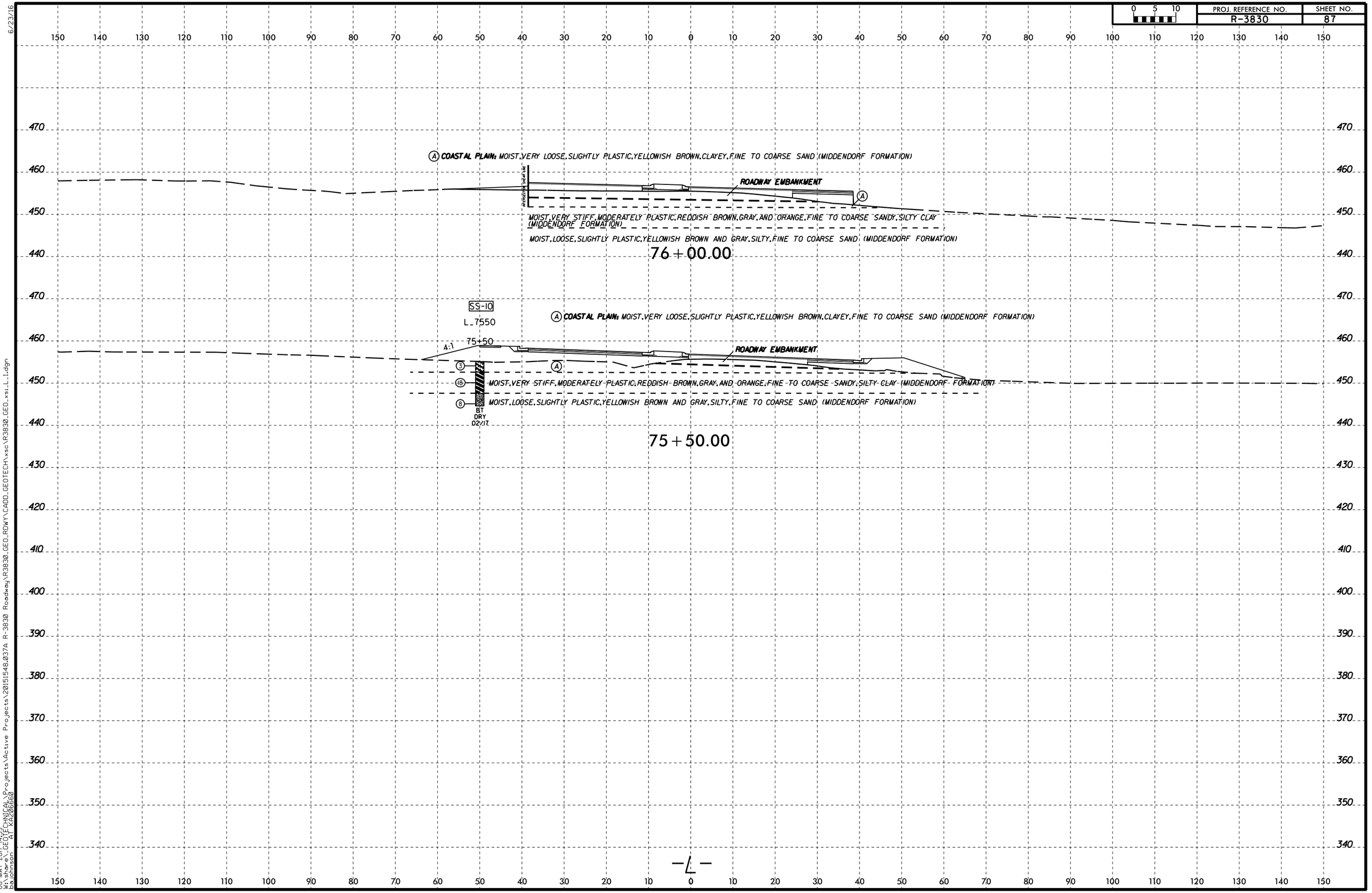
4:1 4:1 **ROADWAY EMBANKMENT**

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

74 + 00.00

-L-



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

470 460 450 440 430 470 460 450 440

4:1

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

77 + 00.00

Ⓐ **COASTAL PLAIN:** MOIST, VERY LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN AND GRAY, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

76 + 50.00

$-\mathit{L}-$

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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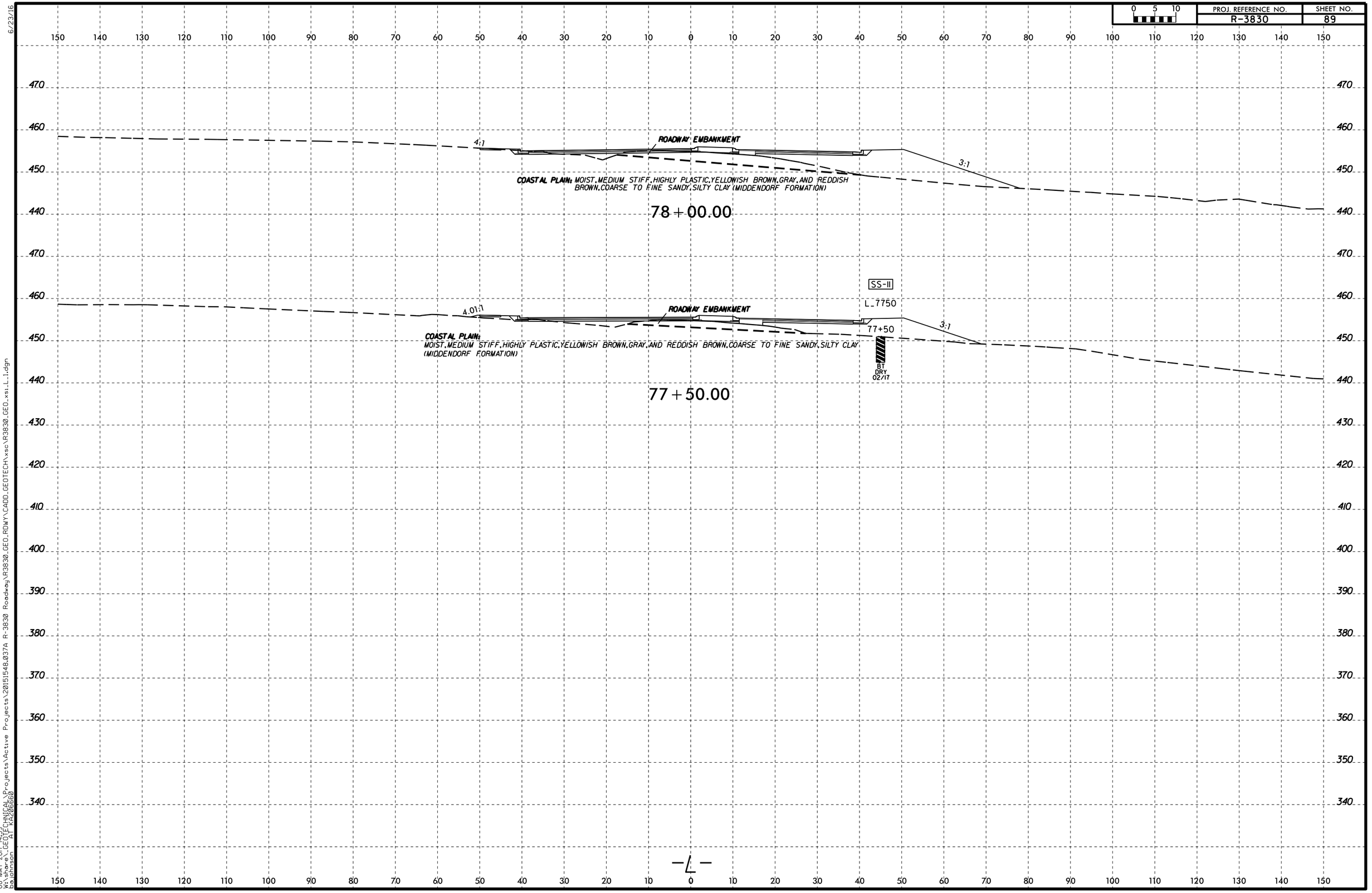
bajohnson AT KA20666

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	89



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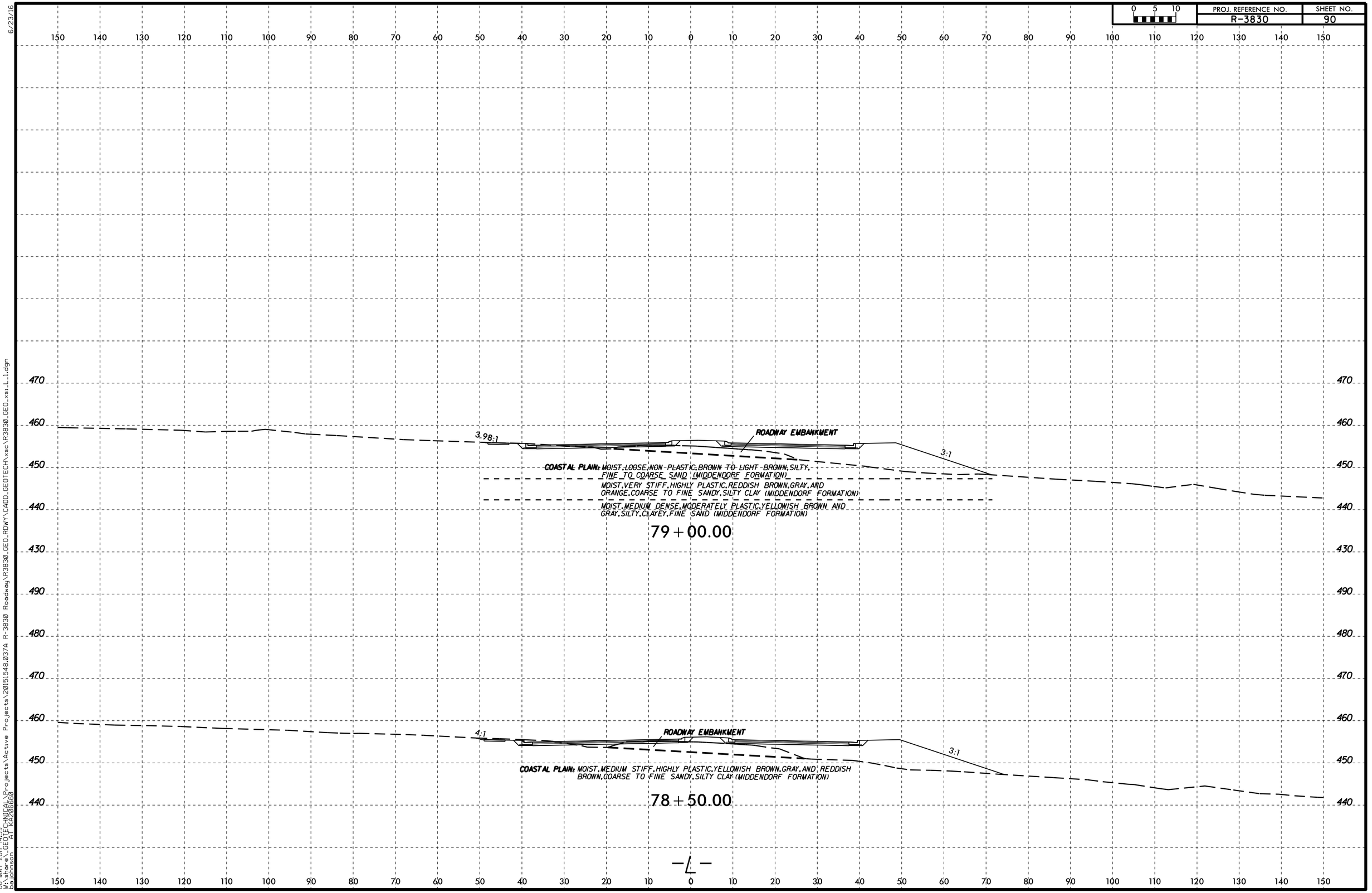
bjohnson AT KAZOO660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	90



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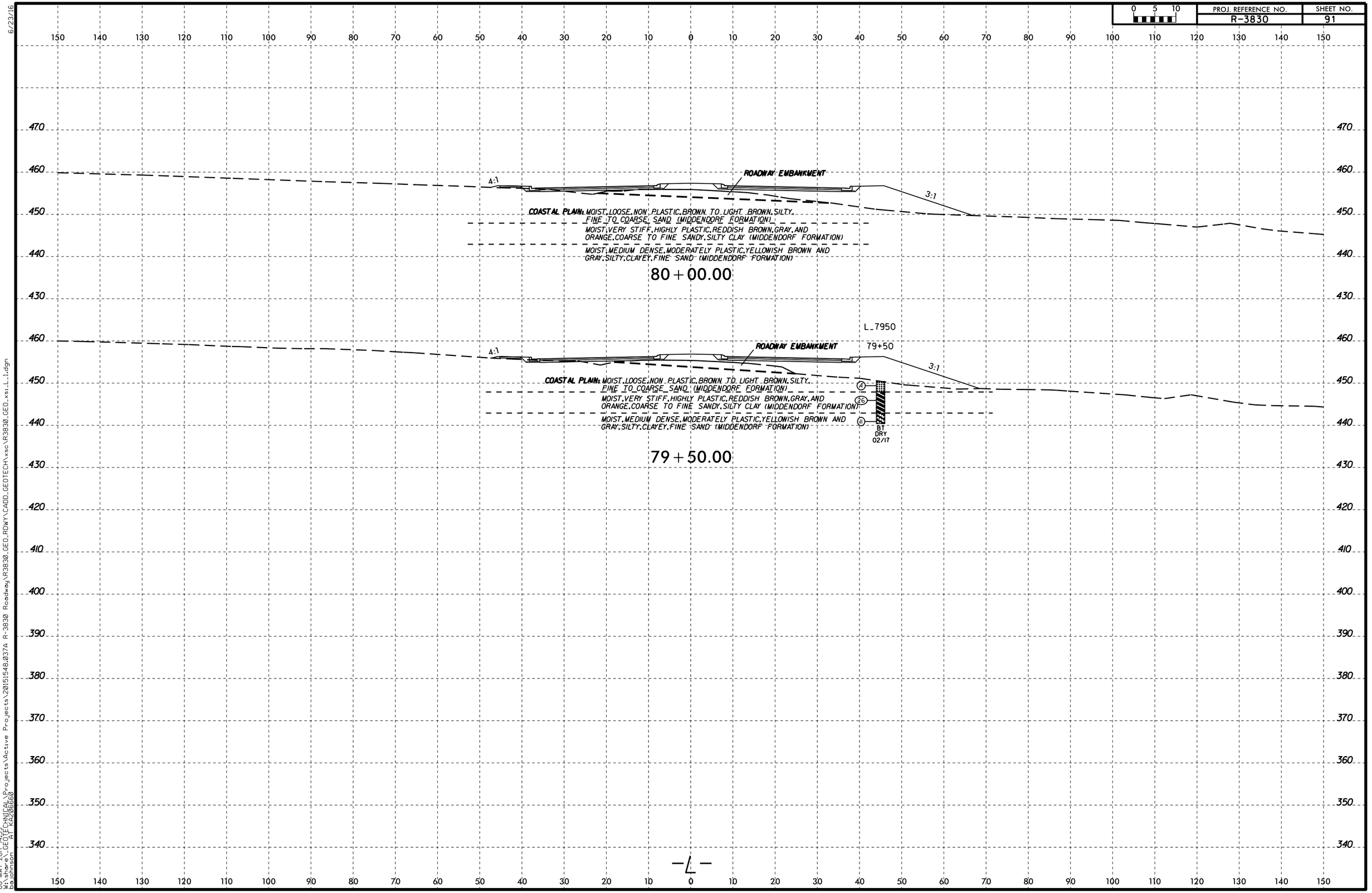
bjohnson AT KPZ06660



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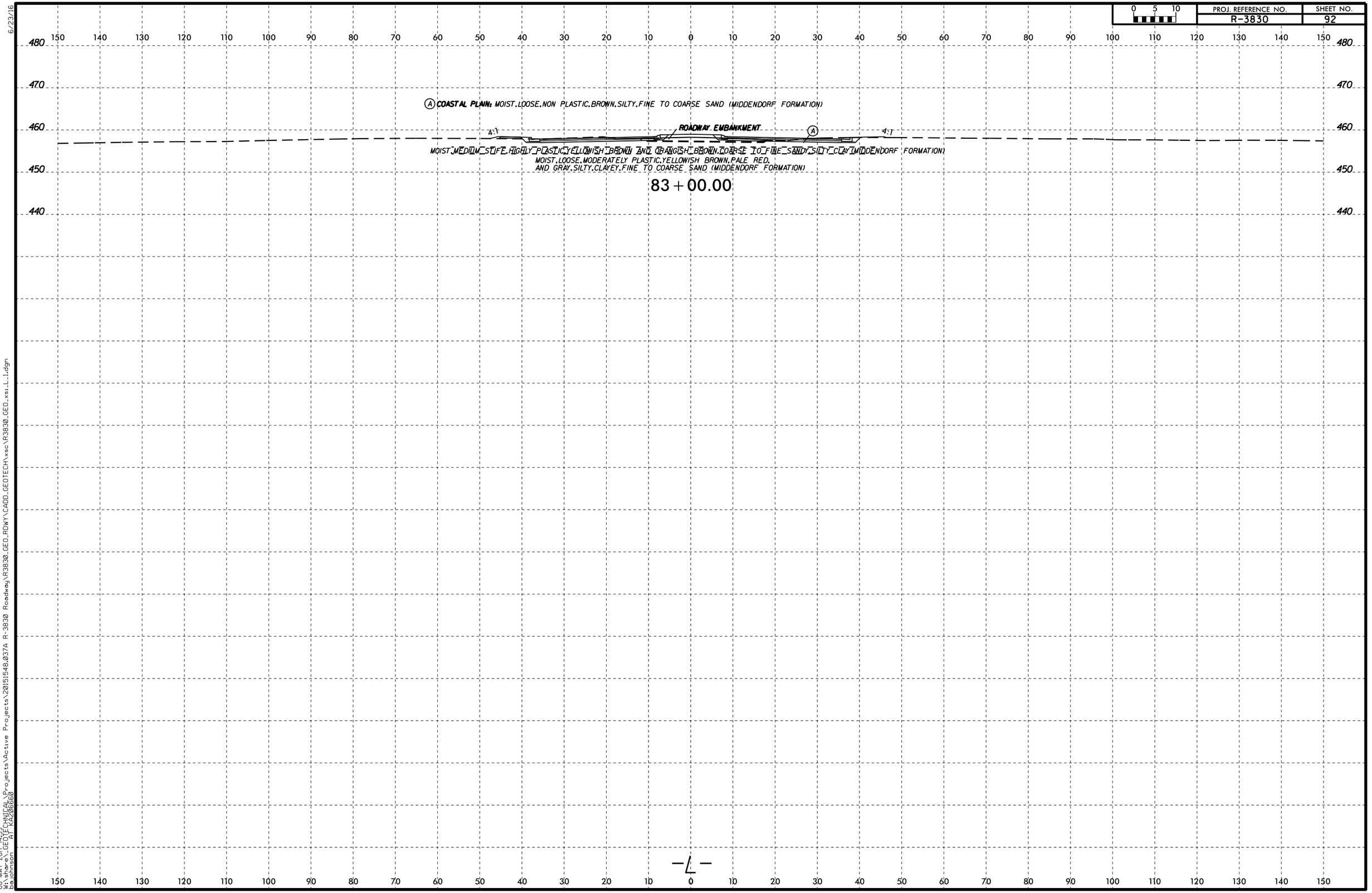
	R-3830	92



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	93

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

470 460 450 440 430 420 410 400 390 380 370 360 350

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** Ⓑ 4:1

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, COARSE TO FINE SAND, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, PALE RED, AND GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

84 + 00.00

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ **ARTIFICIAL FILL:** PAVEMENT

L_8350

83+57

4:1 Ⓐ **ROADWAY EMBANKMENT** Ⓑ 4:1

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, COARSE TO FINE SAND, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, PALE RED, AND GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT DRY 02/17

83 + 50.00

—L—

6/23/16

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bjohnson AT KAZOO660

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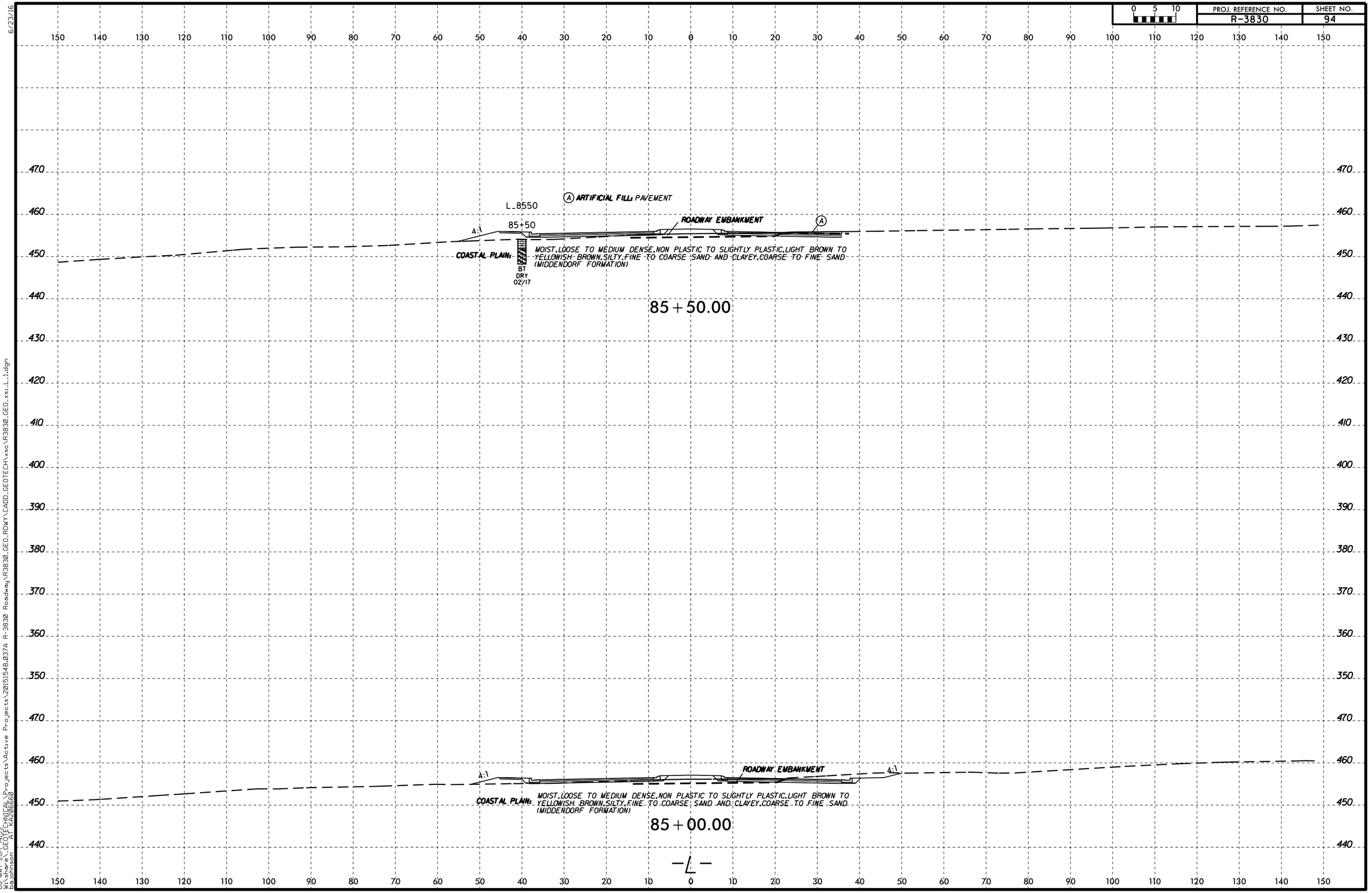

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	95

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

470
460
450
440

Ⓐ ARTIFICIAL FILL: PAVEMENT

ROADWAY EMBANKMENT

A:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

87 + 00.00

ROADWAY EMBANKMENT

A:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

86 + 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

08-MAY-2017 14:40
W:\share_GEOTECHNICAL\Projects\Active Projects\20151548.037A R-3830 Roadway\R3830_GEO_xsi_L1.dgn
bajohnson AT KA20666

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	96

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

470 460 450 440

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

88+00.00

470 460 450 440

L-8750 (A) ARTIFICIAL FILL: PAVEMENT

87+50

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN: (3) MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

(20) MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

(20)

BT
DRY
02/17

87+50.00

430 420 410 400 390 380 370 360 350 340

-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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	97

L-8954

89+54

ROADWAY EMBANKMENT

3:1

4:1

6 11 23 BT DRY 02/17

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, DARK BROWN, SILTY, FINE TO COARSE SAND WITH TRACE OF ORGANIC MATTER (MIDDENDORF FORMATION)

MOIST, STIFF TO VERY STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

89+50.00

ROADWAY EMBANKMENT

3:1

4:1

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, DARK BROWN, SILTY, FINE TO COARSE SAND WITH TRACE OF ORGANIC MATTER (MIDDENDORF FORMATION)

MOIST, STIFF TO VERY STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

89+00.00

-L-

6/23/16

08-MAY-2017 14:40
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bajohnson AT KA20660

6/23/16
08-MAY-2017 14:40
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bajohnson AT KA206660
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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

460
450
440
430

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN

MOIST,MEDIUM STIFF,MODERATELY PLASTIC,YELLOWISH BROWN,SILTY,FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,VERY STIFF,HIGHLY PLASTIC,REDDISH BROWN AND GRAY,FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

91+00.00

460
450
440

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN MOIST,LOOSE, NON PLASTIC,DARK BROWN,SILTY,FINE TO COARSE SAND WITH TRACE OF ORGANIC MATTER (MIDDENDORF FORMATION)

MOIST,STIFF TO VERY STIFF,MODERATELY PLASTIC,YELLOWISH BROWN,GRAY,AND REDDISH BROWN,SILTY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

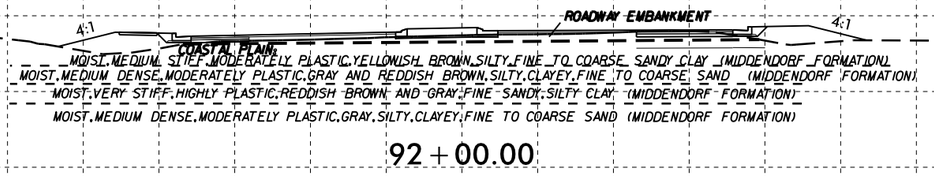
90+00.00

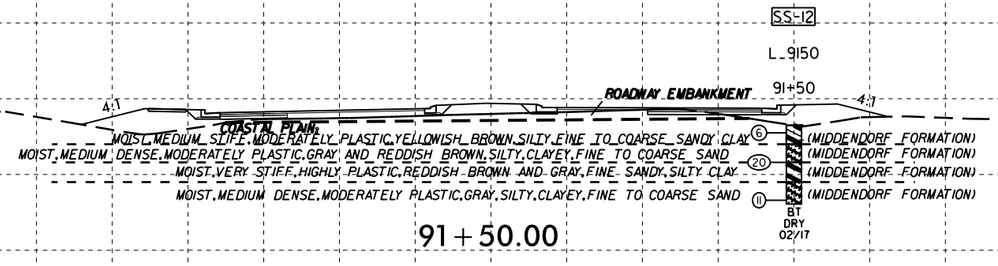
-L-

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

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

460 450 440 430 420 410 400 390 380 370 360 350 340





0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	100

L_9350

93+50

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN, RED, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, PALE RED AND GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

BT DRY 02/17

93 + 50.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN, RED, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, PALE RED AND GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

93 + 00.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE, SANDY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND REDDISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

92 + 50.00

-L-

6/23/16

03-MAY-2017 10:58
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bajohnson AT KA206660

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

460 460
450 450
440 440
430 430

4:1 ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, MEDIUM STIFF, HIGHLY PLASTIC, LIGHT BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

95+00.00

460 460
450 450
440 440
430 430

ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN, RED, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, PALE RED AND GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

94+50.00

450 450
440 440
430 430

4:1 ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN, RED, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, PALE RED AND GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

94+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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bajohnson AT KA206660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

450 440 430

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, LIGHT BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

96+00.00

450 440 430

L-9550

95+50

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, LIGHT BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

BT DRY 02/17

95+50.00

450 440 430 420 410 400 390 380 370 360 350 340 330

−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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03-MAY-2017 10:59
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bajohnson AT KA206620

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

450 440 430 420 410 400 390 380 370 360 350 340 460 450 440 430

Ⓐ **ROADWAY EMBANKMENT:**
MOIST.LOOSE.SLIGHTLY PLASTIC TO NON PLASTIC.YELLOWISH BROWN TO LIGHT BROWN.CLAYEY.FINE TO COARSE SAND AND SILTY.FINE TO COARSE SAND

4:1 6:1 6.02:1

COASTAL PLAIN:
MOIST.MEDIUM DENSE.NON PLASTIC.YELLOWISH BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

98+00.00

Ⓐ **ROADWAY EMBANKMENT:**
MOIST.LOOSE.SLIGHTLY PLASTIC TO NON PLASTIC.YELLOWISH BROWN TO LIGHT BROWN.CLAYEY.FINE TO COARSE SAND AND SILTY.FINE TO COARSE SAND

L_9750
97+50

6:1 5.99:1

INTERSECTION NEAR LINE

BT DRY 02/17

COASTAL PLAIN:
MOIST.MEDIUM DENSE.NON PLASTIC.YELLOWISH BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

97+50.00

Ⓐ **ROADWAY EMBANKMENT:**
MOIST.LOOSE.SLIGHTLY PLASTIC TO NON PLASTIC.YELLOWISH BROWN TO LIGHT BROWN.CLAYEY.FINE TO COARSE SAND AND SILTY.FINE TO COARSE SAND

6:1 5.99:1

INTERSECTION NEAR LINE

COASTAL PLAIN:
MOIST.MEDIUM DENSE.NON PLASTIC.YELLOWISH BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

97+00.00
-L-

6/23/16

03-MAY-2017 11:00
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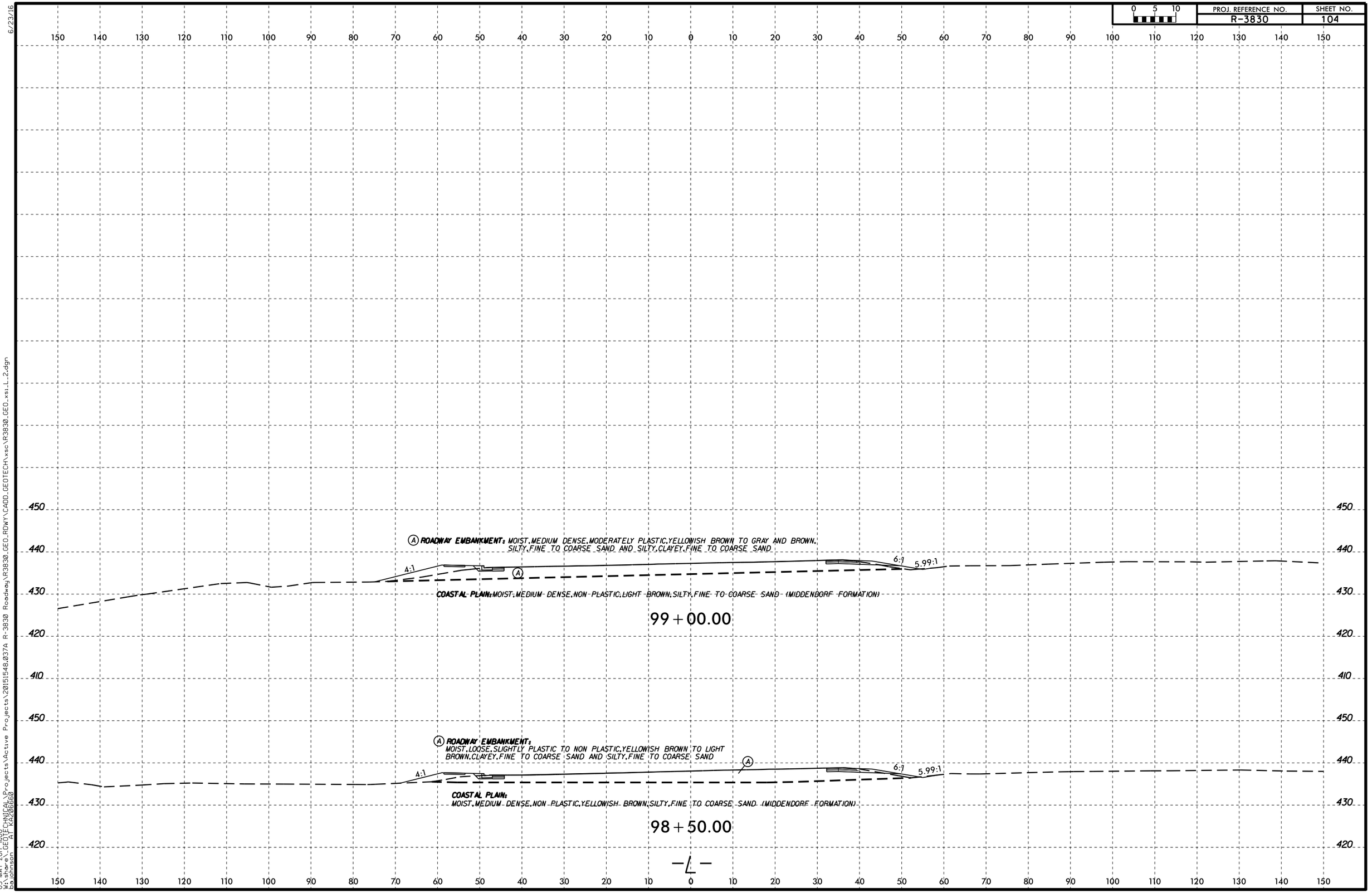
bjohnson AT KA20666

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	104



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bjohnson AT KA20666

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

450 440 430 420 410 400 390 380 370 360 350 340 330 320

Ⓐ **ROADWAY EMBANKMENT:** MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN TO GRAY AND BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND

4:1 6:1 5.98:1

COASTAL PLAIN: MOIST, MEDIUM DENSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

100+00.00

L_9950

99+50

Ⓐ MOIST, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN TO GRAY AND BROWN, SILTY, FINE TO COARSE SAND WITH TRACE WOOD CHIPS

3.97:1 6:1 5.99:1

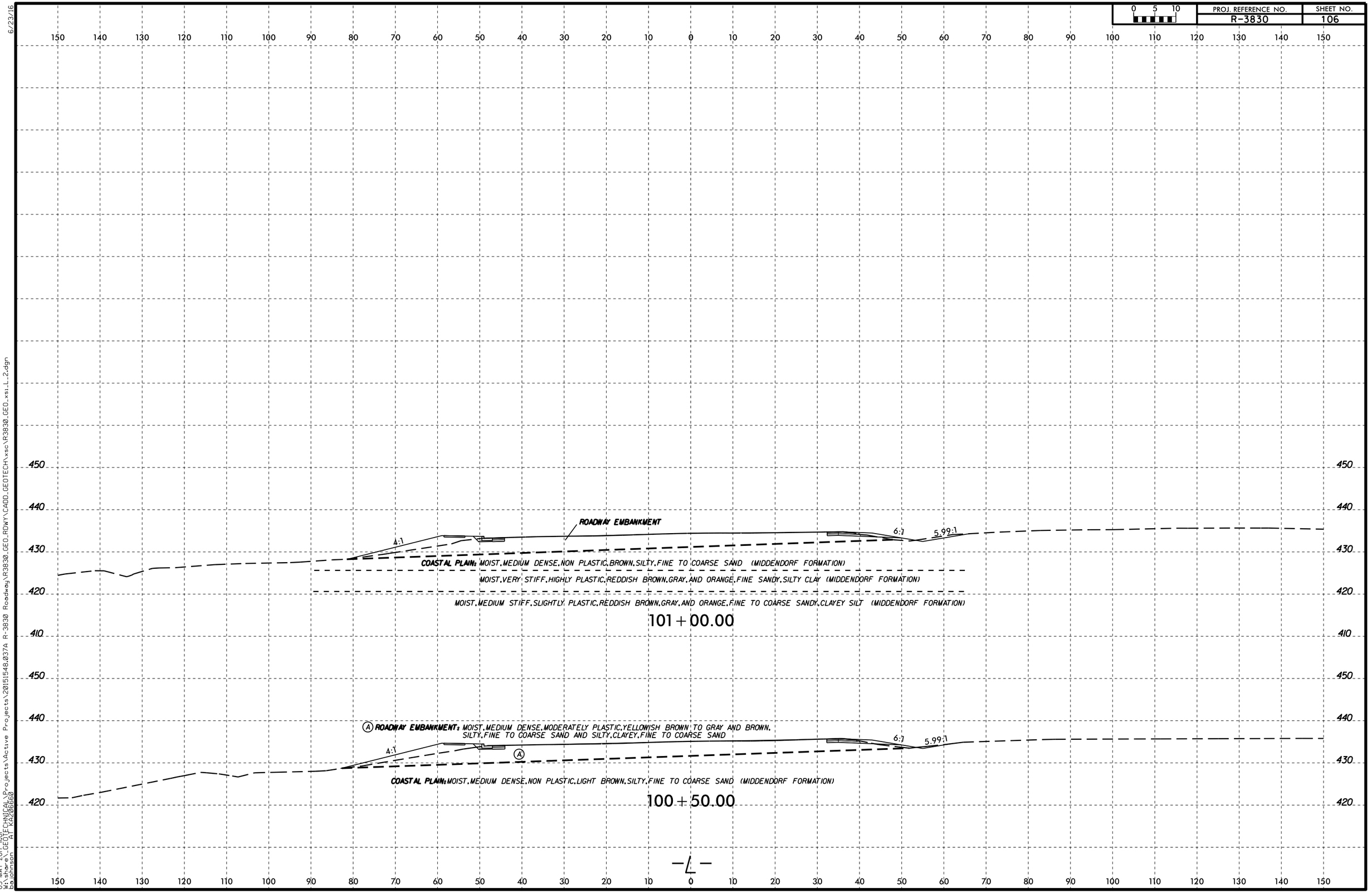
ROADWAY EMBANKMENT: MOIST, LOOSE, MODERATELY PLASTIC, ORANGISH BROWN, PALE RED, AND GRAY, SILTY, CLAYEY, FINE TO COARSE SAND

COASTAL PLAIN: MOIST, MEDIUM DENSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT DRY 02/17

99+50.00

—L—



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	107

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

440
430
420
450
440
430
420
410
400
390
380
370
360
350
340
330
320

ROADWAY EMBANKMENT

4:1

6:1

5.74:1

COASTAL PLAIN: MOIST.MEDIUM DENSE.NON PLASTIC.BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST.VERY STIFF.HIGHLY PLASTIC.REDDISH BROWN.GRAY.AND ORANGE.FINE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

MOIST.MEDIUM STIFF.SLIGHTLY PLASTIC.REDDISH BROWN.GRAY.AND ORANGE.FINE TO COARSE SANDY.CLAYEY SILT (MIDDENDORF FORMATION)

102+00.00

L_10150

101+50

ROADWAY EMBANKMENT

4:1

6:1

5.99:1

COASTAL PLAIN: MOIST.MEDIUM DENSE.NON PLASTIC.BROWN.SILTY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST.VERY STIFF.HIGHLY PLASTIC.REDDISH BROWN.GRAY.AND ORANGE.FINE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

MOIST.MEDIUM STIFF.SLIGHTLY PLASTIC.REDDISH BROWN.GRAY.AND ORANGE.FINE TO COARSE SANDY.CLAYEY SILT (MIDDENDORF FORMATION)

(10) (6) (16) (8)

BT
DRY
02/17

101+50.00

-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

6/23/16

03-MAY-2017 11:01
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bajohnson AT KAZOO600

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

450
440
430
420

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, BROWN, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

105+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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

440 430 420 450 440 430 420 410 400 390 380 370 360 350 340 330 320

Ⓐ **ROADWAY EMBANKMENT:** MOIST, SOFT, HIGHLY PLASTIC, ORANGISH BROWN TO BROWN, COARSE TO FINE SANDY, SILTY CLAY

4:1 6:1 5.99:1

Ⓐ

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, BROWN, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

106 + 00.00

S-13

L_10550

105+50

Ⓐ MOIST, LOOSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND

4:1 6:1 5.99:1

ROADWAY EMBANKMENT: MOIST, SOFT, HIGHLY PLASTIC, ORANGISH BROWN, COARSE TO FINE SANDY, SILTY CLAY

Ⓐ

BT DRY -2'/1'

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, BROWN, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

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

—L—

6/23/16

03-MAY-2017 11:03
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bjohnson AT KA20660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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

440
430
420
410
450
440
430
420
410

Ⓐ **ROADWAY EMBANKMENT:** MOIST, LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND

4:1 Ⓐ 6:1 5.99:1

MOIST, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, COARSE TO FINE SANDY, SILTY CLAY

107 + 00.00

Ⓐ **ROADWAY EMBANKMENT:** MOIST, SOFT, HIGHLY PLASTIC, ORANGISH BROWN TO BROWN, COARSE TO FINE SANDY, SILTY CLAY

3:1 Ⓐ 6:1 5.99:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, BROWN, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

106 + 50.00

$-L-$

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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bajohnson AT KA206660

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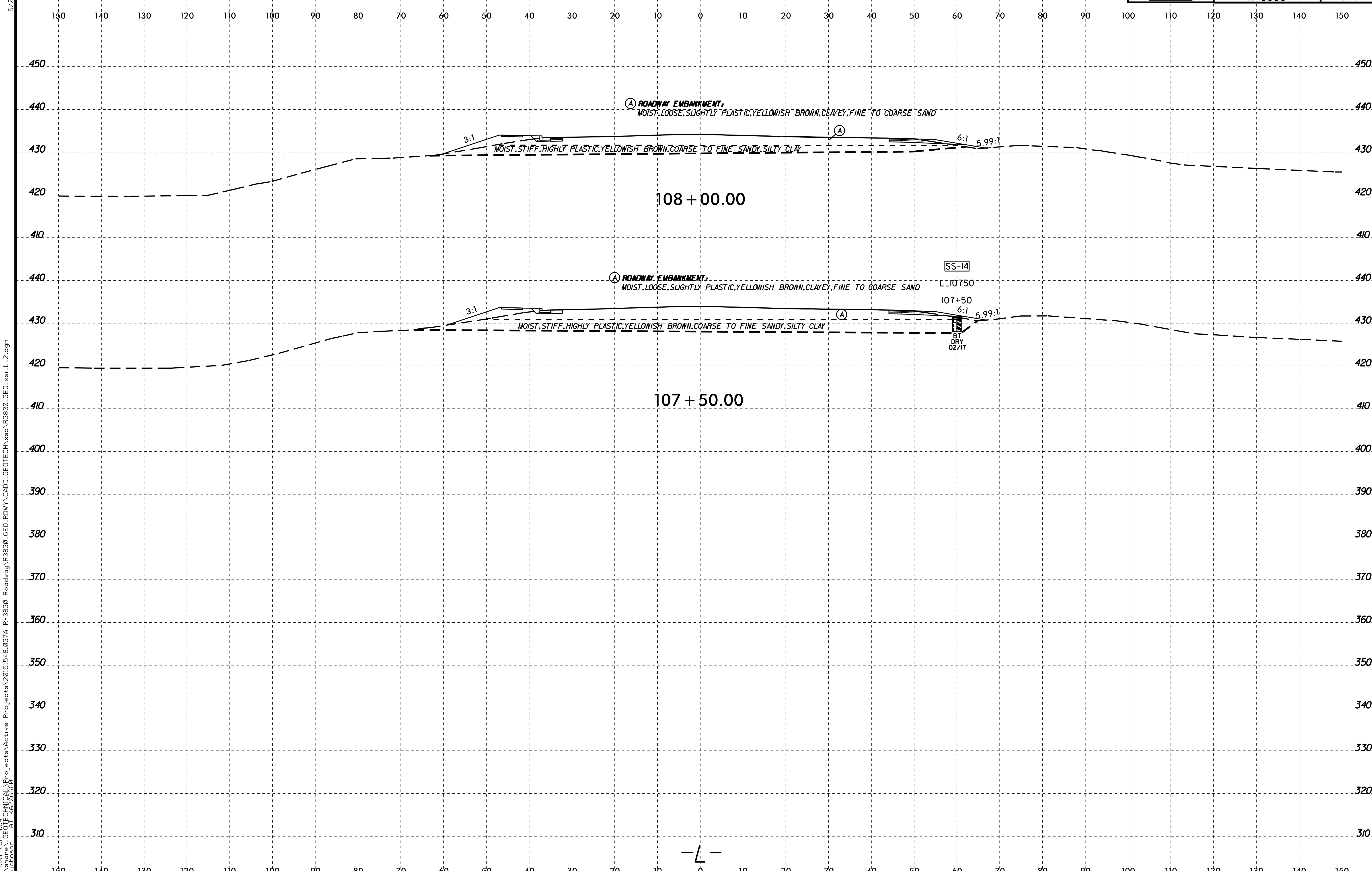
PROJ. REFERENCE NO.	SHEET NO.
R-3830	111



Ⓐ ROADWAY EMBANKMENT:
MOIST,LOOSE,SLIGHTLY PLASTIC,YELLOWISH BROWN,CLAYEY,FINE TO COARSE SAND
MOIST,STIFF,HIGHLY PLASTIC,YELLOWISH BROWN,COARSE TO FINE SANDY,SILTY CLAY
3:1
6:1
5.99:1
108+00.00
Ⓐ ROADWAY EMBANKMENT:
MOIST,LOOSE,SLIGHTLY PLASTIC,YELLOWISH BROWN,CLAYEY,FINE TO COARSE SAND
MOIST,STIFF,HIGHLY PLASTIC,YELLOWISH BROWN,COARSE TO FINE SANDY,SILTY CLAY
SS-14
L_10750
107+50
BT
DRY
02/17
3:1
6:1
5.99:1
107+50.00
-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	112

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

450
440
430
420
410

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT Ⓐ

INTERSECTION SHOULDER LINE

INTERSECTION SHOULDER LINE

MOIST, VERY STIFF TO STIFF, MODERATELY PLASTIC, REDDISH BROWN, ORANGE, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

110 + 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

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

460 450 440 430 420 410 400 390 380 370 360 350 340 330 320

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

3:1

6:1 Ⓐ 5.99:1

MOIST, VERY STIFF TO STIFF, MODERATELY PLASTIC, REDDISH BROWN, ORANGE, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

111 + 00.00

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_11050

110+50

INTERSECTION SKEW LINE

ROADWAY EMBANKMENT

Ⓐ

6:1 5.28:1

6 20 11 5

BT DRY 02/17

MOIST, VERY STIFF TO STIFF, MODERATELY PLASTIC, REDDISH BROWN, ORANGE, AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

110 + 50.00

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	114

L_11250

112+50

3:1

6:1

5.94:1

ROADWAY EMBANKMENT: MOIST,LOOSE TO MEDIUM DENSE,NON PLASTIC,YELLOWISH BROWN TO BROWN, SILTY,FINE TO COARSE SAND

BT-
DRY
02/17

112+50.00

3:1

6:1

5.96:1

ROADWAY EMBANKMENT: MOIST,LOOSE TO MEDIUM DENSE,NON PLASTIC,YELLOWISH BROWN TO BROWN,SILTY,FINE TO COARSE SAND

112+00.00

-L-

6/23/16

03-MAY-2017 11:05
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bajohnson AT KAZ06660

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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

460 450 440 430 420 450 440 430 450 440 430 450 440 430

3:1 6:1

ROADWAY EMBANKMENT: MOIST, LOOSE, MODERATELY PLASTIC, RED, CLAYEY, COARSE TO FINE SAND WITH TRACE GRAVEL

COASTAL PLAIN: MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND RED, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

114 + 00.00

3:1 6:1

ROADWAY EMBANKMENT: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN TO BROWN, SILTY, FINE TO COARSE SAND

113 + 50.00

3:1 6:1

ROADWAY EMBANKMENT: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN TO BROWN, SILTY, FINE TO COARSE SAND

113 + 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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	116

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

460 450 440 430

Ⓐ **ROADWAY EMBANKMENT:** MOIST, LOOSE, MODERATELY PLASTIC, RED, CLAYEY, COARSE TO FINE SAND WITH TRACE GRAVEL

4:1 Ⓐ 6:1

COASTAL PLAIN: MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN AND RED, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

115 + 00.00

L_II450

II4+50

3:1 6:1

ROADWAY EMBANKMENT: MOIST, LOOSE, MODERATELY PLASTIC, RED, CLAYEY, COARSE TO FINE SAND WITH TRACE GRAVEL

COASTAL PLAIN: MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND RED, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

BT
DRY
02/17

114 + 50.00

420 410 400 390 380 370 360 350 340 330

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

03-MAY-2017 11:06
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bjohnson AT KA20660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	117

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

460 450 440 430 470 460 450 440 430

3:1 4:1

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN TO BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, NON PLASTIC, RED, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

116 + 00.00

4:1 4:1

(A) ROADWAY EMBANKMENT: MOIST, LOOSE, MODERATELY PLASTIC, RED, CLAYEY, COARSE TO FINE SAND WITH TRACE GRAVEL

(A)

COASTAL PLAIN: MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN AND RED, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

115 + 50.00

-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

03-MAY-2017 11:07
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bjohnson AT KA20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	118

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

460 450 440 460 450 430 450 440 430 420 410 400 390 380 370 360 350 340

4:1 ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN TO BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, NON PLASTIC, RED, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

117 + 00.00

L_11650

116+50

4:1 ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN TO BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)
BT MOIST, MEDIUM DENSE, NON PLASTIC, RED, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
DRY
02V17

116 + 50.00

−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

6/23/16

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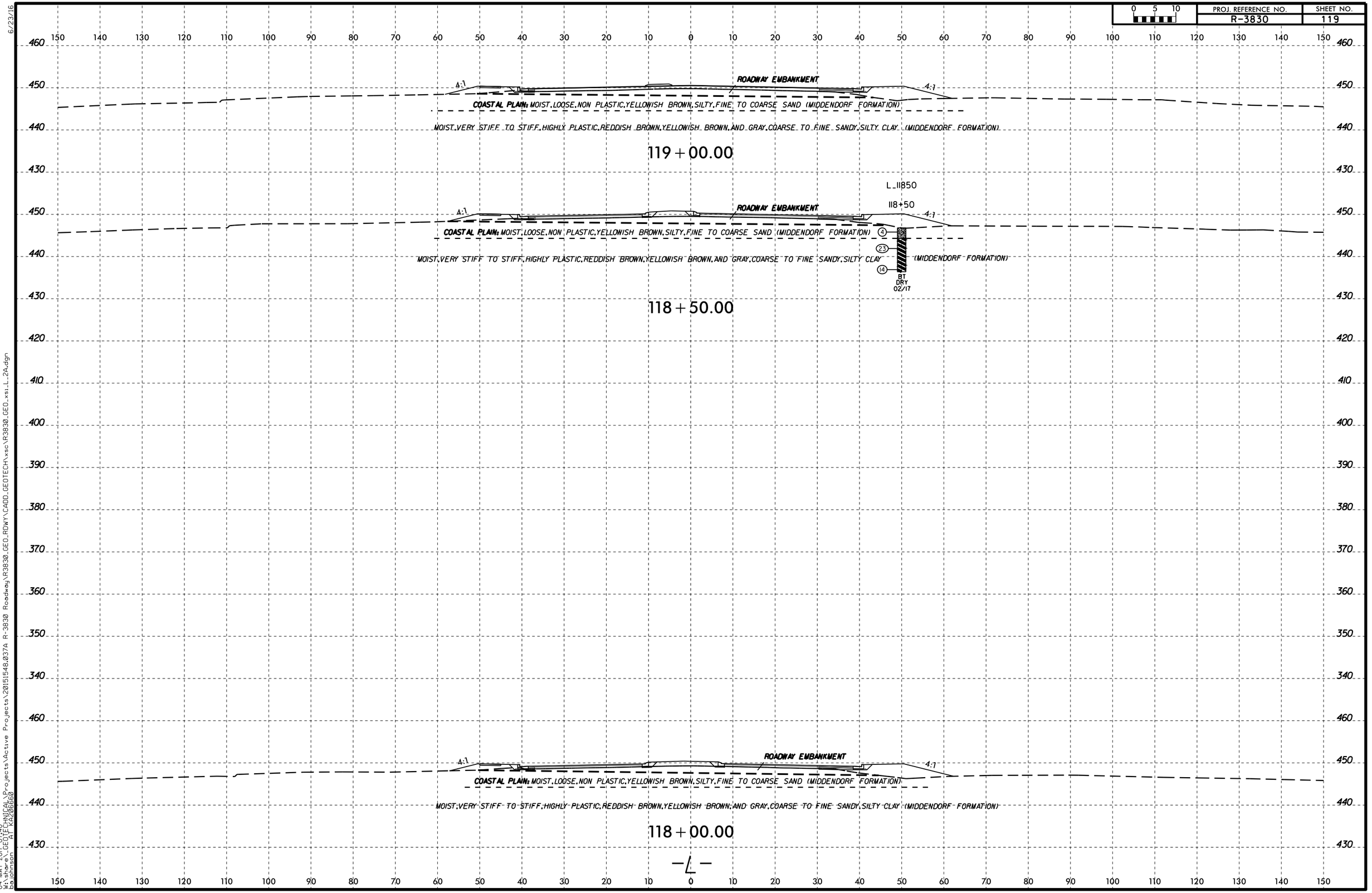

L -12050

120+50

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (5) (MIDDENDORF FORMATION)

MOIST, DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (32) (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (12) (MIDDENDORF FORMATION)

WET, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

BT DRY 02/17

120 + 50.00

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

120 + 00.00

-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	121

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

460 450 440 430

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL

ROADWAY EMBANKMENT 4:1

Ⓐ **COASTAL PLAIN:**
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND WITH TRACE GRAVEL
(MIDDENDORF FORMATION)

WET, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

123+00.00

L_12255
122+55

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL

ROADWAY EMBANKMENT 4:1

17 22 2 Ⓐ
BT
DRY
02/17

COASTAL PLAIN:
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND WITH TRACE GRAVEL
(MIDDENDORF FORMATION)

WET, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

122+50.00

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL

ROADWAY EMBANKMENT 4:1

Ⓐ **COASTAL PLAIN:**
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND WITH TRACE GRAVEL
(MIDDENDORF FORMATION)

WET, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

122+00.00

ROADWAY EMBANKMENT 4:1

COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN,
CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
WET, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
WET, STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

121+00.00

—L—

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	122

L_12450

124+50

4:1

ROADWAY EMBANKMENT

ARTIFICIAL FILL

COASTAL PLAIN: MOIST,LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND WITH TRACE OF ORGANIC MATTER (MIDDENDORF FORMATION)

MOIST,VERY STIFF,MODERATELY PLASTIC,REDDISH BROWN,YELLOWISH BROWN, AND GRAY,SILTY,FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

WET,MEDIUM DENSE,NON PLASTIC,YELLOWISH BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

9 2 14

BT
DRY
02/17

124+50.00

ARTIFICIAL FILL

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST,LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND WITH

MOIST,VERY STIFF,MODERATELY PLASTIC,REDDISH BROWN,YELLOWISH BROWN AND GRAY,SILTY,FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

WET,MEDIUM DENSE,NON PLASTIC,YELLOWISH BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

124+00.00

-L-

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bjohnson AT KA20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	123

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

470
460
450
440
430

ARTIFICIAL FILL
ROADWAY EMBANKMENT
4:1
3:1
COASTAL PLAIN: MOIST, STIFF, SLIGHTLY PLASTIC, BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

126+00.00

ARTIFICIAL FILL
ROADWAY EMBANKMENT
4:1
3:1
COASTAL PLAIN: MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND WITH TRACE OF ORGANIC MATTER (MIDDENDORF FORMATION)
MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, YELLOWISH BROWN AND GRAY, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)
WET, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

125+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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bajohnson AT KA206660
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	124

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

460 450 440 430

ROADWAY EMBANKMENT

4:1

3:1

COASTAL PLAIN: MOIST, STIFF, SLIGHTLY PLASTIC, BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

127 + 00.00

460 450 440 430

L_I2655

I26+55

ROADWAY EMBANKMENT

3:1

COASTAL PLAIN: MOIST, STIFF, SLIGHTLY PLASTIC, BROWN, FINE TO COARSE SANDY SILT (10) (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (25) (MIDDENDORF FORMATION)

WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (9) 03/17 (MIDDENDORF FORMATION)

WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY, FINE TO COARSE SANDY, SILTY CLAY BT (MIDDENDORF FORMATION)

126 + 50.00

420 410 400 390 380 370 360 350 340

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

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6/23/16

04-MAY-2017 07:43
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bjohnson AT KA20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	125

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

460
450
440
430

ROADWAY EMBANKMENT

3:1

COASTAL PLAIN: MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, STIFF, SLIGHTLY PLASTIC, GRAY, FINE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

128+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

460
450
440
430

6/23/16

04-MAY-2017 07:43
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bajohnson AT KAZOO660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	126

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

460 450 440 430 420 410 400 390 380 370 360 350 340

4:1

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, STIFF, SLIGHTLY PLASTIC, GRAY, FINE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

129+00.00

SS-15

L_12850

128+50

Ⓐ **ARTIFICIAL FILL:** MOIST, DENSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

ROADWAY EMBANKMENT

34 28 12 Ⓐ

BT DRY 03/17

COASTAL PLAIN: MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

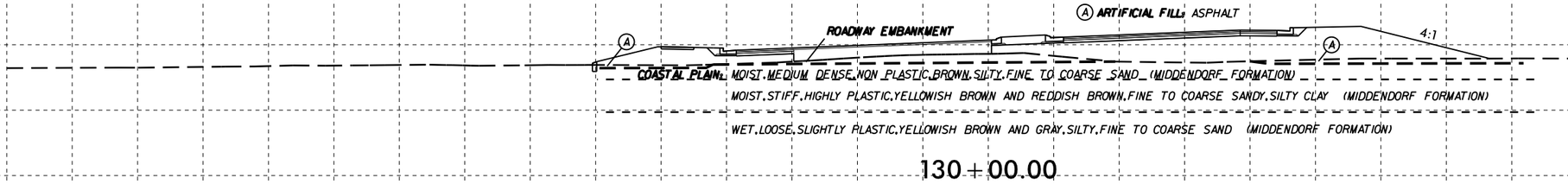
WET, STIFF, SLIGHTLY PLASTIC, GRAY, FINE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

128+50.00

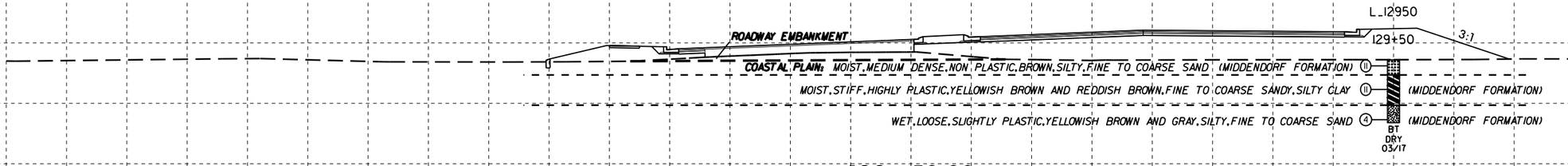
—L—

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

460 450 440 430 420 410 400 390 380 370 360 350 340



130+00.00



129+50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	128

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

470 460 450 440 430 420 410 400 390 380 370 360 350 340 460 450 440 430

L_13147

131+47

4:1

ROADWAY EMBANKMENT

4:1

3
18
12
BT

2/17

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

131+50.00

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

131+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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bjohnson AT KA206660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	129

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

470 460 450 440 430

Ⓐ **ARTIFICIAL FILL:** MOIST, LOOSE, NON PLASTIC, BROWN AND LIGHT BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL

ROADWAY EMBANKMENT

4:1

Ⓐ

COASTAL PLAIN: MOIST, MEDIUM DENSE, HIGHLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

133 + 00.00

ROADWAY EMBANKMENT

4:1

ARTIFICIAL FILL

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

132 + 50.00

Ⓐ **ARTIFICIAL FILL:** ASPHALT

ROADWAY EMBANKMENT

4:1

4:1

Ⓐ

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

132 + 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

460 450 440 480 470 460 450 440 430 420 410 400 390 380 370 360 350 340

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST,MEDIUM DENSE,HIGHLY PLASTIC,YELLOWISH BROWN,GRAY,AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

134+00.00

L_13350

133+50

ROADWAY EMBANKMENT

4:1

(A) **ARTIFICIAL FILL:** MOIST,LOOSE,NON PLASTIC,BROWN AND LIGHT BROWN,SILTY,FINE TO COARSE SAND WITH TRACE GRAVEL

COASTAL PLAIN: MOIST,MEDIUM DENSE,HIGHLY PLASTIC,YELLOWISH BROWN,GRAY,AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

(A) (10) (26) (19)

BT DRY 02/17

133+50.00

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6/23/16

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bajohnson
AT KH206660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	131

L_13550

135+50

4:1

ROADWAY EMBANKMENT

3
24
9
2/17
BT

COASTAL PLAIN: MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET,STIFF,HIGHLY PLASTIC,REDDISH BROWN AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

135+50.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST,MEDIUM DENSE,MODERATELY PLASTIC,GRAY AND REDDISH BROWN,SILTY,CLAYEY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET,STIFF,HIGHLY PLASTIC,REDDISH BROWN AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

135+00.00

—L—

6/23/16

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bjohnson AT KA20660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	132

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

460 450 440 430

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

4:1 **ROADWAY EMBANKMENT** Ⓐ

COASTAL PLAIN: MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND TO SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

137 + 00.00

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

4:1 **ROADWAY EMBANKMENT** Ⓐ

COASTAL PLAIN: MOIST, VERY LOOSE, NON-PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND REDDISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

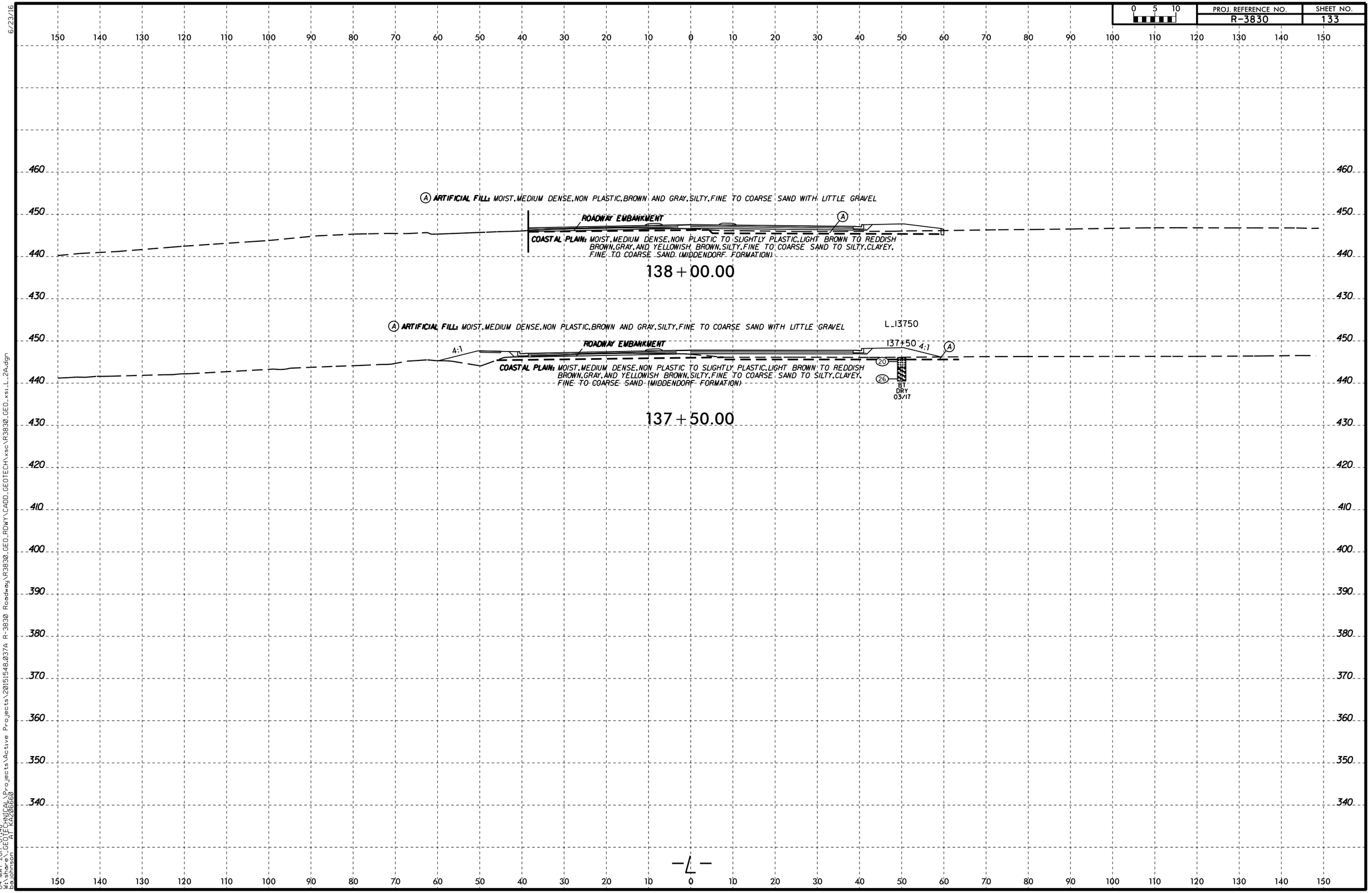
WET, STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

136 + 00.00

$-L-$

460 450 440 430

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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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	134

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

460
450
440
430

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

ROADWAY EMBANKMENT

4:1

Ⓐ

COASTAL PLAIN: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

139 + 50.00

-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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bajohnson AT KAZOO60

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	135

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

460 450 440 430 420 410 400 390 380 370 360 350 340 330

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

140+50.00

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

L_I3982

139+82

ROADWAY EMBANKMENT

3:1

E 6
18
13
BT.

02/17

COASTAL PLAIN: MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, SILTY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, HIGHLY PLASTIC, GRAY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

140+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

460 450 440 430 420 410 400 390 380 370 360 350 340 460 450 440 430

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

L_14150

141+50

4:1 **ROADWAY EMBANKMENT** 4:1 Ⓐ

17

20

BT DRY 02/17

COASTAL PLAIN: MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

141+50.00

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

4:1 **ROADWAY EMBANKMENT** Ⓐ 4:1

COASTAL PLAIN: MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

141+00.00

—L—

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	137

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

460
450
440

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN AND BROWN, SILTY, COARSE TO FINE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN TO RED AND GRAY, SILTY, COARSE TO FINE SANDY CLAY (MIDDENDORF FORMATION)

143 + 00.00

460
450
440
430

(A) ARTIFICIAL FILL: MOIST, MEDIUM DENSE, NON PLASTIC, BROWN AND GRAY, SILTY, FINE TO COARSE SAND WITH LITTLE GRAVEL

ROADWAY EMBANKMENT

(A)

4:1

existing ground line

COASTAL PLAIN:
MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, FINE TO COARSE SAND AND SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

142 + 00.00

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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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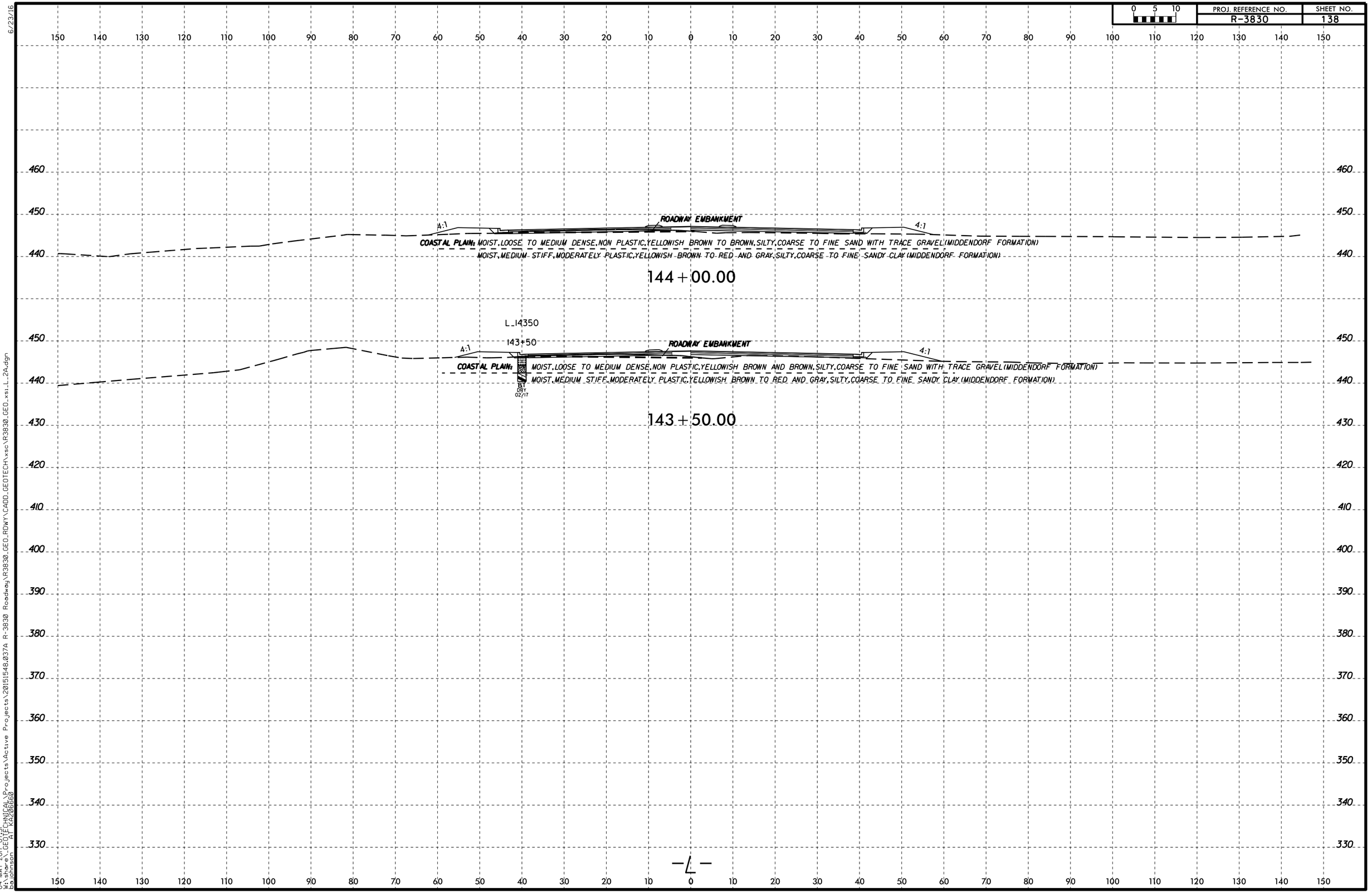
bajohnson AT KA206660



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

460 450 440 430 420 410 400 390 380 370 360 350 340 460 450 440 430

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST.LOOSE.SLIGHTLY PLASTIC.YELLOWISH BROWN.SILTY.COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST.LOOSE.MODERATELY PLASTIC.YELLOWISH BROWN.REDDISH BROWN.AND GRAY.CLAYEY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

146+00.00

L_14550

145+50

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST.LOOSE.SLIGHTLY PLASTIC.YELLOWISH BROWN.SILTY.COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST.LOOSE.MODERATELY PLASTIC.YELLOWISH BROWN.REDDISH BROWN.AND GRAY.CLAYEY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT
DRY
02/17

145+50.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST.LOOSE.SLIGHTLY PLASTIC.YELLOWISH BROWN.SILTY.COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST.LOOSE.MODERATELY PLASTIC.YELLOWISH BROWN.REDDISH BROWN.AND GRAY.CLAYEY.FINE TO COARSE SAND (MIDDENDORF FORMATION)

145+00.00

-L-

6/23/16

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bjohnson AT KA206660

L -14750
147+50

ROADWAY EMBANKMENT

4:1

4:1

BT
DRY
02/17

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC,
LIGHT BROWN, TO YELLOWISH BROWN AND RED, COARSE TO FINE SAND
(MIDDENDORF FORMATION)

147+50.00

ROADWAY EMBANKMENT

4:1

4:1

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC,
LIGHT BROWN, TO YELLOWISH BROWN AND RED, COARSE TO FINE SAND
(MIDDENDORF FORMATION)

147+00.00

-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	141

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

460

450

440

430

420

Ⓐ **COASTAL PLAIN:** MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

4.01:1

Ⓐ

MOIST, STIFF, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND REDDISH BROWN, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)

149 + 00.00

ROADWAY EMBANKMENT

4:1

4.01:1

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC.
LIGHT BROWN, TO YELLOWISH BROWN AND RED, COARSE TO FINE SAND
(MIDDENDORF FORMATION)

148 + 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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bajohnson AT KA206660

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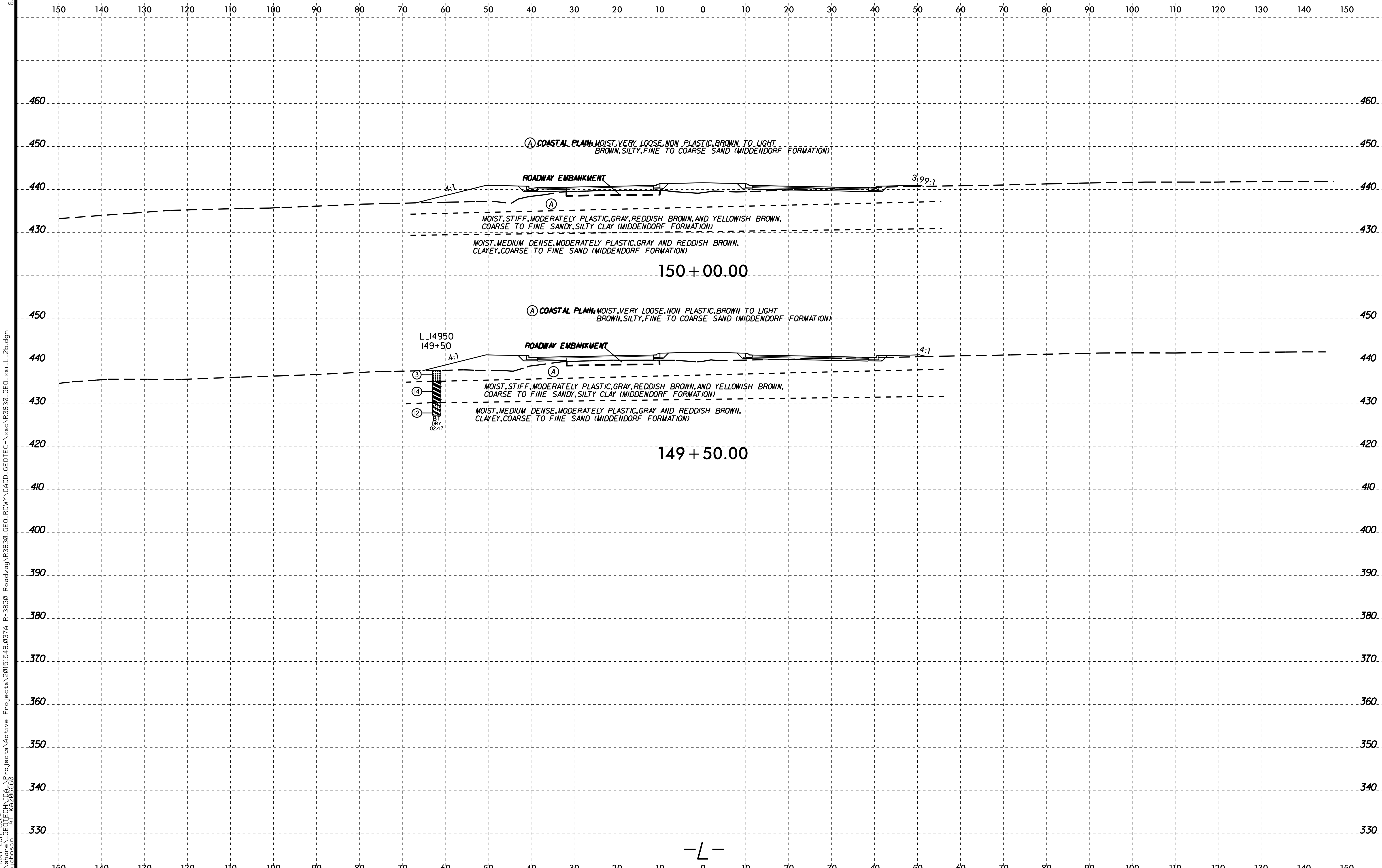
R-3830	142



0 5 10
Ⓐ COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
ROADWAY EMBANKMENT
4:1
3.99:1
Ⓐ
MOIST, STIFF, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND REDDISH BROWN, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)
150+00.00
Ⓐ COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)
L_14950
149+50
ROADWAY EMBANKMENT
4:1
4:1
3
14
12
B1
DRY
02/17
Ⓐ
MOIST, STIFF, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY AND REDDISH BROWN, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)
149+50.00
-L-

6/23/16

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bajohnson AT KA206660

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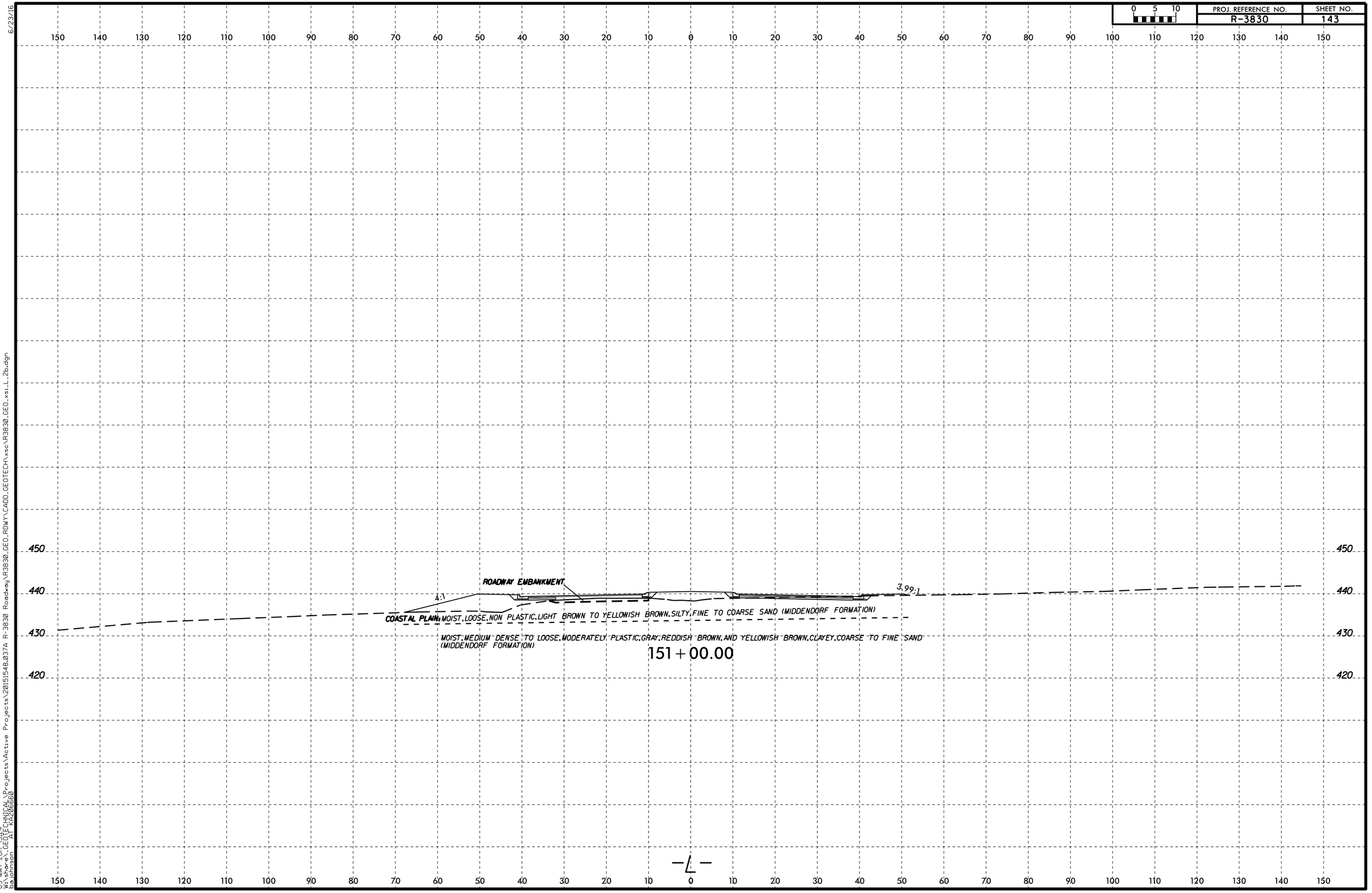

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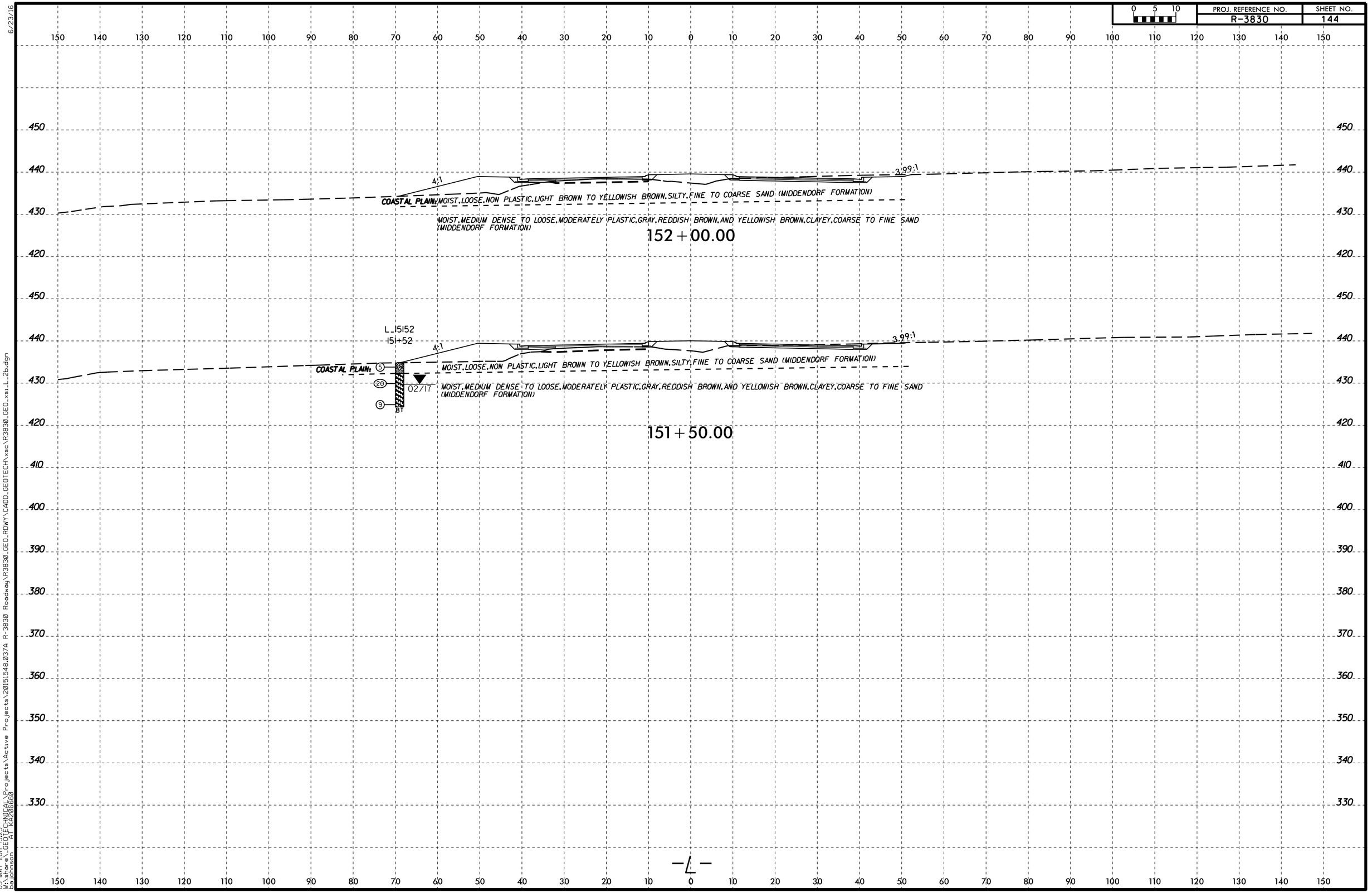
	R-3830	144



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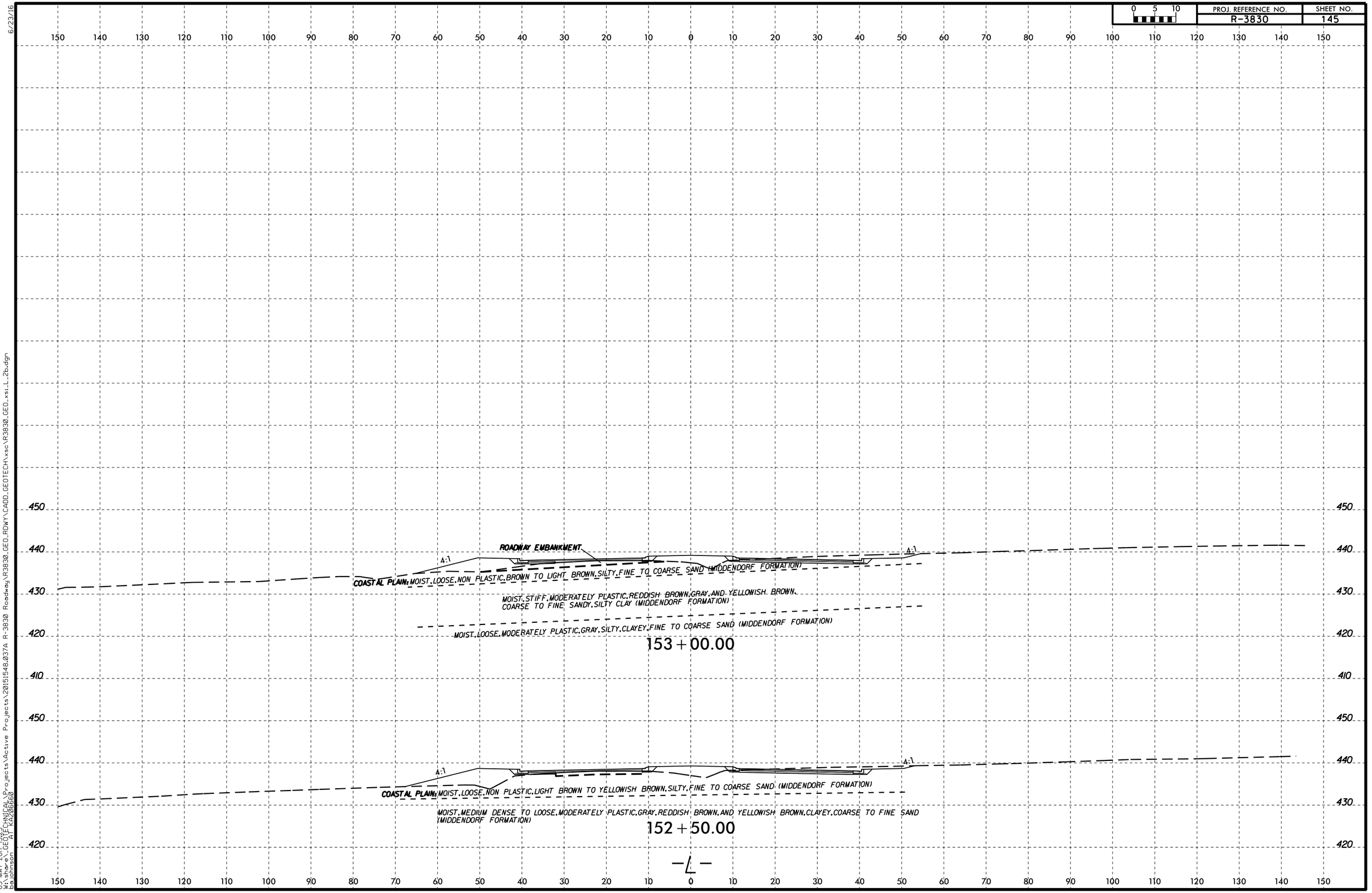

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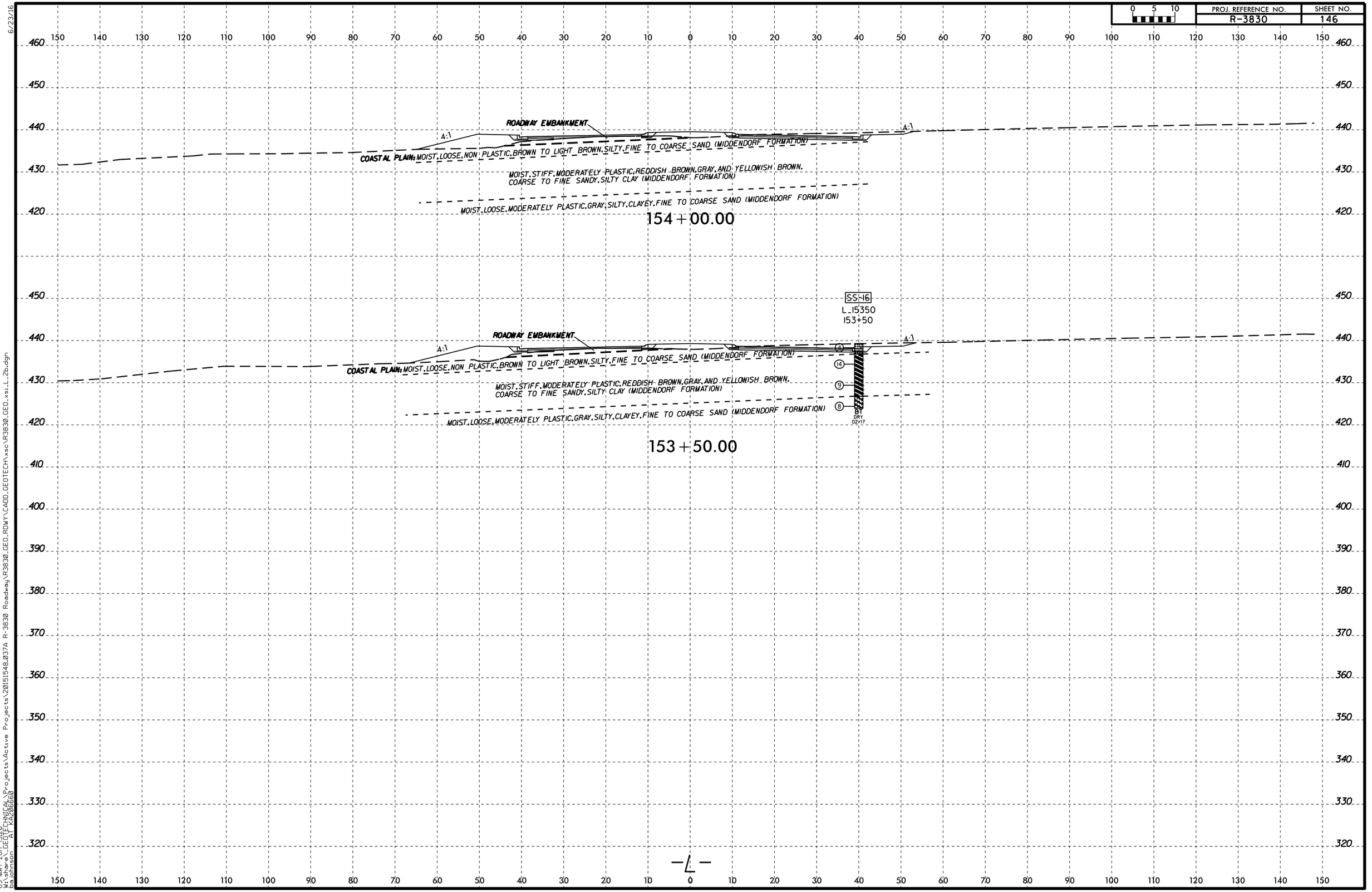
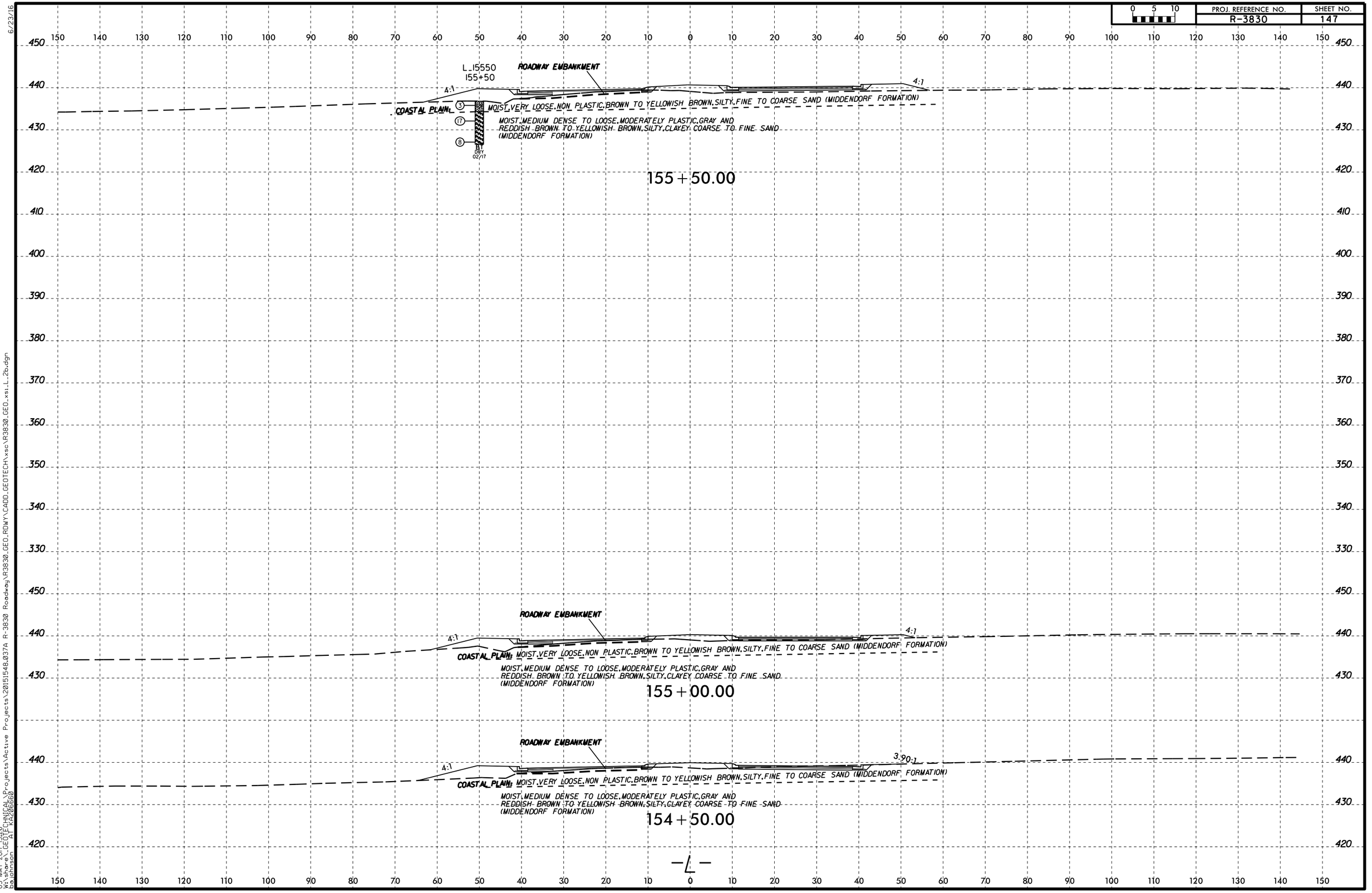
bjohnson AT KA206660





0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	148

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

460 450 440 430 420

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

Ⓐ

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, GRAY AND ORANGE, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND PALE RED, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

157+00.00

ROADWAY EMBANKMENT

4:1 4:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE TO LOOSE, MODERATELY PLASTIC, GRAY AND REDDISH BROWN TO YELLOWISH BROWN, SILTY, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

156+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

6/23/16

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bajohnson AI KA206660

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

460 450 440 430 420 410 400 390 380 370 360 350 340 330

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN,
SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

4:1

Ⓐ

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN,
GRAY, AND ORANGE, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND PALE RED, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

158+00.00

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN,
SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_15750
157+50

ROADWAY EMBANKMENT

4:1

4:1

Ⓐ

Ⓑ

MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN,
GRAY, AND ORANGE, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

Ⓒ

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND PALE RED, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓓ

BT
DRY
03/17

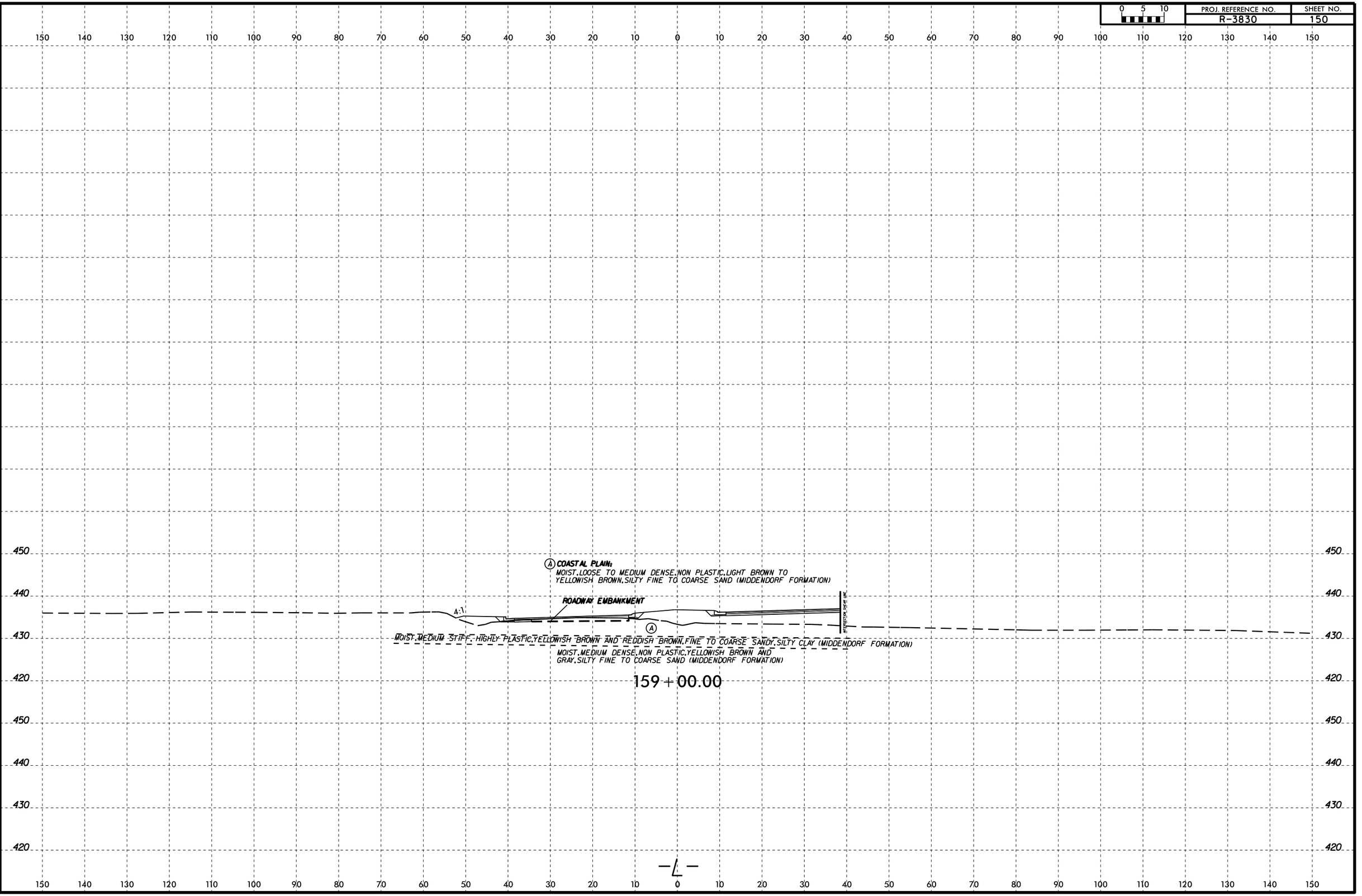
157+50.00

—L—

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	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



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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bajohnson AT KAZ06660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	151

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

450 440 430 420 410 400 390 380 370 360 350 340 330 320

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

4:1

Ⓐ

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN AND GRAY, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

160+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L 15950
159+50

ROADWAY EMBANKMENT

4:1

Ⓐ

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

DPT
DRY
02/17

MOIST, MEDIUM DENSE, NON PLASTIC, YELLOWISH BROWN AND GRAY, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

159+50.00

—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

440 430 420 410

ROADWAY EMBANKMENT

4:1

4:1

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND YELLOWISH BROWN, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

162 + 00.00

ROADWAY EMBANKMENT

3.99:1

4:1

L_16150
161+50

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

6
22
5
BT
DRY
03/17

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND YELLOWISH BROWN, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

161 + 50.00

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, LOOSE, MODERATELY PLASTIC, GRAY AND YELLOWISH BROWN, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

161 + 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

440 430 420 410 400 390 380 370 360 350 340 330 320 410 420 430

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 3:1

℄ 16350
163+50

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION) ②

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION) ⑭

⑧ BT DRY 03/17

163 + 50.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

163 + 00.00

℄

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

PROJ. REFERENCE NO.	SHEET NO.
R-3830	154

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

440
430
420
410

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 3:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

165+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 3:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

164+00.00

400

$-L-$

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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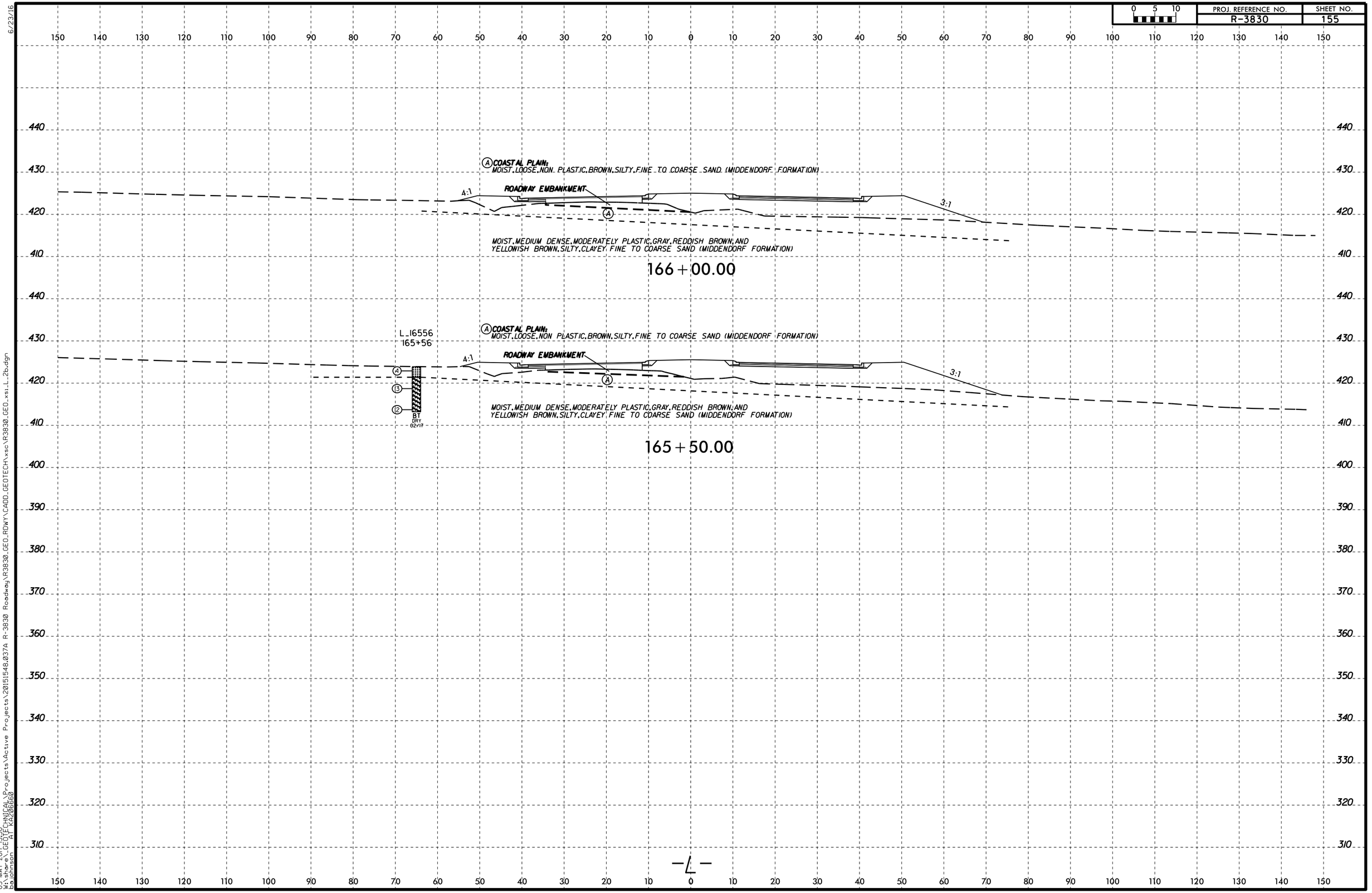
bjohnson AT KA20666



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	156

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

430 420 410 400 390 380 370 360 350 340 330 320 310

L_16750
167+50

3.99:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN:
MOIST TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT
DRY
02/17

167+50.00

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN:
MOIST TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

167+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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bajohnson AT KAZ06660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	157

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

430
420
410

ROADWAY EMBANKMENT

4:1

4:1

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, SLIGHTLY PLASTIC, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

168 + 50.00

ROADWAY EMBANKMENT

4.02:1

4:1

COASTAL PLAIN:
MOIST TO MEDIUM DENSE, NON PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

168 + 00.00

-L-

430
420
410

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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bajohnson AT KAZ06660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	158

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

430 420 410

ROADWAY EMBANKMENT

4:1

4:1

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, SLIGHTLY PLASTIC, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

169+50.00

SS-17
L_16900
169+00

ROADWAY EMBANKMENT

4:1

4:1

4
10
11

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT
DRY
0.5/17

MOIST, STIFF, SLIGHTLY PLASTIC, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

169+00.00

430 420 410 400 390 380 370 360 350 340 330 320 310

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

-L-

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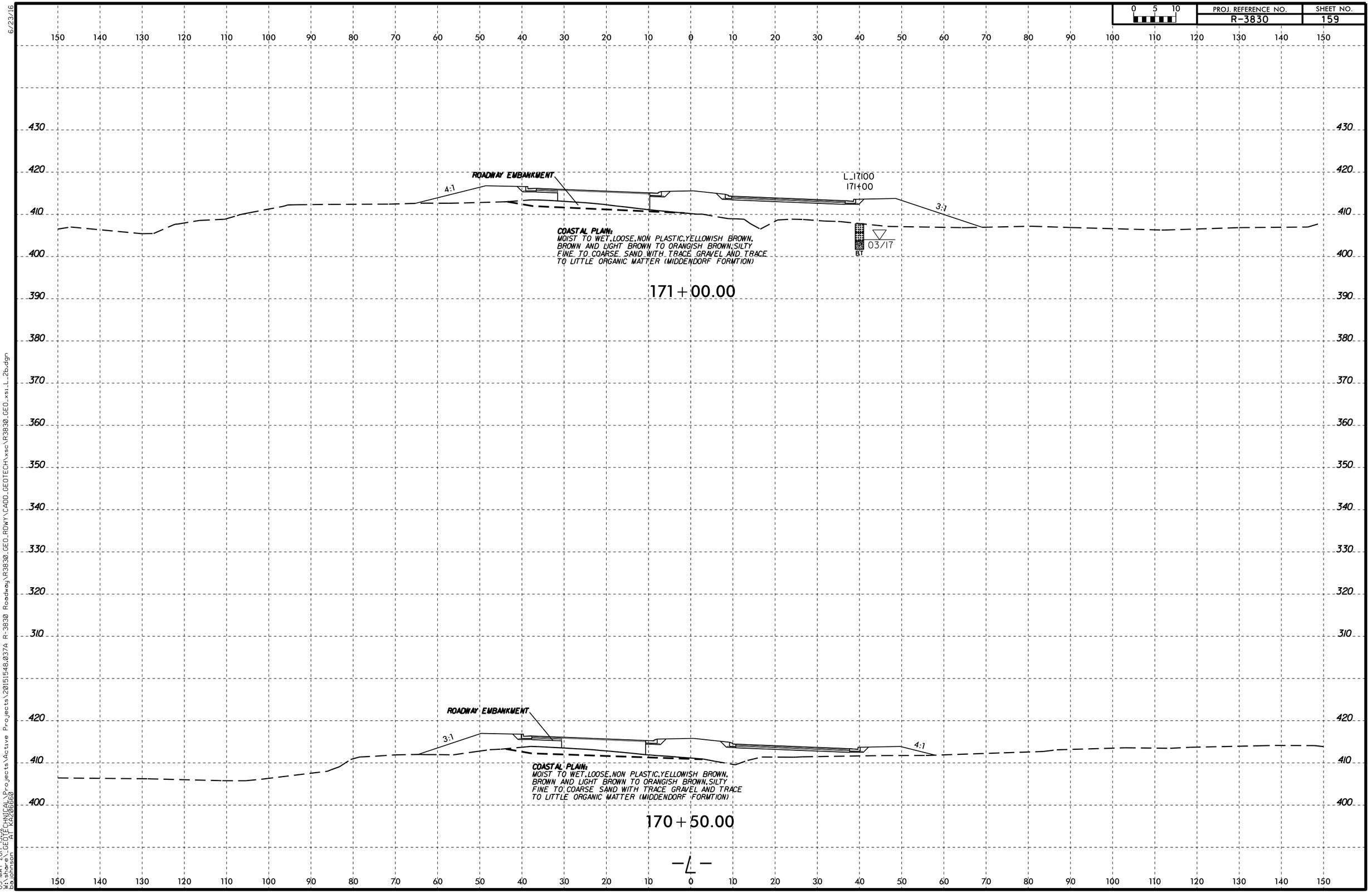
bjohnson AT KA20660



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bajohnson AT KA206660

PROJ. REFERENCE NO.	SHEET NO.
R-3830	160

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

440 430 420 410 400

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)
Ⓑ MOIST, MEDIUM STIFF, HIGHLY PLASTIC, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

3:1

L_17300
173+00

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

DRY 03/17

173+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)
Ⓑ MOIST, MEDIUM STIFF, HIGHLY PLASTIC, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

3:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

172+50.00

ROADWAY EMBANKMENT

4:1

3:1

COASTAL PLAIN:
MOIST TO WET, LOOSE, NON PLASTIC, YELLOWISH BROWN, BROWN AND LIGHT BROWN TO ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL AND TRACE TO LITTLE ORGANIC MATTER (MIDDENDORF FORMTION)

171+50.00

-L-

390

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bajohnson AT KH206560

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	161

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

440 430 420 410 400 390 380 370 360 350 340 330 320 310 300

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT TO MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

3:1

MOIST, MEDIUM DENSE, NON PLASTIC, PALE RED TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

174+00.00

S-18
L_17350
173+50

4:1

BT
DRY
02/17

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT TO MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

3:1

MOIST, MEDIUM DENSE, NON PLASTIC, PALE RED TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

173+50.00

—L—

6/23/16

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bjohnson AT KAZOO660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	162

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

440
430
420

Ⓐ **COASTAL PLAIN:**
MOIST.LOOSE.MODERATELY PLASTIC,YELLOWISH BROWN.CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

Ⓐ

4:1

MOIST.MEDIUM STIFF.MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND GRAY.FINE TO COARSE SANDY.SILTY CLAY TO FINE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

175+00.00

430
420
410

Ⓐ **COASTAL PLAIN:**
MOIST.LOOSE.MODERATELY PLASTIC,YELLOWISH BROWN.CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

Ⓐ

3:1

MOIST.MEDIUM STIFF.MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND GRAY.FINE TO COARSE SANDY.SILTY CLAY TO FINE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

174+50.00

$-L-$

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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bajohnson AT KAZOO660

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	163

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

450 440 430 420

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

Ⓐ

4:1

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

176 + 00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

L=17550
175+50

ROADWAY EMBANKMENT

4:1

Ⓐ

4:1

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

BT
DRY
02/17

175 + 50.00

430 420 410 400 390 380 370 360 350 340 330 320 310

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

—L—

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bjohnson AT KAZ06660

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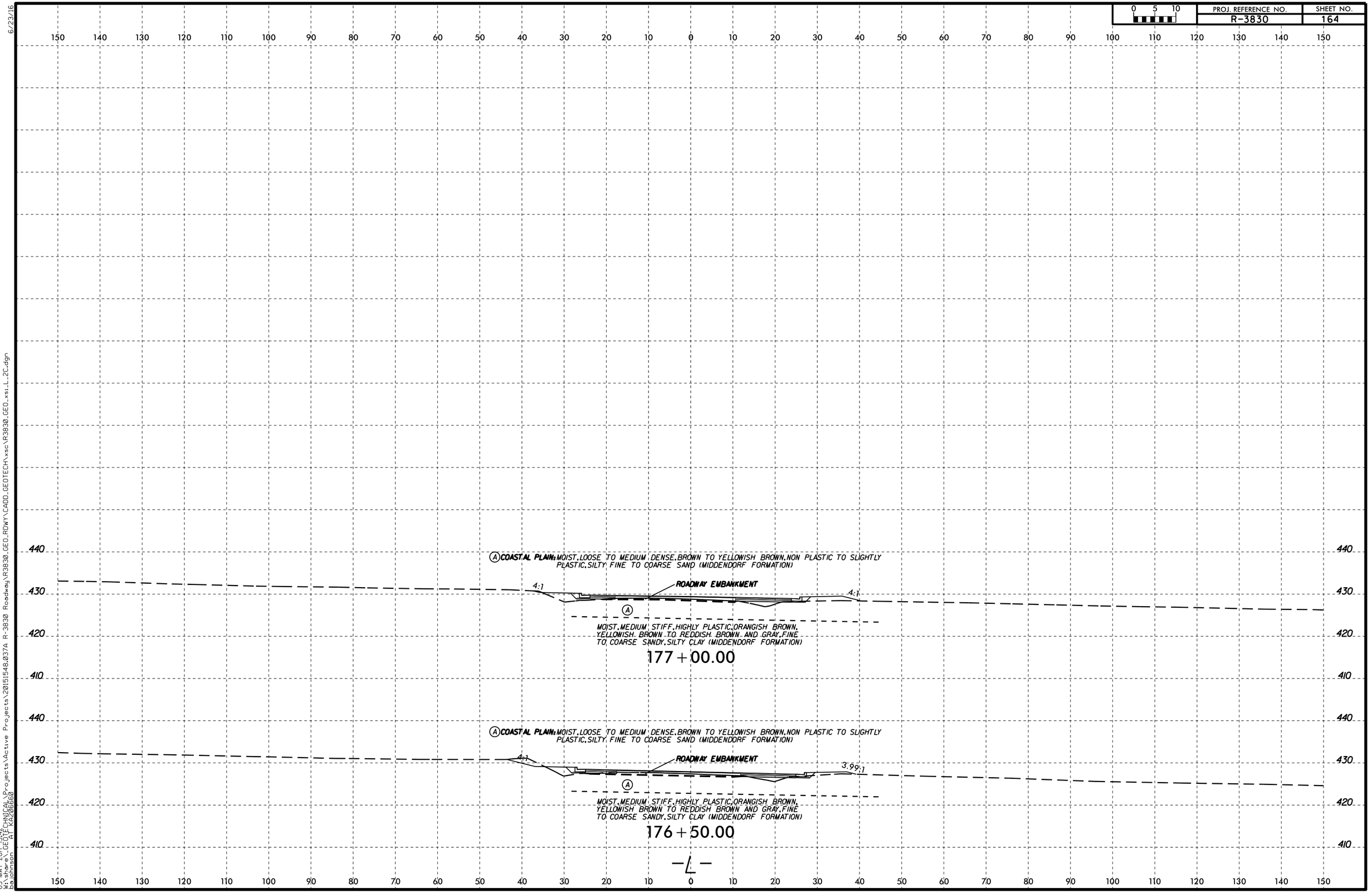
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	164



6/23/16

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bajohnson AT KA20660

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

440 430 420

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE TO MEDIUM DENSE, BROWN TO YELLOWISH BROWN, NON PLASTIC TO SLIGHTLY PLASTIC, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

3.99:1 **ROADWAY EMBANKMENT** 4:1

Ⓐ

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, ORANGISH BROWN, YELLOWISH BROWN TO REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

178+00.00

440 430 420

Ⓐ **COASTAL PLAIN:** MOIST, LOOSE TO MEDIUM DENSE, BROWN TO YELLOWISH BROWN, NON PLASTIC TO SLIGHTLY PLASTIC, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_I7750
I77+50

4.01:1 **ROADWAY EMBANKMENT** 4:1

Ⓐ

BT DRY 62y/f

MOIST, MEDIUM STIFF, HIGHLY PLASTIC, ORANGISH BROWN, YELLOWISH BROWN TO REDDISH BROWN AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

177+50.00

410 400 390 380 370 360 350 340 330 320

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—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	166

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

450 440 430 420 410 400 390 380 370 360 350 340 330 440 430 420

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

L_17950
179+50

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, COARSE TO FINE SANDY CLAY (MIDDENDORF FORMATION)

BT
DRY
02/17

179+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, COARSE TO FINE SANDY CLAY (MIDDENDORF FORMATION)

179+00.00

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

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

450
440
430
420
410
440
430
420

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

Ⓐ

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

181+00.00

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, COARSE TO FINE SANDY CLAY (MIDDENDORF FORMATION)

180+00.00

—L—

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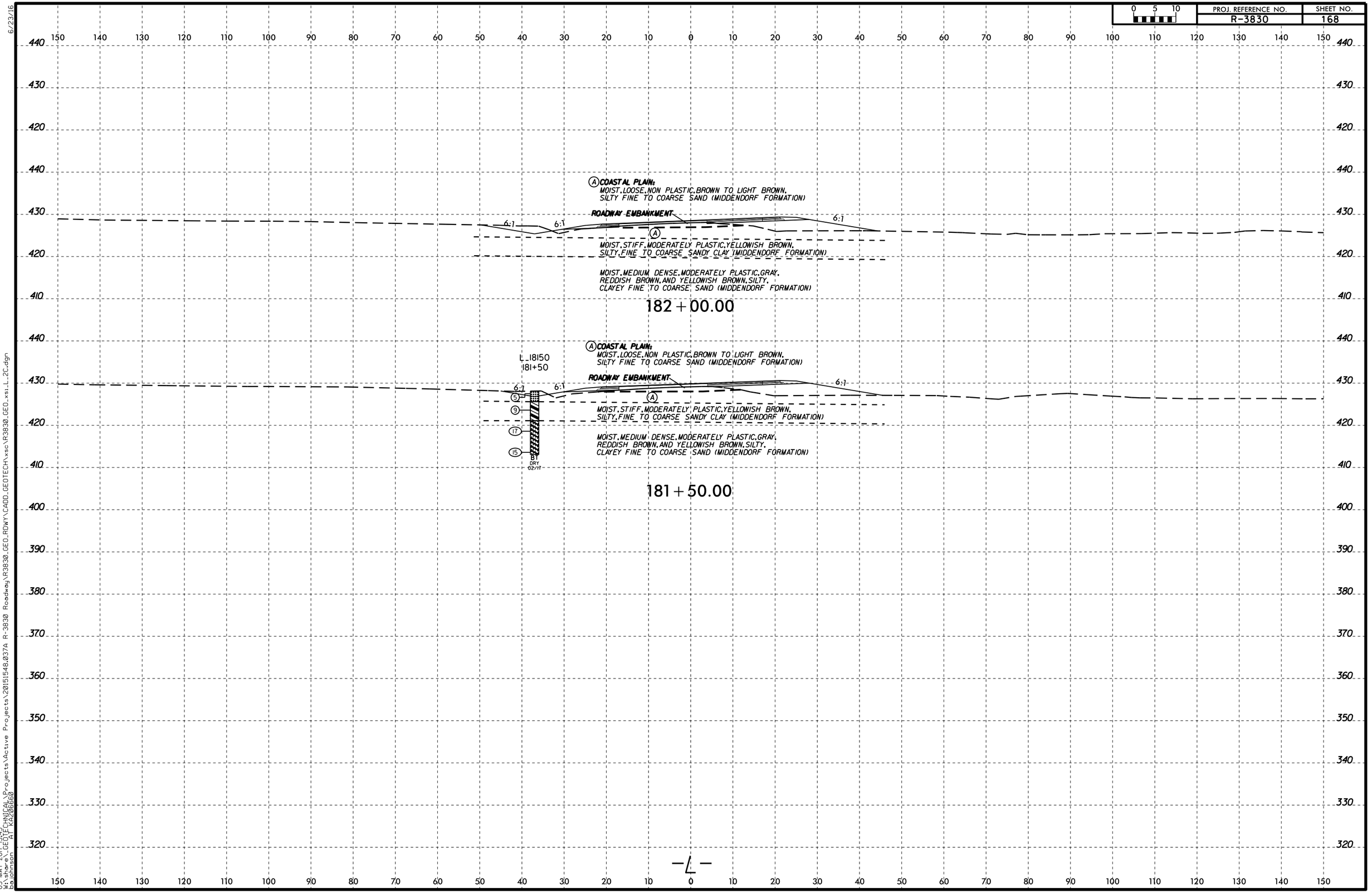
bjohnson AT KA206660



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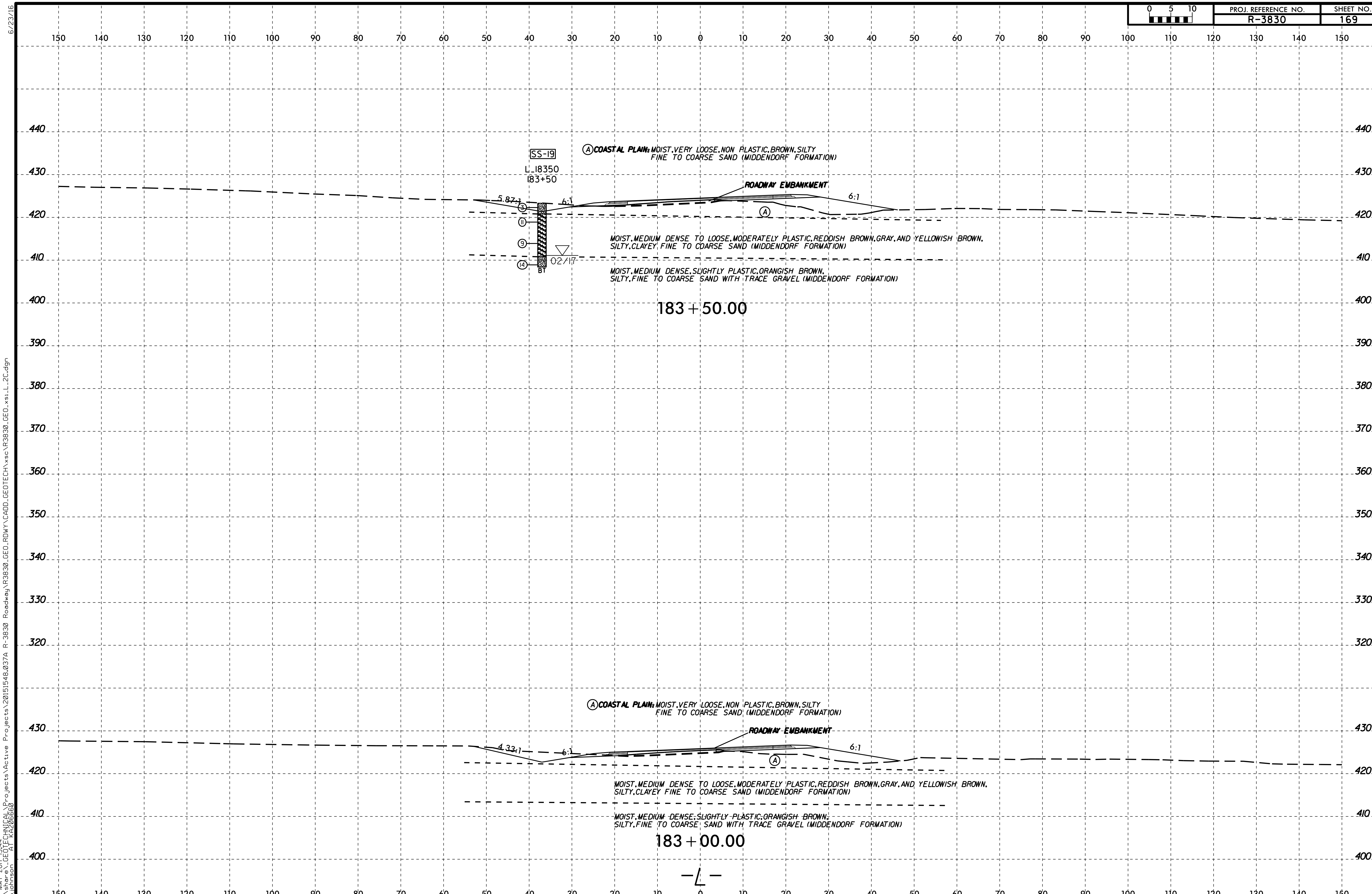
R-3830	169



0 5 10
SS-19
L_18350
183+50
Ⓐ COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)
ROADWAY EMBANKMENT
5.87:1
6:1
6:1
02/17
BT
MOIST, MEDIUM DENSE TO LOOSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)
183+50.00
Ⓐ COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)
ROADWAY EMBANKMENT
4.33:1
6:1
6:1
MOIST, MEDIUM DENSE TO LOOSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)
183+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

430
420
410
400

ROADWAY EMBANKMENT

4.15:1 6:1 6:1

COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, BROWN AND LIGHT BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

185+00.00

430
420
410
400
440

Ⓐ COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4.57:1 6:1 6:1

MOIST, MEDIUM DENSE TO LOOSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, SILTY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

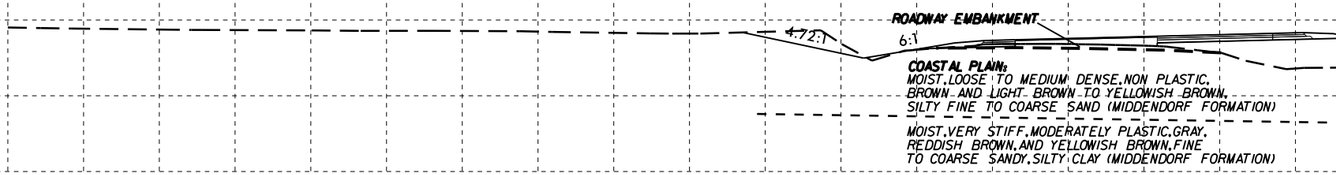
184+00.00

—L—

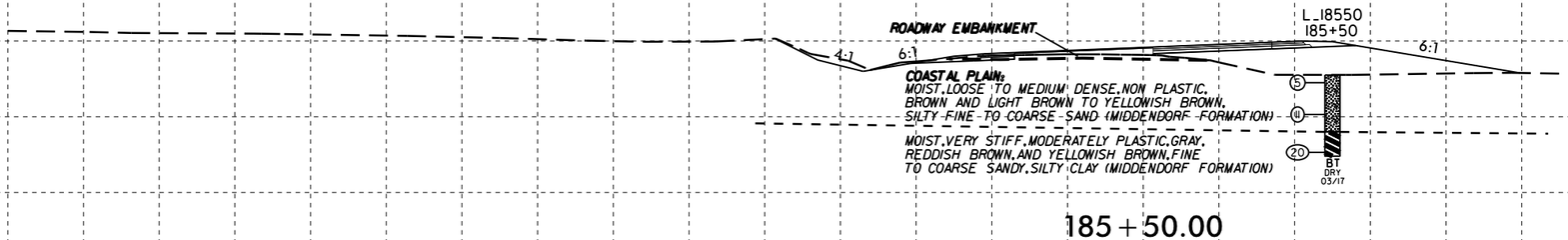
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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

430 420 410 400 390 380 370 360 350 340 330 320 310



186+00.00



185+50.00

—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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	172

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

420
410
400
390

ROADWAY EMBANKMENT

6:1 6:1 6:1

COASTAL PLAIN:
MOIST, SOFT, MODERATELY PLASTIC TO HIGHLY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY, COARSE TO FINE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, STIFF, SLGHTLY PLASTIC, YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY, CLAYEY SILT (MIDDENDORF FORMATION)

187 + 00.00

ROADWAY EMBANKMENT

5.21:1 6:1 6:1

COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC, BROWN AND LIGHT BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, VERY STIFF, MODERATELY PLASTIC, GRAY, REDDISH BROWN, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

186 + 50.00

-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

6/23/16

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bajohnson AT KA206660

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

420 410 400 390 430 420 410 400 390 380 370 360 350 340 330 320 310 300

ROADWAY EMBANKMENT

6:1

5.73:1

COASTAL PLAIN:
MOIST,SOFT,MODERATELY PLASTIC TO HIGHLY PLASTIC,REDDISH BROWN AND YELLOWISH BROWN,SILTY,COARSE TO FINE SANDY CLAY TO FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,STIFF,SLGHTLY PLASTIC,YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY,CLAYEY SILT (MIDDENDORF FORMATION)

188+00.00

SS-20
L_18750
187+50

ROADWAY EMBANKMENT

6:1

6:1

COASTAL PLAIN:
MOIST,SOFT,MODERATELY PLASTIC TO HIGHLY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN,SILTY,COARSE TO FINE SANDY,CLAY TO FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST,STIFF,SLGHTLY PLASTIC,YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY,CLAYEY SILT (MIDDENDORF FORMATION)

2
18
10
03/17
B1

187+50.00

-L-

6/23/16
03-MAY-2017 13:45
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bjohnson AT KAZOO660
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	174

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

420
410
400
390

6:1

2:1

ROADWAY EMBANKMENT

COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT TO HARD, SLIGHTLY PLASTIC, YELLOWISH BROWN AND LIGHT BROWNISH GRAY TO BROWN, ORANGE, GRAY AND BLUISH GRAY, FINE SANDY SILT (MIDDENDORF FORMATION)

189+00.00

-L-

6/23/16

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bajohnson AT KA20660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	175

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

420 410 400 390

2:1

ROADWAY EMBANKMENT

2:1

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT TO HARD, SLIGHTLY PLASTIC, YELLOWISH BROWN AND LIGHT BROWNISH GRAY TO BROWN, ORANGE, GRAY AND BLUISH GRAY, FINE SANDY SILT (MIDDENDORF FORMATION)

190+00.00

410 400 390

2:1

ROADWAY EMBANKMENT

2:1

18950
189+50

03/17

COASTAL PLAIN: MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, SOFT TO HARD, SLIGHTLY PLASTIC, YELLOWISH BROWN AND LIGHT BROWNISH GRAY TO BROWN, ORANGE, GRAY AND BLUISH GRAY, FINE SANDY SILT (MIDDENDORF FORMATION)

2 3 11 49 BT

189+50.00

380 370 360 350 340 330 320 310 300 290

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	176

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

420
410
400
390

ROADWAY EMBANKMENT

3.25:1

4.73:1

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

191+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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bajohnson AT KAZ06660

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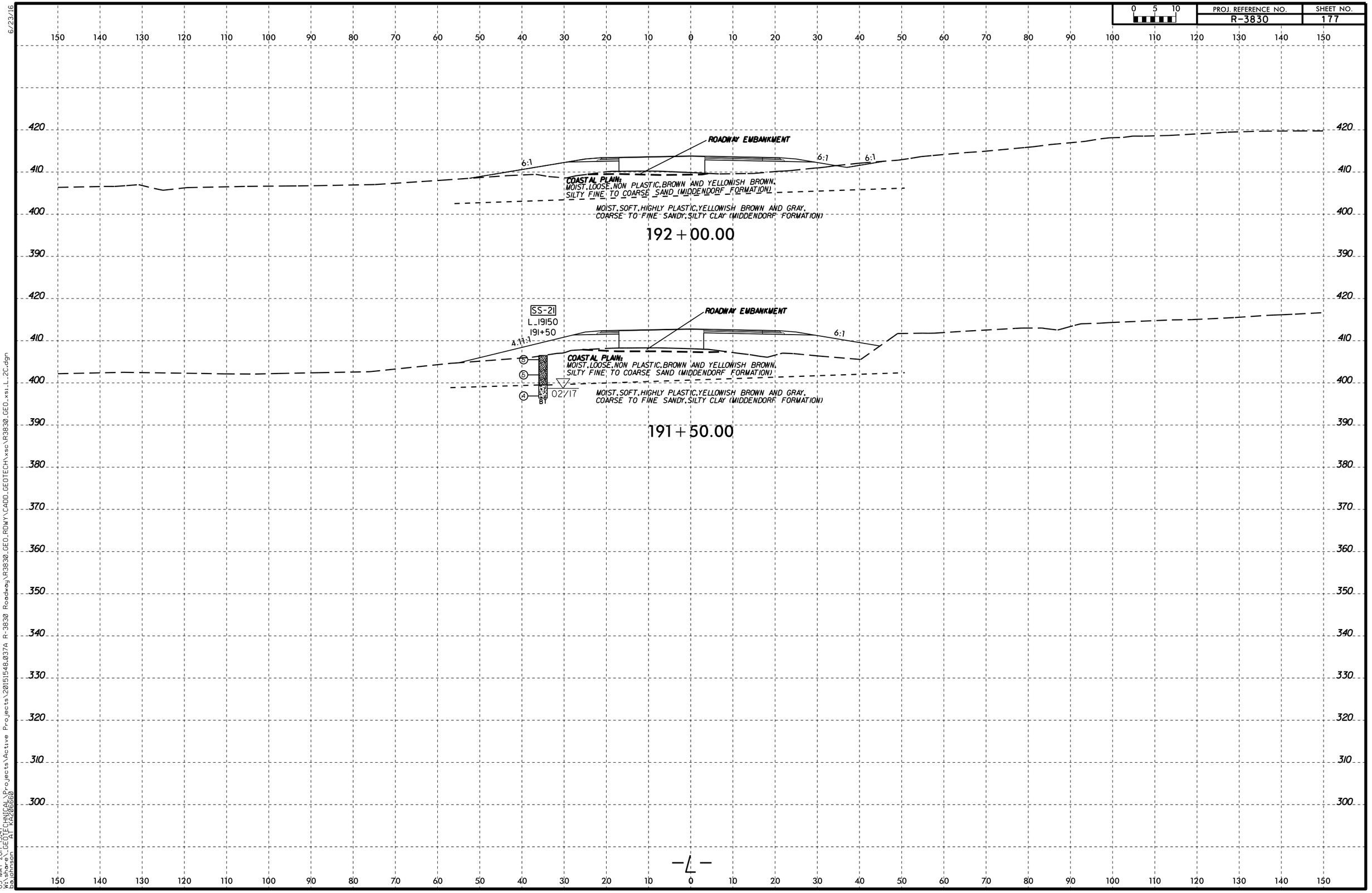
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	177



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	178

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

450
440
430
420
410
400
390

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, HARD TO VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

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

Ⓐ Ⓑ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

193+00.00

ROADWAY EMBANKMENT

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

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, SOFT, HIGHLY PLASTIC, YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

192+50.00

$-L-$

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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bajohnson AT KAZ06660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	179

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

450 440 430 420 410 400 390 380 370 360 350 340 330 320 310

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, HARD TO VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

SS-22
L 19350
193+50

6:1 6:1 6:1 2:1

Ⓐ 4 27 23 18

BT
DRY
03/17

Ⓑ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

193+50.00

—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

6/23/16

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AT KP206660

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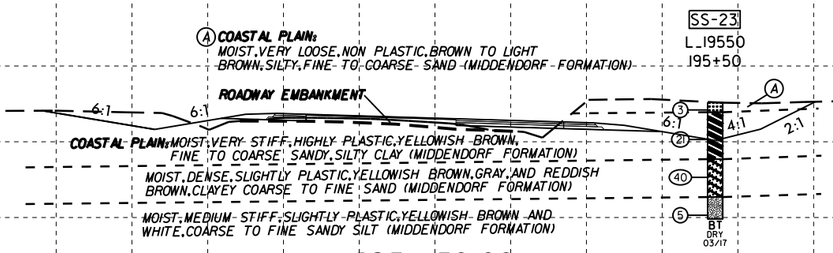
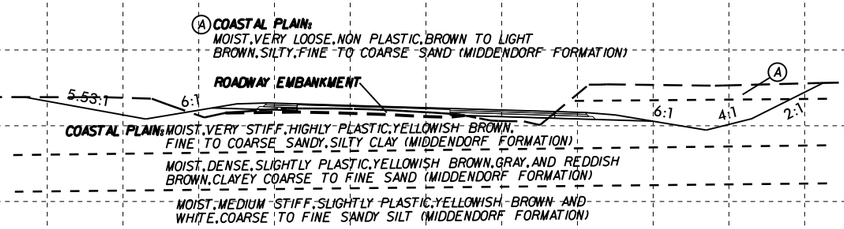
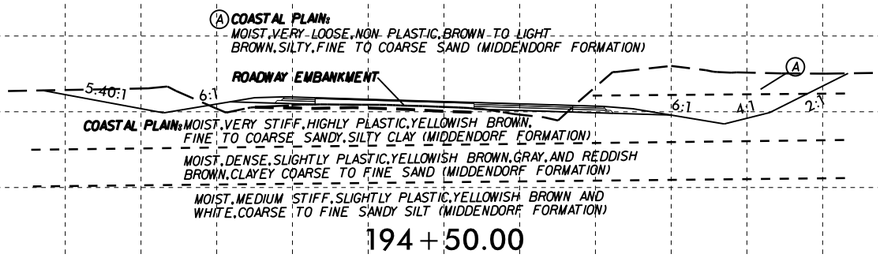
440 430 420 410 400



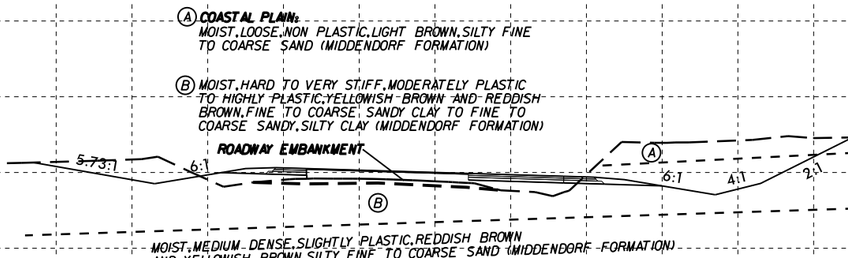
195+50.00



195+00.00



194+50.00



194+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

440 430 420 410

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, DARK BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1 5.5:1

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, LIGHT BROWN, AND GRAY, SILTY, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

197 + 00.00

440 430 420 410 450 440 430 420 410 400

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, DARK BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

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

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, LIGHT BROWN, AND GRAY, SILTY, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

196 + 50.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

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

Ⓐ

COASTAL PLAIN: MOIST, VERY STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, DENSE, SLIGHTLY PLASTIC, YELLOWISH BROWN, GRAY, AND REDDISH BROWN, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN AND WHITE, COARSE TO FINE SANDY SILT (MIDDENDORF FORMATION)

196 + 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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bajohnson AT KA206660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	182

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

430 420 410 440 430 420 410 400 390 380 370 360 350 340 330 320

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, DARK BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

Ⓐ
MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, LIGHT BROWN, AND GRAY, SILTY, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

198+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, DARK BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_197.50
197+50

ROADWAY EMBANKMENT

6:1 6:1 6:1

Ⓐ
MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN, LIGHT BROWN, AND GRAY, SILTY, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

BT DRY 02/17

197+50.00

—L—

6/23/16

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bjohnson AT KAZOO60

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	183

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

440 430 420 410 400 390 380 370 360 350 340 330 320 440 430 420 410

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

L-19950
199+50

6:1 6:1 6:1 4.77:1

ROADWAY EMBANKMENT

Ⓑ Ⓐ

MOIST, STIFF, HIGHLY PLASTIC, YELLOW BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

BT
DRY
02/17

199+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

6:1 6:1 6:1 6:1

ROADWAY EMBANKMENT

Ⓑ Ⓐ

MOIST, STIFF, HIGHLY PLASTIC, YELLOW BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

199+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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bajohnson AT KA20660

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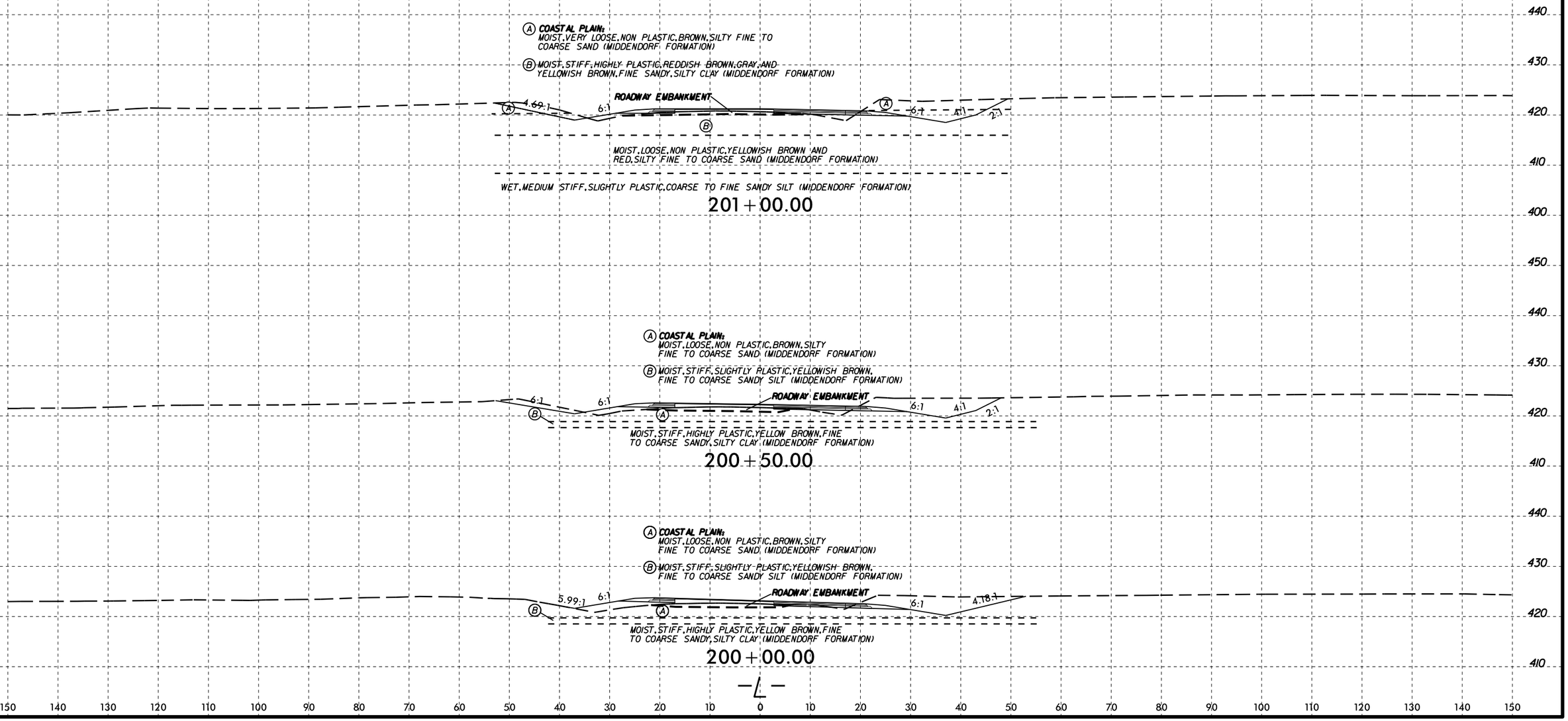
440 430 420 410 400 450 440 430 420 410 440 430 420 410



PROJ. REFERENCE NO.	SHEET NO.
R-3830	185

0 5 10

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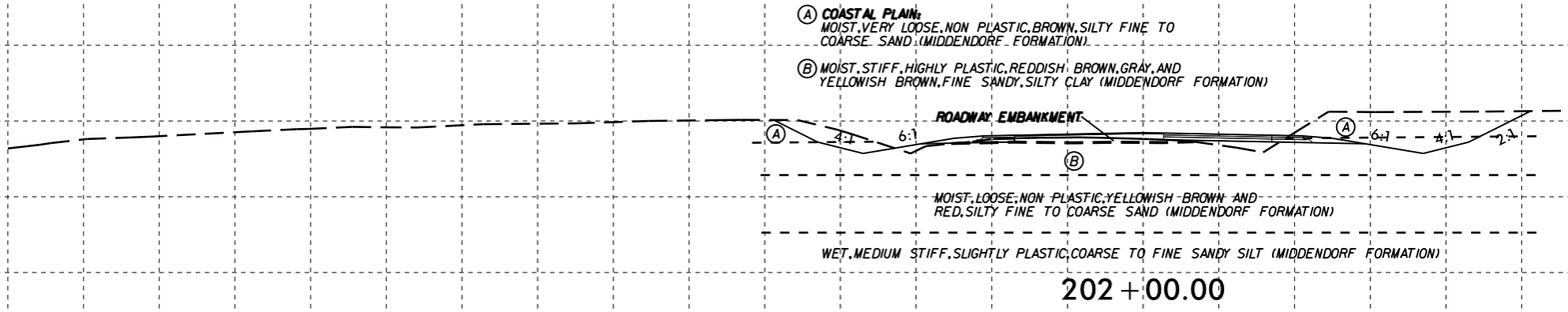
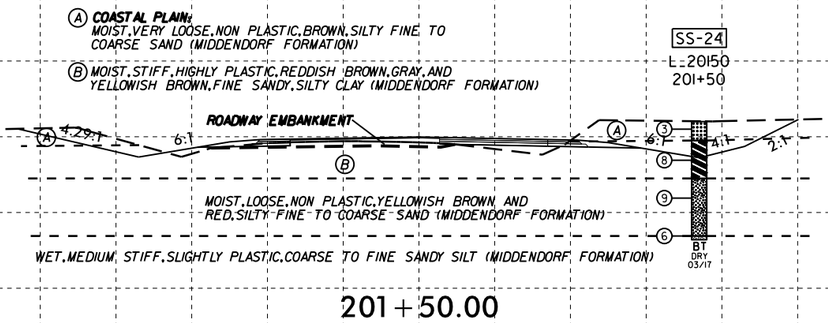
440 430 420 410 400 390 380 370 360 350 340 330 320 310





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6/23/16

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bjohnson
AT KP20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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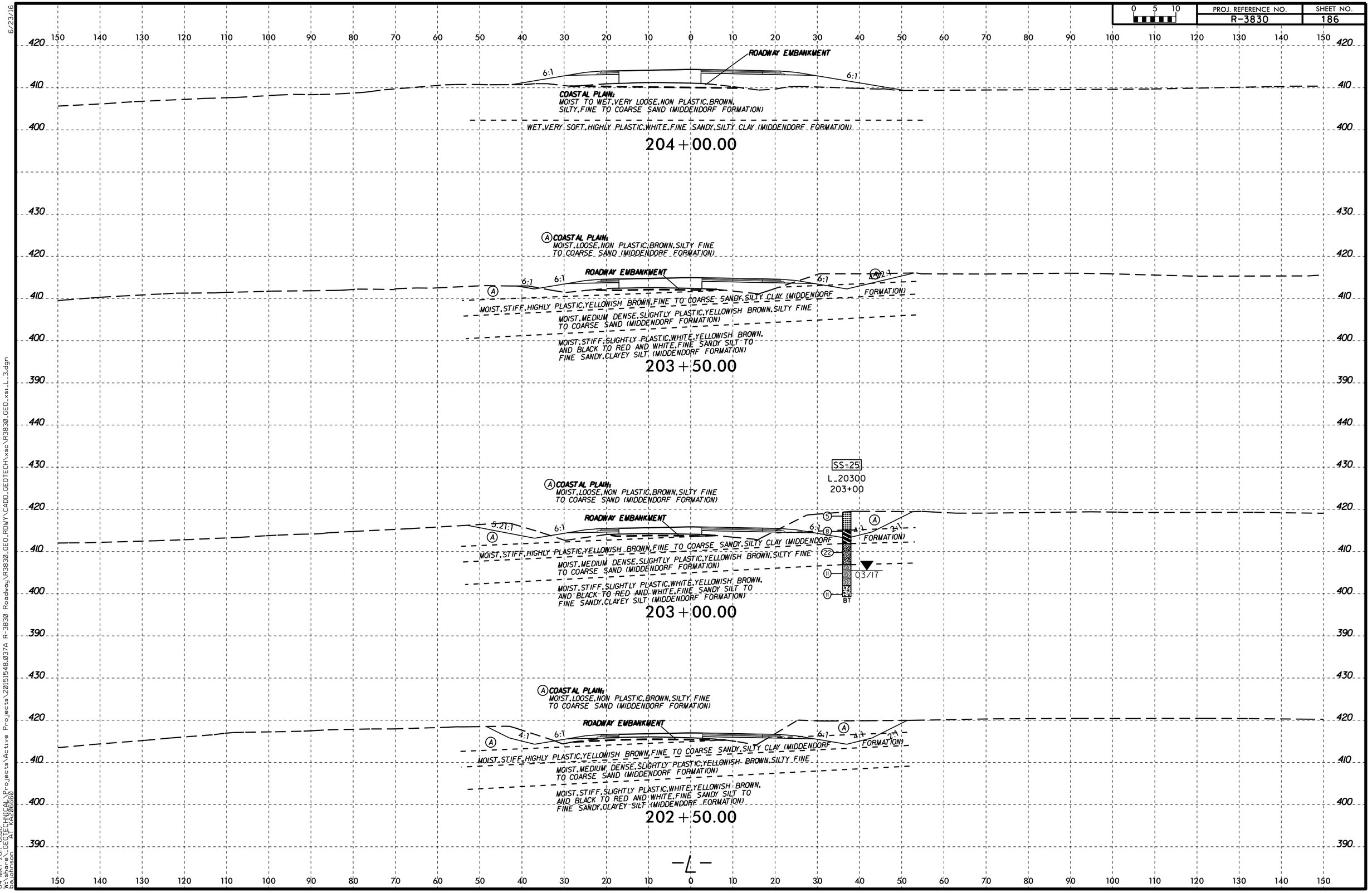


0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	187

L_20500
205+00

ROADWAY EMBANKMENT

4.18:1

3.97:1

3 WOH 02/17

COASTAL PLAIN:
MOIST TO WET,VERY LOOSE,NON PLASTIC,BROWN,
SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

1 BT

WET,VERY SOFT,HIGHLY PLASTIC,WHITE,FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

205+00.00

ROADWAY EMBANKMENT

6:1

4.54:1

COASTAL PLAIN:
MOIST TO WET,VERY LOOSE,NON PLASTIC,BROWN,
SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET,VERY SOFT,HIGHLY PLASTIC,WHITE,FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

204+50.00

-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

430 420 410 400 390

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SANDY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1

5.42:1

Ⓐ

MOIST, STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)

WET, LOOSE, NON PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

206+50.00

3.99:1

ROADWAY EMBANKMENT

3.33:1

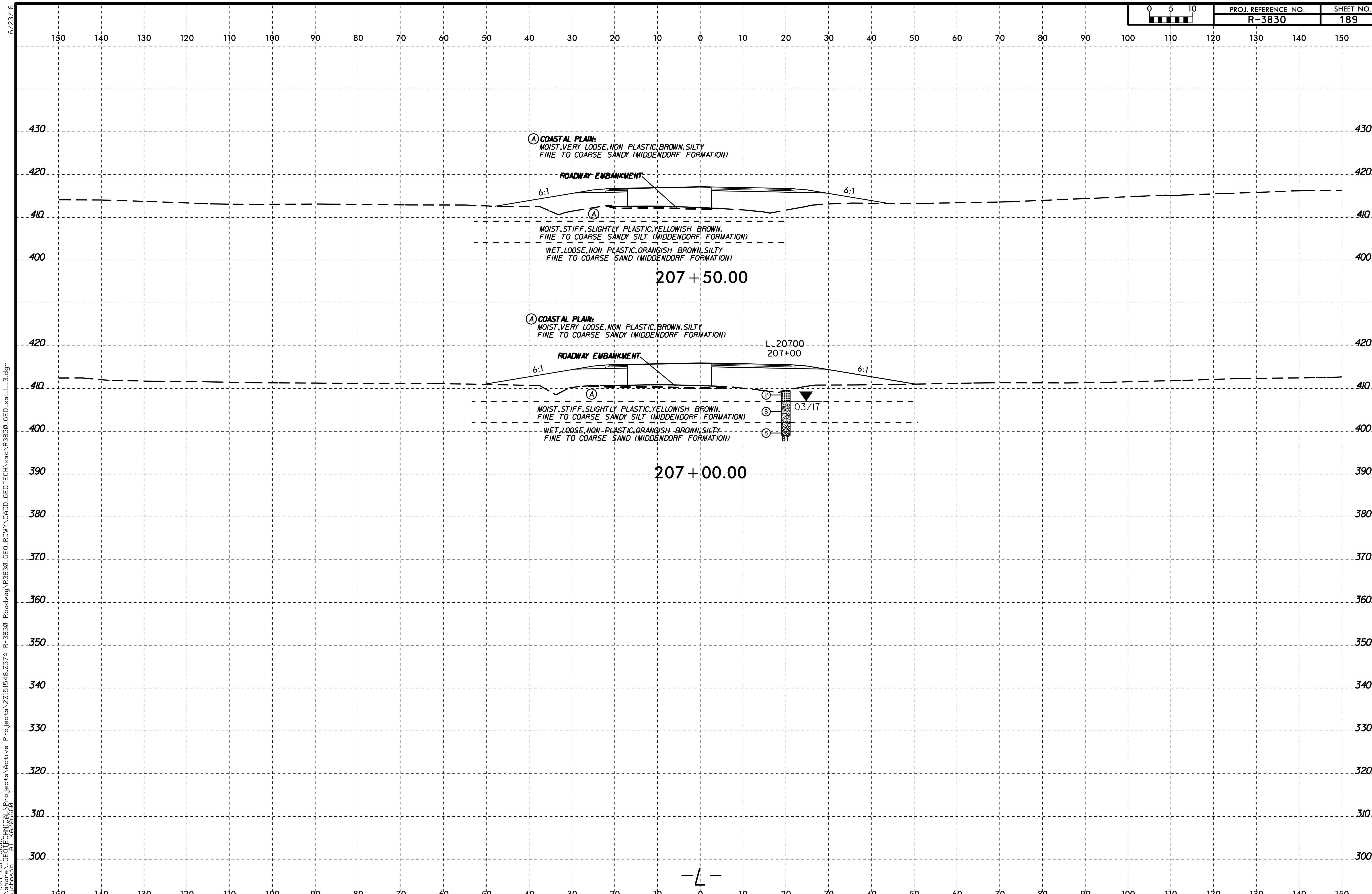
COASTAL PLAIN:
MOIST TO WET, VERY LOOSE, NON PLASTIC, BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, VERY SOFT, HIGHLY PLASTIC, WHITE, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

205+50.00

-L-

PROJ. REFERENCE NO.	SHEET NO.
R-3830	189



0 5 10
(A) COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SANDY (MIDDENDORF FORMATION)
ROADWAY EMBANKMENT
6:1
6:1
MOIST, STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)
WET, LOOSE, NON PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)
207+50.00
(A) COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SANDY (MIDDENDORF FORMATION)
ROADWAY EMBANKMENT
L_20700
207+00
6:1
6:1
03/17
BT
MOIST, STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT (MIDDENDORF FORMATION)
WET, LOOSE, NON PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)
207+00.00
-L-

6/23/16

04-MAY-2017 08:10
W:\share\GEOTECHNICAL\Projects\Active Projects\20151548.037A R-3830 Roadway\R3830_GEO_RDWY\CADD_GEOTECH\xsc\R3830_GEO_xsL_L_3.dgn
bajohnson AT KA206660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	190

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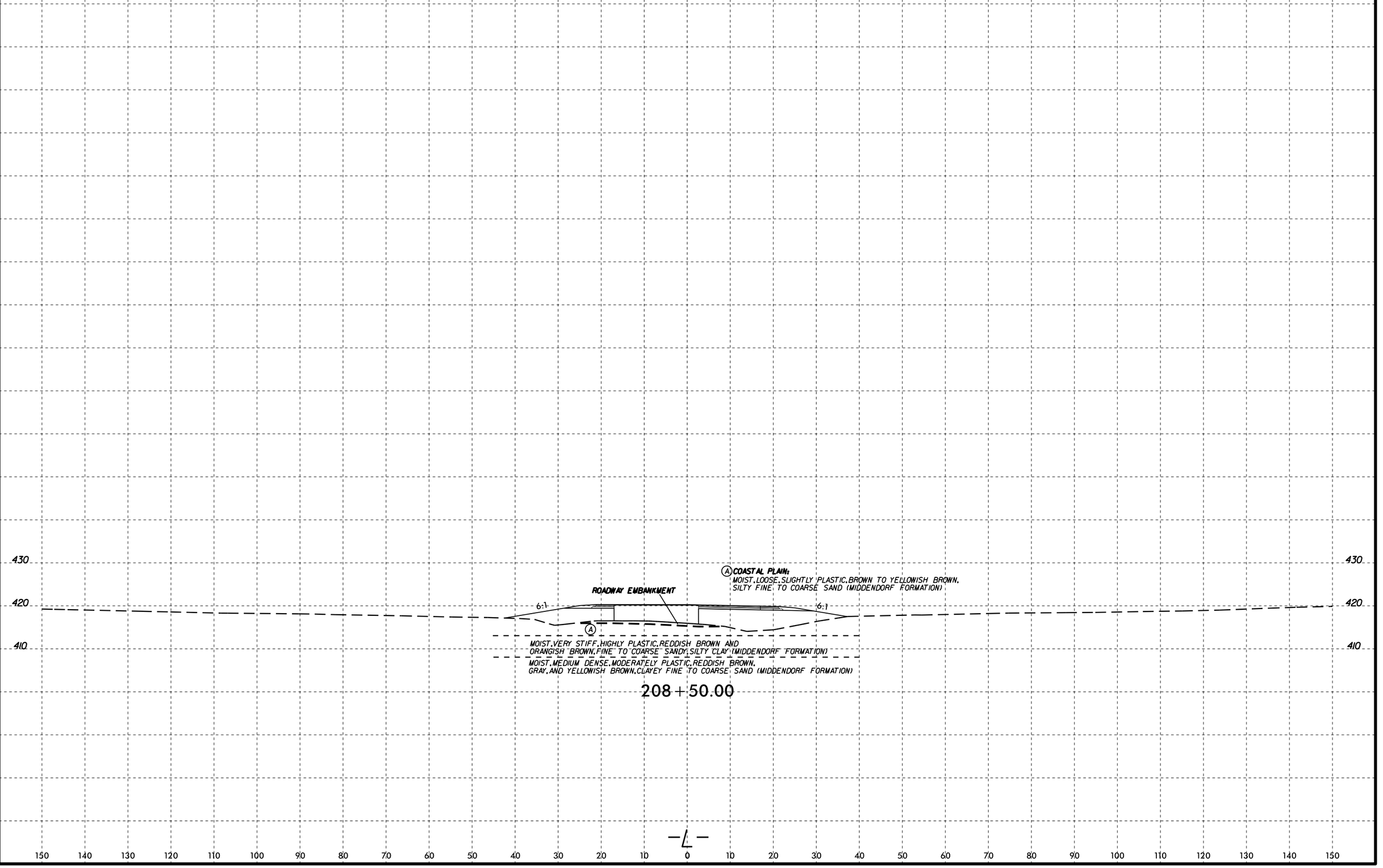

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bajohnson AT KAZ06660

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

430 420 410

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, SLIGHTLY PLASTIC, BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

Ⓐ
MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN AND ORANGISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

209+50.00

430 420 410

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, SLIGHTLY PLASTIC, BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_20900
209+00
6:1

ROADWAY EMBANKMENT

6:1 5.99:1

④ Ⓐ
⑯ MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN AND ORANGISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)
⑮ MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)
BT DRY 02\17

209+00.00

400 390 380 370 360 350 340 330 320 310

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

—L—

6/23/16

04-MAY-2017 08:10
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bajohnson
AT KH206660

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

430 420 410 400 440

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO LIGHT BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

MOIST, VERY STIFF TO STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, NON PLASTIC, PALE RED AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

211+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO LIGHT BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_2110
211+00

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

MOIST, VERY STIFF TO STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, NON PLASTIC, PALE RED AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

211+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO LIGHT BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

MOIST, VERY STIFF TO STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, LOOSE, NON PLASTIC, PALE RED AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

210+50.00

$-L-$

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

440 430 420 410

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE, SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, ORANGISH BROWN AND REDDISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORE FORMATION)

214 + 50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 5.99:1

MOIST, MEDIUM DENSE, NON PLASTIC, GRAY, RED, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

213 + 50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE, SANDY CLAY (MIDDENDORF FORMATION)

L_21300
213+00

ROADWAY EMBANKMENT

6:1 6:1 6:1

BT 02/17

MOIST, MEDIUM DENSE, NON PLASTIC, GRAY, RED, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

213 + 00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE, SANDY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

MOIST, MEDIUM DENSE, NON PLASTIC, GRAY, RED, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

212 + 50.00

$-L-$

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

440 430 420 410 400 390 380 370 360 350 340 330 320 310

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE, SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, ORANGISH BROWN AND REDDISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

215+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE, SANDY, SILTY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

L_21500
215+00

6:1 6:1 6:1

MOIST, MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, ORANGISH BROWN AND REDDISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

4
17
11
BT
DRY
03/17

215+00.00

—L—

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	195

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

430
420
410
400

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 Ⓐ 6:1 6:1

MOIST, HARD, MODERATELY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

WET, LOOSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

216 + 50.00

-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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bajohnson AT KAZ06660

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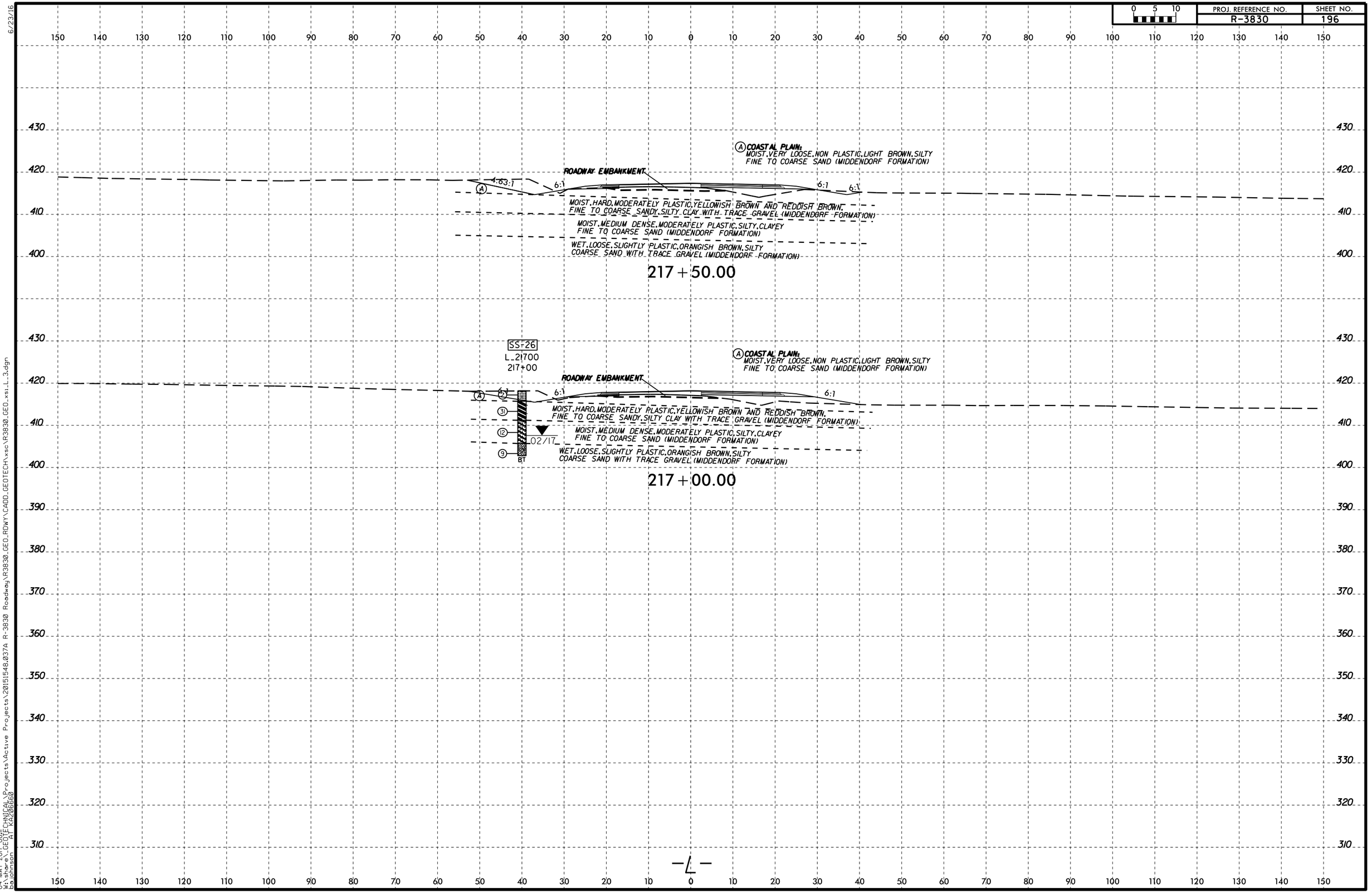

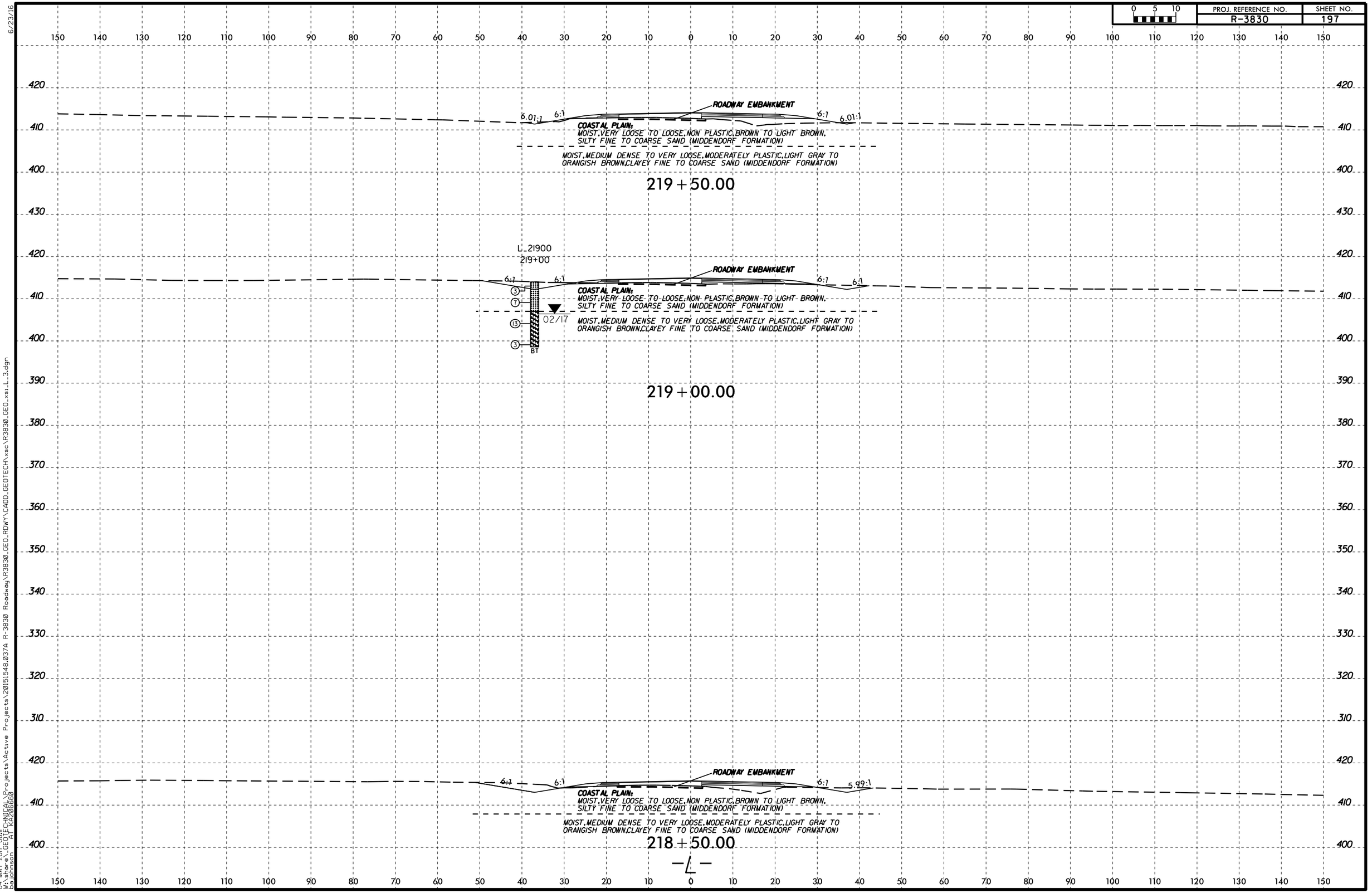

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	198

SS-27
L_22100
221+00

A COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

5.46:1 6:1 6:1 6:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

02/17

MOIST TO WET, LOOSE TO VERY LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN AND GRAY, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT

221+00.00

A COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1 5.98:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST TO WET, LOOSE TO VERY LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN AND GRAY, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

220+50.00

-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

430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

6/23/16

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bajohnson AT KAZOO660

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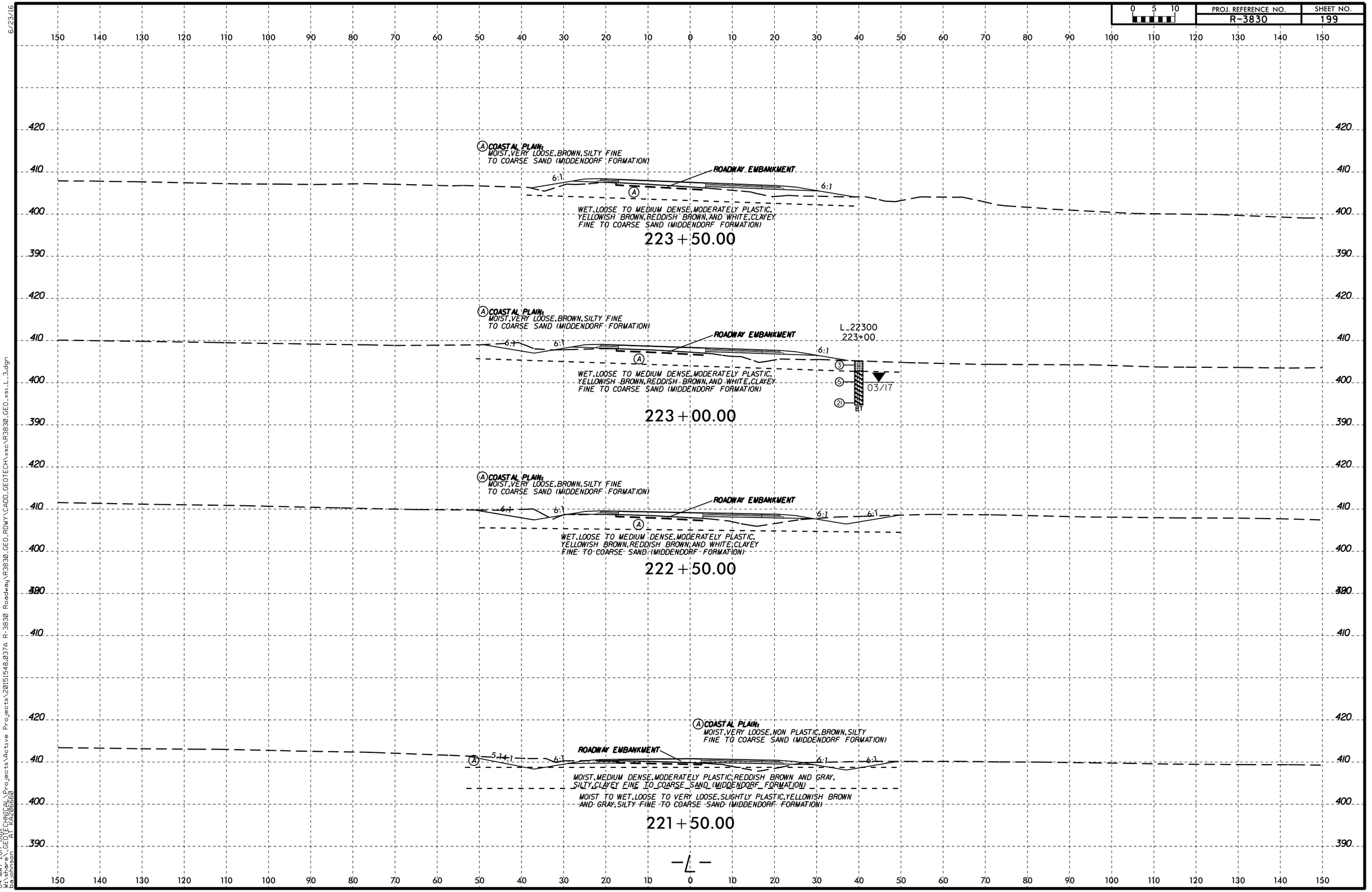

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bajohnson AT KA206660

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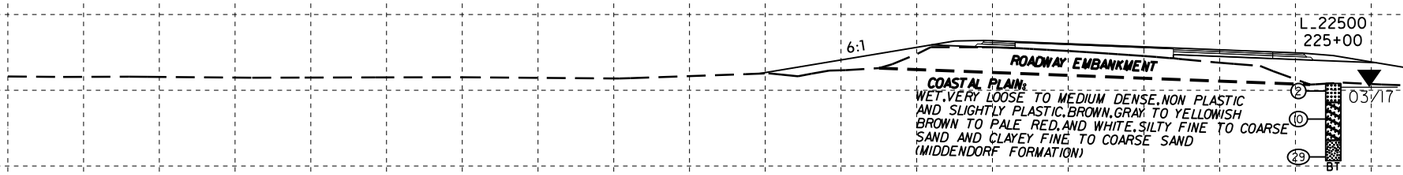
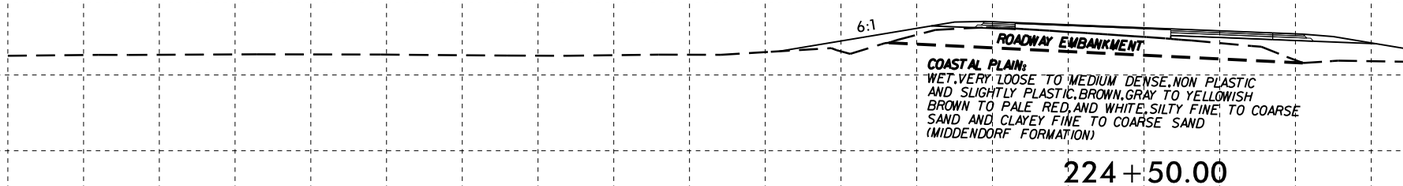
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	200



225+00.00



224+50.00

-L-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	201

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

410 400 390 410 400 390 410 400 390 380

6:1

ROADWAY EMBANKMENT

6:1

COASTAL PLAIN:
MOIST TO WET, LOOSE TO DENSE, NON PLASTIC, LIGHT BROWN TO REDDISH BROWN, WHITE, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

226+50.00

6:1

ROADWAY EMBANKMENT

5.10:1

COASTAL PLAIN:
WET, VERY LOOSE TO MEDIUM DENSE, NON PLASTIC AND SLIGHTLY PLASTIC, BROWN, GRAY TO YELLOWISH BROWN TO PALE RED, AND WHITE, SILTY FINE TO COARSE SAND AND CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

225+50.00

-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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bajohnson AT KA20666

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

410 400 390 380 410 400 390 380 370 360 350 340 330 320 310 300 290

5.45:1

ROADWAY EMBANKMENT

4.36:1

COASTAL PLAIN:
MOIST TO WET, LOOSE TO DENSE, NON PLASTIC, LIGHT BROWN TO REDDISH BROWN, WHITE, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

227+50.00

L_22700
227+00

INTERSECTING SKEW LINE

ROADWAY EMBANKMENT

6:1

COASTAL PLAIN:
MOIST TO WET, LOOSE TO DENSE, NON PLASTIC, LIGHT BROWN TO REDDISH BROWN, WHITE, AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

6
41
16
BT
03/17

227+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

410 400 390 380 370 360 350 340 330 320 310 300 290 410 400 390 380 370 360 350 340 330 320 310 300 290 410 400 390

6:1 ROADWAY EMBANKMENT 6:1

COASTAL PLAIN:
WET,LOOSE,NON PLASTIC,YELLOWISH BROWN AND LIGHT BROWN,SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

229+50.00

L_22900
229+00
6:1
02/17
BT
ROADWAY EMBANKMENT
6:1

COASTAL PLAIN:
WET,LOOSE,NON PLASTIC,YELLOWISH BROWN AND LIGHT BROWN,SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

229+00.00

5.33:1 ROADWAY EMBANKMENT 5.47:1

COASTAL PLAIN:
WET,LOOSE,NON PLASTIC,YELLOWISH BROWN AND LIGHT BROWN,SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

228+50.00

-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

6/23/16

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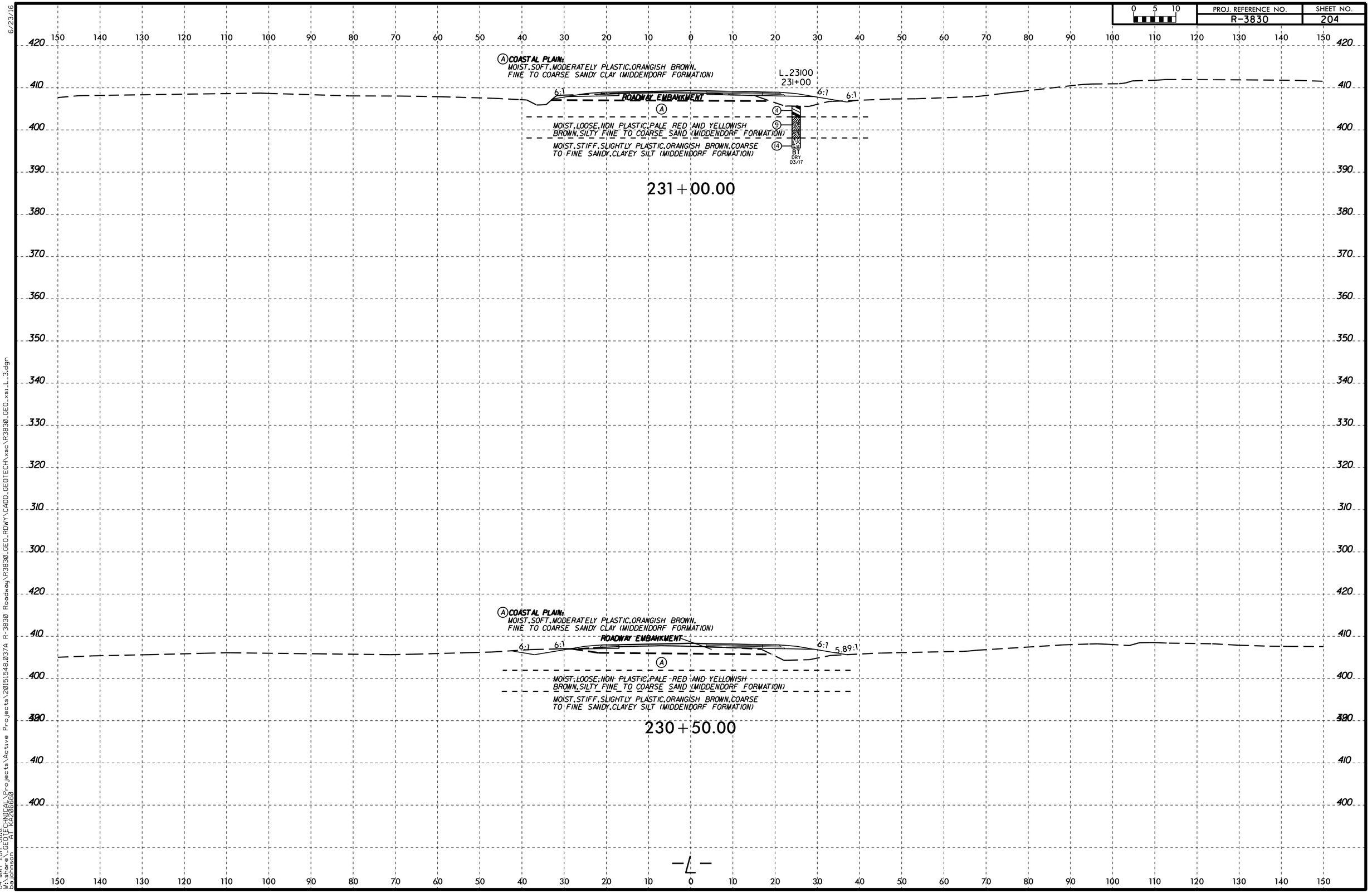
bjohnson AT KA20666

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	204



6/23/16

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bjohnson AT KAZOO60

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	205

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

430 420 410 400

Ⓐ COASTAL PLAIN:
MOIST;MEDIUM DENSE,MODERATELY PLASTIC,CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

SS-28
L 23300
233+00

ROADWAY EMBANKMENT

6:1 6:1 6:1

MOIST TO WET,MEDIUM DENSE TO VERY LOOSE,NON PLASTIC,ORANGISH BROWN TO YELLOWISH BROWN,LIGHT BROWN,AND GRAY,SILTY COARSE TO FINE SAND (MIDDENDORF FORMATION)

15 20 10 2 BT

03/17

233+00.00

Ⓐ COASTAL PLAIN:
MOIST;MEDIUM DENSE,MODERATELY PLASTIC,CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

MOIST TO WET,MEDIUM DENSE TO VERY LOOSE,NON PLASTIC,ORANGISH BROWN TO YELLOWISH BROWN,LIGHT BROWN,AND GRAY,SILTY COARSE TO FINE SAND (MIDDENDORF FORMATION)

232+50.00

Ⓐ COASTAL PLAIN:
MOIST,MEDIUM DENSE,MODERATELY PLASTIC,CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

6:1 6:1 6:1

MOIST TO WET,MEDIUM DENSE TO VERY LOOSE,NON PLASTIC,ORANGISH BROWN TO YELLOWISH BROWN,LIGHT BROWN,AND GRAY,SILTY COARSE TO FINE SAND (MIDDENDORF FORMATION)

232+00.00

Ⓐ COASTAL PLAIN:
MOIST,SOFT,MODERATELY PLASTIC,ORANGISH BROWN, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

6.04:1

ROADWAY EMBANKMENT

6:1 6:1

MOIST,LOOSE,NON PLASTIC,PALE RED AND YELLOWISH BROWN,SILTY FINE TO COARSE SAND (MIDDENDORE FORMATION)

MOIST,STIFF,SLIGHTLY PLASTIC,ORANGISH BROWN,COARSE TO FINE SANDY,CLAYEY SILT (MIDDENDORF FORMATION)

231+50.00

-L-

390

6/23/16

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Bjohnson AT KA20666

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

430 420 410

6:1 ROADWAY EMBANKMENT 6:1

COASTAL PLAIN:
WET,VERY LOOSE TO LOOSE,MODERATELY PLASTIC TO HIGHLY PLASTIC,
GRAY AND BROWN,SILTY,CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

234+50.00

440 430 420 410 400

Ⓐ COASTAL PLAIN:
MOIST,MEDIUM DENSE,MODERATELY PLASTIC,CLAYEY FINE
TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

6:1 ROADWAY EMBANKMENT 6:1

MOIST TO WET,MEDIUM DENSE TO VERY LOOSE,NON PLASTIC,ORANGISH
BROWN TO YELLOWISH BROWN,LIGHT BROWN,AND GRAY,SILTY COARSE
TO FINE SAND (MIDDENDORF FORMATION)

234+00.00

430 420 410 400

Ⓐ COASTAL PLAIN:
MOIST,MEDIUM DENSE,MODERATELY PLASTIC,CLAYEY FINE
TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

6:1 ROADWAY EMBANKMENT 6:1 6:1

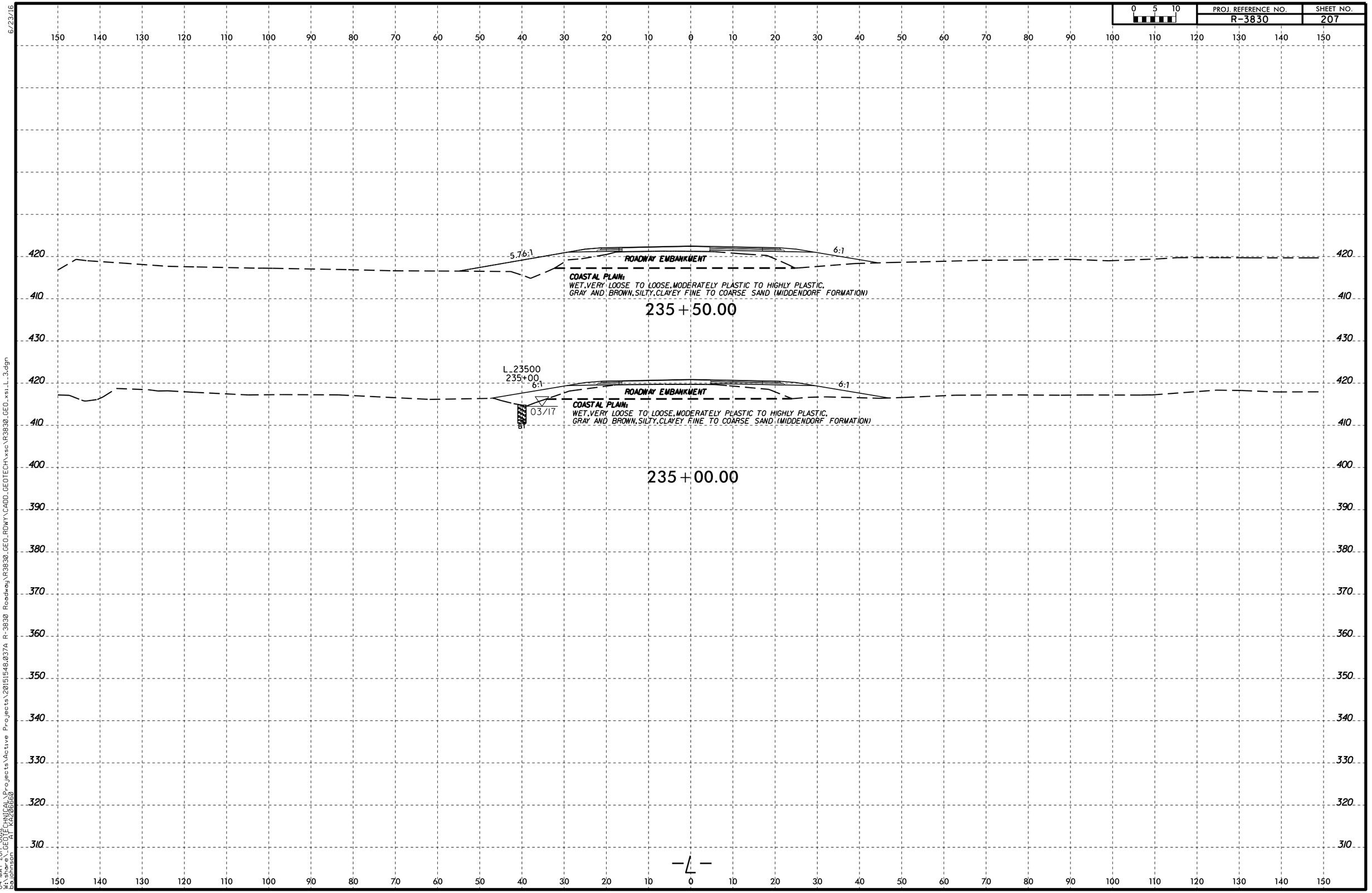
MOIST TO WET,MEDIUM DENSE TO VERY LOOSE,NON PLASTIC,ORANGISH
BROWN TO YELLOWISH BROWN,LIGHT BROWN,AND GRAY,SILTY COARSE
TO FINE SAND (MIDDENDORF FORMATION)

233+50.00

—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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	207



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bjohnson AT KAZOO60

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	208

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

440 430 420 410 400 390 380 370 360 350 340 330 320 310 430 420 410 400

L 23700
237+00

4.07:1

ROADWAY EMBANKMENT

6:1

COASTAL PLAIN: MOIST, VERY LOOSE TO LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, YELLOWISH BROWN, BROWN, GRAY, AND REDDISH BROWN, SILTY FINE TO COARSE SAND TO SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, HIGHLY PLASTIC, GRAY AND YELLOWISH BROWN, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

② ⑧ ⑪ 03/17

237+00.00

4.52:1

ROADWAY EMBANKMENT

6:1

COASTAL PLAIN: MOIST, VERY LOOSE TO LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, YELLOWISH BROWN, BROWN, GRAY, AND REDDISH BROWN, SILTY FINE TO COARSE SAND TO SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

MOIST, STIFF, HIGHLY PLASTIC, GRAY AND YELLOWISH BROWN, FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

236+50.00

—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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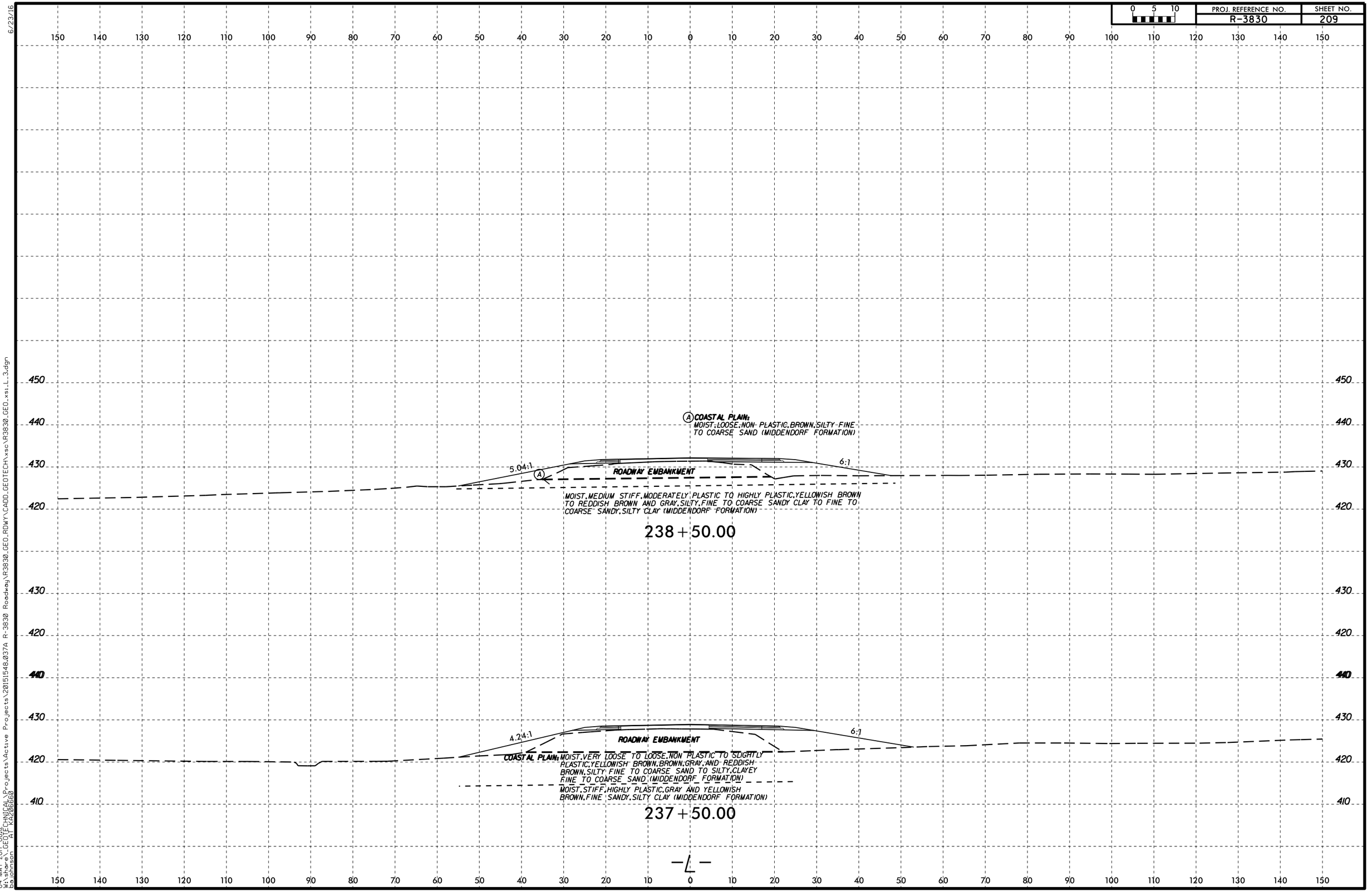
bjohnson AT KA20666



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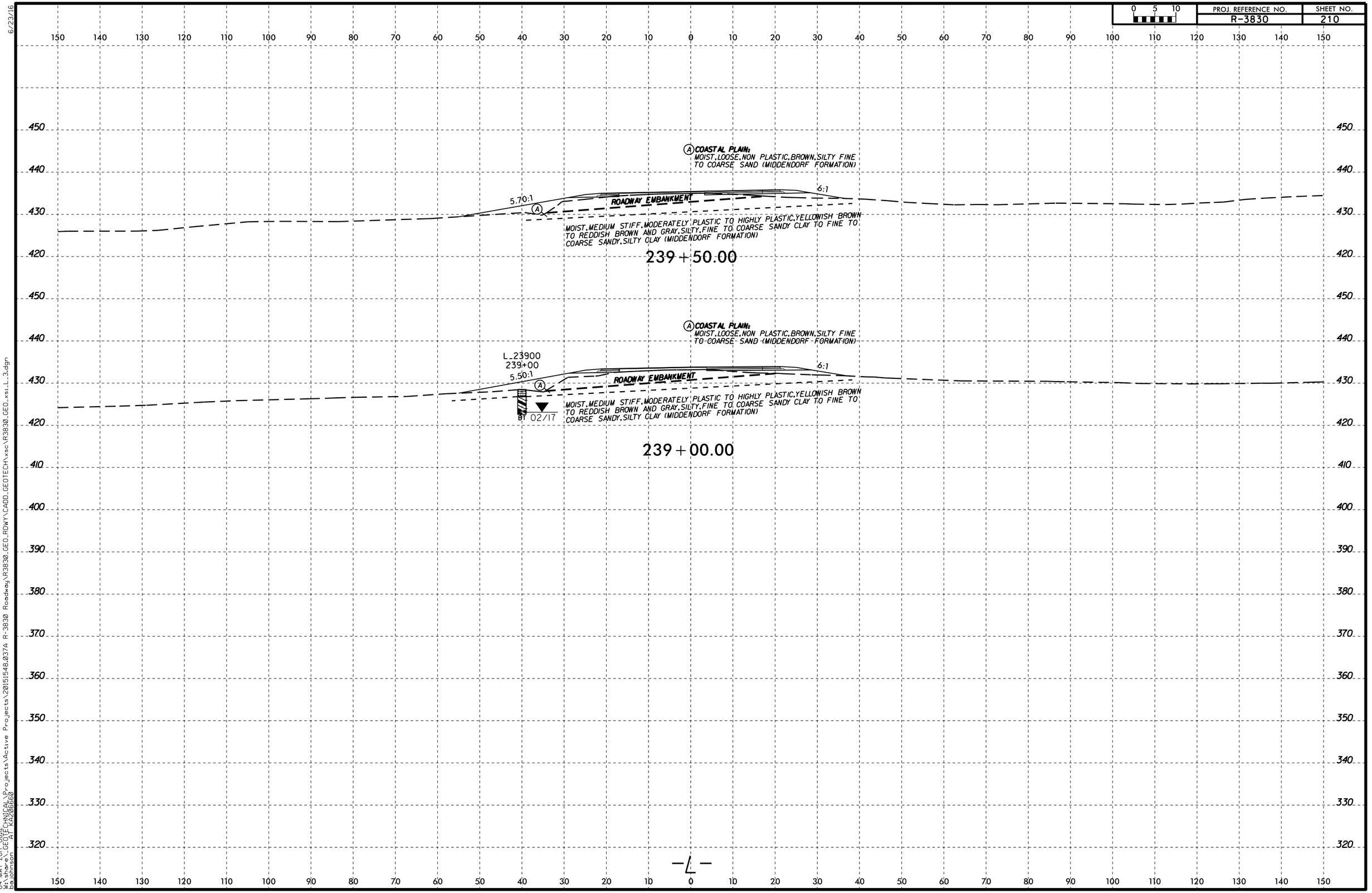
bajohnson AT KA20660



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	211

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

450
440
430

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

6:1

ROADWAY EMBANKMENT

6:1

Ⓐ

MOIST, VERY STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

240+50.00

450
440
430

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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bajohnson AT KA20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	212

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

460 450 440 430 420 410 400 390 380 370 360 350 340 330

Ⓐ COASTAL PLAIN:
MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

6:1 6:1 6:1

ROADWAY EMBANKMENT

MOIST,VERY STIFF,MODERATELY PLASTIC,YELLOWISH BROWN, REDDISH BROWN,AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

241+50.00

Ⓐ COASTAL PLAIN:
MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_24100
241+00

6:1 6:1

ROADWAY EMBANKMENT

MOIST,VERY STIFF,MODERATELY PLASTIC,YELLOWISH BROWN, REDDISH BROWN,AND GRAY,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

Ⓐ 2 18 20 ST DRY 03/17

241+00.00

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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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bjohnson AT KA20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	213

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

460 450 440 430

243+50.00

ROADWAY EMBANKMENT

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

COASTAL PLAIN:
MOIST.VERY LOOSE TO LOOSE.NON PLASTIC.LIGHT BROWN TO YELLOWISH BROWN.
SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)
MOIST.VERY STIFF.HIGHLY PLASTIC.REDDISH BROWN AND GRAY.
FINE TO COARSE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

L_24300
243+00

243+00.00

ROADWAY EMBANKMENT

5.99:1 6:1 6:1 4:1 2:1

(10) (4) (22) (20)

DRY 03/17

COASTAL PLAIN:
MOIST.VERY LOOSE TO LOOSE.NON PLASTIC.LIGHT BROWN TO YELLOWISH BROWN.
SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)
MOIST.VERY STIFF.HIGHLY PLASTIC.REDDISH BROWN AND GRAY.
FINE TO COARSE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

242+50.00

ROADWAY EMBANKMENT

6:1 6:1 6:1

COASTAL PLAIN:
MOIST.VERY LOOSE TO LOOSE.NON PLASTIC.LIGHT BROWN TO YELLOWISH BROWN.
SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)
MOIST.VERY STIFF.HIGHLY PLASTIC.REDDISH BROWN AND GRAY.
FINE TO COARSE SANDY.SILTY CLAY (MIDDENDORF FORMATION)

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bajohnson AT KAZOO660

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	214

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

470 460 450 440 430 420 410 400 390 380 370 360 350

L_24500
245+00

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

12 22 10 19 BT 02/17

COASTAL PLAIN:
MOIST,MEDIUM DENSE,NON PLASTIC,BROWN TO YELLOWISH BROWN AND ORANGISH BROWN,SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

WET,LOOSE,MODERATELY PLASTIC,YELLOWISH BROWN,REDDISH BROWN,AND GRAY,SILTY,CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

WET,VERY STIFF,HIGHLY PLASTIC,GRAY AND REDDISH BROWN, COARSE TO FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

245+00.00

ROADWAY EMBANKMENT

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

COASTAL PLAIN:
MOIST,MEDIUM DENSE,NON PLASTIC,BROWN TO YELLOWISH BROWN AND ORANGISH BROWN,SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

WET,LOOSE,MODERATELY PLASTIC,YELLOWISH BROWN,REDDISH BROWN,AND GRAY,SILTY,CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

WET,VERY STIFF,HIGHLY PLASTIC,GRAY AND REDDISH BROWN, COARSE TO FINE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

244+50.00

-L-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	215

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

470
460
450
440
430

ROADWAY EMBANKMENT

6.03:1 6:1 6:1 4.17:1

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH LITTLE TO TRACE GRAVEL (MIDDENDORF FORMATION)

246+50.00

ROADWAY EMBANKMENT

6:1 6:1 6:1 4.61:1

COASTAL PLAIN:
MOIST, MEDIUM DENSE, NON-PLASTIC, BROWN TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

WET, LOOSE, MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, SILTY, CLAYEY COARSE TO FINE SAND (MIDDENDORF FORMATION)

WET, VERY STIFF, HIGHLY PLASTIC, GRAY AND REDDISH BROWN, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

245+50.00

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bjohnson AT KA206660

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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

460 450 440 430 420 410 400 390 380 370 360 350 340

ROADWAY EMBANKMENT

6:1

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO ORANGISH, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE TO TRACE GRAVEL (MIDDENDORF FORMATION)

INTERSECTION SEAM LINE

247+50.00

L_24700
247+00

ROADWAY EMBANKMENT

6:1

6:1

T

5

BT
DRY
03/17

COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC TO SLIGHTLY PLASTIC, BROWN TO ORANGISH, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE TO TRACE GRAVEL (MIDDENDORF FORMATION)

INTERSECTION SEAM LINE

247+00.00

-L-

PROJ. REFERENCE NO.	SHEET NO.
R-3830	217

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

480 470 460 450 440 430 420 410 400 390 380 370 360 350 340 330 320 310 300

Ⓐ **COASTAL PLAIN:**
MOIST.LOOSE.NON PLASTIC.BROWN.SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

L_24900
249+00

6:1

4:1

ROADWAY EMBANKMENT

Ⓐ

MOIST.MEDIUM STIFF.MODERATELY PLASTIC.YELLOWISH BROWN. FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

MOIST TO WET.MEDIUM STIFF.SLIGHTLY PLASTIC.GRAY. REDDISH BROWN.YELLOWISH BROWN.AND PALE RED. COARSE TO FINE SANDY.CLAYEY SILT (MIDDENDORF FORMATION)

03/17

5 7 8 5 BT

249+00.00

Ⓐ **COASTAL PLAIN:**
MOIST.LOOSE.NON PLASTIC.BROWN.SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

4.22:1

6:1

ROADWAY EMBANKMENT

Ⓐ

MOIST.MEDIUM STIFF.MODERATELY PLASTIC.YELLOWISH BROWN. FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

MOIST TO WET.MEDIUM STIFF.SLIGHTLY PLASTIC.GRAY. REDDISH BROWN.YELLOWISH BROWN.AND PALE RED. COARSE TO FINE SANDY.CLAYEY SILT (MIDDENDORF FORMATION)

248+50.00

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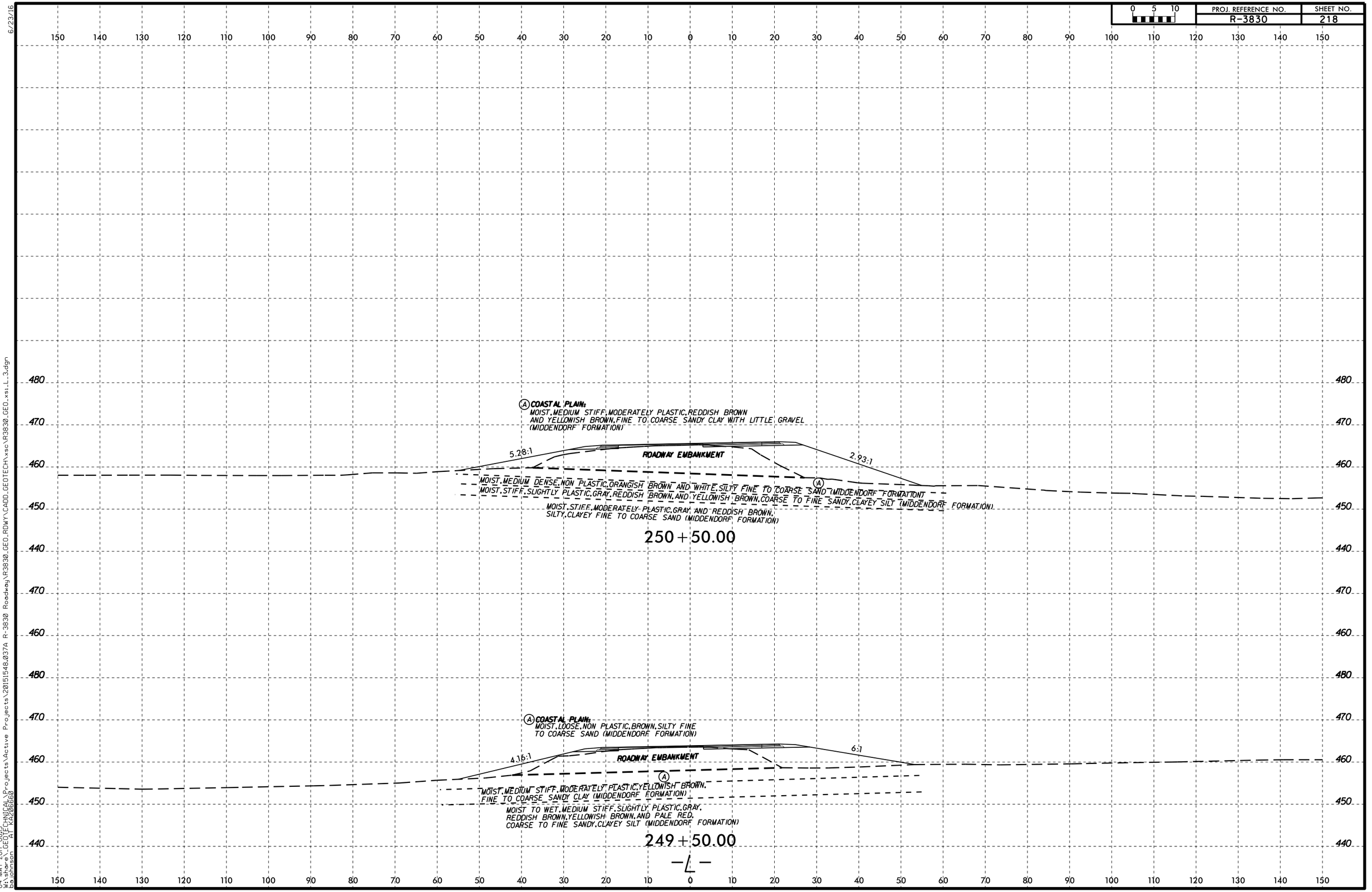

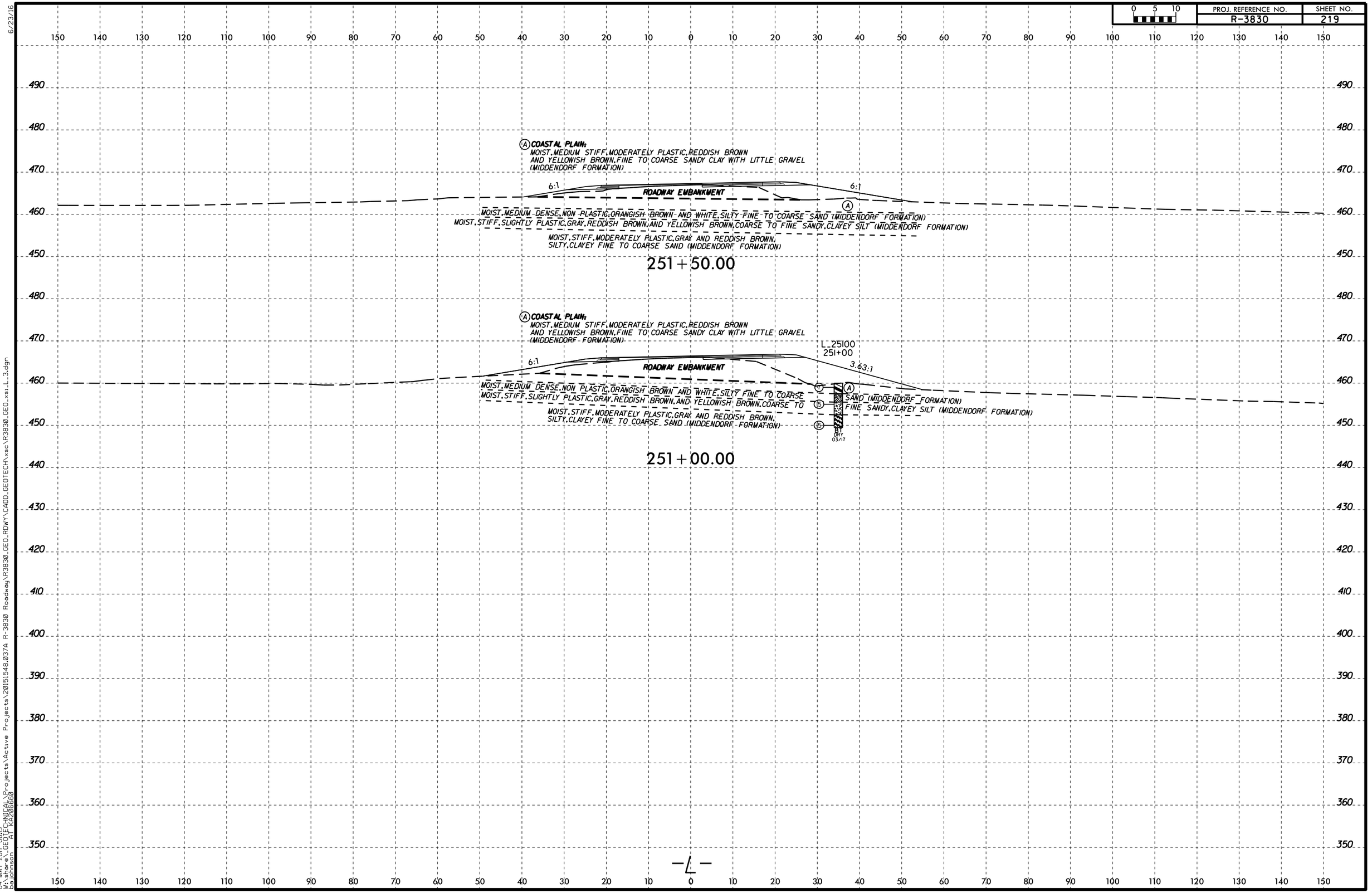

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bjohnson AT KAZOO60

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

480 470 460 450 490

ROADWAY EMBANKMENT

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

COASTAL PLAIN:
MOIST, MEDIUM DENSE, HIGHLY PLASTIC TO MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND WHITE, SILTY, CLAYEY FINE TO COARSE SAND TO CLAYEY FINE TO COARSE SAND WITH TRACE TO LITTLE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN AND WHITE, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

253+50.00

SS-29
L_25300
253+00

ROADWAY EMBANKMENT

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

(18) (16) (22) (15)
BT
DRY
02/17

COASTAL PLAIN:
MOIST, MEDIUM DENSE, HIGHLY PLASTIC TO MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND WHITE, SILTY, CLAYEY FINE TO COARSE SAND TO CLAYEY FINE TO COARSE SAND WITH TRACE TO LITTLE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN AND WHITE, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

253+00.00

ROADWAY EMBANKMENT

5.63:1 6:1 6:1 6:1

COASTAL PLAIN:
MOIST, MEDIUM DENSE, HIGHLY PLASTIC TO MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND WHITE, SILTY, CLAYEY FINE TO COARSE SAND TO CLAYEY FINE TO COARSE SAND WITH TRACE TO LITTLE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN AND WHITE, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

252+50.00

ROADWAY EMBANKMENT

6:1 6:1 6:1 6:1

COASTAL PLAIN:
MOIST, MEDIUM DENSE, HIGHLY PLASTIC TO MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND WHITE, SILTY, CLAYEY FINE TO COARSE SAND TO CLAYEY FINE TO COARSE SAND WITH TRACE TO LITTLE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN AND WHITE, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

252+00.00

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	221

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

490
480
470
460
450

4:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN:
MOIST, SOFT TO MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN AND RED, SILTY, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

254+50.00

4:1 6:1

ROADWAY EMBANKMENT

6:1 6:1

COASTAL PLAIN:
MOIST, MEDIUM DENSE, HIGHLY PLASTIC TO MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND WHITE, SILTY, CLAYEY FINE TO COARSE SAND TO CLAYEY FINE TO COARSE SAND WITH TRACE TO LITTLE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, NON PLASTIC, ORANGISH BROWN AND WHITE, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

254+00.00

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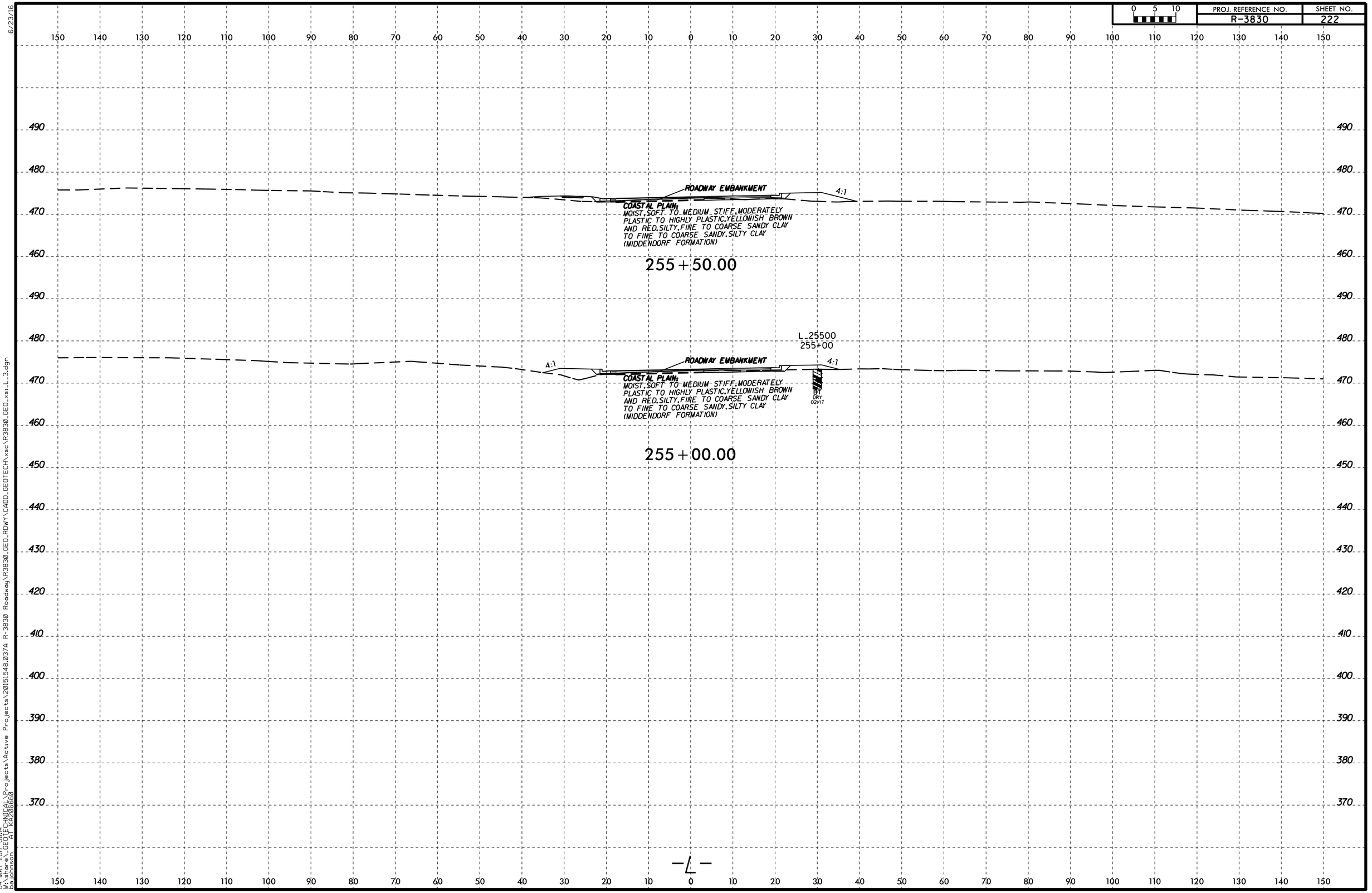
bajohnson AT KA206660



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bjohnson AT KAZOO60

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	223

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

490
480
470
460

Ⓐ **COASTAL PLAIN:**
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

Ⓐ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

256+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

Ⓐ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

256+00.00

-L-

490
480
470
460

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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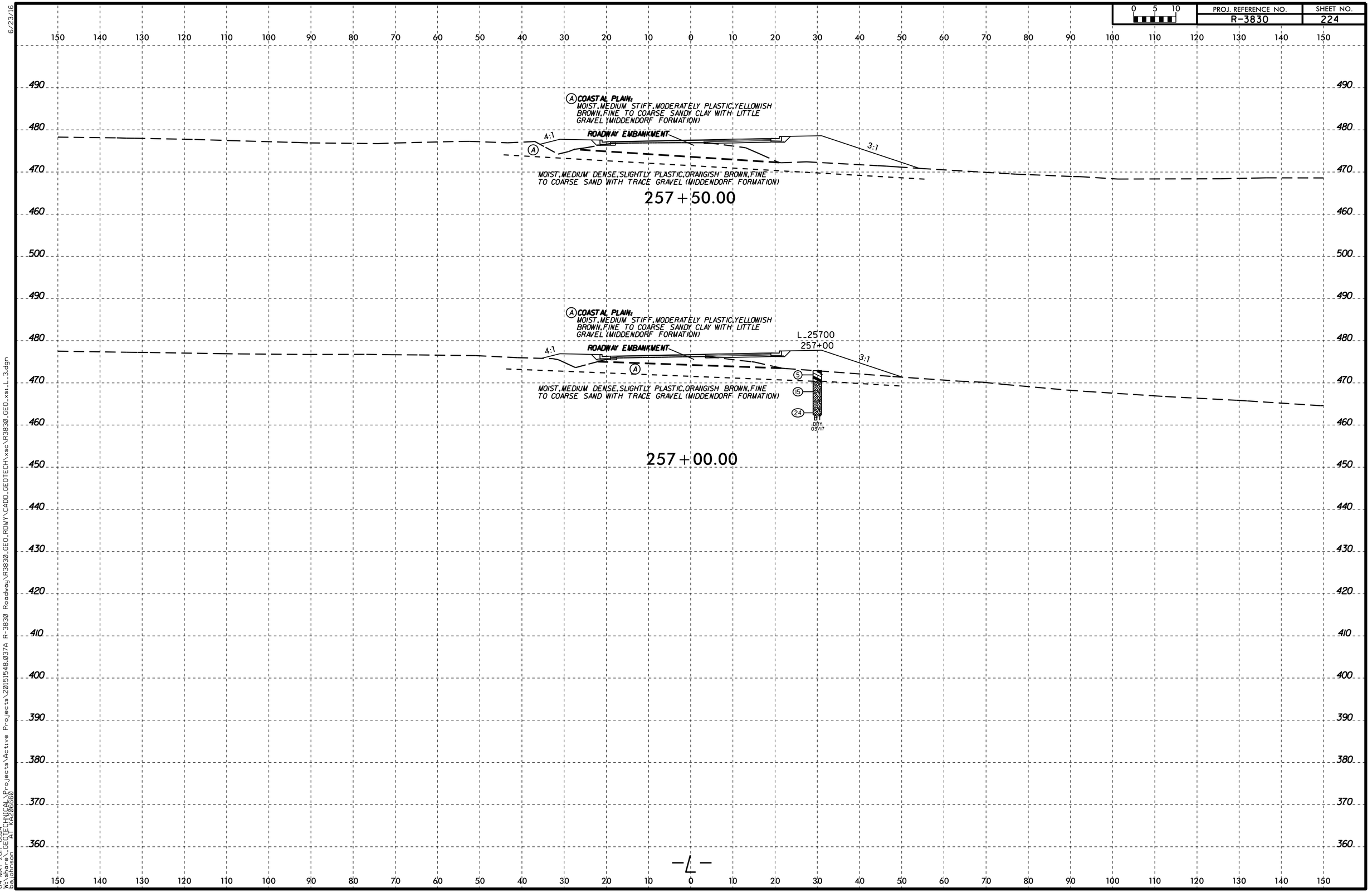
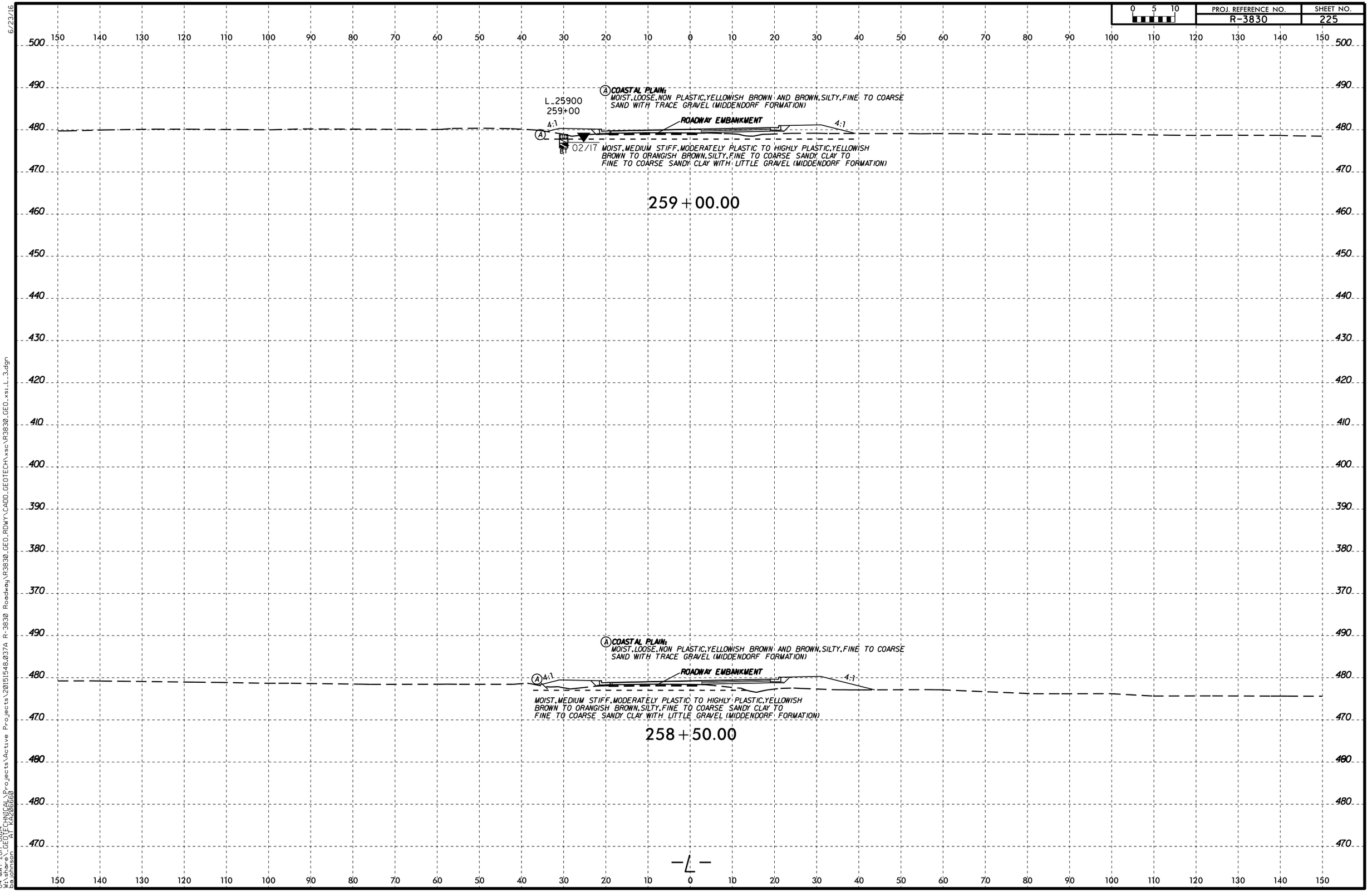
bjohnson AT KAZ06660



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	225



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

500 490 480 470

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

8% 12%

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

260+50.00

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, YELLOWISH BROWN AND BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

8%

ROADWAY EMBANKMENT

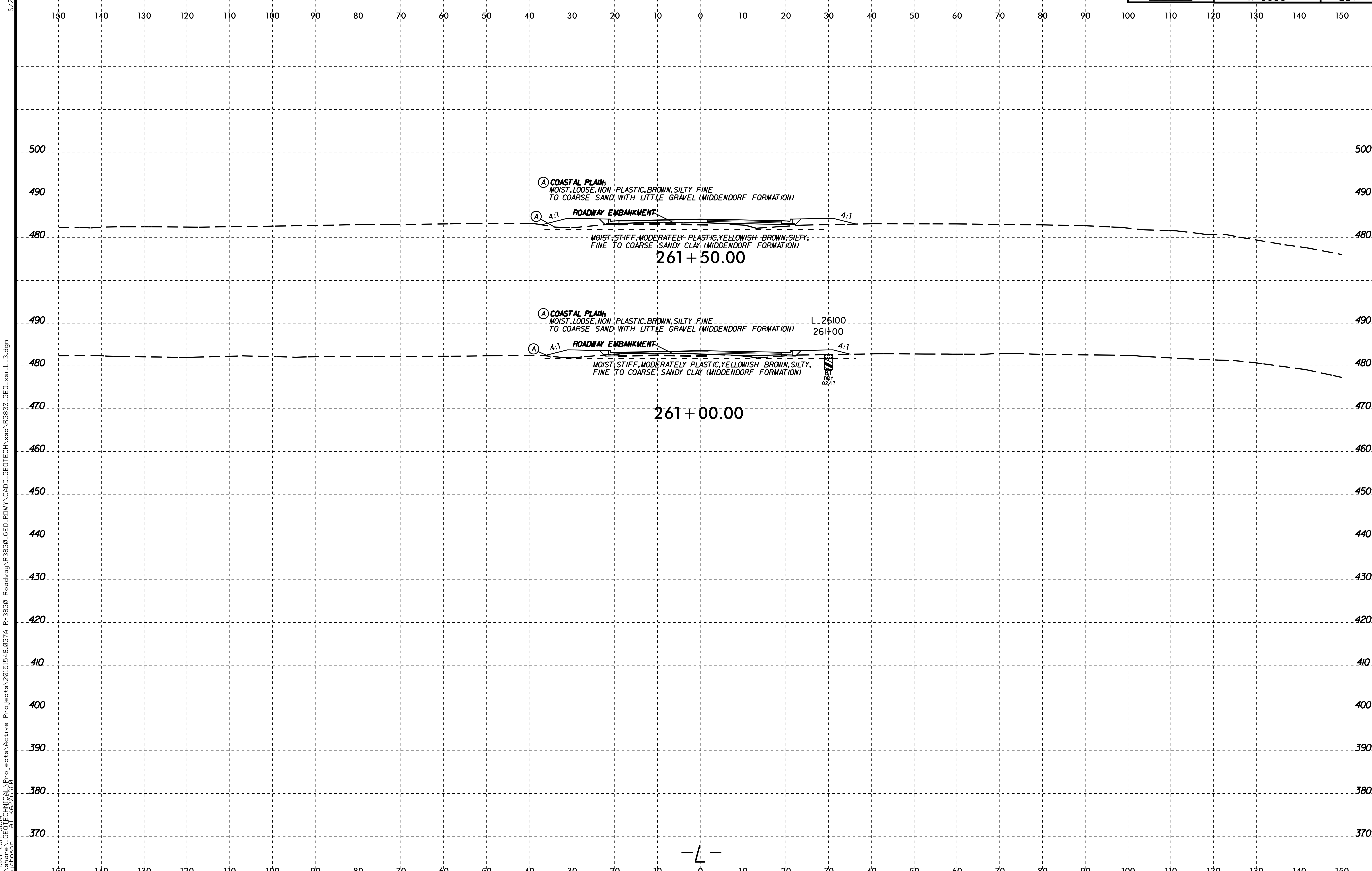
4:1

MOIST, MEDIUM STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO ORANGISH BROWN, SILTY, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

259+50.00

-L-

PROJ. REFERENCE NO.	SHEET NO.
R-3830	227



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bajohnson AT KA206660

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

500
490
480

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

263+50.00

L_26300
263+00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT 4:1

BT DRY 02\17

COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

263+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

262+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

262+00.00

-L-

500
490
480
470
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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bajohnson
AT KH206660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	229

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

510 500 490 480 470 460 450 440 430 420 410 400 390 380 370

(A) COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 ROADWAY EMBANKMENT 4:1

(A)

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

265+50.00

(A) COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

L_26500
265+00

4:1 ROADWAY EMBANKMENT 4:1

(A)

MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

BT DRY 02/17

265+00.00

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bjohnson AT KAZOO660

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	230

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

500
490
480
470
460

Ⓐ COASTAL PLAIN:
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1

ROADWAY EMBANKMENT

4:1

Ⓐ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH SOME GRAVEL (MIDDENDORF FORMATION)

MOIST, DENSE, MODERATELY PLASTIC, ORANGISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

266+50.00

Ⓐ COASTAL PLAIN:
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1

ROADWAY EMBANKMENT

4:1

Ⓐ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH SOME GRAVEL (MIDDENDORF FORMATION)

MOIST, DENSE, MODERATELY PLASTIC, ORANGISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

266+00.00

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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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bajohnson AT KA206660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	231

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

500 490 480 470

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

4:1 — **ROADWAY EMBANKMENT** — 3:1

Ⓐ

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH SOME GRAVEL (MIDDENDORF FORMATION)

MOIST, DENSE, MODERATELY PLASTIC, ORANGISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

267+50.00

490 480 470

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

L_26700
267+00

4:1 — **ROADWAY EMBANKMENT** — 4:1

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MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH SOME GRAVEL (MIDDENDORF FORMATION)

MOIST, DENSE, MODERATELY PLASTIC, ORANGISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

BT DRY 03/17

267+00.00

460 450 440 430 420 410 400 390 380 370

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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bjohnson AT KAZOO660

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	232

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

500
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460

A:1

ROADWAY EMBANKMENT

3:1

COASTAL PLAIN:
MOIST, VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND WHITE, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY WITH LITTLE TO TRACE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, ORANGISH BROWN, WHITE, AND YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

268+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

A:1

ROADWAY EMBANKMENT

3:1

MOIST, MEDIUM DENSE, SLIGHTLY PLASTIC, ORANGISH BROWN, SILTY FINE TO COARSE SAND WITH SOME GRAVEL (MIDDENDORF FORMATION)

MOIST, DENSE, MODERATELY PLASTIC, ORANGISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

268+00.00

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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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bajohnson AT KA20666

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

500 490 480 470

4:1 ROADWAY EMBANKMENT 4:1

COASTAL PLAIN:
MOIST, VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND WHITE, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY WITH LITTLE TO TRACE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, ORANGISH BROWN, WHITE, AND YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

269+50.00

490 480 470

4:1 ROADWAY EMBANKMENT

L 26905
269+05

3:1

COASTAL PLAIN:
MOIST, VERY STIFF, MODERATELY PLASTIC TO HIGHLY PLASTIC, YELLOWISH BROWN TO REDDISH BROWN AND WHITE, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY WITH LITTLE TO TRACE GRAVEL (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, ORANGISH BROWN, WHITE, AND YELLOWISH BROWN, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

23 22 26 BT DRY 03/17

269+00.00

460 450 440 430 420 410 400 390 380 370

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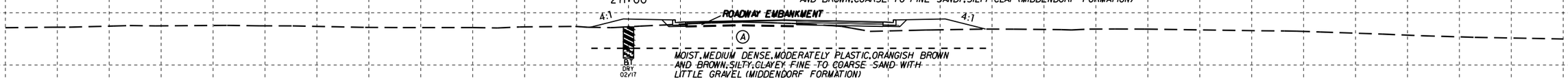
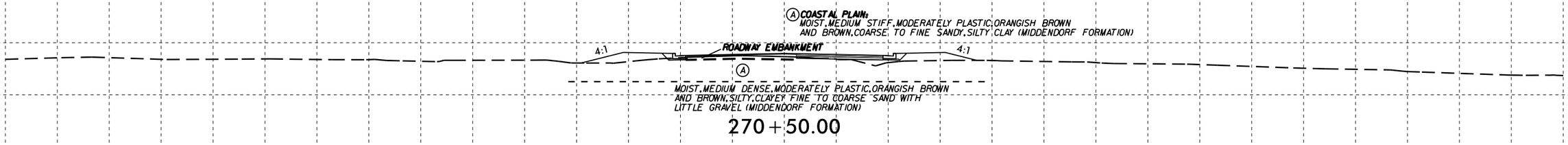
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

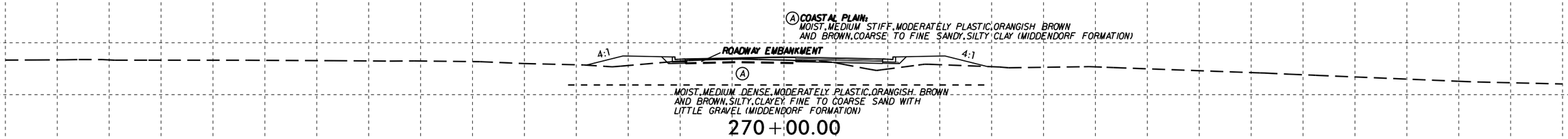
S-30
L_27100
271+00



271+00.00



270+50.00



270+00.00

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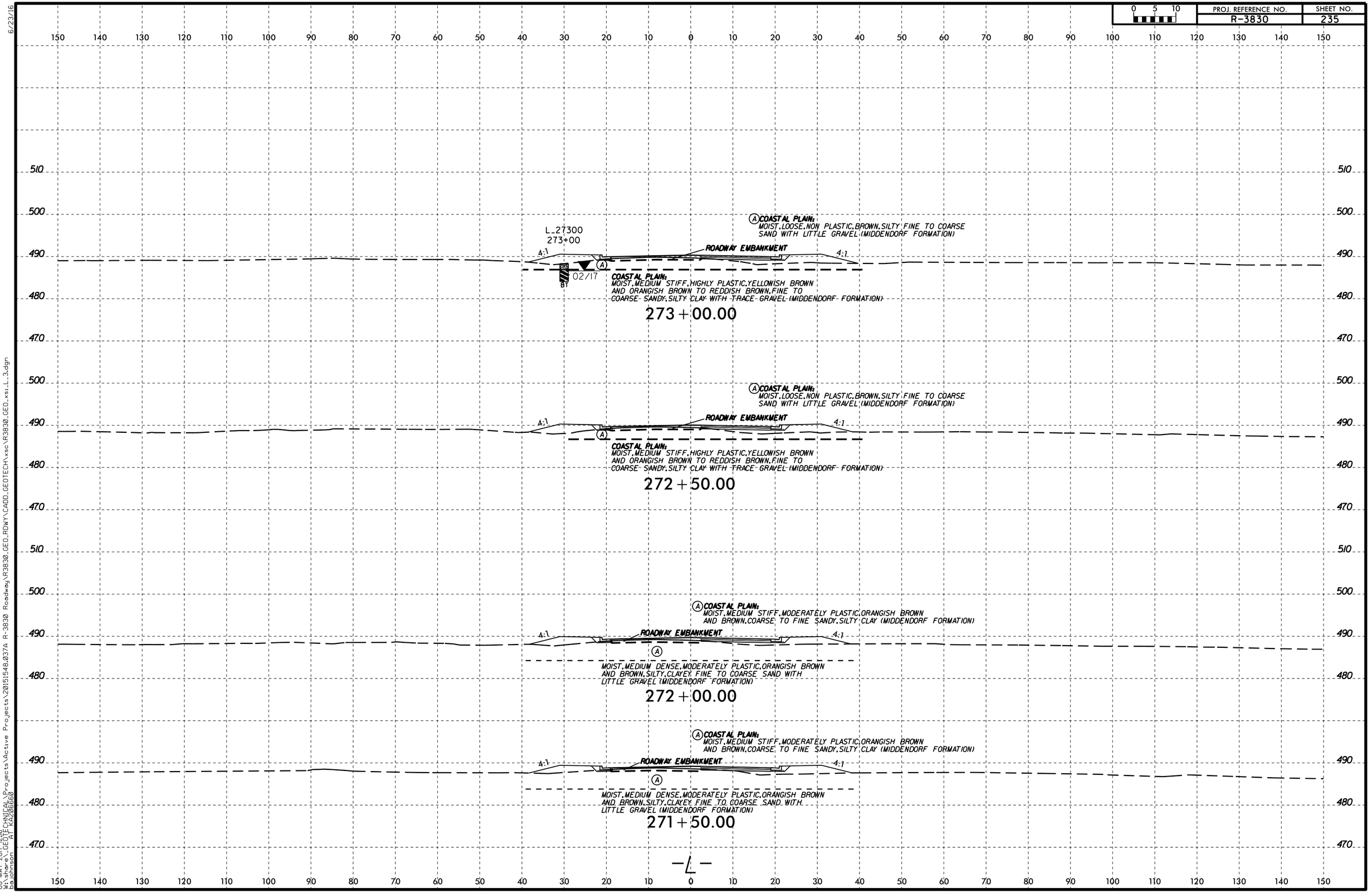

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510
500
490
480
470

Ⓐ COASTAL PLAIN:
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

Ⓐ MOIST, DENSE TO MEDIUM DENSE, MODERATELY PLASTIC, ORANGISH BROWN AND WHITE, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

274+50.00

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

Ⓐ COASTAL PLAIN:
MOIST, MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN TO REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

273+50.00

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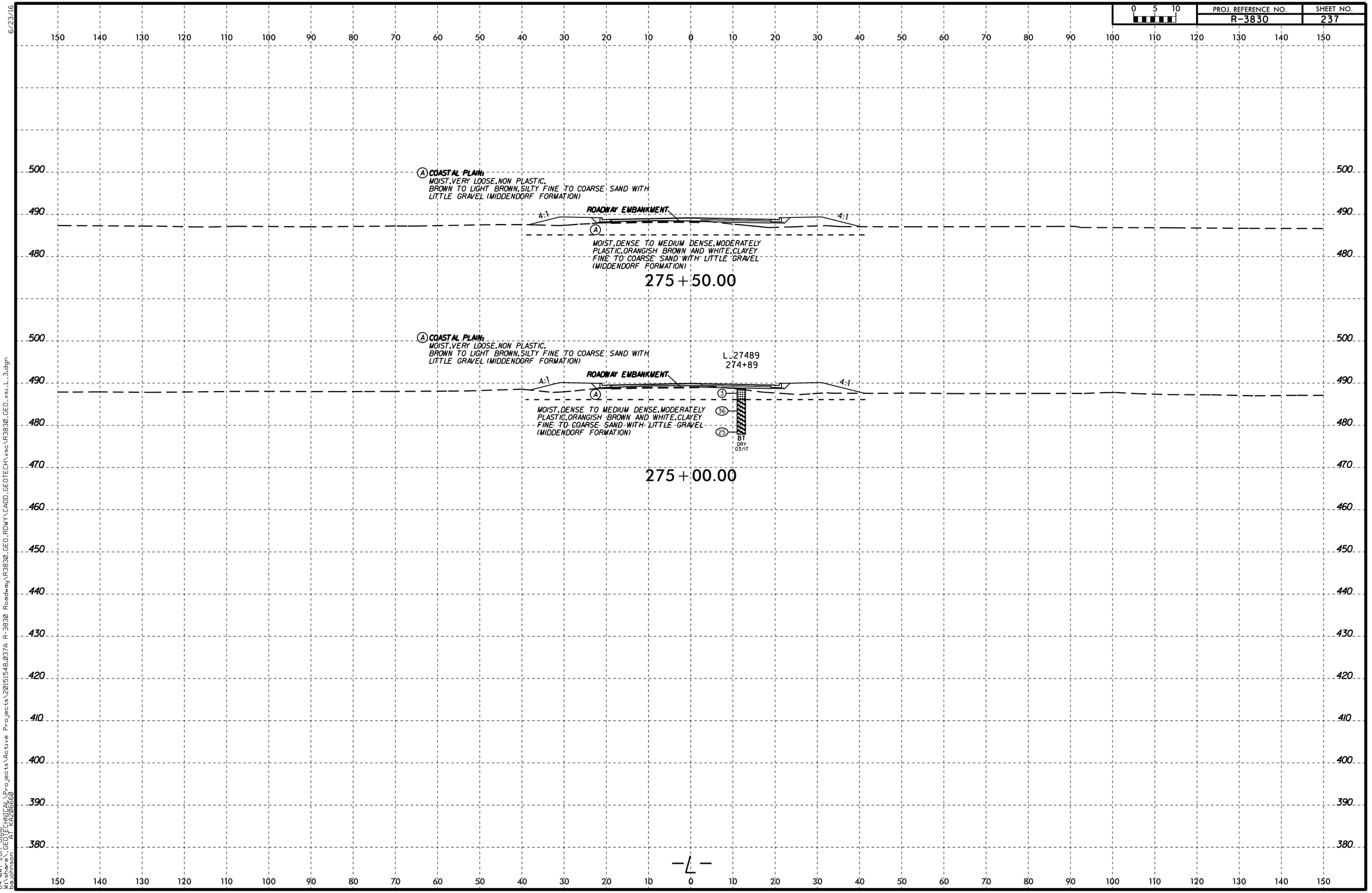
bajohnson AT KA206660



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500 490 480 470 460 450 440 430 420 410 400 390 380 500 490 480 470

L_27700
277+00

ROADWAY EMBANKMENT

4:1

4:1

(A) COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY
FINE TO COARSE SAND (MIDDENDORF FORMATION)

(4)

(28) MOIST, VERY STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE
TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

(25) MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND WHITE, CLAYEY
FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

BT
DRY
02/17

277+00.00

(A) COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY
FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

4:1

MOIST, VERY STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE
TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND WHITE, CLAYEY
FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

276+50.00

-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

6/23/16

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	R-3830	239

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

500
490
480

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

4:1

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MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

278+50.00

490
480
470

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

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MOIST, VERY STIFF, HIGHLY PLASTIC, YELLOWISH BROWN AND REDDISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND WHITE, CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

277+50.00

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bjohnson AT KAZ06660

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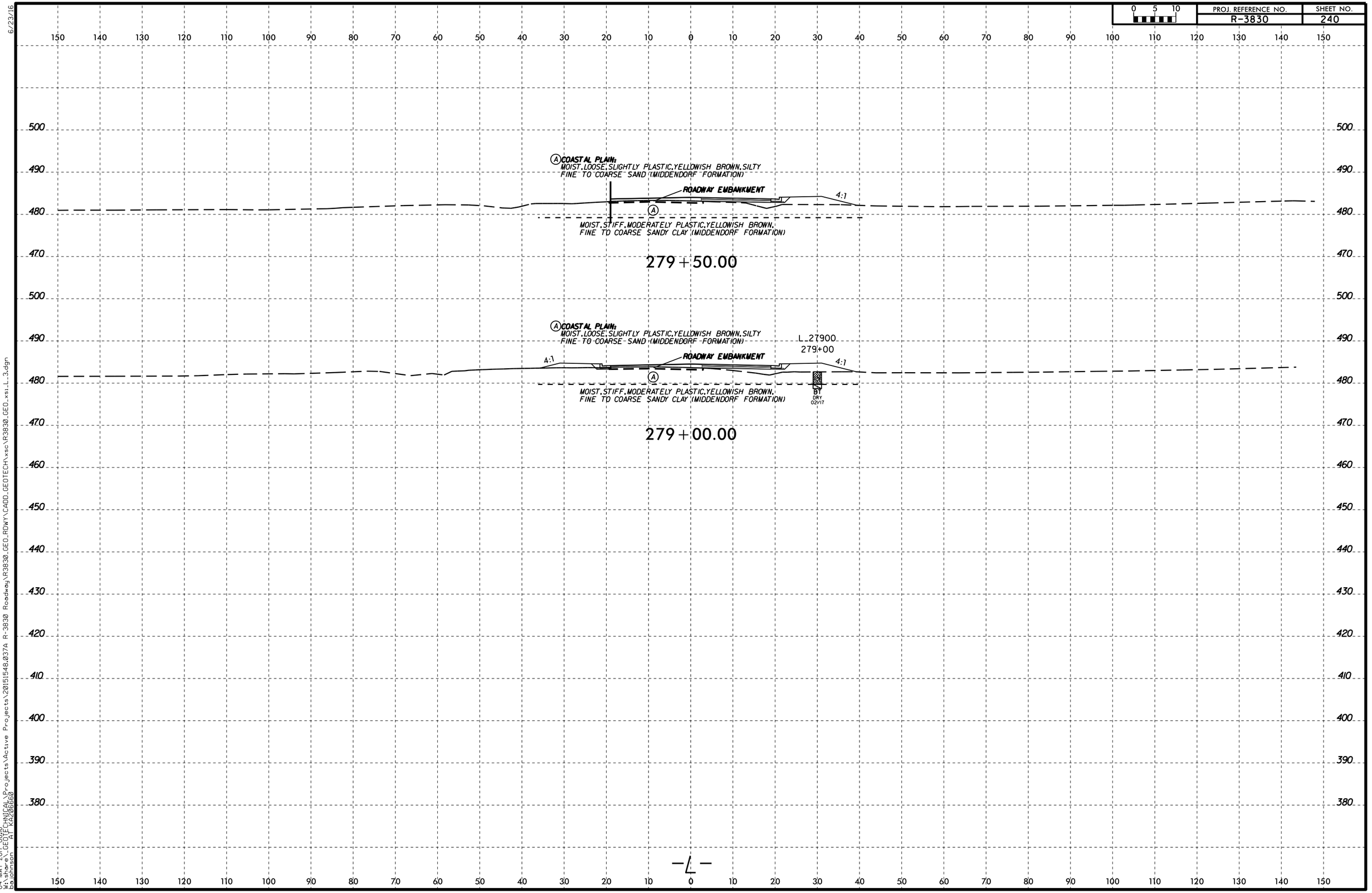

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	241

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

510
500
490
480
470

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, VERY STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

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MOIST, DENSE, MODERATELY PLASTIC, REDDISH BROWN AND WHITE, CLAYEY COARSE TO FINE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

280+50.00

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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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bjohnson AT KAZOO60

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

490 480 470

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, VERY STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

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MOIST, DENSE, MODERATELY PLASTIC, REDDISH BROWN AND WHITE, CLAYEY COARSE TO FINE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

281+50.00

500 490 480 470

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN TO YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, VERY STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

L_28100
281+00

ROADWAY EMBANKMENT

4:1 4:1

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MOIST, DENSE, MODERATELY PLASTIC, REDDISH BROWN AND WHITE, CLAYEY COARSE TO FINE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

281+00.00

460 450 440 430 420 410 400 390 380 370

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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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

500 490 480 470 460

Ⓐ **ARTIFICIAL FILL:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

Ⓑ **COASTAL PLAIN:**
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 Ⓐ

Ⓑ

MOIST, MEDIUM DENSE, NON PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

283+50.00

Ⓐ **ARTIFICIAL FILL:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

Ⓑ **COASTAL PLAIN:**
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

L_28300
283+00

ROADWAY EMBANKMENT

4:1 4:1 Ⓐ

Ⓑ

MOIST, MEDIUM DENSE, NON PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

BT DRY 02/17

283+00.00

Ⓐ **ARTIFICIAL FILL:**
MOIST, LOOSE, NON PLASTIC, LIGHT BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

Ⓑ **COASTAL PLAIN:**
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1 Ⓐ

Ⓑ

MOIST, MEDIUM DENSE, NON PLASTIC, REDDISH BROWN AND YELLOWISH BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

282+50.00

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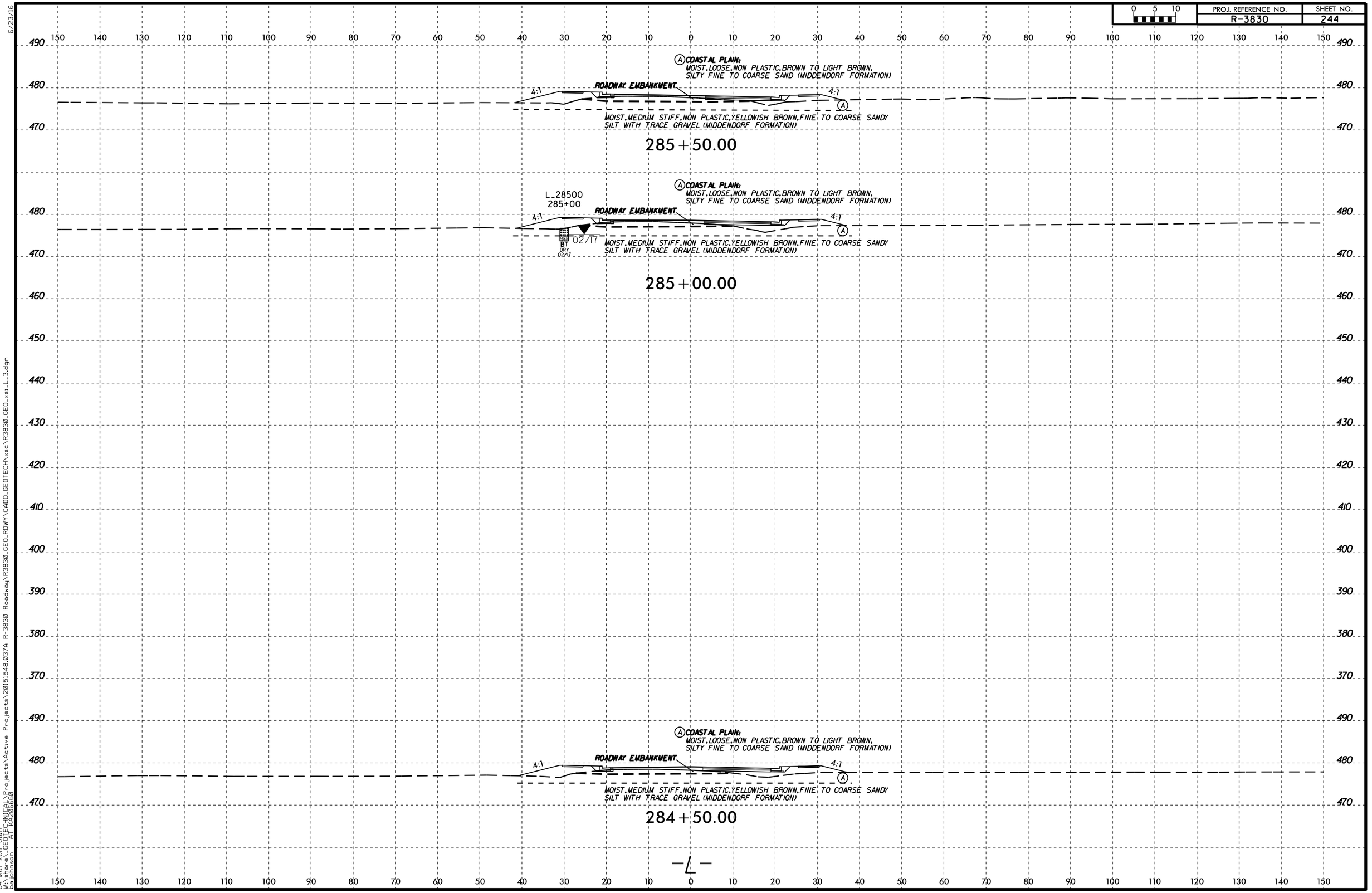

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	245

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

490
480
470
460

ROADWAY EMBANKMENT

COASTAL PLAIN:
MOIST, STIFF TO HARD, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY COARSE TO FINE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

290+50.00

480
470

ROADWAY EMBANKMENT

COASTAL PLAIN:
MOIST, STIFF TO HARD, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY COARSE TO FINE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

290+00.00

490
480
470

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

MOIST, MEDIUM STIFF, NON PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY SILT WITH TRACE GRAVEL (MIDDENDORF FORMATION)

289+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

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bjohnson AT KAZOO60

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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

490 480 470 460 450 440 430 420 410 400 390 380 370

4.48:1

ROADWAY EMBANKMENT

ARTIFICIAL FILL 4:1

COASTAL PLAIN: MOIST, STIFF TO HARD, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY COARSE TO FINE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

292+00.00

ROADWAY EMBANKMENT

ARTIFICIAL FILL 4:1

COASTAL PLAIN: MOIST, STIFF TO HARD, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY COARSE TO FINE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

291+50.00

SS-31
L_29100
291+10

5.14:1

ROADWAY EMBANKMENT

4:1

COASTAL PLAIN: MOIST, STIFF TO HARD, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGISH BROWN, SILTY COARSE TO FINE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

9
37
BT
DRY
02/17

291+00.00

—L—

6/23/16

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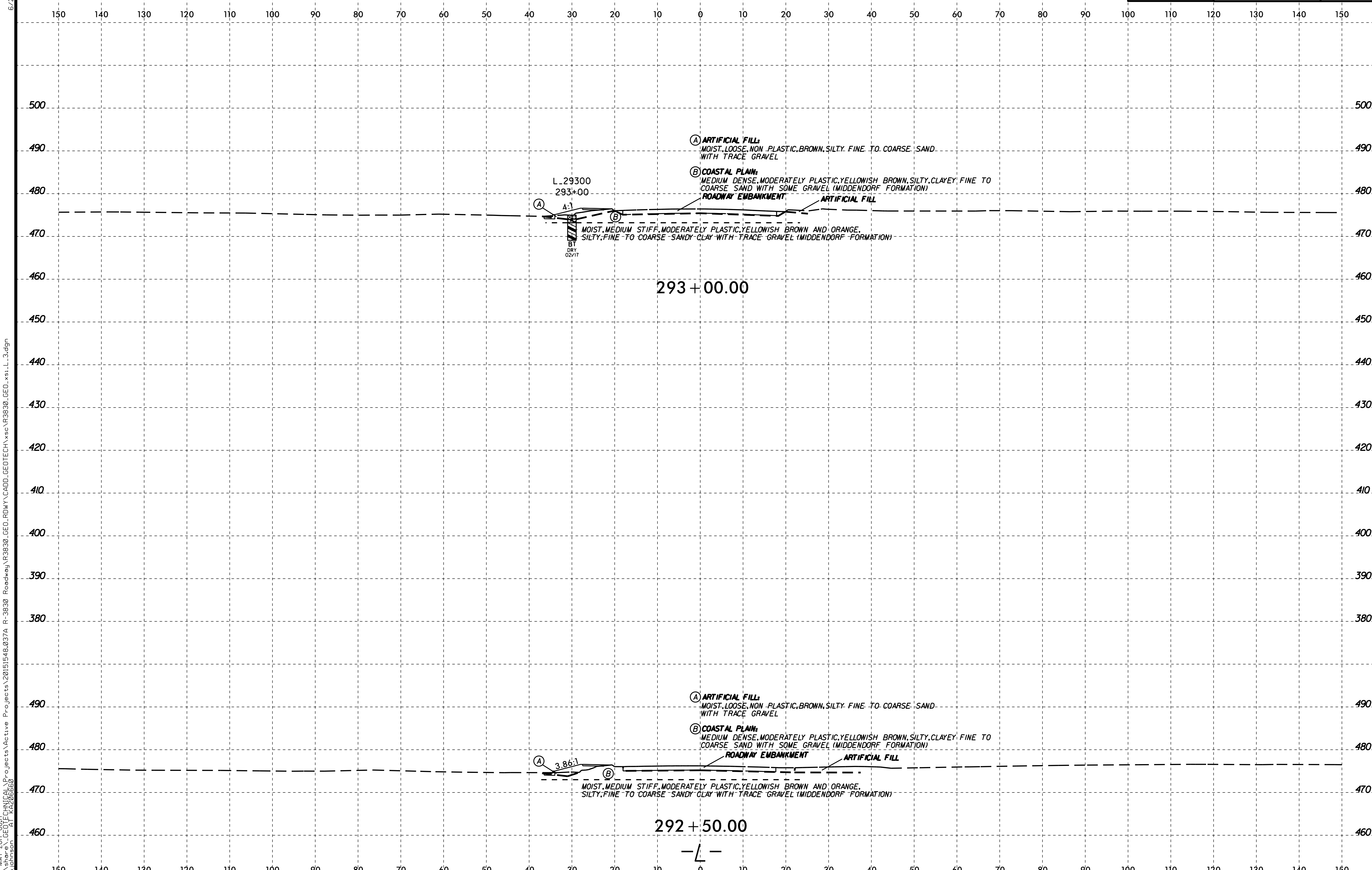
bajohnson AT KH206660

PROJ. REFERENCE NO.	SHEET NO.
R-3830	247



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bajohnson AT KA206660

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	248

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

490
480
470
460

Ⓐ **ARTIFICIAL FILL:**
MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

Ⓐ **ROADWAY EMBANKMENT**

COASTAL PLAIN:
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

294+50.00

Ⓑ **COASTAL PLAIN:**
MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND WITH SOME GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN AND ORANGE, SILTY, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

293+50.00

-L-

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bajohnson AT KA206660

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

490 480 470 490 480 470 460 490 480 470 460 450 440 430 420 410 400 390 380 370

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

Ⓐ **COASTAL PLAIN:** MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

295+50.00

Ⓐ **ARTIFICIAL FILL:** MOIST, MEDIUM STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, SILTY FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

L_29500
295+00

Ⓐ 7.25:1

ROADWAY EMBANKMENT

BT DRY 02/17

COASTAL PLAIN: MOIST, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

295+00.00

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	250

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

490 480 470 460 450 440 430 420 410 400 390 380 370 490 480 470 460

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

A-1

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

297+50.00

L_29700
297+00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

A-1

Ⓐ

B1
DRY
02/17

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

297+00.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

A-1

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

296+50.00

-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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bjohnson AT KA20660

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	251

SS-32
L_29913
299+13

BT
DRY
QZ/LT

(A) ARTIFICIAL FILL:
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

(A) (20) (20)

COASTAL PLAIN:
MOIST, VERY STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, COARSE TO FINE SANDY SILT (MIDDENDORF FORMATION)

299+00.00

(A)

ROADWAY EMBANKMENT

(A) ARTIFICIAL FILL:
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

COASTAL PLAIN:
MOIST, VERY STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, COARSE TO FINE SANDY SILT (MIDDENDORF FORMATION)

298+50.00

-L-

6/23/16

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bjohnson AT KAZOO60

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	252

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

490
480
470

Ⓐ **ARTIFICIAL FILL:**
MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL

Ⓐ **ROADWAY EMBANKMENT**

COASTAL PLAIN:
MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

300 + 50.00

ROADWAY EMBANKMENT

Ⓐ A-1

ARTIFICIAL FILL:
MOIST, MEDIUM DENSE, MODERATELY PLASTIC, CLAYEY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

COASTAL PLAIN:
MOIST, VERY STIFF, SLIGHTLY PLASTIC, YELLOWISH BROWN, COARSE TO FINE SANDY SILT (MIDDENDORF FORMATION)

299 + 50.00

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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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bjohnson AT KAZ06660

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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

490 480 470 460 450 440 430 420 410 400 390 380 370

Ⓐ **ARTIFICIAL FILL:**
MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL

Ⓐ **ROADWAY EMBANKMENT**

COASTAL PLAIN:
MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

301+50.00

L_30100
301+00

Ⓐ **ARTIFICIAL FILL:**
MOIST, MEDIUM DENSE, NON PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH TRACE GRAVEL

Ⓐ **ROADWAY EMBANKMENT**

4:1

BT
DRY
02/17

COASTAL PLAIN:
MOIST, STIFF, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

301+00.00

—L—

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	254

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

490
480
470

Ⓐ COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

Ⓐ

MOIST, LOOSE, MODERATELY PLASTIC, REDDISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

303+50.00

L_30300
303+00

Ⓐ COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1

PT
DRY
02/17

Ⓐ

MOIST, LOOSE, MODERATELY PLASTIC, REDDISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

303+00.00

Ⓐ COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, FINE TO COARSE SANDY CLAY WITH TRACE GRAVEL (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

Ⓐ

MOIST, LOOSE, MODERATELY PLASTIC, REDDISH BROWN, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

302+50.00

-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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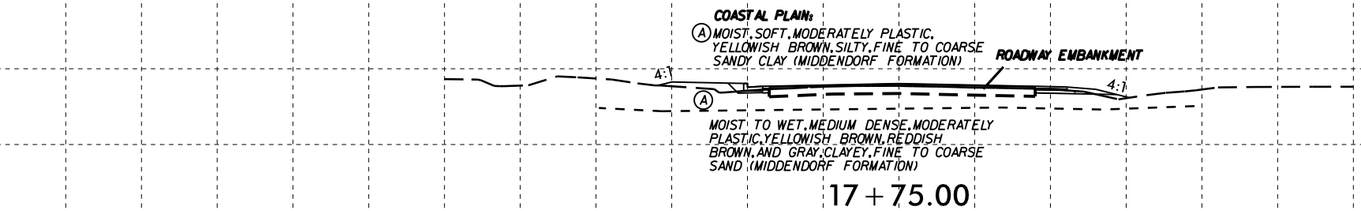
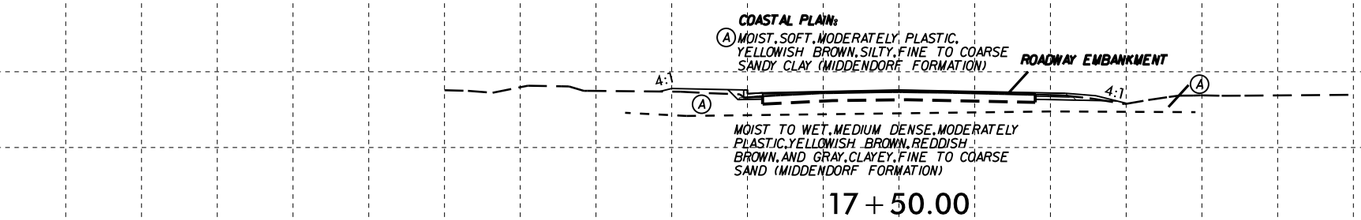
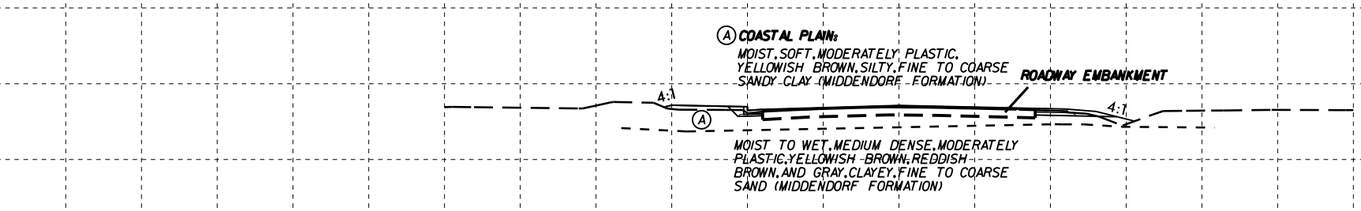
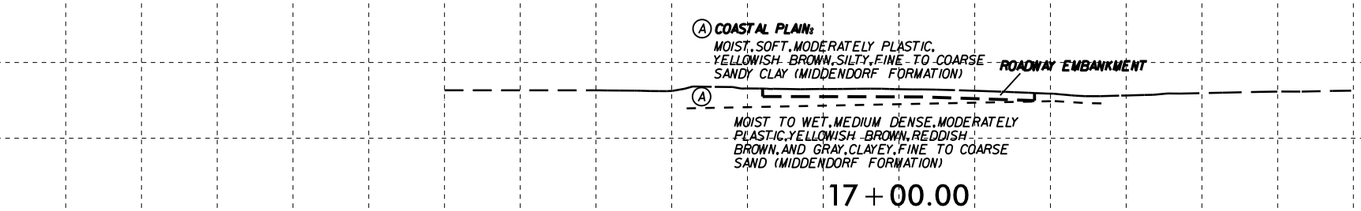
bajohnson AT KAZOO660









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PROJ. REFERENCE NO.	SHEET NO.
R-3830	256

0 5 10

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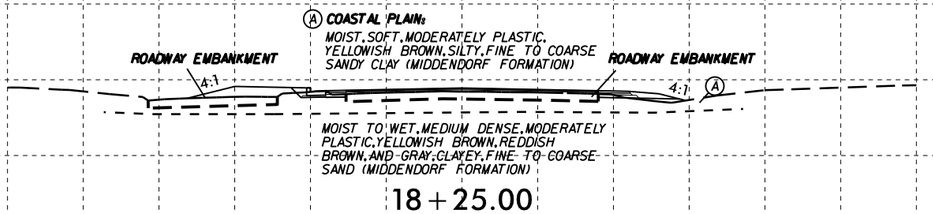
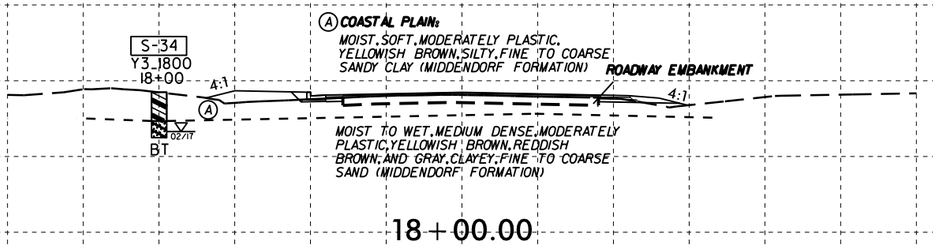
470 460 450 440 430 420 410 400 390 380 370 360 350





-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

480 470 460 450 440

COASTAL PLAIN:
(A) MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

19 + 25.00

(A) **COASTAL PLAIN:**
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

4:1 **ROADWAY EMBANKMENT** 4:1

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

19 + 00.00

(A) **COASTAL PLAIN:**
MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT 4:1 **ROADWAY EMBANKMENT** 4:1

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

18 + 75.00

COASTAL PLAIN:
(A) MOIST, SOFT, MODERATELY PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SANDY CLAY (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT 4:1 **ROADWAY EMBANKMENT** 4:1

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

18 + 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

480 470 460 450 440 430

Ⓐ **ARTIFICIAL FILL:** MOIST, LOOSE, SLIGHTLY PLASTIC, BROWN, SILTY FINE TO COARSE SAND WITH LITTLE GRAVEL (MIDDENDORF FORMATION)

Ⓑ WET, LOOSE, NON PLASTIC, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ WET, STIFF, HIGHLY PLASTIC, GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

4:1 4:1

11+50.00

COASTAL PLAIN:

Ⓑ WET, LOOSE, NON-PLASTIC, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ WET, STIFF, HIGHLY PLASTIC, GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

11+00.00

Ⓑ WET, LOOSE, NON PLASTIC, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

INTERSECTION CENTER LINE

INTERSECTION CENTER LINE

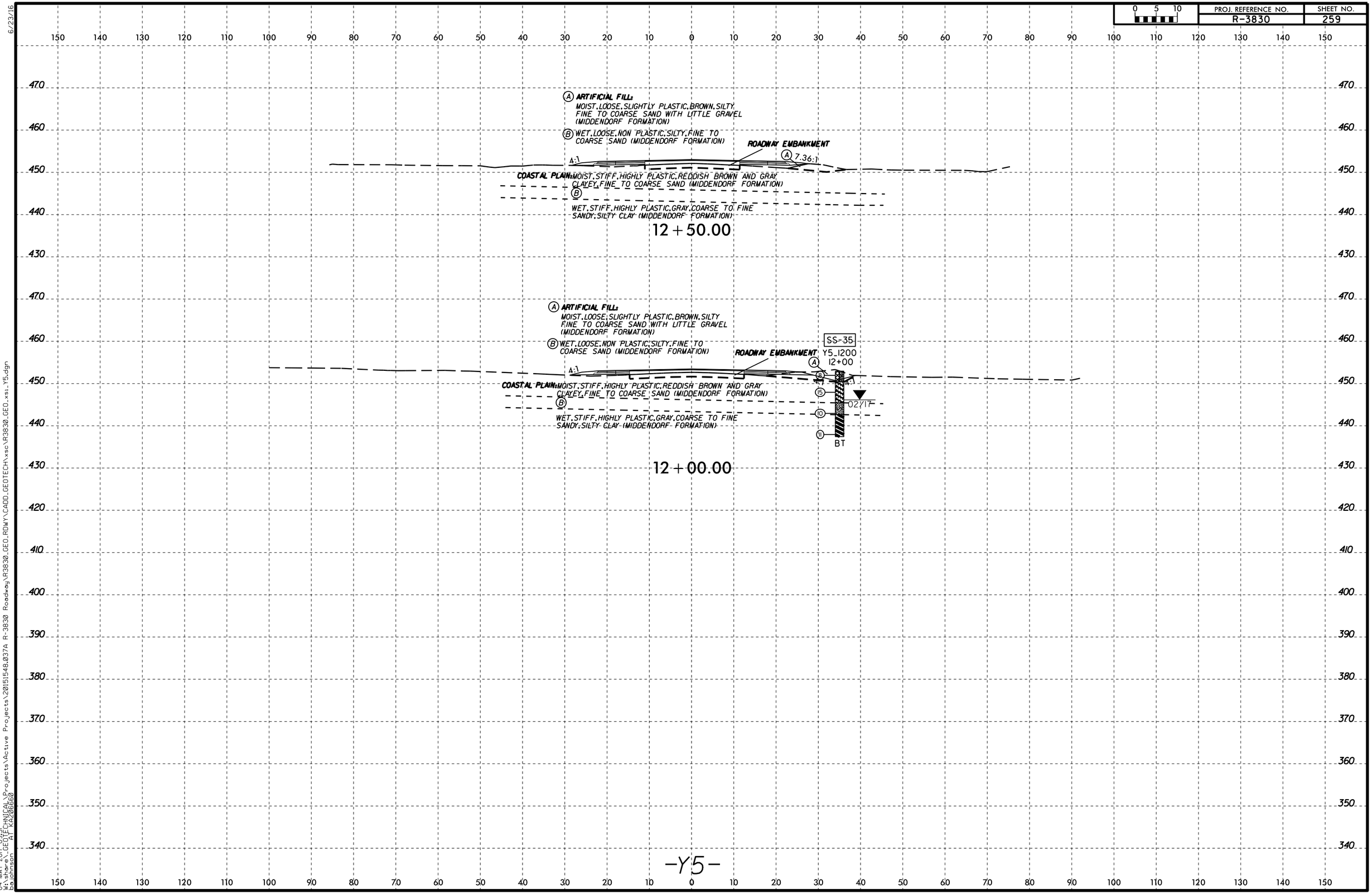
COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ WET, STIFF, HIGHLY PLASTIC, GRAY, COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

10+50.00

-Y5-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	259



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	260

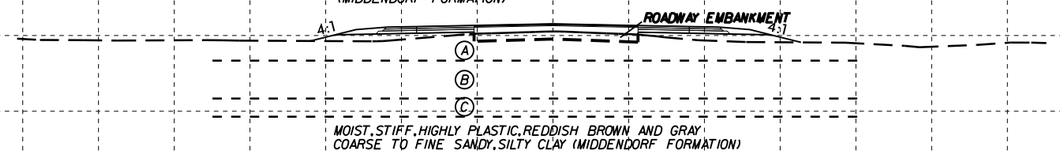
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

480 470 460 450 440 430 490 480 470 460 450 440 430 420

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

Ⓒ MOIST, LOOSE, HIGHLY PLASTIC, GRAY AND REDDISH BROWN, SILTY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)



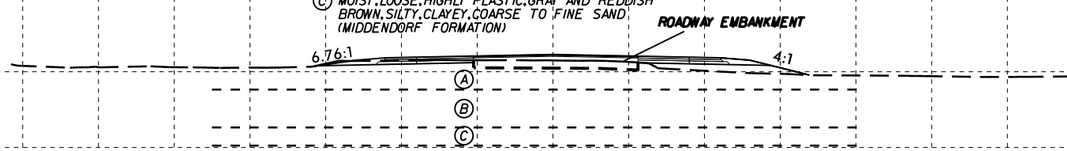
MOIST, STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

13 + 50.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE, SLIGHTLY PLASTIC, BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓑ MOIST, VERY STIFF, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND ORANGE, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

Ⓒ MOIST, LOOSE, HIGHLY PLASTIC, GRAY AND REDDISH BROWN, SILTY, CLAYEY, COARSE TO FINE SAND (MIDDENDORF FORMATION)



MOIST, STIFF, HIGHLY PLASTIC, REDDISH BROWN AND GRAY COARSE TO FINE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

13 + 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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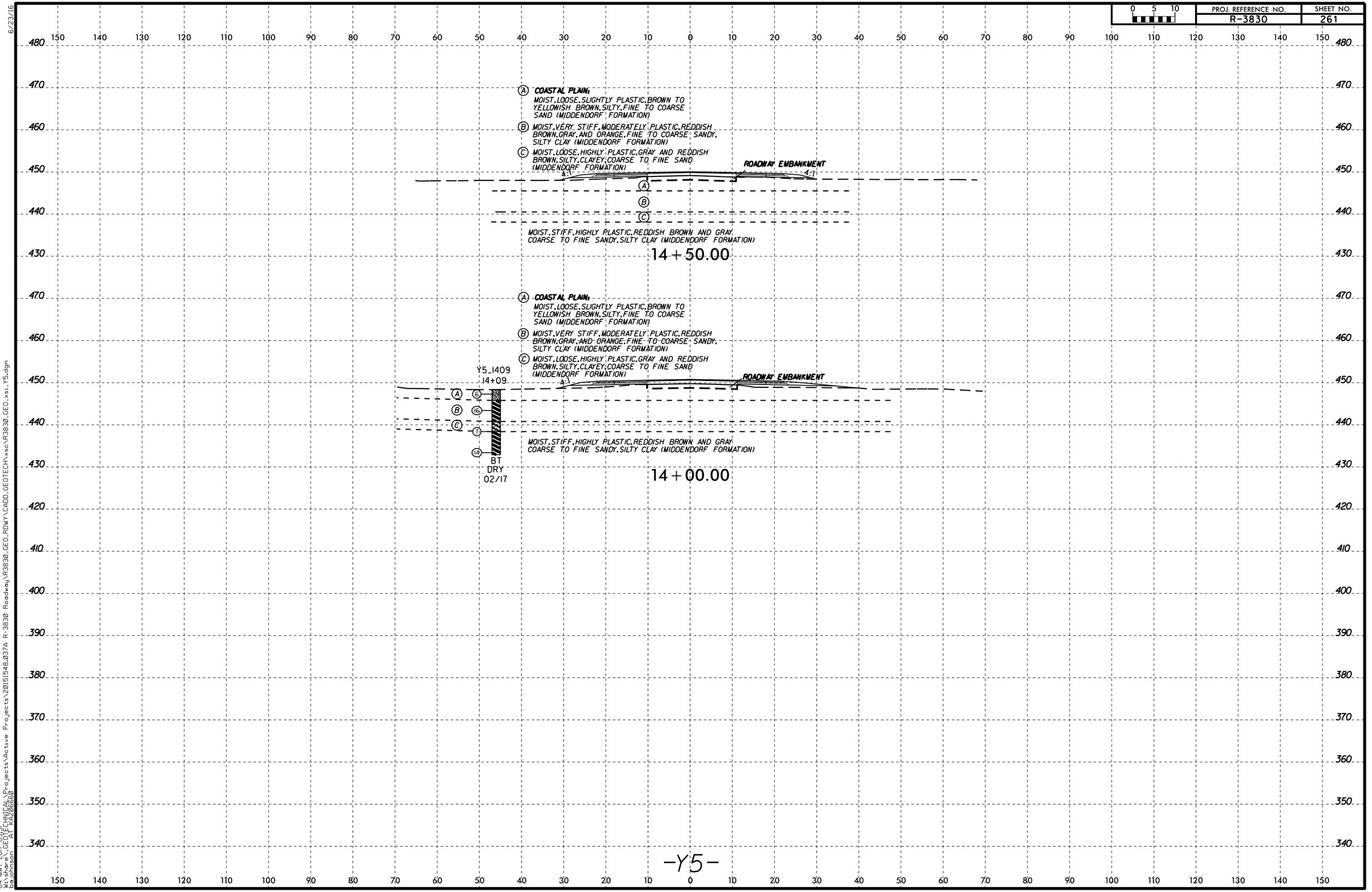
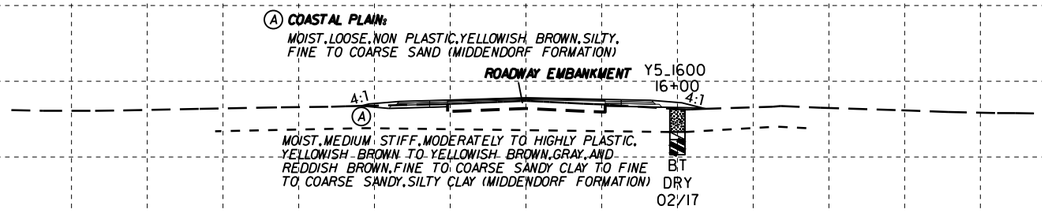
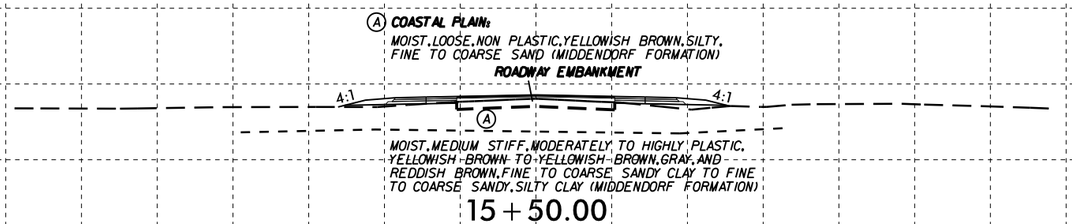
bajohnson
AT KH2066660





16 + 00.00



15 + 50.00

-Y5-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	263

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

460
450
440
430

Ⓐ COASTAL PLAIN:
MOIST, LOOSE, NON PLASTIC, YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

Ⓐ

MOIST, MEDIUM STIFF, MODERATELY TO HIGHLY PLASTIC, YELLOWISH BROWN TO YELLOWISH BROWN, GRAY, AND REDDISH BROWN, FINE TO COARSE SANDY CLAY TO FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

16 + 40.00

-Y5-

460
450
440
430

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

04-MAY-2017 09:31
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bjohnson AT KA20666

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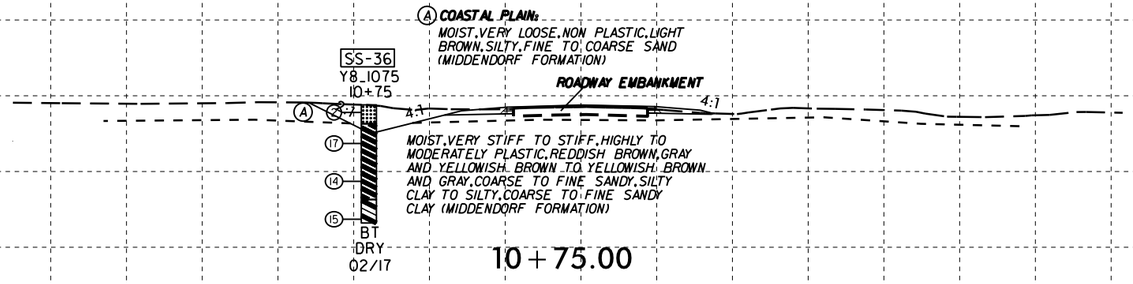

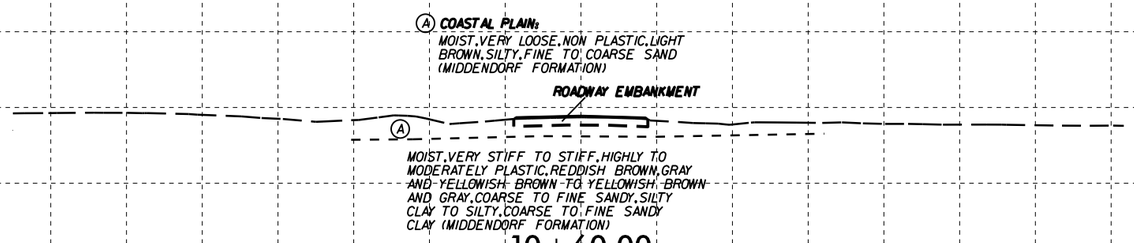

-Y8-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	265

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480 470 460 450 440

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

2:1 4:1 4:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

11+75.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

2:1 4:1 4:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

11+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

MOIST, VERY STIFF TO STIFF, HIGHLY TO MODERATELY PLASTIC, REDDISH BROWN, GRAY AND YELLOWISH BROWN TO YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY, SILTY CLAY TO SILTY, COARSE TO FINE SANDY CLAY (MIDDENDORF FORMATION)

11+25.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4:1 4:1

MOIST, VERY STIFF TO STIFF, HIGHLY TO MODERATELY PLASTIC, REDDISH BROWN, GRAY AND YELLOWISH BROWN TO YELLOWISH BROWN AND GRAY, COARSE TO FINE SANDY, SILTY CLAY TO SILTY, COARSE TO FINE SANDY CLAY (MIDDENDORF FORMATION)

11+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

470 460 450 440 430 420 410 400 390 380 370 360 350

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 — ROADWAY EMBANKMENT — 4:1

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

12+25.00

Ⓐ **COASTAL PLAIN:**
MOIST, LOOSE TO MEDIUM DENSE, NON PLASTIC TO SLIGHTLY PLASTIC, LIGHT BROWN TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Y8 1200
12+00

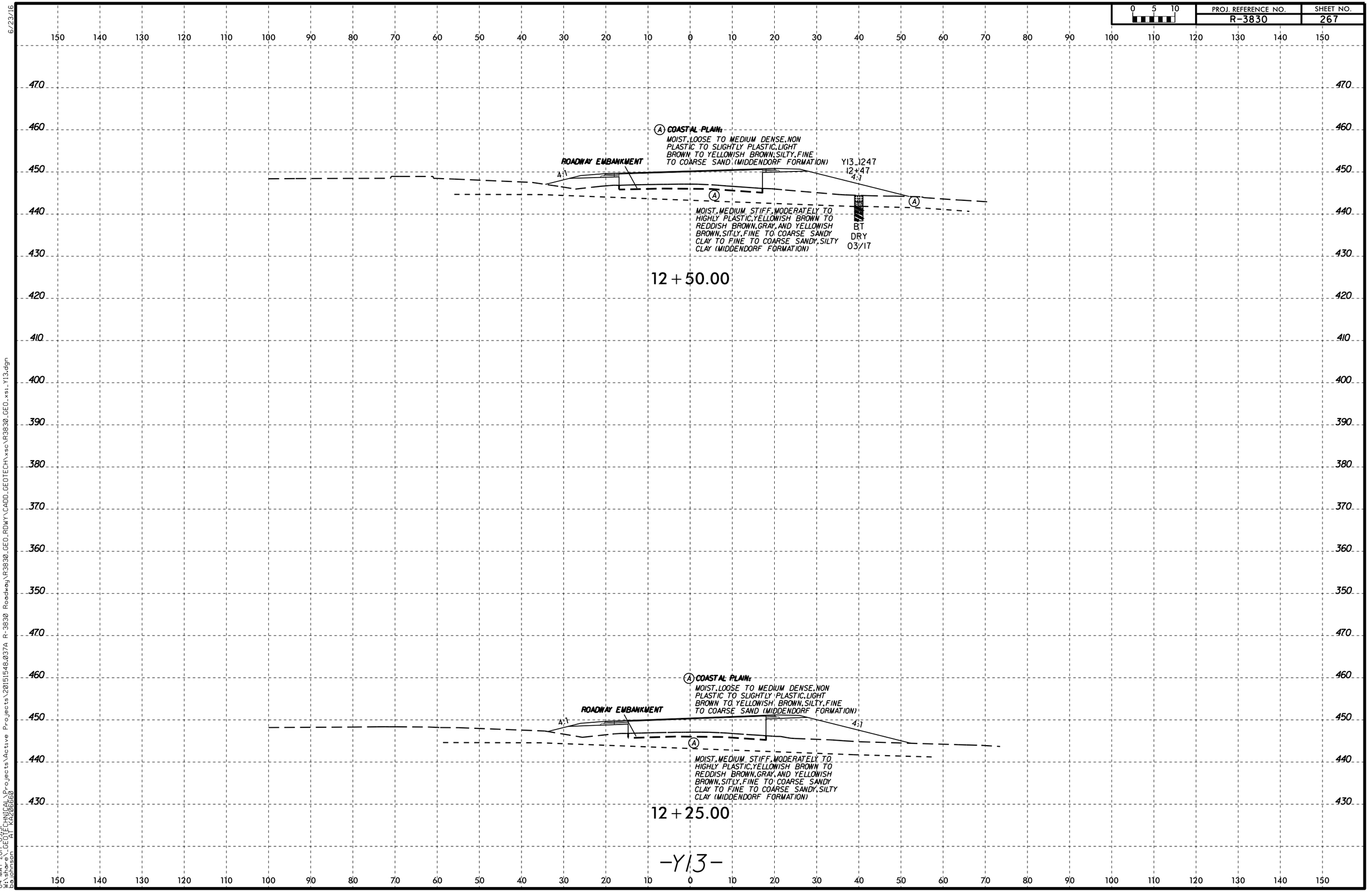
2:1 — 4:1 — ROADWAY EMBANKMENT — 4:1

BT 02/17

MOIST, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, CLAYEY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

12+00.00

-Y8-



6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	268

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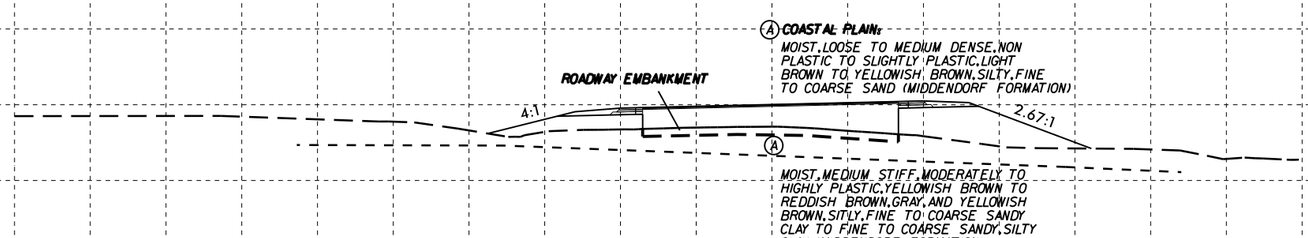
460
450
440
430



12+75.00

-Y13-

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bajohnson AT KAZOO660

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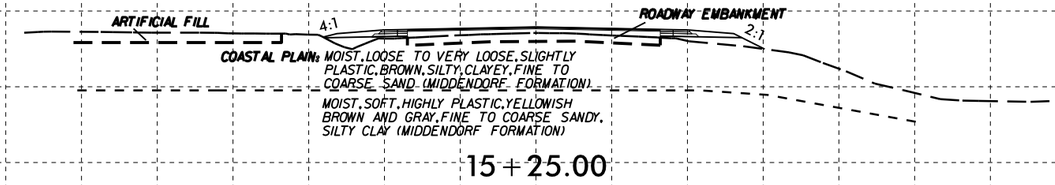
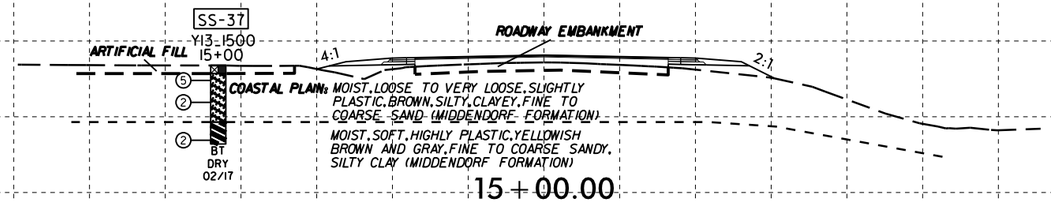
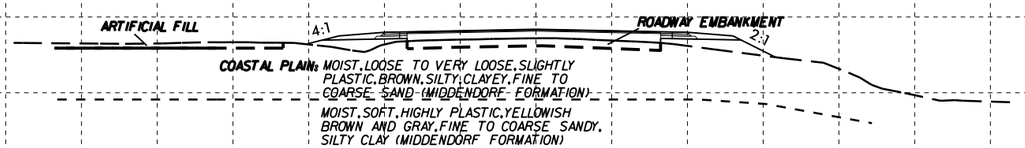
460 450 440 430



15+25.00



15+00.00



14+75.00

-Y13-

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

440 430 420 410 400 390

11+25.00

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4.06:1 6:1 6:1

MOIST,VERY STIFF,HIGHLY PLASTIC, REDDISH BROWN,GRAY,AND YELLOWISH BROWN,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY,CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

11+00.00

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

4.99:1 6:1 6:1

MOIST,VERY STIFF,HIGHLY PLASTIC, REDDISH BROWN,GRAY,AND YELLOWISH BROWN,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY,CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

10+90.00

Ⓐ **COASTAL PLAIN:** MOIST,VERY LOOSE,NON PLASTIC,BROWN TO LIGHT BROWN,SILTY,FINE TO COARSE SAND (MIDDENDORF FORMATION)

ROADWAY EMBANKMENT

MOIST,VERY STIFF,HIGHLY PLASTIC, REDDISH BROWN,GRAY,AND YELLOWISH BROWN,FINE TO COARSE SANDY,SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET,MEDIUM DENSE,MODERATELY PLASTIC,REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY,CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

-Y16-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	271

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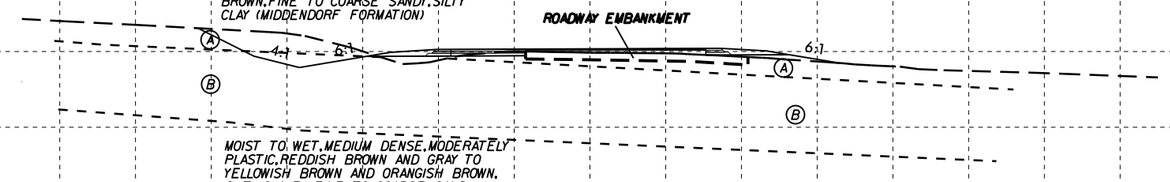
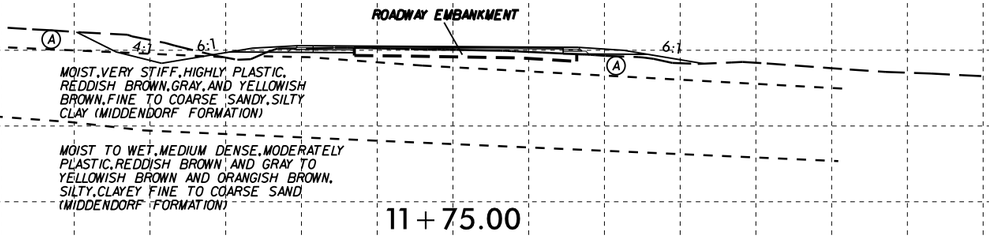
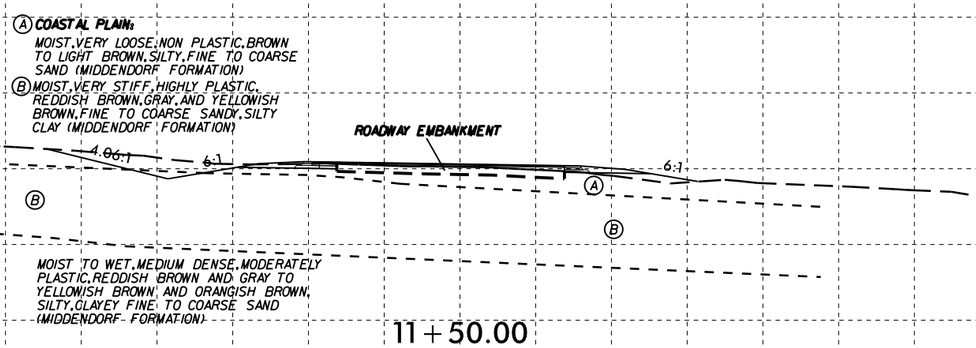
440 430 420 410 400 390







-Y16-

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

440 430 420 410 400 440 430 420 410 400 440 430 420 410 400 390

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 6:1

ROADWAY EMBANKMENT

6:1

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

12 + 75.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 6:1

ROADWAY EMBANKMENT

6:1

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

12 + 50.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 6:1

ROADWAY EMBANKMENT

6:1

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

12 + 25.00

-Y16-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	273

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1

6:1

6:1

ROADWAY EMBANKMENT

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

13+25.00

SS-38

Y16_1300

13+00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

2
16
10
14
17

02/17

BT

6:1

ROADWAY EMBANKMENT

6:1

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

13+00.00

-Y16-

6/23/16

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bjohnson AT KH206560

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

440 430 420 410 400 390

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

4:1 4:1

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

14 + 00.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓐ 4:1 6:1 6:1

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

13 + 75.00

Ⓐ **COASTAL PLAIN:**
MOIST, VERY LOOSE, NON PLASTIC, BROWN TO LIGHT BROWN, SILTY, FINE TO COARSE SAND (MIDDENDORF FORMATION)

Ⓐ 4:1 6:1 Ⓐ 6:1

ROADWAY EMBANKMENT

MOIST, VERY STIFF, HIGHLY PLASTIC, REDDISH BROWN, GRAY, AND YELLOWISH BROWN, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, REDDISH BROWN AND GRAY TO YELLOWISH BROWN AND ORANGISH BROWN, SILTY, CLAYEY FINE TO COARSE SAND (MIDDENDORF FORMATION)

13 + 50.00

-Y16-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	275

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

440 430 420 410 400 390 380 370 360 350 340 330 320 440 430 420 410 400

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT TO MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

Ⓐ
MOIST, MEDIUM DENSE, NON PLASTIC, PALE RED TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

S-18
L 17350
14+41

BT
DRY
02/17

14+50.00

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT TO MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN, REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

4:1

4:1

Ⓐ
MOIST, MEDIUM DENSE, NON PLASTIC, PALE RED TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

14+25.00

-Y16-

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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bjohnson AT KA20666

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3830	276

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

450
440
430
420
410
400

Ⓐ **COASTAL PLAIN:**
MOIST, SOFT TO MEDIUM STIFF, HIGHLY PLASTIC, YELLOWISH BROWN; REDDISH BROWN, AND GRAY, FINE TO COARSE SANDY, SILTY CLAY (MIDDENDORF FORMATION)

INTERSECTING GRADE LINE

Ⓐ

MOIST, MEDIUM DENSE, NON PLASTIC, PALE RED TO YELLOWISH BROWN, SILTY, FINE TO COARSE SAND WITH TRACE GRAVEL (MIDDENDORF FORMATION)

14 + 68.00

-Y16-

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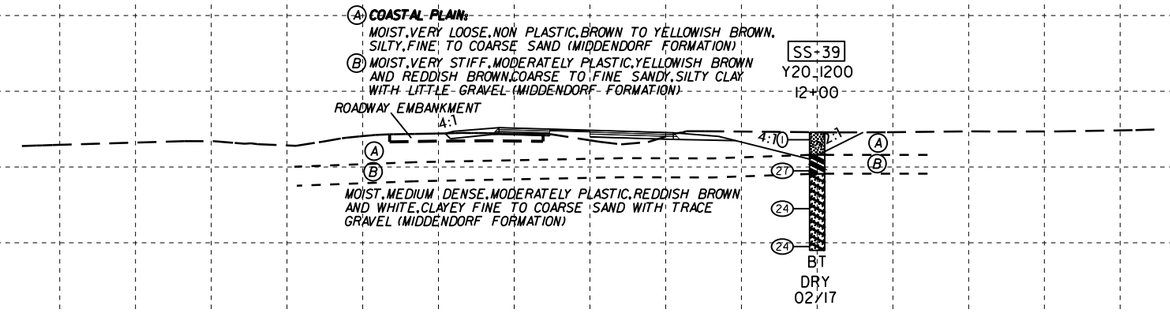
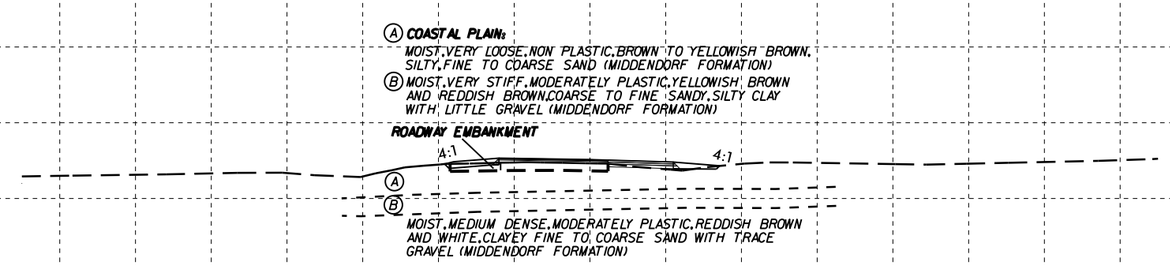
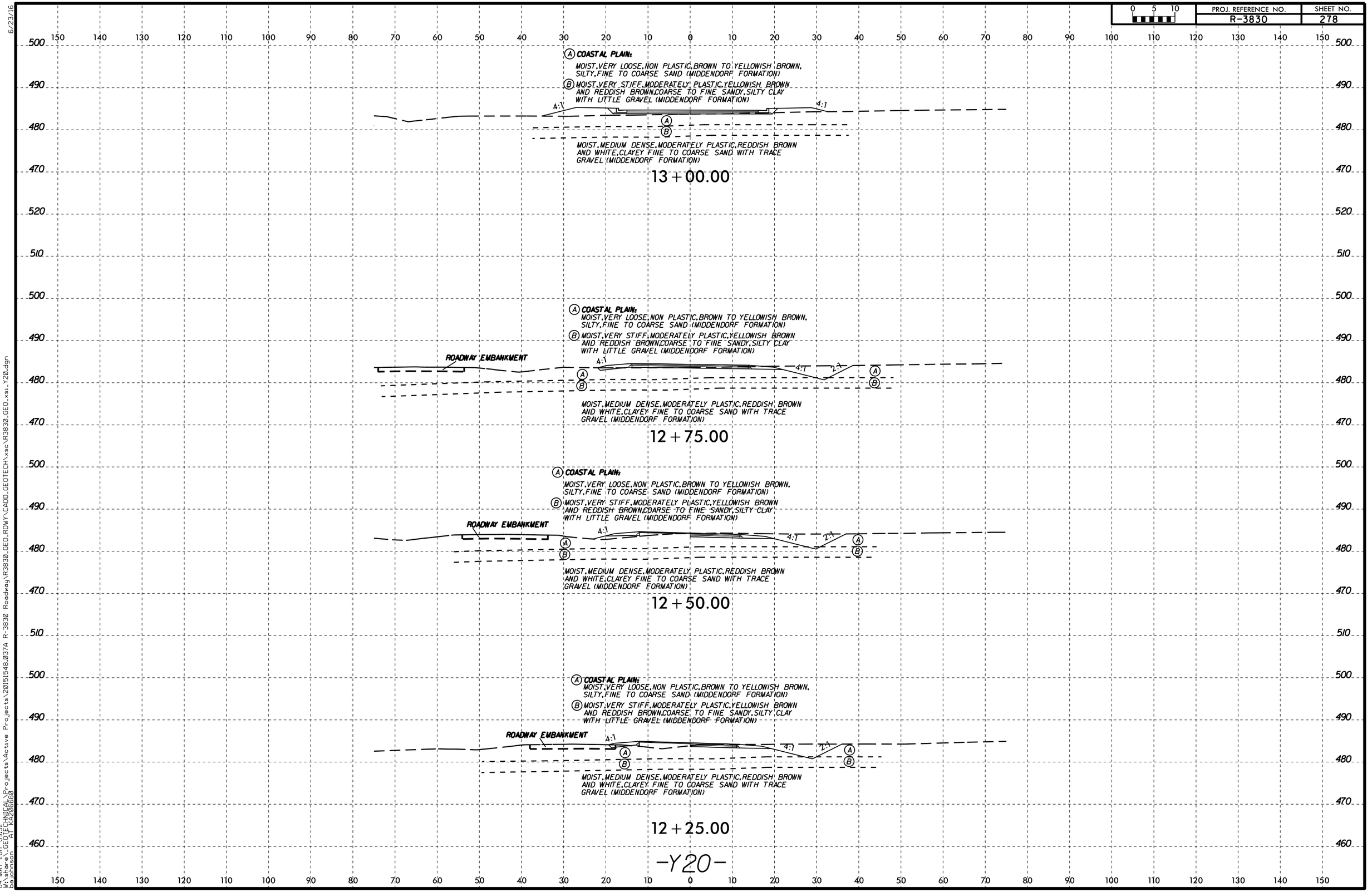


12+00.00



11+75.00

-Y20-



PROJECT REFERENCE NO.	SHEET NO.
R–3830	279

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A
LABORATORY RESULTS

REFERENCE: R–3830

PROJECT: 38887

TRW 5/12/17
INITIALS DATE

SUMMARY OF LABORATORY TEST DATA

TIP NO. R-3830
COUNTY: Lee
NC-42 from US-421 to SR-1579 (Main Street) in Sanford and along SR-1579 from NC-42 to SR-1538 (E. Harrington Avenue) in Broadway

									Atterberg Limits				Gradation Results						
Sample No.	Boring Number	Station	Offset	Alignment	Sample Depth (ft.)	Natural Moisture Content (%)	AASHTO Class.	N-Value (blows/ ft.)	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_1400	14+00	35' RT	-L-	3.9 - 5.4	--	A-7-6 (4)	19	41	16	25	0.1	99.0	68.8	37.2	42.7	22.0	7.4	28.0
SS-2	L_1566	15+66	64' RT	-L-	1.4 - 2.4	16.9	A-7-6 (6)	6	43	18	25	0.4	97.7	76.9	41.9	35.6	23.8	7.4	33.2
SS-3	L_1566	15+66	64' RT	-L-	3.9 - 5.4	--	A-7-6 (7)	22	44	17	27	0.5	98.3	76.2	45.1	36.3	20.1	9.4	34.2
SS-4	L_1850	18+50	40' LT	-L-	0.0 - 1.5	9.3	A-2-6 (0)	8	24	12	12	8.2	89.0	60.4	25.5	50.4	22.8	7.2	19.5
SS-5	L_2050	20+50	40' LT	-L-	3.9 - 5.4	15.0	A-7-6 (4)	25	44	17	27	0.1	99.4	79.5	35.5	39.2	26.7	3.4	30.7
SS-6	L_2450	24+50	40' LT	-L-	3.9 - 5.4	18.3	A-7-6 (15)	22	62	26	36	0.1	98.5	78.9	51.6	35.9	12.9	7.5	43.7
S-7	L_3965	39+65	59' RT	-L-	0.7 - 1.2	--	A-4 (4)	--	32	24	8	1.2	95.8	84.7	63.5	17.8	20.0	33.6	28.6
SS-8	L_4150	41+50	50' LT	-L-	1.0 - 2.5	--	A-7-6 (10)	10	55	26	29	0.1	98.5	78.7	48.8	33.4	18.7	7.0	40.9
SS-9	L_4755	47+55	52' RT	-L-	4.3 - 5.8	13.5	A-2-7 (1)	11	41	17	24	2.3	95.4	67.4	29.9	46.9	22.1	4.7	26.3
SS-10	L_7550	75+50	50' LT	-L-	0.0 - 1.5	--	A-2-6 (0)	3	23	12	11	8.0	87.9	68.8	30.7	36.3	31.3	8.5	24.0
S-11	L_7750	77+50	45' RT	-L-	1.5 - 2.0	--	A-7-5 (36)	--	77	47	30	0.0	99.8	97.9	89.3	3.4	10.0	35.8	50.8
SS-12	L_9150	91+50	40' RT	-L-	0.0 - 1.5	14.9	A-6 (4)	6	38	16	22	1.3	96.8	73.7	39.8	36.7	22.5	9.4	31.4
S-13	L_10550	105+50	50' LT	-L-	0.5 - 0.9	--	A-7-6 (9)	--	51	21	30	0.0	99.8	96.1	46.9	9.9	45.5	10.5	34.1
S-14	L_10750	107+50	60' RT	-L-	1.5 - 2.0	--	A-7-6 (16)	--	52	21	31	0.4	99.3	88.9	59.3	18.0	23.7	12.0	46.3
SS-15	L_12850	128+50	30' RT	-L-	4.0 - 5.5	18.9	A-2-7 (4)	28	61	31	30	2.0	95.2	53.2	35.1	54.4	8.7	5.9	31.0
SS-16	L_15350	153+50	40' RT	-L-	3.9 - 5.4	18.2	A-7-6 (4)	14	41	18	23	0.0	99.9	92.9	39.7	26.9	33.5	3.2	36.4
SS-17	L_16900	169+00	40' RT	-L-	4.2 - 5.7	8.5	A-2-4 (0)	10	24	14	10	0.3	95.9	56.4	27.1	53.3	18.8	9.6	18.3
S-18	L_17350	173+50	60' LT	-L-	0.5 - 0.9	--	A-7-5 (20)	--	63	32	31	0.0	99.8	88.6	64.8	20.3	17.7	14.3	47.7
SS-19	L_18350	183+50	37' LT	-L-	0.0 - 1.5	--	A-2-4 (0)	3	14	NP	NP	0.1	99.6	76.0	15.3	48.4	38.6	7.1	5.9
SS-20	L_18750	187+50	25' RT	-L-	0.0 - 1.5	20.8	A-6 (15)	2	37	20	17	0.3	98.8	96.7	87.3	2.5	9.5	59.1	29.0
SS-21	L_19150	191+50	35' LT	-L-	0.0 - 1.5	--	A-2-4 (0)	5	15	NP	NP	1.5	95.5	67.2	26.4	46.1	29.6	9.2	15.1
SS-22	L_19350	193+50	40' RT	-L-	3.1 - 4.6	12.9	A-7-6 (6)	27	55	21	34	0.4	97.6	63.3	38.1	45.5	15.7	8.6	30.2
SS-23	L_19550	195+50	37' RT	-L-	3.9 - 5.4	16.3	A-7-6 (6)	21	51	27	24	1.4	97.7	73.7	43.8	34.8	20.7	10.1	34.4
SS-24	L_20150	201+50	37' RT	-L-	4.1 - 5.6	29.3	A-7-6 (48)	8	83	28	55	0.0	100.0	96.3	79.8	4.7	15.6	18.9	60.9
SS-25	L_20300	203+00	37' RT	-L-	4.3 - 5.1	18.1	A-7-6 (8)	8	54	25	29	4.9	91.5	68.4	44.5	34.1	17.4	11.1	37.4
SS-26	L_21700	217+00	40' LT	-L-	3.9 - 5.4	19.2	A-7-6 (5)	31	48	25	23	0.6	96.6	68.1	41.0	42.8	17.1	10.8	29.3
SS-27	L_22100	221+00	37' LT	-L-	3.9 - 5.4	10.2	A-2-6 (3)	17	40	16	24	0.0	98.7	76.0	34.4	38.6	28.9	5.2	27.4
SS-28	L_23300	233+00	37' RT	-L-	0.0 - 1.5	8.8	A-2-6 (0)	13	38	20	18	28.1	61.8	37.0	19.5	50.1	18.4	6.6	24.9
SS-29	L_25300	253+00	40' LT	-L-	0.0 - 1.5	10.9	A-2-7 (4)	14	50	21	29	13.0	80.3	54.9	35.1	42.0	16.1	4.5	37.4
S-30	L_27100	271+00	30' LT	-L-	0.2 - 0.6	--	A-7-6 (12)	--	57	25	32	11.1	85.9	71.9	49.7	28.2	15.6	6.7	49.5
SS-31	L_29100	291+10	44' LT	-L-	0.0 - 1.5	--	A-6 (4)	9	36	15	21	6.8	91.3	74.1	40.4	32.8	25.0	6.7	35.5
SS-32	L_29913	299+13	46' LT	-L-	0.0 - 1.5	6.4	A-2-4 (0)	20	22	15	7	25.7	65.8	42.8	20.6	45.9	23.7	11.7	18.7
S-33	L_30300	303+00	30' LT	-L-	1.0 - 1.5	--	A-6 (6)	--	37	17	20	4.7	93.6	77.6	49.4	28.8	20.5	10.4	40.3
S-34	Y3_1800	18+00	40' LT	-Y3-	0.8 - 1.2	--	A-6 (5)	--	36	16	20	0.4	97.6	78.5	46.1	32.3	22.8	7.3	37.6
SS-35	Y5_1200	12+00	35' RT	-Y5-	4.0 - 5.5	17.2	A-2-7 (3)	15	48	20	28	0.0	99.8	67.5	34.5	54.2	11.3	3.1	31.4
SS-36	Y8_1075	10+75	28' LT	-Y8-	4.1 - 5.6	13.4	A-7-6 (9)	17	49	23	26	0.5	98.3	82.5	50.4	23.3	28.1	7.7	41.0
SS-37	Y13_1500	15+00	43' LT	-Y13-	1.0 - 2.5	10.9	A-2-6 (0)	5	31	16	15	1.3	94.2	53.2	25.1	54.7	18.9	6.0	20.5
SS-38	Y16_1300	13+00	40' LT	-Y16-	4.6 - 6.1	33.6	A-7-5 (35)	16	92	32	60	0.1	99.7	76.9	61.5	30.2	9.2	9.1	51.4
SS-39	Y20_1200	12+00	30' RT	-Y20-	4.1 - 5.6	--	A-7-5 (3)	27	49	31	18	9.6	81.0	61.8	39.5	34.9	18.2	8.5	38.4
SS-40	RW1-3	21+44	54' RT	-L-	0.0 - 1.5	--	A-6 (2)	7	34	14	20	4.1	93.6	68.6	35.8	42.7	20.9	4.7	31.7