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REFERENCE: R-5516

PROJECT: 45492

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5516	1	135

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	60+00 to 121+72	4-9	15-17
-LRA-	10+00 to 20+30	4-5, 10	18
-LRB-	10+00 to 22+58	5, 10	18
-YEBOI-	8+09 to 59+74	5-7, 10-11	19-22
-YWBOI-	10+00 to 38+75	5, 10-11	23
-Y09A-	10+00 to 28+73	12, 14	24
-Y10A-	11+85 to 40+75	8, 12-13	25-26
-Y11A-	18+00 to 23+70	13	26

GROSS SECTIONS		
LINE	STATION	SHEET
-L-	60+00 to 121+50	27-59
-LRA-	13+00 to 16+00	60-61
-LRB-	13+00 to 14+00	62
-YEBOI-	15+00 to 29+00	63-73
-YEBOI-	33+50 to 59+50	74-99
-YWBOI-	12+00 to 13+00	100
-Y09A-	10+00 to 28+00	101-117
-Y10A-	10+00 to 40+50	118-131
-Y11A-	18+00 to 23+50	132-134

DESCRIPTION	SHEET
SOIL TEST RESULTS	135

ROADWAY SUBSURFACE INVESTIGATION

COUNTY CRAVEN
 PROJECT DESCRIPTION INTERCHANGE FROM US 70
 TO SLOCUM RD AT CHERRY POINT MILITARY
 BASE

INVENTORY

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

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

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

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

S. CROCKETT

M. WITMORE

G. LANG

MID-ATLANTIC

INVESTIGATED BY S. CROCKETT

DRAWN BY S. CROCKETT

CHECKED BY G. LANG

SUBMITTED BY AECOM

DATE JULY 2016



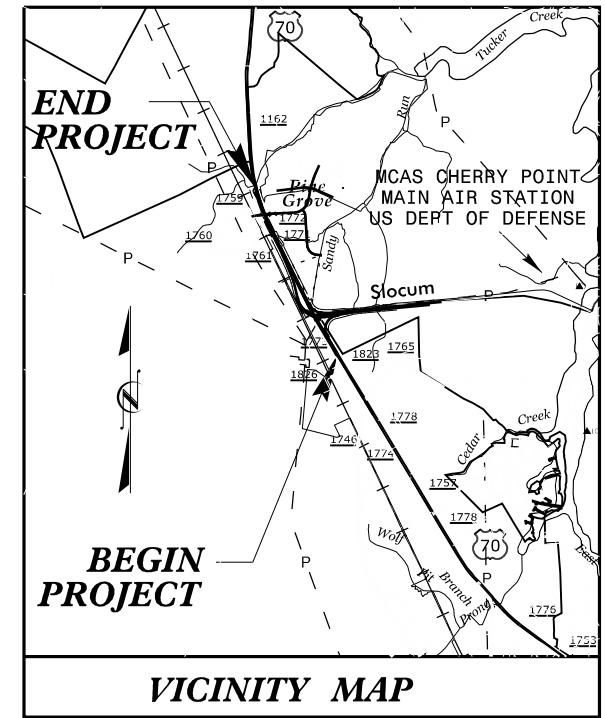
NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED
 Signed by Gabriel Lang 8/9/2016

SIGNATURE	DATE
SIGNATURE	DATE

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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										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.										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:										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 DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (IN OR 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 (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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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										PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA										SPRING OR SEEP										MISCELLANEOUS SYMBOLS										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION					DIP & DIP DIRECTION OF ROCK STRUCTURES					SOIL SYMBOL					TEST BORING					ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT					AUGER BORING					INFERRED SOIL BOUNDARY					CORE BORING					INFERRED ROCK LINE					MONITORING WELL					ALLUVIAL SOIL BOUNDARY					PIEZOMETER INSTALLATION					SPT N-VALUE					SLOPE INDICATOR INSTALLATION					CONE PENETROMETER TEST					SOUNDING ROD					TEST BORING WITH CORE					SPT N-VALUE					<table border="1"> <tr> <th colspan="10">ROCK HARDNESS</th> </tr> <tr> <td colspan="5">VERY HARD</td> <td colspan="5">CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. 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See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



TIP PROJECT: R-5516

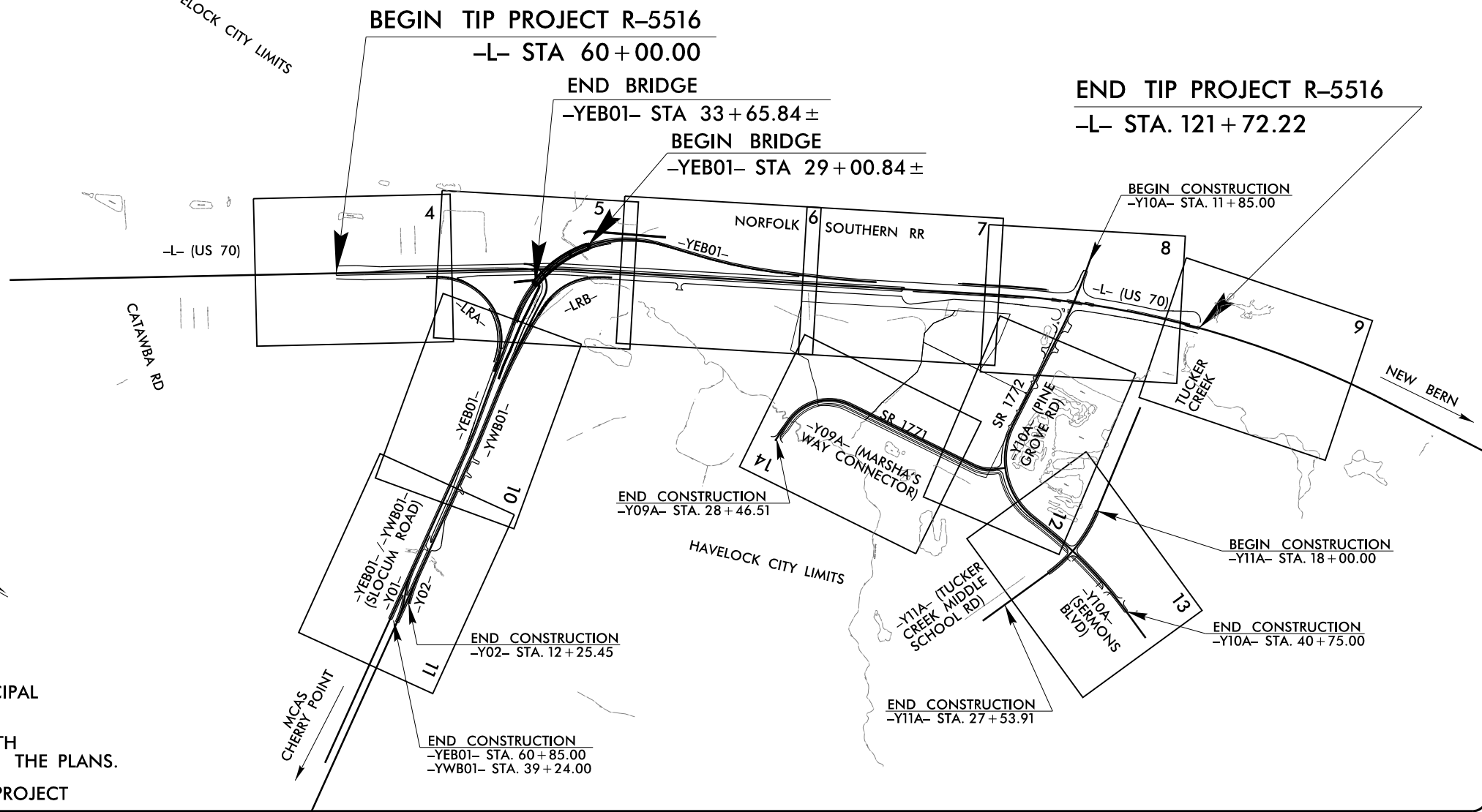
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CRAVEN COUNTY

LOCATION: INTERCHANGE FROM US 70 TO SLOCUM ROAD AT CHERRY POINT MILITARY BASE

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT, STRUCTURE, AND SIGNALS

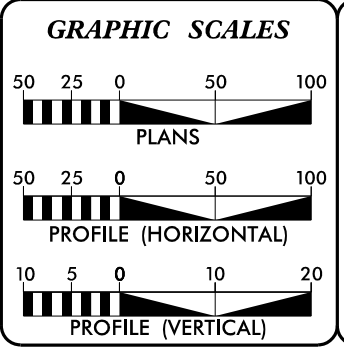
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5516	3	135
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45492.1.1	NHS-0070(154)	P.E.	
45492.2.1	NHS-0070(154)	RW & UTIL.	

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PORTIONS OF THIS PROJECT ARE WITHIN THE MUNICIPAL BOUNDARY OF THE CITY OF HAVELOCK.
THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
METHOD "III" CLEARING SHALL BE USED ON THIS PROJECT

CONTRACT:



DESIGN DATA

ADT 2017 =	32,900
ADT 2040 =	38,100
K =	10 %
D =	70 %
T =	12 % *
V =	60 MPH
* TTST 2 % DUAL 10%	
FUNC CLASS =	PRINCIPAL ARTERIAL STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5516 =	1.169 MILES
LENGTH STRUCTURE TIP PROJECT R-5516 =	0.000 MILES
TOTAL LENGTH TIP PROJECT R-5516 =	1.169 MILES

Prepared in the Office of:

AECOM
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: June 30, 2015

LETTING DATE: June 20, 2017

NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

LEN HILL, PE
PROJECT ENGINEER

TOM HILDEBRAND, PE
PROJECT DESIGN ENGINEER

GARY LOVERING, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



USER: Stephen_Crockett
DATE: 5/14/2016
TIME: 10:27:44 AM
DWG: P:\Users\Stephen_Crockett\Projects\NC DOT\6039720_1206289860_R-5516_Craven\40_Deliverables\5516_GED_ROW\NC DOT\6039720_1206289860_R-5516.dwg



AECOM – North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Tel: 919-461-1100
Fax: 919-461-1415

Areas of Special Geotechnical Interest

July 14, 2016

STATE PROJECT: 45492.1.1 (R-5516)
F.A. PROJECT: NHS-0070 (154)
COUNTY: Craven

DESCRIPTION: Interchange from US 70 to Slocum Rd at Cherry Point Military Base

SUBJECT: Geotechnical Report –Inventory

Project Description

The project consists of the construction of a new flyover interchange at the intersection of US 70 and Slocum Rd at Cherry Point Military Base in Havelock, NC and associated roadway construction involving the widening of US 70 and two new roadway alignments connecting nearby residential areas to US 70. The project begins at US 70 near Slocum Rd and extends approximately 6,200 feet northwest to Tucker Creek, and approximately 2,700 feet east along Slocum Rd in Craven County. The existing US 70 within the project limits consists of a divided four-lane asphalt paved section. The proposed facility consists of a three span bridge crossing US 70 and extending along Slocum Rd to the Cherry Point MCAS Base gate entrance and two new alignments consisting of two-lane paved sections connecting surrounding residential neighborhoods to US 70.

A geotechnical investigation was conducted between December of 2014 and April of 2015. Borings were advanced utilizing an ATV mounted Diedrich D-25 and a trailer mounted CME 45-C drill machines with automatic hammers or by hand auger. Standard Penetration Tests were performed at selected locations and additional borings were advanced using hand augers. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis. The following alignments were investigated.

<u>Line</u>	<u>Station(±)</u>
-L-	60+00 to 121+72
-LRA-	10+00 to 20+30
-LRB-	10+00 to 22+58
-YEB01-	8+09 to 59+74
-YWB01-	10+00 to 38+75
-Y09A-	10+00 to 28+73
-Y10A-	11+85 to 40+75
-Y11A-	18+00 to 23+70

- 1) Clay Soils: Clay soils were encountered on the project at the following intervals.

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-L-	60+00 to 77+10	LT to RT
-L-	78+40 to 115+50	LT to RT
-L-	117+65 to 121+72	LT to RT
-LRA-	10+00 to 20+30	LT to RT
-LRB-	10+00 to 11+35	LT to RT
-LRB-	12+30 to 22+58	LT to RT
-YEB01-	8+09 to 16+90	LT to RT
-YEB01-	18+40 to 59+74	LT to RT
-YWB01-	10+00 to 23+05	LT to RT
-YWB01-	25+10 to 32+70	LT to RT
-YWB01-	33+65 to 38+75	LT to RT
-Y09A-	10+00 to 19+30	LT to RT
-Y09A-	24+55 to 25+50	LT to RT
-Y09A-	27+30 to 27+90	LT to RT
-Y10A-	10+00 to 40+75	LT to RT
-Y11A-	18+00 to 23+70	LT to RT

- 2) Loose/Soft Soils: Soils with "soft" or "very loose" densities (N-value < 4) were encountered on the project and may impact subgrade or embankment construction. These soils were found at the following locations:

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets (ft)</u>
-L-	76+90 to 83+00	55 RT to 150 RT
-L-	92+00 to 94+00	50 LT to 110 LT
-L-	100+75 to 101+75	90 RT to 130 RT
-L-	102+75 to 105+00	65 RT to 110 RT
-L-	109+00 to 110+50	55 RT to 115 RT
-L-	111+25 to 113+00	85 LT to 110 RT
-L-	118+75 to 121+50	65 LT to 115 LT
-LRA-	14+00 to 15+50	70 LT to 60 RT
-YEB01-	15+00 to 18+50	50 LT to 60 RT
-YWB01-	33+00 to 34+25	35 RT to 75 RT
-Y09A-	12+50 to 13+50	50 LT to 30 RT
-Y09A-	19+75 to 21+25	75 LT to 55 RT.
-Y09A-	26+25 to 27+50	90 LT to 55 RT

- 3) **Organic Soils:** The following areas on the project contained organic matter and wood debris (>5%).

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-L-	119+50 to 121+50	70 LT to 150 LT
-Y09A-	19+80 to 20+85	LT to 60 RT
-Y09A-	26+35 to 27+30	LT to RT

- 4) **Artificial Fill:** Several areas of artificial fill are present throughout the project corridor and are related to soil driveways and an abandoned railway embankment. An abandoned construction and demolition landfill is present on alignment -Y10A- from stations 26+20 to 34+65.

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-L-	76+90 to 78+60	55 RT to 150 RT
-YEB01-	39+45 to 59+75	20 LT to 6 RT
-Y10A-	26+20 to 34+65	70 LT to 150 RT
-Y11A-	20+30 to 23+70	10 LT to 80 RT

- 5) **Groundwater:** All alignments within the project exhibit a high water table, seasonal high ground water or the potential for groundwater related construction problems:

within a berm adjacent to -Y11A-. These soils consisted of brown, orange, and gray, very soft to stiff, sandy clay (A-6) and gray, orange, and brown, very loose to medium dense, silty and clayey sand (A-2-4, A-2-6).

Alluvial deposits are located within the floodplain of Tucker Creek and Sandy Run and consist of gray and black, very soft to soft sandy clay (A-6), and gray, brown, and orange, very loose to loose, silty and clayey sand (A-2-4, A-2-6). Organic soils were encountered within some of the alluvial deposits and consisted of gray and black, very soft to soft, sandy clay (A-6) with little organic matter, brown, very loose to loose, moderately organic clayey sand (A-2-6), and black, very soft, muck. Organic content ranged from 6.3 to 43.0 percent.

Coastal Plain soils were encountered throughout the project. These soils consist primarily of brown and gray, sandy clay (A-6, A-7) with Liquid Limit ranging from 24 to 45 and Plasticity Index ranging from 11 to 29, to brown and gray, very loose to dense, silty and clayey sand (A-1-b, A-2-4, A-2-6).

Rock Properties

Coastal Plain Sedimentary rock in the form of sandy limestone was encountered during the roadway investigation at elevations ranging from -32.7 to -74.4 feet.

Ground Water

Groundwater was encountered in the majority borings and ranges in elevation from 2.1 to 27.2 feet. Groundwater may fluctuate with seasonal precipitation.

Physiography and Geology

The project is located in the Coastal Plain Physiographic Province. Land use along the project corridor consists of residential, commercial businesses, military property, and woods. Geologically, the project is located within the Duplin Formation (Tpy). Tucker Creek, Sandy Run and a few ditches drain the project towards the east and northeast into Slocum Creek.

Soil Properties

Soils encountered at the project site include roadway embankment, artificial fill, alluvial, and coastal plain materials.

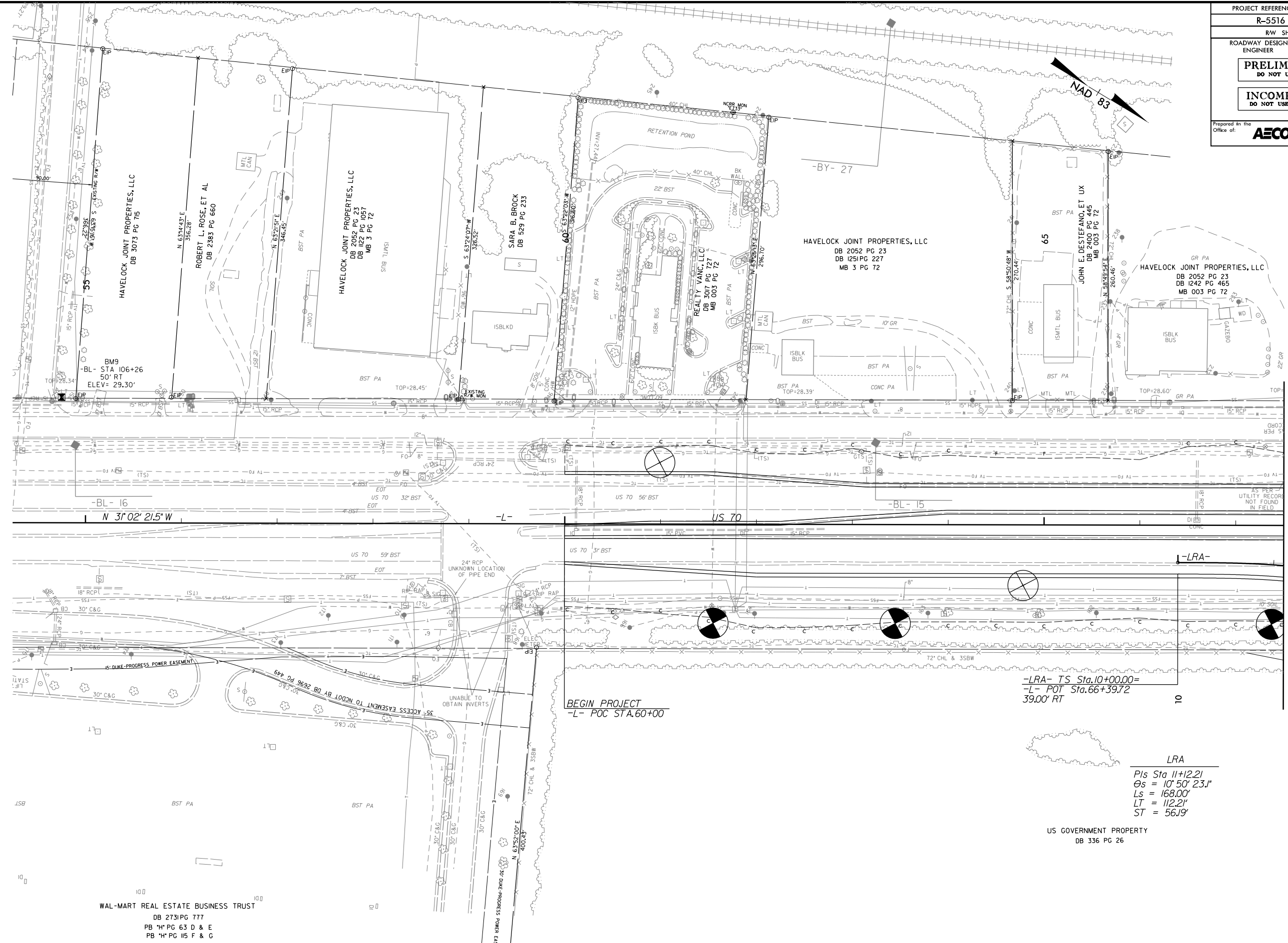
Roadway Embankment soils are present along the existing US-70, Slocum Rd, Old US 70, and Sermons Blvd. These soils consist of brown and gray, soft to stiff, sandy clay (A-6) and orange, gray, and brown, very loose to loose, clayey sand (A-2-6).

Artificial fill materials were encountered adjacent to the existing US-70, along an abandoned railroad easement adjacent to Slocum Rd, within the construction and demolition landfill located along -Y10A-, and

Prepared by,

Stephen Crockett, EI
Geotechnical Professional

PROJECT REFERENCE NO.	SHEET NO.
R-5516	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of:	NC FIRM LICENSE No. F-0342 70 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)
AECOM	



REVISIONS

MATCHLINE -L- STA 67 + 50.00
SEE PLAN SHEET 5

USER: Stephen Crockett
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WAL-MART REAL ESTATE BUSINESS TRUST
 DB 2731 PG 777
 PB *H* PG 63 D & E
 PB *H* PG 115 F & G

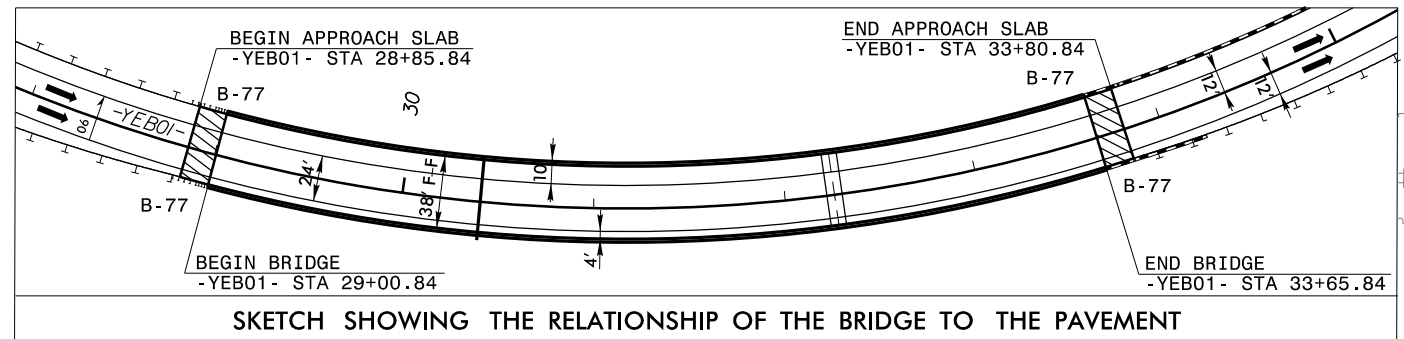
BEGIN PROJECT
 -L- POC STA.60+00

-LRA- TS Sta.10+00.00=
 -L- POT Sta.66+39.72
 39.00' RT

LRA
 PIs Sta 11+12.21
 Os = 10' 50" 23.1"
 Ls = 168.00'
 LT = 112.21'
 ST = 56.19'

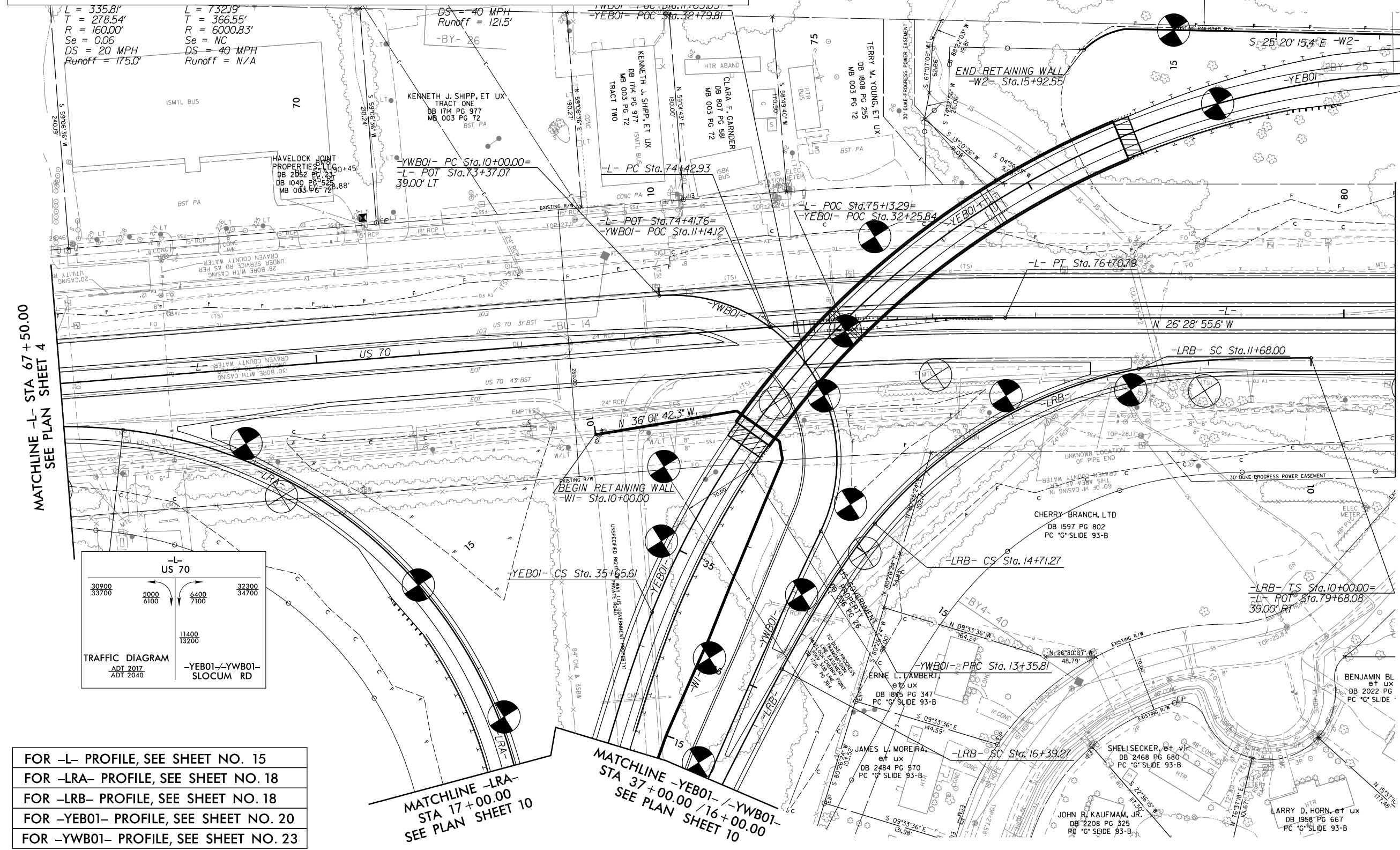
US GOVERNMENT PROPERTY
 DB 336 PG 26

FOR -L- PROFILE, SEE SHEET NO. 15-17
 FOR -LRA- PROFILE, SEE SHEET NO. 18



-YEB01-
 $PI Sta 31+10.10$ $Pls Sta 36+13.64$
 $\Delta = 76^{\circ}29'46.8\" (LT)$ $\Theta s = 4^{\circ}57'08.4\"$
 $D = 6^{\circ}52'41.7\"$ $Ls = 144.00'$
 $L = 1112.15'$ $LT = 96.04'$
 $T = 656.64'$ $ST = 48.03'$
 $R = 833.00'$
 $Se = 0.06$
 $DS = 50-MPH$
 $Runoff = 144.0'$

$L = 335.81'$ $L = 732.19'$
 $T = 278.54'$ $T = 366.55'$
 $R = 160.00'$ $R = 6000.83'$
 $Se = 0.06$ $Se = NC$
 $DS = 20 MPH$ $DS = 40 MPH$
 $Runoff = 175.0'$ $Runoff = N/A$



MATCHLINE -L- STA 67 + 50.00
SEE PLAN SHEET 4

MATCHLINE -L- STA 80 + 50.00
SEE PLAN SHEET 6

-L- US 70			
30900	5000	6400	32300
33700	6100	7100	34700
11400 13200			
TRAFFIC DIAGRAM			
ADT 2017		-YEB01-/-YWB01- SLOCUM RD	
ADT 2040			

- FOR -L- PROFILE, SEE SHEET NO. 15
- FOR -LRA- PROFILE, SEE SHEET NO. 18
- FOR -LRB- PROFILE, SEE SHEET NO. 18
- FOR -YEB01- PROFILE, SEE SHEET NO. 20
- FOR -YWB01- PROFILE, SEE SHEET NO. 23

MATCHLINE -LRA- STA 17 + 00.00
SEE PLAN SHEET 10

MATCHLINE -YEB01- / -YWB01- STA 37 + 00.00 / 16 + 00.00
SEE PLAN SHEET 10

REVISIONS

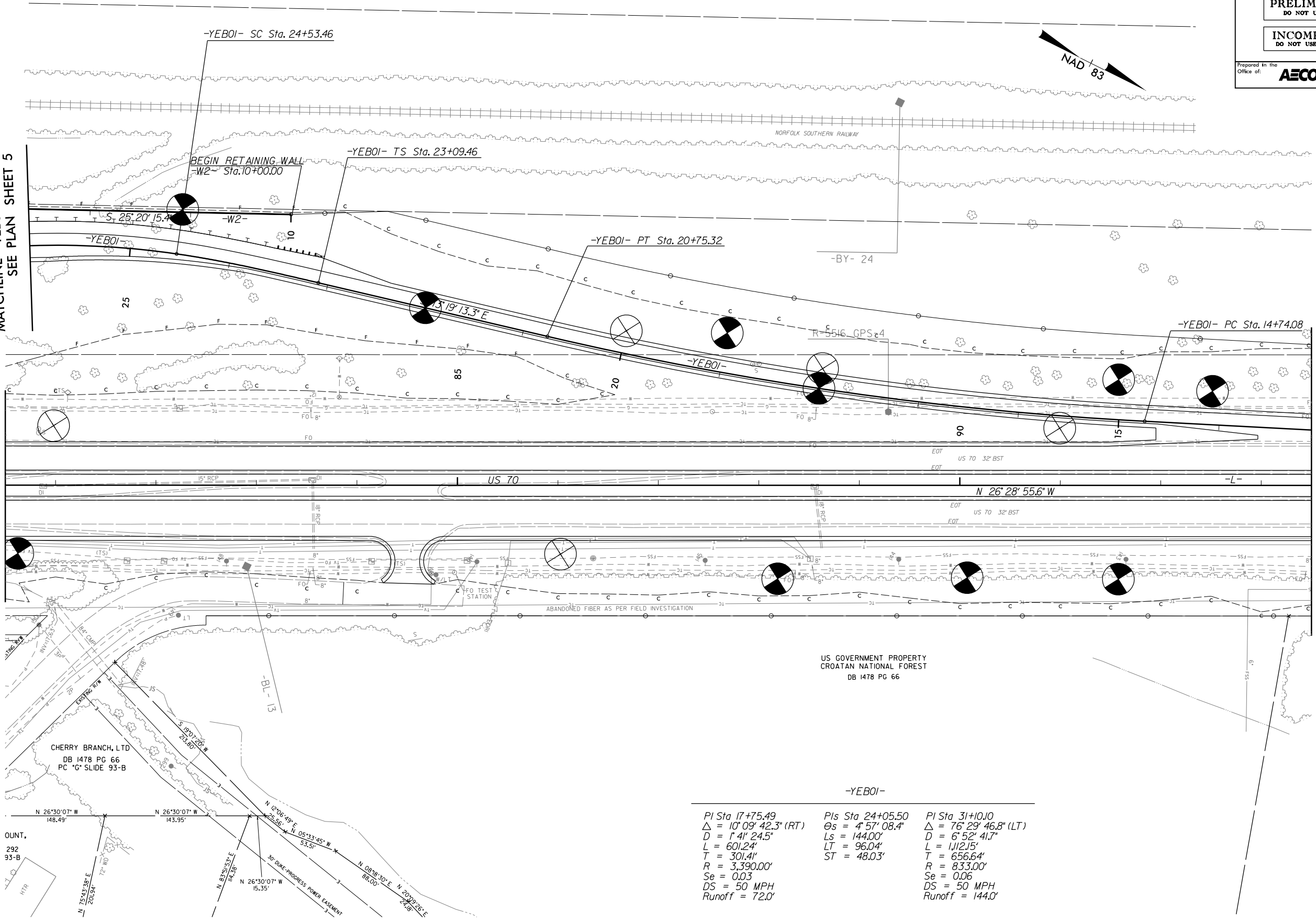
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B.17/99

MATCHLINE -YEB01- STA 26+00.00
SEE PLAN SHEET 5

MATCHLINE -L- STA 80+50.00
SEE PLAN SHEET 5

MATCHLINE -L- /-YEB01-
STA 93+50.00 /13+07.88
SEE PLAN SHEET 7



CHERRY BRANCH, LTD
DB 1478 PG 66
PC *G* SLIDE 93-B

US GOVERNMENT PROPERTY
CROATAN NATIONAL FOREST
DB 1478 PG 66

-YEB01-		
PI Sta 17+75.49	PIs Sta 24+05.50	PI Sta 31+10.10
$\Delta = 10^{\circ}09'42.3"$ (RT)	$\Theta_s = 4^{\circ}57'08.4"$	$\Delta = 76^{\circ}29'46.8"$ (LT)
$D = 1^{\circ}41'24.5"$	$L_s = 144.00'$	$D = 6^{\circ}52'41.7"$
$L = 601.24'$	$LT = 96.04'$	$L = 1,112.15'$
$T = 301.41'$	$ST = 48.03'$	$T = 656.64'$
$R = 3,390.00'$		$R = 833.00'$
$Se = 0.03$		$Se = 0.06$
$DS = 50$ MPH		$DS = 50$ MPH
$Runoff = 72.0'$		$Runoff = 144.0'$

FOR -L- PROFILE, SEE SHEET NOS. 15 & 16
FOR -YEB01- PROFILE, SEE SHEET NOS. 19 & 20

REVISIONS

USER: Stephen_Crockett
DATE: 5/14/2016
TIME: 12:09:10 PM
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PROJECT REFERENCE NO.	SHEET NO.
R-5516	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of:	NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)

B.17/99

-YEB01-
 PI Sta 10+00.08
 $\Delta = 3' 00'' 00.0''$ (RT)
 $D = 0' 47'' 05.5''$
 $L = 382.23'$
 $T = 191.6'$
 $R = 7,300.00'$
 $Se = 0.06$
 $DS = 50$ MPH
 Runoff = 60.0'

US GOVERNMENT PROPERTY
 CROATAN NATIONAL FOREST

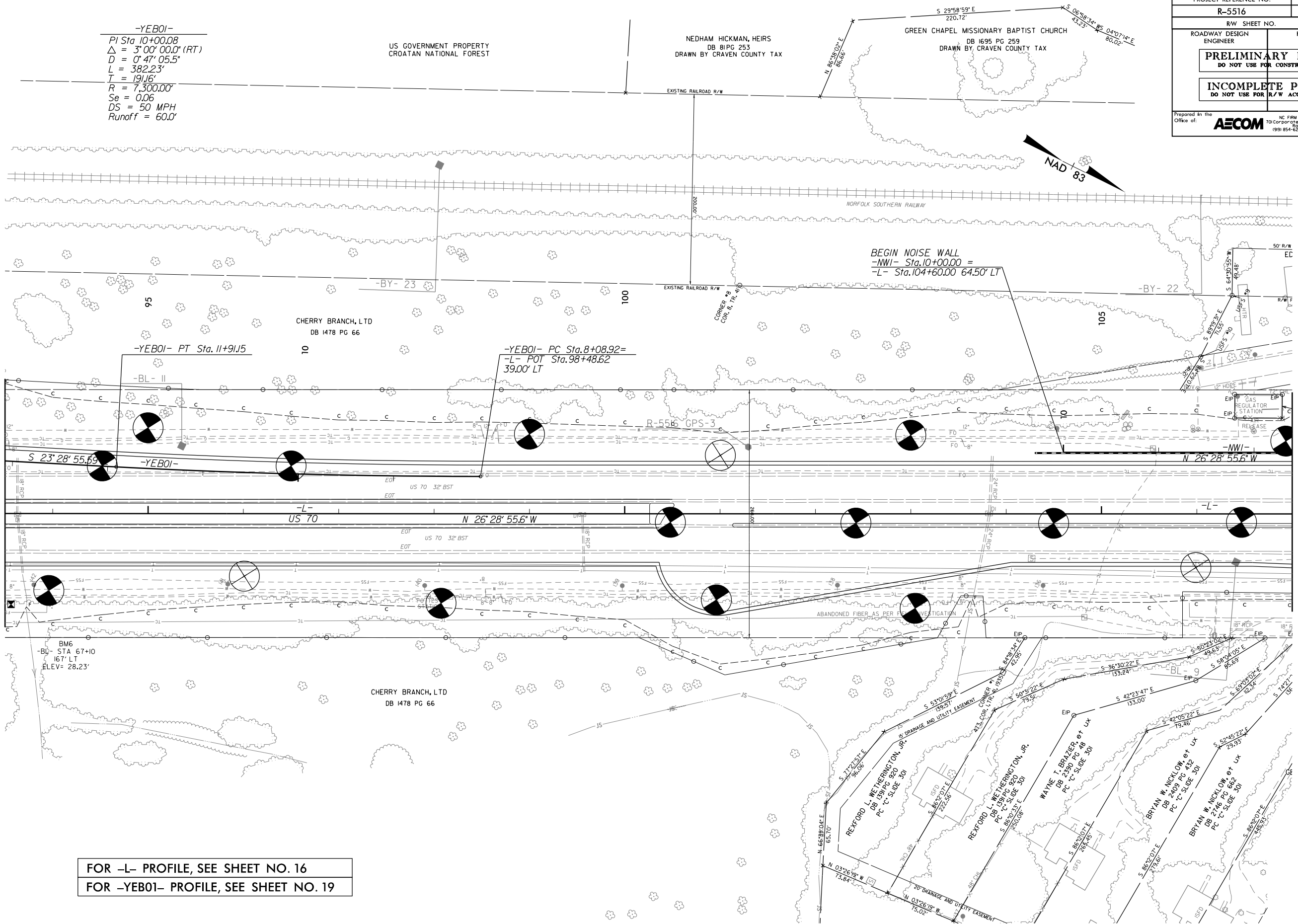
NEDHAM HICKMAN, HEIRS
 DB 81 PG 253
 DRAWN BY CRAVEN COUNTY TAX

GREEN CHAPEL MISSIONARY BAPTIST CHURCH
 DB 1695 PG 259
 DRAWN BY CRAVEN COUNTY TAX

NAD 83

MATCHLINE -L- /-YEB01-
 STA 93+50.00 / STA 13+07.88
 SEE PLAN SHEET 6

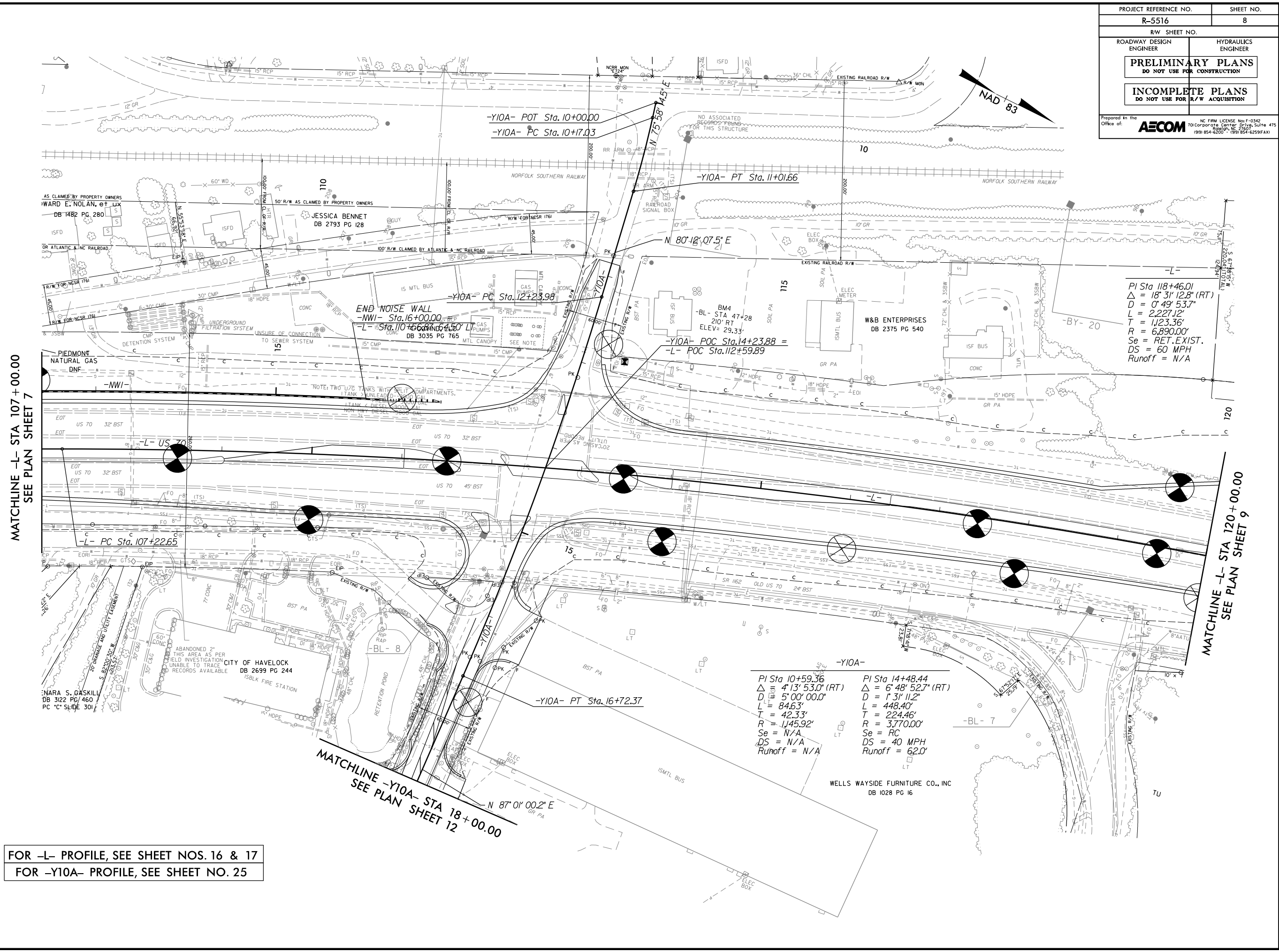
MATCHLINE -L- STA 107+00.00
 SEE PLAN SHEET 8



FOR -L- PROFILE, SEE SHEET NO. 16
 FOR -YEB01- PROFILE, SEE SHEET NO. 19

REVISIONS

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PI Sta 118+46.01
 $\Delta = 18' 31'' 12.8'' (RT)$
 $D = 0' 49'' 53.7''$
 $L = 2,227.12'$
 $T = 1,123.36'$
 $R = 6,890.00'$
 $Se = RET. EXIST.$
 $DS = 60 MPH$
 $Runoff = N/A$

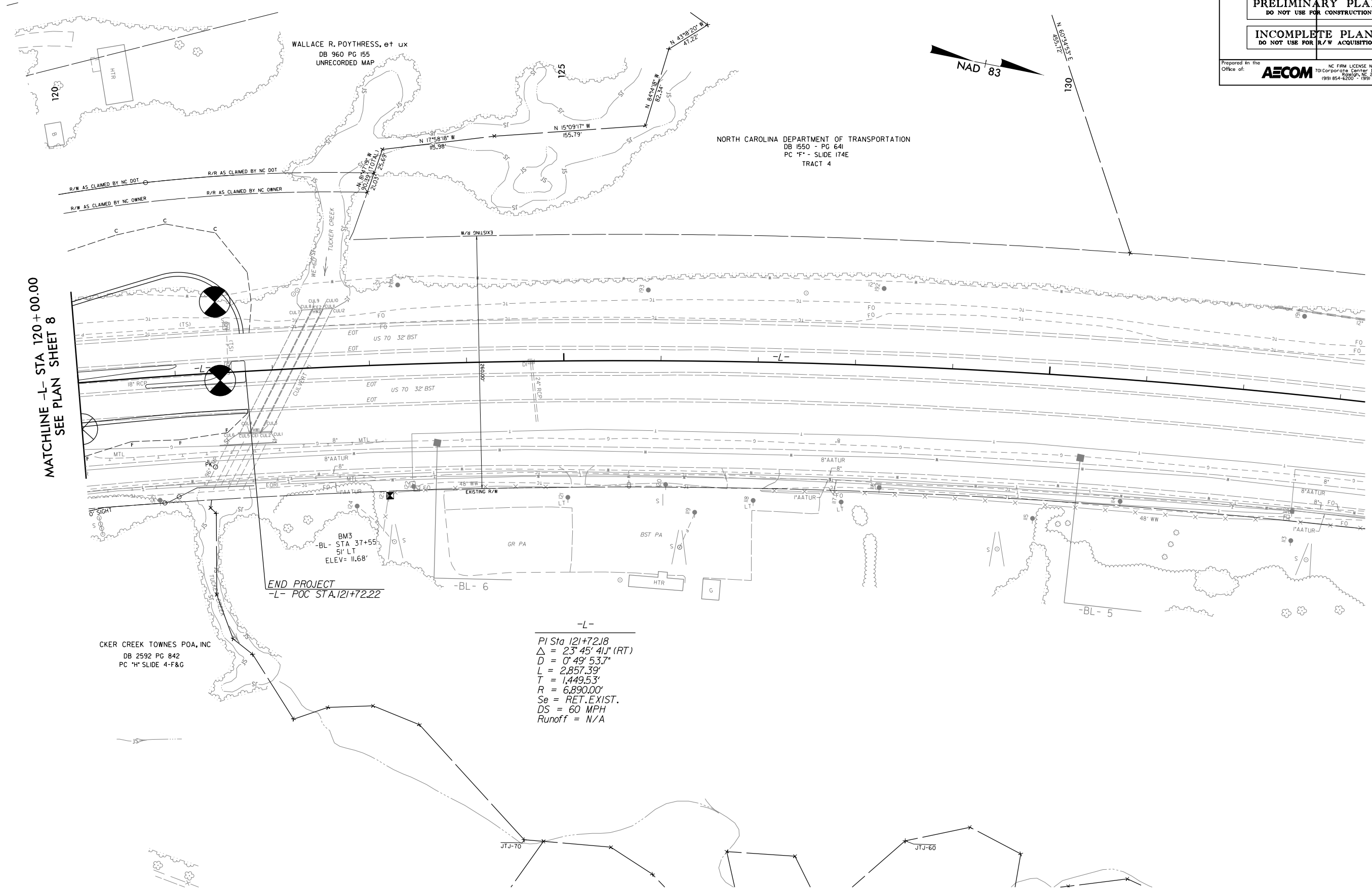
<p>-Y10A-</p> <p>PI Sta 10+59.36</p> <p>$\Delta = 4' 13'' 53.0'' (RT)$</p> <p>$D = 5' 00'' 00.0''$</p> <p>$L = 84.63'$</p> <p>$T = 42.33'$</p> <p>$R = 1,145.92'$</p> <p>$Se = N/A$</p> <p>$DS = N/A$</p> <p>$Runoff = N/A$</p>	<p>PI Sta 14+48.44</p> <p>$\Delta = 6' 48'' 52.7'' (RT)$</p> <p>$D = 1' 31'' 11.2''$</p> <p>$L = 448.40'$</p> <p>$T = 224.46'$</p> <p>$R = 3,770.00'$</p> <p>$Se = RC$</p> <p>$DS = 40 MPH$</p> <p>$Runoff = 62.0'$</p>
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FOR -L- PROFILE, SEE SHEET NOS. 16 & 17
 FOR -Y10A- PROFILE, SEE SHEET NO. 25

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5516	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
<small>Prepared in the Office of:</small> AECOM	
<small>NC FIRM LICENSE No F-0342 70 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)</small>	



MATCHLINE -L- STA 120+00.00
SEE PLAN SHEET 8

CKER CREEK TOWNES POA, INC
DB 2592 PG 842
PC *H* SLIDE 4-F&G

END PROJECT
-L- POC STA.121+72.22

-L-
PI Sta 121+72.18
 $\Delta = 23^\circ 45' 41.1''$ (RT)
 $D = 0^\circ 49' 53.7''$
 $L = 2,857.39'$
 $T = 1,449.53'$
 $R = 6,890.00'$
 $Se = RET. EXIST.$
 $DS = 60$ MPH
Runoff = N/A

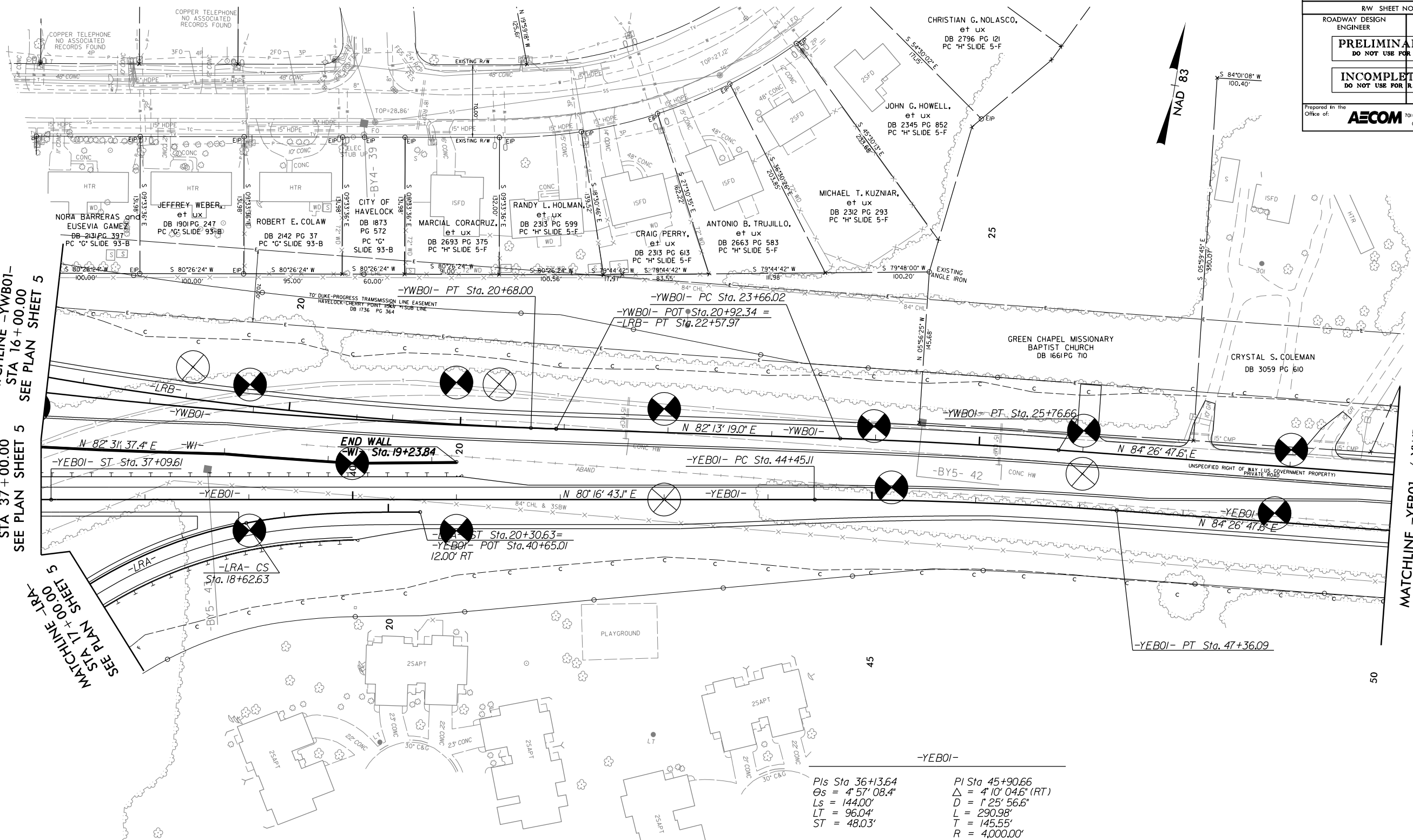


2.56588 N
2.56588 E
130

REVISIONS

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FOR -L- PROFILE, SEE SHEET NO. 17



MATCHLINE -YWB01- STA 16+00.00
SEE PLAN SHEET 5

MATCHLINE -YEB01- STA 37+00.00
SEE PLAN SHEET 5

MATCHLINE -LRA- STA 17+00.00
SEE PLAN SHEET 5

MATCHLINE -YWB01- STA 50+00.00 / STA 29+00.00
SEE PLAN SHEET 11

-LRA-
PI Sta 16+09.21
Δ = 89° 38' 18.4" (RT)
D = 12' 54' 16.0"
L = 694.63'
T = 441.21'
R = 444.00'
Se = 0.08
DS = 40 MPH
Runoff = 168.0'

-LRA-
PI Sta 19+18.82
Δ = 10° 50' 23.1"
Ls = 168.00'
LT = 112.21'
ST = 56.19'

-LRB-
PI Sta 19+49.36
Δ = 9° 40' 46.0" (LT)
D = 1' 33' 52.1"
L = 618.70'
T = 310.09'
R = 3,662.29'
Se = RC
DS = 40 MPH
Runoff = 121.5'

-YEB01-
PI Sta 36+13.64
Δs = 4° 57' 08.4"
Ls = 144.00'
LT = 96.04'
ST = 48.03'

-YEB01-
PI Sta 45+90.66
Δ = 4° 10' 04.6" (RT)
D = 1' 25' 56.6"
L = 290.98'
T = 145.55'
R = 4,000.00'
Se = RC
DS = 40 MPH
Runoff = 144.0'

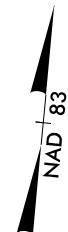
-YWB01-
PI Sta 17+02.36
Δ = 6° 59' 27.5" (LT)
D = 0° 57' 17.3"
L = 732.19'
T = 366.55'
R = 6,000.83'
Se = NC
DS = 40 MPH
Runoff = N/A

-YWB01-
PI Sta 24+71.35
Δ = 2° 13' 28.6" (RT)
D = 1' 03' 22.1"
L = 210.64'
T = 105.33'
R = 5,425.00'
Se = NC
DS = 40 MPH
Runoff = N/A

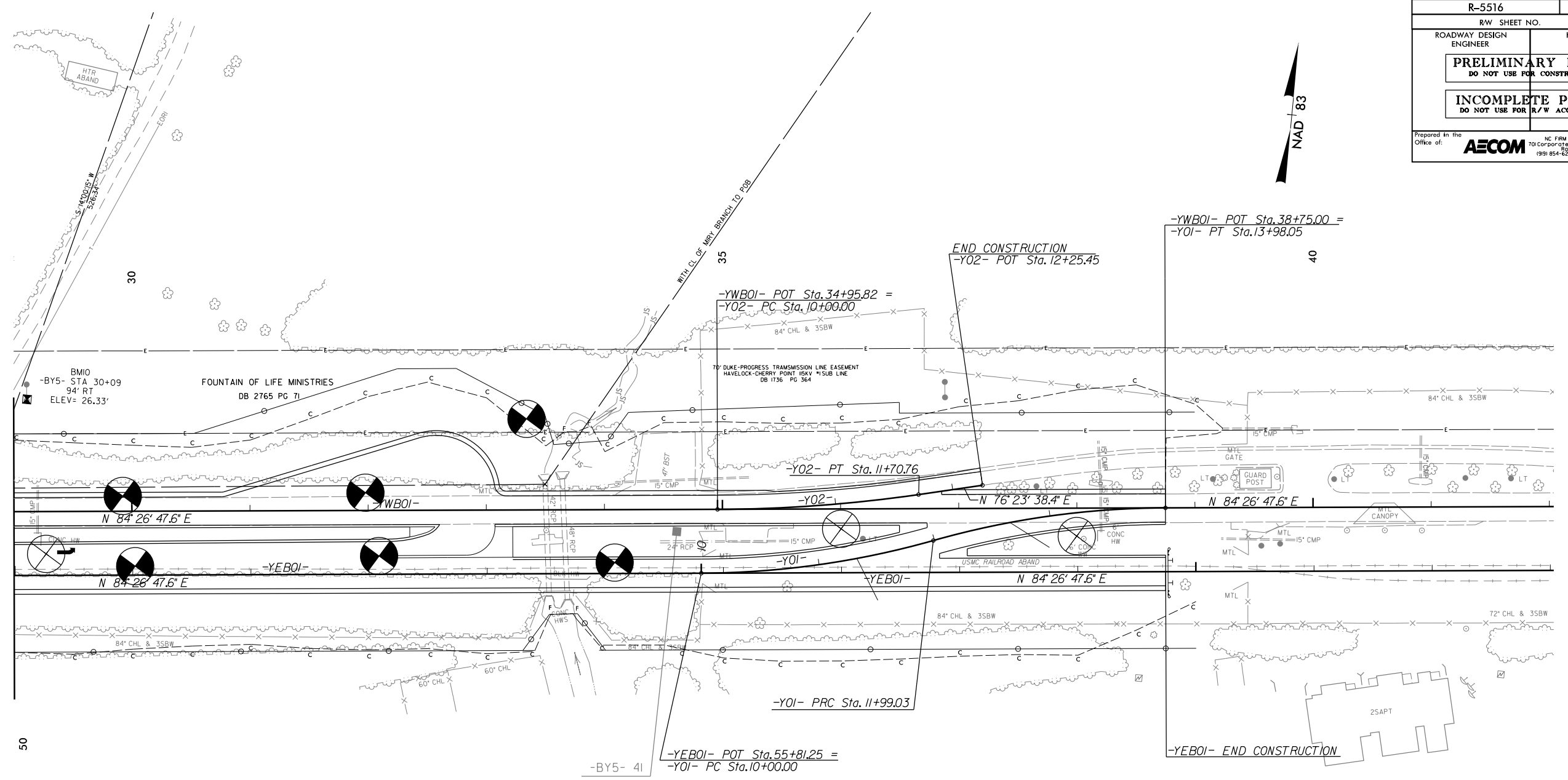
FOR -LRA- PROFILE, SEE SHEET NO. 18
FOR -YEB01- PROFILE, SEE SHEET NOS. 20 & 21
FOR -YWB01- PROFILE, SEE SHEET NO. 23

REVISIONS

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MATCHLINE -YEB01- / -YWB01-
 STA 50+00.00 / 29+00.00
 SEE PLAN SHEET 10



-Y01-		-Y02-
PI Sta 11+00.14	PI Sta 12+99.16	PI Sta 10+85.52
$\Delta = 15^\circ 38' 32.9''$ (LT)	$\Delta = 15^\circ 38' 32.9''$ (RT)	$\Delta = 8^\circ 03' 09.2''$ (LT)
D = 7' 51' 34.2"	D = 7' 51' 34.2"	D = 4' 42' 56.5"
L = 199.03'	L = 199.03'	L = 170.76'
T = 100.14'	T = 100.14'	T = 85.52'
R = 729.00'	R = 729.00'	R = 1,215.00'
Se = VARIES	Se = VARIES	Se = RC
DS = 40 MPH	DS = 40 MPH	DS = 40 MPH
Runoff = 84.0'	Runoff = 84.0'	

FOR -YEB01- PROFILE, SEE SHEET NOS. 21 & 22
 FOR -YWB01- PROFILE, SEE SHEET NO. 23

REVISIONS

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8.17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5516	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of:	NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)
AECOM	

8.17.99

REVISIONS

MATCHLINE -Y10A- STA 18+00.00
SEE PLAN SHEET 8

-Y10A-
 PI Sta 28+29.17
 $\Delta = 77^{\circ} 38' 38.6" (LT)$
 $D = 10^{\circ} 44' 58.8"$
 $L = 722.29'$
 $T = 428.88'$
 $R = 533.00'$
 $Se = 0.060$
 $DS = 40 MPH$
 $Runoff = 126.0'$

JACKSON HOLDINGS GROUP, LLC
 DB 2880 PG 879
 TRACT 13 (TRACT C-159 SERMONS BLVD)

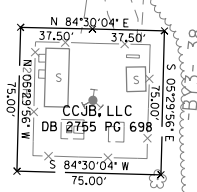
-Y09A- POT Sta.10+00.00 =
-Y10A- POC Sta.27+14.31

-Y09A-
 PI Sta 11+56.79
 $\Delta = 33^{\circ} 10' 07.8" (RT)$
 $D = 22^{\circ} 55' 05.9"$
 $L = 144.73'$
 $T = -74.45'$
 $R = 250.00'$
 $Se = 0.06$
 $DS = 30 MPH$
 $Runoff = 102.0'$

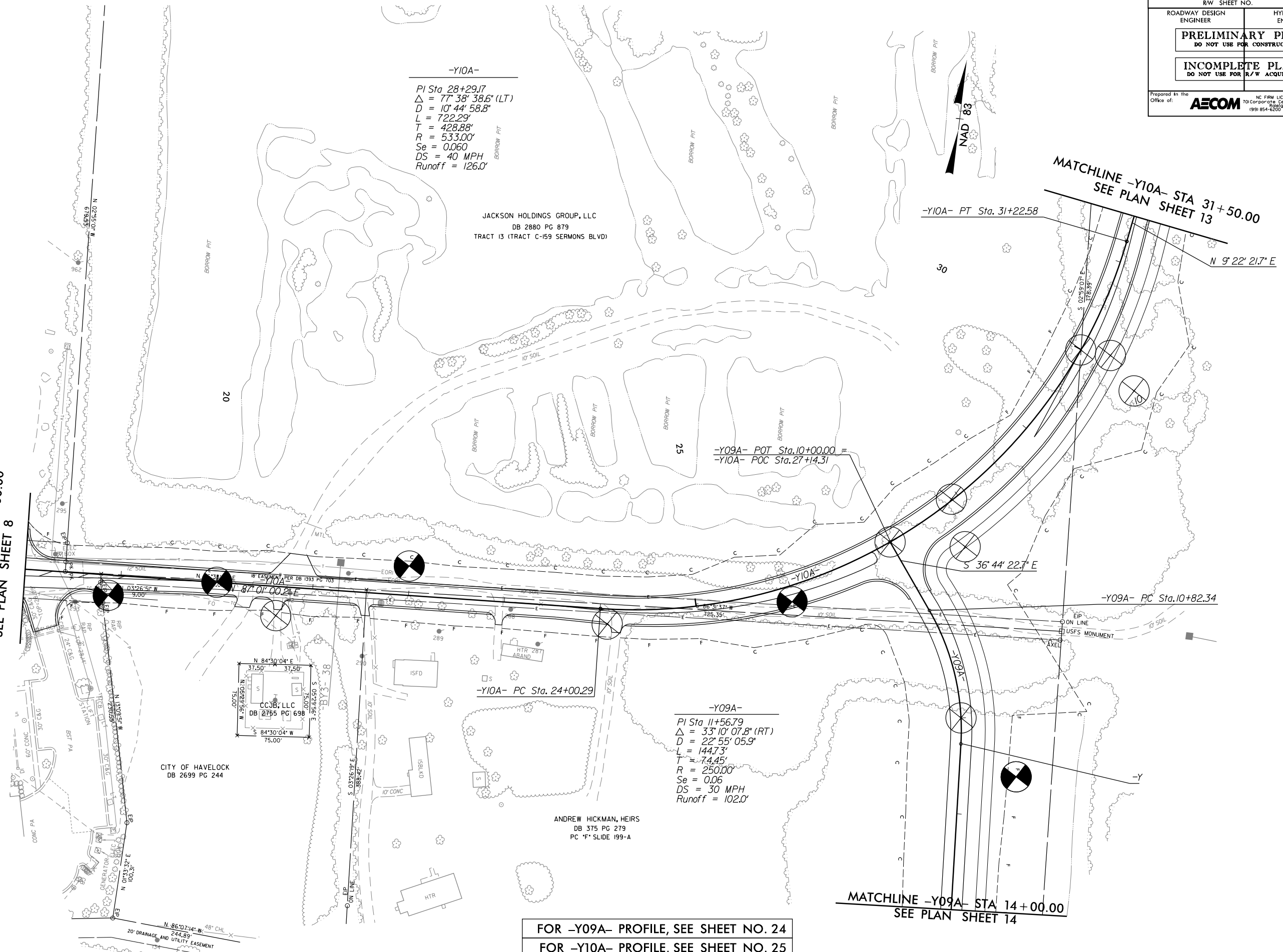
-Y10A- PC Sta. 24+00.29

CITY OF HAVELOCK
 DB 2699 PG 244

ANDREW HICKMAN, HEIRS
 DB 375 PG 279
 PC *F* SLIDE 199-A

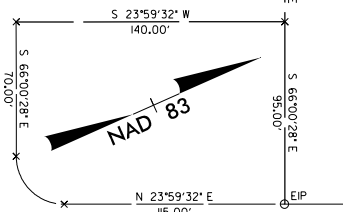
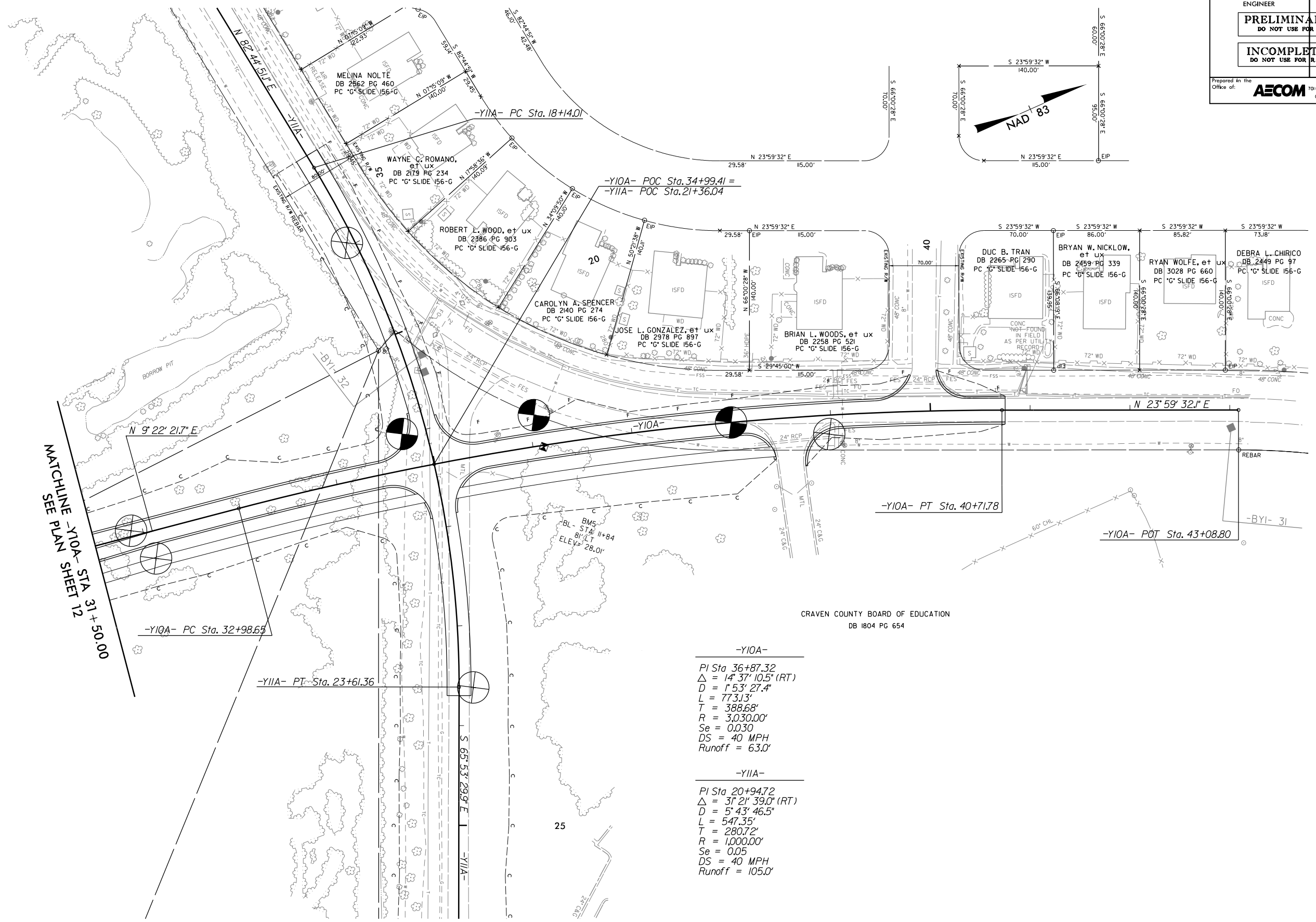


FOR -Y09A- PROFILE, SEE SHEET NO. 24
 FOR -Y10A- PROFILE, SEE SHEET NO. 25



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PROJECT REFERENCE NO.	SHEET NO.
R-5516	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of:	
AECOM	
NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)	



MATCHLINE -Y10A- STA 31+50.00
SEE PLAN SHEET 12

CRAVEN COUNTY BOARD OF EDUCATION
DB 1804 PG 654

-Y10A-
 PI Sta 36+87.32
 $\Delta = 14^{\circ} 37' 10.5''$ (RT)
 D = 1' 53' 27.4"
 L = 77.313'
 T = 388.68'
 R = 3,030.00'
 Se = 0.030
 DS = 40 MPH
 Runoff = 63.0'

-Y11A-
 PI Sta 20+94.72
 $\Delta = 31^{\circ} 21' 39.0''$ (RT)
 D = 5' 43' 46.5"
 L = 547.35'
 T = 280.72'
 R = 1,000.00'
 Se = 0.05
 DS = 40 MPH
 Runoff = 105.0'

FOR -Y10A- PROFILE, SEE SHEET NOS. 25 & 26
 FOR -Y11A- PROFILE, SEE SHEET NO. 26

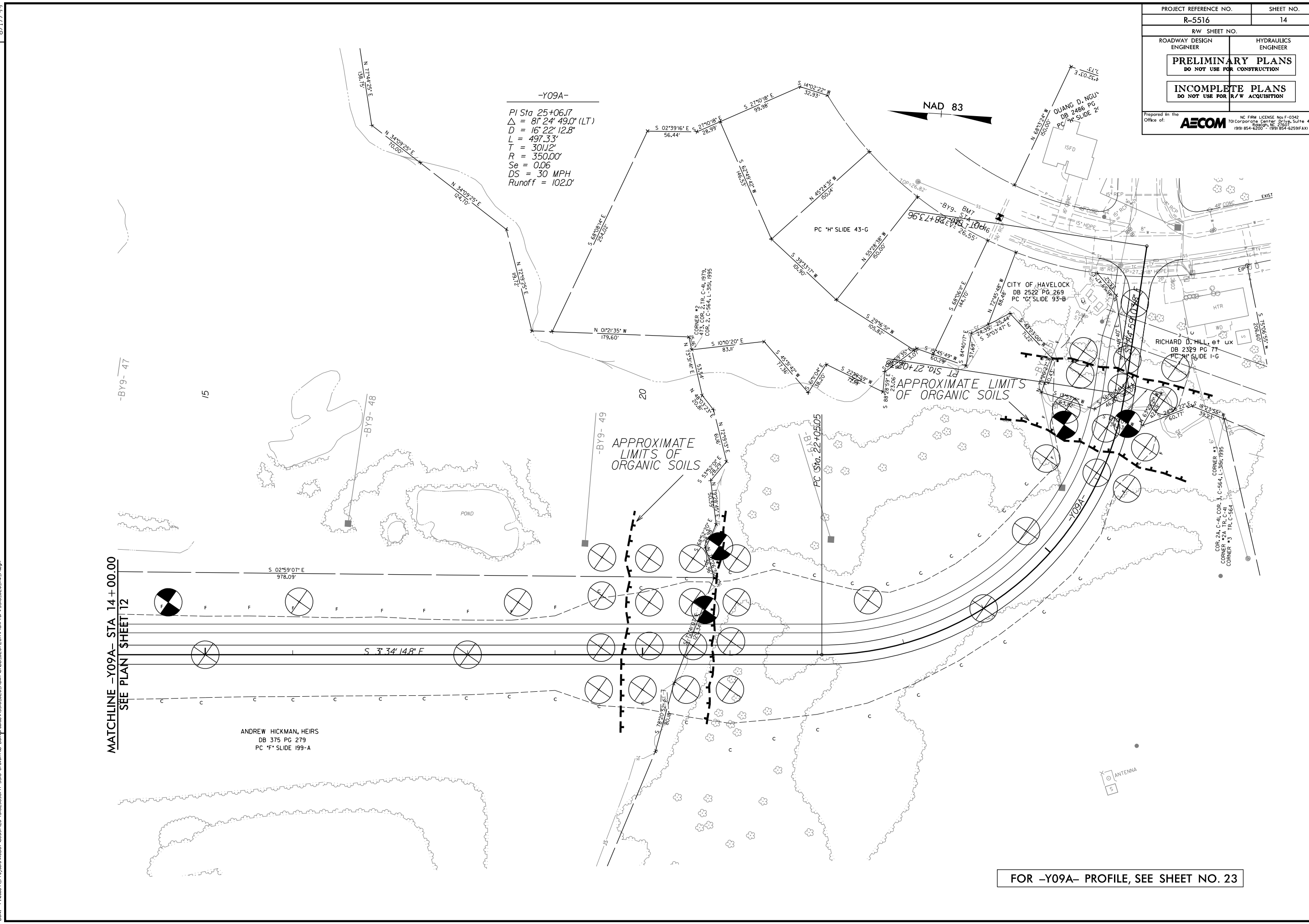
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 B.17/99

PROJECT REFERENCE NO. R-5516	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of: AECOM	NC FIRM LICENSE No: F-0342 701 Corporate Center Dr., Suite 4175 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)

NO.	DESCRIPTION

USER: Stephen_Crockett
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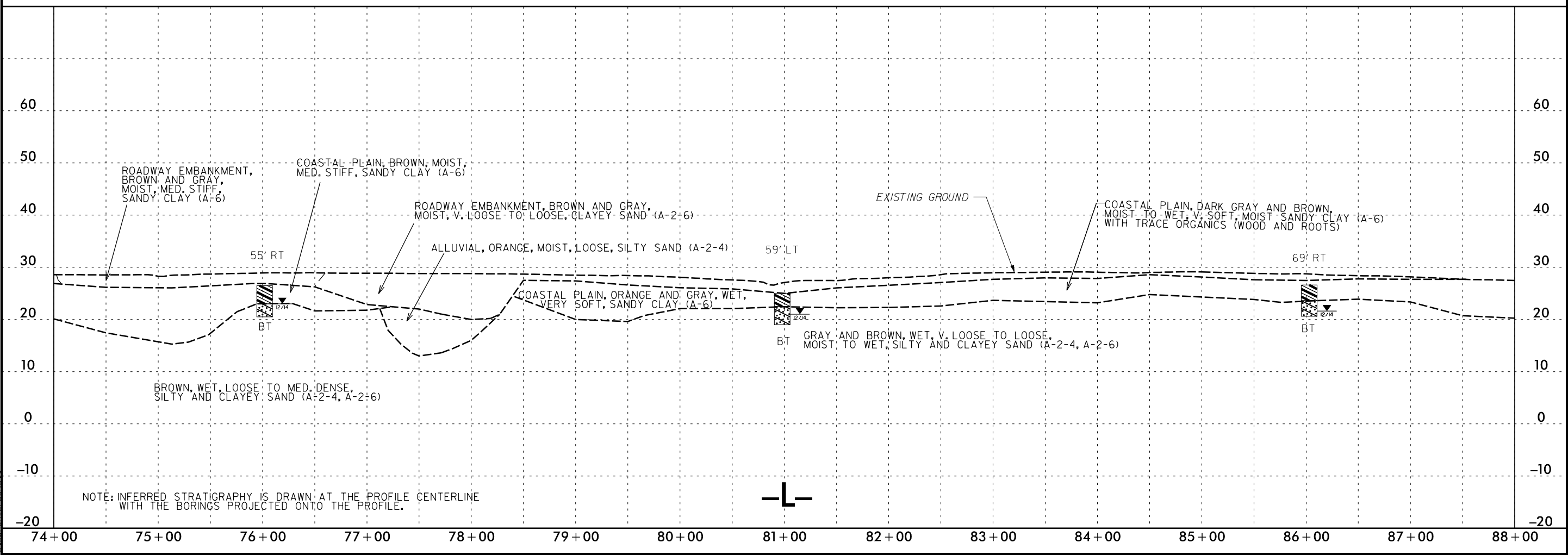
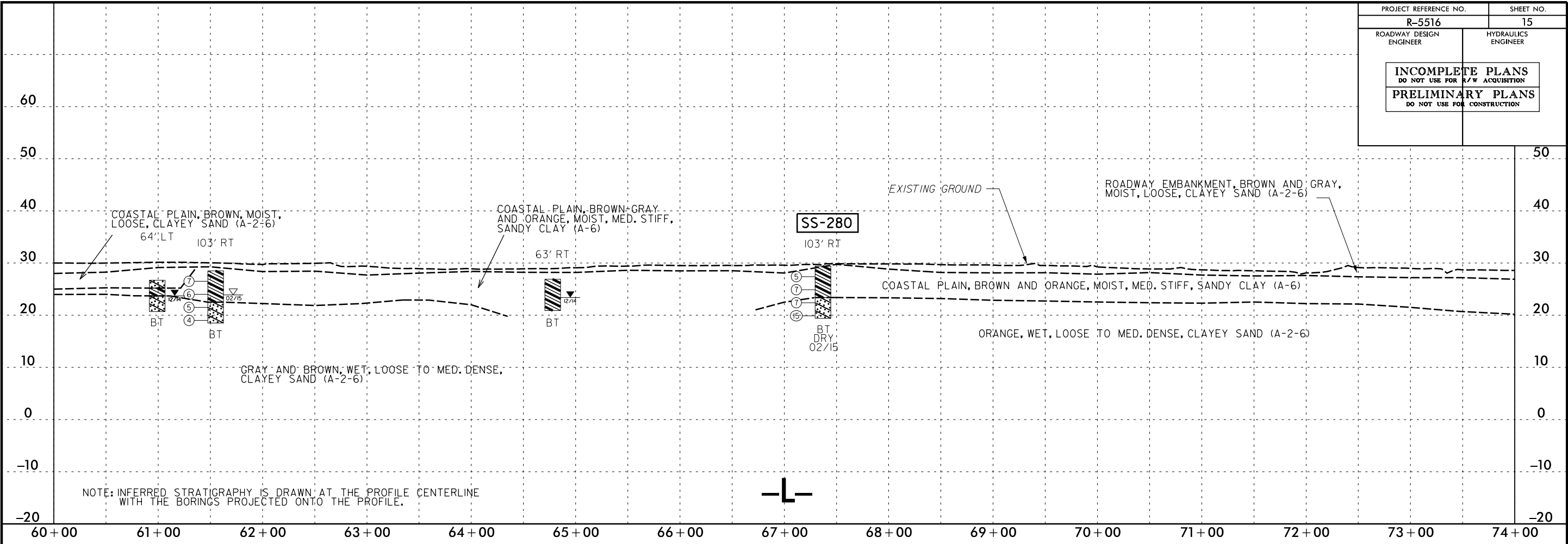
MATCHLINE -Y09A- STA 14+00.00
SEE PLAN SHEET 12

-Y09A-
PI Sta 25+06.17
 $\Delta = 81^{\circ} 24' 49.0''$ (LT)
 $D = 16' 22'' 12.8''$
 $L = 497.33'$
 $T = 301.12'$
 $R = 350.00'$
 $Se = 0.06$
 $DS = 30$ MPH
Runoff = 102.0'

ANDREW HICKMAN, HEIRS
DB 375 PG 279
PC *F* SLIDE 199-A

FOR -Y09A- PROFILE, SEE SHEET NO. 23

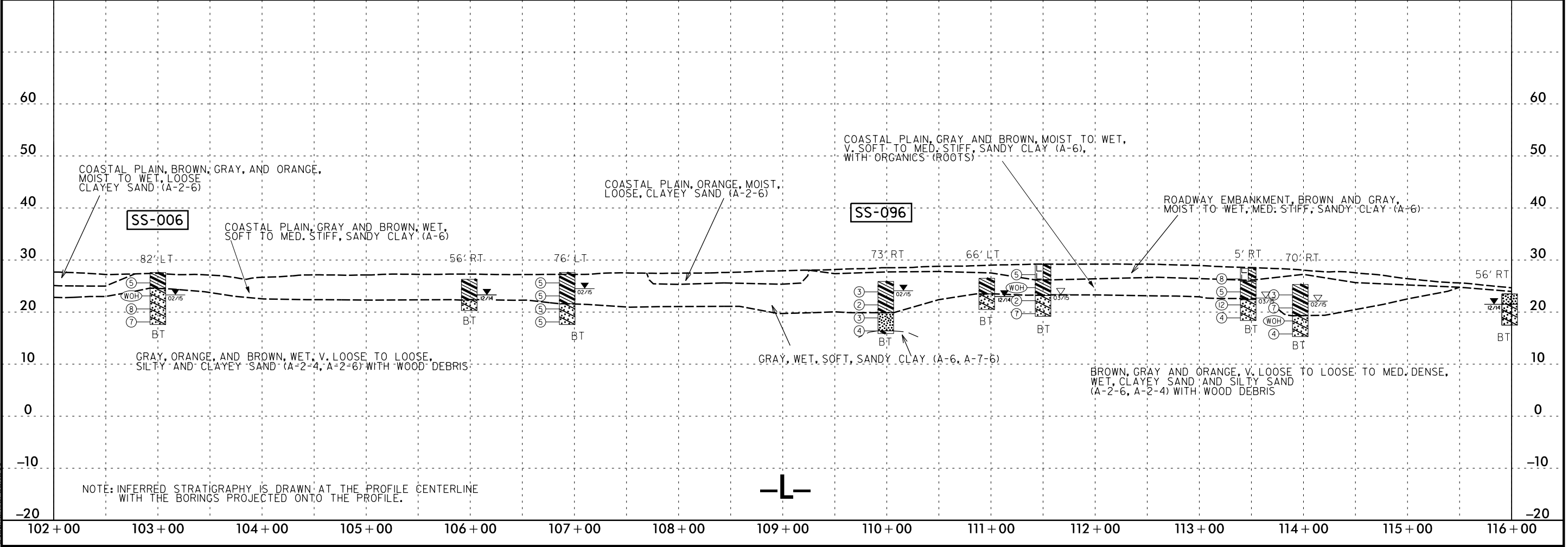
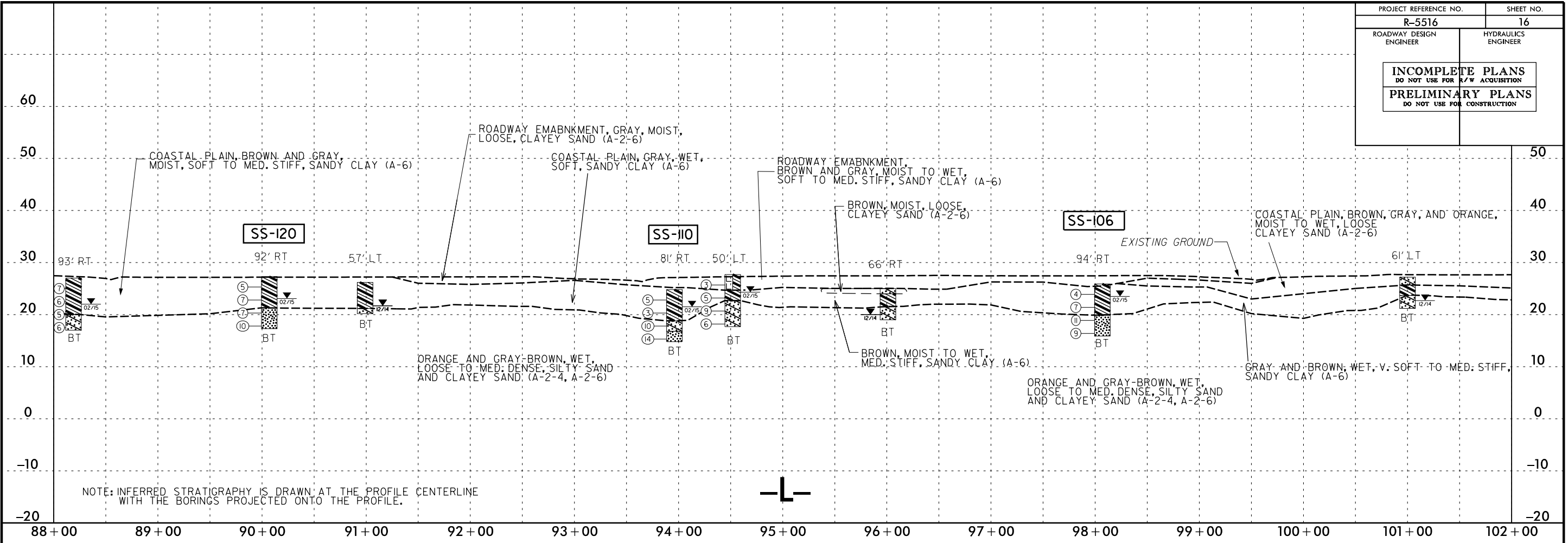
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R-5516	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



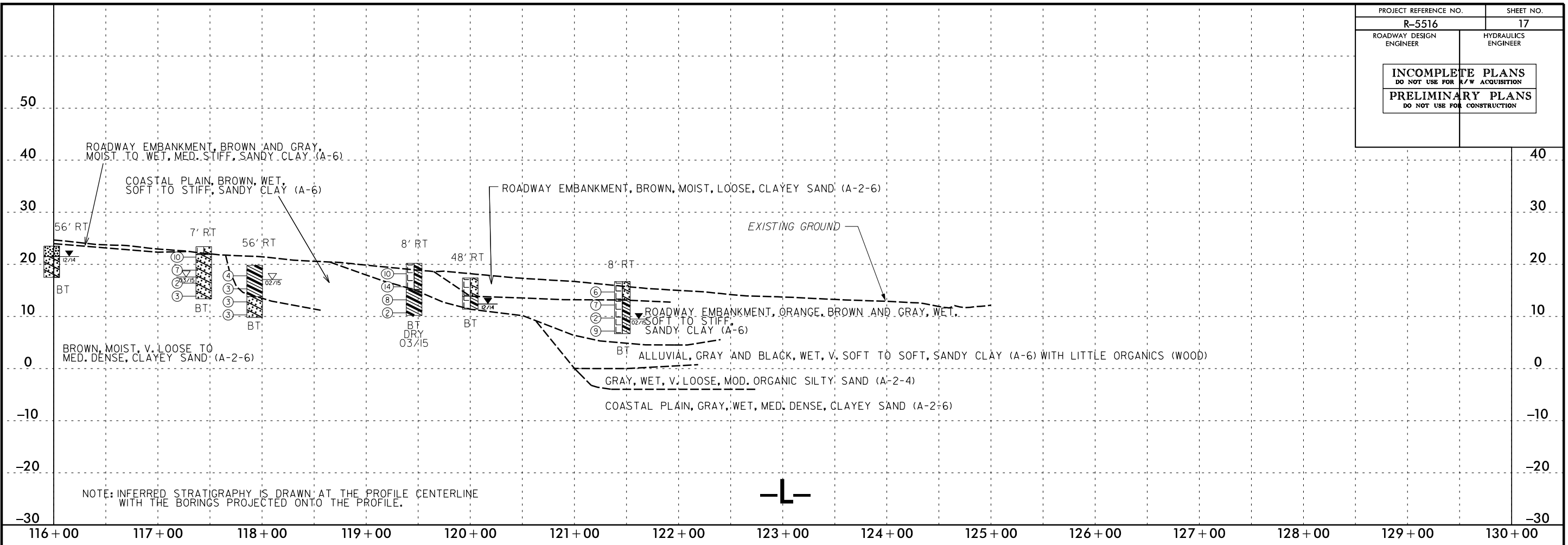
5/28/99
 7/13/2016
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 Stephen Crockett

PROJECT REFERENCE NO. R-5516	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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7/13/2016
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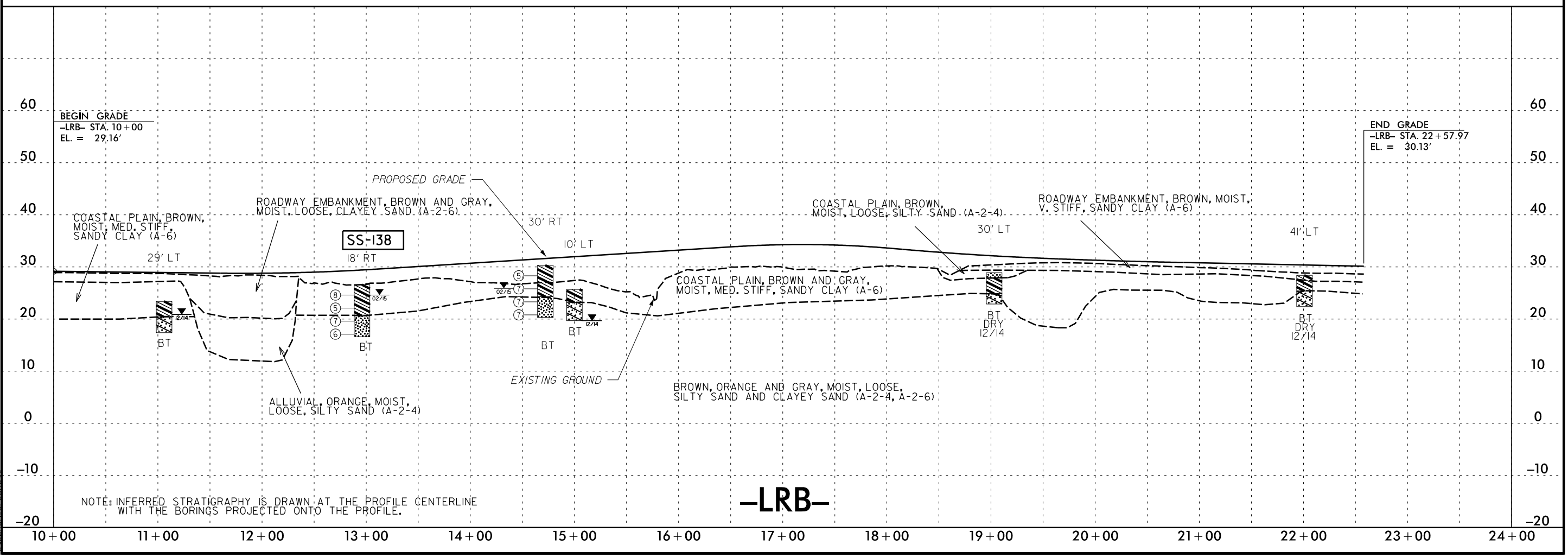
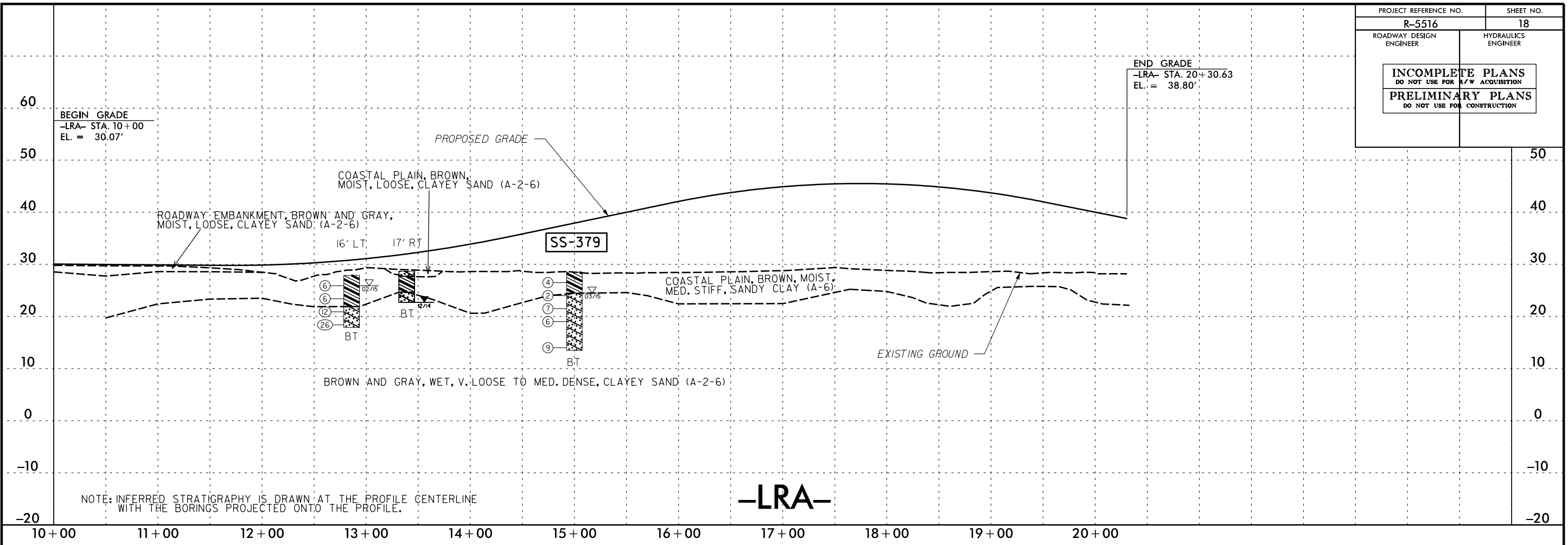
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R-5516	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



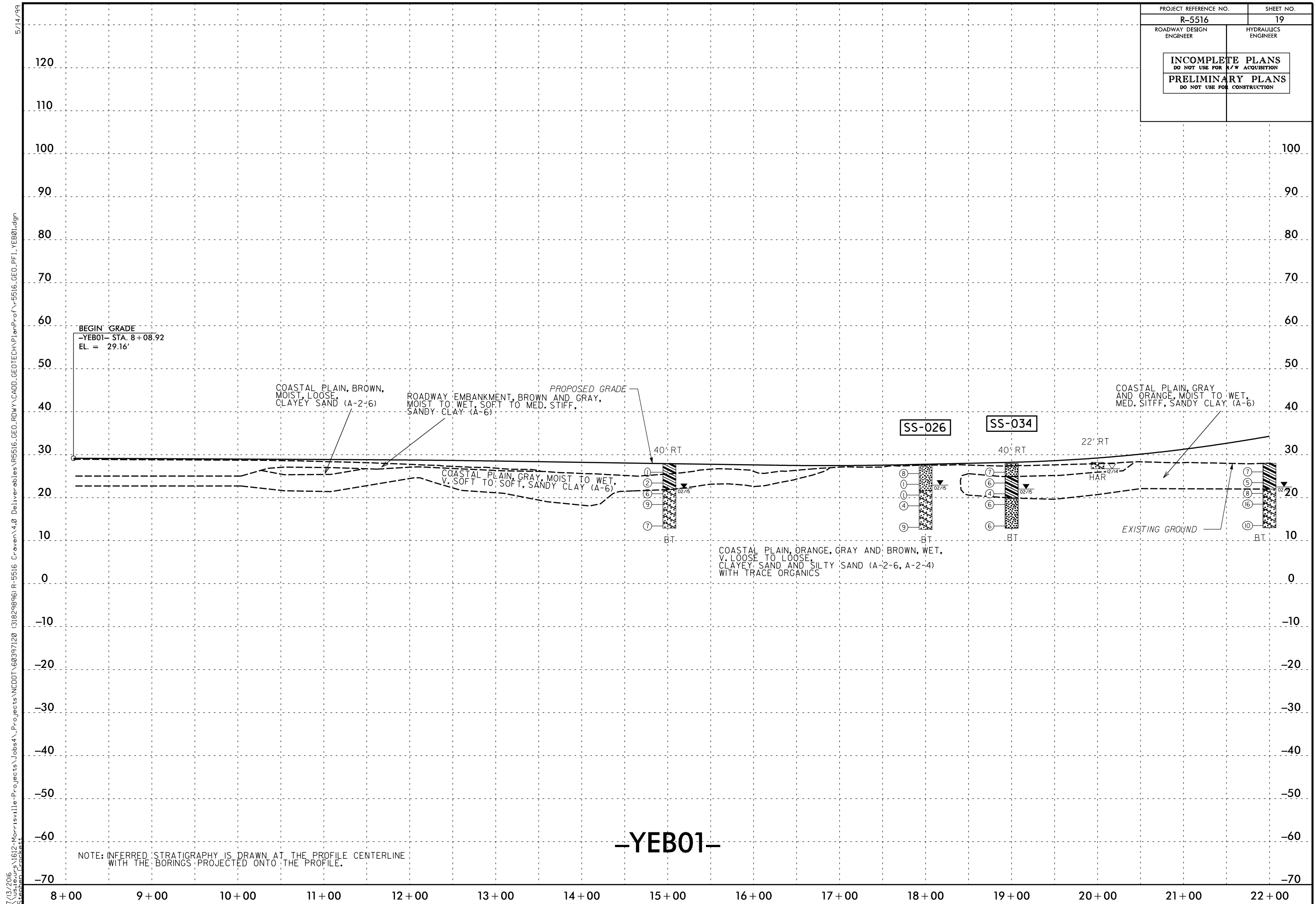
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 Stephen Crockett

PROJECT REFERENCE NO.	SHEET NO.
R-5516	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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 Stephen Crockett

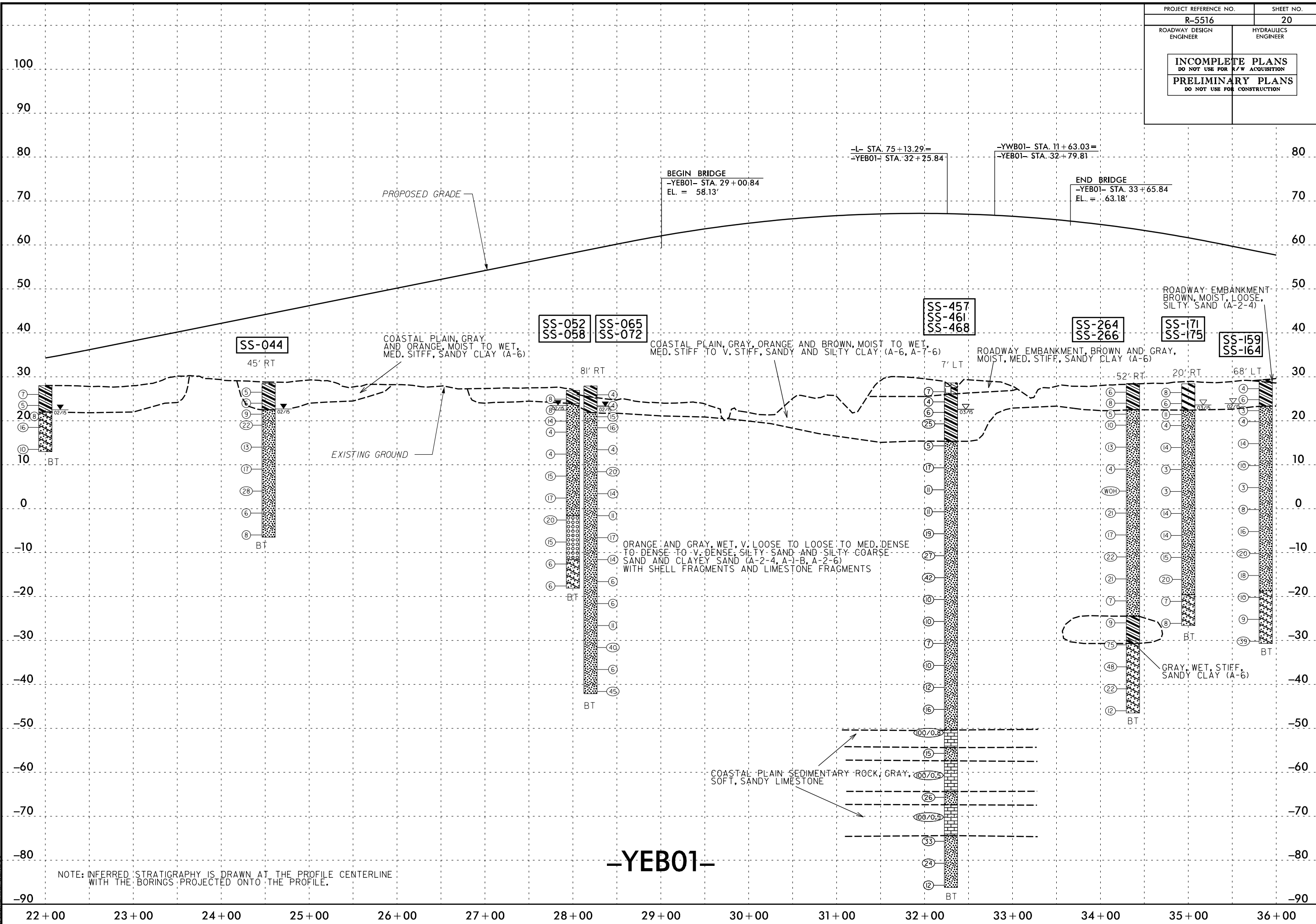


PROJECT REFERENCE NO.	SHEET NO.
R-5516	19
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



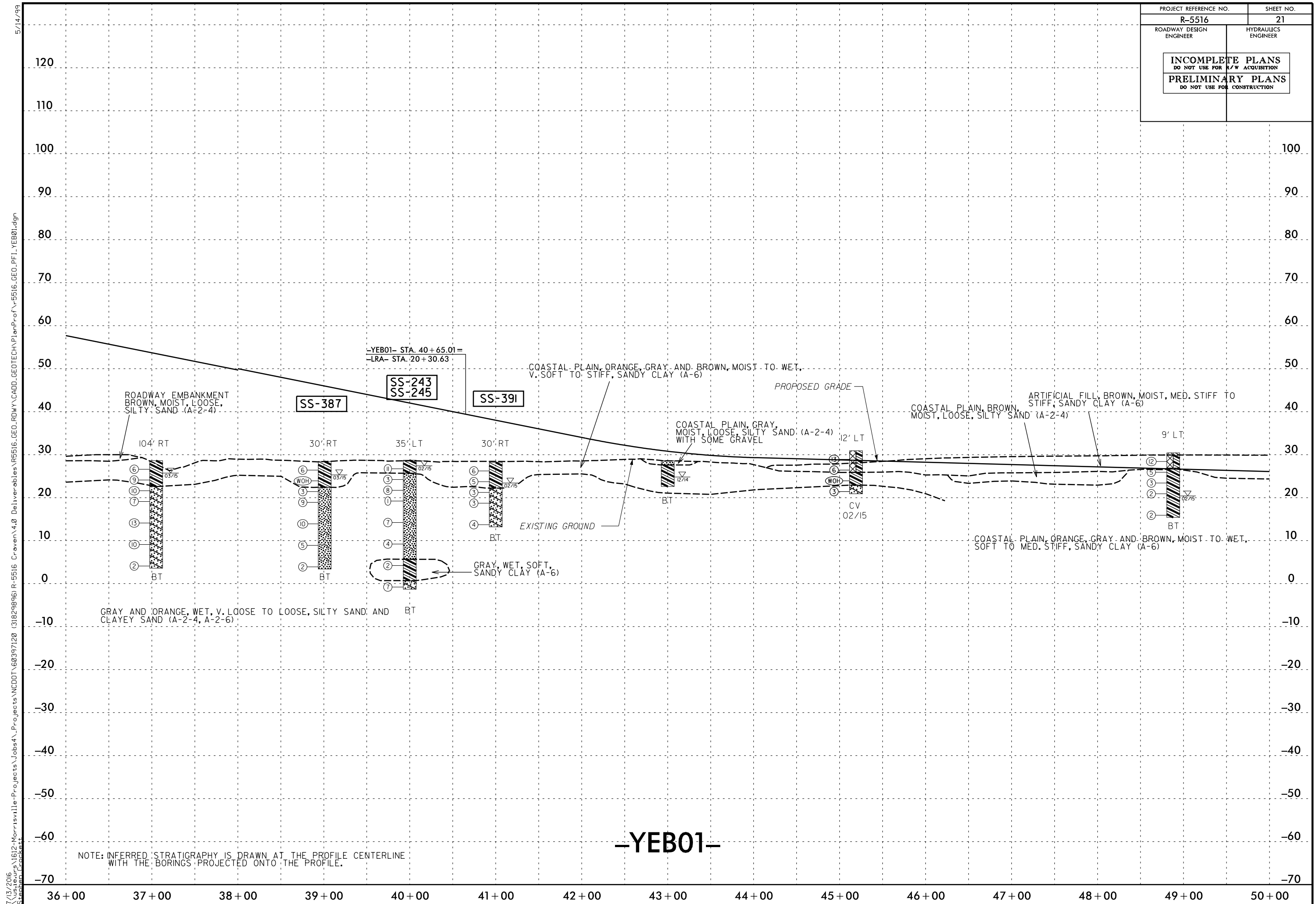
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 Stephen Crockett



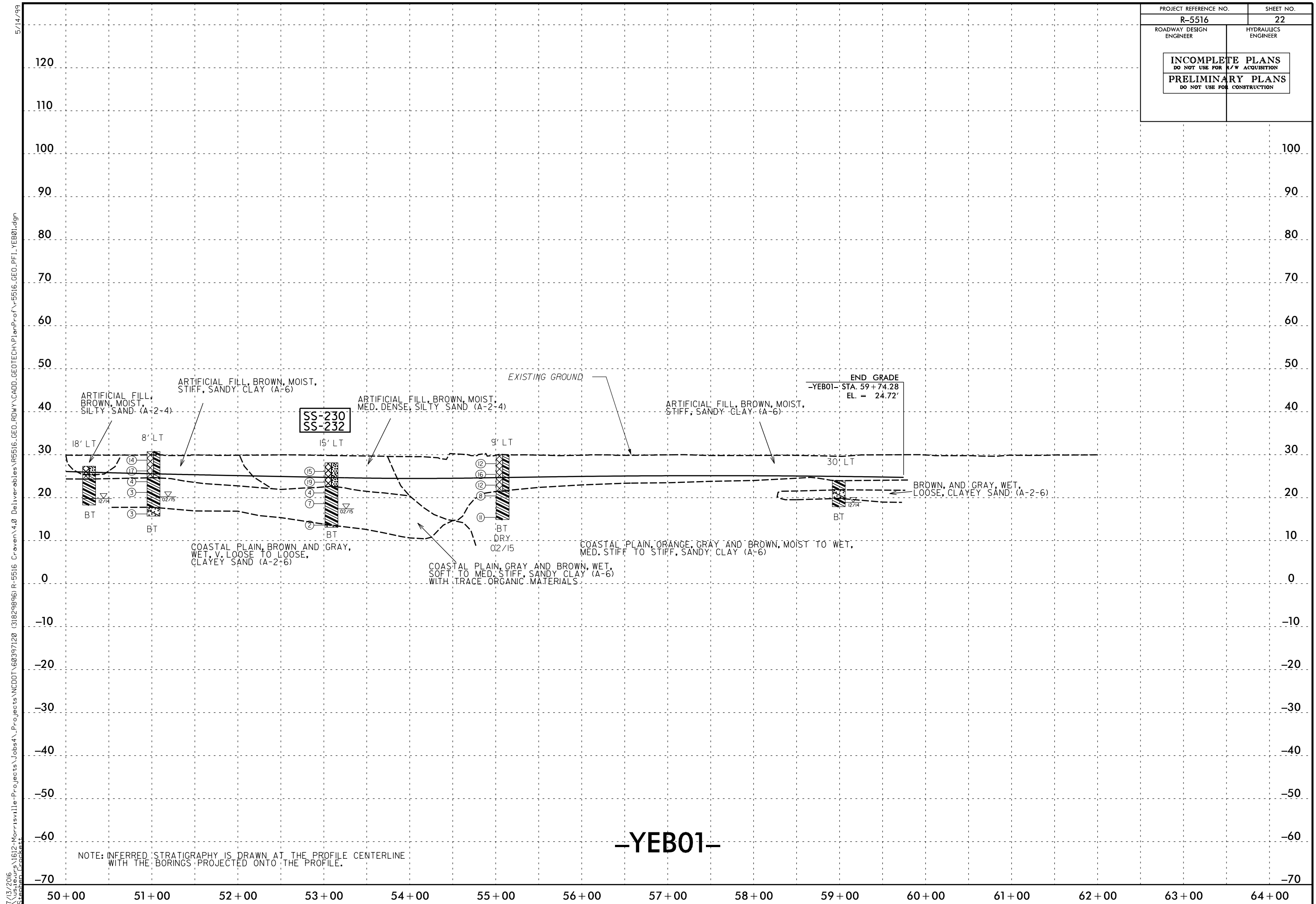
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PROJECT REFERENCE NO. R-5516	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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 Stephen Crockett

PROJECT REFERENCE NO.	SHEET NO.
R-5516	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

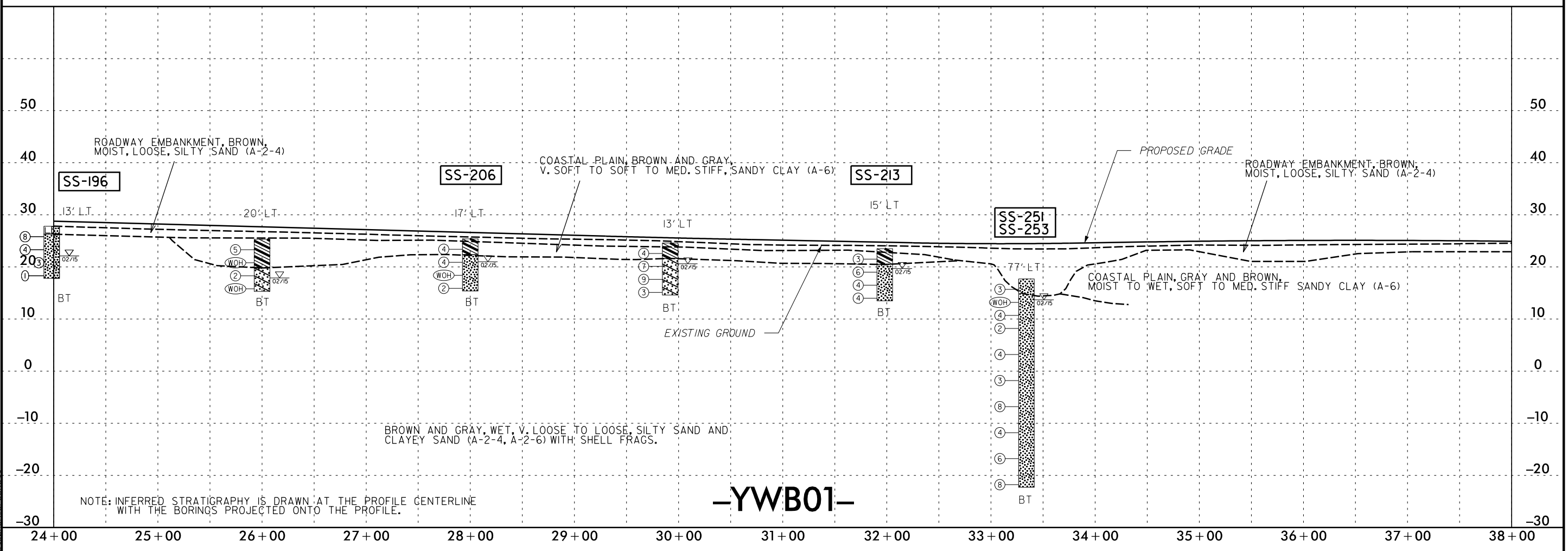
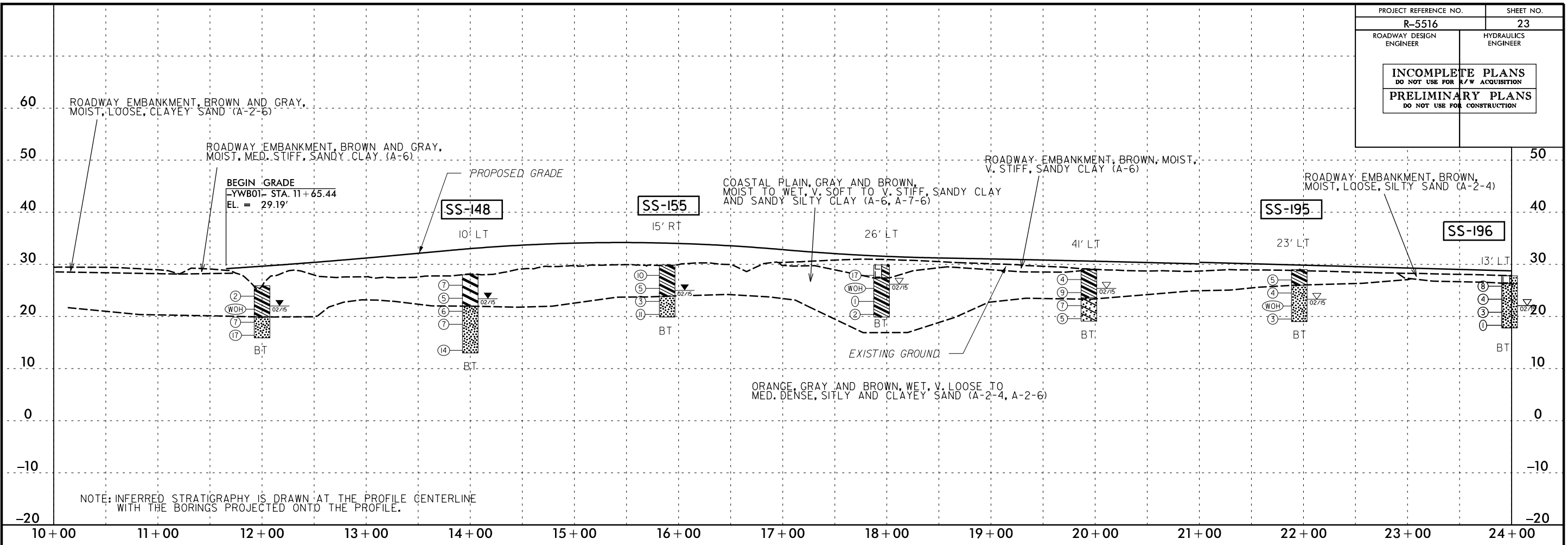


NOTE: INFERRED STRATIGRAPHY IS DRAWN AT THE PROFILE CENTERLINE WITH THE BORINGS PROJECTED ONTO THE PROFILE.

-YEB01-

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PROJECT REFERENCE NO. R-5516	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

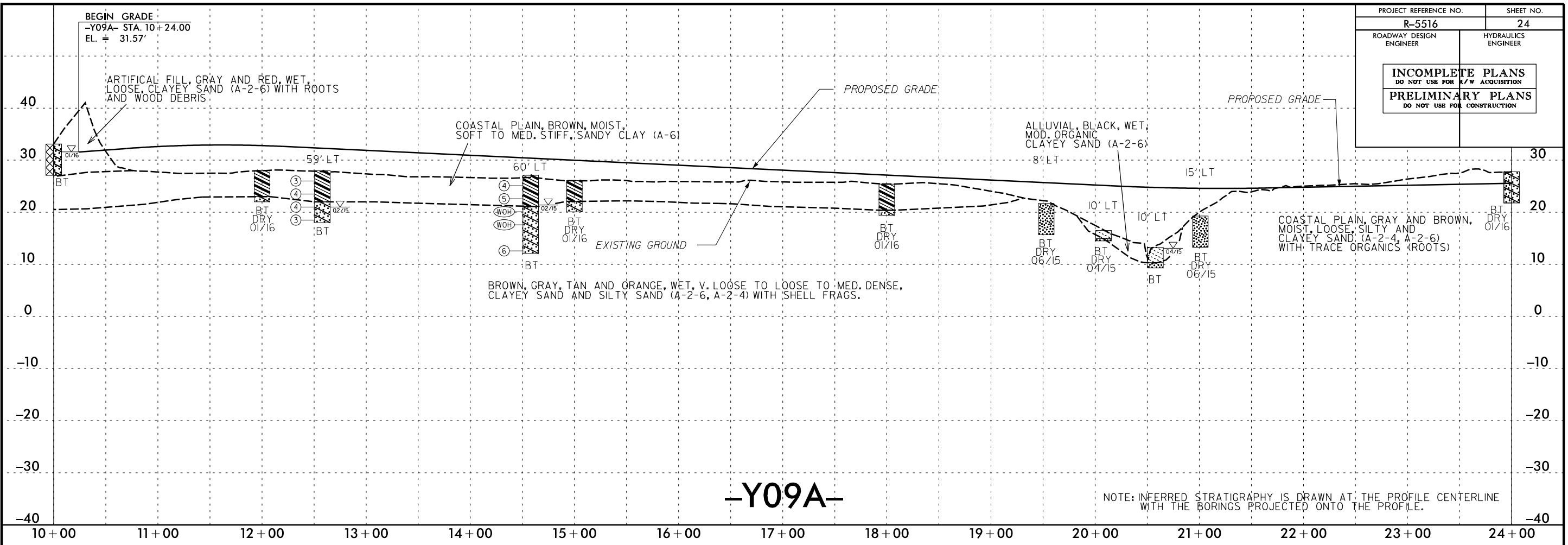


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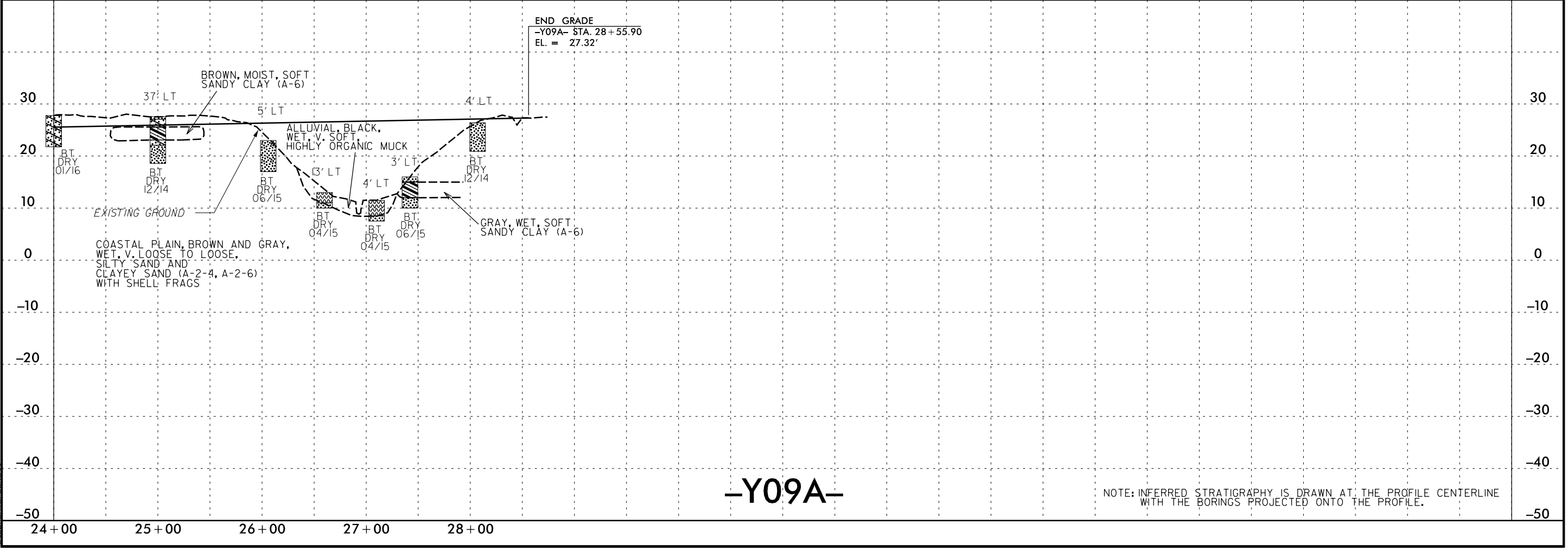
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 Stephen Crockett

PROJECT REFERENCE NO.	SHEET NO.
R-5516	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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 Stephen Crockett



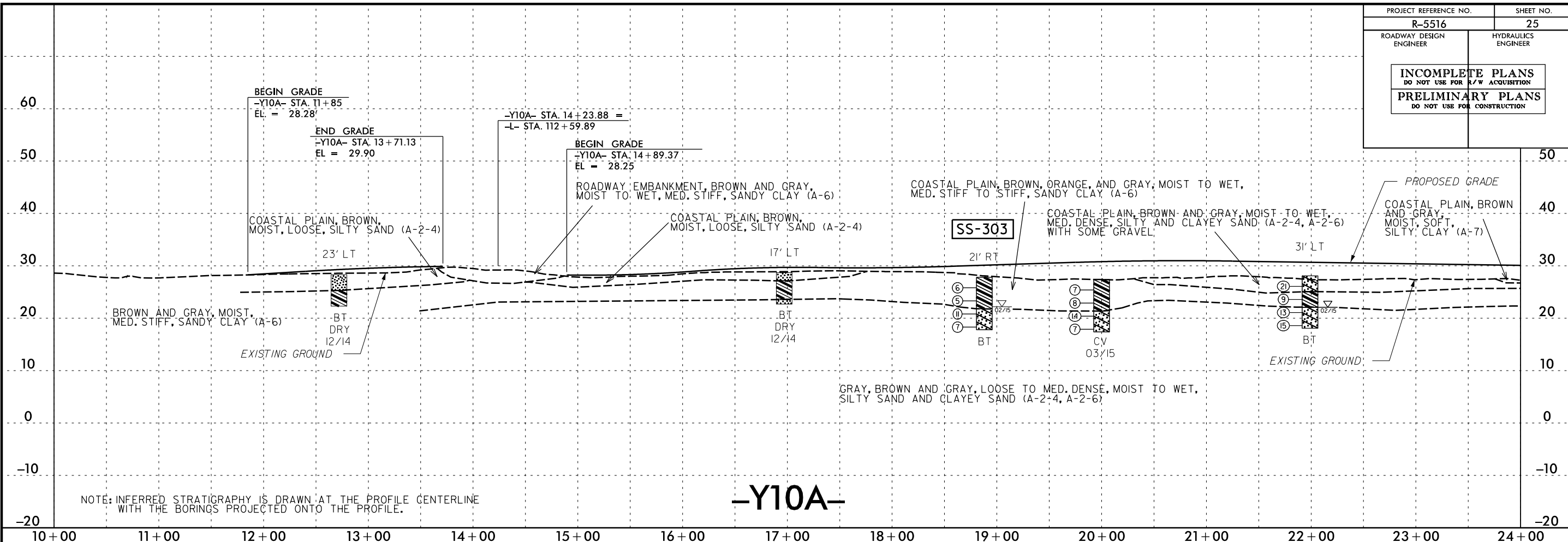
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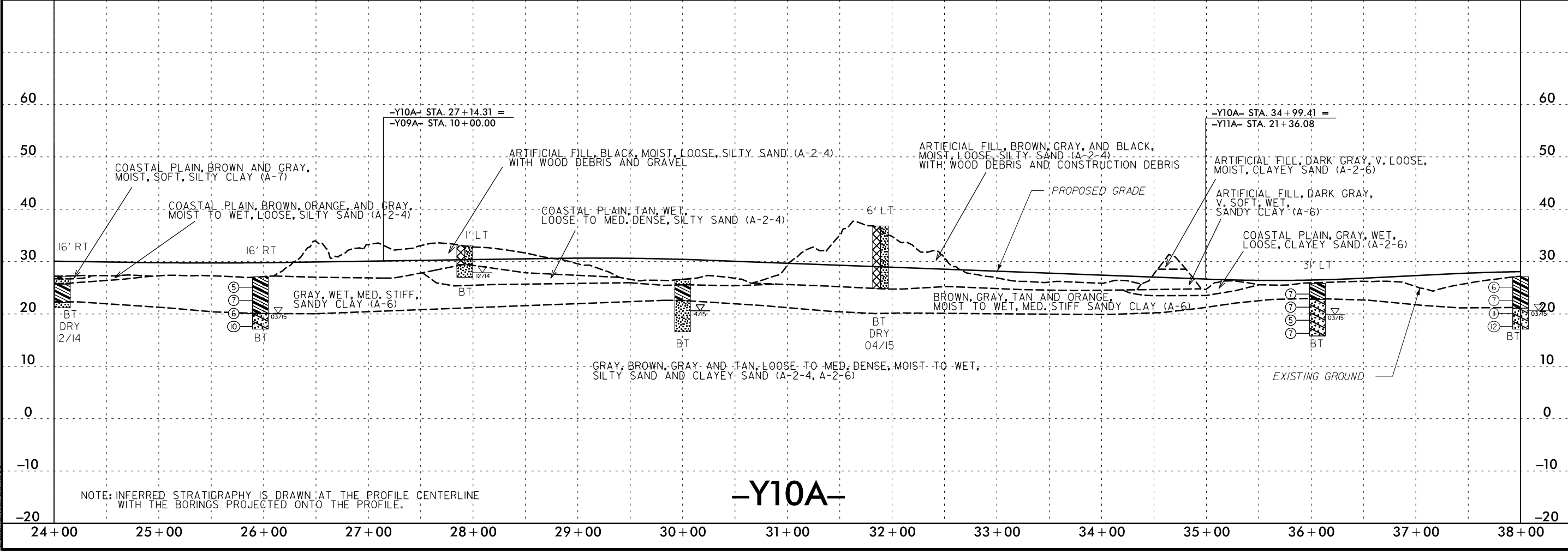
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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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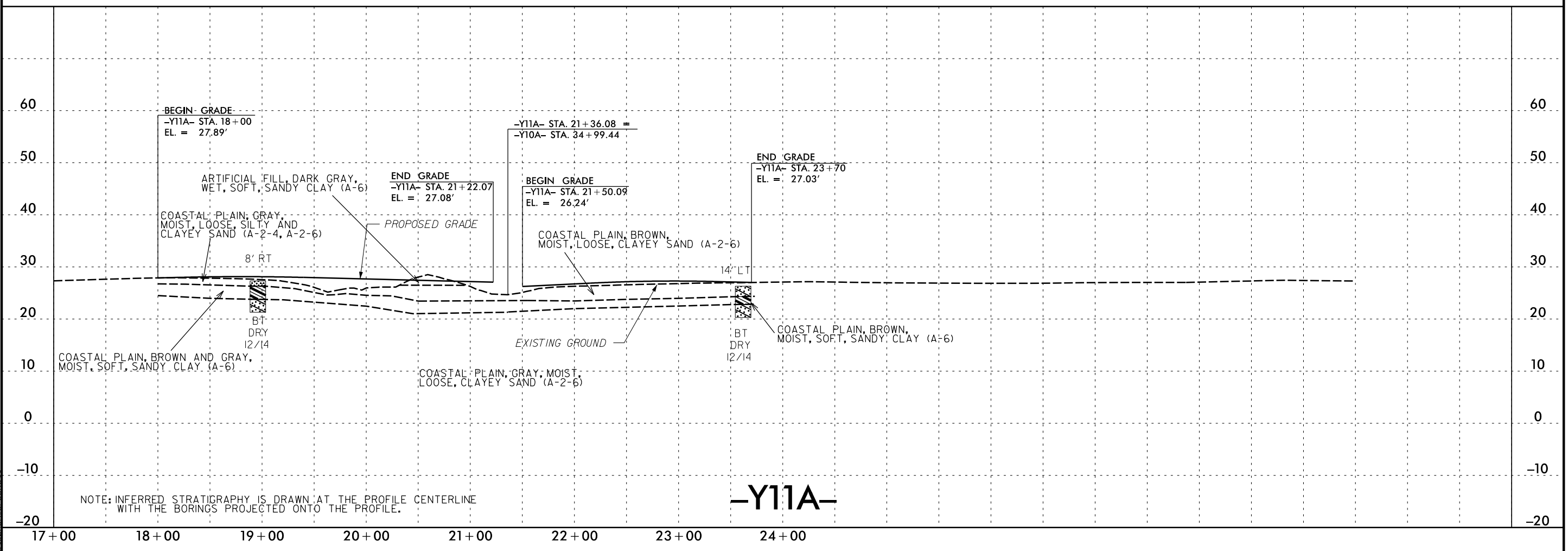
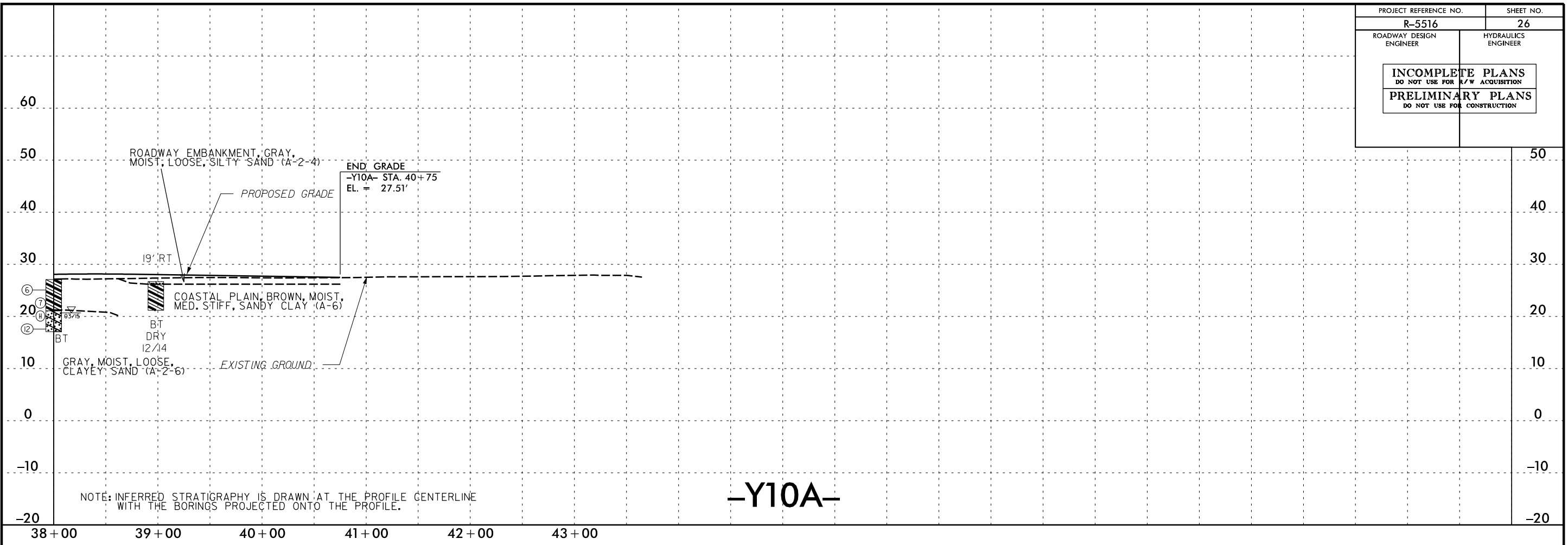


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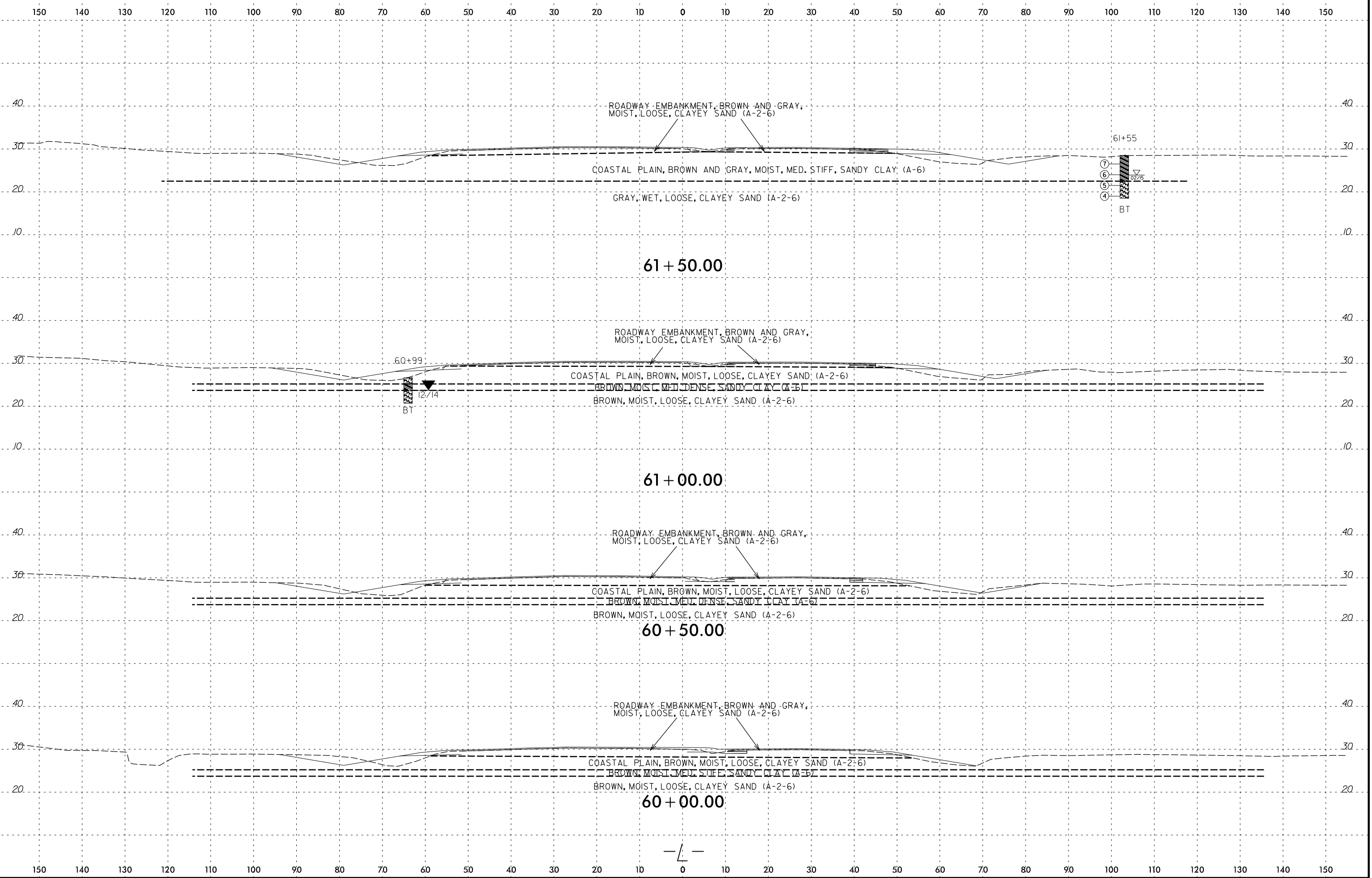


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PROJECT REFERENCE NO.	SHEET NO.
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

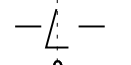
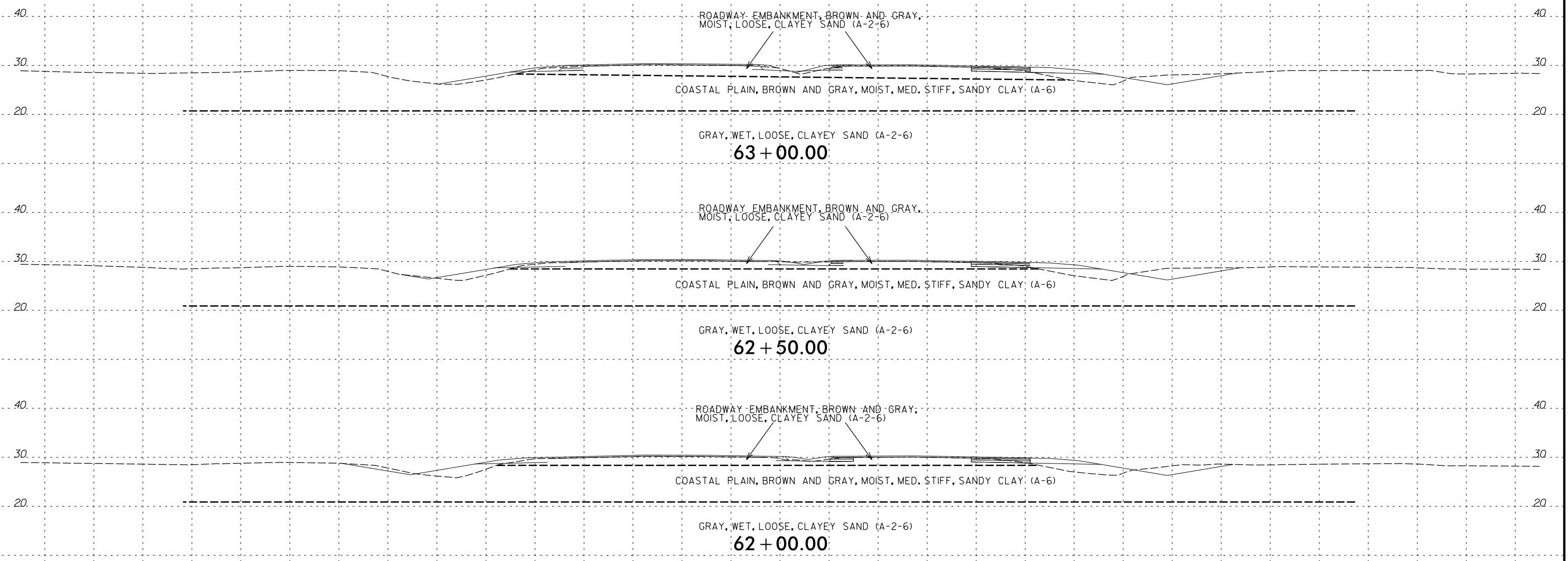


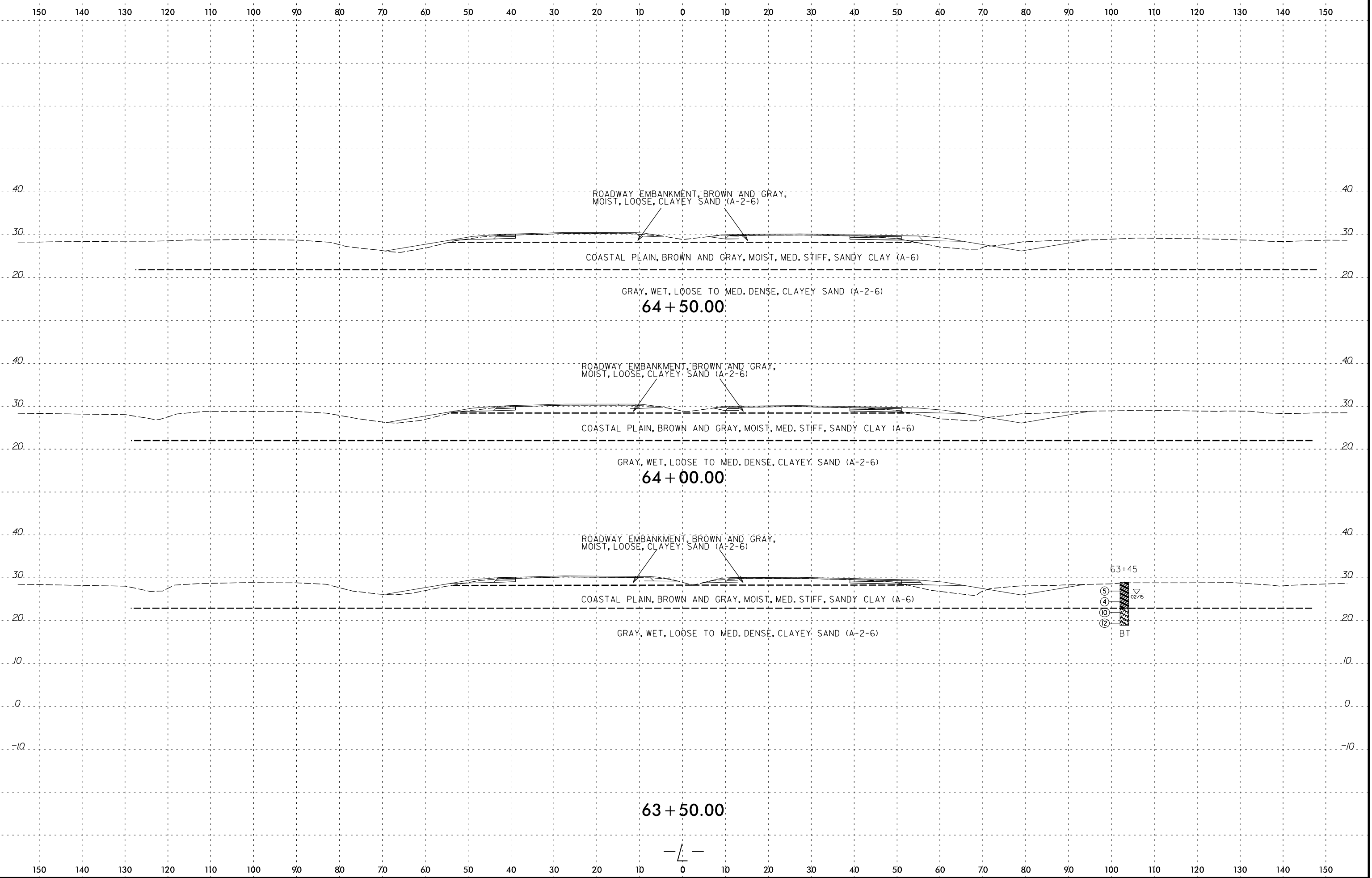
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 Stephen Crockett



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 Stephen_Crockett

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 Stephen_Crockett

8/23/99

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ROADWAY EMBANKMENT, BROWN AND GRAY,
MOIST, LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, BROWN, MOIST,
MED. STIFF, SANDY CLAY (A-6)
66 + 50.00

30.05

10+10.48
-LRA-

ROADWAY EMBANKMENT, BROWN AND GRAY,
MOIST, LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, BROWN, MOIST,
MED. STIFF, SANDY CLAY (A-6)
66 + 00.00

ROADWAY EMBANKMENT, BROWN AND GRAY,
MOIST, LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, BROWN, MOIST,
MED. STIFF, SANDY CLAY (A-6)
65 + 50.00

ROADWAY EMBANKMENT, BROWN AND GRAY,
MOIST, LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, BROWN AND GRAY, MOIST, MED. STIFF, SANDY CLAY (A-6)

GRAY, WET, LOOSE TO MED. DENSE, CLAYEY SAND (A-2-6)

64+78

12/14
BT

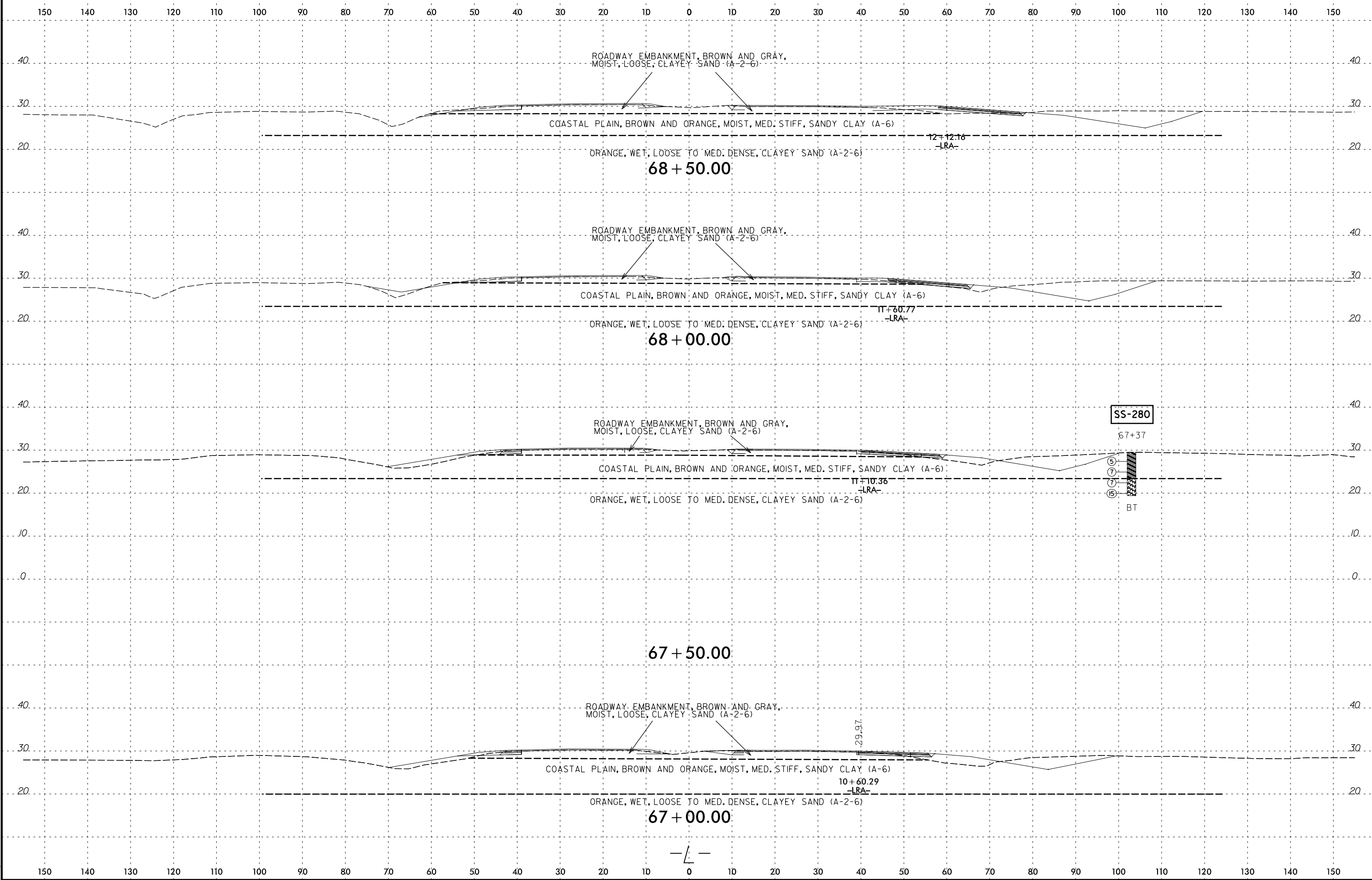
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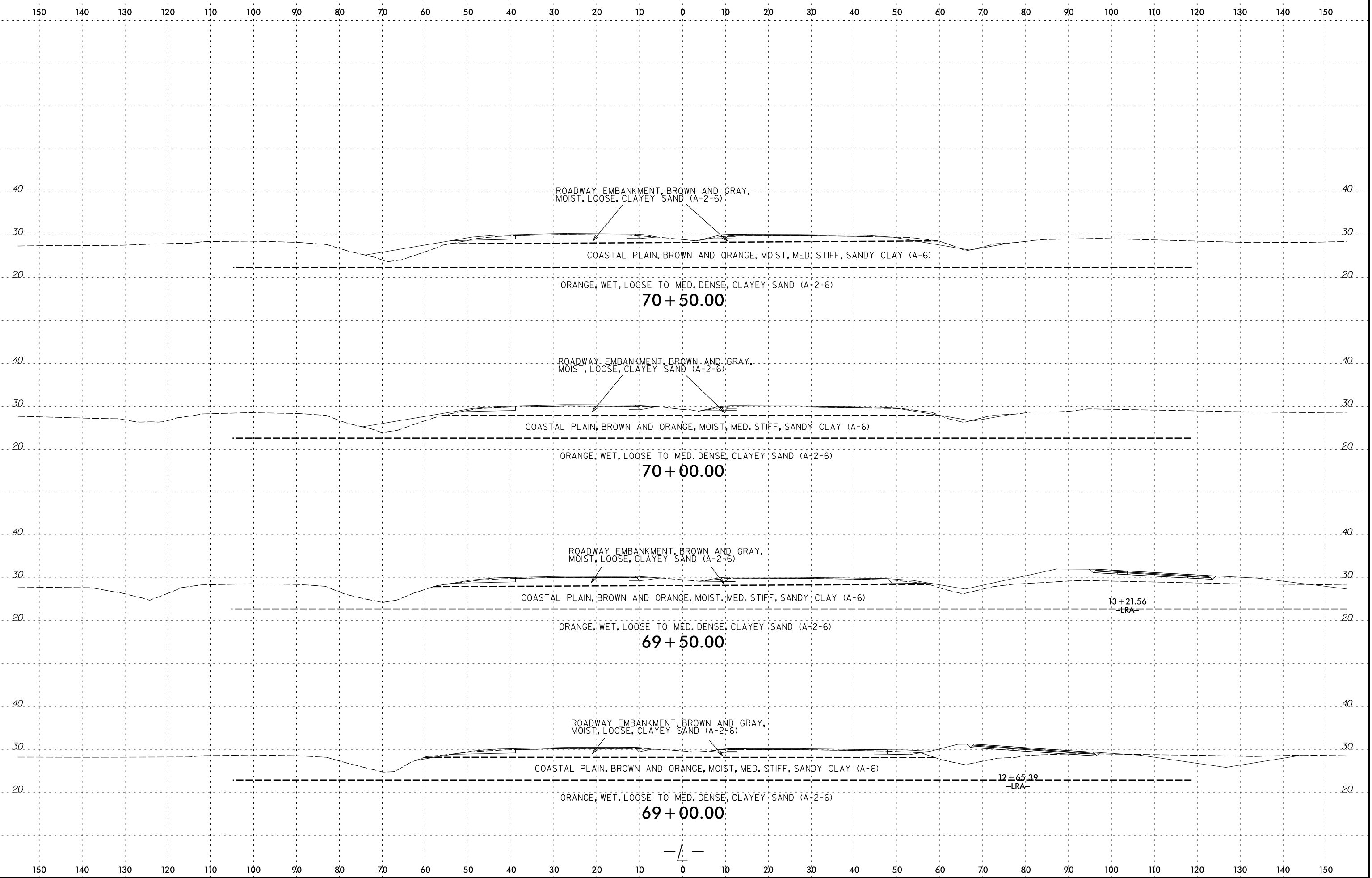
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 Stephen_Crockett

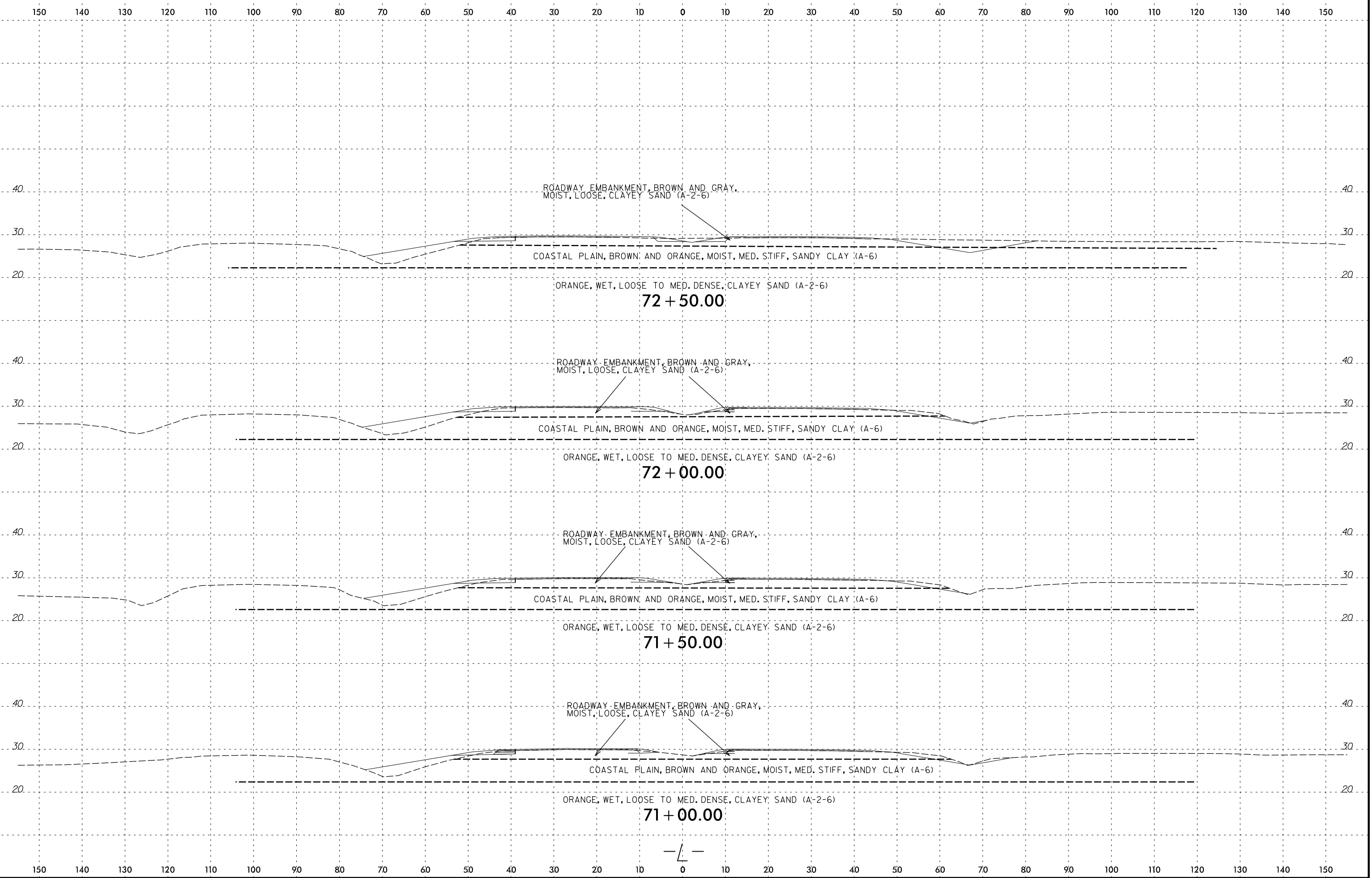
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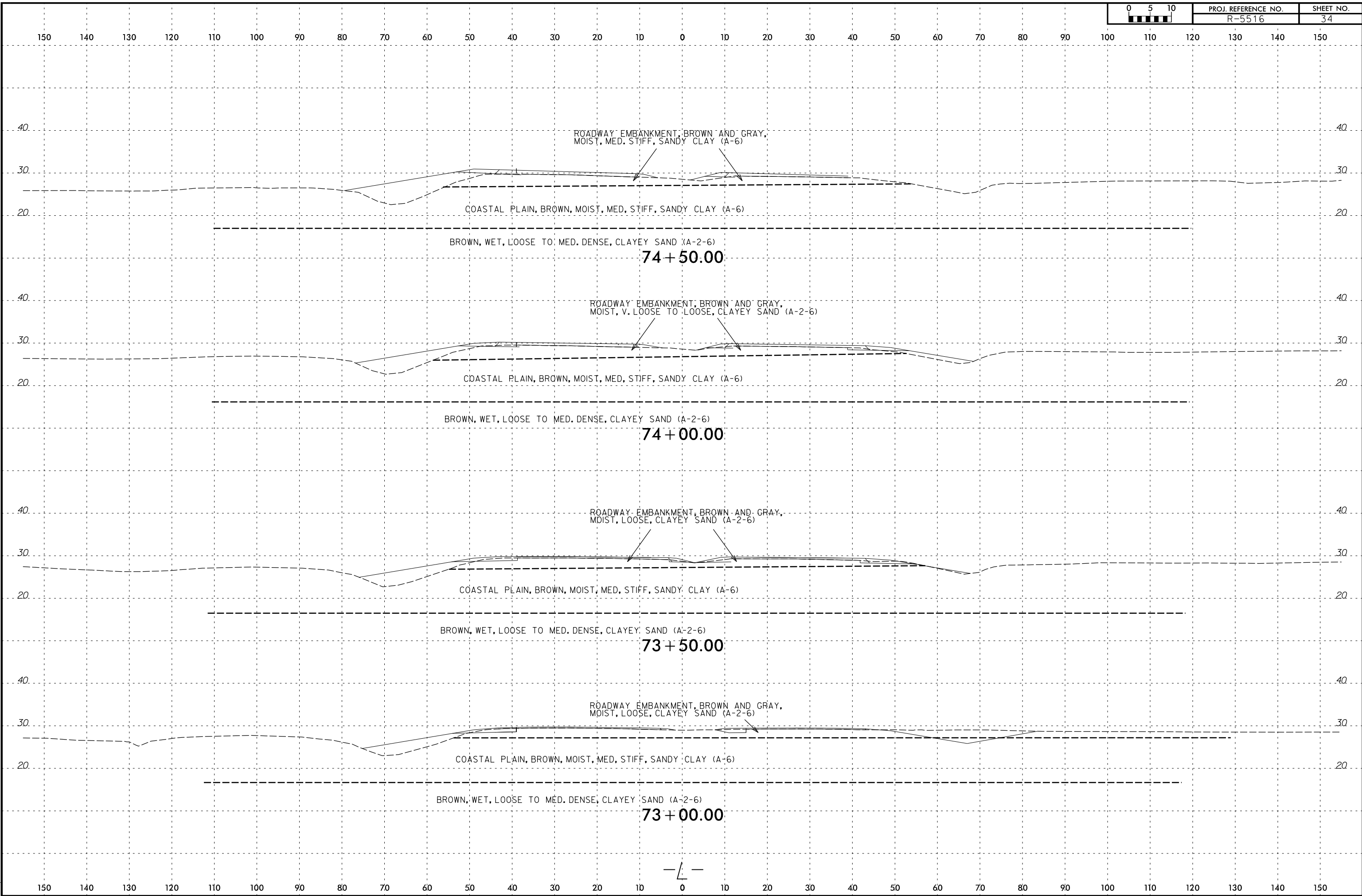
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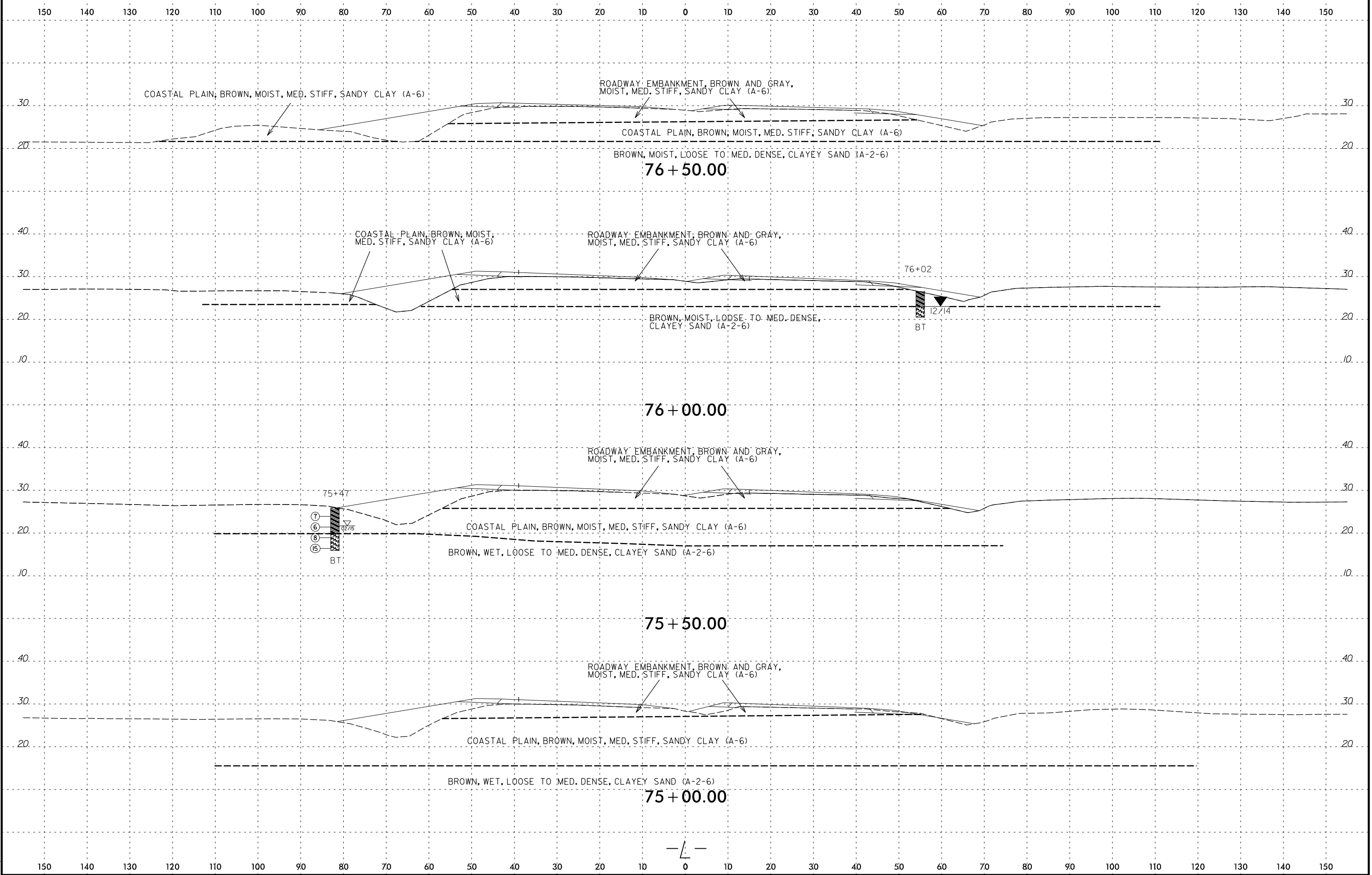


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 Stephen Crockett

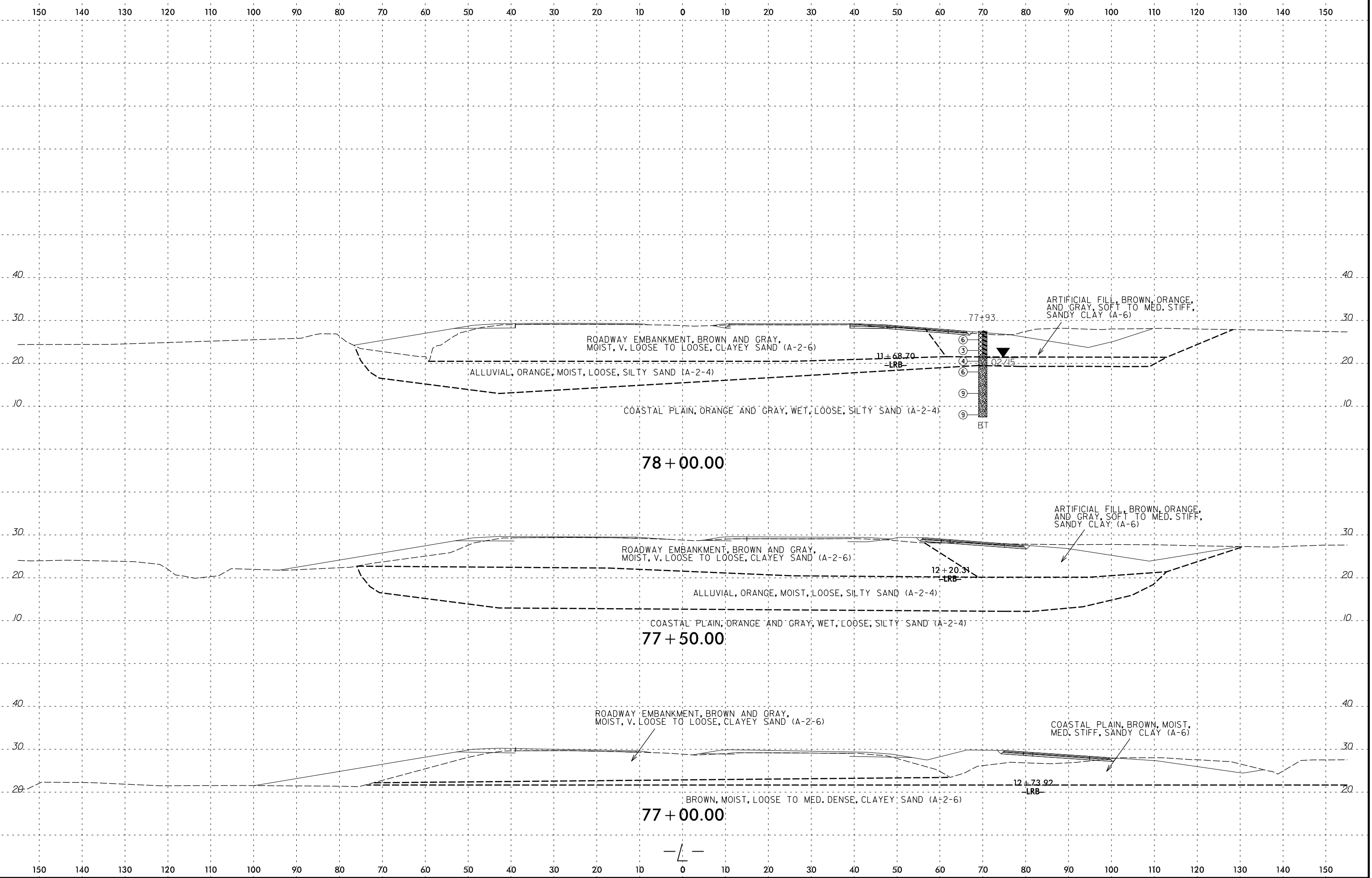


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 Stephen Crockett

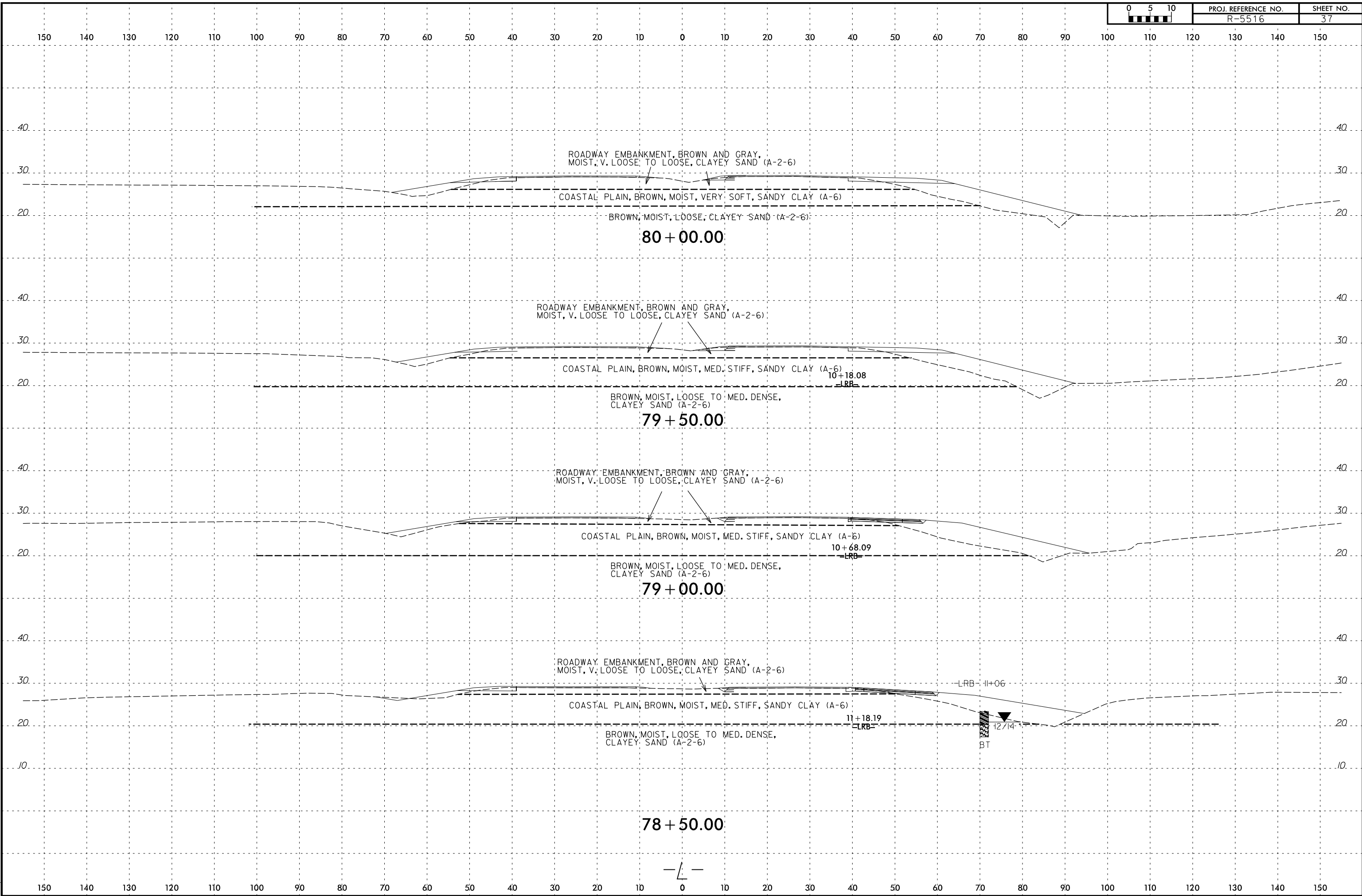




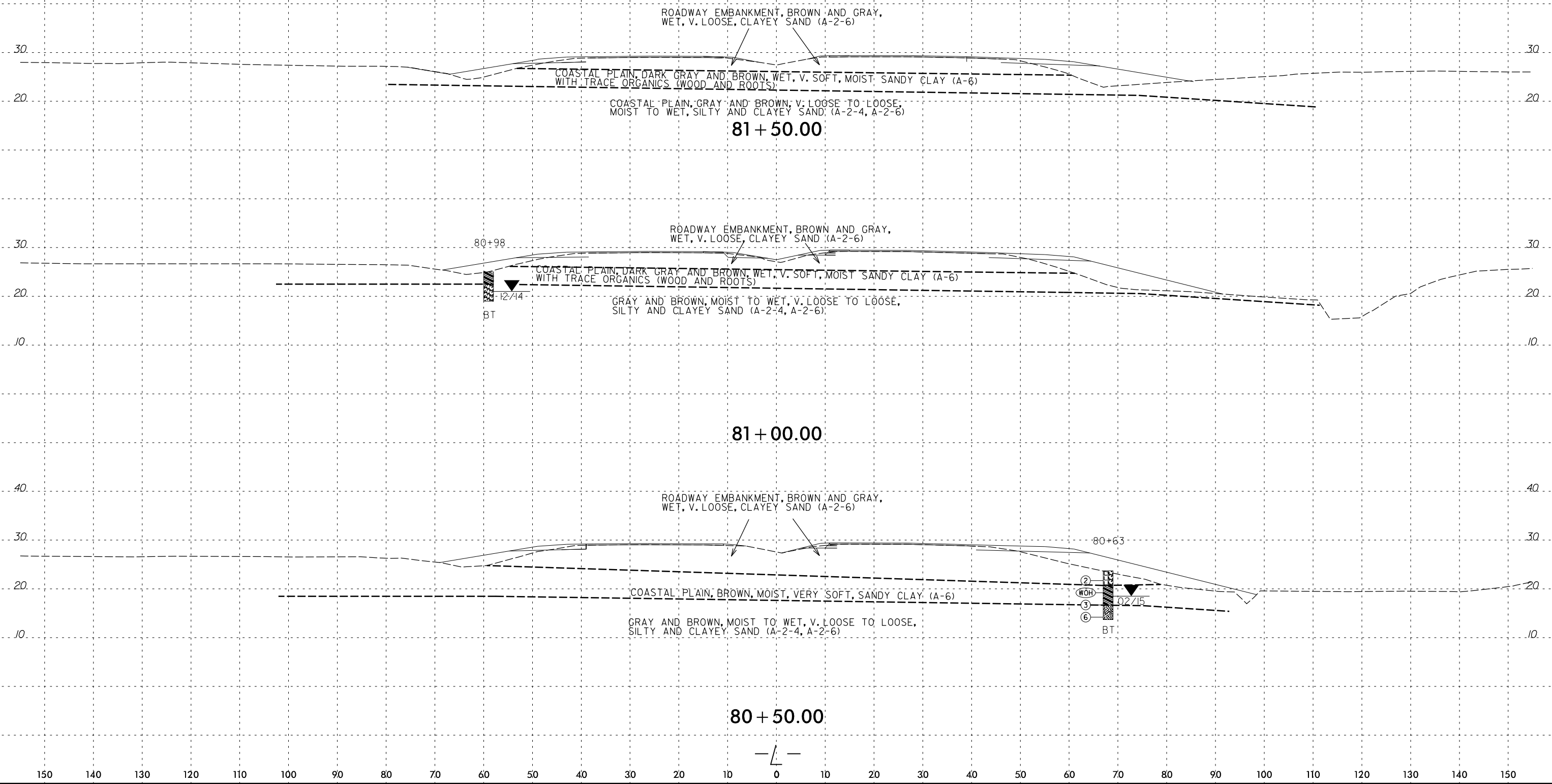
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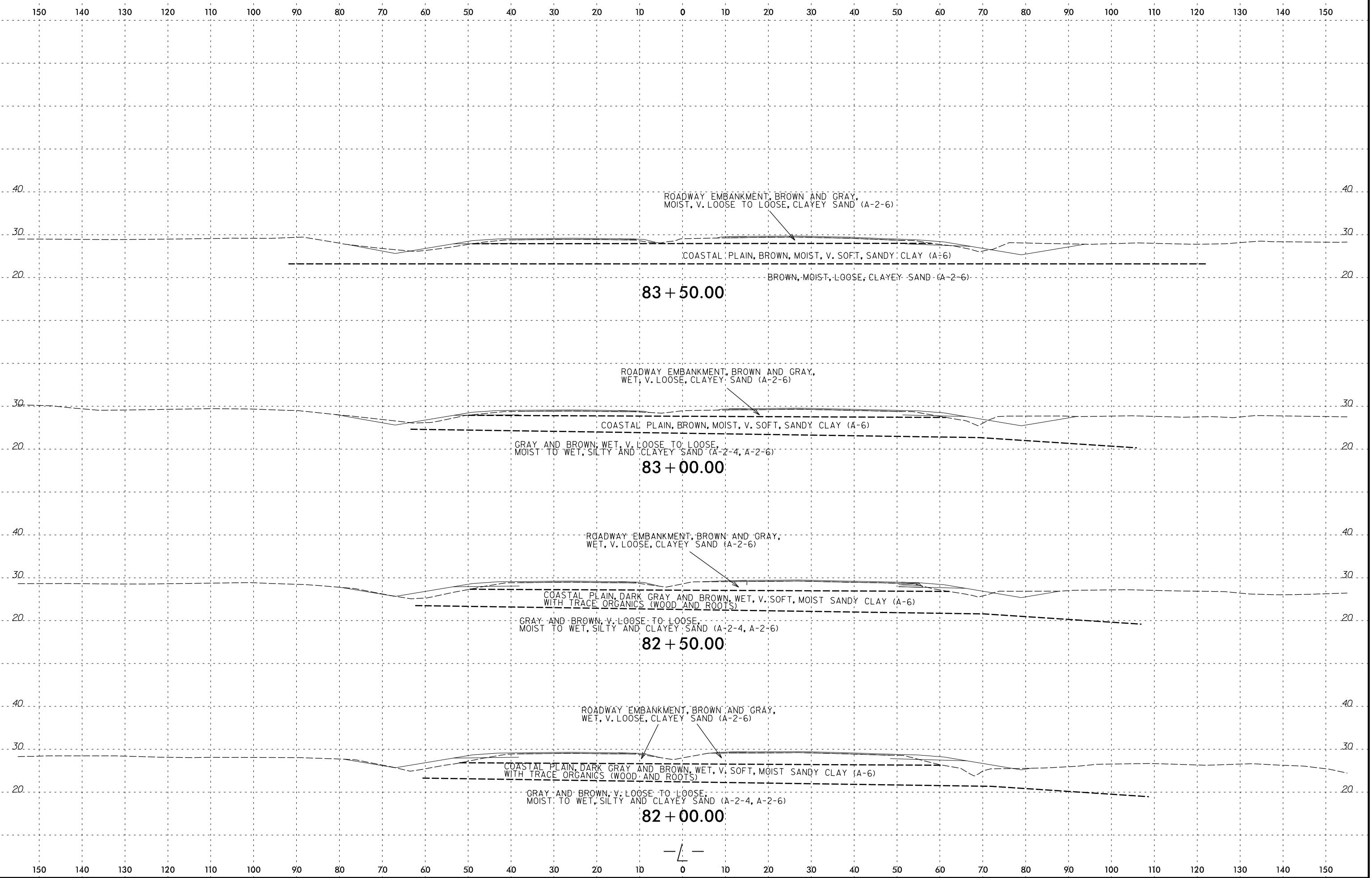


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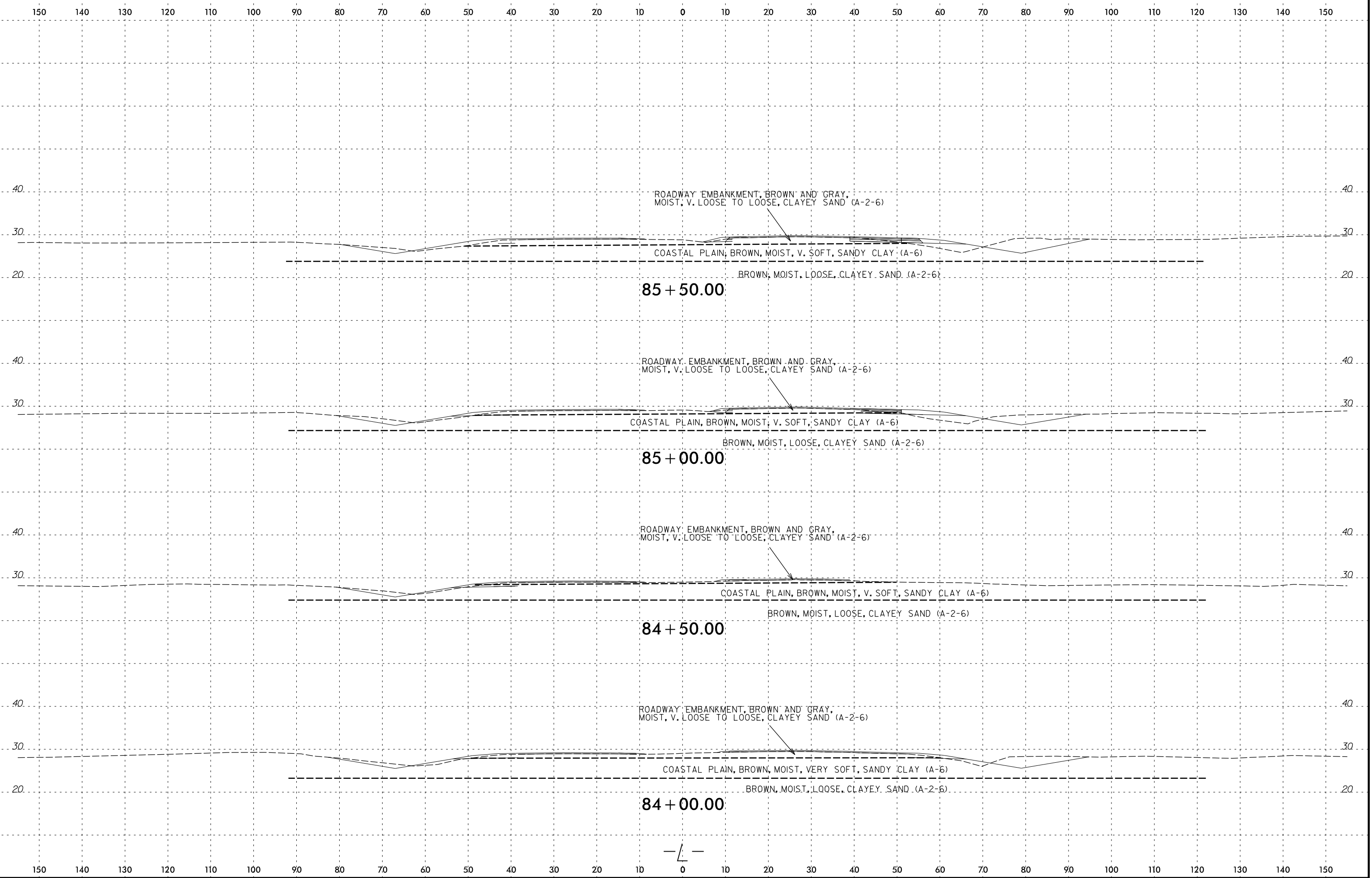


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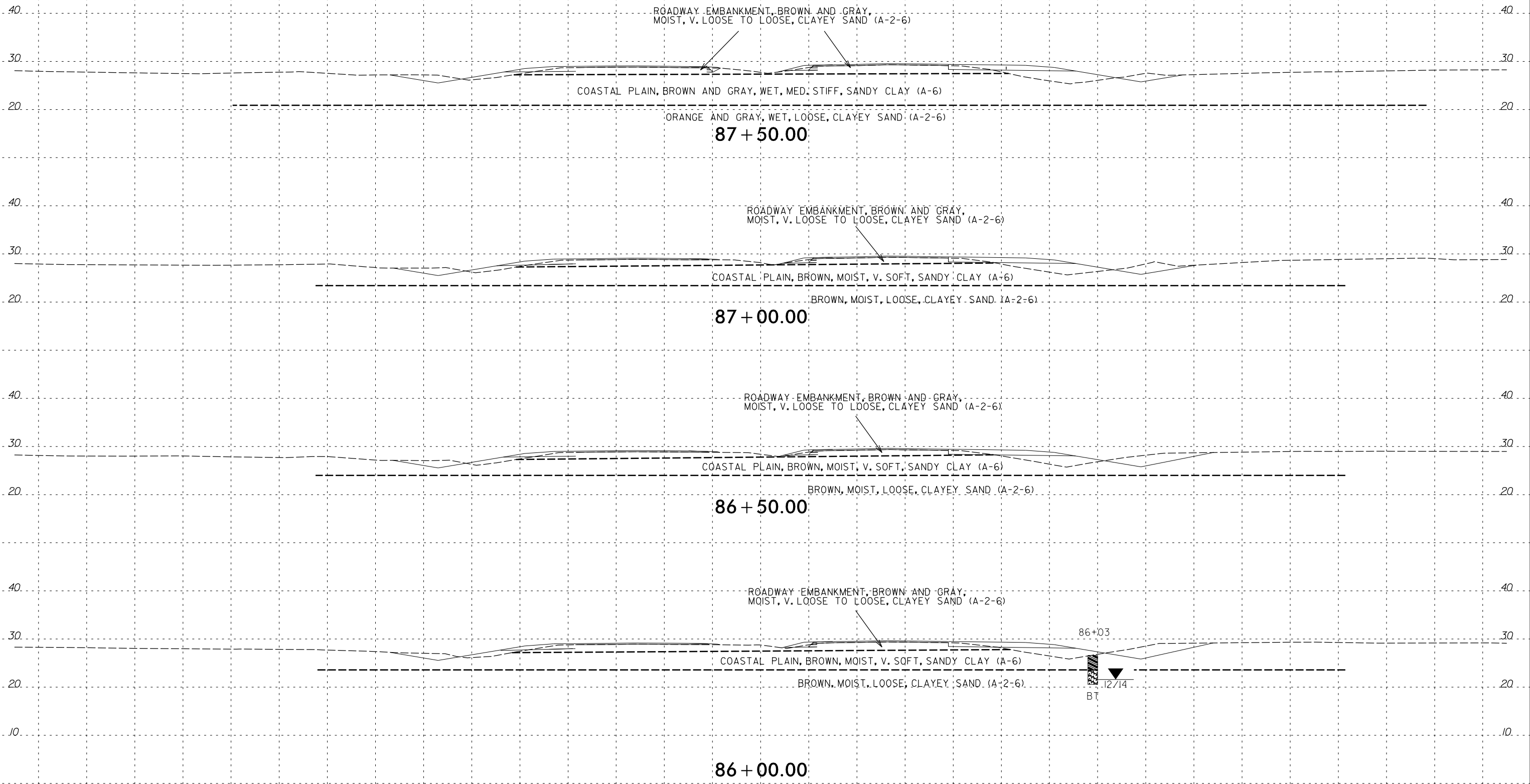
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 Stephen_Crockett



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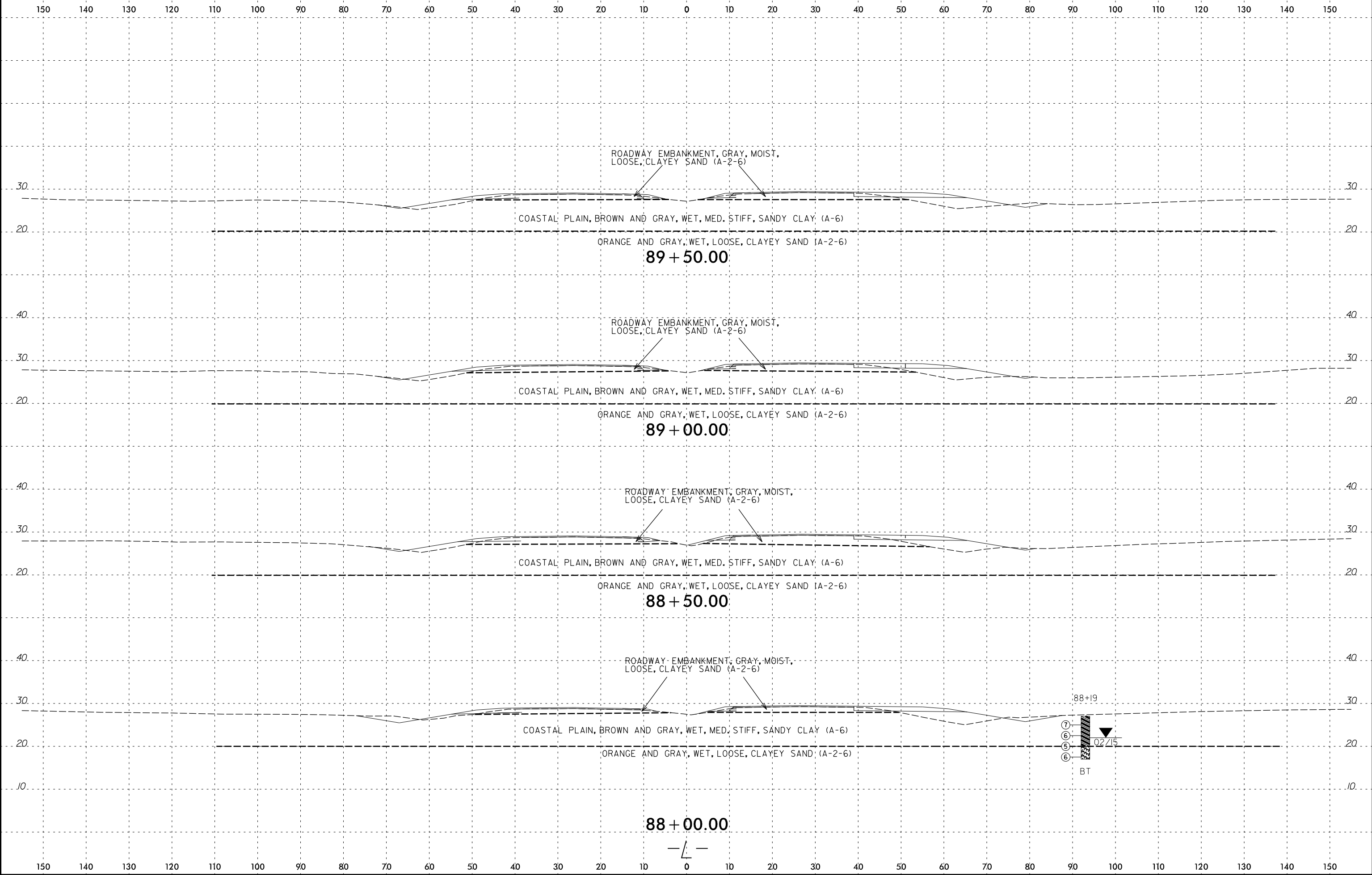
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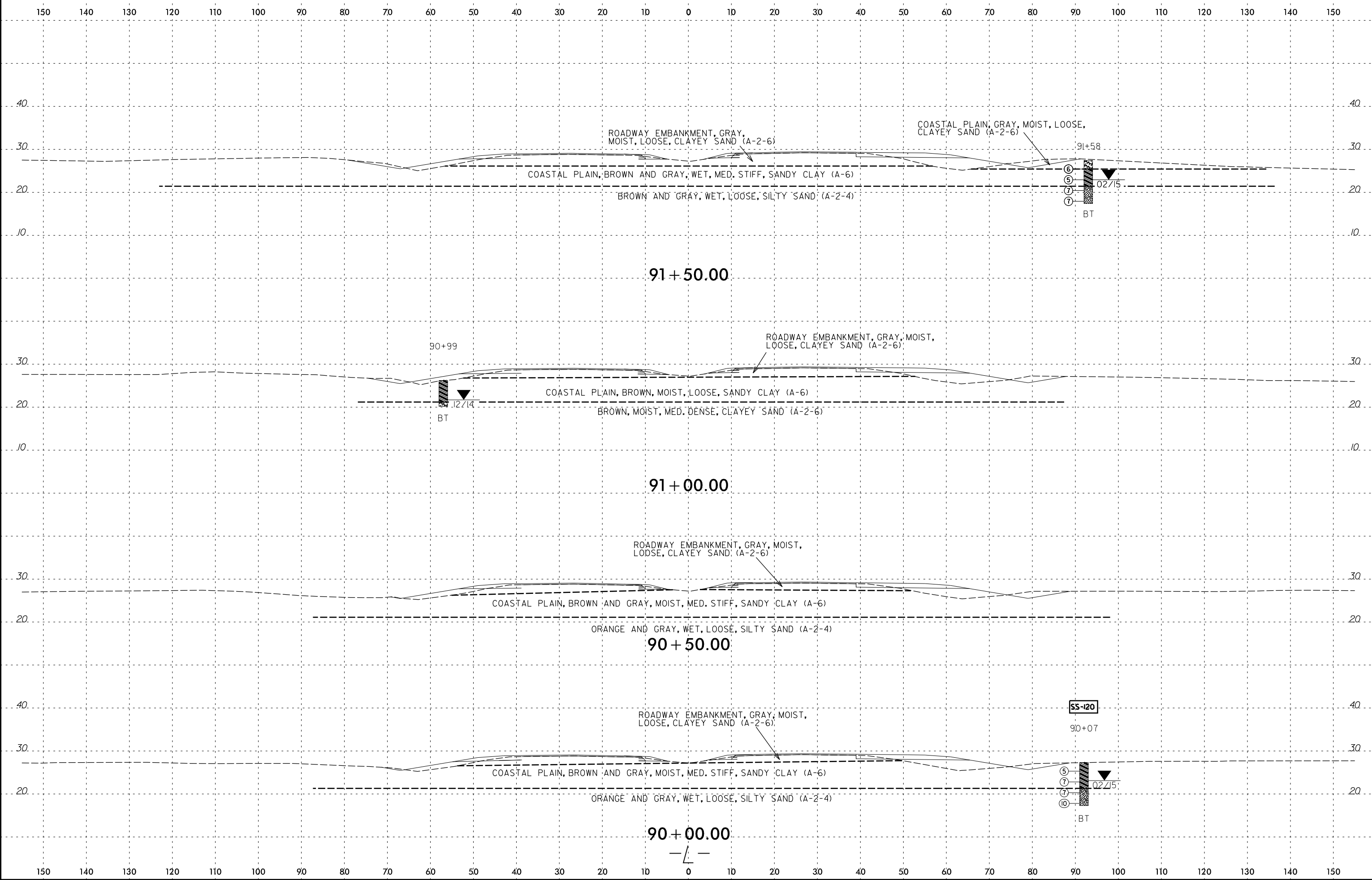
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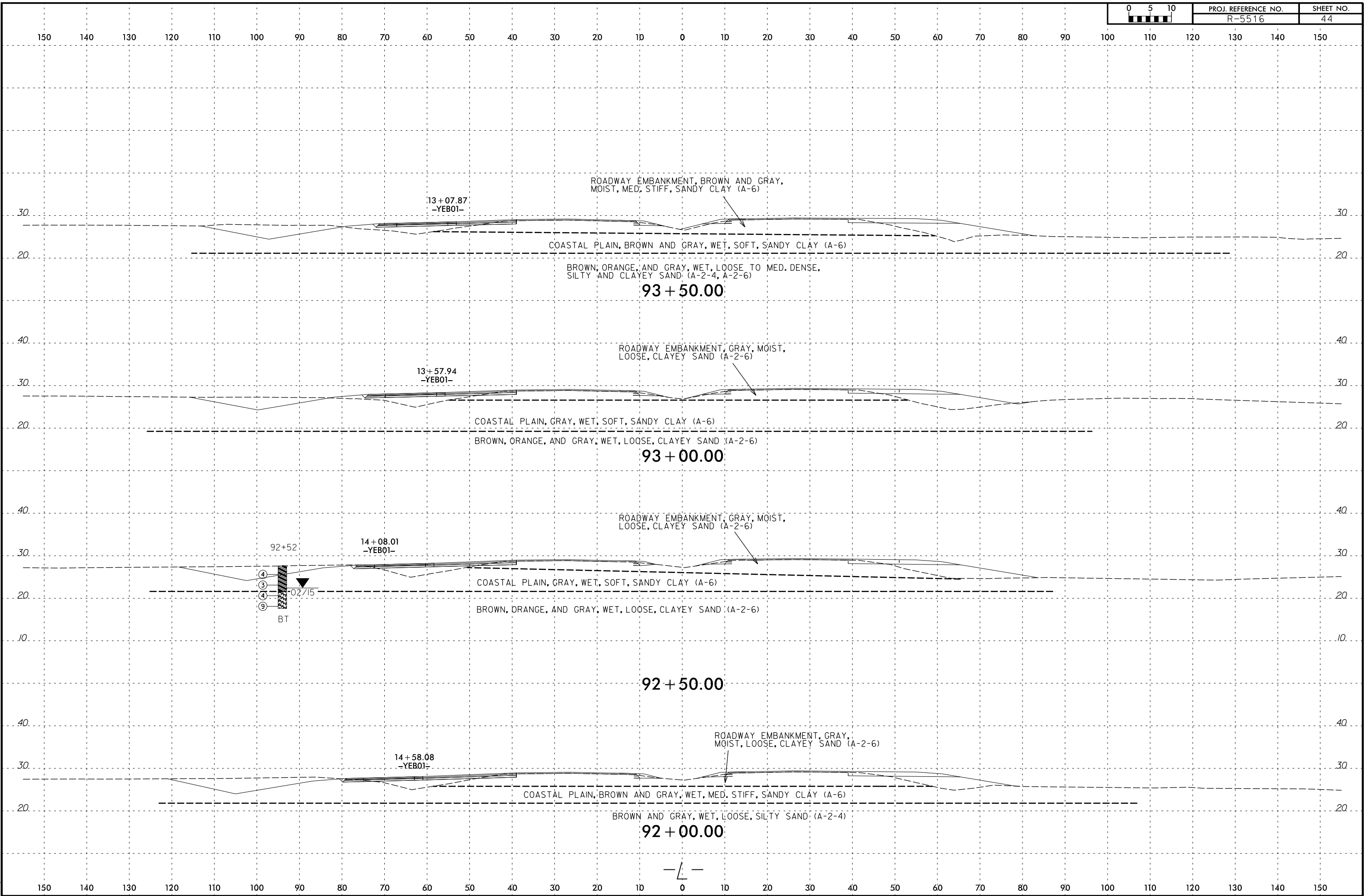


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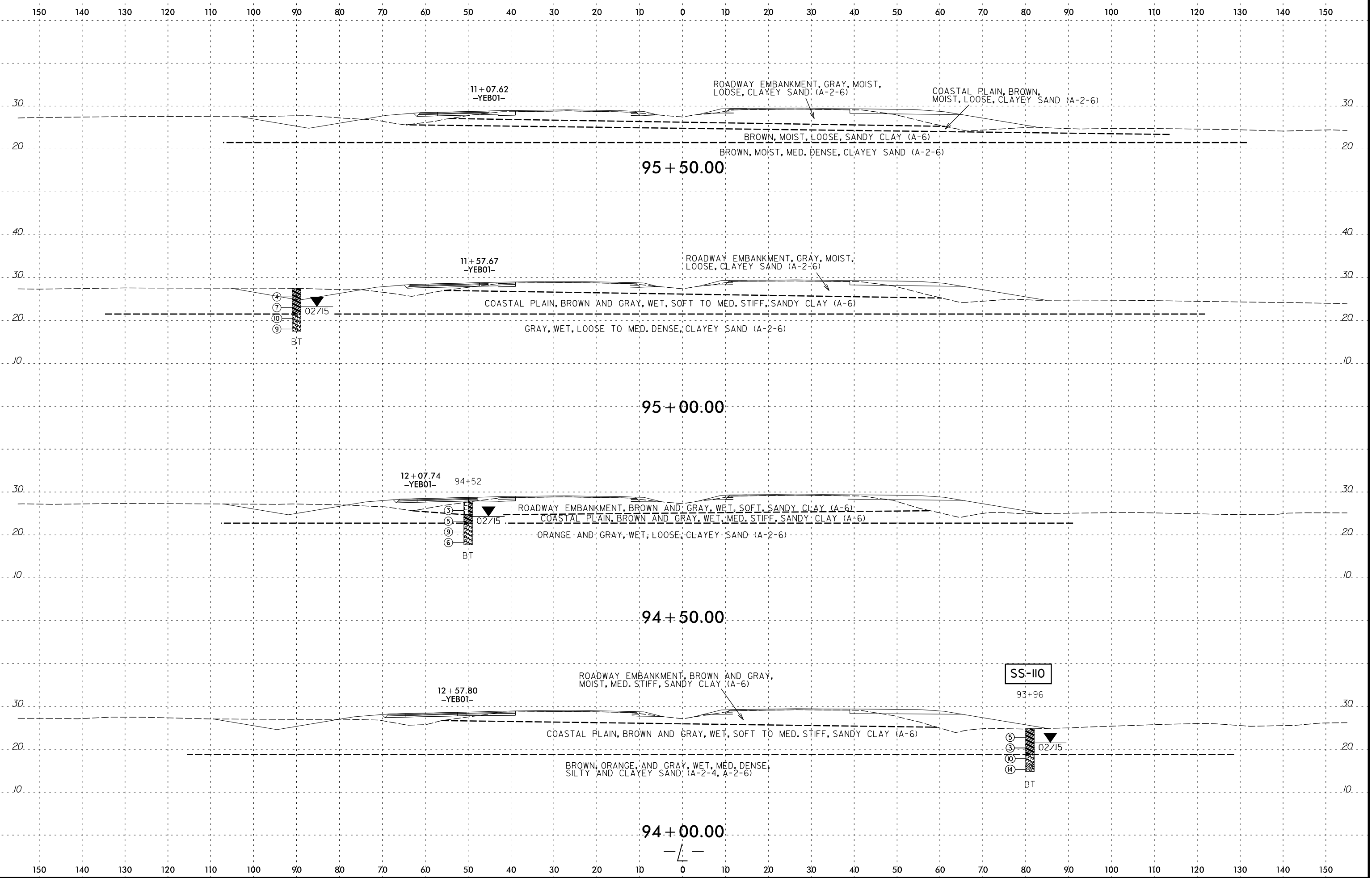




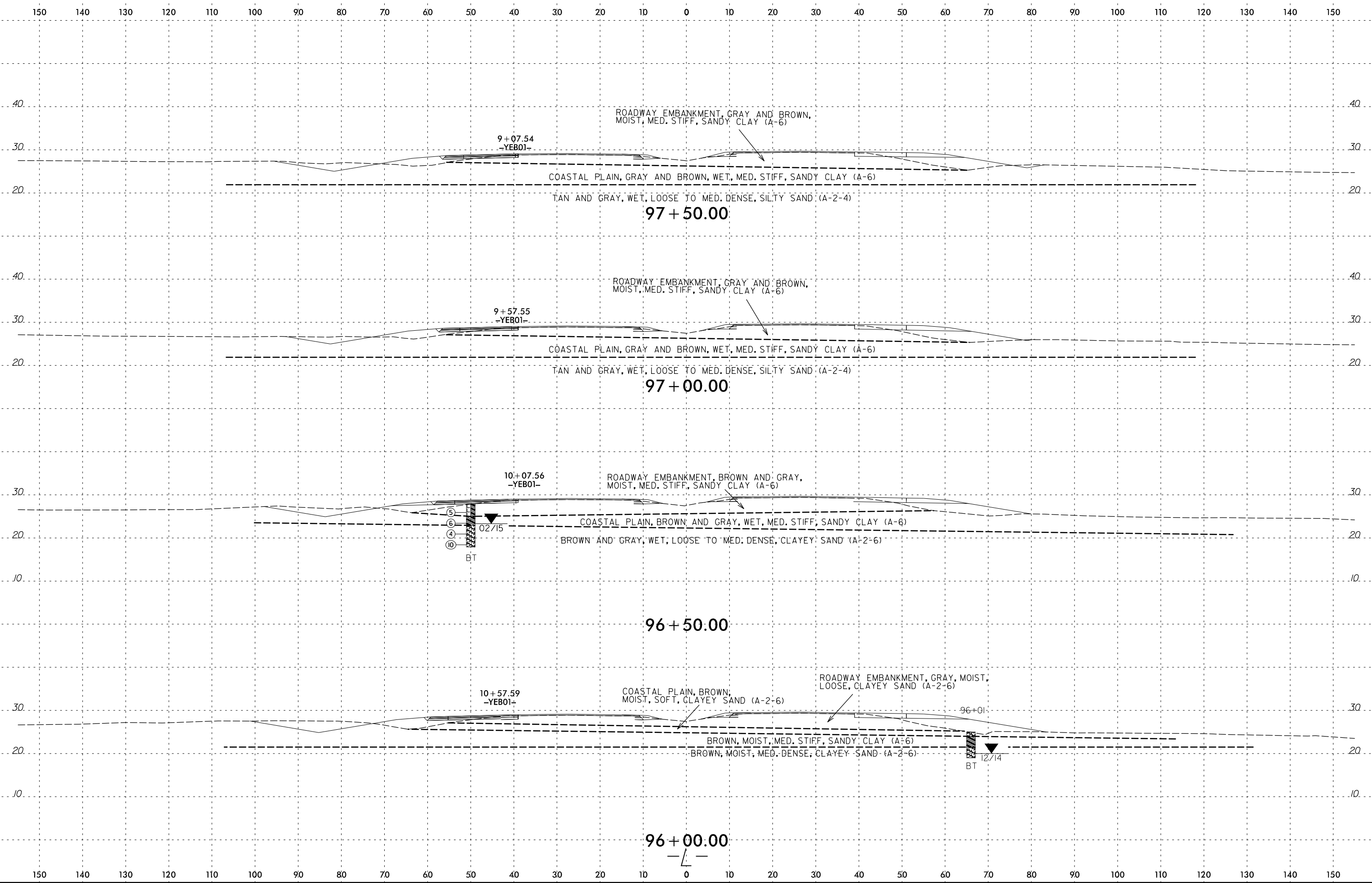


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 Stephen_Crockett

8/23/99

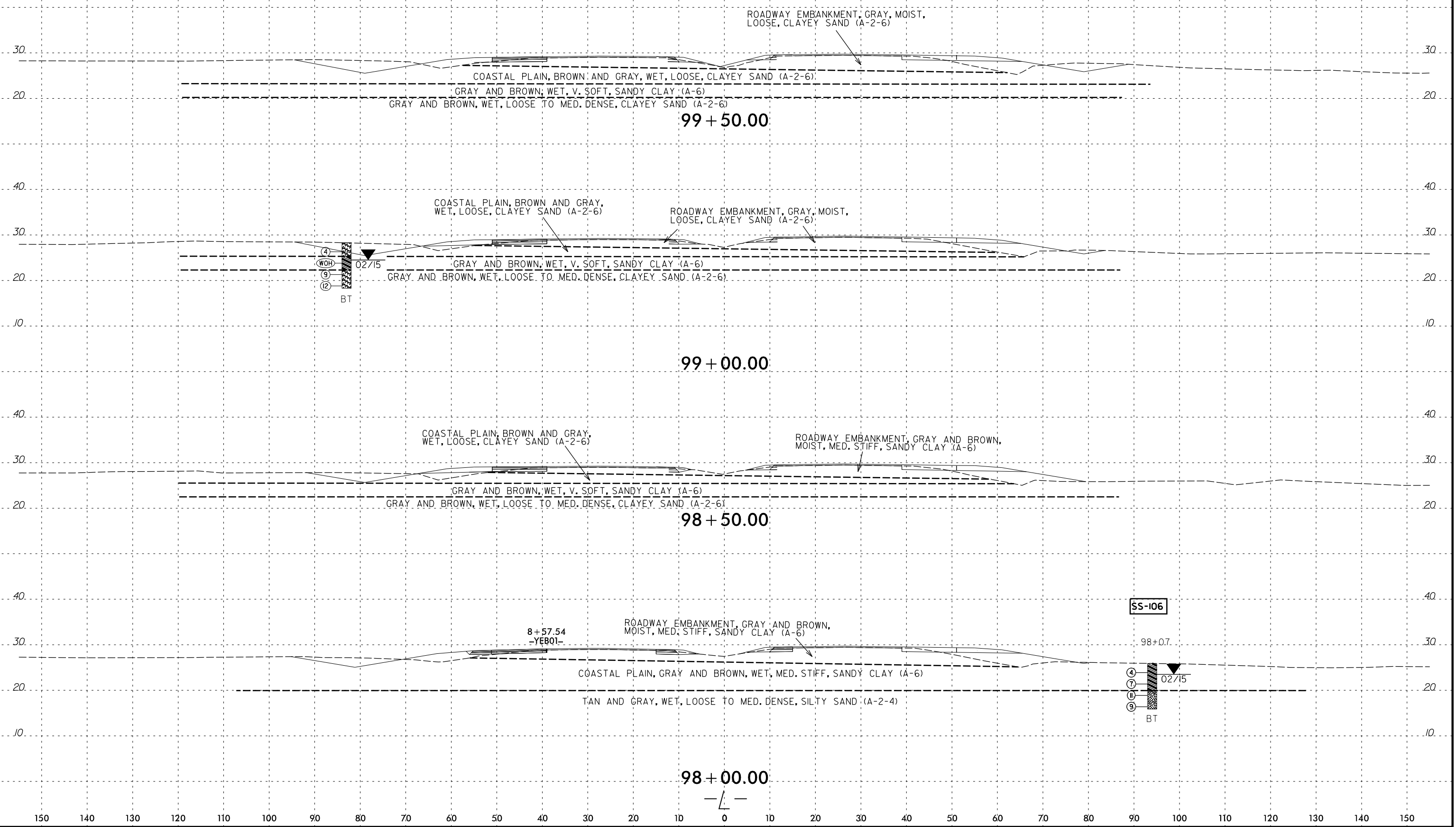


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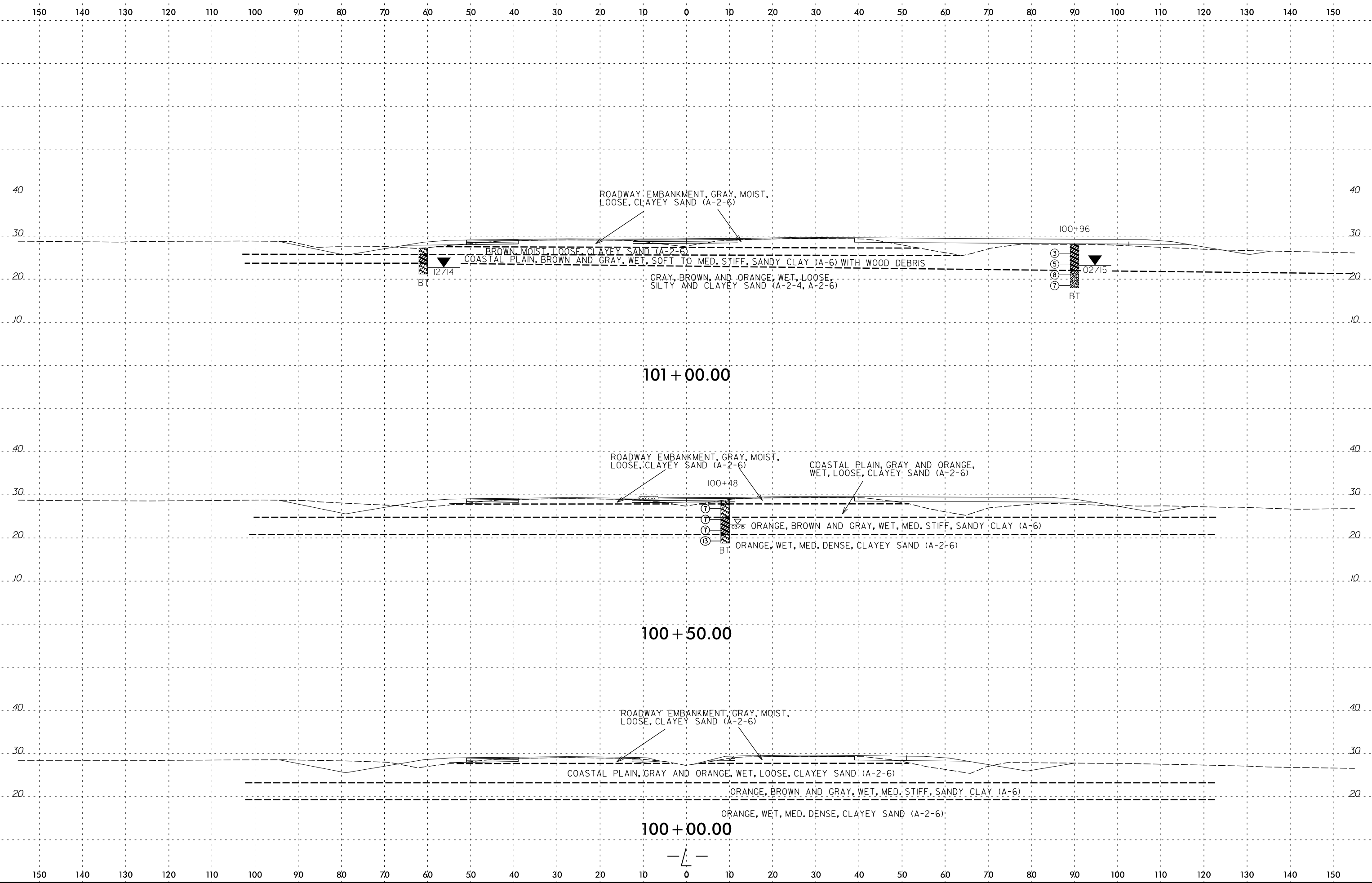


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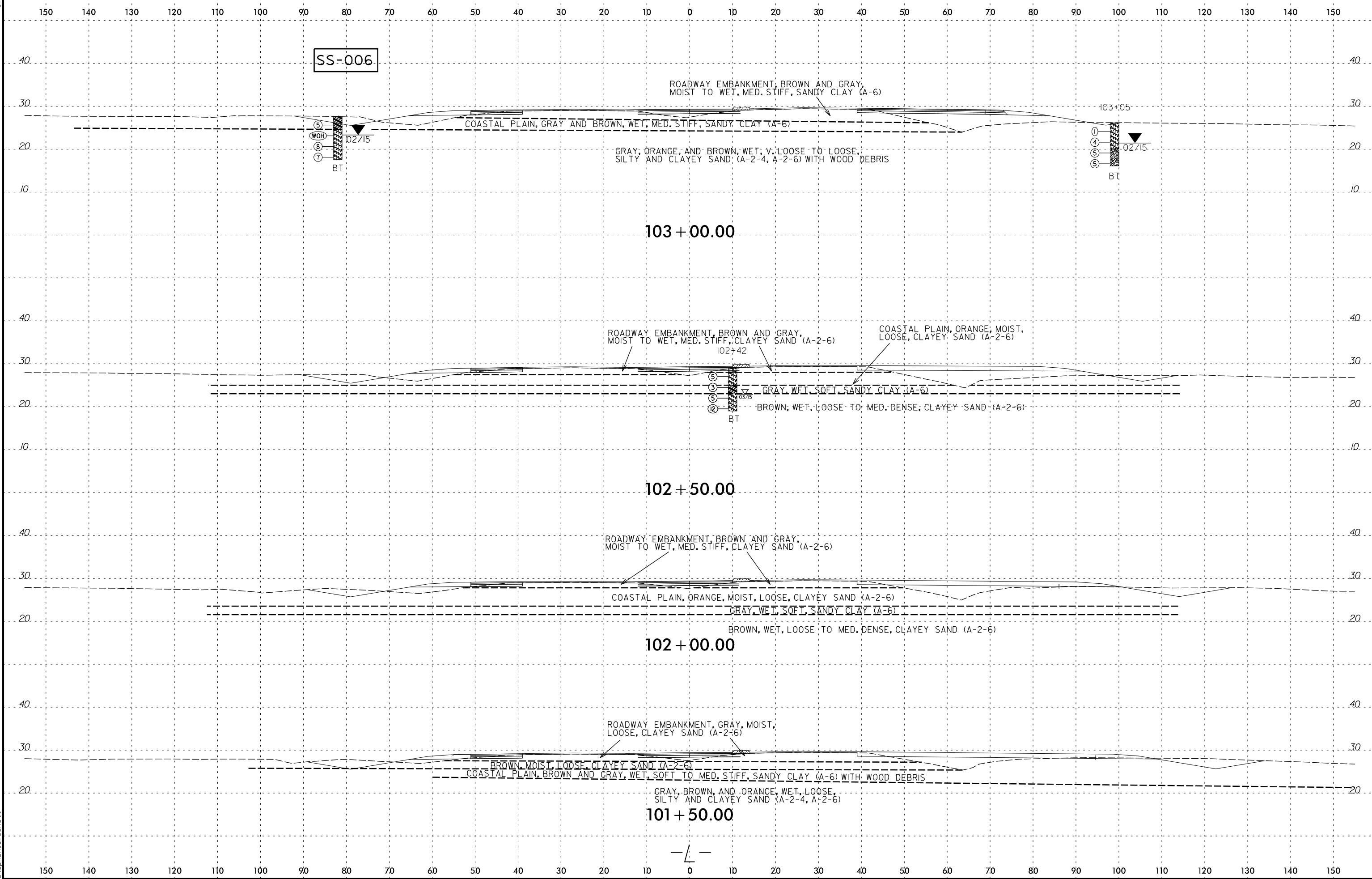
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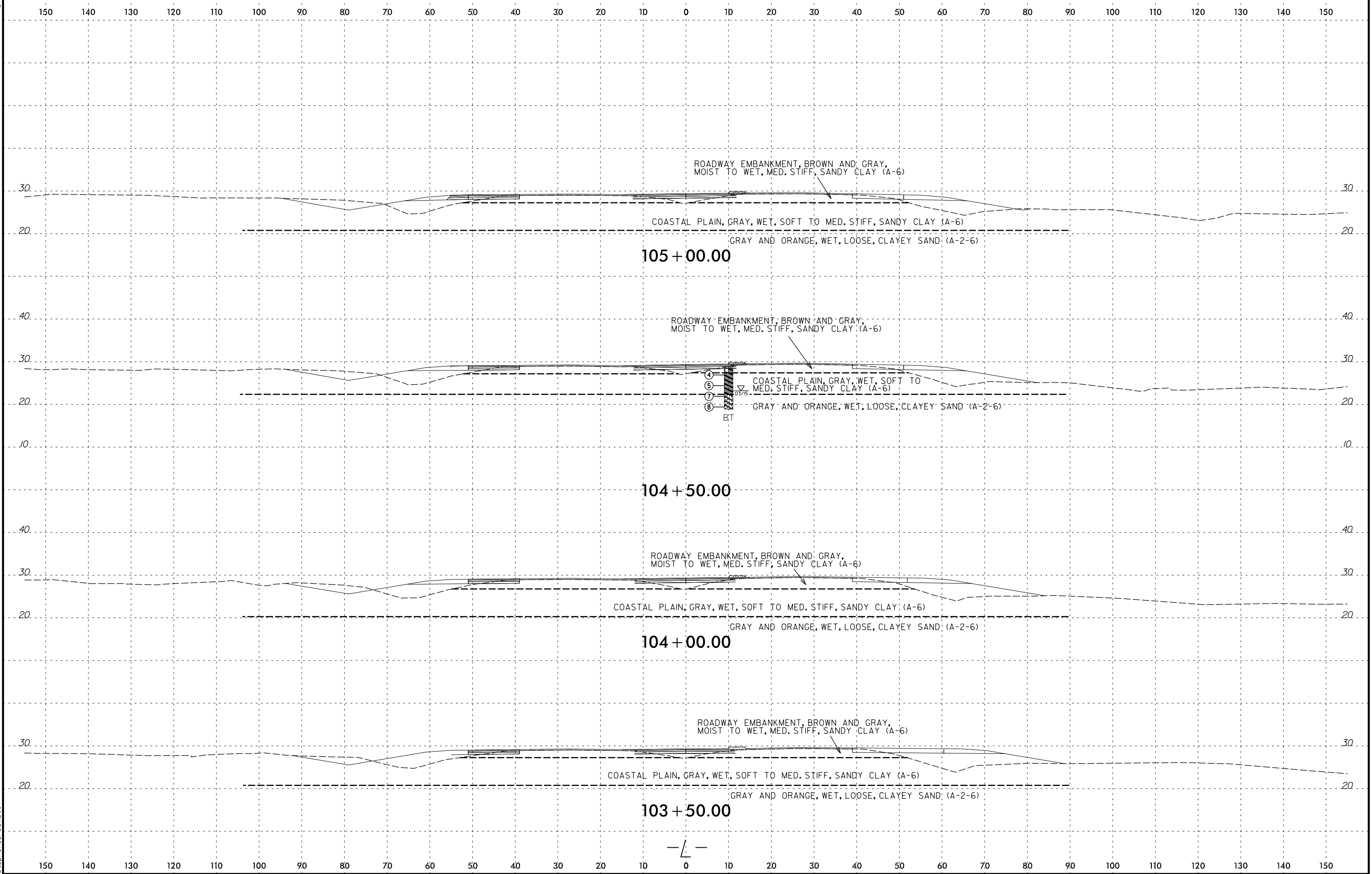
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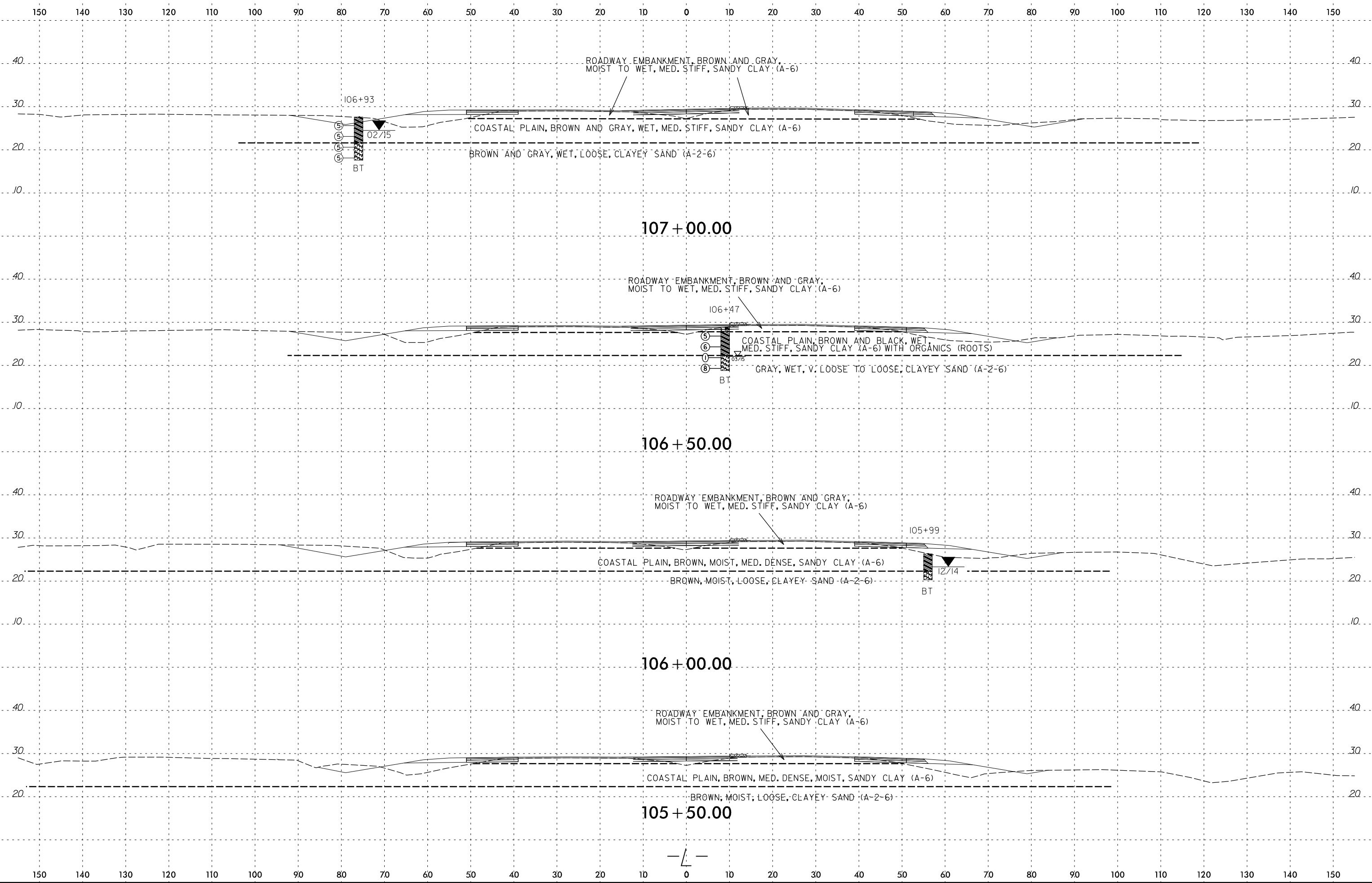


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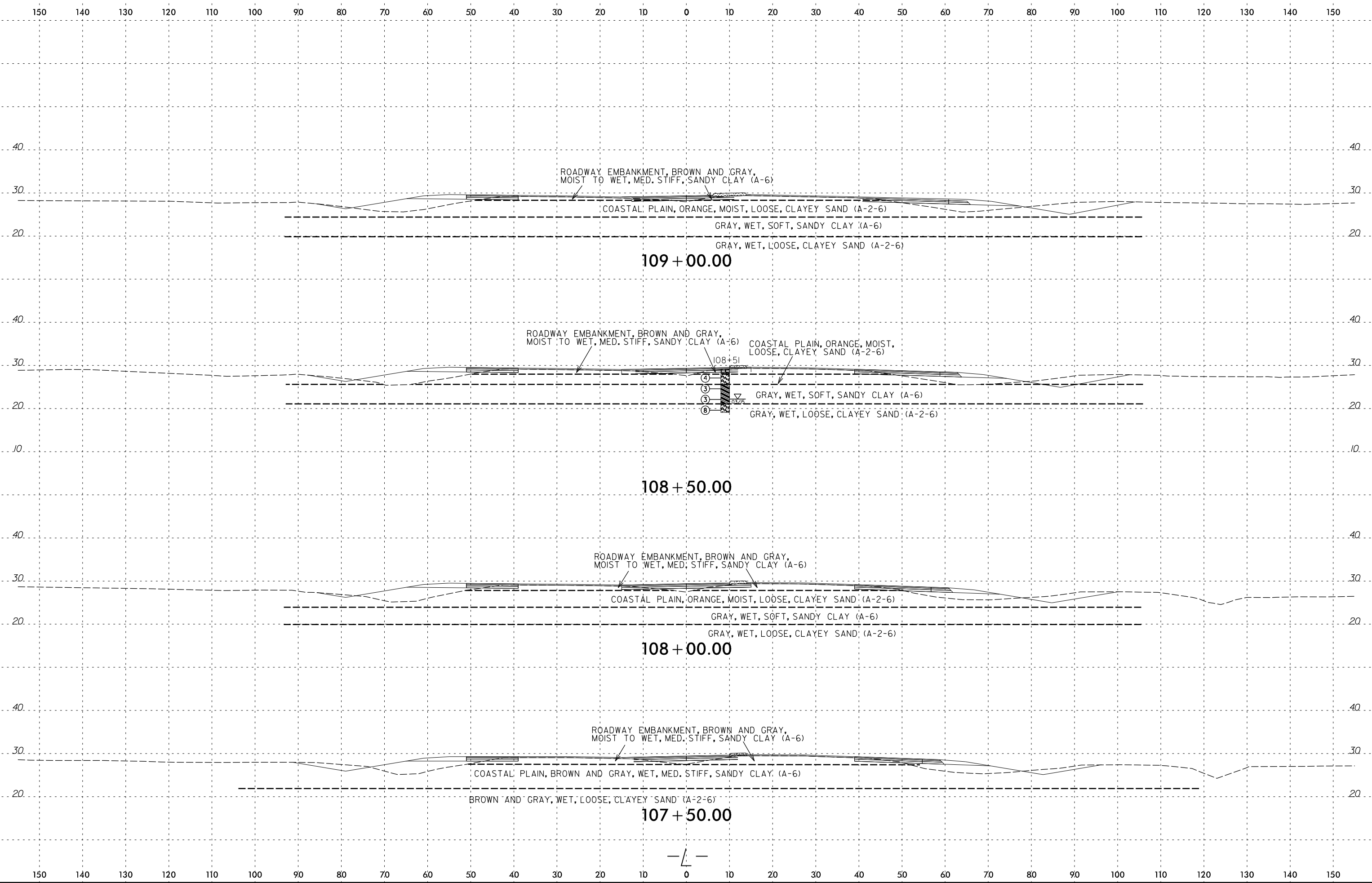


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 Stephen_Crockett

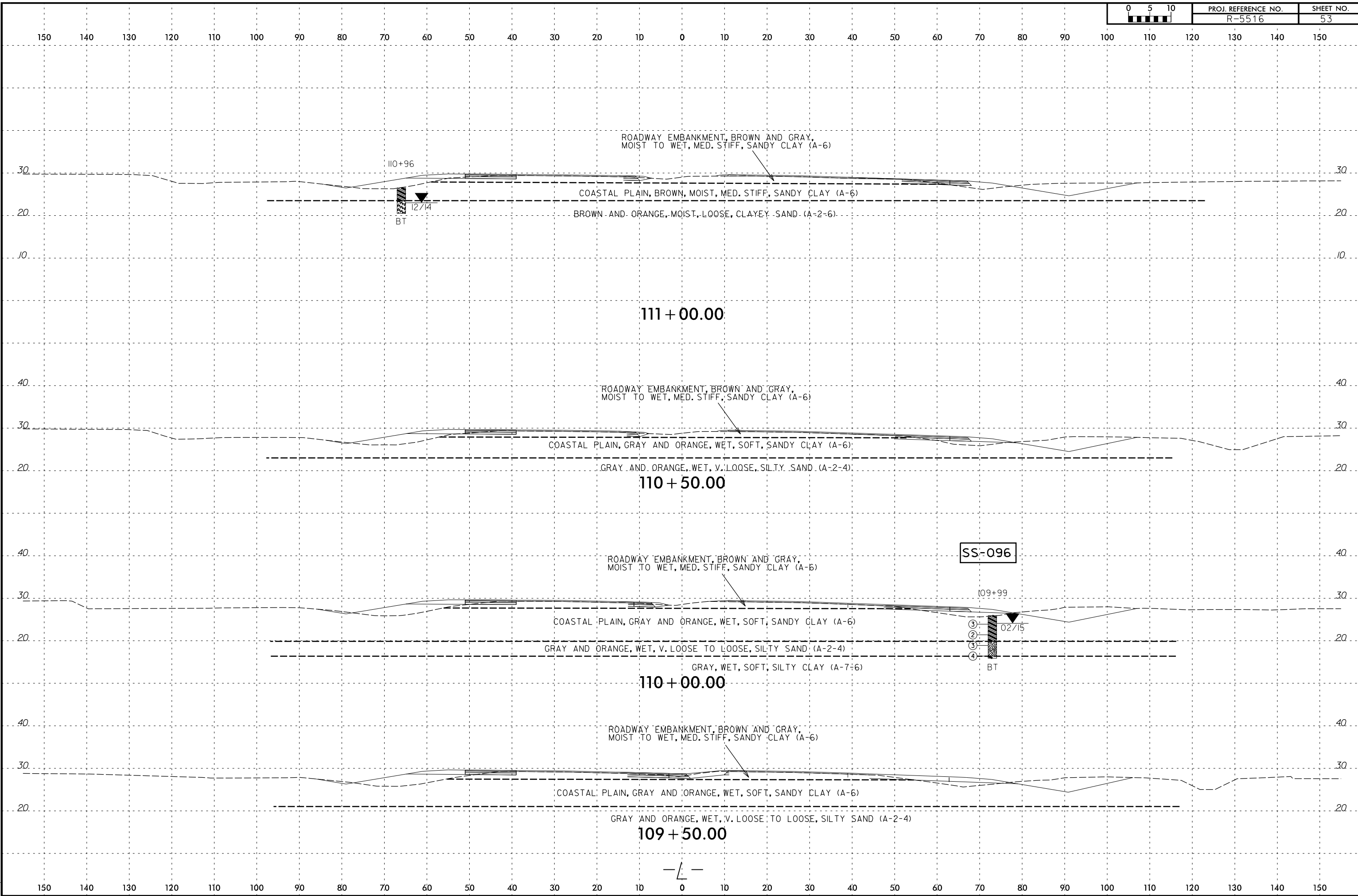




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 Stephen_Crockett

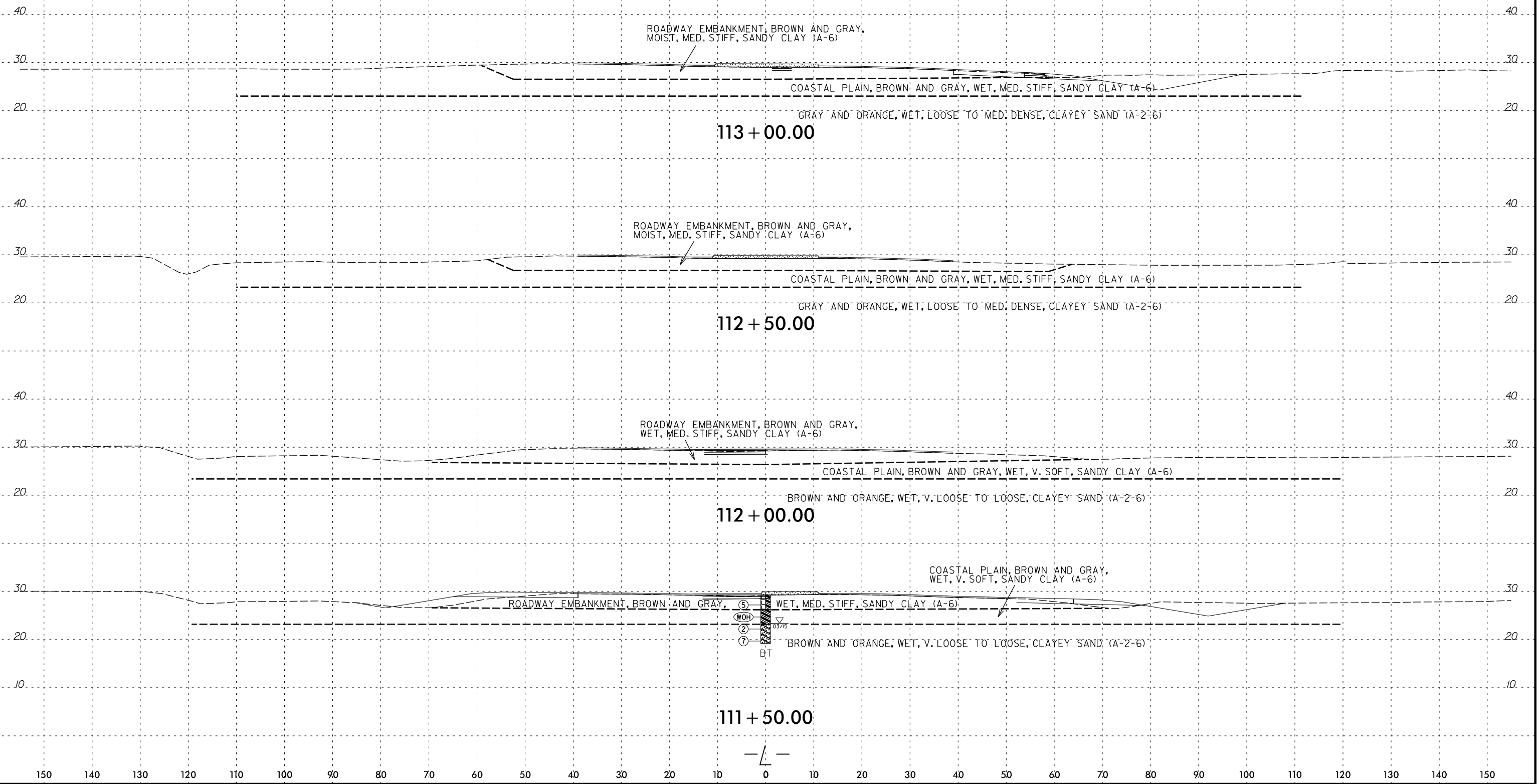


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 Stephen_Crockett

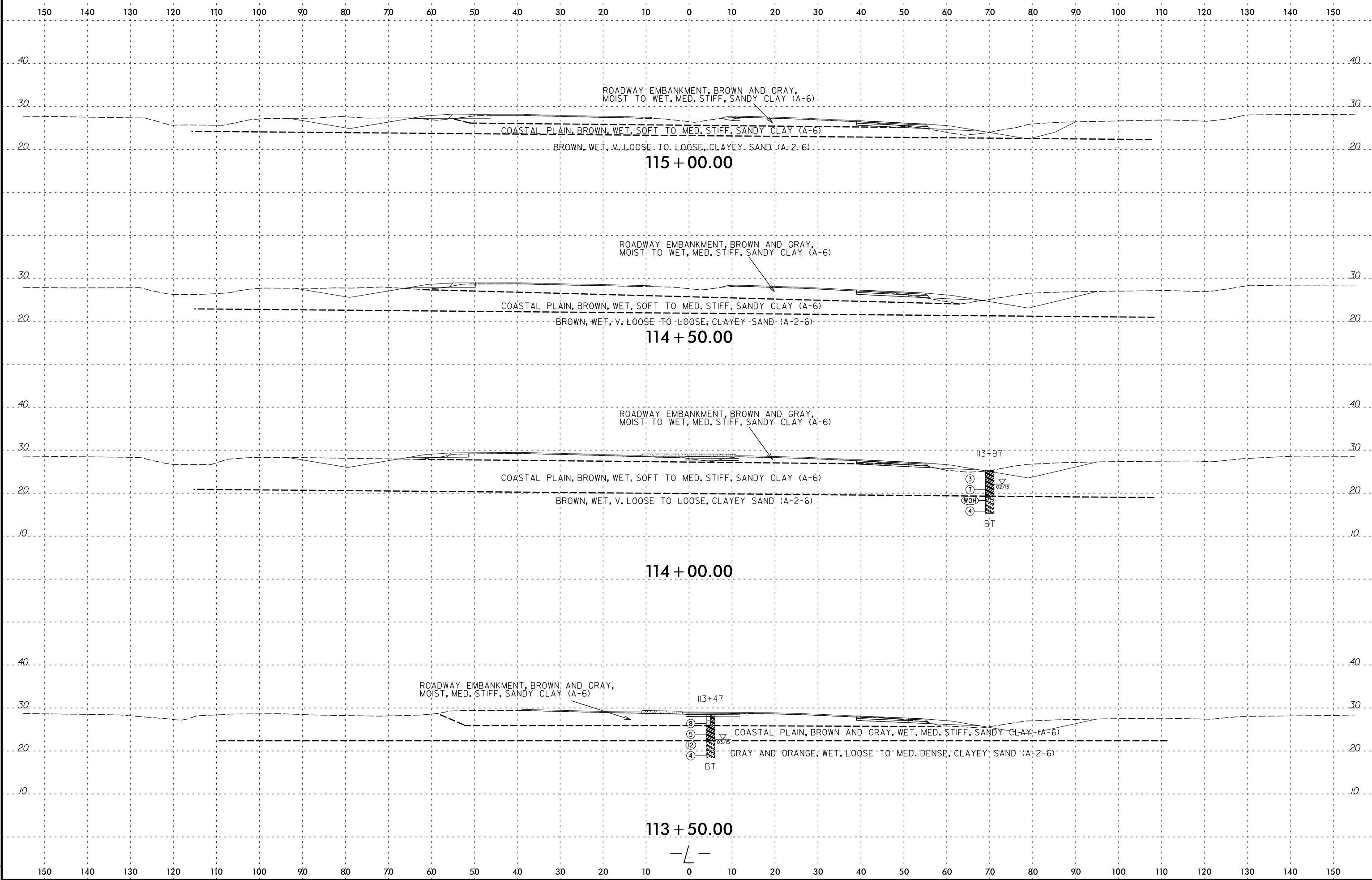


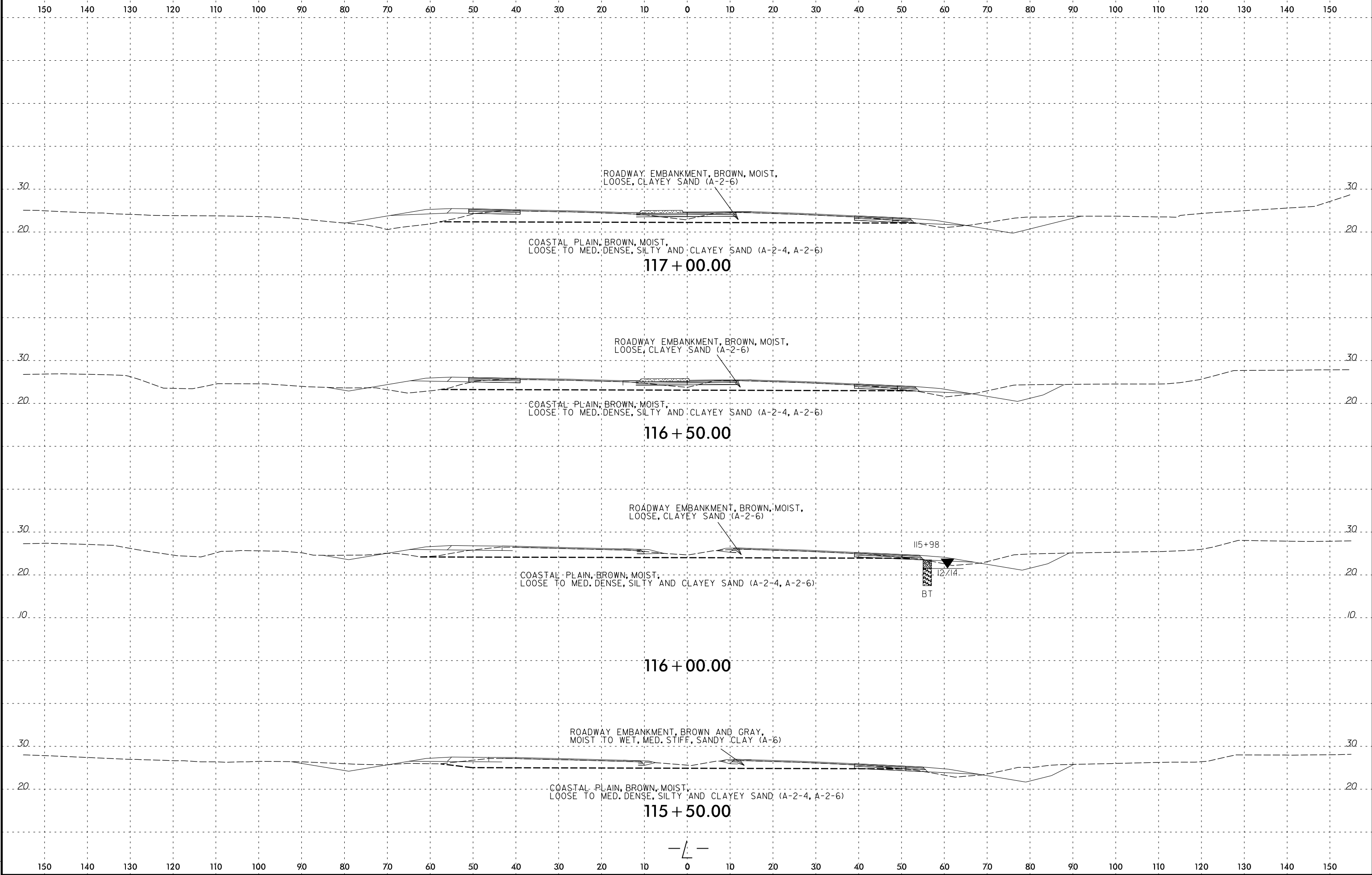
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 Stephen_Crockett

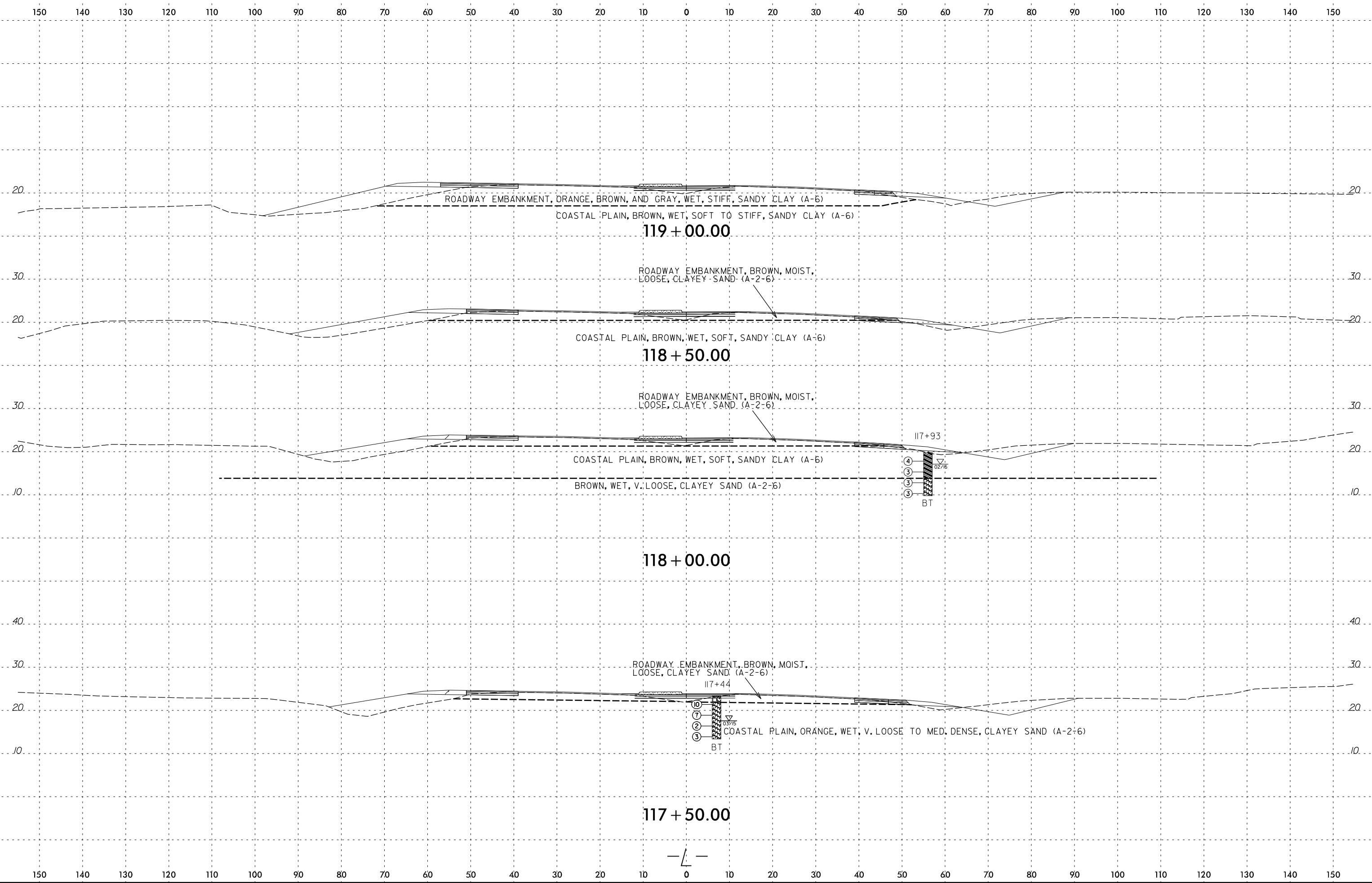
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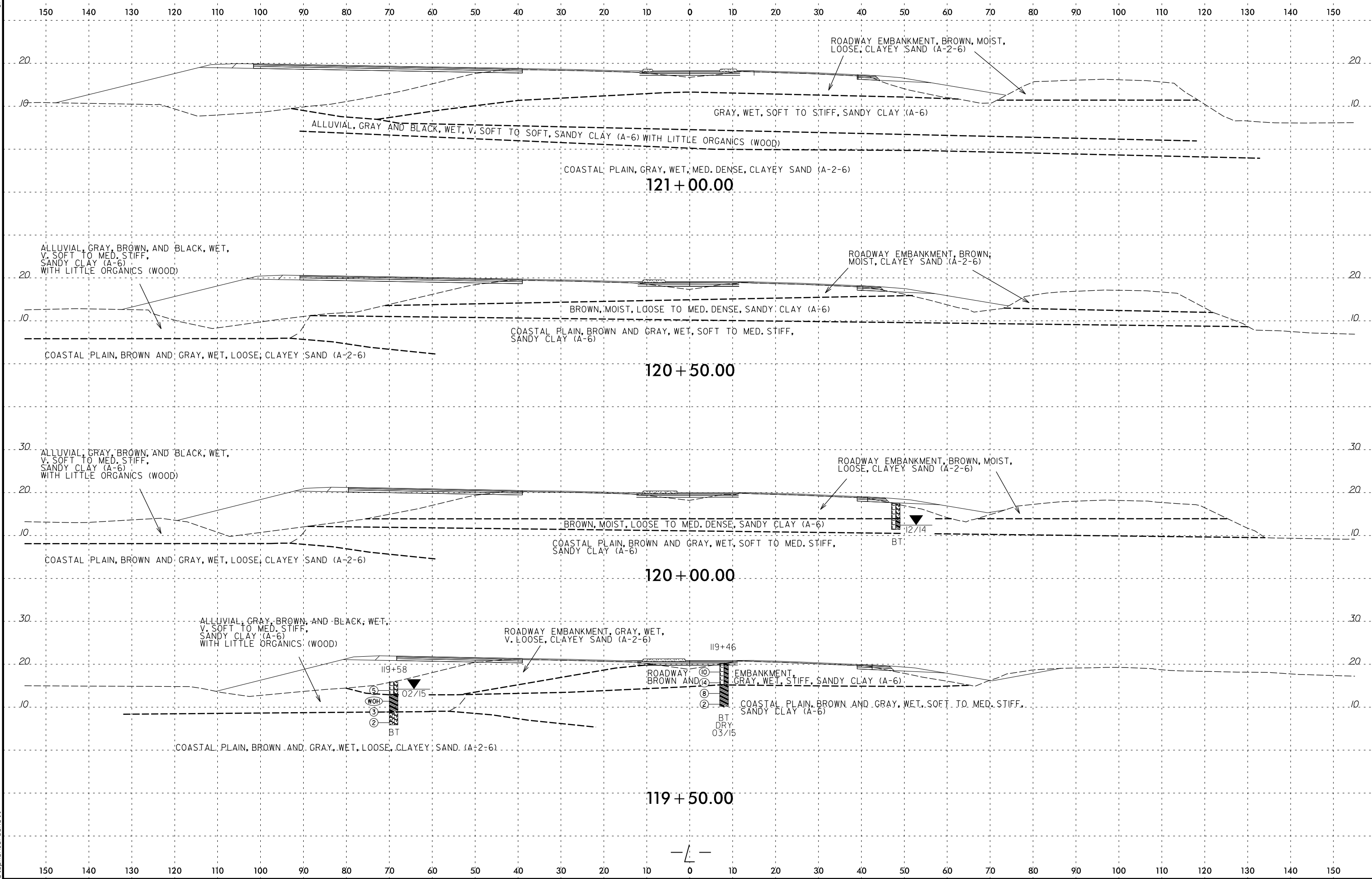
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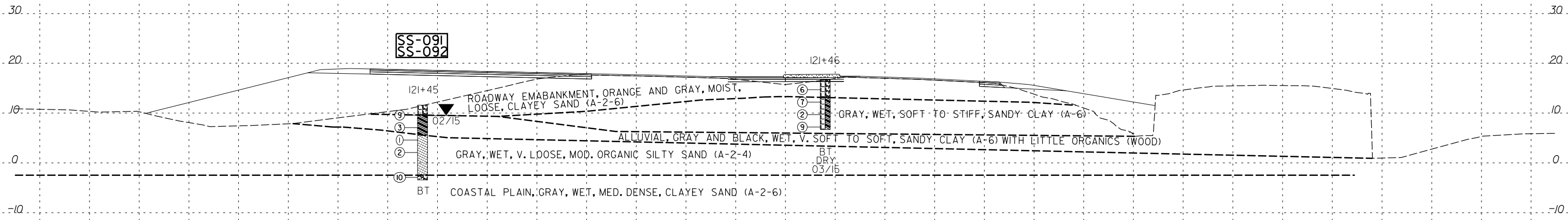


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 Stephen_Crockett



7/14/2016
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 Stephen_Crockett

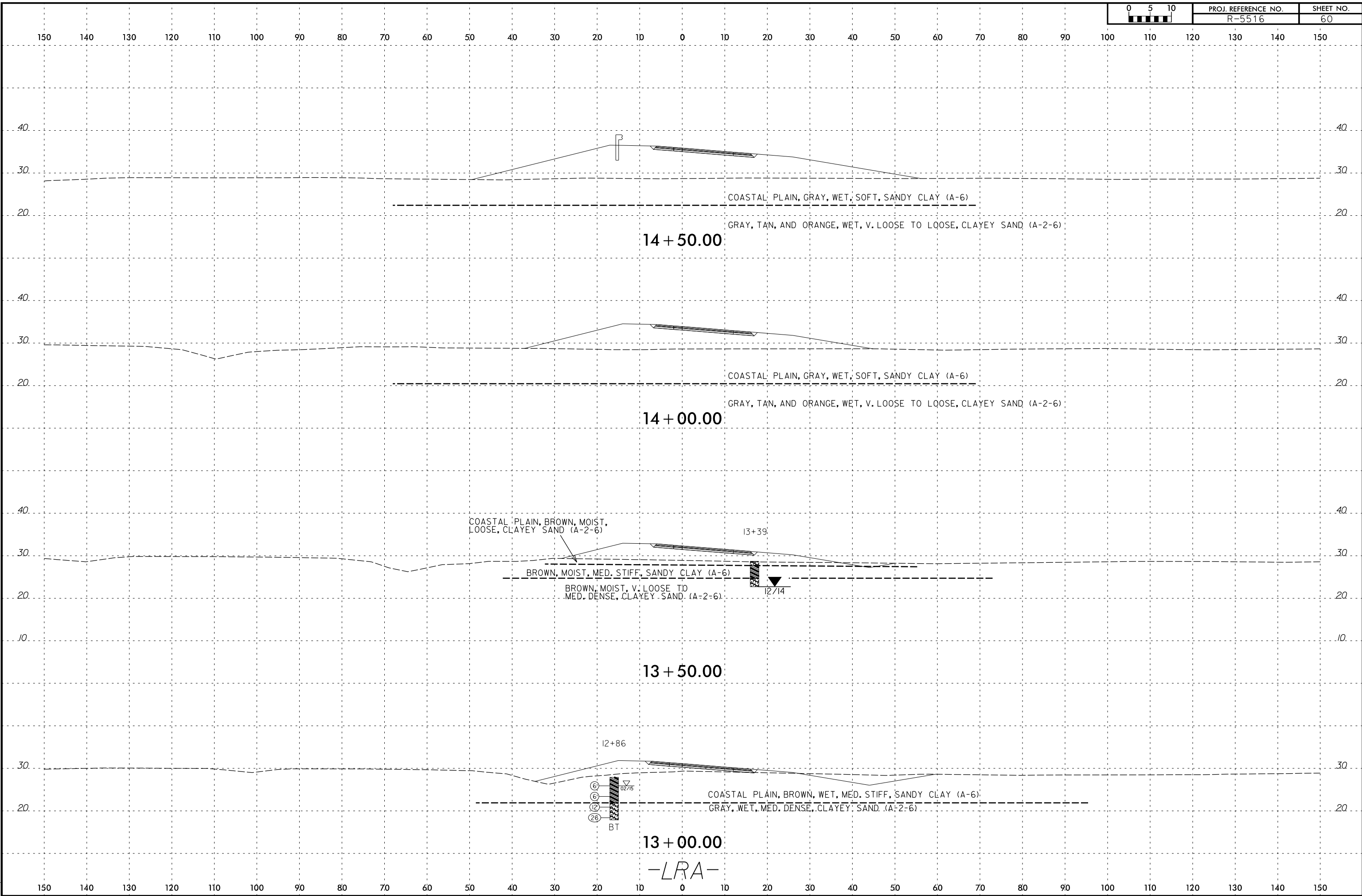
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121 + 50.00



7/14/2016 P:\Jobs4\Projects\NC001\60397120 (31829896) R-5516 Croven\4.0 Deliverables\RS516_GEO_RDW\CADD_GEDTECH\asc\R-5516_geo_xsi_LRA(011).dgn Stephen_Crockett



14 + 50.00

14 + 00.00

13 + 50.00

13 + 00.00

-LRA-

COASTAL PLAIN, GRAY, WET, SOFT, SANDY CLAY (A-6)

GRAY, TAN, AND ORANGE, WET, V. LOOSE TO LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, GRAY, WET, SOFT, SANDY CLAY (A-6)

GRAY, TAN, AND ORANGE, WET, V. LOOSE TO LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, BROWN, MOIST, LOOSE, CLAYEY SAND (A-2-6)

BROWN, MOIST, MED. STIFF, SANDY CLAY (A-6)

BROWN, MOIST, V. LOOSE TO MED. DENSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, BROWN, WET, MED. STIFF, SANDY CLAY (A-6)

GRAY, WET, MED. DENSE, CLAYEY SAND (A-2-6)

13+39

12/74

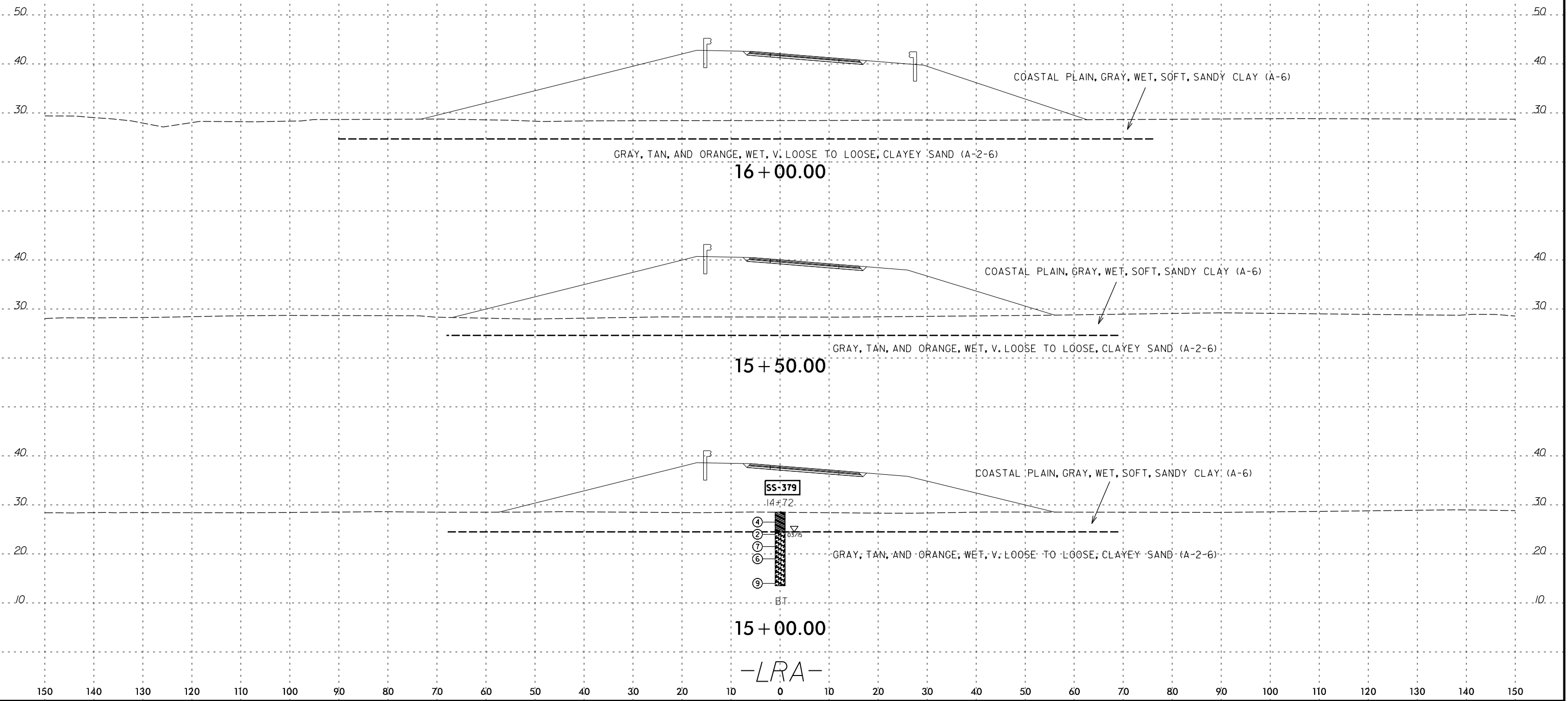
12+86

02/75

BT

8/23/99

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7/14/2016
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 Stephen_Crockett

16 + 00.00

15 + 50.00

15 + 00.00

-LRA-

SS-379

14.72

- ④
- ②
- ⑦
- ⑥
- ⑨

BT

COASTAL PLAIN, GRAY, WET, SOFT, SANDY CLAY (A-6)

GRAY, TAN, AND ORANGE, WET, V. LOOSE TO LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, GRAY, WET, SOFT, SANDY CLAY (A-6)

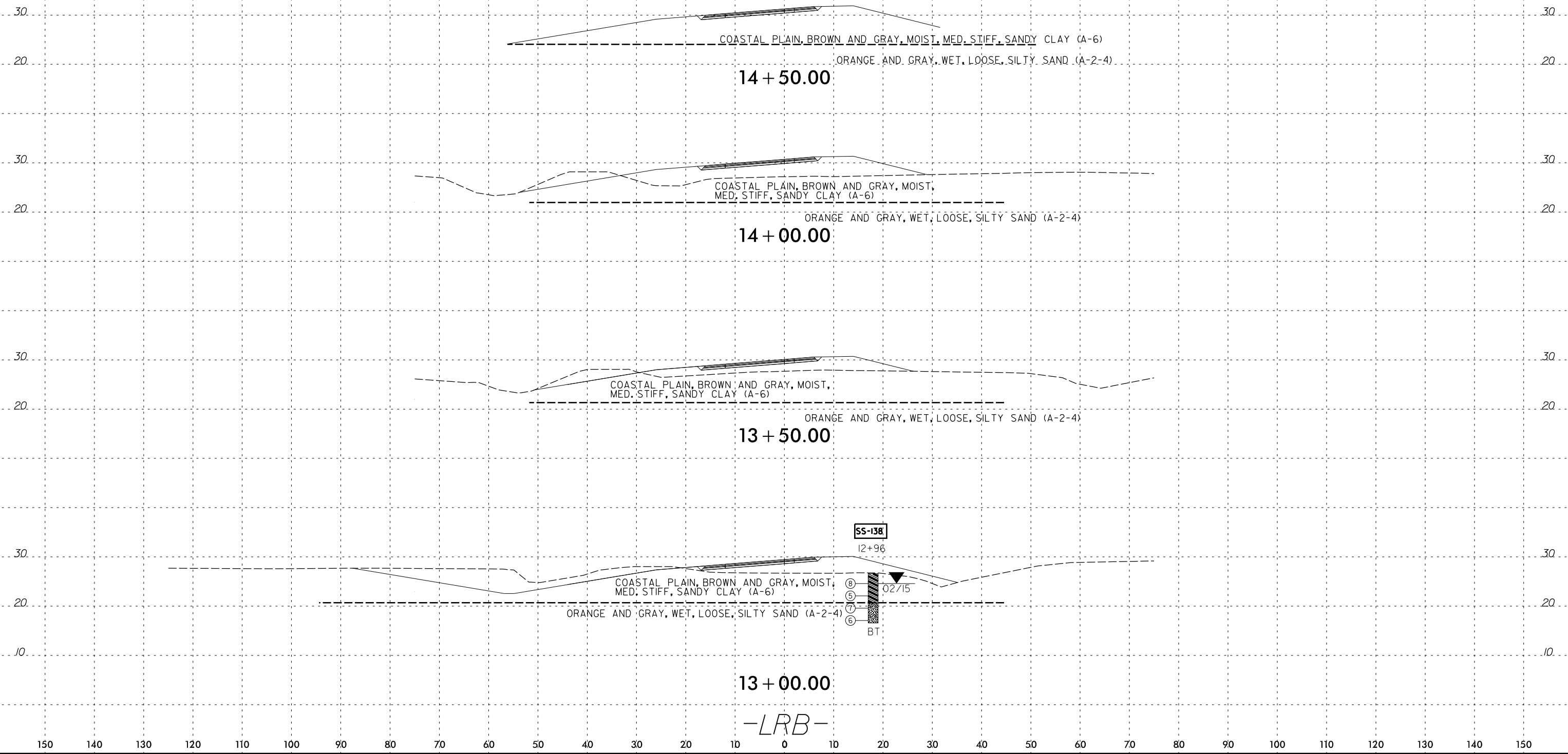
GRAY, TAN, AND ORANGE, WET, V. LOOSE TO LOOSE, CLAYEY SAND (A-2-6)

COASTAL PLAIN, GRAY, WET, SOFT, SANDY CLAY (A-6)

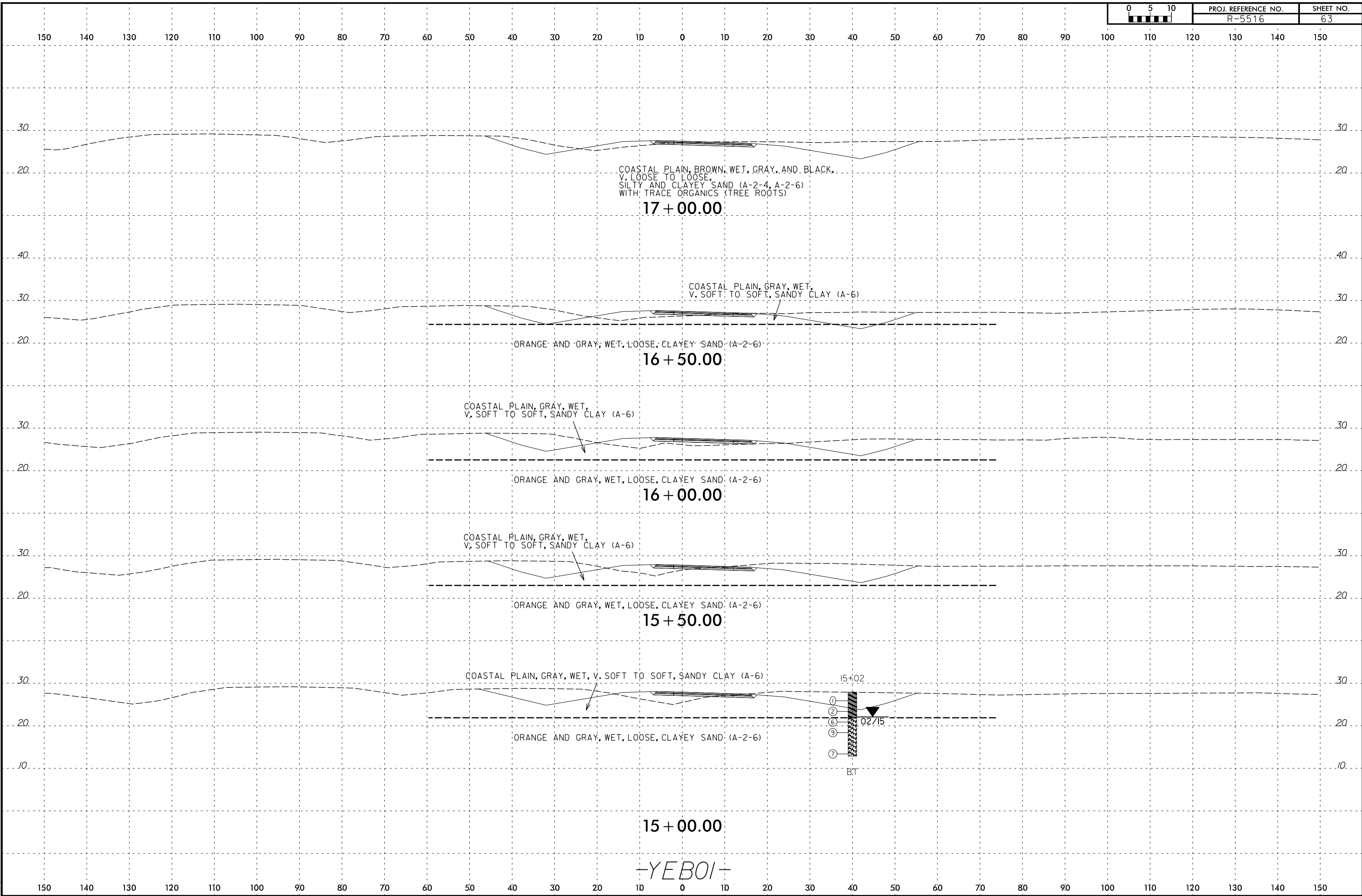
GRAY, TAN, AND ORANGE, WET, V. LOOSE TO LOOSE, CLAYEY SAND (A-2-6)

8/23/99

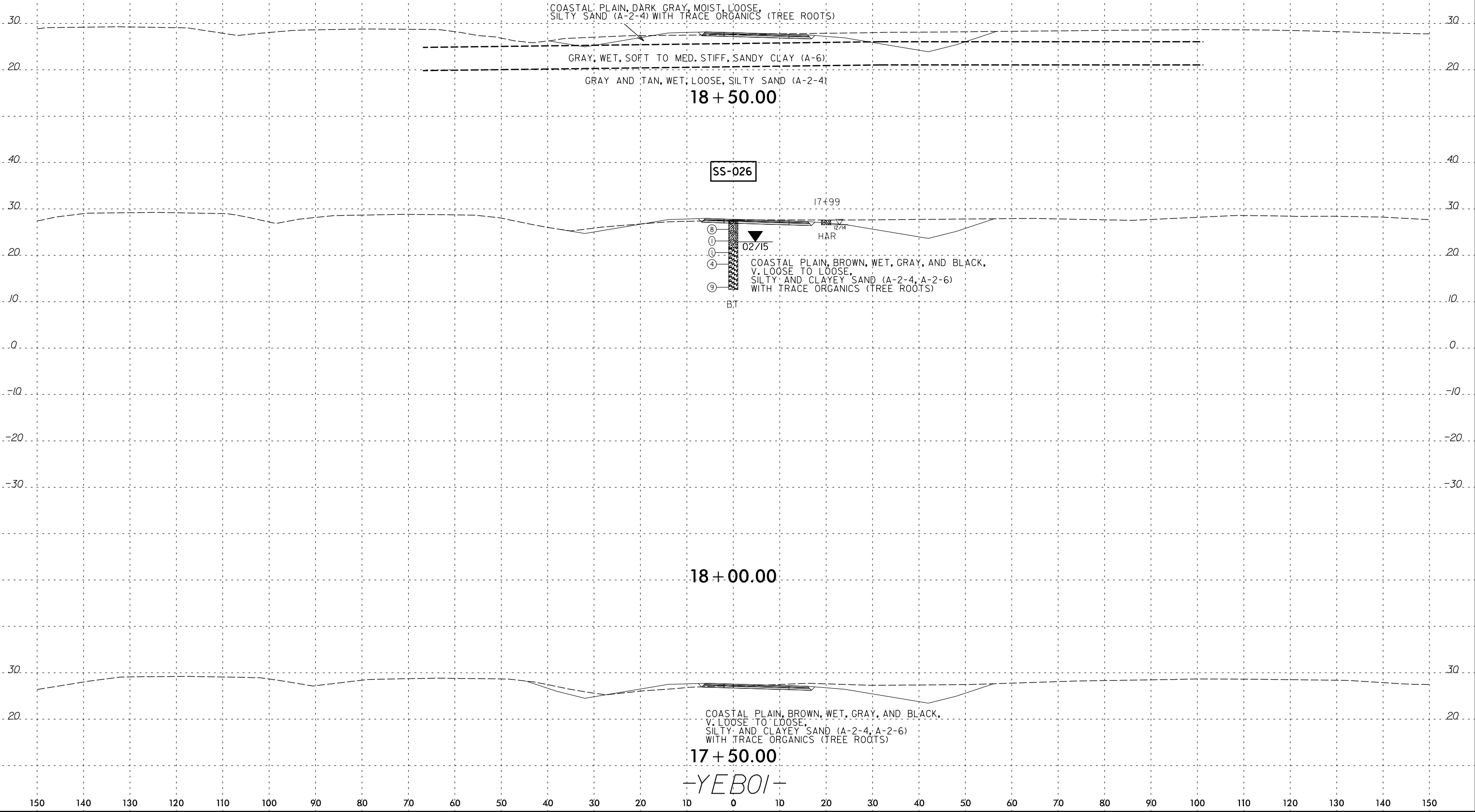
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 Stephen_Crockett



150 140 130 120 110 100 90 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

COASTAL PLAIN, DARK GRAY, MOIST, LOOSE, SILTY SAND (A-2-4) WITH TRACE ORGANICS (TREE ROOTS)

GRAY, WET, SOFT TO MED. STIFF, SANDY CLAY (A-6)

GRAY AND TAN, WET, LOOSE, SILTY SAND (A-2-4)

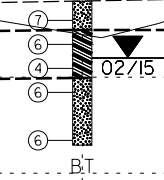
19 + 50.00

COASTAL PLAIN, DARK GRAY, MOIST, LOOSE, SILTY SAND (A-2-4) WITH TRACE ORGANICS (TREE ROOTS)

GRAY, WET, SOFT TO MED. STIFF, SANDY CLAY (A-6)

GRAY AND TAN, WET, LOOSE, SILTY SAND (A-2-4)

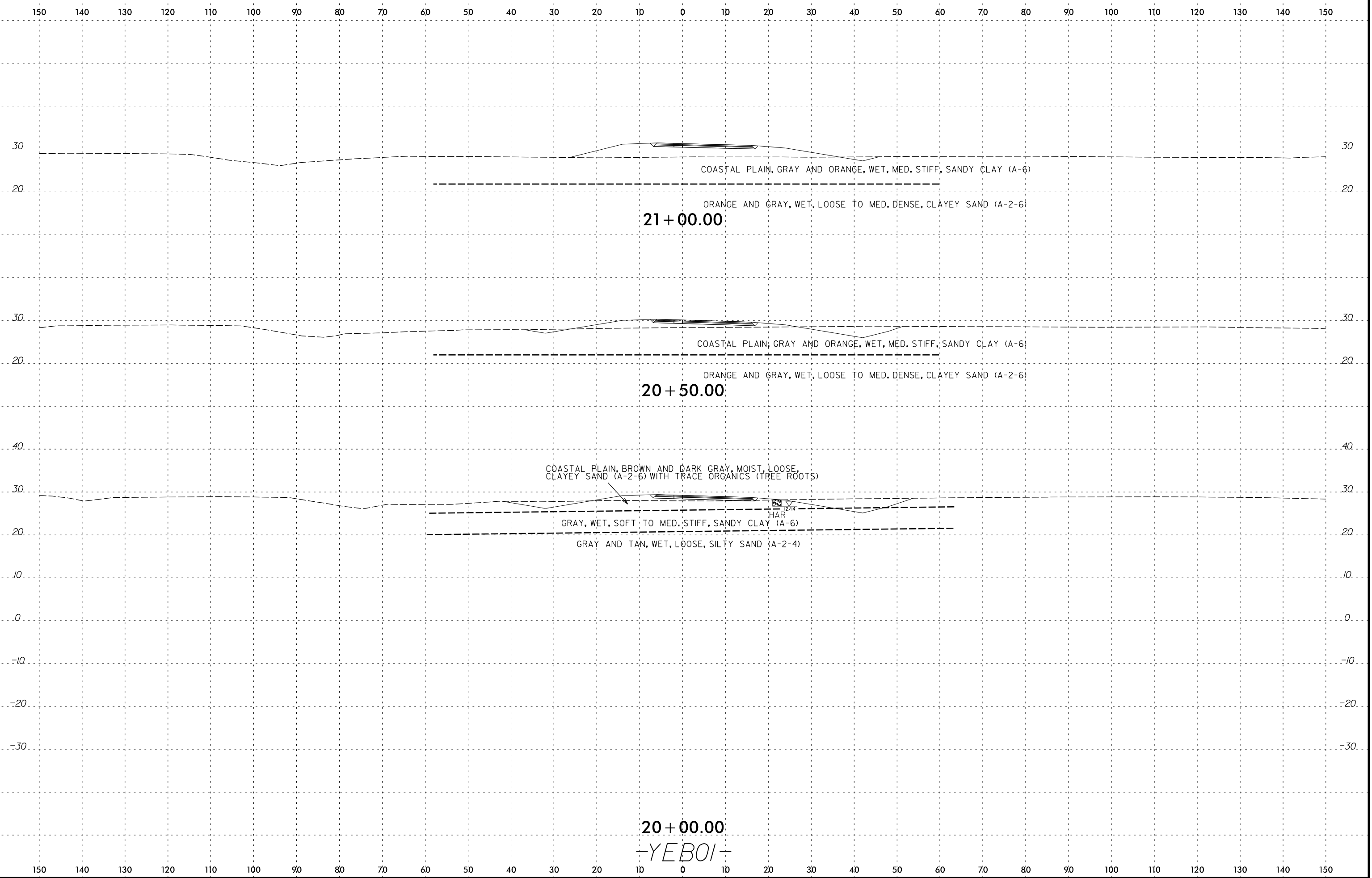
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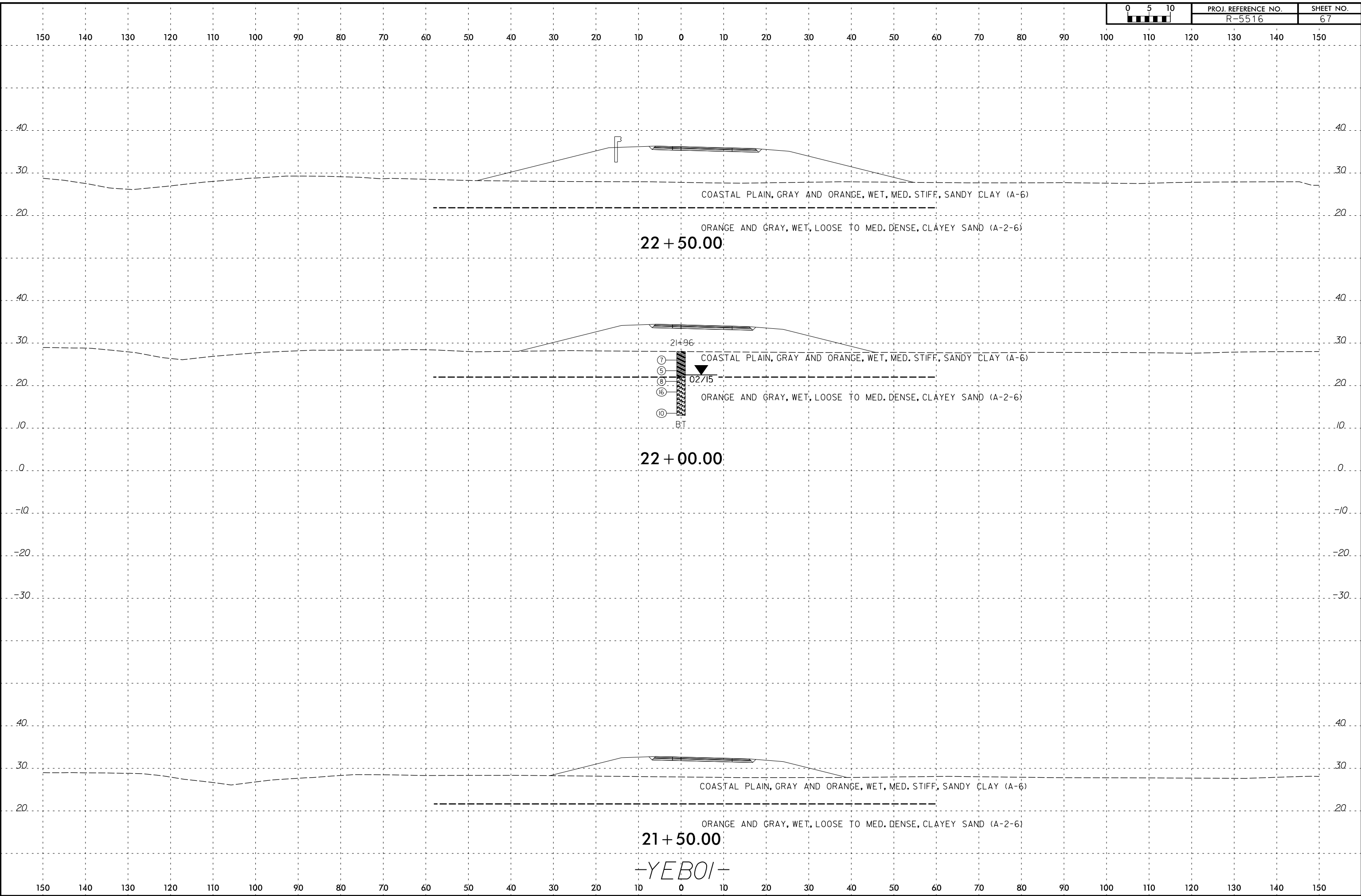


19 + 00.00
-YEBOI-

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

8/23/99
7/14/2016
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Stephen_Crockett

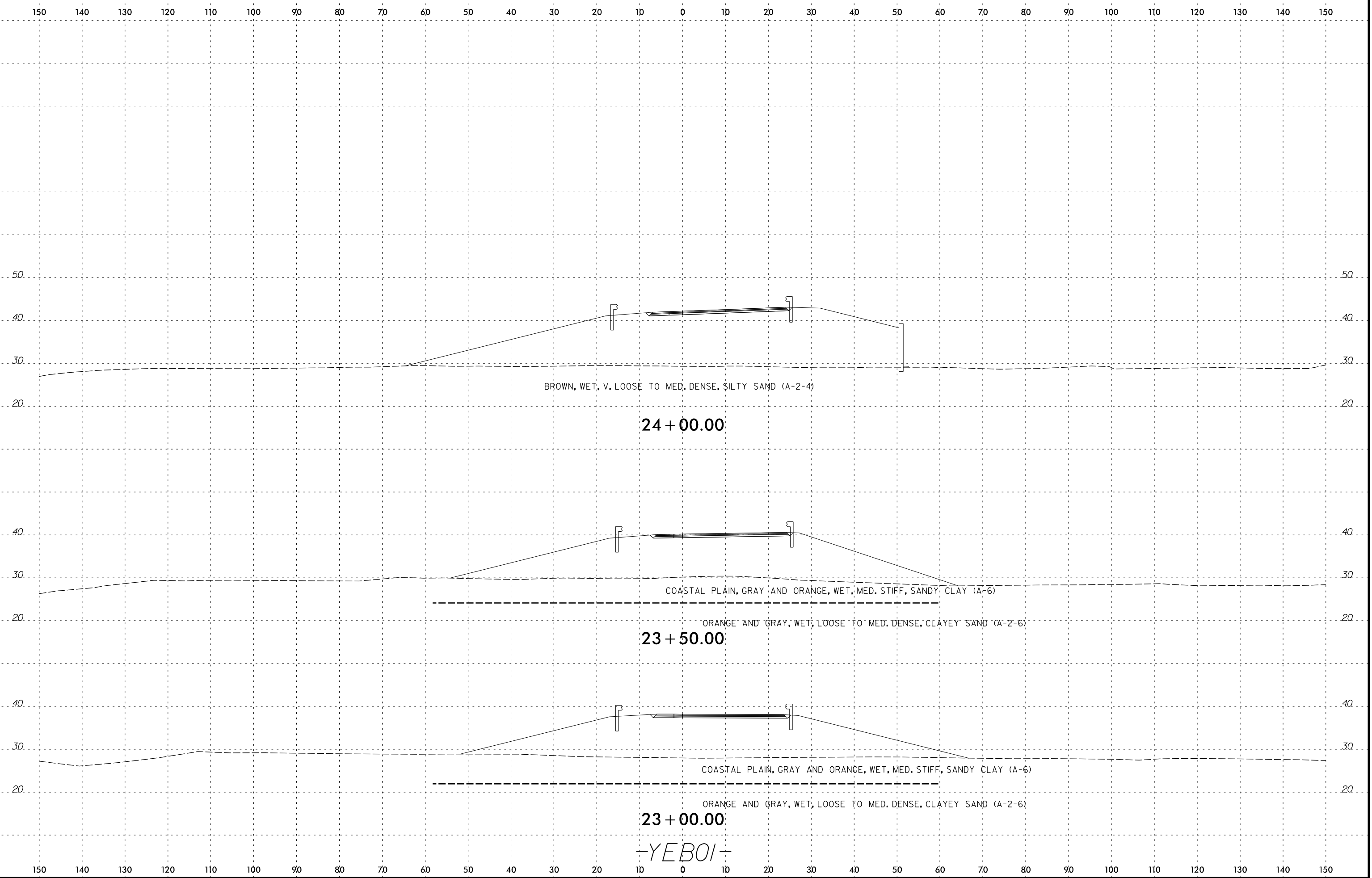




7/14/2016
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 Stephen_Crockett

—YEB01—

8/23/99
7/14/2016
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Stephen_Crockett



24 + 00.00

BROWN, WET, V. LOOSE TO MED. DENSE, SILTY SAND (A-2-4)

23 + 50.00

COASTAL PLAIN, GRAY AND ORANGE, WET, MED. STIFF, SANDY CLAY (A-6)

ORANGE AND GRAY, WET, LOOSE TO MED. DENSE, CLAYEY SAND (A-2-6)

23 + 00.00

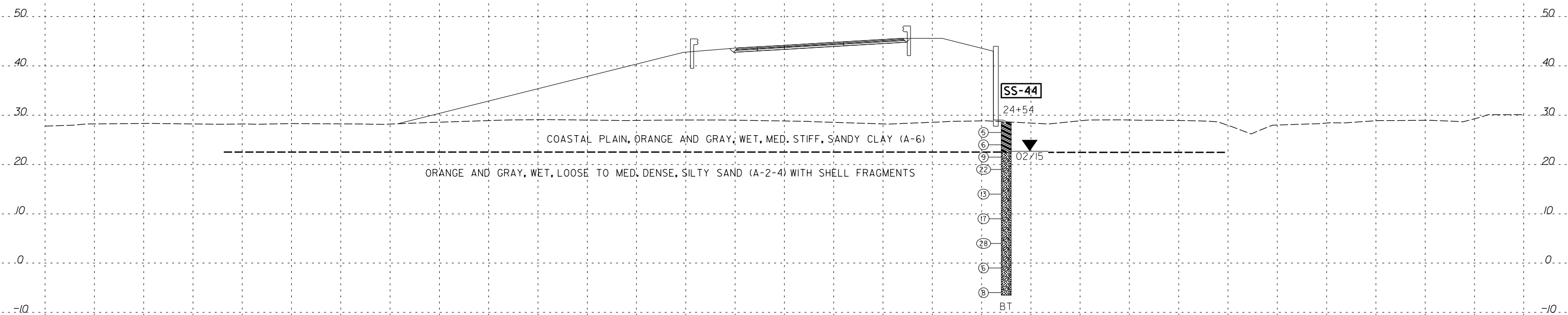
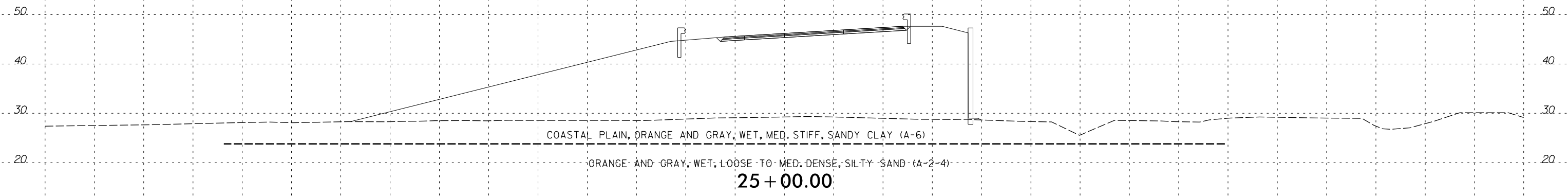
COASTAL PLAIN, GRAY AND ORANGE, WET, MED. STIFF, SANDY CLAY (A-6)

ORANGE AND GRAY, WET, LOOSE TO MED. DENSE, CLAYEY SAND (A-2-6)

-YEB01-

8/23/99

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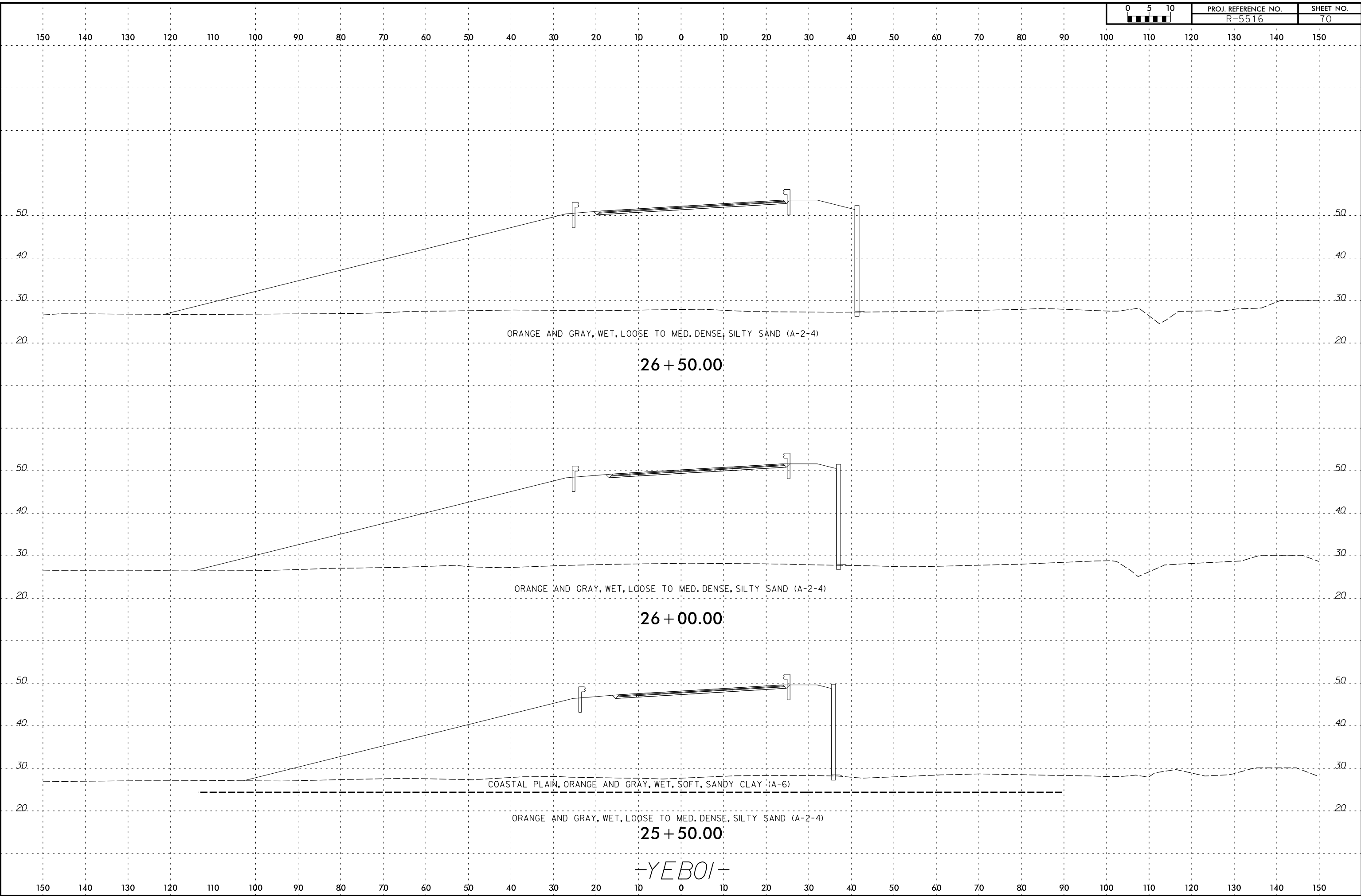


24 + 50.00
-YEB01-

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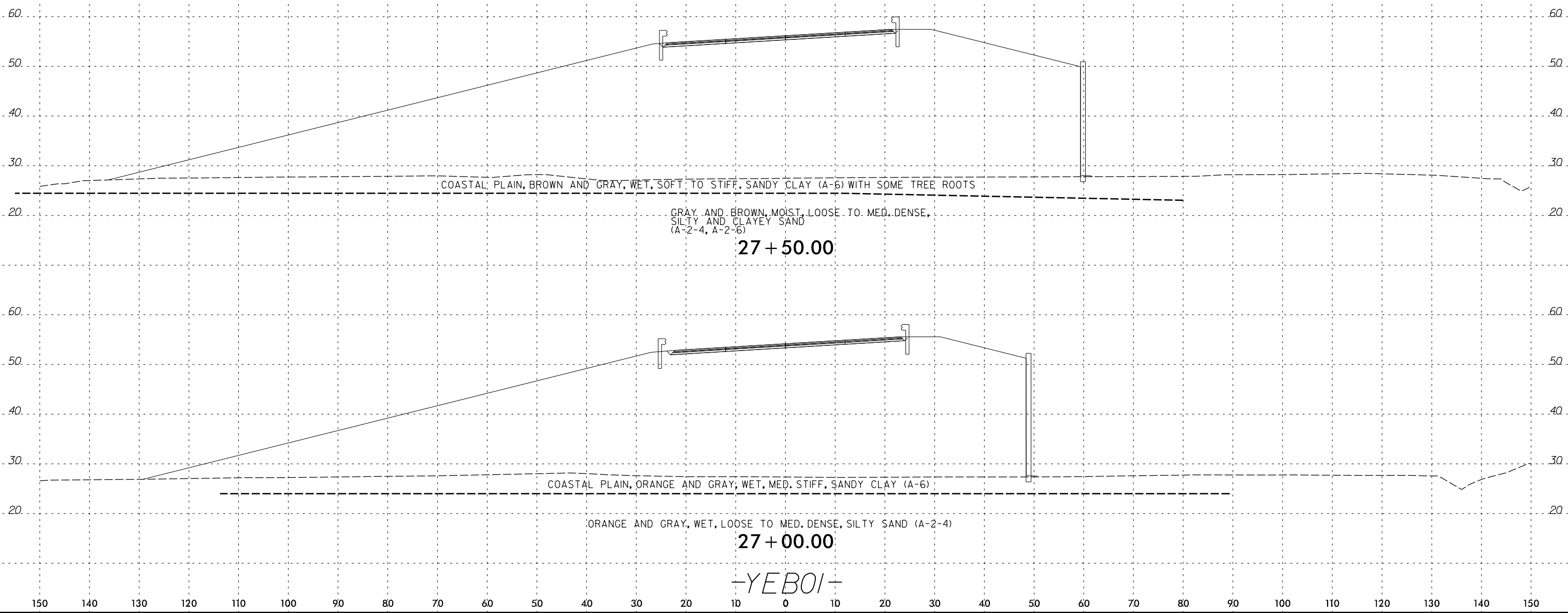
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Stephen_Crockett

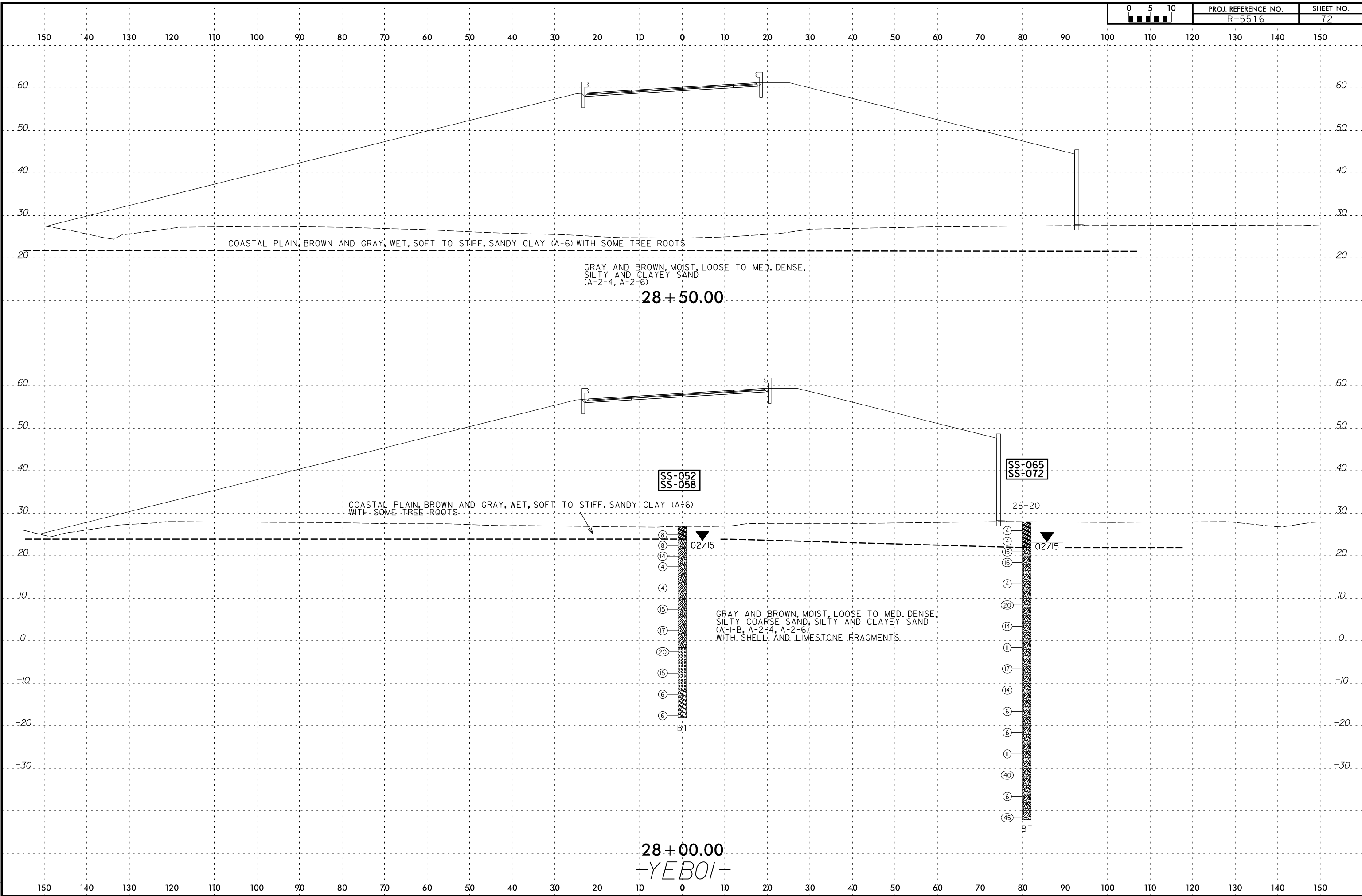
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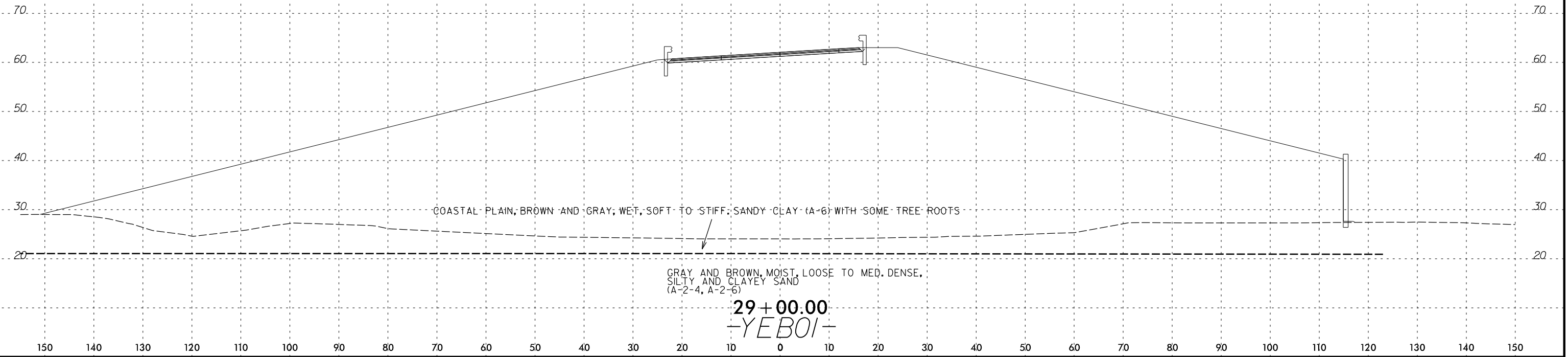


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 Stephen_Crockett

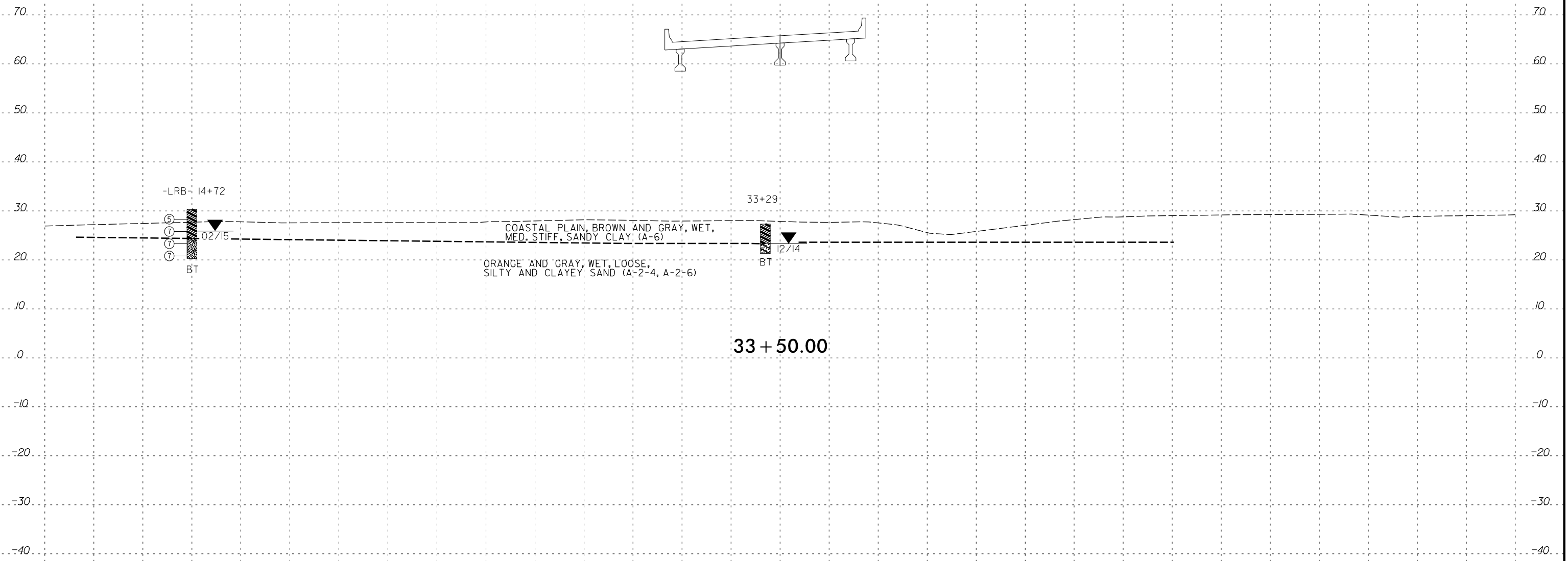
28+00.00
-YEB01-

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7/14/2016
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 Stephen_Crockett



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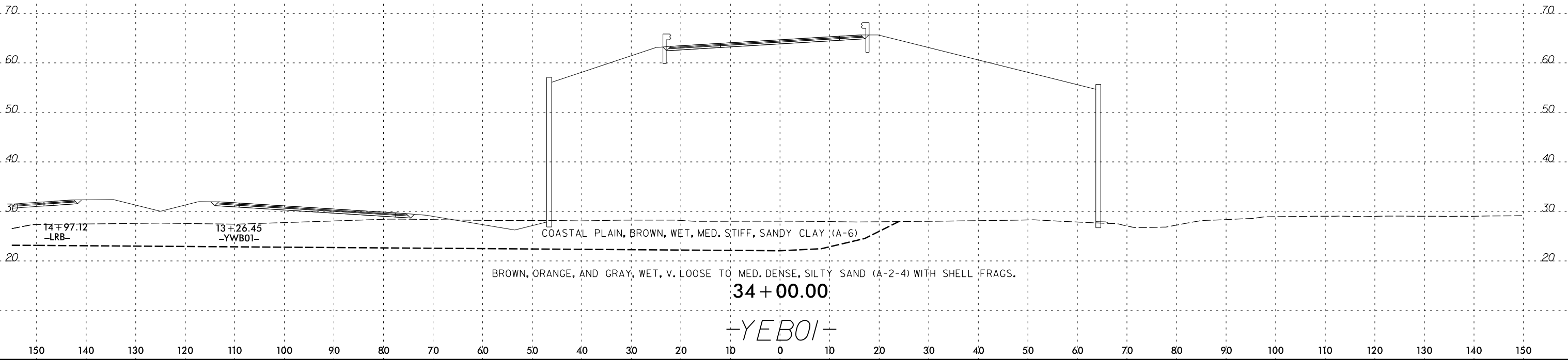


33 + 50.00

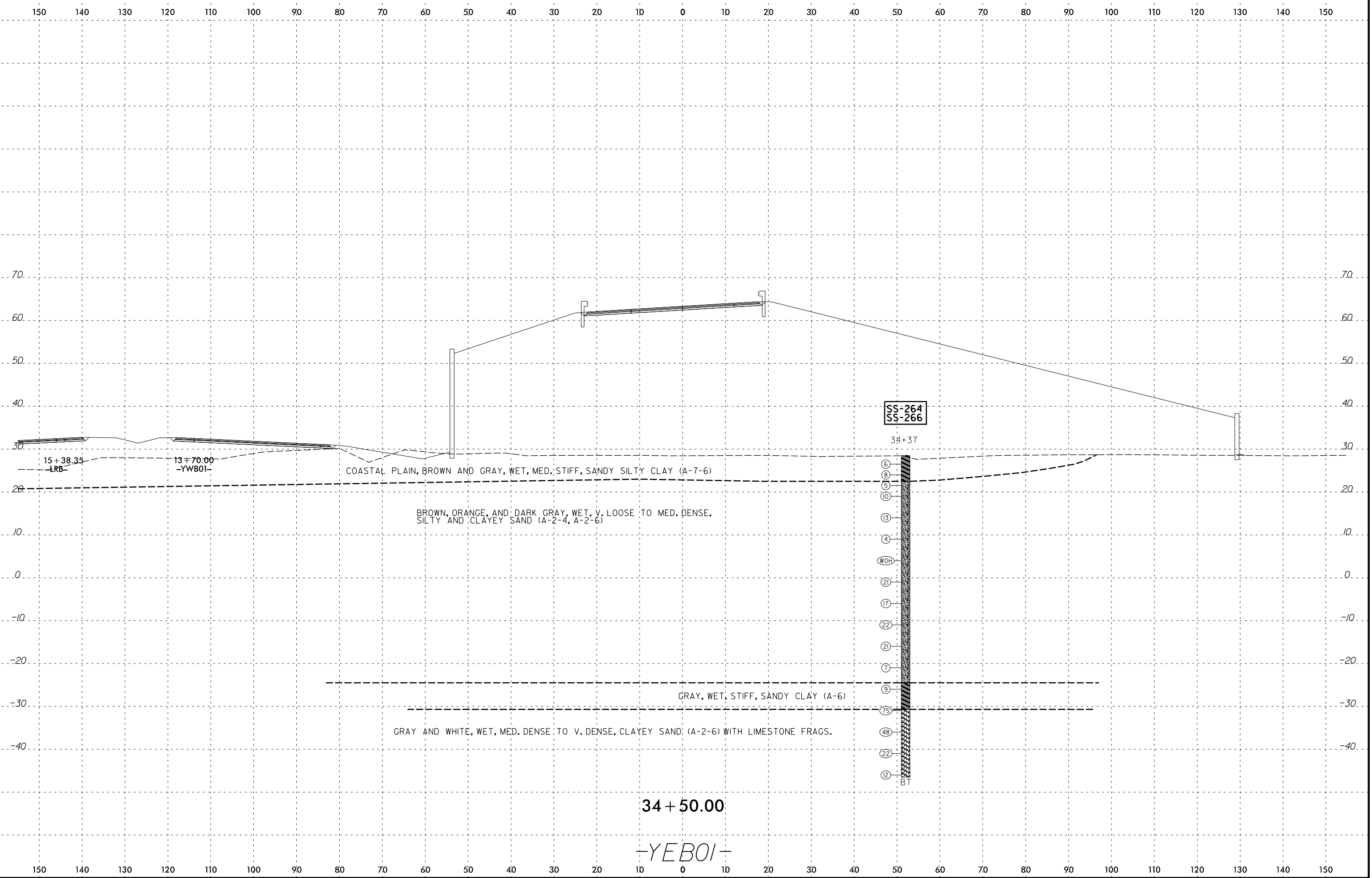
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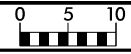
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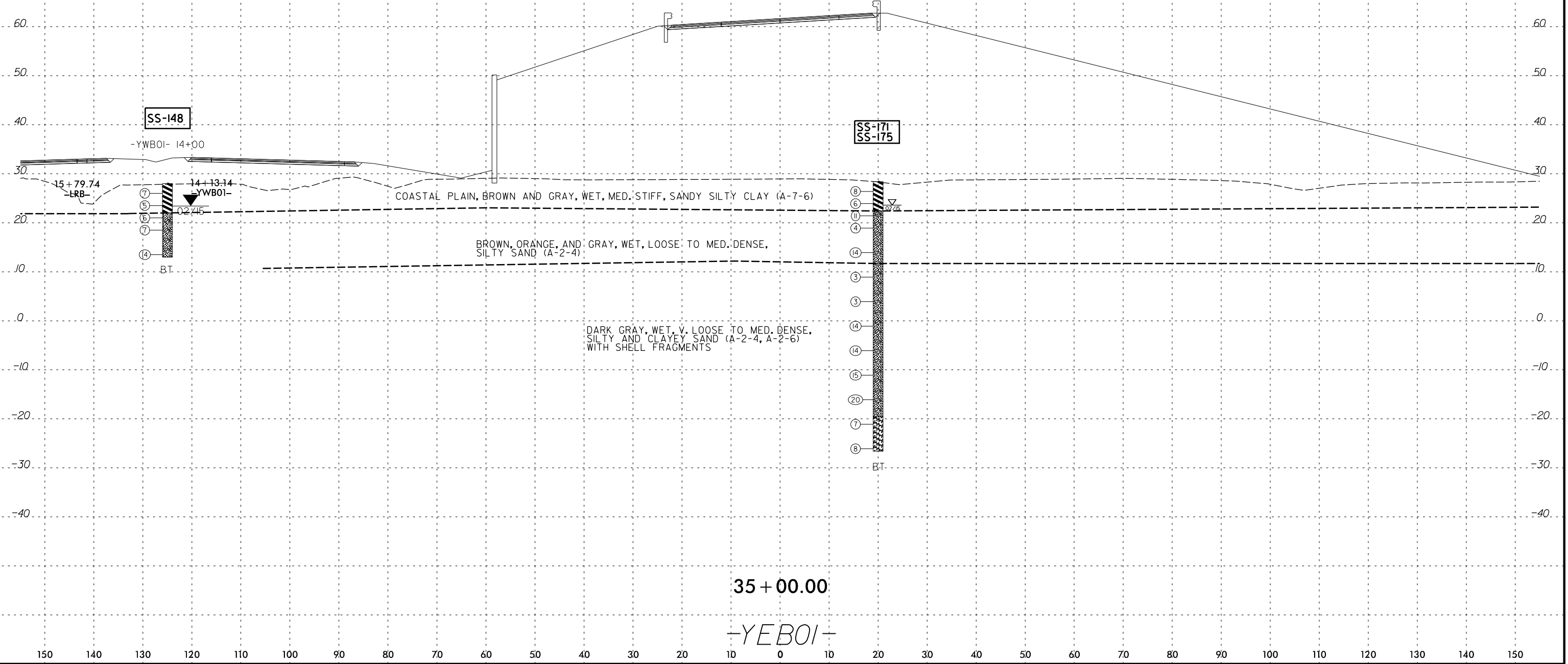
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 Stephen_Crockett



7/14/2016
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 Stephen_Crockett



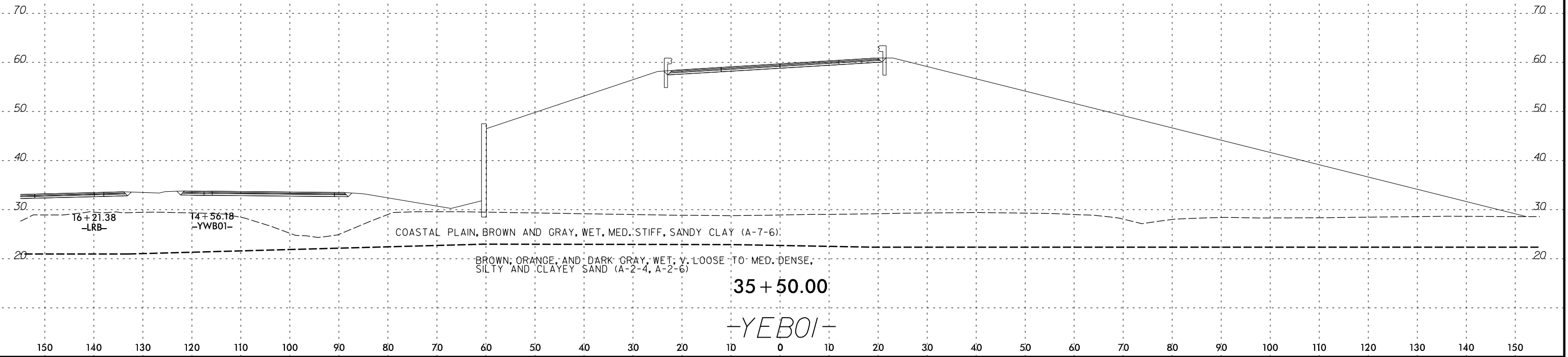
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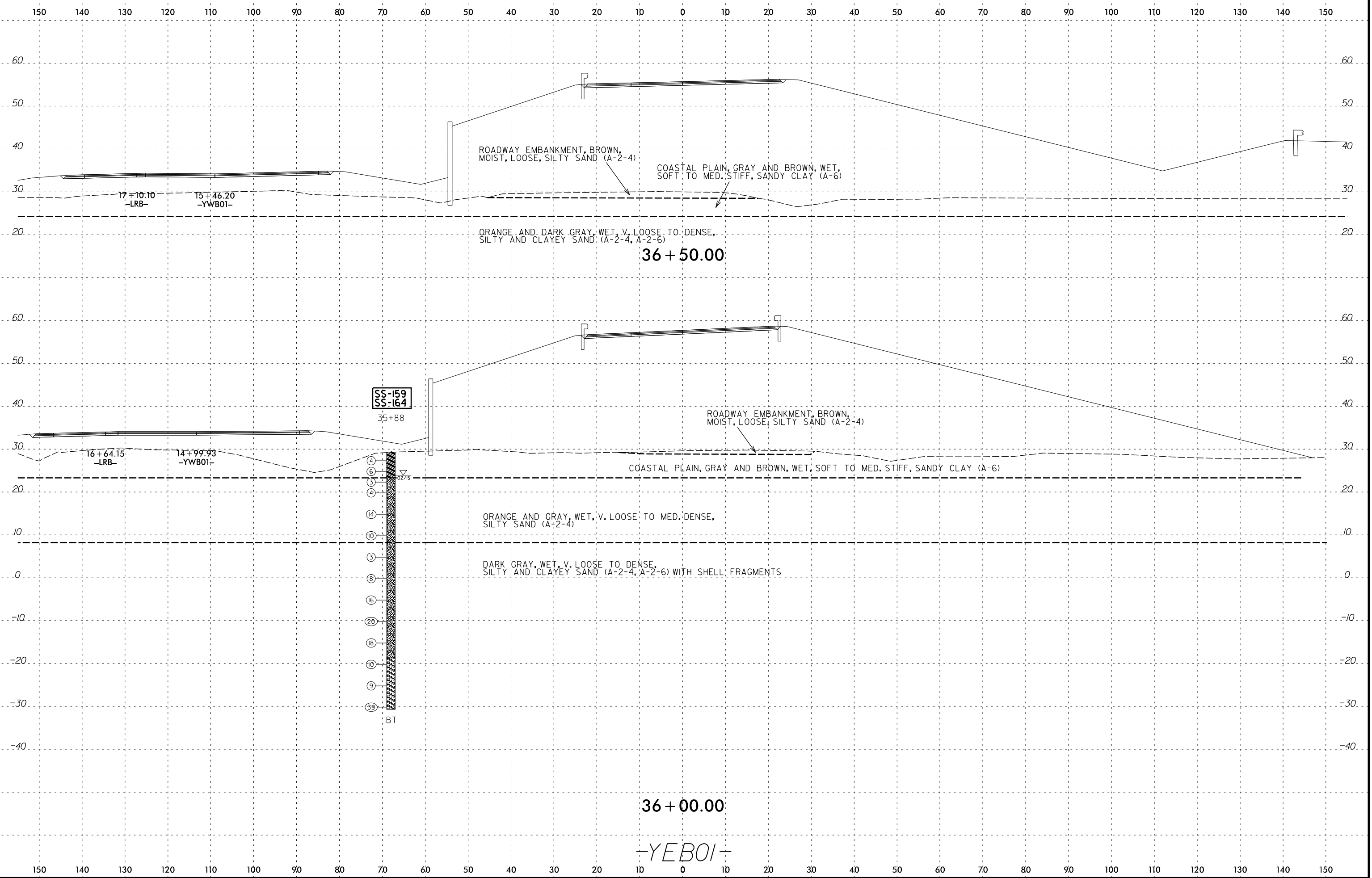
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8/23/99

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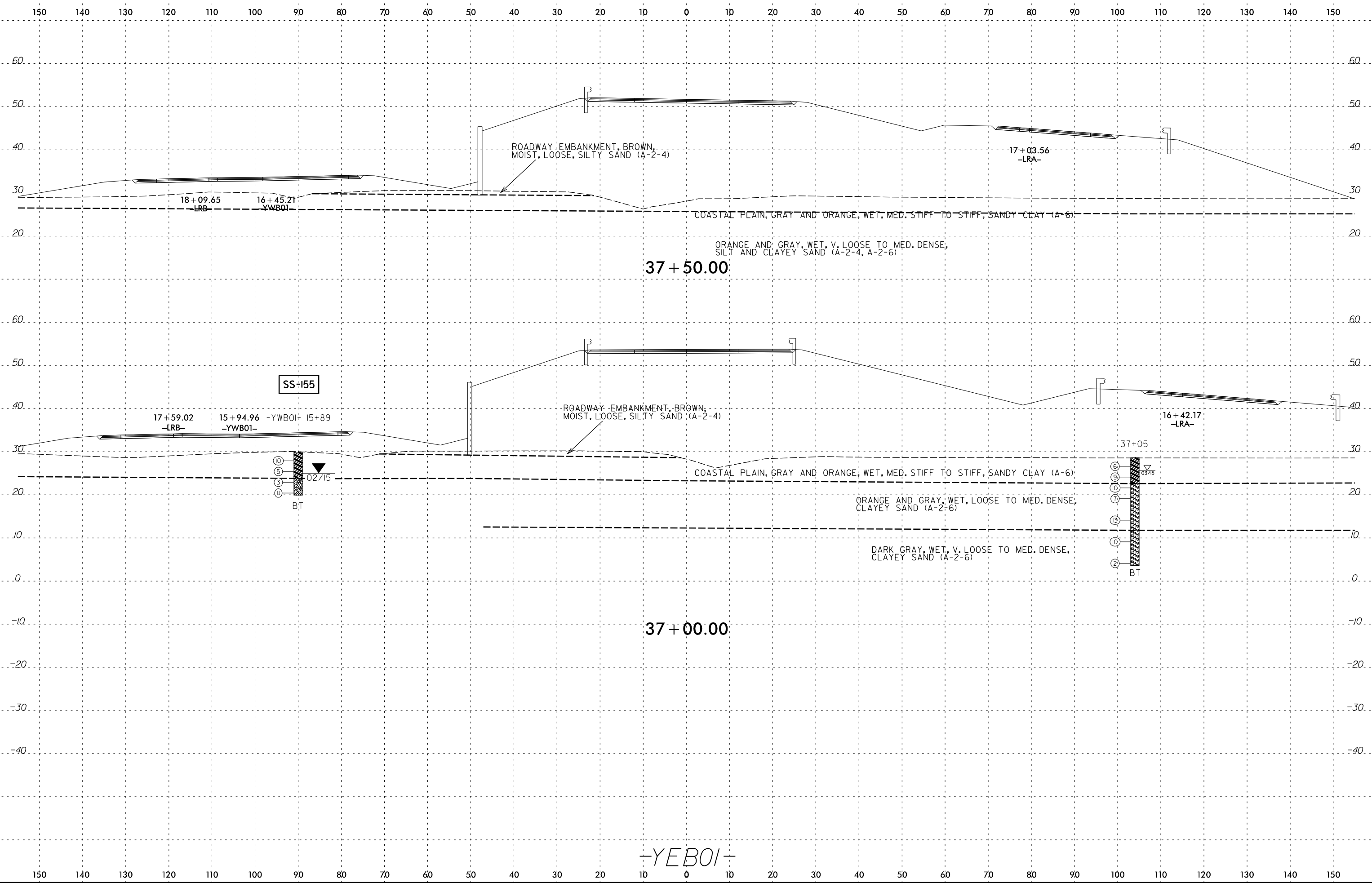


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Stephen_Crockett



7/14/2016
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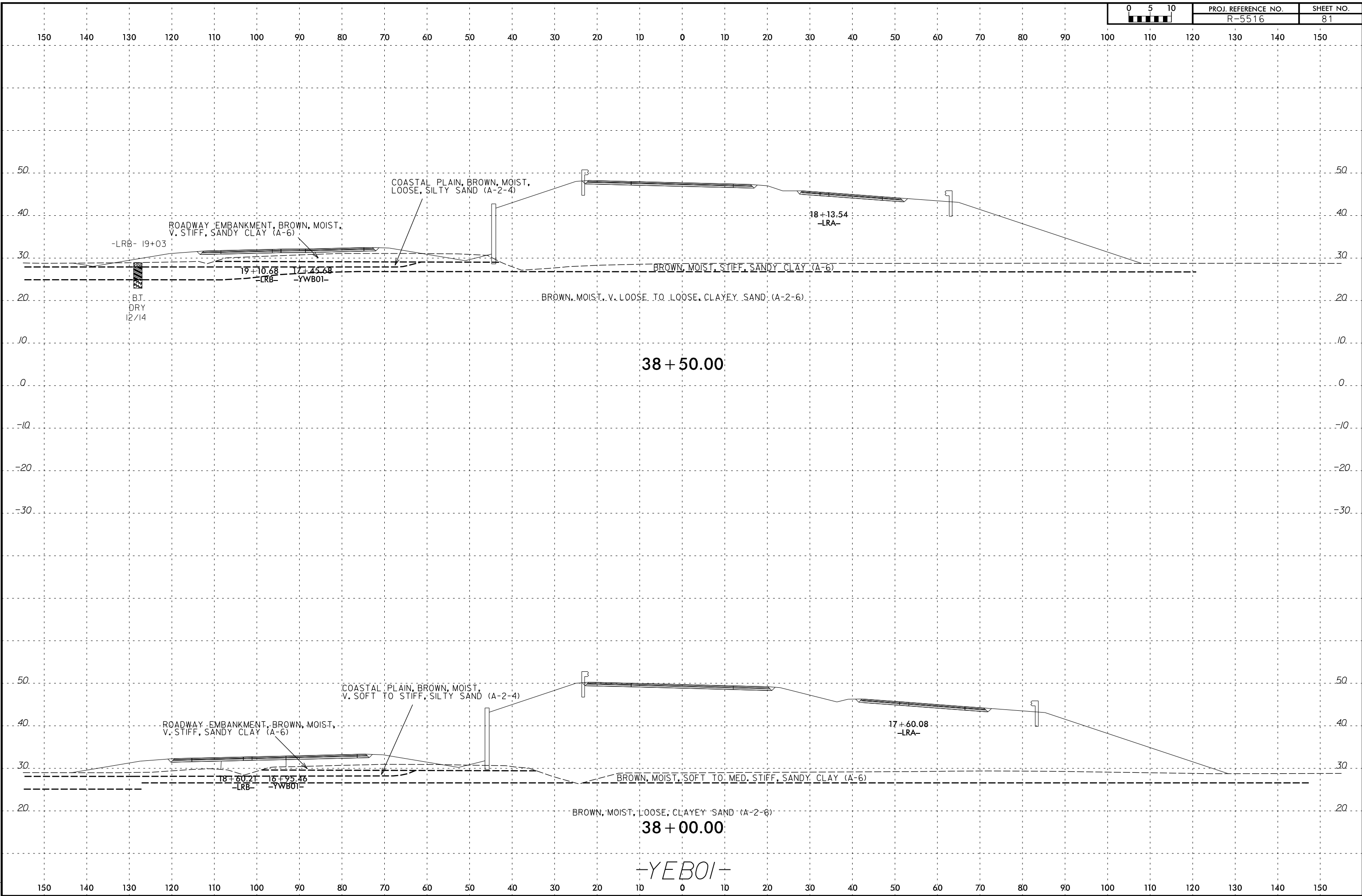
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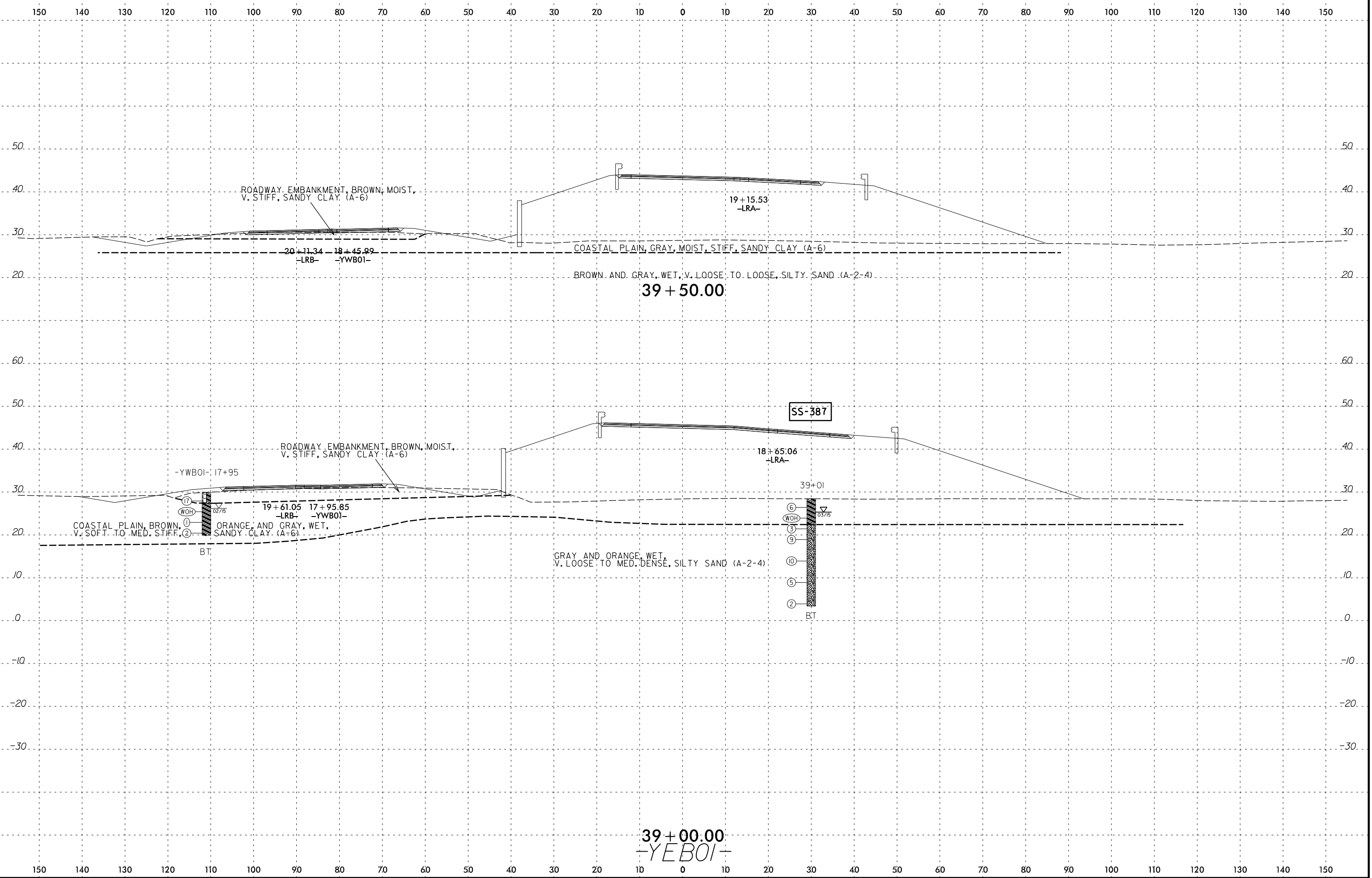
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8/23/99



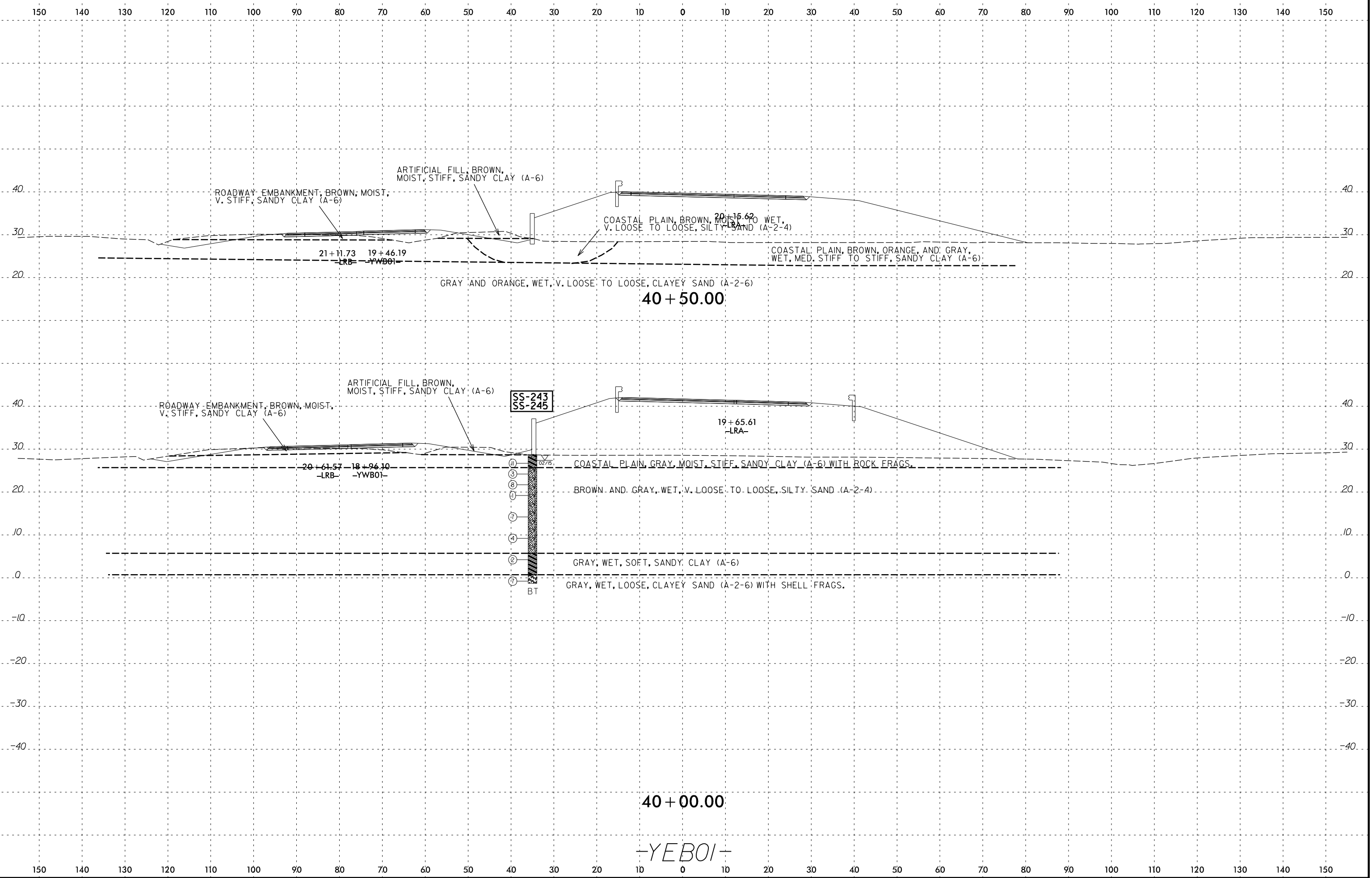
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8/23/99

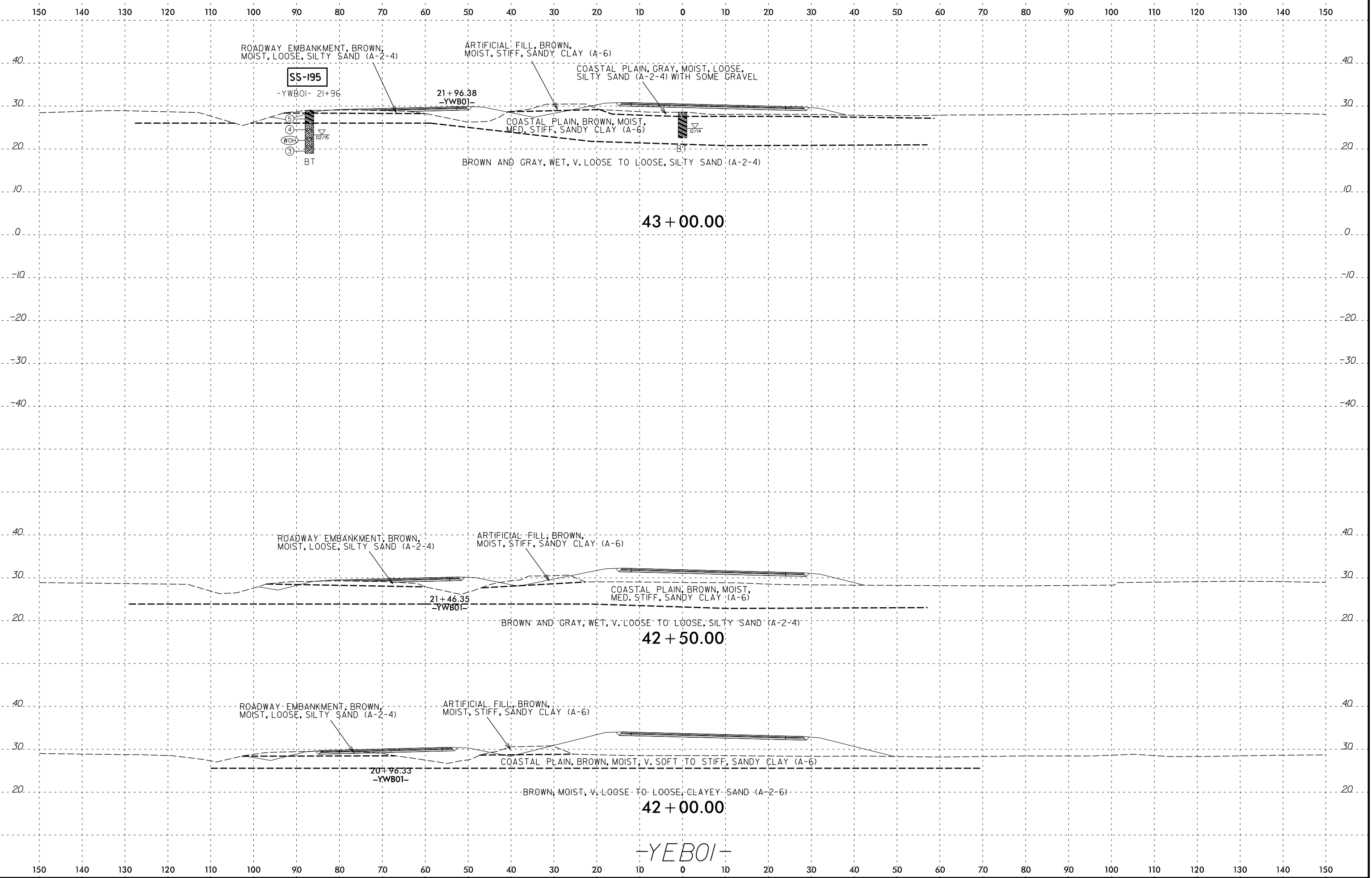


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 Stephen_Crockett

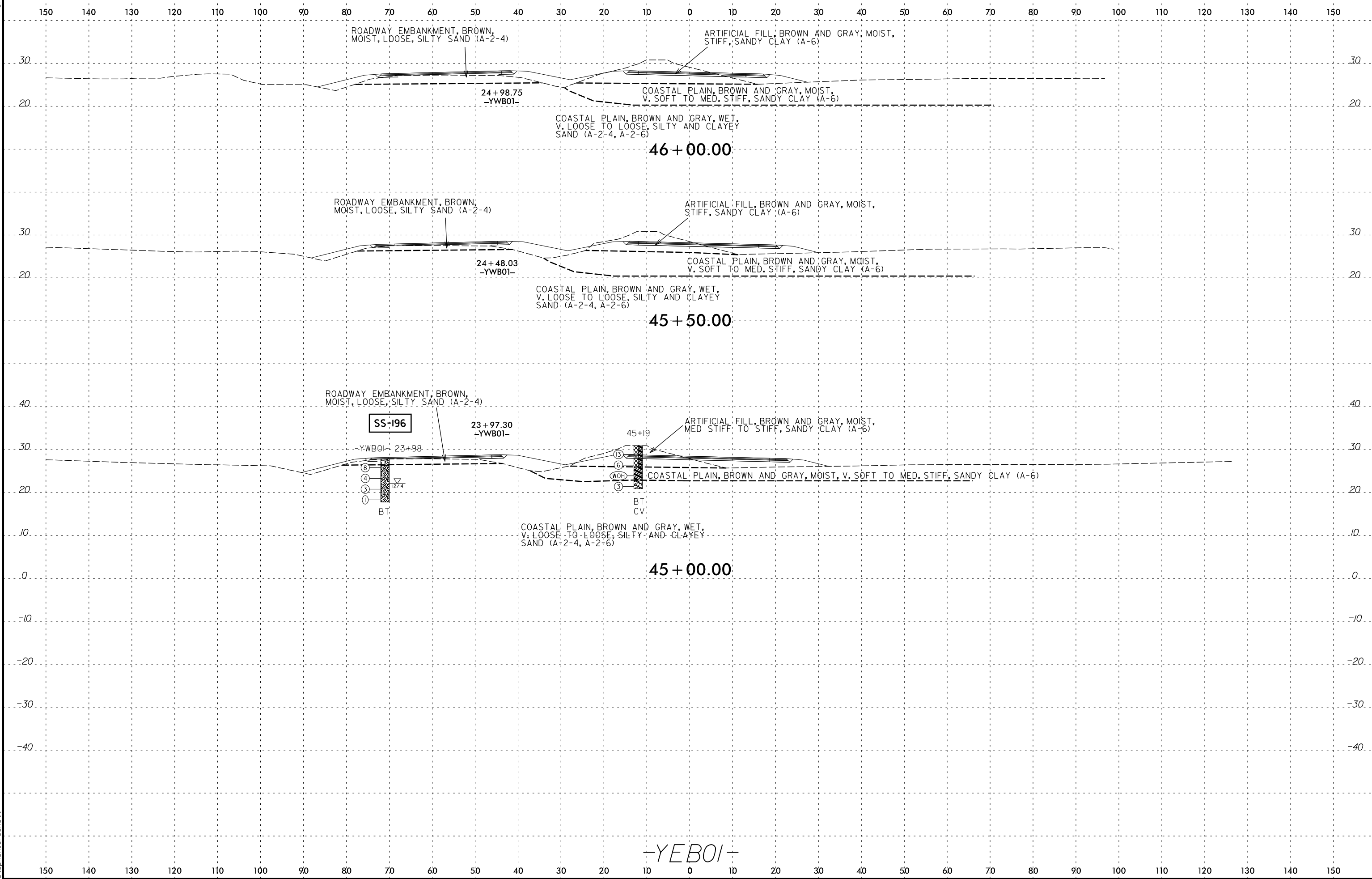
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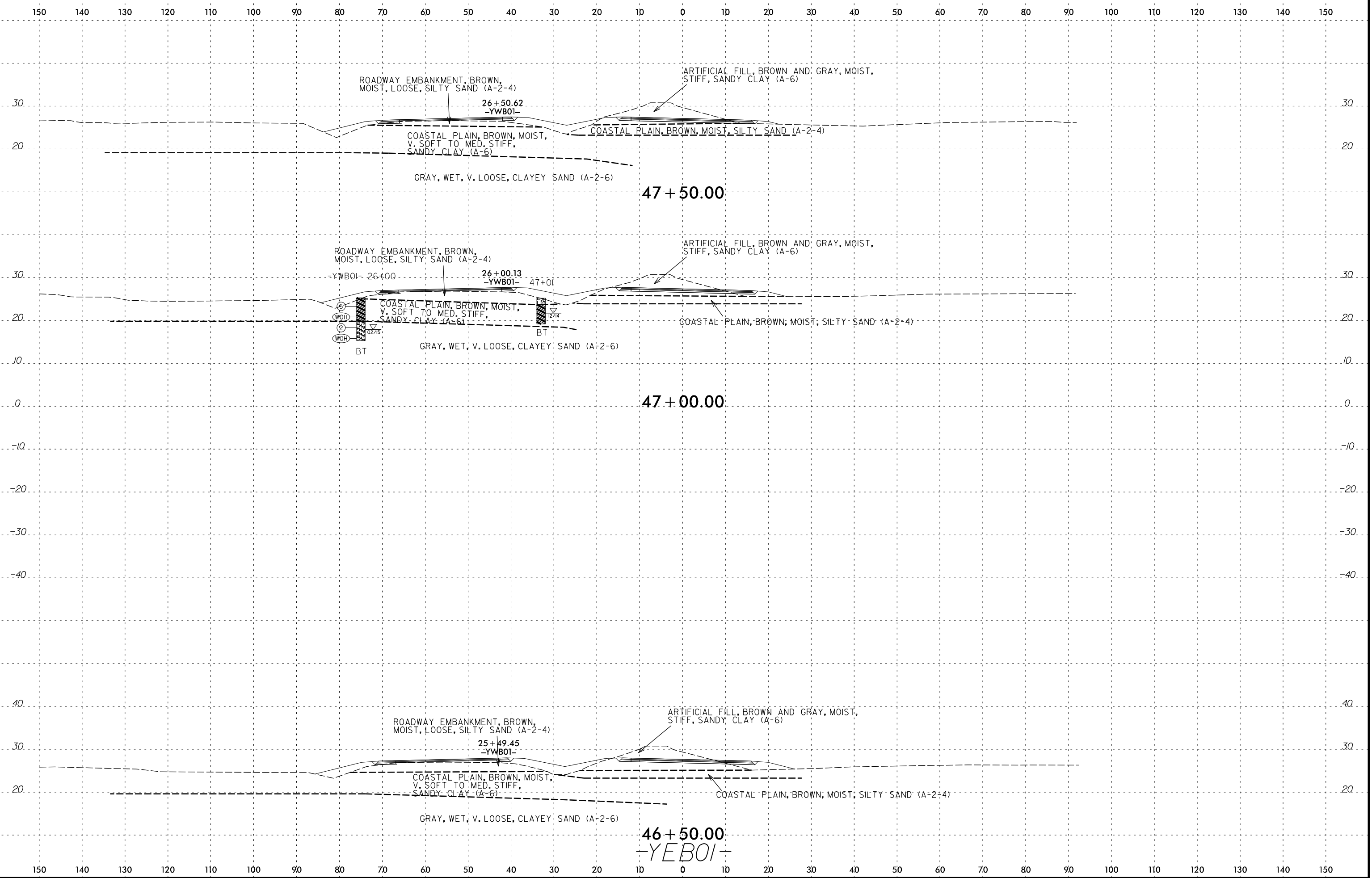


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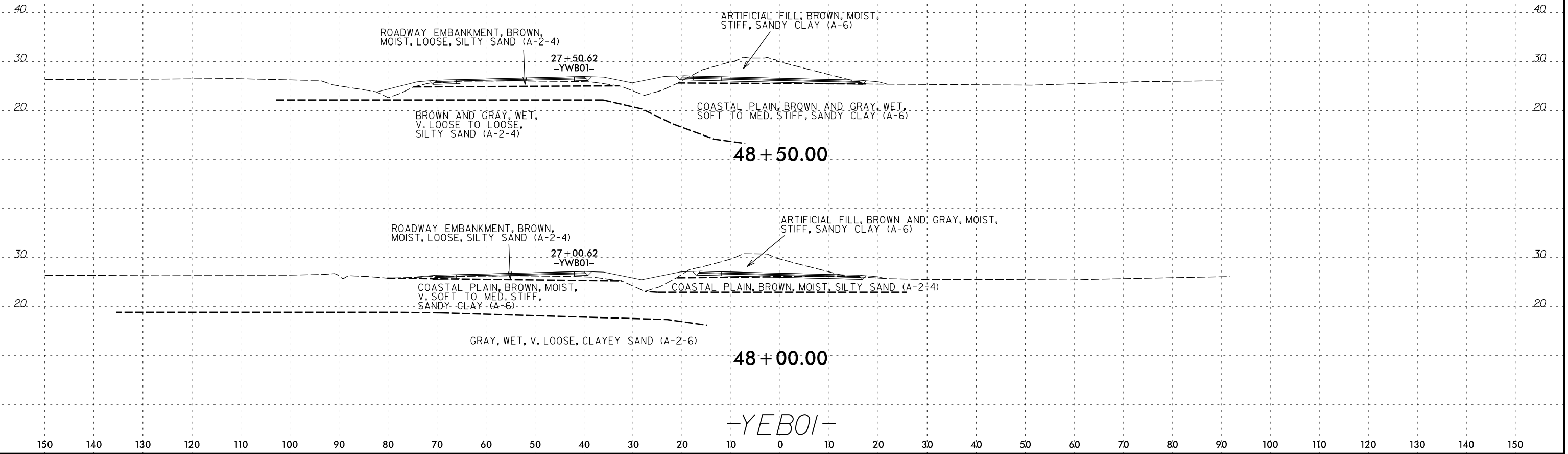


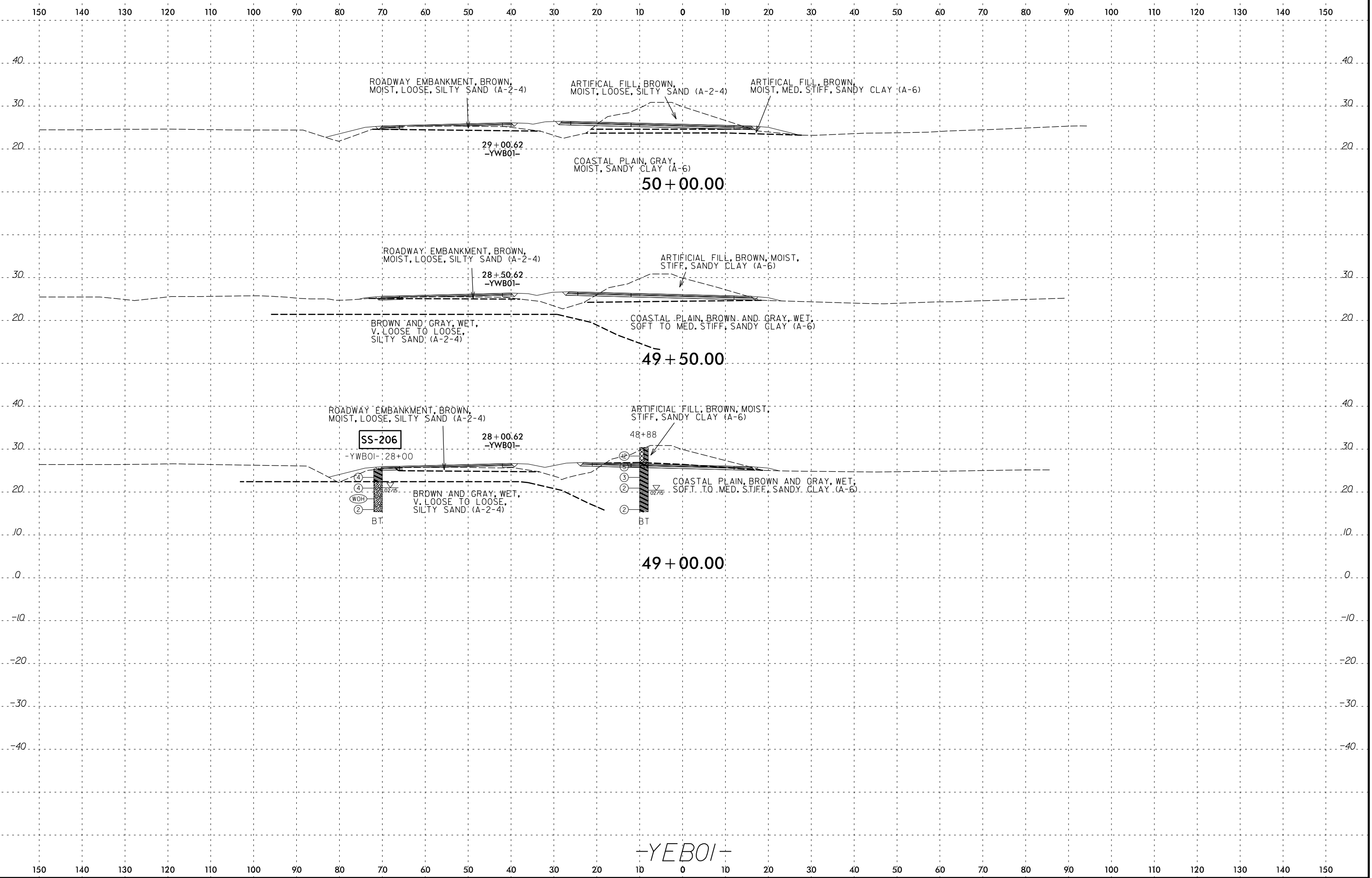
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 Stephen_Crockett

-YEB01-



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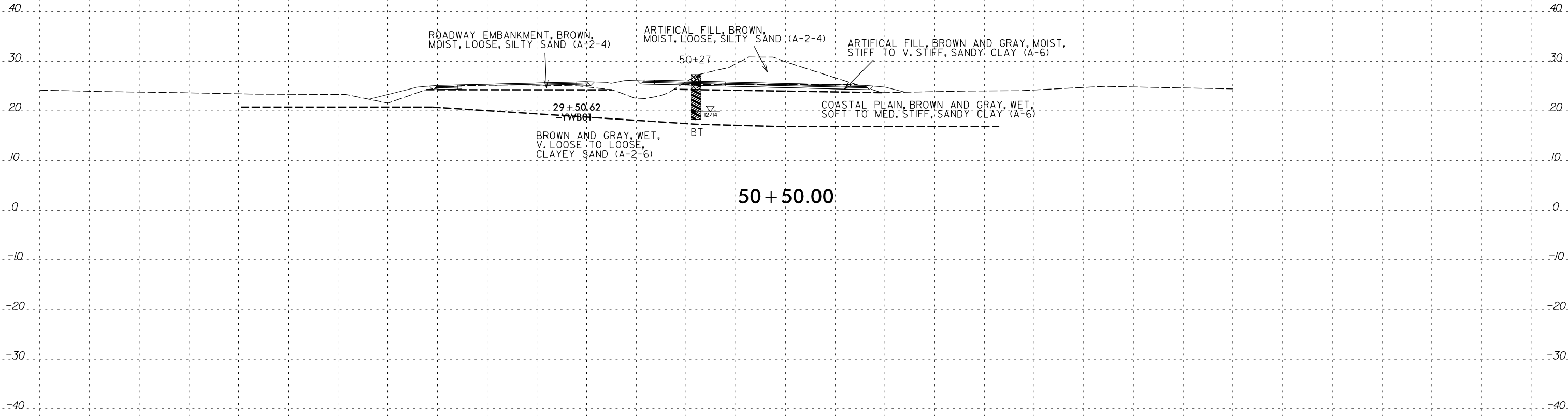


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 Stephen_Crockett

-YEB01-

8/23/99

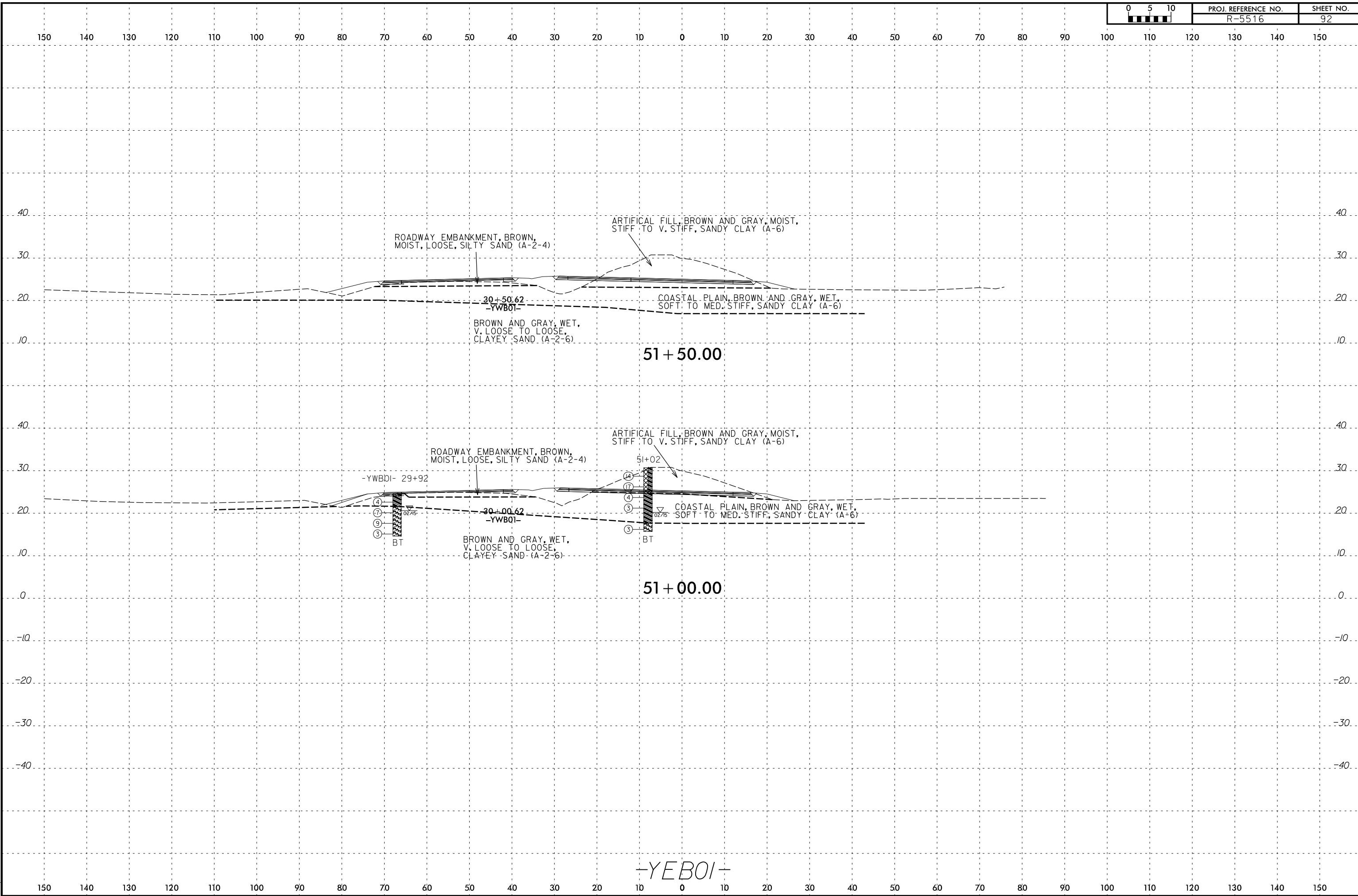
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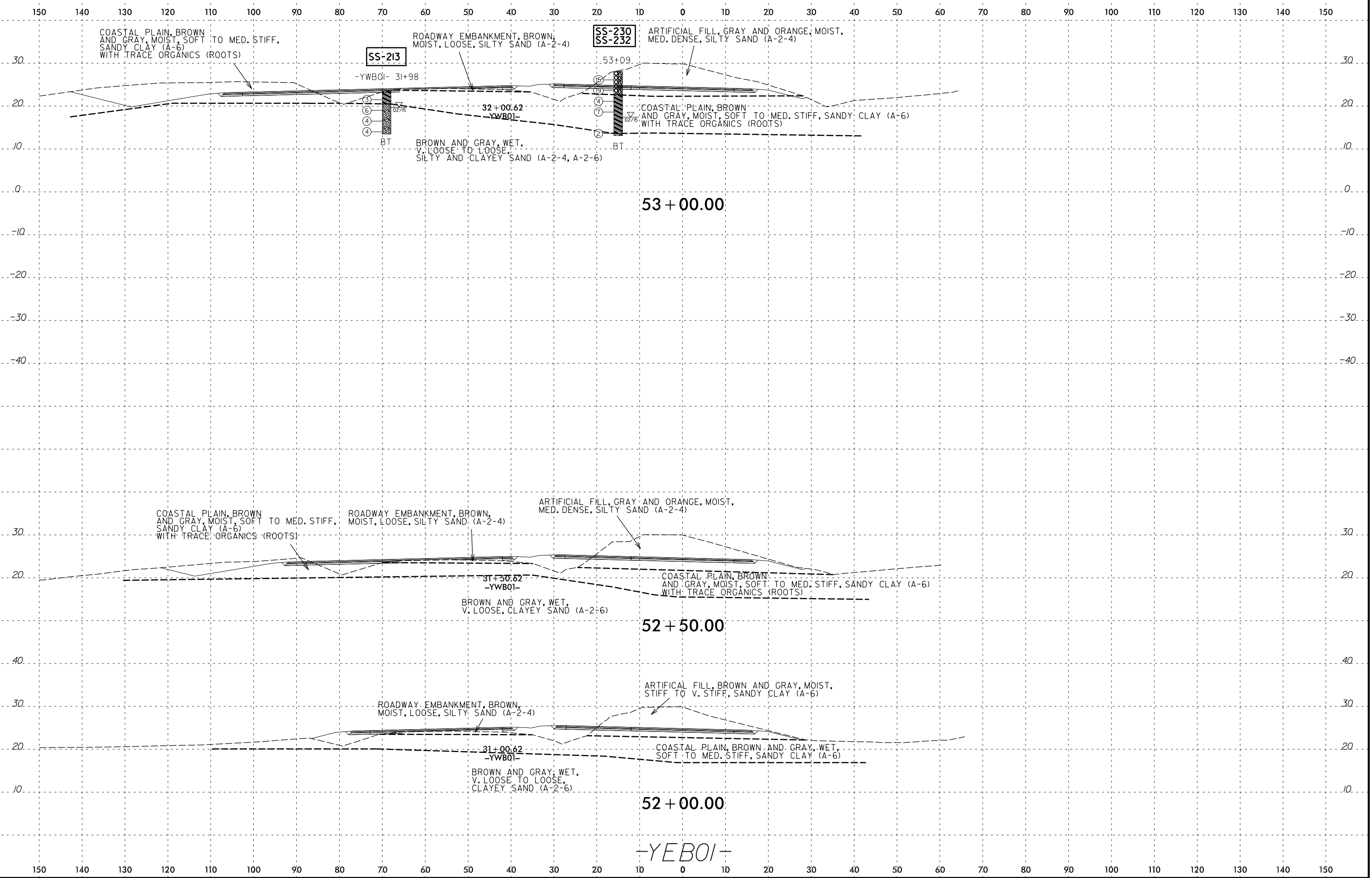


50 + 50.00

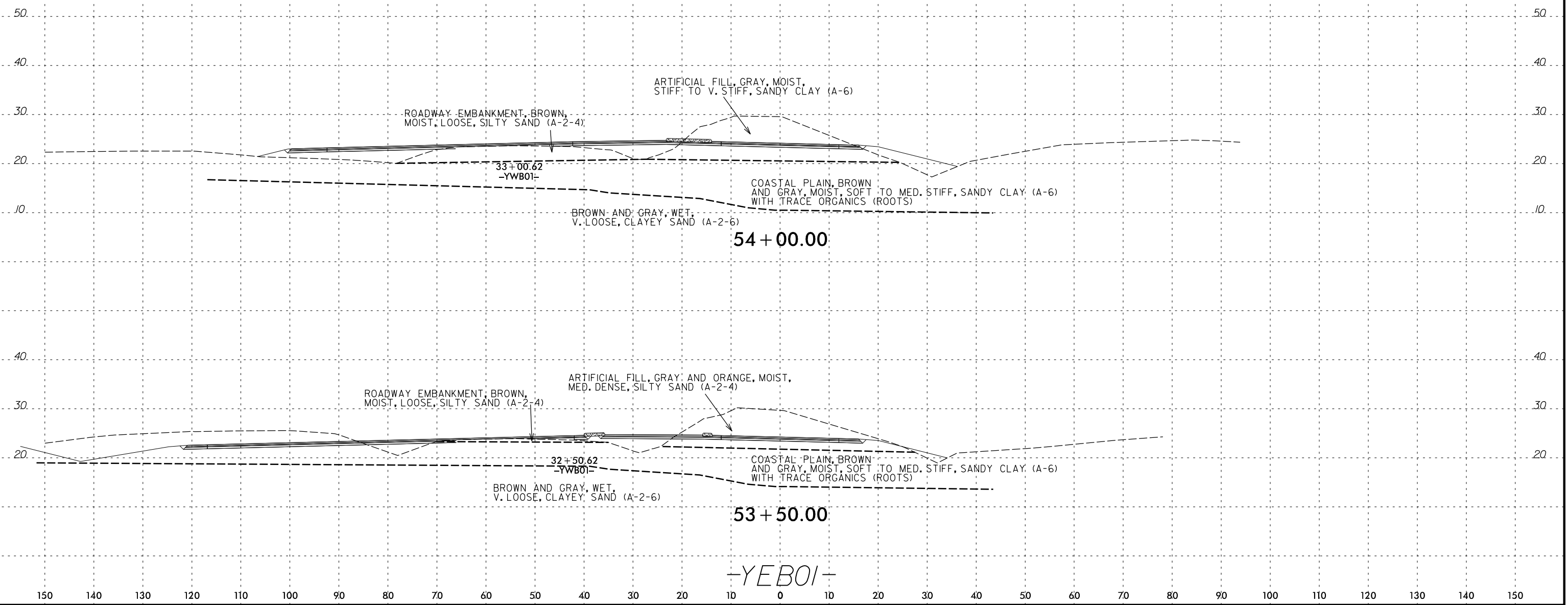
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 Stephen_Crockett

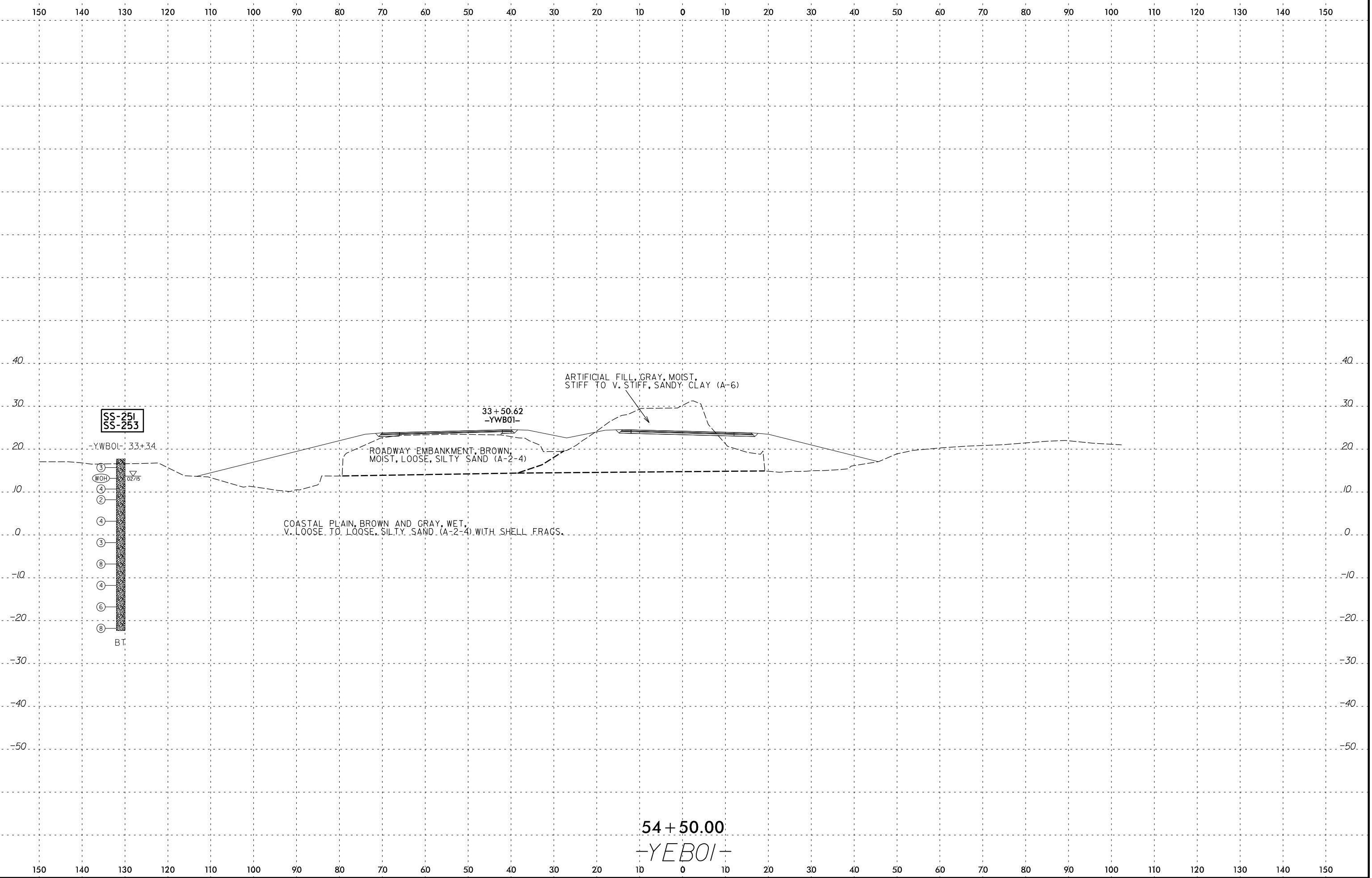




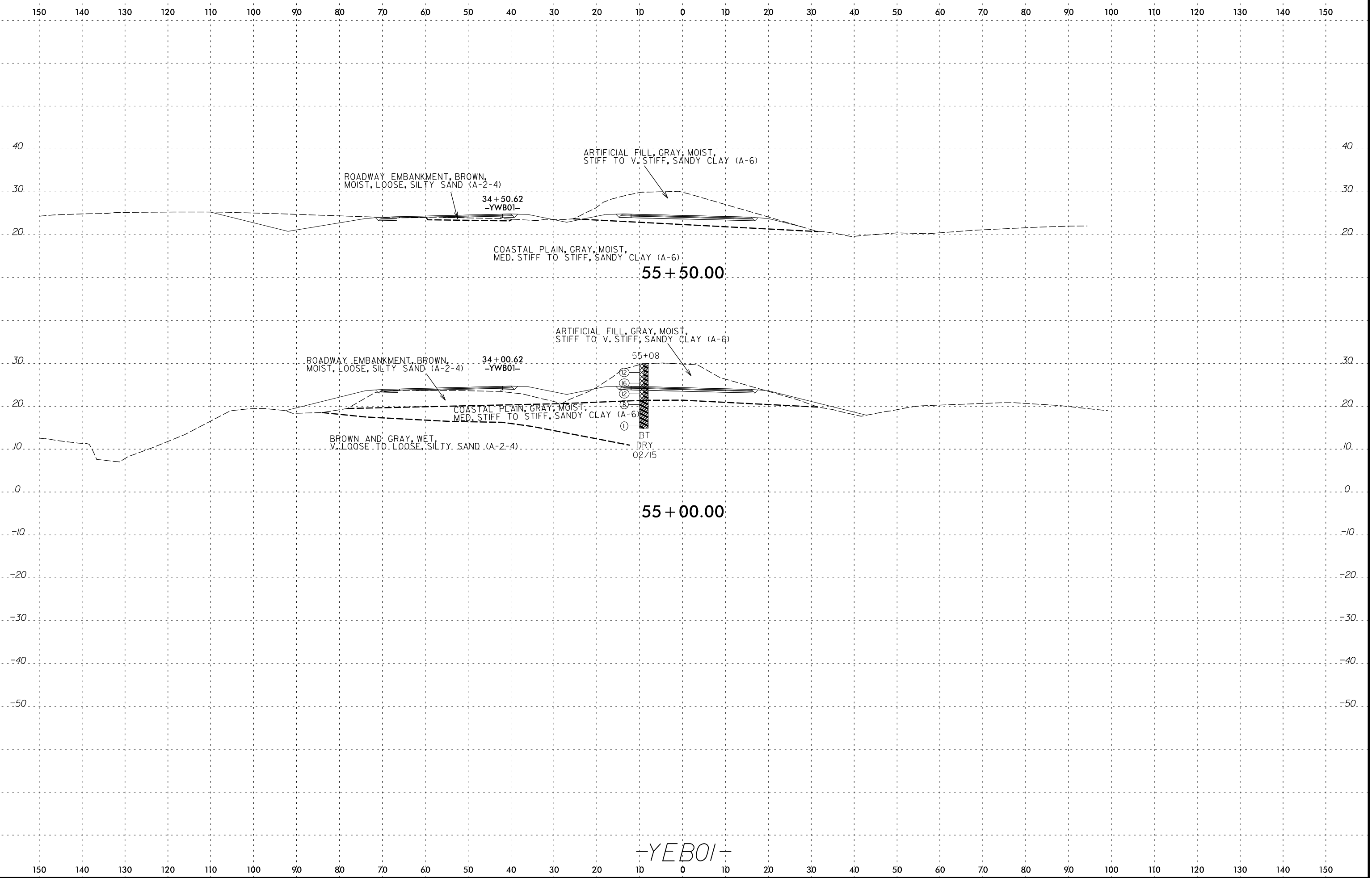
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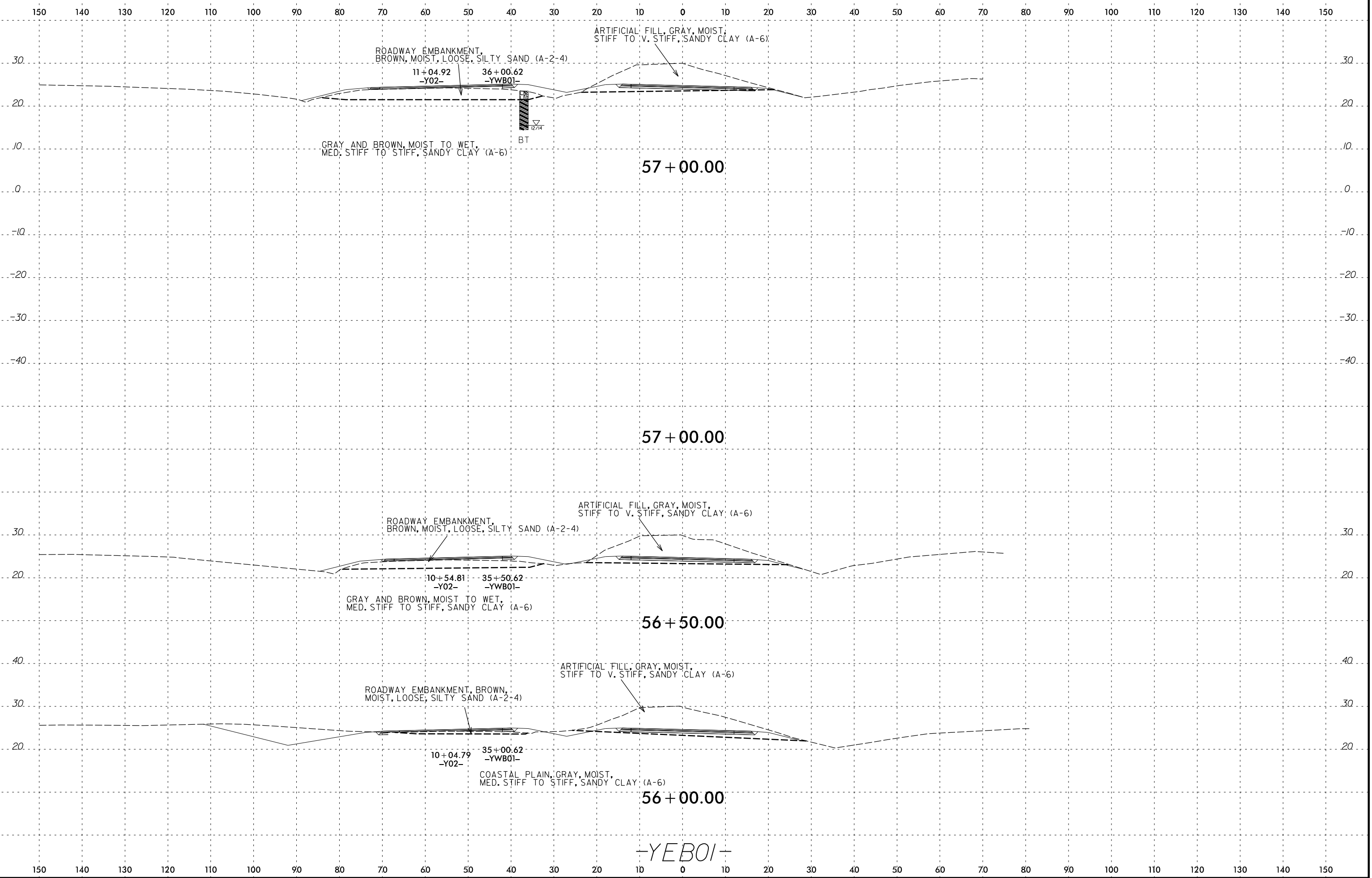
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 Stephen_Crockett



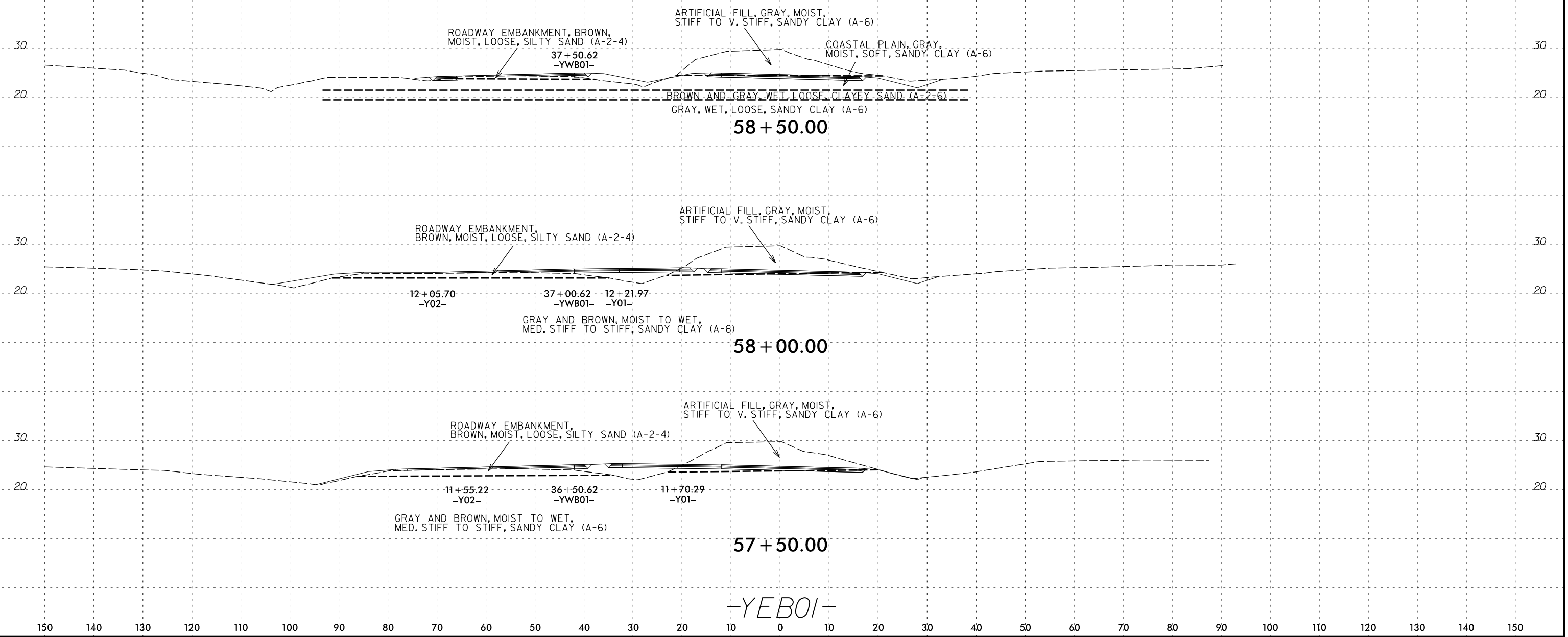
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 Stephen_Crockett



7/14/2016
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 Stephen_Crockett

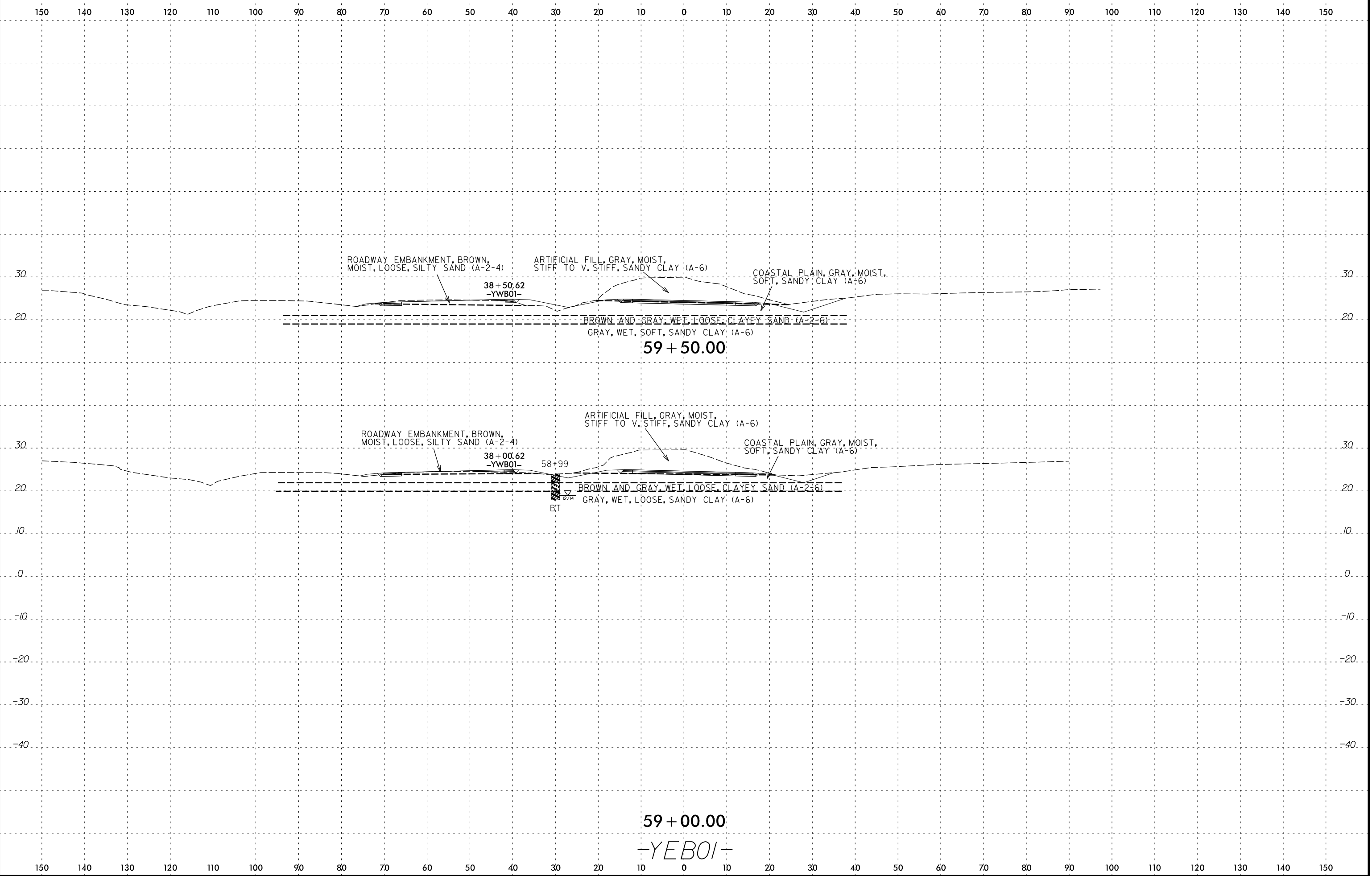


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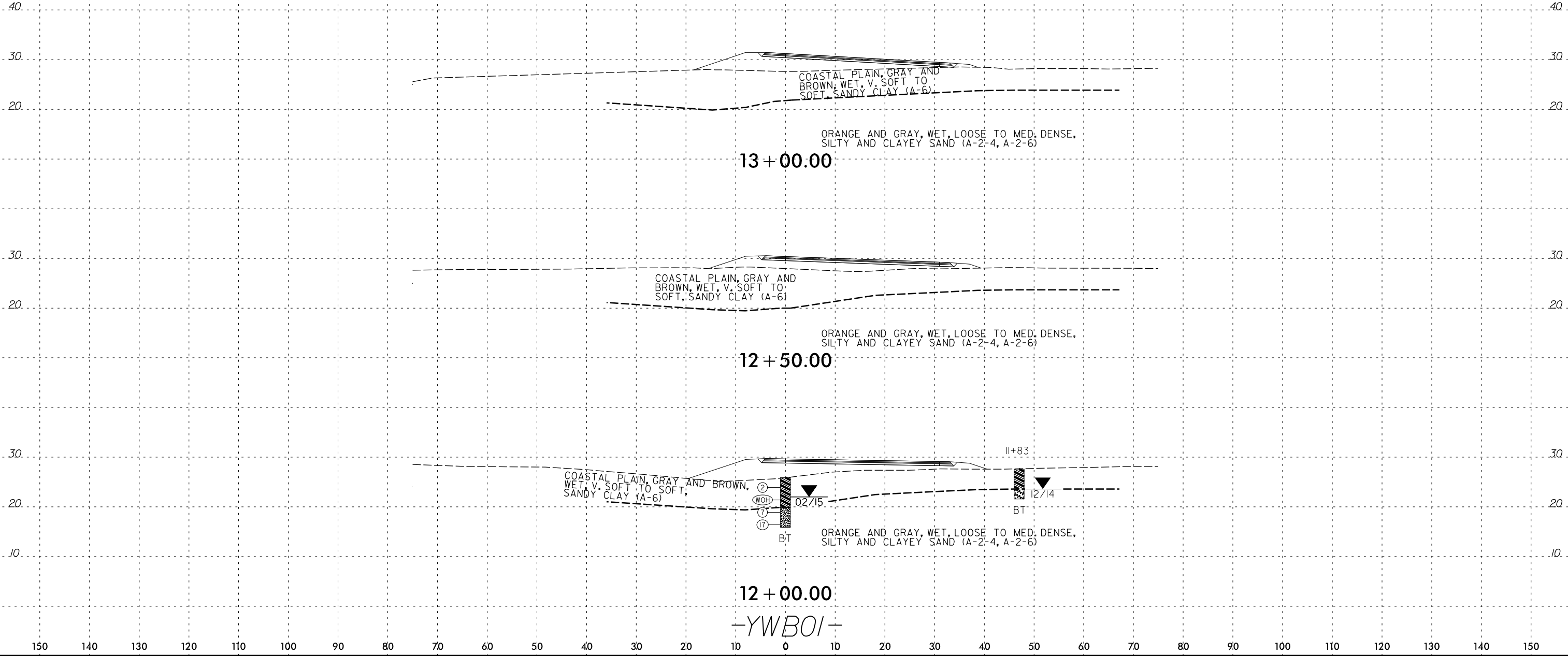


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 Stephen_Crockett

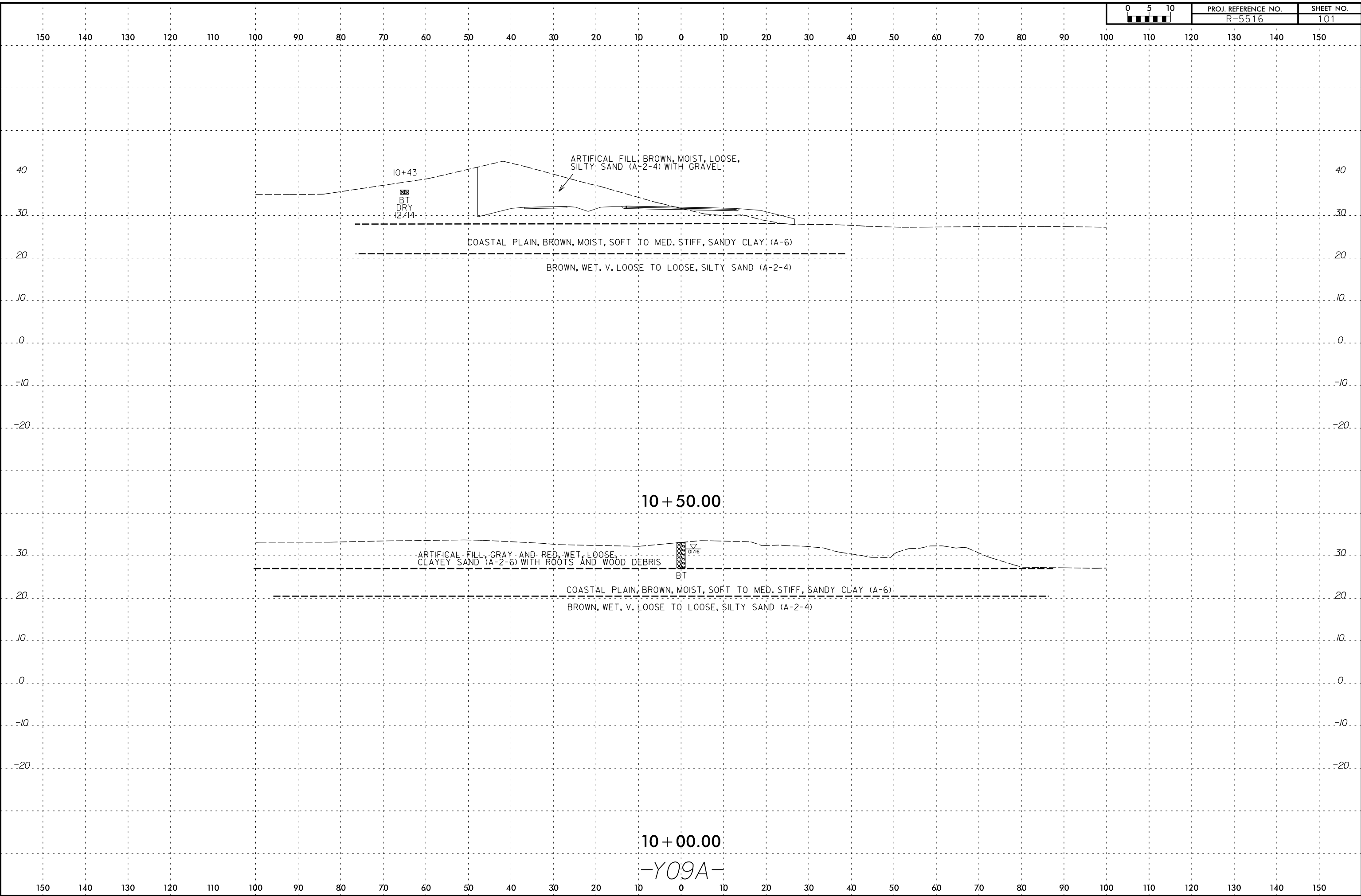
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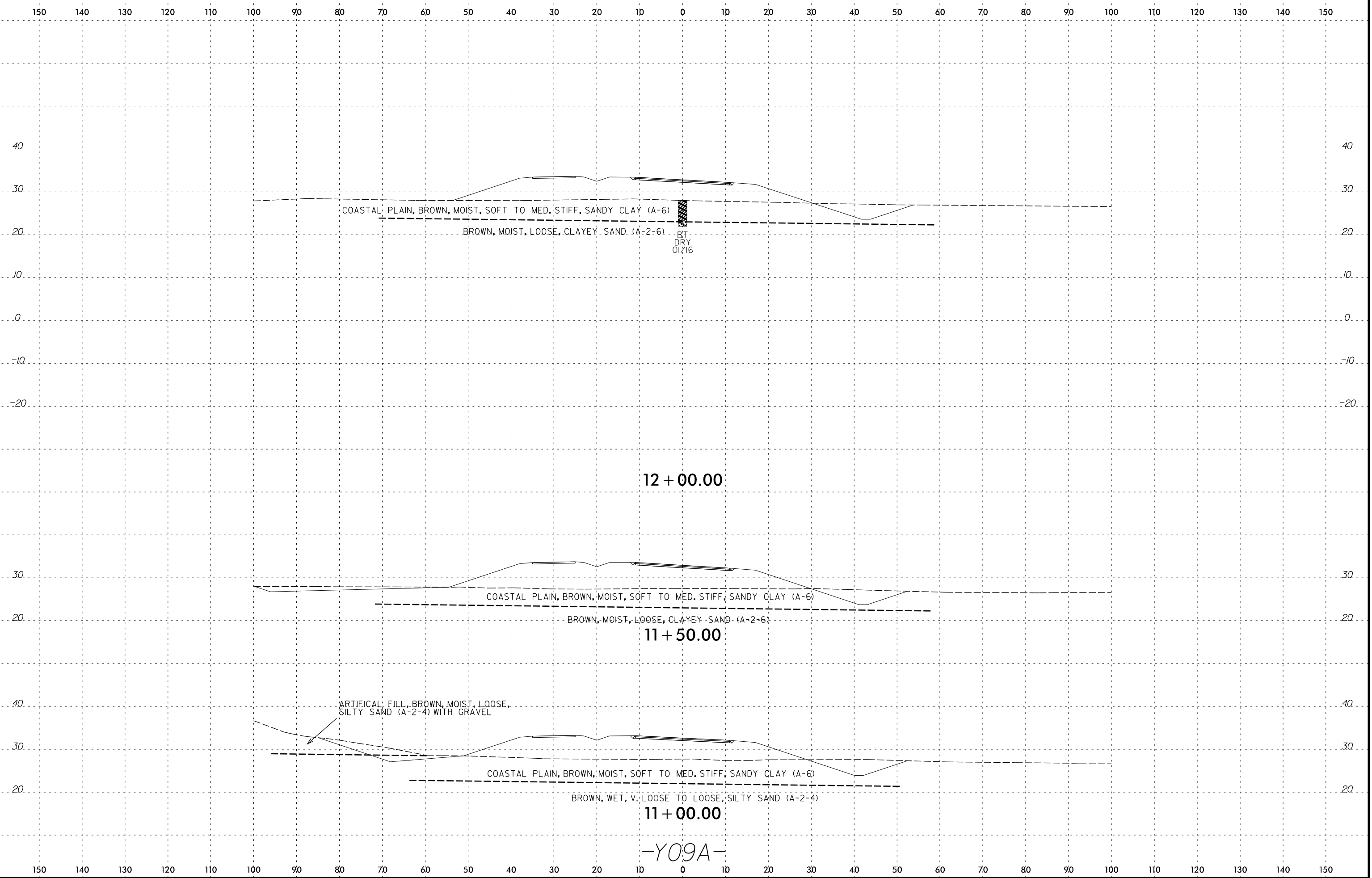


8/23/99



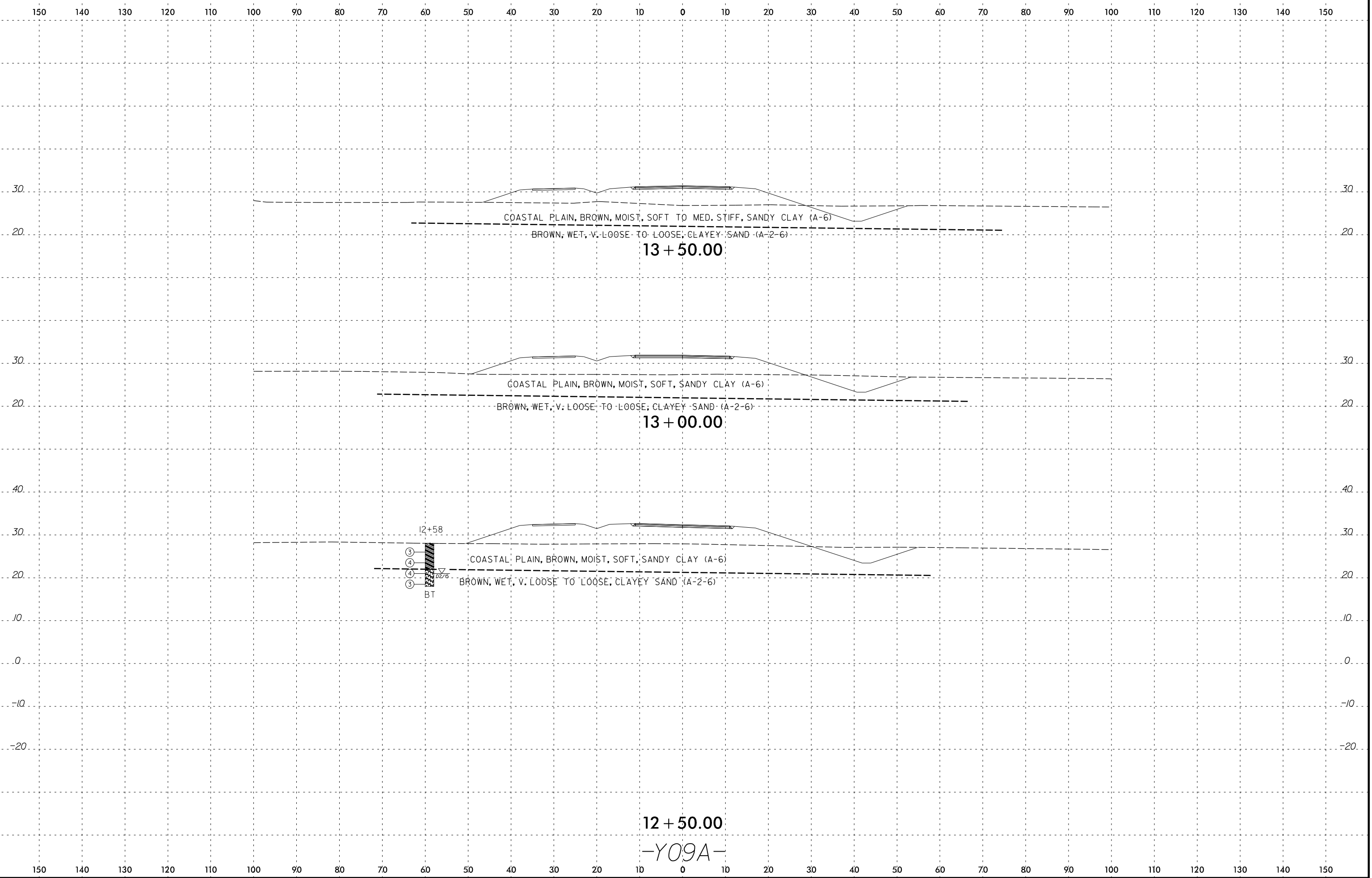
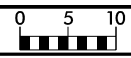
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Stephen_Crockett

8/23/99

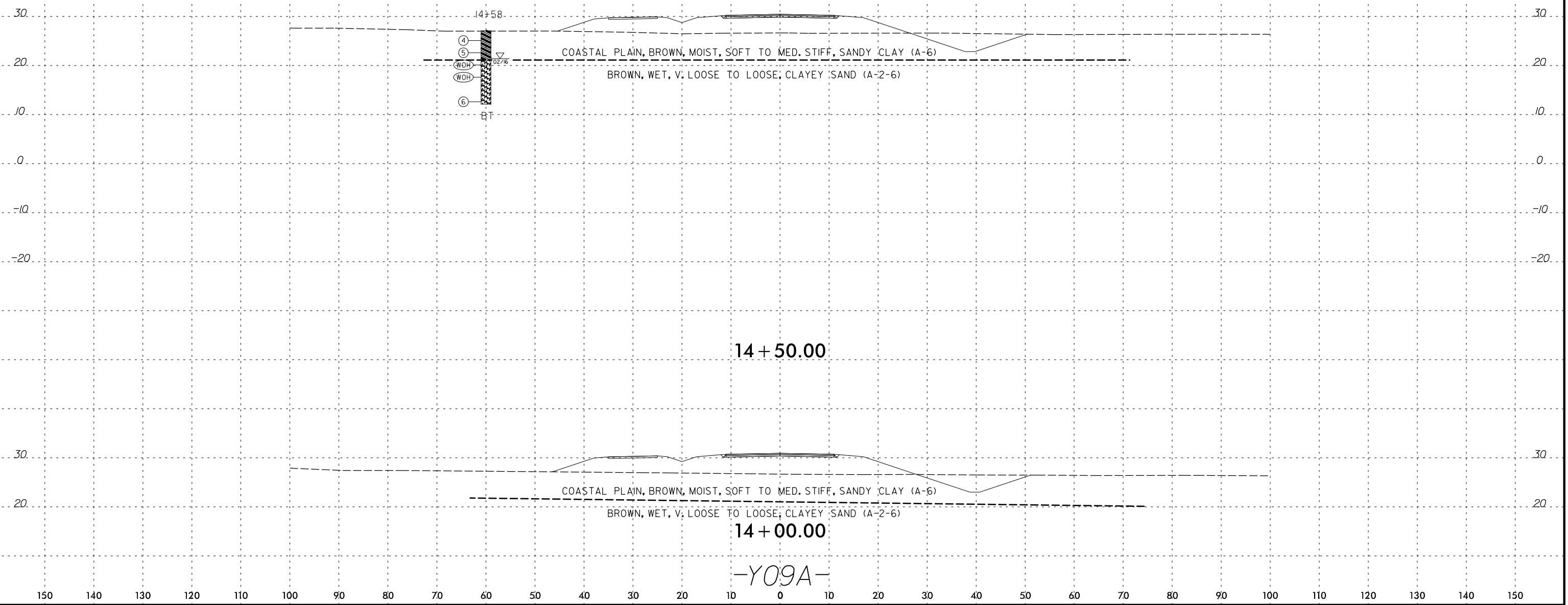


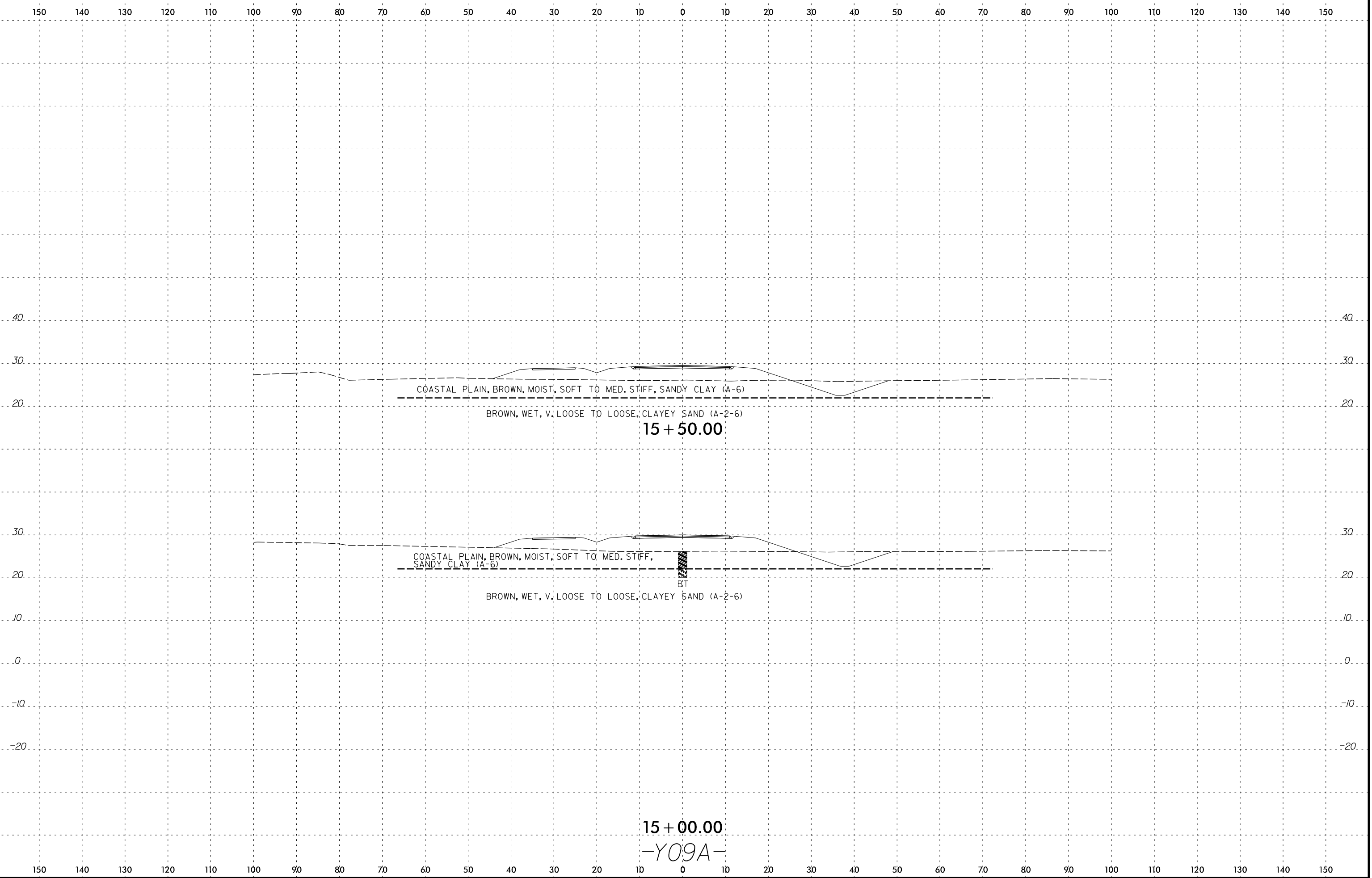
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-Y09A-

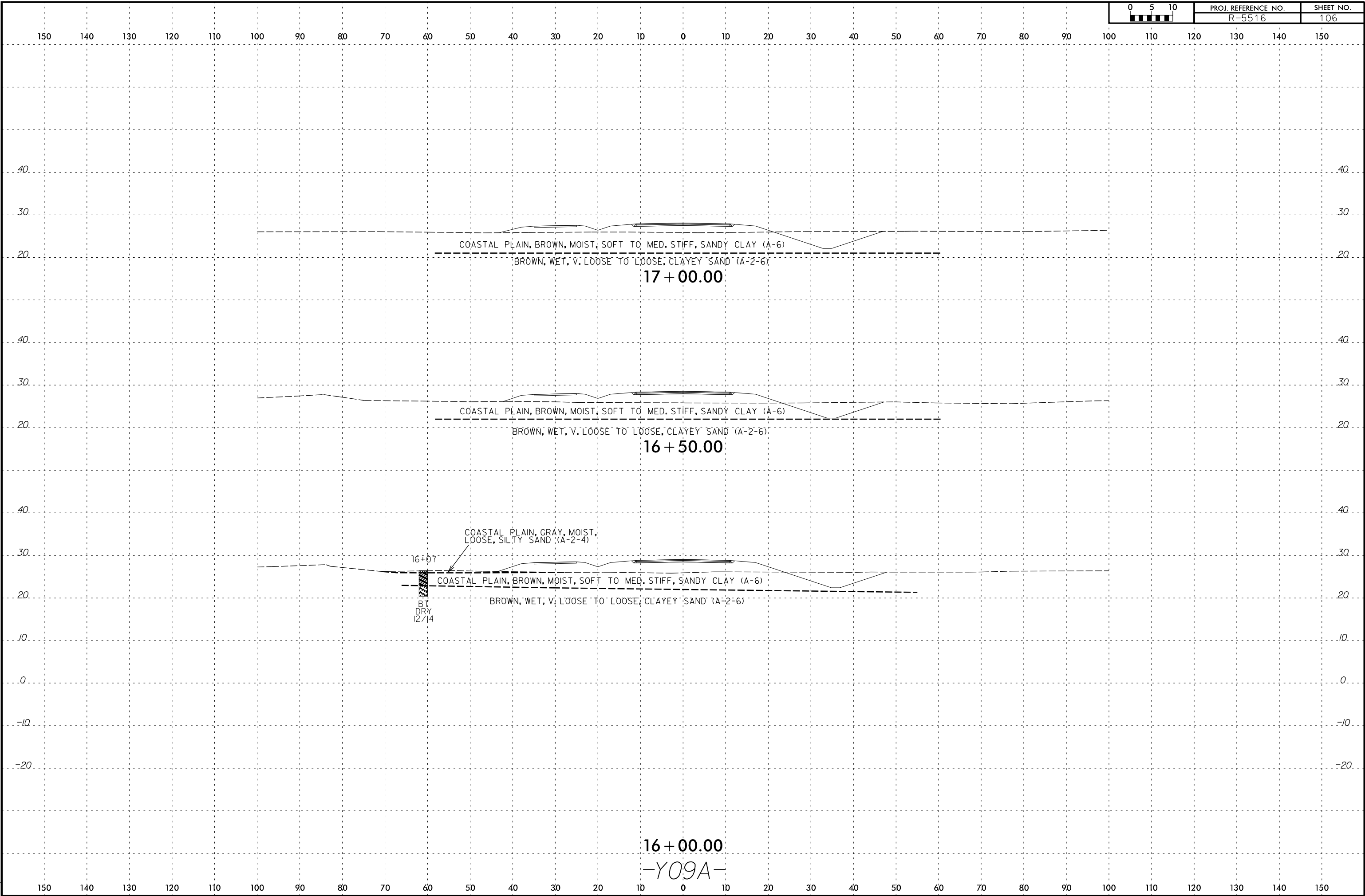


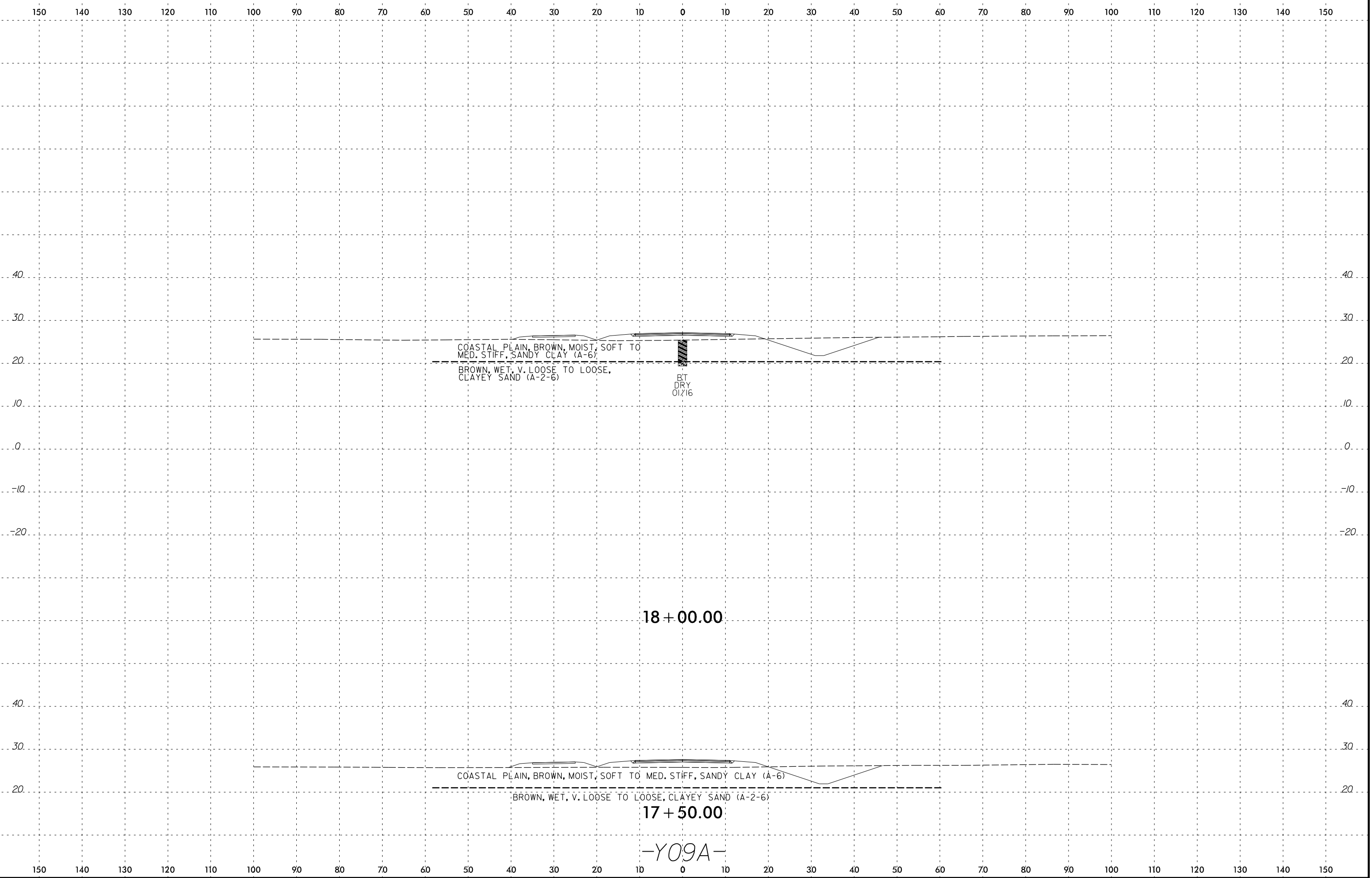
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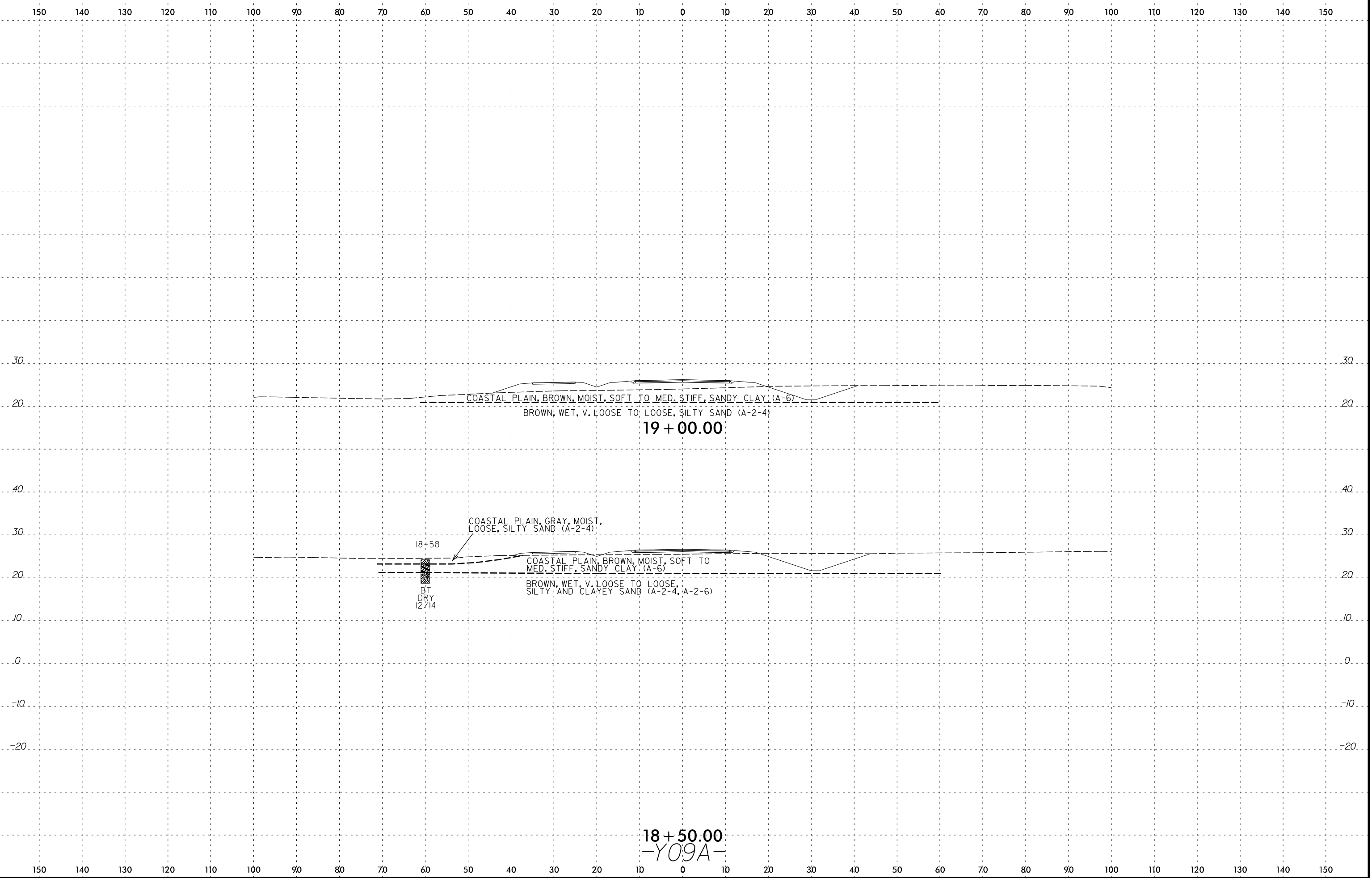




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 Stephen_Crockett



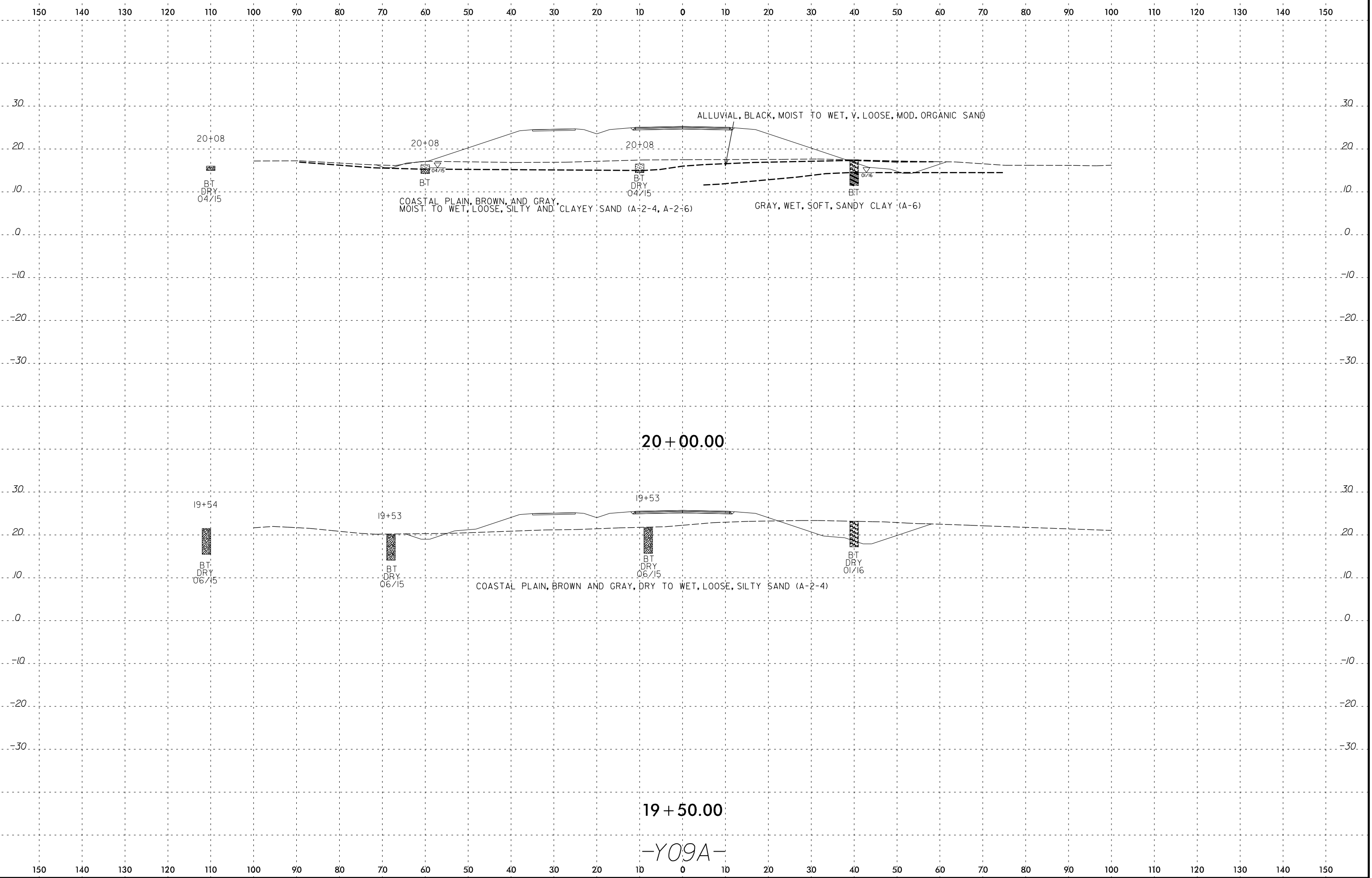




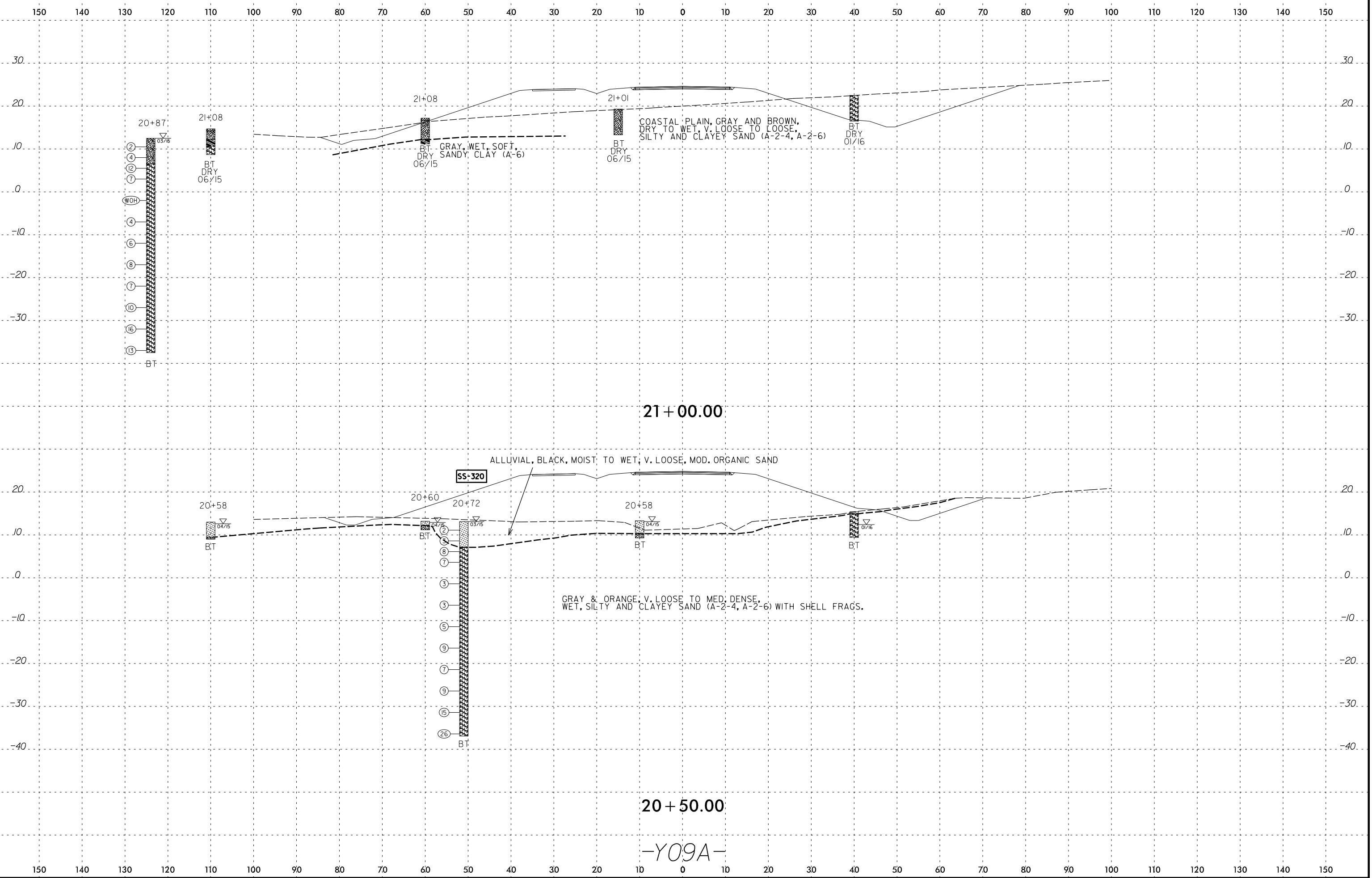
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 Stephen_Crockett

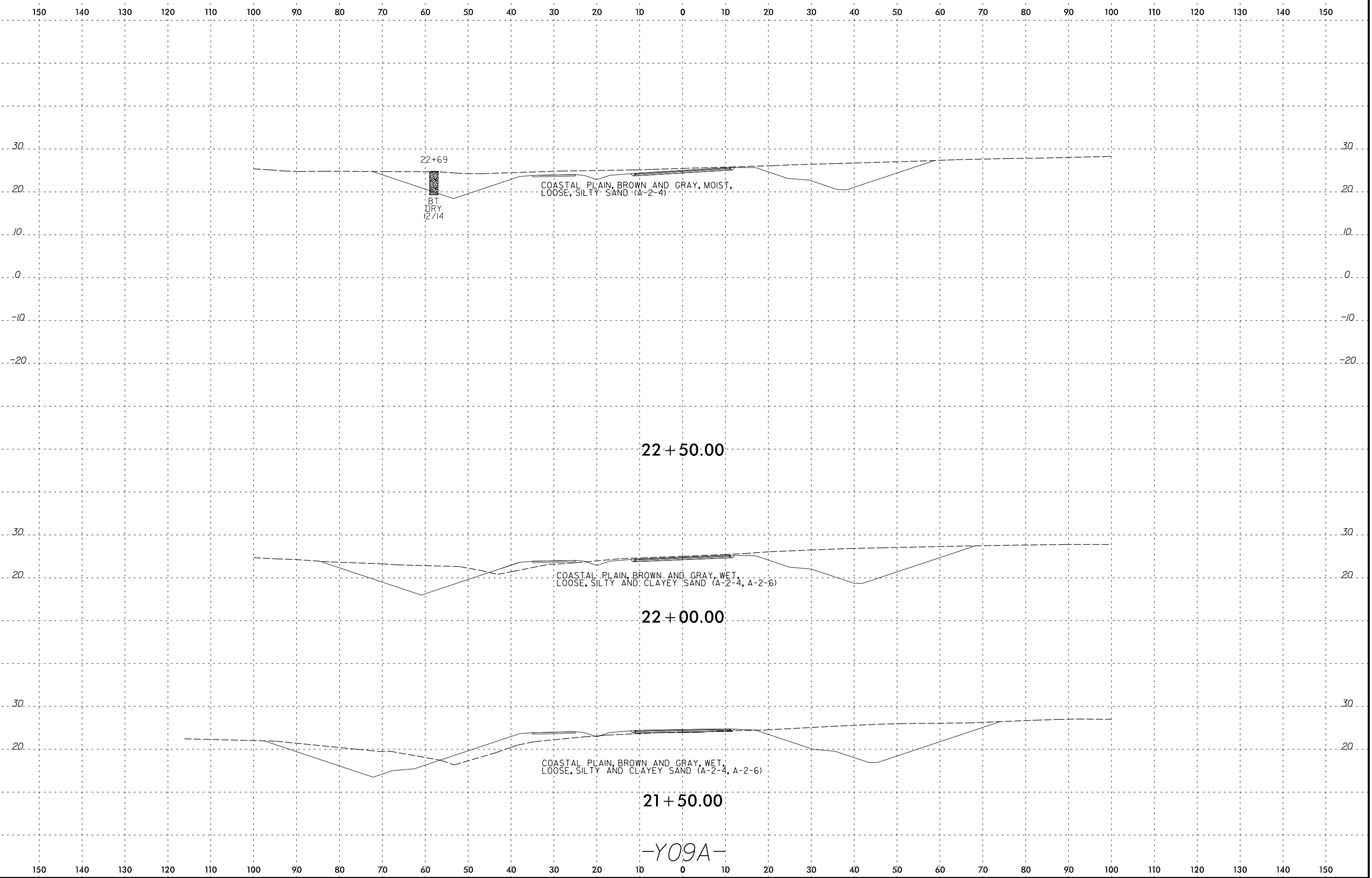
18+50.00
-Y09A-

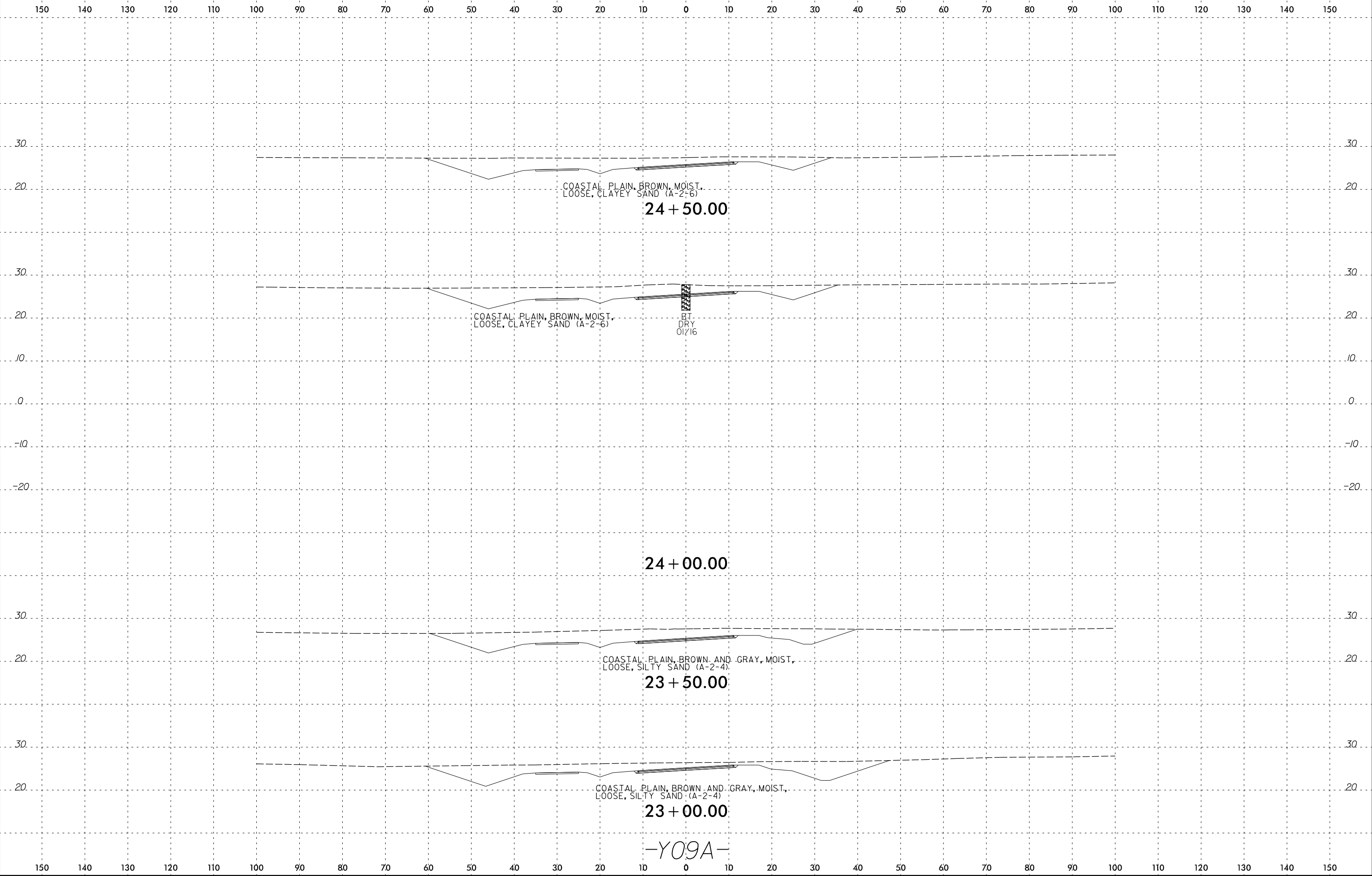
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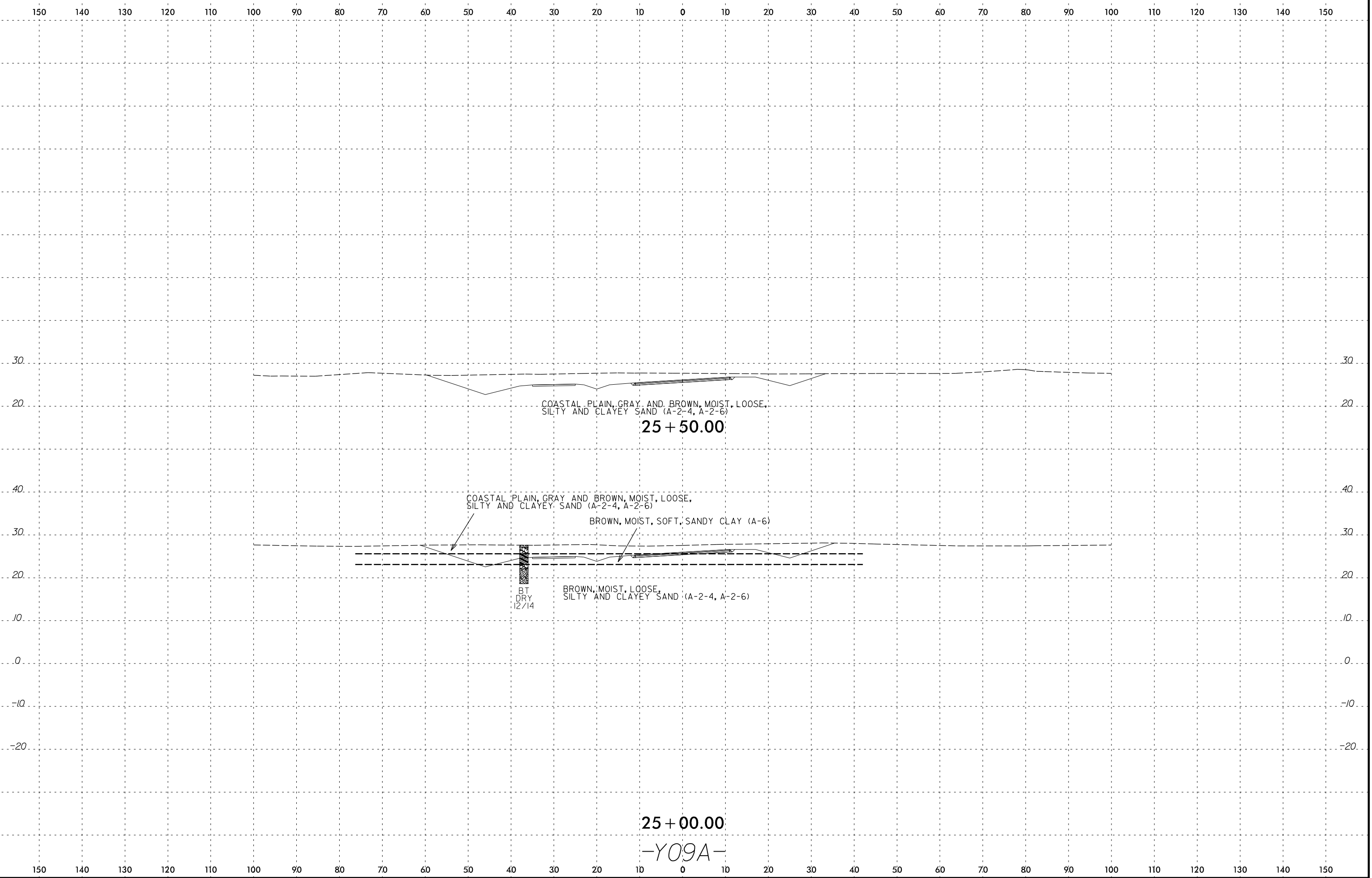


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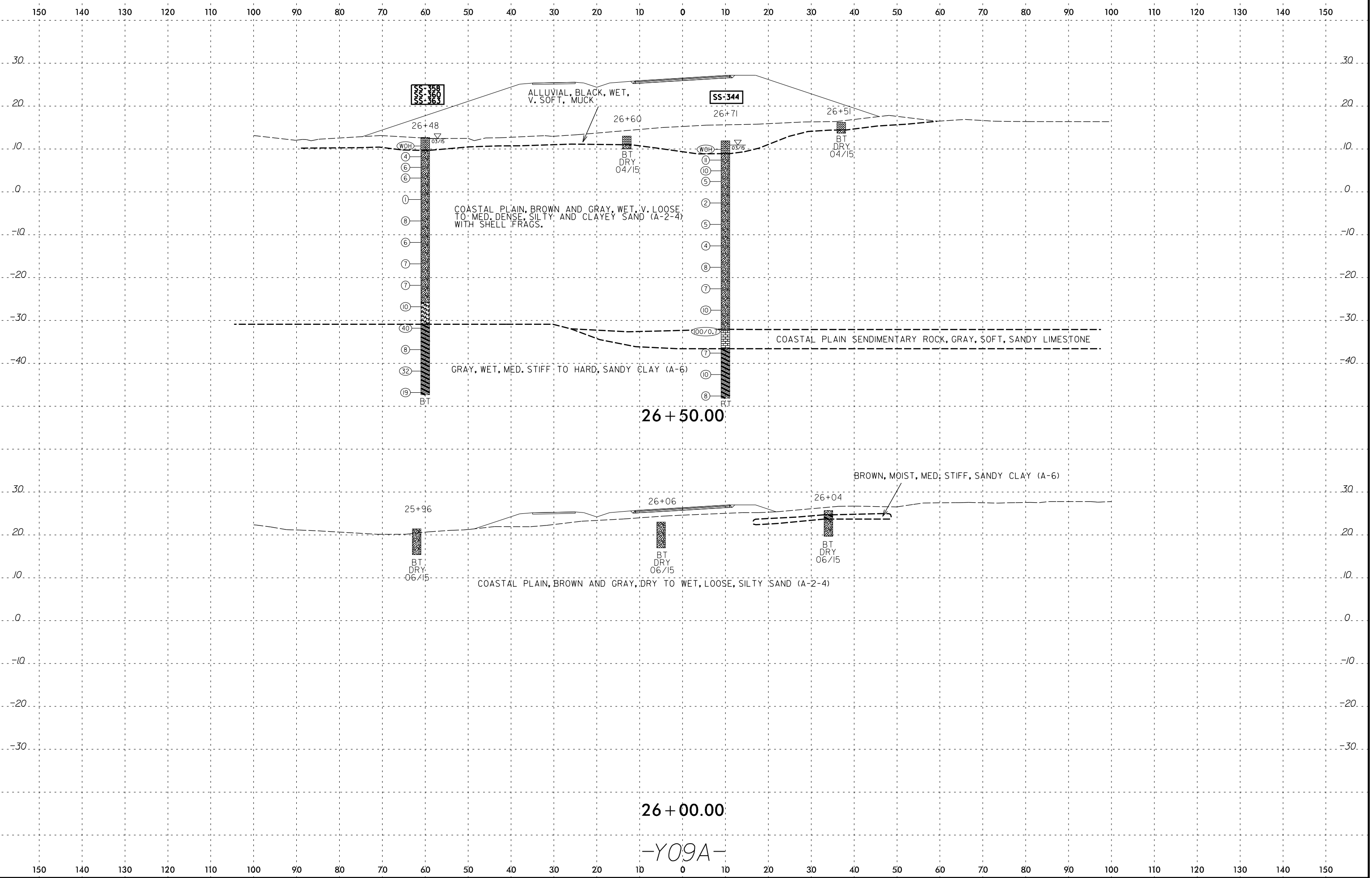








8/23/99



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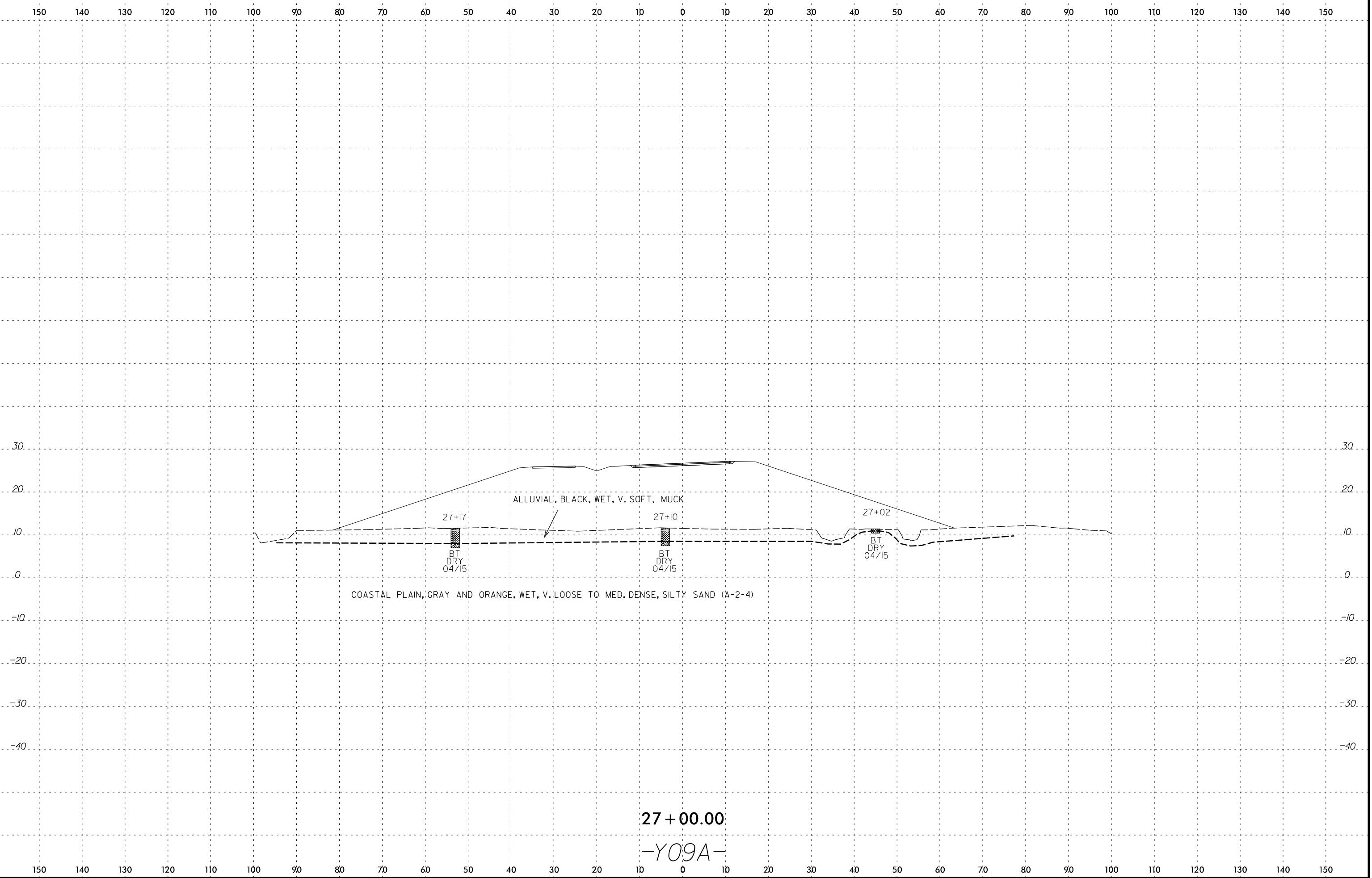
-Y09A-

GEOTECHNICAL BORING REPORT

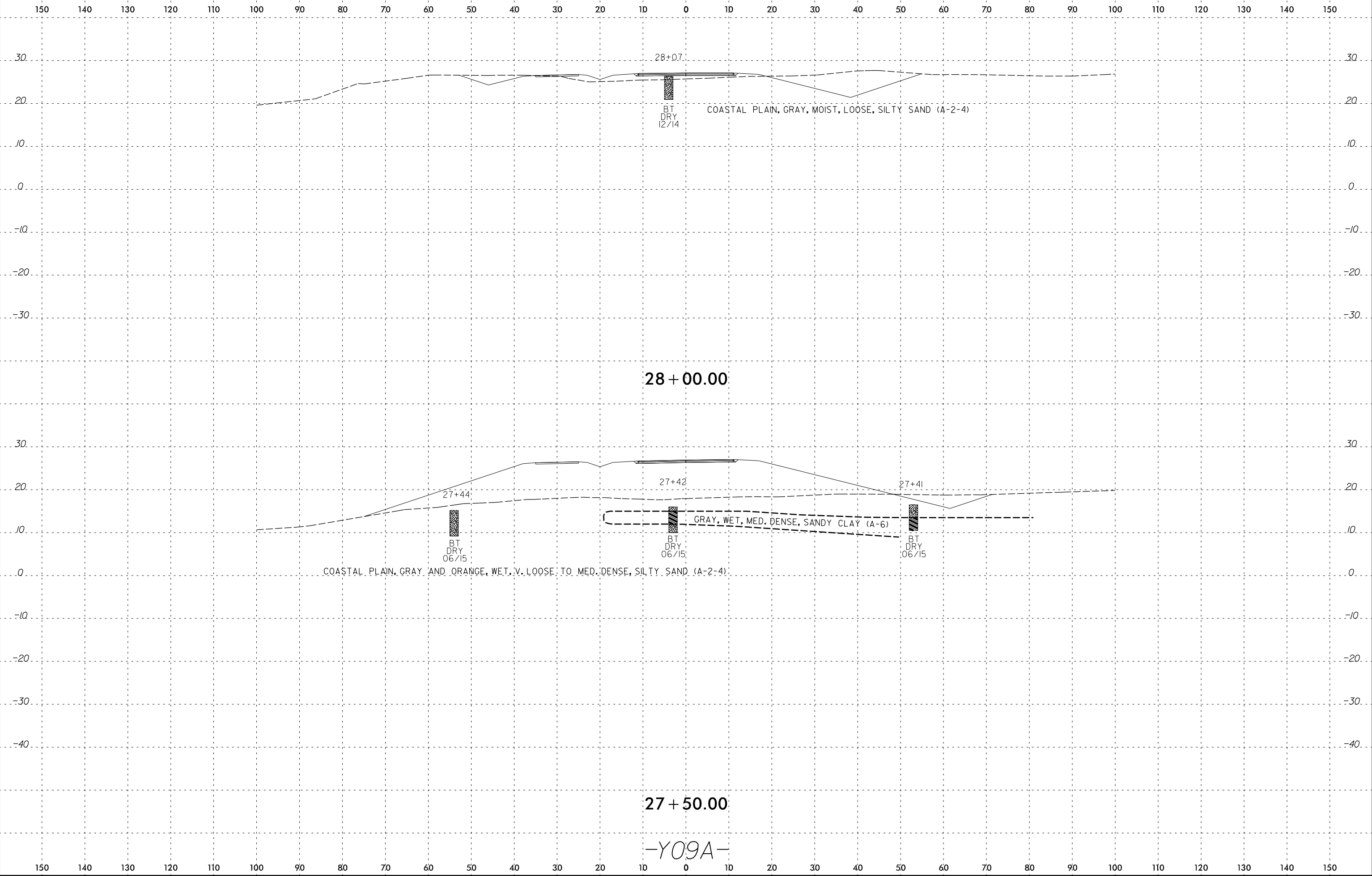
BORE LOG

WBS 45492.1.1		TIP R-5516		COUNTY CRAVEN		GEOLOGIST S. CROCKETT										
SITE DESCRIPTION INTERCHANGE FROM US 70 TO SLOCUM RD AT CHERRY POINT MILITARY BASE							GROUND WTR (ft)									
BORING NO. Y09A_26+50_LT		STATION 26+70		OFFSET 62 ft LT		ALIGNMENT -Y09A-										
COLLAR ELEV. 9.8 ft		TOTAL DEPTH 2.0 ft		NORTHING 433,477		EASTING 2,616,860										
DRILL RIG/HAMMER EFF./DATE N/A				DRILL METHOD Hand Auger		HAMMER TYPE N/A										
DRILLER N/A		START DATE 04/15/15		COMP. DATE 04/15/15		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
10														9.8	GROUND SURFACE	0.0
														8.3	ALLUVIAL	1.5
														7.8	BLACK, WET, V. SOFT, MUCK	2.0
															COASTAL PLAIN	
															GRAY, WET, LOOSE, SILTY SAND (A-2-4)	
															Boring Terminated at Elevation 7.8 ft IN CP: SILTY SAND	

NCDOT BORE DOUBLE R6516_GEO_HAND AUGERS.GPJ NC_DOT.GDT 4/22/16



8/23/99



7/14/2016 P:\Jobs4\Projects\NC001\60397120 (31829896) R-5516 Croven\4.0 Deliverables\RS516_GEO_RDW\CADD_GEDTECH\asc\--5516_geo_xsi_Y09A(01).dgn Stephen_Crockett

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

COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND (A-2-4)

BROWN AND GRAY, MOIST, MED. STIFF, SANDY CLAY (A-6)

13 + 00.00

COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND (A-2-4)

BROWN AND GRAY, MOIST, MED. STIFF, SANDY CLAY (A-6)

12 + 50.00

12+72

BT
DRY
12/14

COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND (A-2-4)

BROWN AND GRAY, MOIST, MED. STIFF, SANDY CLAY (A-6)

12 + 00.00

11 + 50.00

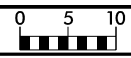
11 + 00.00

10 + 50.00

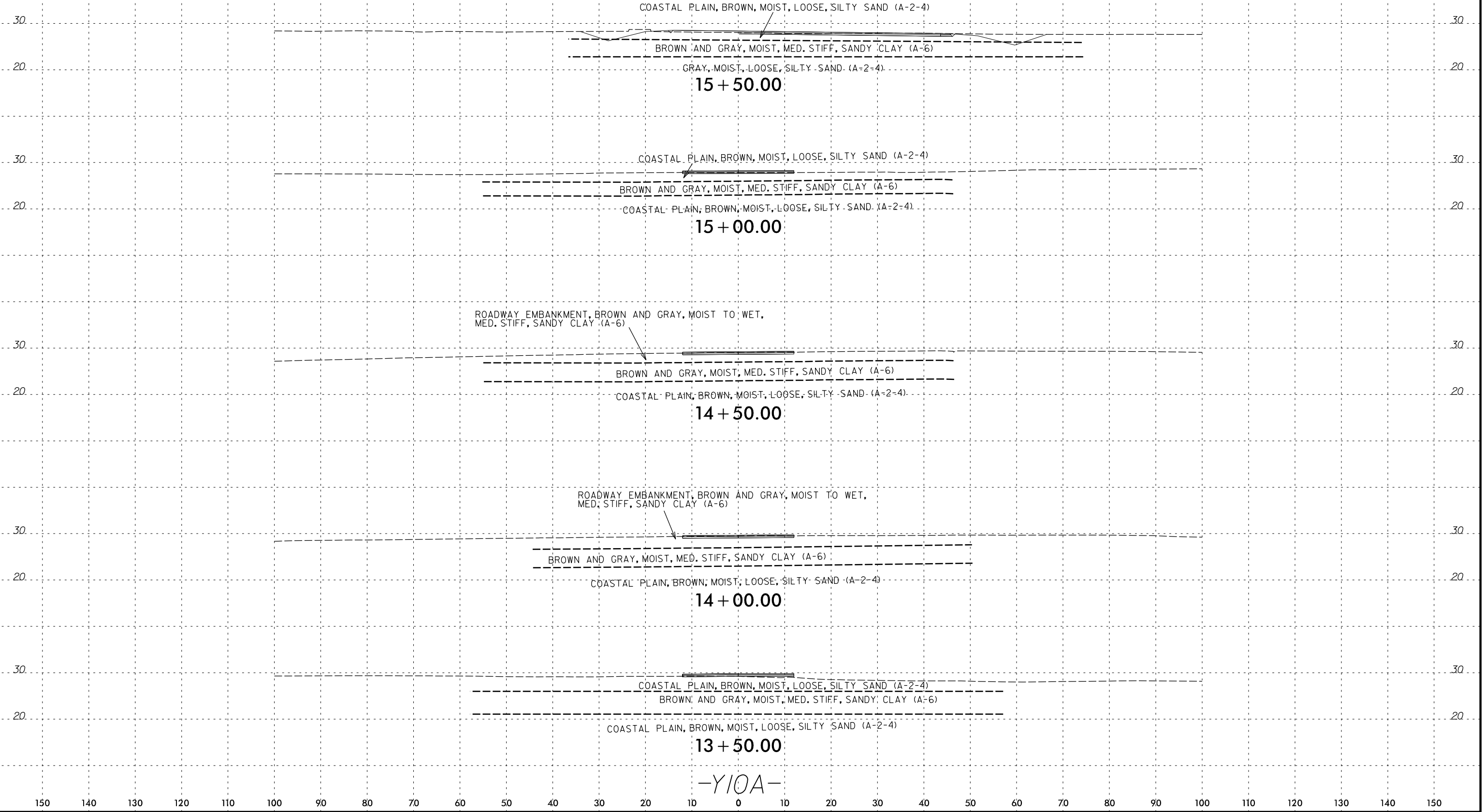
10 + 00.00

-Y10A-

8/23/99



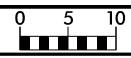
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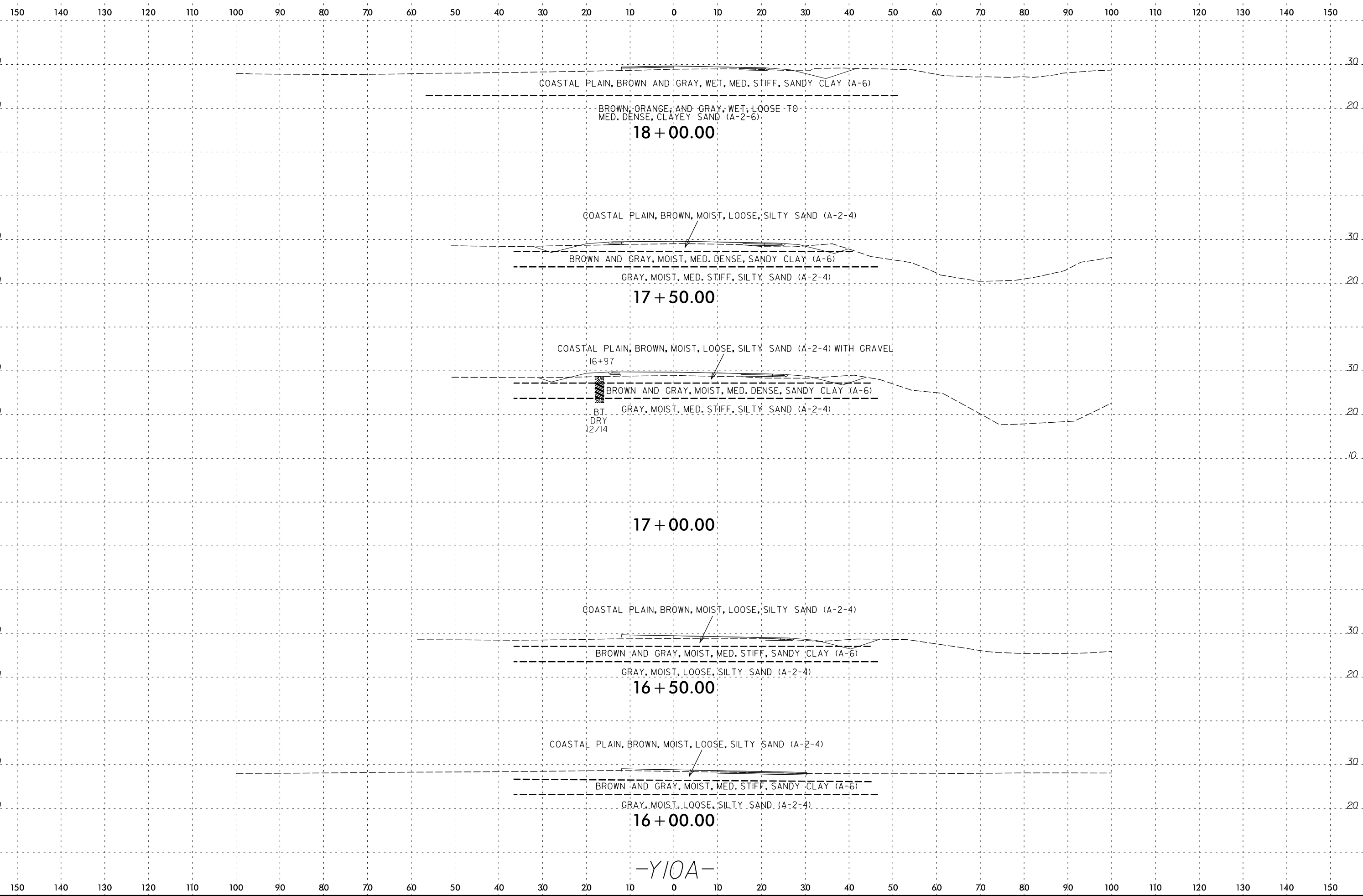
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7/14/2016
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 Stephen_Crockett

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
R-5516	120



18 + 00.00

17 + 50.00

17 + 00.00

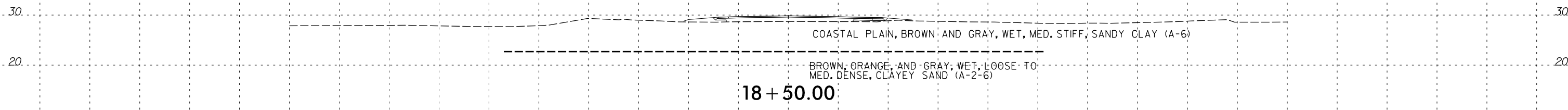
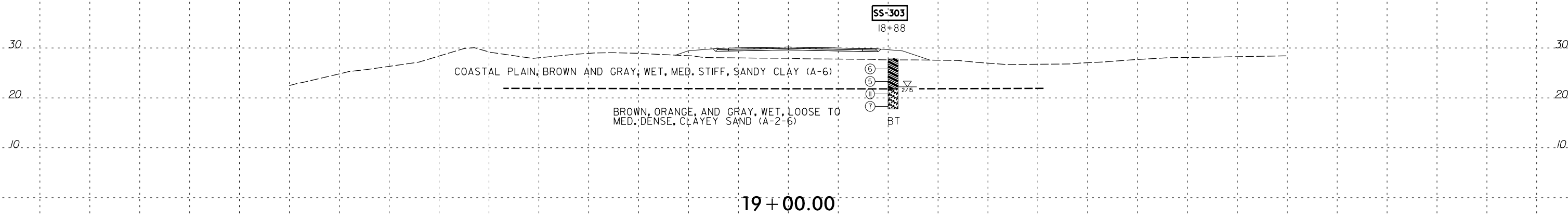
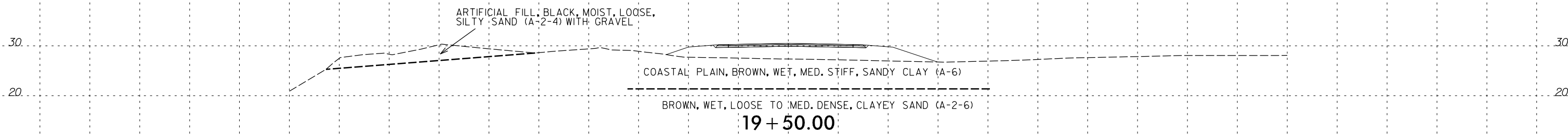
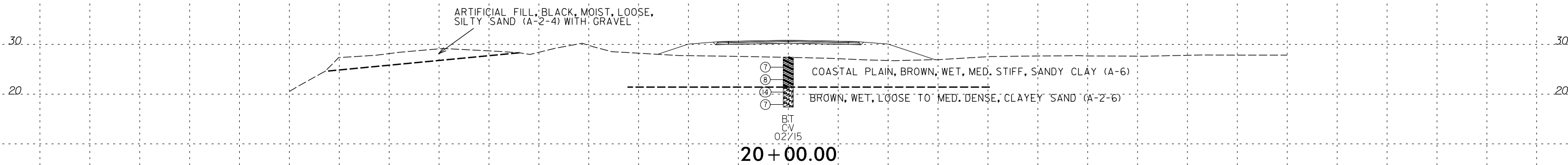
16 + 50.00

16 + 00.00

-Y10A-

7/14/2016 P:\Jobs4\Projects\NC001\60397120 (31829896) R-5516 Croven\4.0 Deliverables\RES516_GEO_RDW\CADD_GEO\TECH\asc\--5516_geo_xsi_Y10A(1).dgn Stephen_Crockett

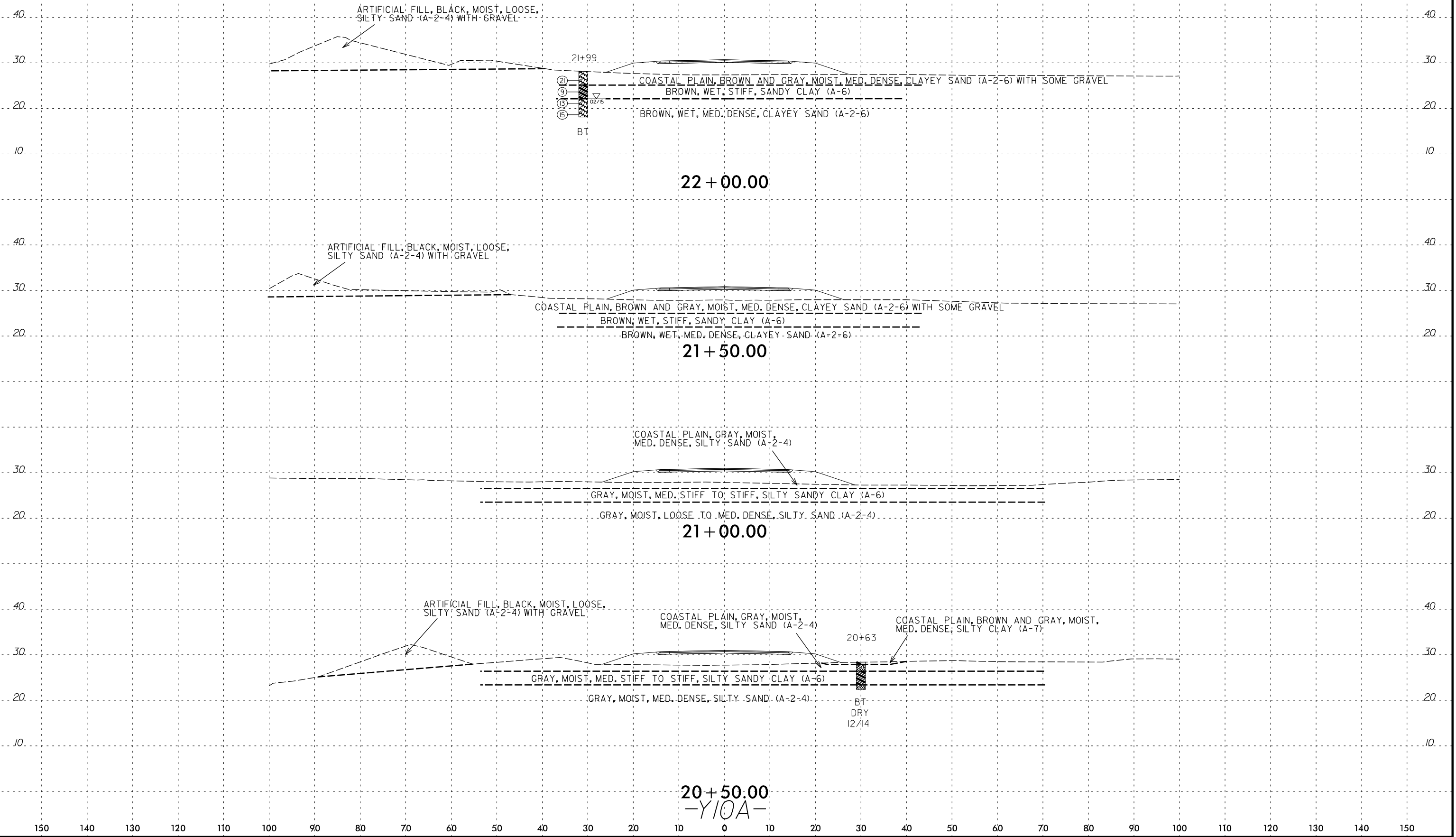
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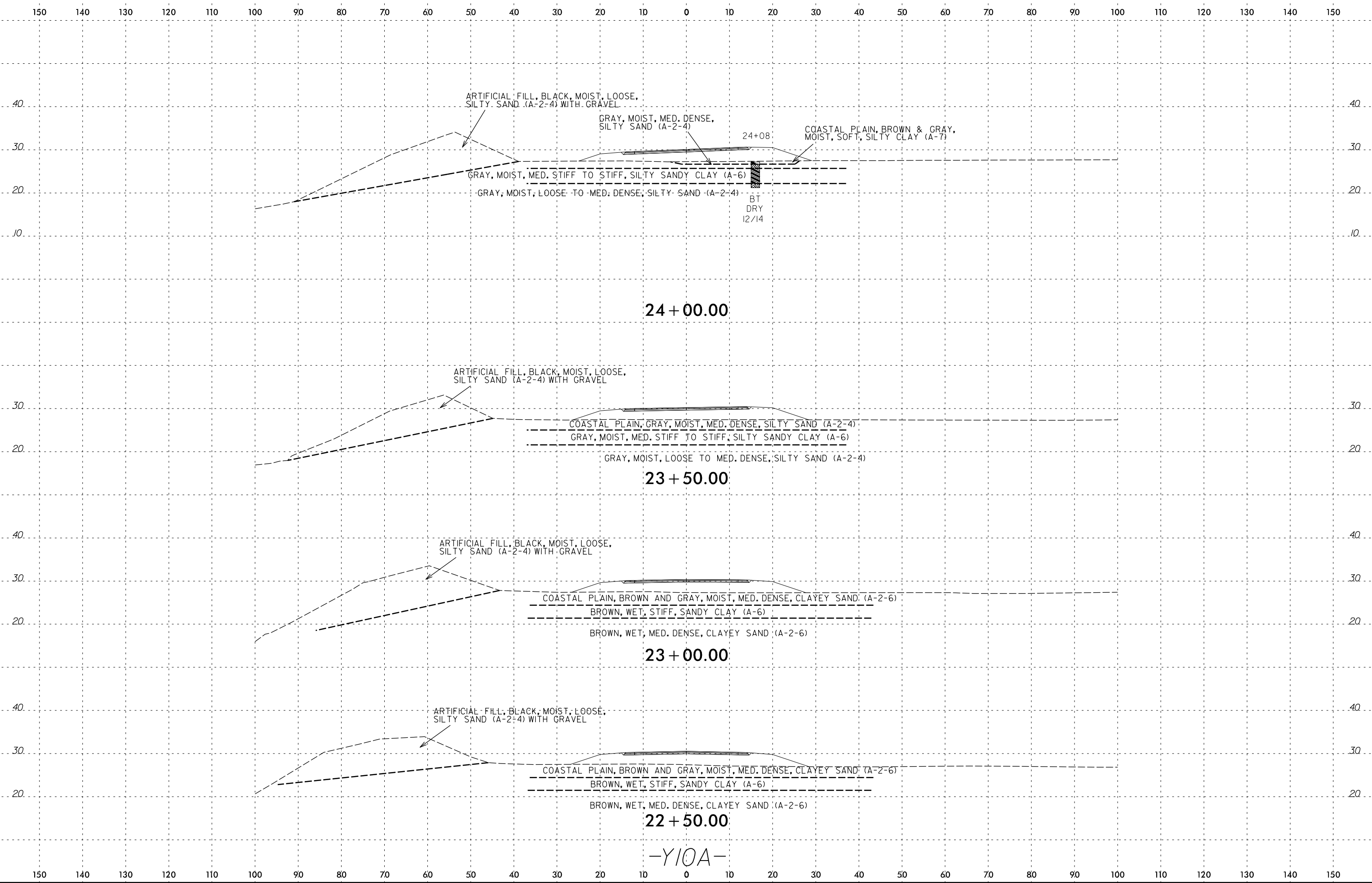


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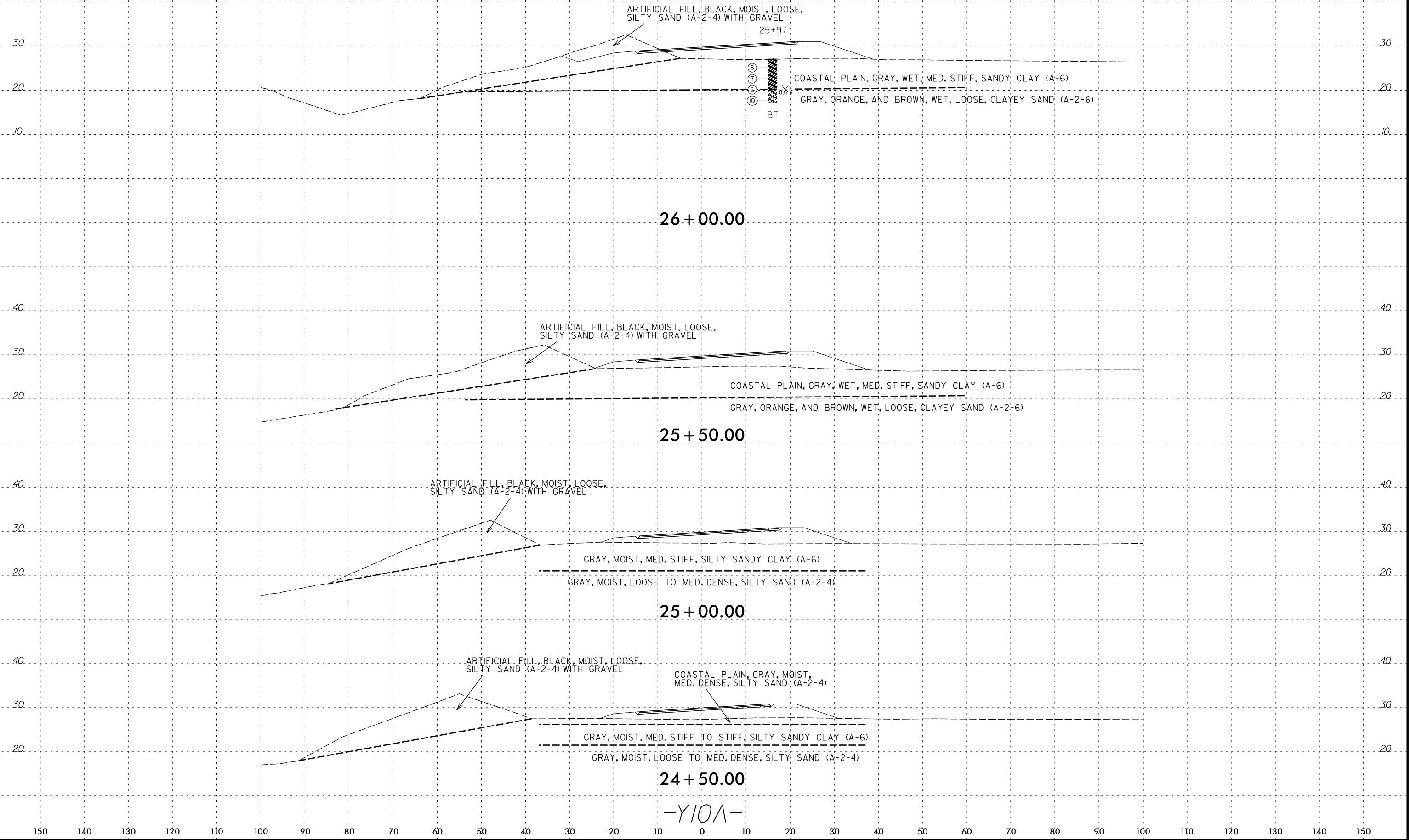
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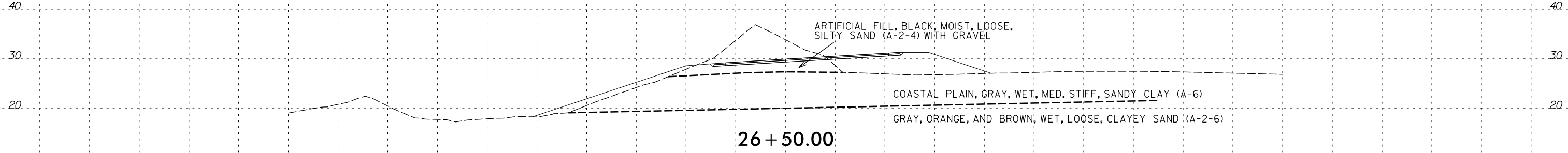
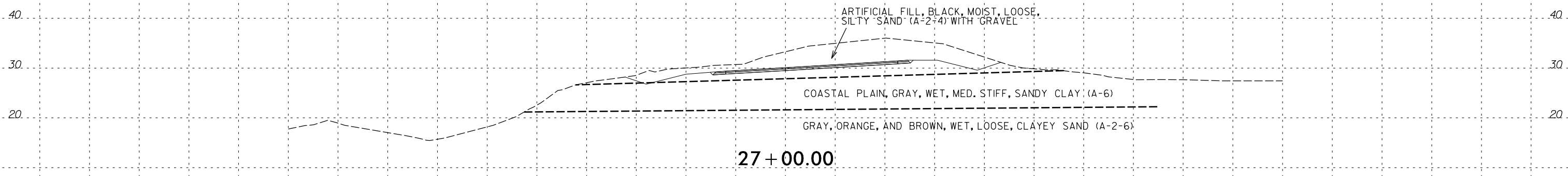
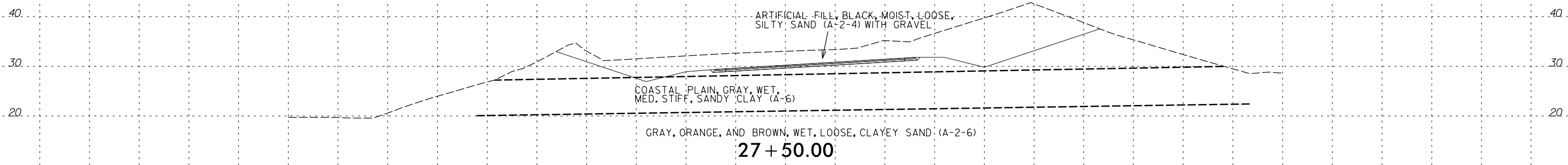
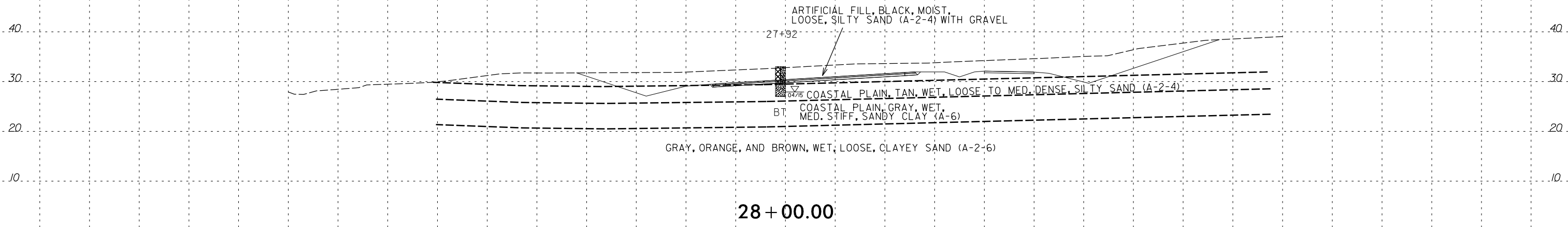


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 Stephen_Crockett

-Y10A-

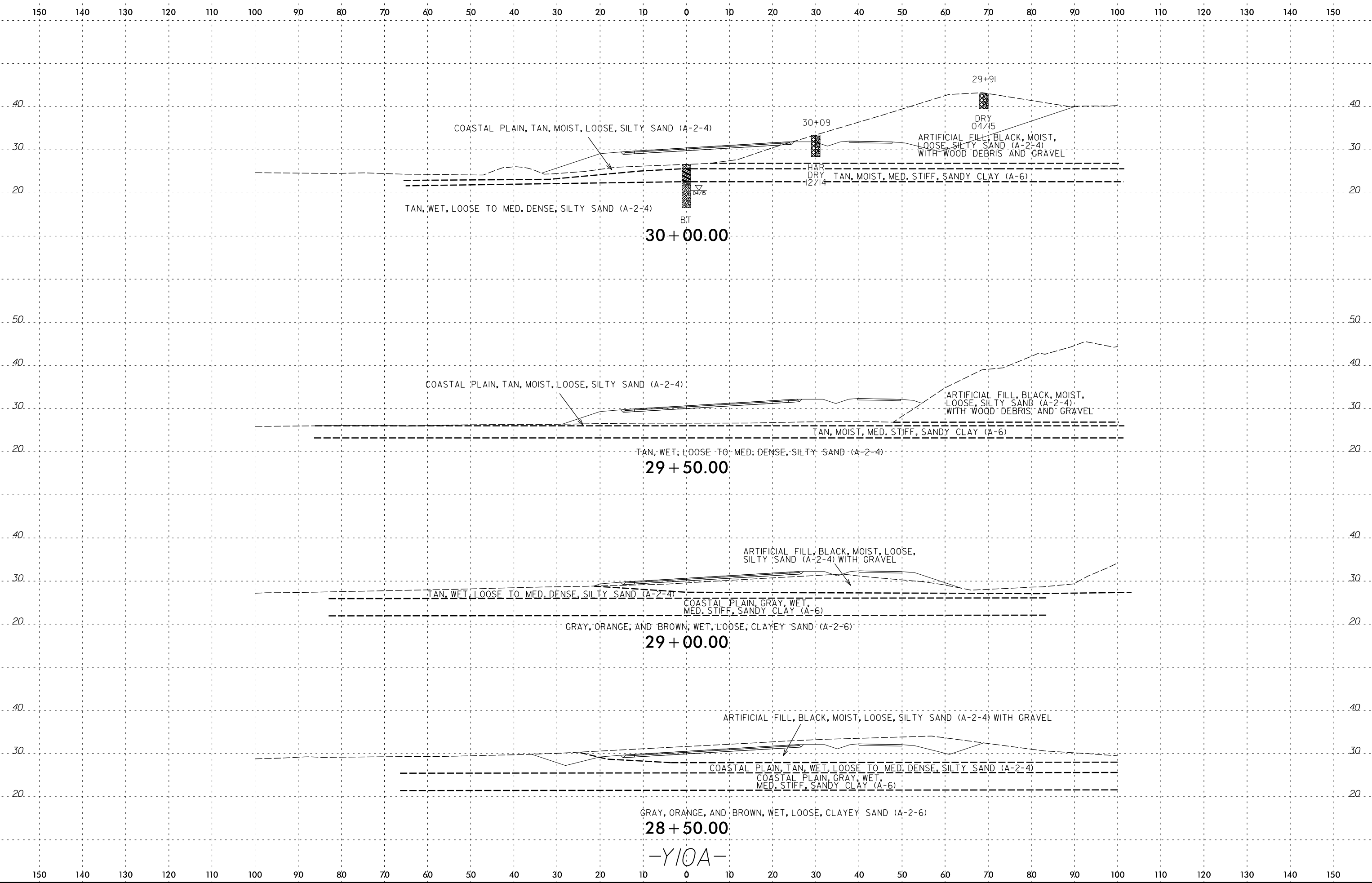
8/23/99

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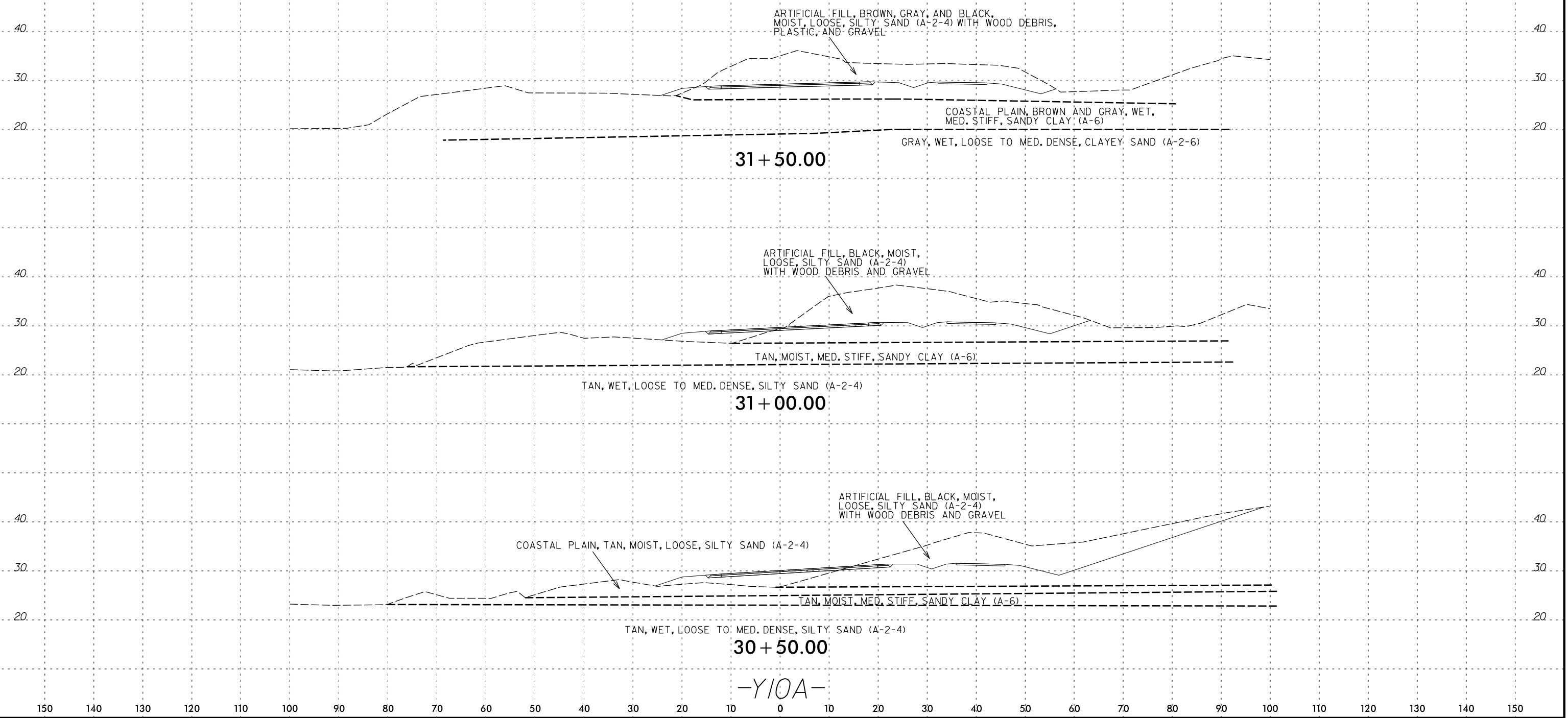
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 Stephen_Crockett



7/14/2016
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 Stephen_Crockett

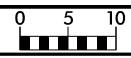
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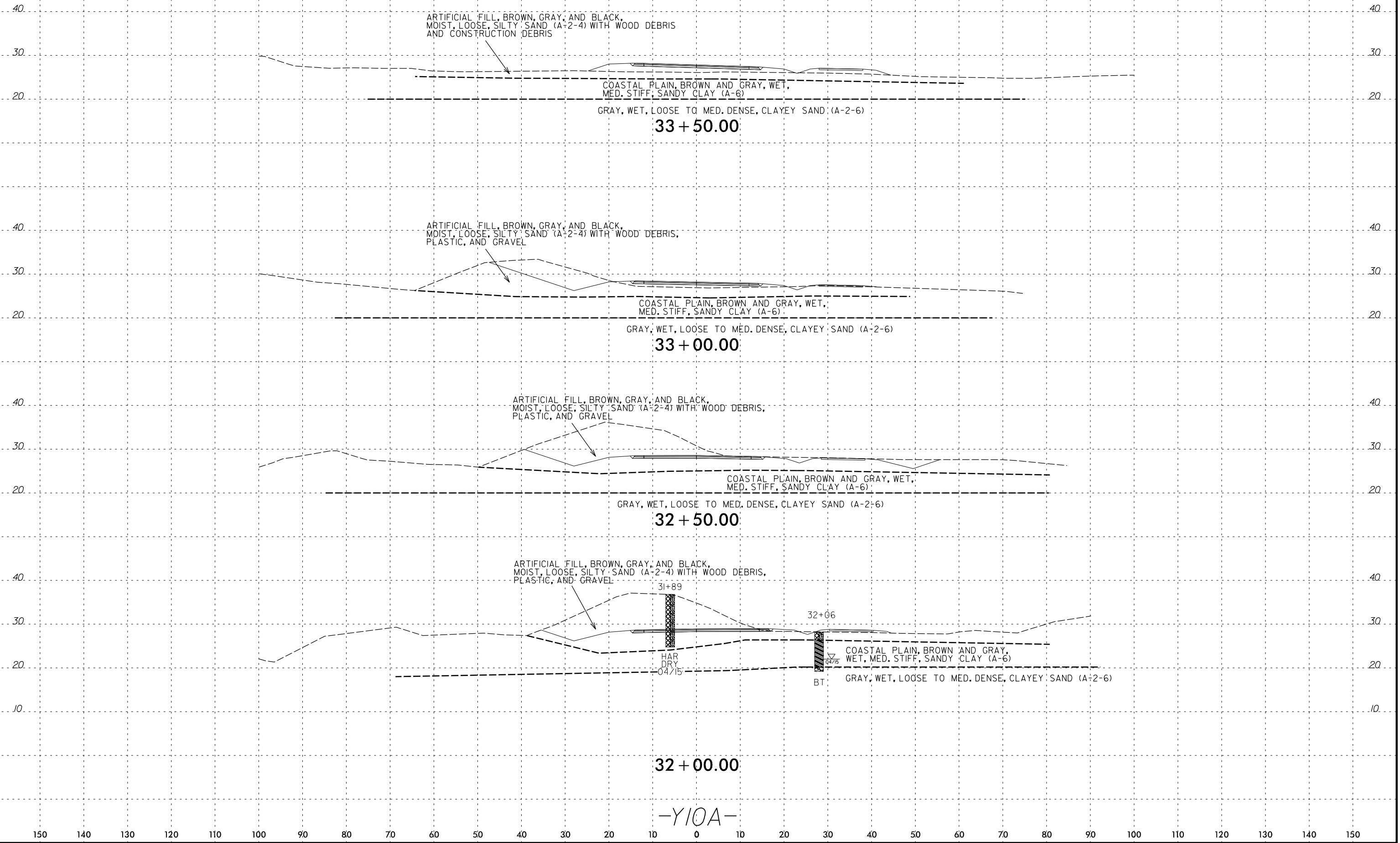
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8/23/99



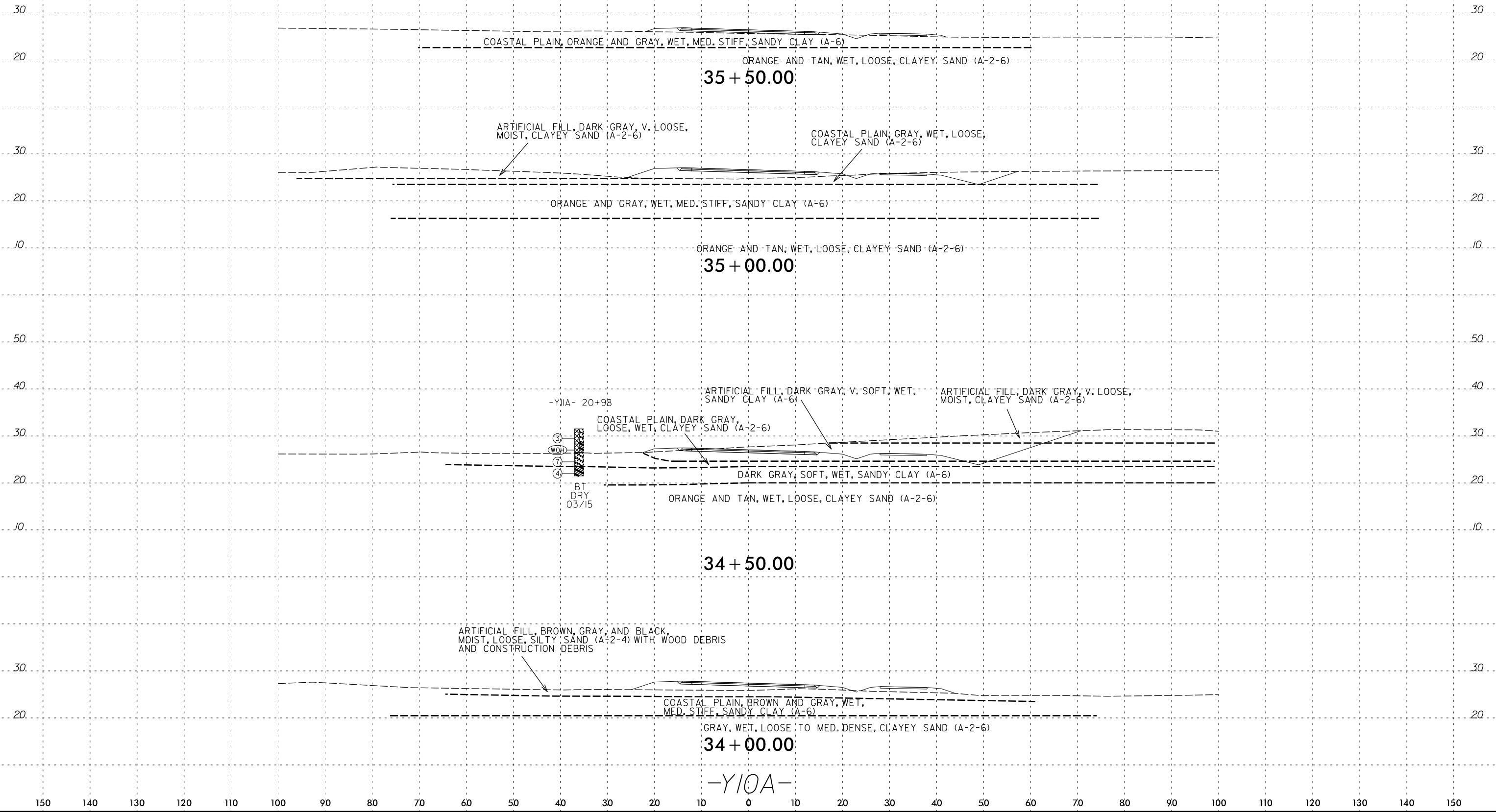
PROJ. REFERENCE NO.	SHEET NO.
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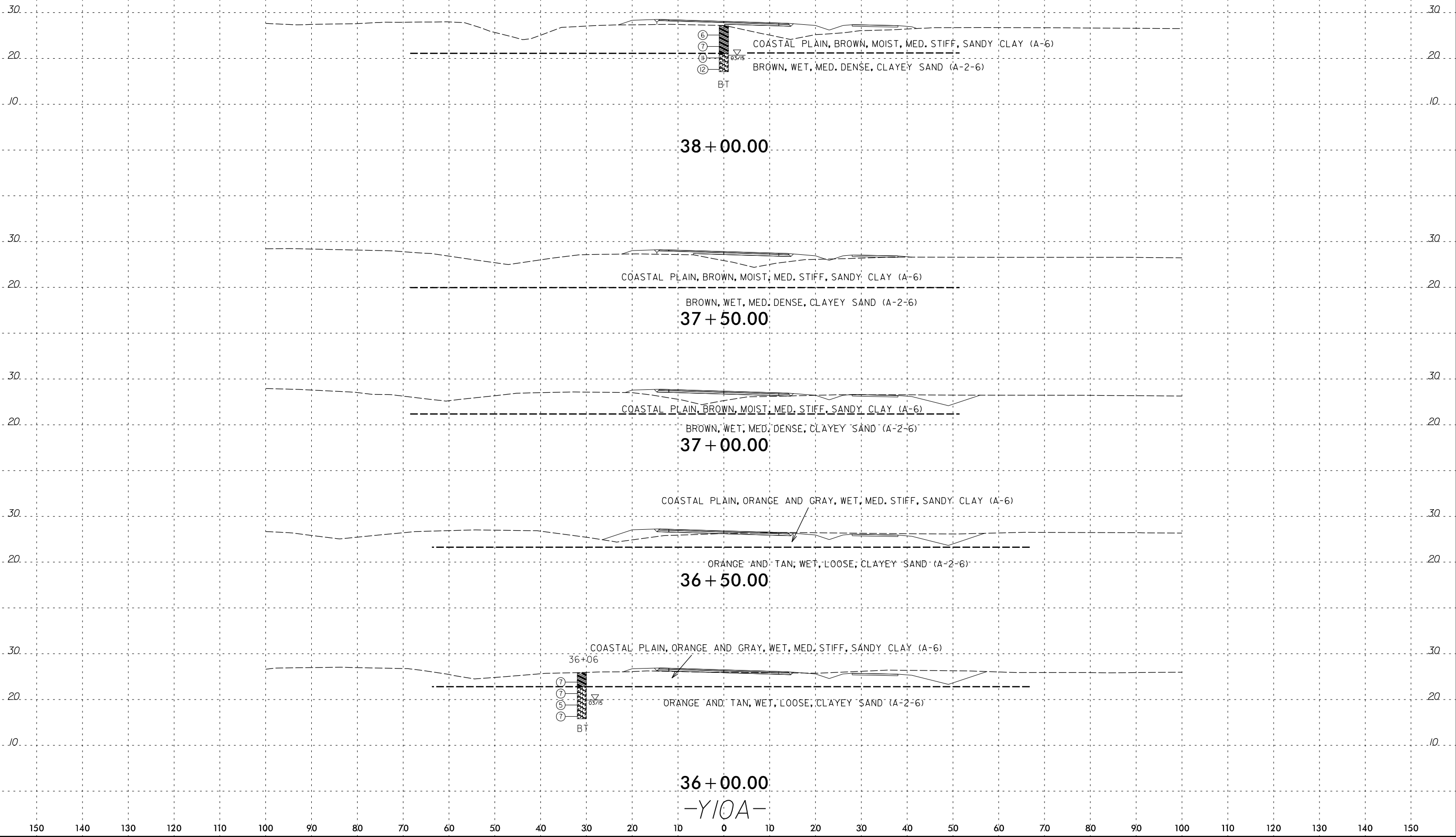


7/14/2016
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 Stephen_Crockett

150 140 130 120 110 100 90 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



8/23/99

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

ROADWAY EMBANKMENT, GRAY,
MOIST, LOOSE, SILTY SAND (A-2-4)

COASTAL PLAIN, BROWN, MOIST, MED. STIFF, SANDY CLAY (A-6)

40 + 50.00

ROADWAY EMBANKMENT, GRAY,
MOIST, LOOSE, SILTY SAND (A-2-4)

COASTAL PLAIN, BROWN, MOIST, MED. STIFF, SANDY CLAY (A-6)

40 + 00.00

ROADWAY EMBANKMENT, GRAY,
MOIST, LOOSE, SILTY SAND (A-2-4)

COASTAL PLAIN, BROWN, MOIST, MED. STIFF, SANDY CLAY (A-6)

39 + 50.00

ROADWAY EMBANKMENT, GRAY,
MOIST, LOOSE, SILTY SAND (A-2-4)

COASTAL PLAIN, BROWN, MOIST,
MED. STIFF, SANDY CLAY (A-6)

38+98

BT.
DRY
12/14

39 + 00.00

COASTAL PLAIN, BROWN, MOIST, MED. STIFF, SANDY CLAY (A-6)

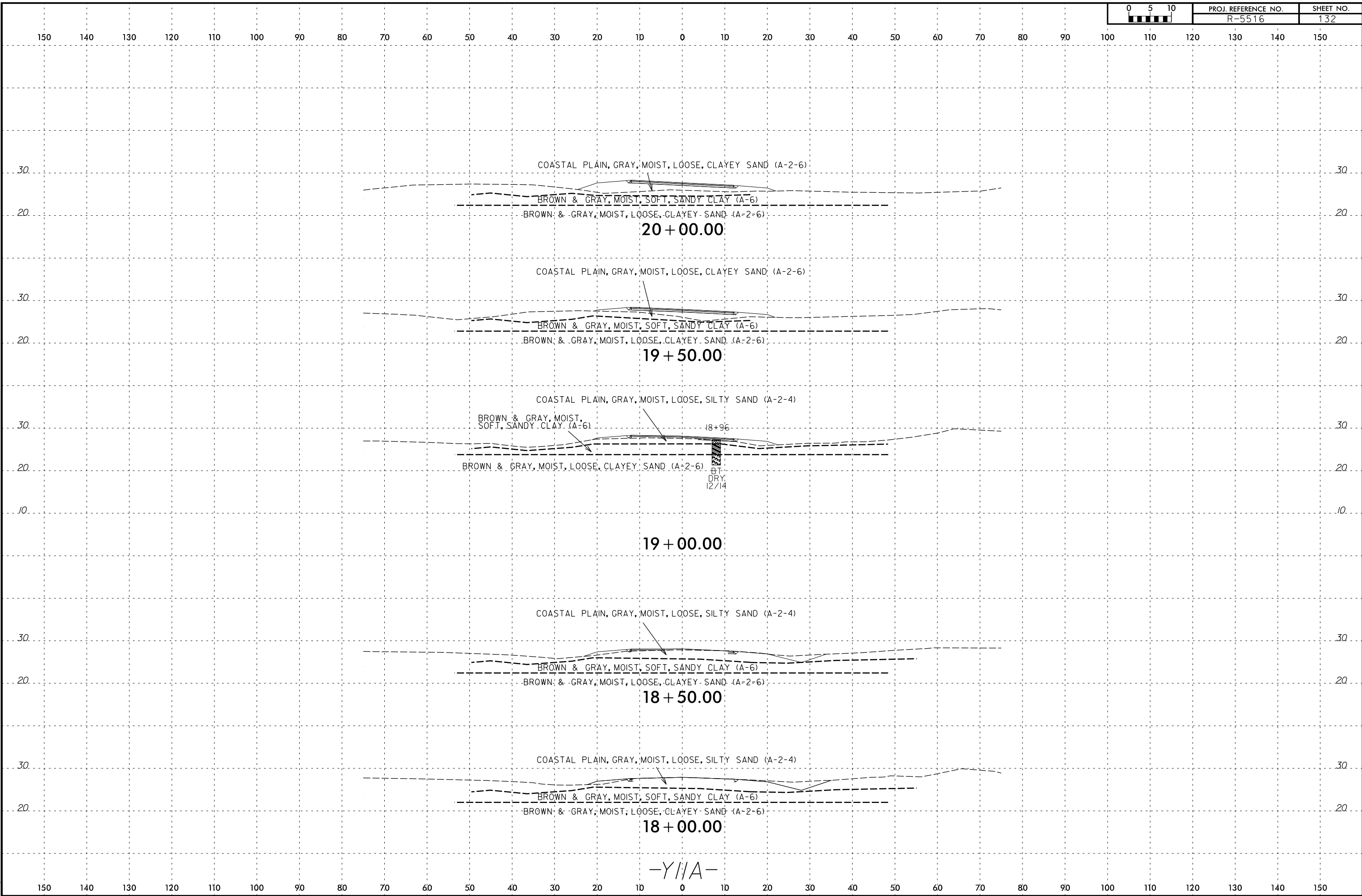
BROWN, WET, MED. DENSE, CLAYEY SAND (A-2-6)

38 + 50.00

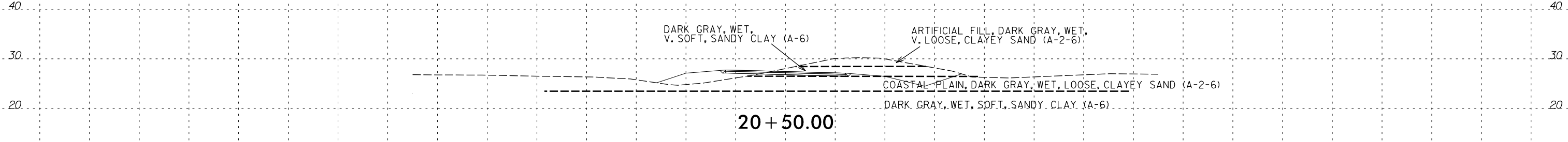
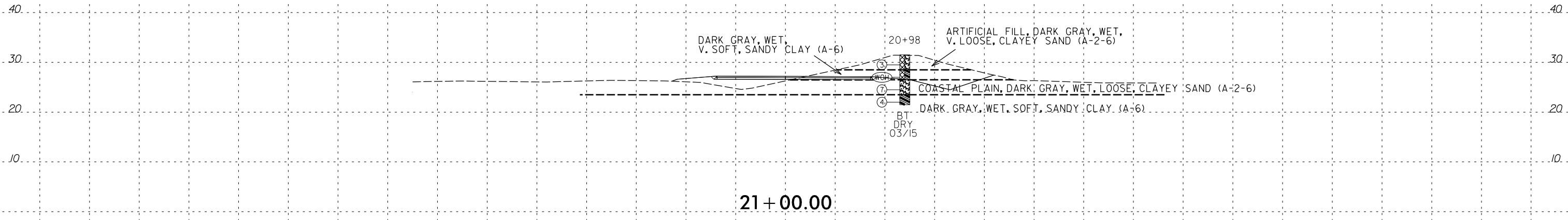
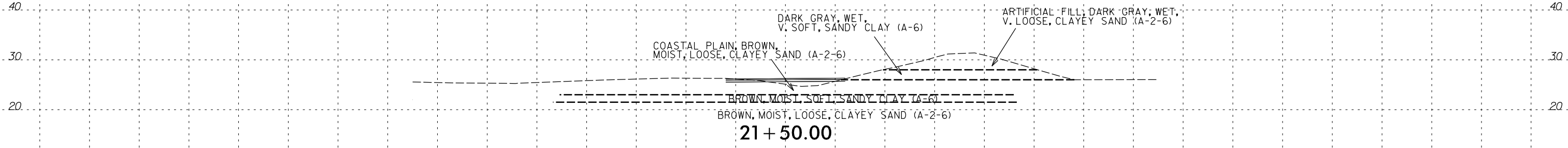
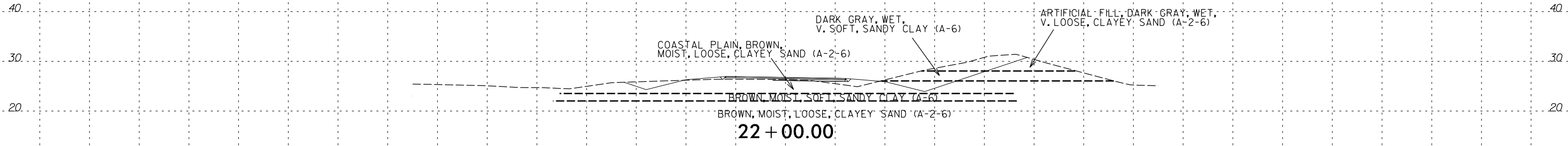
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7/14/2016
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Stephen_Crockett

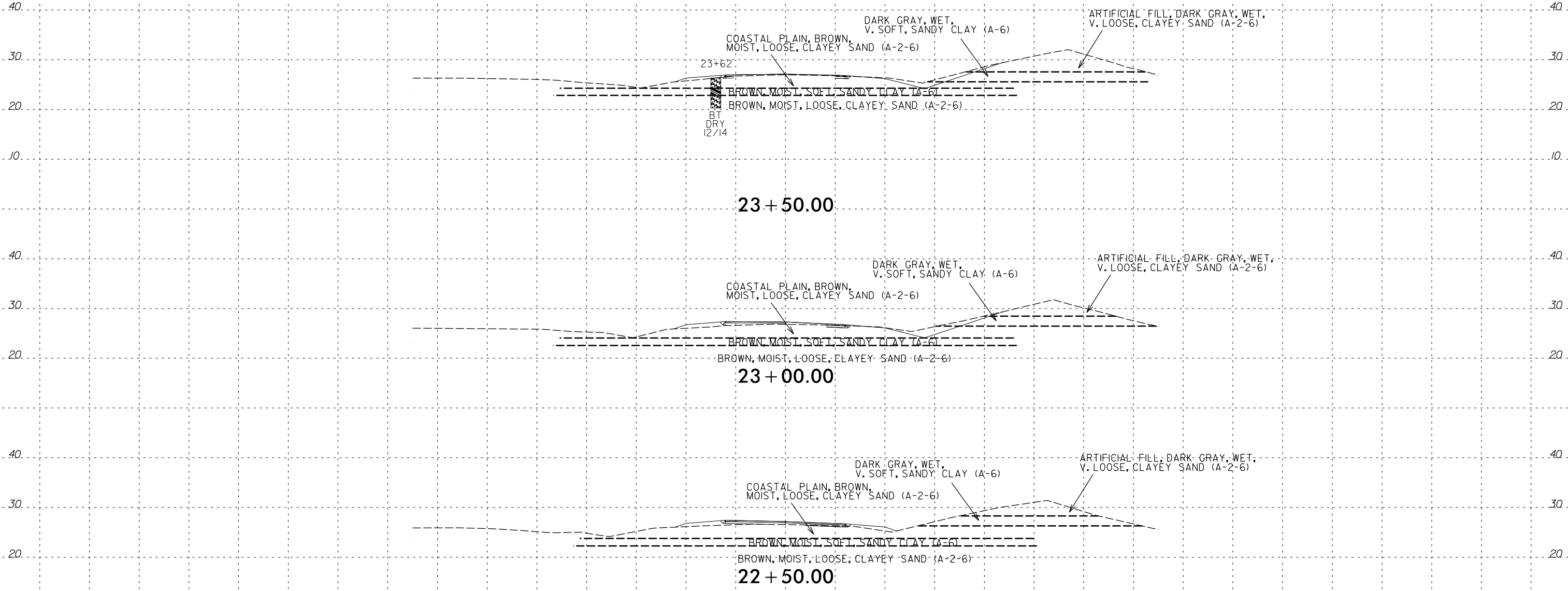


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-Y//A-

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



23 + 50.00

23 + 00.00

22 + 50.00

-Y//A-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	ALIGNMENT	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-006	82' LT	103+00	-L-	3.5-5.0	A-2-6	25	11	13.3	53.8	10.6	22.3	99.2	94.9	34.8	23.2	-
SS-026	CL	18+00	-YEB01-	1.0-2.5	-	-	-	-	-	-	-	-	-	-	14.9	2.5
SS-034	40' RT	19+00	-YEB01-	8.5-10.0	A-2-4	-	-	17.8	77.0	1.5	3.8	100	98.0	5.7	24.0	-
SS-044	45' RT	24+54	-YEB01-	8.5-10.0	A-2-4	-	-	5.2	90.4	2.5	2.0	100	99.7	5.2	23.9	-
SS-052	CL	28+00	-YEB01-	6.0-7.5	A-2-4	-	-	19.5	75.9	1.0	3.9	100	99.3	5.0	24.6	-
SS-058	CL	28+00	-YEB01-	33.5-35.0	A-1-B	-	-	77.6	14.9	3.8	3.7	86.9	40.9	8.9	22.3	-
SS-065	81' RT	28+20	-YEB01-	13.5-15.0	A-2-4	-	-	9.1	79.3	4.1	7.4	100	97.0	13.5	26.1	-
SS-072	81' RT	28+20	-YEB01-	48.5-50.0	A-2-4	22	3	17.0	68.7	5.1	9.2	100	94.1	17.6	31.3	-
SS-091	73' LT	121+45	-L-	6.0-7.5	-	-	-	-	-	-	-	-	-	-	66.3	9.2
SS-092	73' LT	121+45	-L-	8.5-10.0	A-2-4	-	-	6.1	68.9	15.0	10.0	100	98.7	28.0	75.1	-
SS-096	73' RT	109+99	-L-	6.0-7.5	A-2-4	-	-	34.3	59.5	2.4	3.8	100	86.8	6.9	23.5	-
SS-106	94' RT	98+07	-L-	1.0-2.5	A-6	33	18	12.2	45.7	11.2	30.9	100	95.3	43.2	23.0	-
SS-110	81' RT	93+96	-L-	1.0-2.5	-	-	-	-	-	-	-	-	-	-	22.8	2.9
SS-120	92' RT	90+07	-L-	6.0-7.5	A-2-4	-	-	28.2	60.2	3.6	8.0	99.9	92.9	12.3	27.6	-
SS-138	18' RT	12+96	-LRB-	6.0-7.5	A-2-4	-	-	16.1	80.9	1.0	2.0	100	97.0	3.4	25.9	-
SS-148	10' LT	14+00	-YWB01-	1.0-2.5	A-7-6	45	29	8.8	39.1	14.7	37.5	100	97.0	53.3	22.0	-
SS-155	15' RT	15+89	-YWB01-	6.0-7.5	A-2-4	21	5	6.0	68.3	7.2	18.5	100	98.0	28.4	27.9	-
SS-159	68' LT	35+88	-YEB01-	6.0-7.5	A-2-4	18	4	18.4	68.8	4.0	8.9	100	90.3	14.9	27.3	-
SS-164	68' LT	35+88	-YEB01-	28.5-30.0	A-2-4	-	-	48.9	34.7	9.5	7.0	87.1	73.5	21.6	24.6	-
SS-171	20' RT	35+00	-YEB01-	1.0-2.5	A-7-6	42	25	5.2	42.8	13.3	38.8	100	100	53.5	24.9	-
SS-175	20' RT	35+00	-YEB01-	13.5-15.0	A-2-4	-	-	74.3	23.0	1.1	1.6	99.7	74.1	3.3	18.9	-
SS-195	23' LT	21+96	-YWB01-	8.5-10.0	A-2-4	21	3	1.3	70.6	9.8	18.3	100	99.8	31.5	46.6	-
SS-196	13' LT	23+98	-YWB01-	1.0-2.5	A-2-4	17	1	17.4	61.1	10.4	11.2	91.3	92.1	24.1	22.8	-
SS-206	17' LT	28+00	-YWB01-	6.0-7.5	A-2-4	-	-	0.2	77.4	7.6	14.8	100	100	24.4	31.7	-
SS-213	15' LT	31+98	-YWB01-	3.5-5.0	A-2-4	20	5	0.8	81.1	10.8	7.3	98.2	99.8	20.0	21.4	-
SS-230	15' LT	53+09	-YEB01-	1.0-2.5	A-2-4	-	-	1.6	78.6	5.9	13.9	100	99.7	22.1	16.2	-
SS-232	15' LT	53+09	-YEB01-	6.0-7.5	A-2-4	-	-	-	-	-	-	-	-	-	21.3	2.9
SS-243	35' LT	40+00	-YEB01-	8.5-10.0	A-2-4	18	3	3.3	70.6	13.3	12.8	100	99.0	30.0	57.0	-
SS-245	35' LT	40+00	-YEB01-	18.5-20.0	A-2-4	-	-	60.2	33.1	4.0	3.2	99.1	70.0	7.9	20.0	-
SS-251	77' LT	33+34	-YWB01-	8.5-10.0	A-2-4	25	6	1.2	75.9	6.7	16.1	100	99.8	24.4	49.2	-
SS-253	77' LT	33+34	-YWB01-	18.5-20.0	A-2-4	-	-	22.5	68.2	5.5	3.7	99.3	90.9	10.8	26.0	-
SS-264	52' RT	34+37	-YEB01-	23.5-25.0	A-2-4	23	6	8.4	65.2	12.6	13.8	100.0	99.4	28.6	40.9	-
SS-266	52' RT	34+37	-YEB01-	33.5-35.0	A-2-4	-	-	54.8	35.0	5.6	4.6	94.8	78.2	12.4	22.7	-
SS-280	103' RT	67+37	-L-	3.5-5.0	A-6	30	15	12.8	47.8	13.2	26.2	100	95.5	40.9	30.7	-
SS-303	21' RT	18+88	-Y10A-	1.0-2.5	A-6	24	11	10.4	48.5	16.2	25.0	99.8	95.0	43.4	16.4	-
SS-320	51' LT	20+72	-Y09A-	1.0-2.5	-	-	-	-	-	-	-	-	-	-	68.7	6.3
SS-333	124' LT	20+87	-Y09A-	3.5-5.0	A-2-4	-	-	49.1	45.4	2.8	2.8	99.6	74.1	6.8	36.8	-
SS-337	124' LT	20+87	-Y09A-	18.5-20.0	A-2-6	32	13	20.6	46.2	11.9	21.3	89.0	85.6	37.5	19.4	-
SS-344	10' RT	26+71	-Y09A-	1.0-2.5	-	-	-	-	-	-	-	-	-	-	363.8	43.0
SS-358	60' LT	26+48	-Y09A-	1.0-2.5	-	-	-	-	-	-	-	-	-	-	209.6	26.0
SS-360	60' LT	26+48	-Y09A-	6.0-7.5	A-2-4	-	-	28.5	68.5	2.3	1.0	99.2	88.8	3.5	32.1	-
SS-363	60' LT	26+48	-Y09A-	18.5-20.0	A-2-4	-	-	22.3	57.5	9.3	10.9	91.0	88.0	24.5	30.2	-
SS-379	CL	15+00	-LRA-	1.0-2.5	A-6	26	11	12.3	47.4	12.9	27.5	99.9	95.5	41.9	24.0	-
SS-387	30' RT	39+01	-YEB01-	8.5-10.0	A-2-4	-	-	5.8	87.4	2.2	4.5	100	99.3	7.6	27.4	-
SS-391	30' RT	41+00	-YEB01-	1.0-2.5	A-6	37	22	5.1	50.6	16.8	27.6	99.0	99.0	47.0	21.3	-
SS-457	7' LT	32+30	-YEB01-	3.3-4.8	A-6	39	23	9.7	40.5	10.9	38.9	96.2	96.9	51.2	24.9	-
SS-461	7' LT	32+30	-YEB01-	18.3-19.8	A-2-4	-	-	62.8	32.8	1.4	3.0	99.7	79.6	5.2	19.3	-
SS-468	7' LT	32+30	-YEB01-	53.5-54.8	A-2-4	30	7	21.2	63.3	6.0	9.5	99.0	90.8	21.0	32.8	-

TESTED BY: Michael P. Smith NCDOT NO.: 129-03-0411