



STEWART

January 25, 2016

MEMORANDUM TO: Lisa Gilchrist, E.I.
Division Bridge Program Manager

FROM: Nathan Mohs, L.G.
Project Geologist

STATE PROJECT: 17BP.5.R.63 (900052)
COUNTY: Vance
DESCRIPTION: Bridge No. 52 on SR 1518 (Stewart Farm Rd.) over Weaver Creek

SUBJECT: Geotechnical Report – Inventory

The Geotechnical Engineering Unit has completed a subsurface investigation for this project and presents the following inventory. No plans, profiles, or cross-sections will be submitted for this roadway project.

Project Description

The project consists of the replacement of Bridge No. 52 on SR 1518 (Stewart Farm Rd.) over Weaver Creek. The bridge will be replaced with a single barrel aluminum box culvert. The total length of the roadway portion of the project is 0.1 miles. The field investigation consisted of two hand auger borings performed in January 2016.

Physiography & Geology

The project is located in gently rolling terrain of Vance County. The surrounding area is mainly farmland and woods. Weaver Creek is part of the Tar-Pamlico River Basin. Geologically the site is characterized by sands and silts associated with weathered, intrusive granitic rock of the Raleigh Belt.

Soil Properties

Soils encountered at the site are alluvial and residual soils. Alluvial soils consist of very soft to soft, sandy silt, and very loose to medium dense, silty to coarse sand (A-4, A-2-4, A-1-b). This material varies in depth up to approximately 8 feet in the creek channel. Roadway embankment soils are located below the existing pavement and is approximately 8 feet thick at the bridge abutments. Residual soil consists of medium stiff, sandy clay (A-6). Residual materials are located along the project alignment, and below alluvial and roadway embankment soils.

Groundwater

Groundwater is not expected to impact roadway construction.



STEWART

Prepared by,



Nathan Mohs, L.G.
Project Geologist

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.5.R.63			TIP 900052			COUNTY VANCE			GEOLOGIST N. Mohs							
SITE DESCRIPTION Bridge No. 52 on SR 1518 (Stewart Farm Road) over Weaver Creek									GROUND WTR (ft)							
BORING NO. L_1250			STATION 12+50			OFFSET 22 ft LT			ALIGNMENT -L-							
COLLAR ELEV. 375.4 ft			TOTAL DEPTH 5.0 ft			NORTHING 939,231			EASTING 2,200,946							
DRILL RIG/HAMMER EFF./DATE N/A						DRILL METHOD Hand Auger			HAMMER TYPE N/A							
DRILLER N. Mohs			START DATE 01/15/16			COMP. DATE 01/15/16			SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
380																
375															375.4	GROUND SURFACE 0.0
											M				370.4	RESIDUAL Orange, Sandy Clay 5.0
																Boring Terminated at Elevation 370.4 ft in Sandy Clay

NCDOT BORE SINGLE 900052_GEO_RDWY_BH.GPJ NC_DOT.GDT 1/18/16

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.5.R.63			TIP 900052			COUNTY VANCE			GEOLOGIST N. Mohs							
SITE DESCRIPTION Bridge No. 52 on SR 1518 (Stewart Farm Road) over Weaver Creek									GROUND WTR (ft)							
BORING NO. L_1478			STATION 14+78			OFFSET 33 ft LT			ALIGNMENT -L-							
COLLAR ELEV. 360.7 ft			TOTAL DEPTH 4.0 ft			NORTHING 939,206			EASTING 2,201,180							
DRILL RIG/HAMMER EFF./DATE N/A						DRILL METHOD Hand Auger			HAMMER TYPE N/A							
DRILLER N. Mohs			START DATE 01/15/16			COMP. DATE 01/15/16			SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						ELEV. (ft)
365																
360														360.7	GROUND SURFACE	0.0
														358.2	ALLUVIAL Gray, Sandy Silt	2.5
														356.7	Gray, Silty Sand	4.0
															Boring Terminated at Elevation 356.7 ft in Silty Sand	

PROJECT: 17BP.5.R.63 REFERENCE: 900052

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

**STRUCTURE
 SUBSURFACE INVESTIGATION**

COUNTY VANCE
 PROJECT DESCRIPTION BRIDGE NO. 52 ON SR 1518
(STEWART FARM ROAD) OVER WEAVER CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	900052	1	7

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF PREPARING THE SCOPE OF WORK TO BE INCLUDED IN THE REQUEST FOR PROPOSAL. 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) 707-6650. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

SOIL AND ROCK BOUNDARIES WITHIN A BOREHOLE ARE BASED ON GEOTECHNICAL INTERPRETATION UNLESS ENCOUNTERED IN A SAMPLE. INTERPRETED BOUNDARIES MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN SAMPLED STRATA AND BOREHOLE INFORMATION MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS. THE LABORATORY SAMPLE DATA AND THE IN SITU (ON-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:
- 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.
 - 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

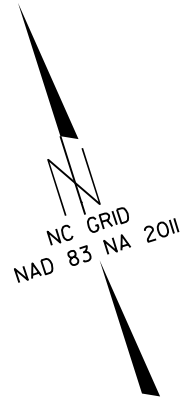
N. MOHS, LG
 INVESTIGATED BY N. MOHS, LG
 DRAWN BY N. MOHS, LG
 CHECKED BY D. BROWN, PE
 SUBMITTED BY N. MOHS, LG
 DATE JANUARY 2016



Nate M/16 1/25/16
 SIGNATURE DATE

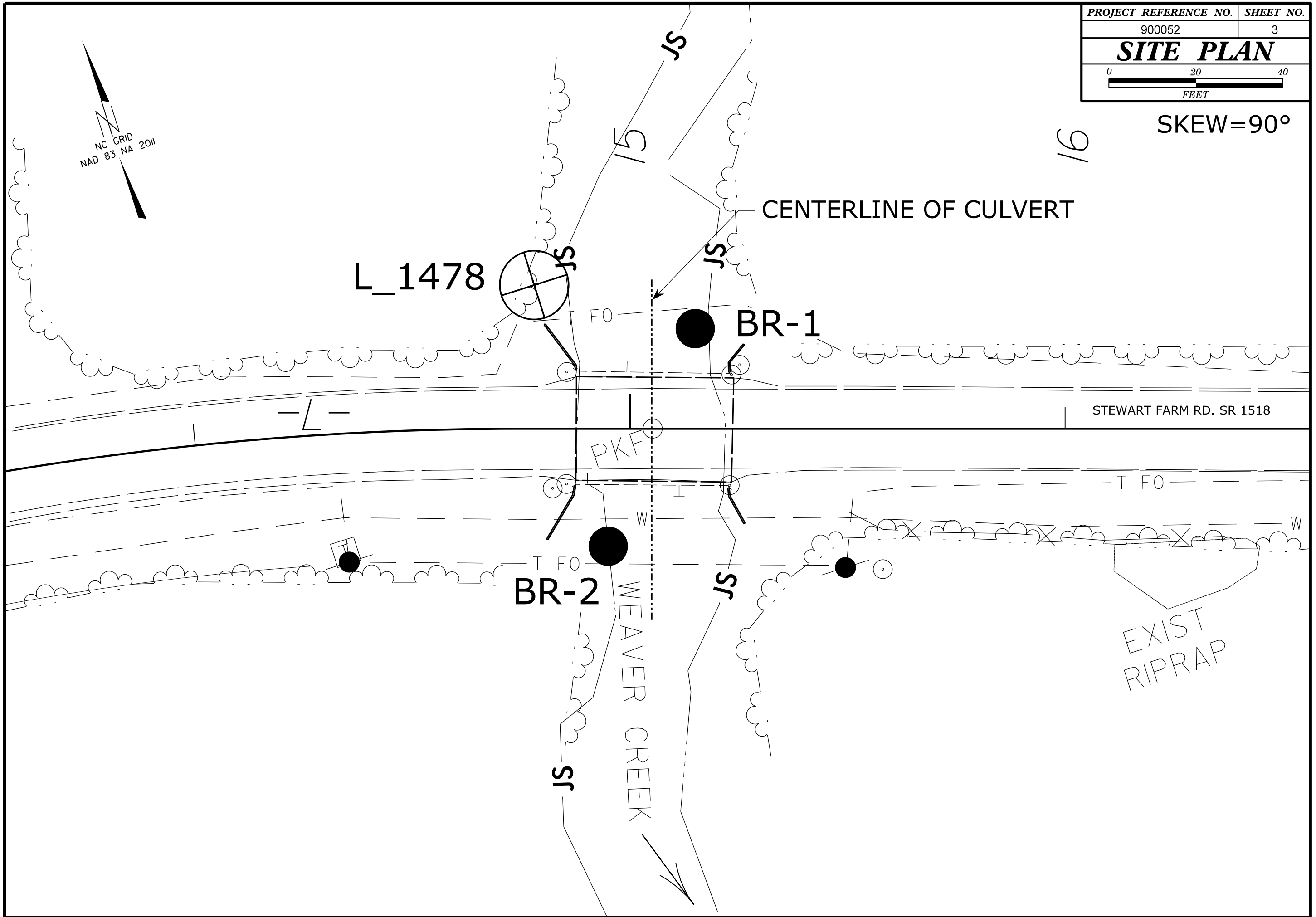
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 UNLESS ALL SIGNATURES COMPLETED

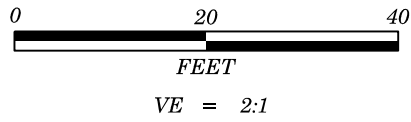
PROJECT REFERENCE NO.	SHEET NO.
900052	3
SITE PLAN	
 FEET	



SKEW=90°

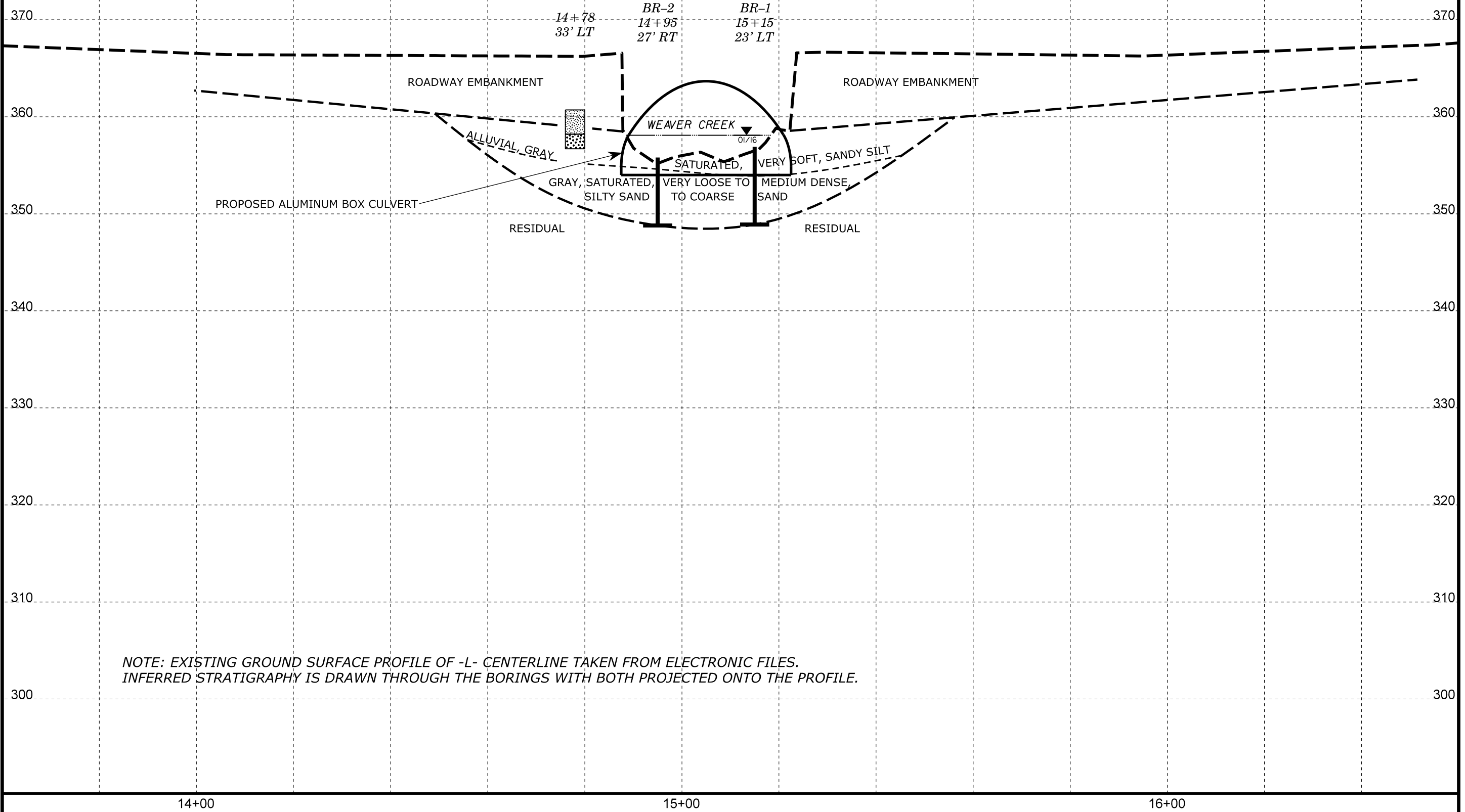
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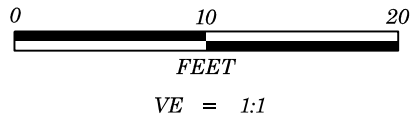


PROJECT REFERENCE NO.	SHEET NO.
900052	4
PROFILE OF BORINGS ALONG -L-	

SKEW=90°

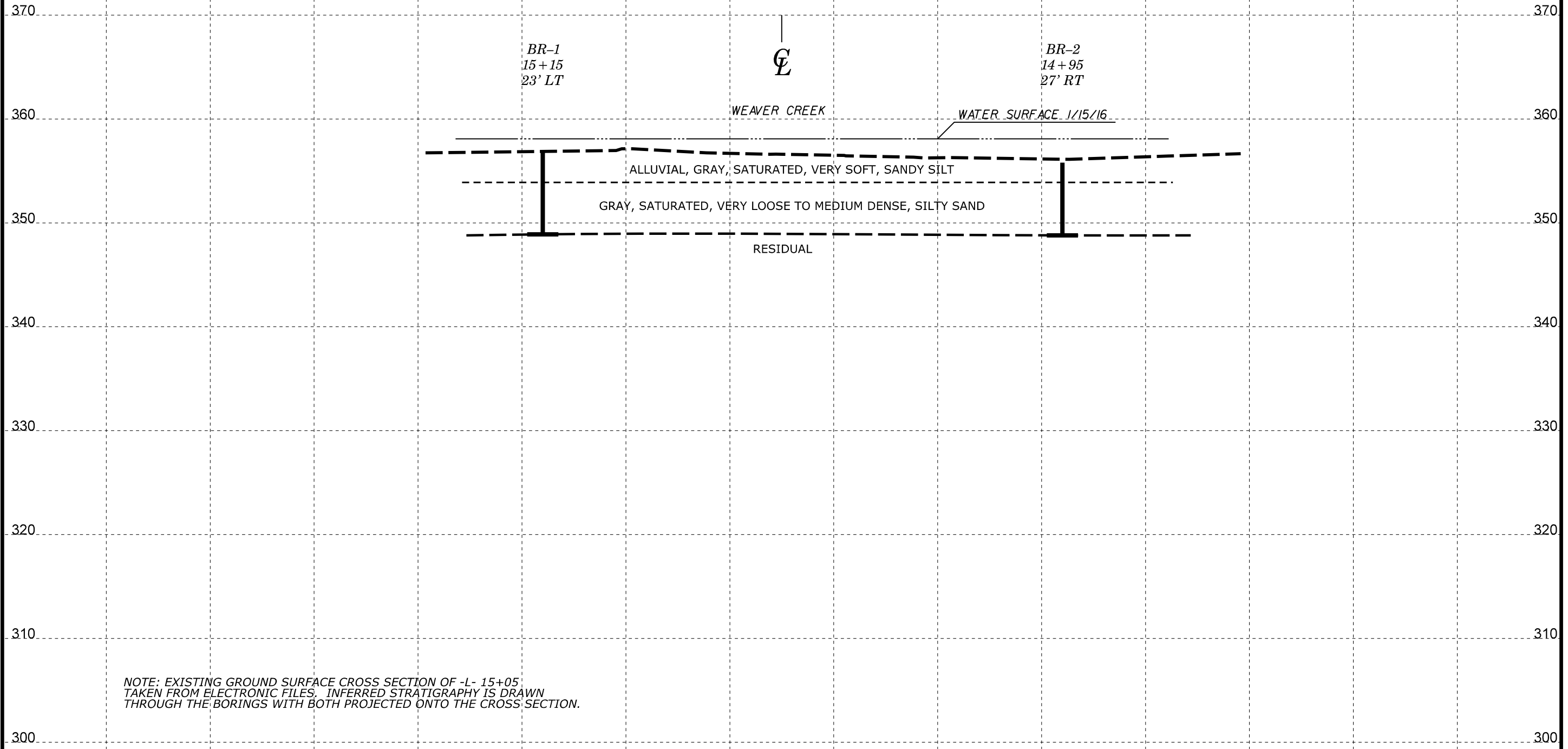


NOTE: EXISTING GROUND SURFACE PROFILE OF -L- CENTERLINE TAKEN FROM ELECTRONIC FILES.
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.



PROJECT REFERENCE NO.	SHEET NO.
900052	5
CROSS SECTION AT CENTERLINE OF CULVERT (-L- 15+05)	

SKEW=90°



NOTE: EXISTING GROUND SURFACE CROSS SECTION OF -L- 15+05
TAKEN FROM ELECTRONIC FILES. INFERRED STRATIGRAPHY IS DRAWN
THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.

SITE PHOTOGRAPH



VIEW LOOKING SOUTH