

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

**STRUCTURE
SUBSURFACE INVESTIGATION**

PROJ. REFERENCE NO. 38513.1.1 (B-4740) F.A. PROJ. BRZ-1194(9)
 COUNTY DAVIDSON
 PROJECT DESCRIPTION BRIDGE # 7 ON SR 1194 OVER DYKERS CREEK

SITE DESCRIPTION _____

CONTENTS

<u>SHEET</u>	<u>DESCRIPTION</u>
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CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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 THIS 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.

PERSONNEL

J. K. STICKNEY

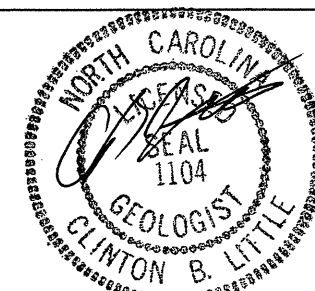
C. L. SMITH

INVESTIGATED BY J. P. ROGERS

CHECKED BY C. B. LITTLE

SUBMITTED BY C. B. LITTLE

DATE NOVEMBER 2012



ID: B-4740

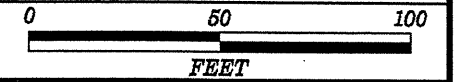
PROJECT: 38513.1.1

DRAWN BY: C. E. BURRIS

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - 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.

SITE PLAN



SKEW = 120°00'00"
(TO LONG CHORD)

-L-	
PI Sta 9+18.51	PI Sta 13+66.69
Δ = 2°54'06.9" (LT)	Δ = 38°20'16.9" (RT)
D = 1°25'56.6"	D = 6°17'21.6"
L = 202.59'	L = 609.57'
T = 101.32'	T = 316.69'
R = 4,000.00'	R = 911.00'

BEGIN BRIDGE
-L- POC Sta.14+13.47

BEGIN APPROACH SLAB
-L- POC Sta.14+02.39

BM #2
-BL- STA 14+61
63' LEFT
ELEV.=682.02'
-L- STA 14+17.41
64.54' LEFT

END BRIDGE
-L- POT Sta.15+18.53

END APPROACH SLAB
-L- POT Sta.15+29.65

FELTON W. &
BRENDA J. GREGG
DB 1269 PG 223

MARK WALSER
DB 114 PG 940

MARK WALSER
DB 1958 PG 1091
DB 1166 PG 872

MARK WALSER
DB 1958 PG 1091

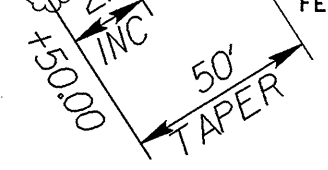
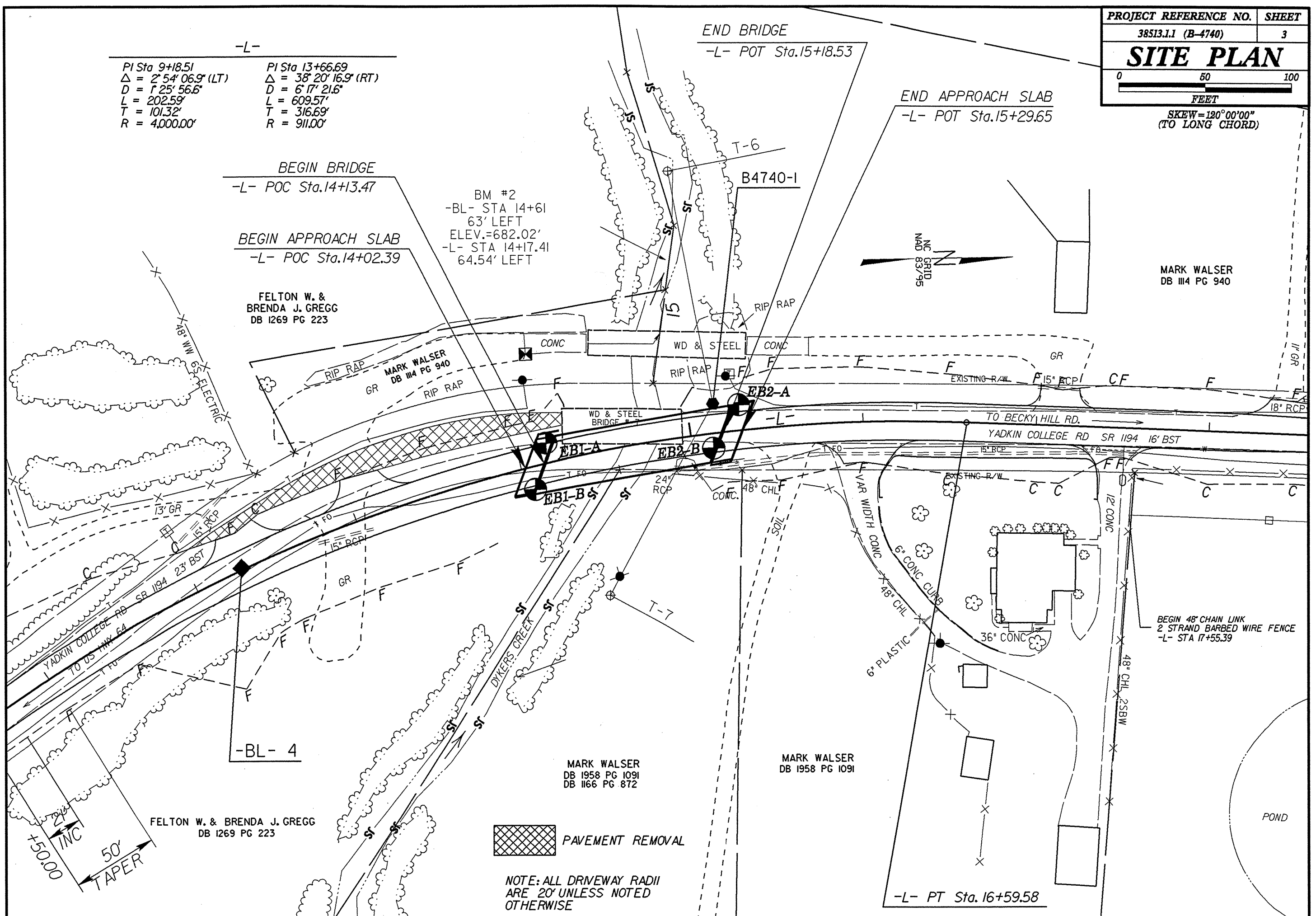
FELTON W. & BRENDA J. GREGG
DB 1269 PG 223

PAVEMENT REMOVAL

NOTE: ALL DRIVEWAY RADII
ARE 20' UNLESS NOTED
OTHERWISE



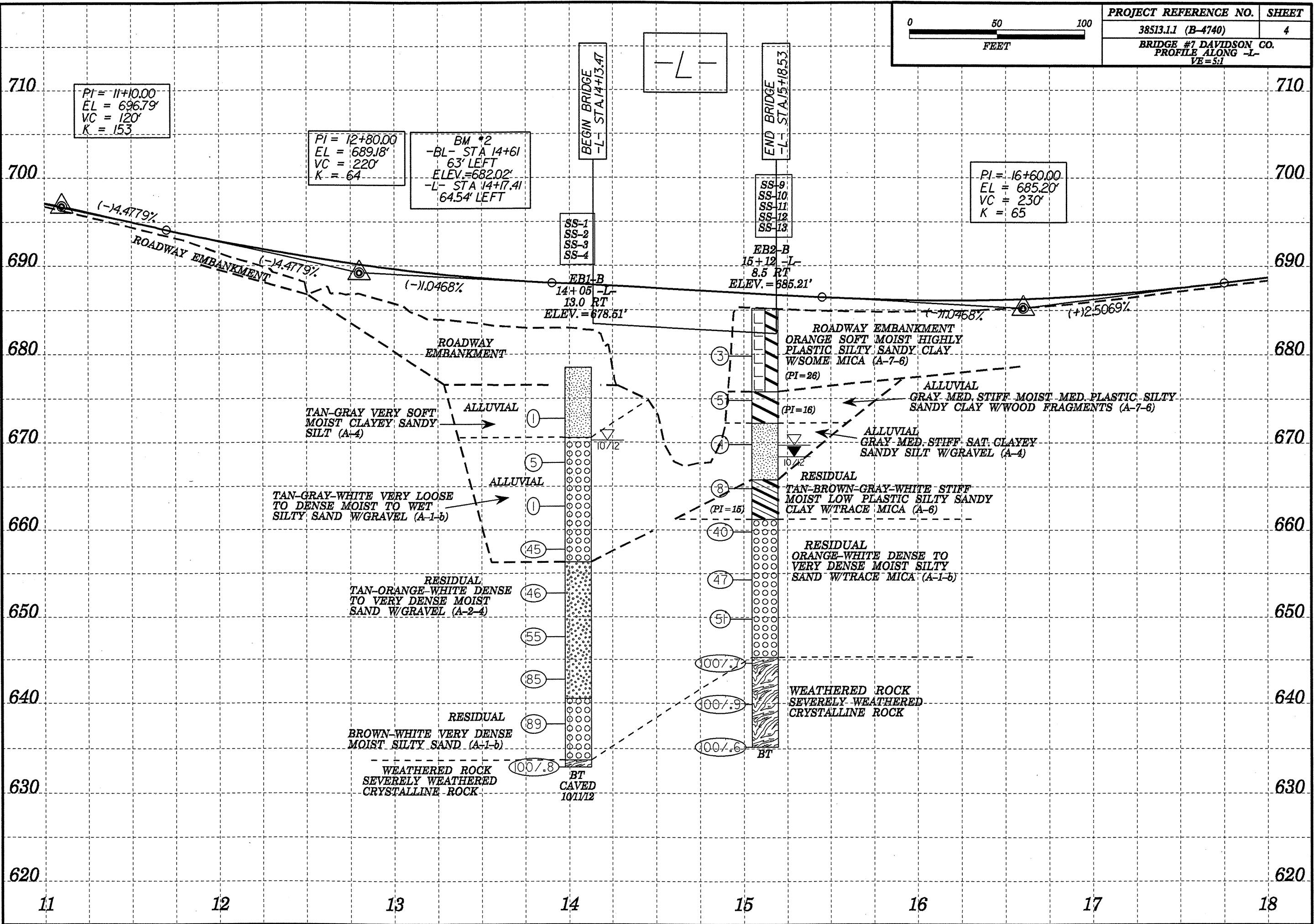
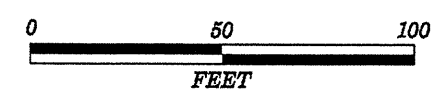
MARK WALSER
DB 114 PG 940

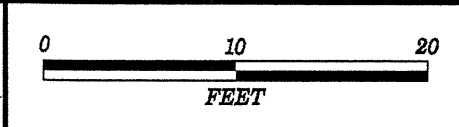


BEGIN 48" CHAIN LINK
2 STRAND BARBED WIRE FENCE
-L- STA 17+55.39

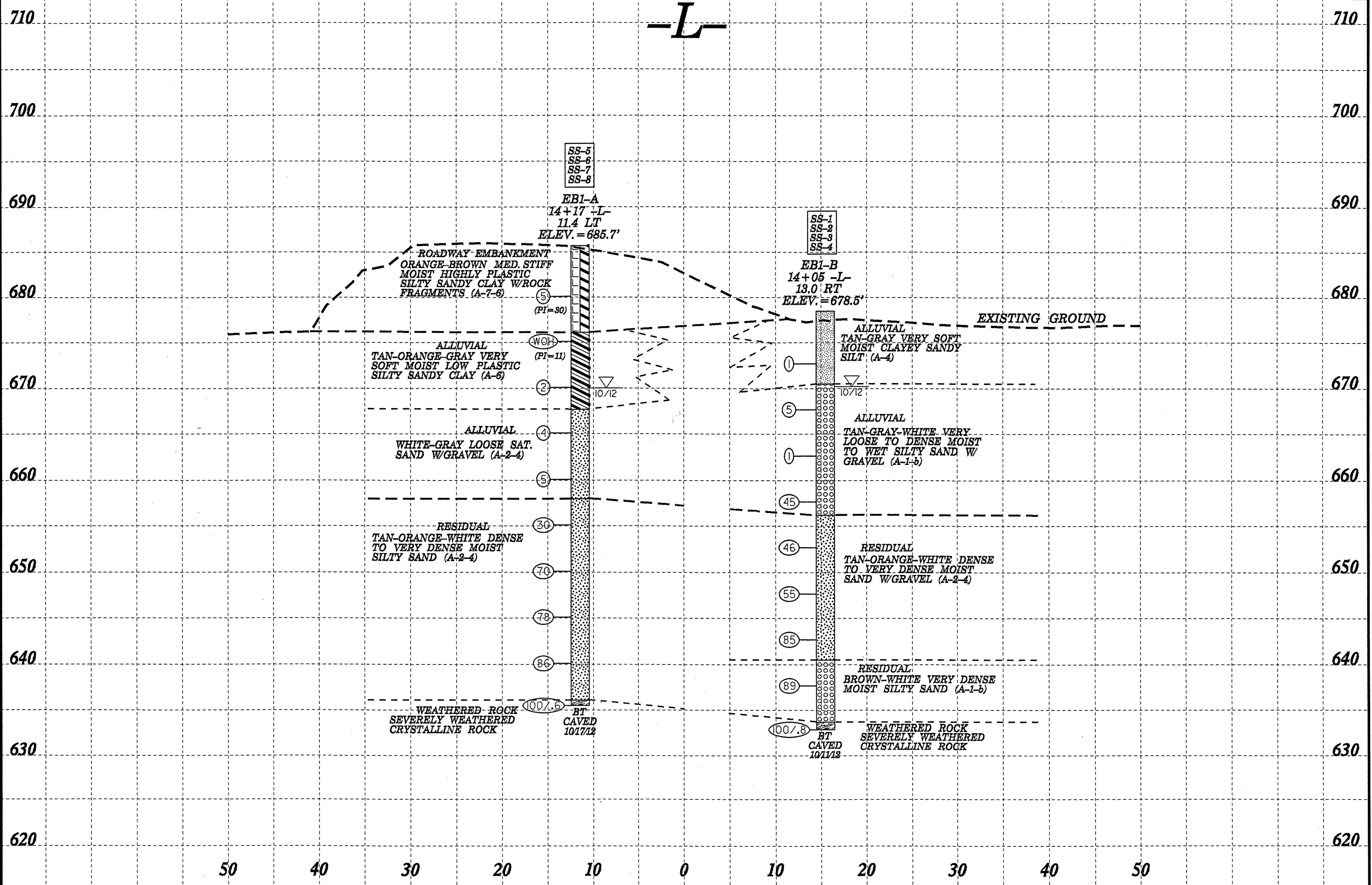
-L- PT Sta. 16+59.58

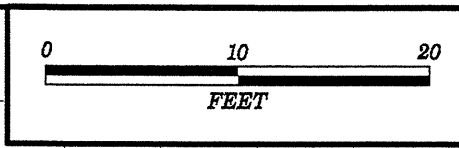
POND



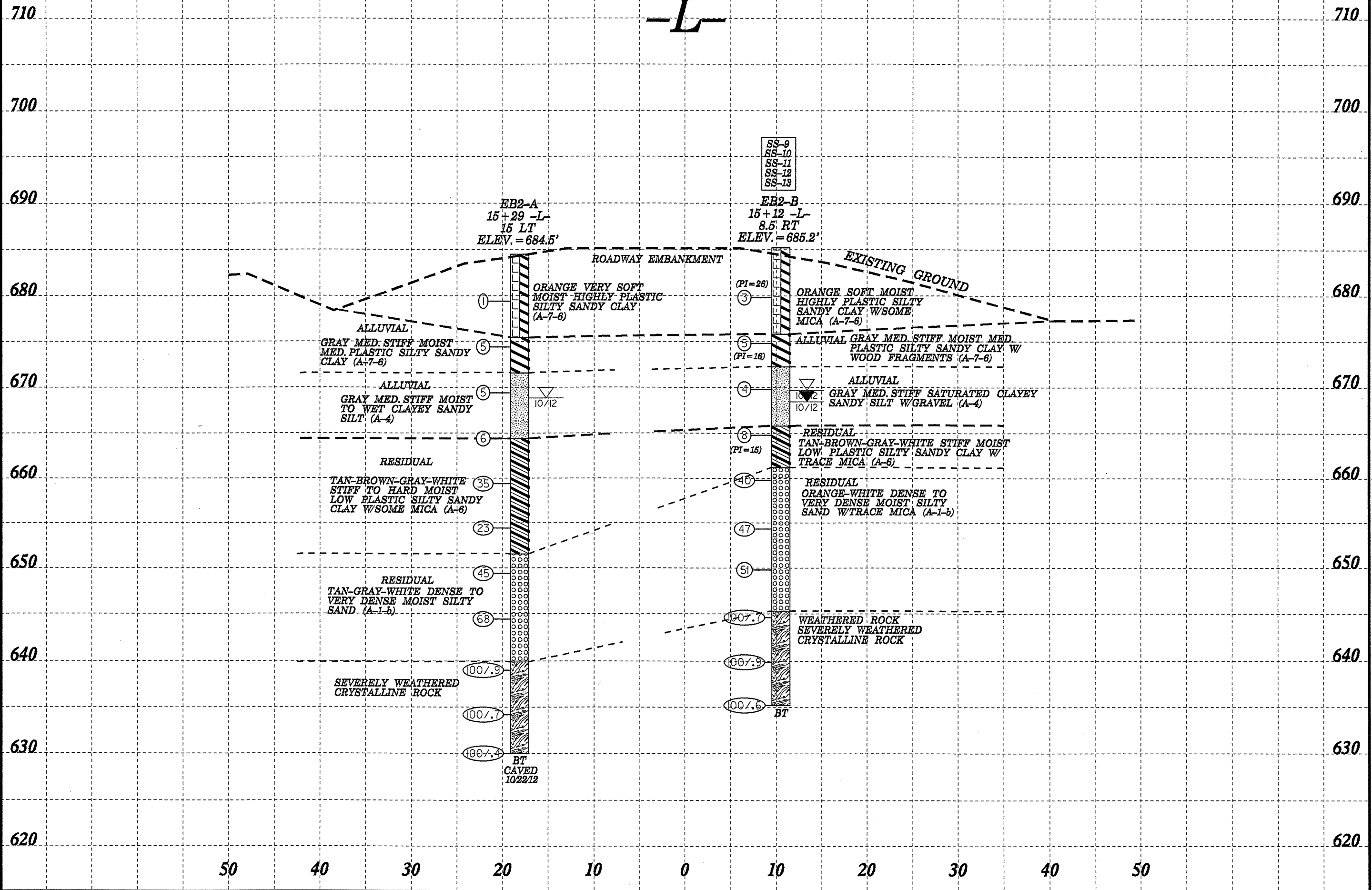


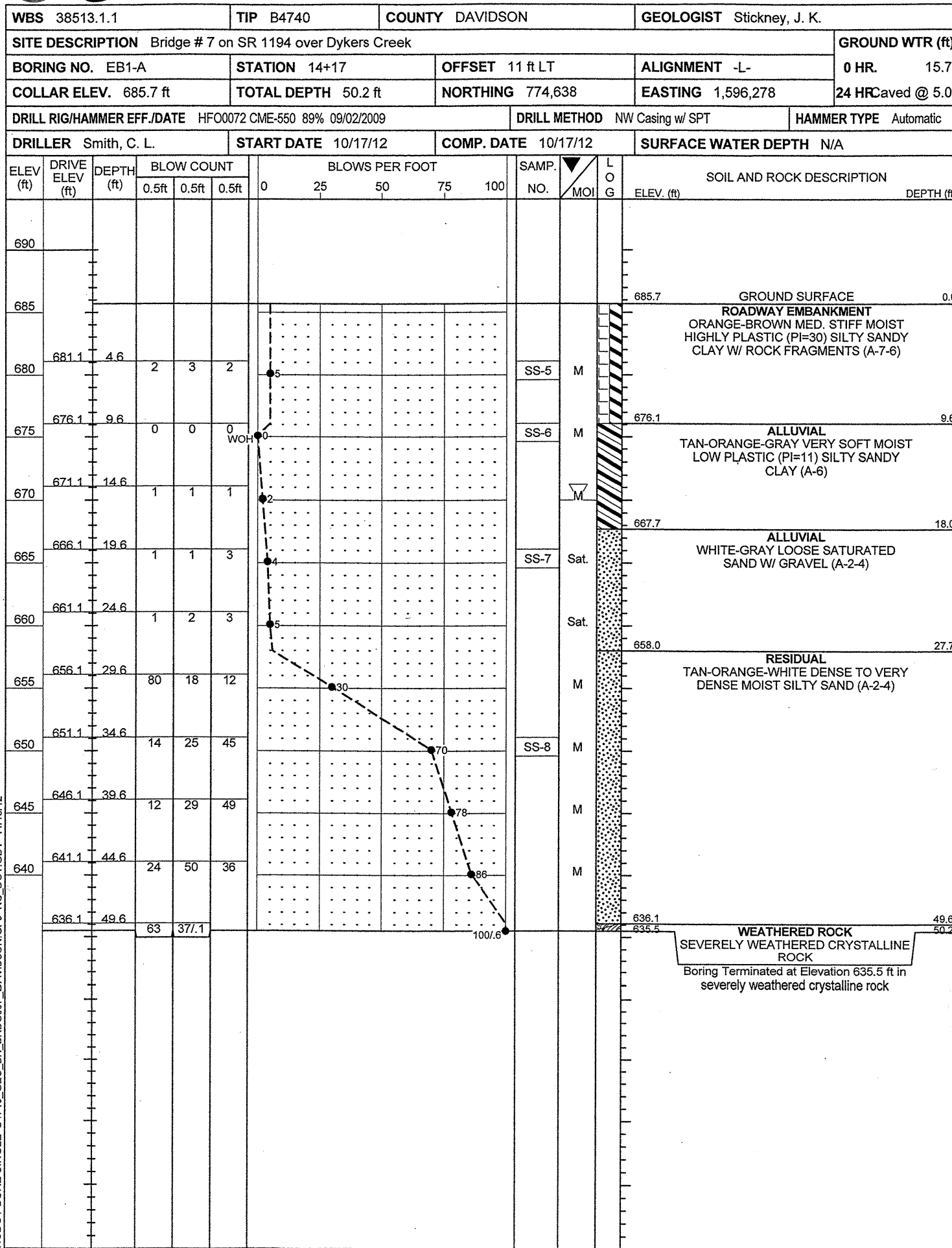
PROJECT REFERENCE NO.	SHEET
38513.1.I (B-4740)	5
SECTION THROUGH EB-1 STA. 14+13.47 -L- SKEW=120°00'00" (TO LONG CHORD)	



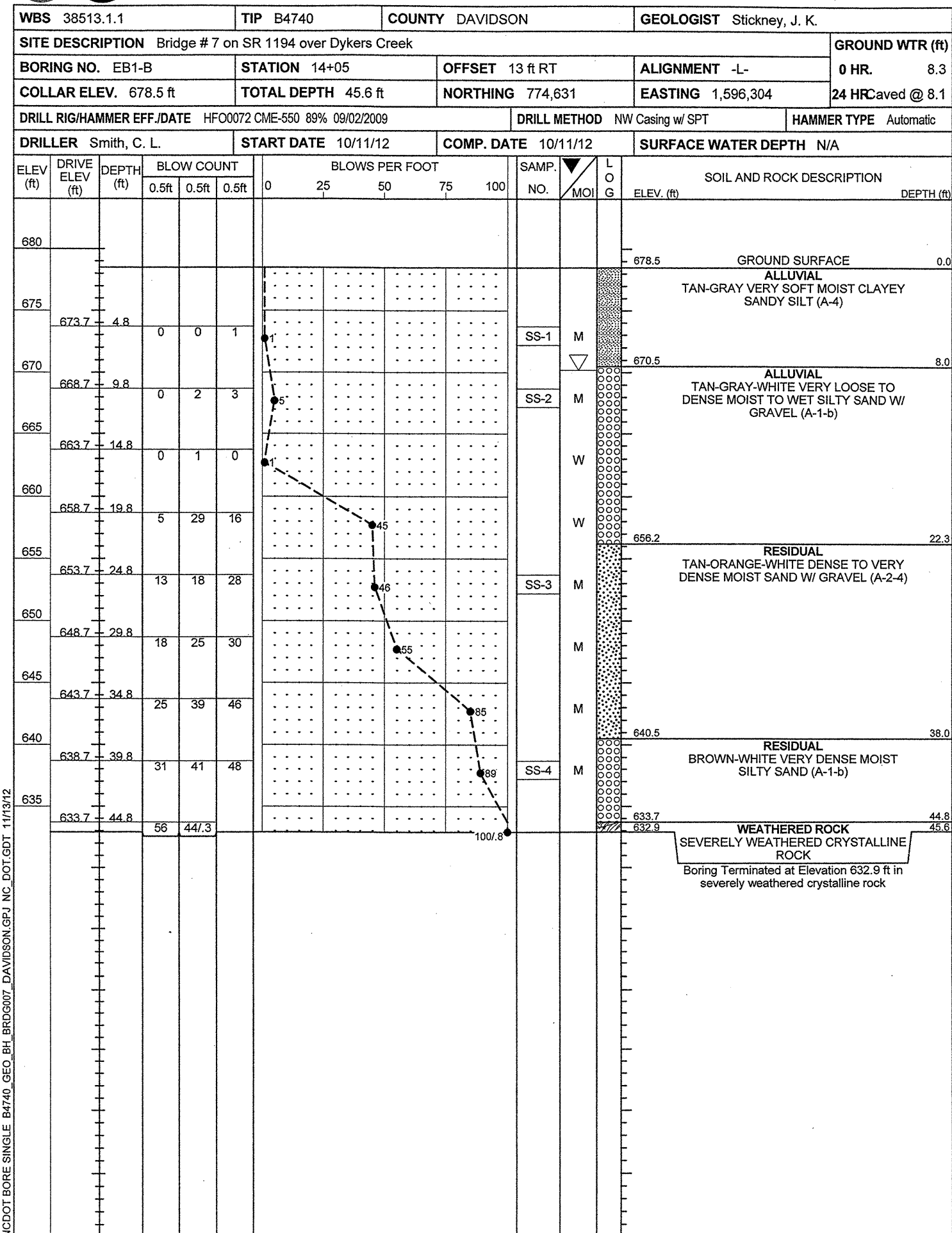


PROJECT REFERENCE NO.	SHEET
38513.1.1 (B-4740)	6
SECTION THROUGH EB-2	
STA. 15+18.53 -L-	
SKEW = 120° 00' 00" (TO LONG CHORD)	





NCDOT BORE SINGLE B4740_GEO_BH_BRDG007_DAVIDSON.GPJ_NC_DOT.GDT 11/13/12



NCDOT BORE SINGLE B4740_GEO_BH_BRDG007_DAVIDSON.GPJ_NC_DOT.GDT 11/13/12

WBS 38513.1.1		TIP B4740		COUNTY DAVIDSON		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge # 7 on SR 1194 over Dykers Creek							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 15+29		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 684.5 ft		TOTAL DEPTH 54.5 ft		NORTHING 774,749		EASTING 1,596,258										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 89% 09/02/2009		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 10/22/12		COMP. DATE 10/22/12		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						
685															684.5	0.0
680	680.4	4.1	0	0	1									M	ROADWAY EMBANKMENT ORANGE VERY SOFT MOIST HIGHLY PLASTIC SILTY SANDY CLAY (A-7-6)	
675	675.4	9.1	1	2	3									M	ALLUVIAL GRAY MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)	9.1
670	670.4	14.1	2	3	2									M	ALLUVIAL GRAY MED. STIFF MOIST TO WET CLAYEY SANDY SILT (A-4)	13.0
665	665.4	19.1	0	2	4									M	RESIDUAL TAN-BROWN-GRAY-WHITE STIFF TO HARD MOIST LOW PLASTIC SILTY SANDY CLAY W/ SOME MICA (A-6)	20.1
660	660.4	24.1	10	15	20									M		
655	655.4	29.1	7	10	13									M		
650	650.4	34.1	15	18	27									M	RESIDUAL TAN-GRAY-WHITE DENSE TO VERY DENSE MOIST SILTY SAND (A-1-b)	33.0
645	645.4	39.1	21	33	35									M		
640	640.4	44.1	34	44	56/4									M		
635	635.4	49.1	39	50	50/2									M		
630	630.4	54.1	100/4											M		
															639.9	44.6
															WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK	
															630.0	54.5
Boring Terminated at Elevation 630.0 ft in severely weathered crystalline rock																

NCDOT BORE SINGLE B4740_GEO_BH_BRD007_DAVIDSON.GPJ NC_DOT.GDT 11/13/12

WBS 38513.1.1		TIP B4740		COUNTY DAVIDSON		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge # 7 on SR 1194 over Dykers Creek							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 15+12		OFFSET 9 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 685.2 ft		TOTAL DEPTH 50.0 ft		NORTHING 774,735		EASTING 1,596,283										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550 89% 09/02/2009		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 10/18/12		COMP. DATE 10/18/12		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						
690															685.2	0.0
685															ROADWAY EMBANKMENT ORANGE SOFT MOIST HIGHLY PLASTIC (PI=26) SILTY SANDY CLAY W/ SOME MICA (A-7-6)	
680	680.8	4.4	0	1	2									M		
675	675.8	9.4	0	2	3									M	ALLUVIAL GRAY MED. STIFF MOIST MED. PLASTIC (PI=16) SILTY SANDY CLAY W/ WOOD FRAGMENTS (A-7-6)	9.4
670	670.8	14.4	1	3	1									M	ALLUVIAL GRAY MED. STIFF SATURATED CLAYEY SANDY SILT W/ GRAVEL (A-4)	13.0
665	665.8	19.4	3	3	5									M	RESIDUAL TAN-BROWN-GRAY-WHITE STIFF MOIST LOW PLASTIC (PI=15) SILTY SANDY CLAY W/ TRACE MICA (A-6)	19.4
660	660.8	24.4	14	21	19									M		
655	655.3	29.9	13	27	20									M	RESIDUAL ORANGE-WHITE DENSE TO VERY DENSE MOIST SILTY SAND W/ TRACE MICA (A-1-b)	24.0
650	650.8	34.4	15	23	28									M		
645	645.8	39.4	25	58	42/2									M		
640	640.8	44.4	46	54/4										M		
635	635.8	49.4	77	23/1										M		
															645.3	39.9
															WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK	
															635.2	50.0
Boring Terminated at Elevation 635.2 ft in severely weathered crystalline rock																

NCDOT BORE SINGLE B4740_GEO_BH_BRD007_DAVIDSON.GPJ NC_DOT.GDT 11/13/12

TEST RESULTS

PROJECT: 38513.1.1 (B-4740)
 COUNTY: DAVIDSON
 SITE DESCRIPTION: BRIDGE NO. 7 ON SR 1194 OVER DYKERS CREEK

SOIL SAMPLE RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	N	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC	UNIT WT. (d)	VOID RATIO
								C. SAND	F. SAND	SILT	CLAY	10	40	200				
EB1-A																		
SS-5	11.4 LT.	14+17 -L-	5.1-6.1	A-7-6(18)	5	57	30	18.1	16.1	25.7	40.2	91	81	63				
SS-6	11.4 LT.	14+17 -L-	10.1-11.1	A-6(3)	0	32	11	31.3	21.9	22.7	24.1	98	80	49				
SS-7	11.4 LT.	14+17 -L-	20.1-21.1	A-2-4(0)	4	30	7	69.5	14.5	8.0	8.0	66	28	12				
SS-8	11.4 LT.	14+17 -L-	35.1-36.1	A-2-4(0)	70	28	NP	50.4	27.9	17.7	4.0	79	51	20				
EB1-B																		
SS-1	13.0 RT.	14+05 -L-	5.3-6.3	A-4(0)	1	27	5	19.5	41.2	21.3	18.1	100	92	46				
SS-2	13.0 RT.	14+05 -L-	10.3-11.3	A-1-b(0)	5	30	5	55.4	22.5	16.1	6.0	77	45	20				
SS-3	13.0 RT.	14+05 -L-	25.3-26.3	A-2-4(0)	46	24	NP	59.2	29.5	5.2	6.0	83	53	12				
SS-4	13.0 RT.	14+05 -L-	40.3-41.3	A-1-b(0)	89	26	NP	55.8	26.1	12.0	6.0	63	37	14				
EB2-B																		
SS-9	8.5 RT.	15+12 -L-	4.9-5.9	A-7-6(12)	3	51	26	25.7	20.7	13.5	40.2	97	81	55				
SS-10	8.5 RT.	15+12 -L-	9.9-10.9	A-7-6(8)	5	42	16	22.5	15.5	29.9	32.1	94	79	62				
SS-11	8.5 RT.	15+12 -L-	14.9-15.9	A-4(4)	4	32	10	16.1	31.3	26.5	26.1	98	91	57				
SS-12	8.5 RT.	15+12 -L-	19.9-20.9	A-6(1)	8	40	15	36.5	25.3	20.1	18.1	87	65	36				
SS-13	8.5 RT.	15+12 -L-	24.9-25.9	A-1-b(0)	40	28	NP	58.2	23.3	12.4	6.0	78	43	17				

Aerial Photo

0 50 100

FEET

SKREW=120° 00' 00"
TID=LONG CHORD

-L-

PI Sta 9+18.51	PI Sta 13+66.69
Δ = 254° 06' 9" (LT)	Δ = 38° 20' 16" (RT)
D = 125' 56.6	D = 617' 21.6
L = 202.59	L = 609.57
T = 101.32	T = 316.69
R = 40000'	R = 9100'

BEGIN BRIDGE
-L- POC Sta. 14+13.47

BEGIN APPROACH SLAB
-L- POC Sta. 14+02.39

BM #2
BL STA 14+61
63' LEFT
ELEV. = 682.02
-L- STA 14+17.41
64.54' LEFT

END BRIDGE
-L- POT Sta. 15+18.53

END APPROACH SLAB
-L- POT Sta. 15+29.65

B4740-1

AC BRIDGE
MAD 83' 7/8"

RIP RAP

EB1-A
EB1-B

CONC

36" CONC

-BL- 4

DIKERS CREEK

POND

-L- PT Sta. 16+59.58