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## Technical Memorandum

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To: Mr. Amish T. Bhatt, S.E, P.E., AECOM  
From: Met Seyhun, P.E., Sr. Geotechnical Engineer  
Date: February 21, 2020  
Subject: Top of Weathered/Sound Bedrock Clarification – West Abutment Drilled Shafts  
Approved SGR for Adams Street Bridge over I-90/94 dated August 11, 2017  
SN016-1701  
Project: Jane Byrne (Circle) Interchange Reconstruction – Cook County, Illinois  
Wang No: 1100-04-01

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This memorandum was prepared in response to comment 5 by the Bridge Office on the pre-final submittal by Transystems for Adams Street Bridge (016-1701), stating as per below.

5. We don't understand why the west abutment has 17' rock sockets while the east has only 6' and the piers have 5'. We think they should revise considering the friction in the so-called weathered bedrock.

Wang drilled Boring 0589-B-01 at the proposed bridge west abutment and encountered refusal 11 feet higher than the other nearby borings.

It is our opinion that the auger refusal reported at an elevation of 501.1 feet elevation in Boring 0589-B-01 is an outlier because bedrock is at as high as about 490.0 feet elevation in this area. We believe this may be due to the presence of a possible boulder/cobble and not weathered bedrock. Since no rock cores were taken at the west abutment where drilled shafts are planned on top of bedrock, this area must be investigated before the planned shaft installation.

The investigation should consist of blind drilling to top of bedrock adjacent to the proposed west abutment foundations and undertake a 20-foot rock core to establish the actual elevation of sound bedrock that is anticipated at about 484 feet elevation. Rock excavation quantities should be considered from 501 feet elevation at the west abutment as per 0589-B-01 but the final quantities should be adjusted according to the actual top of bedrock.

Attached is updated Boring log 0589-B-01. This boring log should be incorporated in the final construction documents.

*Attachment: Revised Boring log 0589-B-01*



# BORING LOG 0589-B-01

wangeng@wangeng.com  
 1145 North Main Street  
 Lombard, IL 60148  
 Telephone: 630-953-9928  
 Fax: 630-953-9938

WEI Job No.: 1100-04-01

Client **AECOM**  
 Project **Jane Byrne Interchange**  
 Location **Section 16, T39N, R14E of 3rd PM**

Datum: NAVD 88  
 Elevation: 594.82 ft  
 North: 1899347.34 ft  
 East: 1171345.80 ft  
 Station: 8311+86.85  
 Offset: 16.7442 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	594.3	6-inch thick ASPHALT --PAVEMENT--															
	593.3	12-inch thick CONCRETE --PAVEMENT--															
		Medium dense, brown and black GRAVELLY SAND; dry to moist --FILL--			1	5 5 5	NP	8									
			5		2	1 8 5	NP	11									
					3	4 6 6	NP	11									
					4	3 3 3	NP	13									
	585.0	Very stiff to hard (4.0P), brown and gray SILTY CLAY LOAM, trace gravel	10		5	1 2 3	2.54 B	21									
					6	1 2 2	0.41 B	23									
	581.8	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	15		1												
					2												
					1												
					1												
					2												
					2												
					1												
					2												
					1												
					2												

--In-Situ Vane Shear, 36.5 feet--  
 --S<sub>u undis</sub> = 802.9 psf--  
 --S<sub>u remold</sub> = 284.9 psf--  
 --Sensitivity = 2.82--

--In-Situ Vane Shear, 19.0 feet--  
 --S<sub>u undis</sub> = 958.3 psf--  
 --S<sub>u remold</sub> = 543.9 psf--  
 --Sensitivity = 1.76--

--In-Situ Vane Shear, 46.5 feet--  
 --S<sub>u undis</sub> = 1087.8 psf--  
 --S<sub>u remold</sub> = 647.5 psf--  
 --Sensitivity = 1.68--

### GENERAL NOTES

Begin Drilling **06-22-2014** Complete Drilling **06-22-2014**  
 Drilling Contractor **Wang Testing Services** Drill Rig .....  
 Driller **N&R** Logger **A. Happel** Checked by **C. Marin**  
 Drilling Method **2.25" HSA to 15', mud rotary thereafter, boring**  
**backfilled upon completion**

### WATER LEVEL DATA

While Drilling  groundwater not observed  
 At Completion of Drilling  mud in the borehole  
 Time After Drilling **NA**  
 Depth to Water  **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.



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	542.3	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	55		5	4 6 10	0.25 P	27		518.1	--%Silt=63.3-- --%Clay=34.3-- --A-6 (17)-- Gray GRAVELLY SANDY LOAM; moist	80		12	12 10 10	NP	10
			60		8	5 8 9	2.95 B	16		513.1	Dense, gray, fine to medium SAND; moist	85		13	12 16 17	NP	14
		--L <sub>L</sub> (%)=28, P <sub>L</sub> (%)=15-- --%Gravel=4.8-- --%Sand=16.4-- --%Silt=55.6-- --%Clay=23.2-- --A-6 (8)--	65		9	8 9 12	3.94 B	15		504.3	--DIFFICULT DRILLING at 90.5 Possible Boulders/Cobbles	90		14	13 17 20	NP	16
			70		10	12 17 18	6.89 B	13		501.1	--AUGER REFUSAL-- Boring terminated at 93.50 ft	95		15	50/1	NP	
			75		11	4 5 6	1.72 B	28				100		16	50/2	NP	
		--L <sub>L</sub> (%)=37, P <sub>L</sub> (%)=21-- --%Gravel=0.5-- --%Sand=1.9--															

### GENERAL NOTES

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