



AECOM
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Chicago, Illinois 60606

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January 10, 2018

Brad Jacobson
Kenny Construction Co.
2215 Sanders Road
Northbrook, IL 60062

RE: Radiological Survey of Infrastructural Excavations
Permit No.: Digger 600368509
Permit Address: 401-99 North Lake Shore Drive, Chicago, Illinois
AECOM Project No. 60558002

Dear Mr. Jacobson:

Pursuant to conditions required by the United States Environmental Protection Agency (USEPA) and the City of Chicago Department of Public Health (CDPH), radiation surveying was required to be performed at the above referenced Site. Specifically, screening for thorium was required whenever excavation activities would be conducted in areas that were not previously screened during the recent Chicago Park District (CPD) project at DuSable Park. AECOM Technical Services, Inc. (AECOM) provided the required radiation surveillance on November 2 and 20 as well as December 4, 7, 11, and 13 for excavation related to the installation of structural components for the Lakefront Bike Trail within DuSable Park and in the ROW along the western property boundary of DuSable Park.

Surveying was performed within the excavation and on the spoil removed (refer to annotated drawing). The activities included excavations of foundation pads and existing concrete obstructions. Kenny Construction excavated three separate foundation areas located in the northwest and southwest corners of the Site as well as an area directly south of the east entrance ramp. The foundation excavation directly south of the east entrance ramp included some removal of existing concrete obstruction. The three excavation areas were in various sizes ranging between 6 to 24-feet in length, 4 to 16-feet wide, and to a depth of 4-feet below ground surface (bgs). The area directly south of the east entrance ramp was excavated beyond 4-feet bgs, however screening was not continued after the removal of the obstruction since the base was within native soil (sand).

The USEPA removal action level for Chicago's Streeterville area is 7.1 picocuries per gram (pCi/g) total radium (Ra-226 + Ra-228). Gamma radiation count measurements for the project were recorded using Ludlum Model 2221 survey meters and a shielded 2 x 2 inch NaI probe (Model 44-10). For the instruments used, the gamma count thresholds indicative of the 7.1 pCi/g removal action level were 6,367 (S/N: 176944) and 7,374 cpm (S/N: 172039) counts per minute (cpm) shielded.

Excavation activities for the Bike Trail project at DuSable Park were initiated in the northwest corner of Park near the East Ramp and Ogden Slip on November 2, 2017. The area was located in the northwest corner of DuSable Park within the 40-foot setback that was not screened as part of the CPD DuSable Park project. With one exception, the gamma readings by AECOM during the excavation work within the setback area were between 2,000 and 4,000 cpm shielded. The instrument threshold equivalent to the USEPA removal action level was 7,374 cpm shielded. At a depth of approximately 4.5 feet below the original surface (about 3 feet CCD) a maximum reading of approximately 18,000 cpm shielded was observed at a spot less than 6 X 6 inches at 1:15PM.

A hand shovel was used by AECOM to remove approximately 2 inches of fill from the 6 X 6 inch area to investigate whether the gamma readings were increasing with depth or expanded laterally (refer to the attached drawing). However, after removal of the small volume of fill (less than 1/2 gallon) the in situ gamma readings dropped below the instrument threshold and were consistent with other readings observed in the excavation area (less than 3,500 cpm shielded). Readings of the fill removed and placed in the 5-gallon pail were only slightly above the instrument threshold at approximately 8,000 cpm shielded. Further screening within the area did not reveal any other gamma readings above the instrument threshold. In discussions with the USEPA, it was agreed that this small spot would not require verification sampling. The contaminated fill was added to one of the bulk storage bags for the CPD project, which were being shipped for disposal to US Ecology in Grand View, Idaho.

The field gamma measurements within the remaining excavation areas, and for the spoil removed during the excavation process, did not exceed the instrument thresholds previously stated and ranged from a minimum of 1,300 cpm to a maximum of 4,400 cpm shielded. Based on field observations there was no further indication of the presence of radiologically-contaminated fill and/or an exceedance of the USEPA removal action level of 7.1 pCi/g total radium. An annotated drawing and a table of the survey readings for each of the areas has been included in the attachments.

As part of the monitoring requirements a copy this letter has been forwarded to:

Chicago Department of Public Health
Attention: Mr. Terry Sheahan
333 South State Street, Room 200
Chicago, Illinois 60604

Please contact us with any questions you have regarding this letter or the reported results.

Regards,



Andrew Kozak
Geologist



Steven C. Kornder, Ph.D.
Senior Project Geochemist

cc: Terry Sheahan, Chicago Department of Public Health
Verneta Simon, USEPA

Attachments: Annotated Drawing and Results Table

ANNOTATED DRAWING AND TABLE

BENCHMARK: CITY OF CHICAGO BENCH MONUMENT #9 LOCATED 4' E. OF EAST LINE OF MICHIGAN AVENUE AND 19' SOUTH OF NORTH LINE OF RICE STREET, ELEV. 12.905.

EXISTING STRUCTURES: 016-6103 - A FIVE SPAN CONTINUOUS STEEL STRINGER STRUCTURE CARRYING TWO LEVELS OF TRAFFIC WITH AN OVERALL LENGTH OF 432 FT. AND A WIDTH OF 214 FT. THE SUPERSTRUCTURE IS SUPPORTED ON STEEL PIER BENTS.
 016-6104 - A TWO SPAN CONTINUOUS ROLLED STRINGER STRUCTURE CARRYING THREE LEVELS OF TRAFFIC WITH AN OVERALL LENGTH OF 202 FT. AND A WIDTH OF 250 FT. THE SUPERSTRUCTURE IS SUPPORTED ON STEEL PIER BENTS AND A REINFORCED CONCRETE ABUTMENT.
 016-6106 - LAKE SHORE DRIVE NORTHBOUND EXIT RAMP "N" TO ILLINOIS STREET. A THREE SPAN CURVED STEEL STRINGER STRUCTURE. SPANS 1 AND 2 ARE CONTINUOUS UP TO PIER 3. SPAN 3 IS CONTINUOUS WITH THE ADJACENT STRUCTURE (016-6104). THE SUPERSTRUCTURE IS SUPPORTED ON REINFORCED CONCRETE SOLID WALL PIERS AND A CONCRETE ABUTMENT. THE STRUCTURE HAS AN OVERALL LENGTH OF 252 FT. AND A WIDTH OF 29 FT.
 016-6165 - LAKE SHORE DRIVE NORTH BOUND ENTRANCE RAMP FROM DUSABLE PARK TO LOWER LEVEL LAKESHORE DRIVE. A SINGLE SPAN FLARED STEEL STRINGER STRUCTURE. THE SUPERSTRUCTURE IS SUPPORTED ON A REINFORCED CONCRETE PIER AND ABUTMENT WITH AN MSE WALL APPROACH RAMP BEHIND THE ABUTMENT. THE STEEL STRUCTURE HAS AN OVERALL LENGTH OF 100 FT. AND A MAXIMUM WIDTH OF 30 FT.

CONSTRUCTION BY OTHERS FUTURE CONTRACT NO. TO BE DETERMINED

DESIGN SPECIFICATIONS

ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE FOLLOWING STANDARDS:
 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 2002 17th EDITION
 AASHTO GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, 1997;
 AWS D1.5 AND D1.1 BRIDGE WELDING CODE
 ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, 2003

DESIGN CRITERIA

LIVE LOAD: 100 PSF PEDESTRIAN
 H-10, NOT IN CONCURRENCE WITH PEDESTRIAN
 IMPACT: NOT APPLICABLE
 WIND LOAD: 50 PSF LATERAL, 20 PSF UPLIFT
 THERMAL: +/- 80 DEGREES F (-30 DEGREES F TO +130 DEGREES F)
 SEISMIC: ACCELERATION A = 0.038 g
 SITE COEFFICIENT S = 1.2
 SEISMIC PERFORMANCE CATEGORY A
 DEFLECTION: SPAN LENGTH / 500 MAINLINE, SPAN LENGTH / 300 CANTILEVERS
 FATIGUE: 100,000 CYCLES WIND

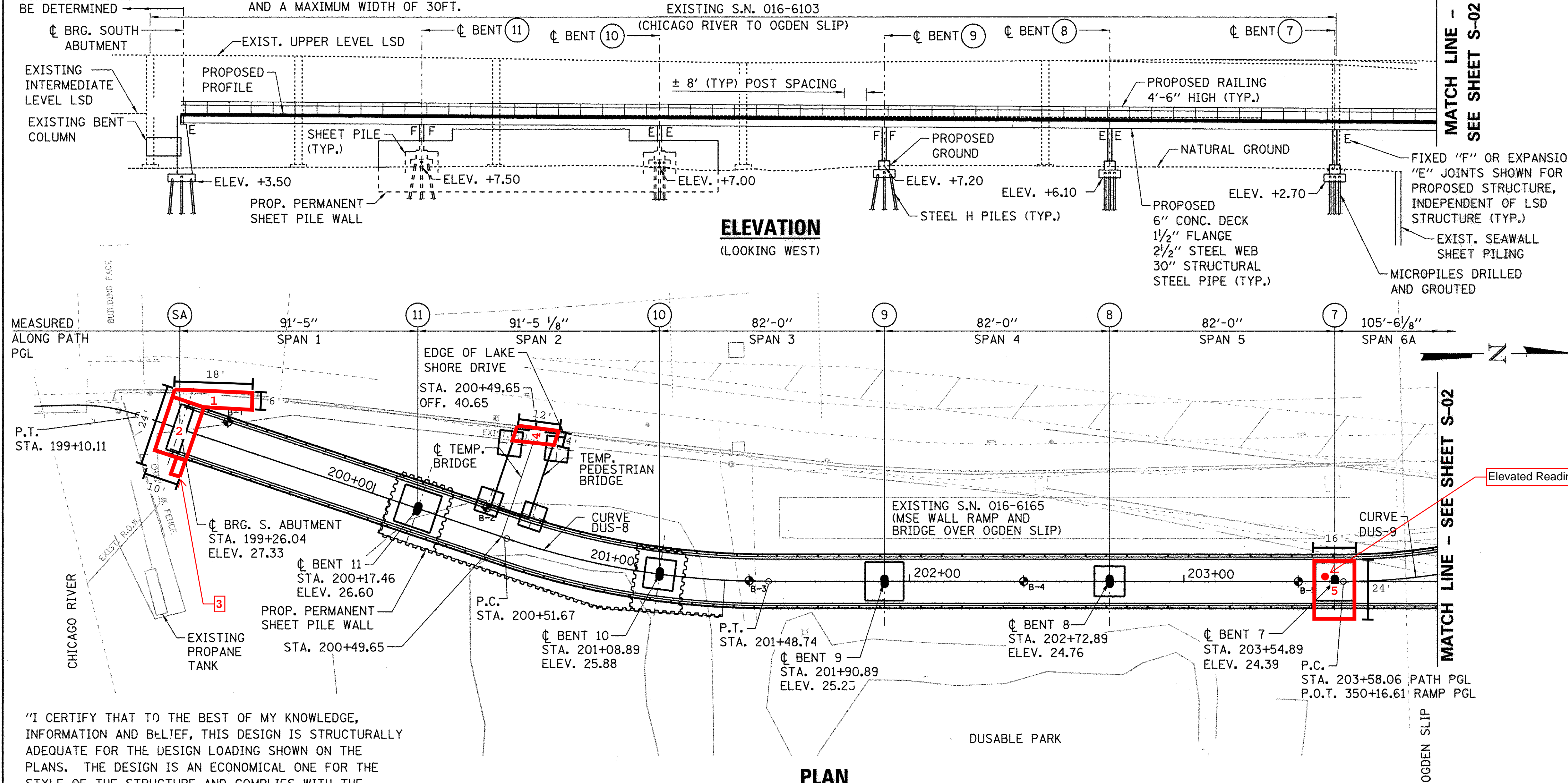
DESIGN STRESSES

REINFORCED CONCRETE:
 f'c = 6000 PSI (BENT 6 CAP AND COLUMNS)
 f'c = 4000 PSI (BRIDGE DECK, ABUTMENT DIAPHRAGMS, AND PIER 9M MODIFICATIONS)
 f'c = 3500 PSI (ALL OTHERS)

REINFORCEMENT BARS:
 Fy = 60,000 PSI (AASHTO M31, M42, OR M53, GRADE 60)

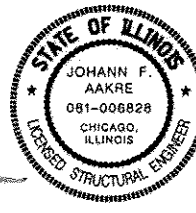
STRUCTURAL STEEL:
 Fy = 50,000 PSI (AASHTO M270, GRADE 50) - UNLESS NOTED OTHERWISE

POST TENSIONING BARS:
 fpu = 150 ksi (ASTM A722)



"I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF THE STRUCTURE AND COMPLIES WITH THE REQUIREMENTS OF THE "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION".

APPROVED
BASED ON PEER REVIEW
J. Carl Pappas
ENGINEER OF BRIDGES AND STRUCTURES



DATE 8/5/2016

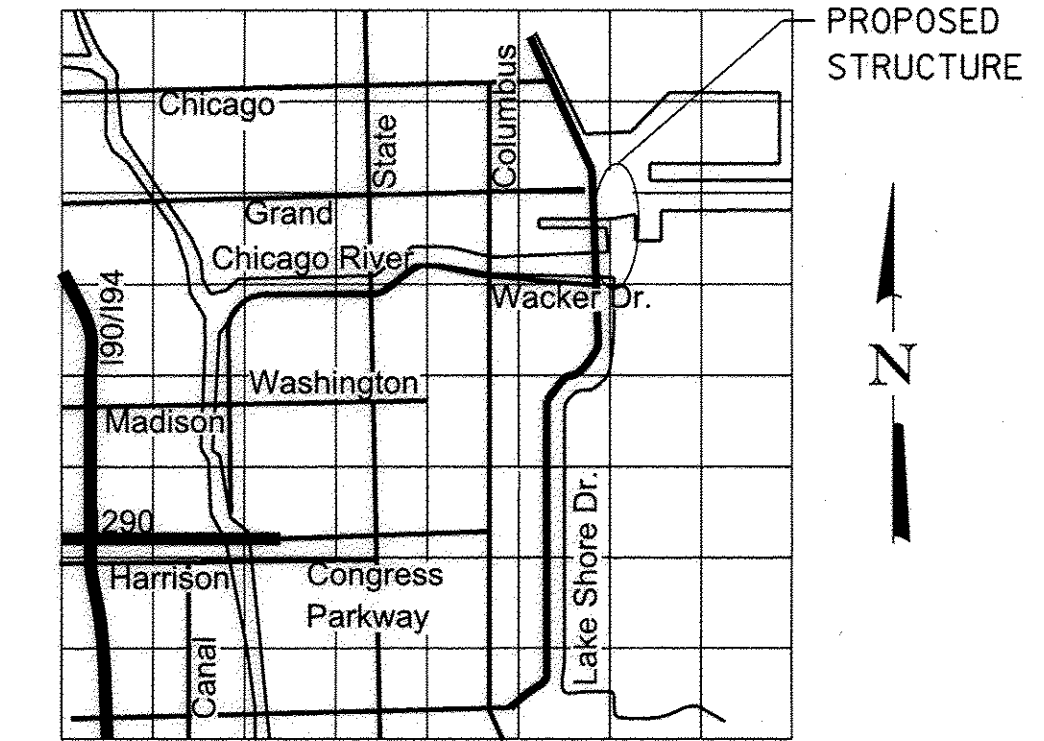
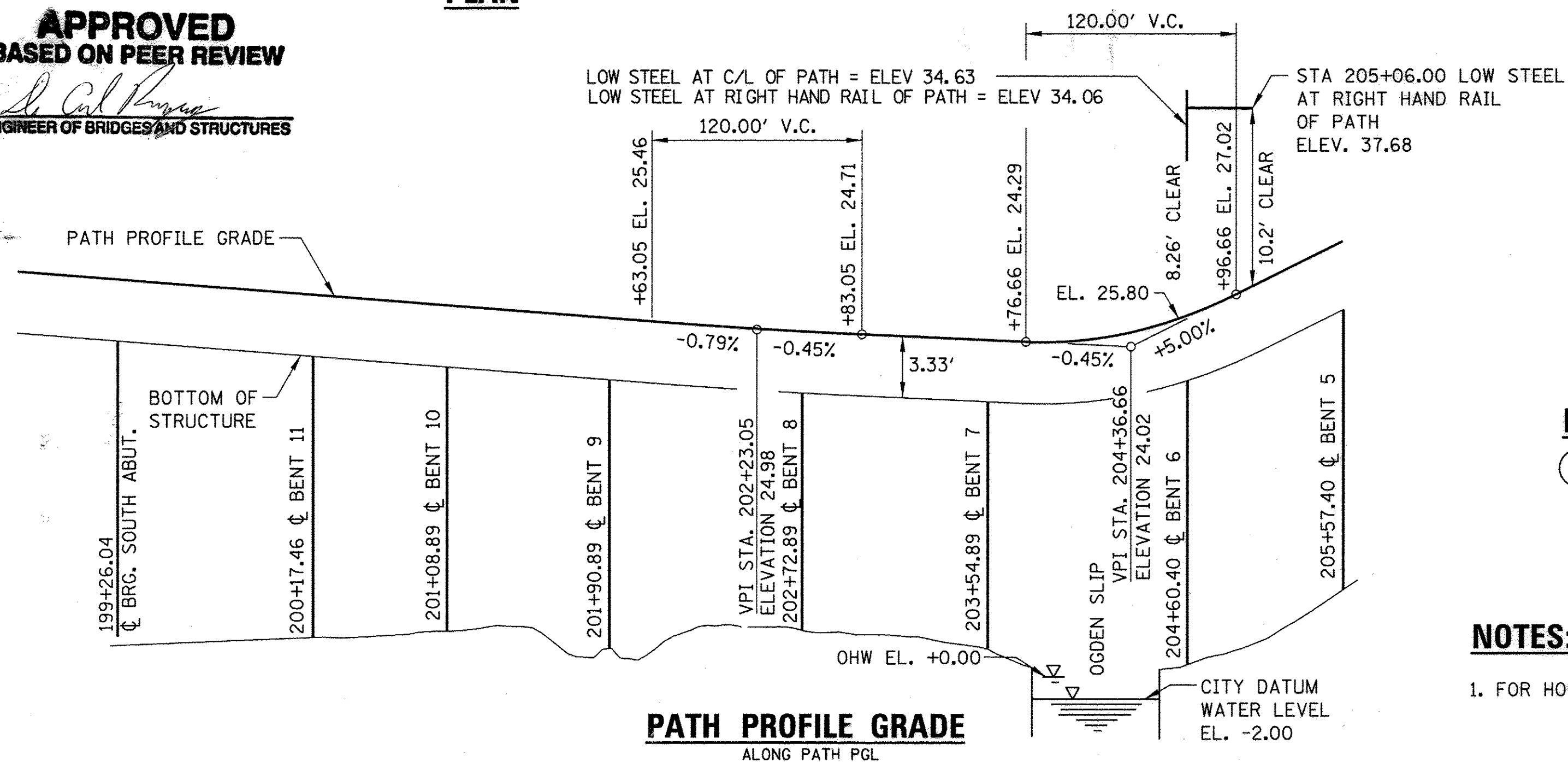
JOHANN F. AAKRE P.E., S.E.
 ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 081-006828
 LICENSE EXPIRES NOVEMBER 30, 2016
 APPLICABLE TO DRAWING NO. S-1 THRU S-78 ONLY

PEER REVIEW BY HNTB CORP. OF ST. LOUIS, MISSOURI FINDS THAT THIS STRUCTURE CONFORMS TO THE DESIGN CRITERIA AND IS STRUCTURALLY ADEQUATE FOR THE PROPOSED LOADS.



DATE 5/2/16

LAWRENCE E. ROLWES, S.E.
 ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 081-007040
 LICENSE EXPIRES NOVEMBER 30, 2016
 APPLICABLE TO DRAWING NO. S-1 THRU S-78 ONLY



LOCATION SKETCH

LEGEND

- 11 PROPOSED BENT NUMBER
- ◆ SOIL BORING LOCATION
- PROPOSED COLUMN

NOTES:

1. FOR HORIZONTAL CURVE DATA SEE SHEET S-02.

NO.	BY	DATE	DESCRIPTION
REVISIONS			
LAKEFRONT TRAIL IMPROVEMENT FROM CHICAGO RIVER BRIDGE TO OGDEN SLIP SN 016-6572			
GENERAL PLAN, ELEVATION AND PROFILE (SHEET 1 OF 2)			
CONSULTANT HNTB			
CITY OF CHICAGO			
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES & TRANSIT			
DRAWN	LK	SHEET NO.	
CHECKED	JFA	S-01	
APPROVED	JFA		
DATE	8/5/16		
SCALE	N.T.S	01 OF 78 SHEETS	
CONTRACT NO.		PROJECT NO. E-4-710	

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 2/20/2016 15:18

Radiological Gamma Survey Readings

<u>Section</u>	<u>Depth (inches)</u>	<u>CPM Shielded*</u>
1	0" - 48"	1,600 - 4,100
2	0"	1,300 - 1,700
	18"	1,900 - 2,600
	36"	3,300 - 3,600
	48"	3,100 - 4,400
3	0" - 48"	2,200 - 3,900
	48"	2,100 - 4,000
4	0" - 36"	1,600 - 2,400
5**	0"	2,000 - 3,900
	18"	2,700 - 3,900
	36"	1,900 - 4,000
	48"	2,100 - 2,700

Notes:

* counts per minute, all readings were recordings utilizing a shielded probe.

** Table doesn't include readings for the small hot spot, refer to text.