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October 28, 2015

William Marsh - Project Manager
Turner Construction Company – Special Projects Division
55 E. Monroe, Suite 1430
Chicago, IL 60603

RE: Radiological Letter Report
Harris Theater, Chicago, IL
Permit No. 578866784
AECOM Project No. 60342594

Dear Mr. Marsh,

Pursuant to conditions specified in permits issued by the City of Chicago, radiation monitoring was required to be performed for the above referenced project. AECOM Technical Services, Inc. (AECOM) provided the required radiation surveillance. This letter provides a summary of the radiological surveying performed between March 12 and July 29, 2015, for excavations that extended into previously unscreened fill materials.

Gamma radiation count measurements were made using Ludlum Model 2221 survey meter and an unshielded 2 x 2 inch NaI probe (Model 44-10). The U.S. Environmental Protection Agency (USEPA) cleanup value for Chicago's Streeterville area is 7.1 picocuries per gram (pCi/g) total radium (Ra-226 + Ra-228). The field instrument (Serial # 176944) gamma count equivalent to 7.1 pCi/g was 18,279 counts per minute (cpm) unshielded. Monitoring between March 12 and 26, 2015 revealed no gamma readings indicative of contaminated fill soil above the clean-up value established by the USEPA for the Streeterville area of Chicago.

Sidewalk Removal along East Randolph Street

On March 12, the sidewalk slab adjacent to the property was removed for the installation of 10 micropiles. This work was performed at the northern end of the property south of Randolph Street (see Figure 1). The sidewalk removal was approximately 30-feet wide by 95-feet long and extended to approximately 6-inches below ground surface (bgs). Gravel subgrade was predominate during the sidewalk removal along with minor amounts of black urban fill soil containing sand, brick, cinders, ash and demolition debris. For the field instrument used, the gamma count threshold indicative of the 7.1 pCi/g USEPA cleanup value was 18,279 cpm unshielded. The field gamma background for the area is approximately 6,149 cpm unshielded. The field gamma measurements within the excavation and the soil materials uncovered during the sidewalk removal process did not exceed the instrument threshold previously stated. A maximum count of 6,900 cpm unshielded was recorded during the excavation. Thus, there was no indication of the presence of radiologically-contaminated fill soil and/or an exceedance of the USEPA cleanup value of 7.1 pCi/g total radium.

The week of October 19, 2015, a trench drain was installed in this sidewalk area (Figure 2). This drain was the final excavation work necessary for the project. The drain excavation was limited to the upper 12 to 18-inches and predominantly revealed gravel subgrade, which was previously screened with no indication of radiological contamination.

Micropile Installation

On March 12-18, 2015 drilling for the installation of 10 micropiles were performed along the northern property boundary of the Harris Theater (see Figure 1). Urban fill containing sandy soils and some clay were unearthed during the drilling process. For the field instrument used, the gamma count threshold indicative of the 7.1 pCi/g USEPA cleanup value was 18,279 cpm unshielded. The field gamma measurements for the spoil materials generated during the drilling process ranged between 4,100 cpm and 6,000 cpm, thus did not exceed the instrument threshold previously stated. A 5 by 8-foot "slurry pit" was also excavated to a depth of approximately 3-feet below ground surface. This pit was created to contain the slurry generated during the micropile installation process. The field gamma measurements for the excavated materials generated during the slurry pit excavation process ranged between 5,500 cpm and 11,200 cpm, thus did not exceed the instrument threshold previously stated.

Elevator Pit Excavation

On March 20, 2015, an excavation for the installation of an elevator was performed inside the northwest corner of the building (see Figure 2). The excavation was approximately 11-feet by 21-feet to a depth of approximately 7.5-feet below ground surface. Subgrade consisting of CA-6 gravel was removed during excavation. For the field instrument used, the gamma count equivalent to the USEPA 7.1 pCi/g cleanup value was 18,279 cpm unshielded. The field gamma background for the area was approximately 6,149 cpm unshielded. The excavation was surveyed in 18-inch lifts and the field gamma measurements within the excavation and the spoil materials generated during the excavation process ranged between 5,300 and 5,900 cpm. Thus, the readings did not exceed the instrument threshold previously stated.

On July 29, 2015, additional screening was conducted to extend the depth of a portion of the elevator pit an additional 1-1.5 feet. Native sand appeared to be encountered at approximately 8-feet below the top of floor slab adjacent to the elevator pit. Background for surface soils just outside of the building was approximately 8,500 cpm unshielded. The instrument threshold equivalent to 7.1 pCi/g was 19,055 cpm unshielded. Readings for the excavation and additional spoil ranged from 8,300 to 10,726 cpm unshielded. Thus, there were no indication of the presence of radiological contamination.

Grade Beam Excavation

Between the days of March 23-26, 2015, an excavation for the installation of Grade Beams was performed along the north side of the building (see Figure 2). The excavation was approximately 80-feet long by 6-feet wide to a depth of approximately 4-feet below ground surface. Urban Fill consisting of brown-black fine to medium sands with some gravels and trace brick debris was removed during excavation. Each section of the grade beam excavation was surveyed in 18-inch lifts. For the field instrument used, the gamma count equivalent to the USEPA 7.1 pCi/g cleanup value was 18,279 cpm unshielded. The field gamma background for the area was approximately 6,149 cpm unshielded. The field gamma measurements within the excavation and the spoil materials generated during the excavation process ranged between 6,800 and 13,100 cpm. Thus, the readings did not exceed the instrument threshold previously stated.

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

Regards,



Brian R. Schmidt
Project Scientist II

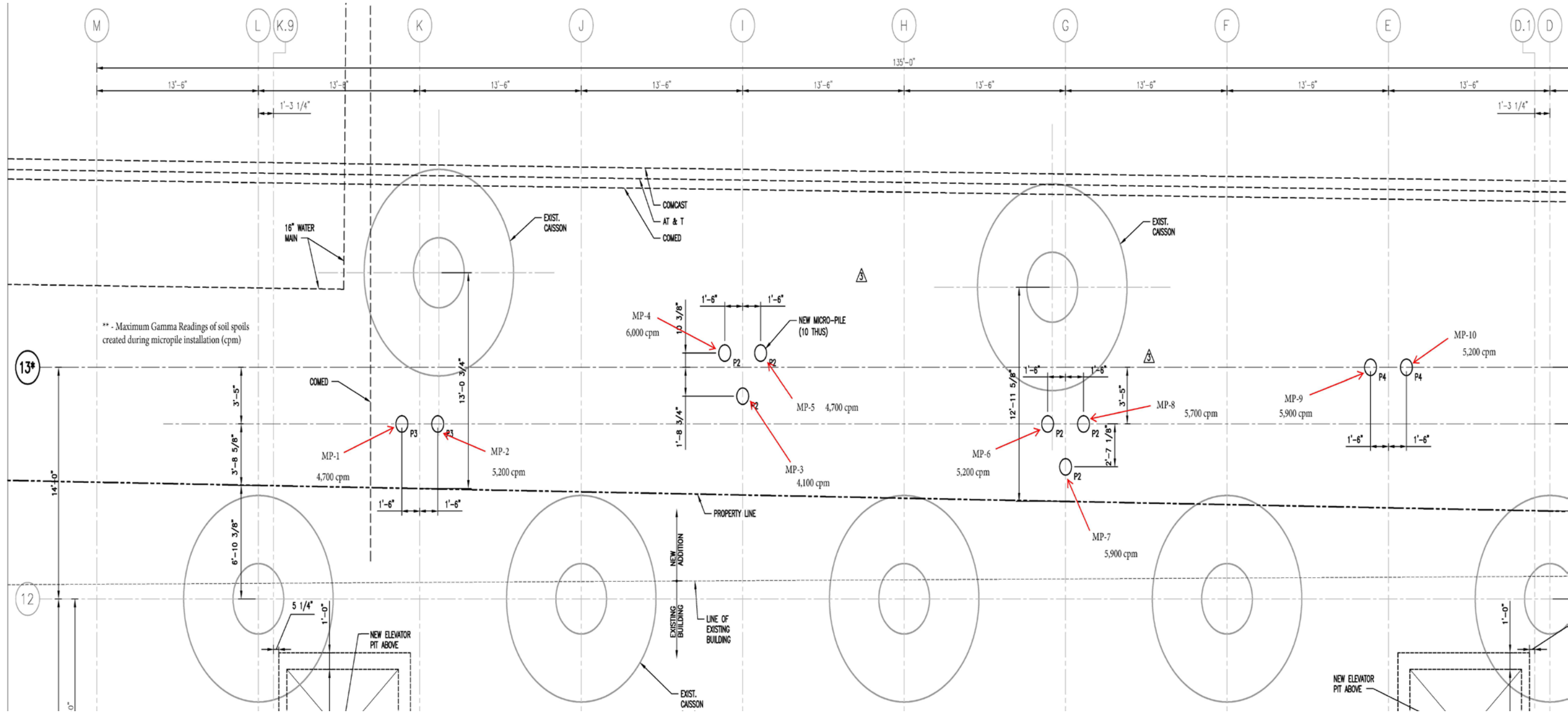


Steven C. Kornder, Ph.D.
Senior Project Geoscientist

cc: Rahmat Begum, Chicago Department of Public Health
Verneta Simon, USEPA

Attachments: Figure 1 – Micropile Locations
Figure 2 – Elevator Pit and Grade Beam Locations

FIGURE 1 – MICROPILE LOCATIONS



HARRIS THEATER
 MICROPILE LOCATION FIGURE
 205 EAST RANDOLPH STREET
 CHICAGO, ILLINOIS

Drawn: BRS 3/30/2015

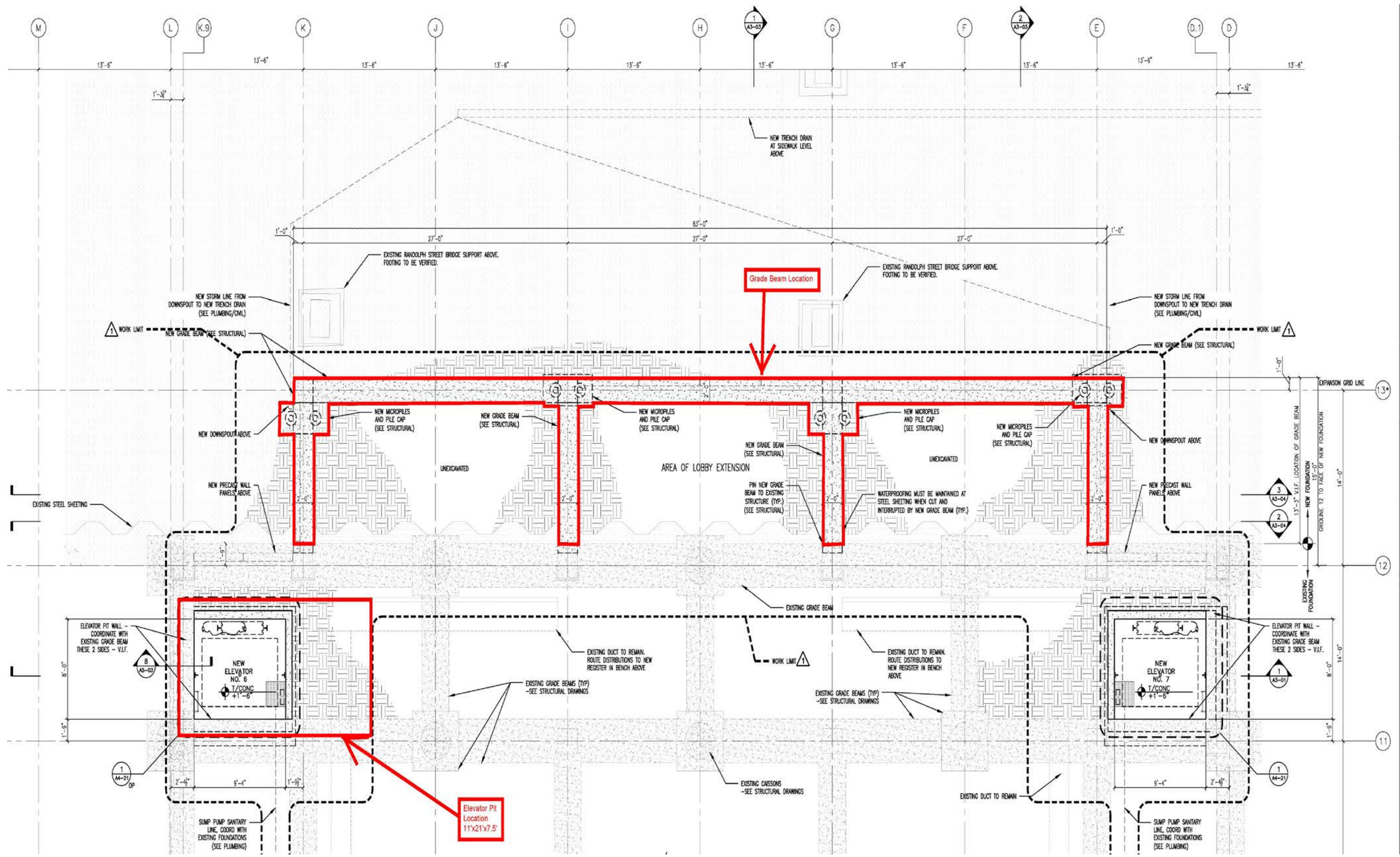
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FIGURE NUMBER 1

FIGURE 2 – ELEVATOR PIT AND GRADE BEAM LOCATIONS



HARRIS THEATER
 ELEVATOR PIT AND GRADE BEAM LOCATION FIGURE
 205 EAST RANDOLPH STREET
 CHICAGO, ILLINOIS

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FIGURE NUMBER	2	