March 29, 2018

Mr. Javier Perez-Maldonado
Project Manager, Division of Environmental Remediation
New York State of Environmental Conservation
625 Broadway
Albany, NY 12233

Re:	Project:	Whole Foods, Brooklyn Store Post Construction Sub Slab Vapor Sampling
	Site:	314 Third Avenue, Brooklyn, New York
	BL Project No.	03C497-L2

Dear Mr. Perez-Maldonado:

BL Companies is submitting this revised sampling plan for Soil Vapor Intrusion (SVI) at the request of the New York State Department of Health (NYSDOH). Upon review of the Periodic Review Report for the Whole Foods property in Brooklyn, the NYSDOH recommended that an (SVI) investigation be conducted in accordance with the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (with updates).

BL Companies has submitted a proposal to the property owner and plans to perform the SVI investigation. BL Companies is submitting the following revised workplan for this investigation and will proceed following approval of the plan by New York State Department of Environmental Conservation (NYSDEC) and NYSDOH, as requested. This revised workplan incorporates comments received from NYSDOH on March 26, 2018 and discussed with both agencies on March 27, 2018.

I. PROJECT DESCRIPTION

The location of the Project is 314 Third Avenue in Brooklyn, New York, referred to below as the "**Site.**"

The new construction at the Site was completed in 2013. Part of the construction included the installation of a liquid boot vapor barrier and a passive Sub-Slab Depressurization System (SSDS) below the new building. In addition, monitoring wells were installed to allow for bi-annual groundwater monitoring. In accordance with the Site Management Plan, annual inspection of the composite cover system and semi-annual groundwater sampling have been performed by BL Companies. Recent work completed by the USEPA in the 4th Street Basin of the Gowanus Canal appears to be the cause of settling and subsidence adjacent to the building and along the promenade. It is our opinion that the settling and subsidence is limited and has not lessened the

effectiveness of the composite cover system to prevent exposure to contaminated soils that remain beneath the composite cover system. BL Companies and Whole Foods, as well as USEPA, will continue to monitor and inspect the site on a regular basis until such time as USEPA has repaired the damage.

Attached are the as-built drawings (SD001, SD002 and SD003) for the SSDS. The building has an unoccupied crawl space with a concrete slab below the sales floor. There are four test pipe access points for the SSDS as depicted on SD001. One of those points is at the occupied level and three are in the crawl space below the occupied area. These access points will be used to collect the sub-slab soil vapor samples.

The primary contaminants of concern at the site, both pre- and post-remediation, were Poly-Aromatic Hydrocarbons (PAHs). Volatile Organic Compounds (VOCs) have been detected at the site but their presence was not widespread nor at significantly elevated concentrations. Low levels of VOCs are present in groundwater today. Based on the volume of contaminated soils removed from the site during remediation, the low concentrations of the VOCs in groundwater today, and the presence of the Liquid Boot vapor barrier beneath the building, the potential for vapor intrusion is low. Nevertheless, the sampling described herein will be performed and should confirm that VOCs are not present in soil vapor under the building at concentrations that create a vapor intrusion concern. If VOCs are found to be present in the soil vapor and indoor air, the SSDS can be converted from a passive system to an active system as a mitigation measure.

BL Companies developed this sampling protocol in compliance with the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 with Updates.

II. SAMPLING PROTOCOLS

All air and vapor samples will be collected over an eight-hour period using Summa canisters that are certified clean by a NYS-approved laboratory. The certification details will be included in the SVI report. The sampling duration is consistent with NYSDOH Guidance 2.7.3 (a) and allows for all samples to overlap in duration. The building is currently occupied and an operating grocery store. The store is open to customers from 7:00 AM to 10:00 PM. Store shelves are re-stocked during the over-night hours. However, there are no processes within the store that would affect the VOC levels in the indoor air, if any. A 24-hour sample is typically collected in a facility that has variations in VOC levels during different working shifts due to processing at the facility. In that case a Time Weighted Average over twenty-four hours allows for an averaged sample of varying exposures. This facility does not include the expectation of varying VOC levels and an eight-hour sample will be representative of potential exposure. The analysis will provide results in mcg/m^3.

Either 1.4L or 6L summa cannister will be used to collect the samples at a flow rate <0.2 LPM and allow for collection of >1L of vapor in compliance with the guidance document. The volume of the sample will be greater than one liter. This volume will achieve minimum reporting limit of 0.2 mcg/m^3 in compliance with Section 2.9 and the Updates - Soil Vapor Matrices. Tracer gas will be used during the collection of the samples in accordance with the protocol outline in Section 2.7.5 of the final guidance in order to confirm that fresh air from above the slab is not pulled below the

slab and into the sample. In addition, sample tubing will be purged of 1 to 3 volumes prior to the start of sample collection into each summa canister.

The samples will be collected as a one-time event. Depending on the results of the testing additional monitoring may be recommended. This initial round of sampling is anticipated to be scheduled in early April 2018. The samples will be analyzed for the presence of VOCs via EPA Method TO-15 in accordance with the Guidance for Evaluating Soil Vapor Intrusion in NY State, October 2006 and Updates. Phoenix Laboratory in Manchester Connecticut will provide the summa cannisters and the analysis. Phoenix is ELAP certified by the NYSDPH. Laboratory certificates are attached.

The proposed work plan involves collection of the sub-slab vapor samples from the four SSDS sampling ports and the interior-most SSDS riser where it daylights on the roof. The vapor present with in the SSDS piping should be representative of the vapor present in the surrounding sub-slab soil. We propose collecting the samples from the sample ports without purging the SSDS piping, as we believe that would represent worst-case conditions. We are not proposing to collect samples by drilling through the slab and liquid boot vapor barrier, as that would breach the integrity of the vapor barrier and potentially void any warranty.

A. The sub-slab vapor samples will be collected as follows:
    a. 1.4 L or 6L summa cannisters attached to vapor points with 1/4" tubing
    b. Flow rates shall not exceed 0.2 LPM
    c. Four samples will be collected, one from each of the four sampling ports of the SSDS system and one from the interior-most 4-inch riser pipe where it daylights on the roof (shown on the attached figure)
    d. Tracer gas will be used to confirm that the sampling ports do not leak fresh are from above the slab
    e. The sample ports will be screened with a Photo-ionization Detector (PID) upon removal of the cap at each port

B. The two indoor air samples will be collected in accordance with the criteria below:
    a. One sample will be collected adjacent to the grocery freezer in Backstock #2 area and the second sample will be collected from the receiving office (see attached floor plan)
    b. The samples shall be collected from breathing zone (three to five feet above ground)
    c. Flow rates shall be consistent with sub-slab vapor samples and not exceed 0.2 LPM
    d. Personnel should not linger near the sample location
    e. The sample collection areas will be screened with a PID prior to sample collection

C. The outdoor air sample will be collected in accordance with the criteria below:
    a. The sample shall be collected at an upwind from breathing zone (three to five feet above ground)
    b. The sample will be taken simultaneously with indoor air sample collection
    c. The exact location of the outdoor sample will be determined in the field and will depend on activity at the Site and weather conditions
    d. Tubing shall be used to collect sample at the appropriate height

e. The sample shall be collected upwind of HVAC intake if possible
f. The sample location will be protected from weather if required
g. Flow rates shall be consistent with sub-slab vapor samples and not exceed 0.2 LPM
h. Personnel should not linger near sample location

D. The chain of custody shall include:
   a. Unique sample identification
   b. Date and time of sample collection
   c. Identity of samplers
   d. Sampling methods and devices
   e. Volume of soil vapor extracted
   f. Vacuum level of cannisters before and after sample collection
   g. All protocols for tracking samples from sampling point to laboratory

E. Sketches of the building/area shall be included in the final report. Field conditions that may affect the sample results will be included on the field sketches as well as;
   a. Sample locations
   b. Pertinent observations (spills, floor stains, odors) should be recorded.
   c. Compass orientation
   d. Product inventory survey of sources of volatile chemicals that could impact sample results
   e. Notation of heating system operation, window or other ventilation status
   f. Location of HVAC equipment, doorways, garages, stairs, utility penetrations

Upon receipt of the analytical reports, the Consultant will review the data and compare the results to the decision matrices in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 with Updates. A final report will be completed that includes; chain of custody, site sample sketches, observational field records, all sampling data and analysis. The report will be submitted to NYSDEC and NYSDOH as requested. Any follow up sampling will be discussed with these governing bodies prior to execution.

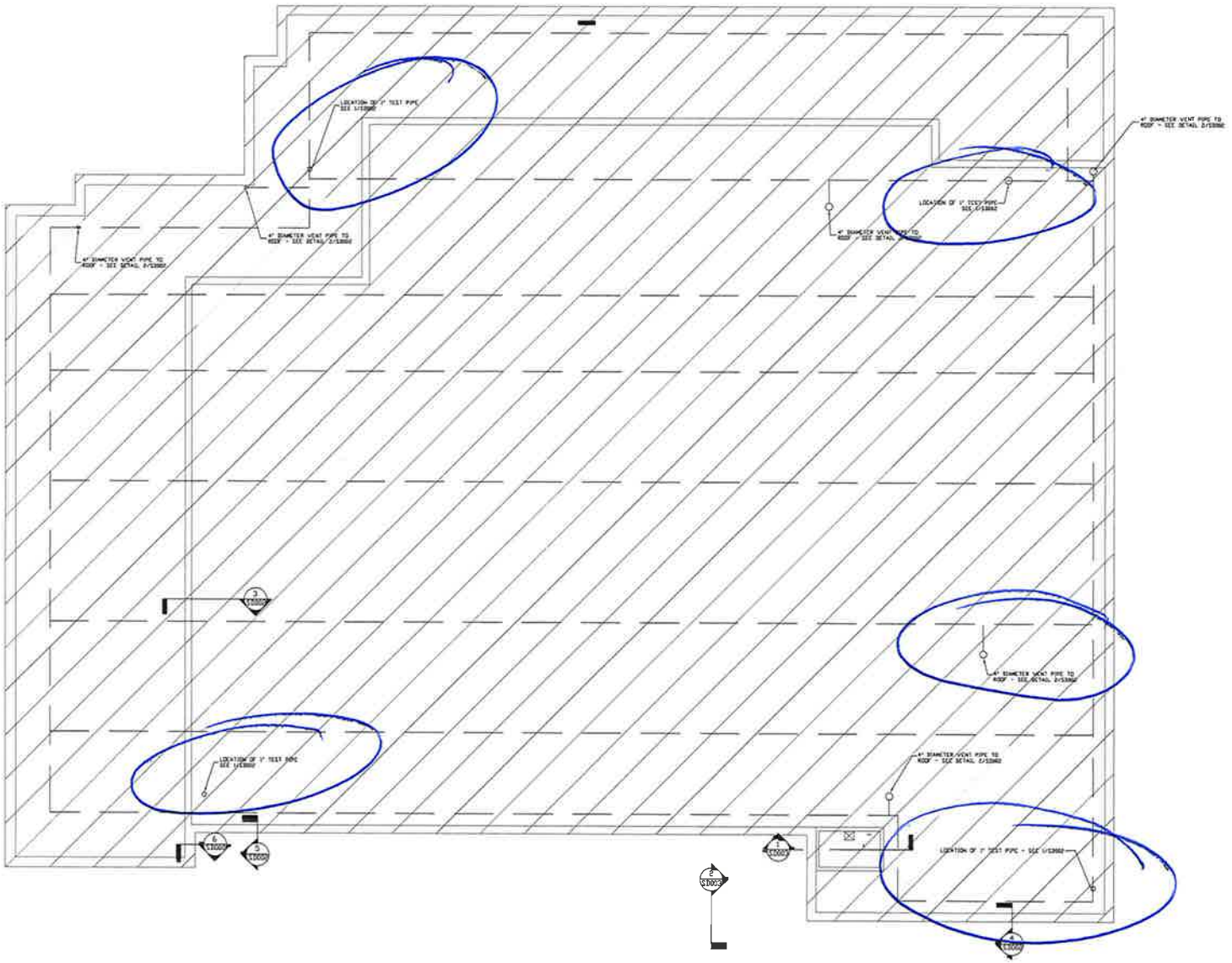
Please let us know if you have any questions or comments. We look forward to your approval of this work plan and completing the requisite reporting for this Site.

Very truly yours,

BL COMPANIES, INC.

Samuel R. Haydock, MS, LEP
Principal

CC: Mark Mobley, Whole Foods Market



LEGEND

GEOVENT

HORIZONTAL LIMITS OF LIQUID BOOT APPLICATION

Sample locations

Environmental Management Services

50 Prescott Street
Jersey City, NJ 07304
Phone: 201-395-0010
Fax: 201-395-0020

Designer:		
Drawn by: JT		
Checked by:		
Design No. or LSM No.:	Facility Code:	Date: 3/26/2014

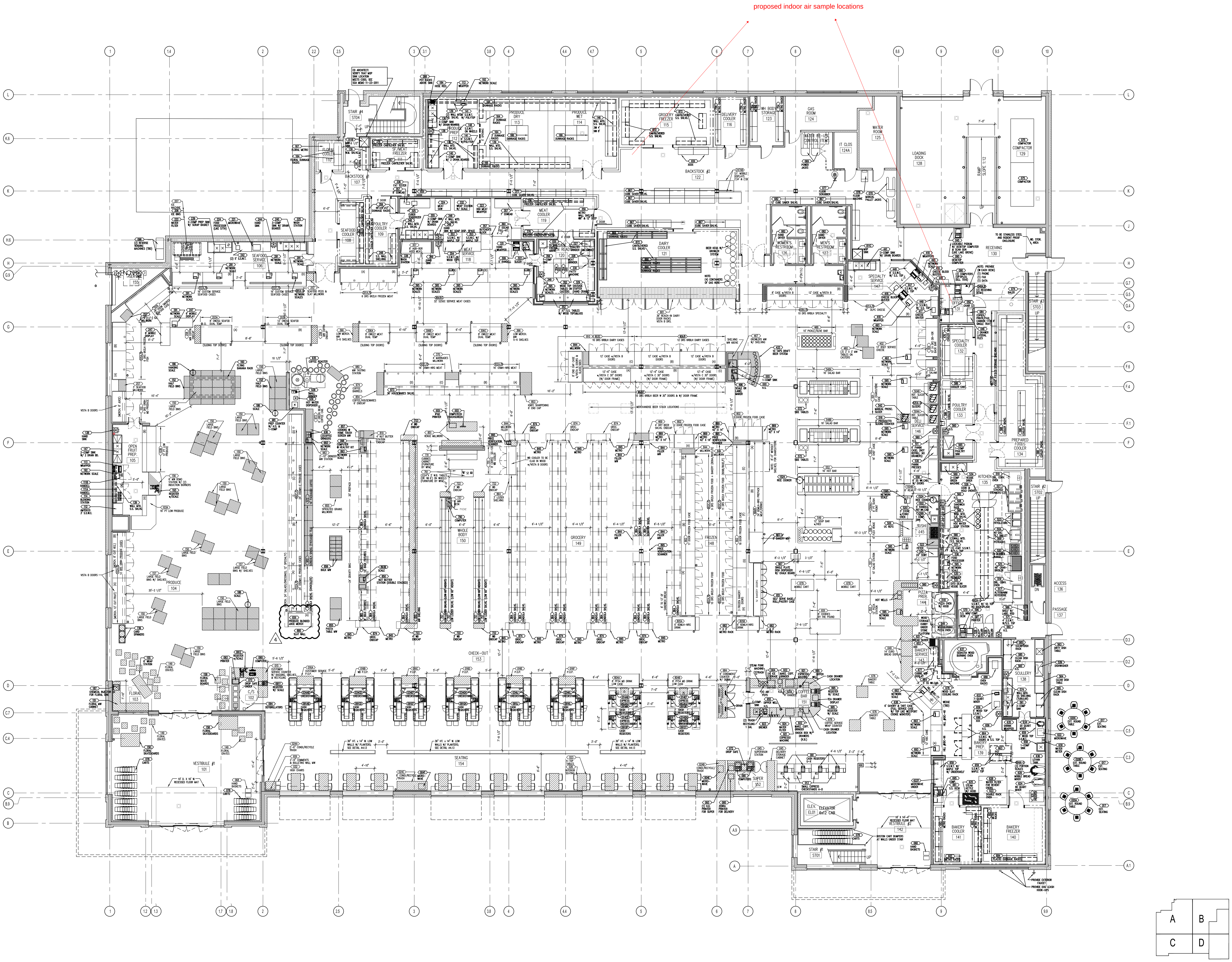
Project:
WHOLE FOODS MARKET

Address:
214 3RD STREET
BROOKLYN, NEW YORK

Drawing Title:
AS-BUILT VAPOR BARRIER AND VENTING LAYOUT

Drawing No.:
SD001

Sheets in Contract:
1 of 3



1 FIRST FLOOR EQUIPMENT PLAN
1/8" = 1'-0"

THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES

BL Companies
ARCHITECTURE
ENGINEERING
PLANNING
LANDSCAPE ARCHITECTURE
LAND SURVEYING
ENVIRONMENTAL SCIENCES
ANALYTICAL SERVICES

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(203) 630-1406
(203) 630-2615 Fax

WHOLE FOODS MARKET
214 3RD STREET
BROOKLYN, NEW YORK

REVISIONS

No.	Date	Desc.
1	04/23/2012	ISSUED FOR PRICING
2	12/07/2012	BULLETIN #7
3	07/19/2013	BULLETIN #15
4	08/12/2013	BULLETIN #16

Designed
Drawn
Checked
Approved
Scale AS NOTED
Project No. 03C497
Date 06 APRIL 2012
Cad File: A11C3794111

ARCH./ENG. SEAL

Title
FIRST FLOOR EQUIPMENT PLAN

Drawing No.
A-111.00
X OF XX