

# VAPOR MITIGATION SYSTEM

## GREYSTONE SENIOR LIMITED DIVIDEND HOUSING ASSOCIATION, LIMITED PARTNERSHIP

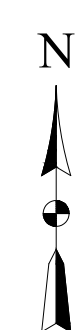
### 440, 446 AND 460 MARTIN LUTHER KING JUNIOR BOULEVARD DETROIT, MICHIGAN 48201

#### Drawing Index:

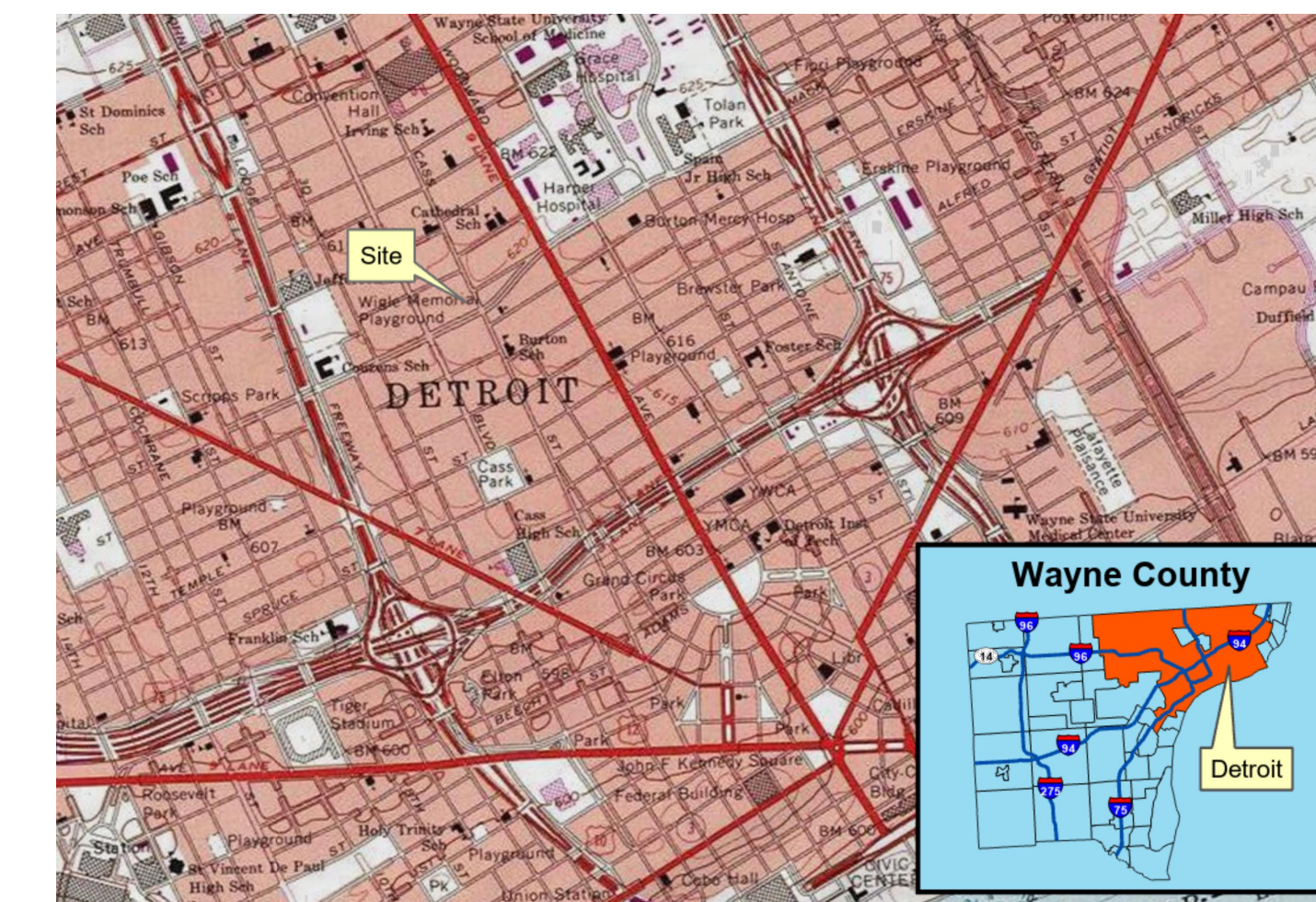
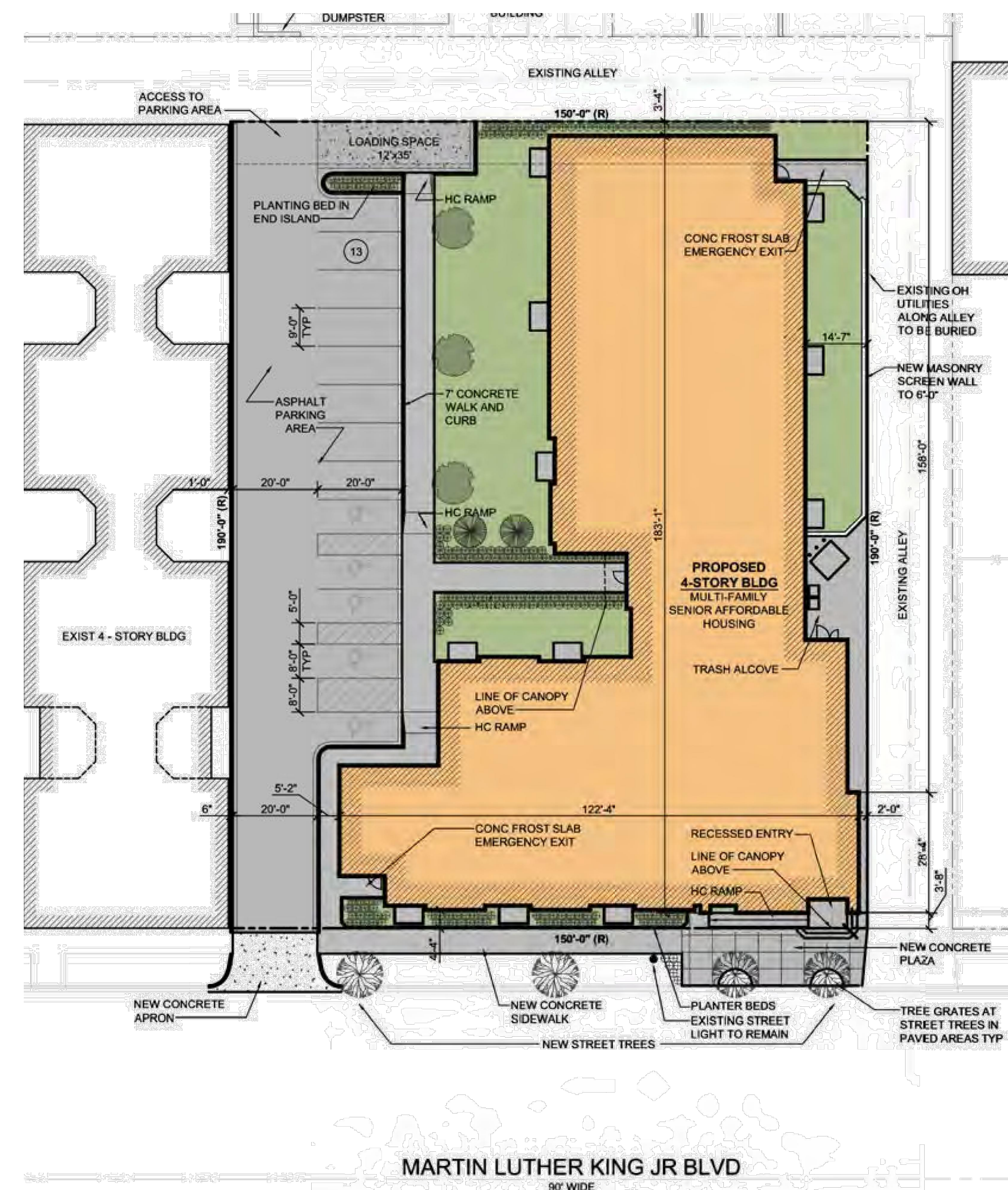
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3. FIRST LEVEL RISER PLAN
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Site Map  
Scale: 1" = 60'



PROPERTY BOUNDARY IS APPROXIMATE,  
BASED ON PARCEL MAP AND  
NOT BOUNDARY SURVEY



Site Location Map  
Scale 1"=2,000'



CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

















**Soil Gas Collection System for Volatile Organic Vapors**

*Underground Utilities* - The contractor is responsible for contacting MISS DIG and a private utility locator prior to start of construction. Utilities locations are approximate and should not be considered accurate.

*Sealing Gaps and Joints in Slabs* - All gaps, control joints, isolation joints, construction joints, shall be sealed for the purpose of preventing air leakage. The gap width shall be according to the caulk or sealant manufacturer's specifications. Caulks and sealants shall be applied according to the manufacturers' instructions. When sealing is undertaken, gaps and joints should be dry, clean, and free of loose material. Any joint that allows enough air leakage to reduce sub-slab pressure field extension should be sealed.

*Sealing Pipe Rough-Ins* - Openings around plumbing pipes and utilities that have been placed in sleeved or other openings that penetrate the slab shall be filled with a sealant. Expanding urethane foam or other material, as permitted by code, shall be used to create an airtight seal.

*Sealing Slab Penetrations* - Slab penetrations for utility pipes and conduits are to be sealed. Whenever any utility or pipe, especially the suction point pipe, has a gap around it, that gap shall be sealed. Sealing by (1) widening the gap, inserting polyethylene backer rod, and sealed with polyurethane caulk, or (2) filling the gap with low shrink mortar or grout.

*Sealing Slab Openings Intentionally Provided for Future Use* - When an opening has been cast into the slab for subsequent use, that opening shall be appropriately sealed before the building is occupied. If the opening was cast to install utilities that should be connected before occupancy, the opening shall be filled with concrete poured tight to the utility pipes and conduits after the utilities have been brought through the opening. If the opening was cast anticipating use after occupancy, the opening shall be filled with aggregate to a level appropriate to support a thin concrete slab. Filling a small opening in a slab with expanding foam is permitted provided that the opening is smaller than a person's foot print, is not in a walkway, and that it had been left open intentionally for a known future use.

*Sealing Gas-Permeable Layer* - The gas-permeable layer shall be sealed at the top and sides.

*Sealing Top of Gas-Permeable Layer* - Slab penetrations and openings around pipes, conduits, and other objects shall be sealed. The slab should be poured tight to the foundation walls and the objects that penetrate the slab. When the slab is not poured tight to foundation walls and tight to penetrating objects, all joints and openings shall be sealed with polyurethane caulk. The floor wall cold joint shall be sealed with polyurethane caulk when expansion joints are used.

*Smoke Test* - Smoke test to be performed by vapor barrier installer. Note time, date, project name, inspector name, temperature and weather conditions on testing log. In addition, record humidity, barometric pressure, and wind speed/direction. Confirm wind speed is below 15 mph. Cap other vent outlet(s) not being used. Maintain operation of smoke generator/blower system for at least 15 minutes following purging of membrane. Thoroughly inspect entire membrane surface. Use fluorescent paint or chalk to mark/label any leak locations. Mark/label leak locations on testing log.

*Sub Slab Gas-Permeable Layers* - The gas permeable layer shall be MDOT 17A. Peastone shall not be used in the vapor collection pipe trenches.

*Sealing Sides of Gas-Permeable Layer* - Foundation walls and footings (or curtain walls) seal the gas-permeable layer on the sides. Openings around utility pipes and conduits and other penetrations under the slab shall be sealed. Pipes and conduits shall be air and water tight. Open ends of conduits shall not terminate in the gas-permeable layer or in the soil below

*Soil-Gas-Retarder (Vapor Barrier)* - A Monoshield soil-gas-retarder (also known as vapor barrier membrane) shall be placed under concrete slabs

Vapor Barrier Installer - Installer to be an approved installer from the barrier manufacturer.

The edges of the membrane shall be secured to the foundations and other structures that penetrate the membrane with a caulk or sealant according to the membrane manufacturer's specifications. At locations where the PVC vent pipe passes through the vapor barrier membrane, the pipe shall be secured to a boot that is secured to the membrane, as shown i

*Vent Stack Pipes* - The minimum requirements for the vent stack pipes and their discharge are all of the following:

- (1) The vent stack pipe shall be vertical and its discharge upward, unobstructed, outside the structure, at least 10 ft (3 m) above the ground level, above the edge of the roof, and shall also meet the separation requirements of (2) and (3) below. Whenever practicable, vent stack pipes shall terminate above the highest roof of the building.
- (2) if the discharge point is not at least 3 ft (1 m) above the top of any window, door, or other opening into conditioned or otherwise occupiable spaces of the structure, the end of the vent stack pipe shall be 20 ft (6 m) or more away from such openings. Chimney flues shall be considered openings into conditioned or otherwise occupiable space.
- (3) The end of the vent stack pipe shall be 20 ft (6 m) or more away from any opening into the conditioned or other occupiable spaces of an adjacent building. Chimney flues of adjacent buildings shall be considered openings into conditioned or otherwise occupiable space.
- (4) For vent stack pipes which penetrate the roof, the point of discharge shall be at least 12 in. (0.3 m) above the surface of the roof. For vent stack pipes attached to or penetrating the sides of buildings, the point of discharge shall be vertical and a minimum of 12 in. (0.3 m) above the edge of the roof and in such a position that it can neither be covered with snow, or other materials nor be filled with water from the roof or an overflowing gutter.
- (5) When a horizontal run of vent stack pipe penetrates the gable end walls, the piping outside the structure shall be routed to a vertical position so that the discharge point meets the requirements of sections (1), (2), (3), and (4) above.
- (6) Points of discharge that are not in a direct line of sight from openings into conditioned or otherwise occupiable space because of intervening objects, such as dormers, chimneys, windows around the corner, and so forth shall

meet the separation requirements of sections (1), (2), (3), (4), and (5) above.

*System Solid and Perforated PVC Pipe* - The vapor collection system and vent system shall be PVC pipe with a minimum wall thickness equal to or greater than that of Schedule 40. For system piping described by a standard dimension ratio (SDR) series number, the pipe series shall be DR 17 or less.

*System Piping Supports* - Pipe support hardware that is manufactured to support drain waste vent (DWV) piping above ground shall be used to support system piping. Horizontal and vertical runs of system piping shall be supported in accordance with applicable building codes for DWV pipe of the same type and size. The vent stack pipe shall be braced at the roof penetration. The pipe supports should not interfere with installed pipe insulation.

Vertical pipes shall be supported at least once every 10 feet. Horizontal pipes shall be supported at least once every 4 feet. Pipe supports shall not pierce the PVC piping.

*Pipe Insulation* - The pipe insulation should be designed or selected to fit the piping.

*Pipe Labels* - A permanent label or distinctive marking that can be read at a distance of 6 ft (2 m) shall be applied to the system piping (or its insulation) on each level of the building, at locations such that at least one label is visible from any accessible location along the piping, whether or not it is to be visible following completion of the building. The label should read: "CAUTION - VAPOR MITIGATION PIPE May CONTAIN HAZARDOUS SUBSTANCES" or have other wording that identifies the pipe as part of a soil gas collection system.

*System Maintenance and Information Label* - A label that identifies the system maintenance provider, identifies the state contact, and shows the system's installation/activation date(s) shall be applied near the "Vapor Mitigation System" label.

**Specifications and Installation Requirements for Soil Depressurization Systems**

*Maintain all Fire Ratings* - All fire protections required by the applicable building code shall be preserved.

*System Labels* - One permanent system label that can be read from a distance of 3 ft (1 m) shall be securely attached in a prominent location.

*System Maintenance and Information Label* - A label that identifies the system maintenance provider, identifies the state contact, and shows the system's installation/activation date(s) shall be applied near the organic vapor system label.



CLIENT: GREYSTONE SENIOR LDHA, LP

JOB SITE: 440 - 460 MARTIN LUTHER KING JUNIOR BLVD  
DETROIT, MI 48201

VAPOR MITIGATION SYSTEM  
SPECIFICATIONS

SHEET TITLE:

9

|          |               |
|----------|---------------|
| SCALE:   | SHEET: 9 OF 9 |
| DRAWN:   | BWB           |
| CHECKED: | FM, BWB       |
| DATE:    | 12/12/22      |

ASTI PROJECT: 5-11745

Revisions: 7/24/23 Client Review Comments  
Revisions: 10/25/23 EGLE Comments  
Revisions: 6/10/24 EGLE Comments

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