

## SIDEWALK VAULT STRUCTURAL CONDITION ASSESSMENT STANDARDS

Structural Condition Assessment (SCA) of a sidewalk vault within the City of Ann Arbor public right-of-way shall be performed by an independent professional engineer, registered in the State of Michigan, with the technical emphasis of understanding structural engineering principles, structural conditions, and building foundation systems. An engineer performing an SCA on a vault shall include the following tasks:

1. Identify vaults directly associated with the subject property. Provide sketches showing the location of the vault with respect to building/right-of-way features; the length/width/height of the vault; equipment or pipes in the vault; and hatches/covers in the vault.
2. Identify the materials contained within the existing vault structure. This may include stones, concrete, structural steel, reinforcement steel, or other materials not listed herein.
3. Perform a field inspection to identify the structural conditions of the subject vault structure.
4. Determine dead load weights acting on existing top slabs. This shall include permanent suspended equipment from below the top slab. Identify improvements needed to support these loads.
5. Determine the vault top slab load carrying capacity, and compare that capacity to a vehicular live load from an H10-44 vehicular box truck, commonly identified with an axle load of 16,000 lbs., (8,000 lb. wheel load). Identify improvements needed to support these loads.
6. Determine the vault top slab load carrying capacity, and compare that capacity to a uniform live load of 150 pounds per square foot (psf). Identify improvements needed to support these loads.
7. Determine lateral load pressure on vault walls located within the public right-of-way. This would include wheel load distribution from a truck vehicle (H20-44) and its associated 32,000 lb. axle load (16,000 lb. wheel load); for vehicles within the street that potentially influence the lateral pressure of vault walls, based on proximity and depth. Identify improvements needed to support these loads.
8. Identify any other structural deficiencies that may be encountered, and any other immediate safety concerns to the public, based on the field investigation. Identify improvements needed to correct these.
9. Determine if the top slab is also serving as the sidewalk within the right-of-way or if there is a separate sidewalk slab above or on top of the top slab of the vault. If the top slab is also serving as the sidewalk within the right-of-way, assess the sidewalk

surface for compliance with Americans with Disabilities Act (ADA) and City of Ann Arbor sidewalk repair requirements. Identify improvements needed to bring the sidewalk into compliance with the ADA and City of Ann Arbor sidewalk requirements and specifications and any resulting effects to the other structural components of the vault.

10. Prepare a certified structural condition assessment (SCA) letter report for the property owner to submit to the City of Ann Arbor City Engineer, summarizing the field work performed, structural analyses, and recommendations.