

**WALL BRACING INSPECTION REPORT
30 TRINITY STREET
HARTFORD, CT**



**Prepared for
The Connecticut Department of Administrative Services
Division of Construction Services
Hartford, CT**

Connecticut DAS/DCS Project No. BI-2B-411

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**Michael R. Plickys, P.E.
Principal in Charge
MACCHI ENGINEERS, LLC
44 Gillett Street, Hartford, CT 06105**

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EXECUTIVE SUMMARY

Macchi Engineers was retained by the Connecticut Department of Administrative Services (DAS) Division of Construction Services to conduct a structural evaluation of the existing areaways located on the north and south faces of the building located at 30 Trinity Street in Hartford, CT. In conformance with our Contract, the structural evaluation included the following scope of work:

- Review of all available drawings and information pertaining to the existing areaway walls and structural bracing supports.
- Completion of visual inspections of north and south areaways.
- Determination if the alley way between 18/20 Trinity Street and 30 Trinity Street can support vehicular traffic in its current condition.
- Provide a letter report of our findings including recommendations of allowable level of vehicular loads that can safely use the alleyway.

In 2015, Macchi Engineers conducted a series of visual inspections of the existing areaways located at 30 Trinity Street. The inspections revealed significant lateral movements and damage to the existing brick masonry walls at numerous locations. Subsequent to the inspections temporary repair drawings were prepared which involved the installation of heavy timber bracing framings that were installed between the outer areaway walls and the exterior walls of the building. In addition to the bracing, it was recommended that no vehicular traffic be allowed in the alley way between 30 Trinity Street and 18/20 Trinity Street.

Our most recent inspections indicate that the deterioration of the brick masonry walls and concrete copings continues on both the north and south areaway walls. However, the installation of the heavy timber shoring appears to have slowed the acceleration of significant lateral movements and appear to be functioning as designed.

Based on our latest field inspections, the following is the recommended maximum vehicular loading on the alley way between 18/20 Trinity Street and 30 Trinity Street.

**Maximum Vehicle Weight (GVWR) 10,000 lbs (Max individual wheel load 4,000 lbs)
One-way off of Trinity Street only.**

In addition to the limitation on vehicle weight, we recommend that a vehicular barrier system be installed directly south of the south area way and parallel with the existing retaining wall located north of 18/20 Trinity Street.



STRUCTURAL DESCRIPTION:

The existing area ways are approximately 6 feet deep and are constructed of masonry with concrete copings. 30 Trinity Street was constructed in 1916. See Photo 1. Very limited drawing information is available of the existing construction. The existing wall sections appear to indicate standard vertical masonry walls with brick masonry buttress walls located at each of the building's column lines. The drawings do not indicate a gravity type wall or the presence of a large retaining wall footing.

VISUAL INSPECTIONS:

Macchi Engineers completed visual inspections on 5/16/18. Access within the areaways was through the existing bar grating. Overall the timber lateral shoring that was installed in 2015 appears to be in good overall condition. We did not observe any significant deterioration in either the timber members or connections. See Photos 2 & 3. The shoring appears to be functioning as designed, which has helped to slow down the acceleration of lateral movements in the walls. The walls themselves are generally in poor condition. Continued moisture infiltration through the walls has caused significant deterioration in the mortar joints, and movements of the brick masonry. See Photos 4,5,6.

CONCLUSIONS AND RECOMMENDATIONS:

Recent inspections indicate that overall, the brick masonry areaway walls are in poor overall condition. The timber shoring installed in 2015 is performing as designed and has helped to slow the lateral movements of the walls. Without extensive remedial work, deterioration in the brick masonry and mortar will continue over time.

Due to the current condition of the south areaway walls, we recommend that vehicular traffic in the alley way between 18/20 and 30 Trinity Streets be limited. This would include limiting the weight of vehicles to a maximum 10,000 lbs (GVWR), and restricting the alley way to one-way access. It should be noted that this restriction will exclude most fire trucks from access. In addition, we recommend that a vehicular barrier be installed south and parallel to the existing areaway. New vehicular signs will be installed at both the entrance and exit points. This will help direct traffic away from the damaged walls and help eliminate the possibility of significant lateral surge charge loads being imposed on the walls causing further damage. See enclosed Drawing S-1 for recommended layout.

Finally, during the design and completion of the shoring work in 2015, we indicated that the shoring was for temporary support of the walls, and was not intended to provide permanent support. Moving forward, and until permanent repairs can be completed, we recommend that the areaway walls and timber shoring be visually inspected by a Registered Structural Engineer on a yearly basis to ensure the integrity of the walls and shoring have not been compromised.

APPENDIX A – PHOTOS



PHOTO 1– South Alley Way Looking East.



PHOTO 2 – South Areaway Timber Shoring



PHOTO 3 – North Areaway Timber Shoring



PHOTO 4 – Areaway Lateral Arch Deterioration

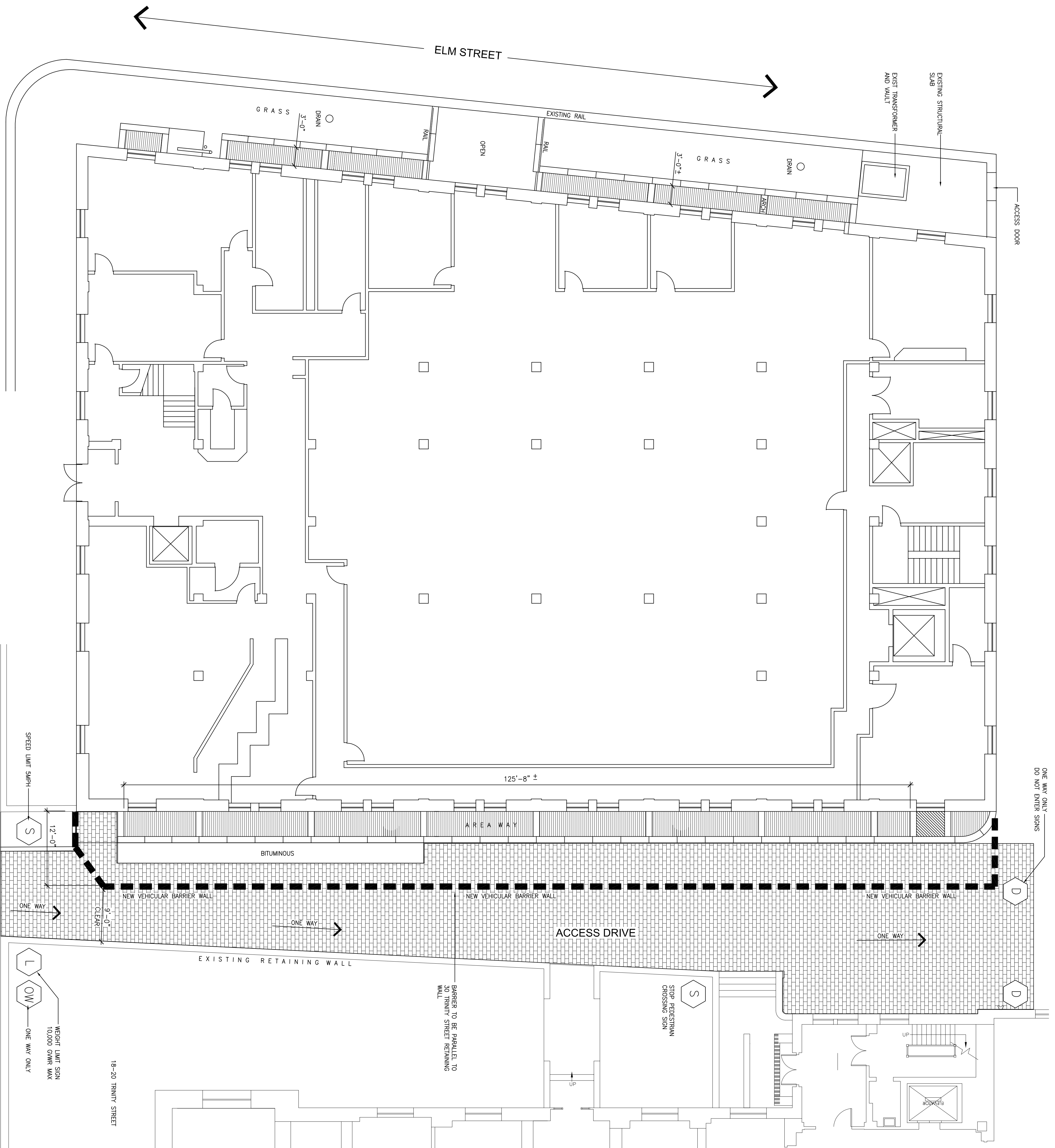


PHOTO 5 – Area way Wall Lateral Displacement



PHOTO 6 – Area way Wall Joint Deterioration and Lateral Displacement

APPENDIX B - PLANS



PROPOSED ALLEY WAY PLAN
 SCALE: 1/8"=1'-0"
 PROJECT NORTH

REVISIONS		DRAWING PROVIDED BY		DATE	
NO.	DATE	DESCRIPTION	BY	DATE	DESCRIPTION

STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	DATE: JUNE 2018
PROJECT: AREA WAY PLAN 30 TRINITY STREET Hartford, Connecticut	APPROVED BY: [Signature]
DRAWING PROVIDED BY: MACCHI ENGINEERS, LLC 44 Gillet Street Hartford, CT 06103 (860) 544-5100	PROJECT NO.: B129-411
DATE: JUNE 2018	SCALE: AS NOTED
DRAWN BY: MRP	CHECKED BY: [Signature]
DATE: [Signature]	PROJECT NO.: S10