WEBINAR

THE CHAMPLAIN TOWERS COLLAPSE

Professional & Legal Implications for Design Firms

February 22 at 2 PM ET

Presenter:
Bruce N. Furukawa, Esq.
Furukawa Castles LLP

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About Our Presenter

Bruce N. Furukawa

Attorney, Furukawa Castles LLP

Bruce N. Furukawa is a Partner in the Design Professionals Defense & Counseling Group, primarily representing and counseling architects and engineers. He has represented design professionals, in a wide range of projects. As an experienced trial attorney, Mr. Furukawa has litigated complex construction delay and cost claims, construction defect, land use and personal injury lawsuits.

Mr. Furukawa has special expertise in legal technology. He supervises effective and efficient collection, review, and production of electronic documents for leading design, banking, healthcare, and real estate firms. By applying best practice methodologies and protocols, Mr. Furukawa bridges IT and Legal Department communication gaps to streamline processes and save time and money.

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Today's Agenda

- PUA Overview
- Overview of Champlain Towers
- Breakdown of Collapse & Investigation
- Litigation & Settlement
- Recommended Changes
- Preliminary NST Findings
- Future Focus
- Questions

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PUA Overview

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  - November 6th

Learning Objectives

- Examine the timeline of the events on the day of the Champlain Towers collapse
- Identify the issues from the preliminary forensic analysis of the building's design, construction and maintenance history that need to be evaluated in the events leading up to and including to the collapse
- Understand the professional responsibility of design professionals, inspection authorities having jurisdiction, contractors and building owners and operators in the design, construction, inspection and maintenance of buildings
- Discuss how the Champlain Towers collapse and past building disasters to understand a design professional's duty to warn

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Overview of Champlain Towers

Building Metrics

- Designed in 1979
- Cast-in-place concrete structure
- Constructed in 1981 (40 years old)
- 12 story + penthouse
- 136-unit residential condominium building
- 1 story below-grade parking garage
  - At-grade entrance, pool, rec area
- 1996 installation of planters and tile at pool deck
- 40 YR recertification required in 2021
  - Process initiated in 2018
- $15M Rehab design work and construction started in
  - 2020
- Catastrophic building collapse on 6/24/2021
  - Sequence of events from approximately 1:13am – 1:24am
- 7/4/2021 implosion of remaining standing portion of tower

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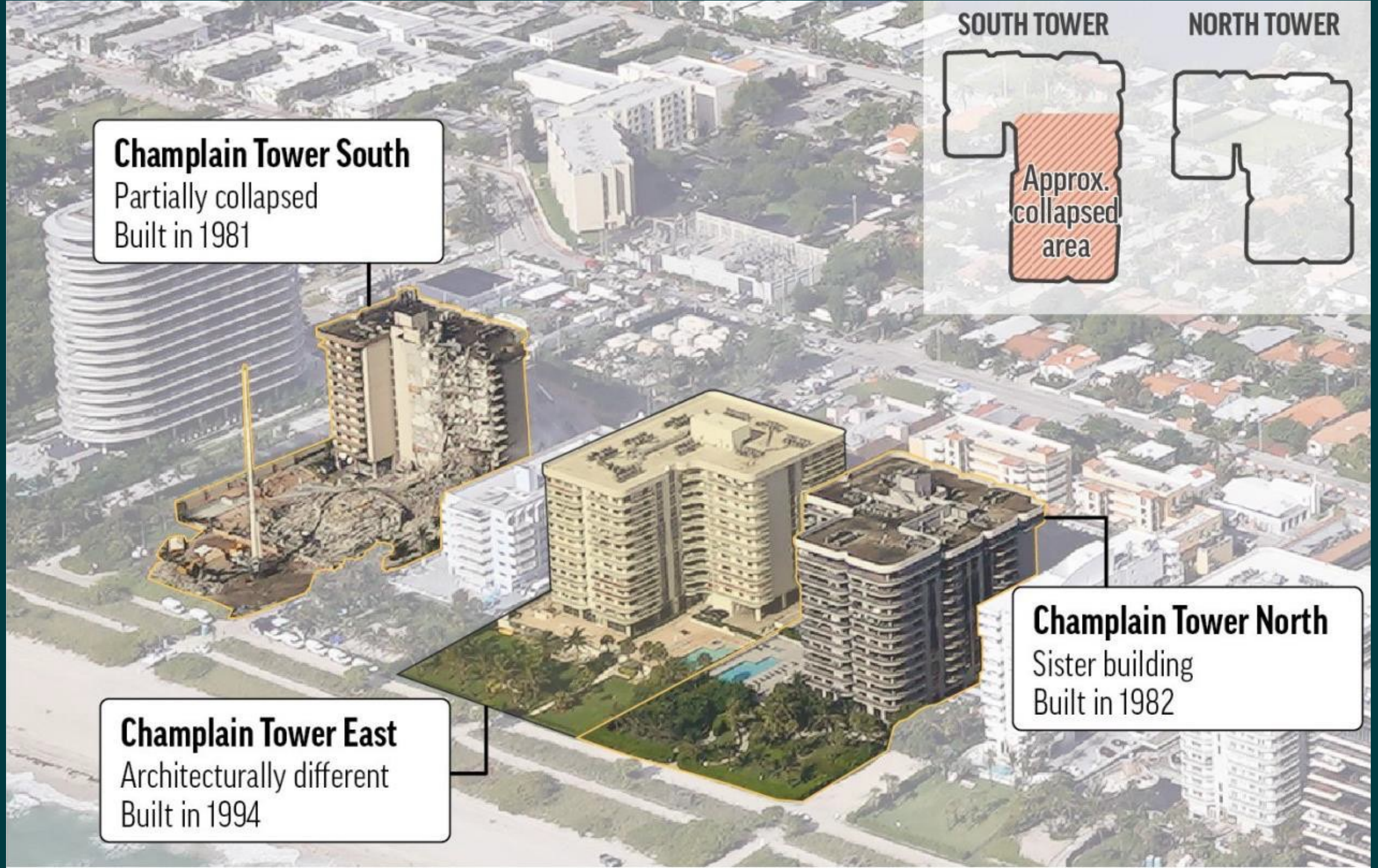
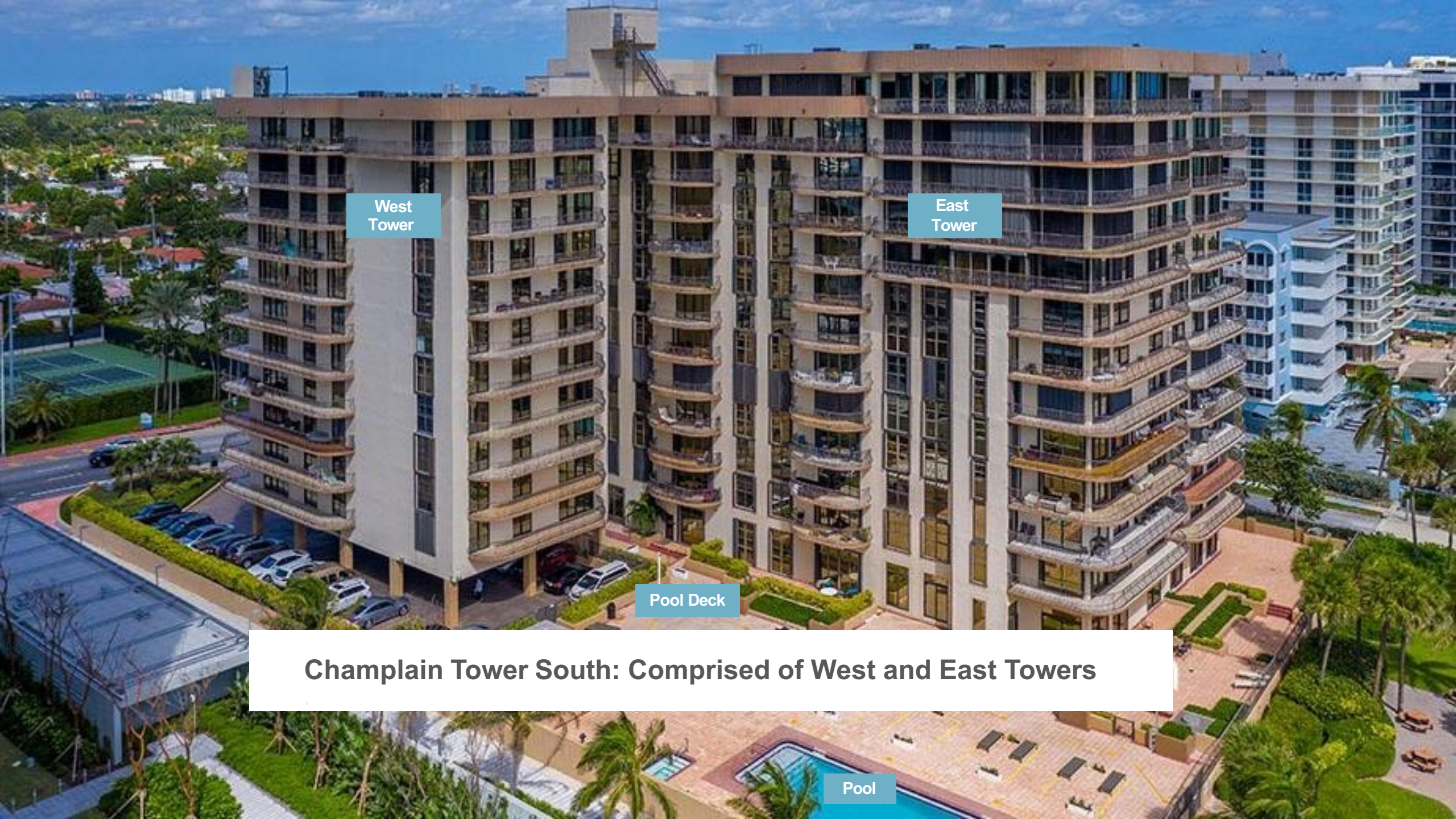
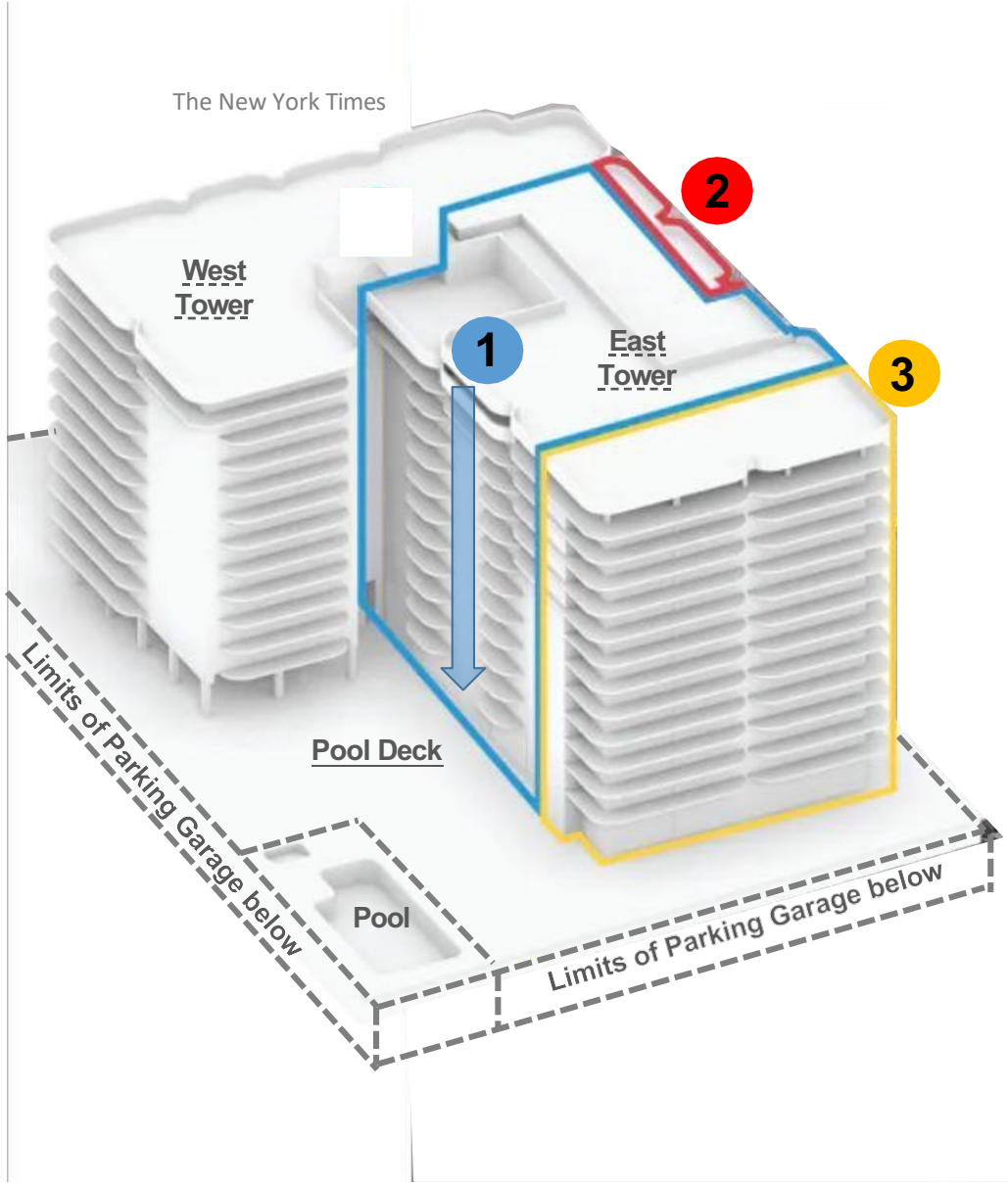

SOUTH TOWER
NORTH TOWER
Approx. collapsed area
Champlain Tower South
Partially collapsed
Built in 1981
Champlain Tower East
Architecturally different
Built in 1994
Champlain Tower North
Sister building
Built in 1982



Champlain Tower South: Comprised of West and East Towers

3

Breakdown of Collapse & Findings



Security camera footage of collapse on the morning of 6/24/2021


room 711
room 611
room 111
room 412
Parking Deck
(Garage below)
Pool Deck
(Parking Garage below)
Approximately 1:00-1:13 AM
June 24, 2021
Residents report loud noises & vibrations
Kostack Studio


Security camera room 711.....13 seconds elapsed time
room 711
room 611
Resident
from
room 611
Residents
from
room 111
room 111
room 412
Approximately 1:15 AM
Residents report pool deck collapse
Kostack Studio


Approximately 1:22 AM
Central section of tower collapses in two sections
Kostack Studio

The east portion of the tower collapses several seconds later

Kostack Studio


Approximately 1:25 AM an elapsed time of 12 seconds for progressive collapse
The west portion of the tower remains standing
Kostack Studio

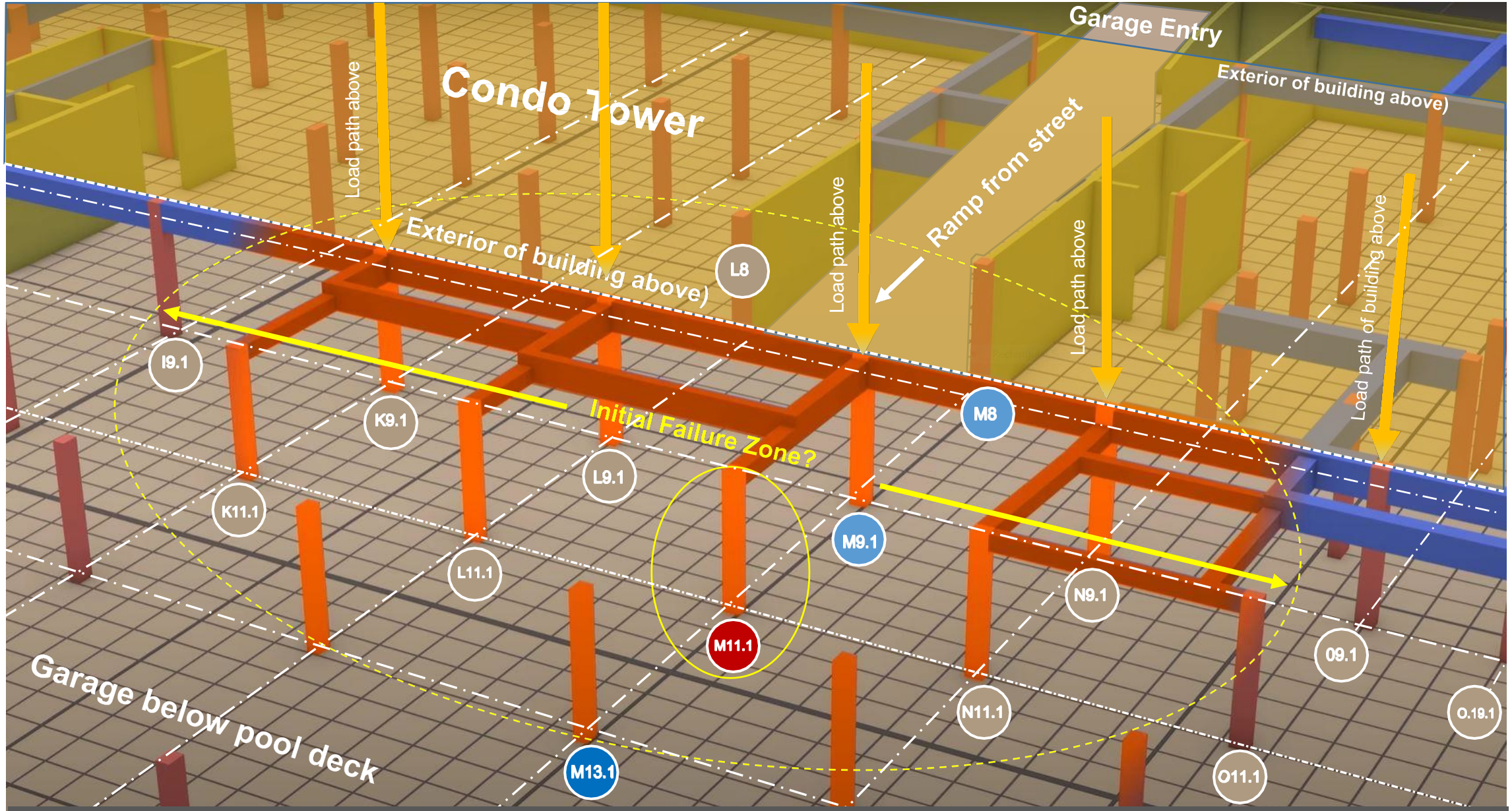
The west portion of the tower remains standing

The west portion of the tower remains standing likely due to a more robust structure and sizeable shear wall

The focus on the probable ground zero of the collapse

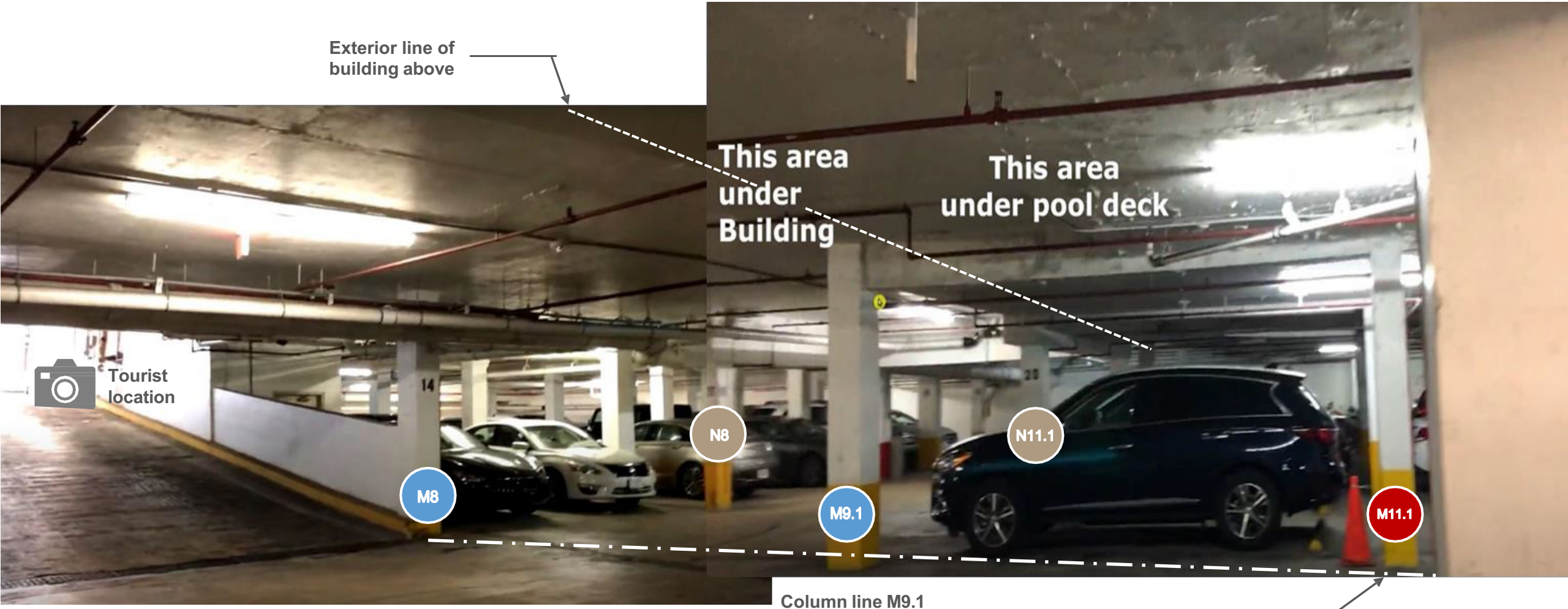
Kostack Studio

Tourists sitting on plaza deck at condo across the street have a view into the parking deck



View of Parking Garage situated below Pool Deck. Parking Garage/Pool Deck and Building Tower Structure are connected (No EJ)

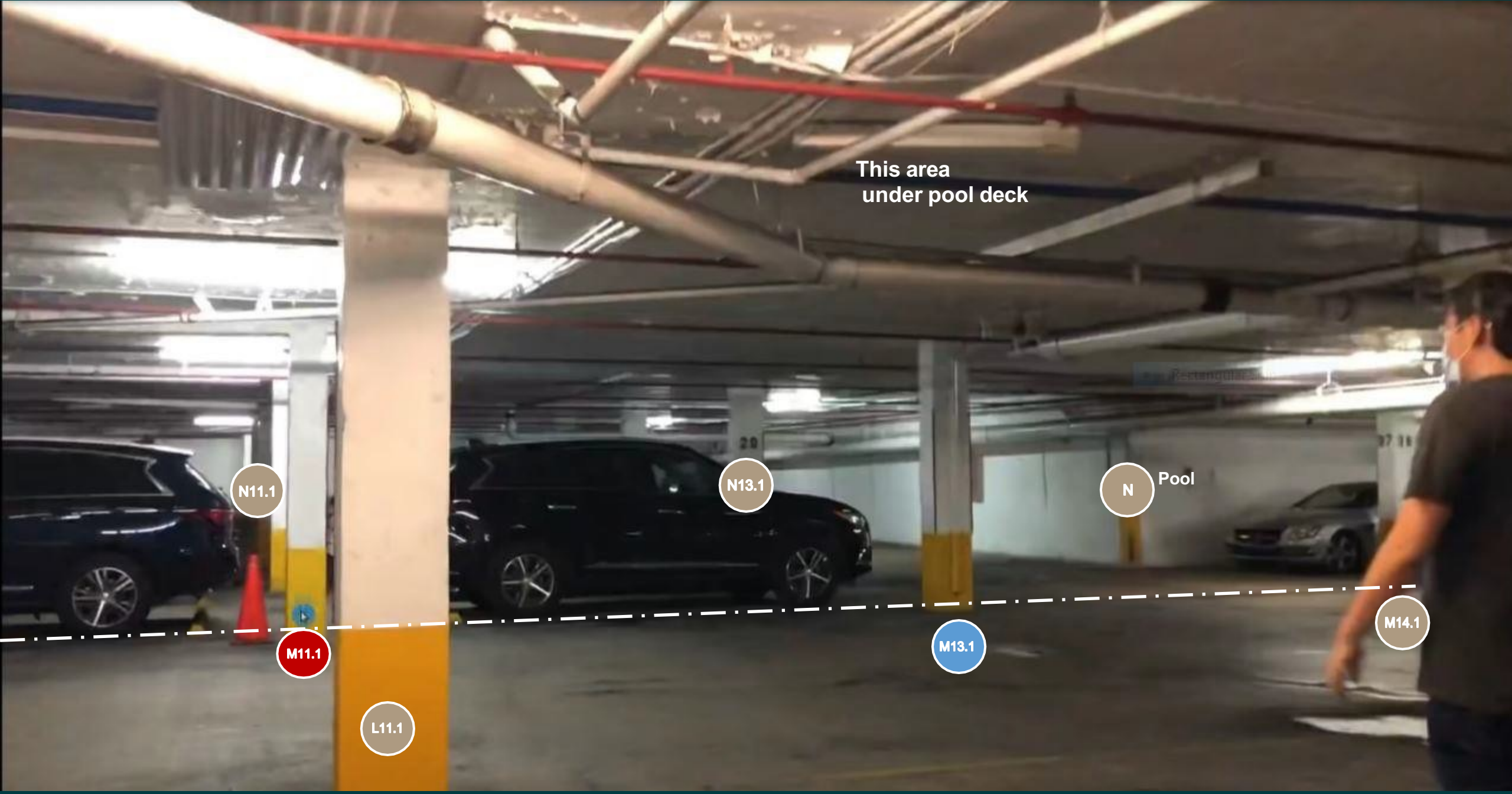
Tourist films into garage door opening 7 minutes prior to building collapse after hearing very loud noises from garage entry.



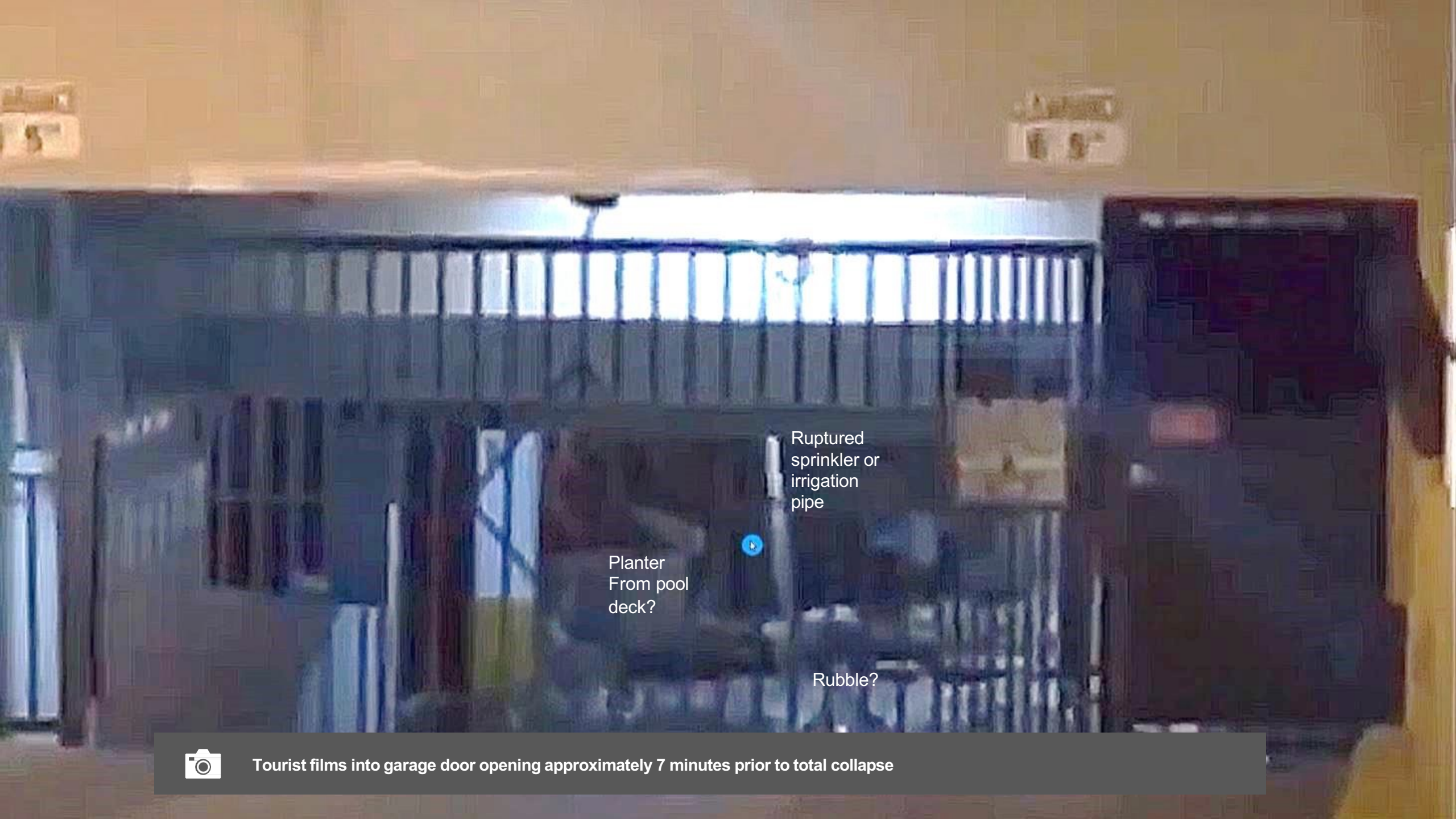
Champlain Tower South entry, ramp and garage

Column line M9.1 supports building façade above.

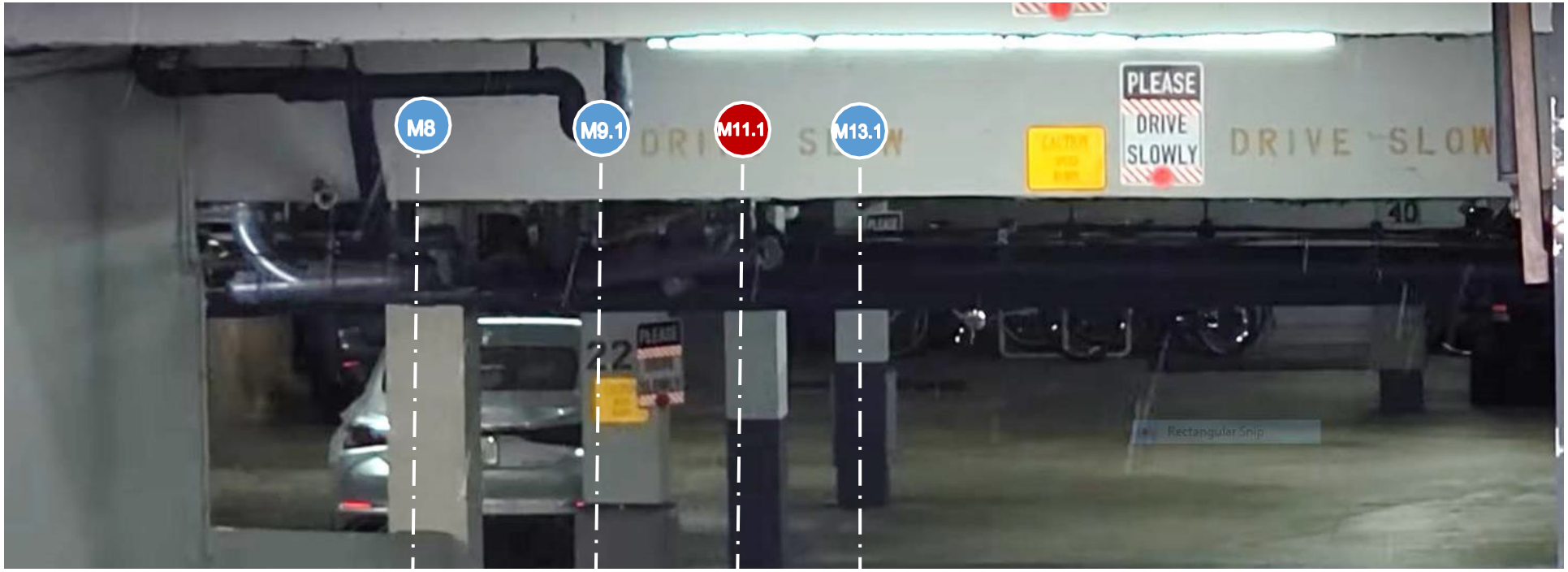
Tourist film showing column M11.1 collapsed?



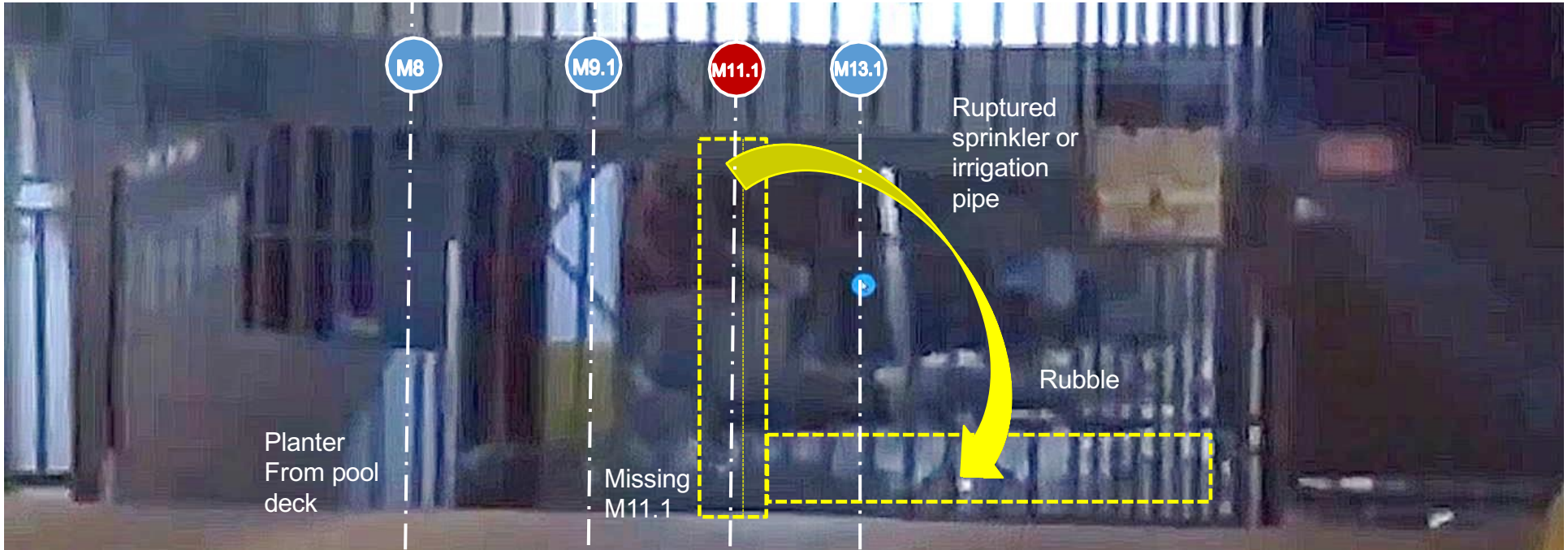
Champlain Tower South garage drive aisle and parking



Tourist films into garage door opening approximately 7 minutes prior to total collapse

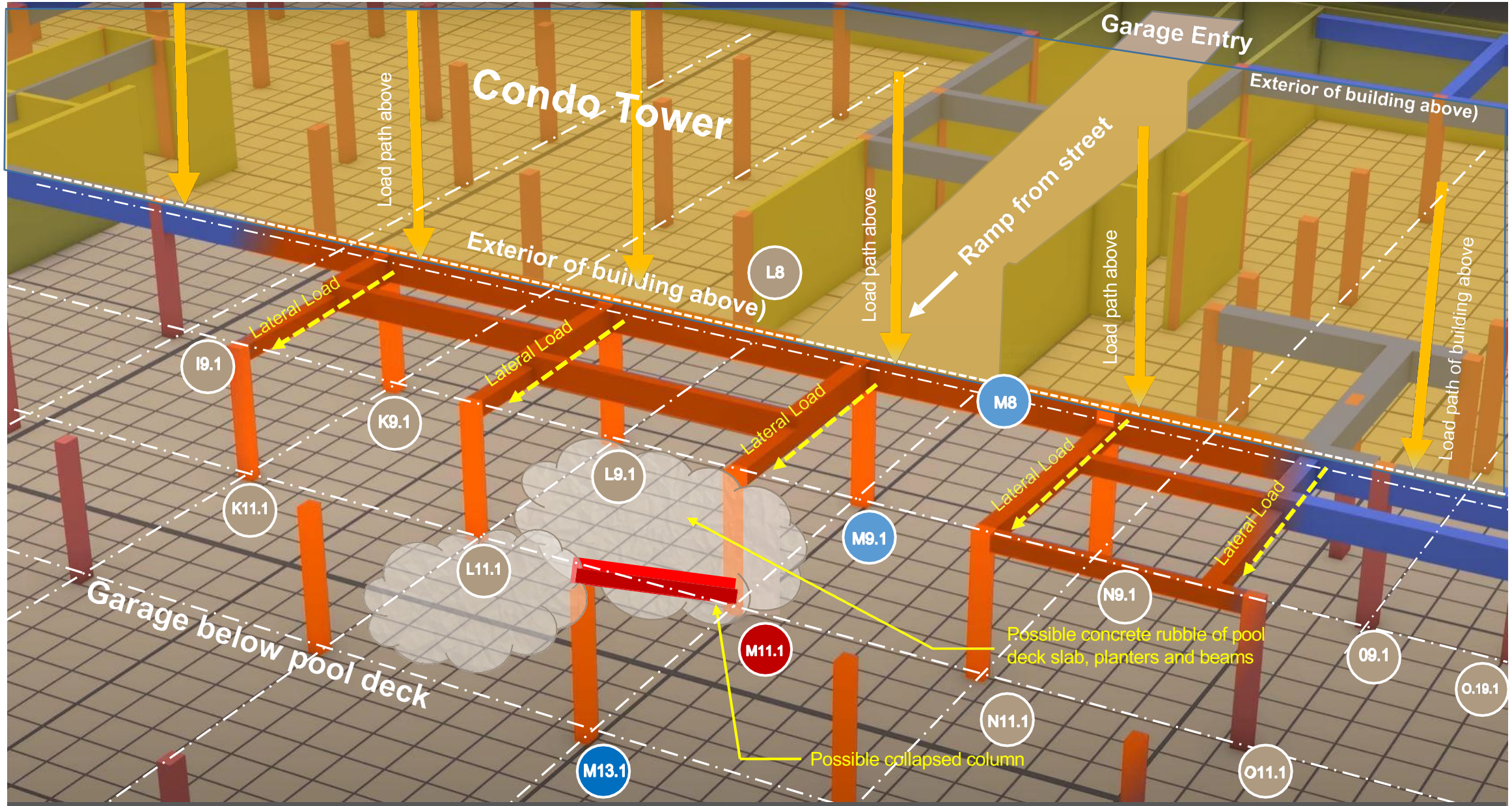


Above – Champlain Tower North garage entry



Below – Champlain Tower South garage entry

Tourist films into garage door opening approximately 7 minutes prior to total collapse



The early indications that there was trouble with the Pool Deck/Garage supporting structure

National Institute of Standards & Technology (NIST)

Analysis of Failure Hypotheses

Invasive Testing Program

Data

Building & Code History
- Wind load history contract
- Continued determination of pre-collapse conditions
- Analysis of data from civil litigation

Evidence Collection & Preservation
- Manage invasive extraction program
- Track evidence during invasive testing
- Priority 1 > Priority 2 interviews

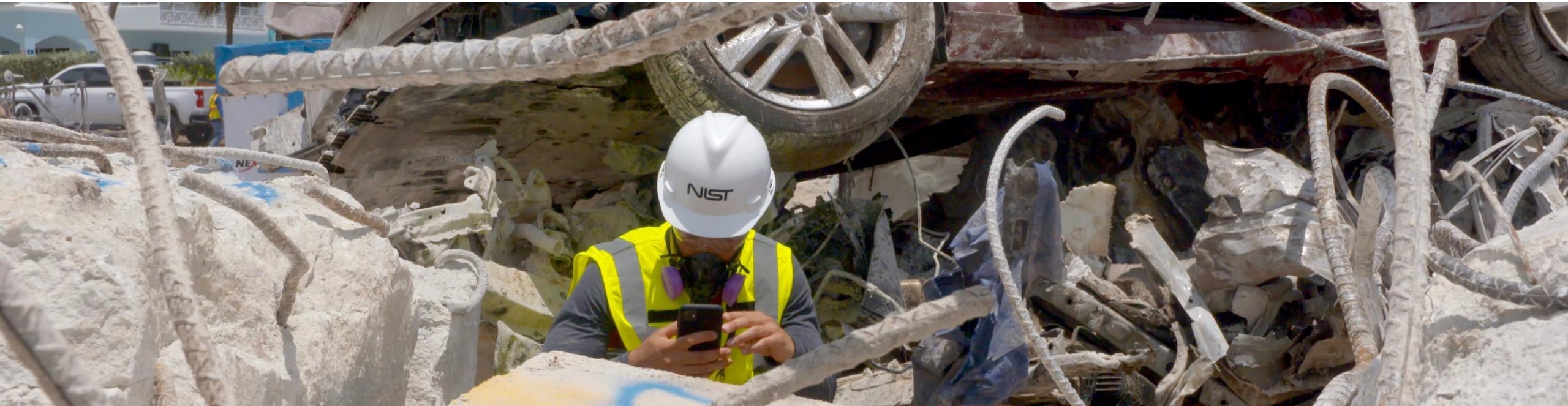
Remote Sensing & Data Visualization
- Complete LiDAR/advance drone maps
- Populate 3-D model
- Image/video processing
- Targeted tagging of images

Materials Science
- Materials testing at NIST and outside labs
- Contracts for durability, NDT, petrography
- Analysis of concrete mixing & placement

Geotechnical Engineering
- Geotechnical support services contract
- SSI analysis with Structural Engineering
- Analysis of possible geotechnical contributors to failure hypotheses

Structural Engineering
- Building and code checks contract
- Laboratory replica test contract
- Advance computer collapse analyses

Analysis



National Institute of Standards & Technology (NIST)

Areas of Forensic Focus

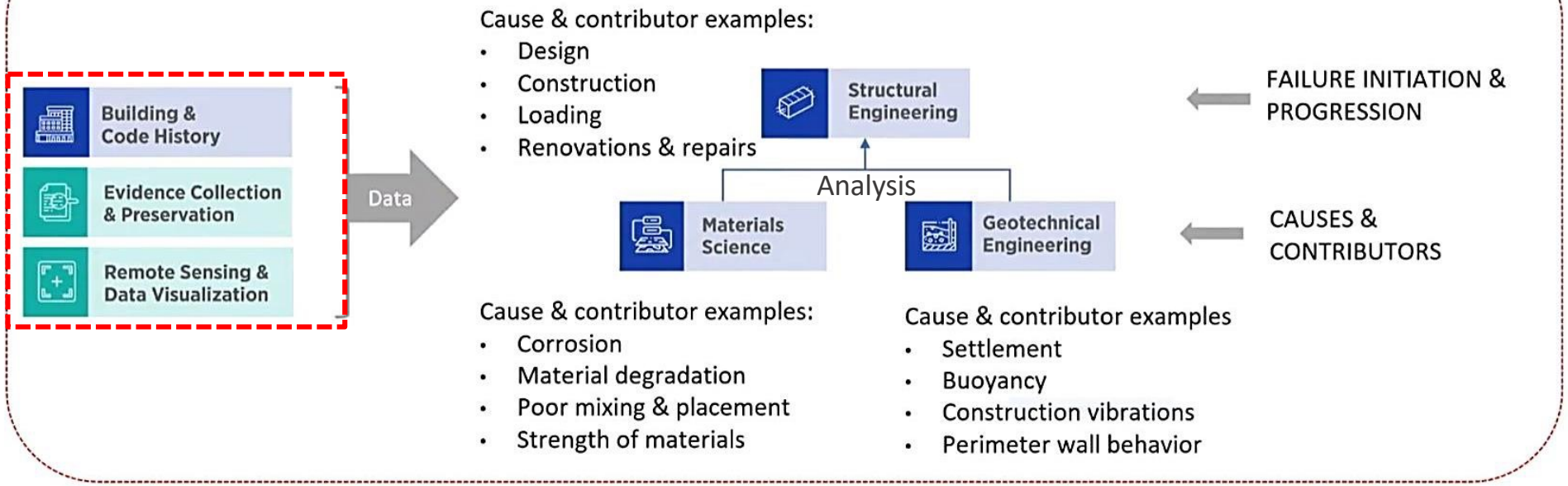
Schedule of NIST Activities

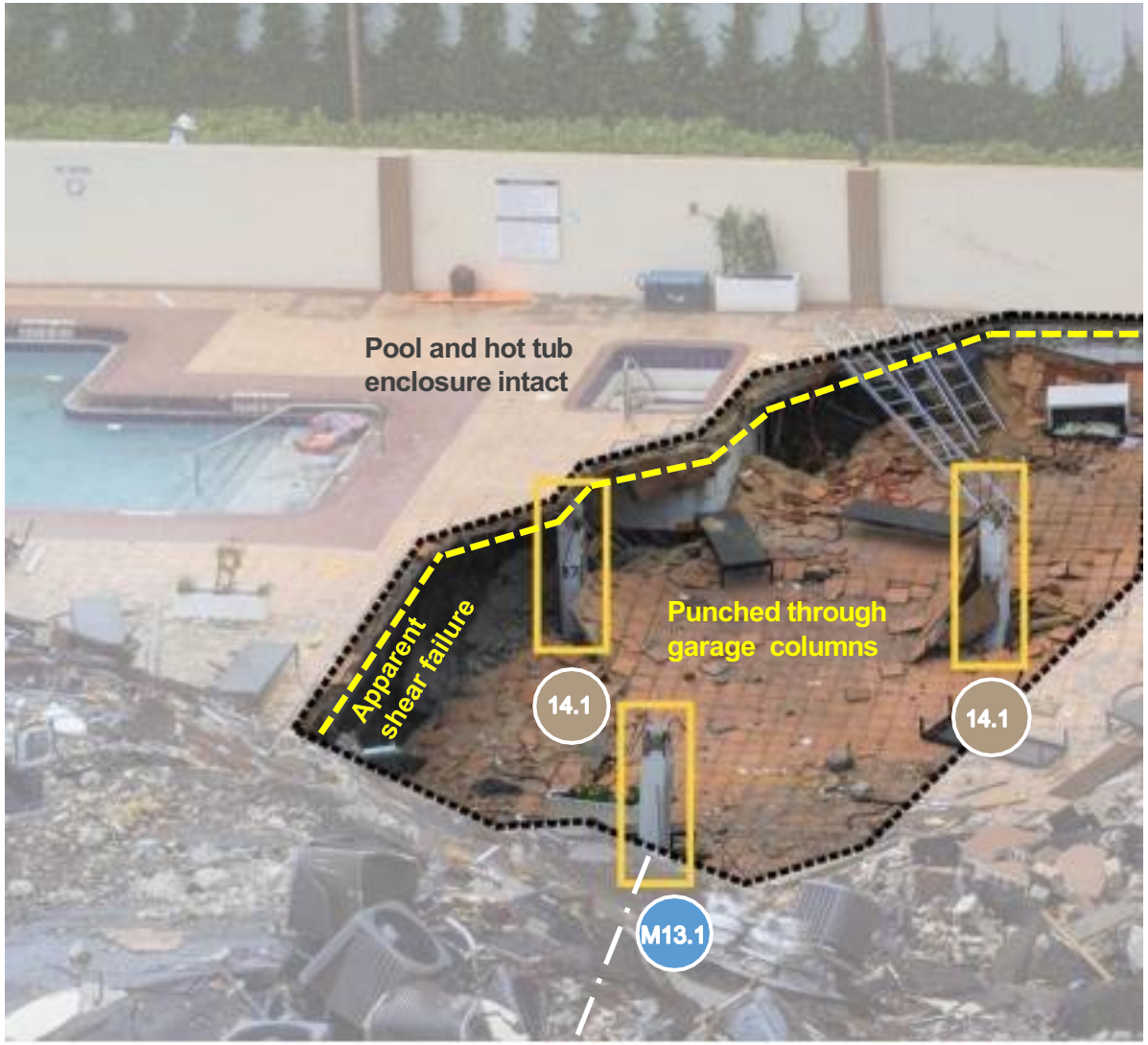
Data collection and analysis 2021 to 4/2024

Technical work completed 4/2024

Final Report issued 4/2025

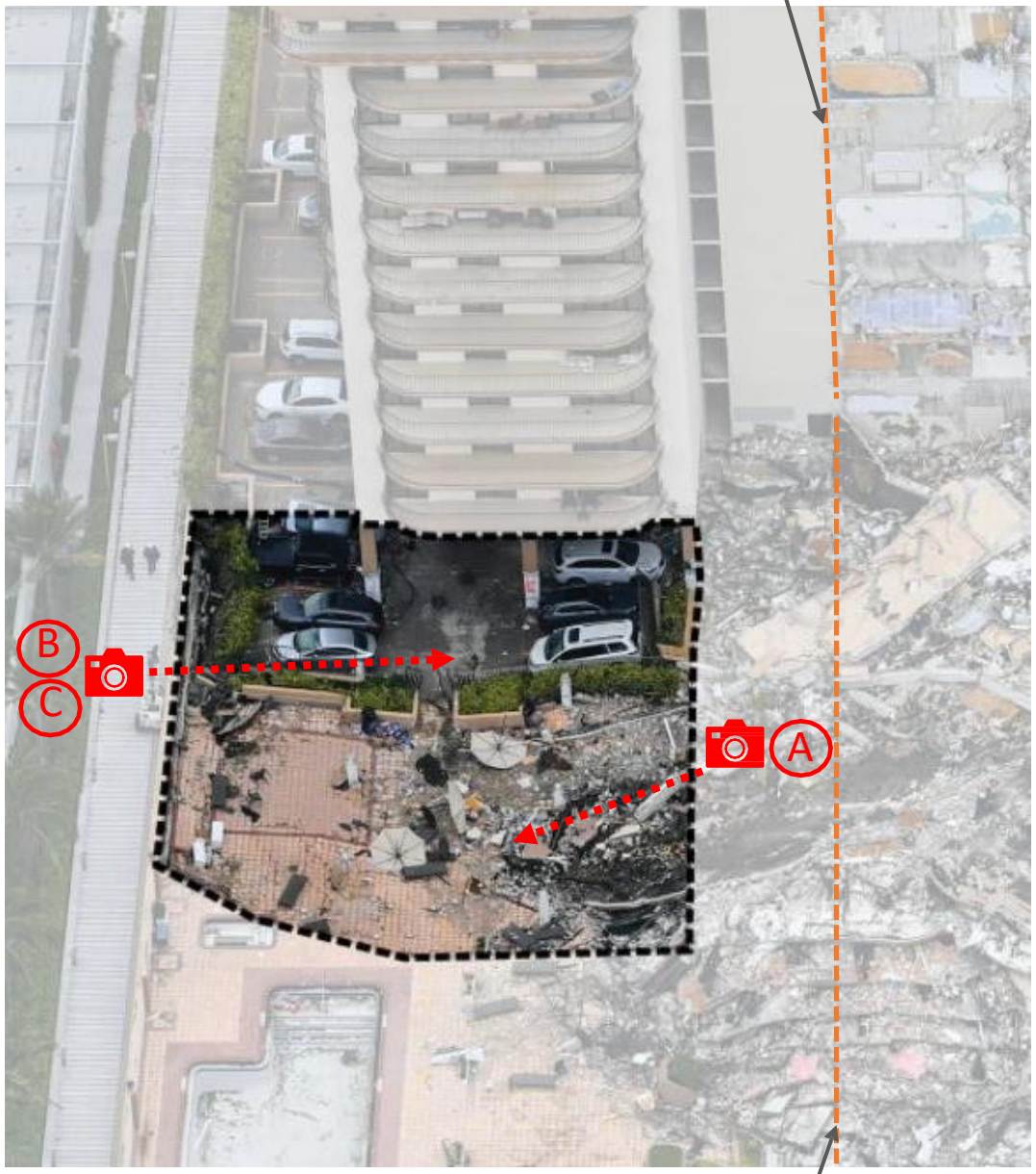
NIST is currently evaluating 24 hypothesis as a possible cause of the catastrophic failure





A Pool deck with punch through of columns down to garage

Anomalies for NIST Forensic Investigation



Pool deck and parking over garage

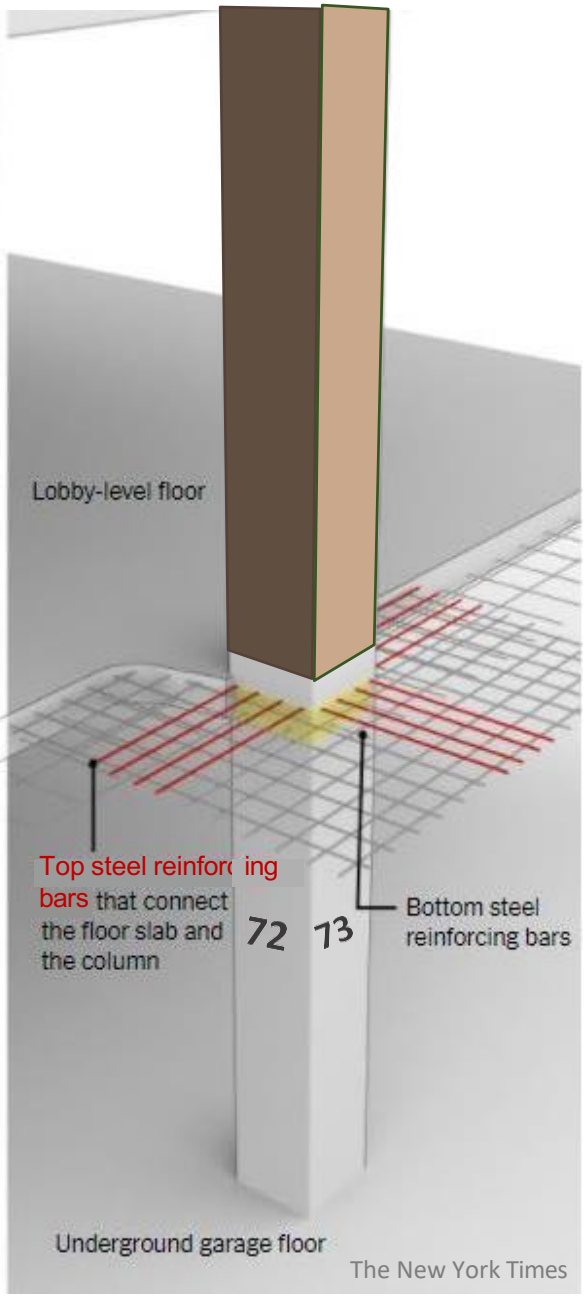
Ⓑ Parking deck over garage, collapsed into garage below

Pool deck over garage, collapsed into garage below

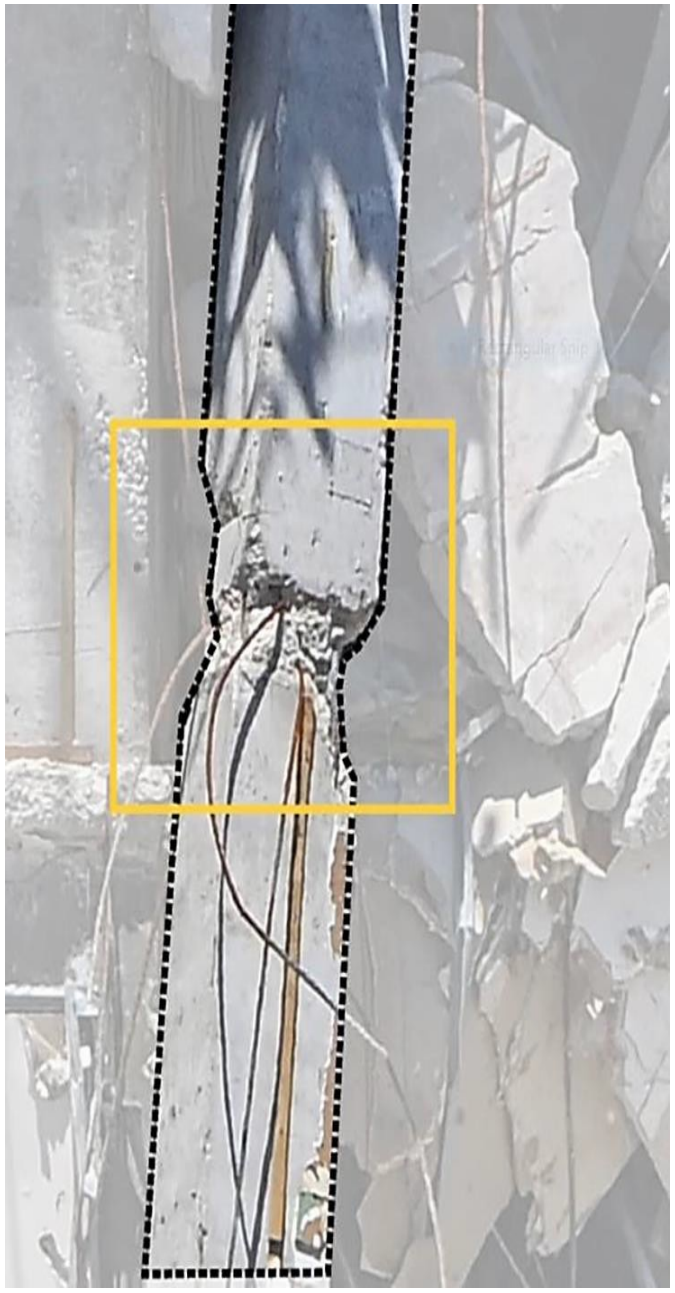
© Parking deck over garage, collapsed into garage below

Pool deck over garage, collapsed into garage below

Parking deck collapsed into garage below



Reinforcing as originally designed



Continuous punched through building columns

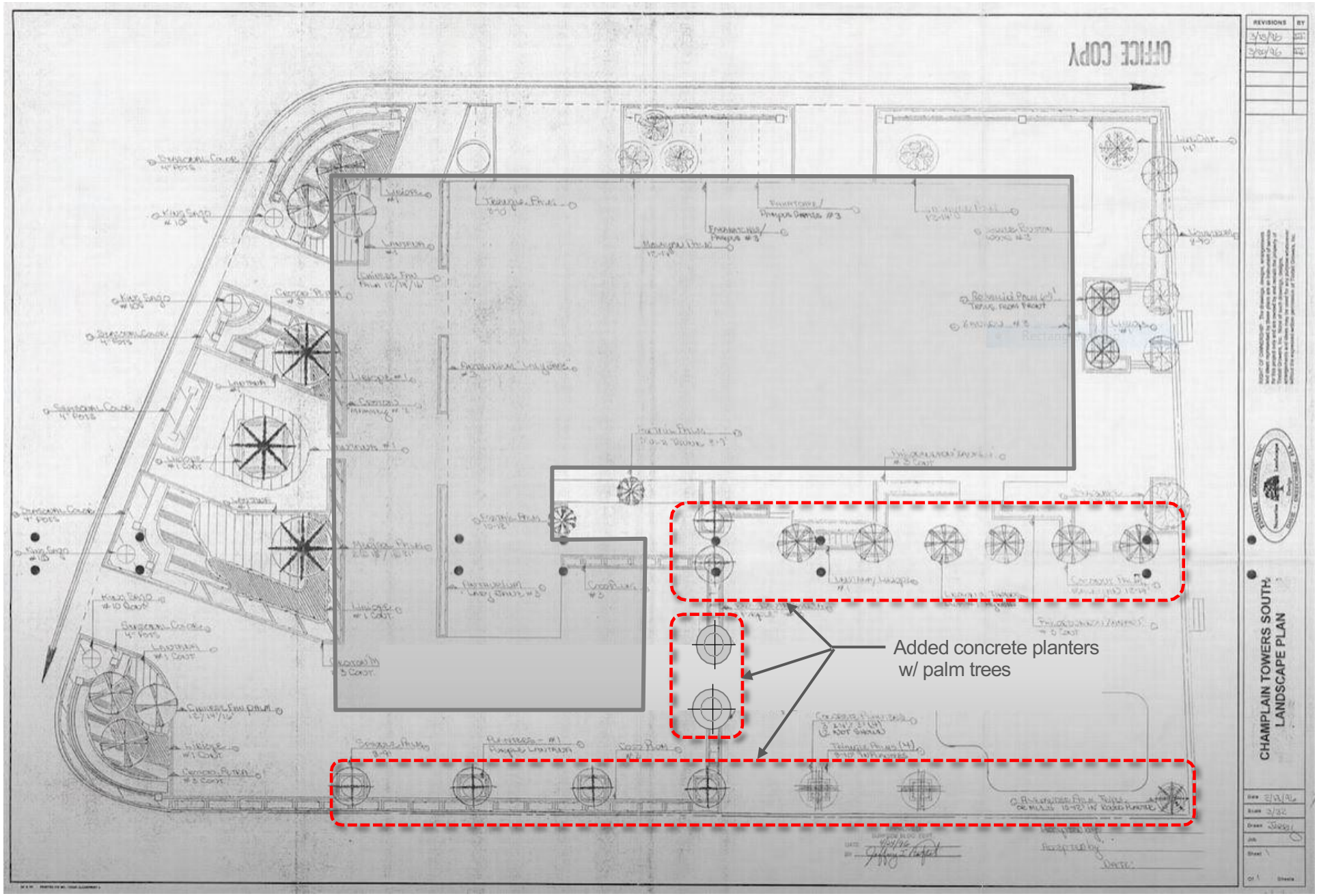
Proximity of reinforcing steel in building and garage columns

Corrosion of columns at garage slab and foundation

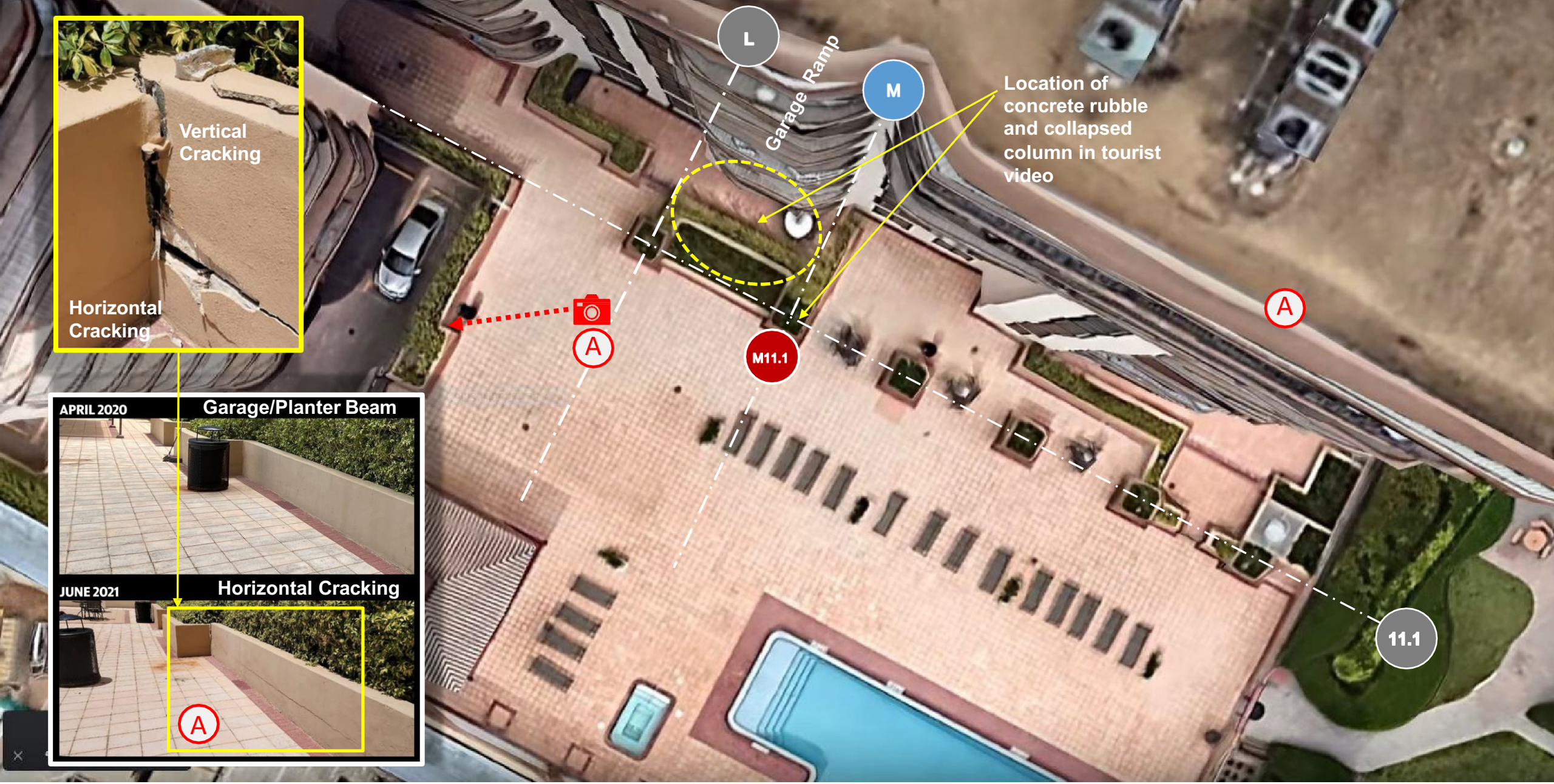
Amount of reinforcing steel in columns

Column to foundation connections

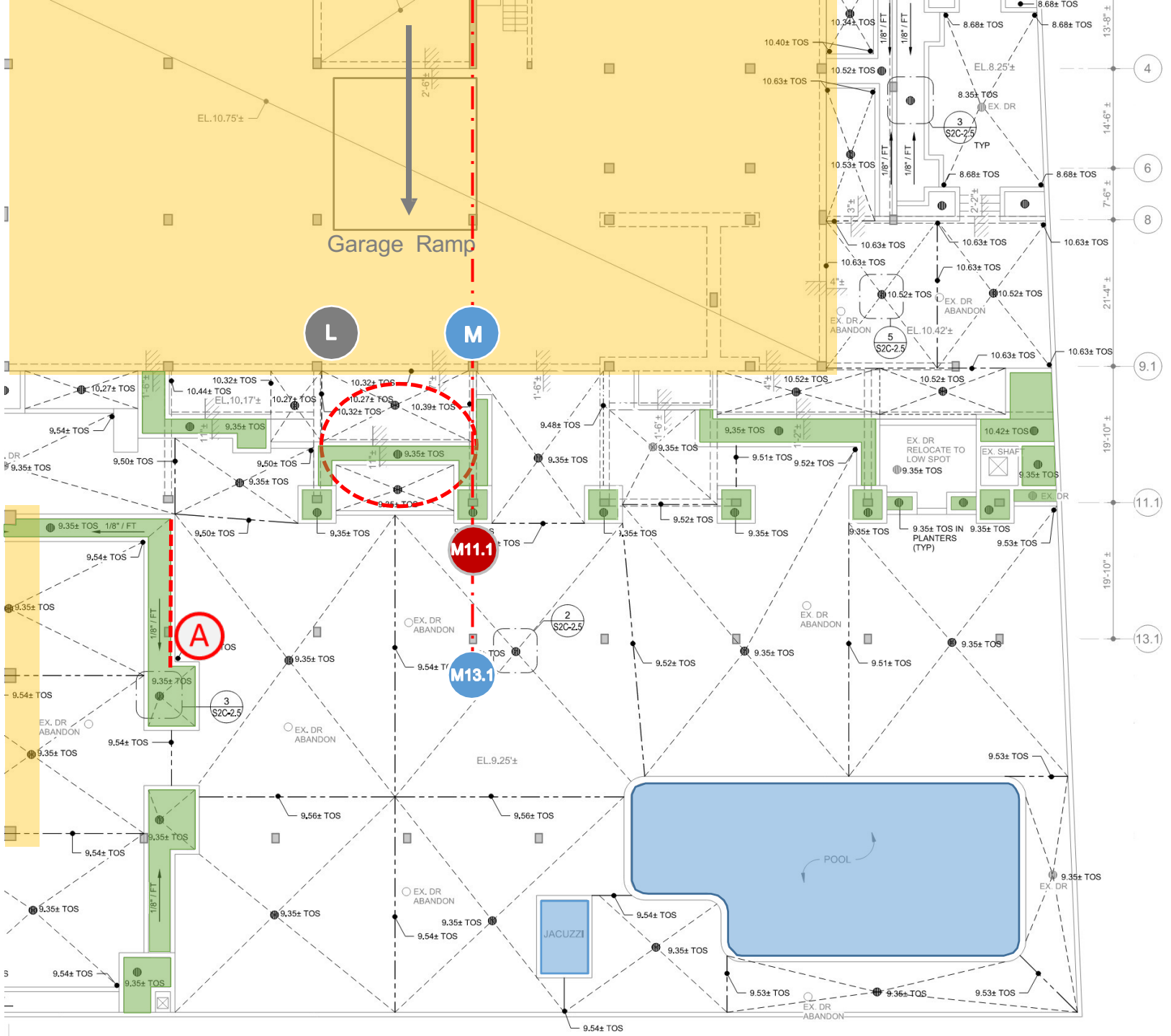
Column to beam connections



Landscape additions in 1996



Pool deck and landscape additions from 1996 renovation. Evidence of structural displacement in 2021



Pool deck with landscape additions and drains from 1996 renovation

Structural distress evident at A in June 2021

CHAMPLAIN TOWERS SOUTH 40-YEAR BUILDING
REPAIR & RESTORATION

PHASE IIC: OVERALL BUILDING REPAIR AND RESTORATION

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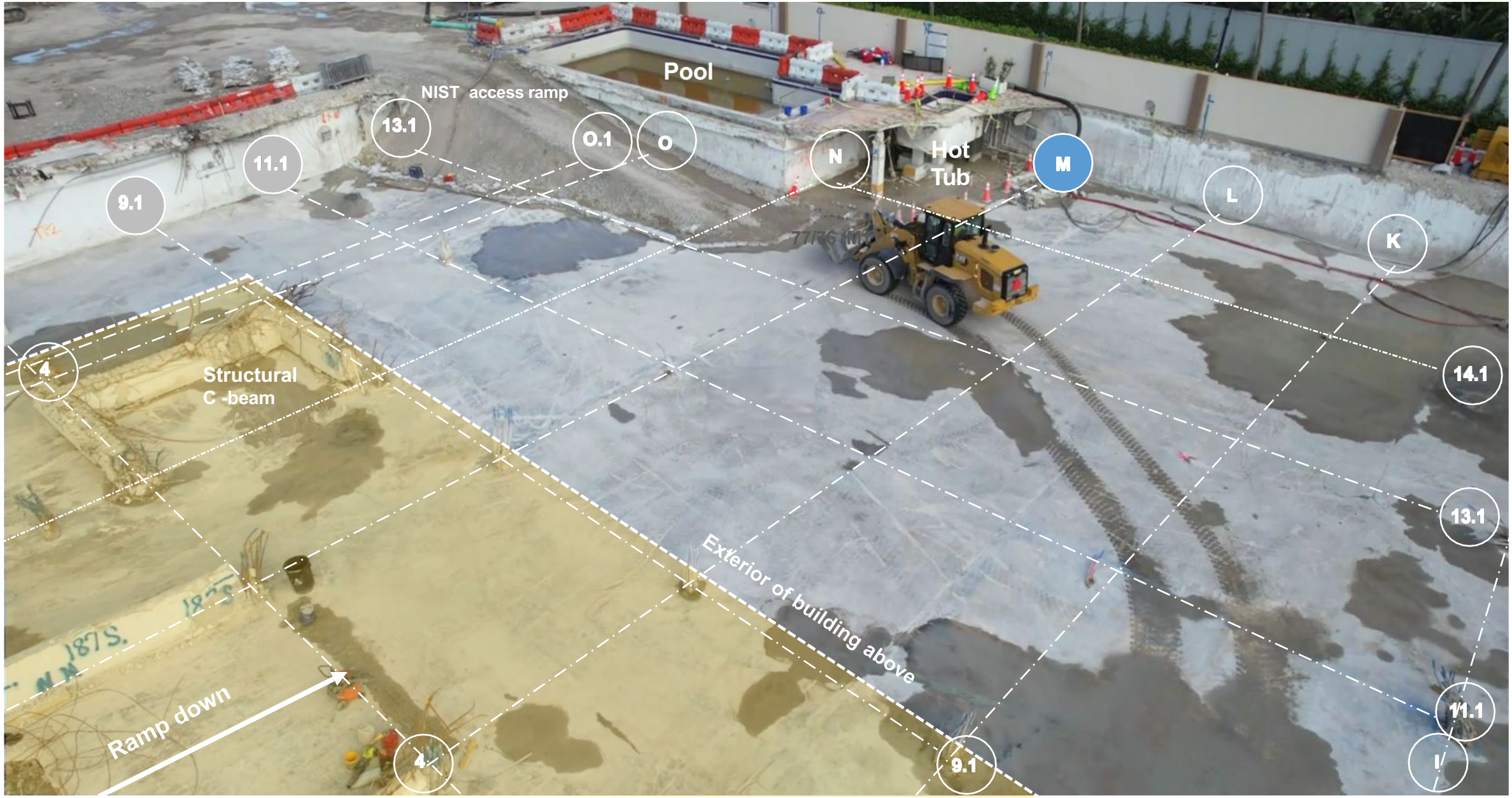
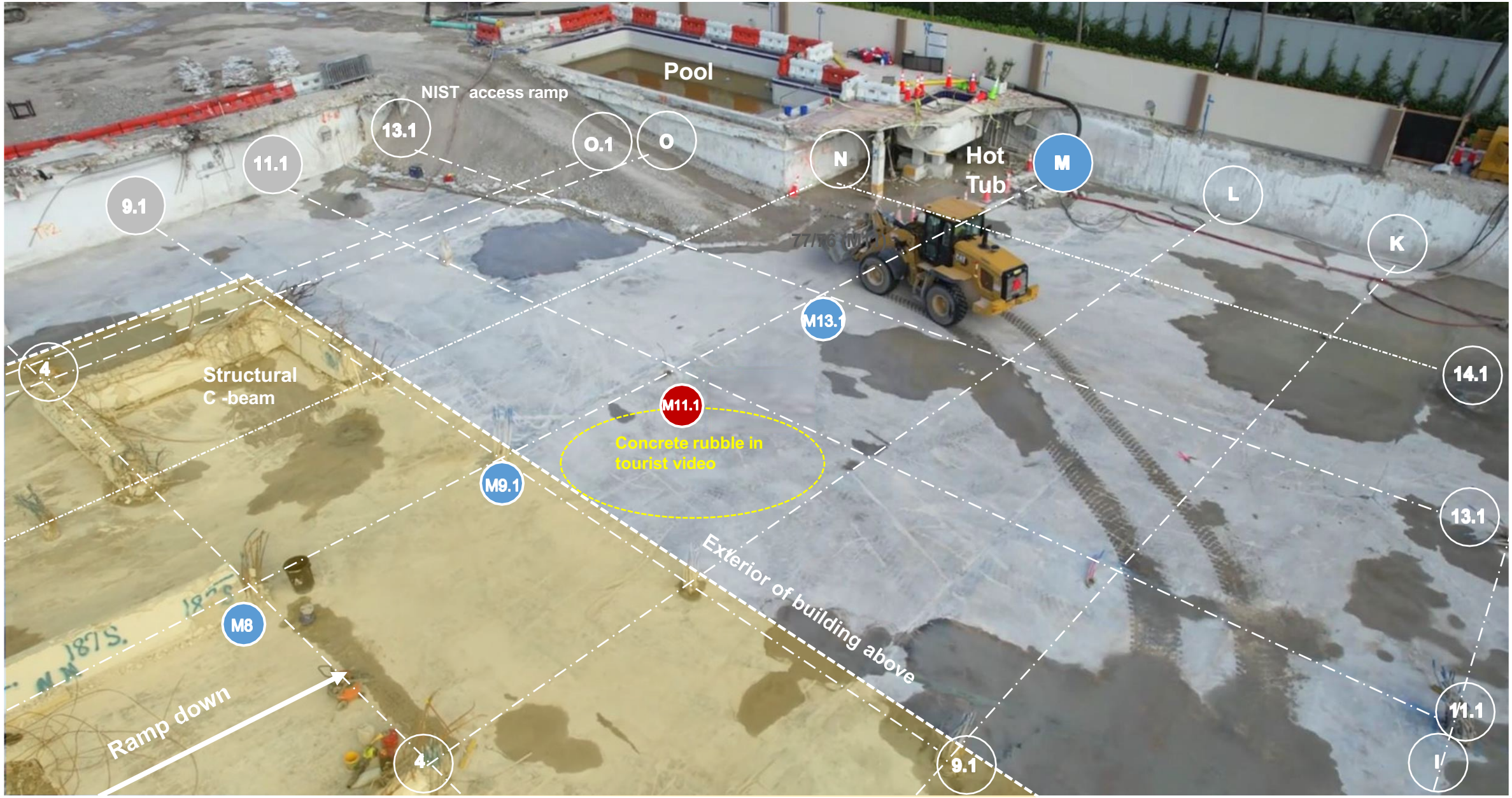
No.	Date	Revisions

DESIGNED	DRAWN
HR/JB/RM	HR/JB/RM
CHECKED	APPROVED
RM	FPM



Garage level slab and pool area cleared of debris with column layout



Garage level slab and pool area cleared of debris – site of debris from tourist video

Garage level slab and pool area cleared of debris

The Champlain Towers South Partial Collapse

Partial List of Items of Investigative Focus

- Seawater intrusion of garage and piles
- Overstressed pool deck
- Rebar corrosion
- Weight of added planters and tile on pool deck
- Water collecting on flat pool deck
- Structural design of deck
- Construction (concrete/rebar)
- Vibration from nearby construction of Eighty-Seven Park Tower

The Champlain Towers South Partial Collapse

Morabito Consultants 10.8.2018 Report

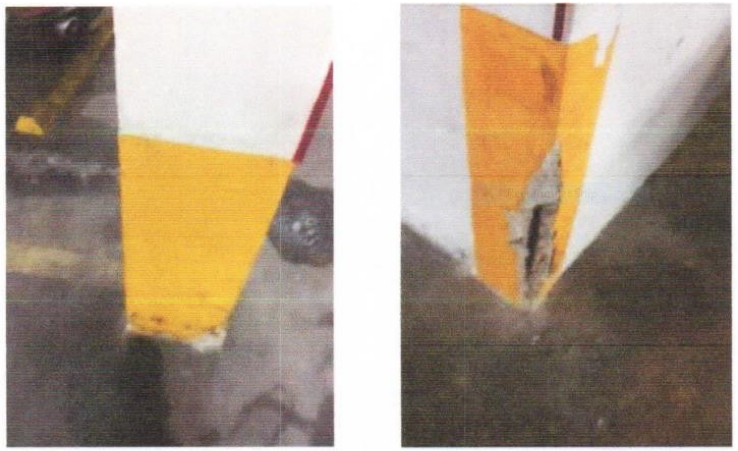


Figure J1: Typical cracking and spalling at parking garage columns

Figure J2: Spalling with exposed steel reinforcement at topside of garage deck.

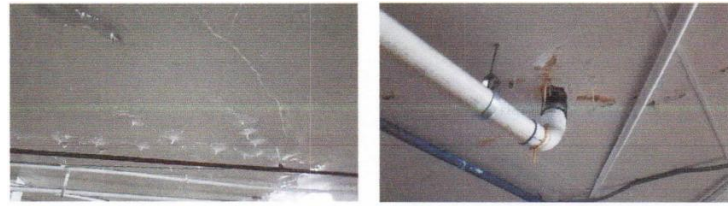


Figure K1: Previously installed failed injection repairs with leaching forming

Figure K2: More previously installed failed injection repairs with leaching forming

"Abundant cracking and spalling of the columns, beams and walls…sizeable spalls…underside of the pool/entrance drive/planter slabs…instances
of exposed deteriorating rebar. Most is minor… concrete deterioration needs to be repaired in a timely fashion."

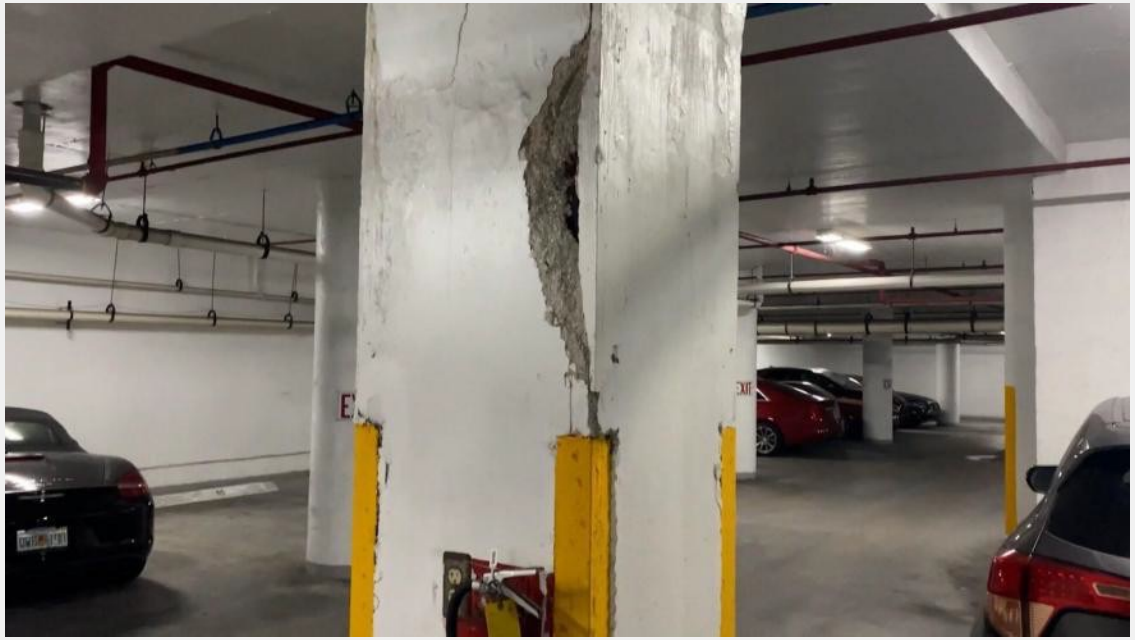
"The entrance/pool deck concrete slabs are distressed and need to be replaced in their entirety."

"The failed waterproofing is causing major structural damage to the structural slab below these areas. Failure to replace the waterproofing in the near future will cause the extent of the concrete deterioration to expand exponentially."

Concrete planters arranged along column line 11.1 (For several years contained palm trees)

Spalling concrete at balconies

Spalling concrete at garage columns



Ponding water at pool deck above garage

Previous Building Disasters

A catalyst for change to codes and procedures

1987 - L'Ambiance Plaza Apartment Project falls while under construction in Bridgeport CT killing 28 workers

1981 - Kansas City Hyatt Regency skywalks fall during a Friday dance night killing 114 and injuring around 200

1922 - Knickerbocker Theatre in Washington DC collapsed 2 days after a record blizzard killing 98 and injuring 133

4

Litigation & Settlement

The Litigation Parties

The defendants can be divided into three major categories:

1. The Security Company for Champlain Towers South, Securitas and its insurers
2. The Developers of the Condominium Next Door and its design team including:
    - Eighty-Seven Park Developers
    - Eighty-Seven Park General Contractor: John Moriarty & Associates of Florida, Inc.
    - Eighty-Seven Park Design Team:
        - Stantec Architecture – AOR
        - NV5, Inc - Geotechnical Engineer
        - DeSimone Consulting Engineers, LLC - Structural Engineer
        - Geosonics, Inc. - Vibration Monitoring firm
        - Florida Civil, Inc. - Dewatering plan designer
    - Eighty-Seven Park Condo Association
3. The Champlain Towers South Condo Association and its legal and engineering contractors, including:
    - Champlain Towers South Condo Association
    - CTS Condo Association lawyers – Becker & Poliakoff
    - P.A. n/k/a Becker
    - CTS' evaluation and restoration structural engineer
    - Morabito Consultants, Inc.

The Settlement

- The settlement was approximately **$1 Billion**
- Plaintiffs settled with more than 20 entities, including the parties in the three categories described previously
- The Security Defendants settled for **$500 million**
- The guard on duty during the night of the event called 911 about 10 minutes before the collapse but didn't activate the building-wide in-unit voice alarm. The Securitas manager admitted the company hadn't trained all its guards on how to use the system to alert residents to evacuate
- The developer next door settled for **$400 million**
- They were accused in the litigation of destabilizing Champlain South during Eighty Seven Park's construction in 2016 when metal sheet piles were driven into the ground about 12 feet from the Surfside condo's perimeter wall around the pool deck

- The Champlain Towers South parties settled for **$55 million**
- The law firm for the Champlain Towers paid **$31 million**
- Morabito Consultants paid **$16 million**. Morabito Consulting was the engineering company that performed a 2018 structural analysis of Champlain Towers South and was supervising its restoration plan
- Property damage settlement capped by unit owners was for **$83 million** even though a "qualifying bid" of $120 million has been made for the CTS site by a foreign investor. All of sale proceeds above $83 million apparently go into the Allocation Pool for the victim plaintiffs' estates.

Why no claims against the original design and construction team?

- Florida, like the vast majority of states, has a 10-year statute of repose beginning when the buildings are substantially complete. Champlain Towers South was completed in 1981 so such claims were barred.

What changes can be expected for Florida and nationally?

- More counties in Florida will likely adopt the existing 40- year re-certification process. The Orlando Sun-Sentinel reports that only 2 of Florida's 67 counties have adopted recertification
- Re-certification requirements by building authorities may be more stringent involving sub-surface explorations or re- verification of original designs
- The 40-year re-certification process may be shortened to 20 years
- Other states along the coasts with similar buildings may require re-certification in their states.
- Evaluations of existing structures will more specifically exclude certain analyses from their scope.
- Condo associations will not be allowed to avoid reserving necessary funds for maintenance
- Real estate disclosures may be changed to require reserve financial status

C.C.P. section 337.15, subdivision (a) provides for the 10-year limitation for bringing an action for damages against certain kinds of persons "... for any of the following:" It then lists as the following, only:

"(1) Any latent deficiency in the design, specification, surveying, planning, supervision or observation of construction or construction of an improvement to, or survey of, real property.

"(2) Injury to property, real or personal, arising out of any such latent deficiency."

Thus, by its express language, section 337.15 only bars actions for damages for (1) the deficient work or property itself and (2) damage to other real or personal property arising from such deficiency.

Our reading of the express words of section 337.15, our giving consideration to its legislative history, and harmonizing that section in the context of the statutory framework as a whole, leads us to conclude **that section 337.15 does not limit the time within which direct actions for personal injury damages or wrongful death may be brought against the persons specified in the statute**.

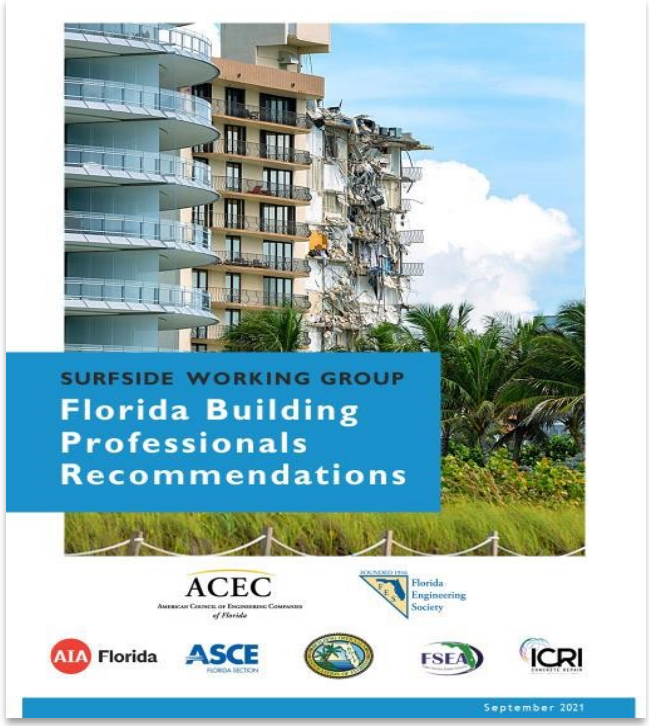
5

Recommended Changes

Surfside Working Group's Florida Building Professionals Recommendations

- Reacting to the tragedy of the Champlain Tower South collapse in Surfside, Structural Engineers from ACEC-FL and FES assembled a coalition of engineers and building professionals from various backgrounds, understanding that changes are needed to Florida's Building Code and inspection laws to assure the safety of all other existing structures in Florida.

- This coalition includes engineers from the American Council of Engineering Companies of Florida, the Florida Engineering Society, the Florida Structural Engineers Association, the Florida Section of the American Society of Civil Engineers and other building professionals from the International Concrete Repair Institute, the Building Officials Association of Florida and the Florida Association of the American Institute of Architects. Together this group presents the following recommendations from the Florida building professionals.



Summary of Recommended Changes

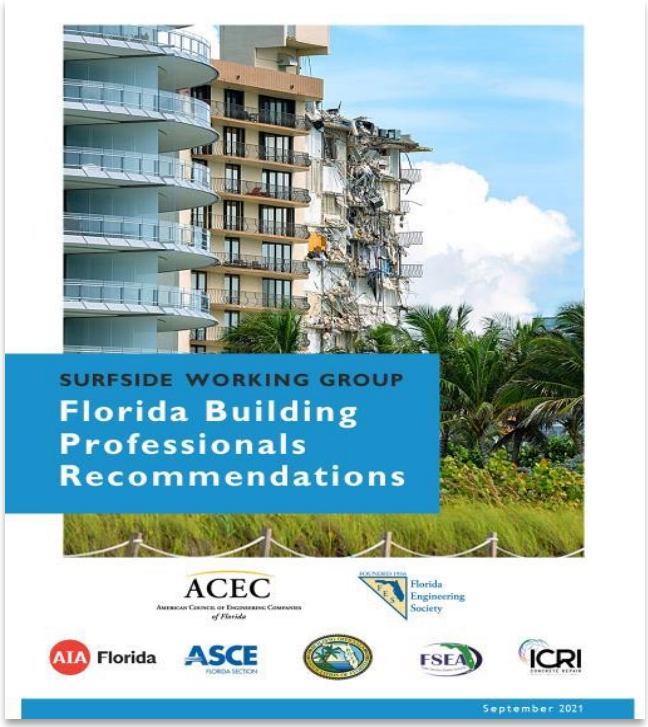
1 **Establish statewide Mandatory "Minimum Structural Inspections" for all existing buildings over a certain size throughout Florida**

- These inspections would be similar to the current Miami-Dade Re-certification program
- Inspection period would decrease based on proximity to more aggressive, corrosive saltwater environments
- Inspections would be required for all non-single family residential buildings over a certain size
- Phase 1 visual inspection conducted for all buildings in this category
- If the Phase 1 inspection finds signs of structural damage, a more rigorous Phase 2 inspection and repair program would be triggered
- Payment for inspections and any required repairs is the responsibility of the building Owner(s)
- Inspector's reporting responsibility is to the Building Department / Official
- Building Department has the responsibility to require repair recommendations be acted upon by the Owner

Summary of Recommended Changes

2 **Establish post-occupancy "Whole Building Safety Inspection" program for all existing buildings over a certain size throughout Florida**

- The document “Ensuring the Safety of Existing Buildings” currently being prepared by the International Code Council (ICC) should be adopted into the Florida Building Code
- This document establishes periodic and milestone inspections for building structures, envelopes, electrical, and fire protection systems on existing buildings



See full report for detailed information regarding the two major recommendations

6

Preliminary NST Findings

Preliminary Findings by NST

At a public hearing Thursday, **investigators noted the problems that began with pervasive weaknesses in the structural design were exacerbated by misplacement and corrosion of the reinforcing steel within the deck and the addition of planters and heavy pavers that were not accounted for in the original designs. The findings echoed reporting done by the Miami Herald in consultation with structural engineers who identified similar weaknesses in the structure and other problems that compounded in the weeks before the collapse. Those included areas where the pool deck appeared to be sagging dangerously, cracking a nearby planter.** Glenn Bell, team associate leader for the investigation, explained how engineers examined the original building codes and standards from 1980 to determine where construction of Champlain Towers South may have deviated. They also analyzed the standards for reinforced concrete design from 40 years ago.

They concluded the design failed to meet codes and standards and "the lack of compliance was most severe in the pool deck structure," Bell said. Bell said **they found the strength in some pool deck locations was only about half of that required at the time of construction and also would not have complied with current codes. He said the weak connections between the pool deck and supporting columns were vulnerable to punching shear — a type of failure where the slab disconnects from the column in a sudden, sweeping collapse. "Even absent any sudden overload or obvious initiator of a failure on the night of a collapse, the conditions present on the pool deck slab at that time represented a serious safety concern for the building**," Bell said.

7

Future Focus

Future Focus

- Prepare for a crisis
- Be specific and clear on what you are and are not evaluating
- Be specific on what you cannot/did not evaluate and what that means
- Whenever contractor performance in construction does not meet specifications, ring the bell loudly

Questions

Questions?

COURSE CONTENT

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