

TABLE A: STRUCTURAL CODE ANALYSIS (EBC 307, 703, 708)

CODE SECTION	SUBJECT	REQUIREMENTS	APPLIES?	COMPLIANCE / COMMENTS
307.2.1	Seismic support of non-structural building elements	New non-structural building elements, equipment and systems shall be provided with seismic supports as required by Section 1613 of the BC.	Yes	See architectural (GC) filing for seismic supports of non-structural building elements, equipment, and systems.
307.2.2	Wind resistance of non-structural building elements	New non-structural building elements, equipment, appliances and supports that are exposed to wind shall be designed and installed to resist the wind pressures determined in accordance with Chapter 16 of the BC.	No	Proposed alteration does not include any non-structural building elements, equipment, appliances, or supports that are exposed to wind, so Section 307.2.2 does not apply.
703.2	Increase in floor area	Buildings subject to alterations that increase existing floor surface area more than 110% per Section 302.7 should comply with structural provisions of the BC as if it were a new building.	No	Proposed alteration does not increase existing floor surface area, so Section 703.2 does not apply.
703.3	Increased demand, entire building	For buildings subject to structural alterations that meet any of the criteria listed in Section 703.3, the structure of such entire building shall be made to comply with the structural loading provisions of the Section 705.	No	Proposed alteration does not meet any of the (5) criteria listed in Section 703.3, so Section 703.3 does not apply and the entire building does not need to comply with the structural provisions of Section 705.
703.4	Increased demand, structural elements and foundations	Alterations not meeting criteria in Sections 703.2 and 703.3 shall comply with Sections 703.4.1 and 703.4.2.	Yes	Proposed alteration does not meet criteria listed in Sections 703.2 and 703.3; so alteration must be analyzed per Sections 703.4.1 and 703.4.2. See analysis of Sections 703.4.1 and 703.4.2 below.
703.4.1	Increased demand, structural elements	Existing structural element with increase in demand or decrease in capacity shall be made to comply with the structural loading provisions of Section 705. The effect shall be considered through load path until resolved in subgrade.	Yes	Proposed alteration results in an increased demand due to the new data center rack and safe, so Section 703.4.1 applies. Demand is increasing locally at the steel framing in that structural bay, so the effect on these elements and the load path to subgrade must be analyzed. The proposed alteration does not increase the seismic mass by more than 10 percent, nor decreases the lateral earthquake load resisting capacity of the building by more than 10 percent in either orthogonal direction, so additional earthquake loads on the building's lateral load resisting system due to the alteration need not be considered per Exception 1 in Section 703.4.1. The proposed alteration does not increase the wind sail area by more than 10 percent, nor decreases the lateral wind load resisting capacity of the building by more than 10 percent in any direction, so additional wind loads need not be considered beyond the point that they have been delivered to the building structure's main wind force resisting system per Exception 2 in Section 703.4.1. The steel beams below the new data center rack and safe do not have sufficient capacity to support the new superimposed dead loads and need to be reinforced in order to comply with Section 705. The steel other steel beams and girders in the effected structural bay have sufficient capacity to support the increased demand and comply with Section 705. The columns in the effected structural bay have sufficient capacity to support the increased demand and comply with Section 705.
703.4.2	Increased demand, foundations	New foundation elements or existing foundation elements with increase in demand shall comply with Chapter 18 of the NYC BC.	Yes	Proposed alteration results in an increased demand on foundation elements, so Section 703.4.2 applies. However, proposed alteration increases the gravity load by 5 percent or less, so Exception 1 applies and existing foundation elements do not need to be made to comply with Sections 703.4.2.1 and 703.4.2.2, and Chapter 18 of the 2022 BC. Note that no settlement or foundation movement has been observed and the proposed alteration does not reduce the bearing capacity of the soil strata providing support.
703.5.1	Stability index	Where a structural alteration reduces the lateral stiffness of a building by more than 10 percent, the building's lateral system or the altered elements of its lateral system shall have a stability index less than 0.25.	No	Proposed alteration does not reduce the lateral stiffness of the existing building, so Section 703.5.1 does not apply.
703.5.2	Buildings or stories initially out-of-plumb	Where a structural alteration increases the lateral loads on a building or story, or reduces the lateral stiffness of a building or story, the analysis if the altered building or altered story shall include the effects of pre-existing horizontal out-of-plumbness in excess of 1 percent in the existing structural system.	No	Existing building is not out-of-plumb, so Section 703.5.2 does not apply.
703.5.2	Alterations of URM buildings with wood-framed floors constructed prior to 1903	Structural alterations of unreinforced masonry buildings with wood- framed floors constructed prior to 1903 shall comply with Sections 703.5.3.1 through 703.5.3.6.	No	Existing building is not an unreinforced masonry building with wood framed floors constructed prior to 1903, so Section 703.5.3 does not apply.
703.6.1	Exceptions from continuity detailing requirements	Notwithstanding the requirements of Sections 703.2 and 703.3, existing structural elements need not comply with the continuity detailing requirements of the BC unless required by Section 708 of this code.	No	No continuity detailing is present, per Section 708, so existing structural elements do not need to comply with the continuity detailing requirements of the BC.
703.6.2	Exceptions from seismic detailing requirements	Notwithstanding the requirements of Sections 703.2 and 703.3, existing structural elements need not comply with the seismic detailing requirements of the BC unless required by Section 708 of this code.	No	No seismic detailing is present, per Section 708, so existing structural elements do not need to comply with the continuity detailing requirements of the BC.
703.7	Seismic separation requirements	Altered buildings that must comply with Sections 703.2 or 703.3 and are adjacent to or sharing unreinforced masonry walls shall comply with Section 703.7.	No	Altered building is not required to comply with Sections 703.2 and 703.3 (see analysis above), so Section 703.7 does not apply.
708	Remediation work	Remediation work shall be performed within the work area as required by Section 708.1.1 and for conditions identified during the course of work independent of work area as required by Section 708.1.2. Per sections 708.1.1 and 708.1.2, listed required remediation work applies to unreinforced masonry structures and wood or light-framed structures only.	No	Building is not an unreinforced masonry or light-framed structure, so Section 708 does not apply.

Note: See architectural drawings for code analysis of EBC Chapter 6.

ASSOCIATED FILINGS

1. Associated work is filed separately under the following DOBNOW Job Numbers:

Architecture/General Construction (GC): Q12345678-11

MEP (PL): Q12345678-S2

PROJECT:

Structural Alteration

554 Forest Avenue

Queens, NY

BLOCK: xx LOT: xx

EBC Case Study #1

OWNER:



ARCHITECT:

ARCHITECT

MEP ENGINEER:

MEP ENGINEER

STRUCTURAL ENGINEER:

STRUCTURAL ENGINEER

FACADE ARCHITECT:

DOB APPROVAL STAMP:

DOB JOB NUMBER/STICKER:

DOB NOW ST:

Q12345678-S1

SEAL:



DRAWING TITLE:

STRUCTURAL CODE ANALYSIS

PROJECT #: J5262.06

DATE: 05.11.2026

SHEET TITLE:

PAGE: 01 OF 04

S-005.00

TABLE B: CONDITION ASSESSMENT REQUIREMENTS (EBC 704)

CODE SECTION	SUBJECT	REQUIREMENTS	APPLIES?	COMPLIANCE / COMMENTS
704.1	Condition assessment, general	Condition assessments shall be performed in accordance with Section 704 for all structural alterations.	Yes	Section 704 applies for all structural alterations. See analysis of Sections 704.2 and 704.3 below.
704.1.1	Area of structural condition assessment	The condition assessment shall include the area where structural work is being performed and all structural elements that may be affected by the alteration as required by Section 703.	Yes	Structural work area consists of 3 structural bays at the 7th floor and load path from those bays to the lowest levels of the building.
704.1.2	Visual assessment	For all buildings 7 stories or less, a visual assessment from the exterior of the building shall be performed.	No	Building is more than 7 stories tall, so Section 704.1.2 does not apply and a visual assessment is not required.
704.2	Initial condition assessment	An initial structural condition assessment is required for all structural alterations, where an increase in the demand capacity ratio is introduced to an existing structure, or where required by Sections 907.2, 1007.2 or 1103.3	Yes	Proposed structural alteration increases the demand capacity ratio of concrete slab and steel frame, so Section 704.2 applies and an initial structural condition assessment is required.
704.3	Detailed condition assessment	A detailed structural condition assessment is required for all structural alterations where existing structural elements are to be altered or an increase in the demand capacity ratios introduced to an existing structure.	Yes	Proposed structural alteration increases the demand capacity ratio of concrete slab and steel frame, so Section 704.3 applies and a detailed structural condition assessment is required.

TABLE C: DESCRIPTION OF STRUCTURAL ELEMENTS (EBC 704)

NOTE	ELEMENT	SIZE	SIZE REFERENCE	MATERIAL	MATERIAL STRENGTH	MATERIAL REFERENCE
1	Existing steel beam	W12x40	Measured on site	A36 steel	Yield stress = 36ksi Ultimate stress = 58ksi	EBC Section H103, Table H103.2 (after 1961)
2	Existing steel girder	W14x68	Measured on site	A36 steel	Yield stress = 36ksi Ultimate stress = 58ksi	EBC Section H103, Table H103.2 (after 1961)
3	Existing steel column	W12x120	Measured on site	A36 steel	Yield stress = 36ksi Ultimate stress = 58ksi	EBC Section H103, Table H103.2 (after 1961)
4	Existing concrete slab	5" thick	Measured on site	NW concrete**	Min. compressive strength = 4,000psi*	EBC Section H103, Table H103.4 (1970-Present, Slabs)
5	Existing concrete slab reinforcement	#3 @ 12" o.c. both directions**	N/A (assumption to be verified in detailed assessment)	A615 Grade 40	Yield stress = 40ksi Tensile stress = 70ksi	EBC Section H103, Table H103.4.1 (1967-Present)

* Assumptions made in initial condition assessment **confirmed** by additional information acquired in detailed condition assessment.
** Assumptions made in initial condition assessment **changed** by additional information acquired in detailed condition assessment. See detailed assessment on sheet S-102.

TABLE D: DESCRIPTION OF EXISTING CONDITIONS (EBC 704)

DAMAGE CONDITION	APPLIES?
Discontinuity of load path	No
Deficiency or damage of structural elements in load path	No
Deterioration of structural elements, including but not limited to rot, corrosion, loss of cohesion, displacement and cracking, plumbness, alignment and displacement	No
Signs of moisture infiltration and related damage	No
Deformations due to possible overloading	No
Presence of bowing, lean or deflections in excess of 1 percent	No
Elements with significant unbraced lengths	No
Indications of building settlement	No

Note: Existing conditions assessment based on visual inspection of readily accessible and visible portions of area of structural assessment.

STRUCTURAL DESCRIPTION

The building is a 9-story plus cellar high rise building with a floor area of 8,800 SF per floor and a total floor area of 88,000 SF. The building was completed in 1971 under the 1968 NYC Building Code. The main occupancy is Occupancy Group B and the construction Class is I-C. The building has a structural steel frame with steel beams, girder, and columns. The slabs are reinforced concrete. The exterior walls are masonry curtain walls, but the scope of the project does not include any exterior wall work. See plans for structural element spacing and geometry, and Table C: Description of Structural Elements for structural element size and material. Hung architectural and mechanical loads can be fastened to structural steel frame or reinforced concrete slab.

PROPOSED STRUCTURAL ALTERATION

Structural scope of work:
1. Localized structural reinforcement of floors to support new live loads.
2. No change in use, occupancy, or egress.

Work area as defined by EBC Chapter 2:
1. Structural work area includes three structural bays at 7th floor. See shaded structural work area on plan.
2. See architectural drawings for total work area.

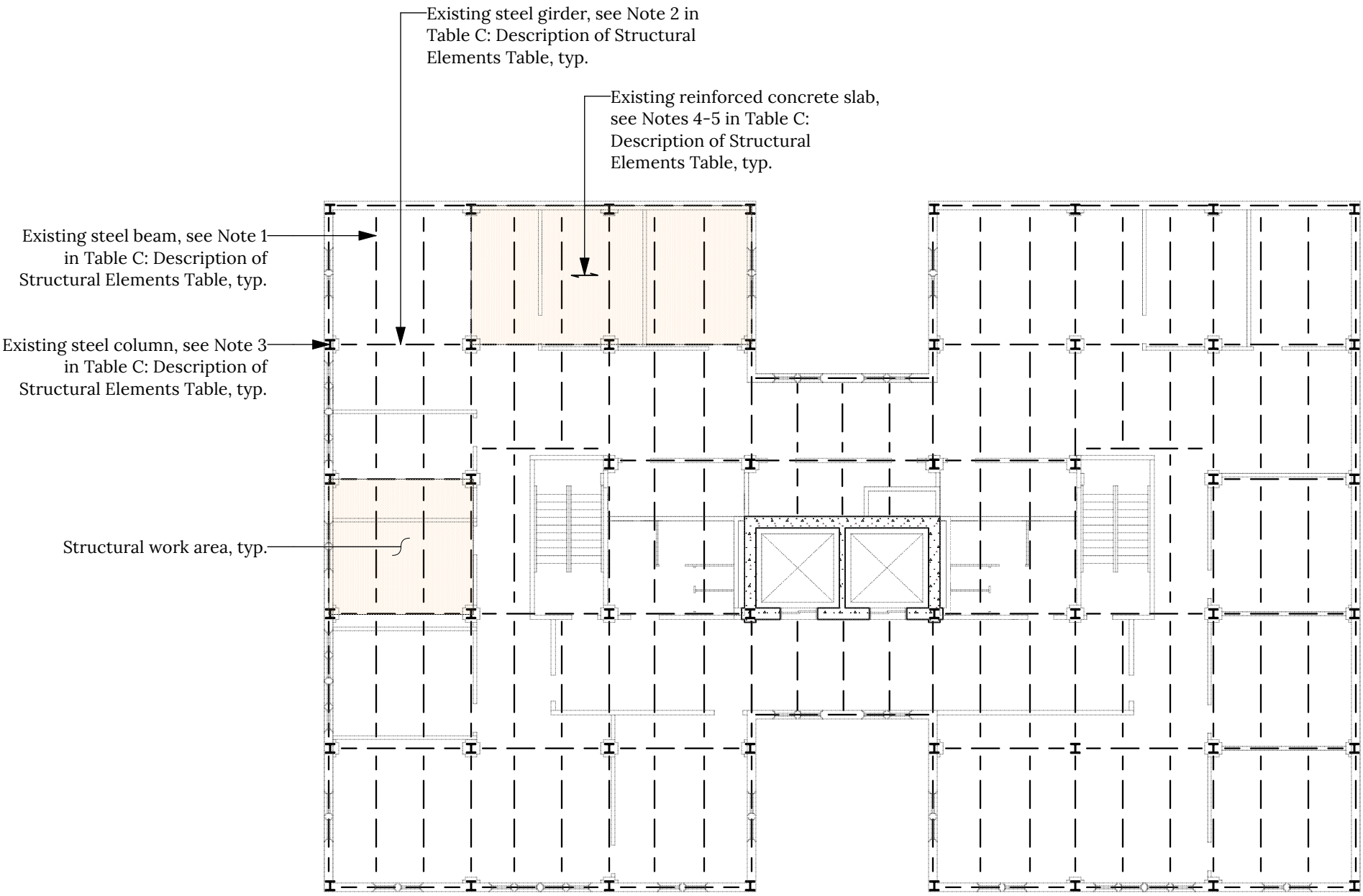
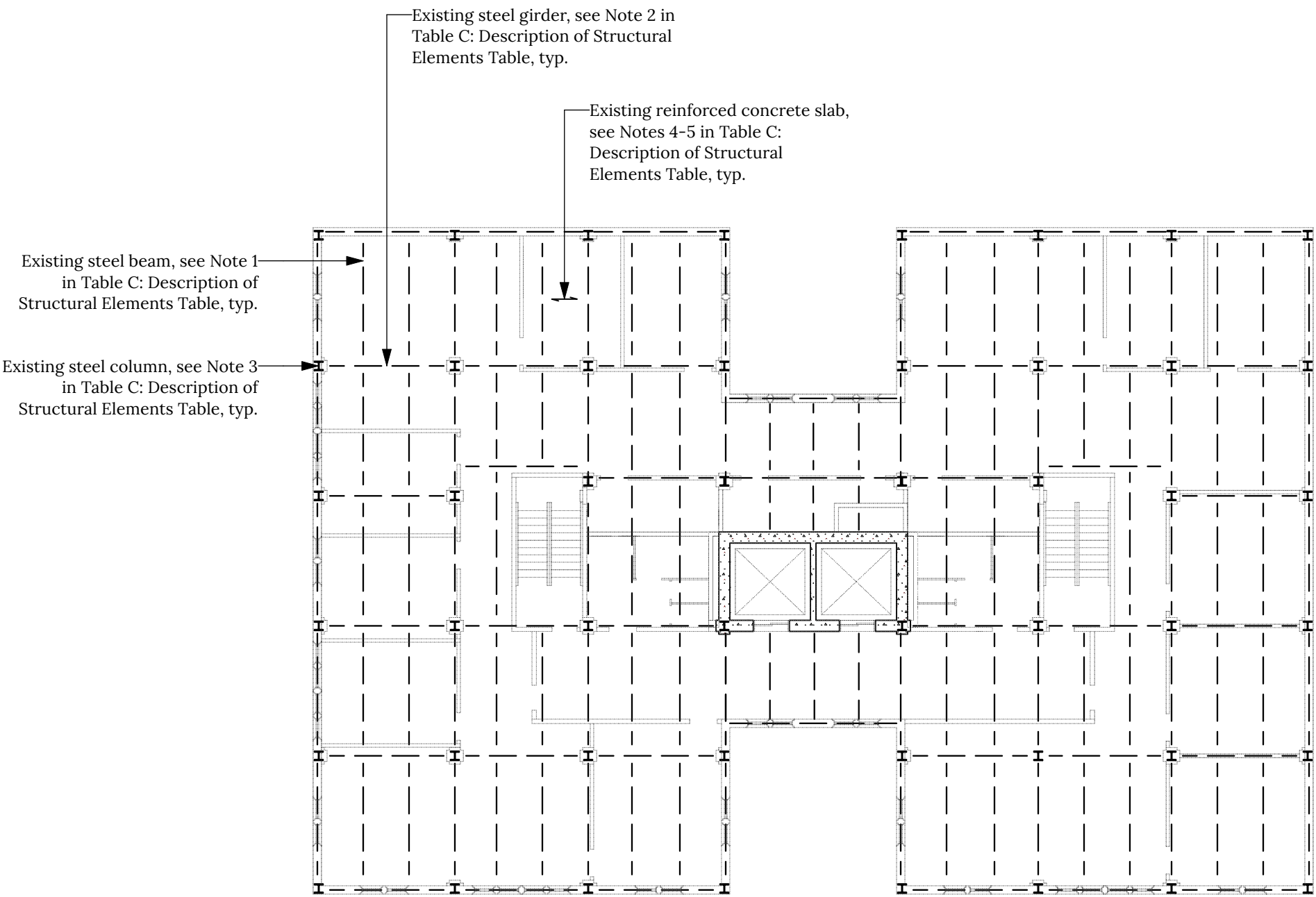
Analysis of load path:
1. Existing reinforced concrete slab have sufficient capacity to support new live loads.
2. Existing steel beams at areas of new, increased live loads are overstressed. Install new supplemental beams to reinforce floor at areas with new live loads.
3. Existing steel girders have sufficient capacity to support new live loads.
4. Existing steel columns have sufficient capacity to support new live loads.
5. Existing foundations have sufficient capacity to support new live loads.

APPLICABLE CODES

- New York City Existing Building Code 2027
- New York City Building Code 2022

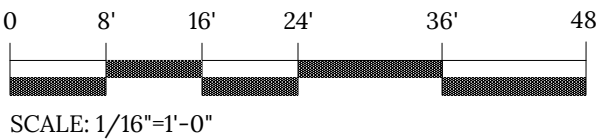
DOCUMENTS CONSULTED FOR CONDITION ASSESSMENT

- Architectural backgrounds provided by architect, dated January 21, 2026 (unverified source)
- Original 1971 Certificate of Occupancy (verified source per EBC H101.2.1)



LEGEND

- Existing steel beam or girder
- Existing steel column
- Existing concrete
- Structural area of work



PROJECT:

Structural Alteration

554 Forest Avenue
Queens, NY
BLOCK: xx LOT: xx

EBC Case Study #1

OWNER:

NYC Buildings



ARCHITECT:

ARCHITECT

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STRUCTURAL ENGINEER:

STRUCTURAL ENGINEER

FACADE ARCHITECT:

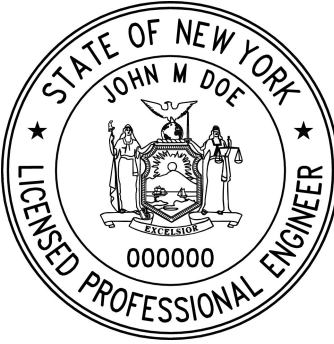
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- For Owner

DOB JOB NUMBER/STICKER:

DOB NOW ST:
Q12345678-S1

SEAL:



DRAWING TITLE:

INITIAL ASSESSMENT

PROJECT #: J5262.06

DATE: 05.11.2026

SHEET TITLE:

PAGE: 02 OF 04

S-010.00

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5	Existing concrete slab reinforcement	#4 @ 12" o.c. both directions**	Measured on site at probe opened for detailed assessment	A615 Grade 40	Yield stress = 40ksi Tensile stress = 70ksi	EBC Section H103, Table H103.4.1 (1967-Present)

* Assumptions made in initial condition assessment confirmed by additional information acquired in detailed condition assessment.

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PROPOSED STRUCTURAL ALTERATION

Structural scope of work:

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- No change in use, occupancy, or egress.

Work area as defined by EBC Chapter 2:

- Structural work area includes three structural bays at 7th floor. See shaded structural work area on plan.
- See architectural drawings for total work area.

Analysis of load path:

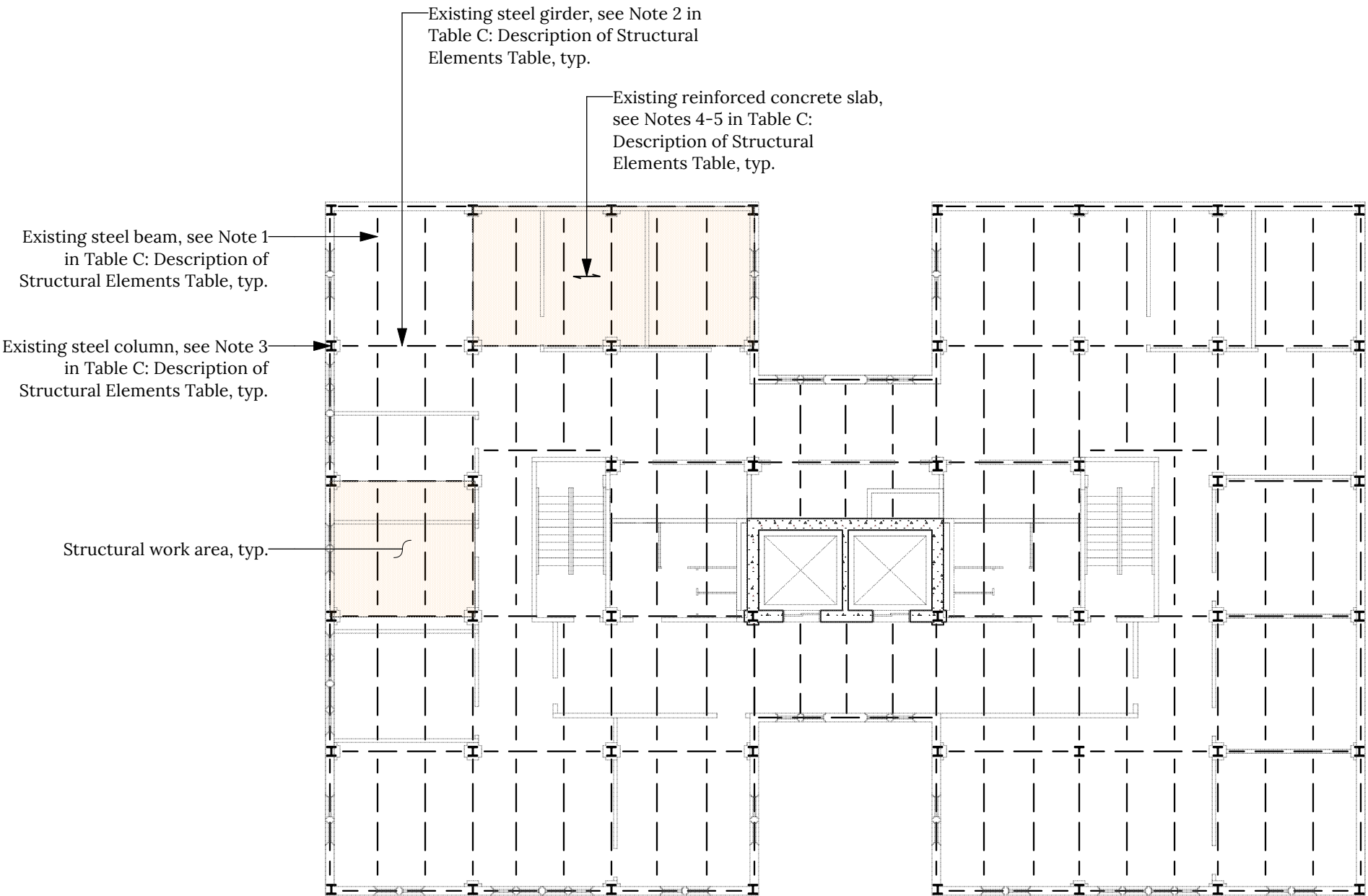
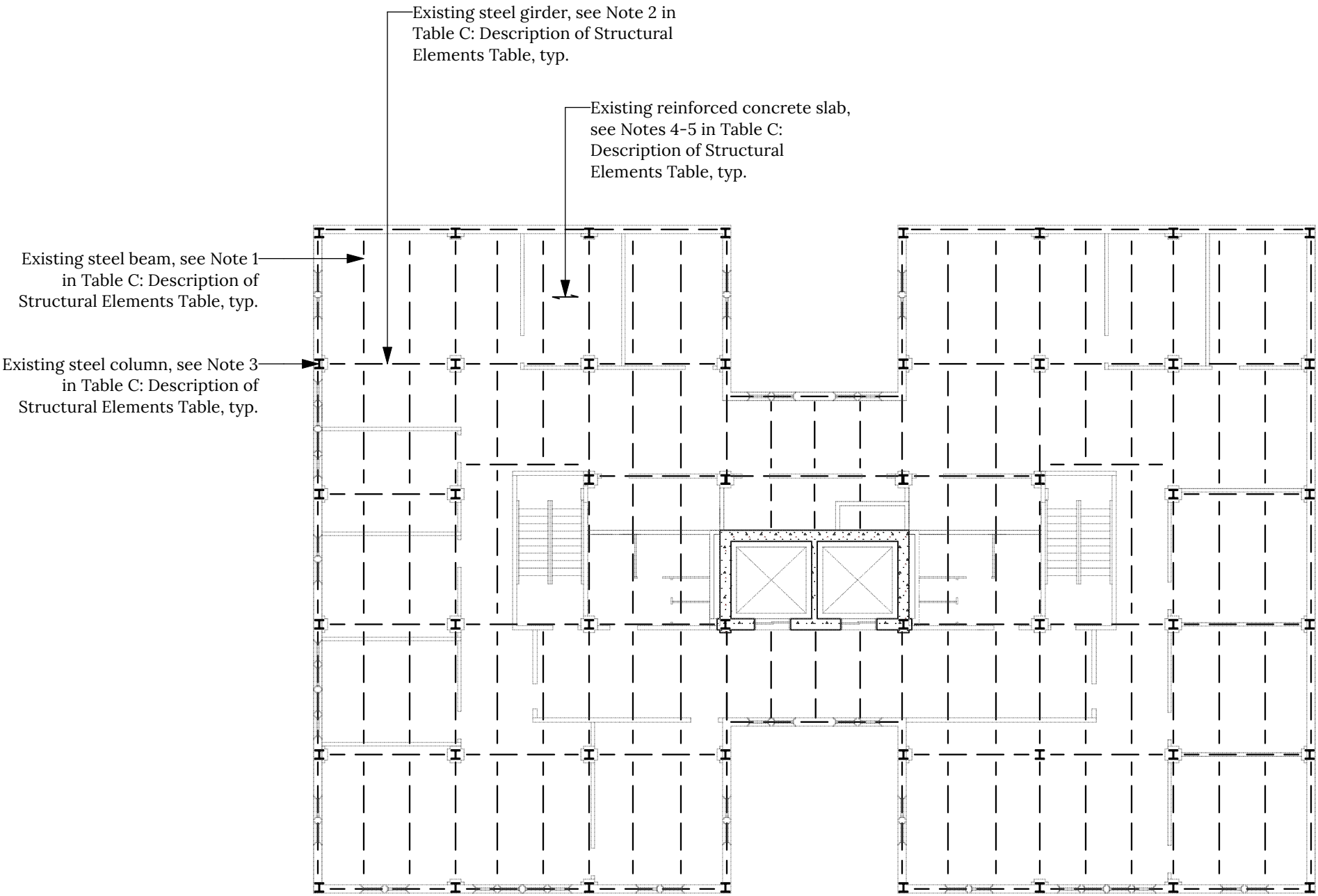
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- Existing steel girders have sufficient capacity to support new live loads.
- Existing steel columns have sufficient capacity to support new live loads.
- Existing foundations have sufficient capacity to support new live loads.

APPLICABLE CODES

- New York City Existing Building Code 2027
- New York City Building Code 2022

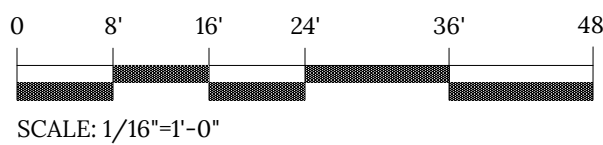
DOCUMENTS CONSULTED FOR CONDITION ASSESSMENT

- Architectural backgrounds provided by architect, dated January 21, 2026 (unverified source)
- Original 1971 Certificate of Occupancy (verified source per EBC H101.2.1)



LEGEND

- Existing steel beam or girder
- Existing steel column
- Existing concrete
- Structural area of work



PROJECT:

Structural Alteration

554 Forest Avenue

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BLOCK: xx LOT: xx

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NYC
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ARCHITECT:

ARCHITECT

MEP ENGINEER:

MEP ENGINEER

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SEAL:



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DETAILED ASSESSMENT

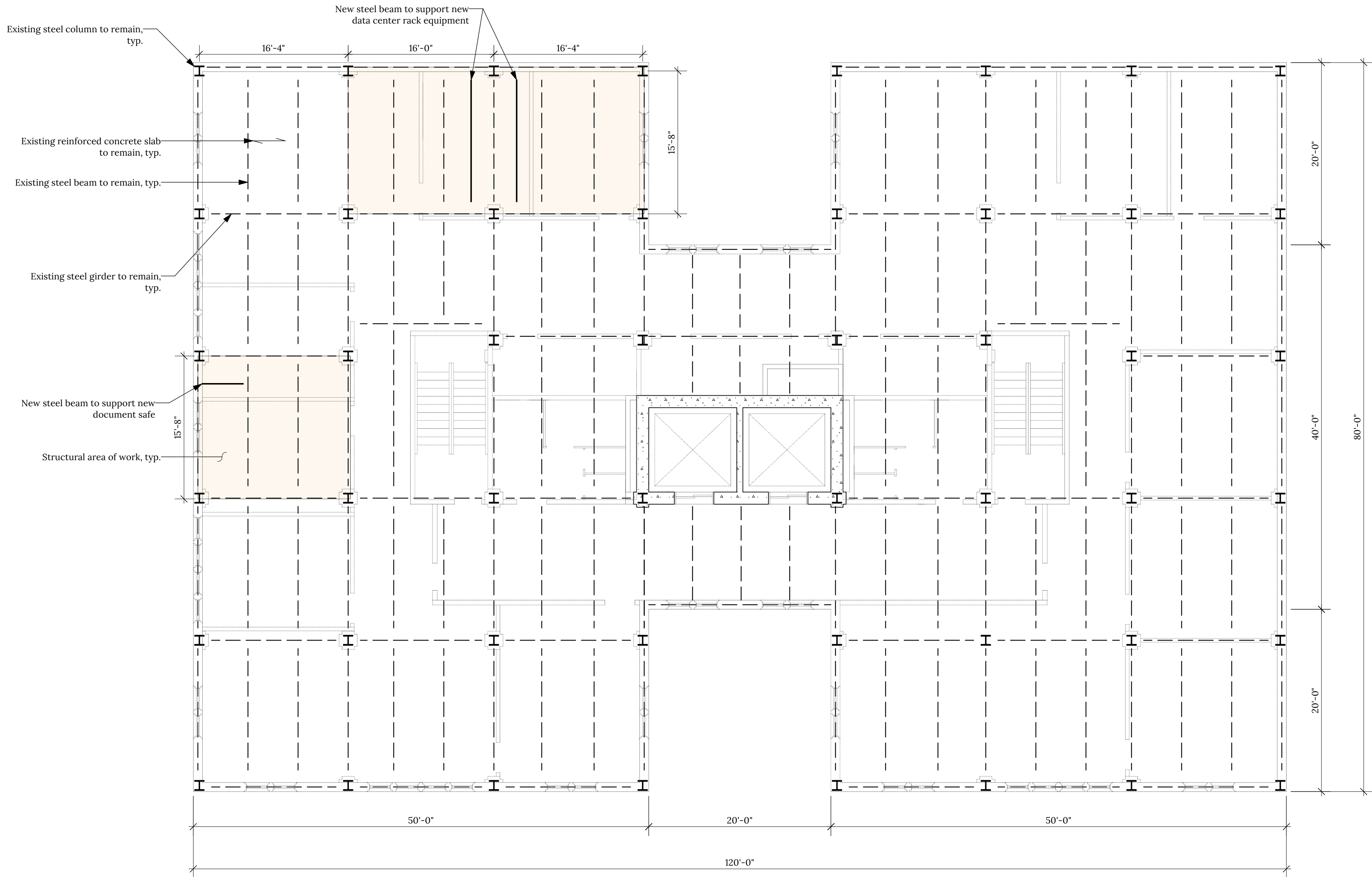
PROJECT #: J5262.06

DATE: 05.11.2026

SHEET TITLE:

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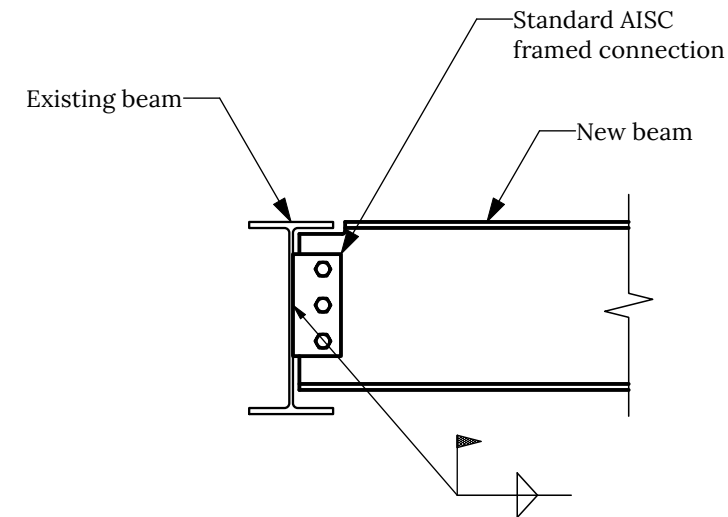
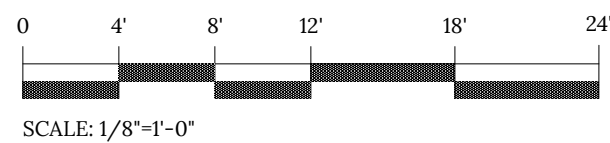
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- LEGEND
- Existing steel beam or girder
 - New steel beam
 - Existing steel column
 - Existing concrete
 - Structural area of work

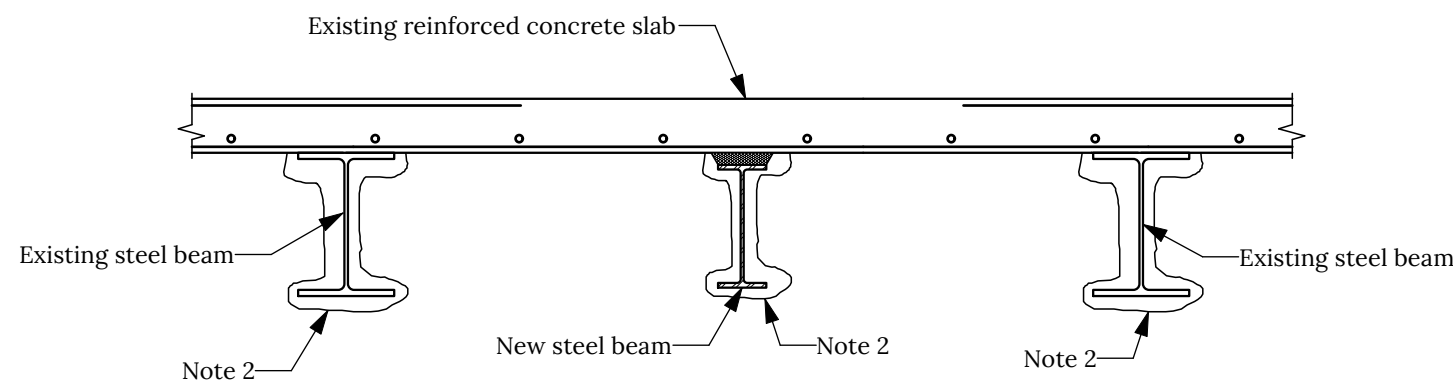
- Notes:
- See Detailed Assessment, S-020, for existing conditions.
 - Hung HVAC units in architectural work area have been reviewed for effect on structure. No structural reinforcing required.
 - Core holes for new electric service to be aligned with slab span and have solid concrete between cores equal to the core diameter.

1 7th Floor - Schematic Repair Plan
Scale: 1/8" = 1'-0"



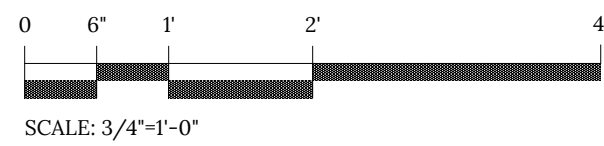
- Note:
- Fireproofing and slab are not shown for clarity.

2 New Beam to Existing
Scale: 3/4" = 1'-0"



- Note:
- 1" min. dry-pack.
 - Spray-on fireproofing.

3 New Beam Below Existing Slab
Scale: 3/4" = 1'-0"



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Structural Alteration

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SCHEMATIC PLAN
AND DETAILS

PROJECT #: J5262.06

DATE: 05.11.2026

PAGE: 04 OF 04

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