

Brooklyn Marine Terminal Port Operation and Maritime Industrial Uses RFEI

Submitted By:

SST CONSULTANT ENGINEER, P.C.

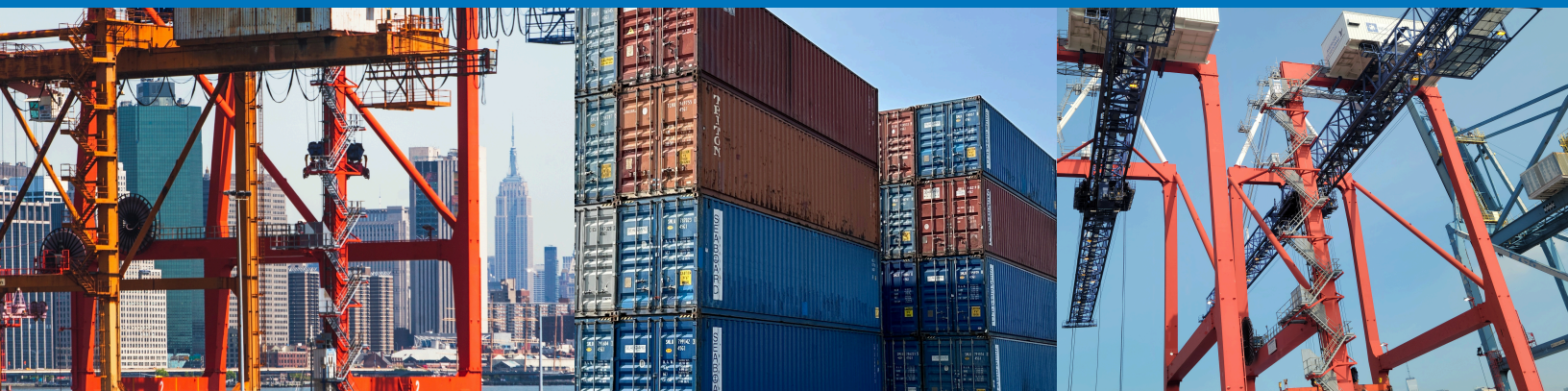




REQUEST FOR EXPRESSIONS OF INTEREST

Brooklyn Marine Terminal Port Operations and Maritime Industrial Uses

BMT Managed by
NYC/EDC



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I. Project Overview

The New York City Economic Development Corporation (“NYCEDC”) requests expressions of interest from port developers, port operators, and maritime industrial users with respect to the port and marine terminal facilities at the Brooklyn Marine Terminal (“BMT”) located in Red Hook, Brooklyn. The responses will further inform the refinement of the vision for the Brooklyn Marine Terminal (“BMT Vision Plan” or “Vision Plan”), which is discussed in more detail below, as the proposed BMT port and marine terminal and mixed-use project moves forward through environmental review and eventually to one or more Requests for Proposals (“RFP”) for developers, port operators and maritime industrial users of the BMT port and marine terminal facility. Although the BMT port is envisioned to include the Brooklyn Cruise Terminal with the container and flex maritime terminals as a single commercial port area, the focus of this Request for Expressions of Interest (“RFEI”) is to solicit ideas for how BMT could be optimized for maritime industrial uses.

NYCEDC seeks proposals from a wide range of potential maritime port developers, port operators and maritime industrial users. More specifically, the purpose of this RFEI is to:

- Identify port operators/developers who would be interested in responding to one or more future RFPs for the operation and development of the BMT port and cruise terminal facilities together as a single commercial port area both consulting the proposed BMT Vision Plan and also allowing for alternate configurations to the footprint as proposed in the Vision Plan.
- Understand what refinements to the BMT Vision Plan (if any) could be made to increase interest in the future RFPs, including small or large-scale changes to the physical layout, size, configuration, or other existing constraints.
- Understand the potential market advantages or disadvantages of linking the BMT port facility to the Hunts Point Food Distribution Center or other existing or future coastal facilities via the water through a Blue Highway network and the importance of having unified operations at these facilities.
- Solicit feedback from the business community regarding the potential to significantly increase the type and/or level of maritime industrial activity at the BMT port facility and what infrastructure investments or other improvements would be most important in achieving this increase.

- Solicit feedback regarding the number, type, size, and configuration of new buildings that would need to be built at the BMT site to maximize the potential throughput at the site and the market opportunities for financing the construction of these new buildings.
- Identify other potential maritime industrial users of BMT that may seek to occupy portions of the port through entering into licenses or sublease agreements with a future port and marine terminal operator. These maritime industrial uses may include (but are not limited to) container shipping, construction staging or shipping of construction related materials, maritime based general bulk cargo operations, offshore wind, cruise, last mile delivery/blue highway shipping or other food supply infrastructure or manufacturing uses that rely on maritime shipping.
- Solicit market feedback on the potential economics for future maritime users at the site, including potential private capital investment and land rental proceeds.

II. Project Background

The BMT Vision Plan

In June 2024, the City and NYCEDC, respectively, entered into historic agreements with the Port Authority of New York and New Jersey (“PANYNJ”) to transform the long underutilized and neglected site of BMT by unlocking both public and private investment. Mayor Adams, Governor Hochul, NYCEDC, and the PANYNJ announced the agreements that swapped two waterfront properties, with PANYNJ securing control of Howland Hook in Staten Island and NYCEDC control of BMT. The Mayor and the Governor also announced a shared vision to transform BMT into a modern, all-electric maritime port and vibrant mixed-use community along the Brooklyn waterfront.

To help guide the BMT Vision Plan, in September 2024, a 28-member Task Force was formed made up of elected officials, community and neighborhood stakeholders, local and citywide nonprofit organizations, and industry experts. The Task Force was created to advise the planning and engagement processes, incorporate community feedback, and ultimately approve the final BMT Vision Plan that will be used as the foundation for the New York State Empire State Development Corporation (ESD) General Project Plan (GPP) process.

The BMT Vision Plan, released in spring 2025, is a comprehensive document that calls for improved public access to the waterfront in newly developed open spaces, the development of market rate and affordable housing, improved neighborhood resiliency, better connectivity through transit and traffic improvements, and the development of new affordable industrial space. At the heart of the plan is a commitment to maintain, modernize, and electrify the BMT port so that it responds to 21st century industry trends, is financially sustainable, and supports local efforts to move more freight by waterways under the nascent Blue Highways initiative. The plan as currently proposed describes a 60-acre modern and sustainable all-electric port focused on water-to-water freight, removing trucks from local streets, and serving as a key node in the Blue Highways network, and reducing direct-to-consumer vehicle trips.

The Port Today

Today, BMT is a port of potential regional maritime importance, but due to chronic underinvestment, it is believed that substantial improvements are necessary to meet its full potential and respond to market demands. The current container terminal operates on less than

half the full site (approximately 60 acres) with a generally low-density operation. This operational arrangement may be suitable for the low volume currently handled at the terminal but will become increasingly inefficient if volumes increase. Not only does the finger pier configuration of Piers 7 through 9B no longer meet the needs of modern-day cargo vessels, but the entire structure is severely dilapidated. It is believed that BMT's potential to handle more containers and general cargo is not limited by space, but by obsolete infrastructure and equipment, regional competition, and a port layout that does not meet modern standards. Two of the piers (9A and 9B) have been condemned because of structural failure and will cost approximately \$300 million to replace in-kind. Recent dive inspections by NYCEDC show that Piers 7 and 8 need approximately \$400 million of investment to be brought back into a state of good repair in their current alignment (an alignment that is no longer suitable for modern cargo operations). Finally, under legacy operating agreements, the current port operator, Red Hook Container Terminal, LLC ("RHCT"), receives a \$3 to \$5 million annual operating subsidy from NYCEDC -previously paid by the PANYNJ- to keep the site in operation. The container port currently employs 170 individuals, the majority of whom are members of the International Longshoremen's Association (ILA), with additional jobs supported across the rest of the site.

Proposed Future Public Investments

It is envisioned that a future operator at BMT will increase the port's throughput and volume and run a profitable maritime business once a series of investments have been made in port infrastructure, most importantly through the construction of a new marginal pier, providing room for growth in the bulk cargo business, including construction materials and in other Blue Highway-related initiatives focused on micro-mobility. With substantial public investment and a long-term lease, it is envisioned that a new operator will be able to privately finance further infrastructure improvements.

A redeveloped BMT port will be positioned to support an increased share of the handling of the imported perishables and foodstuffs cargo volumes destined for New York City. Moreover, BMT will be an important node within the City's Blue Highways network. The future BMT port will be able to support a range of maritime activities, including container, cruise, bulk cargo, construction staging, and project cargo (See Attachment B: Blue Highways Network). Future investments in the port will deliver a new marginal pier replacing Piers 8, 9A, and 9B, a reconfiguration that is believed will better respond to market demand and provide operational flexibility. Although the BMT Vision Plan describes a 60-acre port centered on a refurbished Pier

10 and new marginal pier at Piers 8 through 9B, respondents to this RFEI can submit proposals for a port facility with a different or larger configuration that may or may not contemplate a new marginal pier.

The future port will be fully electrified using clean energy through onsite renewable energy generation, electric cargo-handling equipment, and shore power, significantly reducing emission and noise impacts in local communities. The new marginal pier will be raised to protect the port from 2100s sea-level rise and frequent storms, ensuring resiliency into the future and helping mitigate the threat of coastal flooding and storm surges to operations.

Today, the entrances to the Port are set up in an inefficient manner with an entrance off Union Street and another entrance and exit from Hamilton Avenue. A new port entrance and exit at the Hamilton Avenue and Bowne Street intersections will direct truck traffic toward Hamilton Avenue, in turn providing direct access to the Brooklyn-Queens Expressway and reducing neighborhood traffic impacts at the intersection of Columbia Street and Atlantic Avenue.

In the short term, the City is already delivering substantial capital upgrades to the BMT site, including:

- \$15 million investment to purchase a new electric crane
- \$2 million investment in fender repairs to Pier 10
- \$1 million investment to demolish and remove the four out-of-service cranes
- \$55 million to bring the existing piers to state of good repair

Subject to an approved GPP and final approval by the Public Authority Control Board (PACB), public contributions from the City, State, and federal contributions to BMT would grow to \$411 million, including:

- \$164 million federal USDOT MEGA Grant with a \$109 million City match (City Capital, FY26) for marginal pier reconstruction
- \$65 million State grant towards the project, including \$15 million towards a new cold-storage facility to support the port and the Blue Highways initiative

Planned Port Operator RFP

The BMT port is envisioned to benefit from a single operator assuming full operational controls for the container, cruise, and flex maritime terminals together as a single commercial port area,

allowing for increased efficiency, private investment in the port and financial sustainability with no operating subsidy. A future RFP is anticipated to encourage proposals seeking at least a 30-year lease term with the expectation that RFP Respondents will propose to make significant private investment in top-side equipment, structures, and/or land-rental payments. The future operator of BMT may also be invited to submit a proposal to operate a Blue Highways service at Hunts Point associated with a 5- to 8-acre barge terminal on the peninsula in the Bronx, creating efficiencies and market opportunities for cross-harbor, intra-harbor, and coastwide marine shipping. A new marginal pier, modernized infrastructure and equipment, paired with densified operations, better site circulation, and a long-term operator is envisioned to facilitate intensified maritime operations at BMT.

NYCEDC does not intend to select a port operator, developer, and/or maritime industrial tenant(s) from this RFEI. Rather, the RFEI will serve as a critical step in refining the scope to be studied in the environmental review, identifying potential port operator/developer partners, and shaping one or more subsequent RFPs. The Brooklyn Marine Terminal Development Corporation (“BMTDC”), an entity that will be formed to oversee and manage the redevelopment of the BMT (see the Governance section of the Vision Plan), will ultimately be responsible for reviewing responses received from this RFEI and incorporating any lessons learned into the future RFPs.

For more details on the BMT Vision Plan, please review the BMT Vision Plan document in its entirety [here](#).

For more information on the market assumptions underlying the BMT Vision Plan, a copy of the Moffatt & Nichol memo from January 24, 2025 is attached to this RFEI in Appendix A.

III. Response Guideline for Respondents

NYCEDC welcomes responses from all interested parties including those interested in acting as the operator/developer of the entire port facility or those interested in operating on a portion of the site as a tenant to the port operator. NYCEDC also welcomes responses from any interested maritime based industrial business that is interested in operating on the site even if they do not conform exactly to the vision of the port presented in the BMT Vision Plan. For example, Respondents are welcome to express interest in developing or operating a port that is larger than the 60-acres indicated in the BMT Vision Plan, or to propose maritime uses on parts of the site that are not designated for such use in the BMT Vision Plan.

Respondents should include the answers to the following questions in their responses:

Use, Size and Layout of Facility

1. Describe the nature of the proposed maritime industrial operation:

Who are the primary clients (1a)? What are the primary commodities (1b)? How dependent is business on waterborne shipping (1c)?

1a- R: The primary clients is **NYCEDC (New York City Economic Development Corporation)**

Red Hook Container Terminal

Equinor: Developing the BMT as the Operations & Maintenance base for the Empire Wind 1 offshore wind project.

Serving diverse users from cargo ships to cultural vessels, with support from groups like the **International Longshoremen's Association (ILA)** and local businesses.

1b- R: The primary commodities is the bulk goods (lumber, salt, aggregates, specialized Container/non-containerized cargo.

1c- R: About 69% are shipping by waterborne shipping in U.S.

2. Would the Respondent plan to act as port operator/developer for the entire port facility or as a tenant to an operator?

R: As a tenant to an operator.

3. How long has Respondent's business been operational? Where is Respondent's business currently located? Would a location at BMT represent an expansions of the existing business or replacement?

R: The responder is located in Douglaston, Queens for 15 year in business. Respondent is a structural engineer perform 3D structural model for Building and

Infrastructure. Please refer to the attached Resume-Capability Statement.

R: The responder is located in Douglaston, Queens for 15 year in business. Respondent is a structural engineer perform 3D structural model for Building and

Infrastructure. Please refer to the attached Resume-Capability Statement.

SST work mainly on line and communicate with Internet.

4. What location within BMT best suit Respondent proposed use? Describe why this location is most suitable (e.g., requirement for contiguous open spaces, berthing space required, water depth, requirement for interior spaces, etc.)

R: The Brooklyn Maritime Terminal Pier 11 will be best suit for me. Because is close to the public transportation.

5. How much aggregate would the proposed use occupy? Does the respondent anticipate the port to grow over time? How much and in what ways? Does the respondent anticipated a phased approach to both initial construction and potential growth?

R: It is about 60sqft for 1-2 employee Office space. It will grow as BMT design start.

6. Describe the amount and type of interior building spaces that the proposed business would require. Is there are a specific location within the BMT site where these buildings would to located?

R: Estimate 3 employee count and density (100sq ft/person), then identify specific functions for offices with internet access and near pier 11 for easy access to public transportation.

7. Do the proposed future public investments described above and in the BMT Vision Plan make BMT a more attractive site for your business?

R: Yes potential public infrastructure investments

8. Are there different potential public infrastructure investments that would make the site more attractive to your business?

R: Yes, Economic development activities include loans and grants to businesses, job training, infrastructure improvements to commercial districts, and other efforts to attract or retain workers.

9. How important is a marginal pier with a 1,700 linear foot berth to your business? Could your business operate just as efficiently with the restoration of the finger piers at Piers 8, 9A and 9B instead?

R: A 1,700-foot marginal pier is a substantial asset, crucial for maximizing waterfront revenue by accommodating many parallel-docked vessels, improving efficiency, and A 1,700-foot marginal pier is a substantial asset, crucial for maximizing waterfront revenue by accommodating many parallel-docked vessels, improving efficiency, and potentially attracting diverse users (cargo, ferries, private boats) potentially attracting diverse users (cargo, ferries, private boats)

Since SST is working on the computer that can on access to internet, large space may not be required.

10. Describe how your business would meet the City's goal to build a modern, all-electric, 21st Century port.

R: Provide 3D structural framing plan and detail to handle electric rail and load. Define grid line for all structural element. Start from foundation pier to deck and crane that all interactive.

Others: **Electrified Equipment, Shore Power; Marginal Pier; Smart Grid**

11. Are there other maritime industrial businesses whose presence at BMT would make it a more attractive location for your business?

R: For a maritime business, other key players like **ship repair/maintenance, specialized logistics (cold storage, bulk cargo), offshore energy support (wind/oil), maritime tech/innovation firms, and related manufacturing (gear, components)** make a location like Brooklyn Marine Terminal (BMT) more attractive by creating a synergistic port ecosystem for efficiency, shared resources, and talent. Think complementary services that support bigger operations or specialized needs, enhancing the whole waterfront's industrial appeal.

12. What is your business' perspective on any synergies between BMT and a Hunts Point Marine Terminal?

R: The synergy between the Brooklyn Marine Terminal (BMT) and the Hunts Point Marine Terminal centers on creating a unified "[Harbor of the Future](#)" network, leveraging a "[Blue Highway](#)" barge system to shift freight from trucks to water, reducing congestion, and boosting city-wide food security by connecting BMT's modern port with Hunts Point's major food hub, creating an efficient, sustainable maritime & industrial ecosystem for NYC.

13. What site infrastructure, acreage, and equipment at the Hunts Point Marine Terminal would be desired?

R: acreage will repurpose the existing 122-acre site for a 60-acre port, mixed-use space (housing, light industrial, commercial), and 28 acres of public parkland; and key equipment involves electrified cranes for efficient, sustainable maritime operations.

Financial Proposal

14. Describe, in qualitative terms, the core functions and services that the Respondent's business currently uses to generate revenue.

R: The proposal as shown on the attachment page 17, 18 of 55 is the core function and service of the Respondent's business currently uses to generate revenue.

15. Does the Respondent's company operate independently or is it a subsidiary of another? If the latter, who is the parent company and/or the largest holder(s)?

R: The Company is working independently.

16. Provide examples of existing or previous operations, where similar functions described in this RFEI are used to generate revenue. Describe the financial model of these examples, including any public subsidies they receive.

R: SST provide 5 Sample projects in Capability Statement. The proposal is added as typical to generate the revenue.

17. To support the Respondent's existing/previous operations, has the Respondent's firm historically invested in the development of these businesses? Investment could take the form of either direct capital injection for infrastructure and/or equipment, and/or the provision of equipment through other sources. If so, please provide examples and a description of whether such an investment strategy could be brought to BMT.

R: SST is not invested directly in the development of those business. However SST make the final product to cover entire structure. For example, provide the D/C ratio or Passing ratio for all members, not just a single element.

18. What are the general conditions (i.e., length of lease term) your firm typically seeks to support the business model.

R: It is usually less than 6 month. But it can over years for large project.

Employment

19. Provide a brief description of the employment opportunities the Respondent's firm views could be associated with terminal operations, as well as within the broader community.

R: The foundation of the existing or new foundation need record, design or peer review enable a lot of structural work. SST is a structural engineer that perform the 3D structural model for caisson as early as 2004. The substructure including caisson and platform structure all need record for coordination.

20. Provide an estimate of the number of Full Time Equivalent positions associated with the proposed project.

R: Estimate 1 full time equivalent structural engineer that special in both AUTOCAD and Structural software will be required.

Alternate 3 full time professional will be required including structural Engineer, AUTO CAD draftsman, and estimator will be required.

21. Does the Respondent's firm have prior experience working with unionized labor, and in particular, the ILA - if so, where?

R: Yes. As shown on the Capability Statement Kopper Railroad Inc. has Union worker that work on MP 274.02, MP278.77 for Railroad bridge renovation in New York State.

22. Please describe plans for establishing a comprehensive workforce development strategy that could include a Project Labor Agreement, targeted community hiring, a maritime career

readiness program for local disadvantaged residents, or other elements

R: SST will follow the 115 pages of **New York City Local/Regional Workforce Plan** has establishing comprehensive workforce development strategy that could include a Project Labour Agreement, target community hiring, a maritime career readiness program for local disadvantaged residents, or other elements.

Traffic/Utilities

23. How much car traffic and truck traffic would the proposed business generate at the BMT on a daily basis?

- R: A daily barge service is expected to eliminate approximately **300 one-way truck trips** through Red Hook and surrounding communities.

24. How does the Respondent envision maximizing potential for Blue Highways at BMT?

R: 1. **Creating a modern port:** The BMT will be redeveloped into a 60-acre, all-electric port featuring a new marginal pier to support efficient water-to-water freight movement. This modernization aims to attract a single operator who can maximize efficiency through private investment and integrated operations.

2. **Reducing truck traffic:** The primary goal of the Blue Highways initiative is to move a significant portion of goods off congested NYC roadways and onto the city's waterways. Leveraging the BMT as a central node for this network is projected to help alleviate traffic and reduce emissions.

25. Would the proposed business own boats or ships? How many? What size? Would these vessels need to be docked at BMT? How much berthing space would be required?

R: The proposed business is a consultant Engineer company, does not own boats or ships.

26. What is the required electrical capacity needed to run the proposed business?

R: The monthly electrical bill is 280KWH per month.

General

27. Does the Respondent have any additional feedback on the BMT Vision Plan?

R: **Key Positive Feedback & Features**

Job Creation: Promises thousands of construction and permanent maritime/industrial/commercial jobs.

Modern Port: Aims to create a resilient, all-electric maritime hub with "Blue Highway" expansion for goods movement.

V. Submission and Details

The BMT Vision Plan

This response is submitted for parts of the RFE1 that focus on the structural 3D analysis and D/C ratio of proposed BMT platform structure. It is more related to section II- Project background. The current container terminal operates on less than half of the full site (approximately 60 acres) with a generally low-density operation. This operational arrangement may be suitable for the low volume currently handled at the terminal but will become increasingly inefficient if volume increase. This can be performed as Peer Review by a 3D structural structure analysis.

For the RFE1 overall responses must contain the following in this order:

- A.** Contact information, including the legal name of the respondent, business address (if applicable), name of contact, telephone, and email.

R: First name: Shiu-Sen Last name: Tsai Title: President

Business Name: SST CONSULTANT ENGINEER, P.C.

Address: 233-23 41st Avenue, Queens, New York City, USA 11363

Phone: [REDACTED] Email: [sst8576@\[REDACTED\]](mailto:sst8576@[REDACTED])

- B.** Firm Description: A brief description of the company, its lines of business ,organization, mission, affiliates, objectives, location, its years in business under its present business name, and a list of previous business names used,if any.

R: SST CONSULTANT ENGINEER, P.C. is S-Corporation Year 2010 to present.

Address: 233-23 41st Avenue, Douglaston, NY 11363.

Organization: President: Shiu-Sen Tsai; Assistant Secretary: Nian Wen Zheng

Mission: Performed the building and infrastructure 3D structure analysis to obtain the D/C ratio using software like CSI Bridge; STAAD.Pro, LARSA 4D etc.

Affiliated: MBE certification with NYC SBS, MBE-# VS00070997

NYS MBE,-# 67624 PANYNJ, MBE #21002603

New York State P.E. 064889 Membership- ASCE

- C.** Financial Capacity and Capability: A description of the financials of the Respondent and financial approach to demonstrate adequate financial resource to develop the site in a manner consistent with Respondent's proposal.

R: Financial Capacity: Professional Liability insurance and Surety Bonding

Financial Capability: Working with Empire State Development and Insurance Company

SST will have the Surety bonding cover in addition ton Professional Liability Insurance.

- D.** The description shall include the Respondent's general maritime industry experience and in operating facilities related to or serving such industry. The Respondent shall identify and briefly

describe all facilities operated by the Respondent and any affiliates, the annual volumes of activity and customers served at such facilities, and other information pertinent to the operation of such facilities. The Respondent shall include any experience relevant to demonstrate its experience in successfully developing and/or operating facilities related to proposed uses.

R: 1. As shown on the resume (page 3 of 53), SST is the original structural design and construction services for the "Port Newark Container Terminal, LLC." two new buildings as part of the overall development of a 155-acre port and container-handling site.

2. As shown on the Sample of the Capability Statement page 47-45, SST has working on the FDR Outerbound Detour Roadway with Caisson installed on East River bed. That experience also can be used in BMT.

SST provide Consultant Engineer service work with confidence and easy. SST is also willing to joint other teams for best coordination.

E. Any other information relevant to determine the level quality of experience Respondent has in successfully developing and/or operating facilities related to proposed uses.

R: The design and construction technique does not appear to be changed through so many years. SST is confident that all BMT work can be more or less the same.

F. Responses to the questions relevant to your organization listed in Section III and any other information that would be informative and responsive to this RFEI.

R: Will conform. All inquiry should be through mail and documents.

Submissions will be evaluated by NYCEDC and BMTDC based on (1) alignment with the City's objectives described in this RFEI, (2) the potential long-term viability of the proposed operation, (3) demonstrated capability, expertise, and experience of the respondent, and (4) the feasibility of ancillary infrastructure improvements or other City interventions required to support implementation. Respondents are encouraged to submit as much information as possible, specifically by providing comprehensive responses to the questions outlined in Section III. All responses must be shared in full to all BMTDC Board Members.

	CAPABILITY STATEMENT SUMMARY Sample Project			Sheet	1 of
SST Consultant Engineer, P.C.				Date	12/15/2025
				By	ST
Item Number	Title	Item Page	Content	Total Pages	
*	Resume			1-4	
		Page 1	SST resume		
		Page 2-4	Employee History		
*	Capability Statement			5-8	
		Page1-2	Capability		
		Page 2-4	Project brief #1 to #5		
#1	MP 274.02, MP 278.77 Bridge Renovation Proposal	Page 2-3	Plan and existing photo	9-18	
		4-5	3D Structural Model		
		7-8	D/C Ratio		
		9-10	Proposal		
#2	41 East 20th Street Renovation			19-25	
		Page1-2	3D Structural Model		
		3-5	Wall Stress & D/C ratio		
#3	88 Walker Street Hotel Construction	6-7	D/C ratio on foundation	27-39	
		Page 1-3	3D Structural Model		
		4-8	D/C ratio & Steel take-off		
#4	45-55 158th Street Peer Review	9-14	Structural Drawing	41-46	
		Page1-2	3D Structural Model		
#5	FDR Outerboard Detour Roadway	3-4	D/C ratio on curved corridor	47-55	
		5-6	Wall Stress & D/C ratio		
#5	FDR Outerboard Detour Roadway	Page 1-6	Project of the Year New York Construction	47-55	
		7-9	3D Structural Model		

Shiu-Sen Tsai, P.E.
SST Consultant Engineer, P.C.

233-23 41st Avenue, Douglaston, NY 11363 E-mail: sst8576@[REDACTED] Cell: [REDACTED]

Title: President, SST CONSULTANT ENGINEER, P.C. (2021-Present)

Professional Engineer (Civil), New York, #064889
Special Inspection Agency #000834

MS, Civil Engineering, Carleton University, Ottawa, Canada, 1981

BA, Architecture, Feng-Chia College of Engineering and Business, Taiwan, 1970

Building Projects--SST CONSULTANT ENGINEER, P.C.

→ **41 East 20th Street, NYC, NY 10003—LMW ENG. Group, LLC/LEECO Construction, Brooklyn, NY**
Provide 3D analysis for timber/cold formed steel renovation with CMU perimeter wall & inspection. This is a 3 story history building with crawl space on lot size 25'x92'. [2020-2024] Construction Value = \$ 1 M

→ **88 Walker Street, New York, NY 10007 –Design 101, LLC, Forest Hill, NY** Structural design and RFI for this steel building structure. This is a 10 story + 1 Cellar Steel Building with lot size of 49'x100'. [2016-2023] Construction Value = \$ 8 M

Eastern Mirages-42-31 Union Ave., Flushing, NY—Fleet Architect LLP, 136-20 38th Avenue, Flushing, NY

Structural design for additional steel corridor/roof structure on various floor levels. This is miscellaneous steel structure on newly 17 story concrete building complex. [2019] Construction Value = \$ 1 M

→ **45-55 158 Street, Flushing, NY 11358—NYCDOB/Ameriland Brook LLC, Flushing, NY**
Peer Review for this one family steel +CMU wall building structure. This is a 2 story + 1 Cellar and attic floor Building with lot size of 65'x100'. [2020-2022] Construction Value = \$ 1 M

48 N 15th Street, Brooklyn NY 11222 --- SST CONSULTANT ENGINEER, P.C.

Structural engineer in record. Responsible for the TR1 sign off/Inspection and provide the repair detail for the front falling façade. This is a 20 ft high 1 story masonry warehouse/office Building with lot size of 160'x100'. [2018] Construction Value = \$ 0.1 M

103-25 113th Street, Richmond Hill, NY 11419 --- SST CONSULTANT ENGINEER, P.C.

Structural engineer in record. Responsible for the repair design of the water spooling of timber joist/stud due to the fire rescue for adjacent building. This is a two family house with lot size of 22'x100'. [2018-2019] Construction Value = \$ 0.3 M

261 Union Avenue, Brooklyn NY 11211—Design 101, LLC, Forest Hill, NY

Structural engineer in record. Responsible for the design and RFI for design and excavation/shoring for this building construction. This is a 6 story + 1 Cellar Steel Building with lot size of 25'x100'. [2015-2017] Construction Value = \$ 2 M

2600 Adam Clanton Powel Blvd. NY 10039—Lin+Associate Architect, PC, Kew Garden, NY

Original Structural engineer in record (in previous #12284517-3). Original design and structural dwg. of this steel building structure. This is a 7 story + 1 Cellar Steel Building with lot size of 100'x200'. [2014-2015] Construction Value = \$ 8 M.

26 Avenue P., Brooklyn NY 11204—AJR Construction P.C., 265 Canal Street, Brooklyn, NY

Original Structural design engineer. Structural design & contract dwg. for this steel building structure. This is a 7 story + 1 Cellar Steel Building with lot size of 49'x100'. [2014-2015] Construction Value = \$ 6 M

Shiu-Sen Tsai, P.E.

SST Consultant Engineer, P.C.

Infrastructure Projects: Shiu-Sen Tsai, P.E. (1981-2021-Present) Summary Biography

Tsai has over 40 years of professional experience including 20 years as a senior structural engineer responsible for design and preparation of contract plans for the transit facilities, bridges and buildings. His experience encompasses: Bridges, Transit Facilities, Port/Piers/waterfront, Water Resources, Environmental Facilities, Tunnel, Buildings Structures and Airports Terminal.

Bridge Project

Renovation of Railway Bridge MP 274.02, MP 278.77 for Kopper Railroad Structures Inc. Senior Structural Engineer, start/end dates (July 2024 to August 2025) – SST Consultant Engineer, P.C.

Scope/Description/Value: Provide Precast Bearing Pad Anchor Design and D/C ratio check. Review the shop drawing submission prior to construction. Provide 3D structural model and D/C ratio for girders, cross beams, stringers, railway rail and timber joists as required for MP 274.02. (2 spans thru girder, OAL=90 ft.). Total project cost = \$ 1.1 M

Terminal C Canopy Expansion, Boston, MA, Massachusetts Port Authority, Senior Structural Engineer, start/end dates (Jun 2020 to Nov 2020) – Jacobs, NYC

Scope/Description/Value: Structure design at expansion joint pier for cap girders, columns and renovated existing pile cap that carry additional load from new wider roadway. Obtain expansion joint pier load from two independent CSiBridge models and process to foundation design. Design single and combined pile cap footings using CRSI/AASHTO code provisions. Total project cost = \$ 50 M

Renovation of Harlem River Drive (HRD) Ramp to GWA, New York, NYC Dept. of Transportation, Senior Structural Engineer, start/end dates (Jul 2019 to May 2020) – Jacobs, NYC

Scope/Description/Value: Structural Engineer using CSiBridge to develop 3D space frame model for option 5 NB_SB ramp renovation scheme. Aim to combine NS and SB roadway ramps, steel viaduct and tunnel structure in one model, without discontinuity in the expansion joints or between the tunnel and steel superstructure. Total project cost = \$ 431 M (8 years)

Durham-Orange Light Rail Transit Project, Raleigh NC, North Carolina Dept. of Transportation, Structural Engineer, start/end dates (Aug 2017 to Jan 2020) – Jacobs, NYC

Scope/Description/Value: Superstructure design for new light rail transit using MDX, CSI Bridge, and MIDAS software. Use CSiBridge to combine 27 spans in one model, without discontinuity in the expansion joints. Also combined pre-stressed I girder and steel I girder in same model. Total project cost = 2.5 B

SunRail Phase 2 for Central Florida Commuter Rail Transit Project, Orlando FL, Florida Dept. of Transportation, Structural Engineer, start/end dates (Mar 2016 to June 2017) – Jacobs, NYC

Scope/Description/Value: Reinforce concrete box culverts design and concrete box culverts shop drawing review for new commuter railroad. Total project cost = \$ 187 M

Load Rating Program, UT, Utah State Department of Highways, Senior Structural Engineer, start/end dates (Sep 2014 to Aug 2015) – Jacobs, NYC

Scope/Description/Value: Using the CSi Bridge, provide 3-D space framing model for the load rating program for 26 curved bridges of UTDOT. The CSi Bridge is able to resolve curved, complex geometry of the bridge structure. Use the CSi Bridge software to perform all 26 bridge model. The 3D structural model tools included the extensive use of the CAD and spread sheet for the complicated geometry. Structural model included the deck slabs, girders, floor beams, cap beam, columns and foundation. Parametric variation, curve geometry and special user's joint for skew diaphragm are also involved.

Pulaski Skyway Rehabilitation Contract, NJ, NJ Dept. of Transportation, Senior Structural Engineer, start/end dates (Jan 2014 to Jan 2015) – Jacobs, NYC

Scope/Description/Value: Senior Structural Engineer responsible for the initial set-up of structural modelling of 18 spans and 7,100 ft. long of the truss bridges. Scope of work from bridge pier 58 to pier 81 that cross the Hackensack bridge river. Use the CSiBridge software to perform all analysis included the seismic analysis and load rating. The structural model included the long span truss, pile foundation, drill shaft foundation and underwater hydraulic load. Total project cost = \$ 210 M

George Washington Bridge 178th, 179th Streets Ramp Renovation, New York, NY, Port Authority of NY & NJ, Senior Structural Engineer, start/end dates (June 2010 to Jan 2012) – Jacobs, NYC

Scope/Description/Value: The structural system is divided into 10 portions based on the function and expansion joint separation. The structural calculation work included the SAP2000, STAAD 3-D analytical model, spread sheet and Mathcad. A total of 116 spans, comprised of about 960 members, were modelled. The as-built and as-inspected, Demand/Capacity ratios were established for all structural element types (stringers, floor beams, girders and columns). Four types of AASHTO legal loading were analyzed. The load rating work involved existing steel and concrete work constructed in 1930 to 1960.

Shiu-Sen Tsai, P.E.

SST Consultant Engineer, P.C.

LaGuardia Airport Runway Renovation, New York, NY, Port Authority of NY & NJ, Senior Structural Engineer, start/end dates (Dec 2010 to Nov 2011) – Jacobs, NYC

Scope/Description/Value: Provide the load rating of the existing LGA runway and Taxiway slab and girder. The platform structure consisted of about 20-330'x380' units. The structural calculation work included the STRUDL analytical model and spread sheet summary of different component. The structural analysis summarized the available live load capacity of the pre-stressed deck slab and girder.

*** 11th Avenue Viaduct Reconstruction, South Section, New York, NY, NYCDOT, Senior Structural Engineer, start/end dates (Aug 2009 to Mar 2010) – HDR, NYC**

Scope/Description/Value: Reconstruction of Load rating of the bridge Viaduct at 11th Avenue section near Jacobs Convention Centre. The project is aimed to coordinate with the #7 train extension that under the portion of the existing 11th Avenue Viaduct. Total project cost = \$ 53M

→ *** FDR Drive Outboard Detour Roadway, New York, NY, NYSDOT, Senior Structural Engineer, start/end dates (Month 2002 to Month 2003) – TAMS, NYC**

Scope/Description/Value: Structural design of temporary outboard detour roadway between E53rd Street and E63rd Street. The half-mile-long steel structure is supported on steel cap girders and 54"Ø steel caissons that anchored into East River bed. This project was award from New York Construction as best of year 2004- overall winner for its innovative engineering and smooth execution. Total project cost = \$ 40 M

*** Access Roadways/Ramp at International Arrivals Terminal Redevelopment, JFK International Airport, Jamaica, NY, PANYNJ, Structural Design Engineer, start/end dates (Jan 1994 to Jan 1997) – TAMS, NYC**

Scope/Description/Value: Structural design for the arrival/departure ramps that consisted of five roadway on the elevated bridge viaduct. The five ramp structure ranged from 500 to 1,000 feet in length each and the averaged curved girder spans length is 90 feet.

Transit Facilities

→ *** Redevelopment of Port Newark Container Terminal, Port Newark, NJ, Port Newark Container Terminal LLC., Project Structural Engineer, start/end dates (Month 2000 to Month 2002) – TAMS, NYC**

Scope/Description/Value: The new buildings consist of a 23,000-square-foot administration building built over a trucking entrance, a 33,000-square-foot maintenance building for servicing straddle carriers and other site vehicles. The administration building is a four-story steel building structure with moment connection and knee bracing. The 70 feet high maintenance building consists of long-span roof girders, mezzanines, and mega entrance doors.

*** Facility Maintenance Buildings, Newark International Airport, Newark, NJ, PANYNJ, Project Structural Engineer, start/end dates (1997 to 1999) – TAMS, NYC**

Scope/Description/Value: Provide design and construct service for two steel buildings for PANYNJ. One is administration office and the other is for crane/truck parking. Scope of work included design, shop drawing review and RFI of construction service. The steel building has composite deck floor, lateral bracing and moment connection. Timber pile were used for all foundations.

*** Journal Square Transportation Center Renovation, Jersey City, NJ, PANYNJ, Structural Engineer, start/end dates (Sep 1983 to Sep 1984) – Ammann and Whitney Consulting Engineers, NYC, NY**

Scope/Description/Value: Field inspection the plaster ceiling adjacent to the collapse plaster ceiling about 150ftx60 ft. at concourse level. Proposed a new hanger assembly for all plaster ceilings. Design the new ceiling structure to prevent progressive collapse.

Ports/Piers/Waterfront

*** Ellis Island Seawall Reconstruction, Ellis Island, NY, National Park Service, Senior Structural Engineer, start/end dates (Jan 2010 to Mar 2010) – HDR, NYC**

Scope/Description/Value: Field inspection and buttress seawall design for the reconstruction of 1100 ft. long Type "E" buttress Seawall. Provide 3-D model analysis for Wales.

*** Hillview Reservoir Cover, Yonkers, NY, NYCDEP, project structural engineer, start/end dates (Month 1996 to Month 2004) – TAMS, NYC**

Scope/Description/Value: The proposed concrete roof is a double-tee structure designed for lightweight overlay and H-14 truck loading. The 90-acre structure is divided into 53 units, each unit is 270 feet by 270 feet with columns spacing 45 feet in each direction.

Shiu-Sen Tsai, P.E.

SST Consultant Engineer, P.C.

Tunnels

*** Creedmoor Hospital Steam Tunnel Reconstruction, NY, Creedmoor Hospital Steam Tunnel Reconstruction, NY, Project Structural Engineer, start/end dates (July 1986 to July 1986) – TAMS, NYC**

Scope/Description/Value: Perform the field inspection and repair detail of the Creedmoor Hospital Steam tunnel. The 2,500-foot-long underground steam tunnel is housing the heating pipes that connect the hospital complex.

Building Structures

*** Structural Renovation of Schools at Brooklyn and Manhattan, NY, NYCSCA, Structural Engineer, start/end dates (May 2005 to July 2005) – TAMS, NYC**

Scope/Description/Value: Performed the construction support service for three schools at PS105, PS149, PS198M in Brooklyn and Manhattan, NY.

*** Structural Renovation of Schools at Queens, NY, NYCSCA, Structural Engineer, start/end dates (Feb 2004) – TAMS, NYC**

Scope/Description/Value: Performed the structural inspection and renovation detail for three schools at PS128, Springfield Garden High School and the Newcomers High school.

*** 10 School Renovations, Paterson, NJ, NJEDA, Structural Engineer, start/end dates (Month 2002 to Month 2004) – TAMS, NYC**

Scope/Description/Value: Provided field inspections, condition survey and final design drawing for construction.

Airports Terminal

*** Delta Air Lines Terminal Building, LaGuardia Airport, Flushing, NY, PANYNJ, Structural Engineer, start/end dates (Month 1983 to Month 1984) – Ammann and Whitney Consulting Engineers, NYC**

Scope/Description/Value: Provide structural design and CSS for this new two story terminal building. This new building is applied steel beams/girders with composite deck slab.

Memberships and Affiliations

- ☐ American Society of Civil Engineers (ASCE), 30 years, Active
- ☐ The New York State Society of Professional Engineer, 30 years, Active
- ☐ International Code Council, 8 years, Active

Published Papers

- ☐ "A study of Coupled Shear Wall-Slab Building Structures with Reference to Optimization", Master Engineer Thesis, Carleton University (<http://www.civeng.carleton.edu>), 1981.

Key Skills/Areas of Expertise

- CSiBridge ☐ SAP2000 ☐ Excel ☐ Conspan STAAD.Pro ☐ MDX ☐ MathCad ☐ Microstation AutoCad ☐ PCA Column ☐ LARSA 4D ☐ Strudl

Employment History

2010 to Present,--SST Consultant Engineer, P.C.

2010 to 2021, ----Jacobs, NYC, Senior Structural Engineer

2006 to 2010, ----HDR, NYC, Senior Structural Engineer

2003 to 2006, ----Earth Tech, NYC, Senior Structural Engineer

1981 to 2003, ----TAMS, NYC, Senior Structural Engineer

1981-1984, -----Amman and Whitney Consulting Engineers, NYC, NY, Structural Engineer

1979-1981, -----Carleton University, Ottawa, Canada, Teaching Assistant & Graduate school

1978, -----C.H. Campbell Consulting Engineering Ltd., Calgary, Canada, Structural Engineer

1976-1977, -----ATCO Structures Ltd., Calgary, Canada, Structural Engineer

1971-1975, -----East Asia Consulting Engineer Company, Taipei, Taiwan, Project Structural Engineer

Capability Statement Template

Instructions

Insert the requested information on page 2 of this document. Save the information and upload the document here: [MWBE Capability Statement Upload](#)

Our team will provide you with a copy for final approval prior to inclusion in the e-capability portfolio.

Logo: <i>(Insert Company logo here)</i>	
Company Name: <i>(Name of the Company)</i>	Company Address: <i>(This section provides the official physical location of the business, which serves as a primary point of contact and verification for clients and agencies.)</i>
	Certifications (approx. 25-30 words): <i>(The Certifications section highlights the formal designations your business holds that may qualify it for set-aside contracts, preferred vendor status, or specific industry recognitions.)</i> List professional certifications/licenses and up to 4 small business certifications (e.g. DBE, MWBE, VOSB, etc.).
	NAICS Codes: <i>(This section identifies the official industry classifications under which your business is designated to operate with NYSDOT and/or ESD.</i> <i>These codes are essential for government contracting, as they help agencies match your company with appropriate opportunities.)</i>
Past Performance/Key Clients (approx. 75 words): <i>(This section provides concrete examples of previous work that demonstrates your company's experience, reliability, and ability to deliver results and showcases notable organizations or agencies with whom your company has worked.)</i> List and briefly summarize up to 5 projects.	Contact Information: <i>(This section provides all the essential details for connecting with your company's key representatives.)</i> Provide key contact name, email address, website and phone number.

Logo: ST	
Company Name: SST Consultant Engineer, P.C.	Company Address: 233-23 41 st Avenue, Douglaston, NY 11363
<p>The benefit of the 3D structural model and analysis with D/C ratio are:</p> <ol style="list-style-type: none"> 1. Foresee the building and bridge structure for the cost and weak point during the construction stage. 2. It will have a better control of the overall structure in term of the cost and schedule. 3. Avoid the RFI issue that will delay the schedule and additional cost. 4. All steel and material will exactly follow the code. 	Certifications: NYS PE 064889 NYS 67624 MBE NYC SBS VS00070997 Port Authority of NY & NJ-MBE 21002603 Steel Bolting Special inspector ICC 8290233 ACI Concrete Special inspector ACI 02107246
Past Performance/Key Clients: 1. Koppers Railroad Structures Inc. Work Time – 10/2024 thru 08/2025 Provide Engineering Services Listed, approve the design, rebar layout, overall dimensions, compressive strength, etc. MP 274.02- 2 spans thru girder, OAL=90' MP 278.77- 1 span thru girder, OAL=70' Both bridges provide Precast Bearing Anchor design & D/C ratio check, Review shop drawings & approved/stamped. Provide 3D structural model and all member D/C ratio, include girders, cross beams, stringers, timber joist and railing.	Contact Information: Contractor: Koppers Railroad Structure, Inc. Capital Railroad Contracting, Inc. Adam DiModica, PE, Capital Railroad Contracting, Inc, Web Site - capitalrailroad.com Email - DiModca@capitalrailroad.com Mobile - [REDACTED] Total project cost = \$1.1 M.

<p>Past Performance/Key Clients:</p> <p>2. 41 East 20th Street, NYC, NY</p> <p>Work Time – 10/2023 thru 08/2024</p> <p>This is a 3 story history building with 20ftx60 feet in size. The building has a crawl space but no basement</p> <p>Provide Engineering Services Listed, approve the design, field inspection, signoff for the initial structural permit.</p> <p>Provide 3D structural model and all member D/C ratio, as required.</p> <p>Bearing wall design as plate element to resisting the seismic force.</p>	<p>Contact Information:</p> <p>LEECO CONSTRUCTION CORP.</p> <p>Email – David@ [REDACTED]</p> <p>Cell – [REDACTED]</p> <p>Phone -- [REDACTED]</p> <p>LMW ENGINEER GROUP. LLC</p> <p>125 Lexington Avenue, Linden, NJ 07036</p> <p>Email – jwang@ [REDACTED]</p> <p>Phone -- [REDACTED]</p> <p>Total project cost = \$1 M.</p>
<p>Past Performance/Key Clients:</p> <p>3. 88 Walker Street, New York, NY 10007</p> <p>Work Time – 2016 to 2023</p> <p>Structural design and shop drawing review/approved</p> <p>Structural design of this 10 Story + 1 cellar steel building structure for hotel.</p> <p>Applied 3D structural model with offset column above the ground level for perimeter foundation.</p>	<p>Contact Information:</p> <p>Design101, LLC -Lucas Lee</p> <p>Email - design101@ [REDACTED]</p> <p>Phone - [REDACTED]</p> <p>Iron City</p> <p>41-22 FULLER PL 4FL, FLUSHING, NY 11355</p> <p>Email - ironcitygc@ [REDACTED]</p> <p>Phone - [REDACTED]</p> <p>Total project cost = \$8 M.</p>

<p>Past Performance/Key Clients:</p> <p>4. 45-55 158 Street, Flushing, NY 11358</p> <p>Work time – 2020 to 2023</p> <p>Peer Review for this one family steel structure + CMU wall Building structure</p>	<p>Contact Information:</p> <p>NYC DOB- Donald ALbano</p> <p>Email -DAbano [REDACTED]</p> <p>Ameriland Brook LLC,</p> <p>30-05 Strattan Street, Flushing, NY 11354</p> <p>Email – ablcnyc@[REDACTED]</p> <p>Phone – [REDACTED]</p> <p>Total project cost = \$1 M.</p>
<p>Past Performance/Key Clients:</p> <p>5. FDR Drive Outboard Detour Roadway, NYC, NY</p> <p>TAMS, NYC/NYS DOT</p> <p>Work Time – 2002 thru 2003</p> <p>Structural design of temporary outboard detour roadway between E53rd Street and E63rd Street. The half-mile-long Steel structure is supported on steel cap girders and 54"Ø steel caissons that anchored into East River bed.</p>	<p>Contact Information:</p> <p>Daniel Frankfurt Engineers & Architects/ /TAMS/DMJM Harris/Slattery Skanska</p> <p>This project was award from New York Construction as best of year 2004 –overall winners for its innovative engineering and smooth execution.</p> <p>Total project cost = \$40 M.</p>

1. MP 274.02, MP 278.77 Bridge Renovation



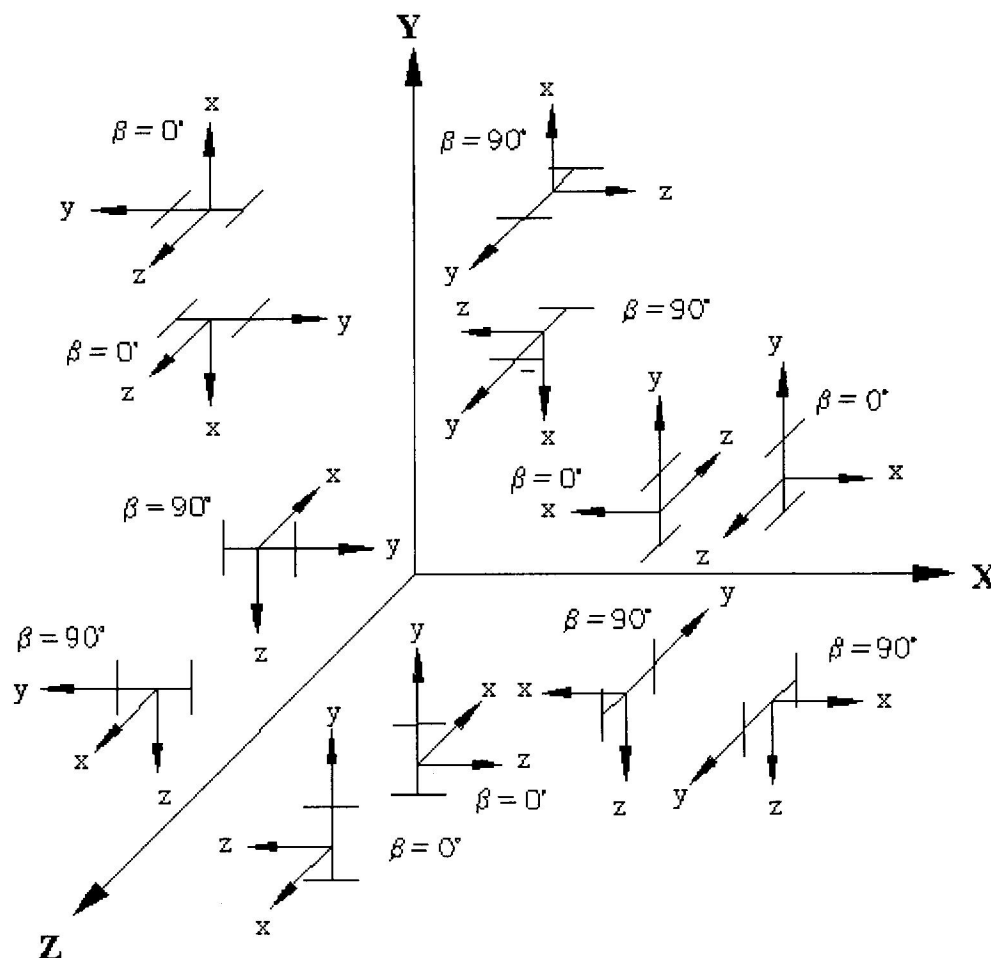


MP 274.02-Superstructure- Looking From Project East



MP 274.02-Superstructure - Looking From Project East

Figure 1-8: Relationship between Global and Local axes




Reference Vector


This is yet another way to specify the member orientation. In the reference point method described above, the X,Y,Z coordinates of the point are in the global axis system. In a reference vector, the X,Y,Z coordinates are specified with respect to the local axis system of the member corresponding to the BETA 0 condition.

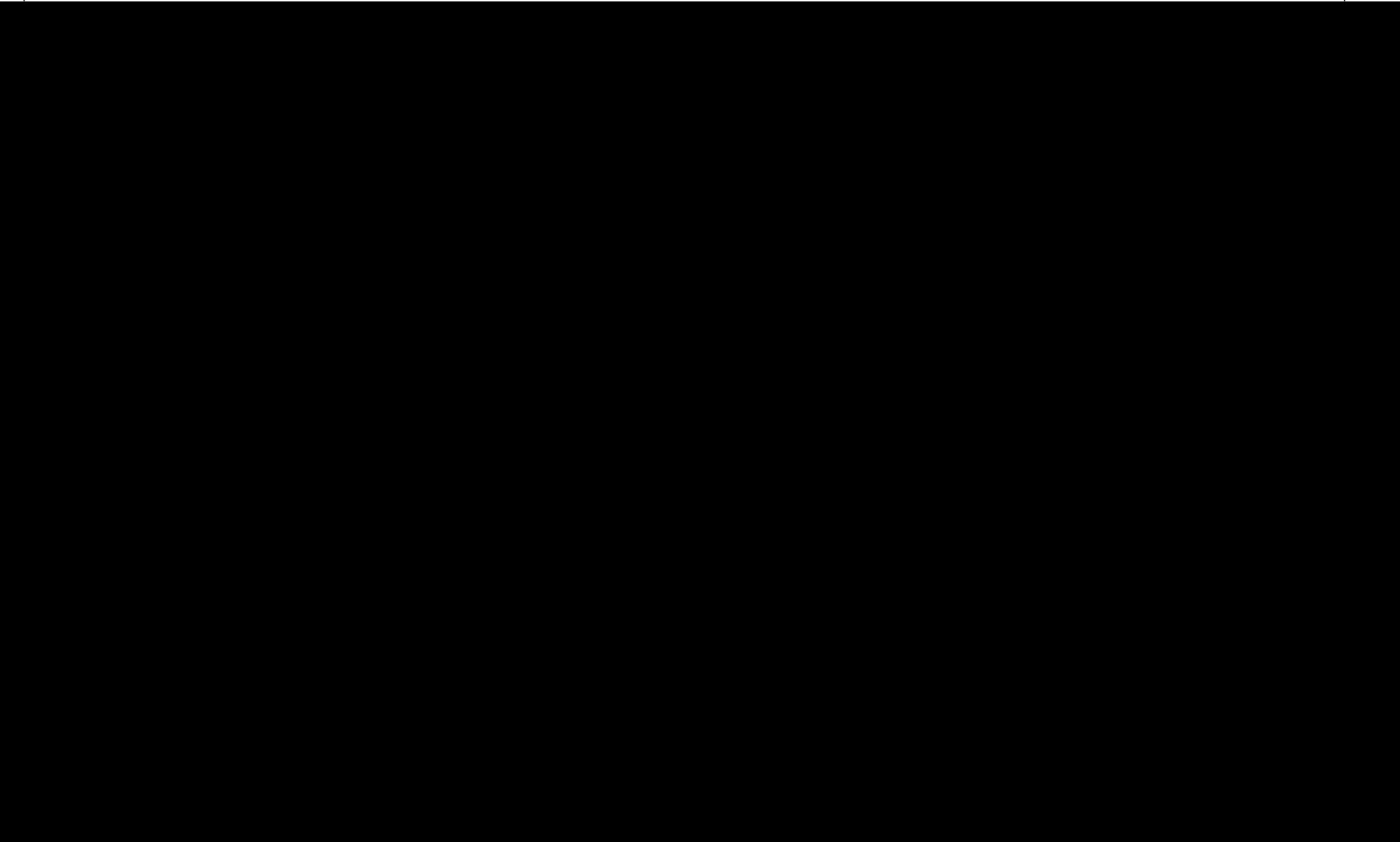
A direction vector is created by the program as explained in section 5.26.2 of this manual. The program then calculates the Beta Angle using this vector.

STAAD.Pro X,Y, Z
Coordinate System

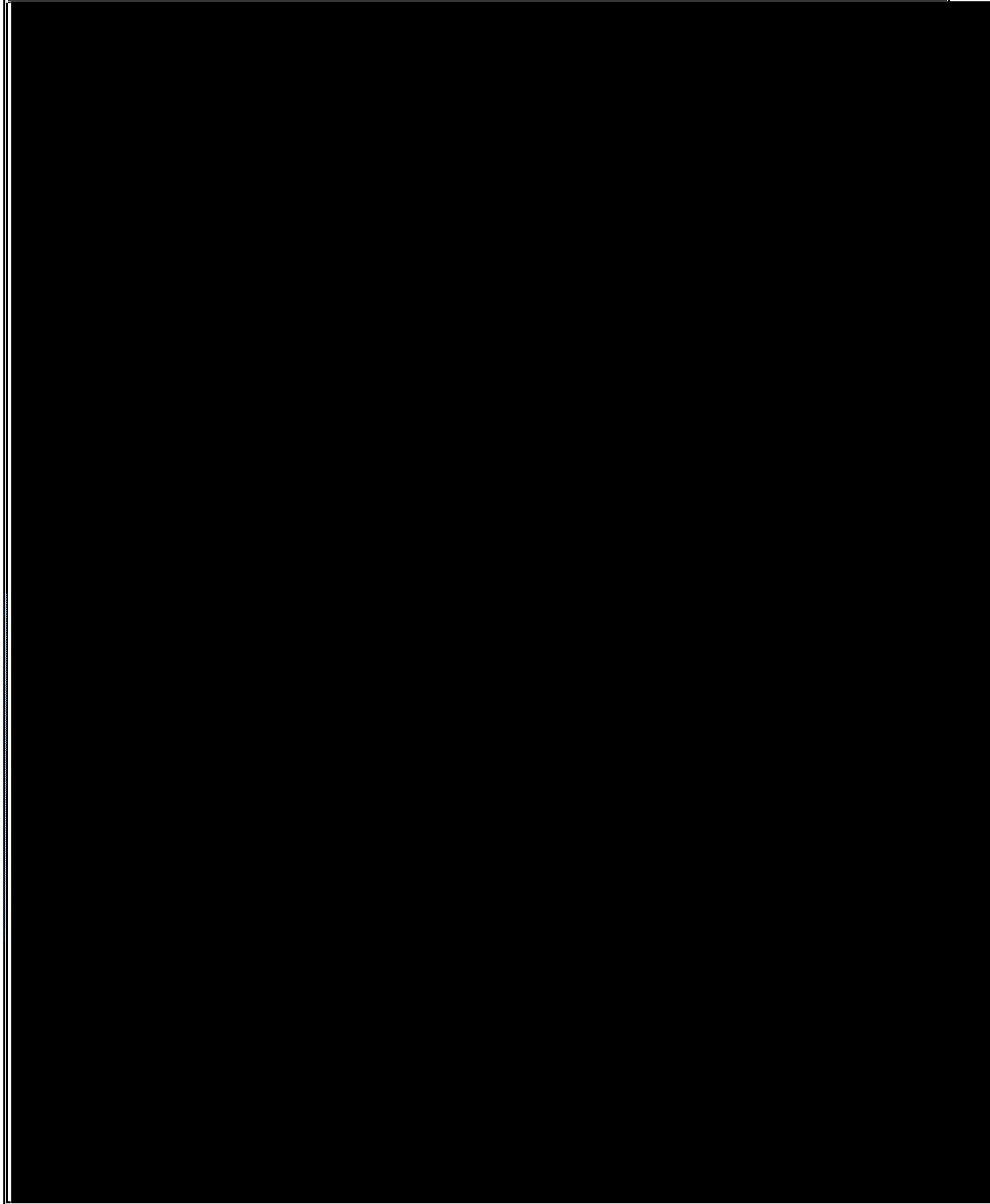
STATION AHEAD ONLY

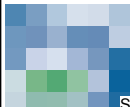
 Software licensed to SST Consultants	Job No MP274.02-9D	Sheet No 1	Rev
	Part		
	Ref		
	By ST	Date10-Jul-25	Chd MD
Client B & H Rail Corp.	File MP274.02_135 Y UP-9D.s		Date/Time 31-Aug-2025 20:44

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	Part		
	Ref		
	By ST	Date10-Jul-25	Chd MD
Client B & H Rail Corp.	File MP274.02_135 Y UP-9D.s		Date/Time 23-Aug-2025 15:54



B & H Rail Corporation		MP 274.02, MP 278.77 Load and Force Cooper E 60 Load & STAAD Member Number	Sheet	001 of
Bridge Rehabilitation			Date	03-Aug-25
SST Consultant Eng. PC			By	ST
Project No.--	001		Ch'ked by	AD



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	Part		
	Ref		
	By ST	Date10-Jul-25	Chd MD
Client B & H Rail Corp.	File MP274.02_135 Y UP-9D.s		Date/Time 31-Aug-2025 20:44

SST CONSULTANT ENGINEER, P.C.
233-23 41ST AVENUE
DOUGLASTON, NY 11363

2 of 5

F A X M E S S A G E

OFFICE: [REDACTED] CP DATE Aug/14/2025
FAX: [REDACTED]
E-mail: sst8576@[REDACTED] NO. OF PAGES: 2
(INCLUDING COVER PAGE)

FROM: Shiu-Sen Tsai
TO: Adam DiModica, PE; Koppers Railroad Structures Inc e Mail: CremerCJ@[REDACTED]
[dimodicaaj@\[REDACTED\]](mailto:dimodicaaj@[REDACTED])
COMPANY NAME: B & H Rail Corporation, 4546 Tompkins Drive, Madison, WI, 53716
Phone: [REDACTED] Mobile: [REDACTED]
FAX NUMBER: [REDACTED]
SUBJECT: B & H Rail Corporation Bridge Rehabilitation-Invoice
Invoice for Final Payment for MP 274.02*, MP 278.77*,

M E S S A G E

Dear Adam DiModica, PE / Cremer, Cathy

Work Time: October/2024 through August/2025 by SST Consultant Engineer, P.C
Software Use: AutoCad, STAAD. Pro, Csi Bridge and General application softwares

Work Coordination
SST Consultant Engineer, P.C.-----Shiu-Sen Tsai, PE, Nian-Wen Zheng, Secretary
Koppers Railroad Structures Inc---DiModica, Adam J, PE; Cathy J. Cremer, Nick Beneke

ITEM #	
	Provide Engineering Services listed, approve the design, rebar layout, overall dimensions, compressive strength required, etc as follows:
MP 274.02	2 span thru girder, OAL = 90', Bid Item #6, #7 Complete MP 274.02, Precast Bearing Anchor Design & D/C Ratio Check @ 10/24/2024 . Review precast concrete block shop drawing and approved/stamped @ 04/13/2025 . Provide 3D structural model and all member D/C ratio @ 08/12/2025
MP 278.77	1 span thru girder, OAL = 70'-0". Bid item #8, 9,10,11, 12, and 13. Complete MP 278.77, Precast Bearing Anchor Design & D/C Ratio Check @ 10/24/2024 . Review precast concrete block shop drawing and approved/stamped @ 04/13/2025 .
	Office Expense
	Field Visits- 1 visits for two bridges. With 64 field photos.

Thank you for your time and cooperation.

Shiu-Sen Tsai, P.E. **ST**

IF YOU DID NOT RECEIVE ALL PAGES INDICATED, OR IF THE PAGES WERE NOT
RECEIVED CLEARLY, PLEASE CALL US BACK. THANK YOU.

B & H Rail Corporation
Bridge Rehabilitation
MWBE Proposal

3 of 5

SST CONSULTANT ENGINEER, P.C.
233-23 41ST AVENUE
DOUGLASTON, NY 11363

Aug/14/2025

F A X M E S S A G E (cont.)

Proposal_B & H Rail Corporation Bridge Rehabilitation-Update 3

Original Consulting Fee based on Projects Items

Part "A" Estimate price to provide the engineering services listed, approve the design		unit	Fee
rebar layout, overall dimensions, compressive strength required, etc.			
Part "A" Create 3D space frame model using STAAD.Pro or CSiBridge Software			
-- MP 274.02*	2 span thru girder, OAL = 90', Bid Item #6, #7	1	\$4,000.00
-- MP 278.77*	1 span thru girder, OAL = 71', Bid Item #8, #9, #10, #11, #12, #13	1	\$4,000.00
Σ = 2 Bridges			

Invoice for Final Payment 08/14/2025 (09/2024 thru 08/2025)

(1) Work Coordination

SST Consultant Engineer, P.C.-----Shiu-Sen Tsai, PE, Nian-Wen Zheng, Scretary
Koppers Railroad Structures Inc---DiModica, Adam J, PE; Cathy J. Cremer, Nick Beneke

ITEM#			
	Provide Engineering Services listed, approve the design, rebar layout, overall dimensions, compressive strength required, etc as follows:		
MP 274.02	2 span thru girder, OAL = 90', Bid Item #6, #7	1	\$4,000.00
MP 278.77	1 span thru girder, OAL = 70', Bid item #8, 9,10,11, 12, and 13.	1	\$4,000.00
	Office Expense	0.25	\$2,000.00
	*Field Visits	*1	\$2,000.00

Amount Due **Sum**(1-3)= \$10,000.00
as of 8/14/25:

*The field trip inspection is already paid on 08/26/2024

	Invoice for field trip Inspection for MP 274.02*, MP 278.77*,	*Sum 4	\$2,000.00
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Amount Paid
on 8/26/24

ST

Thank you for your time and cooperation.

Shiu-Sen Tsai, P.E.

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RECEIVED CLEARLY, PLEASE CALL US BACK. THANK YOU.

2- 41 East 20th Street Renovation



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Job No
LEECO 007

Sheet No
1

Rev

Part

Job Title **41 East 20th Street NYC Renovation**

Ref **DV**

By **ST**

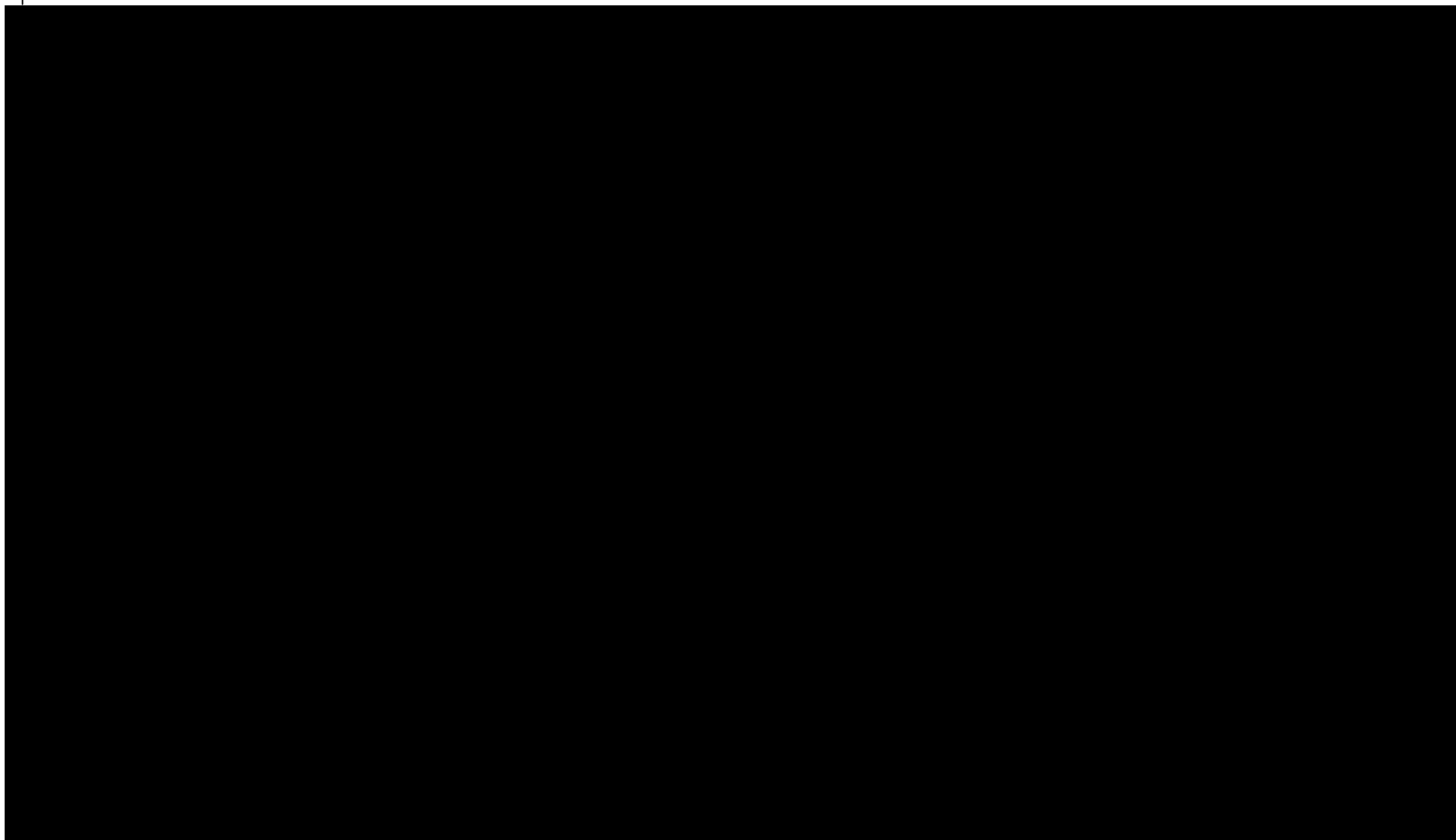
Date **20-Mar-23**

Chd **JW**

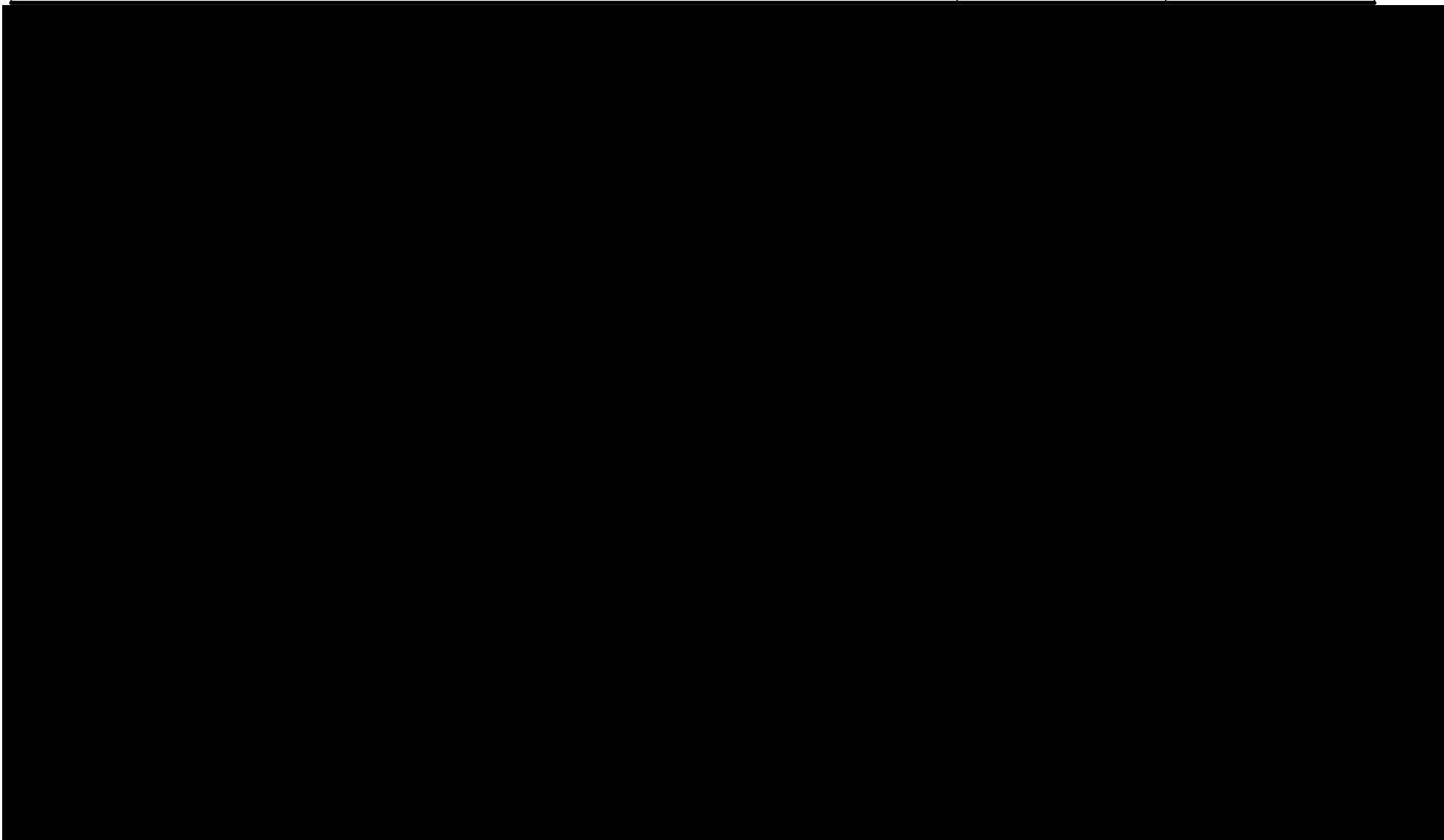
Client **Smart Apartments**

File **ReConfig 1D_FR_2 PLs_**

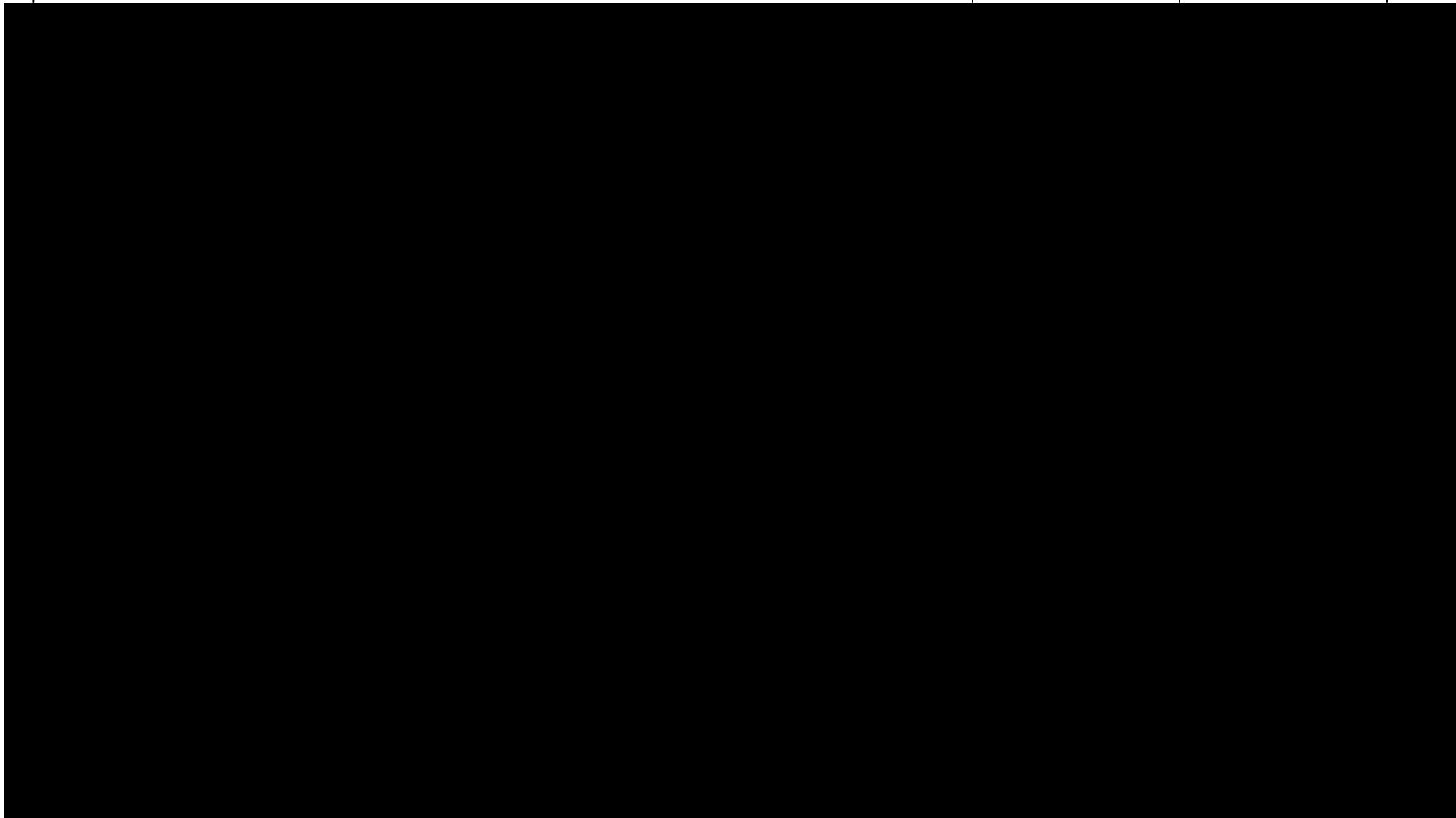
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 Software licensed to SST Consultants	Job No LEECO 007	Sheet No 1	Rev
	Part		
Job Title 41 East 20th Street NYC Renovation	Ref DV		
	By ST	Date 20-Mar-23	Chd JW
Client Smart Apartments	File ReConfig 1D_FR_2 PLs_	Date/Time 26-Mar-2023 08:12	



 Software licensed to SST Consultants	Job No LEECO 007	Sheet No 1	Rev
	Part		
Job Title 41 East 20th Street NYC Renovation	Ref DV		
	By ST	Date 20-Mar-23	Chd JW
Client Smart Apartments	File ReConfig 1D_FR_2 PLs_	Date/Time 08-Apr-2023 10:36	



 Software licensed to SST Consultants	Job No LEECO 007	Sheet No 1	Rev
	Part		
Job Title 41 East 20th Street NYC Renovation	Ref DV		
	By ST	Date 4-Mar-23	Chd JW
Client Smart Apartments	File ReConfig 1D_FR_2 PLs_	Date/Time 25-Mar-2023 21:24	



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Job No
LEECO 007

Sheet No
1

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Part

Ref DV

By ST

Date 20-Mar-23

Chd JW

File ReConfig 1D_FR_2 PLs_

Date/Time 26-Mar-2023 08:12

Job Title 41 East 20th Street NYC Renovation

Client Smart Apartments

PD -1: Plot Diagram

Must be typewritten.



1 Location Information

House No(s) 41

Street Name EAST 20TH STREET

Borough MANHATTAN

Block 00849

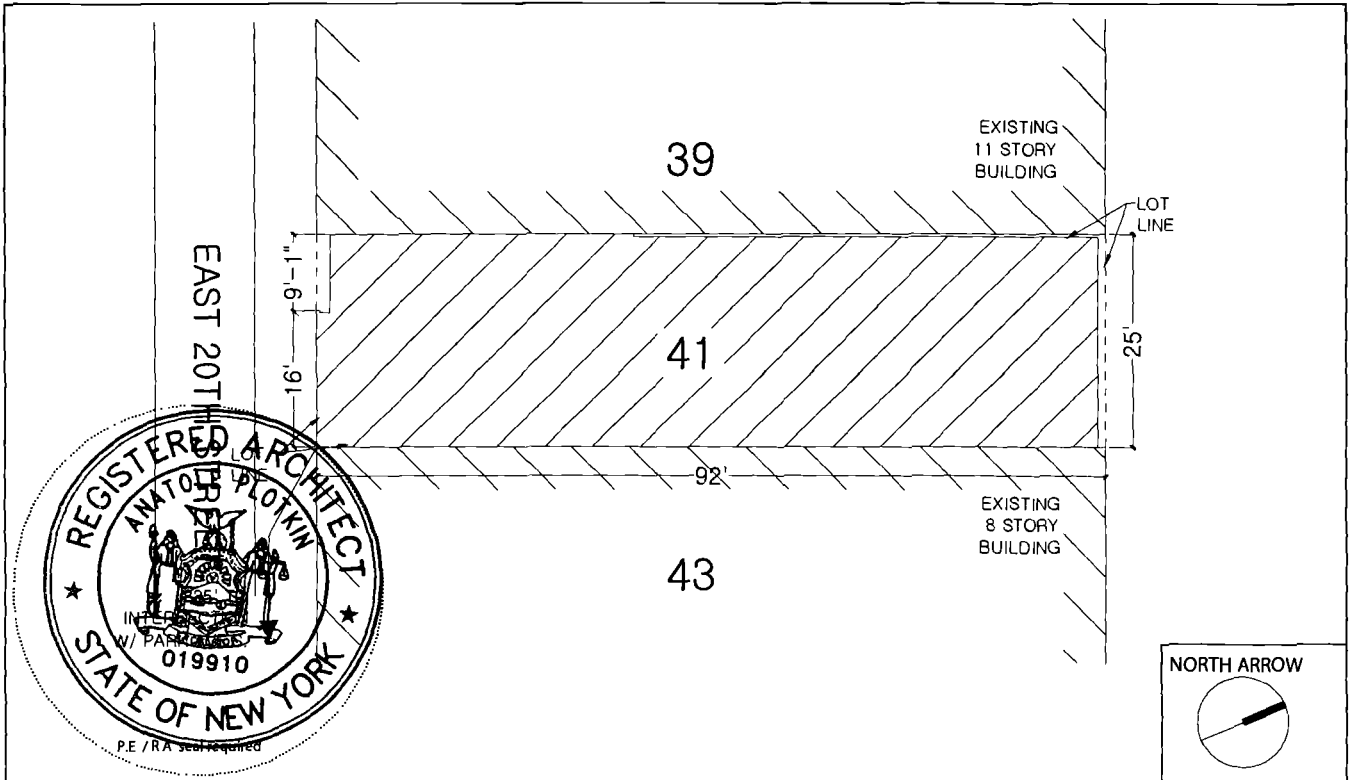
Lot 0029

BIN 1016209

C.B. No. 105

2 Plot Diagram of Zoning Lot

Plot Diagram must show the correct street lines from the City Plan; the plot to be built upon in relation to the street lines and the portion of the lot to be occupied by the building; the legal grades and the existing grades, properly identified, of streets at nearest point from the proposed buildings in each direction; the House Numbers and the Block and Lot Numbers. Indicate dimensions of total tax lots.



3 Description of Land and Premises The zoning lot on which the premises is located is bounded as follows:

BEGINNING at the point on the	side of	20TH STREET	distant	225 feet
NORTHWESTERLY	of the corner formed by the intersection of	4TH AVENUE	and	20TH STREET
running thence	NORTHEASTERLY 92 feet; thence	NORTHWESTERLY 25 feet; thence	SOUTHWESTERLY 92 feet; thence	SOUTHEASTERLY 25 feet;
thence	feet; thence	feet; thence	feet; thence	feet;
thence	feet; thence	feet; thence	feet; thence	feet;
thence	feet; thence	feet; thence	feet; thence	feet;
thence	feet; thence	feet; thence	feet;	to the point of beginning.

4 Applicant's Statement and Signature

Falsification of any statement is a misdemeanor under § 28 -203.1, Item 1, and 28 -11.1 of the NYC Administrative Code and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

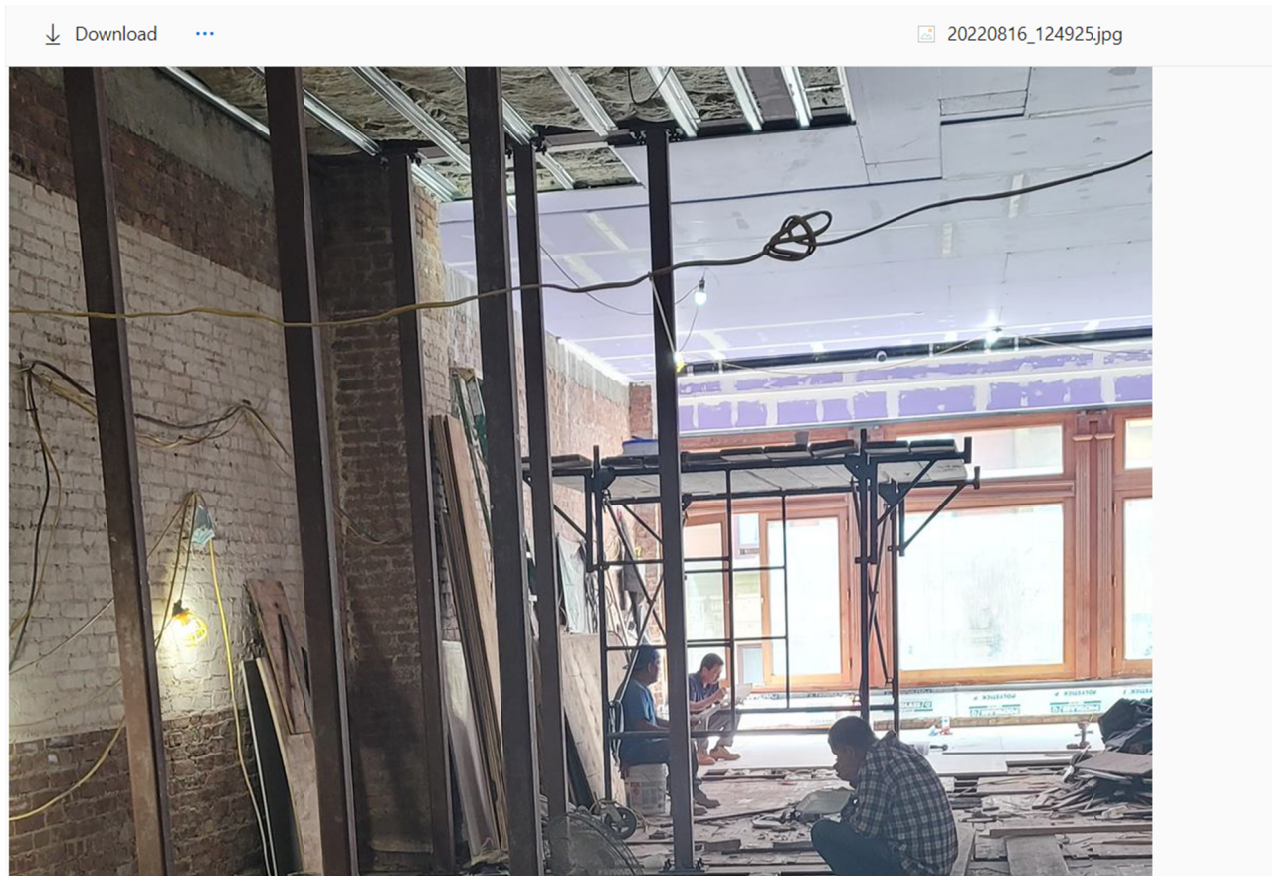
Applicant Name ANATOLE PLOTKIN

Signature

Anatole Plotkin

Date

8/28/18



South Front Window

Info 36 / 76

20220816_124925.jpg

More details

Location

Flatiron, NY, United States

General information

Type
JPG Image

Date taken
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Dimensions
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Camera
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Shot

3- 88 Walker Street Hotel Construction





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Job Title 88 WalkerStreet, NYC

Client Iron City Inc.

File 88 Walker-6-MC-MM-Bkts

Date/Time 08-Sep-2019 20:56

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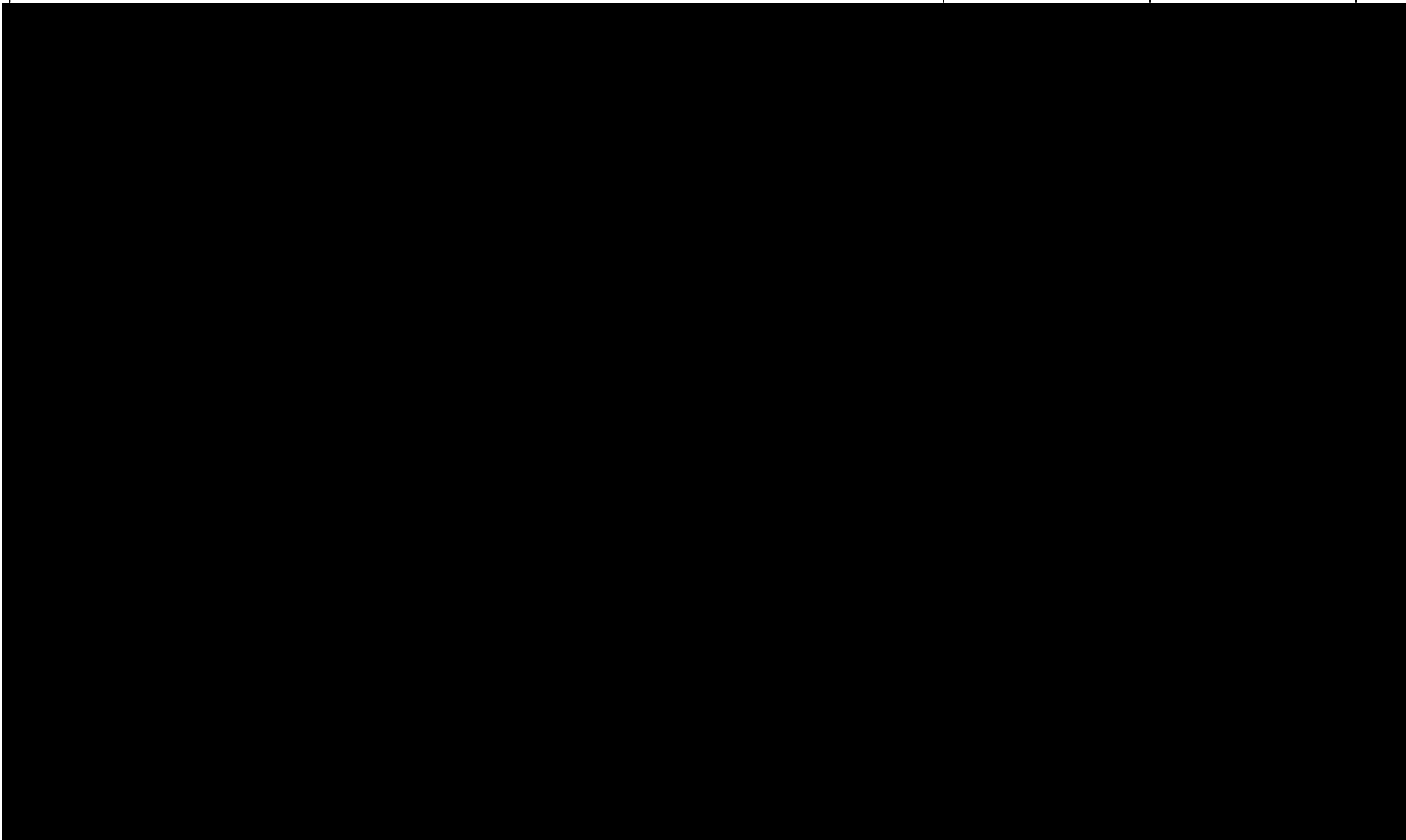
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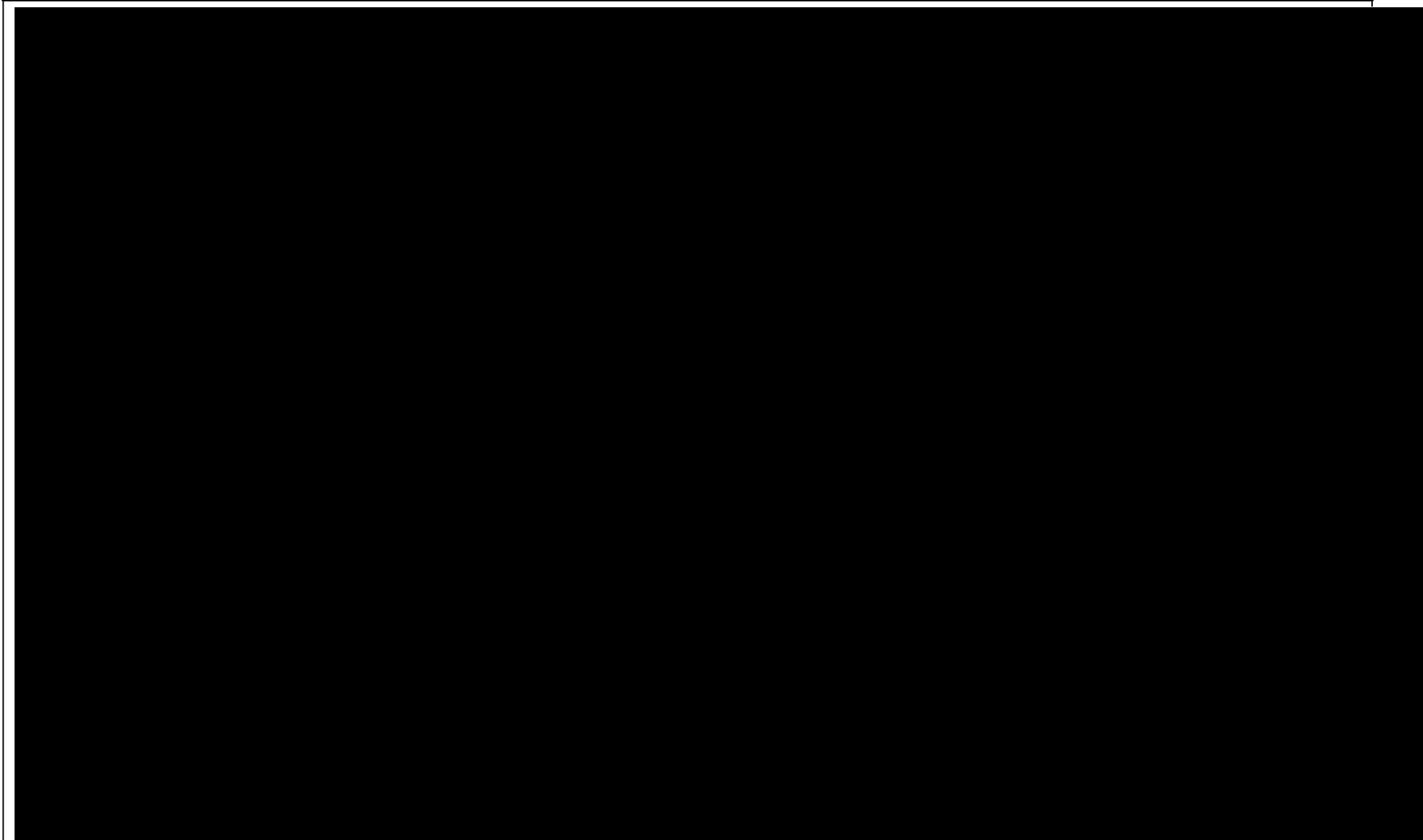
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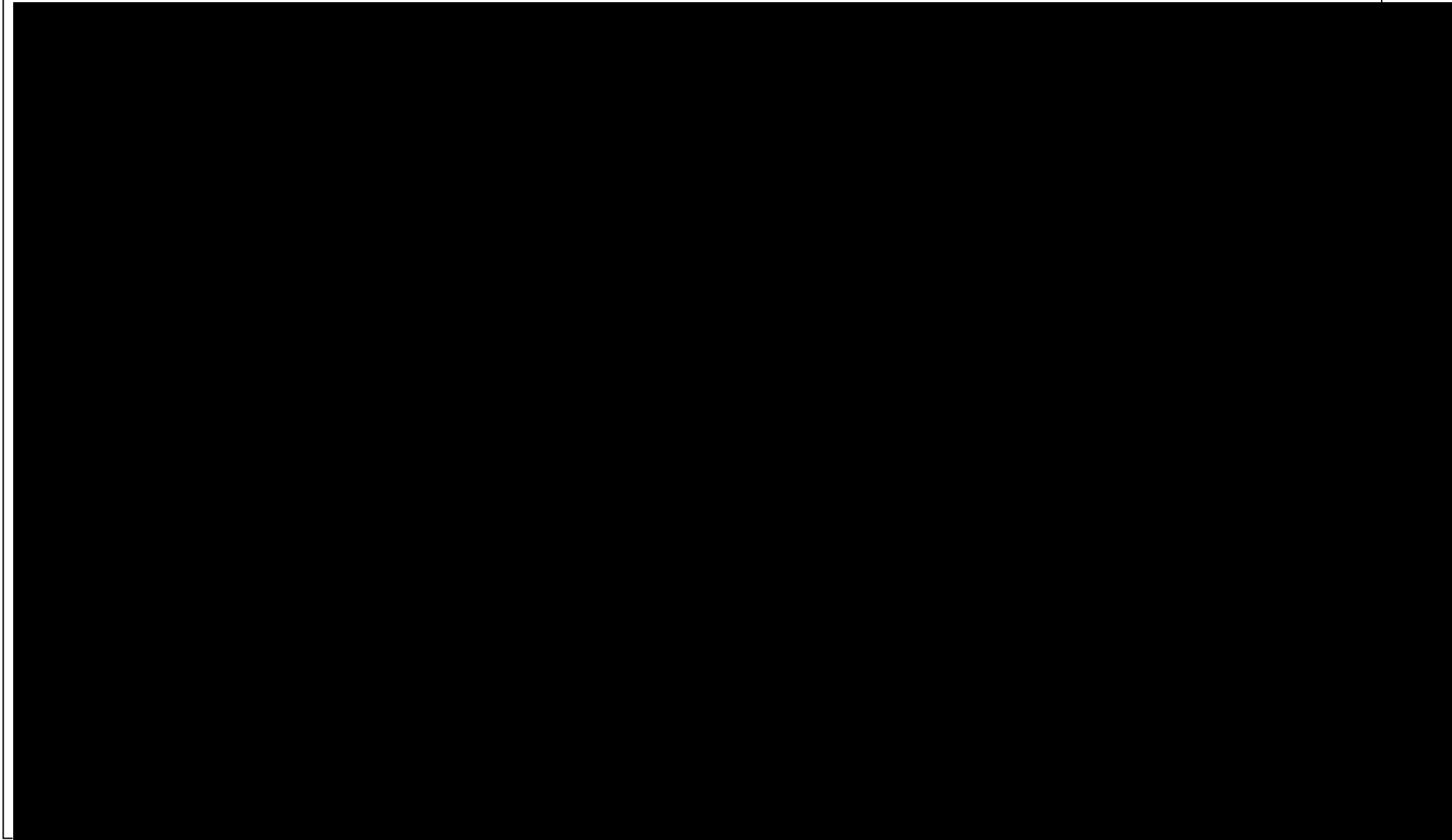
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Client Iron City Inc.	File 88 Walker-6-MC-MM-Bkt	Date/Time 24-Apr-2024 21:49		



STEEL TAKE-OFF

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STRUCTURAL ENGINEER

SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston NY 11363
TEL: [REDACTED] FAX: [REDACTED]
E-Mail: SST8576@[REDACTED]

MECHANICAL ENGINEER

GENERAL CONTRACTOR

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SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston NY 11363
TEL: [REDACTED] FAX: [REDACTED]
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PROJECT

PROPOSED NEW HOTEL BUILDING
TRIBECA, MAHATTAN

88 WALKER STREET
NEW YORK, NY

DRAWING TITLE

MTA SUBWAY PLAN
SHORING EXCAVATION
PLAN

Proj. No. LS-001

Date 03-09-2018

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TEL: 718.897.4741 E-MAIL: DESIGN101@GMAIL.COM

STRUCTURAL ENGINEER

SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston NY 11363
TEL: FAX:
E-Mail: SST8576@

MECHANICAL ENGINEER

GENERAL CONTRACTOR

SHORING/UNDERPINNING/EXCAVATION ENGINEER

SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston NY 11363
TEL: FAX:
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PROJECT

PROPOSED NEW HOTEL BUILDING
TRIBECA, MAHATTAN

88 WALKER STREET
NEW YORK, NY

DRAWING TITLE

SHORING
EXCAVATION
PLAN

Proj. No. LS-001

Date 08-20-17

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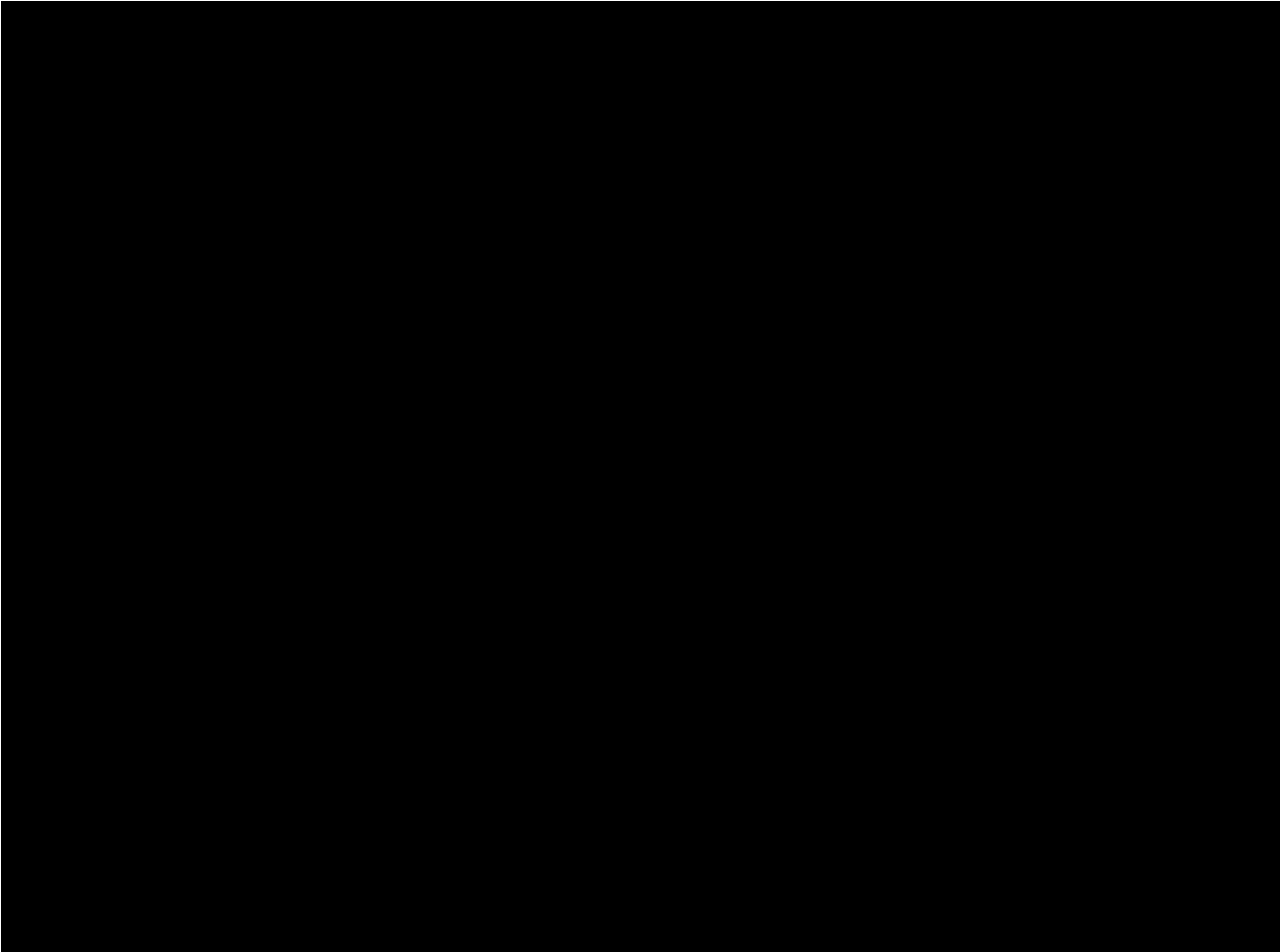


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SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston, N.Y. 11363

TEL: FAX:

E-Mail: SST18576@

MECHANICAL ENGINEER

GENERAL CONTRACTOR

SHORING/UNDERPINNING/EXCAVATION ENGINEER

SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston NY 11363

TEL: 718-279-8576 FAX: 718-279-8576

E-Mail: SST18576@aol.com

PROJECT

PROPOSED NEW HOTEL BUILDING

TRIBECA, MAHATTAN

88 WALKER STREET

NEW YORK, NY

DRAWING TITLE

EXCAVATION/
SHORING
ELEVATION
SECTION

Proj. No. LS-001

Date 06-01-17

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SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston NY 11363
TEL: FAX:
E-Mail: SST8576@

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GENERAL CONTRACTOR

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PROJECT

PROPOSED NEW HOTEL BUILDING
TRIBECA, MAHATTAN

88 WALKER STREET
NEW YORK, NY

DRAWING TITLE

2ND FLOOR
FRAMING PLAN

3RD, 4TH, 5TH, 6TH
FLOOR FRAMING
PLAN

Proj. No. LS-003
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MECHANICAL ENGINEER

J.L. HVAC INC.

323 Scholes St., Brookln, NY 11206
TEL: FAX:
E-Mail: Raymondjh@

GENERAL CONTRACTOR

MILESTONE CONSTRUCTION CORP.

136-20 36th Ave 11J Flushing, NY 11354
TEL: FAX:
E-Mail: milestoneconst@

CONSTRUCTION MANAGER

IRON CITY CONSTRUCTION COMPANY

41-22 Fuller PL 4th Floor, Flushing, NY 11355
TEL: FAX:
E-Mail: ironcitygct

PROJECT

PROPOSED NEW HOTEL BUILDING
TRIBECA, MAHATTAN

88 WALKER STREET
NEW YORK, NY

DRAWING TITLE

TRANSVERSE
SECTIONS

Proj. No. LS-001

Date 11/24/20

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
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TEL: E-MAIL: DESIGN101@

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SST CONSULTANT ENGINEER, P.C.

233-23 41st Ave. Douglaston, NY 11363
TEL: FAX:
E-Mail: SS18576@

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PROJECT

PROPOSED NEW HOTEL BUILDING
TRIBECA, MAHATTAN

88 WALKER STREET
NEW YORK, NY


DRAWING TITLE

FRONT FASCIA
STORE FRONT

MULLION BRACKET
ELEVATION & SECTIONS

Proj. No.	LS-001
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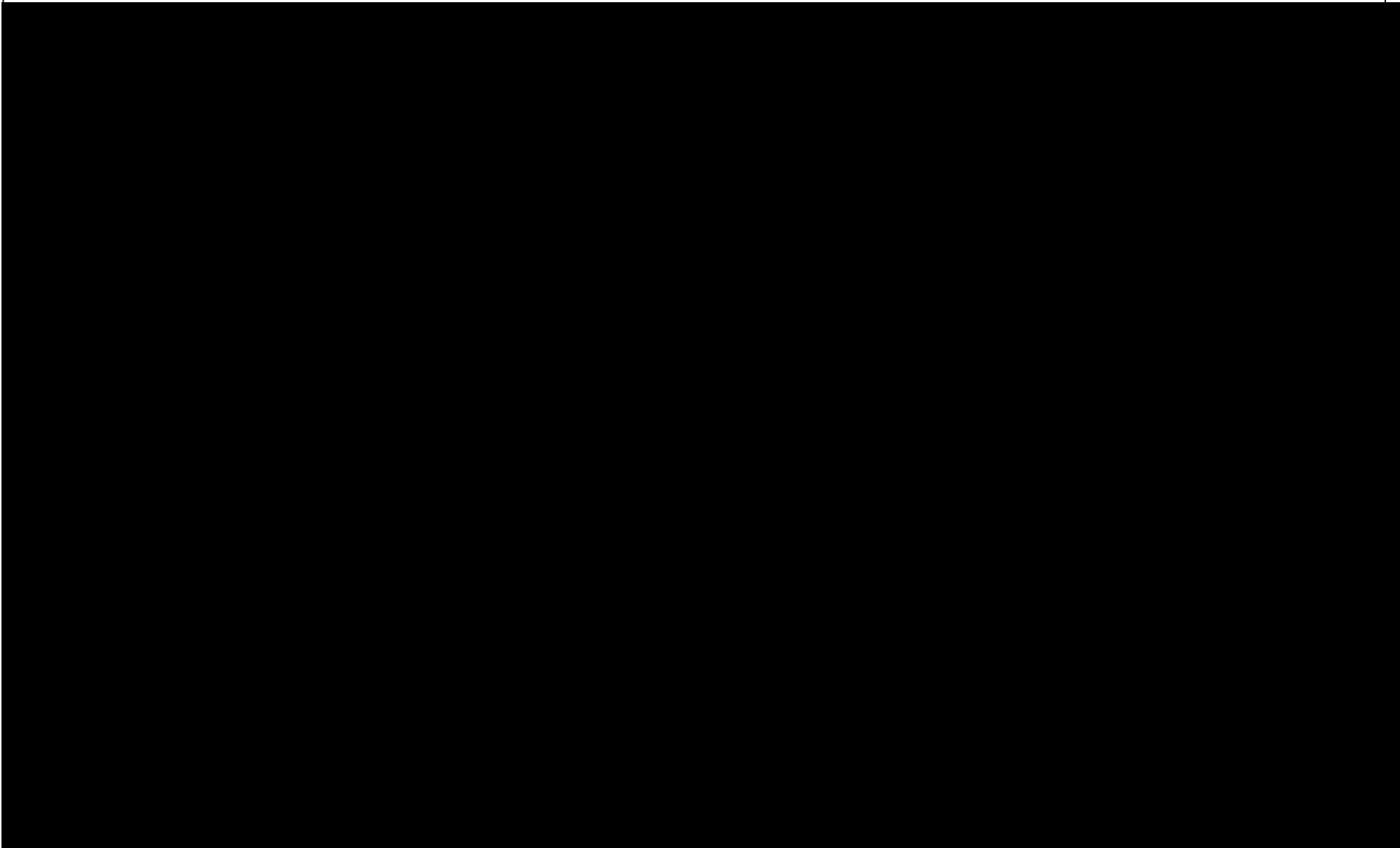
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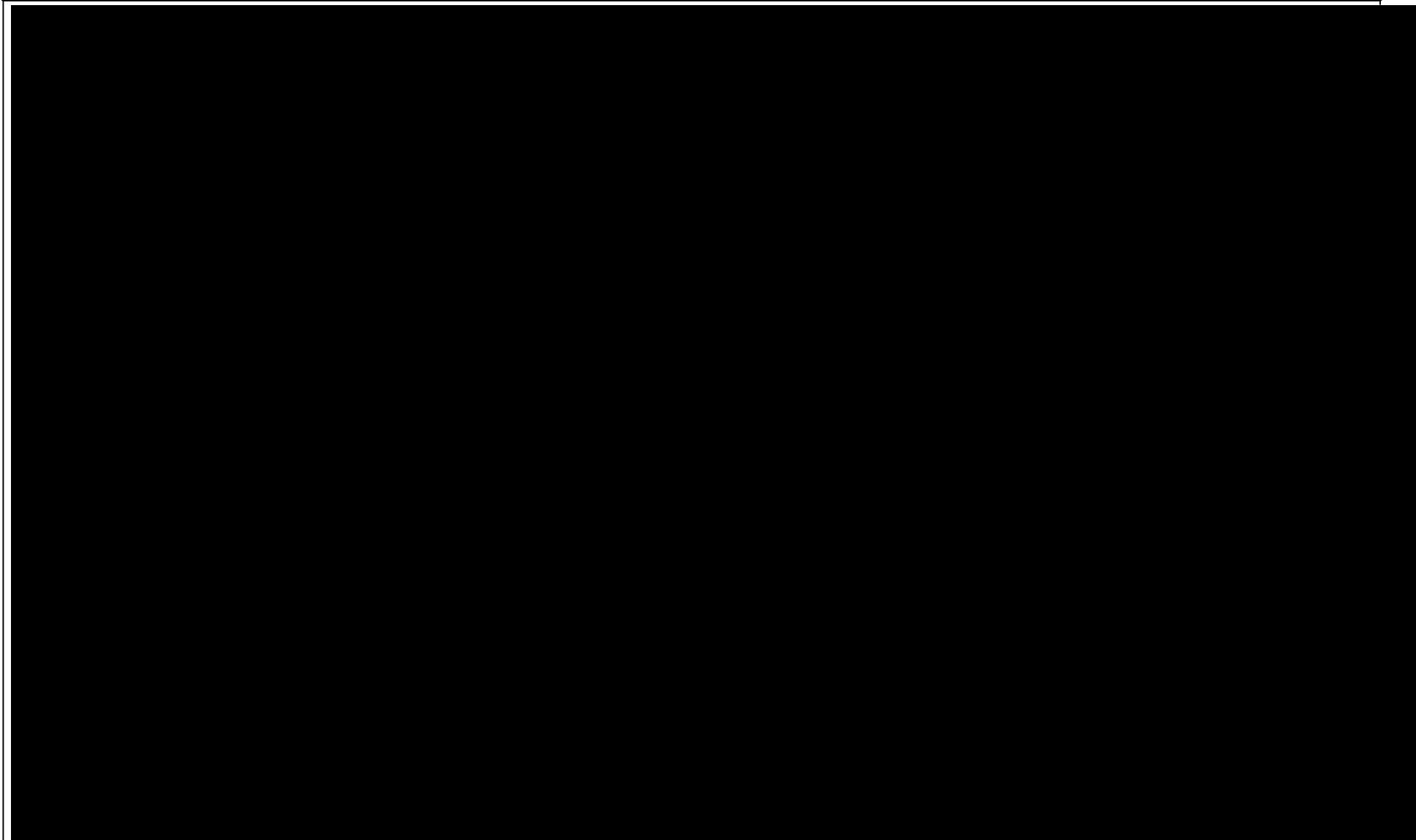
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Client Ameriland Brook LLP

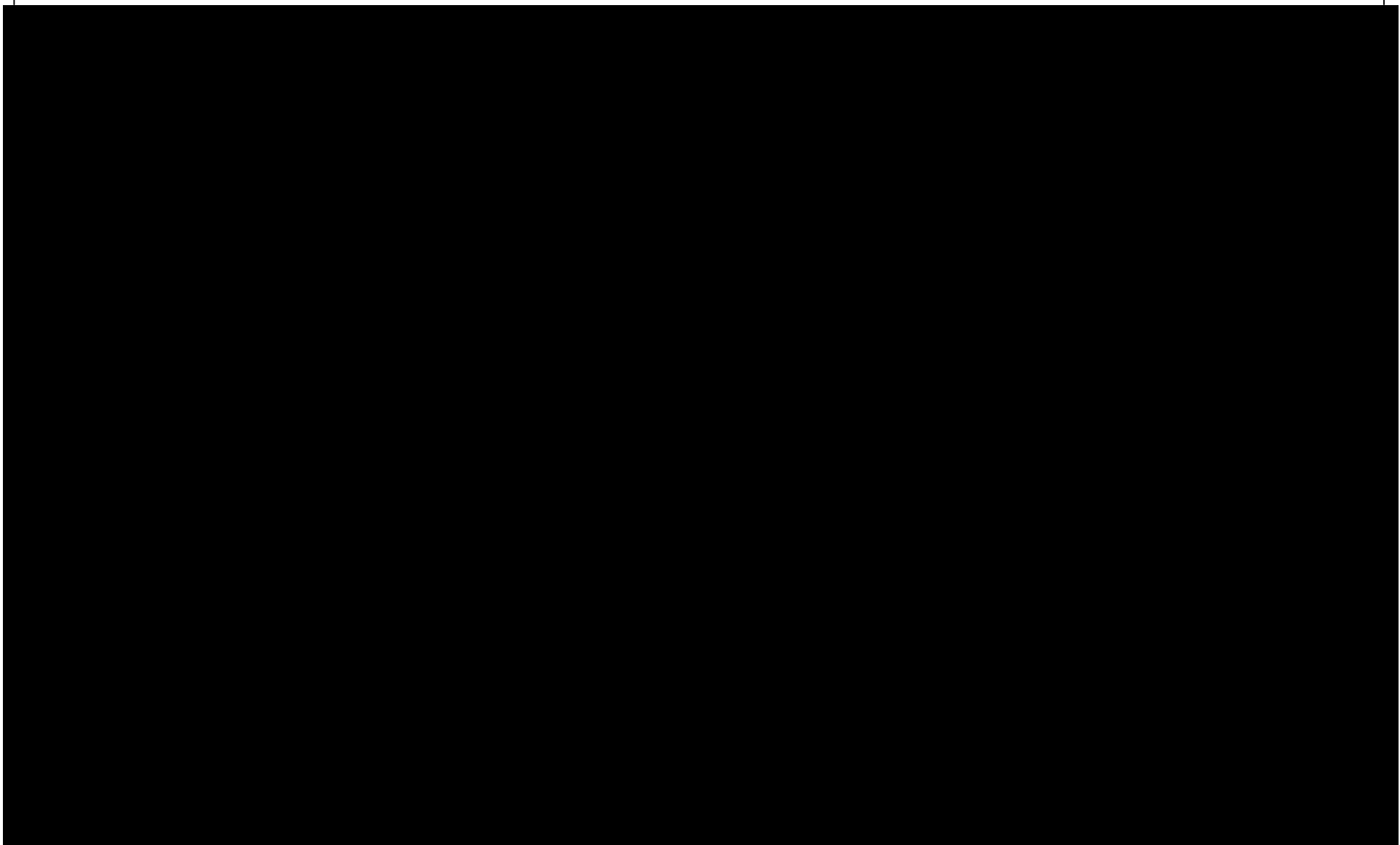
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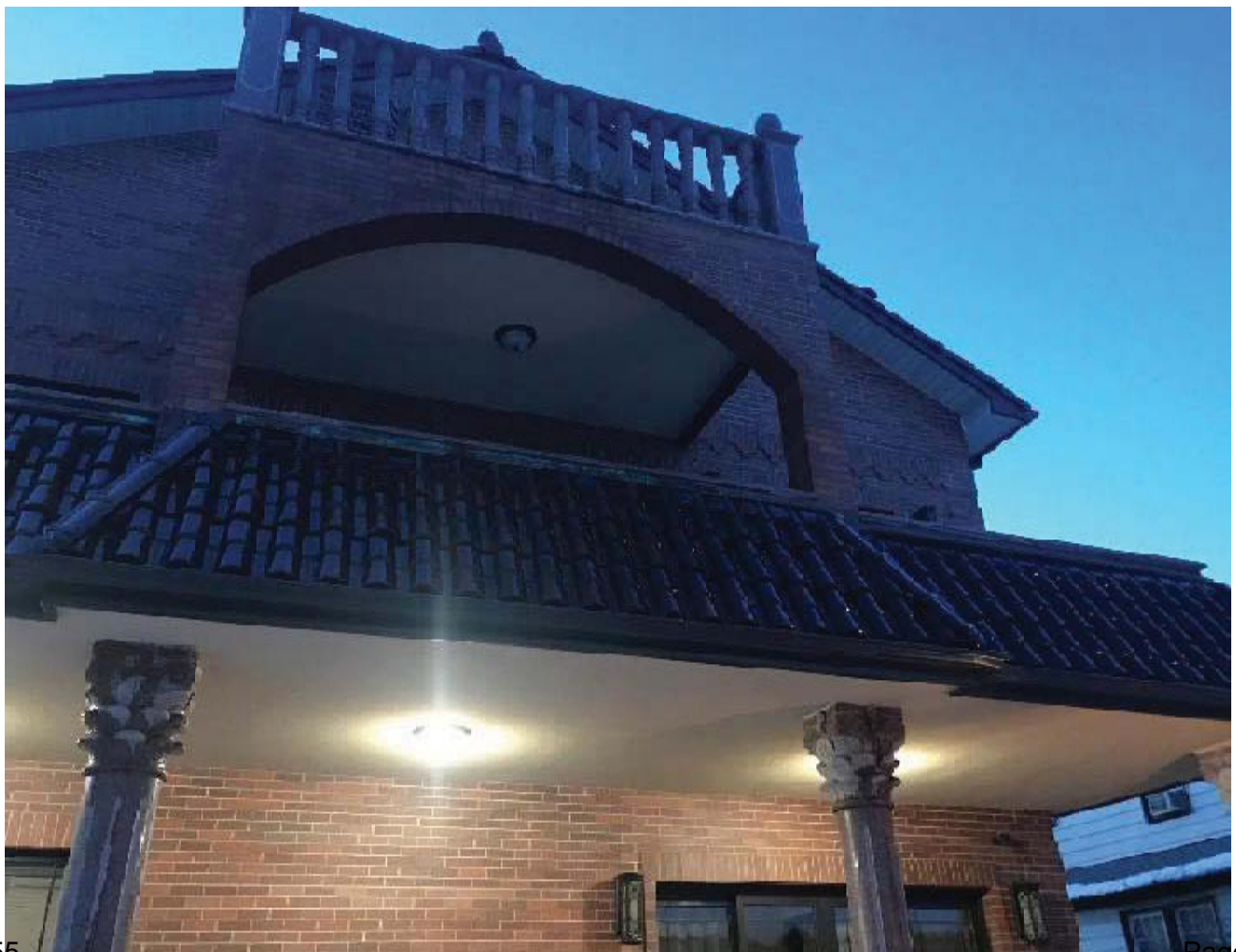


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Cover Story - December 2004

Project of the Year

FDR Drive Outboard Detour Roadway

By Tom Stabile

A mile and a quarter of detour roadway is seldom the stuff of great acclaim. But the FDR Drive Outboard Detour Roadway left the awards jury marveling at everything from innovative engineering to smooth execution.

"The ingenuity of the FDR Drive project is what gets the kid in all of us excited," one judge said.

The temporary detour opened in May after 18 months of construction as the anchor of a \$136 million project to rebuild the deteriorating highway. The signature of the \$40 million detour portion, which runs from 51st to 64th streets, is the half-mile "outboard" built over water from 53rd to 60th streets.

"The whole concept of building a temporary bypass out in the East River and then taking it back down again afterwards is pretty unique," said David Vosseller, marine project manager for Weeks Marine of Cranford, N.J., which built the roadway in a joint venture with Slattery Skanska of Whitestone, N.Y.

The detour carries two lanes of northbound traffic, allowing the project team to shut down one section of the permanent roadway at a time for major demolition and reconstruction. Among rebuilding tasks ongoing through 2007 are replacement of bridge and viaduct superstructures, rehabilitation of the highway roof structure and retaining walls, and retrofitting for seismic shoring, lighting, signs, and drainage. The highway,



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also known as the East River Drive, funnels 150,000 vehicles daily along Manhattan's east side, and is a critical artery linking bridges and tunnels up and down the island.

Observers from many vantage points, including the awards jury, have said none of that work would have occurred without the detour. That's because there was little appetite among city and state leaders for the more standard reconstruction approach - shutting down lanes, stomaching traffic backups, and likely requiring most of the work to take place at night. The jury noted how residents in the upscale East Side neighborhoods near the proposed work pushed hard to prevent a scenario that would have flooded local streets with traffic.

"It's also in a league of its own for the innovation and the thinking and the cooperation they had to elicit from the United Nations, from the Coast Guard, from the neighbors," a juror said. "Complex to execute technically without question, but also because of all of the work they had to do beforehand."

That backdrop explains why the New York State Department of Transportation sought other solutions, eventually turning to New York-based Daniel Frankfurt Engineers & Architects. Its president, Neil Lucey, said a highlight of the outboard detour approach is eliminating nearly all of the nighttime work.

"You could say under a conventional plan you'd have 20 more times nighttime work," Lucey said.

More Bridge Than Highway

The roadway's basic design impressed the jury. "From a technical standpoint, it's innovative," one juror said. "It's head and shoulders above the rest."

The 22-pier bent detour bridge section sits atop 64 steel pipe caissons socketed into the river bedrock. Those hold the steel superstructure supporting precast concrete panel slabs, a layer of asphalt, and a corrugated metal panel roof to shield noise and light.

The idea of a detour over water grew from a floating highway concept state transportation authorities had considered, Lucey said. His firm teamed with three other New York-based consultants - Earth Tech/TAMS, DMJM Harris, and Sam Schwartz Co. - to design an over-water detour with a protective fender system in the busy East River shipping channel.

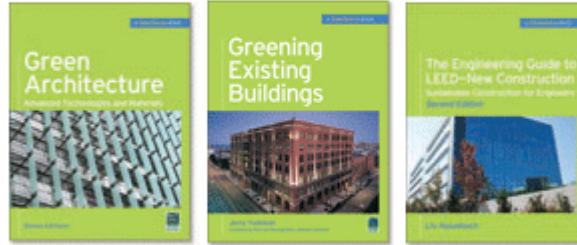
"What made it possible was that the transition back to the land was there," Lucey said. "At the north end, it's the old 60th Street heliport, and at the south end, at about 53rd Street, there's a little disabled vehicle turnout."

That was enough. The team conjured up a temporary structure - more bridge than highway, Lucey said - that could keep the road's existing design speed, stay within the planned budget, gain necessary permits from agencies like the U.S. Coast Guard, and handle wind, currents, and ice. It planned a structure 10 to 14 ft. above mean sea level - higher than the permanent northbound lanes - and an alignment addressing all of those factors, as well as features such as subway tunnels below at 53rd, 60th and 63rd streets, the Queensboro Bridge above at 59th Street, and critical entry and exit ramps.

The study and design phases ran from 1998 to 2001, said Neil Porto, senior project manager for Daniel Frankfurt. Construction started in November 2002, with the joint-venture contractor splitting most over-water work to Weeks and most land work to Slattery.

Slippery Challenges

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The team encountered the choppy East River early on. It has five to seven feet of tide variation and flows at 3.5 to 4.0 knots - close to 5 m.p.h. - which is a significant speed for marine work, Vosseller said. Sometimes those flows were in one direction on the surface and another below.

But Weeks had ample water work experience and resources, said Tom Bowers, engineer in charge and project manager for the department of transportation. For the over-water portion, Weeks met varying river conditions with one barge setup using anchors on the north side and another using a jack-up system that stabilizes against currents and waves on the southern half. Meanwhile, having multiple setups allowed the team to always be building at least two sections of the roadway.

"No one dreamed they would have two full barge setups in the water, plus a barge system for the fenders," Bowers said. "That saved a lot of time."

A major task for the barge crews was installing the caissons. But before they could proceed, the team had to make sure it didn't bore into the subway tunnels. Bowers said Slattery's infrastructure expertise - and its ongoing contracts with the Metropolitan Transit Authority in those same tunnels - was a big help.

In addition to helping the team precisely locate the tunnels to avoid damaging them with caisson boring, Slattery was able to piggyback the drilling schedule onto an already planned subway service outage for other work the company was overseeing in the East River tunnels. That saved months of negotiating with the MTA, Bowers said. The intricate work also helped the team plan for some land-based portions where the temporary roadway will place partial loads over the tunnel sections.

That planning set the table for one of the biggest technical challenges - digging holes for the 54-in. diameter steel caissons. Besides the fast current, the team had tough conditions at the river bed, where there was little or no soil on top of the bedrock, making it harder to drill. And there were other complications, Vosseller said.

"Trying to install and develop the sockets was hard, because the rock itself sloped on a 45 to 50 degree angle," he said. "We had to develop a method that was going to prevent that drilling equipment from skittering down that slope."

Despite the challenges, the Weeks team of divers, drillers, and other crews completed about one caisson every 2.5 shifts, working one shift a day. The procedure started with drilling about 55 ft. into the bedrock - already 25 ft. under the surface - and inserting a 90-in.-diameter casing as a slot for the core barrel drill. From there, the team placed a 79-in. diameter casing in the hole, and within that, developed a 74-in. diameter socket down to the drilled bedrock. The team then placed the 54-in. caisson in that socket and filled the entire casing with concrete up to the river bed. Above the bed, the caissons are hollow up to the superstructure, and they have a steel plate cap to connect with the superstructure.

On the portions of the fender and detour road installations under the Queensboro Bridge, the team had to shorten the crane booms in order to have enough headroom, Bowers added.

Decked and Fendered

Once caisson installation finished on a particular stretch, the next phase of installing the steel superstructure would begin. That framework consists of transverse steel-cap beams and 100-ft. long longitudinal steel girders.

Waves of work crews would roll behind each completed stage, so installation of the precast concrete deck followed as superstructure work finished. Right behind the deck came asphalt surface paving, followed by sound barrier panel installation. "It took a lot of project coordination, a lot of scheduling," Bowers said.

In tandem with the detour are other features, such as an elevated roadway serving as a temporary exit ramp for East 61st Street, and an entrance at 60th Street that rebuilt a ramp to the old heliport. "We're maintaining all the vital ramp connections," said Daniel Frankfurt's Porto.

Another technological highlight is the fender system out in the river. Porto said DMJM Harris designed the system, the first of its kind, to gently guide errant ships back into the East River channel, and away from the detour road.

The \$28 million system consists of a 10-ft.-diameter floating fender beam "guardrail," in sections 250 ft. long, connected by 13 floating barge-like "dolphins." These 18-ft.-deep, 20-ft.-wide, and 20-ft.-long structures, encased in metal with a hardened black plastic exterior, stay in place amid changing currents and tides thanks to four rock anchors, some running 120 ft. deep, tied to each one with chains. Divers did a lot of the heavy anchoring work, Vosseller said.

Quick Lifespan

For all of its innovation, the temporary roadway will have a short existence. Built to last 10 years, its role is merely to buy time for crews rehabilitating the permanent roadway, particularly a stacked section where the northbound lanes are above southbound ones. Work began on that portion in earnest this year, with the installation of a demolition shield over the old northbound lanes, to which crews have diverted traffic heading south in order to begin work on the old southbound lanes.

Porto said a major point of pride is how the detour portion came together with almost no impact on the traveling public. "It was only when the crossovers needed to be connected that there was some weekend work during those times," he said.

Once the reconstruction work is done in 2007, however, the detour will leave little mark after the team disassembles it. Bowers said there are already plans for the sections to journey south by barge, where they will meet a watery grave - joining old New York City subway cars off the Atlantic coast in an artificial reef.

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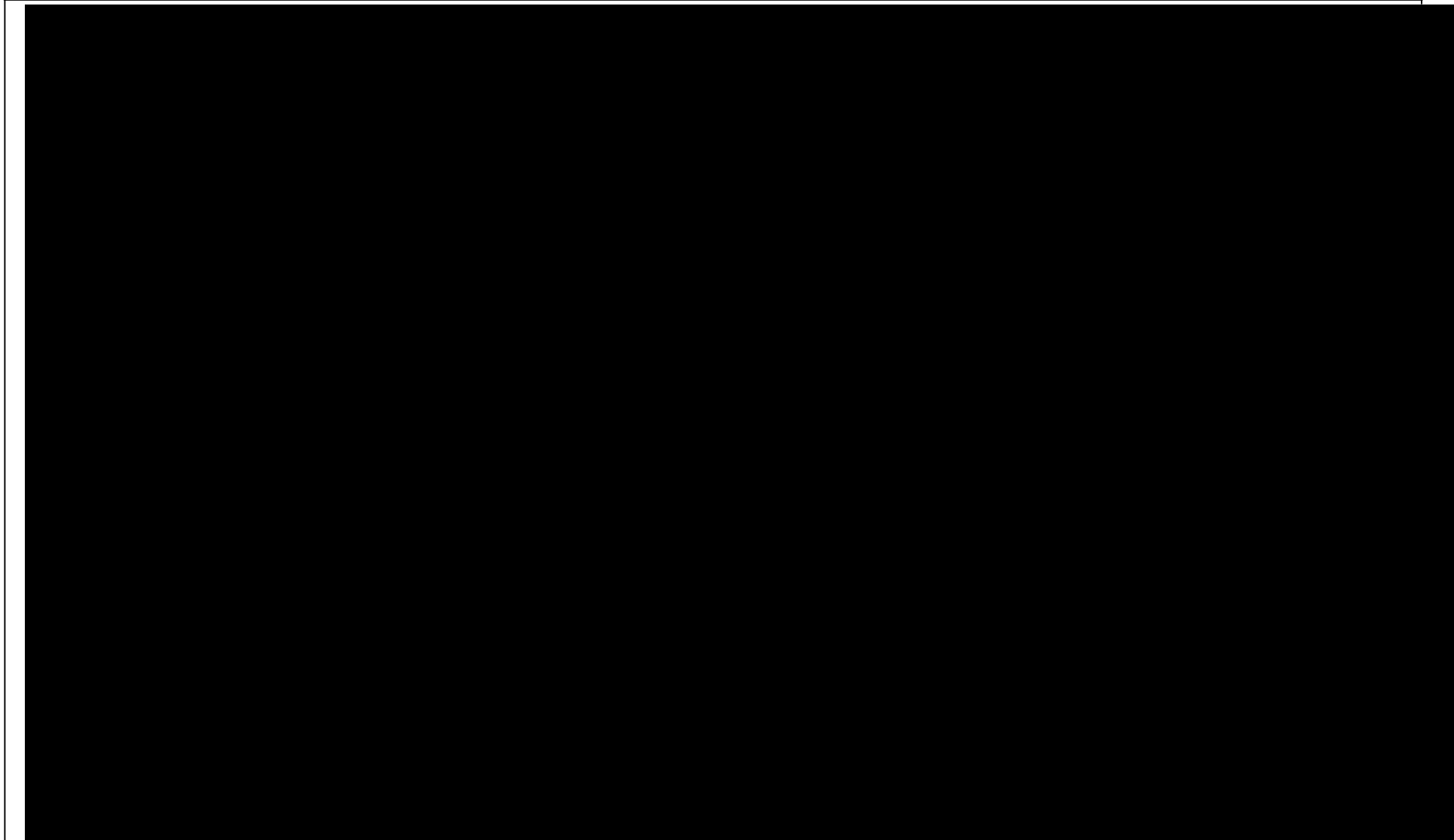
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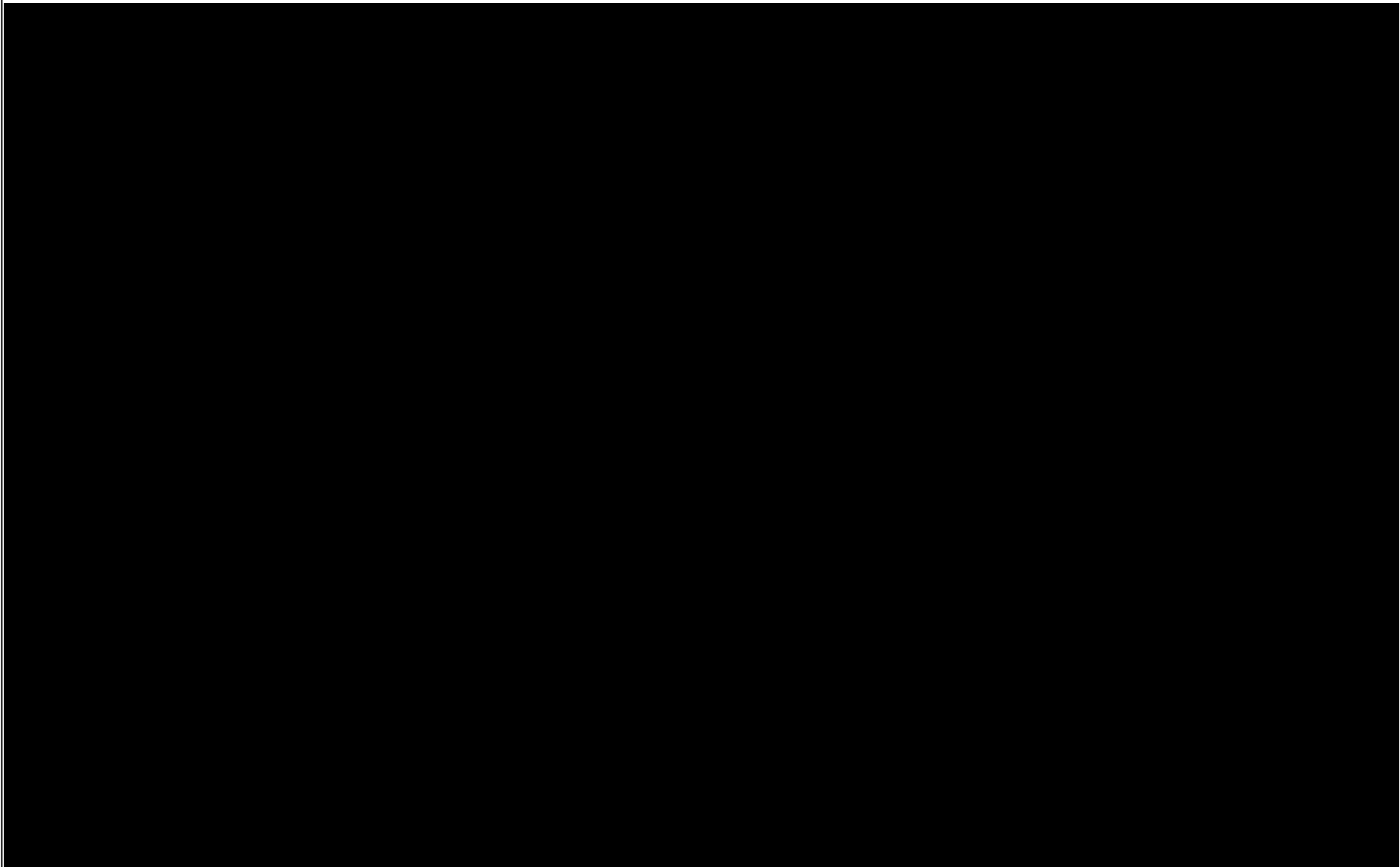
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To NYC/DEC

To whom it may concerned:

SST keep all existing questions as it is.

The response is under the questions.

Keep all existing page as close as possible.

Please noted that I have response to the question below with symbol R:

R: -----

Thanks for the excellent seminar and paper.

Best Regard

Shiu-Sen Tsai, P.E.

SST Consultant Engineer, P.C.

233-23 41st Avenue, Douglaston NY 11363

Cell [REDACTED]