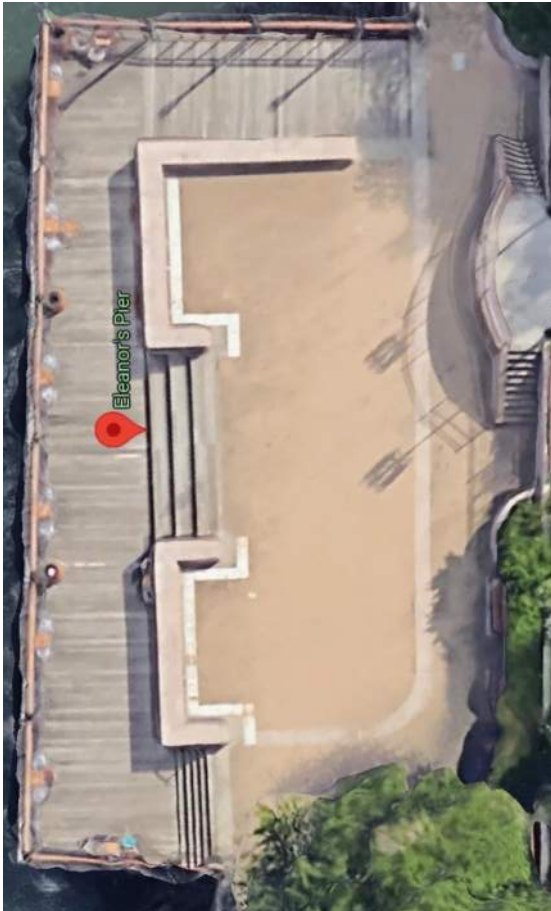




STRUCTURAL PIER REVIEW



**ELEANOR'S PIER
WEST ROAD
Roosevelt Island
New York, NY**

CLIENT:

**ROOSEVELT ISLAND OPERATING CORPORATION
ROOSEVELT ISLAND, NEW YORK, NY**

SUBMITTED BY:

**IMEG CORP.
STRUCTURAL ENGINEERS
1411 Broadway
Suite 610
New York, NY 10018**

6 September, 2024

**STRUCTURAL PIER REVIEW
Eleanor’s Pier
Roosevelt Island
New York, NY
September 6, 2024**

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STRUCTURAL PIER REVIEW
Eleanor's Pier
Roosevelt Island
New York, NY
September 6, 2024

I. EXECUTIVE SUMMARY/RECOMMENDATIONS

At the request of Roosevelt Island Operating Corporation (RIOC), IMEG Corp completed a Structural Review of Eleanor's Pier on Roosevelt Island. The review included the superstructure, stone sitting area and the piling.

IMEG engaged Hudson Marine to complete the underwater pier and pile investigation.

IMEG engaged Future Tech Consultants of NY for testing of the concrete.

The pier is comprised of the following elements:

- Concrete encased pipe piles
- Concrete pier support
- Concrete encased steel framing (see below for history)
- Wood framing (typically sleepers)
- Wood Decking
- Steel Railing
- Timber piling used for light standards

The plaza land based to the east of the pier is comprised of stone clad seating, wall elements stairs and pavers.



See below for an executive summary of repairs. See Appendix 10 for full cost estimate.

Element	Condition Rating	COST ESTIMATE AND RECOMMENDED ACTION				Expected service life (without any repairs) (years)
		Immediate (note 1)		Priority (within 10 years)		
		Action	Cost	Action	Cost	
Pipe Piles	Fair/Poor	None		Reinforce (4); Wrap (16)	\$108,000	10
Concrete pier	Good	None		Allowance	\$50,000	20
Concrete encased steel	Good	None		Allowance		20
Wood framing	Good except hardware	None		Replace	\$136,935	10
Wood Framing Hardware	Poor	Replace	\$20,000			0
Wood Decking	Fair	Repair damaged decking		Replace	See above	10
Railing	Poor	Replace (3 options)	\$60,000 - \$100,250			0
Light Standards	Fair			Clean and re-paint	\$11,000	10

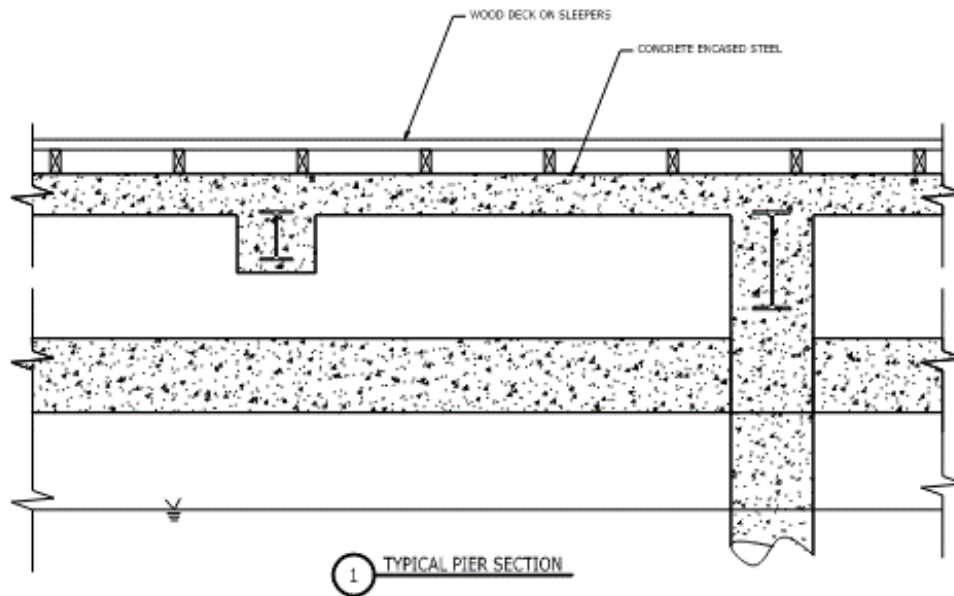
Note 1: Required for occupancy

II. HISTORY AND CONSTRUCTION SUMMARY

The existing pier was constructed in 1990 and renovated in 2014 after Hurricane Sandy. No drawings are available. See Appendix 1 for plans at the deck and beam level. See Appendix 2 for overall photographs.

The pier is constructed on (20)-20" diameter concrete filled pipe piles.

The pier itself is concrete encased structural steel with a conventional 10-12" concrete slab framing between the beams. The perimeter beams on the north and south end are 58" deep, while the beam facing the water is shallow (around 24"). There are a series of low concrete bracing beams.



The walking surface is framed with 3x6 (or 3x8) wood joists at 30" on center with 2-1/2" thick wood decking spanning between the wood joists. The wood joists are typically framed onto the concrete pier as sleepers, except at the stairs and raised seating area in the center. All wood appears to be pressure treated. The decking appears to have been originally anchored to the joists with galvanized screws. These were removed and stainless steel ring shank nails were replaced.

The hardware supporting the wood joists is typically steel with some carbon steel anchors and some stainless steel anchors. Due to the poor rusted condition of the hardware, we are uncertain if the steel was painted or galvanized.

The railing is painted structural steel with a timber cap beam. The railing posts were anchored into sleeves that were cast into the concrete.

The light standards are round tapered timber sections. They are pressure treated. Many have been recently replaced. They are connected to the concrete with an embedded steel or iron shoe with set bolts.

The upper plaza is ground supported. The pavers are a concrete brick pattern. Seating areas and walls are clad in granite and are assumed to be concrete. The granite is supported on steel relieving angles where facing the wood decking.



Overall, Aerial Plan

III. SURVEY AND TESTING METHODOLOGY

A visual survey and measurements were completed by IMEG (formerly Cameron Engineering) on June 24, July 16, July 30, August 6, August 19 and 20, 2024. Four (4) probe areas had the timber decking removed for about 30" to review existing conditions below.

Deficiencies were graded in accordance with the Waterfront Facilities Maintenance Management System (WFMMS) Inspection Guideline Manual, dated May 2016.

The underwater pier and pile survey was completed by Hudson Marine on August 20th and 21st. Surveys were completed near low tide. All piles were surveyed and graded. The concrete was visually reviewed from the underside. No hands on survey nor any concrete testing was completed from the underside.

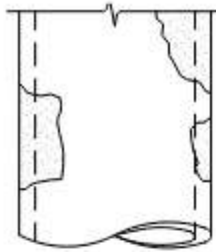
Piles were graded as noted below:

**TABLE 3-3
DAMAGE GRADES FOR STEEL COMPONENTS**

Damage Grade	Existing Damage ⁽¹⁾	Defects Indicating Higher Damage Grade(s)
Not Inspected	<ul style="list-style-type: none"> Not inspected, inaccessible or passed by 	
No Damage	<ul style="list-style-type: none"> Protective coating intact No apparent loss of material 	
Minor	<ul style="list-style-type: none"> Less than 50 percent of perimeter or circumference affected by corrosion at any elevation or cross section Loss of thickness up to 15 percent of nominal at any location 	Minor damage not appropriate if: <ul style="list-style-type: none"> Changes in straight line configuration or local buckling Corrosion loss exceeding fabrication tolerances (at any location)
Moderate	<ul style="list-style-type: none"> Over 50 percent of perimeter or circumference affected by corrosion at any elevation or cross section Loss of thickness 15 to 30 percent of nominal at any location 	Moderate damage not appropriate if: <ul style="list-style-type: none"> Changes in straight line configuration or local buckling Loss of thickness exceeding 30 percent of nominal at any location
Advanced	<ul style="list-style-type: none"> Partial loss of flange edges or visible reduction of wall thickness on pipe piles Loss of nominal thickness 30 to 50 percent at any location 	Advanced damage not appropriate if: <ul style="list-style-type: none"> Changes in straight line configuration or local buckling Perforations or loss of wall thickness exceeding 50 percent of nominal
Severe	<ul style="list-style-type: none"> Structural bends or buckling, breakage and displacement at supports, loose or lost connections Loss of wall thickness exceeding 50 percent of nominal at any location 	

(1) Any defect listed below is sufficient to identify relevant damage grade.

MINOR

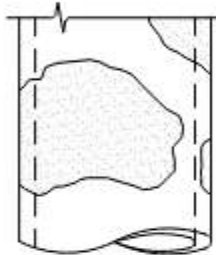


LESS THAN 50 PERCENT OF CIRCUMFERENCE AFFECTED BY CORROSION



LOSS OF THICKNESS UP TO 15 PERCENT AT ANY LOCATION

MODERATE

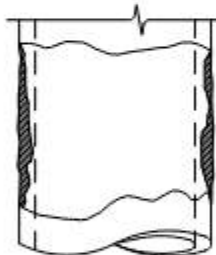


OVER 50 PERCENT OF CIRCUMFERENCE AFFECTED BY CORROSION

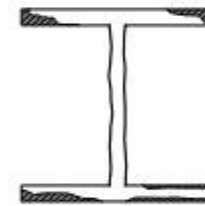


LOSS OF THICKNESS 15 TO 30 PERCENT AT ANY LOCATION

ADVANCED



VISIBLE REDUCTION OF WALL THICKNESS

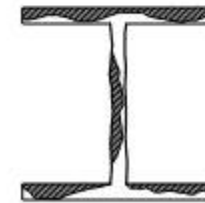


LOSS OF THICKNESS 30 TO 50 PERCENT AT ANY LOCATION, PARTIAL LOSS OF FLANGES

SEVERE



STRUCTURAL BENDS OR BUCKLING; LOOSE OR LOST CONNECTIONS



PERFORATIONS AND LOSS OF THICKNESS EXCEEDING 50 PERCENT AT ANY LOCATION

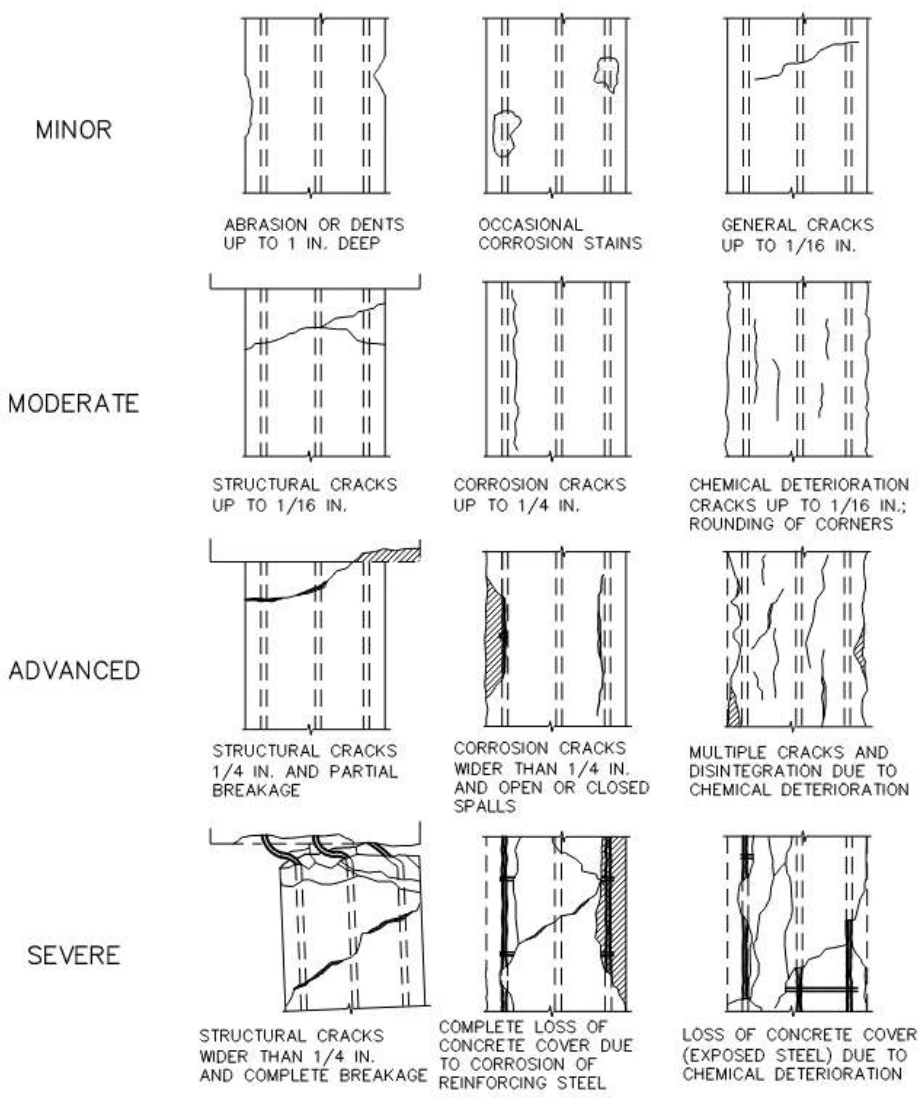
Concrete framing was visually graded through photographs from the under pier survey (see later) and visually at probe locations : Grading as noted below:

**TABLE 3-4
DAMAGE GRADES FOR CONCRETE COMPONENTS**

Damage Grade	Existing Damage ⁽¹⁾	Defects Indicating Higher Damage Grade(s)
Not Inspected	<ul style="list-style-type: none"> Not inspected, inaccessible or passed by 	
No Damage	<ul style="list-style-type: none"> Good original surface, hard material, sound 	
Minor	<ul style="list-style-type: none"> Mechanical abrasion or impact dents up to 1 in. General cracks up to 1/16 in. in width Occasional corrosion stains or small pop-out corrosion spalls 	Minor damage not appropriate if: <ul style="list-style-type: none"> Structural damage Corrosion cracks Chemical deterioration⁽²⁾
Moderate	<ul style="list-style-type: none"> Structural cracks up to 1/16 in. in width Corrosion cracks up to 1/4 in. in width Chemical deterioration⁽²⁾: Random cracks up to 1/16 in.; "Soft" concrete and rounding of corners up to 1 in. deep 	Moderate damage not appropriate if: <ul style="list-style-type: none"> Structural breakage and/or spalls Exposed reinforcement Loss of cross section due to chemical deterioration beyond "rounding of corner edges"
Advanced	<ul style="list-style-type: none"> Structural cracks 1/16 in. to 1/4 in. in width and partial breakages (structural spalls) Corrosion cracks wider than 1/4 in. and open spalls (excluding pop-outs) Multiple cracking and disintegration of surface layer due to chemical deterioration 	Advanced damage not appropriate if: <ul style="list-style-type: none"> Loss of cross section exceeding 30 percent due to any cause
Severe	<ul style="list-style-type: none"> Structural cracks wider than 1/4 in. or complete breakage. Loss of bearing and displacement at connections Complete loss of concrete cover due to corrosion of reinforcing steel with over 30 percent of diameter loss for any main reinforcing bar Loss of concrete cover (exposed steel) due to chemical deterioration Loss of over 30 percent of cross section due to any causes described above 	

(1) Any defect listed below is sufficient to identify relevant damage grade.

(2) Chemical Deterioration: Sulfate attack, alkali-silica reaction or ettringite distress.



Concrete testing was completed by Future Tech Consultants of New York on July 30th. All cores were taken from the top side. No access was available from below the pier. A total of (9) cores were taken with the following testing completed:

- (4) cores for chloride testing
- (3) cores for concrete strength
- (2) cores for petrographic testing to determine the concrete consistency and extent of carbonation. Carbonation in concrete over time reduces its capacity to naturally resist corrosion. Carbonation reduces the natural pH of concrete.

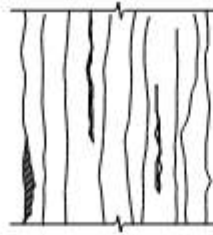
Wood framing and decking: Grading as noted below:

**TABLE 3-6
DAMAGE GRADES FOR TIMBER COMPONENTS**

Damage Grade	Existing Damage ⁽¹⁾	Defects Indicating Higher Damage Grade(s)
Not Inspected	<ul style="list-style-type: none"> • Not inspected, inaccessible or passed by 	
No Defects	<ul style="list-style-type: none"> • Sound surface material 	
Minor	<ul style="list-style-type: none"> • Checks, splits and gouges less than 0.5 in. wide 	Minor damage not appropriate if: <ul style="list-style-type: none"> • Loss of cross section • Marine borer infestation • Displacements, loss of bearing or connections
Moderate	<ul style="list-style-type: none"> • Checks and splits wider than 0.5 in. • Remaining diameter loss up to 15 percent • Cross section area loss up to 25 percent. Corroded hardware. • Evidence of infestation by marine borers 	Moderate damage not appropriate if: <ul style="list-style-type: none"> • Displacements, loss of bearing or connections
Advanced	<ul style="list-style-type: none"> • Checks and splits through full depth of cross section • Remaining diameter loss 15 to 30 percent • Cross section area loss 25 to 50 percent. Heavily corroded hardware. • Displacement and misalignments at connections 	Advanced damage not appropriate if: <ul style="list-style-type: none"> • Partial or complete breakage
Severe	<ul style="list-style-type: none"> • Remaining diameter reduced by more than 30 percent • Cross section area loss more than 50 percent • Loss of connections and/ or fully non-bearing condition • Partial or complete breakage 	

(1) Any defect listed below is sufficient to identify relevant damage grade.

MINOR

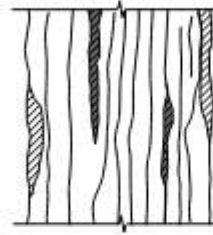


MINOR CHECKS, SPLITS
AND GOUGES LESS
THAN 0.5 IN. WIDE



MINOR CHECKS, SPLITS
AND GOUGES LESS
THAN 0.5 IN. WIDE

MODERATE

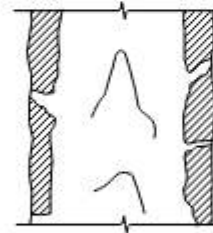


CHECKS AND SPLITS
WIDER THAN 0.5 IN.

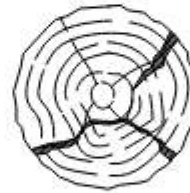


CROSS SECTION LOSS
UP TO 25 PERCENT.
EVIDENCE OF INFESTATION
BY MARINE BORERS

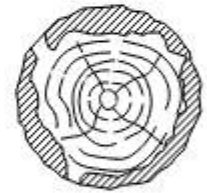
ADVANCED



LOSS OF UP TO 30 PERCENT
OF DIAMETER DUE TO ROT OR
MARINE BORER ACTIVITY

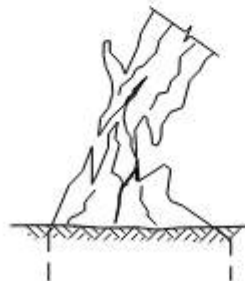


CHECKS AND SPLITS
THROUGH
CROSS SECTION

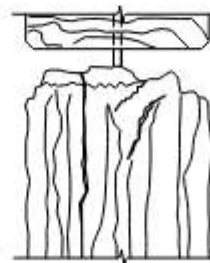


CROSS SECTION LOSS
25 TO 50 PERCENT

SEVERE



COMPLETE BREAKAGE



FULLY NON-BEARING
CONDITION



CROSS SECTION LOSS
EXCEEDING 50 PERCENT

IV. SUMMARY OF FINDINGS

PILINGS:

Based on the survey by Hudson Engineering the following was observed (see Appendix 3):

The piles have various degree of damage ranging from minor to advanced. The piles along the rip rap at the bank in general are in good condition with no damage observed. The piles along the northern water side that are most impacted by the current show the most damage. These piles have significant section loss and have been ranked with advanced damage. Of the (20) piles, 5 piles have been ranked with minor damage due to pitting. 1 pile, #7 has been ranked with advanced damage due to debris impact. 3 piles have been ranked with advanced damage due to pitting, rusting and section loss. This represents about 50% having damage that should be addressed within 10 years. Note that the piles are large (20") with significant capacity. A structural analysis reveals that for downward or compression load, the piles are less than 20% utilized. For lateral loads, they are 50% utilized. If there is a reinforcing cage utilizing minimum reinforcing area per code, the piles have sufficient reserve capacity without the steel shell. We are uncertain if this cage exists.

Repair Recommendations: Repairs to the piles could consist of pile wraps or added encasement as follows:

For minor damage and as a preventative measure, petroleum soaked fiberglass wraps are recommended at the water line.



For advanced damage, concrete encasement with galvanic anodes is recommended. See below for an example:



CONCRETE:

The concrete pier itself has been ranked as good, with minor damage due to scaling within the water scour zone. See Appendix 4 for photographs.

Concrete testing resulted in the following results (see Appendix 9):

- Chloride concentrations were all less than 0.05% (considered to be the threshold for corrosion), with the exception of Core #7 (north end) that is 0.062%. Note that the existing reinforcing is epoxy coated with good cover (3" or more). (one bottom bar was cut during the coring operation)
- Concrete strength ranged from 5,040 psi to 6,020 psi. Strength is good and contributes to the resistance to corrosion.
- The petrographic testing resulted in the following results:
 - 0.45-0.5% water cement ratio. The concrete strength is good.
 - Some micro-cracking noted at the surface, particularly at the north end
 - Some indications of weak aggregate/cement bonding
 - Air entrainment around 8% protecting the concrete from freeze/thaw
 - Some deposits of ettringite reflecting potentially high temperatures during curing. No damage has been noted due to these deposits
 - Well graded aggregates but poor distribution of coarse aggregates
 - Carbonation depth of 1-3 mm (less than 1/8"). This is excellent as carbonation of the concrete reduces its ph and leaves the reinforcing vulnerable to corrosion

Repair Recommendations: No repairs are recommended for the concrete at this time. Additional surveys should be completed within 10 years.

WOOD FRAMING AND DECKING:

The wood framing was observed at the (4) probe location and at the center seating area. In general, the wood framing is in good condition with minor damage. The decking is rated with moderate damage due to cracking and splitting at the top walking surface. The depth of cracking is typically less than 3/8". We estimate 15% of the deck boards should be repaired or replaced. Due to the pressure treatment with embedded chemicals and the challenging location to contain sanding debris, we are uncertain if sanding down the top 3/8" is feasible. We assume that it is not and that a reasonable path forward is to replace in sections, as financially feasible. We also assume that the sub-framing should be replaced with the decking.

The greatest damage was noted in the following locations (see Appendix 5 and 6):

1. The sleepers were shimmed with sections of plywood. This plywood has deteriorated and may cause a 'spongy' walking surface.
2. There is a 4" raised concrete area at the perimeter (south, west, and north only). This raised area is 4-0" wide. Embedded wood framing was set for anchoring the deck. This embedded wood exhibits moderate damage due to moisture.
3. Double joists were connected with through steel bolts and pipe spacers. All hardware is damaged due to corrosion (see wood hardware).
4. Locations where planking was removed and at locations where galvanized screws were removed have signs of splitting.

Repair recommendations: Any framed wood areas cannot be used and are ranked as severe due to the rusting of the hardware. All hardware must be replaced with similar but utilizing AISI Grade 316 stainless steel.

Wood decking can be repaired with exterior grade wood filler. Damaged wood to be removed. Wood filler to be used at cracked joists also where visible.

Future repairs would include replacing the decking and wood joists.

WOOD HARDWARE:

The steel wood hardware is in poor condition and ranked as severe.

Repair Recommendations: All hardware is to be immediately replaced prior to use of the deck. All hardware must be replaced with similar but utilizing AISI Grade 316 stainless steel.

RAILING

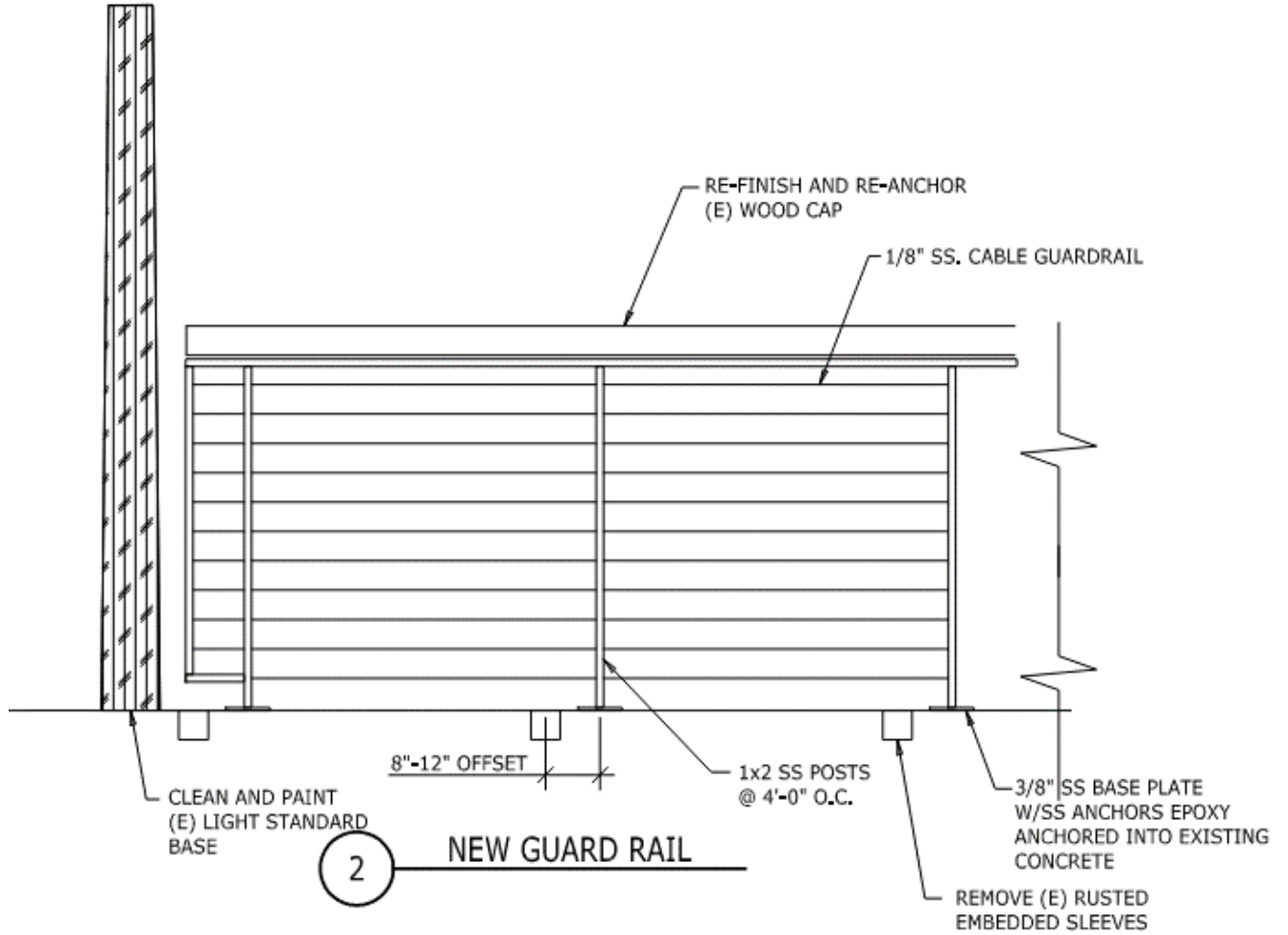
The railing posts are in poor condition and ranked as severe. Railing is to be replaced. See Appendix 7 for photographs.

Options include:

1. Remove existing sleeves. Patch with high strength repair mortar. Unbolt and replace posts only using a post installed base plate and anchors. All steel to be cleaned and painted. This may be time consuming and not realistic.
2. Replace railing with new composite wood, vinyl clad. Wood railing is not recommended due to the severity of exposure to the elements including flooding.



3. Galvanized steel or Stainless steel cable guardrail





CONCRETE PAVERS AND UPPER DECK:

The upper deck is in good condition with some plant growth and missing pavers. See Appendix 8.

The stone benches and cladding is in fair condition. Mortar joints are missing or deteriorated in most locations. Some areas have had sealant surfaced over the mortar or the sealant has replaced the mortar.

The stone facade facing the wood deck is supported by a 3/8" steel angle. This steel angle is rusting and is ranked as having minor corrosion. This corrosion has accelerated due to the addition of sealant which has trapped the water.

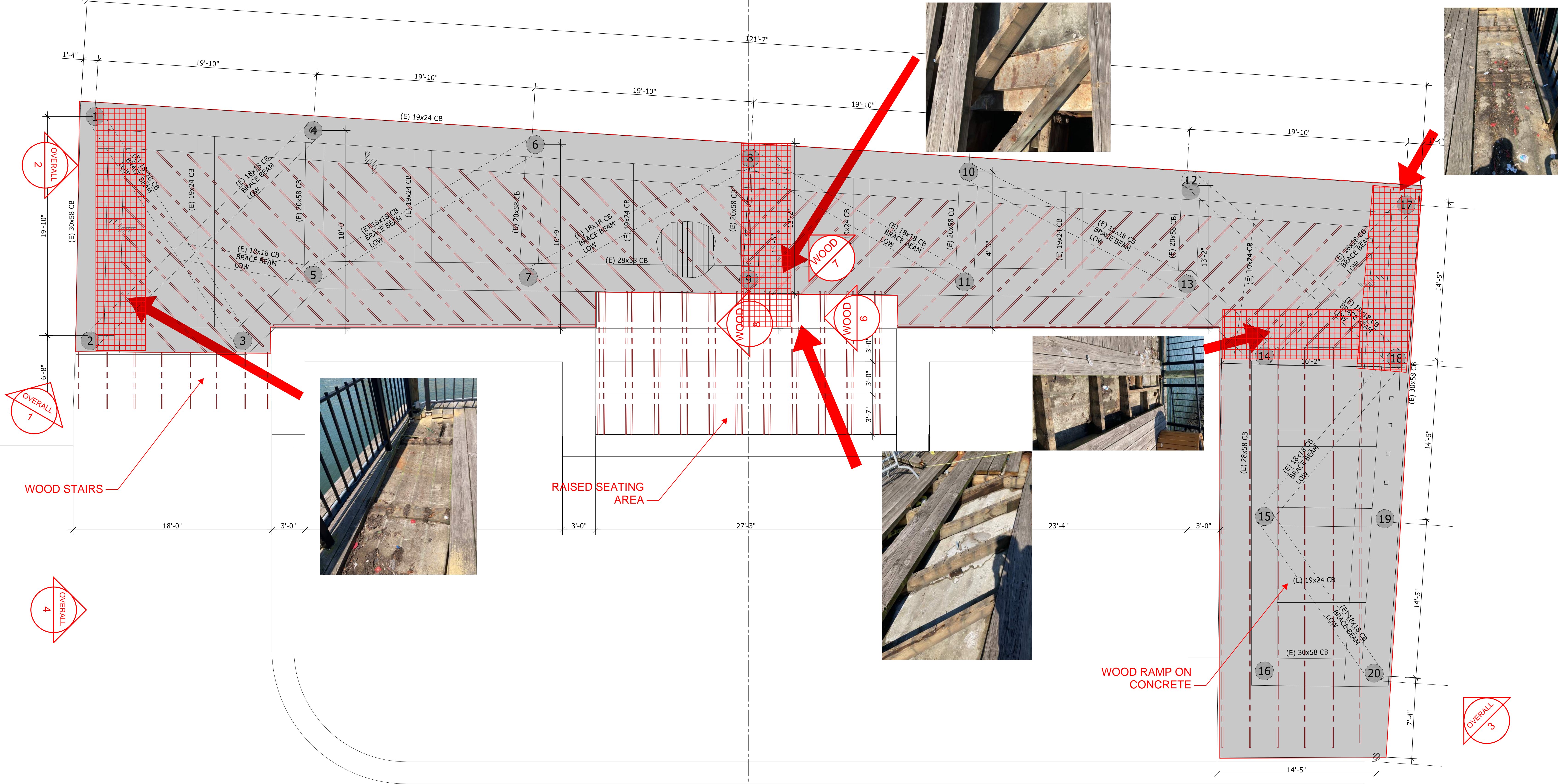
Repair Recommendations: None of the repairs are urgent. Future repairs could include replacing missing pavers and repointing the stone. Cleaning and repainting the stone support angles is also recommended for the future.

EXCLUSIONS

These recommendations are based on the visual observation completed on the date noted. They do not represent the condition of other areas and do not warrant the condition of any portion of the existing pier. Any pricing to include contingencies and allow for concealed conditions.

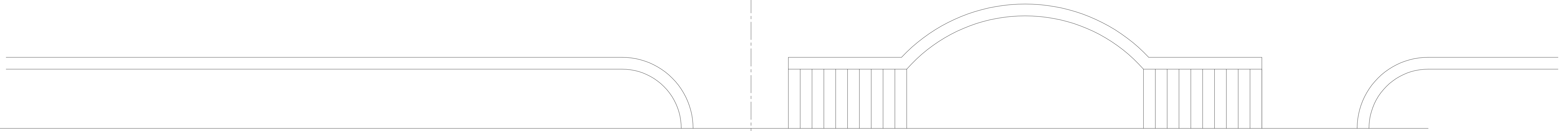
APPENDIX 1

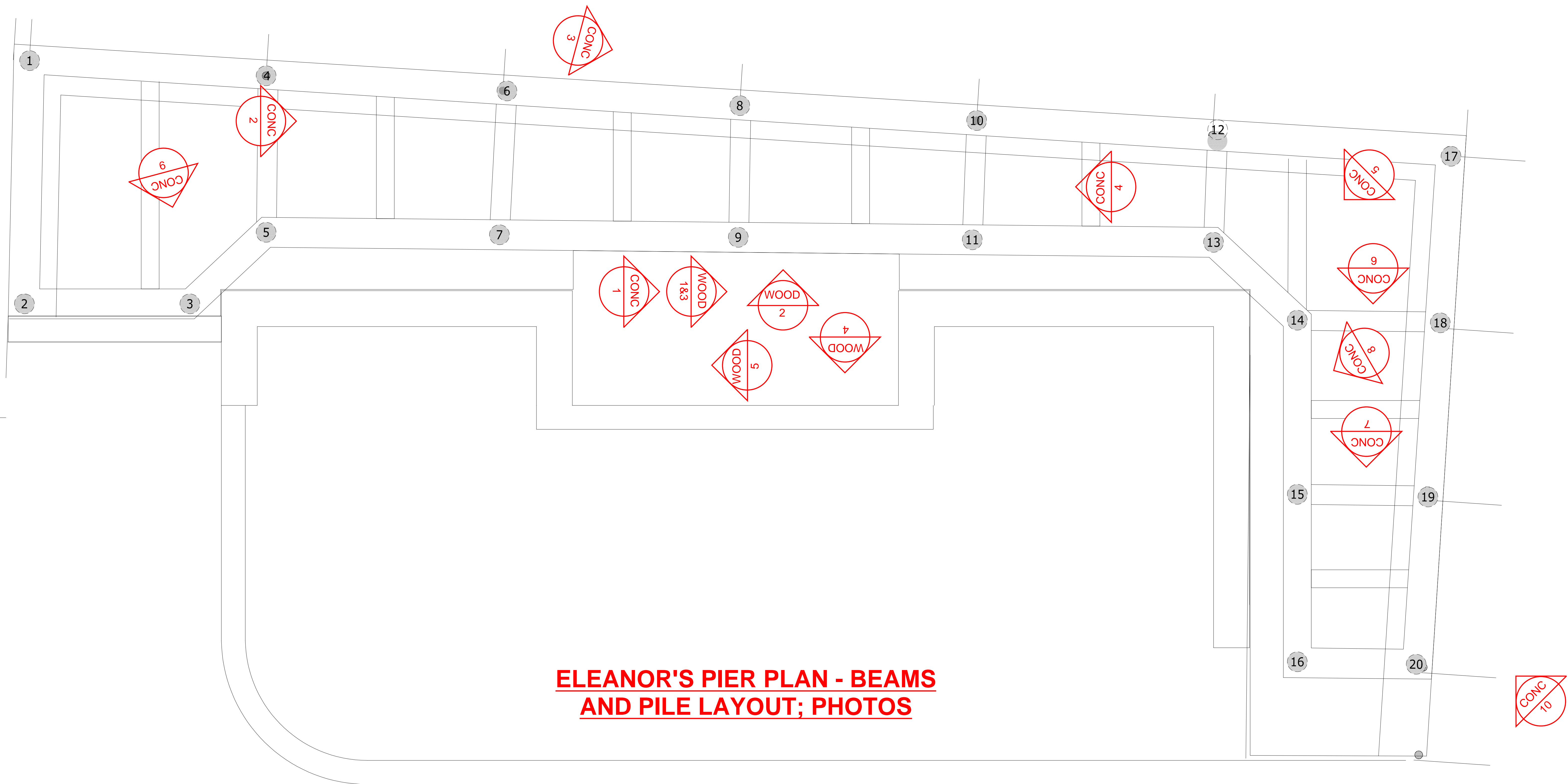
PLAN AND PHOTO LAYOUT



 AREAS WHERE WOOD DECKING WAS REMOVED

ELEANOR'S PIER PLAN

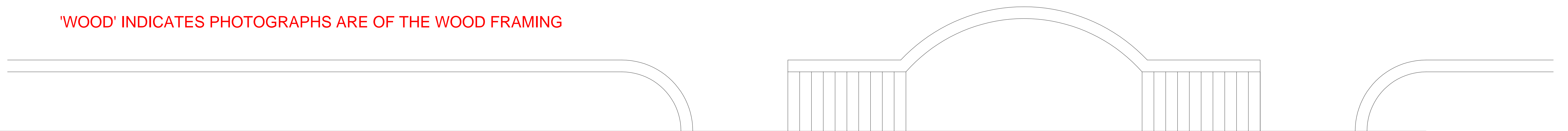




**ELEANOR'S PIER PLAN - BEAMS
AND PILE LAYOUT; PHOTOS**

'CONC' INDICATES PHOTOGRAPHS ARE OF THE UNDERSIDE OF THE CONCRETE DECK

'WOOD' INDICATES PHOTOGRAPHS ARE OF THE WOOD FRAMING

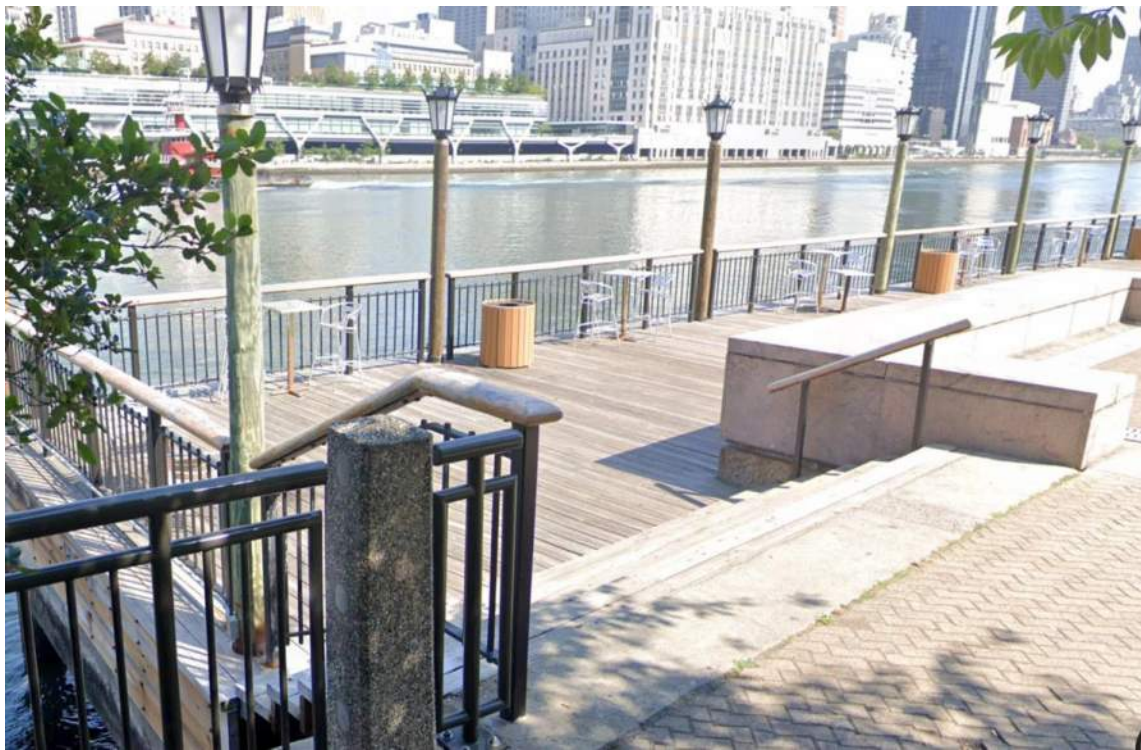


APPENDIX 2

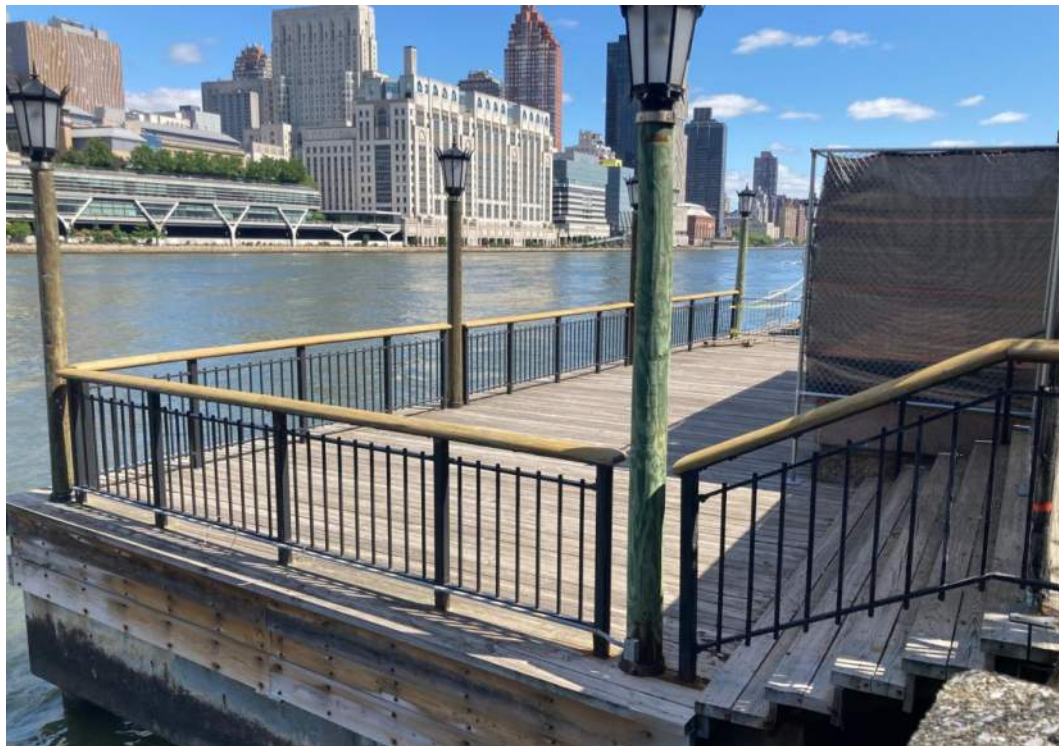
OVERALL PHOTOGRAPHS



Overall plan

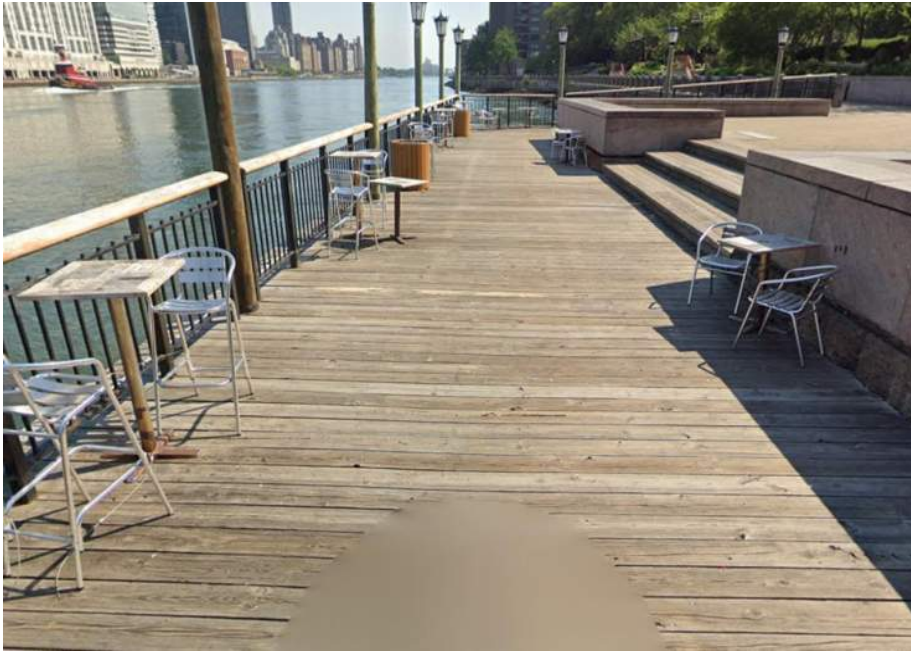


Southern portion of deck (prior to closing off)

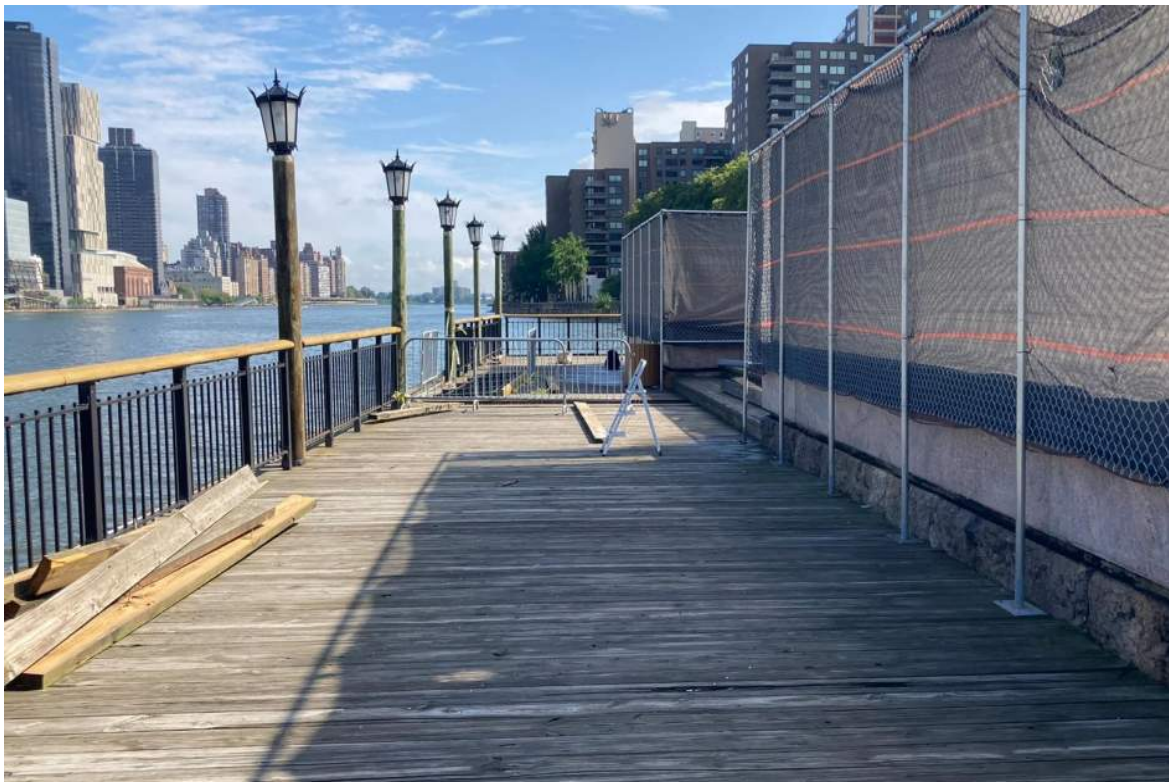


OVERALL 1
Southern portion of deck (current)
6/24/2024

ELEANOR'S PIER



Pier looking north (prior to closing off)



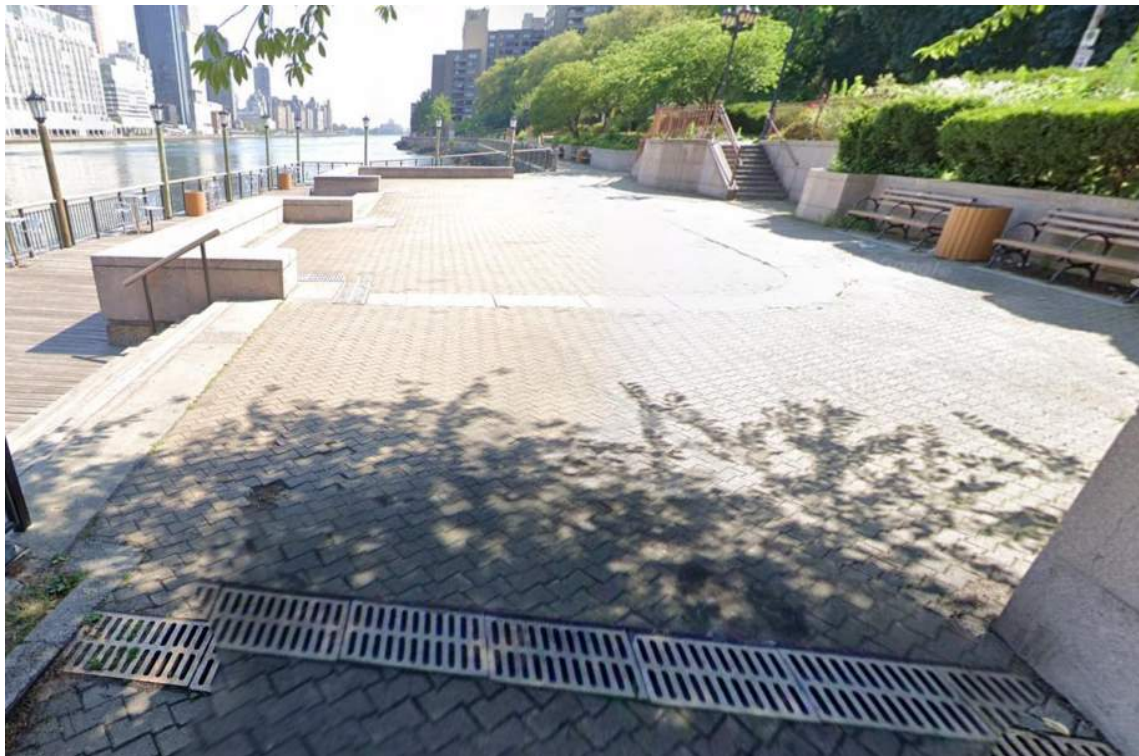
OVERALL 2
Pier looking north (current)
8/20/2024



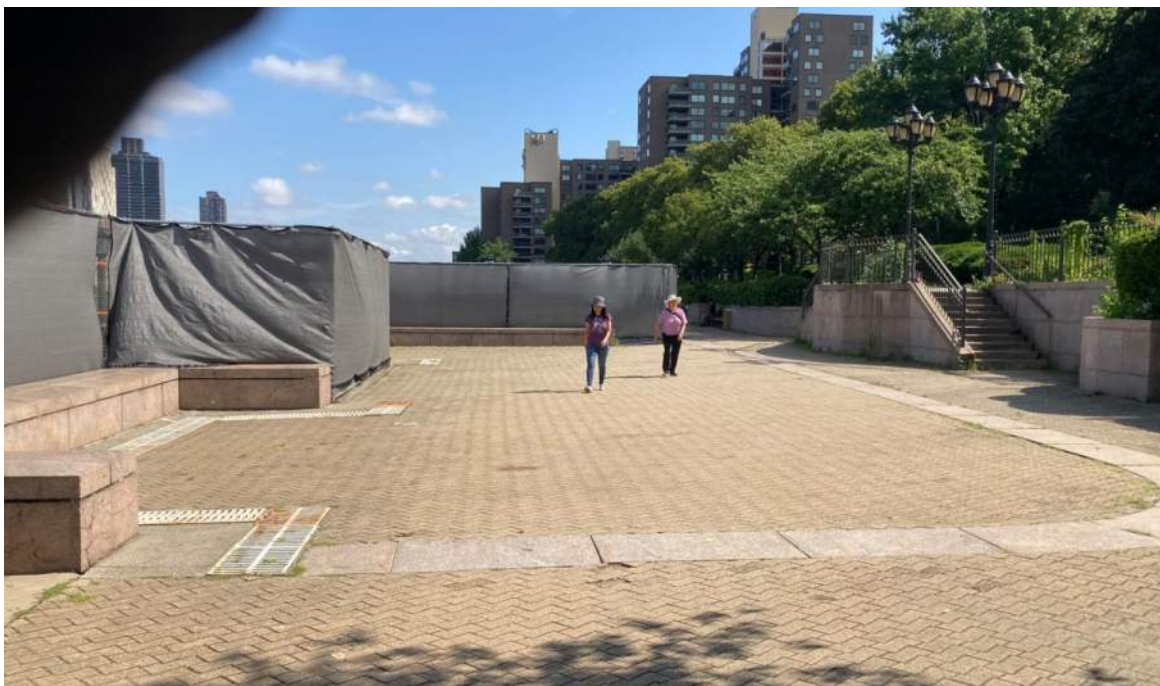
North End Ramp (prior to closing off)



OVERALL 3
Ramp (current)
8/20/2024



Plaza looking north (prior to closing off)



OVERALL 4
Plaza looking north (current)
8/20/2024

APPENDIX 3

PILE PHOTOGRAPHS



Pile 1
8/21/2024



Pile 2
8/21/2024



Pile 3
8/21/2024



Pile 4
8/21/2024

MINOR PITTING OF
STEEL



MINOR PITTING OF STEEL

Pile 5
8/21/2024



MINOR PITTING OF STEEL, SECTION LOSS AND RUSTING

Pile 6
8/21/2024



POTENTIAL DAMAGE TO PILE DUE TO DEBRIS. CONDITION. DAMAGE RANKED AS ADVANCED

Pile 7
8/21/2024



MINOR PITTING OF STEEL, SECTION LOSS

Pile 8
8/21/2024



Pile 9
8/21/2024



MINOR PITTING OF
STEEL, SECTION
LOSS AND
RUSTING

Pile 10
8/21/2024



Pile 11
8/21/2024



MAJOR PITTING OF
STEEL, SECTION
LOSS AND RUSTING;
PILE RANKED WITH
ADVANCED DAMAGE

Pile 12
8/21/2024



HOLE IN THE BACK
OF PILE; PILE
RANKED WITH
ADVANCED DAMAGE

Pile 12 (backside)
8/21/2024



Pile 13
8/21/2024



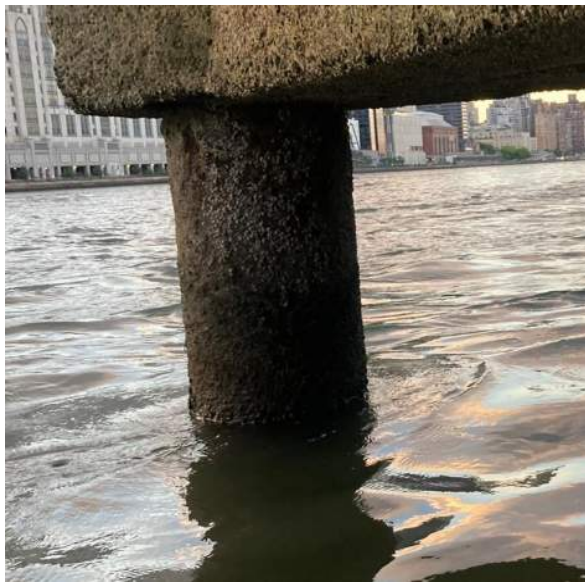
Pile 14
8/21/2024



Pile 15
8/21/2024



Pile 16
8/21/2024



Pile 17
8/21/2024



Pile 18
8/21/2024

**MAJOR PITTING OF
STEEL, SECTION
LOSS AND
RUSTING; PILE
DAMAGE RANKED
AS MODERATE**



Pile 19
8/21/2024



Pile 20
8/21/2024

MAJOR PITTING OF
STEEL, SECTION
LOSS AND
RUSTING; PILE
DAMAGE HAS BEEN
RANKED AS
MODERATE

APPENDIX 4

UNDER DECK PHOTOGRAPHS



MINOR CONCRETE SCALING

CONC 1
Center of pier towards stairs
8/21/2024



MINOR RUSTING

CONC 2
UNDERDECK
8/21/2024

BIOLOGICAL GROWTH ON CONCRETE



CONC3
8/21/2024



CONC4
UNDERDECK
8/21/2024

BIOLOGICAL
GROWTH,
SCALING AND
MINOR RUSTING



CONC5
UNDERDECK
8/21/2024



MINOR RUSTING

BIOLOGICAL
GROWTH,
SCALING

CONC6
UNDERDECK
8/21/2024



CONC7
UNDERDECK
8/21/2024



CONC8
UNDERDECK
8/21/2024



CONC9
UNDERDECK
8/21/2024

BIOLOGICAL
GROWTH,
SCALING



CONC10
Outside of North beam
8/21/2024

BIOLOGICAL
GROWTH,
SCALING

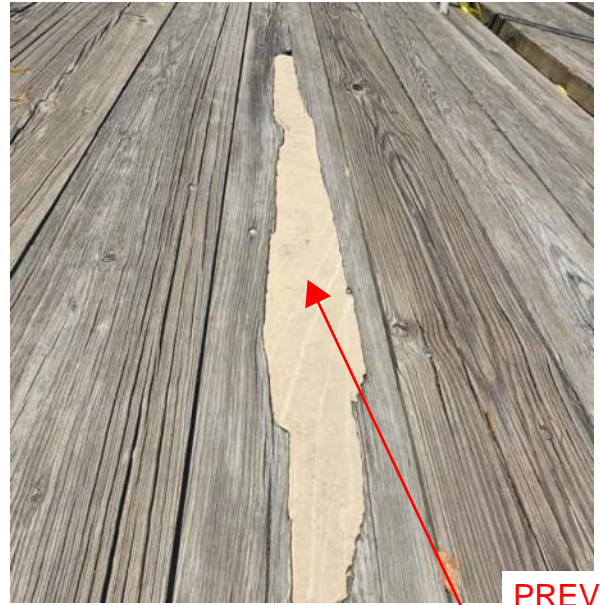
APPENDIX 5

WOOD DECK PHOTOGRAPHS



Generic decking showing splitting
8/21/2024

**SPLITTING
WOOD DECK**



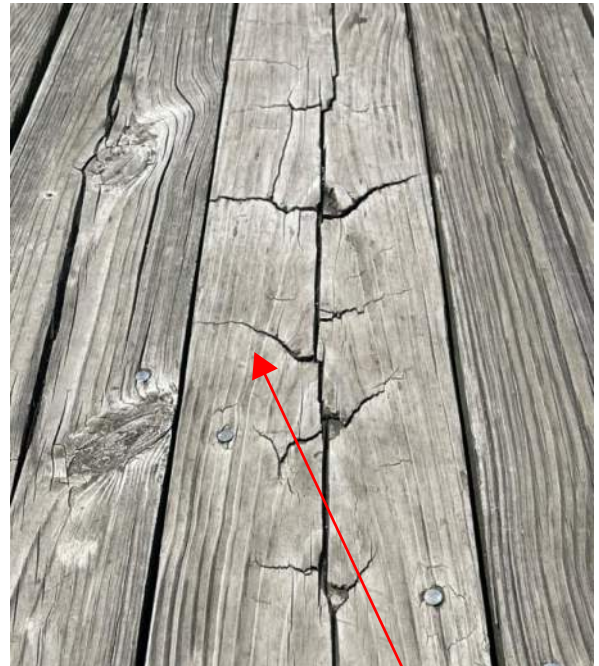
Patching of wood decking
8/21/2024

**PREVIOUS
REPAIRS**



10-15% of decking requires repair or replacement
8/21/2024

**ROTTED
WOOD DECK**



Damaged decking
8/21/2024

**SPLITTING
WOOD DECK**



Decking is 2-1/2" of thickness and is pressure treated
8/21/2024



Embedded nailers show sign of rot
8/21/2024

**DAMAGED
NAILERS**



**OLDER GALVANIZED
HARDWARE IS
RUSTING**

Most galvanized rusting hardware has been replaced
with stainless steel ring shank nails

8/21/2024

APPENDIX 6

WOOD FRAMING PHOTOGRAPHS

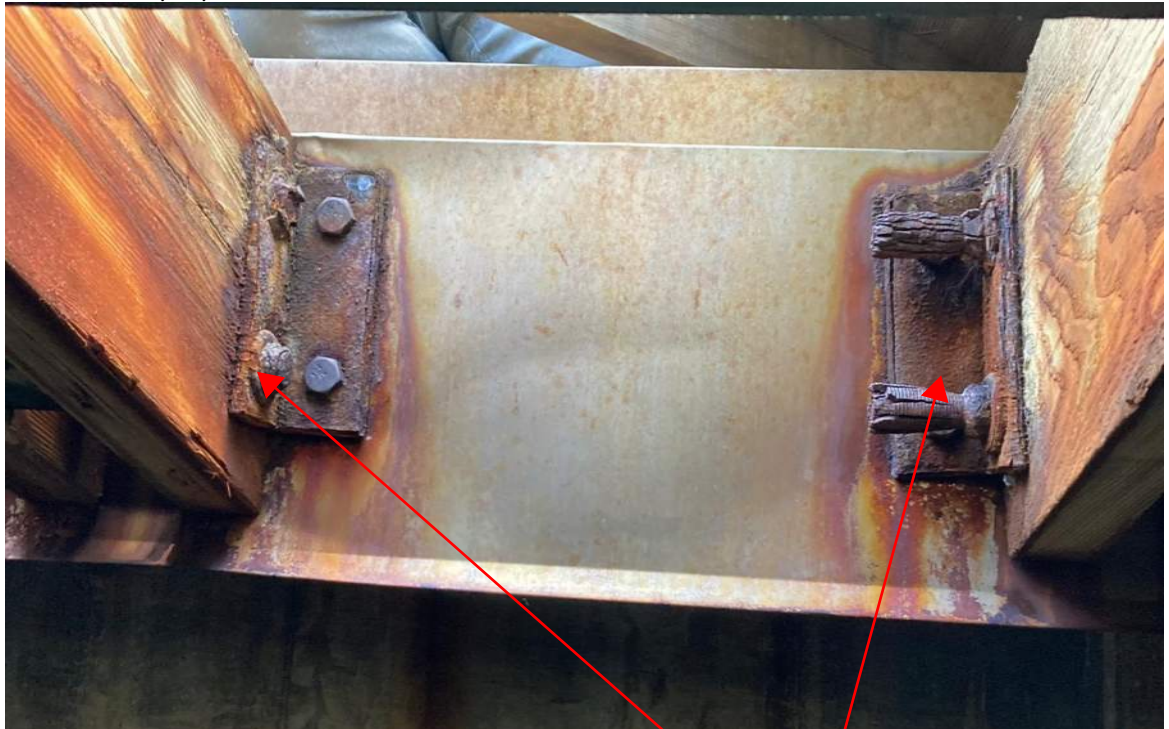


RUSTED
HARDWARE

WOOD 1

Center of pier towards stairs

8/21/2024



WOOD2

UNDERDECK

8/21/2024

RUSTED
HARDWARE



WOOD3
8/21/2024

RUSTED
HARDWARE



WOOD4
8/21/2024

RUSTED
THROUGH
BOLTS



WOOD5
UNDERDECK
8/21/2024

RUSTED
HARDWARE



WOOD6
Split framing at rusted hardware
8/21/2024



WOOD7
with plywood sisters for shimming
8/21/2024

WOOD SPLITTING

DAMAGED/
ROTTED
PLYWOOD
SHIMMING



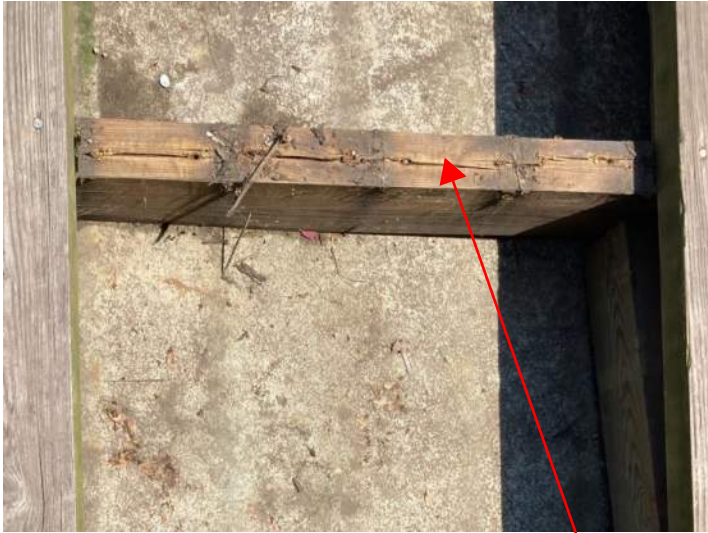
WOOD8
Rusted hardware
8/21/2024

RUSTED
HARDWARE



Plywood shims, typical
8/21/2024

DAMAGED/
ROTTED
PLYWOOD
SHIMMING



Split joists at removed decking, typical
8/21/2024

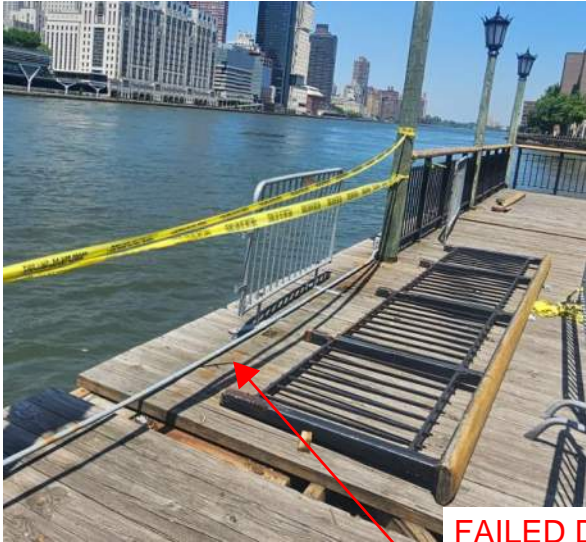


Typical sleeper framing
8/21/2024

— SPLITTING

APPENDIX 7

RAILING AND LIGHT STANDARDS PHOTOGRAPHS



FAILED DECK POSTS

Decking has failed at the posts
8/21/2024



DAMAGED DECK POSTS

Post bases with base plates are rusted also
8/21/2024



Other post based are significantly rusted
8/21/2024

DAMAGED DECK POSTS



Wood cap in good condition
8/21/2024



Light standard base
8/21/2024



**RUSTING ON
BASE OF LIGHT
STANDARDS**



Light standard base
8/21/2024



Light standard base
8/21/2024

**RUSTING ON
BASE OF LIGHT
STANDARDS**

APPENDIX 8

PLAZA PHOTOGRAPHS



Generic Growth
8/21/2024

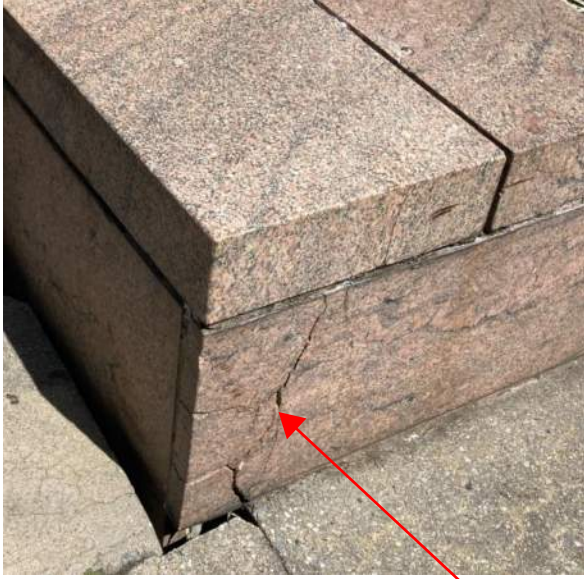
**GROWTH
IN JOINTS**



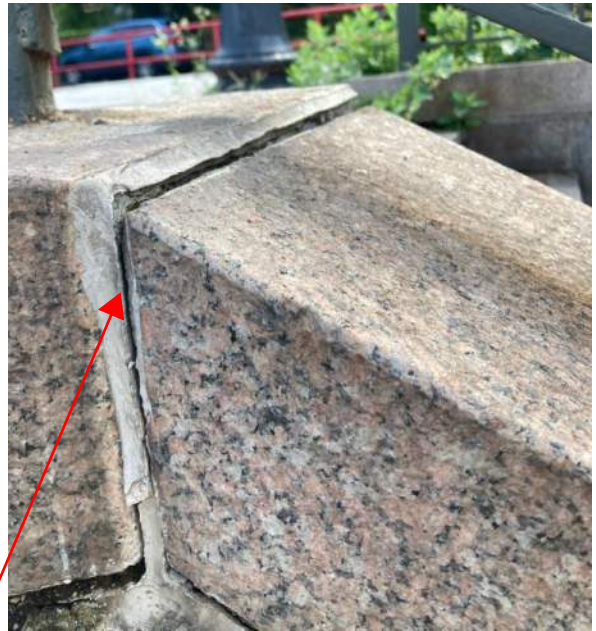
Growth and loss of pavers
8/21/2024



Minor Rust in Drain Covers
8/21/2024



Cracking and loss of mortar at joints
8/21/2024



Stone displacement at stairs
8/21/2024

**CRACKED
AND
DISPLACED
VENEER
STONE**



Loss of mortar at joints
8/21/2024



Stone displacement; loss of grout at joints
8/21/2024



Rusted relieving angle at stone
Joint has been caulked creating trapped moisture
8/21/2024

APPENDIX 9

CONCRETE TESTING

CORE DRILLING REPORT

CLIENT:	IMEG Consulting, Inc. 1411 Broadway, Suite 610 New York, NY 10018	DATE:	7/30/24
		FTC No.:	IMEG124
PROJECT:	West Road, Roosevelt Island, NY	REPORT NO.:	1
		PAGE :	1 of 4
LOCATION:	Eleanor's Pier – Concrete Beams	HOURS:	9:00am-3:00pm
		WEATHER:	Cloudy 85°
DRILLING OPERATORS:	O. Garcia, C. Stefanick	LAB LICENSE#	45

Cores Tested as Per ASTM C-42

Identification No.	1	2	3	4	5	6	7	8	9
Length of Drilled Core (in.)	5.0	12.0	5.0	6.75	12.75	6.50	7.50	7.75	6.25
Length of Prepared Core (in.)	-	-	4.46	-	-	5.50	-	5.63	-
Length of Core Capped (in.)	-	-	4.70	-	-	5.73	-	5.88	-
Area (sq. in.)	-	-	7.07	-	-	7.07	-	7.07	-
Diameter (in.)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ratio L to D	-	-	1.57	-	-	1.91	-	1.96	-
Correction Factor	-	-	0.966	-	-	1.0	-	1.0	-
Crushing Load (lbs.)	-	-	41290	-	-	42540	-	42580	-
Compressive Strength (PSI)	-	-	5840	-	-	6020	-	6020	-
Strength (Corrected PSI)	-	-	5640	-	-	6020	-	6020	-
Unit Weight (lbs.)	-	-	134.3	-	-	133.3	-	134.6	-

Pachometer Used: Yes
Date Drilled: 7/30/24
Capping Used: Sulfur

P.S.I. Required: Unknown
Date Prepared: 7/31/24

Date Placed: Over 28 Days
Date Tested: 8/6/24

Remarks: See attached plan for location of drilled cores

ID No.	Location / Description
1	Top of beam – Chlorides
2	Side of beam near bottom – Chlorides
3	Top of Beam – Compressive strength
4	Top of Beam – Petrographic Testing
5	Side of beam near bottom – Chlorides
6	Top of Beam – Compressive strength
7	Side of beam near bottom – Chlorides
8	Top of Beam – Compressive strength
9	Top of Beam – Petrographic Testing

All cores will be discarded after 10 days.

CORE DRILLING PICTURES

Core #1 – Drilled



Core #2 - Drilled



Drilled



Core #3

Prepared



CORE DRILLING PICTURES

Core #4 – Drilled



Core #5 - Drilled



Drilled



Core #6

Prepared



CORE DRILLING PICTURES

Core #7 – Drilled



Core #9 - Drilled



Core #8

Drilled



Prepared



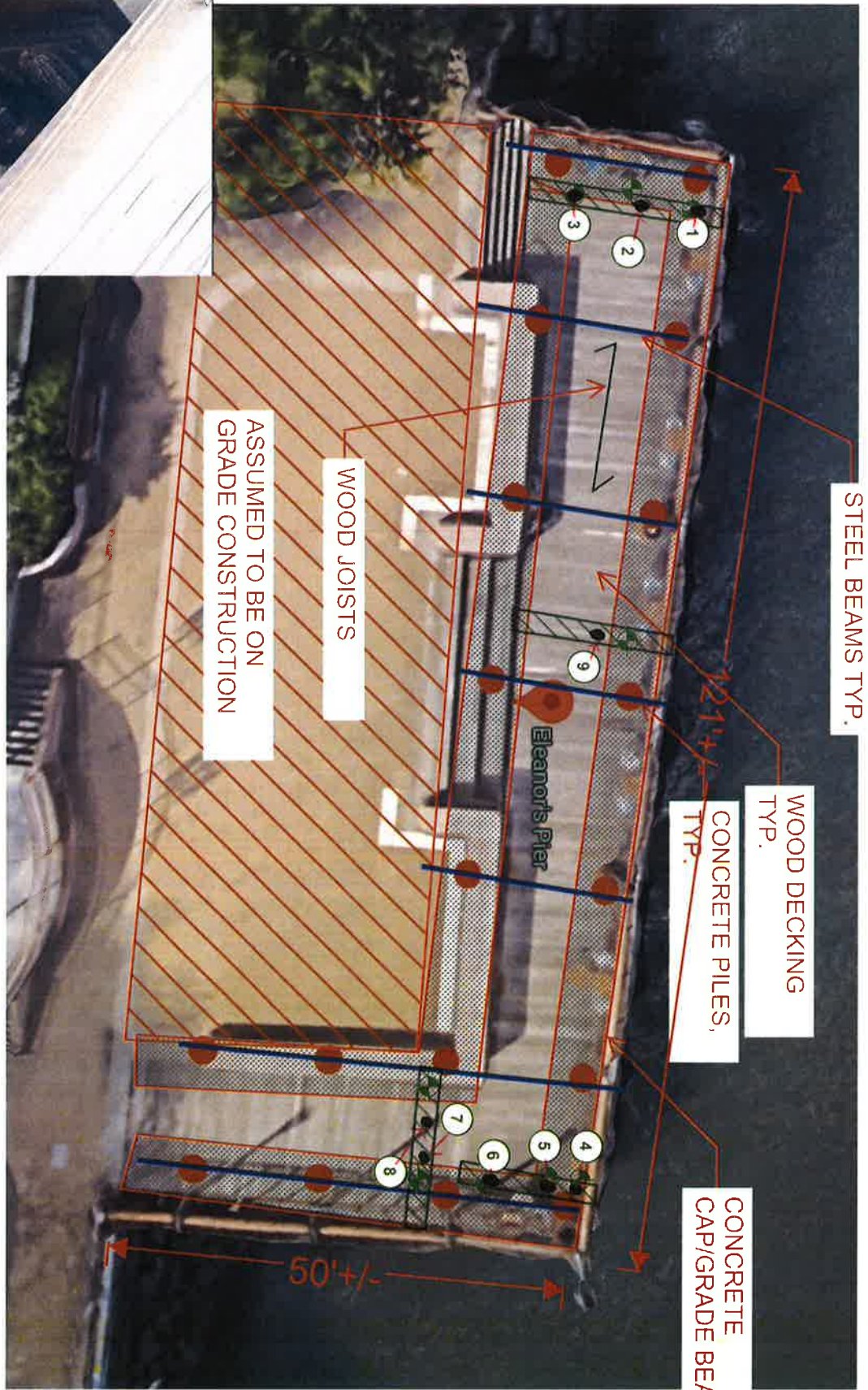
① Core 1D.



Core 1: (top of beam): Chloride
 Core 2: (side of beam near bottom): Chloride
 Core 3: Strength
 Core 4: (top of beam): Petrographic including extent of carbonation
 Core 5: (side of beam near bottom): Chloride

Area of decking removal (minimum 16" wide by length of boards)

Core 6: strength
 Core 7: (side of beam near bottom): Chloride
 Core 8: Strength
 Core 9: Petrographic including carbonation



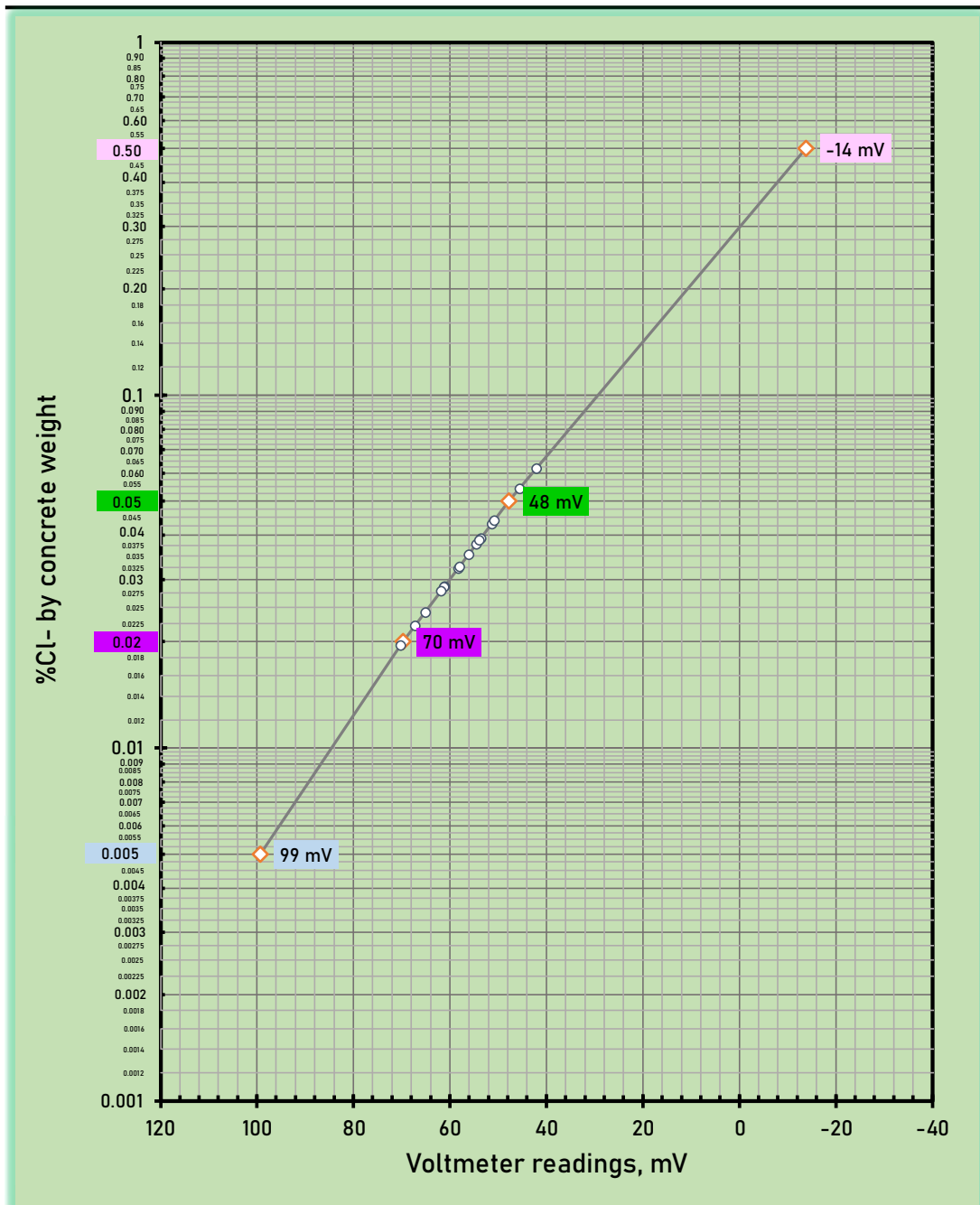
ELEANOR'S PIER
 ASSUMED STRUCTURE
 6/26/24

Measurement of the water soluble chloride content of HARDENED CONCRETE by the RCT method

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 ml of extraction liquid

Date:	7/30/2024	Client:	IMEG Consulting Inc.	Project:	1411 Broadway, Suite 610 New York, NY 10018
Testing Lab:	FTC	FTC#:	IMEG124	Technician	David F. Wicks

Enter the calibration values for the electrode in this table:				
Liquid:	Clear	Purple	Green	Pink
% Cl ⁻ :	0.005	0.020	0.050	0.500
mV :	99	70	48	-14





A SOCOTEC COMPANY

August 27, 2024

Jan Vacca, P.E., LEED ap
Project Executive
IMEG
1411 Broadway, Suite 610
New York, NY 10018

Re: Eleanor's Pier
West Road, Roosevelt Island, NY

FTC No.: IMEG124

Dear Ms. Vacca,

Petrographic examination was requested by Jan Vacca, P.E. of IMEG on two (2) concrete core samples from the above referenced project. The cores were extracted by Future Tech Consultants on July 30, 2024.

Please find attached the report from our sub-consultant "UCT Group, LLC." located in Niles, IL dated August 26, 2024 who performed the aforementioned analysis.

If you have any questions about this report or need more information, please do not hesitate to call.

Very Truly Yours:
Future Tech Consultants of New York, LLC.

A handwritten signature in blue ink, appearing to read 'm. marchese', is written over the typed name below.

Michael Marchese, P.E., FACI
Senior Principal

SM/mbp



CHICAGO
7314 N. Milwaukee Avenue
Niles, IL 60714
P 847-459-9090
www.uctgroup.com

Ms. Melissa Porcelli
Future Tech Consultants
52 E. 2nd Street
Mineola, NY 11501
Ph: 516 918-2984

melissa.porcelli@socotec.us

Re: Laboratory Studies of Concrete Core Samples
Eleanor Pier
Roosevelt Island, New York
FTC Project IMEG124

Dear Ms. Porcelli:

UCT Group LLC (UCT) has completed the laboratory studies of the two (2) concrete core samples excised by others from the referenced pier and delivered to our laboratories on August 8th, 2024.

At your request, the samples were subjected to petrographic examination to assess the service characteristics of the concrete they represent. Per the client’s request, the study of Core 4 was limited to the structural concrete portion.

The sample identification and test protocol provided by you are shown in Table 1 below.

Table 1 - Sample Identification, Location, and Testing Protocol.

Core ID	Location	Petrographic Examination (ASTM C 856)
4	Side of the Pier, Top of Beam, drilled vertically	X
9	Middle of Pier, Top of Beam, drilled vertically	X

SUMMARY OF FINDINGS

There was no cracking observed within the structural concrete of Core 4.

Core 9 contains vertically oriented cracks extending down to ½-inch below the top surface. This cracking passes around aggregate and may have formed before the paste-aggregate bond was sufficiently formed, most likely due to drying shrinkage

The structural concrete of Core 4 has a moderate water-cement ratio, estimated to be around 0.50. The concrete of Core 9 has a fairly low water-cement ratio, estimated to be around 0.45.

The structural concrete in Core 4 was produced using a fairly well-graded, ¾-inch (19-mm) maximum size, crushed dolomite with traprock and various other rocks' coarse aggregate, and a natural sand fine aggregate.

The concrete in Core 9 is slightly different and was produced using a fairly well-graded, ¾-inch (19-mm) maximum size, crushed traprock with granite, dolomite, and various other rocks' coarse aggregate, and a natural sand fine aggregate.

Both Cores are composed of conventional weight concrete containing minor deposits of ettringite.

The overall quality of the concrete of both Cores 4 and 9 is considered good.

LABORATORY STUDIES

Petrographic Examination: The examination was performed in general accordance with applicable provisions of ASTM Standard C856 - *Standard Practice for Petrographic Examination of Hardened Concrete*. Individual results of the petrographic examination are summarized below.

Core 4

General

The core is 2 and $\frac{7}{8}$ -in (73-mm) in diameter, 7.5-in (191-mm) long, and represents partial beam thickness. The core contains 4.75-inches of topping concrete that is well-bonded to 2.75-inches of structural concrete. The petrographic examination was focused on the structural concrete. The top of the core is a weathered trowel-finished surface with some coring damage (Figure 1). The bottom of the core is a fractured surface. There is a 2-mm thick finished surface along the top of the core that is well-adhered to the top surface.



Figure 1 – Top: Core 4 as received for examination (top surface oriented to the left). Bottom: Top (left) surface with coring damage and bottom (right) surfaces of Core 4. Scales are in inches.

Reinforcement

There is an imprint of reinforcement 4.5-inches from the top surface, which includes a slight green remnant.

Unit Weight

The unit weight of the structural concrete, as received, is 136.9 pcf.

Cracks/Deterioration

There are no visible cracks in the structural concrete.

Paste Properties

Paste Properties	
Color	Dark grey
Hardness	Moderate
Luster	Subvitreous
Supplementary Cementitious Material	None (Figure 3)

Carbonation

Cement paste is carbonated to a depth of 1-mm below the top surface of the core.

Water-Cement Ratio

The water-cement ratio of the structural concrete is deemed to be moderate and is estimated to be around 0.50.

Air Content

The air void system of the structural concrete is deemed to be air-entrained and is estimated to be around 8-9%.

Secondary Deposits

Deposits of ettringite were identified in the structural concrete (Figure 3).

Paste-Aggregate Bond

The paste-aggregate bond of the structural concrete is fairly weak, with fractures created in the laboratory mostly passing around coarse and fine aggregate particles.

Aggregate

The aggregate in the structural concrete is well-graded with a poor distribution of coarse aggregate (Figure 2).

The coarse aggregate is composed primarily of crushed dolomite, with minor amounts of traprock and various other igneous and metamorphic rocks and minerals, with a ¾-

inch (19-mm) top size. The aggregate particles range from subangular to angular, with a blocky to elongate sphericity.

The fine aggregate is a natural sand composed primarily of dolomite and traprock with minor amounts of other rocks. Individual sand grains range from irregular/blocky to spherical.

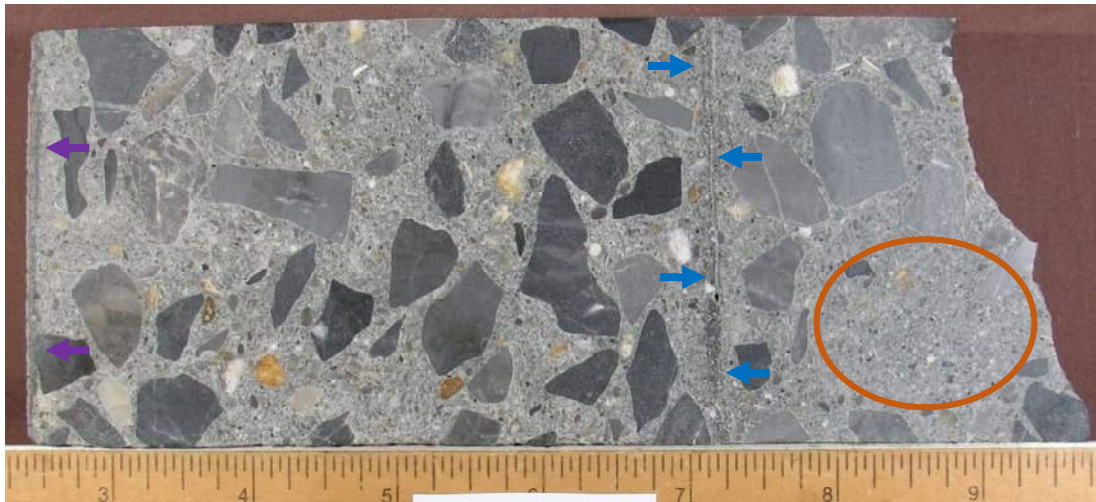


Figure 2 - This photograph is a lapped cross-section from Core 4 and illustrates the general appearance, distribution, and condition of the aggregates in the concrete. The area with a lack of coarse aggregate is indicated by the orange oval. The top surface is oriented to the left. The bonding between the topping and structural concrete is indicated by blue arrows and the 2-mm thick finished surface is indicated by purple arrows. The scale is in inches.

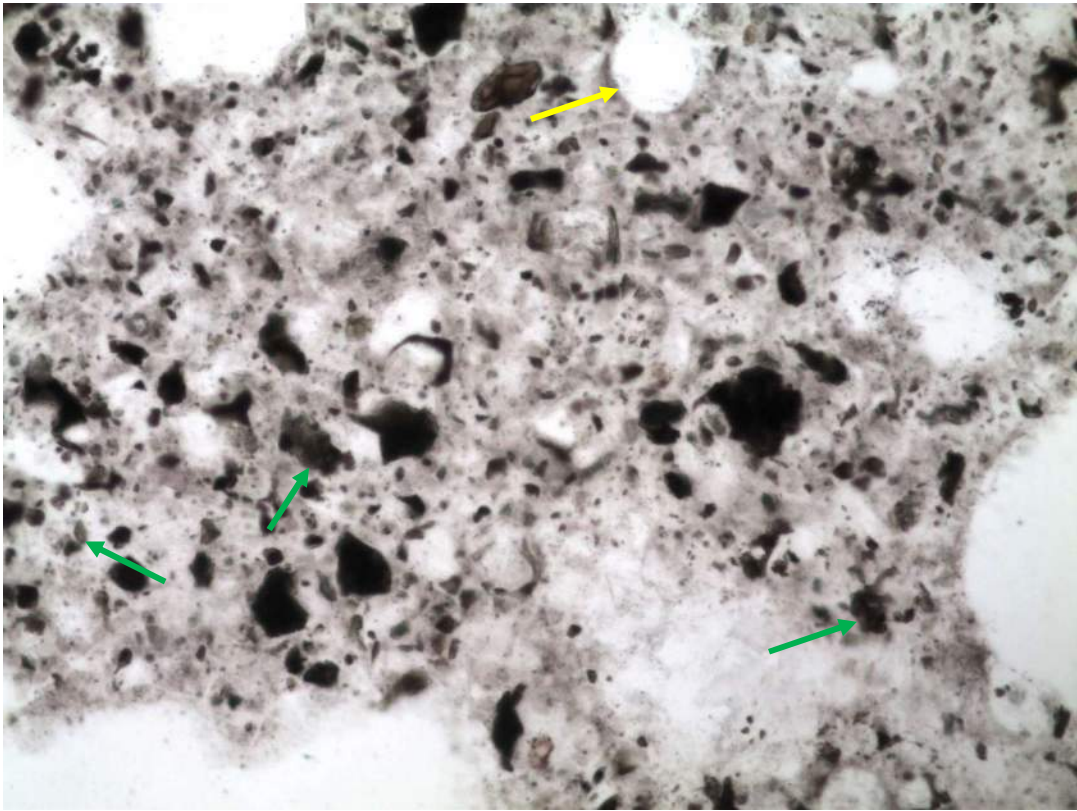


Figure 3 - This photomicrograph (200x, PPL) is from Core 4 and illustrates the Unhydrated Portland Cement (UPC) particles in the core (green arrows). Deposits of ettringite are also present in the concrete and are indicated by the yellow arrow.

Core 9

General

The core is 2 and $\frac{7}{8}$ -in (73-mm) in diameter, 6.75-in (171-mm) long, and represents partial slab thickness. The top of the core is a weathered trowel-finished surface with some possible coring damage (Figure 4). The bottom of the core is a fractured surface. There is a 1-mm thick finished surface along the top of the core that is well-adhered to the top surface.



Figure 4 – Top: Core 9 as received for examination (top surface oriented to the left). Bottom: Top (left) surface indicating possible coring damage with blue arrows and bottom (right) surfaces of Core 9. Scales are in inches.

Reinforcement

There is one 5/8-inch steel bar approximately 3.75-inches below the top surface. There is also an imprint of another steel bar on the bottom surface. The bar and imprint are corrosion-free.

Unit Weight

The unit weight of the concrete, as received, is 147.6 pcf.

Cracks/Deterioration

There are multiple microcracks oriented perpendicular to the top surface that extend 1/2-inch into the concrete. The cracks pass around aggregate and have widths that range from 0.003-inches to a microcrack.

Paste Properties

Paste Properties	
Color	Dark grey
Hardness	Hard
Luster	Vitreous
Supplementary Cementitious Material	None (Figure 6)

Carbonation

Cement paste is carbonated to a depth of 3-mm (1/8-inch) below the top surface of the core.

Water-Cement Ratio

The water-cement ratio of the concrete is deemed to be moderately low and is estimated to be around 0.45.

Air Content

The air void system of the concrete is deemed to be air-entrained and is estimated to be around 7-8%.

Secondary Deposits

Deposits of ettringite were identified in the core (Figure 6).

Paste-Aggregate Bond

The paste-aggregate bond of the concrete is fairly weak, with fractures created in the laboratory mostly passing around coarse and fine aggregate particles.

Aggregate

The aggregate in the concrete is distributed fairly uniformly and well-graded (Figure 2).

The coarse aggregate is composed primarily of crushed traprock, with minor amounts of granite, dolomite, and various other igneous and metamorphic rocks and minerals, with a ¾-inch (19-mm) top size. The aggregate particles range from subangular to angular, with a blocky to elongate sphericity.

The fine aggregate is a natural sand composed primarily of traprock and granite with minor amounts of other rocks. Individual sand grains range from irregular/blocky to spherical.



Figure 5 - This photograph is a lapped cross-section from Core 9 and illustrates the general appearance, distribution, and condition of the aggregates in the concrete. The top surface is oriented to the left. The 1-mm thick finished surface is indicated by purple arrows. The scale is in inches.

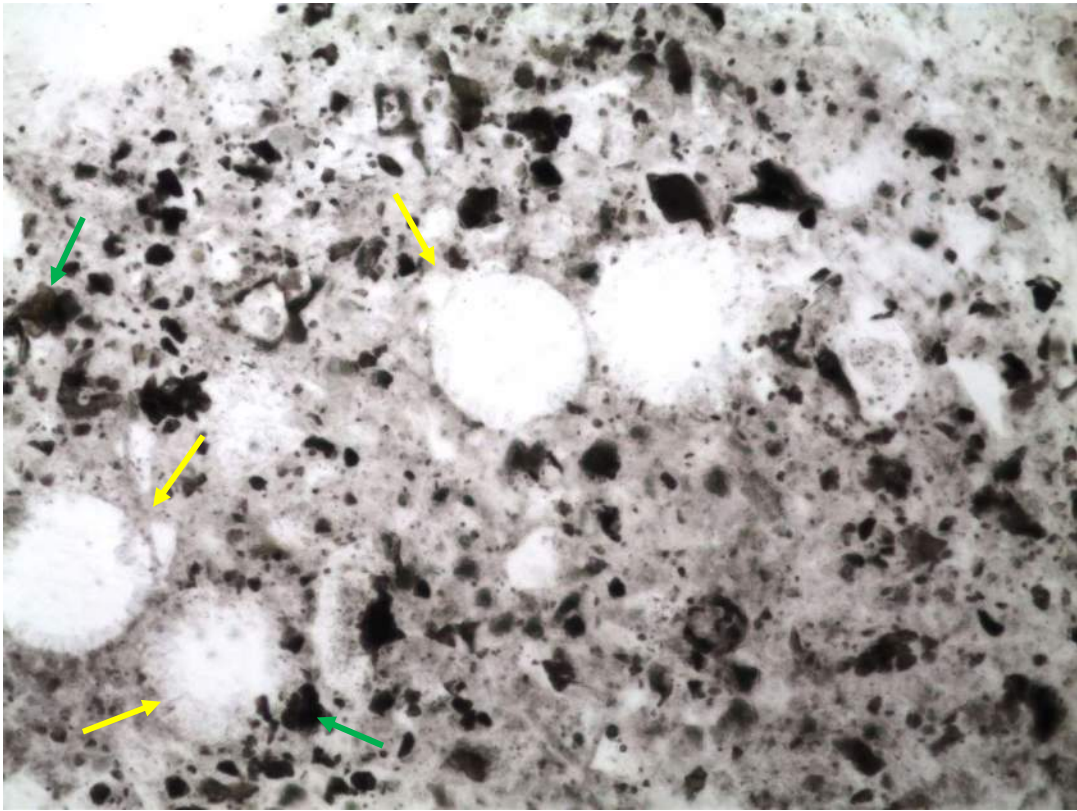


Figure 6 - This photomicrograph (200x, PPL) is from Core 9 and illustrates the Unhydrated Portland Cement (UPC) particles in the core (green arrows). Deposits of ettringite are also present in the concrete and are indicated by yellow arrows.



CHICAGO
7314 N. Milwaukee Avenue
Niles, IL 60714
P 847-459-9090
www.uctgroup.com

We appreciate the opportunity to be of service to you. Should you have any questions, please contact us.

Sincerely yours,
UCT Group LLC

Mitchell McCarthy
Petrographer

Elena I. Emerson
Operations Manager

Sample(s) will be discarded after sixty (60) days unless other disposition is requested by you.

PROJECT NUMBER:	24059	PAGE 11
PROJECT NAME:	Eleanor Pier – Laboratory Studies of Concrete Core Sample	
DATE:	08.26.2024	

APPENDIX 10

COST ESTIMATE

REPAIR COST ESTIMATE - ELEANOR'S PIER

9/6/2024

Div.	Description	Surveyed Quantity	Unit	Unit Price	Immediate Cost			Priority Cost (10 years)
					Least Cost	Median Cost	Highest Cost	
2	DEMOLITION (RAILING)							
2	Demolish Railing; Remove and patch sleeves	1	L.S.	#####	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ -
2	Remove caulking at stone relieving angles	1	L.S.	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	
3	CONCRETE	1	Allowance					\$ 50,000.00
4	MASONRY							
4	Reset stone	1	L.S.	\$ 3,200.00				\$ 3,200.00
4	Pointing stone	1,706	S.F.	\$ 15.00				\$ 25,590.00
4	Replace concrete pavers	200	S.F.	\$ 15.00				\$ 3,000.00
5	STEEL							
5	Railing: Option 1 Vinyl Clad wood	200	L.F.	\$ 150.00	\$ 30,000.00			\$ -
5	Railing: Option 2 Galvanized steel; powder coated	200	L.F.	\$ 275.00		\$ 55,000.00		\$ -
5	Railing: Option 3 Stainless Steel; Brushed Finish	200	L.F.	\$ 371.25			\$ 74,250.00	\$ -
5	Salvage, Re-finish and re-install wood cap	1	L.S.	#####	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ -
5	Wood hardware replacement	40	Per conn.	\$ 500.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	
5	Clean and repaint stone support steel	110	L.F.	\$ 75.00				\$ 8,250.00
6	WOOD							
6	Wood Deck Repair	800	S.F.	\$ 5.00	\$ 4,000.00			
6	Wood Deck Sanding (Not pursued)	3,043	S.F.					
6	Wood Deck Coating (Not pursued)	3,043	S.F.					
6	Wood Deck Replacement	3,043	S.F.	\$ 45.00				\$ 136,935.00
7	Clean and paint light standard bases	11	EA.	1,000	\$ 11,000.00	\$ 11,000.00	\$ 11,000.00	
31	PILING							
31	Wrap - Clean and wrap - Petroleum based fiberglass	16	Per pile	\$ 3,000.00				\$ 48,000.00
31	Concrete encasement with anode embedment	4	Per pile	#####				\$ 60,000.00
	SUBTOTAL				\$ 117,500.00	\$ 138,500.00	\$ 157,750.00	\$ 334,975.00
	Contingency	10.00%			\$ 11,750.00	\$ 13,850.00	\$ 15,775.00	\$ 33,497.50
	General Conditions	1.50%			\$ 1,762.50	\$ 2,077.50	\$ 2,366.25	\$ 5,024.63
	Bonding	1.55%			\$ 1,821.25	\$ 2,146.75	\$ 2,445.13	\$ 5,192.11
	Insurance	1.85%			\$ 2,173.75	\$ 2,562.25	\$ 2,918.38	\$ 6,197.04
	TOTAL				\$ 135,007.50	\$ 159,136.50	\$ 181,254.75	\$ 384,886.28

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Fabrication and erection of all metal items shown on the drawings and not specified under other sections. These include, but are not necessarily limited to the following:
 - 1. Rough hardware, loose bearing plates, miscellaneous framing, bracing and supports.
 - 2. Handrails, guardrails, and brackets.
 - 3. Miscellaneous bracing and brackets.
 - 4. Bolts, rods, dowels, nuts, washers, anchors, brackets and other miscellaneous iron.
- B. Structural notes indicated on the drawings regarding any metal fabrication shall be considered a part of this specification.

1.2 RELATED WORK

- A. Pertinent Sections of Division 01.
- B. Section 051223 - Structural Steel.
- C. Section 055100 - Metal Stairs.
- D. Architectural metals and materials in Divisions 07, 08, 09 and 10.

1.3 REFERENCES

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards except where more stringent requirements are shown or specified. Where any provisions of other pertinent codes and standards conflict with this specification, the more stringent provisions shall govern.
 - 1. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 2. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 3. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength.
 - 4. ASTM F3125 - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi and 150 ksi Minimum Tensile Strength, Inch Dimensions.
 - 5. AWS D1.1 - Structural Welding Code - Steel.
 - 6. AWS D1.3 - Structural Welding Code - Sheet Steel.
 - 7. AWS D1.8 -- Structural Welding Code - Seismic Supplement.
 - 8. OSHA - Occupational Safety and Health Administration.
 - 9. SSPC - Steel Structures Painting Council.

1.4 QUALITY ASSURANCE

- A. Fabrication, Erection and Welding Qualifications:
 - 1. All welding of structural steel shall be performed by operators who have been recently qualified as prescribed in "Qualification Procedures" of the American Welding Society (AWS).
- B. Project Conditions: Do not fabricate components that require fitting to structural elements or into finished spaces until dimensions are verified at the jobsite.

1.5 SUBMITTALS

- A. Prepare and submit shop drawings detailing the fabrication and erection of each metal fabrication indicated on structural drawings. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other sections.
 - 1. Where installed metal fabrications are indicated to comply with certain design loadings, include structural calculations, material properties, and other information needed for structural analysis that has been prepared and certified by a **Professional** **Structural** engineer licensed in the State where the project is located.
 - 2. Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.
- B. Product data, and installation instructions where applicable, for products used in miscellaneous metal fabrications, including paint products and grout.
- C. Provide samples of materials and finished products requested by the Engineer.
- D. Welder's Certificates: Submit certification for all welders employed on the project demonstrating they have been AWS qualified to perform the welding procedures required for this project

1.6 DELIVERY, STORAGE AND HANDLING

- A. Steel fabrications shall be transported, stored, and erected in a manner that will avoid any damage or deformation. Bent or deformed members will be rejected and shall be replaced or repaired at the expense of the responsible party. Store clear of ground and in such a manner so as to eliminate excessive handling.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:

1. All material shall conform with the following requirements and shall be of new stock of the highest grade available, free from defects and imperfections, of recent manufacture and unused. Where two or more identical articles are required, they shall be of the same manufacturer.
2. All metal surfaces shall be free from any defects which would impair the strength, durability, appearance, and shall be of the best commercial quality, for the purposes intended and adequate to withstand the strains and stresses to which they will be subject.

B. Miscellaneous Steel Shapes:

1. All miscellaneous metal, including structural steel shapes, miscellaneous plates, bars, and angles, shall conform to ASTM A36 unless noted.
 - a. Square and rectangular steel tubing shall be hot formed conforming to ASTM A500, Grade B (minimum yield stress 46 ksi).
2. Stainless Steel: Type 316L, No. 4 finish unless otherwise specified.

C. Miscellaneous Related Materials:

1. Welding Electrodes: Conform to AISC and AWS D1.1.

2.2 RAILINGS

A. Railings, including handrails for stairs, shall be fabricated per the contract documents with welded joints ground smooth and exposed ends rounded and welded closed. Joints in rail members shall have internal sleeves to maintain true alignment and backup for welding. Top rail shall extend continuously the entire length without sharp edges, corners, or fastenings. Provide pipe flanges where railings terminate or return to walls.

1. Railings, unless otherwise indicated, shall consist of a three-rail high type design having the top rail at least 42 inches above finish floor with two intermediate rails spaced equally between floor or platform with 4-inch-high toe plates. Standards shall be spaced not to exceed 72-inch centers.
 - a. Provide restraint safety chains where indicated, complete with proper safety hooks and attachments.
 - b. Removable or hinged portion of the railing shall be fabricated as recommended by the fabricator and in accordance with Life Safety Code, complete with all appropriate hardware.
2. Stair railings shall be of type, design, and height indicated on the drawings having the top rail at 34 inches above finish floor with the middle rails spaced equally between stair stringer or toe plate and top rail as detailed. Handrails at walls shall be single runs of matching steel pipe, mounted with brackets spaced not over 54-inch centers.

PART 3 - EXECUTION

3.1 ERECTION

- A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until such detrimental conditions are corrected.
- B. All metal fabrications work shall be erected as indicated on the drawings, as confirmed by field measurements and in accordance with approved shop drawings. Furnish erection bolts, wedges, temporary bracing, and all other required appurtenances for a complete installation. Work shall be set accurately in place and permanently fastened in a neat manner. The work shall be plumb, level, or to the slopes indicated. Contractor shall do all cutting, fitting and similar work required to properly assemble and install the Contractors work. Contractor shall furnish all sleeves, bolts, screws and anchors, expansion shields, and similar anchoring devices, for assembling and securing the work and shall do all drilling, tapping, cutting and all other required operations necessary for a complete installation.
- C. All field welding shall be in accordance with AWS as previously cited.
- D. Field splicing of fabricated items is not allowed, unless said items exceed standard shipping length or change of direction requires splicing. Mechanical splicing by means of wedges without full welding shall not be allowed.
- E. All installed metal work shall be Engineer approved before being covered by subsequent materials.
- F. Each fabricated item shall be complete with attachment devices as shown or required to completely install each item in a secure manner.

3.2 FIELD TOUCH UP

- A. Immediately after erection and before subsequent materials placed, Contractor shall touch up all erection bolts, all field welds and all scratched or abraded areas in shop coat. All touch up areas shall be first cleaned and then painted using a matching rust-inhibitive paint in color and formulation to match shop coat.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Dimensional lumber, engineered wood products, and wood blocking.
- B. Structural notes indicated on the drawings regarding rough carpentry shall be considered a part of this specification.

1.2 RELATED WORK

- A. Pertinent Sections of Division 01.

1.3 REFERENCES

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards except where more stringent requirements are shown or specified. Where any provision of other pertinent codes and standards conflict with this specification, the more stringent provision shall govern.
 - 1. ASTM D245 - Standard Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber.
 - 2. NDS - National Design Specification for Wood Construction with Commentary.
 - 3. NDS Supplement - National Design Specification Values for Wood Construction.

1.4 SUBMITTALS

- A. Submit product data for each distinct product specified.
 - 1. Submit product data and current ICC Evaluation Reports for framing anchors.
- B. Material certificates for dimensional lumber specified to comply with minimum allowable unit stresses indicated on the documents. Indicate species and grade selected for each use, and design values approved by American Lumber Standards Committee.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All lumber shall be delivered, piled, and handled to protect it from warping due to excessive moisture or damage. Lumber shall be stored off the ground and under a waterproof cover properly fastened down to resist wind forces.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Grade and Species:

1. Provide dimensional lumber of any species, graded visually or mechanically, and capable of supporting required loads without exceeding allowable design values according to the "National Design Specification for Wood Construction" and its "Supplement."
- B. Lumber grading rules shall be obtained from one of the following agencies:
1. NELMA - Northeastern Lumber Manufacturers Association.
 2. NLGA - National Lumber Grades Authority.
 3. NSLB - Northern Softwood Lumber Bureau.
 4. SPIB - Southern Pine Inspection Bureau.
- C. When nominal sizes are indicated, provide actual sizes required by PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
- 2.2 MISCELLANEOUS FASTENING REQUIREMENTS
- A. Furnish and install all fasteners and anchoring devices for entire project, which shall include items such as nails, screws, bolts, anchors, and similar items. Common nails shall be used for all fastening in rough carpentry. All nails, screws, and other metal hardware shall be stainless steel, Grade 316 or 316L. Bolts shall have standard threads and be complete with washers and nuts.
- Wood assemblies such as wood curbs, top nailers, and other built-up members shall be anchored with common nails or wood screws having at least 1-1/2 inch anchoring penetration spaced in two staggered rows at 24 inches on center for each row.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.
- D. Countersink nail heads.

3.2 WOOD FRAMING INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's "Manual for Wood Frame Construction," unless otherwise indicated.

- B. Do not splice structural members between supports, unless specifically detailed.
- C. Provide a minimum of three inches of bearing for dimensional lumber.
- D. Where built-up beams or girders of 2-inch nominal dimension lumber on edge are required, fasten together with 2 rows of 20d nails spaced not less than 12 inches o.c], staggered on opposite faces. Locate one row near top edge and another near bottom edge. Provide two (2) 20d nails at each end and at each splice.

END OF SECTION

SECTION 061500 - WOOD DECKING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Engineering, fabrication and erection of solid-sawn wood and composite decking.
- B. Structural notes indicated on the drawings regarding wood decking shall be considered a part of this specification.

1.2 RELATED WORK

- A. Pertinent Sections of Division 01.
- B. Section 061000 - Rough Carpentry.

1.3 REFERENCES

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified. Where any provision of other pertinent codes and standards conflict with this specification, the more stringent provision shall govern.
 - 1. NDS - National Design Specification for Wood Construction with Commentary.
 - 2. NDS Supplement - National Design Specification Values for Wood Construction.
 - 3. NIST PS 20 - Voluntary Product Standard - American Softwood Lumber Standard.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of wood decking to avoid extended on-site storage and to avoid delay.
- B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within, around, and under temporary coverings. Stack wood decking with surfaces that are to be exposed in the final work from exposure to sunlight.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. General: Comply with PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.
- B. Grade Stamps: Provide solid-sawn wood decking with each piece factory marked with the grade stamp of the inspection agency evidencing compliance with grading rule requirements and identifying grading agency, species, grade, moisture content at time of surfacing and mill. Apply grade stamp to a surface that will not be exposed to view.

C. Moisture Content: As indicated on the drawings.

2.2 FABRICATION

- A. Fabricate decking in lengths for layup as indicated on the drawings.
- B. Predrill decking for lateral spiking to adjacent units to comply with referenced decking standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine walls and support framing in areas to receive wood decking for compliance with installation tolerances and other conditions affecting performance of wood decking.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ADJUSTING

- A. Repair damaged surfaces and finishes after completing erection. Replace damaged decking if repairs are not approved by the RIOC.

END OF SECTION

ELEANOR'S PIER REHABILITATION

CONSTRUCTION DOCUMENTS—SPECIFICATION TABLE OF CONTENTS

<u>SECTION NO.</u>	<u>DESCRIPTION</u>
055000	METAL FABRICATIONS
061000	ROUGH CARPENTRY
061500	WOOD DECKING

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Fabrication and erection of all metal items shown on the drawings and not specified under other sections. These include, but are not necessarily limited to the following:
 - 1. Rough hardware, loose bearing plates, miscellaneous framing, bracing and supports.
 - 2. Handrails, guardrails, and brackets.
 - 3. Miscellaneous bracing and brackets.
 - 4. Bolts, rods, dowels, nuts, washers, anchors, brackets and other miscellaneous iron.
- B. Structural notes indicated on the drawings regarding any metal fabrication shall be considered a part of this specification.

1.2 RELATED WORK

- A. Pertinent Sections of Division 01.
- B. Section 051223 - Structural Steel.
- C. Section 055100 - Metal Stairs.
- D. Architectural metals and materials in Divisions 07, 08, 09 and 10.

1.3 REFERENCES

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards except where more stringent requirements are shown or specified. Where any provisions of other pertinent codes and standards conflict with this specification, the more stringent provisions shall govern.
 - 1. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 2. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 3. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength.
 - 4. ASTM F3125 - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi and 150 ksi Minimum Tensile Strength, Inch Dimensions.
 - 5. AWS D1.1 - Structural Welding Code - Steel.
 - 6. AWS D1.3 - Structural Welding Code - Sheet Steel.
 - 7. AWS D1.8 -- Structural Welding Code - Seismic Supplement.
 - 8. OSHA - Occupational Safety and Health Administration.
 - 9. SSPC - Steel Structures Painting Council.

1.4 QUALITY ASSURANCE

- A. Fabrication, Erection and Welding Qualifications:
 - 1. All welding of structural steel shall be performed by operators who have been recently qualified as prescribed in "Qualification Procedures" of the American Welding Society (AWS).
- B. Project Conditions: Do not fabricate components that require fitting to structural elements or into finished spaces until dimensions are verified at the jobsite.

1.5 SUBMITTALS

- A. Prepare and submit shop drawings detailing the fabrication and erection of each metal fabrication indicated on structural drawings. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other sections.
 - 1. Where installed metal fabrications are indicated to comply with certain design loadings, include structural calculations, material properties, and other information needed for structural analysis that has been prepared and certified by a[**Professional**][**Structural**] engineer licensed in the State where the project is located.
 - 2. Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.
- B. Product data, and installation instructions where applicable, for products used in miscellaneous metal fabrications, including paint products and grout.
- C. Provide samples of materials and finished products requested by the Engineer.
- D. Welder's Certificates: Submit certification for all welders employed on the project demonstrating they have been AWS qualified to perform the welding procedures required for this project

1.6 DELIVERY, STORAGE AND HANDLING

- A. Steel fabrications shall be transported, stored, and erected in a manner that will avoid any damage or deformation. Bent or deformed members will be rejected and shall be replaced or repaired at the expense of the responsible party. Store clear of ground and in such a manner so as to eliminate excessive handling.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:

1. All material shall conform with the following requirements and shall be of new stock of the highest grade available, free from defects and imperfections, of recent manufacture and unused. Where two or more identical articles are required, they shall be of the same manufacturer.
2. All metal surfaces shall be free from any defects which would impair the strength, durability, appearance, and shall be of the best commercial quality, for the purposes intended and adequate to withstand the strains and stresses to which they will be subject.

B. Miscellaneous Steel Shapes:

1. All miscellaneous metal, including structural steel shapes, miscellaneous plates, bars, and angles, shall conform to ASTM A36 unless noted.
 - a. Square and rectangular steel tubing shall be hot formed conforming to ASTM A500, Grade B (minimum yield stress 46 ksi).
2. Stainless Steel: Type 316L, No. 4 finish unless otherwise specified.

C. Miscellaneous Related Materials:

1. Welding Electrodes: Conform to AISC and AWS D1.1.

2.2 RAILINGS

A. Railings, including handrails for stairs, shall be fabricated per the contract documents with welded joints ground smooth and exposed ends rounded and welded closed. Joints in rail members shall have internal sleeves to maintain true alignment and backup for welding. Top rail shall extend continuously the entire length without sharp edges, corners, or fastenings. Provide pipe flanges where railings terminate or return to walls.

1. Railings, unless otherwise indicated, shall consist of a three-rail high type design having the top rail at least 42 inches above finish floor with two intermediate rails spaced equally between floor or platform with 4-inch-high toe plates. Standards shall be spaced not to exceed 72-inch centers.
 - a. Provide restraint safety chains where indicated, complete with proper safety hooks and attachments.
 - b. Removable or hinged portion of the railing shall be fabricated as recommended by the fabricator and in accordance with Life Safety Code, complete with all appropriate hardware.
2. Stair railings shall be of type, design, and height indicated on the drawings having the top rail at 34 inches above finish floor with the middle rails spaced equally between stair stringer or toe plate and top rail as detailed. Handrails at walls shall be single runs of matching steel pipe, mounted with brackets spaced not over 54-inch centers.

PART 3 - EXECUTION**3.1 ERECTION**

- A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until such detrimental conditions are corrected.
- B. All metal fabrications work shall be erected as indicated on the drawings, as confirmed by field measurements and in accordance with approved shop drawings. Furnish erection bolts, wedges, temporary bracing, and all other required appurtenances for a complete installation. Work shall be set accurately in place and permanently fastened in a neat manner. The work shall be plumb, level, or to the slopes indicated. Contractor shall do all cutting, fitting and similar work required to properly assemble and install the Contractors work. Contractor shall furnish all sleeves, bolts, screws and anchors, expansion shields, and similar anchoring devices, for assembling and securing the work and shall do all drilling, tapping, cutting and all other required operations necessary for a complete installation.
- C. All field welding shall be in accordance with AWS as previously cited.
- D. Field splicing of fabricated items is not allowed, unless said items exceed standard shipping length or change of direction requires splicing. Mechanical splicing by means of wedges without full welding shall not be allowed.
- E. All installed metal work shall be Engineer approved before being covered by subsequent materials.
- F. Each fabricated item shall be complete with attachment devices as shown or required to completely install each item in a secure manner.

3.2 FIELD TOUCH UP

- A. Immediately after erection and before subsequent materials placed, Contractor shall touch up all erection bolts, all field welds and all scratched or abraded areas in shop coat. All touch up areas shall be first cleaned and then painted using a matching rust-inhibitive paint in color and formulation to match shop coat.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Dimensional lumber, engineered wood products, and wood blocking.
- B. Structural notes indicated on the drawings regarding rough carpentry shall be considered a part of this specification.

1.2 RELATED WORK

- A. Pertinent Sections of Division 01.

1.3 REFERENCES

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards except where more stringent requirements are shown or specified. Where any provision of other pertinent codes and standards conflict with this specification, the more stringent provision shall govern.
 - 1. ASTM D245 - Standard Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber.
 - 2. NDS - National Design Specification for Wood Construction with Commentary.
 - 3. NDS Supplement - National Design Specification Values for Wood Construction.

1.4 SUBMITTALS

- A. Submit product data for each distinct product specified.
 - 1. Submit product data and current ICC Evaluation Reports for framing anchors.
- B. Material certificates for dimensional lumber specified to comply with minimum allowable unit stresses indicated on the documents. Indicate species and grade selected for each use, and design values approved by American Lumber Standards Committee.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All lumber shall be delivered, piled, and handled to protect it from warping due to excessive moisture or damage. Lumber shall be stored off the ground and under a waterproof cover properly fastened down to resist wind forces.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Grade and Species:

1. Provide dimensional lumber of any species, graded visually or mechanically, and capable of supporting required loads without exceeding allowable design values according to the "National Design Specification for Wood Construction" and its "Supplement."
- B. Lumber grading rules shall be obtained from one of the following agencies:
1. NELMA - Northeastern Lumber Manufacturers Association.
 2. NLGA - National Lumber Grades Authority.
 3. NSLB - Northern Softwood Lumber Bureau.
 4. SPIB - Southern Pine Inspection Bureau.
- C. When nominal sizes are indicated, provide actual sizes required by PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

2.2 MISCELLANEOUS FASTENING REQUIREMENTS

- A. Furnish and install all fasteners and anchoring devices for entire project, which shall include items such as nails, screws, bolts, anchors, and similar items. Common nails shall be used for all fastening in rough carpentry. All nails, screws, and other metal hardware shall be stainless steel, Grade 316 or 316L. Bolts shall have standard threads and be complete with washers and nuts.

Wood assemblies such as wood curbs, top nailers, and other built-up members shall be anchored with common nails or wood screws having at least 1-1/2 inch anchoring penetration spaced in two staggered rows at 24 inches on center for each row.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.
- D. Countersink nail heads.

3.2 WOOD FRAMING INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's "Manual for Wood Frame Construction," unless otherwise indicated.

- B. Do not splice structural members between supports, unless specifically detailed.
- C. Provide a minimum of three inches of bearing for dimensional lumber.
- D. Where built-up beams or girders of 2-inch nominal dimension lumber on edge are required, fasten together with 2 rows of 20d nails spaced not less than 12 inches o.c], staggered on opposite faces. Locate one row near top edge and another near bottom edge. Provide two (2) 20d nails at each end and at each splice.

END OF SECTION

SECTION 061500 - WOOD DECKING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Engineering, fabrication and erection of solid-sawn wood and composite decking.
- B. Structural notes indicated on the drawings regarding wood decking shall be considered a part of this specification.

1.2 RELATED WORK

- A. Pertinent Sections of Division 01.
- B. Section 061000 - Rough Carpentry.

1.3 REFERENCES

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified. Where any provision of other pertinent codes and standards conflict with this specification, the more stringent provision shall govern.
 - 1. NDS - National Design Specification for Wood Construction with Commentary.
 - 2. NDS Supplement - National Design Specification Values for Wood Construction.
 - 3. NIST PS 20 - Voluntary Product Standard - American Softwood Lumber Standard.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of wood decking to avoid extended on-site storage and to avoid delay.
- B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within, around, and under temporary coverings. Stack wood decking with surfaces that are to be exposed in the final work from exposure to sunlight.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. General: Comply with PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.
- B. Grade Stamps: Provide solid-sawn wood decking with each piece factory marked with the grade stamp of the inspection agency evidencing compliance with grading rule requirements and identifying grading agency, species, grade, moisture content at time of surfacing and mill. Apply grade stamp to a surface that will not be exposed to view.

- C. Moisture Content: As indicated on the drawings.

2.2 FABRICATION

- A. Fabricate decking in lengths for layup as indicated on the drawings.
- B. Predrill decking for lateral spiking to adjacent units to comply with referenced decking standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine walls and support framing in areas to receive wood decking for compliance with installation tolerances and other conditions affecting performance of wood decking.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ADJUSTING

- A. Repair damaged surfaces and finishes after completing erection. Replace damaged decking if repairs are not approved by the RIOC.

END OF SECTION

A. GENERAL:

1. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR BID UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR BID".
2. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR CONSTRUCTION UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR CONSTRUCTION".

B. CODES AND STANDARDS:

1. THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. USE THE VERSION REFERENCED IN THE BUILDING CODE UNLESS NOTED OTHERWISE.
 - a. BUILDING CODE: 2022 NEW YORK CITY BUILDING CODE
 - b. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", ASCE 7-22, AMERICAN SOCIETY OF CIVIL ENGINEERS.
 - c. "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-19, AMERICAN CONCRETE INSTITUTE.
 - d. "ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 6.
 - e. "MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE.
 - f. "STRUCTURAL WELDING CODE - STEEL", AWS D1.1
 - g. "STRUCTURAL WELDING CODE - STAINLESS STEEL", AWS D1.6
 - h. "NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION W/ 2005 SUPPLEMENT", NDS, AMERICAN FOREST & PAPER ASSOC.

C. DESIGN LOADS:

1. GRAVITY LOADS: NEW WOOD FRAMING HAS BEEN DESIGNED FOR THE SELF WEIGHT OF THE FRAMING AND 100 PSF LIVE LOAD.
2. GUARD RAILS: DESIGNED FOR 50 POUNDS PER LINEAR FOOT OR A 200 POUND POINT LOAD ACTING IN ANY DIRECTION AT 42" ABOVE FINISHED FLOOR.

D. MATERIALS:

1. THE FOLLOWING ASTM STANDARDS AND DESIGN STRESSES SHALL BE USED FOR THE APPROPRIATE MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT.
2. CEMENT: ASTM C150, TYPE I OR III (TYP., U.N.O.); SEE BELOW)
ASTM C150; TYPE II FOR CONCRETE IN CONTACT WITH EARTH
3. CONCRETE: CONCRETE SHALL HAVE THE FOLLOWING ENGINEERING PROPERTIES
 - a. COMPRESSIVE STRENGTH, W/C RATIO & UNIT WEIGHT

LOCATION	f'c @ 28 DAYS (PSI)	w/c (MAX PERMITTED)
ALL CONCRETE, U.N.O.	4500	0.45

- a. AIR ENTRAINMENT:
 1. CONCRETE LISTED IN TABLE "A" SHALL BE AIR ENTRAINED WITH THE APPROPRIATE PERCENTAGE AIR CONTENT LISTED IN TABLE "B" AS APPLICABLE FOR THE INDICATED EXPOSURE CLASS AND NOMINAL MAXIMUM AGGREGATE SIZE IN THE CONCRETE MIX. THE REQUIRED AIR CONTENT VALUE MAY BE REDUCED BY 1% FOR ALL CONCRETE WITH COMPRESSIVE STRENGTH GREATER THAN 5,000 PSI. THE PERMITTED TOLERANCE ON THE REQUIRED AIR CONTENT IS ±1.5 PERCENT. SEE ACI 318 FOR ADDITIONAL REQUIREMENTS.

TABLE "A"		TABLE "B"		
LOCATION	EXPOSURE CLASS**	NOMINAL MAXIMUM AGGREGATE SIZE	REQD. AIR CONTENT F1	EXPOSURE CATEGORY F2 & F3
ALL CONCRETE	F2	3/8"	6%	7.5%
		1/2"	5.5%	7%
		3/4"	5%	6%
		1"	4.5%	6%

** REFER TO ACI 318

4. REINFORCING STEEL:

DEFORMED REINFORCING BARS	ASTM A615, GRADE 60
EPOXY COATED REINF. BARS	ASTM A775
EPOXY COAT ALL REINFORCING STEEL	

5. STRUCTURAL STEEL:

CHANNELS, ANGLE, PLATES & BARS	ASTM A36 (Fy=36 ksi) U.N.O. ASTM A572, GR 50 WHERE INDICATED
ROUND PIPE	ASTM A53, GRADE "B" Fy = 35 KSI
ROUND HSS	ASTM A500, GRADE "C" Fy = 46 KSI
SQUARE & RECTANGULAR HSS's	ASTM A500, GRADE "C" Fy = 50 KSI
HIGH STRENGTH BOLTS	ASTM A325 TYP, U.N.O. & ASTM A490 WHERE INDICATED
ROUND RODS & THREADED RODS	ASTM A36 U.N.O. ASTM A572, GR 50 WHERE INDICATED
WELDING ELECTRODES	AWS A5.1 OR A5.5, E70XX

6. POST-INSTALLED ANCHORS

EXPANSION BOLTS INTO CONCRETE	HILTI KWIK BOLT TZ
SCREW ANCHORS INTO CONCRETE	HILTI KWIK HUS EZ
ADHESIVE ANCHORS INTO CONCRETE	HILTI HIT HY 200 SAFE SET WITH HILTI HIT Z-ROD or HILTI HIT HY 200 SAFESET W/ HOLLOW DRILL BIT W/ HILTI HAS- E THREADED ROD or HILTI HIT RE 500 SD W/ HILTI HAS -E THREADED ROD FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED
EXPANSION ANCHORS INTO GROUT FILLED CONCRETE BLOCK	HILTI KWIK BOLT 3
SCREW ANCHORS LARGER > 1/4" DIA. INTO CONCRETE OR GROUT FILLED CONCRETE BLOCK	HILTI KWIK HUS EZ

- a. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING THAT PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT ICC ESR REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.
- b. ALL ANCHORS SHALL ASSUME THE CRACKED CONCRETE DESIGN CONDITION, U.N.O.
- c. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII).
- d. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON SITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER OF RECORD SHALL RECEIVE DOCUMENTATION VERIFYING THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.

- e. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER OF RECORD.

- f. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.

- g. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

- h. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN A MANNER THAT DOES NOT DAMAGE REINFORCING STEEL. REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. PLATES AND BRACKETS THROUGH WHICH ANCHORS WILL BE INSTALLED SHALL NOT BE FABRICATED UNTIL AFTER REINFORCING STEEL IS LOCATED AND ANCHOR LOCATIONS ARE ADJUSTED. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN ALTERNATIVE ANCHOR LAYOUT WHERE ANCHORS MUST BE RELOCATED TO AVOID INTERFERENCE WITH REINFORCING STEEL.

- i. ADHESIVE ANCHORS SHALL BE INSTALLED WITH A 6" EMBEDMENT DEPTH UNLESS NOTED OTHERWISE. ANCHORS OTHER THAN ADHESIVE ANCHORS SHALL BE INSTALLED WITH AN EMBEDMENT DEPTH EQUAL TO THE MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE UNLESS NOTED OTHERWISE. WHERE EMBEDMENT DEPTH IS SPECIFIED, THAT DEPTH IS THE REQUIRED FINAL EFFECTIVE MINIMUM EMBEDMENT DEPTH.

- j. POST INSTALLED ANCHORS SHALL BE INSPECTED PERIODICALLY DURING INSTALLATION PER CHAPTER 17 OF IBC2021, UNLESS NOTED OTHERWISE.

- k. ADHESIVE ANCHORS INSTALLED IN VERTICAL SURFACES OR IN OVERHEAD OR UPWARDLY INCLINED ORIENTATIONS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION PER ACI 318.

- l. INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR WHO HAS BEEN APPROVED BY THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL VERIFY THAT ALL ANCHORS WERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE APPLICABLE ICC ESR REPORTS AND THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. THE INSPECTION SHALL INCLUDE VERIFICATION OF ANCHOR SPACING, EMBEDMENT AND EDGE DISTANCE REQUIREMENTS.

7. WOOD FRAMING:

- a. TIMBER (SAWN LUMBER):
ALL SAWN LUMBER SHALL HAVE 19% MAX. MOISTURE CONTENT AND SHALL BE SURFACE DRY IN THE FOLLOWING SPECIES AND GRADES:

FRAMING	SPECIES	GRADE
STUDS	SPRUCE-PINE-FIR	NO. 2
BEAMS, HEADERS & ALL OTHER FRAMING	HEM-FIR	NO. 2

- b. LAMINATED VENEER LUMBER:
TRUS JOIST MICROLAM LVL's MANUFACTURED BY WEYERHAEUSER
BEAMS: GRADE 1.9; E = 1,900,000 PSI; Fb = 2,600 PSI; Fv = 285 PSI

- c. PARALLEL STRAND LUMBER:
PARALLAM PSL AS MANUFACTURED BY ILEVEL BY WEYERHAEUSER
BEAMS: GRADE 2.0E; E = 2,000,000 PSI; Fb = 2,900 PSI; Fv = 290 PSI
COLUMNS: GRADE 1.8E; E = 1,800,000 PSI; Fb = 2,400 PSI; Fv = 190 PSI

- d. LAMINATED STRAND LUMBER:
TRUS JOIST TIMBERSTRAND LSL's MANUFACTURED BY WEYERHAEUSER
BEAMS/COLUMNS: GRADE 1.3E; E=1,300,000 PSI; Fb=1,700 PSI; Fv=400 PSI

- e. PRESERVATIVE TREATED PARALLEL STRAND LUMBER
TRUS JOIST PARALLAM PLUS PSL's MANUFACTURED BY WEYERHAEUSER
SERVICE LEVEL "SL 2"
BEAMS: E = 1,460,000 PSI; Fb = 1827 PSI; Fv = 197 PSI
COLUMNS: E = 1,314,000 PSI; Fb = 1512 PSI; Fv = 120 PSI

- g. NAILS: ALL NAILS SHALL BE COMMON NAILS, STAINLESS STEEL U.N.O.

- h. STRUCTURAL CONNECTORS:
STRUCTURAL CONNECTORS FOR WOOD CONSTRUCTION MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. STAINLESS STEEL

E. CONSTRUCTION:

1. GENERAL:

- a. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW THE STRUCTURAL CONTRACT DOCUMENTS AND SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY CONFLICTS BETWEEN THOSE DOCUMENTS AND ANY SAFETY REGULATIONS. SUCH REVIEW AND NOTIFICATION SHALL OCCUR PRIOR TO PRODUCTION OF SHOP DRAWINGS.

- b. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS, FOR PROTECTING THE COMPLETED STRUCTURAL FRAMING FROM DAMAGE DUE TO TEMPORARY CONSTRUCTION LOADINGS, FOR DETERMINING SEQUENCES OF CONSTRUCTION, AND FOR DETERMINATION, DESIGN AND INSTALLATION OF ALL FALSEWORK, FORMWORK, STAGING, TEMPORARY BRACING, SHEETING AND SHORING NECESSARY FOR CONSTRUCTION.

- c. ALL SUBMITTALS, INCLUDING SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY IN PDF FORMAT.

- d. COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.

- e. IF DIFFERENCES OCCUR WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS REGARDING MATERIALS, SIZES, STRENGTHS OR QUANTITIES, THEN THE BETTER MATERIAL, HIGHER STRENGTH, LARGER SIZE AND GREATER QUANTITY INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.

- f. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.

- g. DIMENSIONS MAY NOT BE SCALED FROM THE DRAWINGS.

- h. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. UNLESS INDICATED OTHERWISE, NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.

- i. INFORMATION SHOWN ON THE SECTIONS AND DETAILS IS THAT WHICH IS REQUIRED TO CONVEY THE PURPOSE FOR WHICH THE SECTIONS AND DETAILS WERE PROVIDED. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING ELSEWHERE ON THE CONTRACT DOCUMENTS FOR ALL OTHER INFORMATION WHICH MAY BE OCCURRING IN THE SECTIONS OR DETAILS, BUT WHICH IS NOT SHOWN.

F. CONCRETE:

1. CAST-IN-PLACE CONCRETE:

- a. POST-INSTALLED ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE ANCHOR MANUFACTURER'S REQUIREMENTS; PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGING REINFORCING STEEL WHEN DRILLING BOLT HOLES.

- b. HORIZONTAL CONSTRUCTION JOINTS AND ALL OTHER HORIZONTAL JOINTS ABUTTING PREVIOUSLY CAST CONCRETE ELEMENTS SHALL BE ROUGH JOINTS, UNO.

- c. "ROUGH JOINTS" ARE JOINTS WHICH SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" AND SHALL BE CLEAN AND FREE OF LAITANCE.

- d. WELDING OF REINFORCING STEEL IS NOT PERMITTED.

- e. EMBEDMENT OF ALUMINUM IN CONCRETE IS NOT PERMITTED EXCEPT AT LOCATIONS SPECIFIED OR INDICATED ON THE ARCHITECTURAL DRAWINGS. ALUMINUM EMBEDDED IN CONCRETE SHALL BE COATED TO PREVENT DIRECT CONTACT WITH THE CONCRETE. DETAILS AND MATERIAL INFORMATION FOR THE COATING MATERIAL SHALL BE SUBMITTED FOR REVIEW.

- f. PROVIDE SPACERS, BOLSTERS, SUPPORT CHAIRS AND SUPPORT BARS AS REQUIRED TO SUPPORT REINFORCING STEEL; PROVIDE PLASTIC-TIPPED CHAIRS AND BOLSTERS WHERE UNDERSIDES OF SLABS ARE EXPOSED TO VIEW.

G. CONCRETE REPAIR:

1. REMOVE DELAMINATED CONCRETE TO EXPOSE SOUND CONCRETE FREE OF FRACTURES, LOOSE AGGREGATE OR EXCESSIVE CRACKING.

2. IF REMOVAL OF DELAMINATED CONCRETE EXPOSES CORRODED REINFORCING BARS OR MORE THAN HALF OF ANY CLEAN (FREE OF OXIDATION) REINFORCING BARS, CONTINUE TO REMOVE ADDITIONAL CONCRETE TO PROVIDE A MINIMUM OF 1" (U.N.O.) CLEARANCE AROUND THE REINFORCING BAR.

3. IF THE EXPOSED REINFORCING BARS, WHERE THE BAR INTERSECTS THE EDGE OF A REPAIR AREA, ARE CORRODED, CONTINUE TO REMOVE/CHIP OUT CONCRETE ALONG THE REINFORCING BAR (1" MINIMUM CLEAR ALL AROUND) UNTIL THE BAR IS FREE/CLEAN OF CORROSION FOR A LENGTH OF 2". FROM HERE ON THIS PROCESS WILL BE REFERRED TO "CHASING" OR "CHASE" OF THE REINFORCING BAR.

4. IF THE REMOVAL OF DELAMINATED CONCRETE EXPOSES LESS THAN HALF OF ANY CLEAN (UNOXIDIZED) EXISTING REINFORCED BAR TO WHICH THE REMAINING CONCRETE IS STILL TIGHTLY BONDED, DO NOT CHIP OUT ANY MORE CONCRETE AROUND THE REINFORCING BAR. IF BAR OR BOND TO CONCRETE IS DISTURBED, REMOVE CONCRETE PER GENERAL NOTE F, 2.

5. THE EDGES OF ALL REPAIR AREAS SHALL BE CHIPPED OR SAW CUT AT APPROXIMATELY 90° FROM THE SURFACE OF THE MEMBER TO A MINIMUM OF 1" BEHIND THE REINFORCEMENT IF EXPOSED OR TO A MINIMUM DEPTH OF 1" FROM THE SURFACE IF NO REINFORCEMENT IS EXPOSED

6. FOR CLEANING, REPAIR AND IDENTIFICATION OF CORRODED REINFORCING, SEE S300.E

7. IF THE DEMOLITION DOES NOT EXTEND BEHIND EXISTING REINFORCING STEEL OR U.N.O., DRILL AND EPOXY 1/2"Ø ALL-THREAD "PINS" WITH A MINIMUM 2" EMBEDMENT INTO EXISTING CONCRETE AT 8" EACH WAY. PROVIDE MINIMUM 1" LONG 90° HOOK AT THE ENDS OF ALL PINS. PROVIDE THE ABOVE WHERE INDICATED ON DETAILS AS "PINS".

8. APPLY A BONDING AGENT TO ALL EXISTING CONCRETE THAT WILL BE IN CONTACT WITH NEW CONCRETE. USE ONLY A CEMENT-BASED AGENT. USE OF ANY POLYMER-BASED BONDING AGENT IS NOT PERMITTED.

9. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, REMOVE ANY CONDUIT AND ABANDONED UTILITIES UNCOVERED IN REPAIR AREAS.

10. IF REINFORCING STEEL IS CLOSE TO THE SURFACE, NOT MEETING THE COVER REQUIREMENTS, BUILD OUT PATCHES TO PROVIDE THE PROPER COVER INDICATED ON THE GENERAL NOTES.

11. PRIOR TO PLACING ANY PATCH MATERIAL, APPLY A PENETRATING CORROSION INHIBITOR MATERIAL OVER THE ENTIRE PATCH AREA. USE SIKA FERRO GARD 903 OR EQUAL.

12. COAT EXPOSED REBAR WITH EPOXY PROTECTIVE COAT. COMPLETELY COVER EXPOSED PERIMETER OF BAR. US SIKA ARMATEC 110 EP CEM OR EQUAL.

13. SUBSTRATE TO BE SURFACE DRY, WITH NO OBSERVABLE WATER ACCUMULATION AT COMPLETION OF REBAR CLEANING. APPLY SCRUB COAT OF POLYMER-MODIFIED, CEMENTITIOUS PATCHING MATERIAL TO SUBSTRATE, FILLING ALL PORES AND VOIDS. WHILE SCRUB COAT IS WET, PLACE 5000 PSI CEMENTITIOUS PATCHING MATERIAL PER MANUFACTURER'S REQUIREMENTS.

14. ALL TEMPORARY SHORING SHALL BE INSTALLED PRIOR TO ANY REHABILITATION WORK.

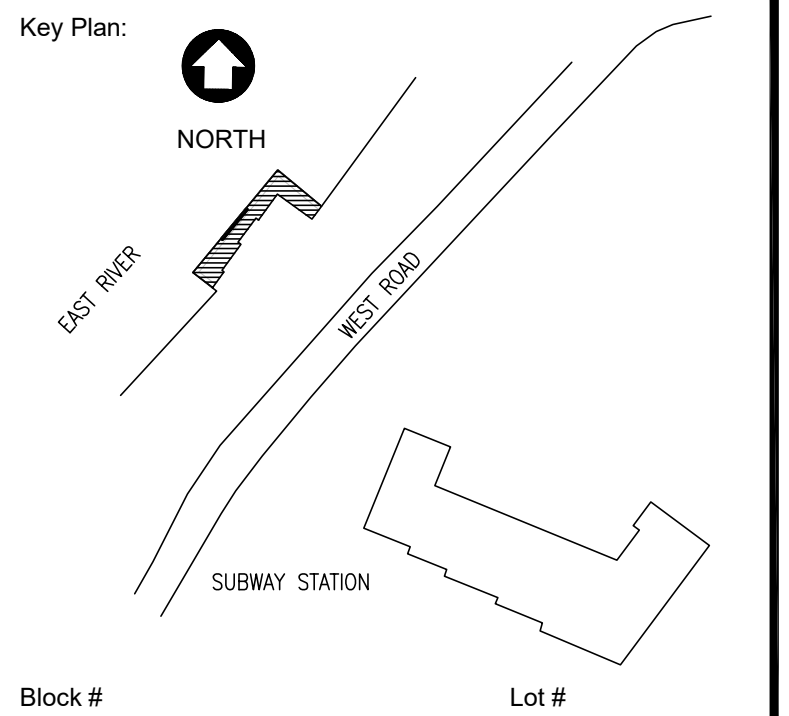
RIOC
ROOSEVELT ISLAND
OPERATING CORPORATION

STRUCTURAL ENGINEER



The FUTURE. Built Smarter. www.imegcorp.com
1411 BROADWAY
SUITE 610
NEW YORK, NEW YORK 10018

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/25	CCG	JBY
1	ADDED SCOPE PER MANUFACTURER	12/19/25	CCG	JBY
0	RELEASE FOR APPROVAL	8/4/25	JBY	JBY

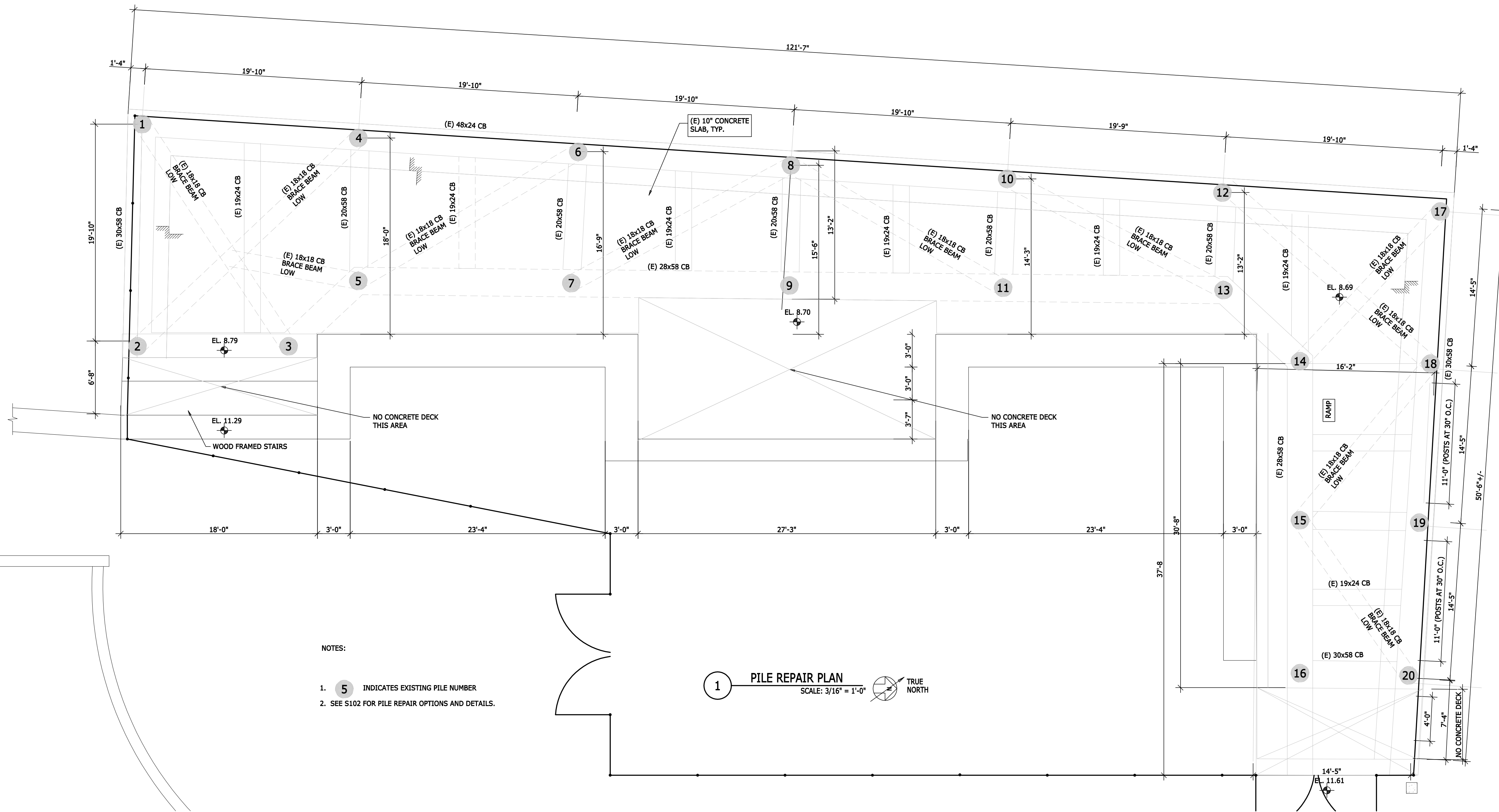


PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:
GENERAL NOTES

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

DOB #
DRAWING NUMBER
S-000.00
SHEET NO. 1 OF 3



NOTES:

1. 5 INDICATES EXISTING PILE NUMBER
2. SEE S102 FOR PILE REPAIR OPTIONS AND DETAILS.

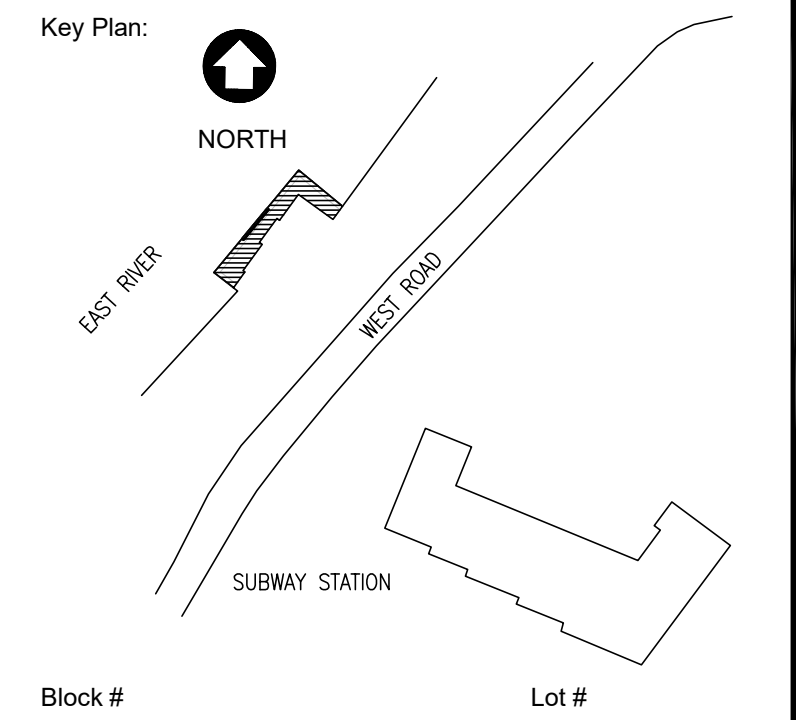
1 PILE REPAIR PLAN
SCALE: 3/16" = 1'-0" TRUE NORTH

SUGGESTED CONSTRUCTION SEQUENCE: ACTUAL CONSTRUCTION SEQUENCE TBD BY CONTRACTOR IN CONSULTATION WITH RIOC

	RESPONSIBLE CONTRACTOR
1) DEMOLISH ALL EXISTING WOOD FRAMING AND HARDWARE. MAINTAIN PERIMETER "SHIPLAP" DECORATIVE TRIM	WOOD FRAMING CONTRACTOR
2) DEMOLISH EXISTING RAILINGS. SALVAGE EXISTING WOOD TOP RAILS. SEE PLANS	MISCELLANEOUS METALS CONTRACTOR
3) INSTALL TEMPORARY FENCING AT THE PERIMETER OF THE PIER.	MISCELLANEOUS METALS CONTRACTOR
4) PILE REHABILITATION CONTRACTOR PERFORMS PILE REPAIRS.	PILE REPAIR CONTRACTOR
5) INSTALL NEW RAILINGS AT PERIMETER.	MISCELLANEOUS METALS CONTRACTOR
6) REMOVE TEMPORARY FENCING ON PHYSICAL PIER. LANDBASED FENCING TO REMAIN UNTIL END OF PROJECT.	MISCELLANEOUS METALS CONTRACTOR
7) INSTALL NEW WOOD FRAMING AND DECKING.	WOOD FRAMING CONTRACTOR
8) REMOVE REMAINDER OF FENCING.	MISCELLANEOUS METALS CONTRACTOR

- NOTES:
1. EXISTING FENCING TO BE REMOVED BY RIOC AFTER WOOD DEMOLITION.
 2. EXISTING TIMBER LIGHT STANDARDS TO REMAIN. ALL CONDUIT TO BE REMOVED AND SECURED BY RIOC.

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/26	CCG	JBY
1	ADDED SCOPE PER MANUFACTURER	12/19/25	JBY	JBY
0	RELEASE FOR APPROVAL	8/4/25	JBY	JBY



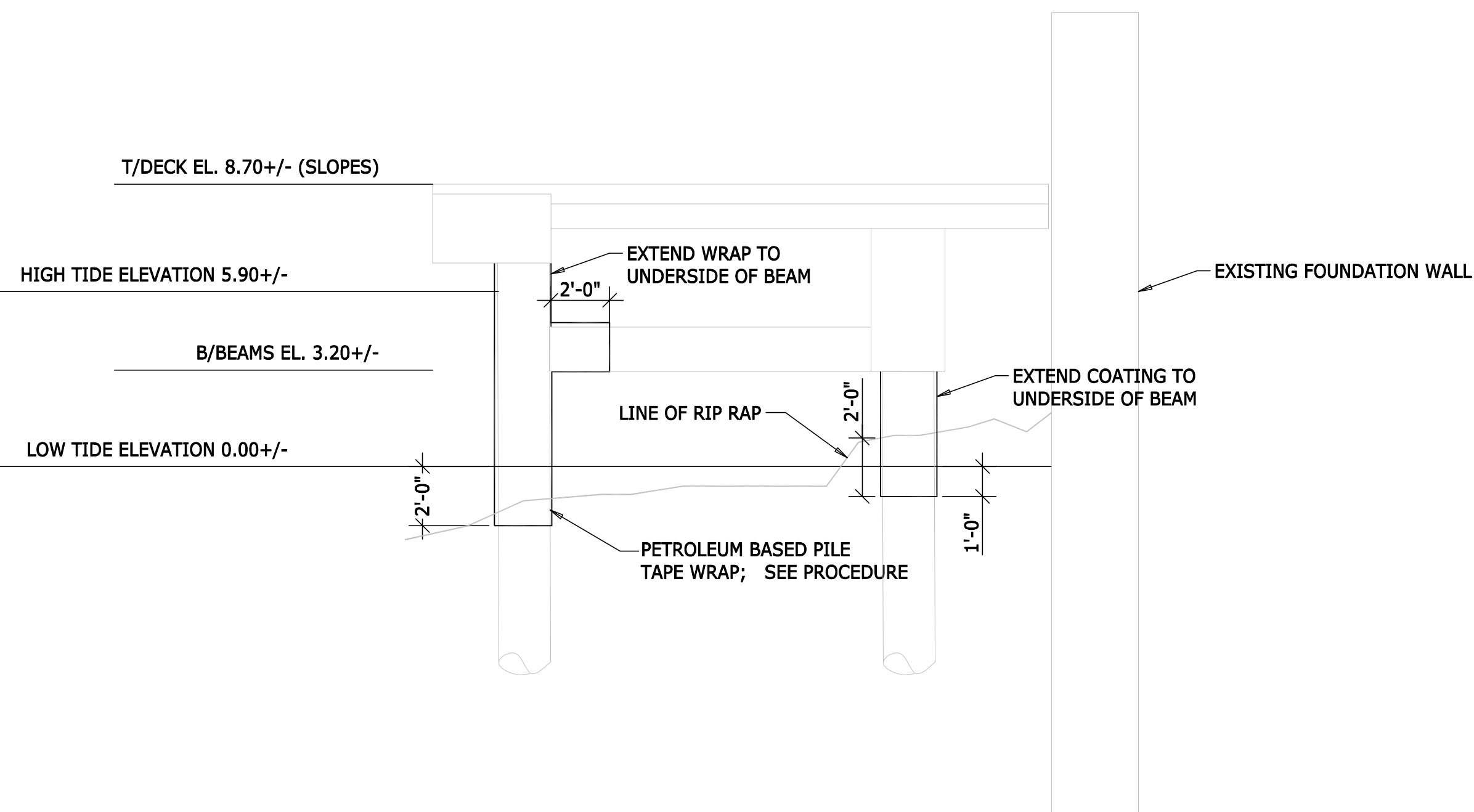
PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:
PILE REPAIR PLAN

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

DRAWING NUMBER:
S-101.00

SHEET NO. 2 OF 3

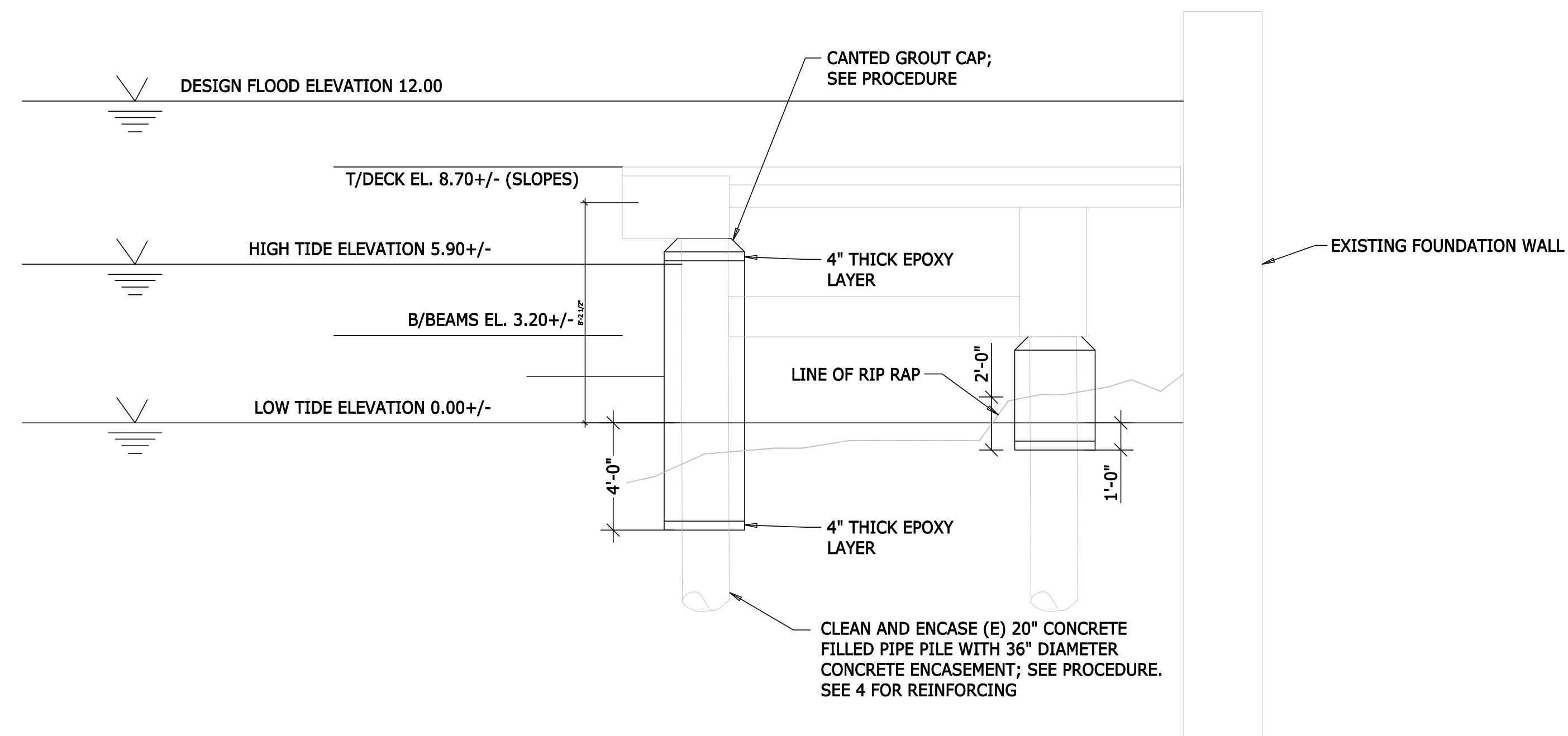


1 PILE REPAIR TYPE 1
1/4"=1'-0"

BASIS OF DESIGN IS DENSO SERIES 2000HD AND SERIES 70, OR APPROVED EQUAL.

PROCEDURE:

1. EXPOSE PILE TO LENGTH INDICATED.
2. CLEAN OFF ALL DEBRIS USING SSPC SP3 POWER TOOL CLEANING
3. APPLY PETROLEUM BASED PILING TAPE TO LENGTH OF PILE.
4. TAPE SPECIFICATIONS:
 - a. MEETS NACE RE0375-2006
 - b. MIN. THICKNESS = 51 MILS (ASTM D1000)
 - c. MIN. BREAKING STRENGTH = 22.5 lbf/in. (ASTM E96-66 PROCEDURE A)
 - d. ELONGATION AT BREAK = 10%
 - e. RESISTANCE TO CATHODIC DISBONDING = 28 in2 avg. (ASTM G-8 - 30 DAYS)
 - f. PETROLATUM IMPREGNATED FABRIC TAPE WITH HIGH DENSITY POLYETHYLENE FILM COVER.
5. PROVIDE SUBMITTAL OF TAPE FOR APPROVAL.
6. APPLY TAPE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



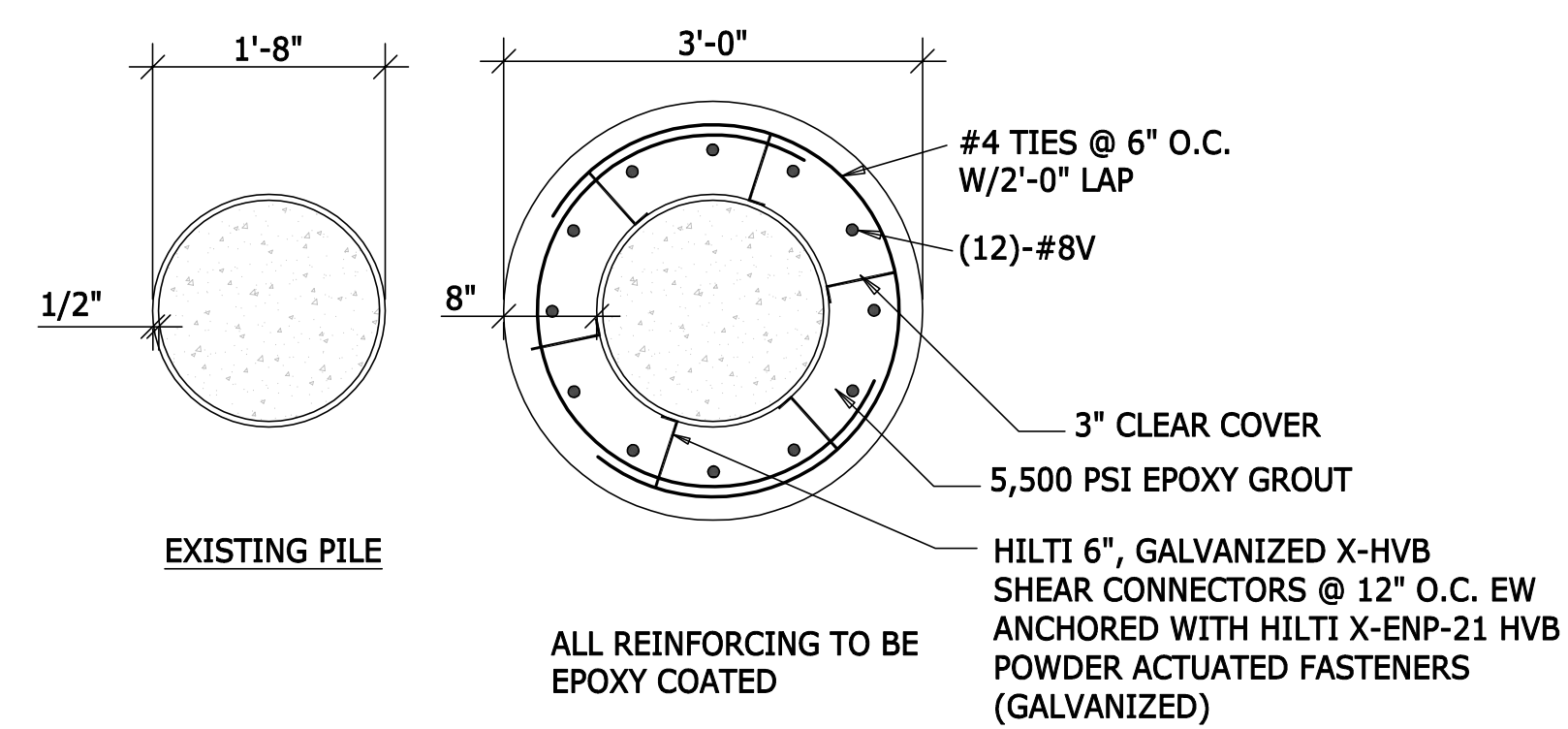
2 PILE REPAIR TYPE 2
1/4"=1'-0"

PROCEDURE: (BASIS OF DESIGN IS DENSO SEA SHIELD 500 SYSTEM OR APPROVED EQUAL.)

1. EXPOSE PILE TO LENGTH INDICATED.
2. CLEAN OFF ALL DEBRIS USING HIGH PRESSURE WATER (3,500-4,000 PSI)
3. APPLY FIBERGLASS JACKET.
 - A. The fiberglass jacket thickness shall be 1/8" or 3/16" thickness, depending on the application and diameter size, as determined by the vendor.
 - B. The jacket shall be translucent to provide visual inspection during the injection of the epoxy grout.
 - C. The jacket shall have minimum 1-1/4" injection ports spaced at intervals not to exceed five feet. To provide even distribution of the epoxy grout, the injection ports shall be placed on alternate sides (can be field installed by contractor).
 - D. The jackets shall have stand-offs adhered to the inside of the jacket to provide 8" annulus between the pile and the jacket (can be field installed by contractor). A UV inhibitor shall be included in the polyester resin to provide long-term UV stability.
4. PLACE BACKER ROD OR SIMILAR AT BASE TO PROVIDE DAM FOR GROUT POUR
5. PROVIDE 4" BASE SET OF EPOXY (SeaShield FX-70TNG)
6. NON SHRINK GROUT FILL (SeaShield 510). GROUT TO BE PUMPED FROM BOTTOM OF JACKET.
7. AFTER EPOXY GROUT HAS CURED, PROVIDE 4" EPOXY CAP (SeaShield FX-70TNG), AND CANTED NON-SHRINK GROUT AT TOP.
8. PROVIDE SUBMITTAL FOR APPROVAL.

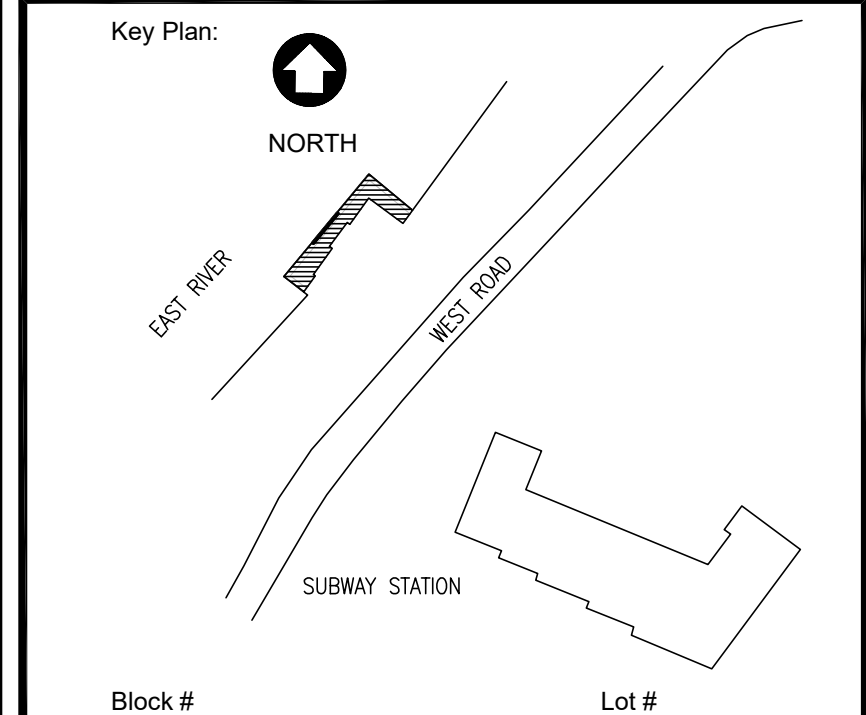
PILE NUMBER	REPAIR TYPE	REPAIR LENGTH (FEET)	REPAIR DETAIL	COMMENTS
1	COATING	6	1	
2	COATING	3	1	
3	COATING	3	1	
4	COATING	8	1	
5	COATING	5	1	
6	COATING	8	1	
7	CONCRETE ENCASEMENT	9	2	
8	COATING	8	1	
9	COATING	5	1	
10	COATING	8	1	
11	COATING	5	1	
12	CONCRETE ENCASEMENT	10	2	
13	COATING	5	1	
14	COATING	3	1	PROTECT TO CONCRETE AT BASE
15	COATING	5	1	
16	COATING	3	1	
17	COATING	6	1	
18	CONCRETE ENCASEMENT	8	2	
19	CONCRETE ENCASEMENT	8	2	
20	COATING	3	1	

3 PILE REPAIR SCHEDULE
3/4"=1'-0"



4 PILE REPAIR TYPE 2 PILE PLANS
3/4"=1'-0"

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
3	REV-2	04/14/26	CCG	JBY
2	REVISED PROCEDURE NOTE 6	02/23/25	CCG	JBY
1	ADDED SCOPE PER MANUFACTURER	12/19/25	CCG	JBY
0	RELEASE FOR APPROVAL	8/4/25	JBY	JBY



PROJECT TITLE:
ELEANOR'S PIER REHABILITATION
W ROAD, NEW YORK, NY

DRAWING TITLE:
PILE REPAIR DETAILS

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

DOB #
DRAWING NUMBER
S-102.00
SHEET NO. 3 OF 3

A. GENERAL:

1. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR BID UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR BID".
2. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR CONSTRUCTION UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR CONSTRUCTION".

B. CODES AND STANDARDS:

1. THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. USE THE VERSION REFERENCED IN THE BUILDING CODE UNLESS NOTED OTHERWISE.

- a. BUILDING CODE: 2022 NEW YORK CITY BUILDING CODE
- b. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", ASCE 7-22, AMERICAN SOCIETY OF CIVIL ENGINEERS.
- c. "NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION w/ 2005 SUPPLEMENT", NDS, AMERICAN FOREST & PAPER ASSOC.

C. DESIGN LOADS:

1. GRAVITY LOADS: NEW WOOD FRAMING HAS BEEN DESIGNED FOR THE SELF WEIGHT OF THE FRAMING AND 100 PSF LIVE LOAD.

D. MATERIALS:

1. THE FOLLOWING ASTM STANDARDS AND DESIGN STRESSES SHALL BE USED FOR THE APPROPRIATE MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT.

2. POST-INSTALLED ANCHORS

EXPANSION BOLTS INTO CONCRETE	HILTI KWIK BOLT TZ
SCREW ANCHORS INTO CONCRETE	HILTI KWIK HUS EZ
ADHESIVE ANCHORS INTO CONCRETE	HILTI HIT HY 200 SAFE SET WITH HILTI HIT Z-ROD or HILTI HIT HY 200 SAFESET W/ HOLLOW DRILL BIT W/ HILTI HAS- E THREADED ROD or HILTI HIT RE 500 SD W/ HILTI HAS -E THREADED ROD FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED
EXPANSION ANCHORS INTO GROUT FILLED CONCRETE BLOCK	HILTI KWIK BOLT 3
SCREW ANCHORS LARGER > 1/4" DIA. INTO CONCRETE OR GROUT FILLED CONCRETE BLOCK	HILTI KWIK HUS EZ

- a. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING THAT PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT ICC ESR REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.

- b. ALL ANCHORS SHALL ASSUME THE CRACKED CONCRETE DESIGN CONDITION, U.N.O.

- c. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII).

- d. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON SITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER OF RECORD SHALL RECEIVE DOCUMENTATION VERIFYING THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.

- e. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER OF RECORD.

- f. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.

- g. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

- h. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN A MANNER THAT DOES NOT DAMAGE REINFORCING STEEL. REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. PLATES AND BRACKETS THROUGH WHICH ANCHORS WILL BE INSTALLED SHALL NOT BE FABRICATED UNTIL AFTER REINFORCING STEEL IS LOCATED AND ANCHOR LOCATIONS ARE ADJUSTED. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN ALTERNATIVE ANCHOR LAYOUT WHERE ANCHORS MUST BE RELOCATED TO AVOID INTERFERENCE WITH REINFORCING STEEL.

- i. ADHESIVE ANCHORS SHALL BE INSTALLED WITH A 6" EMBEDMENT DEPTH UNLESS NOTED OTHERWISE. ANCHORS OTHER THAN ADHESIVE ANCHORS SHALL BE INSTALLED WITH AN EMBEDMENT DEPTH EQUAL TO THE MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE UNLESS NOTED OTHERWISE. WHERE EMBEDMENT DEPTH IS SPECIFIED, THAT DEPTH IS THE REQUIRED FINAL EFFECTIVE MINIMUM EMBEDMENT DEPTH.

- j. POST INSTALLED ANCHORS SHALL BE INSPECTED PERIODICALLY DURING INSTALLATION PER CHAPTER 17 OF IBC2021, UNLESS NOTED OTHERWISE.

- k. ADHESIVE ANCHORS INSTALLED IN VERTICAL SURFACES OR IN OVERHEAD OR UPWARDLY INCLINED ORIENTATIONS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION PER ACI 318.

- l. INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR WHO HAS BEEN APPROVED BY THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL VERIFY THAT ALL ANCHORS WERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE APPLICABLE ICC ESR REPORTS AND THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. THE INSPECTION SHALL INCLUDE VERIFICATION OF ANCHOR SPACING, EMBEDMENT AND EDGE DISTANCE REQUIREMENTS.

3. WOOD FRAMING:

- a. **TIMBER (SAWN LUMBER):**
ALL SAWN LUMBER SHALL HAVE 19% MAX. MOISTURE CONTENT AND SHALL BE SURFACE DRY IN THE FOLLOWING SPECIES AND GRADES:

FRAMING	SPECIES	GRADE
STUDS	SPRUCE-PINE-FIR	NO. 2
BEAMS, HEADERS & ALL OTHER FRAMING	HEM-FIR	NO. 2

- b. **NAILS:** ALL NAILS SHALL BE COMMON NAILS, STAINLESS STEEL U.N.O.

- c. **STRUCTURAL CONNECTORS:**
STRUCTURAL CONNECTORS FOR WOOD CONSTRUCTION MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. GRADE 316 OR 316L STAINLESS STEEL.

E. CONSTRUCTION:

1. GENERAL:

- a. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW THE STRUCTURAL CONTRACT DOCUMENTS AND SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY CONFLICTS BETWEEN THOSE DOCUMENTS AND ANY SAFETY REGULATIONS. SUCH REVIEW AND NOTIFICATION SHALL OCCUR PRIOR TO PRODUCTION OF SHOP DRAWINGS.

- b. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS, FOR PROTECTING THE COMPLETED STRUCTURAL FRAMING FROM DAMAGE DUE TO TEMPORARY CONSTRUCTION LOADINGS, FOR DETERMINING SEQUENCES OF CONSTRUCTION, AND FOR DETERMINATION, DESIGN AND INSTALLATION OF ALL FALSEWORK, FORMWORK, STAGING, TEMPORARY BRACING, SHEETING AND SHORING NECESSARY FOR CONSTRUCTION.

- c. ALL SUBMITTALS, INCLUDING SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY IN PDF FORMAT.

- d. COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.

- e. IF DIFFERENCES OCCUR WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS REGARDING MATERIALS, SIZES, STRENGTHS OR QUANTITIES, THEN THE BETTER MATERIAL, HIGHER STRENGTH, LARGER SIZE AND GREATER QUANTITY INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.

- f. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.

- g. DIMENSIONS MAY NOT BE SCALED FROM THE DRAWINGS.

- h. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. UNLESS INDICATED OTHERWISE, NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.

- i. INFORMATION SHOWN ON THE SECTIONS AND DETAILS IS THAT WHICH IS REQUIRED TO CONVEY THE PURPOSE FOR WHICH THE SECTIONS AND DETAILS WERE PROVIDED. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING ELSEWHERE ON THE CONTRACT DOCUMENTS FOR ALL OTHER INFORMATION WHICH MAY BE OCCURRING IN THE SECTIONS OR DETAILS, BUT WHICH IS NOT SHOWN.

F. WOOD:

1. WOOD CONNECTORS AND FASTENERS:

- a. SEE IBC TABLE 2304.9.1 FOR MINIMUM FASTENING REQUIREMENTS.

- b. WOOD CONNECTORS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. PROVIDE FULL FASTENING USING THE LARGEST FASTENER SIZE, TYPE AND QUANTITY AS SPECIFIED IN THE SIMPSON STRONG-TIE CATALOG TO DEVELOP THE PUBLISHED CAPACITY OF THE CONNECTOR.

- c. WOOD CONNECTOR AND FASTENER FINISH / MATERIAL REQUIREMENTS: CONNECTORS AND FASTENERS SHALL BE GRADE 316 OR 316L STAINLESS STEEL

- d. USE 1/2" DIA. LAG BOLTS OR THRU BOLTS AT 24" O.C. TO JOIN MULTIPLE 2x BEAMS OR GIRDERS SO THAT LOAD DISTRIBUTES EQUALLY.

- e. PROVIDE STANDARD WASHERS ON ALL BOLTED CONNECTIONS.

2. PRESERVATIVE-TREATED WOOD:

- a. ABOVE GROUND PRESERVATIVE TREATED WOOD:
WOOD REQUIRED TO BE PRESERVATIVE-TREATED SHALL BE TREATED WITH WATER-BORNE PRESERVATIVES IN ACCORDANCE WITH AWPA U1 (COMMODITY SPECIFICATIONS "A" OR "F") FOR ABOVE-GROUND USE.

3. MEMBERS SHALL BE SET WITH CROWN UP AND HAVE MINIMUM OF 3" BEARING.

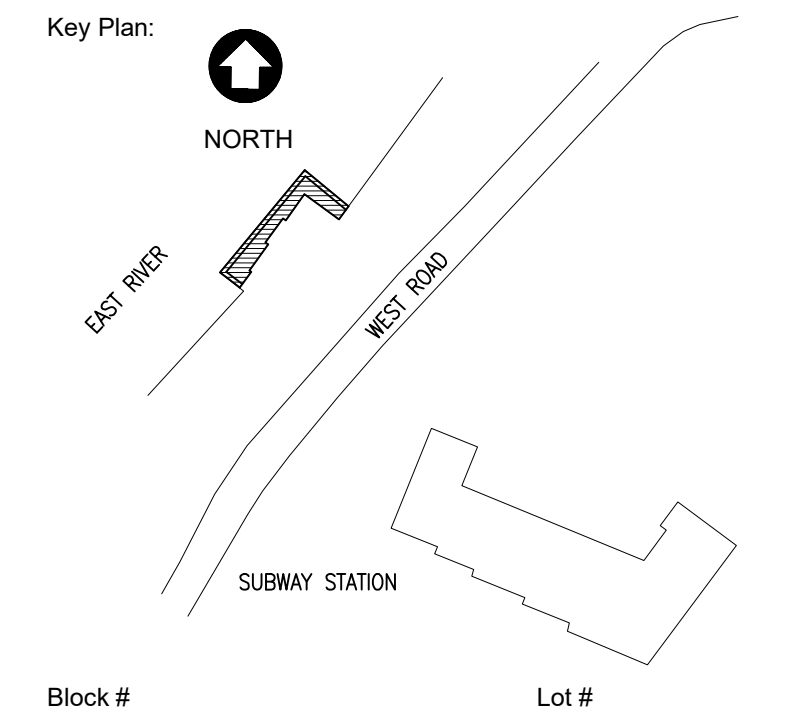
RIOC
ROOSEVELT ISLAND
OPERATING CORPORATION

STRUCTURAL ENGINEER



The Future Built Smarter www.imegcorp.com
1411 BROADWAY
SUITE 610
NEW YORK, NEW YORK 10018

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/26	CCG	JBV



PROJECT TITLE:

**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:

**GENERAL STRUCTURAL NOTES
(WOOD FRAMING)**

DATE 08/04/2025

SCALE AS NOTED

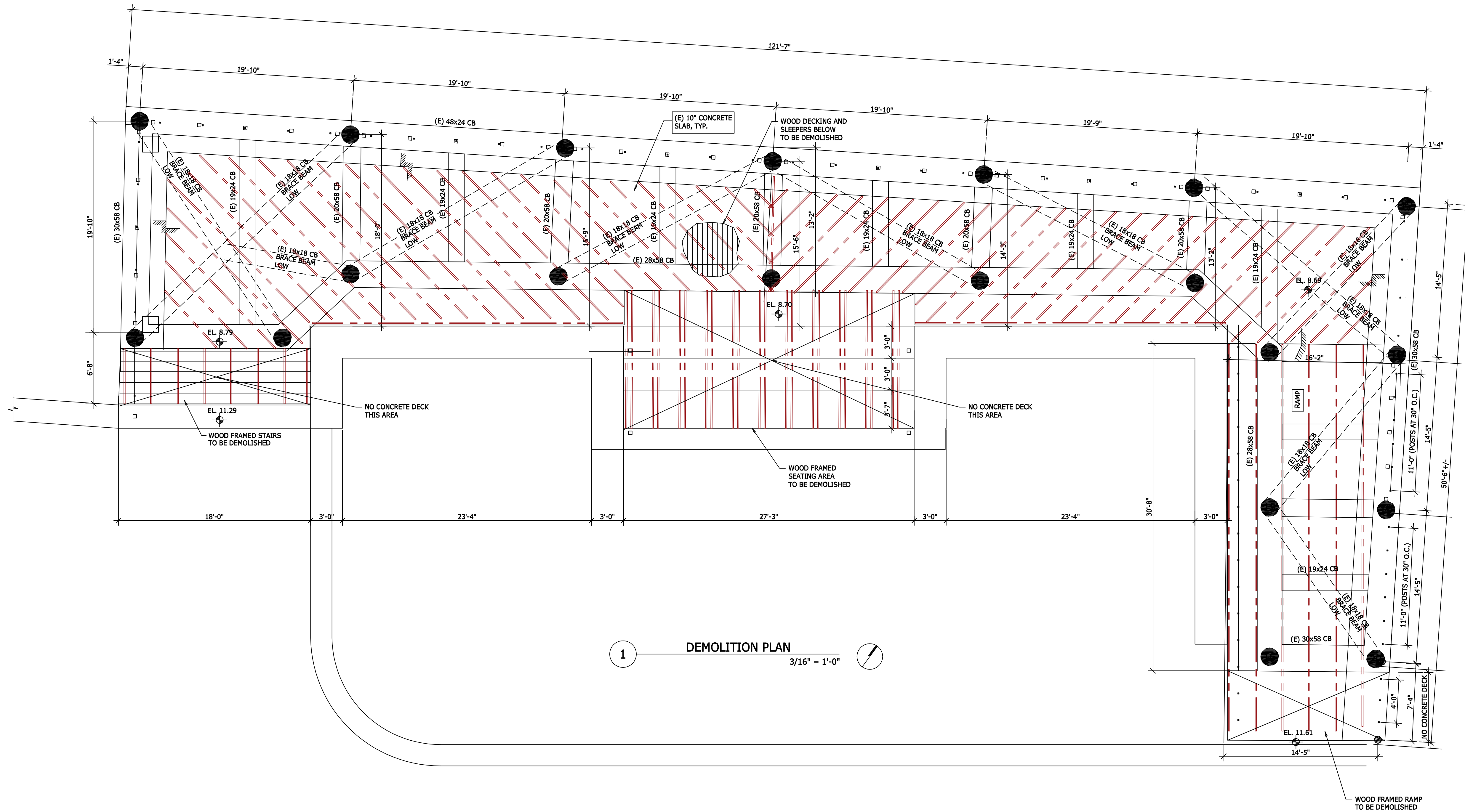
JOB NO. 25003964.00

DOB #

DRAWING NUMBER

S-000.00

SHEET NO.



1 DEMOLITION PLAN
3/16" = 1'-0"

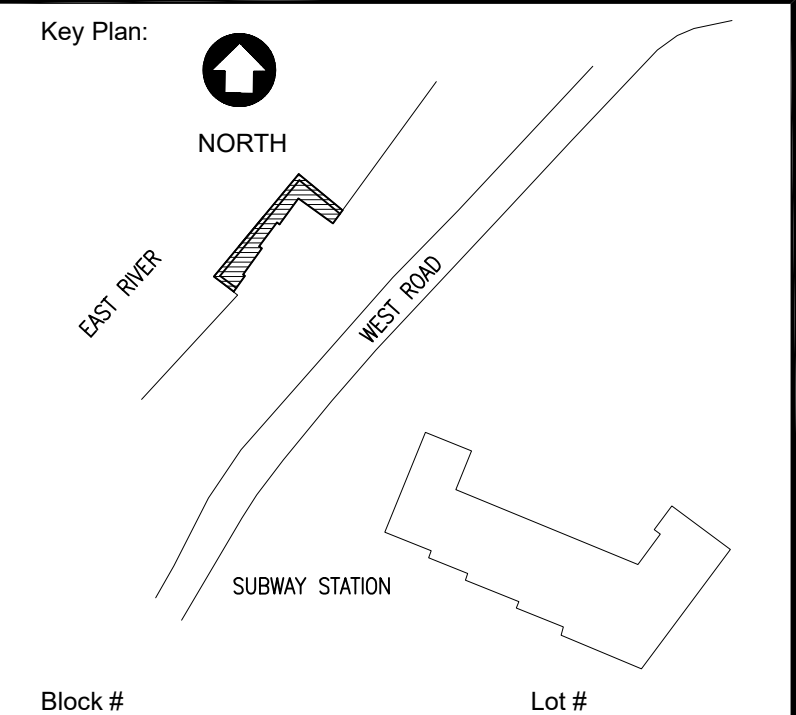
DEMOLITION SCOPE:

- DEMOLISH ALL WOOD FRAMING AND CONNECTION HARDWARE, UNO. ALL EXISTING CONCRETE AND CONCRETE FILLED PIPE PILES TO REMAIN.
- ALL STONE AT EDGE OF PIER TO REMAIN. "SHIPLAP" ON THE 3 VERTICAL SIDES OF THE PIER TO REMAIN.

DEMOLITION NOTES:

- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO DEMOLITION.
- CONTRACTOR IS TO STOP DEMOLITION AND IMMEDIATELY NOTIFY STRUCTURAL ENGINEER OF RECORD IF CONDITIONS VARY FROM THAT INDICATED.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPROVALS AND PERMITS FOR DEMOLITION.
- CONTRACTOR IS RESPONSIBLE FOR ASSESSING IMPACT OF DEMOLITION WORK AND PROVIDING PROTECTION FOR ALL AFFECTED AREAS, INCLUDING BUT NOT LIMITED TO ADJACENT EXISTING BUILDINGS, PAVEMENTS, SIDEWALKS, AND OCCUPIED AREAS.
- CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL LOCAL AND OSHA CODES.
- CONTRACTOR IS RESPONSIBLE FOR ERECTION AND MAINTENANCE OF DUST BARRIERS AS REQUIRED TO PROTECT ADJACENT AREAS.
- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF BARRIERS, MEETING OSHA REQUIREMENTS, CLEARLY IDENTIFYING AND PROTECTING FALL OR TRIPPING HAZARDS CREATED DUE TO DEMOLITION.
- CONTRACTOR IS RESPONSIBLE FOR DEWATERING AREAS WITHIN DEMOLITION SCOPE.
- CONTRACTOR IS TO TAKE PRE-DEMOLITION PHOTOGRAPHS OF ALL ELEMENTS WITHIN (1) FLOOR AND (2) BAYS OF PROPOSED DEMOLITION AREA. ONE COPY, MINIMUM, OF THESE PHOTOGRAPHS IS TO BE DISTRIBUTED TO THE OWNER AND TO THE CONSTRUCTION MANAGER.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEBRIS.
- CONTRACTOR IS TO CEASE DEMOLITION AND IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE, CONSTRUCTION MANAGER AND STRUCTURAL ENGINEER OF RECORD IF SAFETY OF THE STRUCTURE APPEARS TO BE ENDANGERED. TAKE PRECAUTIONS TO SUPPORT UNTIL DETERMINATION IS MADE FOR CONTINUING DEMOLITION.
- WRECKING BALLS NOT PERMITTED.
- NO DEBRIS PERMITTED IN THE RIVER.

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/25	CCG	JBY



PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

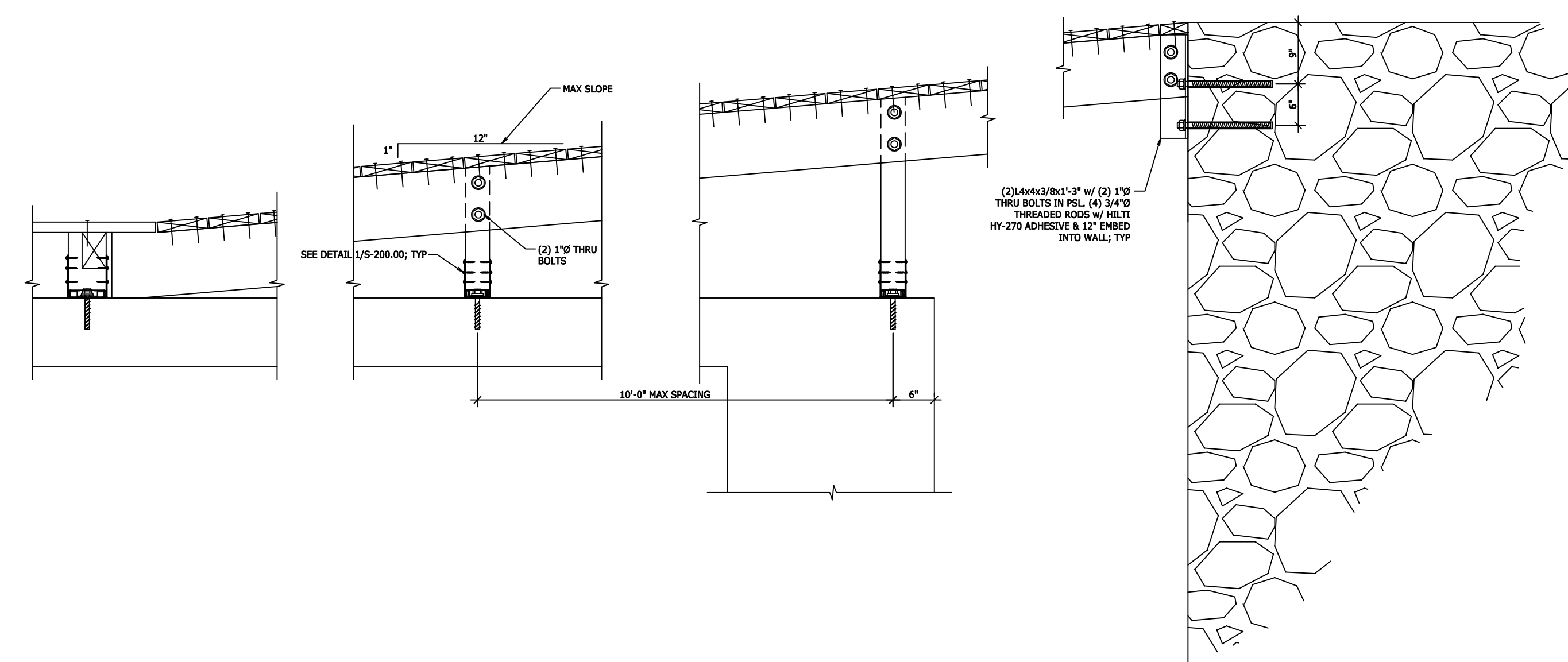
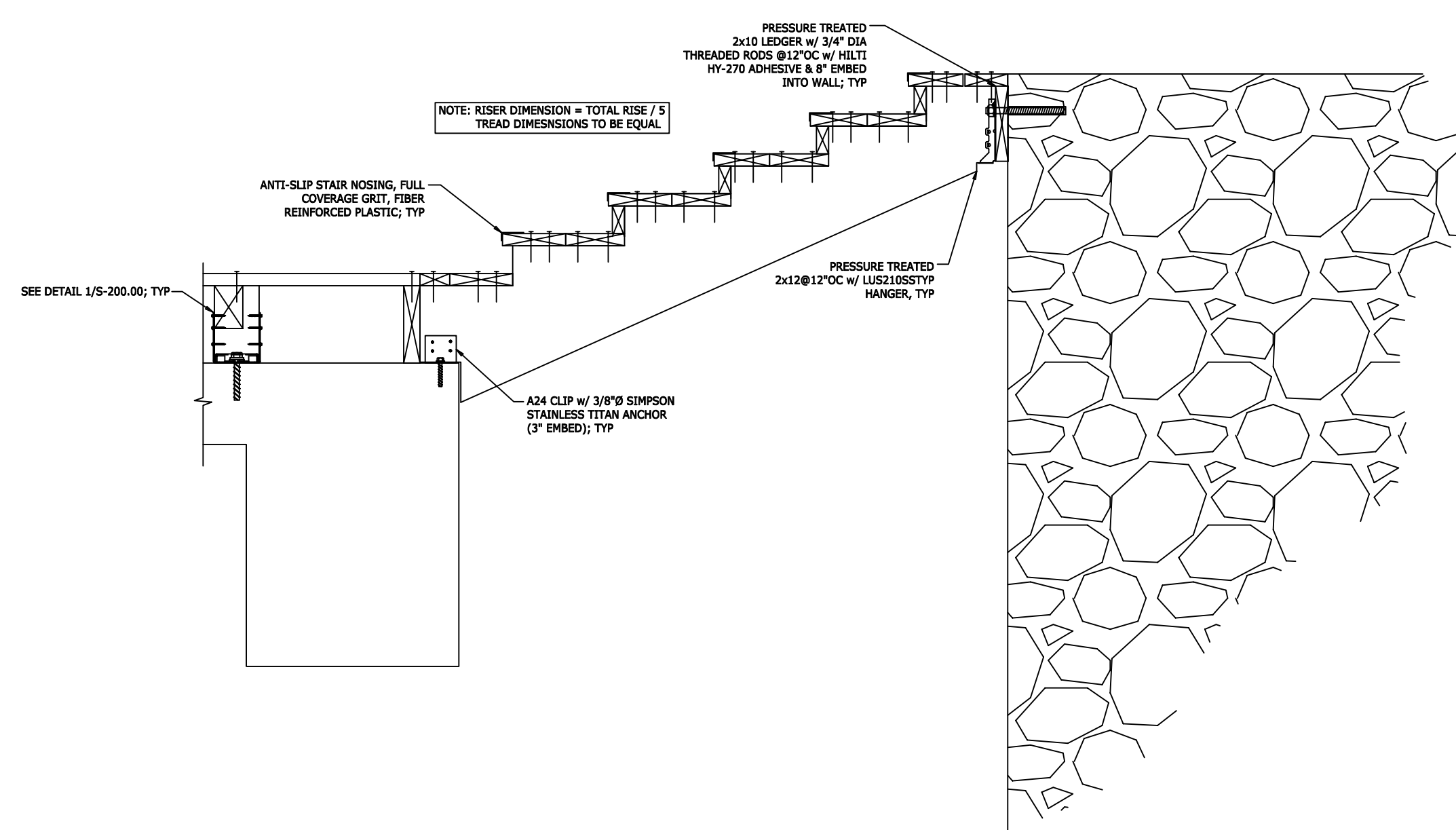
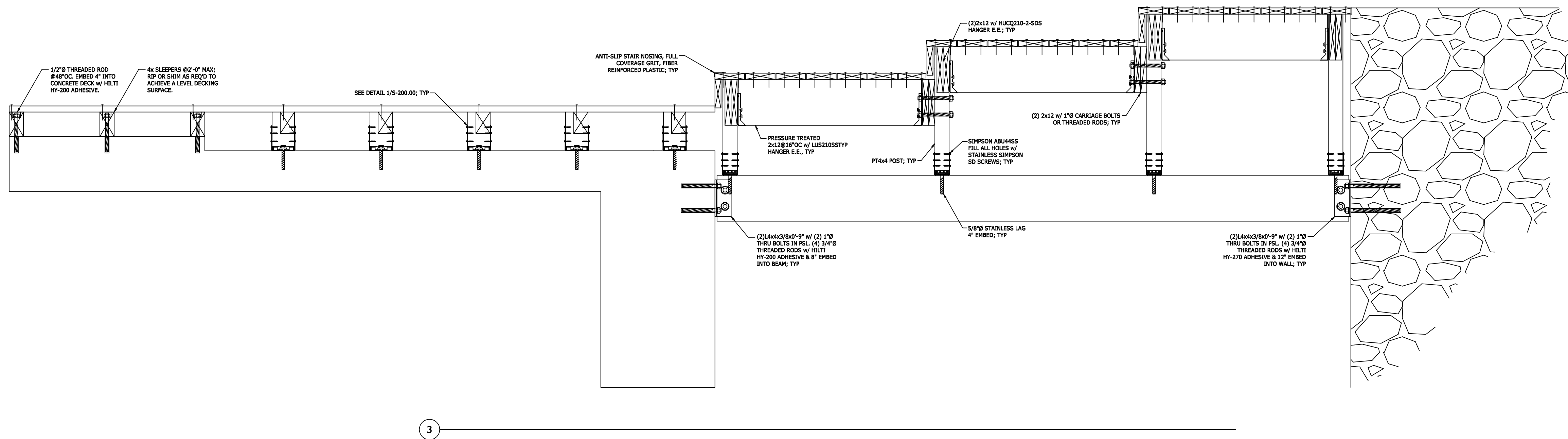
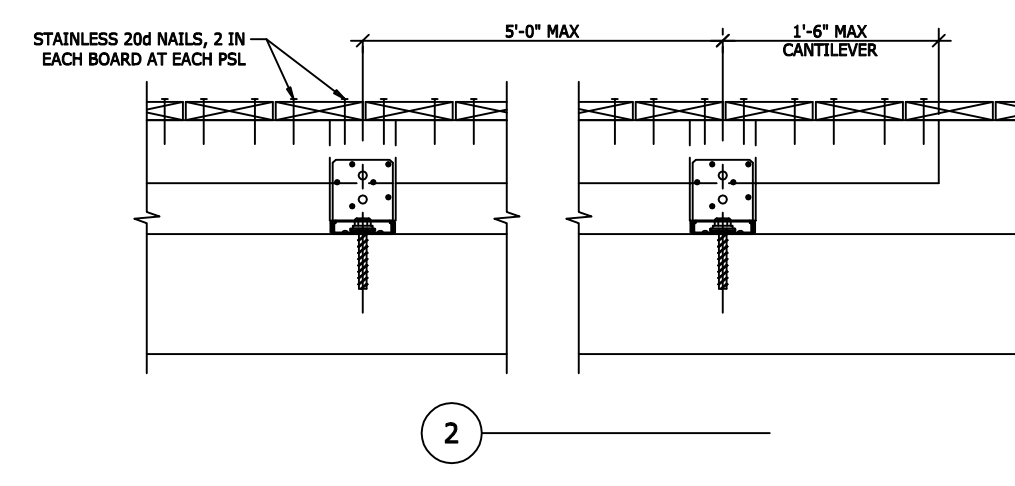
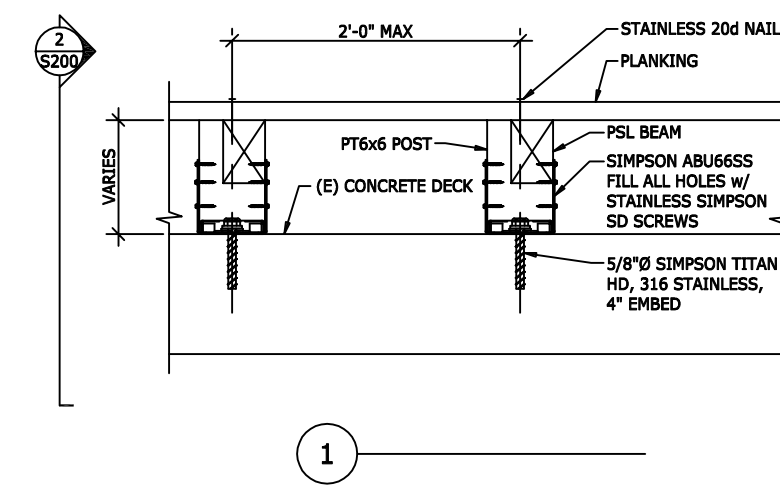
DRAWING TITLE:
WOOD DEMOLITION PLAN

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

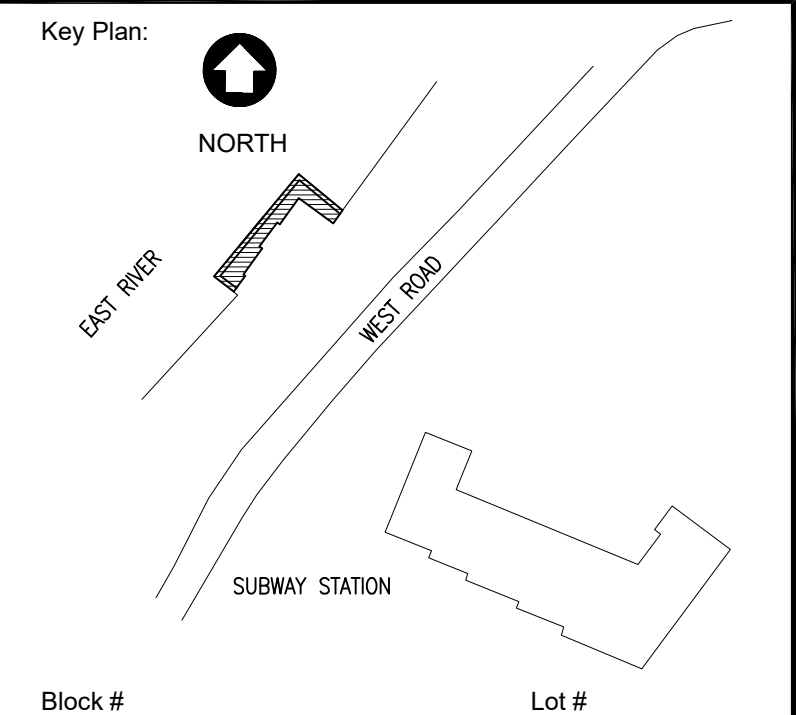
DOB #

DRAWING NUMBER
S-050.00

SHEET NO. 1 OF



NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/26	CCG	JBY



PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:
WOOD FRAMING DETAILS

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

DOB #
DRAWING NUMBER
S-200.00
SHEET NO. 1 OF

A. GENERAL:

1. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR BID UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR BID".
2. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR CONSTRUCTION UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR CONSTRUCTION".

B. CODES AND STANDARDS:

1. THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. USE THE VERSION REFERENCED IN THE BUILDING CODE UNLESS NOTED OTHERWISE.

- a. BUILDING CODE: 2022 NEW YORK CITY BUILDING CODE
- b. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES", ASCE 7-22, AMERICAN SOCIETY OF CIVIL ENGINEERS.
- c. "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-19, AMERICAN CONCRETE INSTITUTE.
- d. "ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 6.
- e. "MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE.
- f. "STRUCTURAL WELDING CODE - STEEL", AWS D1.1
"STRUCTURAL WELDING CODE - STAINLESS STEEL", AWS D1.6
- g. "NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION W/ 2005 SUPPLEMENT", NDS, AMERICAN FOREST & PAPER ASSOC.

C. DESIGN LOADS:

1. GRAVITY LOADS: NEW WOOD FRAMING HAS BEEN DESIGNED FOR THE SELF WEIGHT OF THE FRAMING AND 100 PSF LIVE LOAD.
2. GUARD RAILS: DESIGNED FOR 50 POUNDS PER LINEAR FOOT OR A 200 POUND POINT LOAD ACTING IN ANY DIRECTION AT 42" ABOVE FINISHED FLOOR.

D. MATERIALS:

1. THE FOLLOWING ASTM STANDARDS AND DESIGN STRESSES SHALL BE USED FOR THE APPROPRIATE MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT.
2. CEMENT: ASTM C150, TYPE I OR III (TYP., U.N.O.; SEE BELOW)
ASTM C150; TYPE II FOR CONCRETE IN CONTACT WITH EARTH
3. CONCRETE: CONCRETE SHALL HAVE THE FOLLOWING ENGINEERING PROPERTIES
 - a. COMPRESSIVE STRENGTH, W/C RATIO & UNIT WEIGHT

LOCATION	f _c @ 28 DAYS (PSI)	w/c (MAX PERMITTED)
ALL CONCRETE, U.N.O.	4500	0.45

b. AIR ENTRAINMENT:

1. CONCRETE LISTED IN TABLE "A" SHALL BE AIR ENTRAINED WITH THE APPROPRIATE PERCENTAGE AIR CONTENT LISTED IN TABLE "B" AS APPLICABLE FOR THE INDICATED EXPOSURE CLASS AND NOMINAL MAXIMUM AGGREGATE SIZE IN THE CONCRETE MIX. THE REQUIRED AIR CONTENT VALUE MAY BE REDUCED BY 1% FOR ALL CONCRETE WITH COMPRESSIVE STRENGTH GREATER THAN 5,000 PSI. THE PERMITTED TOLERANCE ON THE REQUIRED AIR CONTENT IS ±1.5 PERCENT. SEE ACI 318 FOR ADDITIONAL REQUIREMENTS.

TABLE "A"		TABLE "B"		
LOCATION	EXPOSURE CLASS**	NOMINAL MAXIMUM AGGREGATE SIZE	REQD. AIR CONTENT F1	EXPOSURE CATEGORY F2 & F3
ALL CONCRETE	F2	3/8"	6%	7.5%
		1/2"	5.5%	7%
		3/4"	5%	6%
		1"	4.5%	6%

** REFER TO ACI 318

4. REINFORCING STEEL:

DEFORMED REINFORCING BARS	ASTM A615, GRADE 60
EPOXY COATED REINF. BARS	ASTM A775

EPOXY COAT ALL REINFORCING STEEL

5. STRUCTURAL STEEL:

CHANNELS, ANGLE, PLATES & BARS	ASTM A36 (F _y =36 ksi) U.N.O. ASTM A572, GR 50 WHERE INDICATED
ROUND PIPE	ASTM A53, GRADE "B" F _y = 35 KSI
ROUND HSS	ASTM A500, GRADE "C" F _y = 46 KSI
SQUARE & RECTANGULAR HSS's	ASTM A500, GRADE "C" F _y = 50 KSI
HIGH STRENGTH BOLTS	ASTM A325 TYP. U.N.O. & ASTM A490 WHERE INDICATED
ROUND RODS & THREADED RODS	ASTM A36 U.N.O. ASTM A572, GR 50 WHERE INDICATED
WELDING ELECTRODES	AWS A5.1 OR A5.5, E70XX

6. POST-INSTALLED ANCHORS

EXPANSION BOLTS INTO CONCRETE	HILTI KWIK BOLT TZ
SCREW ANCHORS INTO CONCRETE	HILTI KWIK HUS EZ
ADHESIVE ANCHORS INTO CONCRETE	HILTI HIT HY 200 SAFE SET WITH HILTI HIT Z-ROD or HILTI HIT HY 200 SAFESSET W/ HOLLOW DRILL BIT W/ HILTI HAS- E THREADED ROD or HILTI HIT RE 500 SD W/ HILTI HAS -E THREADED ROD FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED
EXPANSION ANCHORS INTO GROUT FILLED CONCRETE BLOCK	HILTI KWIK BOLT 3
SCREW ANCHORS LARGER > 1/4" DIA. INTO CONCRETE OR GROUT FILLED CONCRETE BLOCK	HILTI KWIK HUS EZ

- a. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING THAT PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT ICC ESR REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.
- b. ALL ANCHORS SHALL ASSUME THE CRACKED CONCRETE DESIGN CONDITION, U.N.O.
- c. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII).
- d. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON SITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER OF RECORD SHALL RECEIVE DOCUMENTATION VERIFYING THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.

- e. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER OF RECORD.

- f. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.

- g. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

- h. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN A MANNER THAT DOES NOT DAMAGE REINFORCING STEEL. REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. PLATES AND BRACKETS THROUGH WHICH ANCHORS WILL BE INSTALLED SHALL NOT BE FABRICATED UNTIL AFTER REINFORCING STEEL IS LOCATED AND ANCHOR LOCATIONS ARE ADJUSTED. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN ALTERNATIVE ANCHOR LAYOUT WHERE ANCHORS MUST BE RELOCATED TO AVOID INTERFERENCE WITH REINFORCING STEEL.

- i. ADHESIVE ANCHORS SHALL BE INSTALLED WITH A 6" EMBEDMENT DEPTH UNLESS NOTED OTHERWISE. ANCHORS OTHER THAN ADHESIVE ANCHORS SHALL BE INSTALLED WITH AN EMBEDMENT DEPTH EQUAL TO THE MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE UNLESS NOTED OTHERWISE. WHERE EMBEDMENT DEPTH IS SPECIFIED, THAT DEPTH IS THE REQUIRED FINAL EFFECTIVE MINIMUM EMBEDMENT DEPTH.

- j. POST INSTALLED ANCHORS SHALL BE INSPECTED PERIODICALLY DURING INSTALLATION PER CHAPTER 17 OF 18C2021, UNLESS NOTED OTHERWISE.

- k. ADHESIVE ANCHORS INSTALLED IN VERTICAL SURFACES OR IN OVERHEAD OR UPWARDLY INCLINED ORIENTATIONS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION PER ACI 318.

- l. INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR WHO HAS BEEN APPROVED BY THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL VERIFY THAT ALL ANCHORS WERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE APPLICABLE ICC ESR REPORTS AND THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. THE INSPECTION SHALL INCLUDE VERIFICATION OF ANCHOR SPACING, EMBEDMENT AND EDGE DISTANCE REQUIREMENTS.

7. WOOD FRAMING:

- a. TIMBER (SAWN LUMBER):
ALL SAWN LUMBER SHALL HAVE 19% MAX. MOISTURE CONTENT AND SHALL BE SURFACE DRY IN THE FOLLOWING SPECIES AND GRADES:

FRAMING	SPECIES	GRADE
STUDS	SPRUCE-PINE-FIR	NO. 2
BEAMS, HEADERS & ALL OTHER FRAMING	HEM-FIR	NO. 2

b. LAMINATED VENEER LUMBER:

- TRUS JOIST MICROLAM LVL'S MANUFACTURED BY WEYERHAEUSER
BEAMS: GRADE 1.9; E = 1,900,000 PSI; F_b = 2,600 PSI; F_v = 285 PSI

c. PARALLEL STRAND LUMBER:

- PARALLAM PSL AS MANUFACTURED BY LEVEL BY WEYERHAEUSER
BEAMS: GRADE 2.0E; E = 2,000,000 PSI; F_b = 2,900 PSI; F_v = 290 PSI
COLUMNS: GRADE 1.8E; E = 1,800,000 PSI; F_b = 2,400 PSI; F_v = 190 PSI

d. LAMINATED STRAND LUMBER:

- TRUS JOIST TIMBERSTRAND LSL'S MANUFACTURED BY WEYERHAEUSER
BEAMS/COLUMNS: GRADE 1.3E; E=1,300,000 PSI; F_b=1,700 PSI; F_v=400 PSI

e. PRESERVATIVE TREATED PARALLEL STRAND LUMBER

- TRUS JOIST PARALLAM PLUS PSL'S MANUFACTURED BY WEYERHAEUSER
SERVICE LEVEL "SL 2"
BEAMS: E = 1,460,000 PSI; F_b = 1827 PSI; F_v = 197 PSI
COLUMNS: E = 1,314,000 PSI; F_b = 1512 PSI; F_v = 120 PSI

g. NAILS: ALL NAILS SHALL BE COMMON NAILS, STAINLESS STEEL U.N.O.

- h. STRUCTURAL CONNECTORS:
STRUCTURAL CONNECTORS FOR WOOD CONSTRUCTION MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. STAINLESS STEEL.

E. CONSTRUCTION:

1. GENERAL:

- a. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW THE STRUCTURAL CONTRACT DOCUMENTS AND SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY CONFLICTS BETWEEN THOSE DOCUMENTS AND ANY SAFETY REGULATIONS. SUCH REVIEW AND NOTIFICATION SHALL OCCUR PRIOR TO PRODUCTION OF SHOP DRAWINGS.

- b. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS, FOR PROTECTING THE COMPLETED STRUCTURAL FRAMING FROM DAMAGE DUE TO TEMPORARY CONSTRUCTION LOADINGS, FOR DETERMINING SEQUENCES OF CONSTRUCTION, AND FOR DETERMINATION, DESIGN AND INSTALLATION OF ALL FALSEWORK, FORMWORK, STAGING, TEMPORARY BRACING, SHEETING AND SHORING NECESSARY FOR CONSTRUCTION.

- c. ALL SUBMITTALS, INCLUDING SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY IN PDF FORMAT.

- d. COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.

- e. IF DIFFERENCES OCCUR WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS REGARDING MATERIALS, SIZES, STRENGTHS OR QUANTITIES, THEN THE BETTER MATERIAL, HIGHER STRENGTH, LARGER SIZE AND GREATER QUANTITY INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.

- f. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.

- g. DIMENSIONS MAY NOT BE SCALED FROM THE DRAWINGS.

- h. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. UNLESS INDICATED OTHERWISE, NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.

1. INFORMATION SHOWN ON THE SECTIONS AND DETAILS IS THAT WHICH IS REQUIRED TO CONVEY THE PURPOSE FOR WHICH THE SECTIONS AND DETAILS WERE PROVIDED. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING ELSEWHERE ON THE CONTRACT DOCUMENTS FOR ALL OTHER INFORMATION WHICH MAY BE OCCURRING IN THE SECTIONS OR DETAILS, BUT WHICH IS NOT SHOWN.

F. CONCRETE:

1. CAST-IN-PLACE CONCRETE:

- a. POST-INSTALLED ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE ANCHOR MANUFACTURER'S REQUIREMENTS; PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGING REINFORCING STEEL WHEN DRILLING BOLT HOLES.

- b. HORIZONTAL CONSTRUCTION JOINTS AND ALL OTHER HORIZONTAL JOINTS ABUTTING PREVIOUSLY CAST CONCRETE ELEMENTS SHALL BE ROUGH JOINTS, UNO.

- c. "ROUGH JOINTS" ARE JOINTS WHICH SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" AND SHALL BE CLEAN AND FREE OF LAITANCE.

- d. WELDING OF REINFORCING STEEL IS NOT PERMITTED.

- e. EMBEDMENT OF ALUMINUM IN CONCRETE IS NOT PERMITTED EXCEPT AT LOCATIONS SPECIFIED OR INDICATED ON THE ARCHITECTURAL DRAWINGS. ALUMINUM EMBEDDED IN CONCRETE SHALL BE COATED TO PREVENT DIRECT CONTACT WITH THE CONCRETE. DETAILS AND MATERIAL INFORMATION FOR THE COATING MATERIAL SHALL BE SUBMITTED FOR REVIEW.

- f. PROVIDE SPACERS, BOLSTERS, SUPPORT CHAIRS AND SUPPORT BARS AS REQUIRED TO SUPPORT REINFORCING STEEL; PROVIDE PLASTIC-TIPPED CHAIRS AND BOLSTERS WHERE UNDERSIDES OF SLABS ARE EXPOSED TO VIEW.

G. STRUCTURAL STEEL:

1. GENERAL:

- a. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE AWS "STRUCTURAL WELDING CODE - STEEL", ANSI/AWS D1.1 AND AISC REQUIREMENTS; STRUCTURAL STEEL THAT IS DAMAGED DURING WELDING SHALL BE REPLACED OR REPAIRED IN A MANNER THAT IS ACCEPTABLE TO THE STRUCTURAL ENGINEER.

- b. WELDERS SHALL HAVE CURRENT EVIDENCE OF PASSING THE APPROPRIATE AWS QUALIFICATION TESTS. THE ENGINEER MAY REQUEST SUCH EVIDENCE AT ANY TIME DURING THE PROJECT.

- c. ALL STEEL SHALL BE HOT-DIP GALVANIZED U.N.O. AND SHALL BE COMMERCIAL BLAST CLEANED AND PAINTED WITH THREE COATS OF EPOXY PAINT IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SYSTEM SPEC NO. 13.01.

- d. ALL STRUCTURAL FASTENERS SHALL BE GRADE 316 OR 316L STAINLESS STEEL.

- e. ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY APPLYING AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH THE REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL CONTAIN 95% ZINC BY WEIGHT. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NO LESS THAN THE COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.

- f. ALL STRUCTURAL STEEL INCLUDING BOLTS AND OTHER HARDWARE THAT IS SUBJECT TO WETTING WITH SALT-LADEN WATER OR OTHER MILD CHEMICAL ATTACK (SUCH AS

H. WOOD:

1. WOOD CONNECTORS AND FASTENERS:

- a. SEE IBC TABLE 2304.9.1 FOR MINIMUM FASTENING REQUIREMENTS.

- b. WOOD CONNECTORS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. PROVIDE FULL FASTENING USING THE LARGEST FASTENER SIZE, TYPE AND QUANTITY AS SPECIFIED IN THE SIMPSON STRONG-TIE CATALOG TO DEVELOP THE PUBLISHED CAPACITY OF THE CONNECTOR.

- c. WOOD CONNECTOR AND FASTENER FINISH / MATERIAL REQUIREMENTS:
CONNECTORS AND FASTENERS SHALL BE GRADE 316 OR 316L STAINLESS STEEL

- d. USE 1/2" DIA. LAG BOLTS OR THRU BOLTS AT 24" O.C. TO JOIN MULTIPLE 2x BEAMS OR GIRDSERS SO THAT LOAD DISTRIBUTES EQUALLY.

- e. PROVIDE STANDARD WASHERS ON ALL BOLTED CONNECTIONS.

2. PRESERVATIVE-TREATED WOOD:

- a. ABOVE GROUND PRESERVATIVE TREATED WOOD:
WOOD REQUIRED TO BE PRESERVATIVE-TREATED SHALL BE TREATED WITH WATER-BORNE PRESERVATIVES IN ACCORDANCE WITH AWPA U1 (COMMODITY SPECIFICATIONS "A" OR "F") FOR ABOVE-GROUND USE.

3. MEMBERS SHALL BE SET WITH CROWN UP AND HAVE MINIMUM OF 2" BEARING.

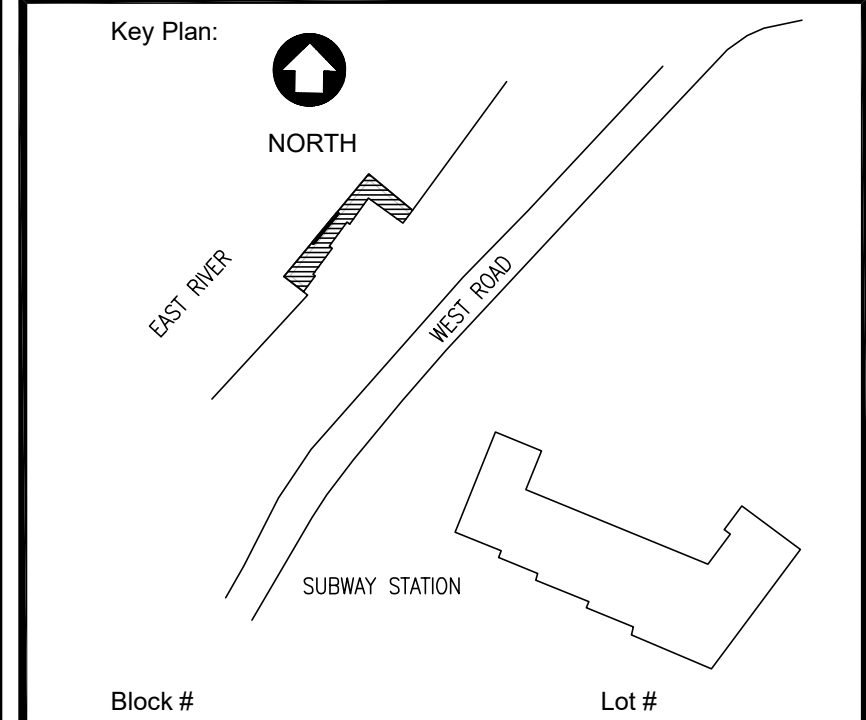
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NO.	DATE	CHECKED	DRAWN
2	06/14/26	CCG	JBV
REV-2			
			DESCRIPTION



PROJECT TITLE:

**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:

RAILING GENERAL NOTES

DATE 08/04/2025

SCALE AS NOTED

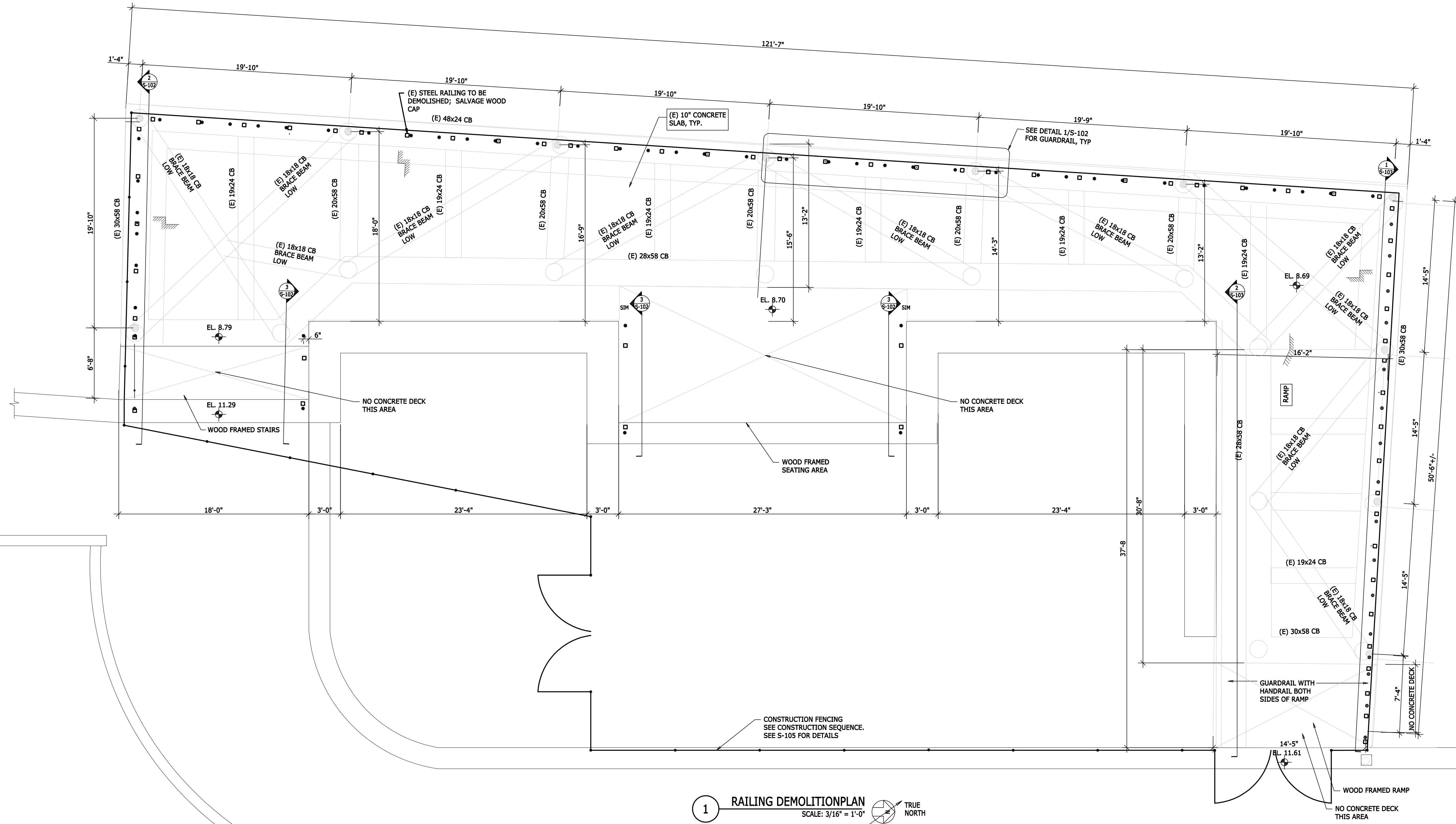
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DOB #

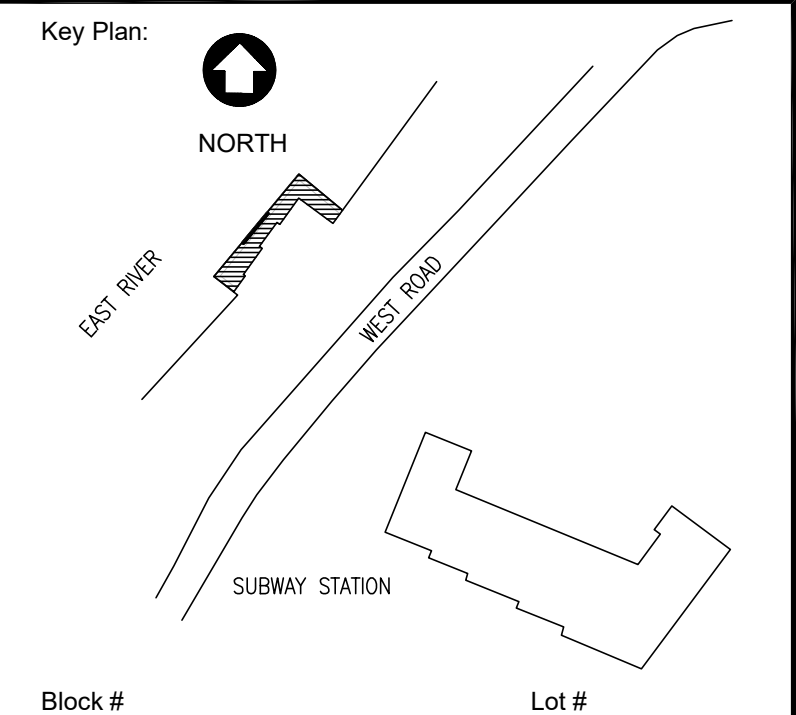
DRAWING NUMBER

S-000.00

SHEET NO. 1 OF 7



NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/26	CCG	JBY



PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:
RAILING DEMOLITION PLAN

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

DOB #

DRAWING NUMBER
S-050.00
SHEET NO. 2 OF 7

RAILING DEMOLITION SCOPE:

- DEMOLISH ALL RAILING THAT ACCESSES THE PIER. REMOVE ALL STEEL SLEEVES EMBEDDED IN THE CONCRETE. FILL HOLE SOLID WITH NON-SHRINK GROUT. THERE ARE 56 4" DIAMETER SLEEVES.
- 210'-0" BID LENGTH OF EXISTING STEEL RAILING IS TO BE DEMOLISHED. EXISTING STEEL SLEEVES TO BE REMOVED AND THE HOLES FILLED WITH NON-SHRINK GROUT. JACK HAMMERING NOT PERMITTED.
- UNSCREW EXISTING WOOD CAP FOR RE-USE.
- ALL STONE AT EDGE OF PIER TO REMAIN.

RAILING DEMOLITION NOTES:

- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO DEMOLITION.
- CONTRACTOR IS TO STOP DEMOLITION AND IMMEDIATELY NOTIFY STRUCTURAL ENGINEER OF RECORD IF CONDITIONS VARY FROM THAT INDICATED.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPROVALS AND PERMITS FOR DEMOLITION.
- CONTRACTOR IS RESPONSIBLE FOR ASSESSING IMPACT OF DEMOLITION WORK AND PROVIDING PROTECTION FOR ALL AFFECTED AREAS, INCLUDING BUT NOT LIMITED TO ADJACENT EXISTING BUILDINGS, PAVEMENTS, SIDEWALKS, AND OCCUPIED AREAS.
- CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL LOCAL AND OSHA CODES
- CONTRACTOR IS RESPONSIBLE FOR ERECTION AND MAINTENANCE OF DUST BARRIERS AS REQUIRED TO PROTECT ADJACENT AREAS.
- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF BARRIERS, MEETING OSHA REQUIREMENTS, CLEARLY IDENTIFYING AND PROTECTING FALL OR TRIPPING HAZARDS CREATED DUE TO DEMOLITION.
- CONTRACTOR IS RESPONSIBLE FOR DEWATERING AREAS WITHIN DEMOLITION SCOPE.
- CONTRACTOR IS TO TAKE PRE-DEMOLITION PHOTOGRAPHS OF ALL ELEMENTS WITHIN (1) FLOOR AND (2) BAYS OF PROPOSED DEMOLITION AREA. ONE COPY, MINIMUM, OF THESE PHOTOGRAPHS IS TO BE DISTRIBUTED TO THE OWNER AND TO THE CONSTRUCTION MANAGER.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEBRIS.
- CONTRACTOR IS TO CEASE DEMOLITION AND IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE, CONSTRUCTION MANAGER AND STRUCTURAL ENGINEER OF RECORD IF SAFETY OF THE STRUCTURE APPEARS TO BE ENDANGERED. TAKE PRECAUTIONS TO SUPPORT UNTIL DETERMINATION IS MADE FOR CONTINUING DEMOLITION.
- WRECKING BALLS NOT PERMITTED.
- NO DEBRIS PERMITTED IN THE RIVER.

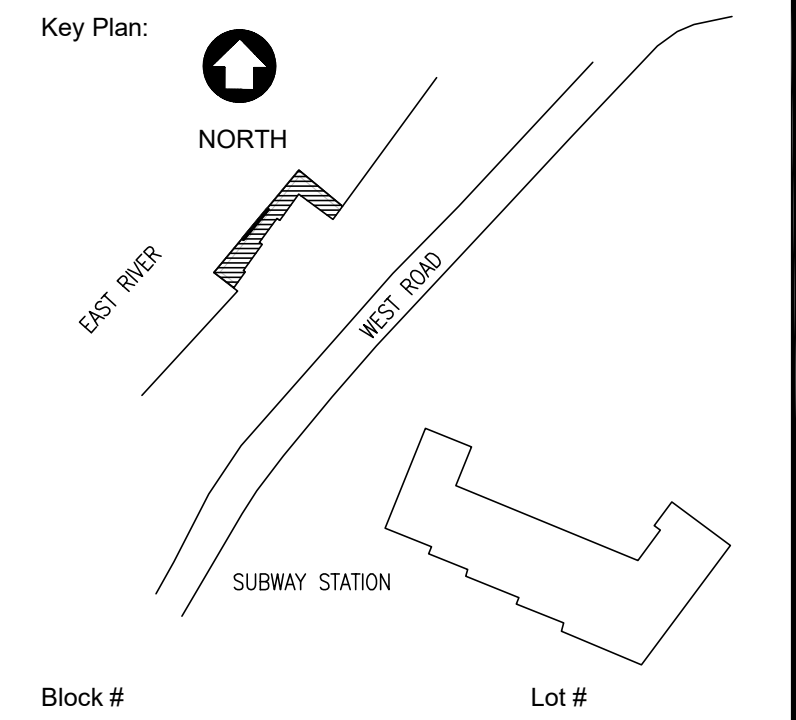
1 RAILING DEMOLITION PLAN
SCALE: 3/16" = 1'-0"
TRUE NORTH

SUGGESTED CONSTRUCTION SEQUENCE: ACTUAL CONSTRUCTION SEQUENCE TBD BY CONTRACTOR IN CONSULTATION WITH RIOC

	RESPONSIBLE CONTRACTOR
1) DEMOLISH ALL EXISTING WOOD FRAMING AND HARDWARE. MAINTAIN PERIMETER 'SHIPLAP' DECORATIVE TRIM	WOOD FRAMING CONTRACTOR
2) DEMOLISH EXISTING RAILINGS. SALVAGE EXISTING WOOD TOP RAILS.	MISCELLANEOUS METALS CONTRACTOR
3) INSTALL TEMPORARY FENCING AT THE PERIMETER OF THE PIER. SEE PLANS	MISCELLANEOUS METALS CONTRACTOR
4) PILE REHABILITATION CONTRACTOR PERFORMS PILE REPAIRS.	PILE REPAIR CONTRACTOR
5) INSTALL NEW RAILINGS AT PERIMETER.	MISCELLANEOUS METALS CONTRACTOR
6) REMOVE TEMPORARY FENCING ON PHYSICAL PIER. LANDBASED FENCING TO REMAIN UNTIL END OF PROJECT.	MISCELLANEOUS METALS CONTRACTOR
7) INSTALL NEW WOOD FRAMING AND DECKING.	WOOD FRAMING CONTRACTOR
8) REMOVE REMAINDER OF FENCING.	MISCELLANEOUS METALS CONTRACTOR

- NOTES:**
- EXISTING FENCING TO BE REMOVED BY RIOC AFTER WOOD DEMOLITION.
 - EXISTING TIMBER LIGHT STANDARDS TO REMAIN. ALL CONDUIT TO BE REMOVED AND SECURED BY RIOC.

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/25	CCG	JBV



PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

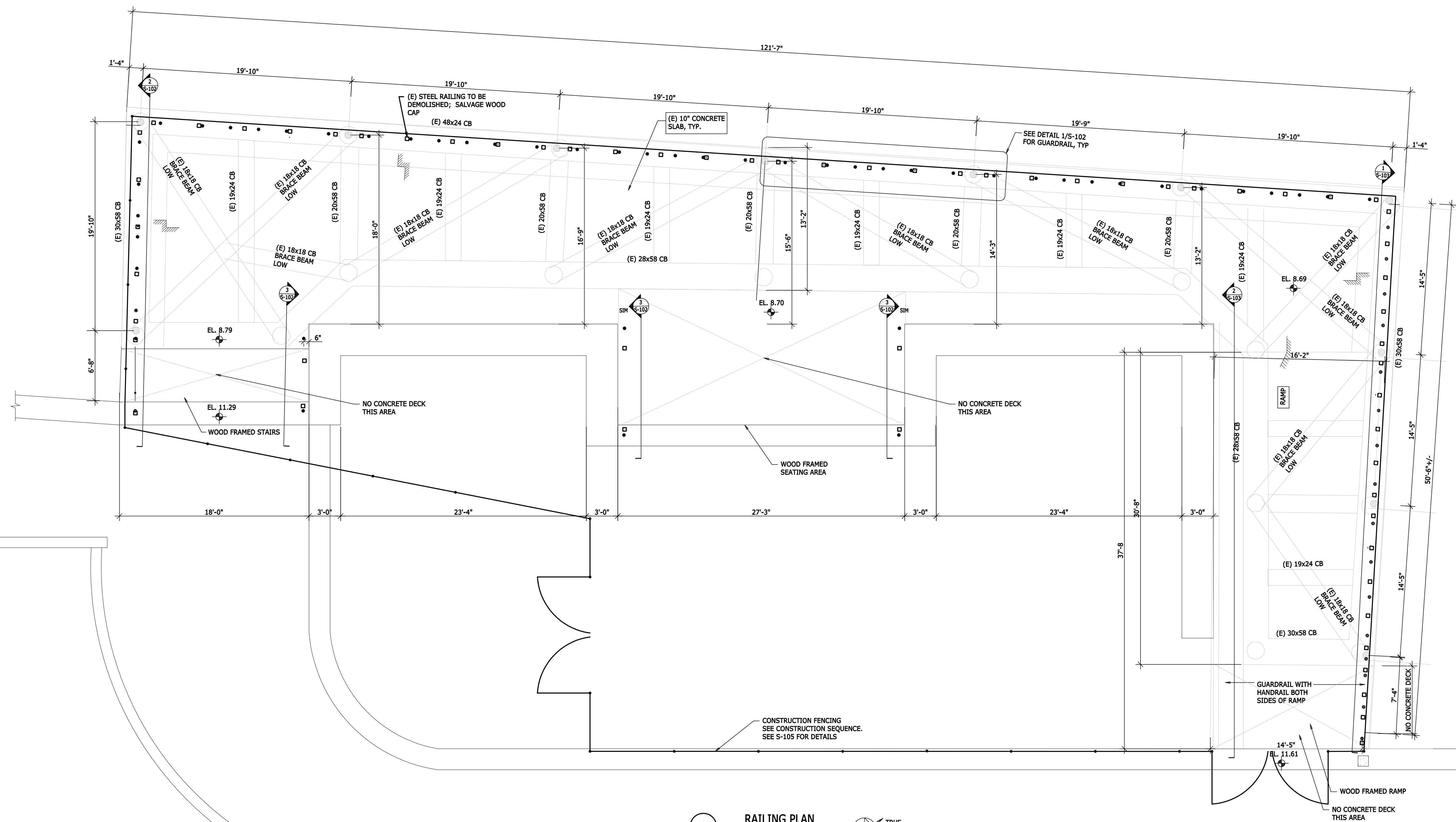
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RAILING PLAN

DATE	08/04/2025
SCALE	AS NOTED
JOB NO.	25003964.00

DRAWING NUMBER	S-101.00
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DOB #

SHEET NO. 3 OF 7

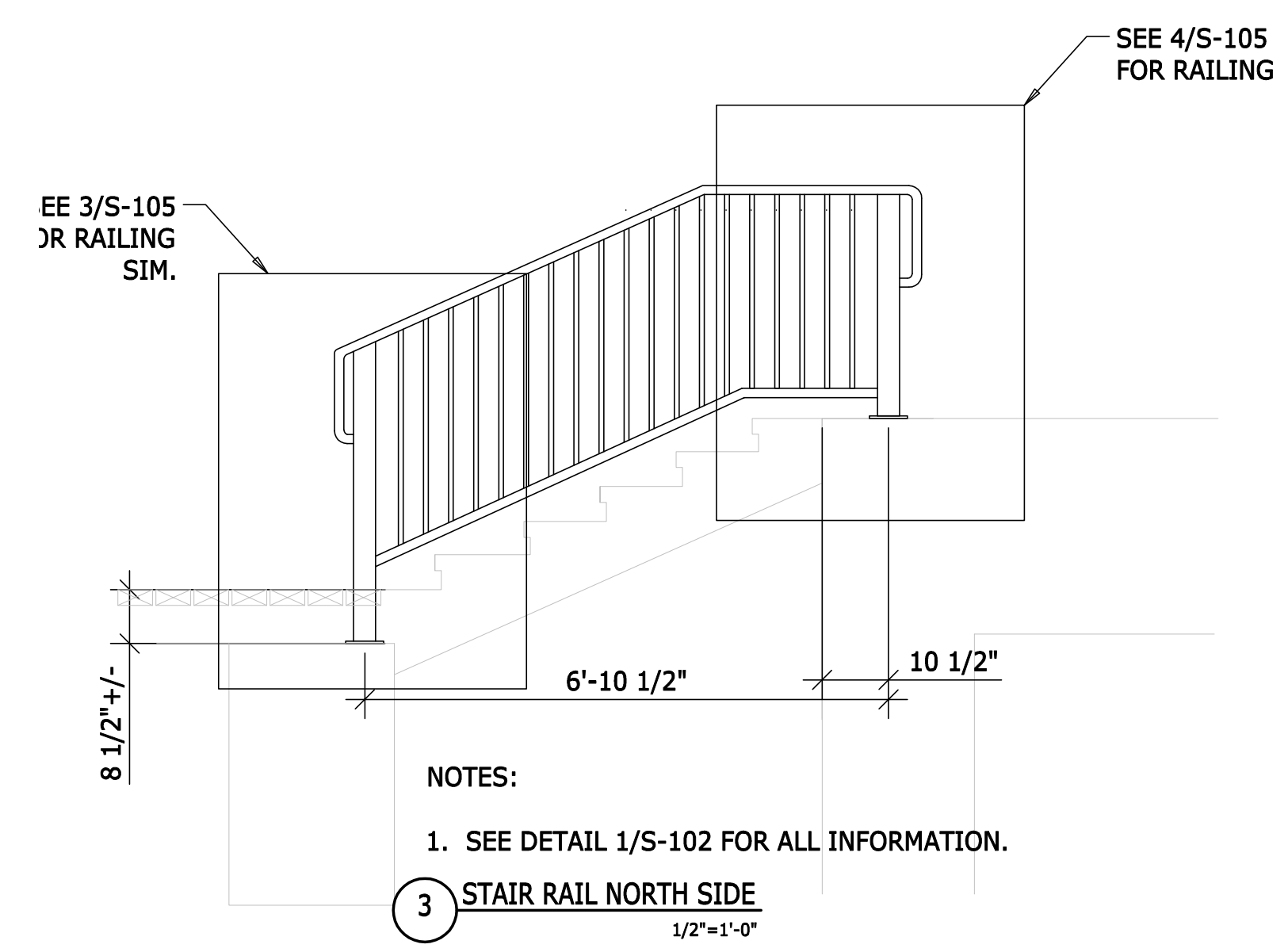
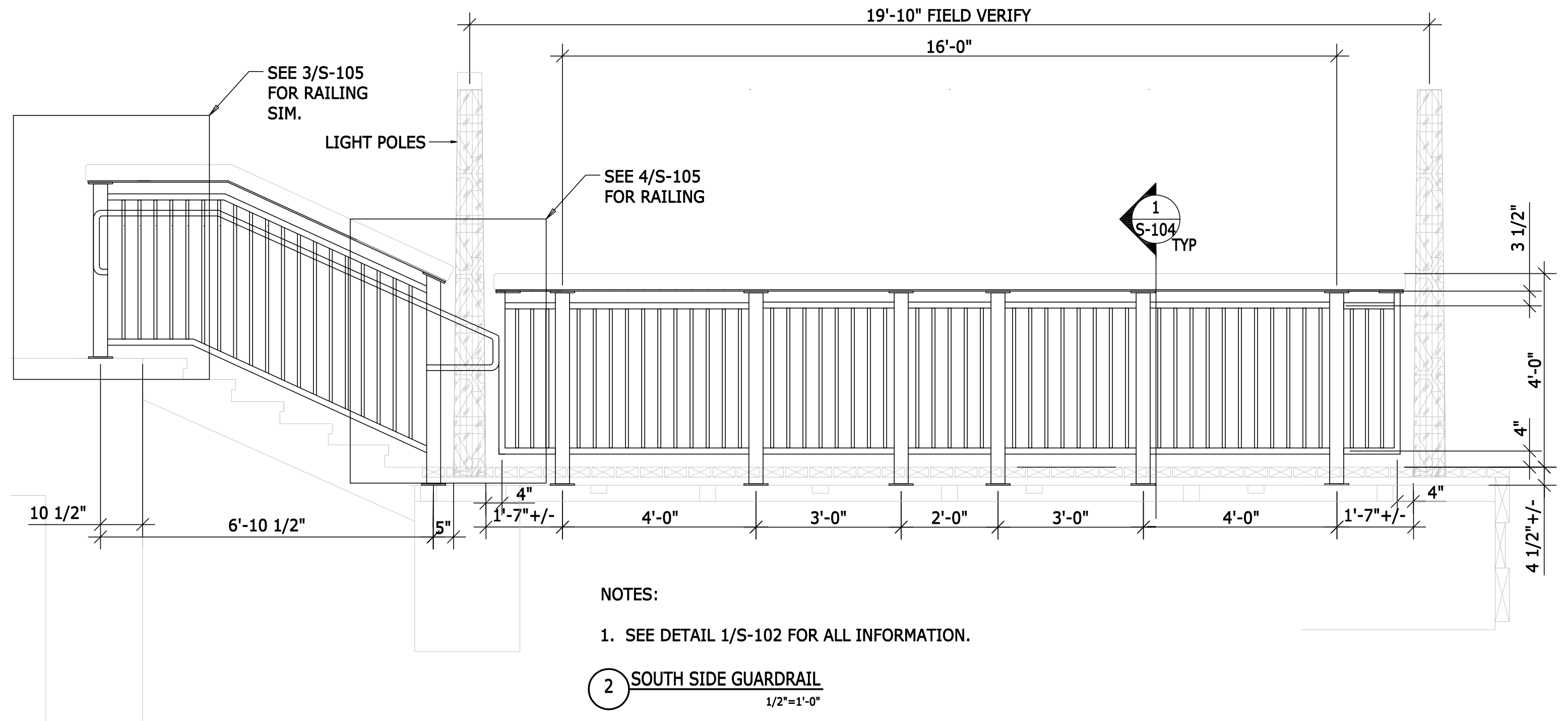
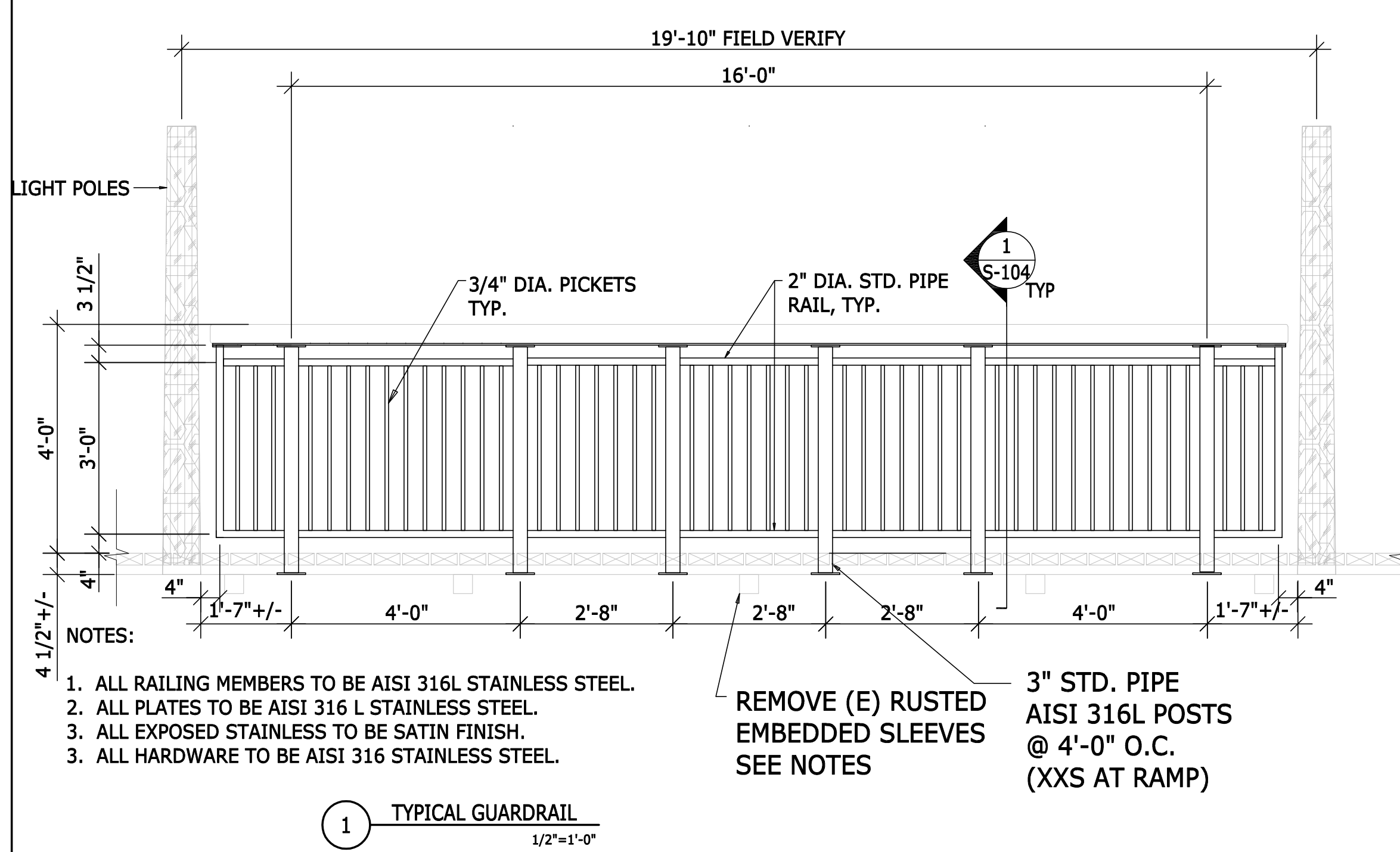


1 RAILING PLAN
SCALE: 3/16" = 1'-0"
TRUE NORTH

SUGGESTED CONSTRUCTION SEQUENCE; ACTUAL CONSTRUCTION SEQUENCE TBD BY CONTRACTOR IN CONSULTATION WITH RIOC

	RESPONSIBLE CONTRACTOR
1) DEMOLISH ALL EXISTING WOOD FRAMING AND HARDWARE. MAINTAIN PERIMETER 'SHIPLAP' DECORATIVE TRIM	WOOD FRAMING CONTRACTOR
2) DEMOLISH EXISTING RAILINGS. SALVAGE EXISTING WOOD TOP RAILS. SEE PLANS	MISCELLANEOUS METALS CONTRACTOR
3) INSTALL TEMPORARY FENCING AT THE PERIMETER OF THE PIER. SEE PLANS	MISCELLANEOUS METALS CONTRACTOR
4) PILE REHABILITATION CONTRACTOR PERFORMS PILE REPAIRS.	PILE REPAIR CONTRACTOR
5) INSTALL NEW RAILINGS AT PERIMETER.	MISCELLANEOUS METALS CONTRACTOR
6) REMOVE TEMPORARY FENCING ON PHYSICAL PIER. LANDBASED FENCING TO REMAIN UNTIL END OF PROJECT.	MISCELLANEOUS METALS CONTRACTOR
7) INSTALL NEW WOOD FRAMING AND DECKING.	WOOD FRAMING CONTRACTOR
8) REMOVE REMAINDER OF FENCING.	MISCELLANEOUS METALS CONTRACTOR

- NOTES:**
- EXISTING FENCING TO BE REMOVED BY RIOC AFTER WOOD DEMOLITION.
 - EXISTING TIMBER LIGHT STANDARDS TO REMAIN. ALL CONDUIT TO BE REMOVED AND SECURED BY RIOC.



PROVIDE HANDRAIL AT RAMP BOTH SIDES

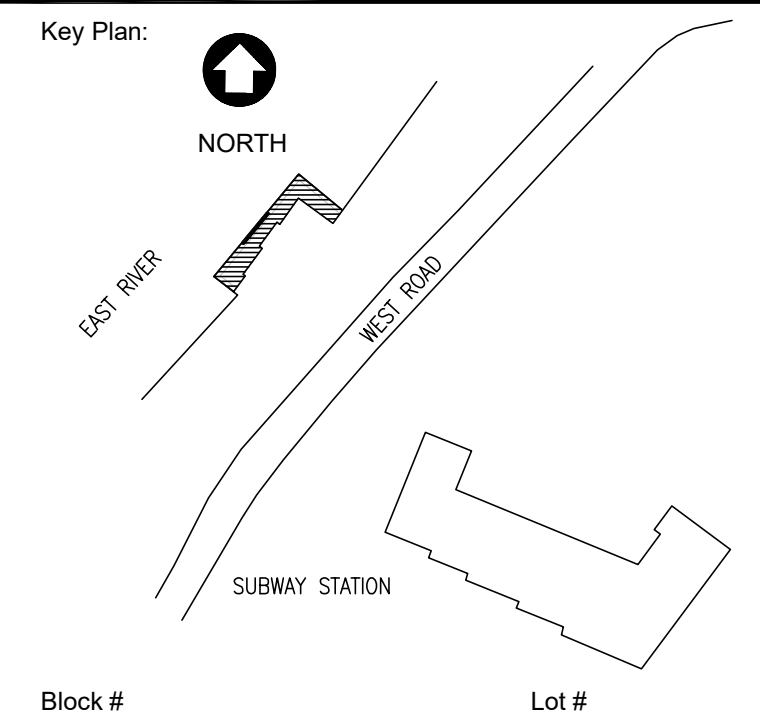
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2	REV-2	04/14/25	CCG	JBY

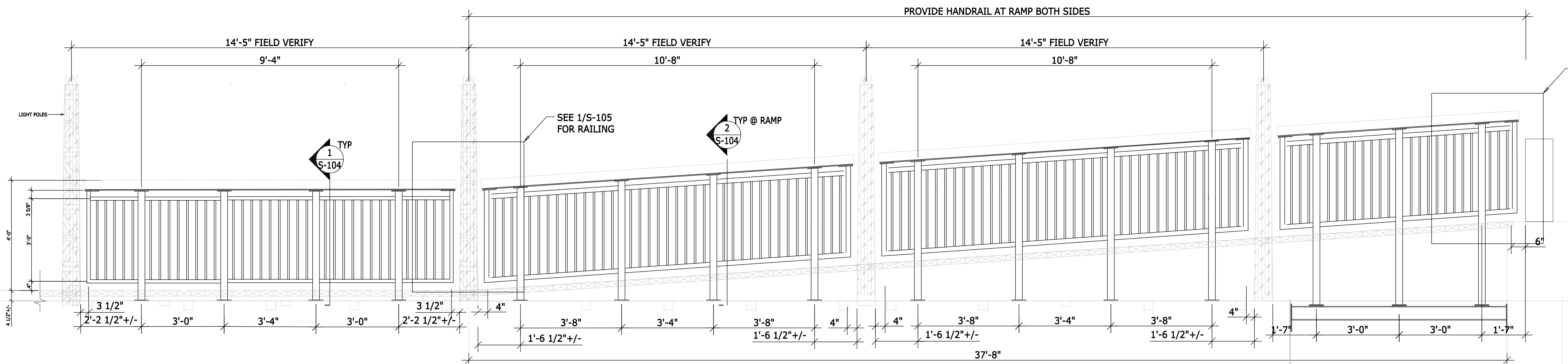


PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:
RAILING ELEVATIONS

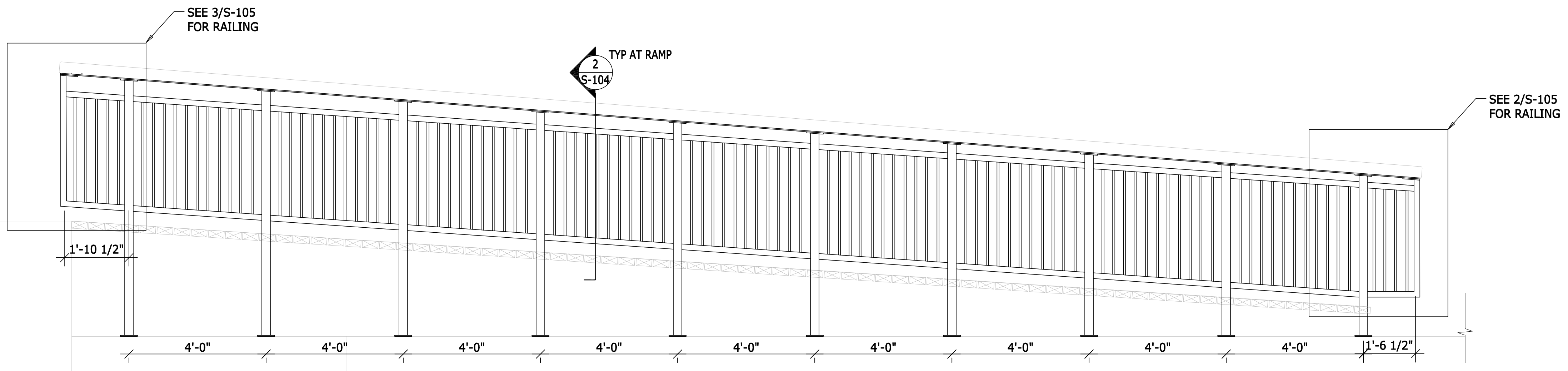
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SCALE	AS NOTED
JOB NO.	25003964.00

DRAWING NUMBER	S-102.00
SHEET NO.	4 OF 7



NOTES:
1. SEE DETAIL 1/S-102 FOR ALL INFORMATION.

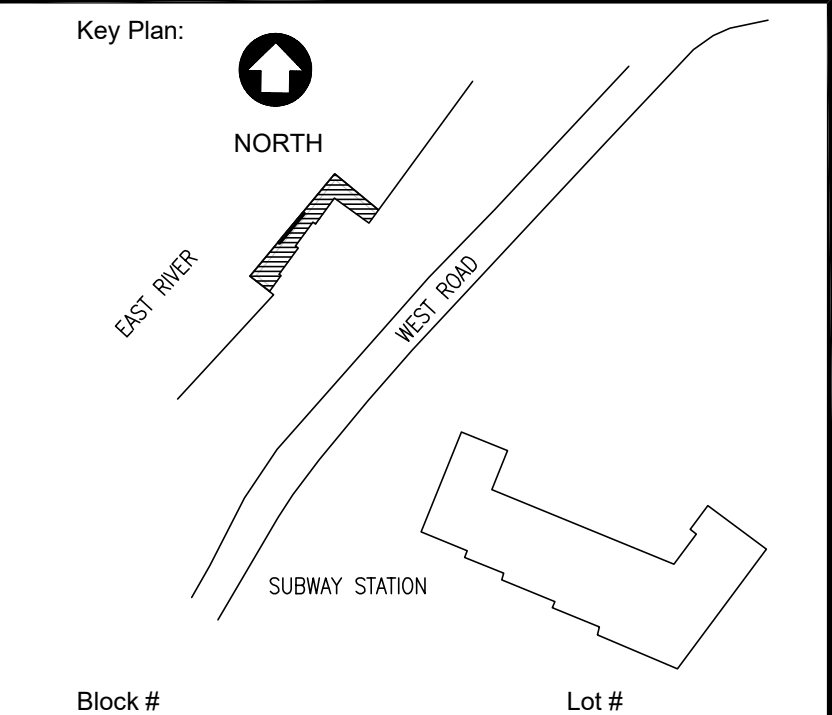
1 RAMP RAILING LOOKING NORTH
1/2"=1'-0"



NOTES:
1. SEE DETAIL 1/S-102 FOR ALL INFORMATION.

2 RAMP RAILING LOOKING SOUTH
1/2"=1'-0"

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/26	CCG	JBV



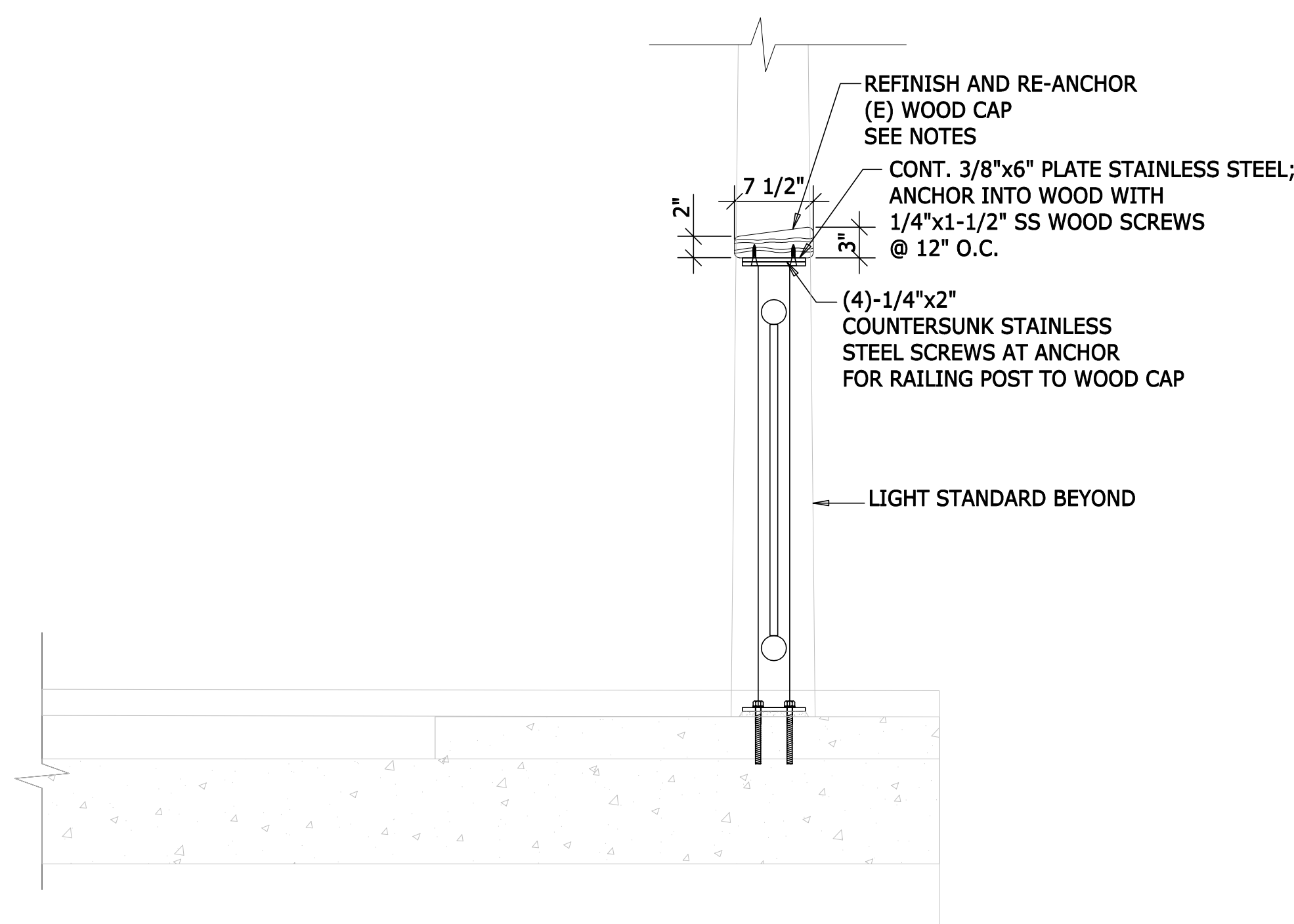
PROJECT TITLE:
**ELEANOR'S PIER
REHABILITATION**
W ROAD, NEW YORK, NY

DRAWING TITLE:
RAILING ELEVATIONS

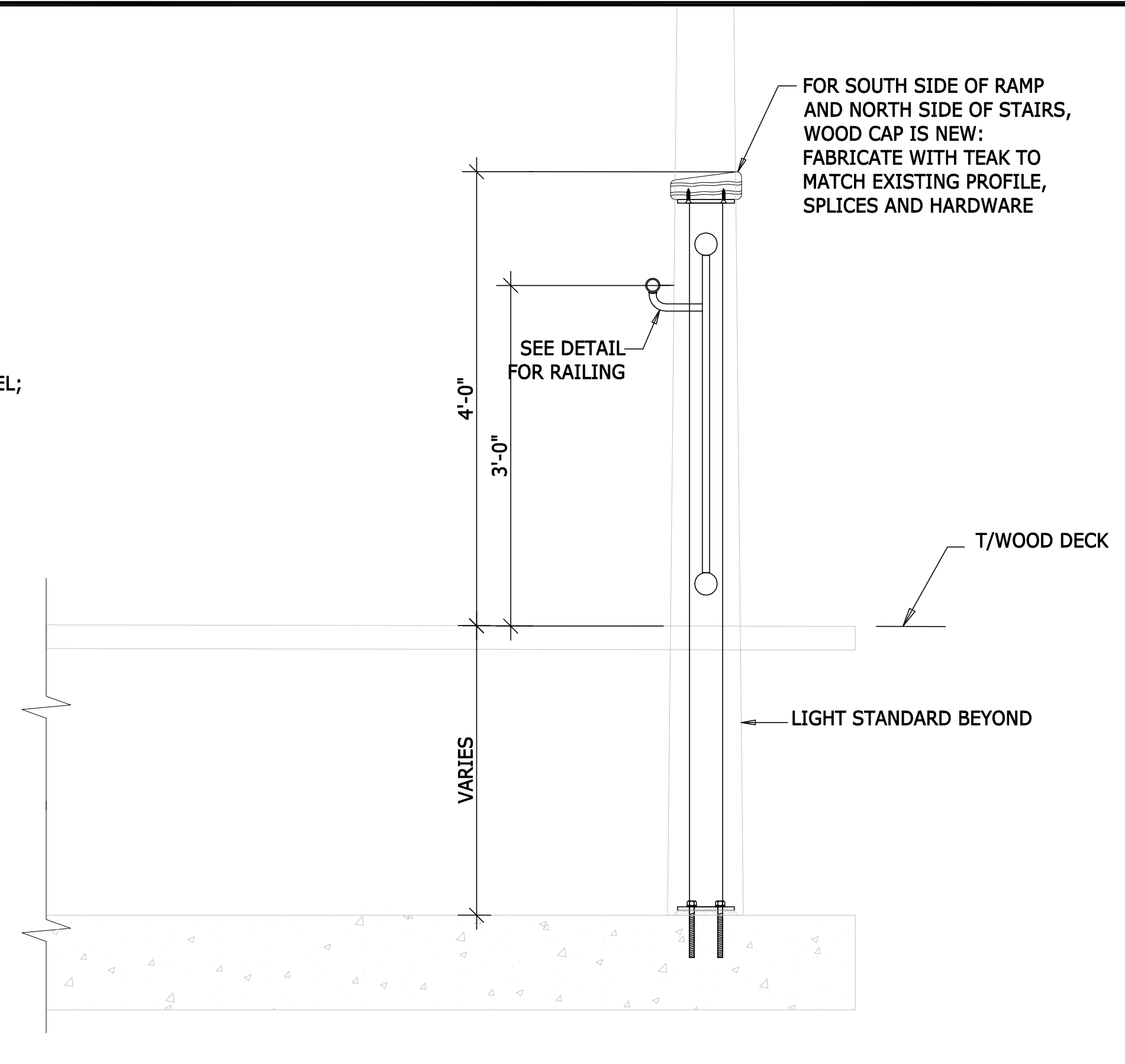
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SCALE	AS NOTED
JOB NO.	25003964.00

DOB #	DRAWING NUMBER
	S-103.00
SHEET NO. 5 OF 7	

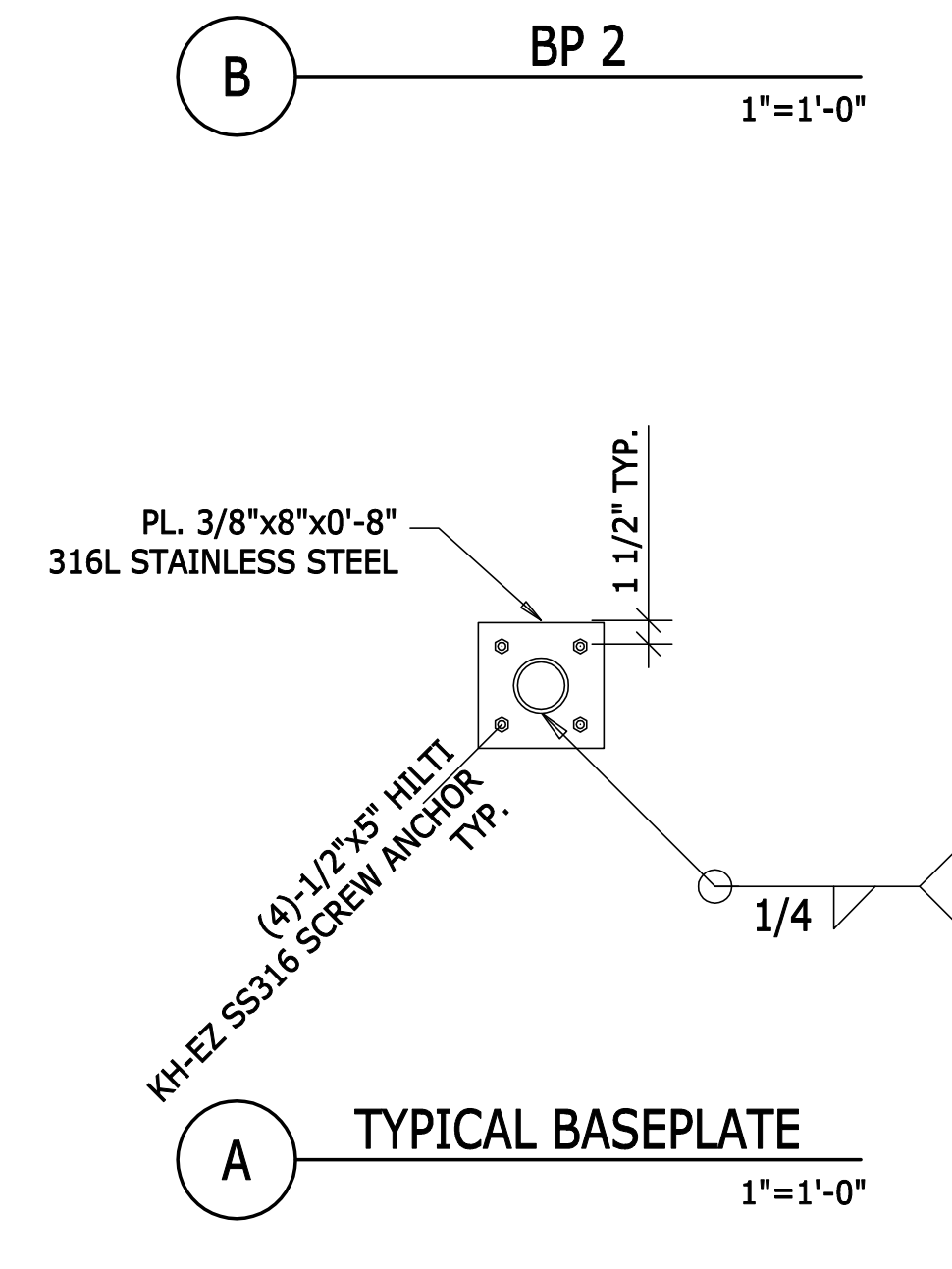
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2	REV-2	06/14/25	CCG	JBY



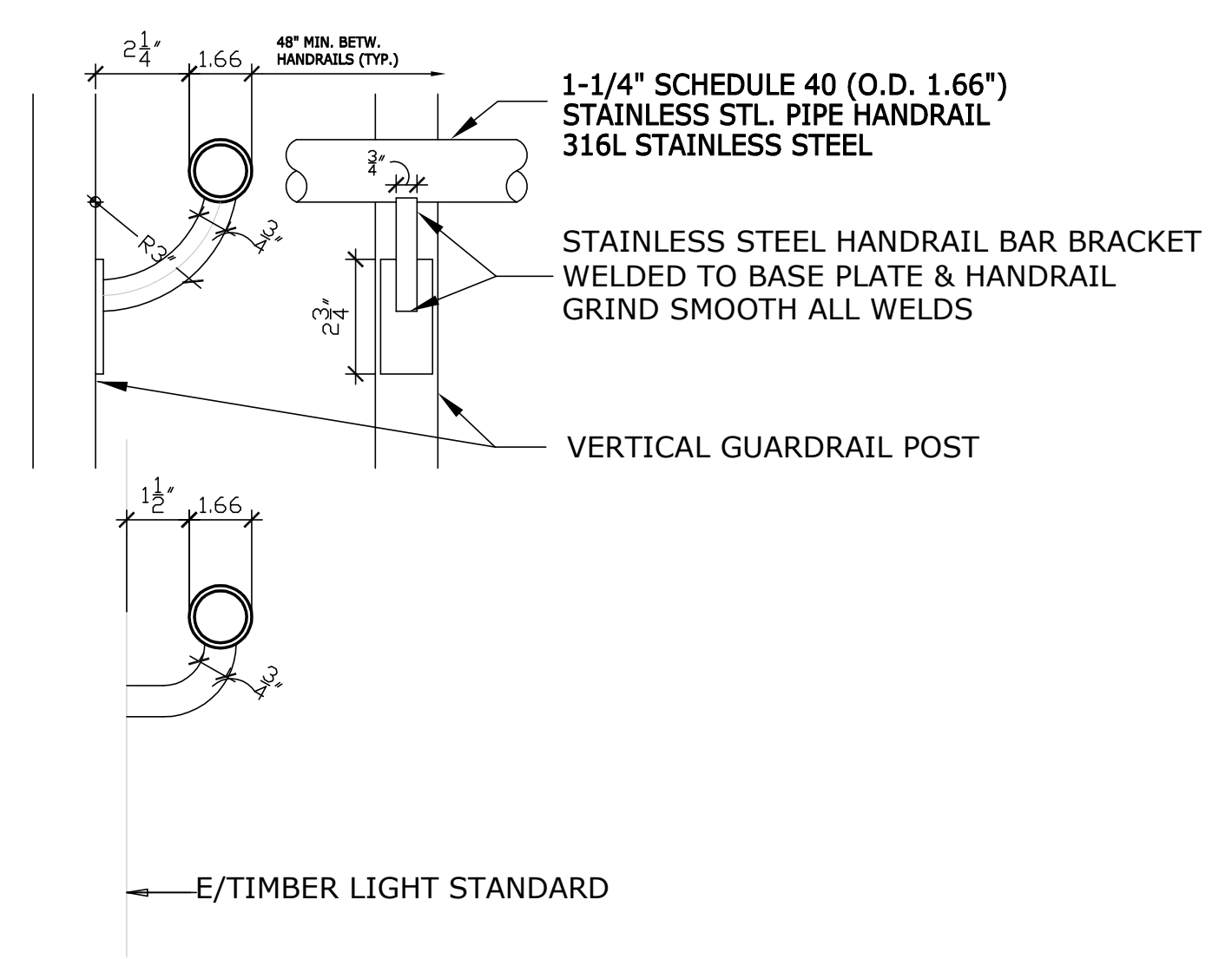
1 TYPICAL GUARDRAIL SECTION 1"=1'-0"



2 TYPICAL GUARDRAIL/HANDRAIL SECTION AT RAMP 1"=1'-0"

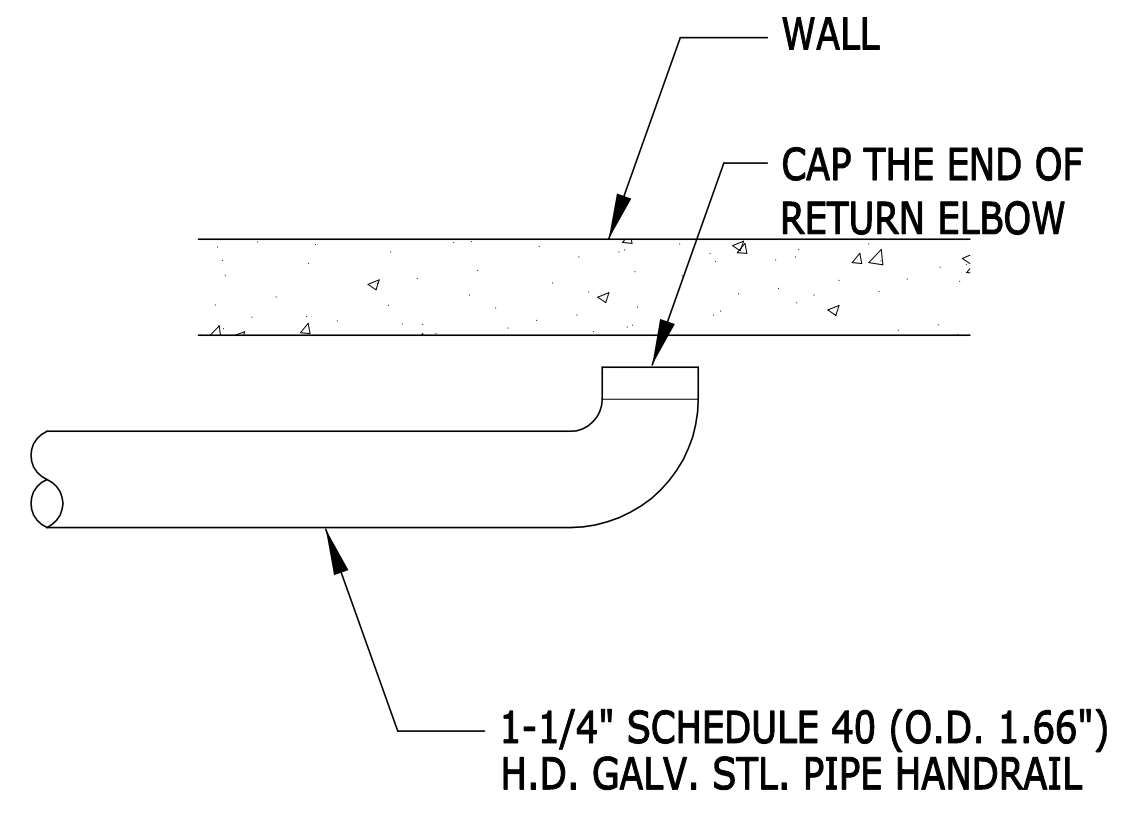


A TYPICAL BASEPLATE 1"=1'-0"

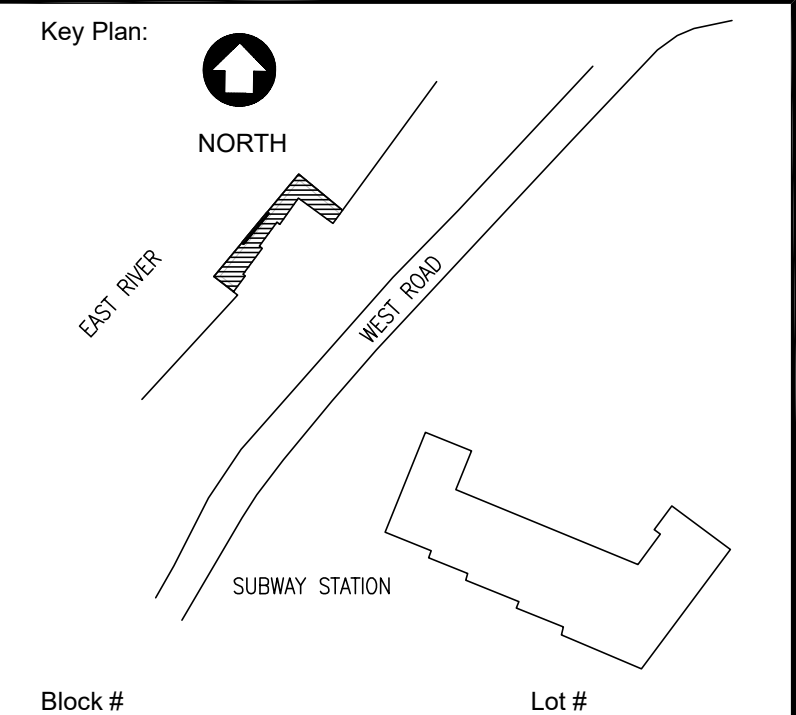


EXTEND HANDRAIL OUT TO CLEAR TIMBER LIGHT STANDARDS AS SHOWN

3 TYP. HANDRAIL MOUNTING DETAILS 3"=1'-0"



4 HANDRAIL EXTENSION DETAIL 1"=1'-0"

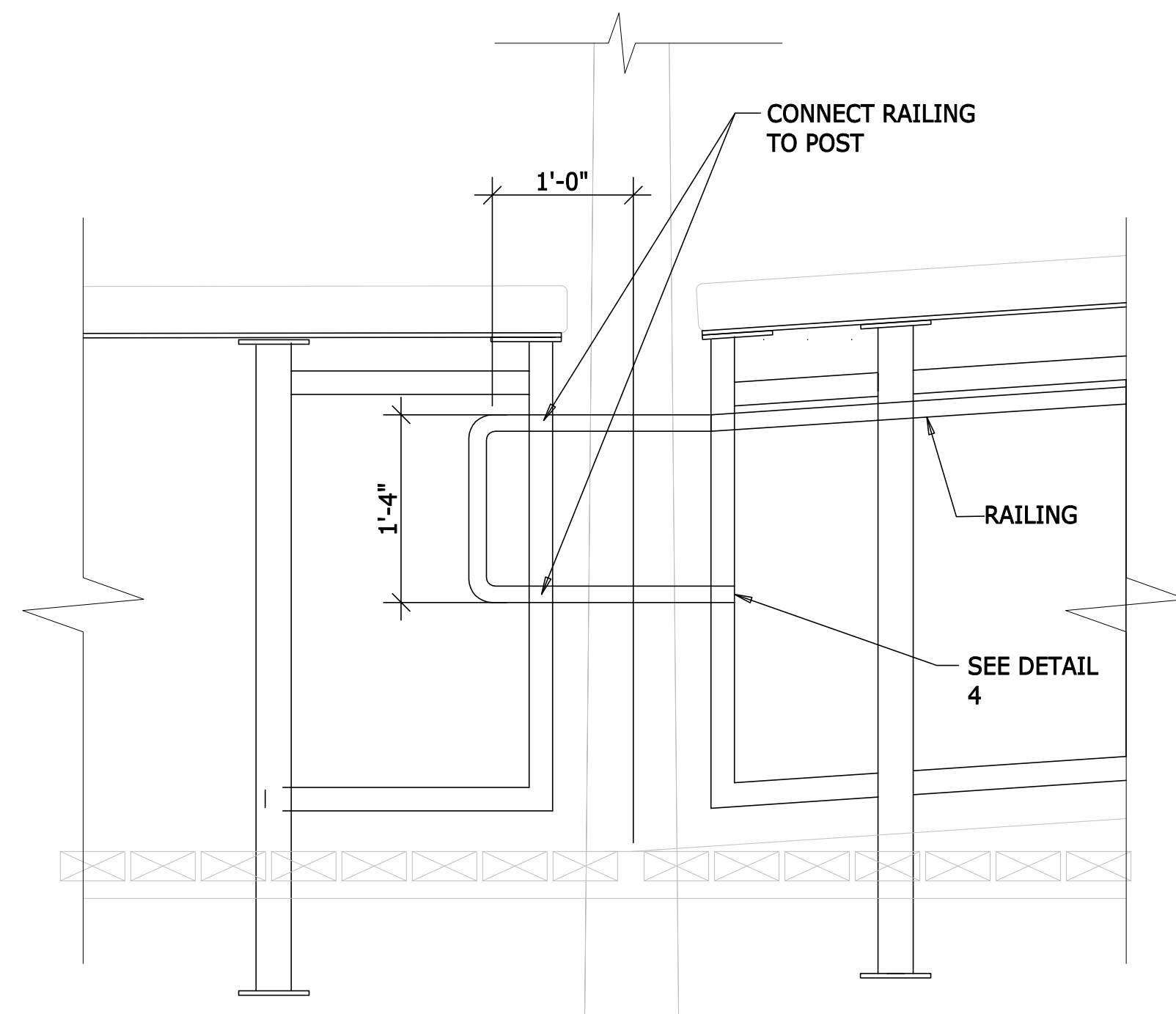


PROJECT TITLE:
ELEANOR'S PIER REHABILITATION
W ROAD, NEW YORK, NY

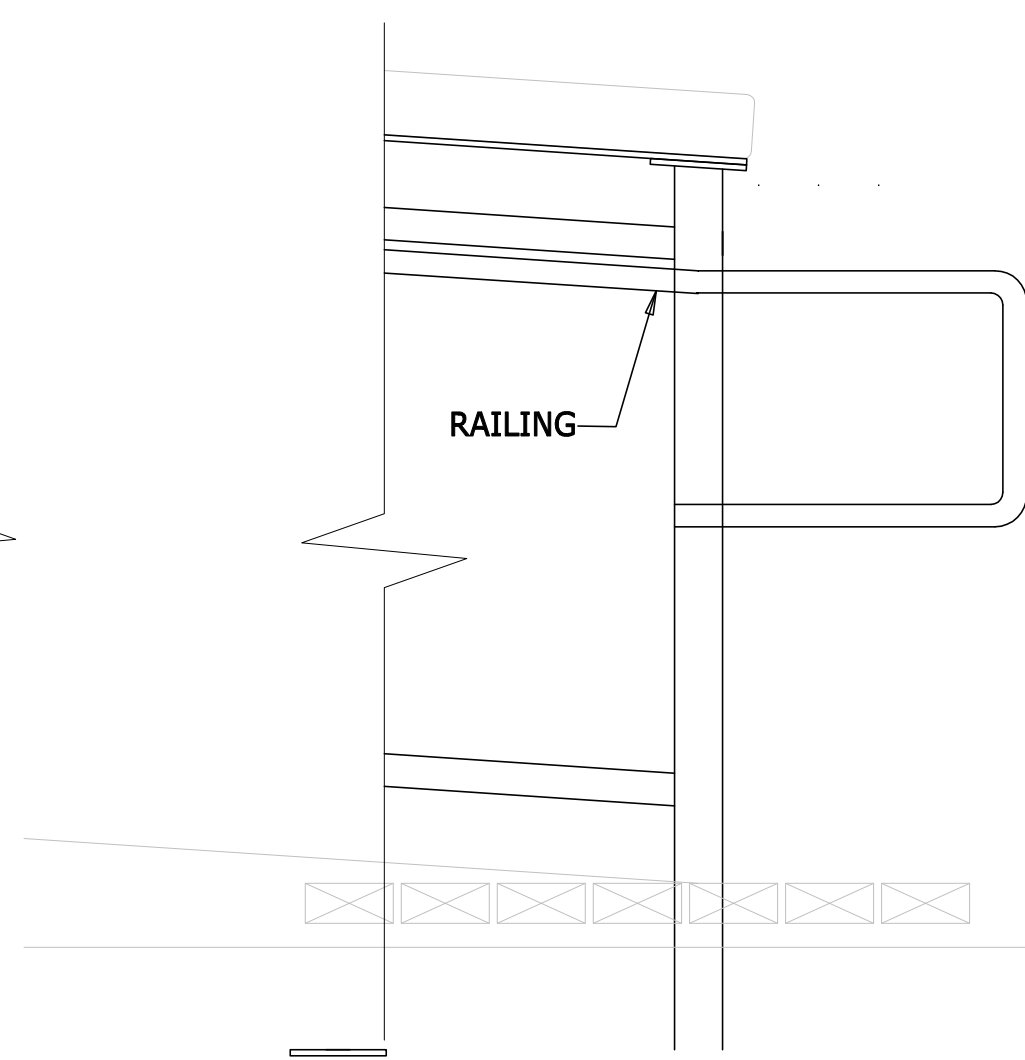
DRAWING TITLE:
RAILING DETAILS

DATE	08/04/2025
SCALE	AS NOTED
JOB NO.	25003964.00

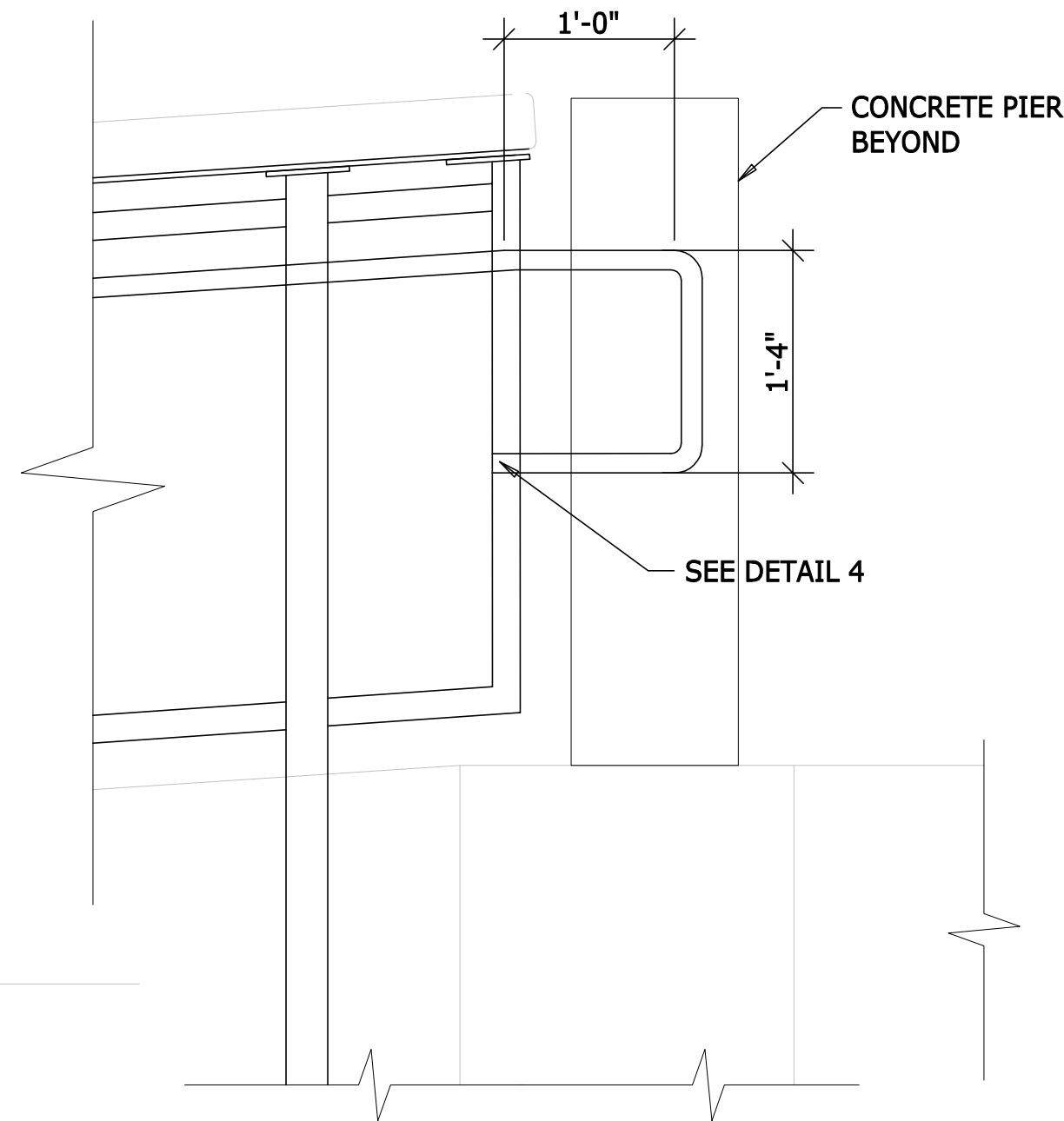
DOB #	
DRAWING NUMBER	S-104.00
SHEET NO.	6 OF 7



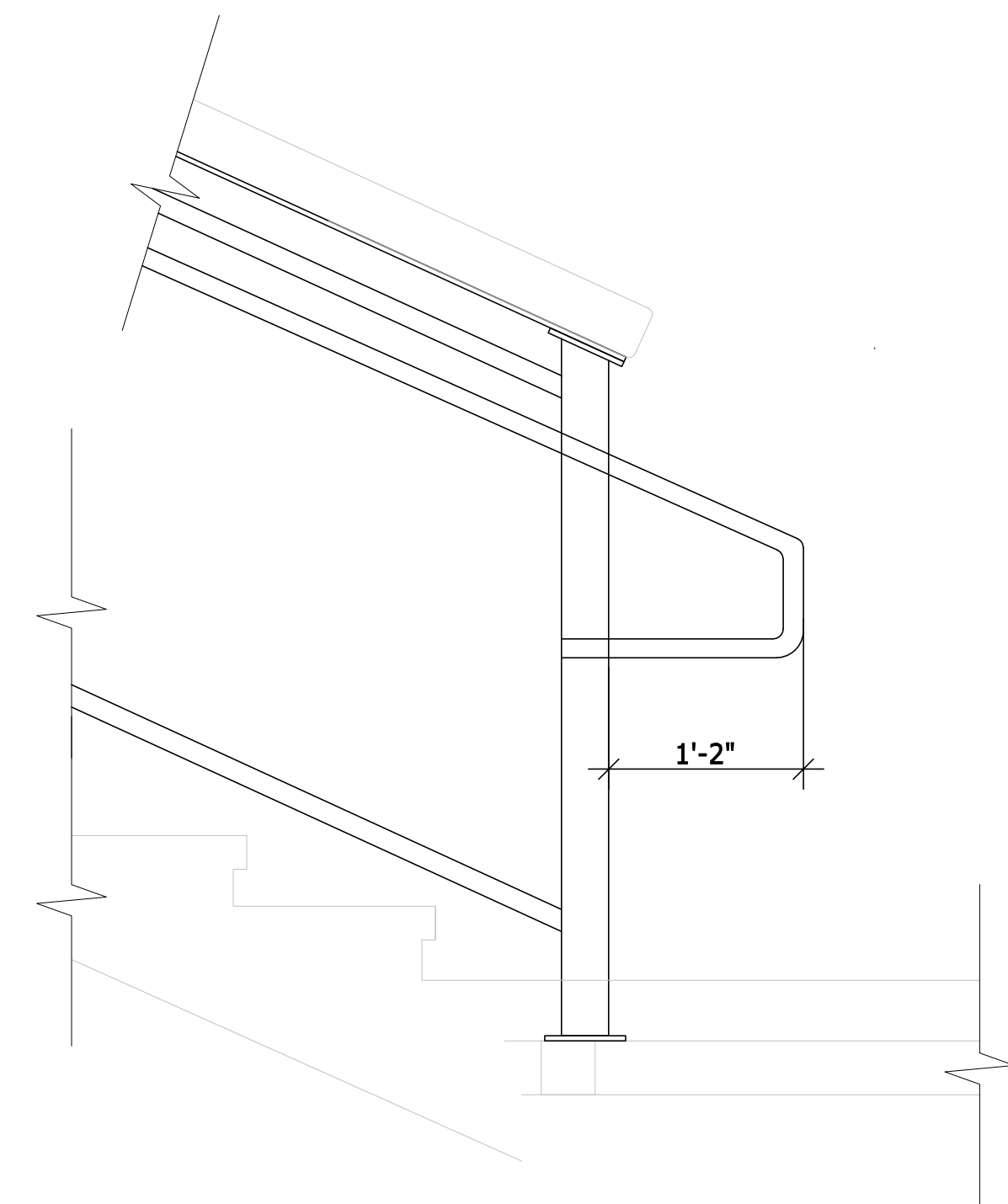
1 **BOTTOM OF RAMP NORTH**
1"=1'-0"



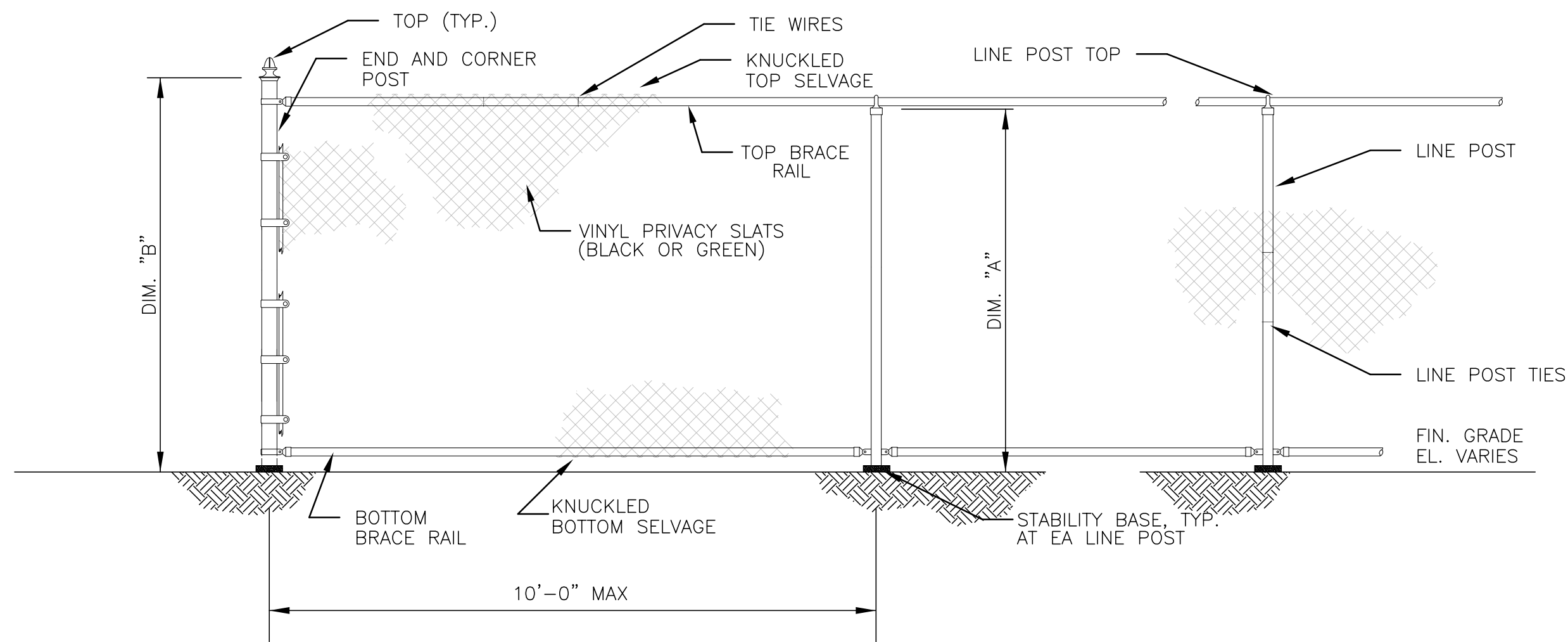
2 **BOTTOM OF RAMP SOUTH**
1"=1'-0"



3 **TOP OF RAMP**
1"=1'-0"



4 **BOTTOM OF STAIRS**
1"=1'-0"

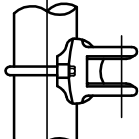
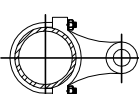


ELEVATION

FENCE HEIGHT	DIMENSION (MIN.)		LINE POST	TOP/BOT RAIL	END/CORN POST
	A	B			
8'-0"	6'-0"	6'-6"	2.0" O.D.	1-5/8" O.D.	2.5" O.D.

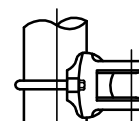
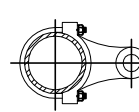
NOMINAL O.D.	ACTUAL I.D.	ACTUAL O.D.	WEIGHT (LBS/FT)
2"	1.610	1.900	2.71 1.660

- GENERAL CHAIN LINK FENCE NOTES**
1. ALL POSTS & RAILS SHALL BE SCHEDULE 40 WIEGHT COMERCIAL GRADE GALVANIZED STEEL PIPE WITH BLACK VINYL CLADDING.
 2. ALL CHAINLINK SHALL BE 2" x 6 GAUGE VINYL COATED WIRE (BLACK).
 3. ALL FENCES SHALL HAVE TOP AND BOTTOM RAILS. 10 FOOT FENCE SHALL HAVE TOP, BOTTOM AND MIDDLE RAILS.
 4. CONTRACTOR TO SUBMIT MANUFACTURERS SPECIFICATIONS AND DRAWINGS, INDICATING ALL SIZES AND CONNECTIONS TO BE USED, FOR APPROVAL BY THE OWNER'S REPRESENTATIVE.

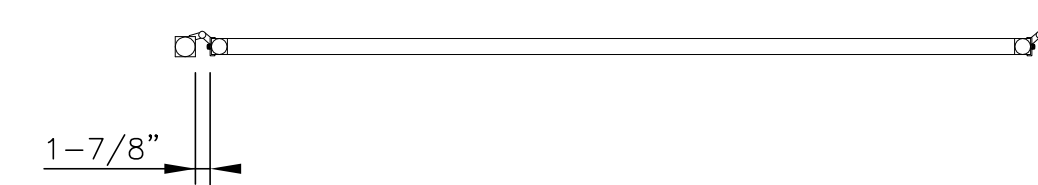


ROUND POST HINGE (TYPICAL)

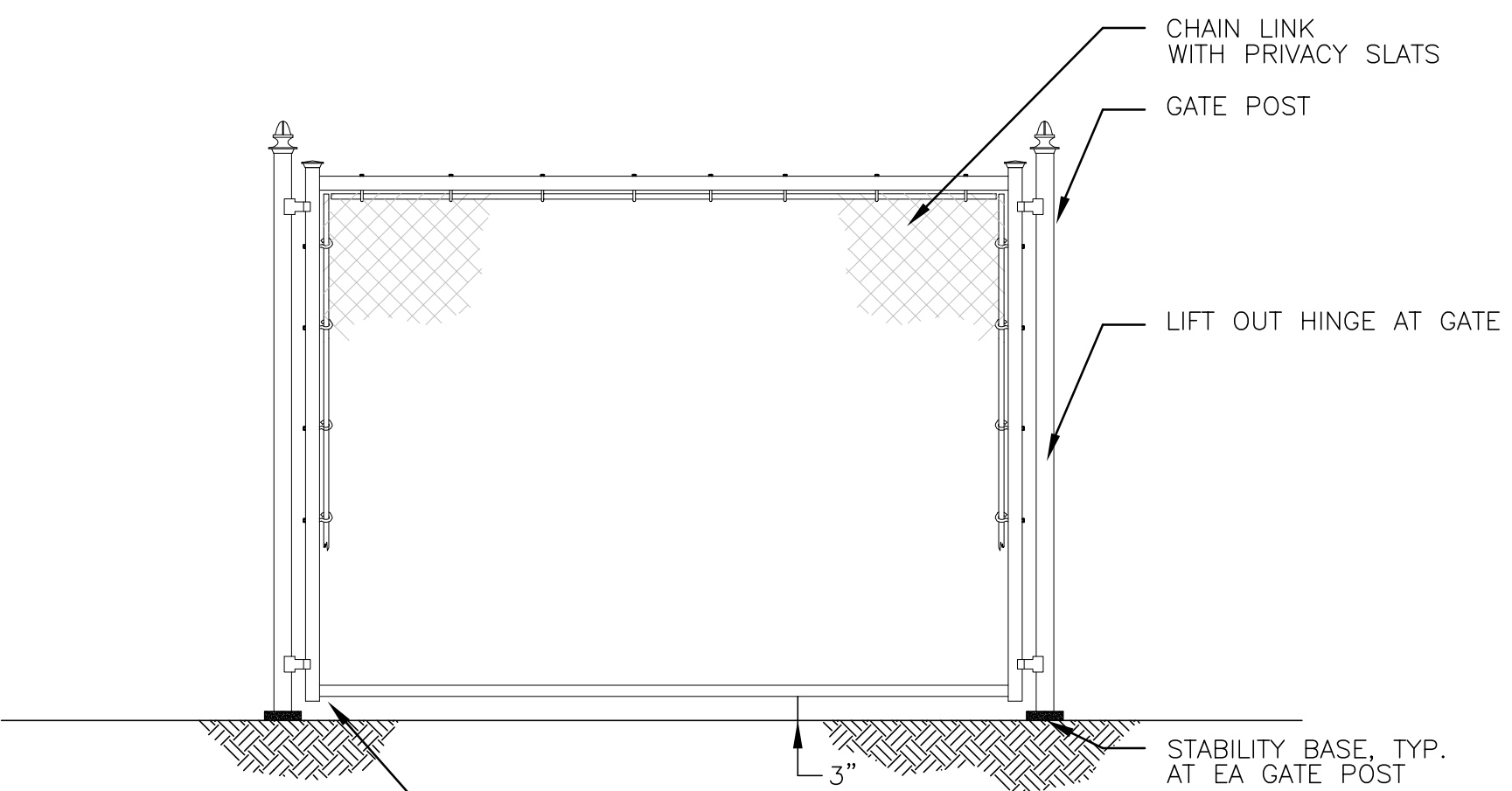
5 **BLACK CHAIN LINK FENCE DETAIL**
SCALE: NTS



ROUND POST HINGE (TYPICAL)



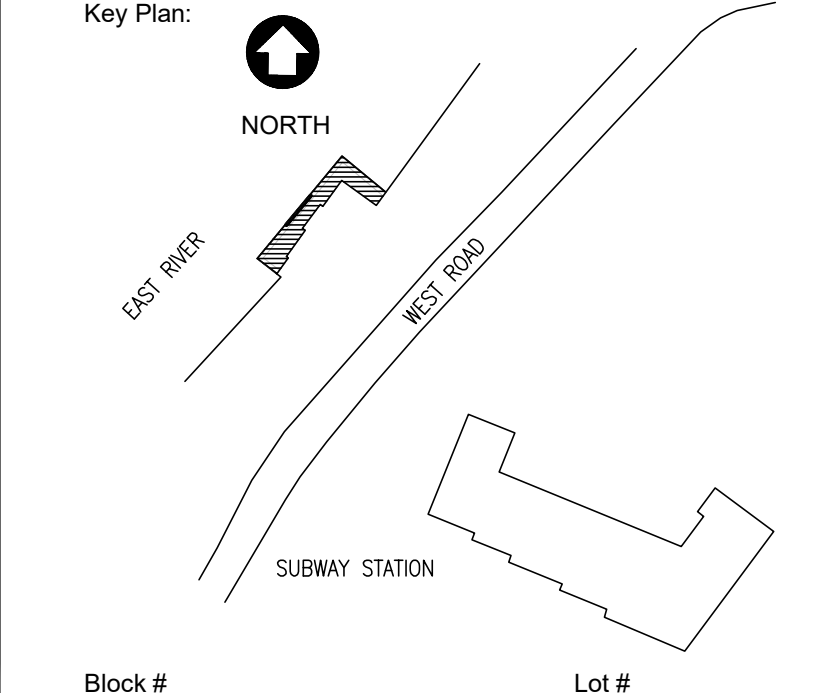
PLAN



ELEVATION

6 **GATE DETAIL**
SCALE: NTS

NO.	DESCRIPTION	DATE	CHECKED	DRAWN
2	REV-2	04/14/26	CCG	JBV



PROJECT TITLE:
ELEANOR'S PIER REHABILITATION
W ROAD, NEW YORK, NY

DRAWING TITLE:
RAILING AND FENCING DETAILS

DATE: 08/04/2025
SCALE: AS NOTED
JOB NO.: 25003964.00

DRAWING NUMBER:
S-105.00
SHEET NO. 7 OF 7